

# Fold-A-Way Patio Door & Window

ASSEMBLY & INSTALLATION GUIDE

This instruction guide provides the minimum recommended procedures to correctly prepare the rough opening, install a fold-a-way patio door unit and apply flashing within a residential or light commercial structure that has the weather resistant barrier applied. Local climate may dictate additional flashing at the discretion of the installer. These instructions are minimal recommendations only and do not supercede local building codes.

Proper installation and maintenance of Lincoln patio doors is essential to proper door performance. Failure to follow these installation and flashing guidelines may void Lincoln's Limited Warranty. Lincoln recommends installation of its product by experienced contractor personnel. If you have questions regarding door installation, contact your Lincoln dealer, an experienced contractor or contact Lincoln at (800) 967-2461.

Written warranty considerations for Lincoln Fold-A-Way door product are available from our authorized dealers, via www. lincolnwindows.com or by phone request at (800)967-2461.

It is essential to read and follow these assembly instructions, utilize Lincoln's installation methods and perform periodic maintenance or warranties may be void.

Fold-A-Way Door installs are more labor intensive than typical patio doors. Follow these special considerations prior to assembly:

- 1.) Header system carries the door's weight. Insure that the header size is substantial enough to support the structure and keep weight off of the Fold-A-Way door.
- 2.) Provide a plumb, level and square rough opening. Rough opening should be sized to Lincoln specifications allowing ample spacing for shims.
- 3.) Fold-A-Way door installations require at least two people. Door panels need to be held securely in place while fastening the hinges to the panel.

## **REQUIRED TOOL LIST**

Here are recommended tools necessary to install your Fold-A-Way Door system.

- 1.) Safety Glasses
- 2) Tape Measure
- 3) Level
- 4) Screw Driver
- 5) Drill
- 6) Phillips and Square Head Bit
- 7) Silicone Gun
- 8) Silicone
- 9) Wood Drill Bit: 5/32"
- 10) Metal Drill Bits: 3/16", 1/8" & 3/4"(Wall Pivot Option)
- 11) Suction Cup Lifts (For Handling & Installing Panels)
- 12) 1/2" Router Bit (U-Channel Option)

## PARTS LIST

Parts quantity will vary with different configurations.

- 1) Patio Door Panels
- 2) Head Jamb Track
- 3) Sill Track
- 4) Sidejambs
- 5) Pivot Carrier Screws
- 6) Pivot Hinge
- 7) Pivot Plugs
- 8) #6 x 1 1/4" Clad Frame Screws
- 9) #6 x 2 1/2" Sidejamb to Top Track Screws
- 10) #8 x 3" Sidejamb to Sill Track Screws
- 11) \*\*2" Bottom Track Install Screw w/ Sealant (For Concrete)
- 12) \*\*2" Bottom Track Install Screw w/ Sealant (For Wood)
- 13) Drip Cap Nail Fin
- 14) Sidejamb Nail Fin
- 15) Hoppe Handleset
- 16) \*\*Sill Pan

\*\* Not Provided

# HARDWARE IDENTIFICATION GUIDE



# **PREPARING THE ROUGH OPENING (R.O.)**

**Clearance:** Lincoln Wood Products Inc. published rough openings allow for a <sup>1</sup>/<sub>4</sub>" of clearance on all sides of the unit for insulation purposes. Doors must be set on level sills. If sills are not level, the use of rot proof shims, to level sills, are recommended. Sills that sag or hump up will affect the operation and performance of your Lincoln doors. It is the installer's responsibility to insure that doors are installed plumb, level, and square.

NOTE: Unit must be installed square, plumb and level or warranty may be void.

- Measuring for square: Take measurements from bottom left corner to top right corner and bottom right corner to top left corner and compare. If measurements are equal the R.O. is square. If measurements are not equal, R.O. is out of square and it is then the responsibility of the installer to remedy this problem prior to installation (fig. 1).
- 2. **Checking for Plumb:** Place a level on both sides of the R.O. making sure the vertical measurement of each side is true. If R.O. is not plumb, it is then the responsibility of the installer to remedy this problem prior to installation (fig.1).
- 3. **Checking Level:** Place a level on the sill of the R.O. making sure the horizontal measurement on the sill is level. If opening is not level, the use of rot proof shims may be used to level the sill. Be sure to support the entire sill to prevent the sill from sagging (fig. 1).



# PREPARING THE WEATHER RESISTANT BARRIER

 Draw an "I-Cut" with a marker on the weather resistant barrier. Start from the top left of the R.O. and continue to the top right of the R.O. making sure mark is flush with rough opening. Repeat process on the sill of the rough opening. From the middle of the top of the R.O. drop a line vertically so that it intersects with the sill R.O. (fig.2).



2. Using a utility knife, cut the lines in the weather resistant barrier starting with the head and working your way down to create the "I-Cut". Fold the side flaps over and into the interior side of the rough opening. Using staples every 12" to 16", fasten the flaps to the interior and trim excess (fig. 3).

Per ASTM standards; Lincoln Wood Products Inc. recommends a minimum of 9" wide flexible flashing. For that reason measure 9" up and 9" over from the top left corner of your rough opening and mark. Repeat on top right corner. A scrap piece of flashing 9" x 9" may be used to simplify this step. Once marked cut the weather barrier diagonally from the top corners of the rough opening to the mark made previously (fig. 2). Fold weather barrier up and tape or tack temporarily out of way (fig. 3).



 Sill Flashing: Flashing can be flexible or adhesive back flexible. All flashing must be at least 9" wide & meet (ASTM D-779; water resistance of at least 24+ hours).

Cut sill flashing length 9" beyond each side of the R.O. (R.O. + 18") Apply sill flashing level with top edge of R.O. allowing 9" of flashing to extend to each side of R.O. (fig.4). In some installations, this step will not be possible i.e. doors on concrete slabs or at grade.

If using non-adhesive flashing, fasten the top and sides of the sill flashing with staples located 12 " to 16" apart.

## **HEADTRACK HARDWARE INSTALLATION**

1. Slide the Track Weatherstrip out of way to reveal predrilled holes for the top pivot hinge (fig. 05).



- 2. Before installing Top Pivot Hinge assembly, ensure Locking Screw is fully inserted into top of carrier pin. The top pivot Hinge assembly adjusts the door panels horizontally by turning the adjusting screw with a screwdriver after all panels/sash are installed (fig. 06).
- Ensure locking screw is Top Pivot fully inserted into top Hinge of hinge pin 06 To adjust panel/sash horizontally, clockwise moves panel away from side jamb, counterclockwise moves panel toward side jamb. 3. Refer to the folding window/door drawing on the glass label to determine the specific panel/sash set-up and hardware placement. Through the open end of the head track, load the top pivot hinge, left or right carrier sets and intermediate carrier sets (fig. 07). PAY SPECIAL ATTENTION TO ASSURE PROPER DIRECTION WHEN INSTALLING LEFT OR **RIGHT CARRIER SETS.** Top Pivot Hinge (PS) Intermediate Carrier (When Required)

4. Line up pivot hinge assembly with predrilled holes in Head Track and attach with #8x3/4" screws. When required on opposite side of Head Track, insert Top Pivot Hinge and ensure it is flush with the end of Head Track and mark screw hole locations using the Top Pivot Hinge Plate as a guide and pre-drill four (4) holes using a 3/16" metal drill bit (fig. 08).

> NOTE: There is no square cut out on opposite side of Head Track and a second pivot hinge is not always required depending on door/window configuration.



5. Fasten Pivot Hinge to Headtrack using the provided #8x3/4" PFH screws (fig. 09).



## **FRAME ASSEMBLY - CLAD EXTERIOR**

 Lay the side jamb assemblies, head jamb assembly and sill on a clean level surface, exterior side down (fig. 10). Be careful to protect the exterior surface from being damaged.

**NOTE:** No sill is provided with the u-channel option. Stabilize the side jambs by attaching a piece of scrap lumber to the interior side of the side jambs near the sill. This can be removed once the unit is installed in the rough opening and is plumb and square.



# **U-CHANNEL OPTION**

**IMPORTANT:** Finished flooring/counter must be installed and groove for u-channel must be prepared before installing folding product. If finished floor/counter is not installed, temporary blocks can be used to set frame at finished height.

 A 1"x7/8" pocket is required for the u-channel option. Locate the pocket 1-1/16" away from the face of the exterior wall (fig. 11).

Drill and countersink through the track channel for #8x3/4" flat head stainless steel screws. Place holes at 16" on center and fasten track to the floor. Caulk accordingly under track before fastening to sub-floor (fig. 12).

**Note:** The u-channel is recessed into the finished floor/counter. The side jambs sit on top of the floor/counter and u-channel.

The ends of the side jamb must be sealed to the floor/counter. The ends of the u-channel under the side jamb must also be sealed to prevent water intrusion into sub-flooring.

Weatherproofing the u-channel is the responsibility of the installer. Prep for any water drainage system that may be required. An adequate overhang and a slope away from the u-channel are recommended. The system is to be determined by the installer.



## **FRAME ASSEMBLY - CLAD EXTERIOR**

2. Affix the Frame Clad Corner Gaskets to each end of the Head Jamb Clad(fig. 13).



3. Affix Sill Gasket to both Side Jambs at the bottom of the jamb (fig. 14).



- 4. Place 1/4" silicone bead onto Side Jamb dado at both ends as shown (fig. 14).
- Screw wood portion of the lower Side Jamb and Sill corners together using (5 per side) #8x3" PFH screws (fig. 15). Start with screw boss holes in sill first. Note: This is not required for u-channel option.



Screw the lower side jamb frame cladding to the sill with (1 per side) #8x3" PFH screw (fig. 16). Note: This is not required for u-channel option.

- Screw the wood portion of the upper Side Jamb and Head Jamb corners together using (6 per side) #6x2-1/2" PFH screws (fig. 15).
- Screw the upper side jamb cladding into the head clad with (1 per side) #6x1-3/4" PFH screws (fig. 16).



9. Apply Corner Gusset to each top corner on the exterior side of the nailing fins and fold gusset tabs over the nail fins so that it sticks to the back side (fig. 17).

#### THIS COMPLETES THE FRAME ASSEMBLY.

## FRAME ASSEMBLY - WOOD EXTERIOR

1. Lay the side jamb assemblies, head jamb assembly and sill on a clean level surface, exterior side down (fig. 18). Be careful to protect the exterior surface from being damaged.

**NOTE:** No sill is provided with u-channel option. Stabilize the side jambs by attaching a piece of scrap lumber to the interior side of the side jambs near the sill. This can be removed once the unit is installed in the rough opening and is plumb and square.



# **U-CHANNEL OPTION**

**IMPORTANT:** Finished flooring/counter must be installed and groove for u-channel must be prepared before installing folding product. If finished floor/counter is not installed, temporary blocks can be used to set frame at finished height.

 A 1"x7/8" pocket is required for the u-channel option. Locate the pocket 2-1/8" away from the face of the exterior wall (fig. 19).

Drill and countersink through the track channel for #8x3/4" flat head stainless steel screws. Place holes at 16" on center and fasten track to the floor. Caulk accordingly under track before fastening to sub-floor (fig. 20).

**Note:** The u-channel is recessed into the finished floor/counter. The side jambs sit on top of the floor/counter and u-channel. The ends of the side jamb must be sealed to the floor/counter. The ends of the u-channel under the side jamb must also be sealed to prevent water intrusion into sub-flooring.

Weatherproofing the u-channel is the responsibility of the installer. Prep for any water drainage system that may be required. An adequate overhang and a slope away from the u-channel are recommended. The system is to be determined by the installer.



## FRAME ASSEMBLY - WOOD EXTERIOR

 Affix Sill Gasket to both Side Jambs at the bottom of the jamb (fig. 21).



- 3. Place 1/4" silicone bead onto Side Jamb dado at both ends as shown (fig. 21).
- 4. Screw the wood portion of the lower Side Jamb and Sill corners together using (6 per side) #8x3" PFH screws (fig. 22). Start with screw boss holes in sill first. **Note:** This is not required for floor channel option.



5. Screw the wood portion of the upper Side Jamb and Head Jamb

corners together using (6 per side) #6x2-1/2" PFH screws (fig.

 Screw the Side Brickmould into the Head Brickmould (1 per side) #6x2-1/2" PFH screws (fig. 23).

#### THIS COMPLETES THE FRAME ASSEMBLY.



## SILL PAN FLASHING INSTALLATION

#### Lincoln Wood Products, Inc. requires the use of sill pan flashing under all Lincoln door products. The sill pan flashing should be used in conjunction with flexible flashing per Lincoln's instructions. Failure to comply with these recommendations may void Lincoln's Limited Warranty.

The sill pan flashing is to be the exact size of the sill R.O. with an up turned leg height of 1" on the sides and back of the sill pan. The intersection between the sides and back of the up turned leg must be sealed in a watertight fashion. The front edge of the sill pan should be down turned to seat against the framing material. In some installations, a down turned leg on sill pan will not be necessary.

Before installing sill pan flashing, determine if sill condition is level. If sill is not level, shims are required to level sill. Be sure to support the entire sill and not allow it to sag. The installer is responsible to install the door level. Rot proof shims are recommended for under sill applications.

 Apply two continuous beads of sealant to the rough sill. One on the interior edge the second on the exterior edge. Both are to continue 6" up the R.O. on each side jamb (fig.24). If a shim is necessary place a shim into sealant and apply sealant over the top of the shim. This will insure water will not penetrate under or over the shim (fig.24).



- 2. Pre-drill the sill pan at a maximum of 16" between fasteners before it is set into position, and apply a bead of sealant to the back side of the down-turned leg on the front edge of the sill pan to insure a water tight seal to framing material (fig. 24).
- 3. Place sill pan into position, compressing it down into sealant and over the flexible flashing materials (fig. 25).
- 4. Check sill pan for level before final installation. Apply sealant to the pre-drilled holes, attach fasteners, and apply sealant over the fastener head (fig. 25).
- 5. Place a bead of sealant on the interior side of the upturned leg on the inside edge of the sill pan. This will seal the inside edge of the doorsill to the sill pan and not allow any water or air to penetrate to the interior. A second bead of sealant is to be applied in a discontinuous bead on the exterior edge of the sill pan. Allow gaps of 1" to 2" in the sealant every 15" to 18". Continue both beads up the sill pan end cap to insure sealing between the sill pan and side jamb.

## FRAME INSTALLATION

Before installation check door to make sure unit is complete and without defects. Corner gussets should be placed at the nailing fin corners of units. After corner gussets are in place, use sealant on any gap that may exist between the gusset and unit to make a weather tight seal. Do not install unit if corner gussets are missing. Contact your Lincoln dealer for replacements.

- Apply a continuous bead of sealant, approximately 3/8" in diameter, to the back of the mounting flange and in line with the mounting holes. (fig. 26) Alternatively, sealant can also be applied to the R.O. to line up with the holes on the mounting flange.
- 2. Place door into opening, press tight to building and check for square, level, and plumb (fig.26). The installer is responsible to install doors square, level & plumb. Failure to do so may negate Lincoln's Limited Warranty.
- 3. At either the left or right side
  - corner, tack door through one mounting hole. This will provide you with the ability to adjust the unit while keeping the door in place (fig.27). Lincoln Wood Products Inc. recommends the use of fasteners that penetrate door framing a minimum of 1". Stainless or galvanized nails or screws may be used. However, Lincoln Wood Products Inc. does NOT recommend the use of pneumatic nail guns and will not be responsible for any damage caused by their use.
- 4. Check unit for square and plumb, making adjustments using shims until door is square and plumb in the opening.

**NOTE:** Unit must be installed square, plumb and level or warranty may be void.

5. Tack opposite diagonal corner from first tack and check for level, plumb, and square. Fasten sides, top, and bottom, using every other mounting hole and continually checking unit for square, plumb, and level.



6. With frame in place and level, plumb and square, fasten the head jamb to the header with the provided #10x3" screws through all pre-drilled holes in the head track (fig. 28 & 29). Use shims at each screw location to prevent head from bowing more than 1/8". Note: Head track screws must penetrate at least 1-1/2" into the rough opening structural header beam that is carrying the load of the door panels.



7. If bowing occurs at sill, drill and countersink through the track channel for #8x3/4" flat head stainless steel screws. Place holes at 16" on center and fasten sill to the floor/counter. Caulk accordingly under sill at each screw hole location. (fig.29).

# **FLASHING APPLICATION**

**Jamb Flashing:** Flashing can be flexible or adhesive back flexible. All flashing must be at least 9" wide and cut so length will extend 8-1/2" beyond the head and sill on both sides of R.O. (R.O. + 17"). If stapling flashing do not penetrate through door mounting flange.

- Apply a continuous vertical bead of sealant to the exterior portion of the vertical mounting flange, covering the mounting holes as you go. Continue bead 8-1/2" above the R.O. (fig. 30).
- Install jamb flashing over side mounting flange and sealant bead, tight against window unit. If using a non-adhesive flashing staple, be sure not to staple through door mounting flange. Top edge of jamb flashing should extend a maximum of 8-1/2" above the R.O. The bottom of the jamb flashing



extends 8-1/2" past the bottom of the R.O. overlapping the sill flashing applied earlier (fig.31).

**Head Flashing:** Flashing can be flexible or adhesive back flexible. All flashing must be a minimum of 9" wide and cut so length is approximately 10" beyond the sides of the R.O. (R.O. + 20") This will allow the head flashing to overlap the jamb flashing applied earlier.

- 3. Apply a continuous horizontal bead of sealant to the exterior portion of the horizontal mounting flange at the head, covering the mounting holes as you go, but not extending past the vertical mounting flange (fig. 31).
- Install head flashing over the horizontal mounting flange and fasten. If using a non-adhesive flashing staple, being sure not to penetrate through door mounting flange (fig.32).
- Lower the head weather resistant barrier flap previously taped out of way (fig. 32). Place over the head flashing. Apply sheathing tape to seal diagonal cut made in weather barrier.



## **BOTTOM PIVOT HINGE INSTALL & ASSEMBLY**



1. Place Pivot Housing into each end of sill channel tight to the side jamb and mark screw hole locations for Pre-Drilling.

**NOTE:** Some configurations may only have a bottom pivot hinge on one end of sill.

- 2. Pre-Drill marks using 1/8" drill bit (fig. 33).
- Apply sealant in the channel around the holes that were drilled. Install pivot housing into channel and fasten with the provided #8 stainless steel screws (fig. 34).
- 4. Insert Pivot Hinge Assembly into Pivot Housing (fig. 35).
- 5. Turn Adjustment Screw so Pivot Retainer can clip onto screw.
- 6. Attach Pivot Retainer with #8 SS PPH Screw into Sill.
- 7. Slide Bottom Hinge onto Pivot Pin Assembly.
- 8. After all the door panels/window sash have been installed, you can adjust the panels/sash horizontally using the adjustment screw on the pivot housing (fig. 35).

**NOTE:** Counterclockwise will move panel/sash toward jamb and clockwise moves panel/sash away from jamb.



# **PIVOT HINGE PANEL INSTALLATION - FOR DOOR PANELS OVER 88" HIGH**

Door panels over 88" require the use of the wall pivot at center of panel. The wall pivot plate must be installed **before** the panel is installed. **Note:** Wall pivot is supplied with all doors for optional use under 88" panel height.

 Install wall pivot plate in side jamb - only required if panel is taller than 88" (fig. 36). Hinge pin and hinge leaf are installed on panel later.

To determine correct hole position vertically, dry fit the panel into the frame with the wall pivot hinge attached and measure 4-3/4" from the top of hinge to hole location and drill 3/4" hole through the jamb.

**Note:** A 3/4" clearance hole may need to be drilled in rough opening framing studs for wall pivot plate clearance.



- 1. Line up pre-drilled holes on the panel with the Pivot Hinge set at the top and bottom of the frame. Using the supplied 10x1-1/2" Hybrid Head screws fasten the Pivot Hinges to the panel (fig. 37 & 38).
- 2. If wall pivot plate was installed (only required if door panel is taller than 88"), insert the hinge pin into the pivot plate and attach the hinge leaf to the hinge pin and then at the center of the door panel (fig. 36).



# STRAIGHT HINGE/HALF OFFSET HINGE ATTACHMENT (HS/HHS)



2. Fasten Straight/Offset Hinges to panel at pre-drilled locations with #10x1-1/2" Hybrid Head Screw (fig. 42).

**Note:** Refer to diagram on glass label for hardware location designations. Door panels over 88" use 4 hinges per panel.

Certain door/window configurations use a combination of Straight Hinges (HS) and Half Offset Hinges (HHS) between the panels. Half Offset Hinges are used to maintain equal panel width.



3. Cut stile weatherstrip to size for placement between hinges and install into kerf on stile (fig. 43).



- Attach next panel/sash in series. Line up pre-drilled holes with the hinges installed on the panel/window in step 1 of this section.
- 5. Fasten hinges to the panel/window in predrilled locations with #10x1-1/2" Hybrid head Screw (fig. 44).
- 6. Cut the stile weatherstrip to size for placement between hinges and install into kerf on stile (fig. 43).
- 7. Install supplied adhesive backed foam hinge gasket at each location.



## END CARRIER HINGE ATTACHMENT -RIGHT CARRIER SET (RCS) OR LEFT CARRIER SET (LCS)



## **INTERMEDIATE CARRIER HINGE ATTACHMENT (ICS)**

Used for certain configurations only. Reference label on glass for hardware location designations.



- 1. Before fastening hinges to the panels/sash, remove weatherstrip located on the the stile (fig 41).
- 2. The top Intermediate Carrier Hinge should already be installed in the Head Track. The bottom Carrier Hinge will have to be installed into Sill Channel.

Line up pre-drilled holes on the panel/sash with Intermediate Carrier Hinges and fasten the Carrier Hinges to the panel/ window in pre-drilled locations with #10x1-1/2" Hybrid Head Screw (fig. 46).

- 3. Doors/windows with intermediate carrier sets (ICS) have one or two hinges attached to the panel/sash between the top and bottom carrier hinges. Attach these hinges at the pre-drilled locations on the panel/sash (fig. 46).
- 4. Cut stile weatherstrip to size for placement between hinges and install into kerf on stile (fig. 41)
- 5. Install supplied adhesive backed foam hinge gasket at each location

# **U-CHANNEL OPTION - FLUSHBOLT LOCATION**

1. With the door panels/window sash in the closed position, turn the handle to engage the flushbolt until it stops on the sill. Mark these positions on the sill and rout for flushbolt cup using a 1/2" router bit as shown (fig. 47 & 48).



2. Ensure that the flushbolt cup fits into the rout and that the flushbolt works when engaged. Caulk around and in the hole before securing the flushbolt cup to the sill with supplied screws.



#### **ASTRAGAL ASSEMBLY**





- 1. Place the strike plates into the strike plate routes on the astragal and mark the screw hole locations for the strike plate.
- 2. Place the astragal against the door panel/window sash and drill a 5/32" hole 2" deep through the astragal and into the panel at each marked location (fig. 51).

3. Remove the astragal and apply a bead of silicone from the bottom the Astragal to the top as show below. The bead should cover the inside leg of astragal and go over the carrier and hinge routes (fig. 52).



- 5. After the silicone is applied, place astragal against edge of panel and insert the dust cups into the hole at each strike plate location (fig. 53).
- Ensure that the astragal is flush with the top and bottom of the panel then fasten the strikes and astragal to the panel/sash using the supplied #8x2-1/2" PFH screws at each of the predrilled hole locations (fig. 53).





#### LOCKING HARDWARE INSTALLATION

#### **EXTENDED STRIKE APPLICATION**

1. Install the lock set harware (when required) and the TwinPoint hardware per the enclosed manufacturers' instructions.





## **MAGNETIC DOOR CATCHES**

 For doors supplied with magnetic door catches, refer to the Centor installation instructions included with the magnetic door catches. If the door configuration has a strike plate attached to the jamb, an Extended Strike plate will need to be applied on the side jamb to prevent the scratching of the cladding when operating the door.

- As shown in the figure below, measure 1-7/8" down from the top of the strike plate and, using the extended strike as a template, mark the screw hole locations on the side jamb.
- Pre-drill using a 1/8" drill bit and fasten the extended strike plate to the side jamb using the supplied #10x3/4" screws (fig. 56).



#### FINAL ADJUSTMENT

 The panels/sash can be adjusted at the Carrier Hinge and Pivot Hinge locations on the head of the unit using a 5/16" (8mm) Allen Key.

