Installation Instructions

Hardware Adjustment

Tilt & Turn
Windows and Doors

Version 1.0

innotech
windows + doors

Contents

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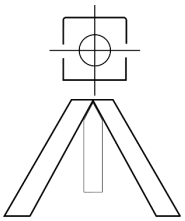
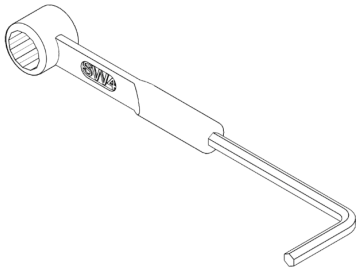
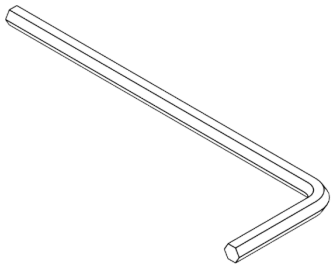
1 Materials and tools required

1.1 Materials and tools required

Spirit levels	 24", 48" and 72" levels. Long levels are more accurate and allow the installer to also check the straightness of walls and window/door products.
Laser level	
Combination Hex-socket Tool	 4mm Hex Key and 11 mm Wrench or Combination Hex-socket Tool (4mm Hex Key, 11 mm Socket Wrench)
Hex Key	 4mm Hex Key

2 Hardware Adjustment

2.1 Why Adjust Hardware

Over time, building settlement and normal wear of operating components can affect the performance and functionality of installed windows and doors. Innotech products are equipped with adjustable hinges and locking mechanisms that allow for correction of common operational issues as they arise.

The following adjustment procedures apply to dual-action Tilt & Turn windows and Tilt & Turn doors installed after July 1, 2015. All adjustments are performed from the hinge side of the unit.

2.2 Clearance Adjustments

To correct sashes that contact or bind against the frame during opening or closing, use one or more of the following adjustments:

- Upper hinge (side-to-side)
- Bottom hinge (up-down)
- Lower hinge (side-to-side)

Use a 4 mm hex key to perform these adjustments. Follow these steps:

1. Turn the adjustment screw ¼ turn.
2. Check whether the issue has been corrected.
3. Repeat in ¼-turn increments until the problem is resolved.
4. Note that each adjustment shifts the entire sash. Correcting one area may create binding in another, so multiple adjustments may be required to achieve smooth operation.

TIP: Before making any adjustments, identify the source of the problem. Understanding the cause will help determine the correct adjustment.

Most issues can be resolved with minor adjustments. Do not make more than one adjustment at a time. After each adjustment, operate the window or door (open, close, and lock) to evaluate whether the issue has been resolved, improved, or worsened. If the problem becomes worse, reverse the last adjustment before proceeding further.

If you are unsure which adjustment to make or have any questions, contact your Innotech Dealer or head office at 604.854.1111 or 1.866.854.1122.

2.2.1 Upper Hinge Side to Side

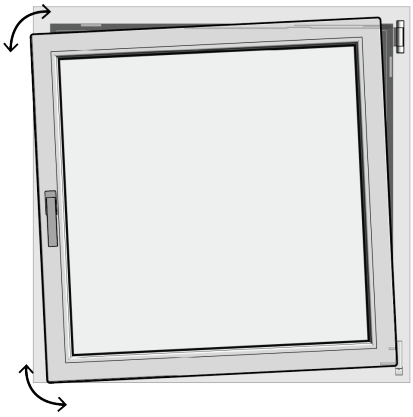


Figure 1 Upper hinge side to side adjustment, Sash movement shown is exaggerated for clarity.

This adjustment moves the top of the sash toward or away from the upper hinge. It also raises or lowers the free (handle-side) corner of the sash.

1. Open the sash to the swing position.
2. Insert a 4 mm hex key into the adjustment screw located at the end of the stay arm.
3. Rotate the screw:
    - **Clockwise** to raise the bottom corner of the sash on the handle side.
    - **Counterclockwise** to lower the bottom corner of the sash on the handle side.

This adjustment allows for vertical movement of the handle-side corner of the sash up to 2 mm (3/32 in.).

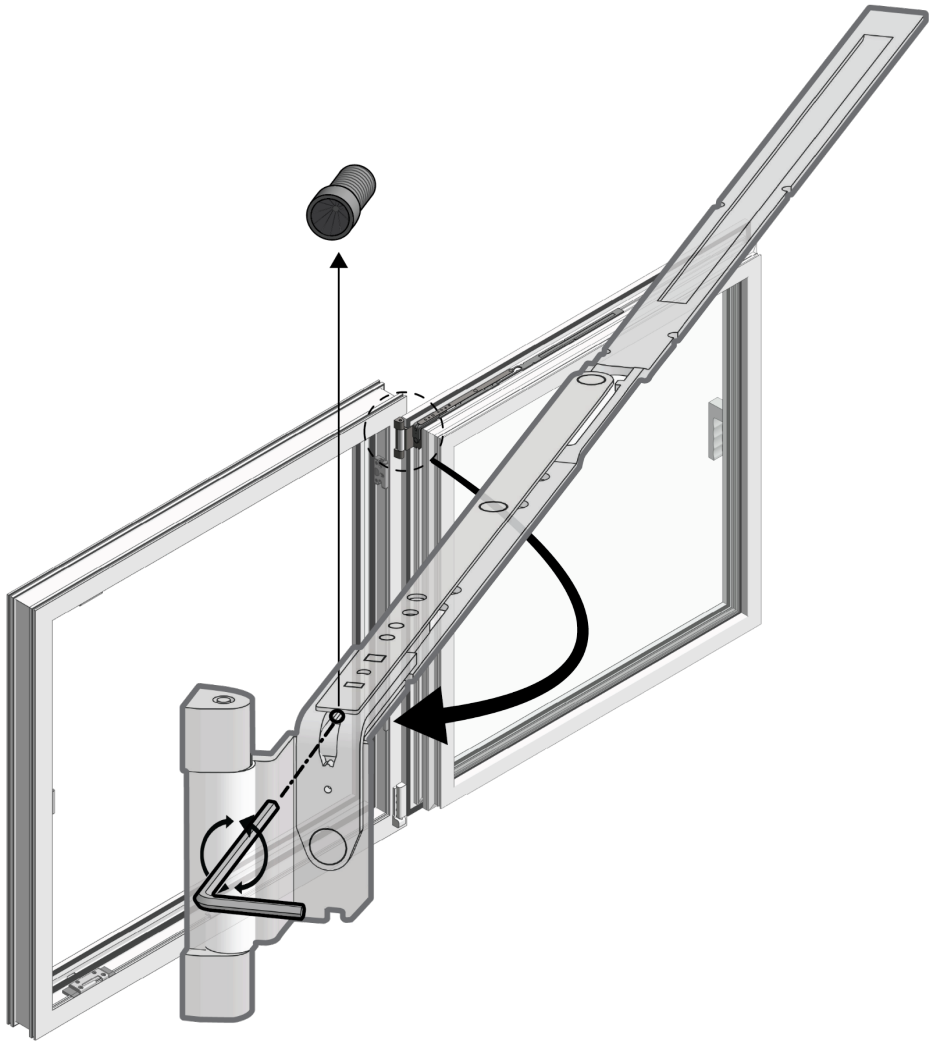


Figure 2 Adjustment screw

2.2.2 Bottom Hinge Up/Down

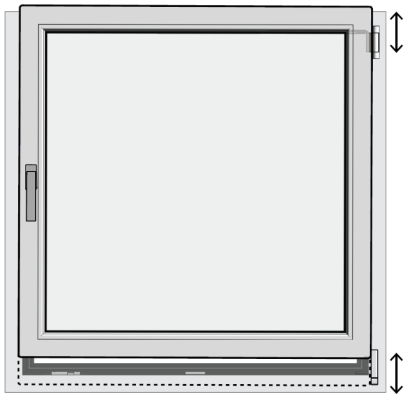


Figure 3 Bottom Hinge Up/Down adjustment, Sash movement shown is exaggerated for clarity.

This adjustment raises or lowers the sash by up to 2 mm (3/32 in.).

1. Open the sash to the swing position.
2. Remove the plastic hinge cover by gently prying it up from the bottom.
3. Insert a 4 mm hex key into the exposed adjustment screw.
4. Rotate the screw:
5. **Clockwise** to raise the sash
6. **Counterclockwise** to lower the sash
7. Close the sash and check for binding.
8. Open the sash in the tilt position and check for binding.
9. Reinstall the plastic hinge cover.

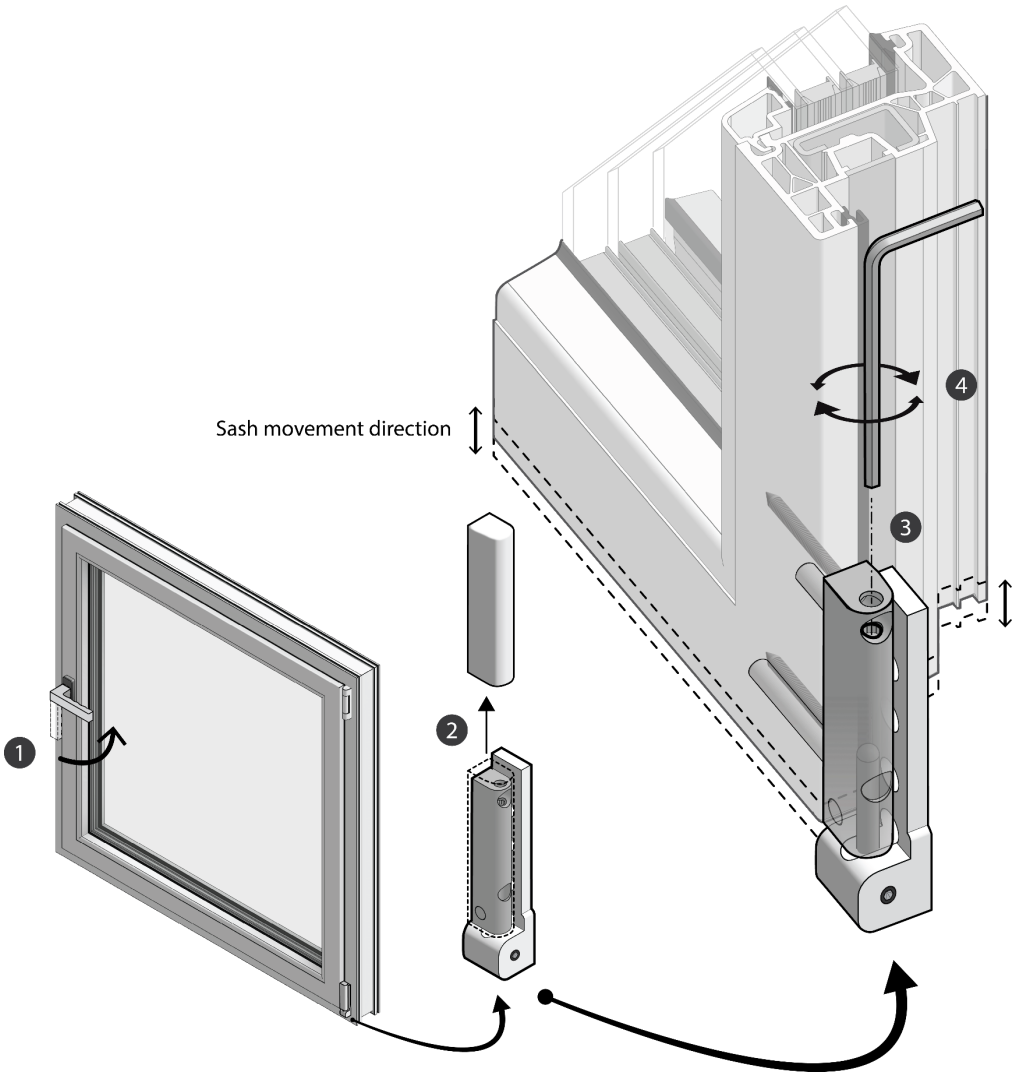


Figure 4 Vertical adjustment of the sash.

2.2.3 Bottom Hinge Side-to-Side

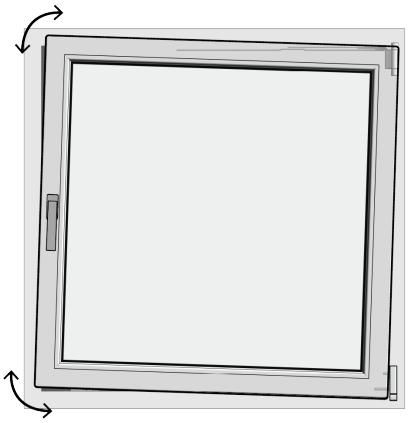


Figure 5 Bottom Hinge Side-to-Side adjustment, Sash movement shown is exaggerated for clarity.

This adjustment moves the bottom of the sash toward or away from the lower hinge and may also raise or lower the free (handle-side) corner of the sash.

1. Open the sash to the swing position.
2. Remove the plastic hinge cover by gently prying it up from the bottom.
3. Insert a 4 mm hex key into the pivot screw located below the lower hinge.
4. Rotate the screw:
    - **Counterclockwise** to move the sash toward the hinge side
    - **Clockwise** to move the sash away from the hinge side

This adjustment allows lateral movement of the sash by up to 2 mm (3/32 in.).

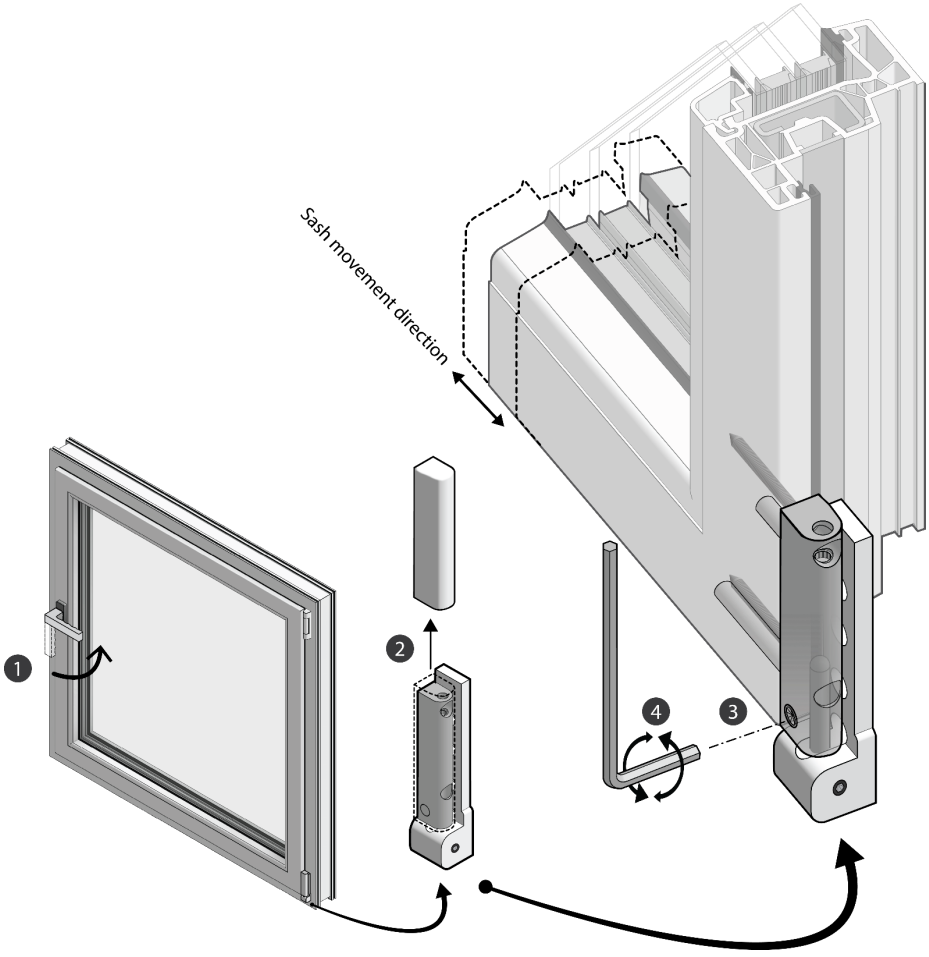


Figure 6 Lateral adjustment causing slight sash rotation.

2.3 Locking Tightness Adjustments

If you notice air leakage around a closed and locked sash, or if the handle is difficult to operate, use the following adjustments to increase or decrease the locking tightness.

If air leakage is present, adjust the locking cam closest to the leakage point. If leakage persists, adjust the adjacent cams as needed. Do not over-adjust, as this may make the handle difficult to operate.

If the handle is difficult to operate, reduce the locking tightness by adjusting the cams accordingly.

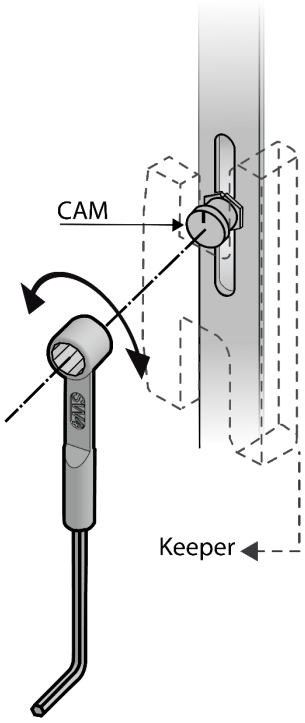


Figure 7 - Flat head CAM adjustment

2.3.1 Flat Head Cam Adjustment

Flat head cams, also known as mushroom cams, are locking pins that engage when the handle is operated to open or close the sash. Each sash typically includes a minimum of three flat head cams:

One near the top on each side of the sash, One near the bottom, below the handle

Depending on the size of the window or door, and the sill configuration, additional cams may be present.

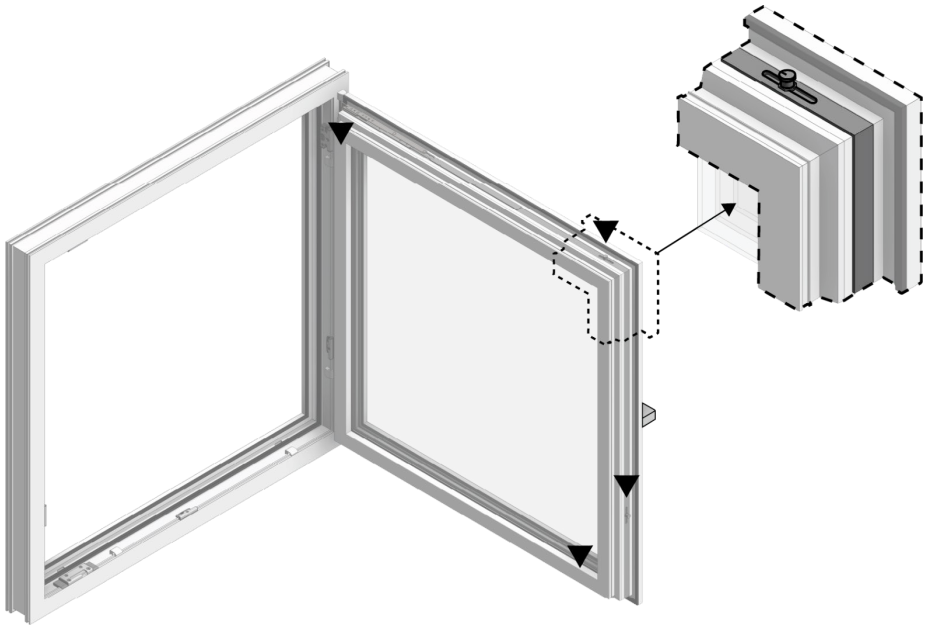


Figure 8 Flat Head Cams, Black rectangles indicate CAM locations on this unit (may vary on other models)

TIP: If you look closely at the cam, you will see an index groove cut out at the base of the cam. When you adjust the cam, it rotates it around this index groove. Use the index groove to measure how much the cam moves with each adjustment.

Flat head cams can be adjusted with the socket head of the combination hex-socket tool. You can also adjust the hexagonal base with an 11 mm wrench.

1. Open the sash to swing open to one side.
2. Find the cam you want to adjust.
3. Use the socket head of the combination hex-socket tool or an 11 mm wrench turn the cam 90° clockwise to increase the locking tightness. Turn the cam 90° counterclockwise to decrease the locking tightness.

NOTE: turn the cam in 1/4 turn increments, then check the sash operation to make sure the adjustment does not make the sash difficult to lock.

This adjustment moves the sash as much as 1 mm (1/32 in.) toward or 1 mm (1/32 in.) away from the frame.

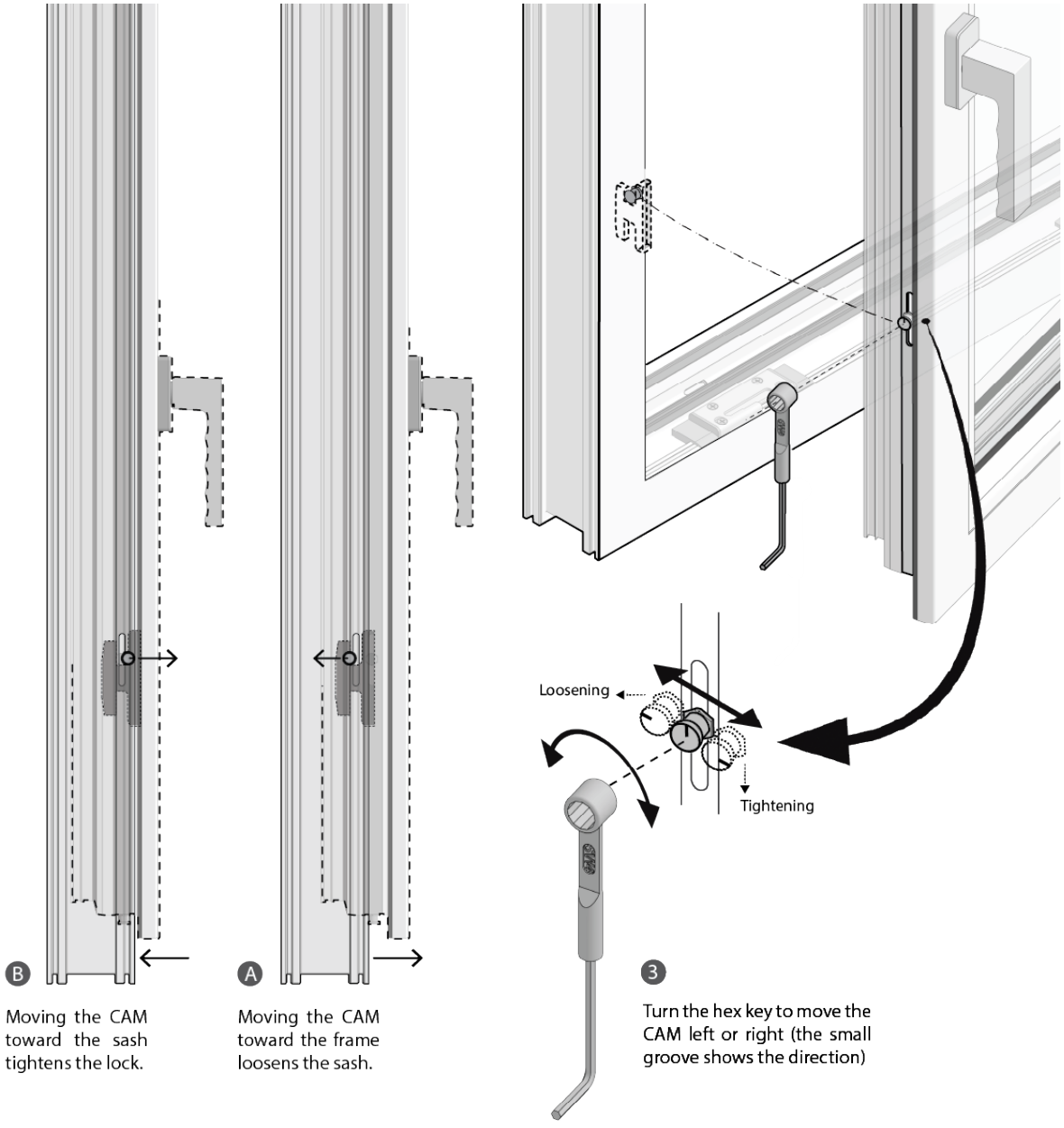


Figure 9 – Flat head CAM adjustment. Movement shown is exaggerated for clarity.

2.4 Sash Overlap

2.4.1 What is sash overlap and why is it important?

The operating panels of Innotech windows and doors, also called sashes, are designed to overlap the fixed frames by a specified amount. Checking the overlap dimensions at the beginning can help you make adjustments to correct operating problems, such as a sash catching against the frame when opening or closing, or hardware that does not fully engage.

For proper operation, the overlap between the sash and the frame must be within factory tolerances—between 6.5 and 8 mm (1/4" – 5/16") on all four sides. (Doors with low-profile accessible sills may have no overlap at the bottom.)

Marking the outline of the sash on the frame before making any clearance adjustments makes it easier to identify what adjustments are needed. It can also help correct a sash that has been adjusted beyond factory tolerances.

2.4.2 Marking Sash Outline on the Frame

1. With the sash closed, draw some horizontal lines onto the frame in line with the edge of the sash. Use a soft pencil or non-permanent marking pen. Draw one horizontal and one vertical line near each of the four corners as shown in the illustration.

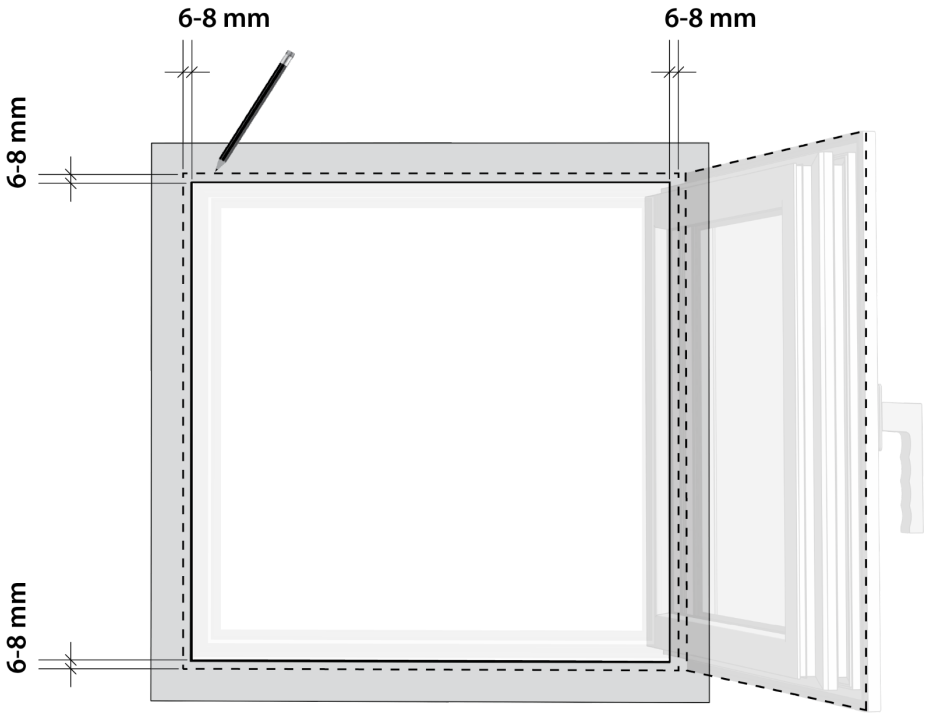


Figure 10 - Marking the frame.

2. Open the sash and check the sash outline dimensions. Any dimension less than 6.5 mm (1/4") will need to be increased, and any dimension greater than 8 mm (5/16") will need to be reduced.

Follow the clearance adjustments instructions for your product to make the necessary adjustments. The following products have adjustment instructions:

- Dual Action Windows and Doors
- Terrace Patio Doors
- Tilt + Glide Windows and Doors

2.5 Stay Arm Adjustment

2.5.1 Why adjust stay arm locking tightness?

This instruction applies to dual action Tilt + Turn Windows and Tilt + Turn Doors. Use this adjustment only when flat head cam adjustments have not corrected a locking tightness problem.

If air leaks at the upper hinge, you can increase the locking tightness of the stay arm by adjusting the stay arm cylinder cam. The stay arm is connected to the upper hinge.

Most dual action Tilt + Turn products Tilt open when the handle points straight up. The illustrations show this type of operation. Some dual action products Tilt open with the handle pointing to one side.

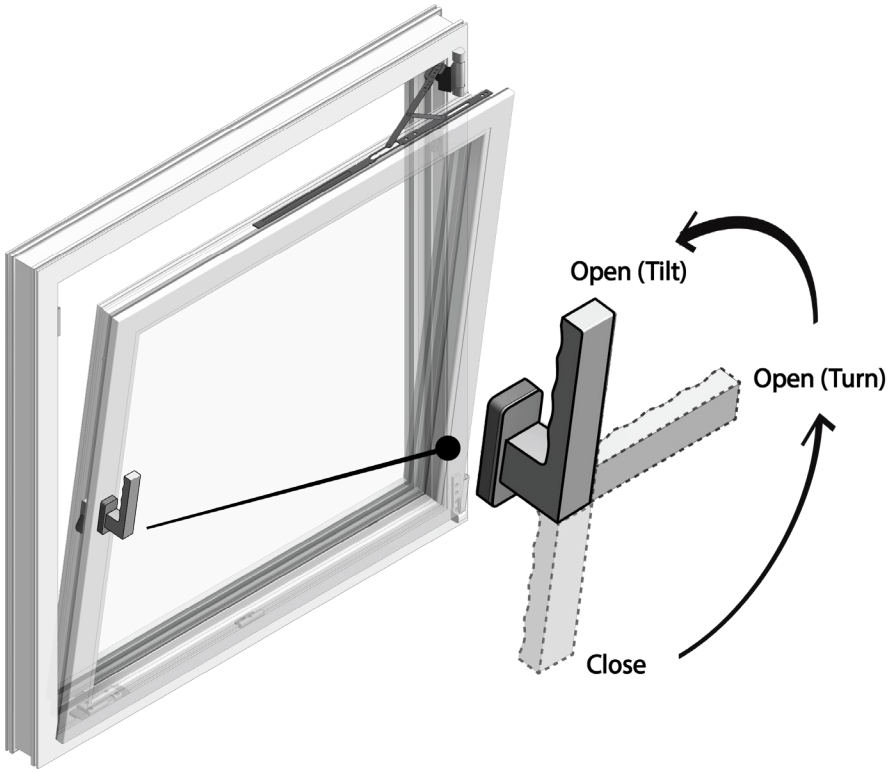


Figure 11 - Open in tilt mode.

2.5.2 Open Sash in Hanging Position

First, open the sash (the operable part of the window or door) in a "hanging" position.

1. Open the sash to swing open to one side.
2. Press and hold the failsafe switch on the edge of the sash beside the handle then rotate the handle towards the Tilt position.

NOTE: If you window or door has Tilt before Turn (TBT) operation, the handle positions will be opposite from those shown in the diagrams above.

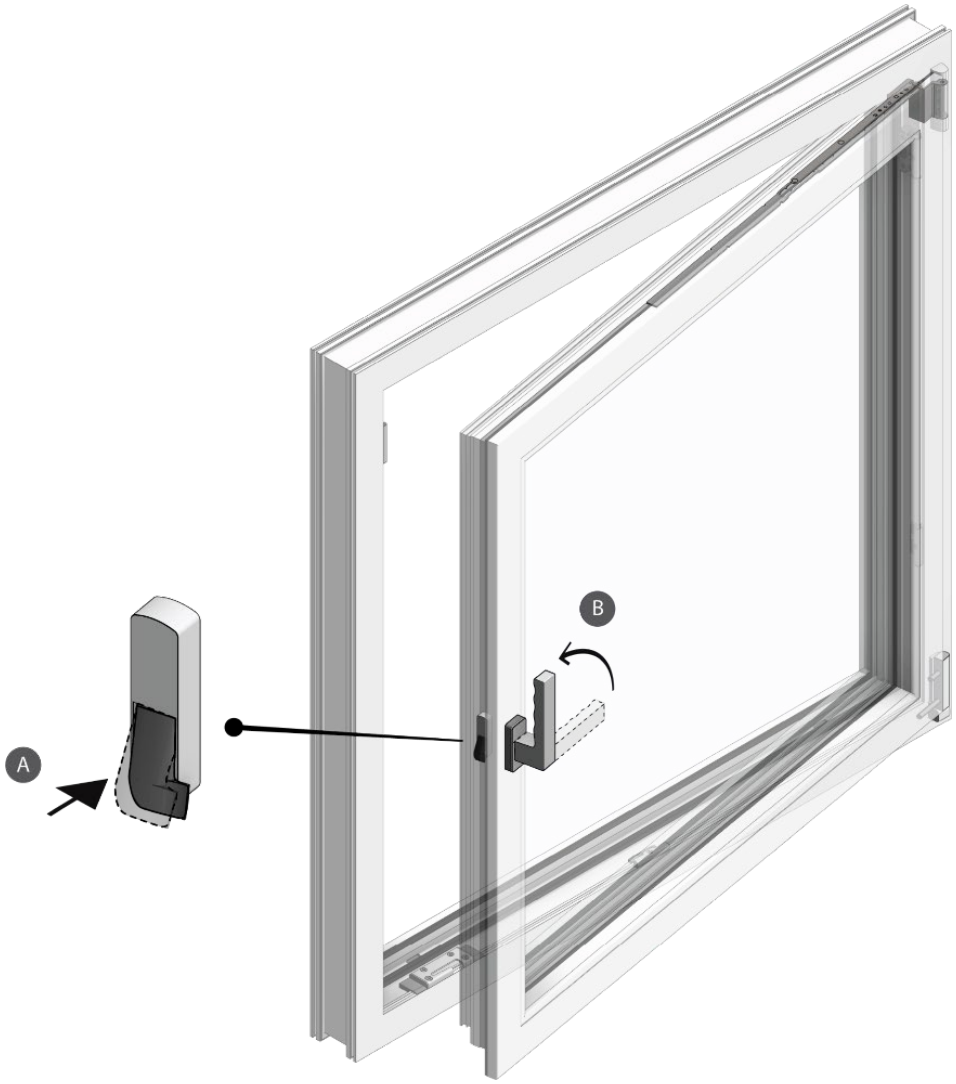


Figure 12 - Hanging position, Step 2

3. Pull the sash towards you so the top tilt and the sash swings to the side. You now have access to the underside of the stay arm that is connected to the upper hinge.

Figure 13 - Hanging position, Step 3

2.5.2.1 Adjust the Stay Arm Closing Tightness

Locate the cylinder cam on the underside of the stay arm. Cylinder cams are adjustable locking pins that engage when the handle is operated to open and close the sash.

If you look closely at the end of the cam you will see that the hexagonal socket is located off-center. When you adjust the cam it rotates about the socket. The cam also has an index groove stamped into it. Use the index groove to tell how much the cam moves with each adjustment.

1. Insert the 4 mm hex key into the head of the cam.

2. Turn the fat side of the cam toward the room side to increase the locking tightness. Turn the fat side of the cam away from the room side to decrease the locking tightness.

NOTE: Turn the cam in 1/4 turn increments, then check the sash operation to make sure the adjustment does not make the sash difficult to lock.

This adjustment moves the sash as much as 1 mm (1/32 in.) toward or 1 mm (1/32 in.) away from the frame.

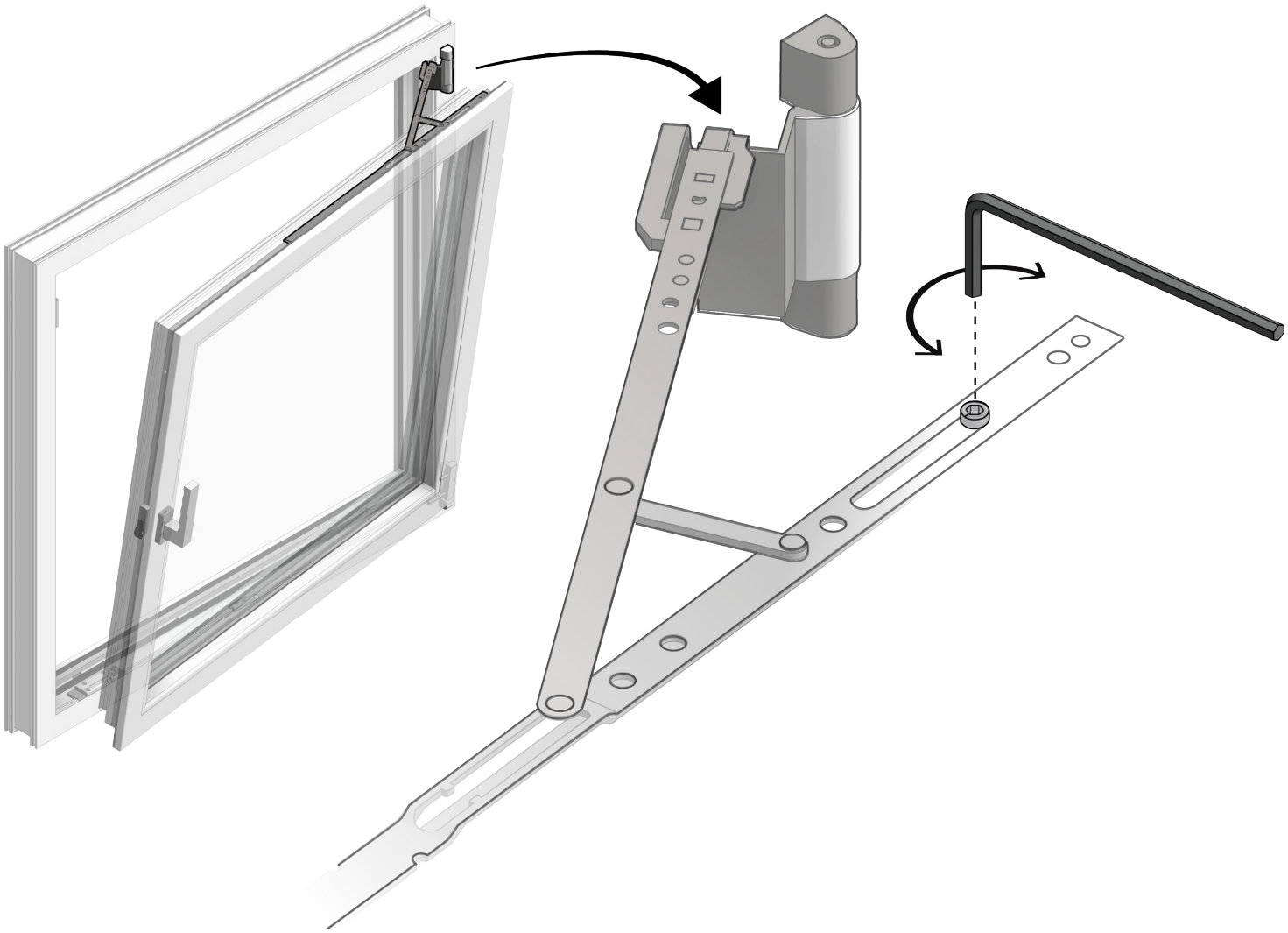


Figure 14 – Adjusting cylinder cam on the stay arm

2.5.3 Reset the Hung Sash

1. Turn the handle to the Tilt position

Figure 15 - Turn the handle to the Tilt position.

2. Gently push and hold the upper hinge corner of the sash against the frame while leaving the sash open.
3. Press and hold the failsafe switch then turn the handle to the Turn position.

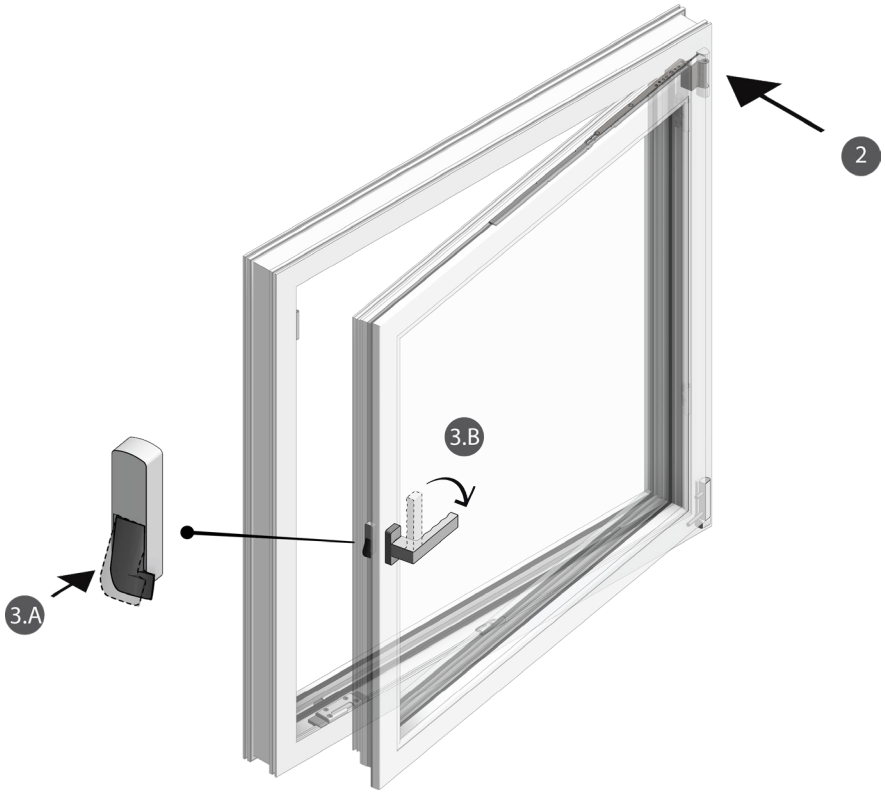


Figure 16 - Steps to rest the hung sash.

4. Release the failsafe switch.

The window or door is now reset in the swing position and can be operated normally.

3 Reference

3.1 Definitions (Glossary)

The following terms are used in Innotech window and door publications. Many are common to all windows and doors. Definitions particular to Innotech are underlined.

Frame. The structural member that surrounds the door and retains glass. A frame has a head (top member), sill (horizontal bottom member) and jambs (vertical members on the left and right edges).

Glazing bead. Every IGU is held into position with glazing beads.

Glazing shims. Plastic shims in various heights that shim the IGU into a sash or frame.

Head. The horizontal frame member at the top of the window or door.

Installation shims. Plastic or composite shims in various heights used to level the frame in the rough opening.

Insulating Glass Unit (IGU). A glass panel composed of two or more panes of glass assembled with spacers and sealants.

Jamb. Vertical members on the left and right edges of a window or door.

Rail. A horizontal member that binds a sash at the sill.

Sill. The horizontal frame member at the bottom of the door.

Sash. The operable element of a window or door that is opened and closed. A sash is composed of top and bottom rails (horizontal members), as well as stiles (vertical members). The hinge stile is the stile with hinges and the lock stile has the handle.

Track. Two or three horizontal members that bound a sash at the header.

3.2 Additional resources

To help ensure a long service life, additional product installation, alarm contact installation, cleaning and maintenance instructions are available for your windows and doors. How-to videos are also available. Visit innotech-windows.com/resources to download or view these resources, contact your local Innotech Dealer, or contact our service department at 1.866.854.1122 Ext 4.

For more information on these quality products please contact:

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