

Check list of suggested tools & support items

- Claw hammer
- Tape measure
- 3/4" [19 or 20] Wood chisel
- Wood or plastic shims
- Pry bar
- Utility knife
- Caulking and caulking gun
- Power screwdriver
- 6" Screwdrivers (Phillips and straight)
- Countersink bit
- · Carpenter's level
- Reciprocating saw (for steel & alum. window replacement)
- Aluminum or wood soffit to match as needed
- Roofing materials to match as needed
- 7 1/4 " Circular saw
- #8x3" FHP installation screws (stainless steel or plated) or 3" drywall screws
- Aluminum trim nails (color to match PVC)
- "Plastic Wood" or similar
- Aluminum coil stock, painted to match
- 3/32" [2.4] x 1/4" [6] Aluminum blind rivet (color to match)
- 3/32" [2.4] Bit
- Pop rivet gun

Note!

For safety and protection, always wear safety glasses and gloves when installing windows, or preparing the rough opening for installation.

Preparing the opening

IMPORTANT! Before you prepare the opening for installation, measure the windows to compare their rough opening sizes. The unit should be 1/2" less than the rough opening, in width and in height (except for badly out-ofsquare openings). The exterior side edge of the wood jambs of the unit should be about even with the face of the exterior wall. For very thin walls, hand the unit over it.

Preparing wood openings

- 1. Remove all inside trim.
- 2. Cut counterweight (or pulley) cords and remove the lower sashes.
- 3. Remove the parting beads along the jambs and at the head(s), (Fig.1).
- 4. Cut counterweight (or pulley) cords and remove the upper sashes.
- 5. Remove pulleys and their assemblies to provide a flush interior surface.

- 6. If the Garden Window unit is to replace several prime windows in the rough opening, remove any mullions in the way, (Fig. 1). **IMPORTANT**! Since the mullion may be load bearing, a special lintel may have to be constructed and fastened to the top and to the sides of the rough opening in order to prevent the wall from sagging above the Garden Window unit.
- 7. Remove inside trims, parting beads and blinds stops from the head, (Fig.2).
- 8. Remove the inside stool and trim from the prime window sill.
- 9. Lightly fill bat insulation into open cavities in the rough opening.
- 10. Clean the opening.







Installing the window

- Remove any skids and wrapping from the window. Do not remove corner braces from the inside corners of the wood frame.
- 2. Insert the Garden Window into the rough opening, making sure the inside edges of the wood buck are flush with the interior wall.
- 3. Make sure window is level and plumb along the width and depth. Insert shims as needed.
- 4. Pre-drill and drive #8x3" Phillips flat head installation screws, or 3" drywall screws, through the head, seat and jambs. Drive the screw heads below the wood surface.
- 5. Lightly fill bat insulation between the window and walls.
- 6. Attach braces (if required) to window seat board underneath and exterior wall.
- 7. Remove 45 degree corner braces from the window.

Caulking and finishing the window

Closing off the gap below the seat board

Note: The following information applies primarily to brick veneer with prime wood window sills.

- 1. Stuff bat insulation into the gap between the seat board and sill.
- 2. Field-fit the cut down head expander and wood blocking as follows:

- a. Measure from edge to edge of the brick opening width, (see Fig. 4).
- b. Cut a 2x4 about 1/8" [3] short of the measurement.
- c. Measure from the inside edge of the cut head expander jamb closure to the sill nose and cut the 2x4 along the length about 1/8" [3] under this for the wood blocking depth.
- d. Measure from the bottom of the seat board to the end of the head expander jamb closure, and modify the piece just cut into a sill angle accordingly.
- e. Both the sill angle and wood blocking are job-customized to fit behind the cut head expander jamb closure. Check the lengths by holding the sill angle and wood blocking together, pushing them both all the way in until the sill angle lines up with the face of the brick. If the sill angle/wood hangs up before this is achieved, or if the pieces don't fit in between the bricks, then mark, trim or re-cut as required.
- 3. Slip the wood blocking within the brick opening, and nail into place.
- 4. Caulk the surfaces of the cut head expander sill angle that will be overlapped by the jamb closures. Also caulk the short leg that will butt the seat board.
- Slip the sill angle in between the brick jambs, and on the wood block nail in place every 15" [405] or so.
- 6. Caulk all seams along the sill closure. Be sure to not leave holes at the brick sill's joints.





Closing off brick veneer jamb gaps outside

- Cut down head expander profile to form an angle that would overlap the edge of the brick by no less than 3/4" [19], so that the short leg of the angle may be set 1/4" to 3/8" [6 to 9] away from the sill jamb garden window jamb trim. (Note: coil stock may be used instead of the head expander.).
- 2. Cut the head expander length about 1/8" [3] smaller than the space in which it is to fit. Notch back the short leg at the bottom and until flush with the bottom of the seat board.
- 3. Cut wood spacers in 6" to 12" [150 to 305] lengths so that the head expander may be supported underneath. Toenail the spacers through the ends to the old wood molding beneath so that the head expander is even with the brick

- 4. Stuff the outside jamb gap with bat insulation.
- 5. Caulk the entire underside portion of the head expander that will overlap the exterior face of the wall.
- 6. Hold the head expander angle trim in place over the brick and wood spacers, so that the short leg is about 1/4" to 3/8" [6 to 9] away from the garden window's jamb trim. Pre-drill the angle through the wood spacers about every 16" [405] for aluminum trim nails, then nail into place.
- 7. Caulk the seam between the head expander angle and the window, and where the ends of the head expander meet the wall at top and bottom. Also, caulk the edges of the head expander trim at the brick, taking care to fill in the voids at the joints between brick courses.



Closing off a brick veneer head

- 1. Cut the flashing and counter-flashing in equal lengths no less than the distance between the outermost edges of the head expander jamb trims.
- Cut the flashing width so that, with the bottom edge doubled over and seated upon the Garden Window head closure, the top edge may overlap the brick no less than 3/4" [19].
- Cut and nail wood spacers to the old prime window head in a manner similar to those done for the jambs in Figure 5. In this case the head wood spacers should be made flush to the jamb trims.
- 4. Place the flashing where it would go, center it, and pre-drill through it and the wood spacers for aluminum trim nails (color to match) that will hold it in place later.
- 5. Caulk the flashing surfaces that will overlap the window, the jamb trims and the brick head. Also, caulk around the pre-drilled holes underside.
- 6. Nail the flashing into place, and press down on the lapping areas until a little caulking oozes out.
- Cut the counter flashing height so that it may lap the flashing no less than 3/4" [19], yet still be attachable to the nearest convenient brick joint above.

- Hold the counter-flashing in place, centering it. Drill through the counter-flashing only, with a 3/16" [5] bit, to mark the hole locations in the mortar joint every 12" to 16" [305 to 405].
- Put down the counter-flashing and drill through the marked areas with a 1/4" [6] masonry bit. Tap in expansion shields for #8 [M4] sheet metal screws.
- Caulk the areas of the counter-flashing that will overlap the brick and the flashing, and screw into place with #8x1" Phillips pan head sheet metal screws (stainless steel or plated), painted to match.
- 11. Caulk the edges of both flashing and counter-flashing, especially the top, beveling off the sealant for run-off.

Finishing the job

- 1. Apply wood filler over the screw heads and scrape off the excess with a spatula. Lightly sand with fine sand paper, with the grain.
- 2. Miter-cut new casing so that there will be a fairly uniform margin of about 1/8" to 3/8" [3 to 9] between the visible edge of the wood frame and the casing. Nail to the wall with finishing nails, counter-sinking them and applying wood filler.
- 3. Operate the vents and make adjustments where needed.
- 4. Smooth off the caulking, and wipe off excess caulking from





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- 7 1/4 " Circular saw
- #8x3" FHP installation screws (stainless steel or plated) or 3" drywall screws
- Aluminum trim nails (color to match PVC)
- "Plastic Wood" or similar

Note!

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Preparing the opening

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Preparing wood openings

- 1. Remove all inside trim.
- 2. Cut counterweight (or pulley) cords and remove the lower sashes.
- 3. Remove the parting beads along the jambs and at the head(s), (Fig.1).
- 4. Cut counterweight (or pulley) cords and remove the upper sashes.
- 5. Remove pulleys and their assemblies to provide a flush interior surface.

- 6. If the Garden Window unit is to replace several prime windows in the rough opening, remove any mullions in the way, (Fig. 1). **IMPORTANT**! Since the mullion may be load bearing, a special lintel may have to be constructed and fastened to the top and to the sides of the rough opening in order to prevent the wall from sagging above the Garden Window unit.
- 7. Remove inside trims, parting beads and blinds stops from the head, (Fig.2).
- 8. Remove the inside stool and trim from the prime window sill.
- 9. Lightly fill bat insulation into open cavities in the rough opening.
- 10. Clean the opening.







Installing the window

- Remove skids and wrapping from the window. Do not remove corner braces from the inside corners of the wood frame.
- 2. Insert Garden Window into the rough opening, making sure the inside edges of the wood buck are flush with the interior wall, (Fig. 3a).
- 3. Make sure the window is level and plumb along the width and depth. Insert shims as needed.
- 4. Pre-drill and drive in #8x3" Phillips flat head installation screws, or 3" drywall screws, through the head, seat and jambs. Drive the screw heads below the wood surface.
- 5. Lightly fill bat insulation between the window and walls.
- 6. Attach braces (if required) to window seat board underneath and exterior wall.
- 7. Remove 45 degree corner braces from the window.

Making the window flush with interior wall

- 1. Walls typically are not in perfect plane. This can create a problem with attempts to finish off the window later.
- 2. This method may be used, (Fig. 3b):
 - a. After punching the Garden Window into the rough opening, nail boards across two corners diagonally opposite. Be certain the boards will not interfere with the window's temporary corner braces. Do not drive the nails all the way in. Make sure the nails will not lie beyond the casing, in an area that will be visible.
 - b. Push the window against the boards. The window will butt against the board across the most sunken area of the wall. Thus, no part of the window will protrude past the interior wall. This will allow the casing to seat itself on the wall, never on the window away from the wall.
 - c. Remove the boards and discard.





Caulking and finishing the window

Closing off the sill area

- 1. Be certain the exposed surface of the support block is about flush with the jamb exterior molding of the old prime window, (Fig. 4).
- 2. Paint or cover the support block's exposed surface. Caulk seams between the support block and the seat board, and between the support block and the jamb exterior molding.

Closing off the jambs

Caulk the seam between the old prime window's exterior molding and the garden window's jamb (backer rods may be used to help fill the void behind the caulking bead), (Fig. 5).



Closing off the head

- Cut a piece of the sill/jamb extender (used for Garden Window jamb trim) to fit in between the prime exterior moldings with about 1/8" [3] overall clearance.
- 2. Cut back the fin of the sill/jamb extender so that the profile will close off the gap between the Garden Window and the prime window's head.
- 3. Caulk the snap groove at the head closure and snap the sill/jamb extender into place.
- 4. Caulk the seams between the sill/jamb extender and old prime window's head and jambs, using at least 3/8" [9] bead.

Finishing the job

- 1. Apply wood filler over the screw heads and scrape off the excess with a spatula. Lightly sand with fine sand paper, with the grain.
- Miter-cut new casing so that there will be a fairly uniform margin of about 1/8" to 3/8" [3 to 9] between the visible edge of the wood frame and the casing, (see Fig. 6). Nail to the wall with finishing nails, counter-sinking them and applying wood filler.
- 3. Operate the vents and make adjustments where needed.
- 4. Smooth off the caulking, and wipe off excess caulking from the window and surrounding building surface.



Checklist of suggested tools and support items

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- Aluminum trim nails (color to match PVC)
- "Plastic Wood" or similar

The following is for masonry (direct attachment)

- 3/4" [19] paddle bit (counterbores)
- 3/4" [19] socket wrench
- 1/2" [13] masonry bit
- 1/4" [6] masonry bit
- 1/4" [M6] lag screw expansion shields
- 1/4" x 2" [M6 x 60] hex lag screws (stainless steel or plated)

The following is for masonry with a wood "liner"

- #8x2" PHP (stainless steel or plated), or 1/4"x2" [M6 x 50] hex lag screws (stainless steel or plated)
- 3/4" [19] paddle bit (counterbores)*
- 3/4" 119] socket wrench*
- 1x4", 1x6", 1x8", or 1x10" lumber**
- Aluminum coil stock, painted to match
- 3/32" [2.4] x 1/4" [6] alum. blind rivet (color to match)
- 3/32" [2.4] bit
- Pop rivet gun

* Needed if lag screws are used

** Equivalent preferred metric sizes can be in mm:20 x 90, 20 x 140, 20 x 185, and 20 x 235 respectively.

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Preparing masonry openings

- 1. Remove the old window (usually an aluminum or steel casement or slider)
- 2. Remove the stone or marble sill.
- 3. Install wood liners (jack frames) to provide a structure for attaching garden window, (Figs. 1 and 2).
 - a. Cut wood liners to fit opening so that the jamb liners will fit in between the head and sill liners (the jamb liners will help support the head liner above).

- b. Set the sill liner into place first and note location of mortar joints below. Shim if necessary to make the liner level along the rough opening. Be sure the inside edge of the sill liner does not protrude into the house.
- c. Make 3/4" counterbores right over the mortar joints (if possible) where the lag screws are to go. The wood should be attached to every mortar joint or every 12" [300]. Take care not to make the counterbores too deep: depth should be about 3/16" [5] so that the jack frame structure is not weakened. Drill through the lead hole of the counterbore into the mortar joint.
- d. Carefully remove the wood sill liner and insert 1/4" [6] expansion shields into the holes drilled in the masonry wall. Replace the liner and check with level.
- e. Drive in the lag screws until tight. Check the liner for levelness.
- f. Set the jamb, then the head liners into place, using the same procedure as described in 3b through 3e.



Figure 1: Head and sill detail with liners

Figure 2: Jamb detail with liner

Installing the window directly to masonry

- 1. When the window is put into the opening, be sure to note where the mortar joints are above, below and on both sides.
- 2. Make the window plumb and level, and flush to the inside, (see previous page).
- 3. Counterbore the head, seat and wood jambs in line with a masonry joint.
- 4. With a 1/4" [13] masonry bit, drill through the lead holes of the counterbores into the masonry joints.
- 5. Remove the window, and insert 1/4" [6] expansion shields
- 6. Re-insert the window into the opening, lining up the thruholes in the window's wood buck with the holes in the masonry. Make the window level along both width and depth if necessary.
- 7. Drive in the lag screws until tight.
- 8. Fill in areas between the rough opening and the window with batt insulation.
- 9. Attach bracing (if required) to seat underneath and to the wall, and remove the temporary braces attached for shipping.



Caulking and finishing the window

Closing off the sill area

- Cut a support block so that it's flush with the brick or stone exterior face of the wall, and clears the rough opening by about 1/8" [3], (Figs. 4 and 5). The fit should be tight between the seat and the masonry sill.
- 2. Fill the void behind where the block would go with batt insulation.
- Secure the wood block from inside of the window with two or three #8x1 3/4" Phillips pan or flat head screws driven below the surface. If the block is exactly 1" [38] wide, locate the screws about 3/4" [19] from the inboard vent jamb towards the interior of the house.
- 4. Paint the exposed surface of the support block, or cover it with trim coil or PVC.





Closing off the jambs

- 1. Cut down the head expander profile to form an angle that would overlap the edge of the brick or stone face by no less than 3/4" [19], so that the short leg of the angle may be set 1/4" to 3/8" [6 to 9] away from the Garden Window jamb.
- 2. Cut the length about 1/8" [3] smaller than the space in which it is to fit. Notch back the short leg at the bottom end until flush with the bottom-side of the seatboard.
- 3. Lightly fill the outside jamb gaps with batt insulation.
- Hold the cut head expander angle in position. With a 3/16"
 [5] bit, drill through the head expander every fourth or fifth mortar joint, marking the joints as you go for anchor locations.

- 5. Put down the angle and drill through the marked areas with a 1/4" [6] masonry bit. Tap in expansion shields for #8 [M4] sheet metal screws.
- 6. Caulk the head expander underside that will overlap the wall face and screw into place with #8 [M4] Phillips pan head sheet metals screws (stainless steel or plated), painted to match.
- 7. Caulk the seams between the trim angle and the window or adjacent structures, and also all exposed edges of the angle, taking care to fill in the holes at the mortar joints.



Closing off the head

- 1. Cut the flashing and counter-flashing in equal lengths no less than the outermost edges of the head expander jamb trims, (Figs. 5 and 6).
- 2. Cut the flashing width so that, with the bottom edge doubled over and seated upon the Garden Window head closure, the top edge may overlap the brick or stone face no less than 3/4" [19].
- 3. If the space between the Garden Window head board and the steel lintel above is greater than 3" [75], the flashing may be supported by wood blocking behind it. Cut the wood blocking so that one end butts against the masonry protruding below the steel lintel and with a shim attached that goes against the leg of the head closure. The shim must be thin enough so that the blocking assembly can slide into place. Hold flashing in place and pre-drill for nailing into place later with trim nails.
- 4. Caulk the flashing surfaces that will overlap the brick or stone face, the window and the head expander jamb trims. Caulk around any pre-dilled holes.
- 5. Cut the counter-flashing height so that it may lap the flashing no less than 3/4" [19], yet still be attachable to the nearest convenient mortar joint above.
- Hold the counter-flashing in place, centering it with respect to the jambs. Drill through the counter-flashing only with a 3/16" [5] bit every 12" to 16" [305 to 405], using the bit to mark the anchor locations in the mortar joint.

- Put down the counter-flashing and drill into the masonry at the marked locations with a 1/4" [6] masonry bit. Tap in #8 [M4] expansion shields into the holes.
- Caulk the areas of the counter-flashing that will overlap the brick and the flashing, and screw into place with #8x1" Phillips pan head sheet metal screws (stainless steel or plated), painted to match.
- 9. Caulk the edges of both flashing and counter-flashing, especially the top, beveling off the sealant there for run-off.

Finishing the job

- 1. Apply wood filler over the screw heads and scrape off the excess with a spatula. Lightly sand with fine sandpaper, with the grain.
- 2. Miter-cut new casing so that there will be a fairly uniform margin of about 1/8" to 3/8" [3 to 9] between the visible edge of the wood frame and the casing, (Fig. 6). Nail to the wall with finishing nails, counter-sinking them and applying wood filler.
- 3. Operate the vents and make adjustment where needed.
- 4. Smooth off the caulking, and wipe off excess caulking from the window and surrounding building surface.

