



*Loewen*

# SWINGING DOOR INSTALLATION GUIDE

Wood Framing - New Construction

# IMPORTANT NOTICES & INFORMATION

The building envelope must be correctly prepared with weather resistant barriers – that meet local and state codes. All frame and sill surfaces must be correctly prepared for air, water, and structural integrity by the builder or contractor before attempting installation. In order to meet warranty requirements, all systems are required to be installed by a certified installer.

- Read these instructions in their entirety prior to installing windows. Contact Loewen at 1.800.563.9367 for clarification.
- Loewen is not responsible for site measurements nor the structural and architectural requirements for the installation of the windows.
- Building design, construction methods, building materials and site conditions unique to your project may require methods different from these instructions.
- Choosing the appropriate method is the responsibility of you, your architect, or your construction professional.
- Confirm with sealant/foam/barrier manufacturers that all materials used are compatible with one another.
- Remove shipping blocks and related staples prior to installation.
- All drawings are shown not to scale.
- To ensure accuracy, make sure you have the latest approved shop drawings and assembly and installation guides.
- Any local, regional or national building code requirements supersede these instructions.
- Safety is top priority for Loewen. Use proper work procedures and protective equipment.

## Notes on Building Envelopes

Improper design and/or non-conforming application of building envelope materials has been demonstrated to cause premature building envelope failure. Even with premium materials, shortcuts and errors in the final installation can impact budgets, time frames, building life span, and increase legal liabilities.

As one of the elements that bisect the interior/exterior plane, window and door integrations are a critical element of the building envelope as a whole. Poor installations can carry significant liability, due to building envelope failure.



# PREPARATION INSTRUCTIONS

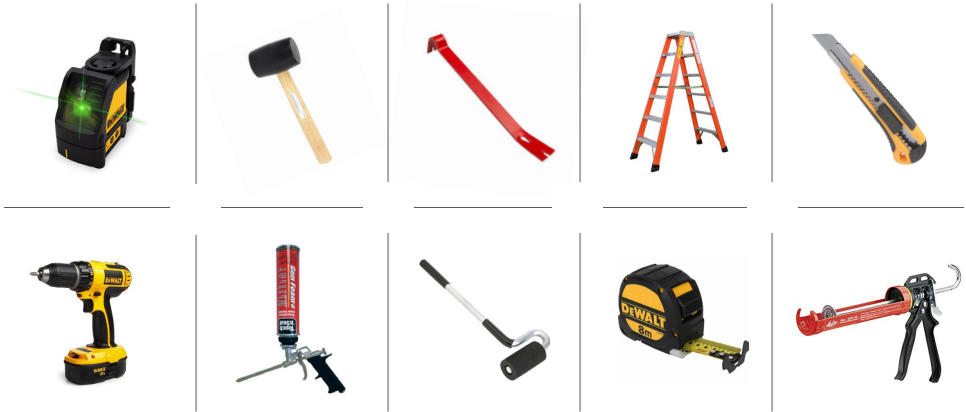
## Site Preparation Advisory

This instruction assumes that exterior of building envelope is correctly prepared with weather resistant barriers – that meet local and state codes.

It is recommended that Loewen Door systems are installed with sufficient overhangs to aid in prevention of water or air infiltration that may contribute to structural damage to the surrounding area, finishes and/or systems.

## Tools Required

- Laser Level Hammer
- Pry Bars
- Ladders
- Utility Knife
- Screw Gun Applicator
- Foam Gun
- “J” Roller
- Tape Measure
- Caulk Gun



## Materials Required

- High Impact Composite (not wood) shims/spacers
- 1 1/2” or 2” #8 Screws (stainless steel recommended)
- Expansion Foam - Closed Cell (low-expansion only)
- Window & Door Flashing Tape (6” recommended)
- Window & Door Sealant
- Interior Trim



## Weather Barrier Material Selection

Though this guide only includes one type of barrier material, various options are available to meet individual site requirements:

- Vapor Permeable Building Wraps
- Fluid Applied Materials
- Self-Adhered Membranes
- Medium Density Spray-Polyurethane Foam
- Rigid Board Stock Insulation
- Factory-Bonded Membranes to Sheathing

# INSTALLATION INSTRUCTIONS

## Verify & Prepare the Rough Opening

Measure the rough opening and the door frame assembly to determine that the size is correct. Recommended rough opening is between 3/4" - 1" larger than the door width and height. Ensure that the rough opening is plumb, level and square, and the walls in the opening are not twisted. Ensure that the RO will be able to accommodate the added height of a sloped sill pan (as recommended).

- 1 1/2" solid blocking is required at the sill and sides of the opening.
- Ensure proper header is in place before installation.
- Make necessary corrections.

If Weather Resistant Barrier house wrap is applied then a cut away with a complete box cut of the opening will be required.

- Cut back and expose the sheathing at the side jambs by removing approximately 1 1/2" of WRB. This will allow a direct-contact seal to the sheathing.
- Create a temporary flap at the head of the opening by cutting the WRB on a 45 degree angle. Temporarily tape the flap up out of the way to allow for door installation and head flashings.
- NO WRB should be brought into the rough opening.

Sill Pans and flashing are used at the base of openings and are designed to divert and drain water directly to the exterior or onto the weather resistive barrier. Sill pans are mandatory in any door installation.




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**All frame and sill surfaces must be correctly prepared for air and water and structural integrity by the builder or contractor before attempting installation.**

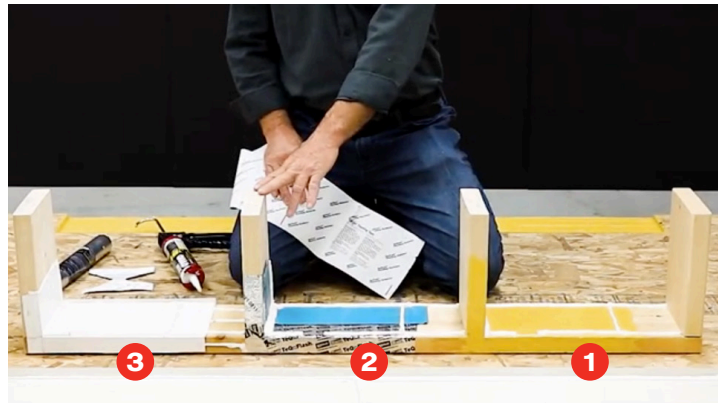
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# INSTALLATION INSTRUCTIONS

## Preparing Sill Pans & Sealant Application

- For illustration purposes we are showing the 3 different sill pan options:
  1. Wet application pan flashing
  2. Flexible pan flashing
  3. Rigid sill pan flashing



- All Sill Pans should be sloped to outside with a minimum 1/2" interior upturn leg or dam and 2" exterior down turn leg. Upturn frame at jamb end should be 6".



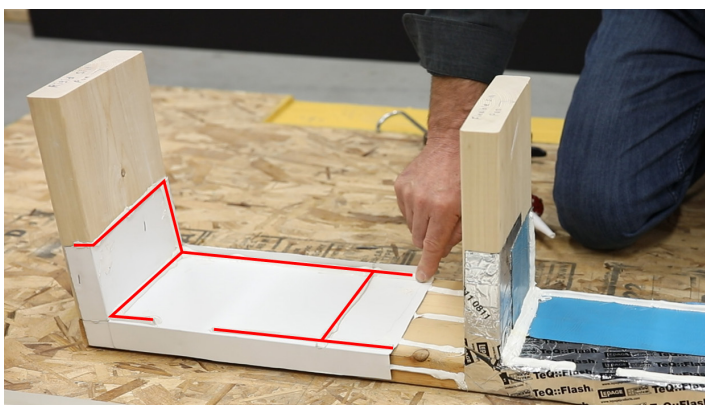
- On the rigid sill apply a sealant bead on top of the sill pan flashing along the exterior of the rough opening, leaving a 2" void approximately 2" from either end. This will allow a drainage path for incidental moisture.



# INSTALLATION INSTRUCTIONS

## Preparing Sill Pans & Sealant Application (Continued)

- Along the jamb side of sill pan where the jamb leg will sit up against apply a continuous bead on the interior edge up the sill leg. Red lines illustrate the completed sealant application.



- Once the sill preparation is complete, Place shims at each end at location of jamb legs to ensure the door frame will be appropriately levelled and door will sit just proud of the sill pan.



# INSTALLATION INSTRUCTIONS

## Preparing Sill Pans & Sealant Application (Continued)

- On the exterior sheathing apply a sealant bead from the sill pan leg, and apply a continuous bead all the way around on four sides of the rough opening. Sealant is applied on the sheathing substrate edge.
- Caulking bead should line up with nailing flange holes so that screws will be driven through this sealant.



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**Sill Pans and flashing are used at the base of openings and are designed to divert and drain water directly to the exterior or onto the weather resistive barrier.**

**Sill pans are mandatory in any door installation.**

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# INSTALLATION INSTRUCTIONS

## Installing Door Frame into Rough Opening

- A hardware package is provided – you will find it attached to the door panels. Hardware kits contain shims, a construction handle, and additional hinge screws.



# INSTALLATION INSTRUCTIONS

## Installing Door Frame into Rough Opening (Continued)

- Check all measurements are correct before you lift the door into the rough opening.



- Set the door from the exterior into the rough opening, starting with the bottom edge, on the sill pan. The jamb legs should be sitting on the sill shims on each side.

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**Two or more people will be required to accomplish setting door assembly into rough opening step.**

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- Tilt the door up and push the top of frame into place.



# INSTALLATION INSTRUCTIONS

## Installing Door Frame into Rough Opening (Continued)

- One person should be on the inside to center the door in the rough opening. Apply a screw through each top corner of the flange to temporarily secure the door.





# INSTALLATION INSTRUCTIONS

## Installing Door Frame into Rough Opening (Continued)

- Using a level and laser, ensure the unit is completely level, and the side jambs are completely square and plumb. If any issues remove the screws and adjust door in place.



# INSTALLATION INSTRUCTIONS

## Installing Door Frame into Rough Opening (Continued)

- For typical installations, apply screws through every second flange hole. In coastal applications, it is required to apply 2" stainless steel screws through every hole.



- Ensure that screws go in straight and perpendicular and not angled, to avoid creating a bow in the jamb, creating wide cavities in between frame and rough opening.



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**Over and under tightening hinge anchor screws will affect the door reveals.**

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# INSTALLATION INSTRUCTIONS

## Installing Door Frame into Rough Opening (Continued)

- From the interior, apply neoprene or composite shims behind every hinge, leaving a 1"-2" gap away from the flange to ensure there is space for foam to create a continuous seal.





# INSTALLATION INSTRUCTIONS

## Securing Door Assembly & Hinges

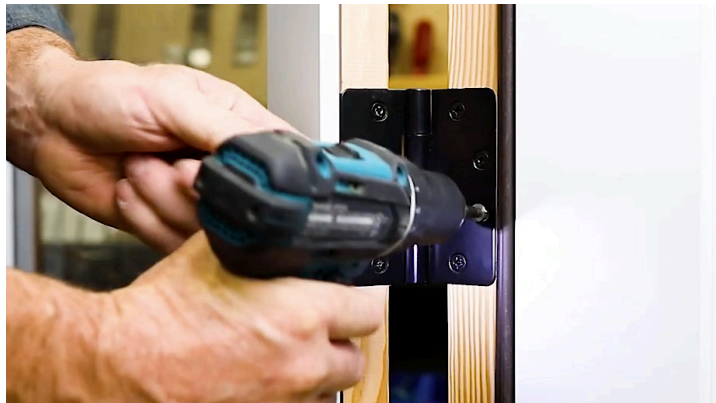
- Locate the hardware package that was attached to the door panels, you will need the construction handle, hinge shims and full length hinge screws.



# INSTALLATION INSTRUCTIONS

## Securing Door Assembly & Hinges (Continued)

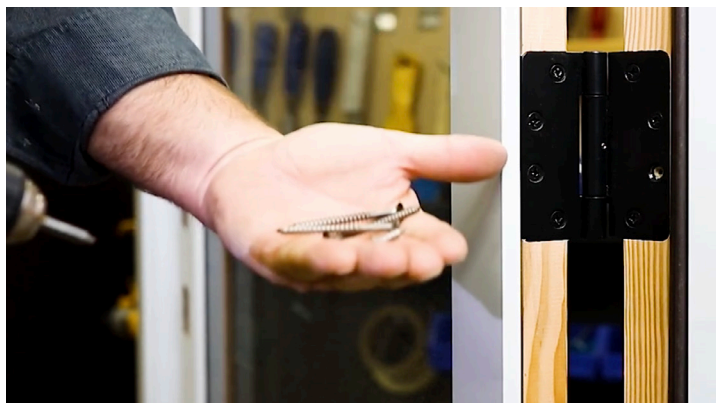
- As none of the screws extend past the door frame jamb the door hinges are not attached properly to the king studs. Open the door and note that each hinge has off-color screws.
- To properly connect door frame jamb and the door hinges to the rough opening, remove the off-color screw, drill a longer pilot hole, and use one of the supplied long screws from the hardware package.



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**Completely fill with sealant any hinge screw holes that penetrate the frame into the RO (outswing).**

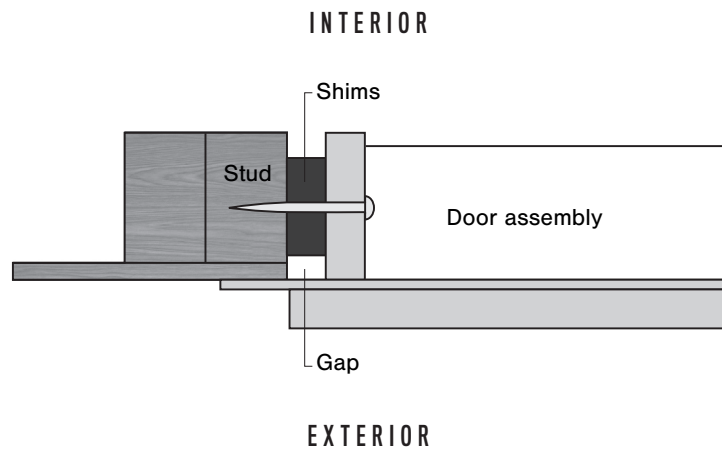
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# INSTALLATION INSTRUCTIONS

## Securing Door Assembly & Hinges (Continued)

- The screws will be driven through the frame, shims, and secure the hinge assembly to the frame studs.



- Ensure screws are not over-tightened to avoid a gap at latch side or in the centre of the 2 panel doors. If the screws are under-tightened, the door panels may strike each other at the center, or strike the door frame.





# INSTALLATION INSTRUCTIONS

## Adjusting Hinges - Standard

- Typical hinges are non-adjustable but have adjustment leafs that can be installed to maintain the consistent gaps around the frame.
- Every hinge will have adjustment leafs that can be removed or additional leafs can be added.



# INSTALLATION INSTRUCTIONS

## Adjusting Hinges - Standard (Continued)

- If there are not enough shims applied behind the hinges the tendency is to over-tighten the hinge screws. This will cause a spread in the frame, and have a wide gap at the latch side or center of the panels.

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**Over and under tightening hinge anchor screws will affect the door reveals.**

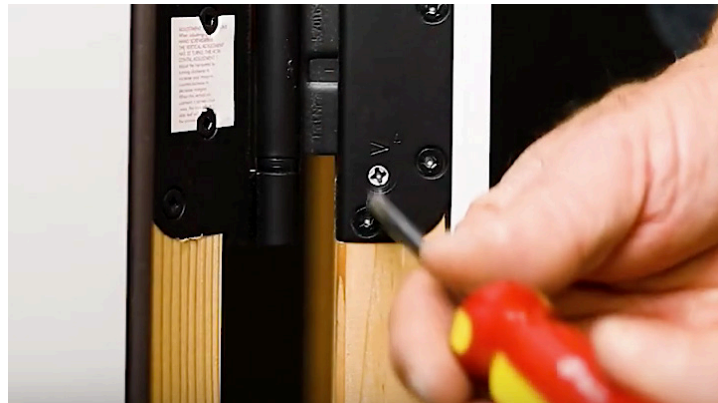
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# INSTALLATION INSTRUCTIONS

## Adjusting Hinges - Adjustable

- Adjustable hinges will have an extra screw on the door side of the hinge that can be adjusted with a hand screwdriver.
- The center hinge will have a screw marked "V" for vertical, which can be turned up to 70 times to move the panel up or down.



- The top hinge will have a screw marked "H" for horizontal which will move the panel left to right. Having a second person hold the door panel at the opposite edge can make this process easier.





# INSTALLATION INSTRUCTIONS

## Sill & Header Strike Plates for 2 Panel Doors

- Remove the short screws in the bottom plate on the centre sill,



- drill longer pilot holes into the sill pan, then fill holes completely with clear silicone sealant.



- Replace the plate, then insert long screws from the hardware package into the holes.



# INSTALLATION INSTRUCTIONS

## Sill & Header Strike Plates for 2 Panel Doors (Continued)

- Repeat above process for the top strike plate with long screws.
- Remove the short screws in the top plate on the header.
- Drill longer pilot holes through the frame into the header, then fill holes completely with clear silicone sealant.
- Replace the plate, then insert long screws from the package into the top strike plate.



# INSTALLATION INSTRUCTIONS

## Sealing & Insulating Door Frame

- To ensure the sill pan is sealed to the sill itself, apply a sealant bead between the sill pan and the door sill all along the bottom edge,
- then use a application tool to push the sealant in to ensure the gap is fully sealed.





# INSTALLATION INSTRUCTIONS

## Sealing & Insulating Door Frame (Continued)

- Door frame to rough opening gap can now be sealed with a closed cell low expansion spray foam.



# FLASHING, SEALANT AND FOAM

## Choose products with these properties:

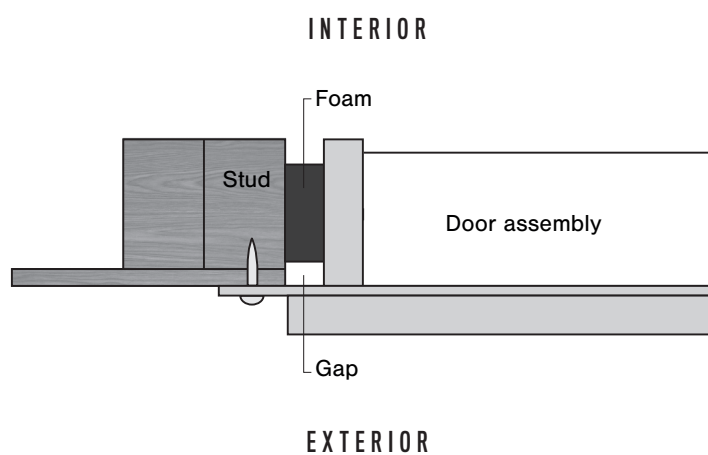
1. Flashing adhesive
  - Excellent adhesion to most building materials
  - Provides a strong, long-lasting seal
2. Window flange sealant
  - Ultra-low VOC content
  - Doesn't harden, crack, separate, or yellow
  - All-weather application
  - Chemically compatible with flashing materials
3. Closed cell sealant foam with low expansion
  - Will not deflect window and door jambs
  - Quick-setting formulation can be cut or trimmed in less than 1 hour
  - Will not absorb moisture
  - Provides minimum R-5 insulation value per inch



# INSTALLATION INSTRUCTIONS

## Sealing & Insulating Door Frame (Continued)

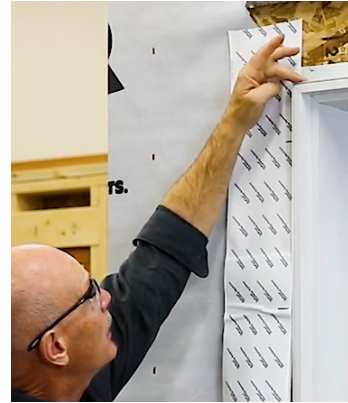
- Apply sealant foam insulation in gaps between RO and frame:
- Apply single bead of foam with foam gun tip slightly back from nailing flange - leaving small gap to exterior.
- Allow first pass to set before filling entire RO.
- Do not fully fill the gap with foam, as this will make it difficult to adjust the jambs using the screws.



# INSTALLATION INSTRUCTIONS

## Sealing & Insulating Door Frame (Continued)

- After the door has been fastened, window/door flashing should be applied to the jambs and head.



- Apply flashing to the exterior wall along the edge of the door frame over the flange, extending approximately 4" above the top of the frame.





# INSTALLATION INSTRUCTIONS

## Sealing & Insulating Door Frame (Continued)

- Apply the top strip of flashing extending past the side strips by a minimum of 1" each side.



- Use a J roller to push out all air pockets and ensure good adhesion against your WRB and against your flanging.
- If at any time the flashing does not stick due to cold wet substrates, it is permissible to secure the flashing with a tack hammer and staples.



# INSTALLATION INSTRUCTIONS

## Sealing & Insulating Door Frame (Continued)

- Remove the previously applied tape holding the flap of the WRB at the head.
- Allow the flap to lay flat over the head flashing.



- Apply slices of window/door flashing over the diagonal cuts made in the WRB. Ensure that the entire cut is covered.



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**Note: If a rigid head flashing/ drip edge hasn't been factory installed, ensure an appropriate one is installed correctly.**

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