

WEATHER SHIELD®

WINDOWS & DOORS



BI-FOLD DOOR SYSTEM INSTALLATION INSTRUCTIONS

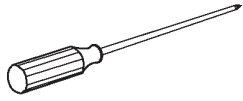
NOTICE	CAUTION !
Failure to install and maintain our product according to these instructions will void any warranty, written or implied. The installer is responsible for consulting the contractor, structural engineer, architect, or consumer, for proper installation according to local codes and/or ordinances.	Some codes require the use of pressure treated lumber to line rough openings. Corrosion resistant materials, such as stainless steel or hot-dip galvanized steel, must be used for fasteners and anchors having direct contact with pressure treated lumber.

WARNING !	NOTICE
Proper Eye and Hearing Protection must always be worn when installing, removing or performing adjustments to window and door products.	Before applying sealant or adhesive pads, make sure the area to be sealed is clean, dry, and frost-free. Use color-matching or transparent sealant. Photos show contrasting sealant for clarity and demonstration only. Use a dab of sealant behind any exterior-facing screws or nails.

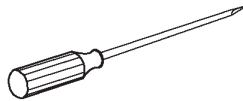
NOTICE
It is highly recommended that Bi-fold systems are installed in areas with sufficient overhangs as required to prevent water or air infiltration. The suggested overhang of the structure should match the height of the unit being installed. Failure to do so may result in structural damage to the surrounding area, finishes and/or systems.

⚠ ⚠ CAUTION - IMPORTANT ⚠ ⚠
Lead-based paint may be present in older homes, and the removal of windows & doors may cause this paint to be disturbed. In order to minimize exposure to lead-based paint dust, please consult www.epa.gov/-/lead for more information.

Recommended tools and materials which are not supplied, but are needed to install your Weathershield Bi-Fold Doors.



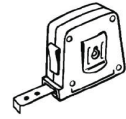
12" x #2 Phillips Screwdriver



12" x #2 Flathead Screwdriver



6" #2 Square Drive & 6" #2 Phillips Extension Bit



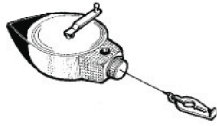
Tape Measure



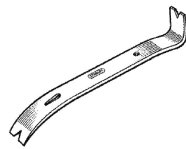
6' Level or Laser Level



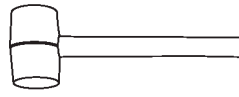
Sill Pan



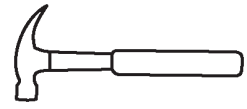
Chalk Line



Pry Bars



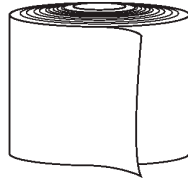
Rubber Mallet or Deadblow Hammer



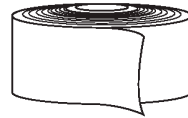
Claw Hammer



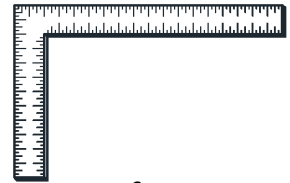
Utility Knife



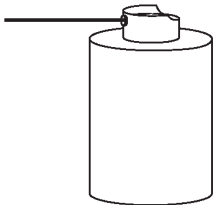
Water Resistant Barrier



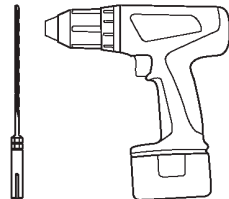
Flashing



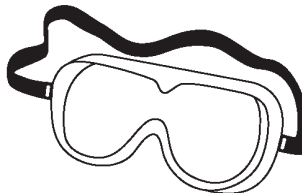
Square



Low Expansion Foam Filler



Drill / SDS Hammer Drill & 5/32" Masonry Bit



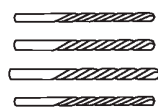
Safety Goggles / Glasses



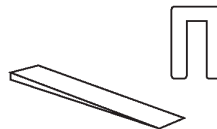
Paper Towels



Gloves



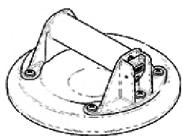
Drill Bit Index Set



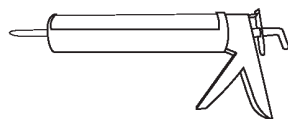
Wood & Plastic Shims



Putty Knives



Vacuum Cups



Caulk Gun & Sealant

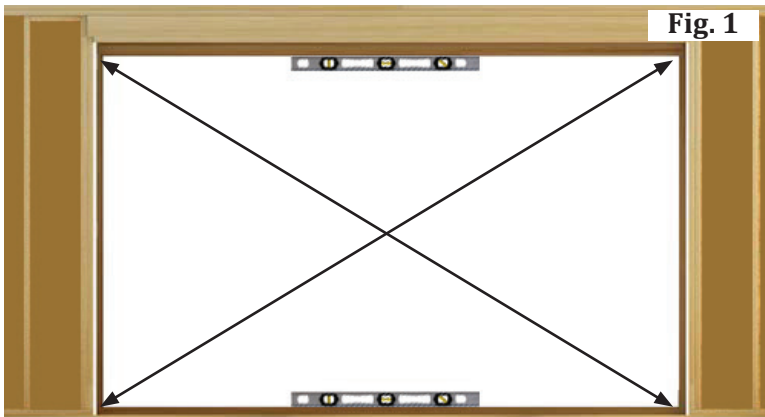
Please read these instructions completely before installing your Weather Shield bi-fold door. These instructions are for installing in new wood frame construction using an industry approved water management system. For installation using other construction methods, such as remodeling, replacement, and recessed openings refer to ASTM E2112-07, "Standard Practice for Installation of Exterior Windows, Doors and Skylights," for installation suggestions. The same information for ASTM E2112 can be found on the ASTM website, www.astm.org. Regional standard practices, environmental conditions, and codes may vary and supersede the procedures contained within. The responsibility for compliance is yours: the installer, inspector, and owner(s).

UNIT PREPARATION

Before installing your Weather Shield Bi-Fold Door System, unpack all components; check each against the packing slip and place back into packaging near the appropriate opening until ready to install. If there is any damage or missing parts, please let your Weather Shield dealer know immediately.

OPENING INSPECTION

Rough opening requires a flat, level, straight, plumb and square openings. Sill and head jamb must be flat, level, straight, side jambs must be plumb, straight and square (**Fig. 1**).



BEFORE YOU BEGIN

Hazard Notations

Please familiarize yourself with the following hazard notations used throughout this instruction.

Installer and Builder Information

- Always provide a copy of these instructions for the current or future building owner.
- Plan sizing of rough opening and clearance from exterior finishing systems to allow for normal materials shrinkage or shifting (e.g. wood structure with brick veneer; allow adequate clearance at sill). Failure to do so can void the Weather Shield warranty.
- Refer to the Technical Installation Specifications section for technical specifications regarding the installation of this product. These installation specifications as well as the details in this section must be followed to achieve proper installation and performance.
- It is the responsibility of the builder, installer and subcontractors to protect the interior and exterior of windows or doors from contact with harsh chemical washes, construction material contamination and moisture. Damage to glazing, hardware, weather strip and cladding/wood can occur. Protect with painters tape and/or protective sheathing as required. Follow all guidelines regarding material use, preparation, personal safety and disposal.
- Contact your Weather Shield dealer if you have any questions regarding product and materials used in manufacturing or questions on replacement parts.

NOTE: *Italicized numbers shown in parentheses () are metric equivalents in millimeters rounded to the nearest whole number.*



WARNING!

Always practice safety! Wear the appropriate eye, ear and hand protection, especially when working with power tools. This door is glazed with safety glass (tempered or laminated) and if broken must be replaced with safety glass. This is in accordance with state and federal laws.

AFTER MARKET PRODUCTS

- Alterations to Weather Shield door products including window films, insulating or reflective interior treatments or additional glazings can cause excessive heat buildup and/or condensation. They may lead to premature failures not covered under warranty by Weather Shield.
- Before purchasing or applying any product that may affect the installation or performance of Weather Shield products contact the manufacturer of after-market product/glazings that are not supplied by Weather Shield and request written product use, associated warranties and damage coverage. Provide this information and warranties to the end user and/or building owner for future reference.

ROUGH OPENING PREPARATION

- Prepare the opening by removing any obstructions that may interfere with the proper operation of the door system once installed in the frame, making sure the opening is clean and free of debris and/or installation materials. Installation of a moisture barrier on the concrete or sub-floor.
- The following sections demonstrates best practice for a rough opening preparation for both air barrier and building paper scenarios. Refer to ASTM E2112 for the other situations not covered in this document.

NOTE: *All head jamb fasteners holes are pre-drilled.*

AIR BARRIER APPLICATIONS

- When trimming away the air barrier at openings, first cut horizontally across the entire width of the rough opening at the head jamb and sill. Then cut the sides of the opening from sill to head jamb. Finally cut the head jamb corners diagonally away from the opening. (See Fig. 2)
- Wrap barrier at the sides and tack in place. Do not tack barrier at head jamb. Fold the head jamb flap up and tape temporarily in place or tuck beneath. This will allow the top flap to fit over the head jamb flashing after installation of the door. (See Fig. 3)

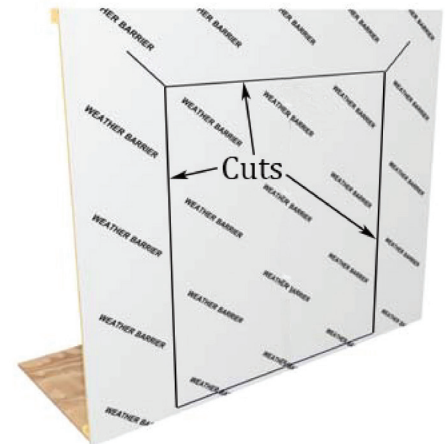


Fig. 2



Fig. 3

INSTALLATION PREPARATION

- Check the rough opening and make sure that all components are sound, suitable, and ready to receive the door. Whenever conditions are unsatisfactory, do not proceed with installation.

IMPORTANT

The door panels are suspended from the head track. It is critical that the rough opening header can carry the weight of the doors. The rough opening header must not deflect more than 1/16" when carrying the weight of the doors (Fig. 4).

- When installing the standard sill we recommend using a sill pan (Fig. 5).

Fig. 4

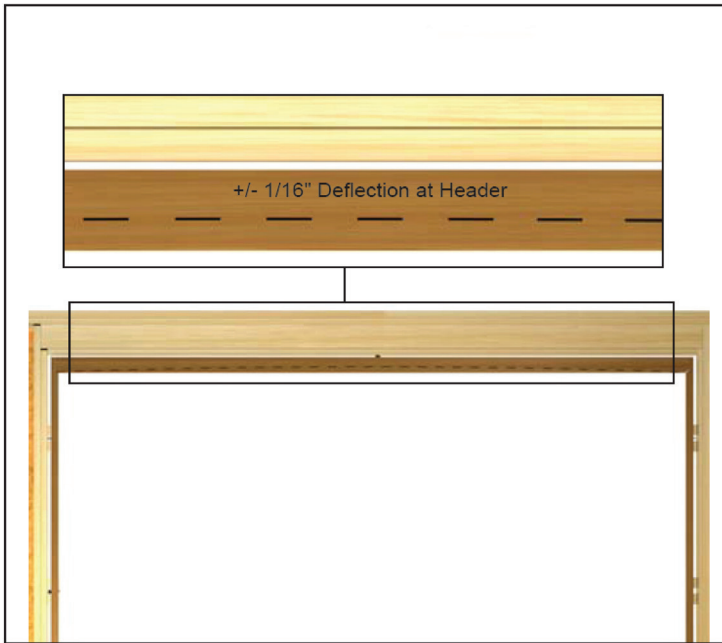
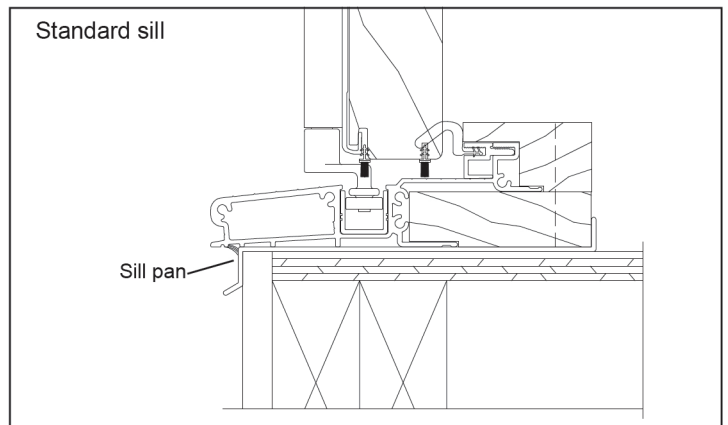
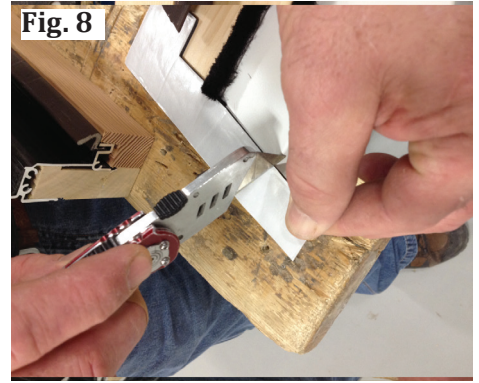
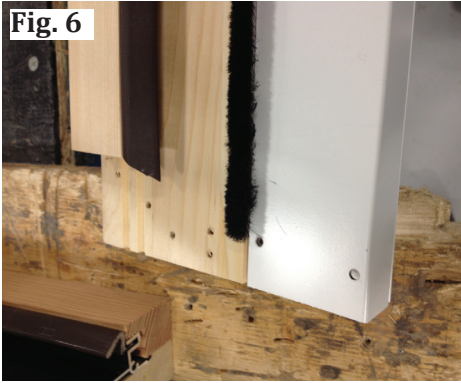


Fig. 5

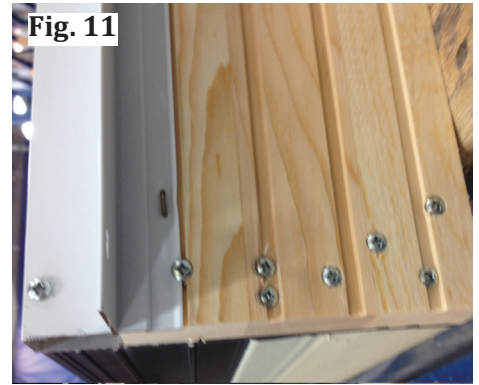
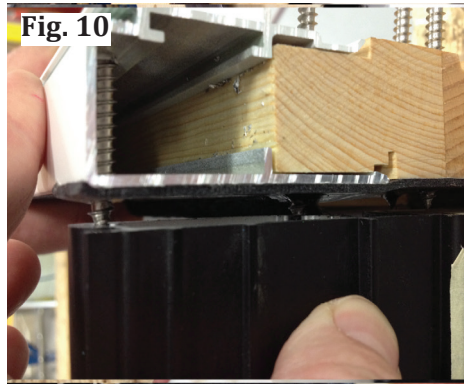


FRAME ASSEMBLY

- Lay out Frame Parts in the orientation that they will be assembled (Fig. 6).
- Apply Sill Gasket to the sill end of the side jambs and trim off the excess front of the Gasket (Fig's. 7+8).



- Remove Release paper from Gasket
- Apply Clear Silicone to the under side of the Side Jamb Stops (Fig. 9).
- Start the screws into the sill end of the Side Jamb, making sure that they start correctly into the screw bosses in the metal part of the sill (Fig. 10).
- Install all (8) #9 X 2-1/2" Screws into bottom Sill to Side Jamb Joint, using pre-drilled hole locations (Fig. 11).



- Make sure that the frame to sill joint is tight so that the gasket has a good seal to the sill and side jamb (Fig. 12).
- Clean up any excess squeeze out where the threshold meets the side stops (Fig. 13).
- Repeat for the opposite sill to side jamb.
- Slide the loose piece of weather strip into the Head track so that the leaf portion points back towards the interior. The weather-strip should be in the interior most T-track in the head jamb (Fig. 14).

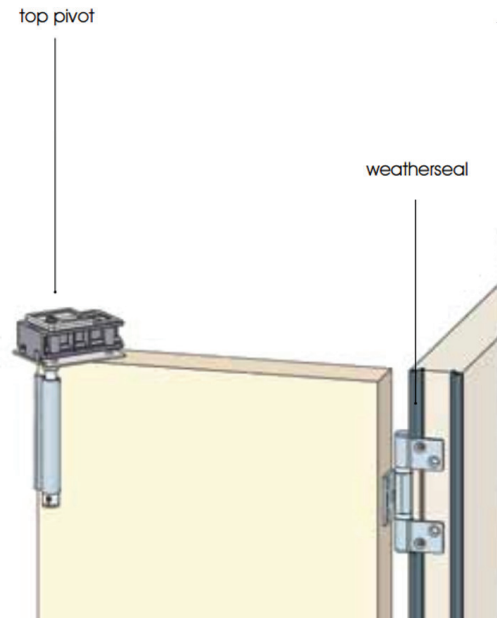
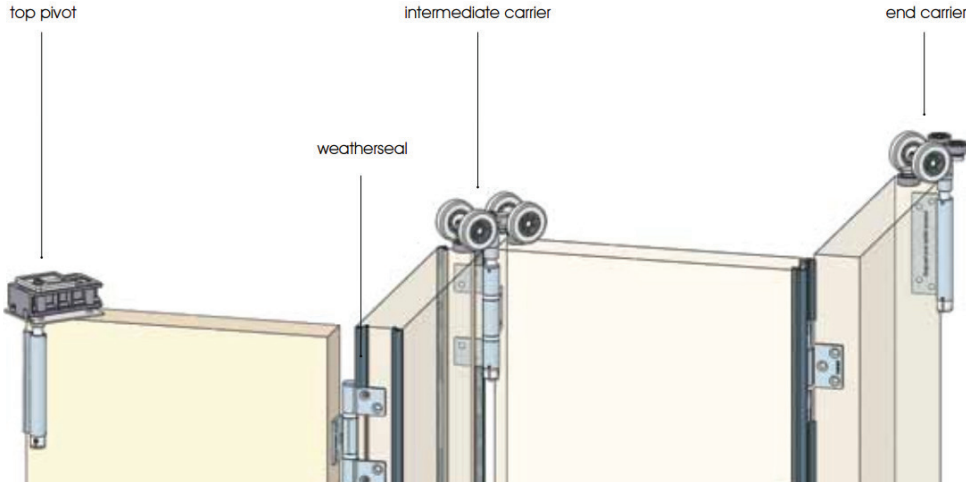


DOOR ASSEMBLY

- Lay out the head track rollers and pivots in the orientation that they will be used in the door. Check the handing (right or left) of the hinges to make sure they are all correct prior to assembling the rest of the frame. Following these guidelines:

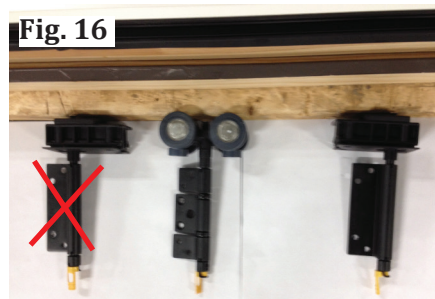
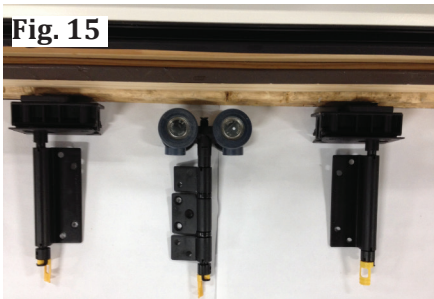
- The top pivot will go up against the side jambs
- The longer portion of the top block will extend out over top of the panel.

- The roller with 4 wheels (Intermediate Carrier) are used where one pair of Panels are connected to the next set pair of panels. (for example on a 4 Left Door they go between the 2nd and 3rd Panel.

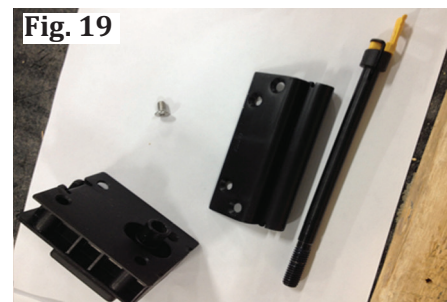
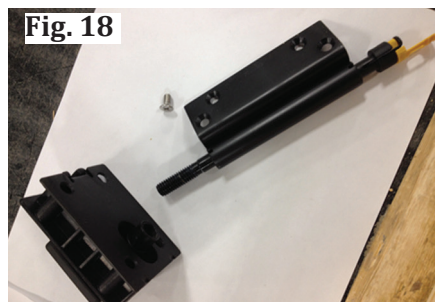


- The roller with 2 wheels (end Carrier) is used at the end of a string of panels, (unless there is a service panel). Not all doors will have all have all types.

- With the flat part of the hinge plates resting on the floor or table, the leaf should point inward (Fig. 15). If they point outward like the one shown in Figure 16, picture then the hinge leaf needs to be flipped as shown in Fig's 17-19.



- To flip the handing on a hinge, remove the screw from the top (Fig. 17), and unthread the hinge pin from the bottom (Fig's. 18+19).
- Flip hinge leaf over 180° then reinstall the pin and the locking screw. Once you are sure that the hardware is handed correctly, install into the head track in the correct order.



- Once you are sure that the hardware is handed correctly, install into the head track in the correct order.
- Slide Top Pivot so that it flushes out to the end of the track (Fig's. 20-22).



Fig. 20

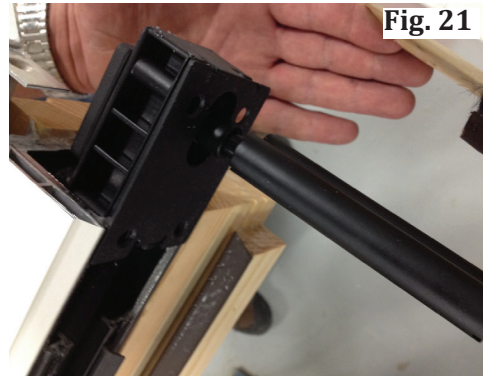


Fig. 21

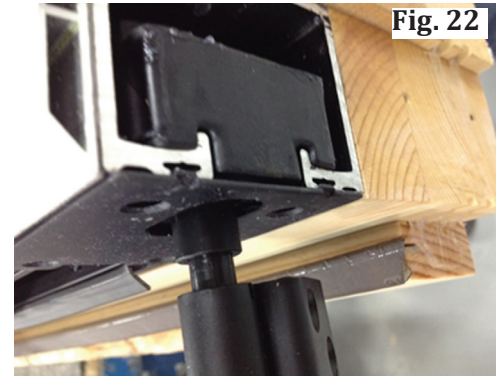


Fig. 22

- Install the (4) smaller #8 X 1" screws through the plate, head track and into the plastic pivot block (Fig. 23).
- The head track will only be prepped for a pivot on one side. If Pivot is need on both sides then pre-drill head track with a .170 diameter drill, using the Pivot Block as a template (Fig.24).
- Once Hardware is in the track remove the side screw from the corner key (Fig. 25).

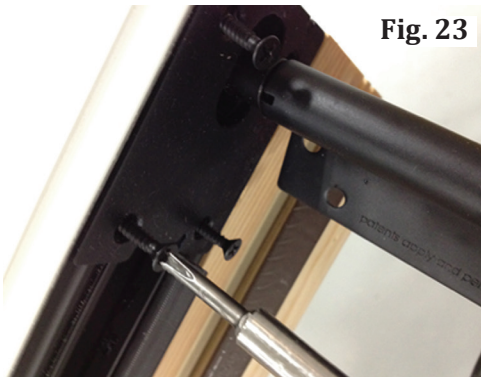


Fig. 23



Fig. 24

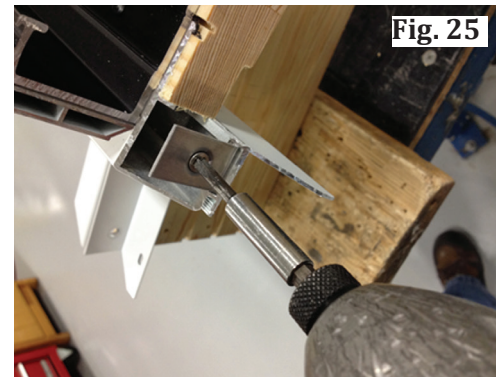


Fig. 25

- Apply Silicone to ends of head jamb (Fig. 26).
- Apply Silicone to the head miter (Fig. 27).
- Reinstall the Corner Key Screw. Install (5) #10x2-1/4" Screws through the Side Jamb going into the side jamb in the pre-drilled location (Fig. 28).



Fig. 26



Fig. 27

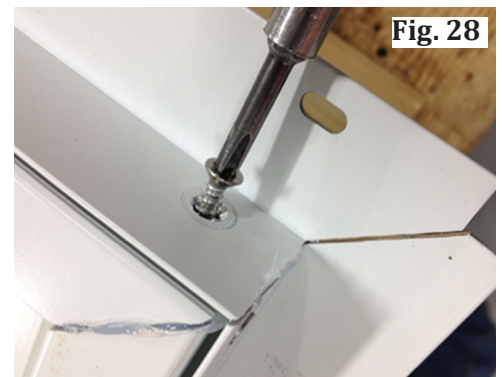
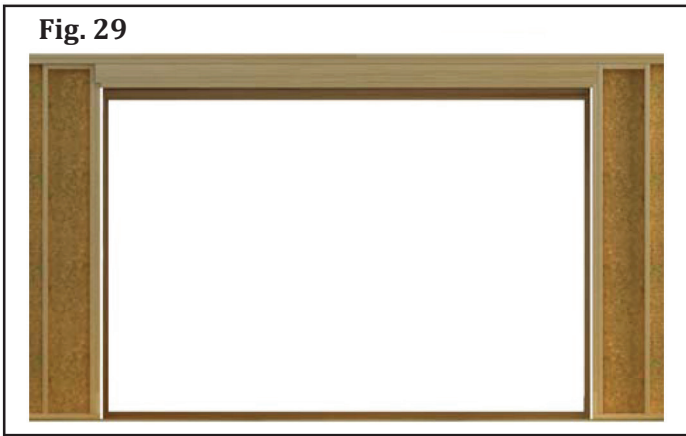


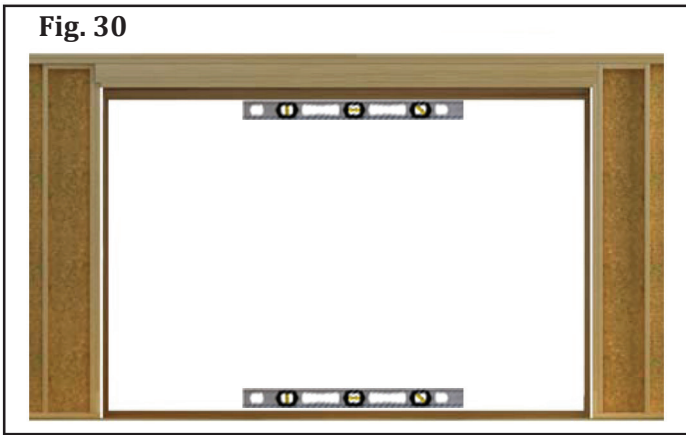
Fig. 28

FRAME INSTALLATION

- Loose fit the door frame into the opening (Fig. 29)



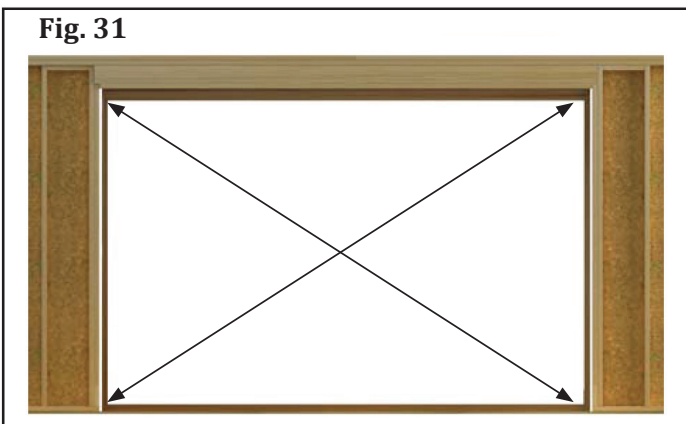
- Ensure that the sill and head are level and flat. Ideally there shouldn't be any upward or downward bow (Fig 30).



- Set the Sill into a bed of silicone and silicone behind the nail fin.

NOTE: *Shimming is important, do not over shim or under shim.*

- Verify that the frame is square by measuring the diagonals (Fig. 31).

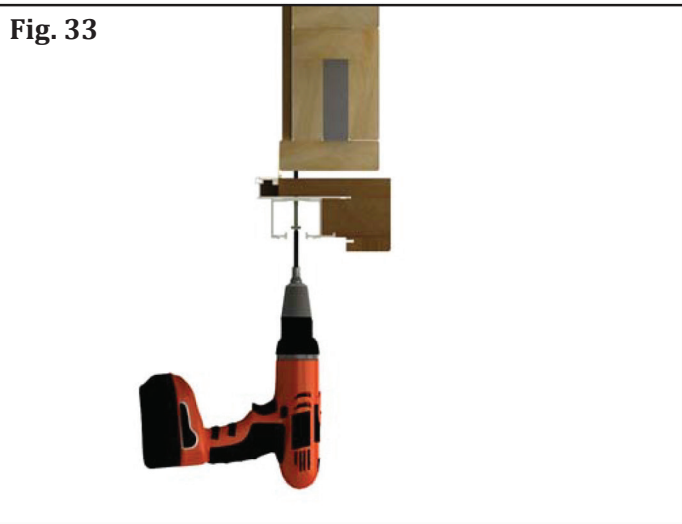


- Remove the screws from the sill keepers and replace with #10 X 2-1/2" Apply some silicone to the screw before installing to ensure they do not leak as they will penetrate through the bottom of the sill (Fig. 32).



- Install a minimum of a #8 x 1-5/8" Screw in every pre-punched hole in the nail fin.

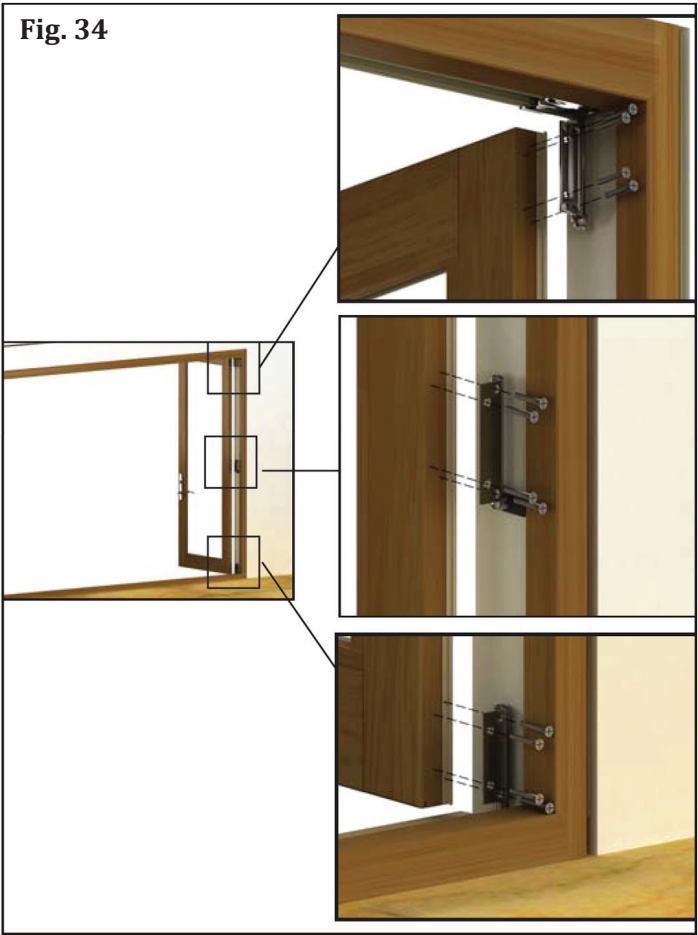
- Pre-drill pilot screw holes into the rough opening head jamb through the head track. Screw through the holes using the supplied 5/16" X 4" lag screws. Lag screws should be installed in every other hole. Note: Steel or concrete structures will require different fasteners. Make sure the head jamb is straight. There should never be a downward bow (Fig. 33). Tip: Use shims to straighten head jamb to level position. Remove shims once head is flat and level for future adjustments.



IMPORTANT

Clean inside of the top track cavity and completely remove all metal shavings or any other contamination. Failure to do so will embed debris into the wheels and track, restricting the ease of operation of the panels and voiding warranty.

- Position the Panel 1 door panel perpendicular to the frame. Lift to align pre-drilled holes in panel stiles with the holes in the hinges and fasten with the supplied screws (Fig. 34).



- Inside the Head Track remove at least every other pan head screw. Pre-drill through the head track and head jamb with a 5/16" drill. Install a minimum of a 5/16" x 4" lag bolt through these holes. Put more screws closer to the side jambs to support the weight of the panels when the doors are stacked in an open position. 4" and 3" as shown below (Fig. 35).

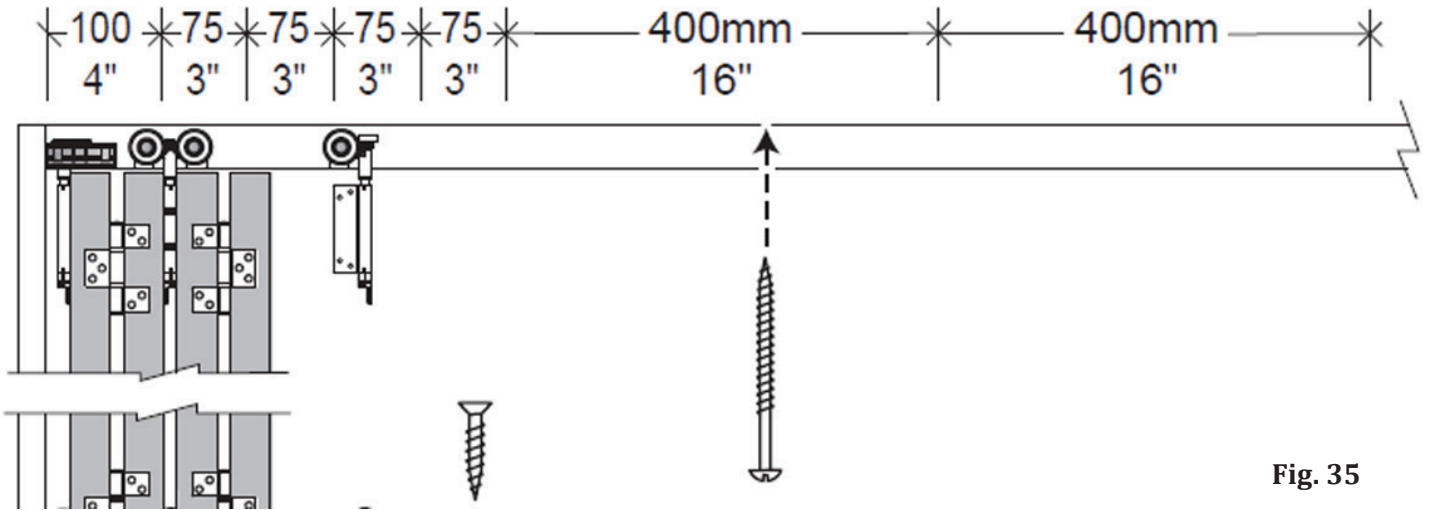


Fig. 35

IMPORTANT

When you pre-drill the holes in the head track shavings will fall and catch in the track. Be sure to clean these shavings out prior to rolling the rollers over them as they will embed into the rubber wheels and cause rough operation of the finished door.

- Side jamb Pivots- On each side jamb there will be 1 or 2 large holes. There is a metal part that will fit in these but they extend out past the jamb (Fig. 36).
- Drill out the studs through these holes to provide clearance for this metal part.
- Pre-drill the screw holes for this plate with a 1/8" drill
- Add the gasket to the back of the plate.
- Add clear silicon around this housing (Fig's. 37+38)

Fig. 36



Fig. 37

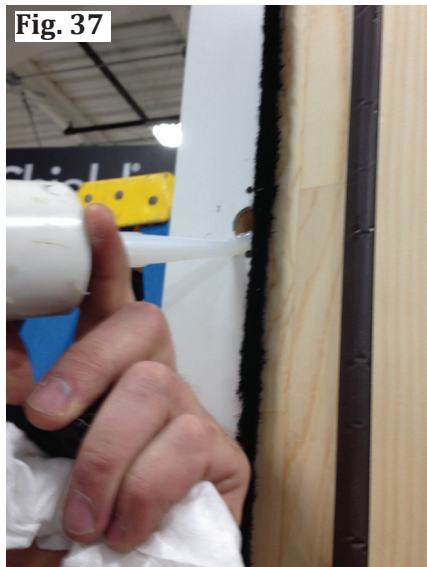
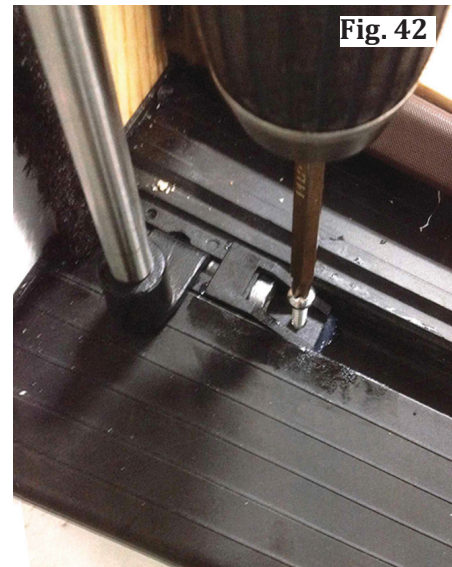


Fig. 38



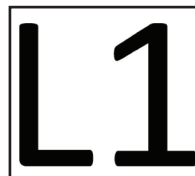
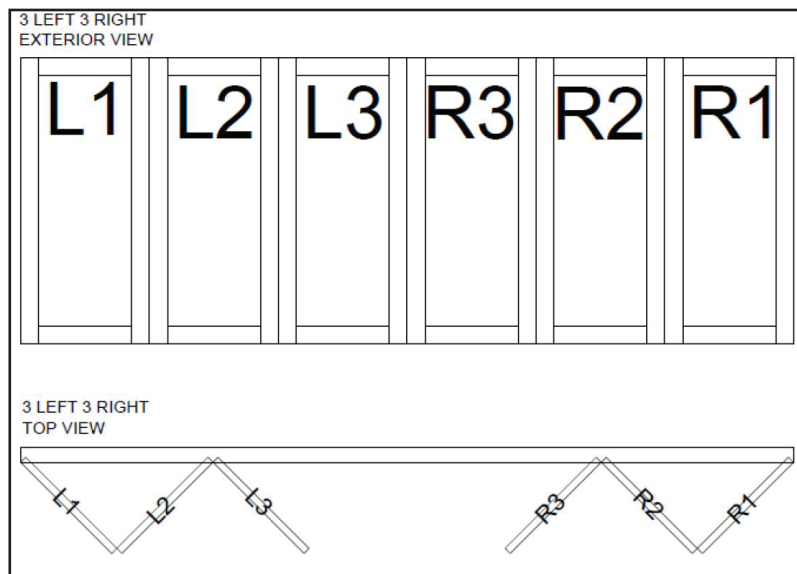
- Take sill pivot block apart as shown (Fig. 39)
- Set the bottom part into the sill channel, push it up against the side jamb, and pre-drill both holes with a 1/8 diameter drill (Fig. 40).
- Slide block aside, and apply silicone to the pre-drill holes (Fig. 41).
- Place block back in place, and install only the screw closest to the jamb first.
- Install the pin and block cover, and secure with the remaining screw (Fig. 42)



PANEL LAYOUT

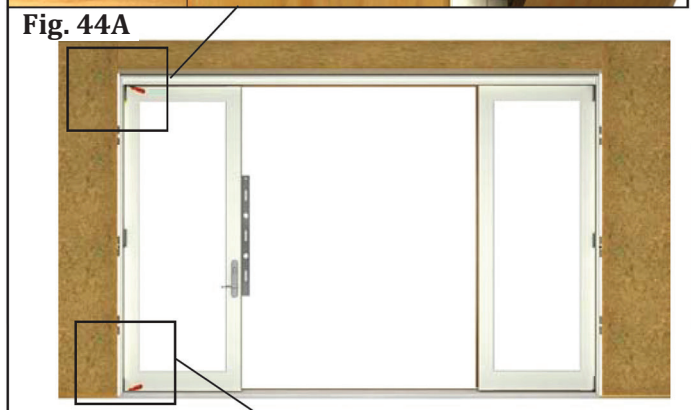
- Depending on the code of the door (panels will be labeled accordingly to ensure they are installed in the correct location in each door frame. Figure 43 below is an example of an 6-panel bi-fold door. A sheet will be included with the installation hardware that depicts your exact door configuration, please refer to it prior to installing your door panels.

Fig. 43

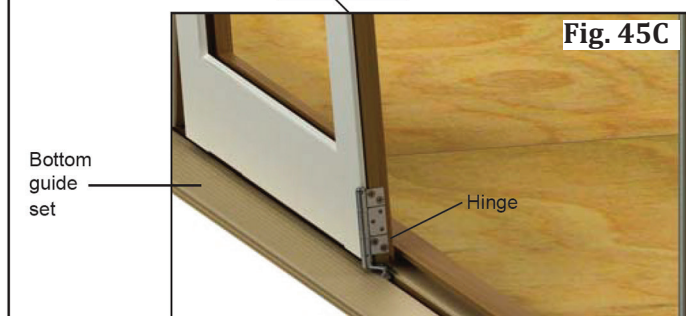
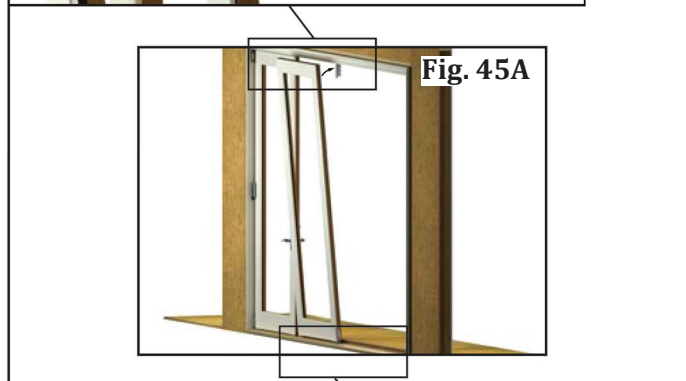
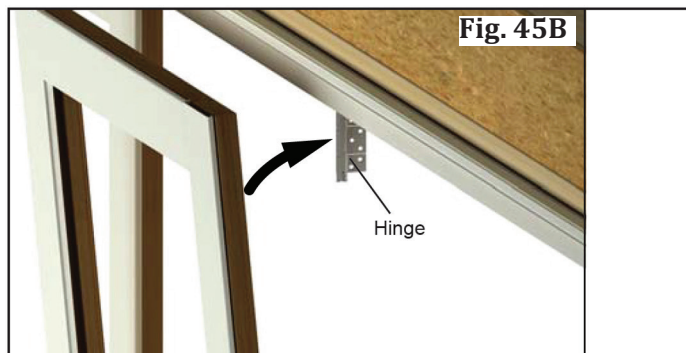


A label similar to this will appear on the glass of each door panel:

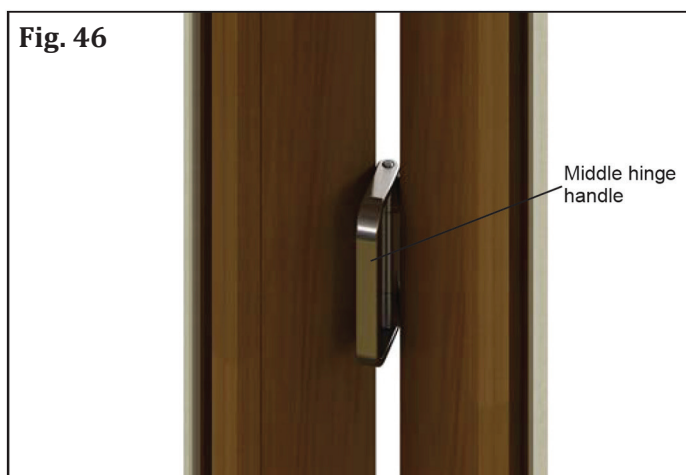
- Install the Panel 1 door panel and check for a consistent gap approximately $9/32"$ (7mm) between the side jamb and the door panel. If necessary, adjust the gap by turning the hinge screws as shown (Fig. 44A-44C).



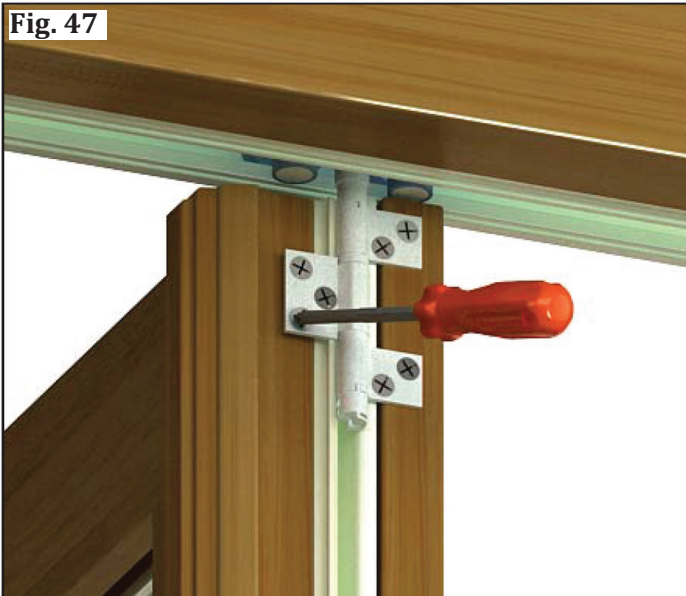
- To install the next panel, Panel 2, place the bottom guide-set into the sill track, tilt the top of the panel toward the head jamb, line up the hinge holes in the panel with the next carrier hinge holes, and fasten with the supplied screws. Figures 45A-45C.



- Open Panel 1 and align the middle hinge handle to the interior (Fig. 46). Surface mount only, do not mortise.



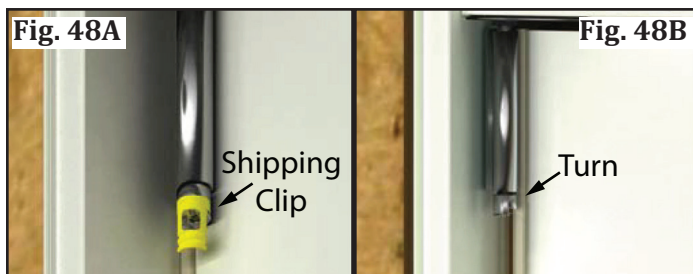
- Align Panel 1 and Panel 2, fasten the hinges to the panels (Fig. 47). Do not over-tighten screws, hand tighten or set clutch on low setting. Make sure you have the correct hinge for each location. Hinges are not interchangeable.



- Close Panel 1 and Panel 2, check for a consistent gap between the head jamb and top of the panels. If needed, correct the gap by turning the Panel 2 top adjustable carrier pin to move the panel up or down as needed. When the gap is correct, remove the colored plastic carrier shipping clip from the carrier pin on the Panel 2 panel and turn the carrier pin engaging the lock. See Figure 48.
- Align Panel 2 and Panel 3. Repeat step 5. Repeat above steps as necessary until all panels are installed.

PANEL ADJUSTMENT

- Surelock™ is supplied with a plastic shipping clip installed to make initial adjustment very easy. Insert a flat bladed screwdriver into the slot to rotate the pin. When correct adjustment is reached and doors operate well, remove the shipping clip. Surelock™ will automatically snap into place when the blade and slot are aligned. To adjust at a later date, simply pull the blade down to disengage it from the slot and rotate the pin. See Figures 48A+B.



- Open and close Panel 1 door panel to make sure that it does not drag at sill. If it does, raise the panel to the top of its travel by turning the top adjustable carrier pin clockwise with a long handled, flat head screwdriver. Then lower it three full turns. See Figure 49.



FINAL ADJUSTMENT

- Operate all door panels. Inspect the gaps at the end panels and between the meeting left and right panels while the panels are closed. If the gaps are uneven, open the panels and adjust the horizontal screw on the top and bottom pivots.
- Adjust until the panels operate smoothly and the gaps are even and acceptable.
- Apply hinge caps at center and sill side jamb locations to finish the installation process.



WATER BARRIER TAPE APPLICATION

IMPORTANT

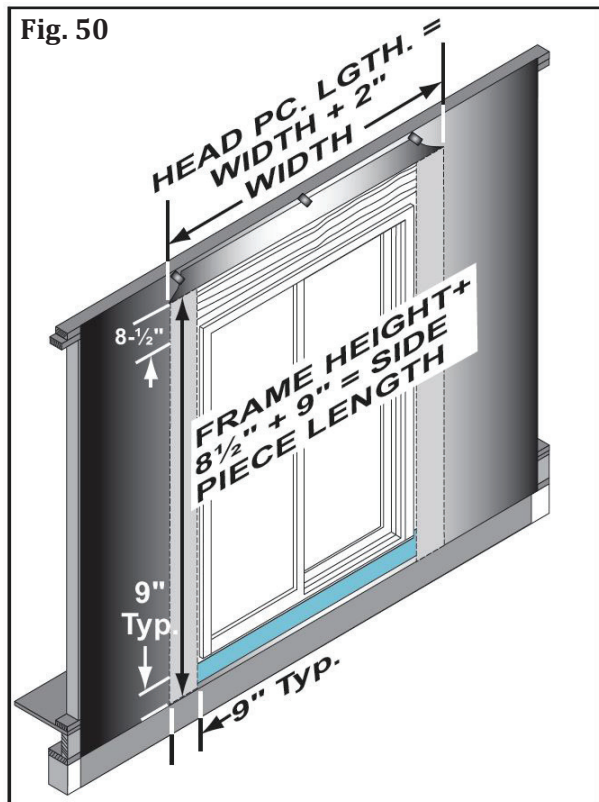
The joint between the nailing fin and wall surface must be sealed with strips of self-adhering water barrier tape.

Preparation

- For the sides, cut two pieces of self-adhering water barrier tape that are 9" wide and 17-1/2" taller than the door (Fig. 50).
- Cut the head piece 8-1/2" tall and long enough to span the door & side tapes; plus 2" (Fig. 50).
- Do not apply tape yet. Complete caulking instructions that follow.
- Apply a generous, continuous bead of silicone sealant on the sides of the nailing fin along the edge where the nailing fin and door frame meet (Fig. 51).
- Start 8-1/2" above the door and run the bead to bottom of nailing fin. Repeat for the other side frame. Also apply sealant along the head nailing fin (Fig. 51).

Tape Application

- Apply side pieces first. Start at the top, about 8-1/2" above the door (Fig. 52).
- Apply tape to the face of the wall close to the door frame and work toward the bottom. Tape must cover the entire nailing fin, including the installation holes, the joint between the fin and the building's sheathing and extend out onto the exterior wall.
- The edge closest to the door must be seated in the sealant applied in Step 2. Use a rubber roller to get good contact with the wall surface.



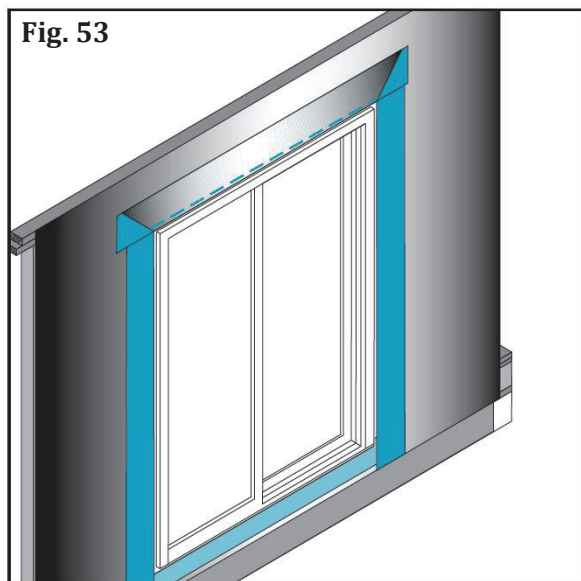
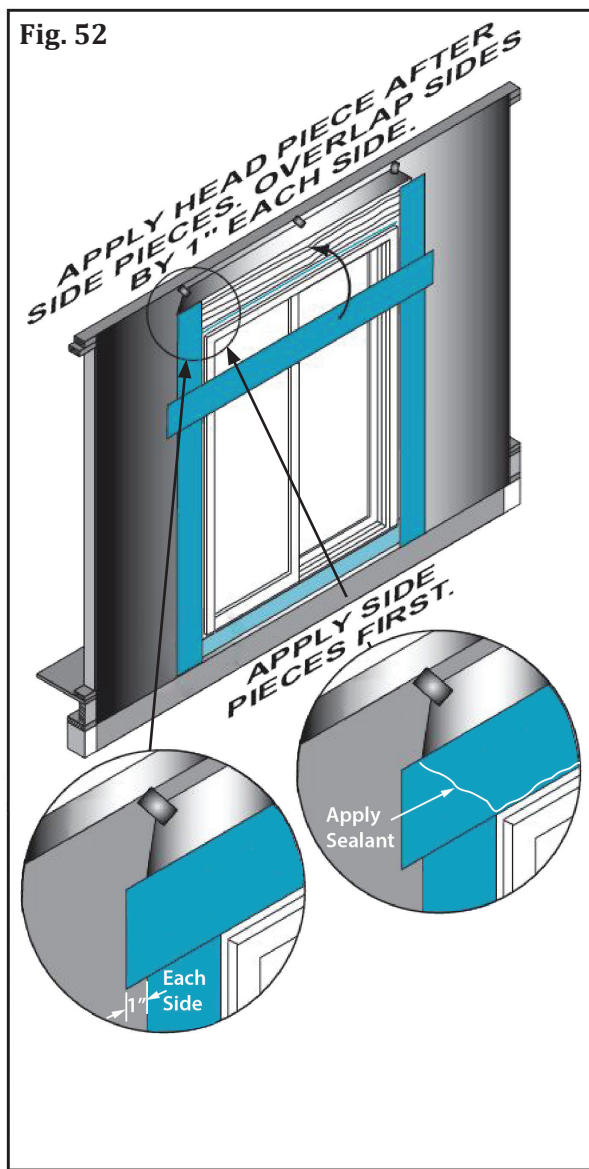
WATER BARRIER TAPE APPLICATION (CONT.)

IMPORTANT

The joint between the nailing fin and wall surface must be sealed with strips of self-adhering water barrier tape.

Tape Application (cont.)

- Apply top piece of self-adhering water barrier tape so one end extends 1" beyond a side piece of tape (Fig. 52). Apply top piece across the head jamb and over the opposite side piece of tape.
- Both ends of top piece should overlap side pieces by 1". Use a rubber roller to get good contact with the wall surface.
- Apply a sealant bead along the top piece of self-adhering water barrier tape. Place bead where flap of WRB will seat when folded down (Fig. 52).
- Untape and fold down the top flap of weather resistant barrier over the top piece of the water barrier tape (Fig. 53). Use a rubber roller, on top of flap, to smooth and spread sealant applied earlier.
- The diagonal seams in the weather resistant barrier must be sealed. Cut and apply self-adhering water barrier tape as shown in (Fig. 54) to seal the seams. Cut tape big enough to overlap seam by at least 1" on all sides.



TECHNICAL INSTALLATION SPECIFICATIONS

The following details are specified for proper installation and performance of the Weather Shield Door.

- Rough Opening Width: 1/4"-1" (6-25mm) wider than door frame outside measurement.
- Rough Opening Height: 1/4"-1/2" (6-13mm) higher than door frame outside measurement.
- Masonry Opening Width: 1/4"-1/2" (6-13mm) wider than door frame outside measurement.
- Masonry Opening Height: 1/8"-1/4" (3-6mm) higher than door frame outside measurement.
- Properly flash and/or seal all doors at the exterior perimeter.
- Sealants used for installation must be Grade NS Class 25 per ASTM C920 and compatible with the building exterior, door exterior surface, and flashing/water management materials.
- Construction adhesive must be APA rated AFG-01 SPEC.
- Flashing materials must comply with ASTM E2112-07, section 5.13 and be compatible with all materials used in installation including panning systems, air barriers and building papers, sheathing, and the door unit.
- The following materials were used to develop these instructions:
 - Water Resistant Barriers:** DuPont™ Tyvek® HomeWrap or Grade D building paper.
 - Flashing Materials:** DuPont™ FlexWrap or DuPont™ Straight Flash, DuPont™ Tyvek® Tape.
 - Sealant:** OSI® Quad Pro-Series®; solvent release butyl rubber sealant or DAP DynaFlex230™.
- Optional foams used for installation must be low expansion only. Foam and foam application must comply with ASTM E2112-07, SEC 5.9.2.
- Fasteners penetrating chemically treated lumber must be a minimum of 0.90 oz/ft² zinc hot dipped galvanized or stainless steel type 304 or 316.
- Shim 4"-6" (102-152) from each corner, and at every point of attachment.

MAINTENANCE

Door hardware is subject to wear and tear, deterioration or damage by everyday use, corrosion and other conditions. Maintenance of hardware is much more important in coastal marine or industrial and chemically aggressive environment. Any metal including stainless steel products require maintenance to prevent or reduce wear and tear or deterioration.

Minimum requirement for the maintenance of hardware is as follows:

- **Bearings:** Apply a light spray of lubricant. Lubricant reduces wear, improves smoothness and further protects against corrosion of the track and bearings. Note that the stainless steel bearings also require periodical cleaning and lubrication that prevent corrosion.
- **Hangers, Pivots and Brackets:** Wipe down with warm soapy water and a soft rag, rinse clean and dry all exposed surfaces well. Apply a light spray of lubricant. Remove excess with a dry cloth.
- **Hinges:** Use warm soapy water on a soft rag. Wipe down the exposed surfaces. Follow with wiping with a clean damp rag. Maintain the original lust of the metal finish by application of a thin film of light machine oil or a corrosion preventing spray. Note that these materials may stain wood material and it's finish.
- **Flush-bolts:** Apply a lightweight lubricant to the sliding pin inside the bolt. Do not remove the bolts from the doors but instead use the access holes or slots that are provided on all drop bolts.

To ensure smooth operation and prevent deterioration of parts and materials. The above maintenance procedures need to be carried out as often as it is necessary. The hardware manufacturer recommends the following minimum maintenance frequency:

Inland environment/climate- every six months.

Coastal marine and industrial environment/climate- every three months.

- Regular maintenance is required to all hardware and materials, otherwise manufacturer's warranty may be voided.