



## HOW-TO BOOKLET #3060

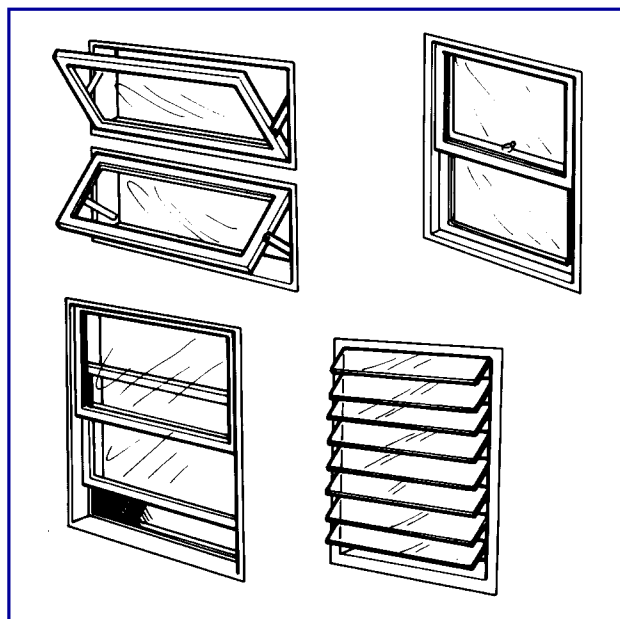
# INSTALL WINDOWS



### TOOL & MATERIAL CHECKLIST

- Pre-Assembled Window Unit
- Hammer
- Carpenter's Square
- Tape Measure
- Level
- Finishing Nails
- Roofing Nails
- Shims
- Nail Set
- Loose Fill Insulation
- Paint
- Trim Molding
- Caulking Compound

*Read This Entire How-To Booklet for Specific Tools and Materials Not Noted in The Basics Listed Above.*



Standard window units usually include double-hung and replacements, basement and utility windows, and octagonal units. Most any style and size, however, can be special ordered for you, if not stocked by the store. Installing a new window or replacing an old window is not difficult.

### ORDERING SPECIFICATIONS

When buying windows, there are several specifications you will need to note:

**The rough opening.** This is the actual size of the opening in which the window unit will be installed. The opening will vary from window-to-window, so you must always measure each rough opening even though the openings appear to be the same size.

For new windows, as a rule of thumb, allow 1-1/16 to 1-1/2 inches between the framing at the rough opening (usually 2X4s) and the window at the top, bottom, and side jambs. This much space is needed to level and plumb the window in the opening. The space will be filled with shims and loose-fill insulation as the window is installed into the rough opening.

**The framed opening.** If you are buying replacement windows that will fit into the frames of the existing windows, you will need to know the dimensions of these openings. Measure the width of the windows at the top, middle, and bottom and use the narrowest dimension as the base figure. Also measure from top to bottom at the sides and middle of the opening and use the shortest dimension as the base figure. Measure each window that you will replace.

## WINDOW SPECIFICATIONS

Stock windows that are pre-fabricated or pre-hung, have about the same general construction specifications. Replacement windows, i.e., those units that will be installed between the header, jambs, and sill of double-hung windows, are basically window sash—the glass panes in a frame. The sash in the old window is simply removed. You use the same window parting strips, trim and other components to install the new replacement.

In stock windows, the jambs (sides) of the windows will be the same width as a standard wall from the exterior sheathing through the face of the wall covering (gypsum wallboard or plaster). The jambs usually are made for 1-inch boards; the jamb liners are used to shim windows to fit the rough opening. Window sills are included with the windows and they are cut from 2-inch lumber and are set into the unit with a pitch for water drainage. The windows or sash are usually 1-3/8 inches thick and if the windows have a combination storm and screen unit, it will be typically 1-1/8 inches thick.

Basement window replacements often are aluminum frames clad with a vinyl skin. These units open/shut for ventilation and screens usually are included.

Octagonal windows are completely pre-fabricated, ready to insert into openings. The sash may be fixed or operational, i.e., the window opens/closes.

**Double-hung.** The units have two parts, an upper and lower sash that by-pass each other when opened/closed. If you buy single pane windows you can also buy wooden or plastic “grids” that insert into the frame and make single windows appear to be multiple panes. The panes are called “lights” or “lites.”

Many double-hung windows are fastened into openings with an exterior nailing flange. Others are fastened into the openings through exterior (and sometimes interior) trim or through the jambs.

**Replacement.** These units are typically glass panes in a frame. You remove the old sash from a double-hung (or other type) window by removing the interior window trim, window parting stops,

and other molding. The old window pulleys are pounded back into the side jambs of the windows, after the sash cord or chain is cut and removed, and the replacement is set into the frame. The trim is then re-installed to secure the replacement window in the framed opening.

**Fixed windows.** These units usually are large picture window styles, although octagonal windows fall into the classification. They are “fixed” in that the sash or lights do not move. Fixed windows generally have insulated glass so storm windows are not needed. Insulated glass is double-paned with an air space between the facing “backs” of the glass surface.

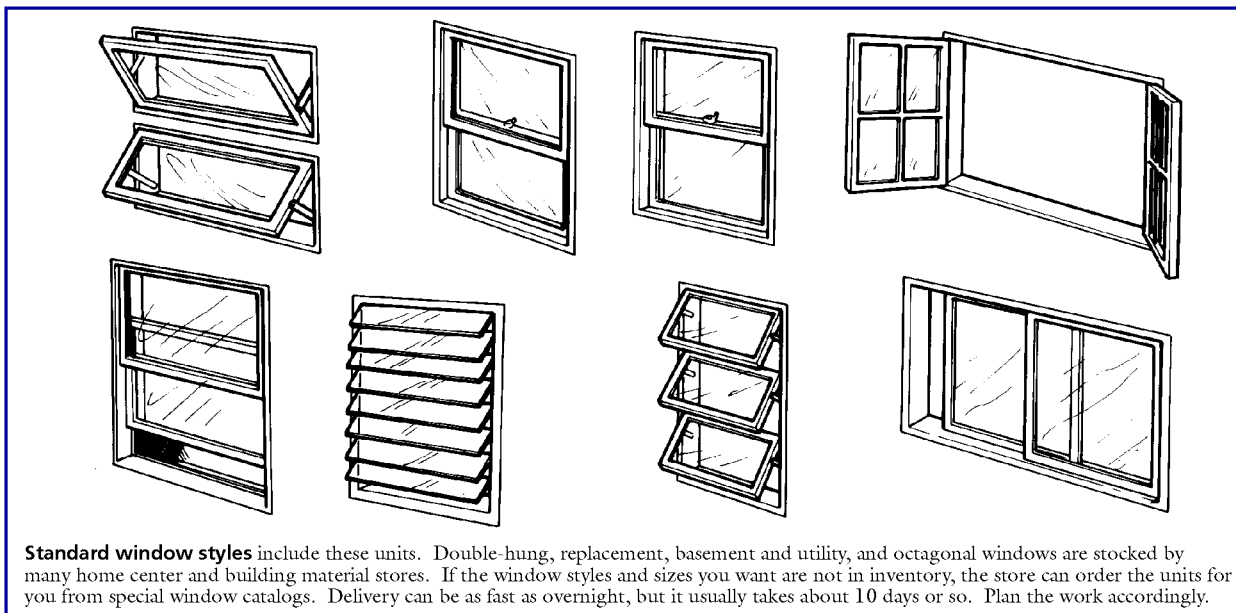
**Horizontal sliding windows.** The sash moves back and forth in a horizontal configuration, rather than vertically as a double-hung window. One sash may be fixed within a single window unit.

**Casement windows.** The sash is hinged along one side; you turn a crank or push out an opening/closing rod to operate the sash.

**Awning/hopper windows.** Awning windows are hinged at the top of the window and the window swings out and up like a canvas awning. Hopper windows are hinged at the bottom and swing out at the top.

**Jalousie windows.** Sometimes called “Florida” windows, these units have glass slats like a shutter. The slats are movable up-and-down via a cranking device on the window frame. You may prefer a wooden jalousie frame over a metal one, since wood has a greater insulation value than metal.

If, when shopping for windows, you don’t see the window type on display that you want, be sure to ask the salesperson to show you the store’s stock window catalogs. Because windows are large and store space is limited, many retailers are prohibited from inventorying a complete, in-depth line of window units. However, those windows not displayed can be readily ordered by the store and delivery is quick—from overnight to about 10 days or so.

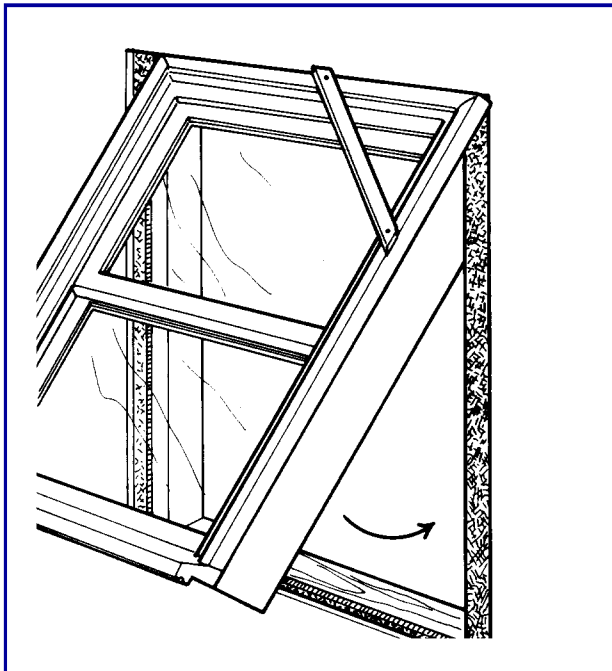


**Standard window styles** include these units. Double-hung, replacement, basement and utility, and octagonal windows are stocked by many home center and building material stores. If the window styles and sizes you want are not in inventory, the store can order the units for you from special window catalogs. Delivery can be as fast as overnight, but it usually takes about 10 days or so. Plan the work accordingly.

## 1 Preparation

If you are replacing a double-hung window, you will have to remove the old window. Do this by prying off the trim or molding strips around the interior and exterior of the window. Then remove the nails from the exterior nailing flange, if the window has a flange. You also may have to remove other window parts, such as the window stops which hold the sash in the channels of the windows, and then remove the sash. The window may also be held in the opening by nails driven through the side and top jambs and at the sill or bottom of the window. When all fasteners are out, you will be able to remove the window as a unit. If not, dismantle it piece-by-piece. Remove the side jambs first.

With a carpenter's square, square the new pre-assembled window unit and tack wooden strips diagonally to hold it square, as illustrated above. Then set the window in the opening to make sure it fits.

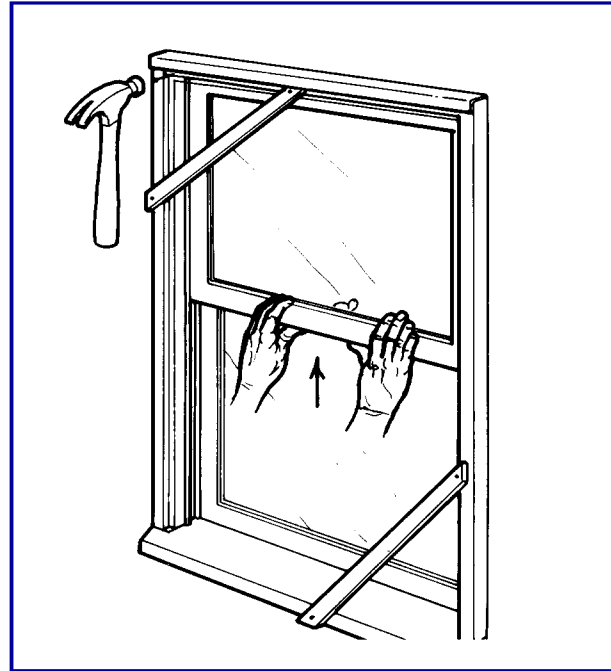


## 2 Fastening

After the window is in the opening, it should have 3/4-in. of space around it at the top and side jambs. The space could be a tad more—or less. You will need this space for leveling. If there is no space around the window, exchange the window immediately.

If the window fits, jockey it up-and-down until the brickmolding at the top exterior fits under the drip cap (which you may have to make; see step 3). Use a carpenter's level to determine which edge of the window is lowest. Then through the nailing flange or exterior molding or trim, tack the higher side to the rough framing or the sheathing.

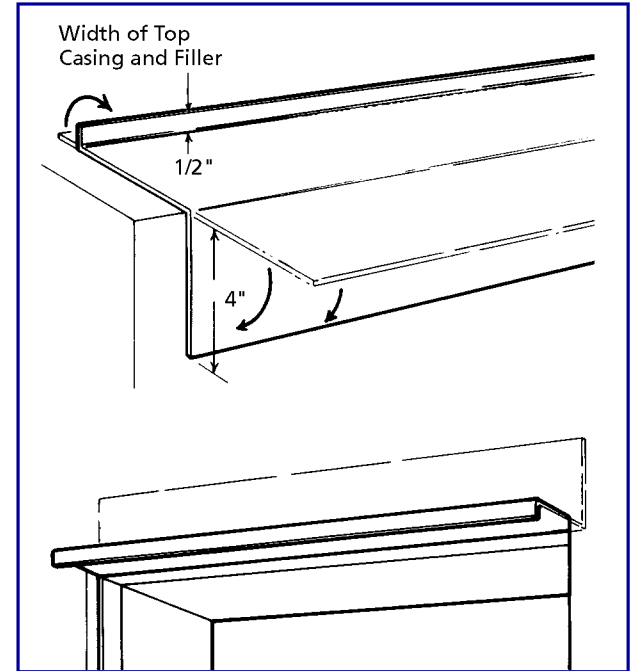
With the level, adjust the lower side so it is perfectly level with the other corner that you tacked. Then tack this corner. The window now should be level in the rough opening at the top and bottom. If so, tack the bottom of the window at the corners on the exterior.



## 3 Flashing

Windows should be flashed, i.e., have a building paper or metal insert between the window and the sheathing to protect the sheathing and framing from water. The window should also have a drip cap at the top of the window so water runs past the window, not down over it. Some pre-assembled windows come with a drip cap. If you need flashing, buy aluminum or copper sheet metal that comes in rolls. Or buy asphalt impregnated building paper, also in rolls. The manufacturer's instructions usually specify extra materials needed.

To form flashing, cut it the length of the opening at the top of the window. The width should be about 5 inches wider than the thickness of the brickmolding and filler strips. Bend it 1/2 inch along the long edge and then 4 inches from the other long edge. The flashing goes between the siding and sheathing at the top of the unit.

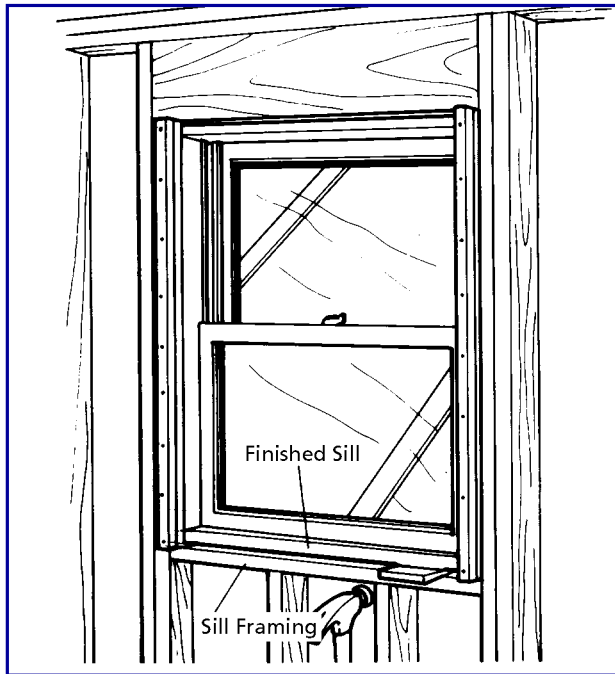


#### 4 Leveling

Inside, with either blocks of 1X4 in. scrap wood and/or shims sandwiched between the rough opening framing members and the window jambs, level the window once again in the opening. The shims should fit snugly, without bowing the jambs.

Once the window is horizontally and vertically level, nail the window in place through the nailing flange or trim outside. Or, nail the window through the side jambs, if according to manufacturer's specifications on the window package or enclosed specification sheet.

Keep in mind that the rough opening probably isn't square. Therefore, you are leveling and plumbing the window in the opening so it is square. Once in place, the window may look lop-sided in the rough opening, but it won't be if it is level and plumb. If it is not level and plumb, the window sash will be difficult to open.

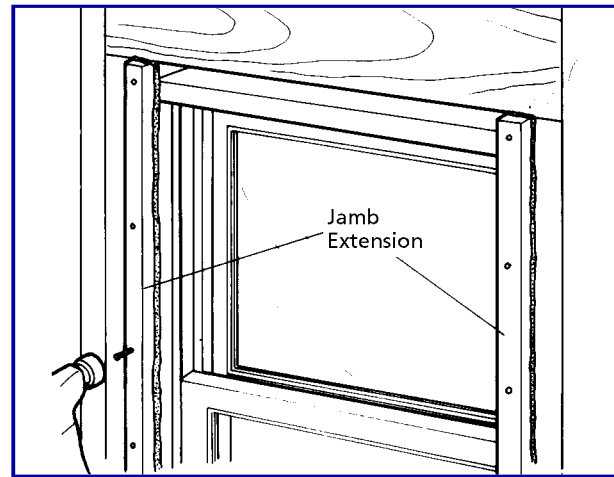


#### 5 Filling the Jambs

In some window installations, the side jambs of the windows do not extend to match the surface of the inside wall. If your window unit fits this description, you will have to add jamb extensions to fill this space. Some manufacturers furnish jamb extensions or "fillers." If not, you can buy jamb extensions.

To install them, edge nail the extensions to the existing jambs of the windows. Use finishing nails and countersink the nail heads. Drill pilot holes for the nails so you don't split the wood. If the extensions stick out past the wall surface that you are matching, you can plane the edges to fit. However, be careful of nails. Countersink them again and again until the right depth is reached with the plane. If the store doesn't sell jamb extensions, you can make fillers from molding pieces or you can saw them from top quality 3/4-inch boards. Fill all nail holes and sand before finishing.

Outside, the window may have pre-assembled trim molding. Or, the window may fit the opening without molding. The siding simply butts against the top, sides, and bottom of the window, forming a flush joint.



#### 6 The Finishing Touch

When the window is in place, level and plumb, the jamb extensions finished, and the window nailed, add loose fill insulation in the gap between the edge of the window frame and the rough opening. We recommend loose fill rock wool insulation for this.

Measure, mark, and miter the trim molding that goes around the window, if not furnished and ready to install. Work around the window: measure, mark, and miter a side piece of trim, and nail it on. Then measure, mark, and cut the top piece and fasten it. Finally, measure, mark, and miter the other side trim and fasten it on. Countersink the nails, fill the holes with wood putty, sand, and finish. We recommend a primer coat of paint on new wood surfaces. Use real formulated primer, not thinned-down finish paint.

Outside, caulk any cracks between the window frame and the siding. Use the good stuff: silicone caulking compound that lasts 20 years or so. Also, paint the window just as soon as it has been installed. Many pre-assembled windows come pre-primed. Even so, apply the finish paint immediately. If unprimed and the finish will be latex, prime bare wood with an oil/alkyd primer, not latex, which raises the wood grain.

