Pre-installation Planning

Receiving
Handling
Storage
Coordination
Protection
Cleaning

Fixed Windows
Dual Action Tilt + Turn Windows
Dual Action Tilt + Turn Doors
Dual Action Tilt + Glide Doors
Terrace Swing Doors

Version 1.0.7

innotech
windows + doors

Contents

Contact us

Innotech Windows + Doors Inc.

Head office:
27452 52nd Avenue
Langley, BC V4W 4B2
Canada

604 854 1111 Tel

604 854 1718 Fax

866 854 1122 Toll Free

innotech-windows.com

1 Preparing for installation

WARNING!

Warranty does not cover damage to products.

Permanent fasteners penetrating window/door flanges after installation can result in damage to windows and doors.

Exterior cladding that restricts differential movement between the cladding and the window/door frames can result in damage to windows and doors.

Please review this information before installing Innotech window and door products. Planning ahead can prevent costly mistakes and protect the owner's investment in these quality products.

1.1 Exterior finishes and Innotech products

Exterior finishes must not impose loads on window/door frames or restrict thermal movement of Innotech products. Stucco, masonry and concrete must not be in direct contact with Innotech frames. **Exterior finish details must allow for differential movement between the cladding and the window/door frames.**

The mounting flanges on Innotech products are not nailing flanges. They must not be used to anchor the windows/doors to the wall structure. **Fasteners penetrating the flanges can cause operating problems and product damage that is not covered by warranty. No permanent fasteners are to penetrate window/door flanges after window/door installation. Builder shall notify all trades of this requirement.**

As these requirements may differ from local construction practice, **Innotech strongly recommends that builder and building designer review exterior finishing details and coordinate the work of trades to ensure that fasteners used to attach exterior finishes and flashings do not penetrate Innotech mounting flanges and to ensure that cladding details allow for differential movement between the cladding and the window/door frames.**

Videos

Innotech has several how-to videos that provide additional information for the successful installation and maintenance of our products. Visit innotech-windows.com/videos to watch the videos.

1.2 Obtain installation instructions

If you have not yet received Innotech installation instructions, be sure to get them from your Innotech representative. **Innotech products are installed differently** than most windows and doors and reviewing the installation instructions ahead of time is recommended.

1.3 Planning for delivery

TIP

Planning ahead for how large windows and doors can be delivered to site and placed at openings will save time and labor on the day of delivery and can prevent unnecessary job delays.

Innotech windows and doors are often ordered in sizes considerably larger than conventional products. **Because they are large and heavy and can weigh up to 250 pounds it is wise to plan ahead** to ensure they can be conveniently offloaded, safely handled and placed in appropriate areas of the jobsite without damage. The advice that follows comes from experience and should be carefully considered.

1.3.1 For retrofit installations

Buildings and homes constructed prior to 1990 may contain lead-based paints. Removing, repairing or disturbing this paint during window or door replacement can cause serious health risks. For more information on proper management of lead-based paint, go to www.epa.gov/lead or https://www.canada.ca/en/health-canada/services/home-safety/lead-based-paint.html.

It is your responsibility to safely and responsibly recycle or dispose old windows and doors that are removed during retrofit installations.

Disposing of old building materials, including windows and doors, into landfills should only be considered if recycling is not offered in your local area. Contact your local recycling management company for additional information.

1.3.2 Ensure rough openings are ready

There is rarely an advantage to delivering windows and doors to the jobsite before the rough openings are ready. If the openings are ready, windows and doors can be delivered right to the opening. If the openings are not ready the windows and doors will need to be stored in a protected indoor area until the openings are ready, and will therefore have to be handled twice.

1.3.2.1 Rough opening condition

TIP

For more information on rough opening preparation see Innotech installation instructions.

To be ready the openings must be:

- Correct in size, square and level, and the exterior face of walls must be plumb.
- At swing and sliding doors, door sills must be in line with the face of the exterior sheathing and any waterproofing membranes at the sill.
    - Concrete floors that are not in line with the face of the exterior sheathing will need to be furred out to be in line with the exterior sheathing at the sill.
    - If the thick layers of torch-on waterproofing at the sill project beyond the face of the rest of the wall, the perimeter of the door opening will need to be shimmed out to be in line with the face of the torch-on.
- All sheathing wraps and membranes must be in place at head, sill and jambs.
- Any openings that do not allow windows and doors to be installed truly **plumb, level, square and true** will have to be corrected before windows and doors are installed.

1.3.2.2 Rough opening deformation and interstorey deflection

WARNING!

Innotech products are designed to accommodate a maximum interstorey deflection of ± 3/8" (10 mm).

Deflections exceeding this amount can cause operational problems and permanent damage to the products that is not covered by warranty.

Rough openings and the structures that support them are subject to sagging under building dead loads and live loads. Rough opening deformations greater than ± 3/8" (10 mm) can cause operational problems and permanent damage to windows and doors that are not covered by warranty.

It is not enough to follow the building code to prevent excessive rough opening deformations. **All openings should be evaluated to prevent deformations greater than ± 3/8" (10 mm) under dead and live loads.**

1.3.3 Provide access for delivery vehicle

The delivery vehicle must be able to pull right up to the building so frames don't have to be hand carried over ditches, piles of gravel, or up steep driveways. Products may be delivered by truck or by pickup truck with trailer. Consult your Innotech representative about how the products will

be delivered and ensure there is clear access for the vehicle to access the building from the street or road.

1.3.4 Have adequate manpower

A minimum of two strong persons are needed to handle typical products. Larger frames will need three or four persons to carry them.

1.3.5 Obtain handling equipment

Large and heavy glazed frames can be difficult to handle without appropriate equipment. Innotech recommends using vacuum cups to handle products glazed at the factory. A minimum of two vacuum cups are needed for handling large heavy windows and doors. See heading *2.3.1 Safe handling practices* on page 10.

1.3.6 Arrange for protected indoor storage

Windows and doors cannot be safely stored outdoors without risk of significant damage from heat, cold, rain, and sun. See heading *2.4 Storing Innotech products* on page 12.

1.3.7 Plan how to move large frames between rooms

Often the layout of walls and the size of door openings make it impossible for large window and door assemblies to be moved to their places within the building. Plan ahead and consider delaying some interior framing to ensure there is access.

1.3.8 Arrange for lifting/hoisting if necessary

If there are large windows and doors that need to be placed on floors above or below the delivery level, ensure there is room to carry them up stairs and around corners. If the frames cannot be maneuvered indoors it will be necessary to use a crane or hoist with appropriate slings to hoist them onto appropriate surfaces that can be accessed from outside the building.

1.4 Protecting Innotech products

Please review this section carefully. You are responsible for damage to the products from the time they are delivered until they are installed and turned over to the homeowner.

1.4.1 Protecting installed products

Protect windows and doors from all construction damage. Do not block sashes in the open position with lumber or other materials.

Keep sills of operable windows and doors free of dust, dirt and construction debris. Ensure gaskets are not damaged or dislodged. Ensure drain slots are not blocked.

Protect windows and doors from welding spatter, grinding sparks, concrete, mortar, stucco, paint and other harmful construction materials and practices.

Protect installed windows and doors from acid solutions used to wash masonry. These solutions are corrosive and will damage window and door framing, glass, hardware, and flashings. Protect windows and doors during the cleaning process to prevent damage. If acid solution comes in contact with windows or doors, immediately wash all surfaces with clean water.

Do not use metal scrapers, paint thinners, chemical solvents or abrasive cleaners to clean any part of the glass or framing on Innotech products during or after construction.

1.4.2 Protective tapes and protective films

WARNING!

Risk of Static Discharge. Removal of protective film can cause sparks of static electricity and can ignite combustible liquids used nearby.

Vinyl window and door frames *may have* protective plastic TAPE applied to interior and exterior surfaces to protect them during manufacturing and handling. Glass surfaces *may have* protective FILM applied to interior and exterior surfaces. *Protective tapes and films may not be present on some products for specific technical reasons.*

- **Protective TAPE on vinyl** surfaces must be removed as soon as products are installed.
- **Protective FILM on glass** surfaces must be removed within twelve months of installation.

Protective TAPE left on exterior vinyl surfaces can begin to fuse to the product surface from warm temperatures and exposure to the sun. Failure to remove the protective plastic TAPE at the time the frames are installed may cause the TAPE to bond to the frame and may permanently damage the frame finish.

Protective FILM must be removed very carefully in the presence of flammable and explosive chemicals and gases. Removal of protective film can cause **sparks of static electricity** and can ignite combustible liquids used nearby.

To reduce potential for creating sparks do one or more of the following:

- Mist the surface of the film with a light water spray.
- Remove film slowly.
- Touch film to glass surface often while you are removing it..

1.4.3 Final cleaning and commissioning

WARNING!

Metal scrapers, chemical solvents and acidic masonry cleaning solutions will permanently damage window and door finishes. Damage from inappropriate cleaning methods is not covered under warranty.

After installation, clean and commission windows and doors following the Innotech instructions supplied with the contract/purchase documents. Visit **www.innotech-windows.com/maintenance** for complete care and maintenance instructions.

Carefully read Innotech cleaning and maintenance instructions before attempting final cleaning of products after installation.

Innotech products must only be cleaned with a mild soap solution, non-abrasive rags or sponges, and rinsed with clean water.

- Do not use metal scrapers to remove substances from frames or glass.
- Do not use abrasive cleaners.

- Do not use any kind of chemical solvent on any surfaces of the product.
- Do not use lubricants containing silicone or graphite. Use of such products may permanently damage the hardware and product finishes.

2 Receiving, handling and storage

2.1 Receiving and inspection

Carefully inspect the windows and doors at the time you receive them. Any visible defects of glass or framing must be reported to the Innotech dealer within 24 hours of receiving them.

Inspect products again before you install them to make sure they have not been damaged on the jobsite.

2.2 Safely unloading products from window and door steel racks

WARNING!

Use extreme caution when handling and unloading products from window and door steel racks.

Always unload steel racks with at least two people.

Never leave product unsecured or unattended on steel racks.

Innotech products are delivered on steel racks and secured with ratchet straps (tie-downs).

Windows and doors may have shifted during transportation. Always use extreme caution when unloading products from steel racks.

To mitigate potential accidents, always evaluate and take precaution of surface, steel rack and product conditions before starting to unload.

2.2.1 Place steel racks on level surface to attain safe lean angle

To prevent steel rack from tipping, place steel rack on a level surface. Due to varying product weight, surface conditions and steel rack conditions, it may be necessary to use small wooden shims (about 1-1 ½" thick) to attain a safe lean angle.

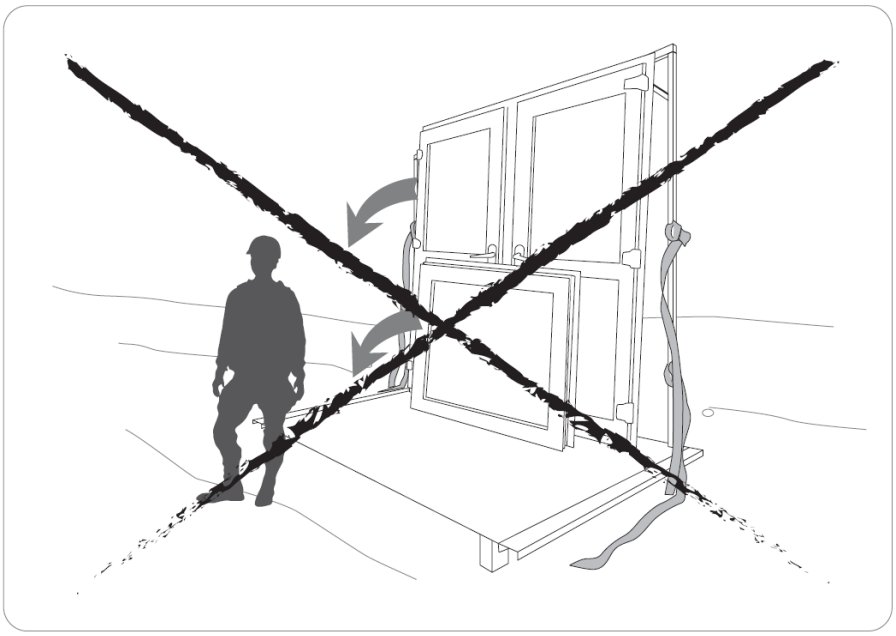
To begin, place the steel rack on a level and even surface. If surface is not level, place wooden shims under the front legs of the steel rack to distribute the weight of the product to the back. Do not exceed safe lean angle as this may cause the steel rack to tip backwards.

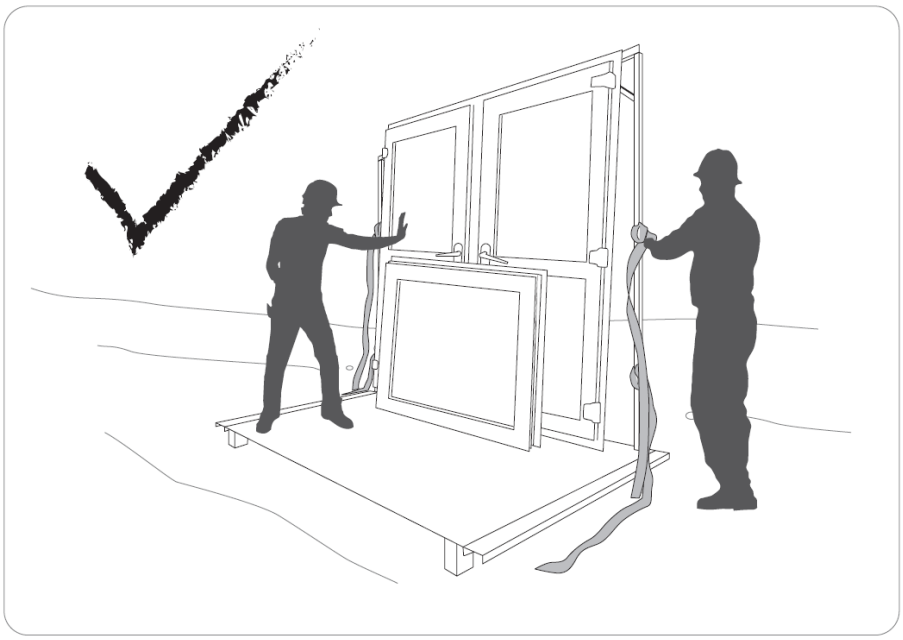
2.2.2 Carefully remove ratchet straps

Steel racks are loaded with largest and heaviest product(s) at the back. Unload front product(s) first. While unloading front product(s), back product(s) must remain secured to the rack.

With at least two or more people, carefully remove the ratchet straps one at a time, starting with the most forward ratchet strap. Depending on the size of the product(s), at least one person should hold the product(s) while the other slowly loosens and removes the ratchet strap.

Never remove all ratchet straps at once. Never leave product unsecured or unattended on the steel rack.





Tip

To avoid injury, always ensure the product(s) at the back remains secured to the steel rack with a ratchet strap.

To do this, carefully loosen the ratchet strap and lift it over one product at a time. This allows you to re-secure the next product(s) at the back of the rack, while safely unloading the front product(s).

2.3 Handling and moving products

Handle these windows and doors carefully. The installer is responsible for damage to the products during handling and installation. Mishandling frames can cause cracks and can separate screwed connections. Cracked, bent, and damaged frames are signs that the products have not been handled correctly.

2.3.1 Safe handling practices

The installer is responsible for safe handling of heavy windows and doors, for selecting appropriate handling equipment, and for the safety of the installation crew. **The guidelines that follow are provided to help the installer to follow practices that will prevent damage to the products due to mishandling.**

2.3.2 Use two or more people to carry frames

Innotech products are heavy. Always use at least two people to carry them. Do not drop these products. Use slow and gentle movements.

2.3.3 Carry products vertically

Windows and doors are delivered in a vertical position and resting on one edge that has support blocks attached. Make sure windows and doors are vertical when you move them and when you put them down. Lift frames gently.

Avoid the following handling practices:

- Never carry Innotech products tilted at a sharp angle or in a horizontal position.
- Never lay Innotech products flat on any surface.
- Never lift units by the top framing member.
- Do not bend frames to go around a corner.

2.3.4 Carrying frames with no glass

Frames with no glass can be heavy. Always carry frames by supporting the frame weight from the bottom or by grasping vertical members near the quarter points. Lift frames gently.

Avoid the following handling practices:

- Never lift units by the top framing member.
- Never lift units by a horizontal framing member.
- When lifting frames with vertical mullions, support the joints between mullions and the horizontal framing members. If you lift the frames by the ends only, you will crack the frames.

TIP

Vacuum cups such as **Wood's Powr-Grip** ® make handling of smooth sided heavy objects easier and safer.

For more information see **www.powrgrip.com.**

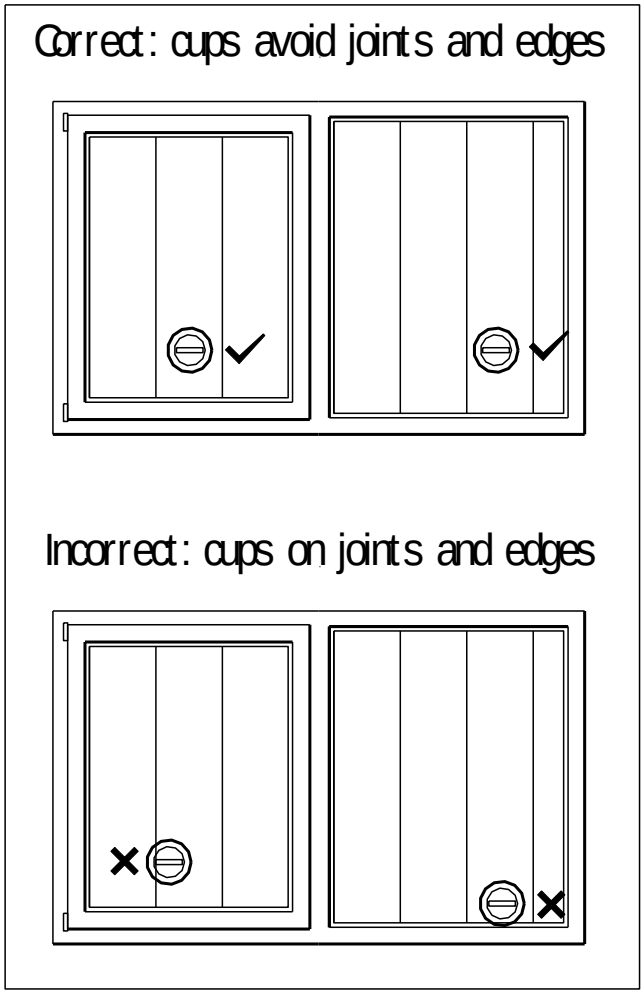
2.3.5 Use vacuum cups to carry frames with glass

Most installers consider vacuum cups to be the safest way to carry heavy glass and window/door units with glass.

Innotech windows and doors may have the glass surfaces covered with protective plastic film. Vacuum cups can be used safely with glass that has protective film.

When using vacuum cups do not place cups on joint seams of plastic film. If plastic film is loose or peeling, or if you believe it is not safe to use vacuum cups on film surface, remove the film before applying vacuum cups.

Figure 1: Placement of cups on glass with protective film



WARNING!

When using vacuum cups do not place cups on joint seams of plastic film.

Always use vacuum cups according to cup manufacturer's directions.

Removing plastic film can cause static discharge that can ignite flammable materials.

2.3.5.1 Carrying glazed units (frames with glass)

Carry frames by supporting the frame weight from the bottom at quarter points or use vacuum cups. When carrying glazed frames without vacuum cups follow the guidelines under heading 2.3.4, Carrying frames with no glass on page 10.

When using vacuum cups, place cups at quarter points from either end of unit. For glass surfaces with protective plastic film, do not place cups on overlapping layers of film or on the joint between film and glass. See Figure 1: Placement of cups on glass with protective film on page 11.

2.3.5.2 Carrying partially glazed units

Use vacuum cups to lift the part of the frame with glass. Support the unglazed part of the frame, especially the joints between mullions and the bottom frame, to prevent cracking of frame joints.

2.3.6 Always support frames on shipping blocks

Products with a flange have shipping blocks on the bottom. Make sure windows and doors are always supported on the blocks.

2.4 Storing Innotech products

Store windows and doors indoors. You must protect them from rain, wind, direct sunlight, and temperature extremes. You must ensure they are well ventilated, and that heat cannot be trapped under protective coverings.

Store window and door units on an edge that has support blocks attached, and always on a flat, level surface. The horizontal distance from the base of the unit to the wall must not be greater than 25 cm (10 inches). Frames may lean against each other, always at the same angle, but never more that seven frames deep.

Do not stack windows and doors against each other without soft protective material between them. Use the foam blocks that keep frames separate during shipping (or similar resilient material) to separate frames from each other. Allow gaps between frames for ventilation.

Protect stored windows and doors from welding splatter, grinding sparks, concrete, mortar, stucco, paint and other harmful construction materials.

Do not cover stored windows and doors with transparent poly, use opaque or white poly. This will prevent excessive heat build up that could damage products.

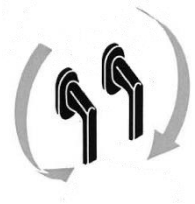
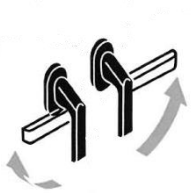
COLD WEATHER CAUTION	**WARM WEATHER CAUTION**
Cold weather makes these products brittle. When handling or installing at temperatures below 5° C (40° F), avoid any impact to frames, sash or glazing bead. Even small impacts can crack frames under these conditions.	Very warm temperatures and/or exposure to direct sunlight can damage window and door products stacked against one another. Heat trapped between surfaces and reflected by glass coatings can lead to permanent damage of frames, finishes, and glass.

2.5 Removing sashes before installation

Before installing operable windows and doors it is often helpful to remove the sashes to make the products easier to handle. Before removing sashes you need to install the handles or use a temporary handle that can operate the hardware.

2.5.1 Dual Action hardware operating modes

Innotech window and door products may have several modes of operation. Dual action sashes have labels showing operating mode located on the handle side of the sash.

Operating mode →	**Handles down**	**Handles to side**	**Handles up**
Product type			
Terrace Swing Door	Lock	Swing open	---
Tilt + Turn (Turn before Tilt)	Lock	Swing open	Tilt in
Tilt before Turn (TBT)	Lock	Tilt in	Swing open
Tilt Only	Lock	---	Tilt

2.5.2 How to install Dual Action window and door handles

Window and door handles are shipped loose. Each new handle is in a plastic bag with two installation screws.

> Note. Handles can become damaged during construction. If you choose you may use only one handle to operate windows and doors during installation. In that case you would not have to install the handle with screws.

Follow the steps below to install the handles.

1. Pull the top and bottom edges of the handle face plate towards you and rotate to one side.

2. Insert handle shaft into the center hole with the handle pointing downwards then fasten it with the provided screws.
3. Rotate the handle faceplate to cover the screws.

2.5.3 How to remove Tilt + Turn sashes from frames

These steps apply to both windows and Tilt + Turn doors. This procedure requires two people.

1. Partially open the sash. If you do not partially open the sash, you will not be able to remove the hinge cover.
2. Grasp the top and bottom edges of the upper hinge cover and pull them towards you.

3. Remove the hinge cover. If you do not partially open the sash, you will not be able to remove the hinge cover.

WARNING!

The sash is heavy! DO NOT try to remove the sash by yourself. Innotech recommends a crew of at least two people for this procedure.

4. One installer supports the weight of the open sash. Second installer pushes the hinge pin down with a screwdriver or similar tool, then pulls the pin downwards until it clicks into place. Do not continue to pull the hinge pin lower, or it will fall out.

5. Tilt sash towards you slightly then lift it off the lower hinge pin.

6. Put the sash in a safe place, on support blocks, on a clean and dry surface. Make sure dirt and sand do not enter the lower hinge hole while the sash is stored in this way.

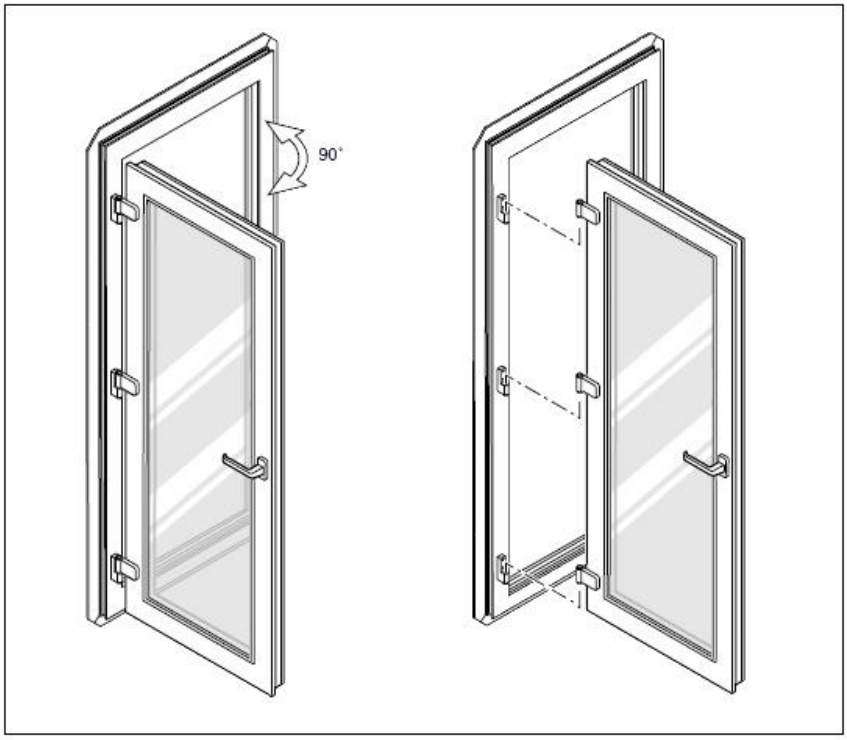
7. Push the upper hinge pin from below until it "clicks" in place. Put the hinge cap back on the hinge so it does not get lost.

2.5.4 How to remove side hinged doors from frames

This procedure requires at least two people. Glazed door sashes are heavy. Innotech recommends using vacuum cups to lift door sashes. Because sashes are often heavier than the frames, take care not to drop or damage the frame when removing the sash.

Follow the steps below to remove side hinged door sashes.

1. Open the sash 90 degrees.
2. Lift the sash vertically and in line with the hinge pins. Be careful that the hinge pins do not come out of the hinge bodies on the frames.

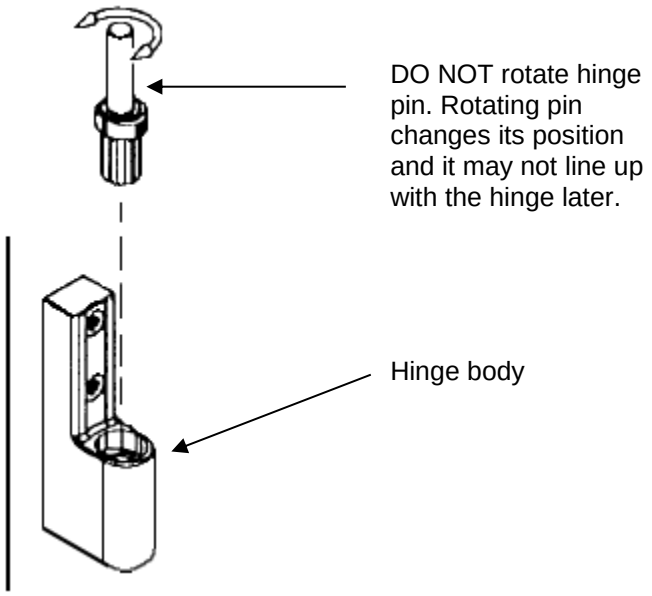


3. Put the sash in a safe place, on support blocks, on a clean and dry surface.

4. If hinge pins were accidentally removed, put them back in the hinge bodies on the frame in <u>exactly the same hinge body and orientation</u> they were in. If the hinge pin is rotated in its socket, it

may not line up with the hinge when you later put the door sash back onto the frame.

If there is an alignment mark on the hinge pin and hinge body, use it to align the hinge in the factory position.



2.6 Additional resources

To help ensure a long service life, additional product installation, alarm contact installation, hardware adjustments, cleaning and maintenance instructions are available for your windows and doors. Visit **innotech-windows.com/videos** to watch important how-to videos and **innotech-windows.com/client-care** to download these documents or contact our service department at 1.866.854.1122 Ext 4.

For more information on these quality products please contact:

Innotech Windows + Doors Inc.

27452 52nd Avenue

Langley, BC V4W 4B2

Canada

www.innotech-windows.com

Toll free 866 854 1122