

# INSTALLING STANDARD INVISIRAIL® GLASS PANELS

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## INSTALLING STANDARD INVISIRAIL® GLASS PANELS

### POST INFORMATION

Posts are always installed in order determined on the deck layout provided with the product. Only install one section at a time. Do not install all posts before installing glass, Minor adjustments may be needed to the post.

### PRE-INSTALLATION

#### STEP A1: GATHER ADDITIONAL TOOLS/SUPPLIES

##### For All Installations

- 2 people are necessary to handle and install glass
- Tape measure
- Bolt(s) as specified on the INVISIRAIL BOLT & PIN LOCATION CHART
- Drill with assorted bits
- Door shims for fine height adjustments
- 2 short pieces 2" x 4" or 4" x 4" to support glass

##### When Using Double Universal Angle Connector

- Cobalt 5/16" drill bit

#### STEP A2: INSTALLING POSTS

- There must be proper blocking in joists so posts are secure.
- When installing posts, use the deck drawing provided to determine post installation order. Start at #1 post and Install.
- See Appendix A for details for blocking and post placement detail
- To set the next post add 1 7/8" (measurement of connector) to the panel going in the space. Sizes are on each panel. This measurement can be made on center or end of one post to the end of the next.

#### STEP A3: DISASSEMBLE CONNECTORS / BRACKETS

##### Disassembling Connectors



Keep all pins and bushings for use later. Consult Invisirail Bolt & Pin Location Chart and other sections of these instructions for when they are required.

# INSTALLING STANDARD INVISIRAIL® GLASS PANELS

## INVISIRAIL BOLT & LOCATION CHART

Every panel of glass must have AT LEAST one pin on each side (one left and one right)

Post Type	Application	Bolt To Use	Through Bolt Required (Y/N/Optional)	Pin Required (Y/N/Optional)	Distance Off Deck Surface (Inches)
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**INVISIPOS**

T	Top clamp inline	IB150	Y	OPT	40
	Top clamp with angle bracket	IB100	Y	Y	40
	Top clamp end post	IB100	Y	Y	40
	Bottom clamp inline	IB150	Y	OPT	6.5
	Bottom clamp end post	IB100	Y	OPT	6.5

VISTA Post	Top clamp inline	ST	N	N	40
	Top clamp end	ST	N	N	40
	Bottom clamp inline	ST	Y	Y	6.5
	Bottom clamp end	ST	Y	Y	6.5

OR

Opt for top and bottom ST N Y for both

**\*Self tapping screws can only be used on bottom when pins are used at all connector locations.**

**\*Through bolts must be used when spacers or angle adaptors are used.**

4 X 4 Wood	Top clamp end	WS	N	N	40
	Top clamp inline	WS	N	N	40
	Bottom clamp end	WS	Y	Y	6.5
	Bottom clamp inline	WS	Y	Y	6.5

6 x 6 Wood	Top clamp end	WS	N	N	40
	Top clamp inline	WS	N	N	40
	Bottom clamp end	WS	Y	Y	6.5
	Bottom clamp inline	WS	Y	Y	6.5

**\*Wood screws can only be used when pins are used at all connector locations.**

**\*Though bolts must be used when spacers or angle adaptors are used.**

**Bolt legend**

WS

Wood Screw: # 14 X 2 inch

IB, VB and B (5/16" Capscrew Bolt)

IB = INVISIPOST BOLT, VB = VISTA POST BOLT, B = WOOD POST BOLT

ST

Self Tapping Screw: # 14 X 1.50 inch

Followed by length of bolt

150 = 1.50 inch

475 = 4.75 inch

inch

e.g. IB150

## INSTALLING STANDARD INVISIRAIL® GLASS PANELS

For non-standard applications (such as post sleeves of various materials) use a threaded rod with end cap to make custom length bolts.



### STANDARD SIZED PANELS - GENERAL INFORMATION

- Standard glass come with top hole details AND bottom notches.
- 4 connector pins must be installed (two on each side). See supplied chart to determine where pins are to be used and where bolts must pass right through post to hold clamps.

**Every panel of glass must have both pins on each side of the panel: two on the left and two on the right!**

### CONNECTOR INSTALLATION [INVISIPOST]

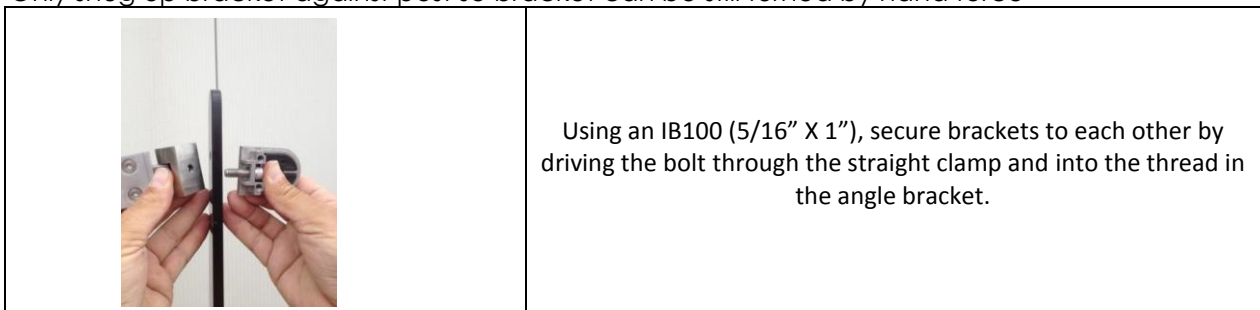
#### INVISIPOST: Straight-Run Connector to Straight-Run Connector

- Disassemble the connectors (see STEP A3 above)
- Top bracket to be installed 40 inches O/C above deck surface for 42 inch rail height (34 inches for 36 inch rail height)
- Do not over tighten the lags, causing stripping
- Only snug up bracket against post so bracket can be still turned by hand force



#### INVISIPOST: Straight-Run Connector to Universal Angle Bracket

- Disassemble the connectors and brackets (see STEP A3 above)
- Top bracket to be installed 40 inches O/C above deck surface for 42 inch rail height (34 inches for 36 inch rail height)
- Do not over tighten the lags, causing stripping
- Only snug up bracket against post so bracket can be still turned by hand force






## INSTALLING STANDARD INVISIRAIL® GLASS PANELS


### INVISIPOST: Universal Angle Bracket to Universal Angle Bracket

- Disassemble the brackets (see below)
- Top bracket to be installed 40 inches O/C above deck surface for 42 inch rail height (34 inches for 36 inch rail height)
- Do not over tighten the lags, causing stripping
- Only snug up bracket against post so bracket can be still turned by hand force


#### Disassembling Universal Angle Bracket

		
<p>Disassemble the angle bracket by taking out the locking pin and hinge screw from the hinge. Keep the nylon pin and bushing.</p>	<p>Drill out the thread of the mounting hole in the hinge using a <i>cobalt 5/16"</i> diameter bit. *Drill out one bracket only*</p>	<p>Insert a short bolt (5/16" X 1") through the hole drilled out in STEP A3. Insert it through the post, screwing into other angle bracket thread. Complete installation by re-attaching the bracket to the hinge on the angle bracket using set screw and hinge screw.</p>

#### INVISIPOST: End Post with Straight-Run Connector

	<p>This end run post always needs a pin into the glass.</p>
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#### INVISIPOST: End Post with Universal Angle Bracket

	<p>Screw IB100 (5/16" X 1") through angle bracket until tight. Fasten hinge to post by tightening bolt with an acorn nut on other side of post. Once the hinge is fastened to post, re-assemble angle bracket.</p>
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## INSTALLING STANDARD INVISIRAIL® GLASS PANELS

### CONNECTOR INSTALLATION [VISTA(aluminium) and WOOD POSTS,]

If using VISTA posts, Aluminium posts, 4" x 4" wood posts, or 6" x 6" wood posts, refer to the INVISIRAIL BOLT & PIN LOCATION CHART.

#### VISTA(aluminium) & Wood Posts: Straight-Run Connector

- Disassemble the connectors (see STEP A3 above)
- Use stainless lag screws (if material is very hard [e.g. Kayu hardwood] pre-drill a pilot)
- Use the InvisiRail Template to locate exactly where connectors should go.
- Top bracket to be installed 40 inches O/C above deck surface for 42 inch rail height (34 inches for 36 inch rail height)
- Do not over tighten the lags, causing stripping
- Only snug up bracket against post so bracket can be still turned by hand force



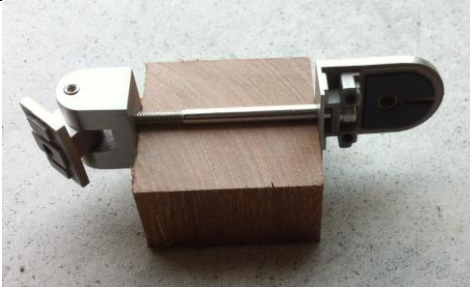
Drilling Straight-Run Connector into post



Top Straight-Run Connector attached to post

#### VISTA & Wood Posts: Universal Angle Bracket

- Disassemble the brackets (see STEP A3 above)
- For top brackets use stainless lag screws (if material is very hard [i.e. Kayu] pre-drill a pilot)
- **For bottom brackets use a through bolt. See bolt chart**
- Use the InvisiRail Template to locate exactly where connectors should go.
- Top bracket to be installed 40 inches O/C above deck surface for 42 inch rail height (34 inches for 36 inch rail height)
- Do not over tighten the lags, causing stripping
- Only snug up bracket against post so bracket can be still turned by hand force



Bolts can pass through posts directly into the thread on the angle bracket.

## INSTALLING STANDARD INVISIRAIL® GLASS PANELS

### GLASS PANEL INSTALLATION

- Use 2 short pieces of 2x4's or 4x4's, sitting on the deck on edge and in between posts, to support the glass sheets while installing. Door shims help with fine height adjustments. The pins need to be aligned with the holes/notches in the glass.



- Locate correct glass panel for section to be installed. All panels are labeled
- Carefully pick up glass sheets and set into position with notches in glass at the bottom.
- Fasten the top brackets first to hold the panel in position
- Take the other half of the brackets, put the pin in and slide onto installed halves, and tighten screws without stripping.
- When complete, all bracket plates should be parallel to each other and the screws should be completely tightened.
  - If the bracket does not slide easily onto installed sections, confirm that the bracket has not been over tightened (this would cause misalignment of the two halves).
  - The back half of the connector must be completely flush with the front half to ensure the pin is in the holes in both halves of the connector.
  - Once the pin is perfectly aligned, completely tighten the screws.



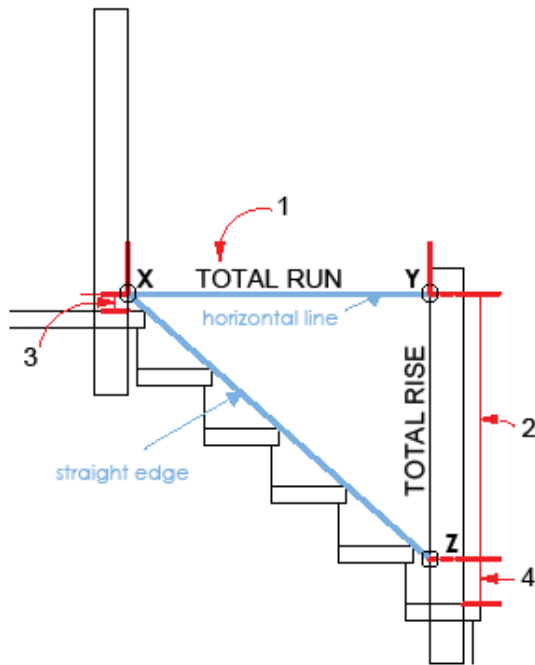
- Continue installing by post number found on the deck diagram provided with the order.

## INSTALLING STANDARD INVISIRAIL® GLASS PANELS

### STAIRS FOR ANY POST TYPE

- Stairs for InvisiRail are always custom cut
- Set posts in desired location
- Use the stair template below for the 4 measurements needed for the custom cut glass

### HOW TO MEASURE FOR INVISIRAIL® STAIR GLASS



Upper and lower posts must be absolutely vertical (plumb).

Lay a straight edge along the stair nosing which intersects both upper and lower posts (X & Z).

Distance **1**: measure X to Y - the horizontal inside distance between the posts to determine the **total run**.

Distance **2**: measure the vertical distance from Y to Z (**total rise**). Point Y must be level with point X.

Distance **3**: measure the height off the deck to where the straight edge meets the upper post (X).

Distance **4**: measure the height off the lower deck/stair to where the straight edge meets the lower post (Z).

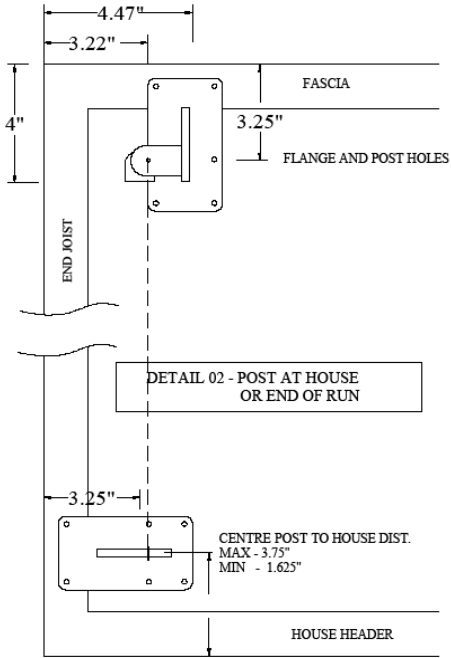
Liv Building Products Inc. 6050 Owen Road, Uxbridge, ON, L9P 1R1  
email: [sales@livbp.com](mailto:sales@livbp.com) phone: 905-852-3733 fax: 905-852-5196 toll free: 1-888-681-9733



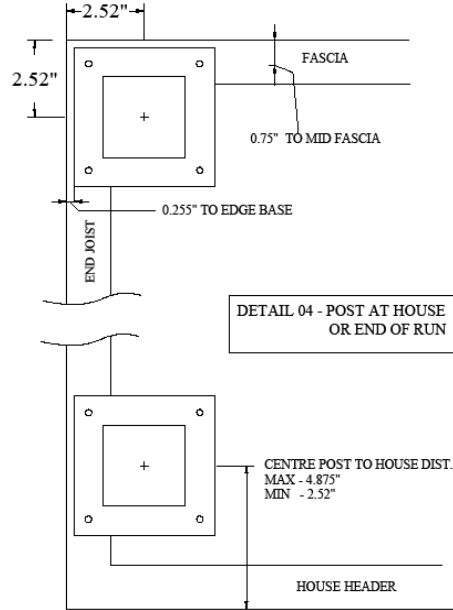
# INSTALLING STANDARD INVISIRAIL® GLASS PANELS

## APPENDIX A

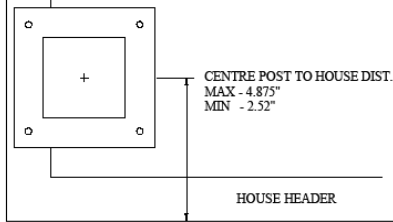
DETAIL 01 - INVISIPOST WITH ANGLE BRACKET



DETAIL 03 - VISTA POST ON CORNER

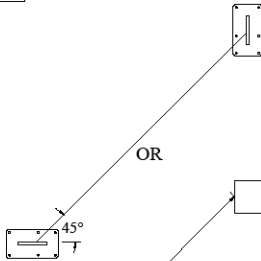
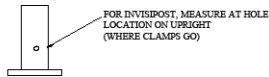


DETAIL 04 - POST AT HOUSE OR END OF RUN



DETAIL 07 - USING ANGLE BRACKET

ALWAYS MEASURE AT MID POST FOR VISTA & WOOD SQUARE POST



MEASUREMENT "M"

FOR	DEDUCT VALUE
1-22.5°	- 3.47"
2-22.5°	- 5.22"
1-45.0°	- 3.22"
2-45.0°	- 4.72"

GLASS SIZE = MEASUREMENT LESS DEDUCT VALUE  
OR  
GLASS SIZE + DEDUCT VALUE = INSIDE DIM ON POST