



WEB BASED CORE APPLICATION SPECIFIC INSTALLATION INFORMATION AND METHODS



Removing Old Windows Part I - Frame In

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Most Windows are Mounted in one of 3 Ways

Knowing how old windows are mounted helps because removal is predictable. Knowing which way the old window or door has been installed and fastened will allow proper measurement.

Knowing the right size will establish the size of the cutbacks required to remove the old window or door with minimal disturbance to the old opening, and best possible conditions for a weather resistant install of the new product.

Matching the mounting method or even adapting a different mounting method can be part of the choices that can be made will help create a weather-tight replacement with the minimal disturbance to existing opening - inside and out. Other than steel casements and other older types, there are three basic mounts:

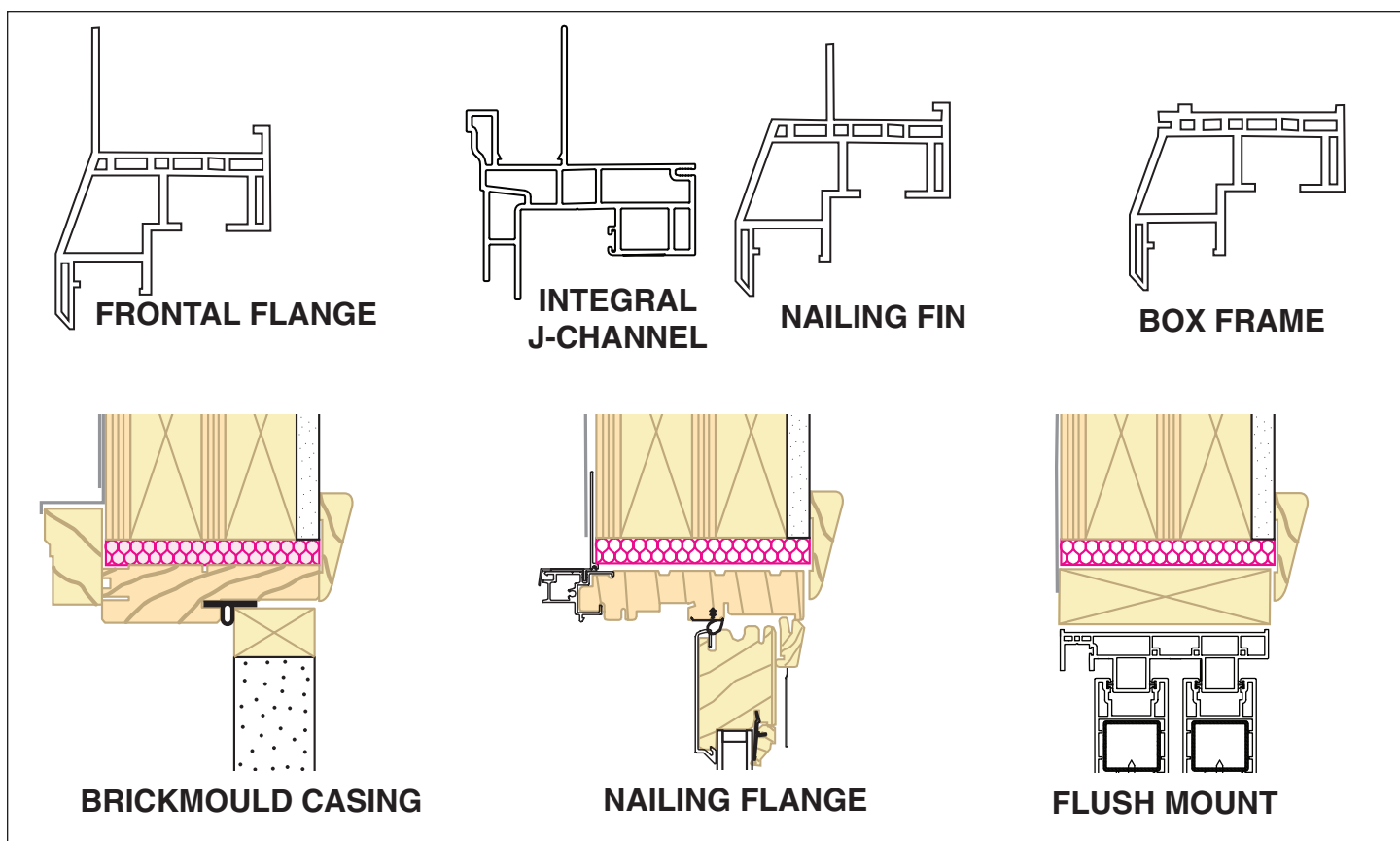
1. A Frontal Flange or Brickmould Trim allows the window or door to be fastened against the outside face of the wall. Often it is in front of the siding, but it can be behind the siding and against the underlying sheathing.

This method requires fastening through the exterior casing/flange or through the window frame into the opening. The frontal flange, sometimes called an unequal leg because the front protudes more than the back, can be as much as 2 inches big and as small as 1/2 inch. The effect is the same.

2. A Recessed Nailing Fin (with or without “J” Channel) allows proper drainage when the siding is placed over the flange. Mounting is accomplished with fasteners through the fin into the exterior wall surface against which the window rests. These nailing fins are usually about 1 inch wide. An integral “J-Channel” can be part of the frame to allow siding to fit behind it creating an effective exterior drainage system.

3. A Flush Frame, or “box frame” that sits within the rough opening and exterior and interior trim “stops” seal the frame and/or provide a surface against which the window or door can rest. This mount requires fastening through the frame into the rough opening.

MOUNTING METHODS



Frame-In or Frame-Out...Which is best?

Most callbacks for replacement applications are due to the failure or inability to integrate all 5 barriers of the wall to the new window. Replacement is different from New Construction applications because the opening has to be cleared of all unneeded parts of the old window. The opening needs to be properly prepared to receive the new window. Finally, the existing trim needs to be integrated to the new window.

Two approaches

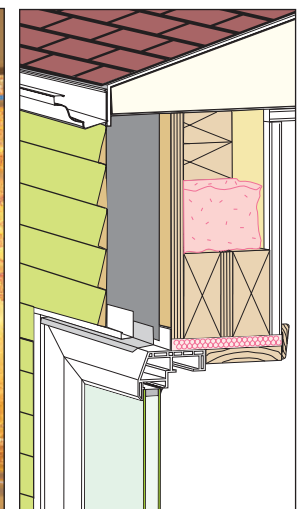
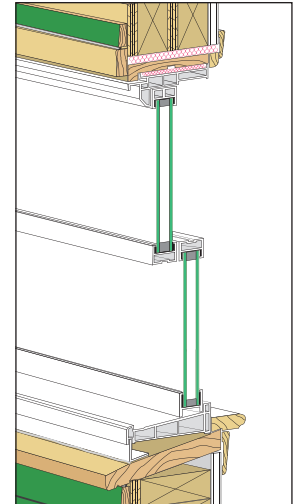
There are two basic approaches to replacing existing windows with frames of wood, vinyl or a combination of materials.

Frame-In. The old window frame is left in the opening with the idea that the interface between the old window and the wall is sufficiently intact to provide an adequate weather barrier and moisture control and/or the old frame is so embedded in the wall, removal would cause unnecessary and extensive damage. Frame-In can be accomplished from inside the house (Inside-Out) or from outside of the house (Outside In) discussed elsewhere in this manual. While each is somewhat unique unto itself, the relative goal is the same: place the new window in the old window frame and sufficiently interface the weather barriers and thermal barriers of the new window to the old window frame.

Frame-Out. The old window is removed down to the rough opening, requiring a new window and its frame to be integrated with the wall's weather, thermal and air barriers. It approximates a new installation, but has the added burden of the old siding and the interior wall and trim staying in place necessitating more care for the fit and finish. While exterior and interior trim are added later in new construction, with replacement they need to be cut back and then re-assembled up to the window... to preserve or re-establishing the weather seal inside & out.

Standard Installation of replacement windows, using pocket installation of box framed windows relies on Frame-in, and a Barrier-only install is often called "Caulk and Walk". That's because the stop against which the box frame is mounted is caulked in an attempt to create an adequate barrier to water, air and moisture penetration of the old window frame cavity. In addition to relying on the old frame to still be an efficient part of the overall wall water management system, it relies on the long lasting ability of caulk/sealant to prevent water and air intrusion. Most caulks/sealants aren't up to the task.

The only secure approach to water management is a Frame Out installation where the new window can be properly integrated into the wall's water management system through flashing, sill pans, and drip caps in addition to the caulk/sealant used.

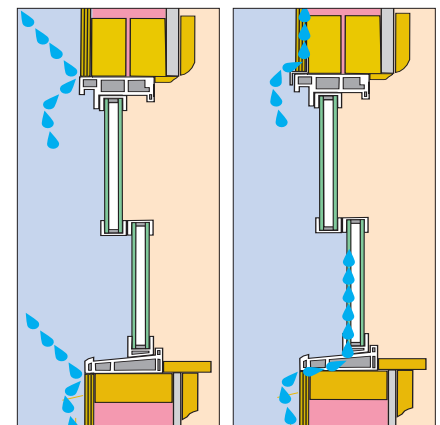


Summary:

Determine which is best: Frame-In or Frame-Out.

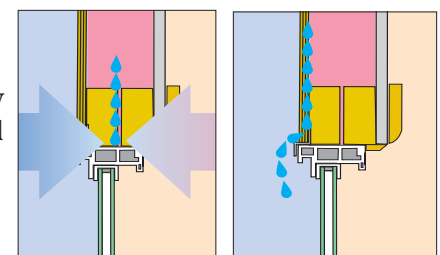
Remember that Frame-In may make it impossible to properly and completely interface the new window with all the weather barriers in the existing wall.

The most complete and weather-tight installation is a Frame-Out, using Divert, Drain, and Dry control techniques and materials to attempt reintegration of the window to the original 5 barriers.



DIVERT

DRAIN



DRY and VAPOR CONTROL

If the decision is to leave the old frame intact, and mount the new window to it or over it, then the preparation of the old frame should include provision for drainage, as previously described.

If the old frame is wood, then application of liquid flashing can be made to the remaining sill, “painting” it along the bottom and up 4” to 6” on each side.

Apply the liquid so as to seal all joints of the sill to the interior stool, and to the jambs on each side. This will keep water that may collect under the new window from being absorbed into the old wood frame. Further, application of adhesive-backed flashing to the jambs and header will provide a diversion path for any water that comes into the cavity. The adhesive-backed flashing should be applied to overlap the liquid-applied sill flashing.

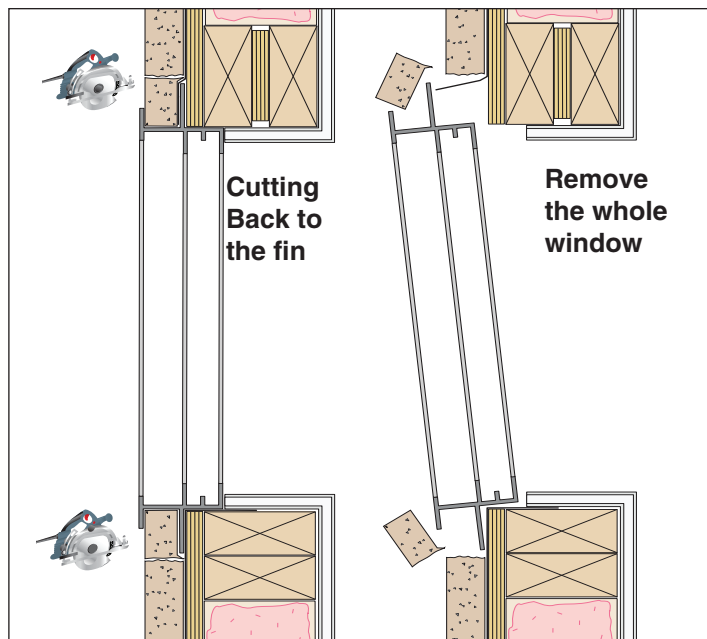
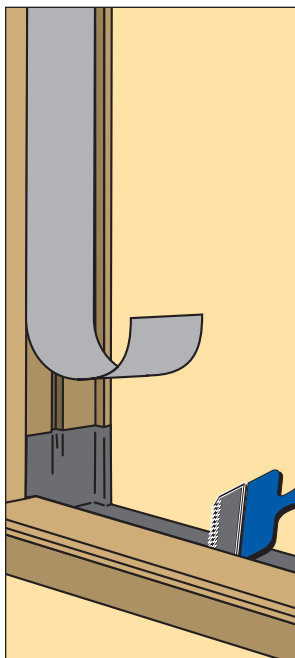
When the new window is mounted, be sure that any sill angles or starter strips allow weeping of any collected water out from under the new window’s sill. If the sill is capped, do not caulk the underside to prevent trapping of water or condensation under the sill capping.

For aluminum windows, where the mounting fin is under the siding (stucco or other siding), you can remove the existing window’s operating sash, and then the stationary glass panel. Cutting the bar between the sash and glazing panels creates an unobstructed opening, leaving the old sill, header and jambs in place.

As before, use liquid applied flashing. The sill should be coated, carefully sealing the joints between the sill and the jambs. Apply the liquid up the sides 4” to 6” on each side. If there are no weep holes in the left-in-place sill track, drill at least two to allow trapped water to drain to the outside.

The installed window should have a flush frontal fin to overlap the siding while the frame of the new window rests on the left-in-place frame of the old window. Installing mounting blocks in the channels of the old sill will help support and level the new window.

If the total frame is to be removed, start by cutting back the siding to expose the old mounting fin. This will allow the fasteners to be removed from the fin, opening the cavity to re-installation of a finned window.



Leaving pieces of the old fin behind.

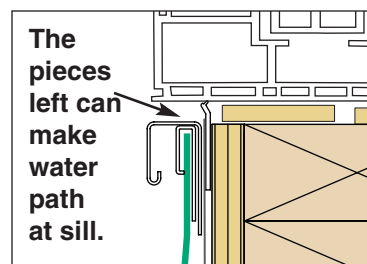
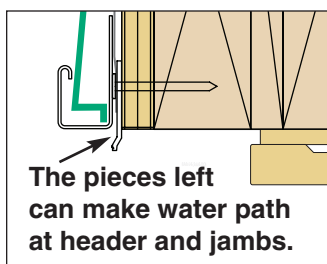
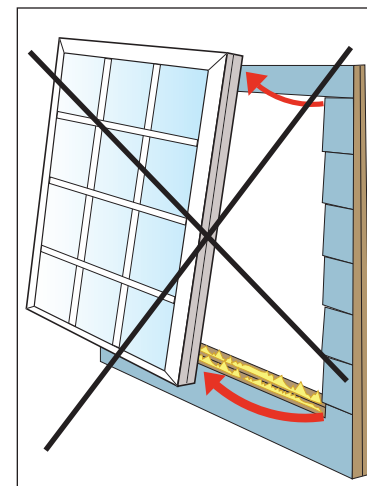
Cutting out the old finned window completely, but leaving the old fin in place, **is not recommended.**

The remaining opening may be difficult to properly re-flash, and the new window cannot be mounted with a fin -further compromising the ability to re-establish the proper water management system.

You will leave four layers - the Siding, the “J” Channel (there’s usually one), the old window’s fin, and the old flashing.

Exterior and interior water and moisture may not be able to be diverted, drained or dried causing potential risk of mildew, rot, or water intrusion.

Preferred: Cutback siding to expose fin (SEE Page 34)



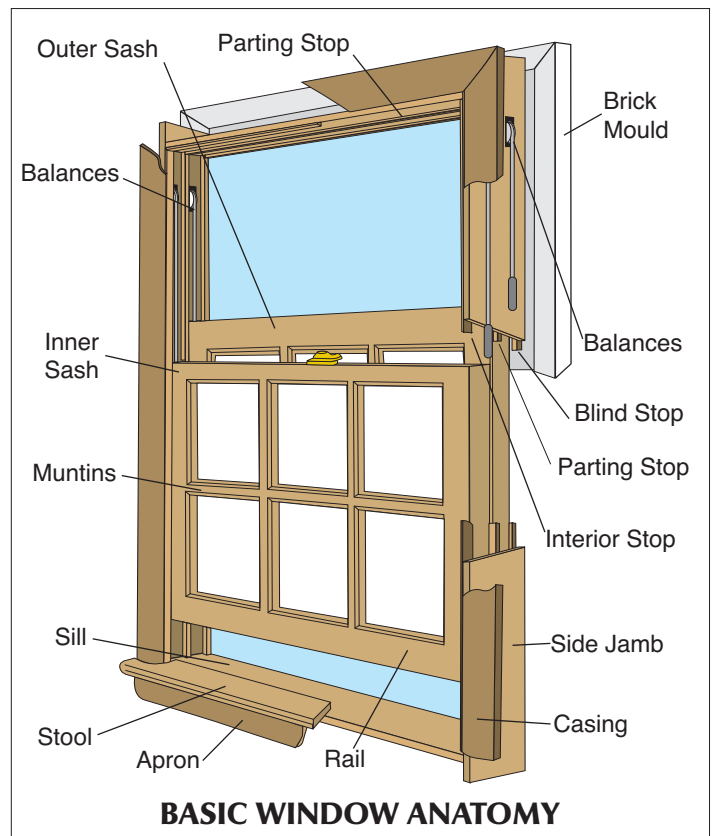
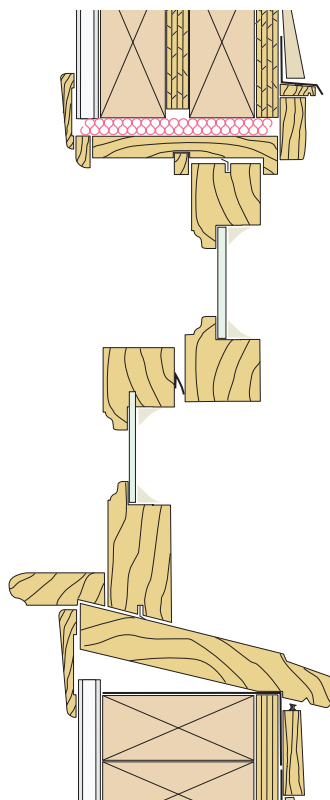
Removing Old Wood Window Sash - Inside or Outside - without Removing Old Frame



If you have determined that the old wood window frame is adequately interfaced with the existing wall's water management system, Replacement Windows are designed to fit neatly and effortlessly into the opening left by the removal of the existing sash in an old wood window. Sized perfectly, the 3-1/4" frame fits into space where the sash and parting stops were.

Before You Start

Read these instructions carefully and identify all the pieces to be removed or added during the installation. Not only are the basics easy and simple, but all work can be done from inside the house.



Remove the Old Window

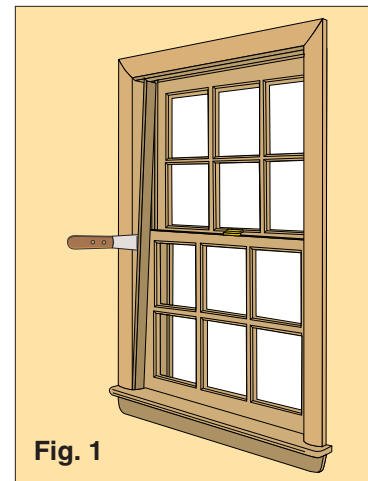
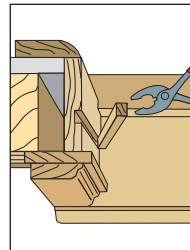
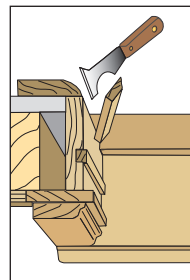
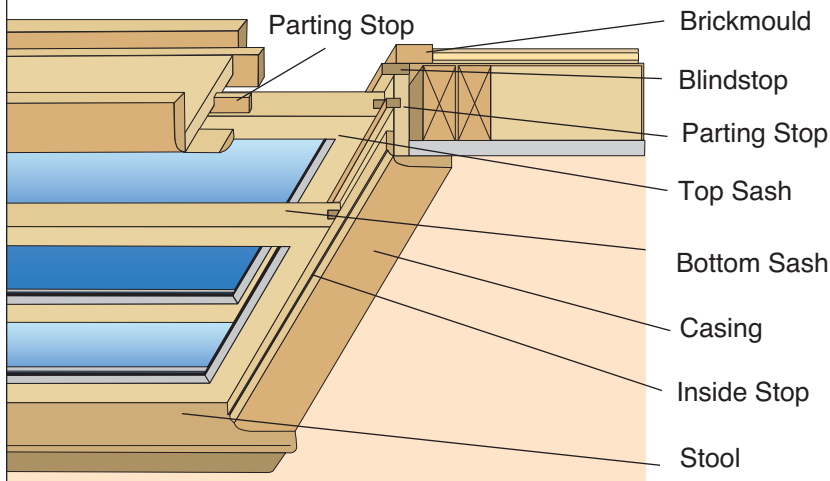


Fig. 1

1. Remove the inside mouldings (stops) with a broad chisel and save them for later use, being careful not to break them. (Fig. 1)
2. Any cords and weights, or spring balances can then be removed so that the old bottom wood sash can be easily removed as shown. Remove the pulleys. If the screws can't be backed out because of corrosion, stick the flathead screwdriver into the pulley and pry it out. (Fig. 2)
3. Pry out the top parting stop. Pliers can easily remove most stops. (Fig. 3-4)
4. Pry out the side stops - left and right. For stops that are heavily painted or stuck, you can use the broad chisel to shear off the part of the stop that protrudes into the jamb. (Fig. 3-4)
5. Once the parting stops are out, the upper sash can be easily removed from the outer track. (Fig. 5)

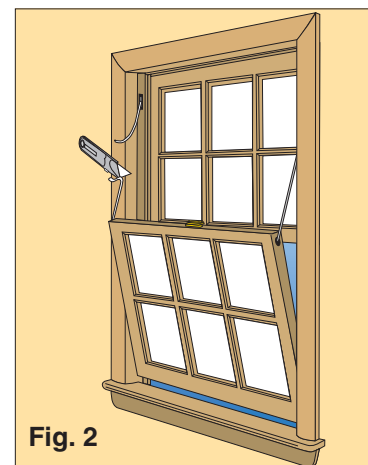


Fig. 2

Windows with Aluminum Tracks

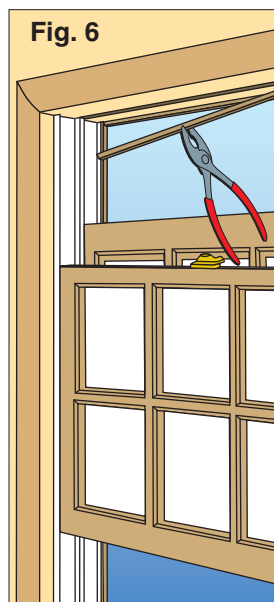


Fig. 6

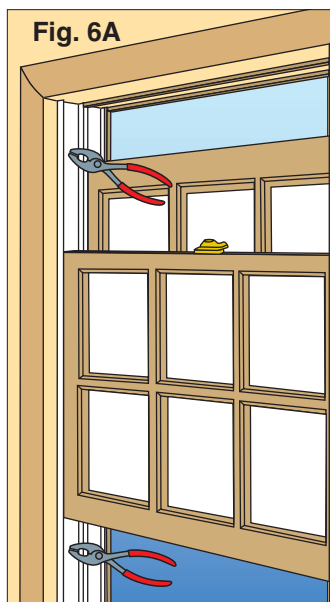


Fig. 6A



Fig. 7

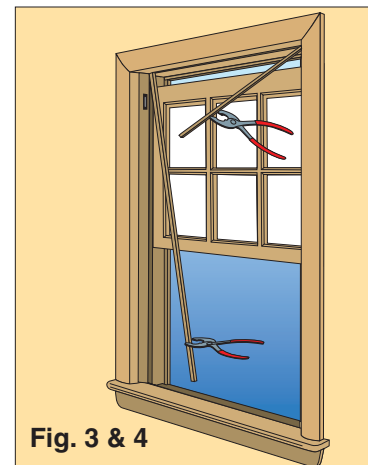


Fig. 3 & 4

6. If the old window has pre-formed aluminum tracks, there will be no wood parting stops on the sides, but there will be one on top. Remove the top parting stop. Then remove the staples holding the pre-formed track. There is also a small aluminum block on the top and bottom of the aluminum track. It too, must be removed. (Fig. 6-7)

7. Once the staples are removed, both the upper and lower sash-and the tracks can be removed as a single unit. (Fig. 7)

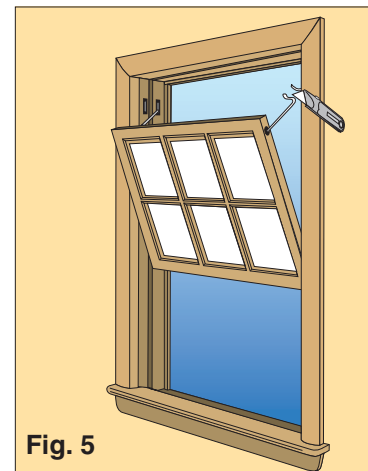
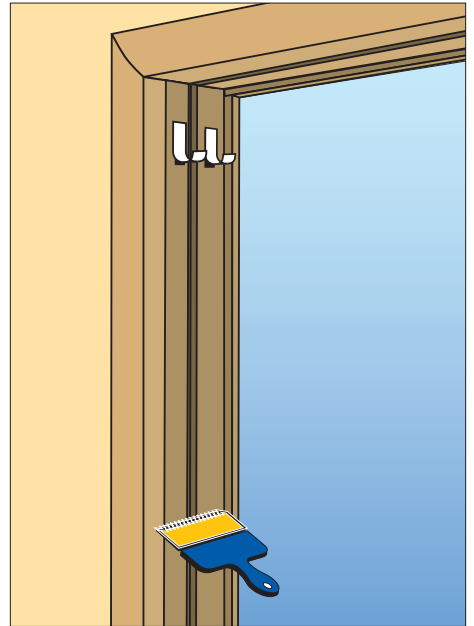


Fig. 5

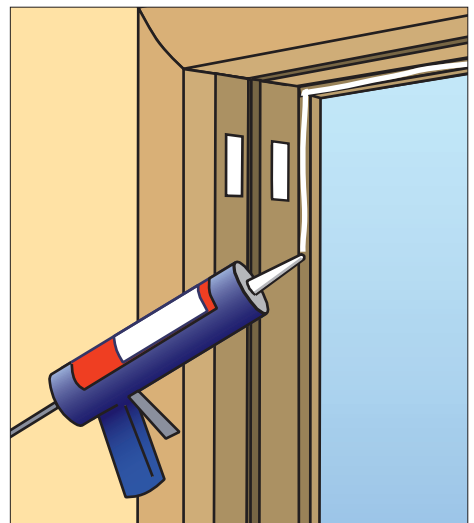
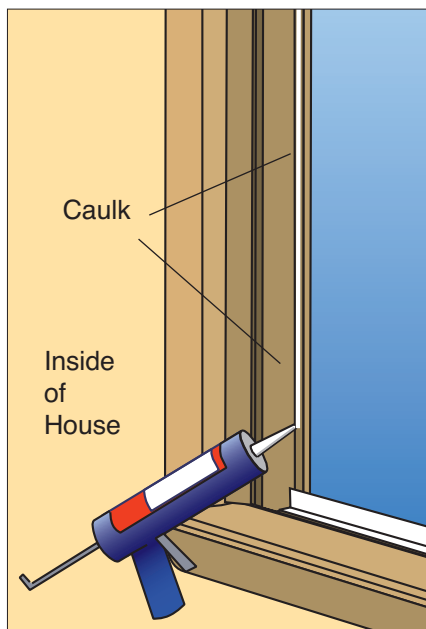
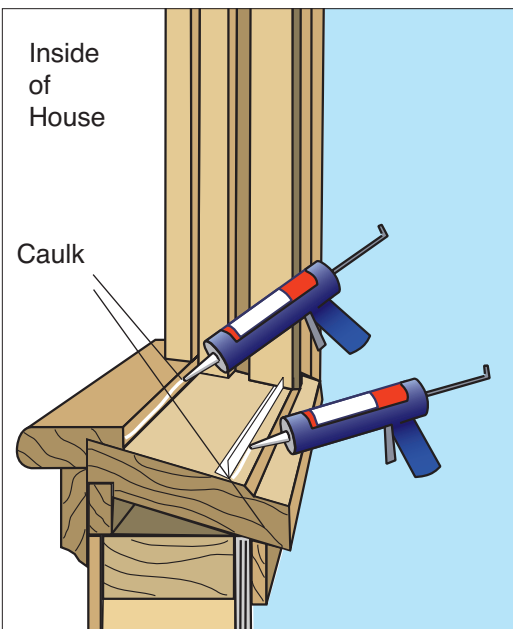
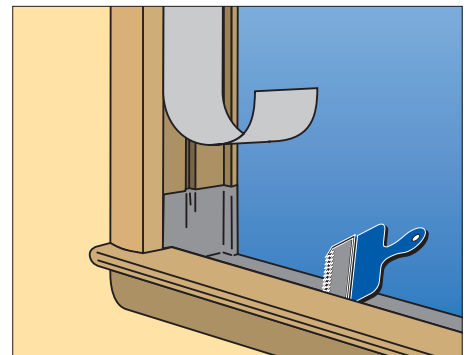


Clean and Prepare the Opening

Even if the opening will be wrapped, it is very important to clean the opening of any debris. Cover any holes made by the weight pulleys, etc. Remove any old screen hook eyes or other protruding screws or fasteners. If there are holes left by the old weights and cords, fill the holes with insulation and cover with a thin metal plate or aluminum tape.

Even if the old opening is really poor shape, it can be prepared and covered to accept the new window and the final trim.

NOTE: It is recommended that you “flash” the left-in-place frame to be sure that any water in the wall is able to escape the opening without damaging the old frame. Use liquid-applied flashing on the sill and adhesive backed flashing on the jambs and header making sure you overlap for drainage.

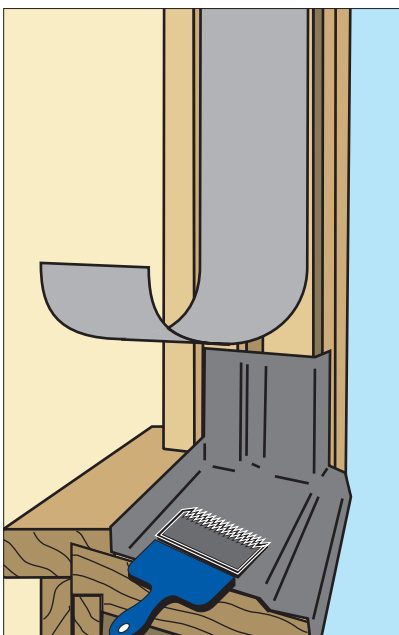


Outside-In Removal of Wood Frame Windows

Box Frame Installation of vinyl replacement windows is based on "blindstop" techniques where the window is set into the opening from the inside of the house. Outside-In installation is accomplished from the outside the house and leaves the interior stops intact. Paring away the exterior blindstop, removing the parting stops and both sash provides a clear opening to install the window from the outside without disturbing the interior and without having to lift it over the stool to place it in the opening.

This is an advanced technique that is somewhat more complicated than the traditional "blindstop" method. But its advantage lies in giving satisfactory results while probably being a more effective method for installing all box frame replacement windows. But, it is important that the old window frame is adequately integrated into the water management system of the wall, or you should use frame out techniques.

Outside-in installation will require access to the opening from outside the house, and though the window can be passed out of the opening from the inside before it is set in place, it may be an advisable and safer method to set the window in place from the outside. For openings above the ground floor, or for large or heavy windows, it is not recommended that outside-in installations be done by one person.



If you leave the old frame in, and install from the outside, it is best to "flash" the opening.

Using liquid flashing on the sill, a pan can be created that will allow any water intrusion to drain to the outside.

Using adhesive-backed applied flashing on the jambs and header, make sure the jamb overlaps the sill, and the header flashing overlaps the jambs.

Making the Decision

The decision to remove a window from the "outside in", by removing the exterior stops, requires more outside work, but this method of removal has many added benefits:

1. The interior stops don't need to be removed and replaced which makes a better looking installation since there is no damage to over-painted interior stops or moulding, etc. The job is cleaner and neater.

2. Since the exterior is to be re-finished in most instances, there is a work savings by not having to remove and replace the inside stops.

3. It is easier to brake and install capping to finish off the exterior of an opening without a blindstop than to cover an old blindstop. The capping looks better, too.

4. Most Replacement Windows without head expanders fit better against interior stops without the 1/8" offset of the material thickness of the expander.

5. The installation is more energy efficient and requires no insulation stuffed into the head expander..

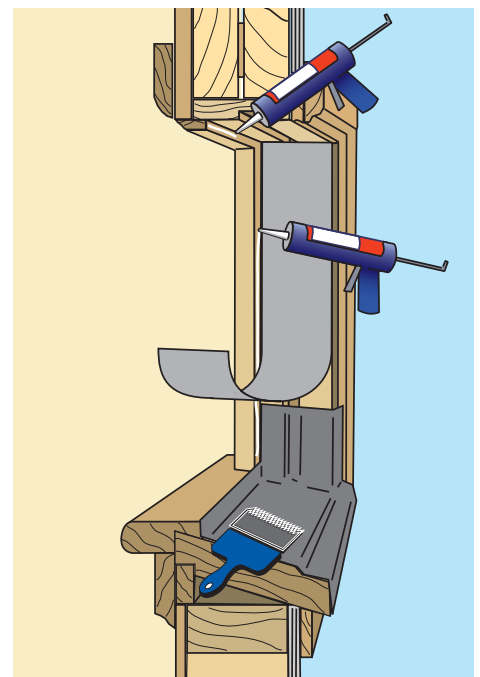
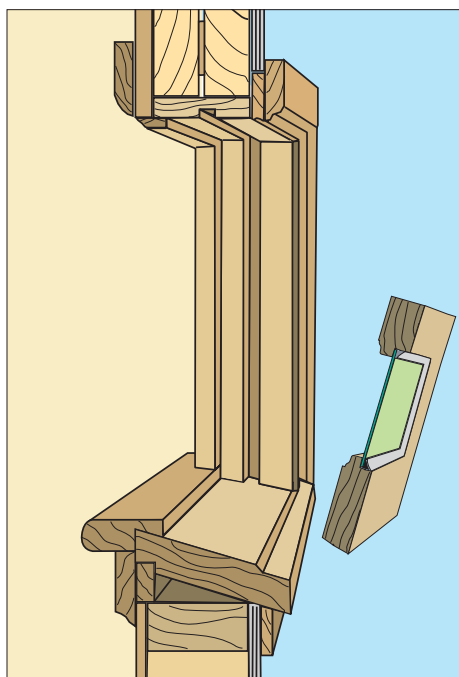
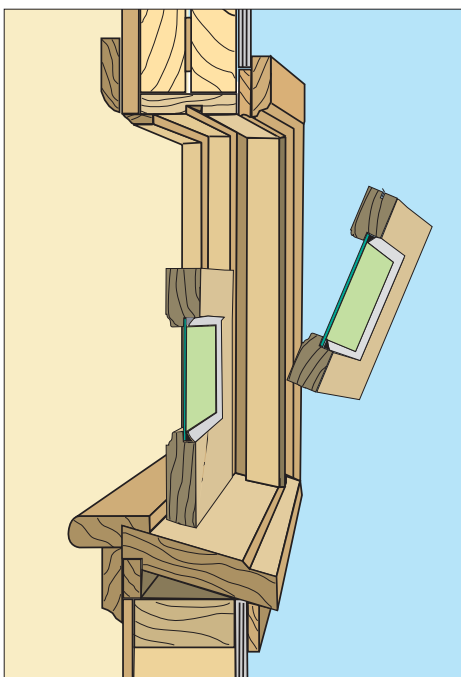
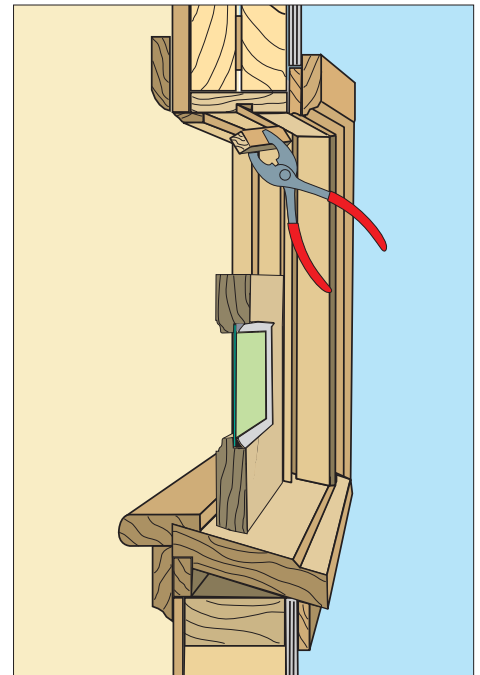
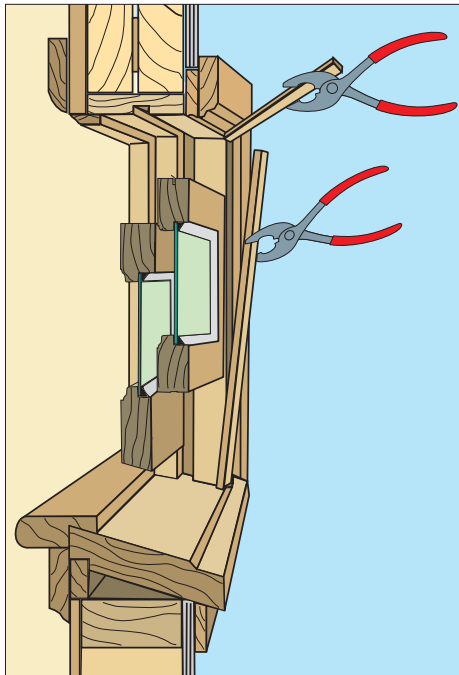
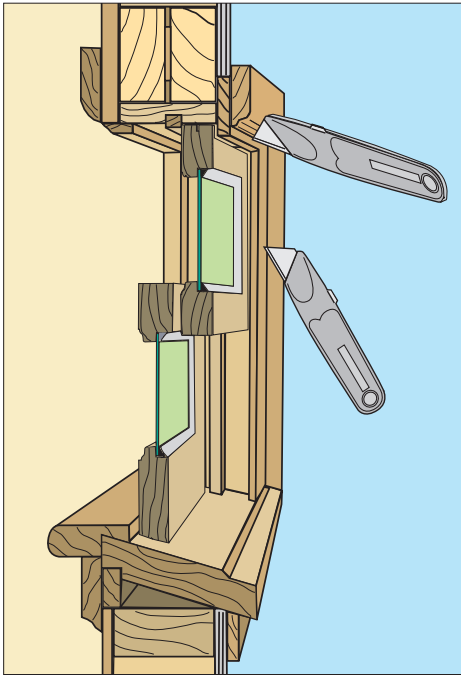
6. More glass and egress area is possible without a head expander. The window can be made taller.

These advantages have to be weighed against the labor of chipping away the blindstop and shimming and squaring the opening from "outside".

The diagrams show that the exterior "blindstop", when removed, clears the opening allowing a full height, full width window to be securely installed without the use of a head expander.



Outside Removal of Wood Frame Windows



How To Remove a Wood Window from the Outside

1. Installation procedures are basically the same as with "inside-out" installations except that the exterior "blindstop" is chipped away with the flat wood chisel which will free the upper sash of the old window first.
2. The parting stop is removed as in other installations which will free the upper sash.
3. Windows with aluminum tracks are removed as a unit once the "blindstops" are removed.
4. The only other difference is that the interior stops are undisturbed and left intact. The new window will be applied "against" the interior stops in the same fashion as against the exterior blindstop.
5. Once the old pulleys, cords, and chains are removed, and the opening cleared of debris, fill gaps and holes with insulation, coat the exposed frame and interior sill with liquid flashing, and caulk the interior stops.

Leaving the Old Nailing Fin Frame In

Leaving the Old Frame in Place

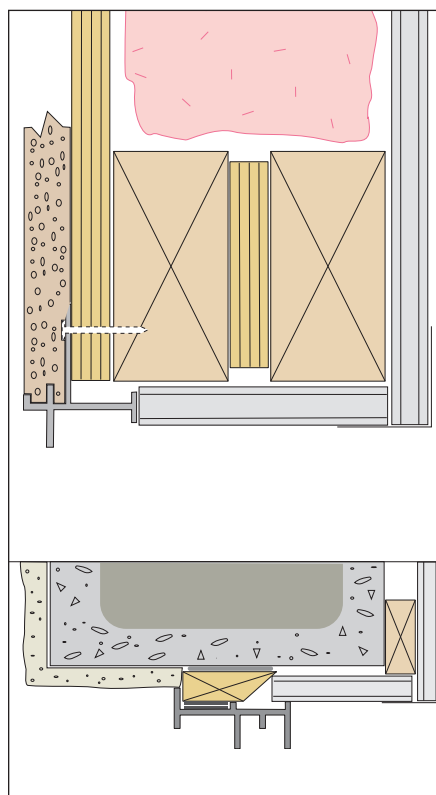
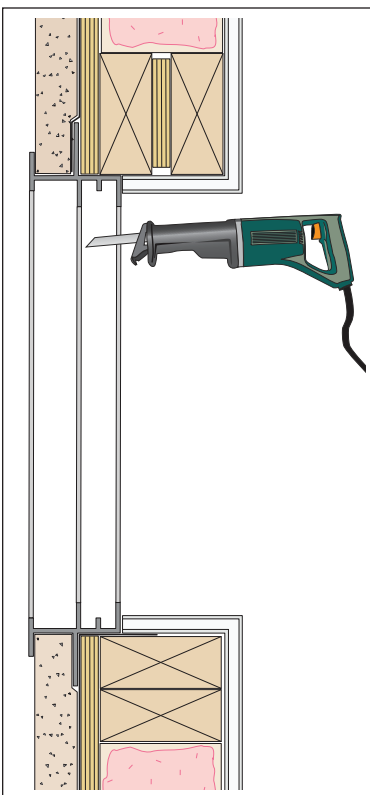
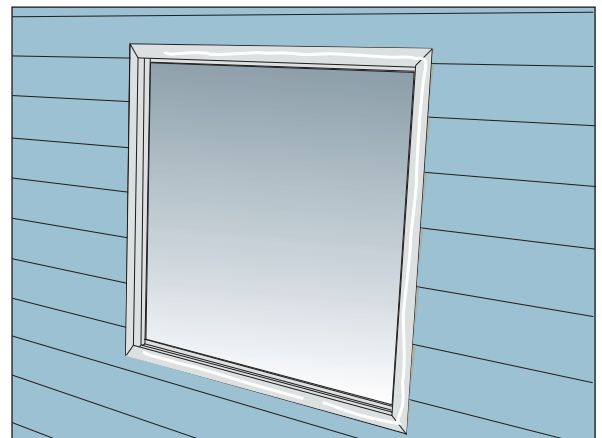
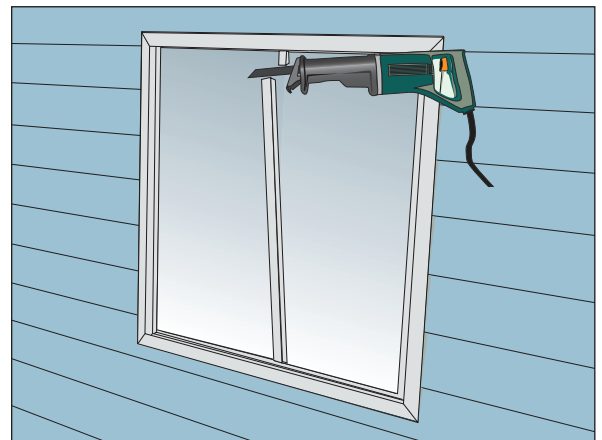
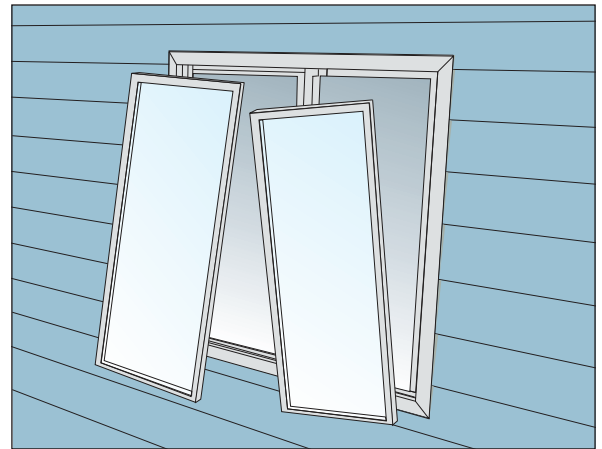
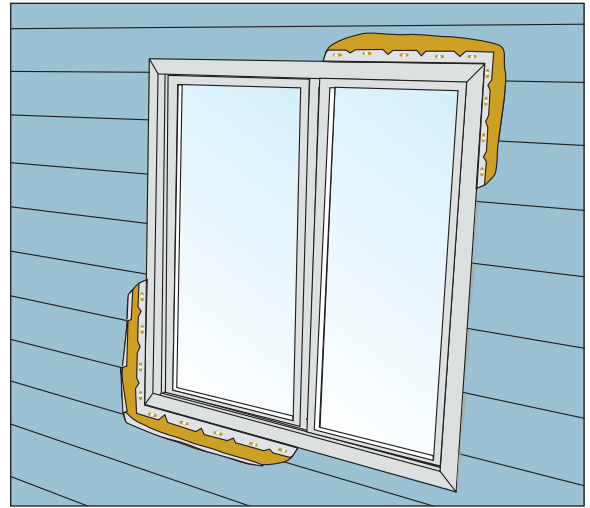
For Aluminum Windows that have been mounted to the underlying sheathing through a nailing fin, it is possible to leave the old frame in and not disturb the siding.

First, you need to remove the operating sash and the fixed sash. Usually this is easy to do unless the fixed glass is glazed directly into the window framing. If so, tape the glass with duct tape to help hold the glass together in case you need to use force to get it out.

Once the glass panels are safely removed, used a reciprocating saw to cut through the vertical meeting stile as close to the header and sill frame members as possible.

Once the center meeting stile is removed, caulk the exterior of the left-in-place frame with quality sealant and “paint” the tracks of the old window with liquid flashing. Be sure to cut out drill weep holes in the sill of the old frame to make sure there is a drainage path to the outside.

Similar steps can be taken to remove the operating panels and glazed sections of finned windows installed in stucco or other masonry. With the old frame left in, the interface with the wall is left undisturbed. However, much care is needed in the installation of the new window to be sure the interface between the new window and the old window frame is made weathertight.

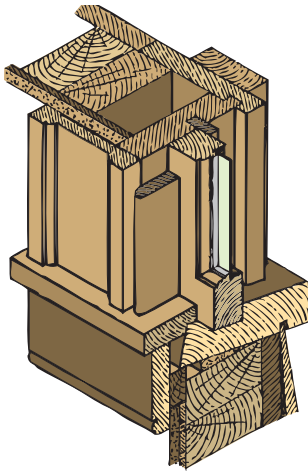


Wood Frame-Out- Removal Sequence

Full Frame-Out for Wood Windows

Wood windows present the same opportunity for Full Frame-Out installation. They, however, do not have an old fin but are similarly attached to the house framing such that when removed, they leave a clean opening into which a finned window can be easily re-flashed and installed properly.

There are many benefits to doing a Frame-Out installation beyond the better integration of the new window into the water management system of the wall.



Weight Pockets can require additional 1" width

important in rooms where the window is the only means of escape in case of emergency or fire.

The Frame-Out method requires that the new window be finned and have jamb extensions (either wood or extruded pvc). It also requires measuring accurately. Measure wood windows with weights and pulleys



Frame-Out Gives 25% More Glass Area and Egress Area

First, you can realize a greater glass area over traditional blindstop, sash-pocket installation because the new window is filling the total opening, not made smaller by the old frame.

Second, Frame-Out will let you install a bigger window maintaining egress accommodation -

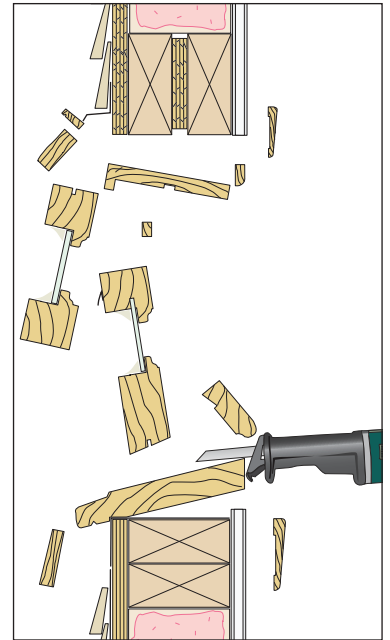
between the interior of the jambs for the width, and adding 3 inches, and the height taken between the interior face of the header and the sill and adding 3-1/2 inches.

For wood windows with plastic track and spring balances, add 2 inches to the width and 2-1/2 inches to the height.

This approach will accurately provide a window that will fit and be able to be shimmed and flashed properly.

If you're able to cut the nailing fin off the old wood window, you can remove the old window to the outside without disturbing the finished siding and J-Channel trim.

Cutting the old nailing fin and leaving it in place presents obstacles to proper flashing. Take care to completely re-establish the weather barriers



All pieces of the old wood framed window, complete with frame, sill and trim can be cut out to expose wall framing.

