



BIFOLD DOOR ASSEMBLY GUIDE

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INTRODUCTION

This document describes the key steps in assembling the door panels, components and hardware of a Loewen Bifold Door and is intended as an informational guide only. Recommendations for installation instructions are described in the Loewen Door Installation Guide.

IMPORTANT NOTICES AND INFORMATION

- Read these instructions in their entirety prior to installing doors. 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 Bifold door.
- Any local, regional or national building code requirements supersede these instructions.
- 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.
- The Bifold Assembly Guide describes assembly of metal clad units; assembly of non-clad units follows the same principles.

IMPORTANT NOTICES & INFORMATION

PRECAUTIONS AND SAFETY:

- Do not work alone. It is recommended that at least two people work together to avoid personal injury or damage when working with windows & doors.
- Use caution when handling glass. Broken or cracked glass can cause serious injury.
- Wear necessary protective gear (gloves, clothing, goggles, etc.).
- Secure tools, ladders or scaffolding. Follow equipment manufacturers' operation instructions, warnings and cautions.
- Secure and properly support the unit until completely fastened.

NOTICE:

All construction details and wall systems must be designed to manage the possibility of unanticipated infiltration of moisture past the exterior wall cladding. Incidental moisture penetrating past the wall cladding must be prevented from entering moisture sensitive areas through the use of a barrier or membrane that diverts the water to outside the building. Loewen is not responsible for claims or damages related to moisture infiltration resulting from: failure to install Loewen products in accordance with the Loewen Door Installation Guide; building design and/or construction details which, when integrated with the window system do not allow for the proper management of moisture within the wall system; deficient maintenance of the building; and unanticipated water infiltration. The site specific suitability of all building details, including the appropriate Loewen product model, the installation details and the means of protection against air, water and structural forces is the responsibility of the customer, designer, architect, engineer, or building contractor.



MATERIALS & TOOLS REQUIRED

MATERIALS

- Cedar or impervious shims/spacers
- 1/2" (38 mm) #8 screws (stainless steel)
- Closed-cell low-expansion foam
- Flashing tape
- Window and door insulation
- Interior trim

Do not use high-expansion foams.

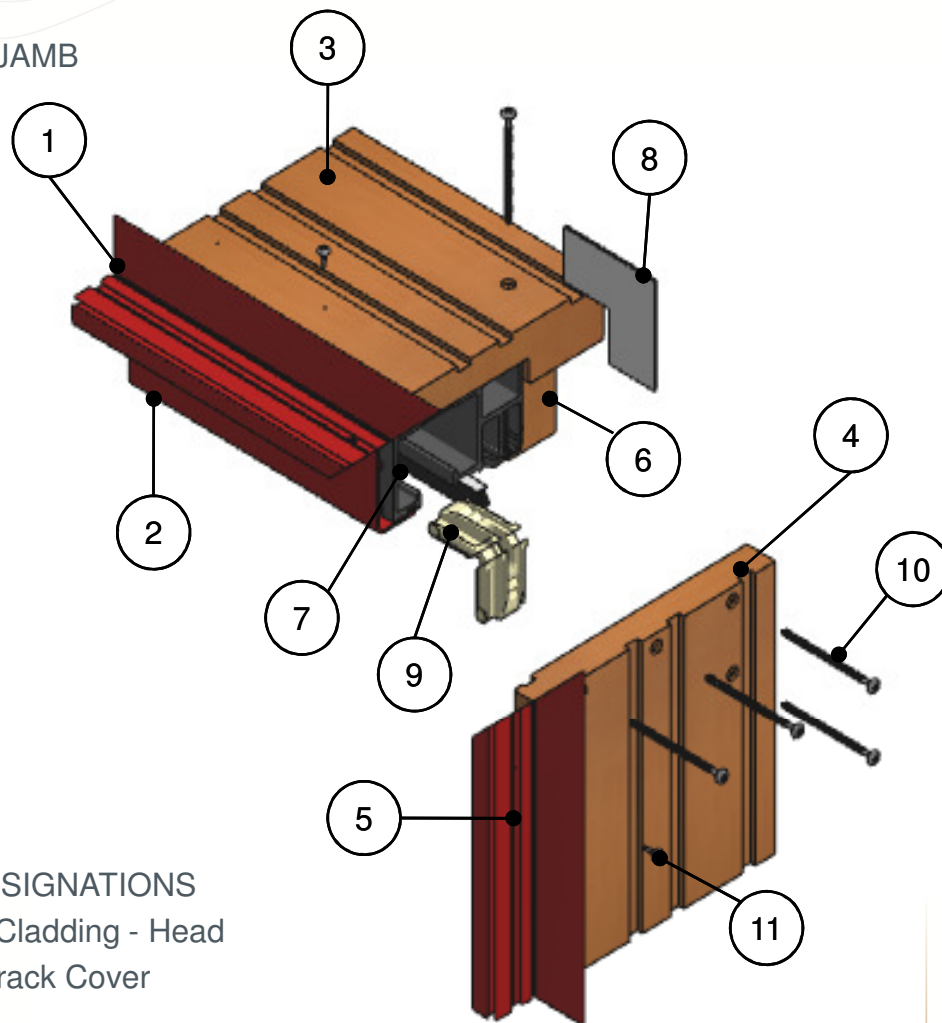
TOOLS

- Tape measure
- Laser Level
- Square
- Hammer
- Manual Screwdrivers with long shafts
- Phillips & Flathead
- Scissors or utility knife
- Screw gun
- Ladders

1) PARTS IDENTIFICATION

1.1) FRAME

1.1a) HEAD & JAMB



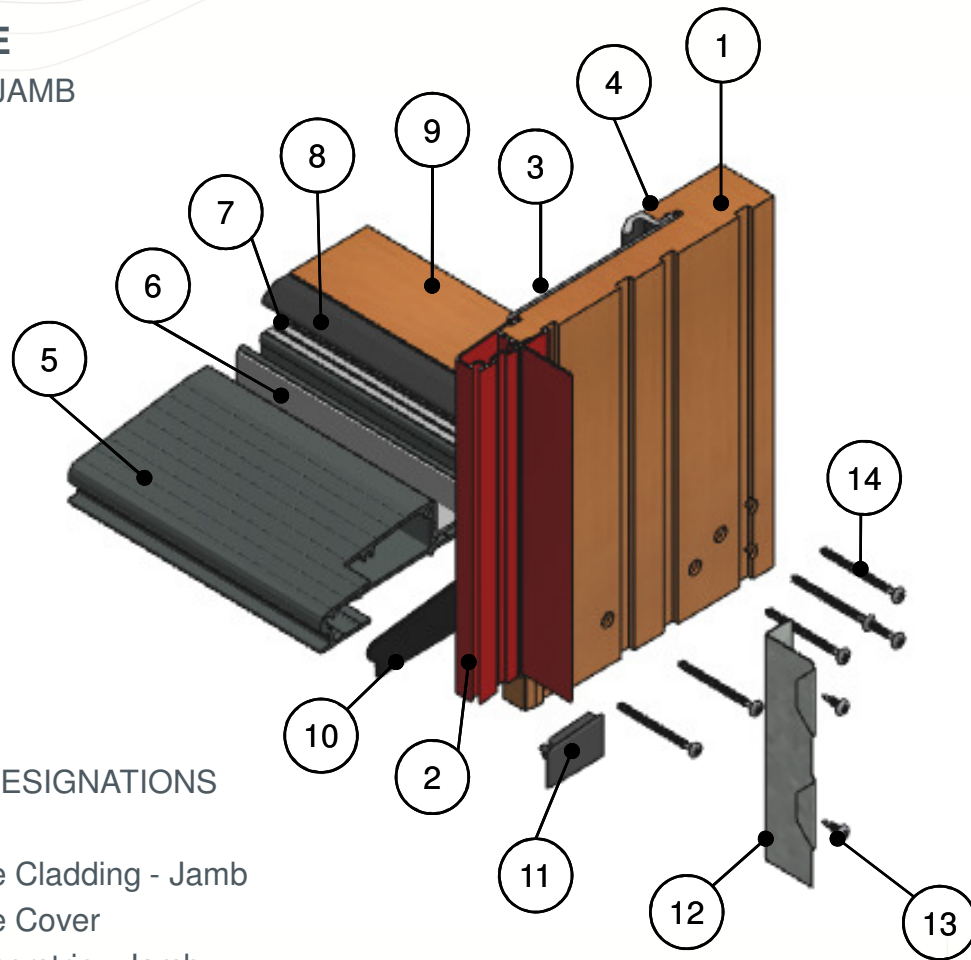
1.1b) PART DESIGNATIONS

- 1) Frame Cladding - Head
- 2) Head Track Cover
- 3) Head
- 4) Jamb
- 5) Frame Cladding – Jamb
- 6) Head Weatherstrip Block
- 7) Head Track
- 8) Frame Gasket
- 9) Frame Corner Key
- 10) #8 x 2 1/2" PH
- 11) #6 x 3/8" PH

1) PARTS IDENTIFICATION

1.1) FRAME

1.2a) SILL & JAMB



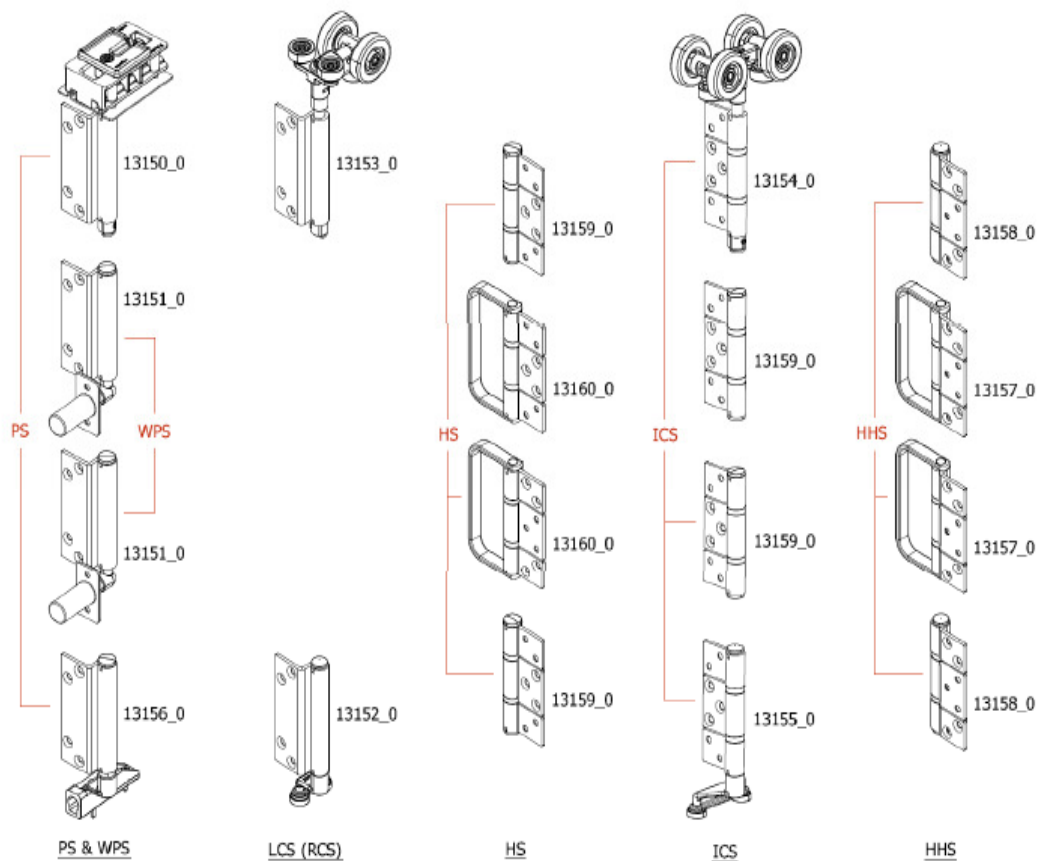
1.2b) PART DESIGNATIONS

- 1) Jamb
- 2) Frame Cladding - Jamb
- 3) Frame Cover
- 4) Weatherstrip - Jamb
- 5) Sill Cladding
- 6) Floor Channel
- 7) Sill Track Filler Strip
- 8) Sill Weatherstrip
- 9) Upper Sill Base
- 10) Sill Gasket
- 11) Sill End Cap
- 12) Flange Plate
- 13) #8 x 1/2" PH
- 14) #8 x 2" PH

1) PARTS IDENTIFICATION

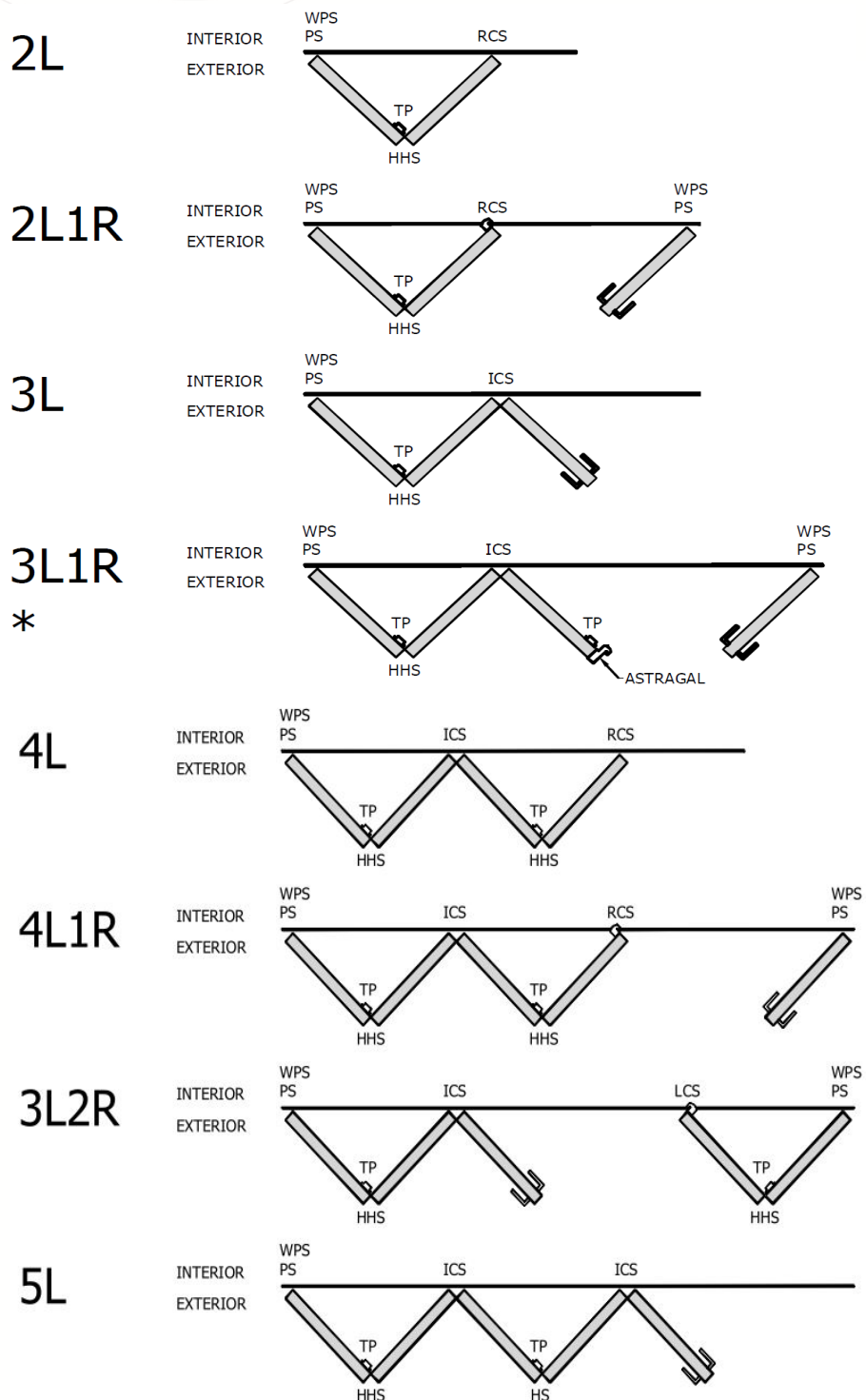
2) HARDWARE

2.1) 4 – HINGES Eclipse Architectural E3 System



1) PARTS IDENTIFICATION

3) DOOR PANELS - HARDWARE LOCATION DESIGNATIONS

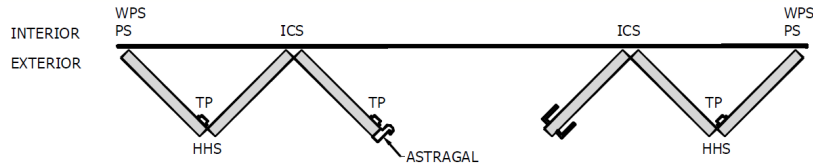


1) PARTS IDENTIFICATION

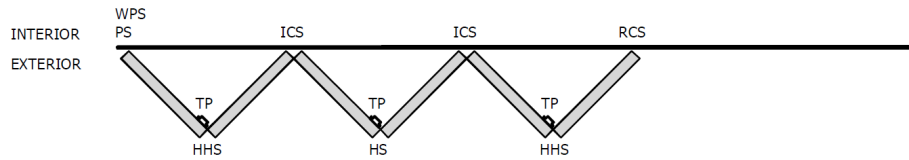
3) DOOR PANELS - HARDWARE LOCATION DESIGNATIONS

3L3R

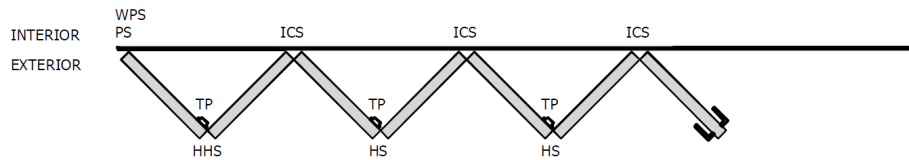
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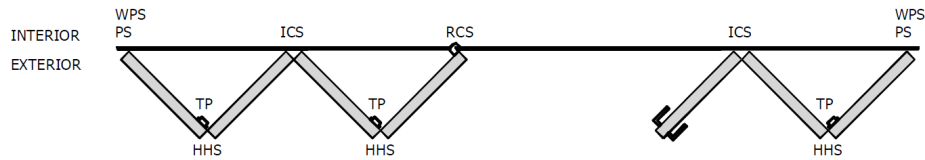
6R



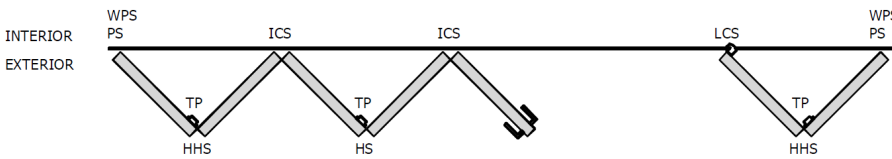
7R



4R3L

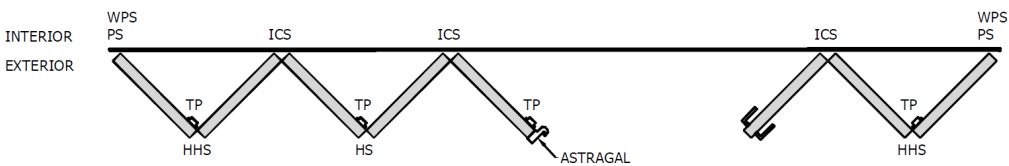


5R2L



5R3L

*



NOTE:

Units marked with an (*) contain an Astragal when ordered with Twin Point Locks. These units must have their OSM width increased by 25mm (1") to maintain standard panel widths.

PS - Pivot Set

LCS - Left Carrier Set

HS - Hinge Set

HHS - Half Offset Hinge Set

WPS - Wall Mount Pivot Set

RCS - Right Carrier Set

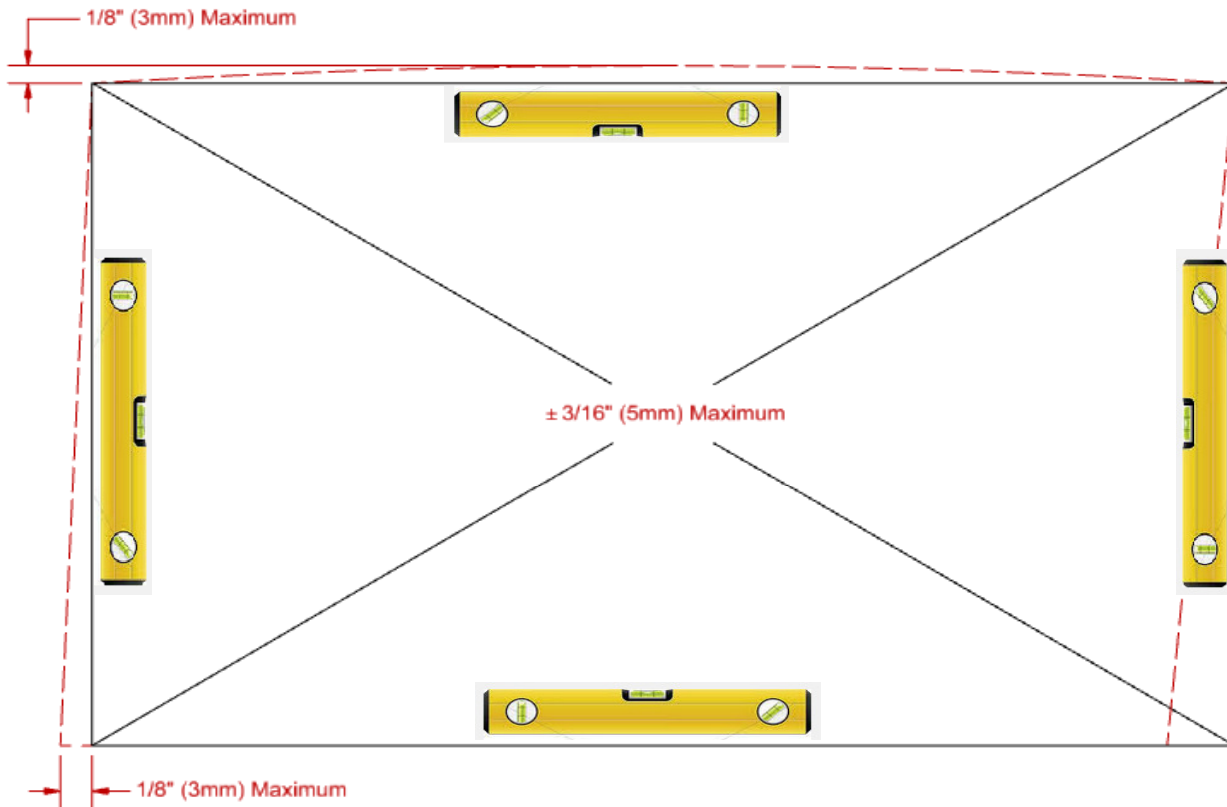
ICS - Intermediate Carrier Set

TP - Twin Point

2) JOB SITE PREPARATION

Step 1: Ensure correct rough opening specifications.

- 1) Measure according to signed Loewen shop drawing
- 2) Plumb opening
- 3) Level opening
- 4) Square opening



Step 2: Make sure the frame header is designed to withstand the dead loads of all doors including glass plus momentum and impact loading since it is a top-hung door system. Rough opening header must not deflect more than $1/16"$ (2 mm) when carrying the weight of the doors according to hardware suppliers' specifications.

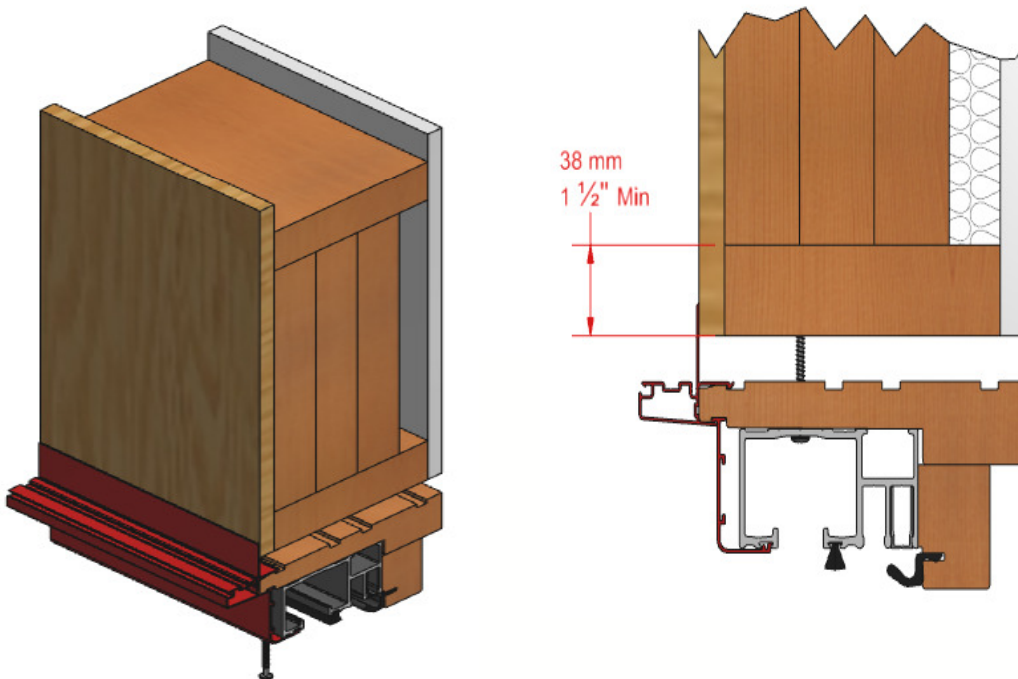
2) JOB SITE PREPARATION

Step 3: When order is received check the following:

- 1) All loose shipped parts are in accordance with packing slip.
- 2) All parts are defect free.
- 3) The panels are intact.
- 4) Brickmould if applicable.
- 5) The frame is intact.

Step 4:

- 1) Ensure the head of the Bifold Door system can be securely fastened to the header components of the structural beam.
- 2) Recommended wood framing for opening or a continuous plane of structural wood to maintain stability, ease of fastening and securing.

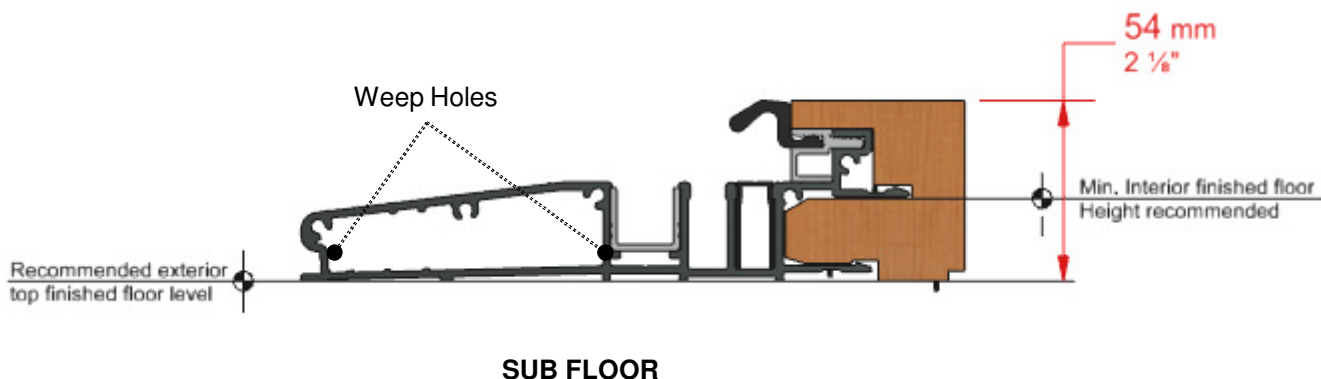


NOTES:

- 1) The Loewen supplied 3" (75 mm) PH track screw is only a suggested screw size. The screw used must penetrate at least 1 1/2" (38 mm) into the rough opening structural header beam that is to carry the accumulative door panel load. The size of the bolt-head should not interfere with any of the carriers wheels.
- 2) This illustration is not to scale and materials shown are not typical.

2) JOB SITE PREPARATION

Step 5: Ensure correct sill specifications.



Step 6: Seal off wood components before the actual installation takes place to protect the Bifold system against shrinking, swelling or warping.

Note:

Ensure waterproofing is in accordance with Loewen Door Installation Guide.

Clad and non clad panels for all doors including but not limited to Bifold, LiftSlide, and MultiSlide must be properly finished according to Loewen finishing instructions immediately upon delivery to the jobsite. These instructions can be found under the “Guidelines for Finishing your Loewen Windows and Doors” section found at www.loewen.com.

3) FRAME ASSEMBLY

Step 1: Head and jamb joints.

- 1) Apply continuous 5mm bead of Dymonic FC on the head. (Figure 1)
- 2) The aluminum frame members are secured at each corner with the nylon keys and screw fasteners. Corner keys are injected with Chem-Calk Bostik 2020.
- 3) Frame members are secured with #8 x 2 1/2" PH screws.
- 4) Add Chem-Calk Bostik 2020 on mitered joints, perimeter and sides. Gasket is then placed at each top corner. (Figure 2 & 3)

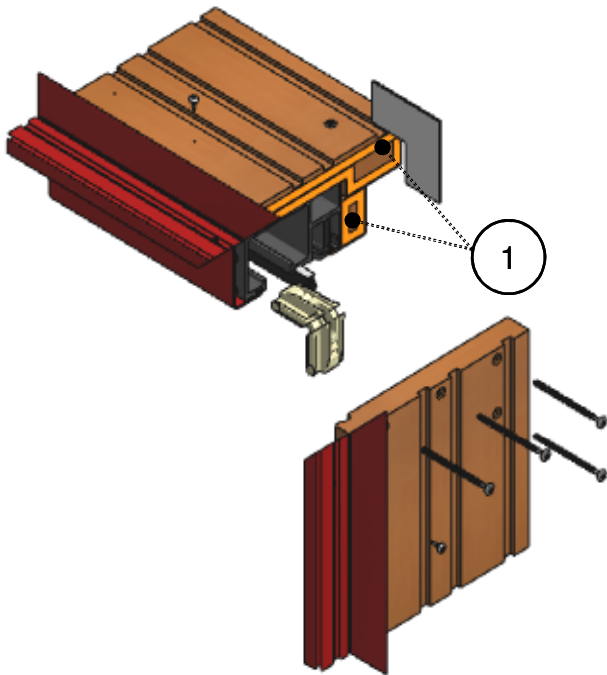


Figure 1

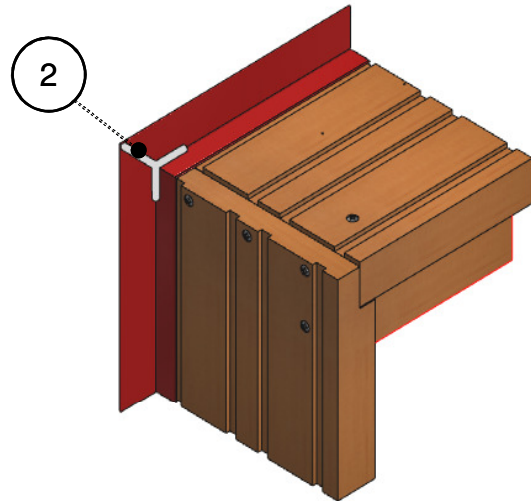


Figure 2

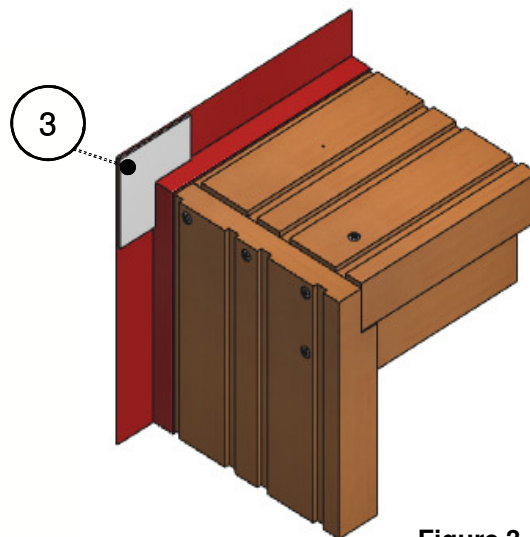


Figure 3

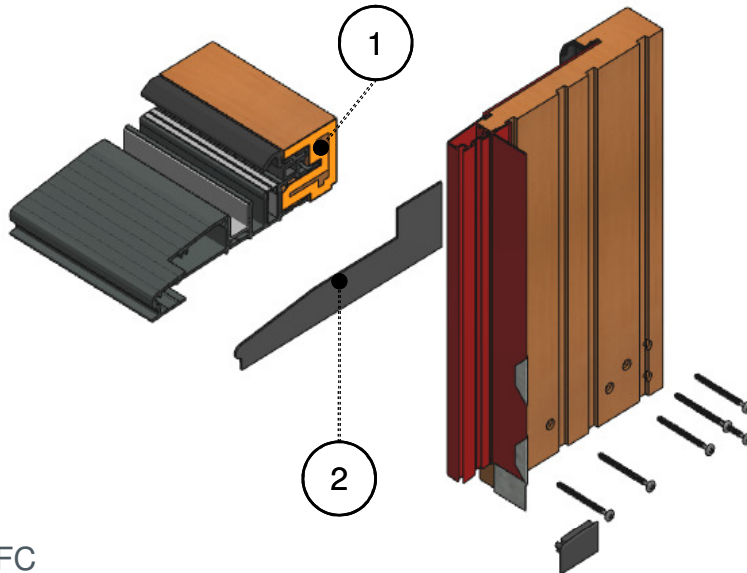
NOTE:

- 1) Dymonic FC
- 2) Chem-Calk Bostik 2020
- 3) Frame Gasket

3) FRAME ASSEMBLY

Step 2: Sill and jamb joints.

- 1) Apply continuous 5mm bead of Dymonic FC on the sill.
- 2) Sill gasket is then placed between sill and jamb.
- 3) Frame members are secured with #8 x 2" PH screws.

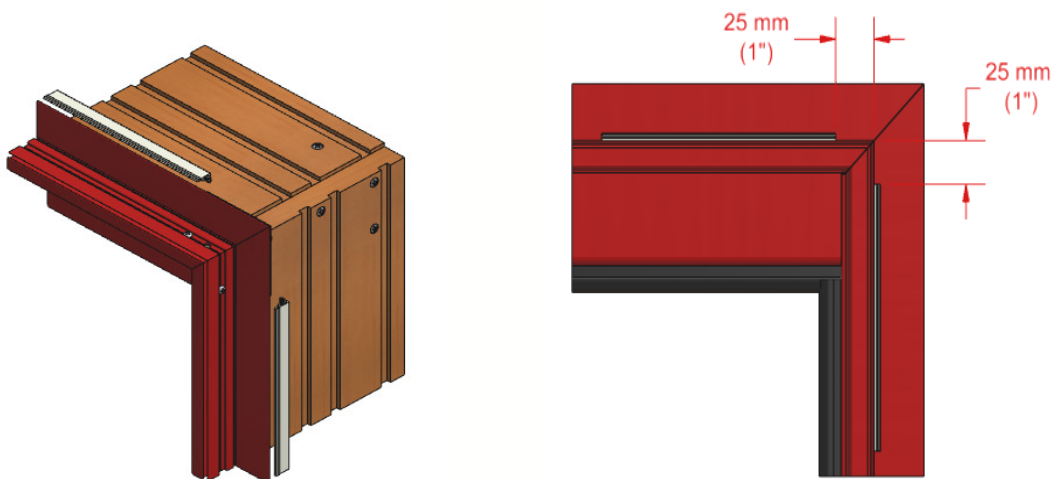


NOTE:

- 1) Dymonic FC
- 2) Sill Gasket

Step 3: Brickmould & casing application

- 1) Place accessory retainer clips in universal frame groove. Apply one clip 25mm from each corner and move inward. Applying additional clips at a maximum spacing of 500mm.



3) FRAME ASSEMBLY

Step 3: Brickmould & casing application (Continuation)

- 2) Apply continuous bead of Chem-Calk Bostik 2020 from head to jamb and mitered corner. (Figure 1)
- 3) Apply continuous bead of Chem-Calk Bostik 2020 on each end of brickmould to head corner. (Figure 2)
- 4) Place corner key into slot on end of brickmould and opposite end of head brickmould. (Figure 3)
- 5) Apply a #6 x $\frac{3}{4}$ " panhead screw through jamb brickmould into head brickmould (Figure 3)

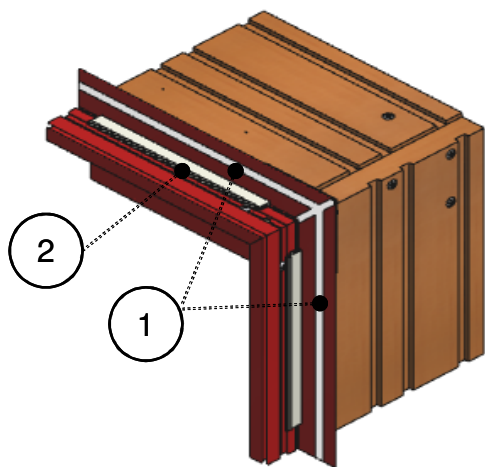


Figure 1

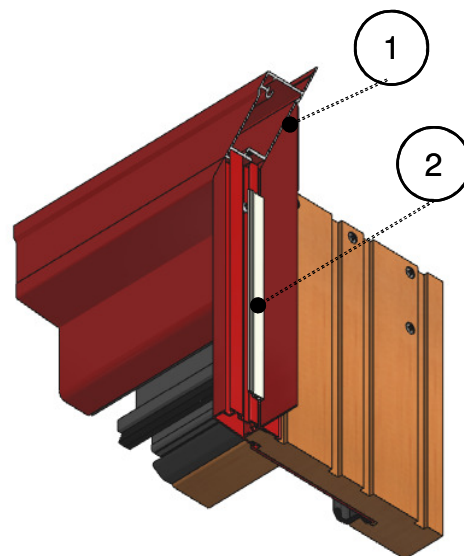


Figure 2

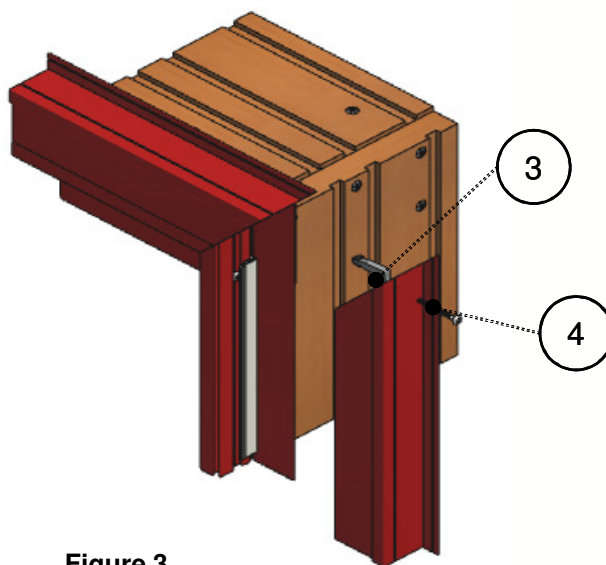


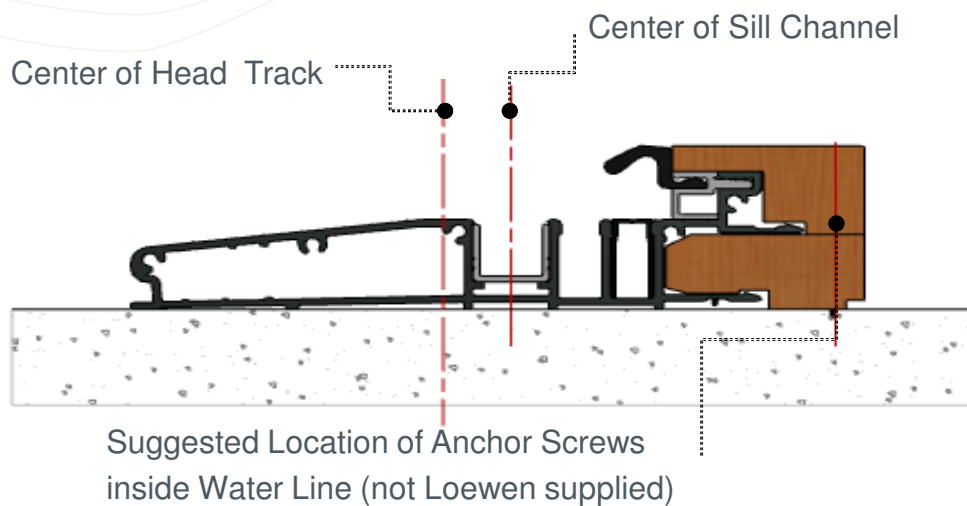
Figure 3

NOTE:



- 1) Chem-Calk Bostik 2020
- 2) Accessory Retainer Clip
- 3) Corner Key
- 4) #6 x $\frac{3}{4}$ " PH

4) FRAME INSTALLATION

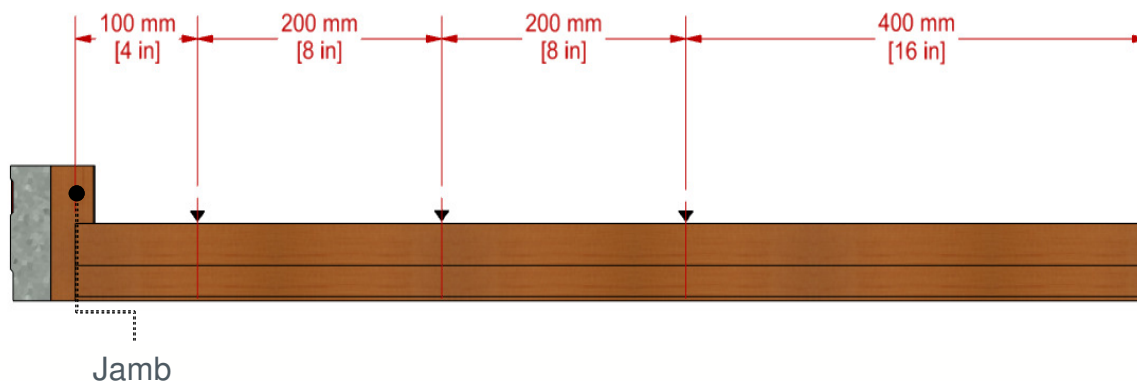
Step 1: Sill



Note: Ensure sill is plumb and level.

- “Sill sag”  to be no more than 1/16" (2 mm) centre span.
- “Sill bow”  to be avoided at any location of sill.

SILL ANCHOR LOCATION CHART



4) FRAME INSTALLATION

Step 2: Jamb

Note 1:

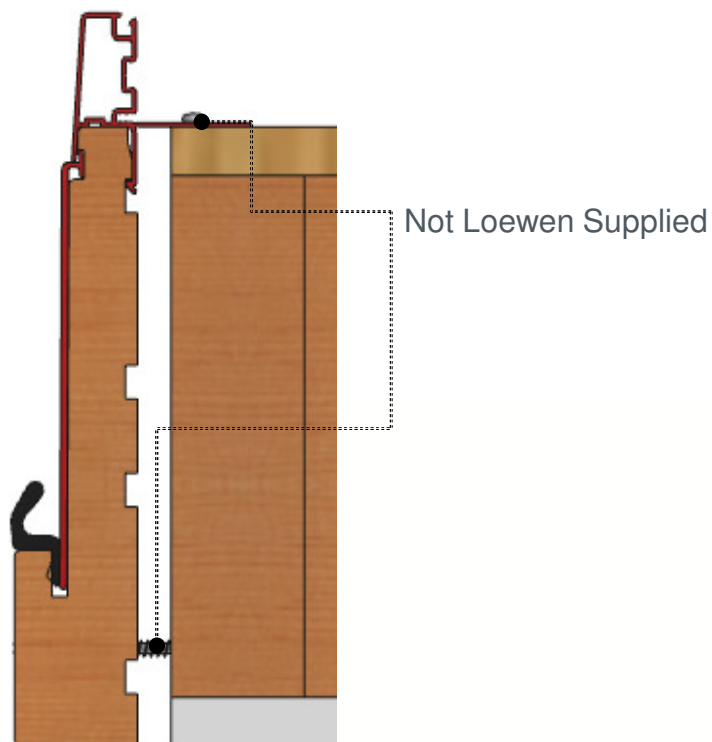
- To accommodate wall pivot cup(s), it is recommended to pre drill hole(s) in the rough framing due to protruding wall cup(s).
- To determine correct hole position(s), dry-fit the Bifold door in the rough opening.

Note 2:

- Bow of jamb to be kept to minimum of 1/8" (3 mm).

Note 3:

- Ensure all corners are square to ensure all components are plumb and level.



4) FRAME INSTALLATION

Step 3: Head

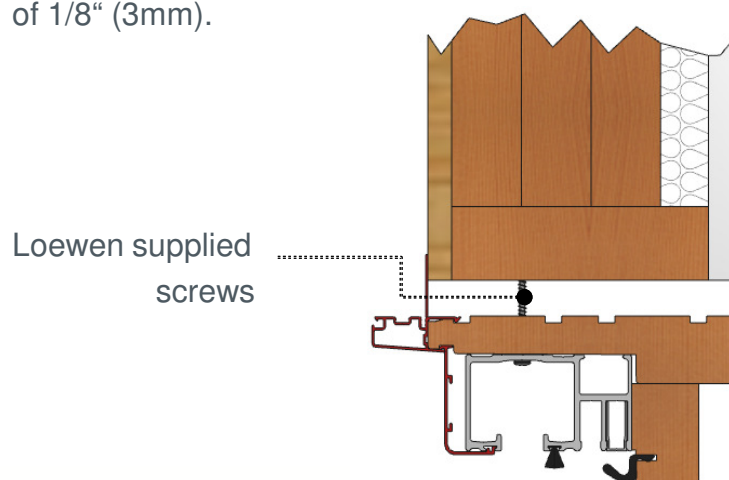
Note 1:

- The Loewen supplied 3" (75 mm) PH track screw is only a suggested screw size.
- The screw used must penetrate at least 1 1/2" (38 mm) into the rough opening structural header beam that is to carry the accumulative door panel load.
- The size of the bolt-head should not interfere with any of the carriers wheels.

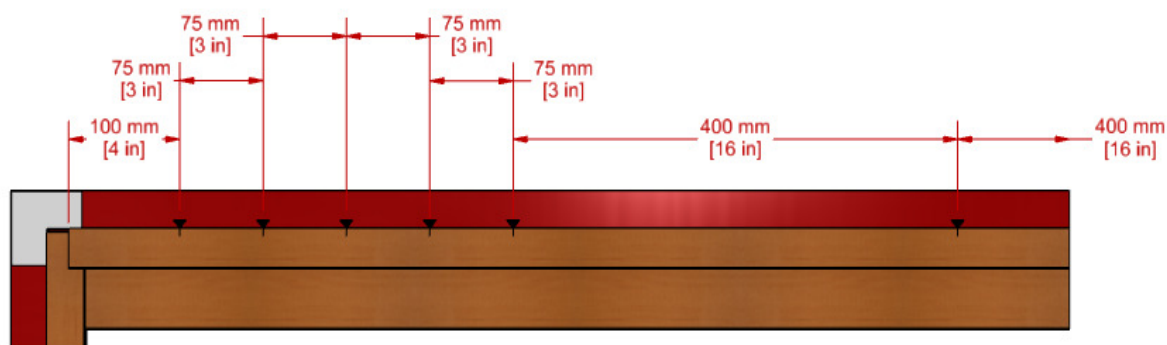
Note 2: Ensure all corners are square to ensure all components are plumb and level.

Note 3: Recommended shim space insulation material to be fibre glass batons to prevent warping of frame.

Note 4: Avoid the head from sagging. Bow of the head is to be kept to a minimum of 1/8" (3mm).



HEAD ANCHOR LOCATION CHART (PRE-DRILLED HOLES)



Note: Remove shipping crews and replace with track screws.

5) PANEL INSTALLATION

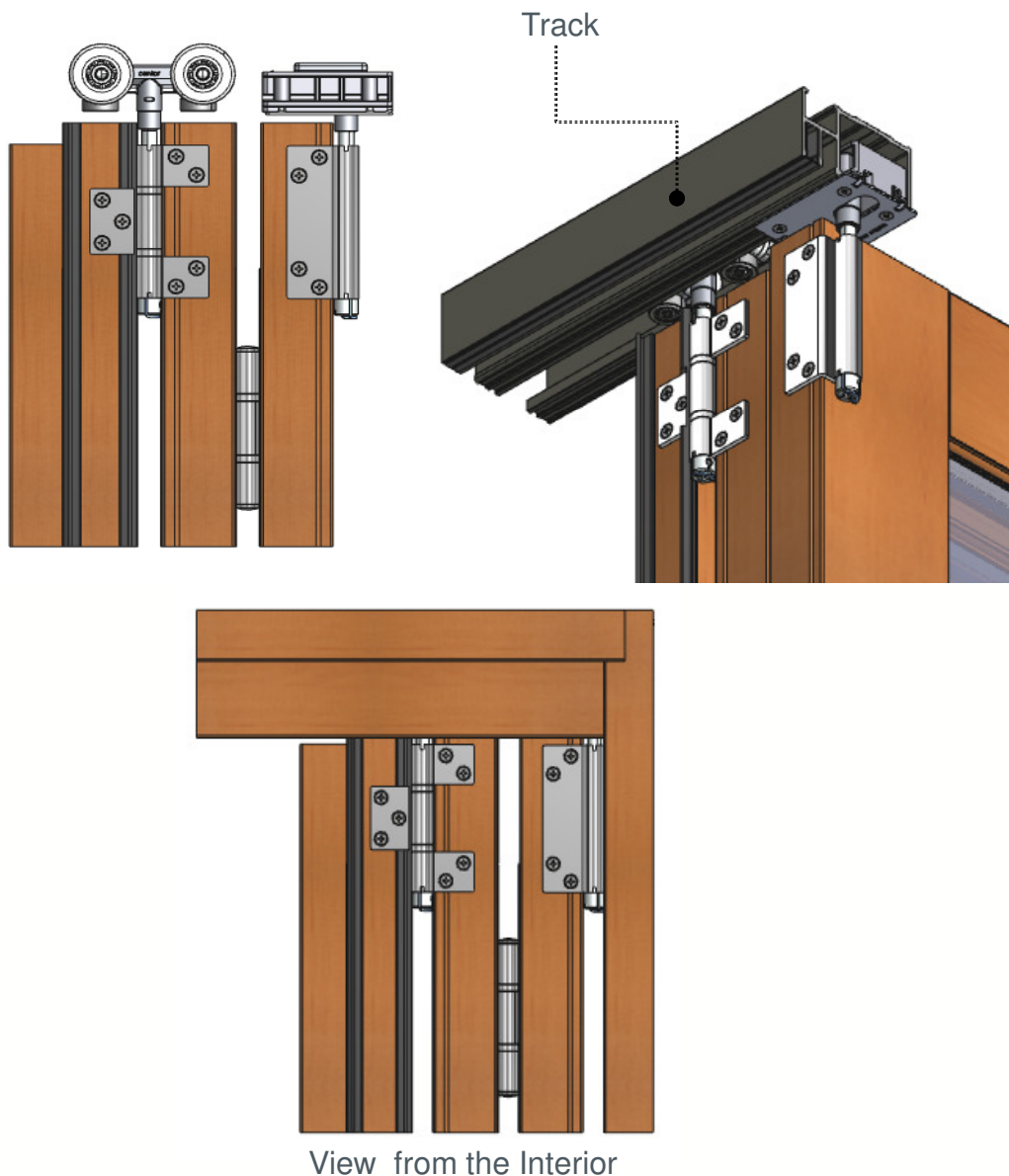
Step 1: Loading head track.

Note 1: This configuration is an example only.

Note 2: Before installing carriers ensure that the track is clear of all debris and there is no contamination of metal parts that could restrict door movement.

Note 3: Lubricate the track and the wheels with a small quantity of white petroleum jelly (Vaseline) to facilitate smooth operation. Use a clean cloth.

Note 4: Consult the shop drawings for the configuration set up and load the head track accordingly.

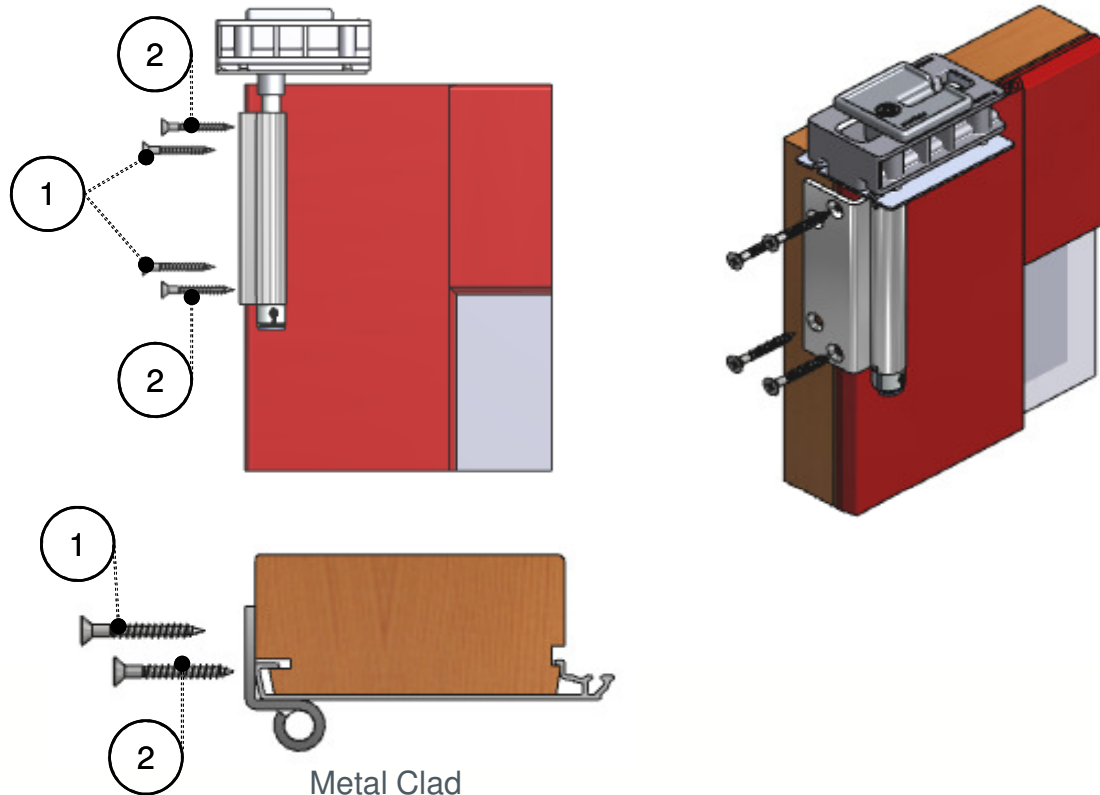


5) PANEL INSTALLATION

Step 2: Panel sequence. (3LIR)

- Panels numbered left to right viewing from exterior for identification purposes only.
- Start with the panel as identified , unless this panel is a swing door pivoting on the right side of this panel or if there are no panels pivoting on the left side jamb.

Step 3: Sequential fastening of hinge Metal Clad only.



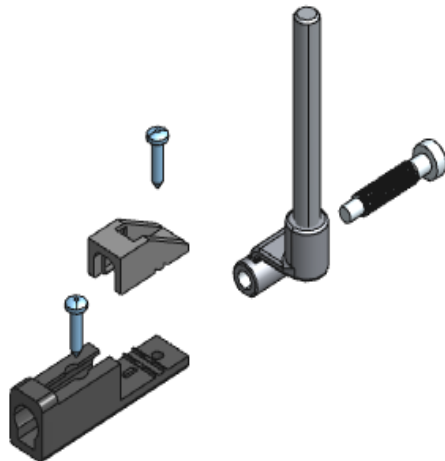
Fastening Sequence:

- 1) First fasten into wood.
- 2) Next fasten into metal ensuring hinge flap is flat against panel edge.

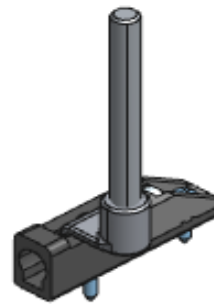
5) PANEL INSTALLATION

Step 4: Panel placement, pivot & wall pivot.

Step 4a: Install pin to receive bottom pivot hinge.



(A) Exploded Parts

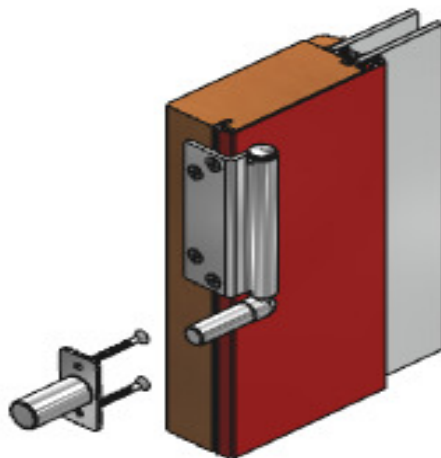


(B) Assembly

Note 1: Place hinge base against side jamb face.

Note 2: Seal off all fastener holes.

Step 4b: Install cup(s) for wall-pivot(s).

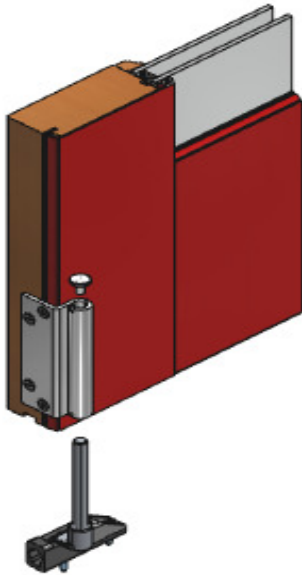


Note: Seal off pivot cup hole.

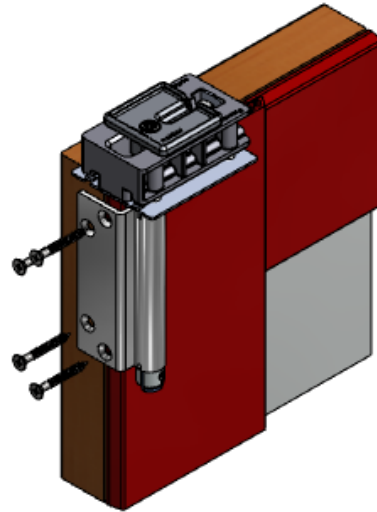
5) PANEL INSTALLATION

Step 4c: Side jamb bottom pivot(s) placement.

Step 4d: Top pivot hinge placement.



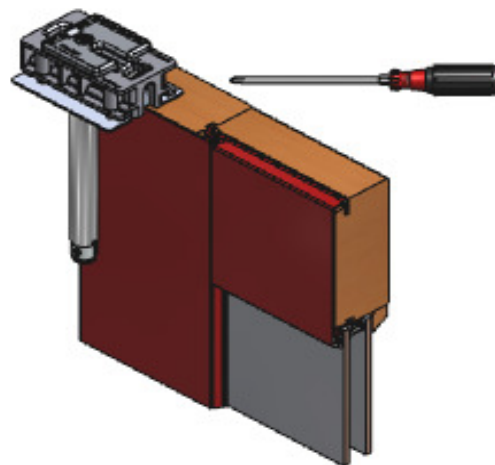
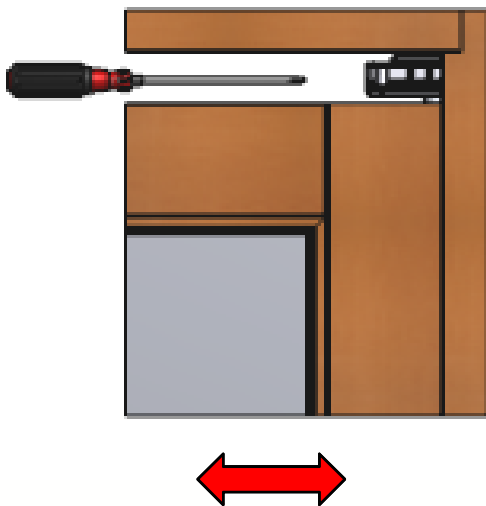
(4c)



(4d)

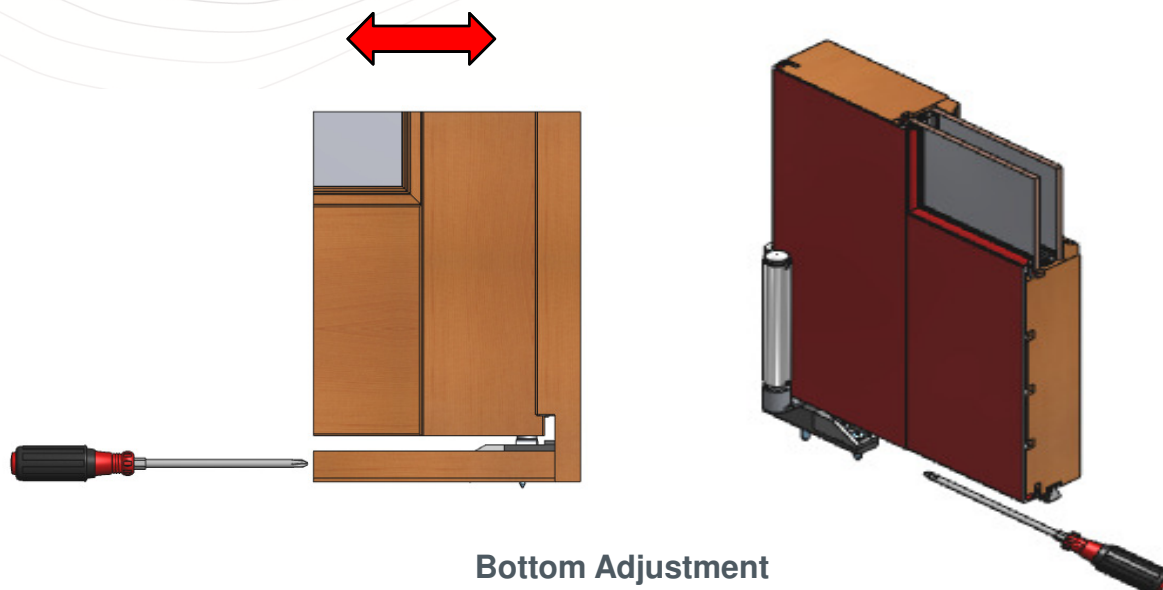
Caution: Always support weight of door panels with flat/pry bar or similar tool when locating and securing any pivot or carrier vertical adjustment.

Step 4e: Horizontal panel adjustment. (First panel)



Top Adjustment

5) PANEL INSTALLATION

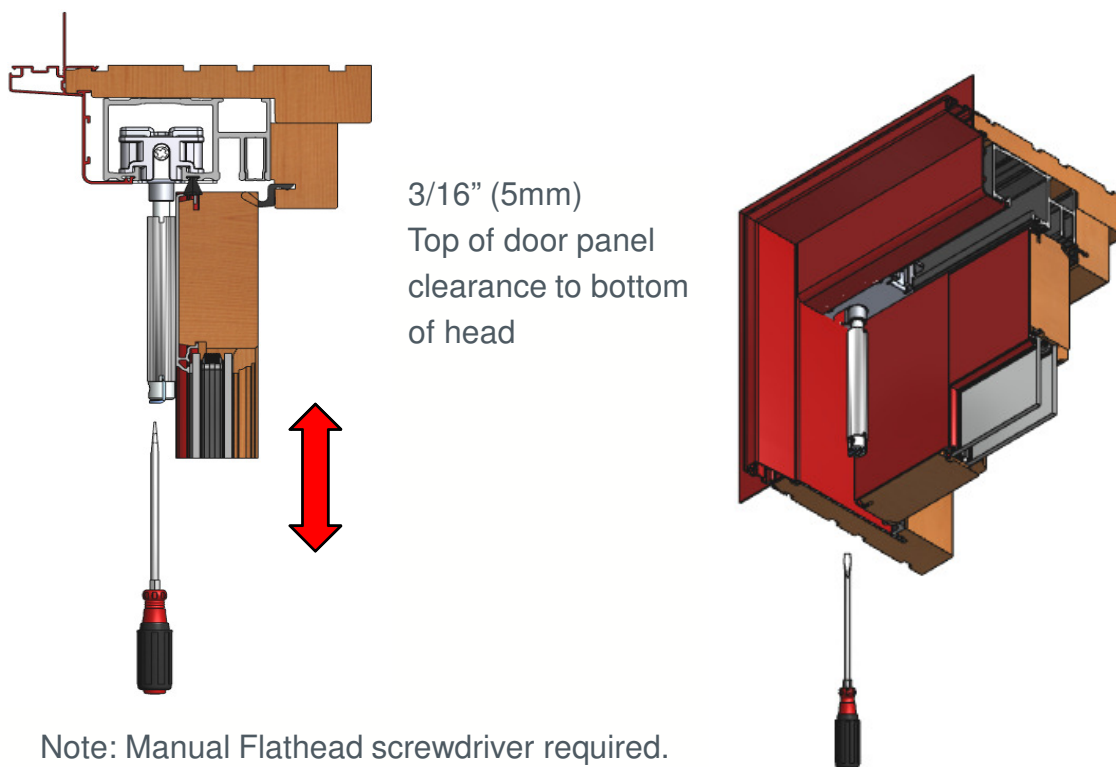


Note 1: Clearance $\frac{3}{16}$ " – $\frac{9}{32}$ " (5 – 7mm) between panel and side jamb.

Note 2: Maximum Adjustment $\frac{3}{8}$ " (10mm)

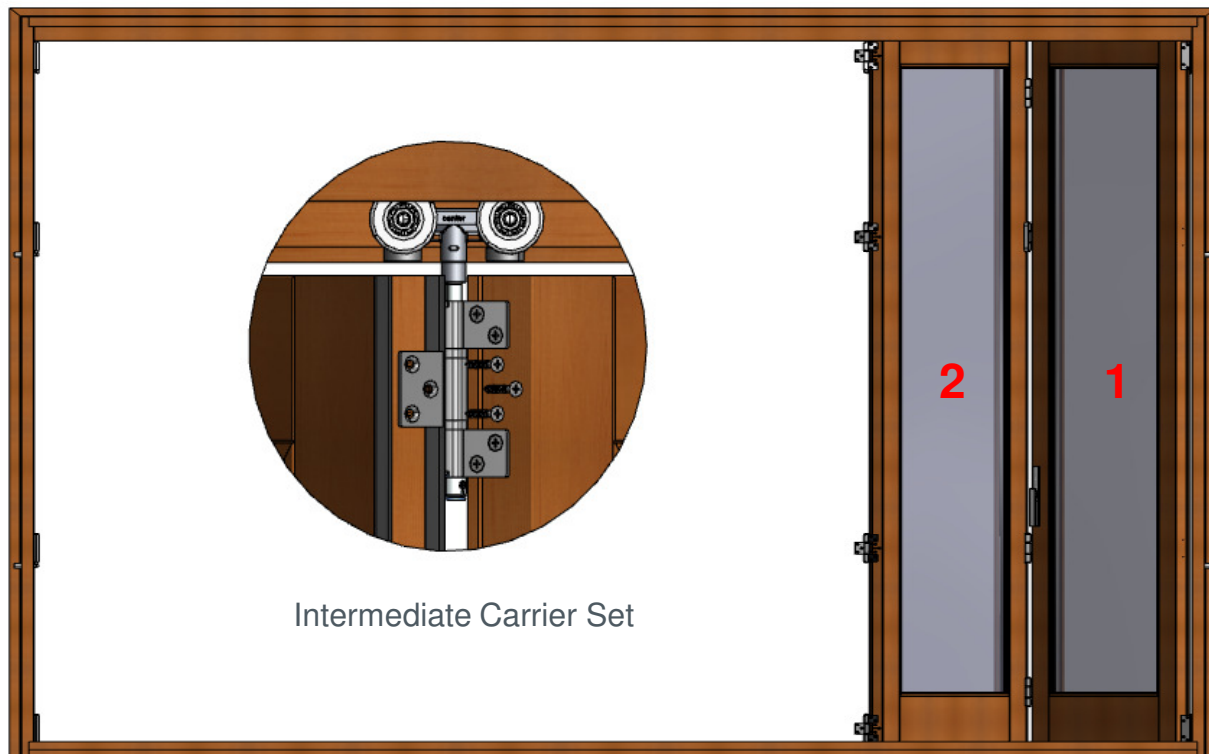
Note 3: Manual Phillips screwdriver with long shaft required.

Step 4f: Vertical panel adjustment. (first panel)



5) PANEL INSTALLATION

Step 5: 2nd panel placement /intermediate carrier set

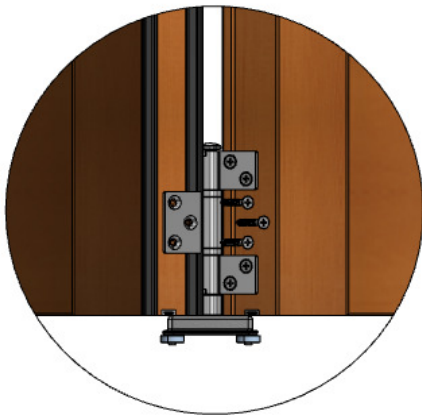


Intermediate Carrier Set

View from the Interior

Note: Ensure correct vertical clearance (Step 4f).

Step 6: Connect 2nd panel to 1st panel.



Intermediate Floor Guide

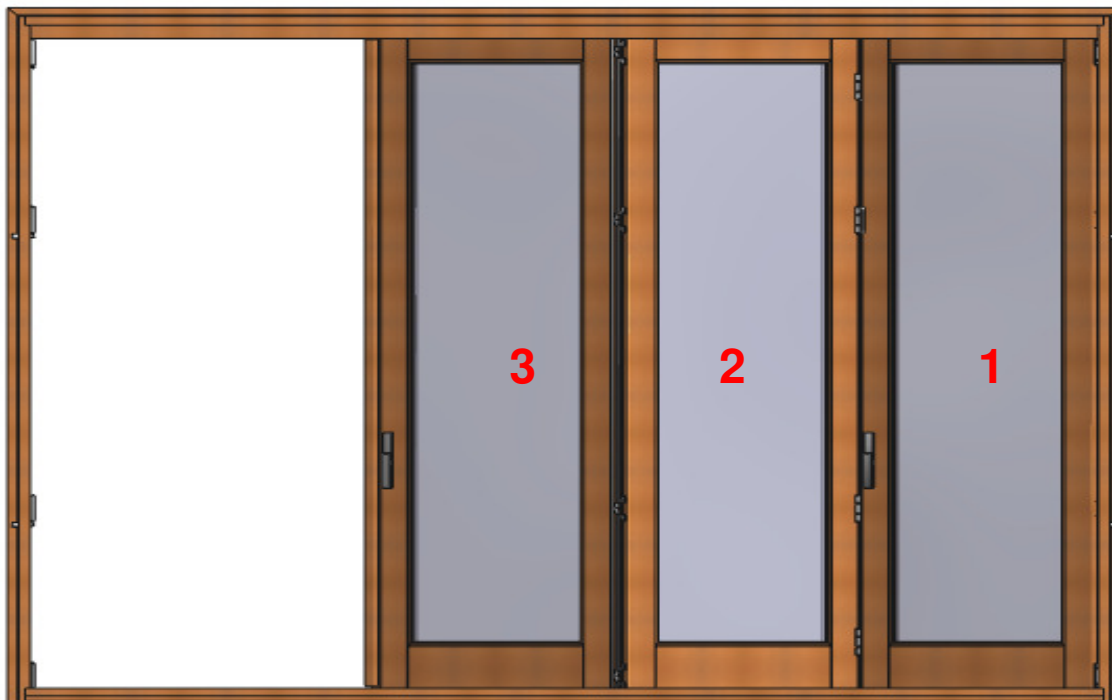


Half Offset Hinge

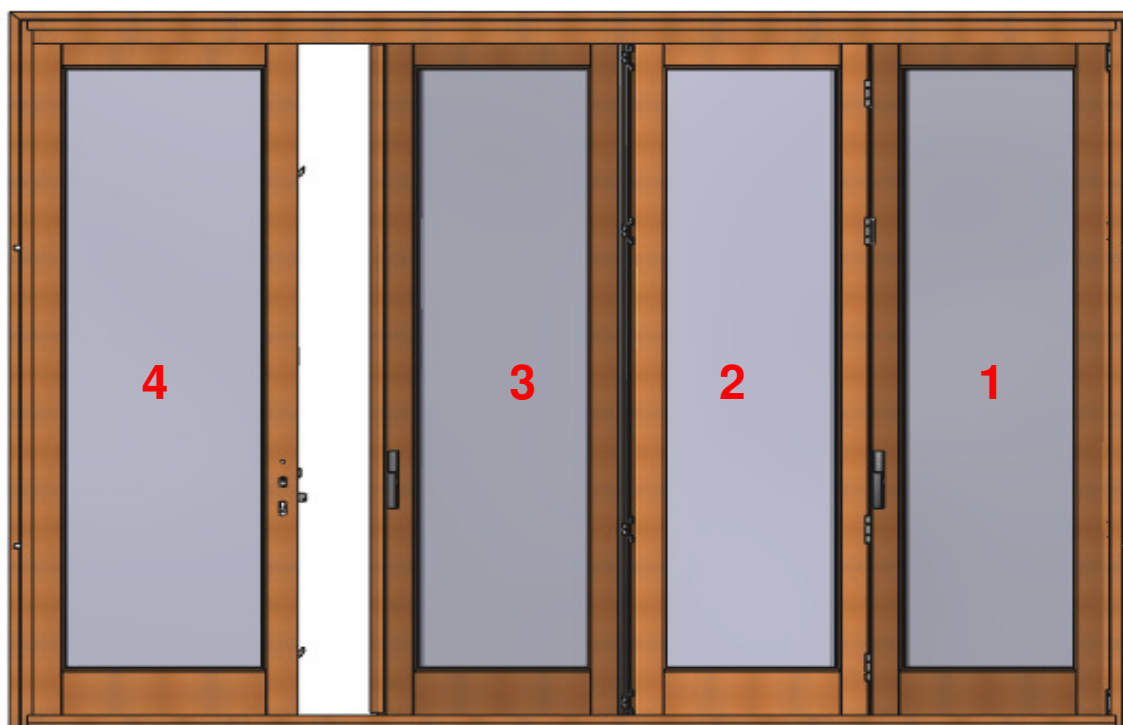
Note: It is easier to connect the panels if they are both perpendicular to track.

5) PANEL INSTALLATION

Step 7: 3rd panel placement/passive panel.



Step 8: 4th panel placement/active swinging panel.



View from the interior

5) PANEL INSTALLATION

Step 9: Repeat steps one through nine for configurations with panels sliding on left sides and swinging on right side.

Step 10: Fine tune Bifold system using Steps 4e and 4f to ensure proper operation of each panel.

6) COMPLETION CHECK LIST

Step 1: Ensure the multipoint is operating smoothly (if applicable)

Step 2: Ensure equal reveal to left and right of the system.

Step 3: Ensure horizontal and vertical alignment.

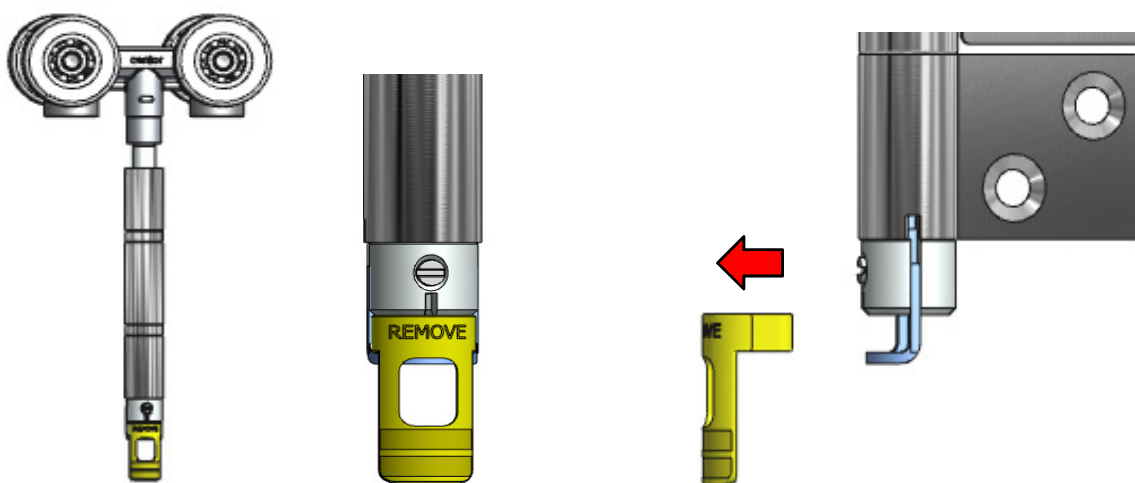
Step 4: Carrier pins at the top pivots, intermediate and end carriers are supplied with a yellow plastic shipping clip, which is installed to make the initial adjustment very easy.

Step 5: Insert a flathead screwdriver into the slot to rotate the pin.

Step 6: When the correct adjustment is reached and the doors operate well, remove the shipping clip.

Step 7: The blade will automatically snap into place once the blade and slot are aligned.

Step 8: To readjust at a later date, simply pull the blade down to disengage it from the slot and rotate the pin.

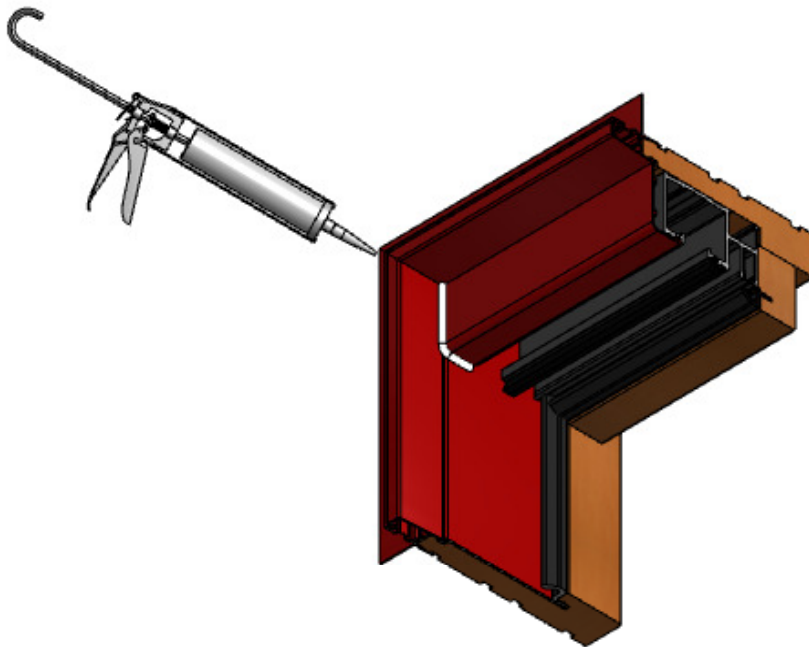


Note: Shipping Clip (Remove after adjustment See Step No. 6)

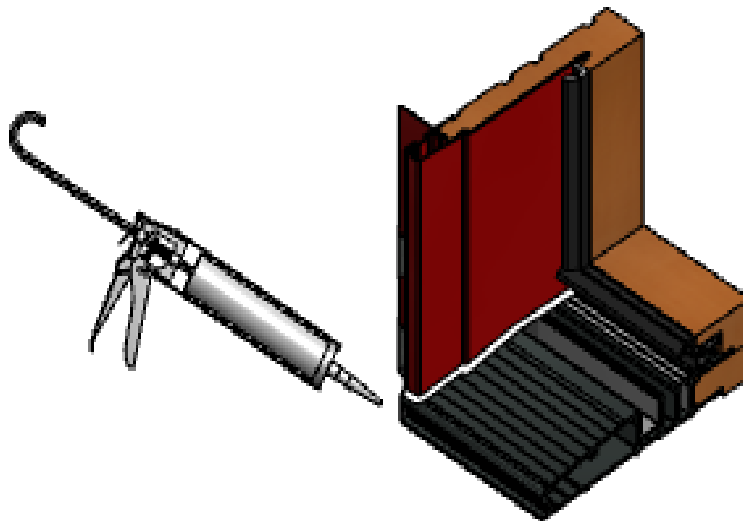
6) COMPLETION CHECK LIST

Step 9: Apply Tremsil 600 sealant to the following:

- A. Sill
- B. Head
- C. Screw holes



Head



Sill

7) RECOMMENDED PRODUCT CARE AFTER INSTALLATION

1. Keep the plastic protection inserts on the sill at all times! Create a sturdy bridge to protect sill during construction phase. Place bridge while Bifold system is in open position. Protect the side jambs of the Bifold Door frame from damage.
2. Protect the Bifold Door system from the following:
 - Stucco: Causes etching on aluminum, stains wood, clogs the track and damages rollers.
 - Drywall: Stains wood; clogs the system tracks; gums up rollers.
 - Duct tape: Some adhesives chemically react with many finishes. Therefore use tape such as 3m painter's tape, but do not leave on any surface for more than 7 days.
3. Instructions for the owner and general contractor:
 - Do not have small children operate or play within the confines of the Bifold Door system.
 - Do not force the Bifold system, contact Loewen if it is found to be difficult to operate.
 - Apply protection bumpers where exterior handles contact the metal clad of the next panel.
 - Anchor panels when in open position to prevent uncontrolled movement that might cause damage.

Operating of the Bifold Door system:

Open system according to the following sequence:

A. Multipoint release (if applicable)

B. Release top and bottom shootbolts.

C. Slide panels to open position starting with panel that does not have an Astragal (if applicable)

Close system according to the following sequence:

A. Slide panels to close position starting with panel that has an Astragal (if applicable)

B. Lock shootbolts

C. Close swing-door with multipoint (if applicable)

8) RECOMMENDED PRODUCT CARE FOR END USER

Safety Tips:

- Do not have small children operate or play within the confines of the Bifold Door system.
- Anchor panels when in open position to prevent uncontrolled movement that might cause damage.

Generic guide to operate Bifold system:

Step 1: Multipoint release (if applicable)

Step 2: Release top and bottom shootbolts

Step 3: Slide panels to open position starting with panel that does not have an Astragal.

Step 4: Release top and bottom shootbolts.

Step 5: Slide panels to open position.

Note: To close the Bifold door system, slide/fold the stack of panels one by one (perpendicular to the track). If applicable, rotate the swing door to the closed position, only when all panels are in their closed position.

- Loewen recommends a door stop or door holder to be applied for safety and to prevent damage to system.
- Do not force the Bifold System.
- Have a qualified installer remove panels or hardware when required.
- Contact Loewen if door is difficult to operate.
- Consult the Loewen Warranty and Care Guide that is issued after the warranty registration process has been completed.
- Consult specific hardware Bifold care and maintenance guide.

8) RECOMMENDED PRODUCT FOR END USER

HINGES

- Wipe down the visible surfaces with warm soapy water on a soft cloth and then rinse off by wiping with a clean damp cloth.
- Apply a thin film of light oil, such as machine oil or anti-corrosive spray to help maintain the original finish of the metal.
- Avoid stains by taking precautions to ensure that the minerals and compounds suggested in the above.
- DO NOT contact any wood components.

FLUSHBOLTS

- Spray suitable lubricant, such as, CRC Marine 66, Inox or WD40 to sliding pin and lock cylinder.
- Use plastic tube (supplied with lubricant) to direct spray.
- Apply lubricant through ready-made slots and holes on flushbolt.

TRACK AND BEARINGS

- Apply, approximately 1/4 teaspoon (1 ml) of white petroleum jelly (Vaseline) or equivalent, to inner lip of each side of head track. Use clean cloth.
- Distribute lubricant evenly along track.
- Ensure wheels and bearings receive sufficient lubricant.
- Wipe all contaminant from track surfaces with damp cloth and mild detergent, clean surfaces with clean soft cloth.
- Apply thin film for systems installed in severe environments by wiping surfaces of track with anti-corrosive substance such as CRC Marine 66, Inox or WD40.

HANGERS, PIVOTS AND BRACKETS

- Spray thin film to hangers, pivots and brackets with anti-corrosive substance, such as, CRC Marine 66, Inox or WD40.
- Wipe exposed surfaces with clean soft cloth soaked in warm soapy water; rinse clean before applying corrosive preventative.

FREQUENCY

- Carry out care procedures with the following minimum recommendations:
- General environments – every 6 months.
- Marine and industrial environments – every 3 months.
- Regular maintenance is required for all hardware, even stainless steel, to keep manufacturer's warranty in place.