

# Installation Guidelines

## Getting Started

Enlightened Style shutters are built using the highest quality materials. When properly installed, these shutters will provide a lifetime of beauty and performance.

### Installation Overview

Panel shutters come in many configurations — individually hinged, bi-fold panels, with and without T-posts, track systems comprised of from one to many panels, French door shutters and specialty shapes. There are also a variety of frames for inside or outside mounting.

Whatever the configuration, installation procedures are basically the same for most. The frame is assembled and fastened to the window at two points. Then the shutter panels are individually installed and racked, during which time frame attachment is completed. Panel locking system adjustment or magnet mounting, caulking and other finish work complete a typical installation.

### Unpacking

Carefully unpack the shutters. The package will include:

- Shutter panels
- Disassembled frames (frames for specialty shapes are typically assembled)
- Miscellaneous hardware (hinge pins, button covers, etc.)

### Tools and Fasteners Needed

- Variable speed drill ( $\frac{3}{8}$ " ) with  $\frac{3}{32}$ " and  $\frac{3}{16}$ " drill bits
- 3" Robertson #6 and #8 bits, #1 and #2 head
- Flat blade, Phillips, and Robertson #1 and #2 screwdrivers
- Miscellaneous tools for non-typical installations (jig saw, hack saw, Dremmel tool, etc.)
- Measuring tape
- Level
- Rubber mallet

Screws are provided. Other types of fasteners may also be needed depending upon the specific mounting surface (concrete, plaster, etc.) and mounting method.

### Additional Materials

Additional materials required for shutter installation include:

- Canvas drop cloth large enough for unpacking and frame assembly
- Clean fabric cloth and a mild cleaning spray solution
- Finishing supplies (caulk, sealant, etc.)
- Instant adhesive or contact cement (outside mount L-frames only)

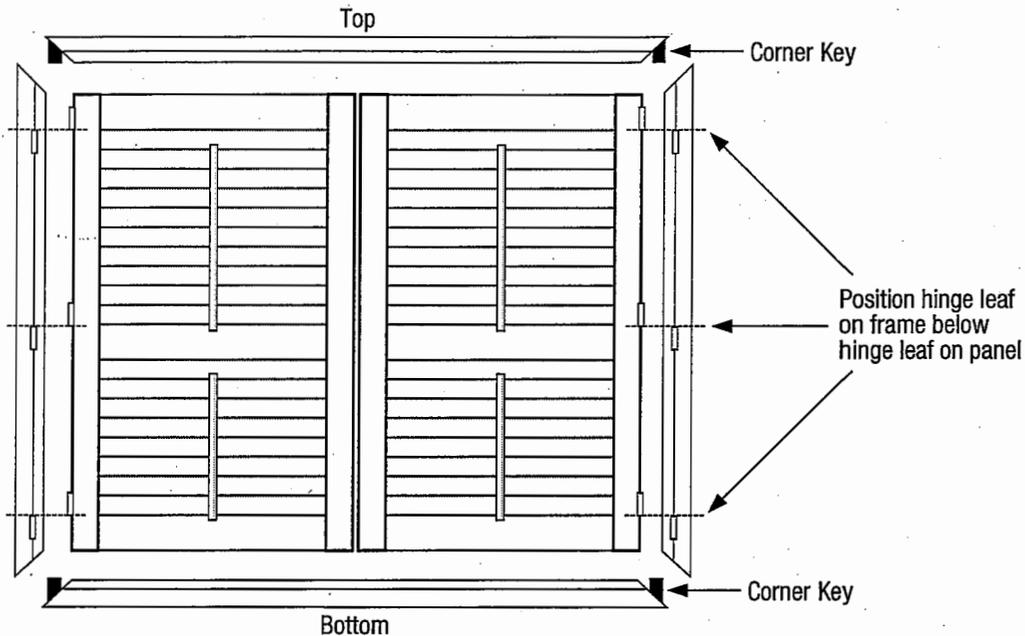
# Installation Guidelines

## Frame Assembly – Panel Systems

### Panel Systems Frame Assembly

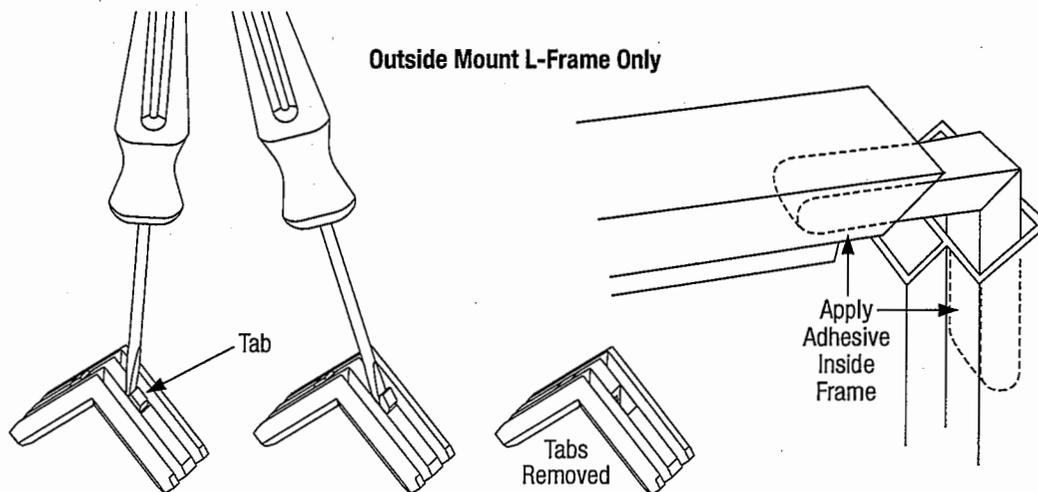
Prepare the work area. Lay the shutter panels on your drop cloth face up as they will appear in the window. Then follow the procedure below.

1. Lay the side frames beside the panels, so that the panel hinges are above the frame hinges. If one or more T-posts are used, lay them in the proper position, as well.



2. Insert the plastic corner keys into the ends of the top and bottom frames.

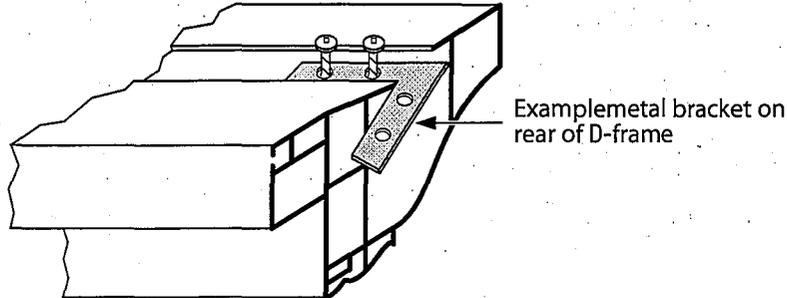
**IMPORTANT:** With outside mount L-frames only, glue the corner key into position as illustrated. This prevents the frame from bowing. First remove the tabs off the corner key with a flat blade screwdriver. Then apply a small amount of instant adhesive or contact cement to the inside of the frame. Insert the corner key into the end of the frame and hold firmly until set. (Note. Be sure the frames match before gluing. The corners cannot be detached after the adhesive has set.)



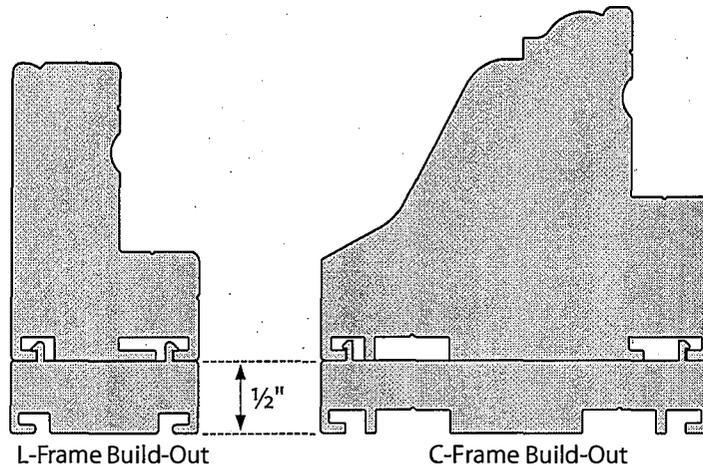
# Installation Guidelines

## Frame Assembly – Panel Systems

3. With the C-frame, T-frame and Z-frame, install 90-degree metal brackets on the back of the corners for a tight, more secure assembly.



4. C-frame and outside mount L-frame only: If build-out is needed for additional clearance, install the build-out onto the back of the frame.
  - The build-out snaps onto the back of the frame.
  - The frame build-out is also screwed into the back of the frame.



5. If one or more T-posts are used, attach them as explained on pages 50 & 51.

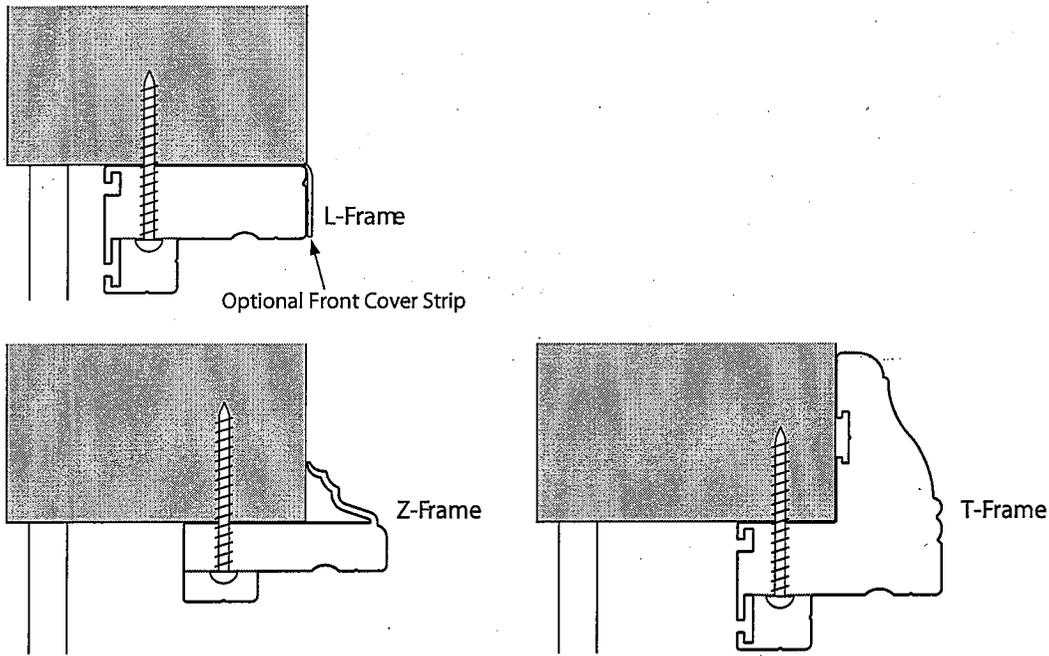
**IMPORTANT:** T-post attachment begins before the bottom frame piece is attached.

# Installation Guidelines

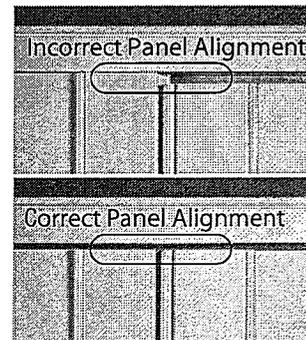
## Inside Mount Framed

### Inside Mount Framed Installation

This section covers inside mount installation of shutters with L-frame and Z-frame.

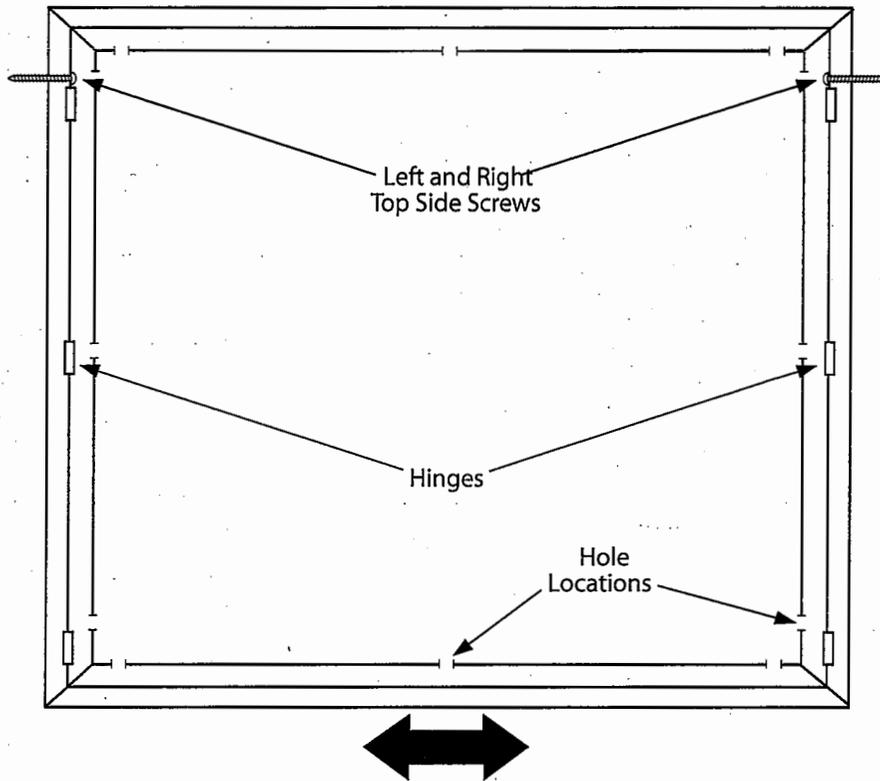


1. Place the assembled frame in the opening.
  - The top of the frame is indicated by the greater distance between the top hinge and top frame, versus the smaller difference between the bottom hinge and bottom frame.
  - The left and right sides of the frame are labeled.
2. Attach the left and right sides of the frame. Insert Robertson screws through the hole above the top hinge on each side.
  - Most frames have pre-drilled holes for ease of installation.
  - Center the frame in the opening, then set the screws into the jambs.
  - Tighten the screws snugly, but do not overtighten. If the screws are too loose, the framed opening will be smaller than ordered. If the screws are too tight, the framed opening will be larger than ordered.
3. Hang the panels and check for proper panel alignment.
  - If the panels are misaligned, rack the shutters by grasping the frame at the bottom corners and moving it from side to side until proper alignment is achieved.
  - With larger shutters, mark this frame location.
  - Note that the panel lock system is designed to help level the panels within the frame.



# Installation Guidelines

## Inside Mount Framed



To square the panels move bottom frame left or right

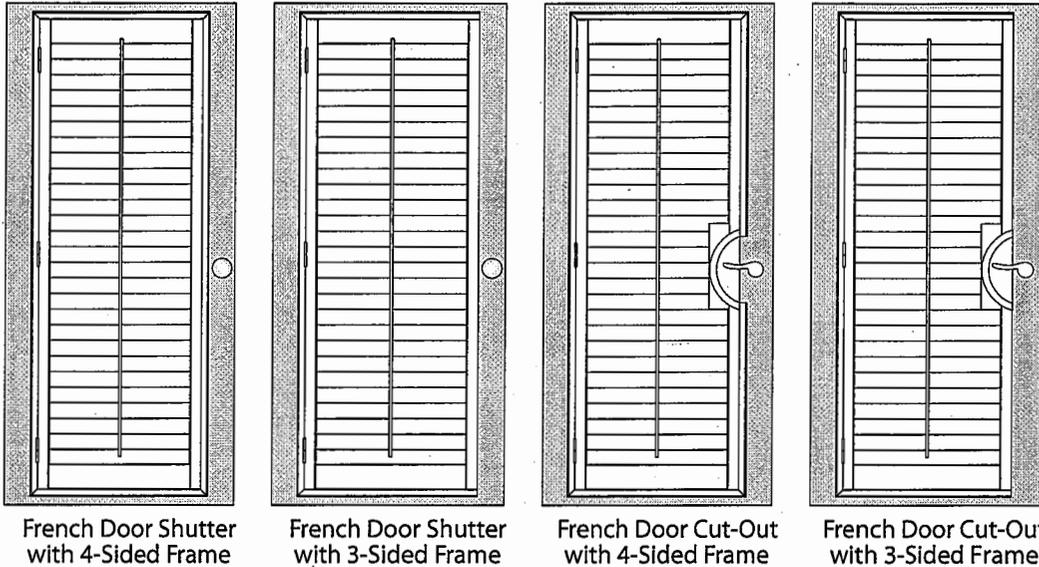
4. When the panels are aligned and square within the frame, hold the bottom frame in position and attach it with a screw through the middle bottom frame hole. Check that the panels are still aligned and re-adjust if necessary.
5. Insert screws into the remaining holes and check that the panels are still aligned after each screw has been tightened. Re-adjust if necessary.
6. Adjust the panel lock assemblies with a flat blade screwdriver so all doors stay firmly shut.
  - If necessary, install panel lock ramps on the sill or casement (see page 74).
7. Once all screws have been installed and the panels checked for alignment, insert any remaining hinge pins and cap all screw holes with the provided button plugs.
8. If necessary, glue front cover strips to the front of the L-frame.
9. If necessary, install magnets and plates (see page 75).
10. Perform any necessary finish work (see page 76).

# Installation Guidelines

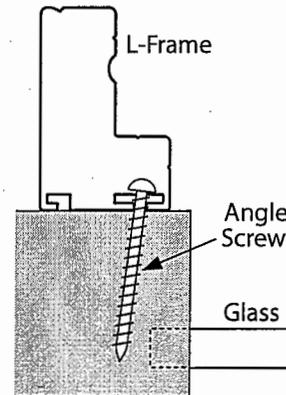
## French Door Shutters

### French Door Shutter Installation

French door shutters are mounted using the L-frame, either 3-sided or 4-sided. Installation procedures for French door cut-outs are the same as those for full panel French door shutters.

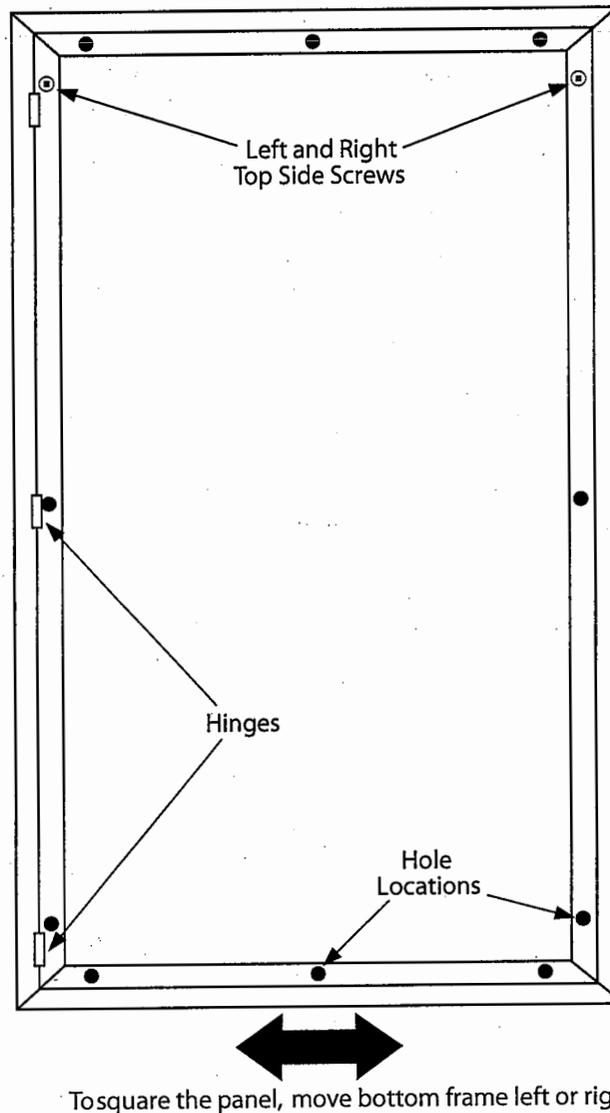


1. Place the assembled L-frame over the opening.
  - The top of the frame is indicated by the greater distance between the top hinge and top frame, versus the smaller difference between the bottom hinge and bottom frame.
  - The left and right sides of the frame are labeled.
2. Attach the left and right sides of the frame. Insert Robertson screws through the top hole on each side.
  - Most frames have pre-drilled holes for ease of installation.
  - Center the frame over the opening, then set the screws into the mounting surface.
  - IMPORTANT: Angle the screws to avoid breaking the glass.
  - IMPORTANT: With French door cut-outs, make sure the cut-out is centered on the door knob.
  - Tighten the screws snugly, but do not overtighten.
3. Hang the panel and check for squareness.
  - If the panel is not square, rack the shutter by grasping the frame at the bottom corners and moving it from side to side until proper alignment is achieved.
  - With larger shutters, mark this frame location.
  - Note that the panel lock system is designed to help level the panel within the frame.



# Installation Guidelines

## French Door Shutters



4. When the panel is square within the frame, hold the bottom frame in position and attach it with a screw through the middle bottom frame hole. Check that the panel is still square and re-adjust if necessary.
5. Insert screws into the remaining holes and check that the panel is still aligned after each screw has been tightened. Re-adjust if necessary.
6. Adjust the panel lock assemblies with a flat blade screwdriver so all doors stay firmly shut.
7. Once all screws have been installed and the panels checked for alignment, insert any remaining hinge pins and cap all screw holes with the provided button plugs.
8. If necessary, install magnets and plates (see page 75).
9. Perform any necessary finish work (see page 76).

# Installation Guidelines

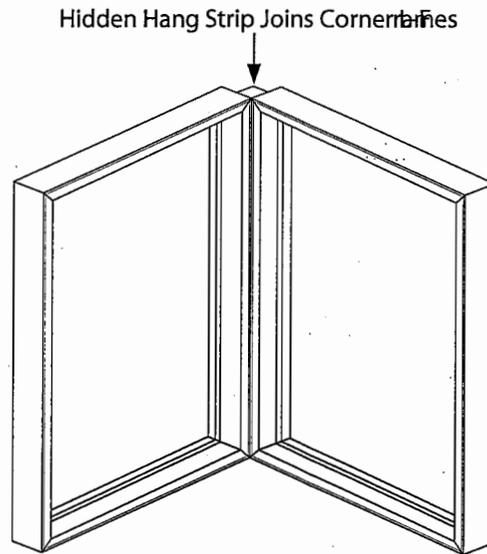
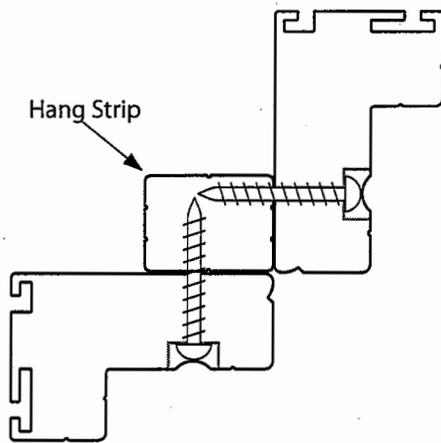
## Corner Window Shutters

### Corner Window Shutter Installation

Corner window shutters are two framed shutters connected together at a 90-degree angle. Before performing a corner window installation, you should be familiar with the framed shutter installation procedures described on previous pages.

1. Connect the two assembled frames.

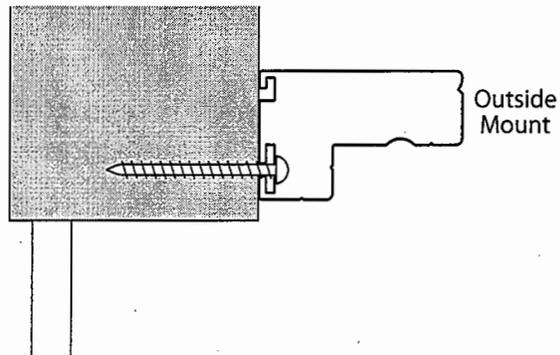
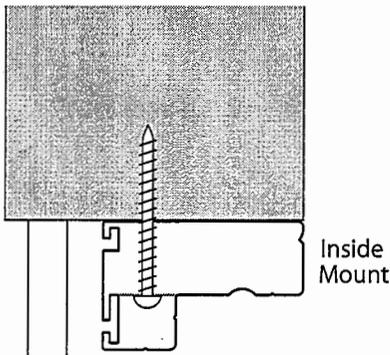
- Position the provided hang strip flush with the front of the right side of the left frame. Attach it with screws through the frame, on the screw indicator line.
- Attach the left side of the right frame to the hang strip in a similar fashion.



2. Place the connected frames in or over the opening.

3. Attach the inside corners of the left and right frames. Insert Robertson screws through the holes nearest the hang strip on the top and bottom frame pieces.

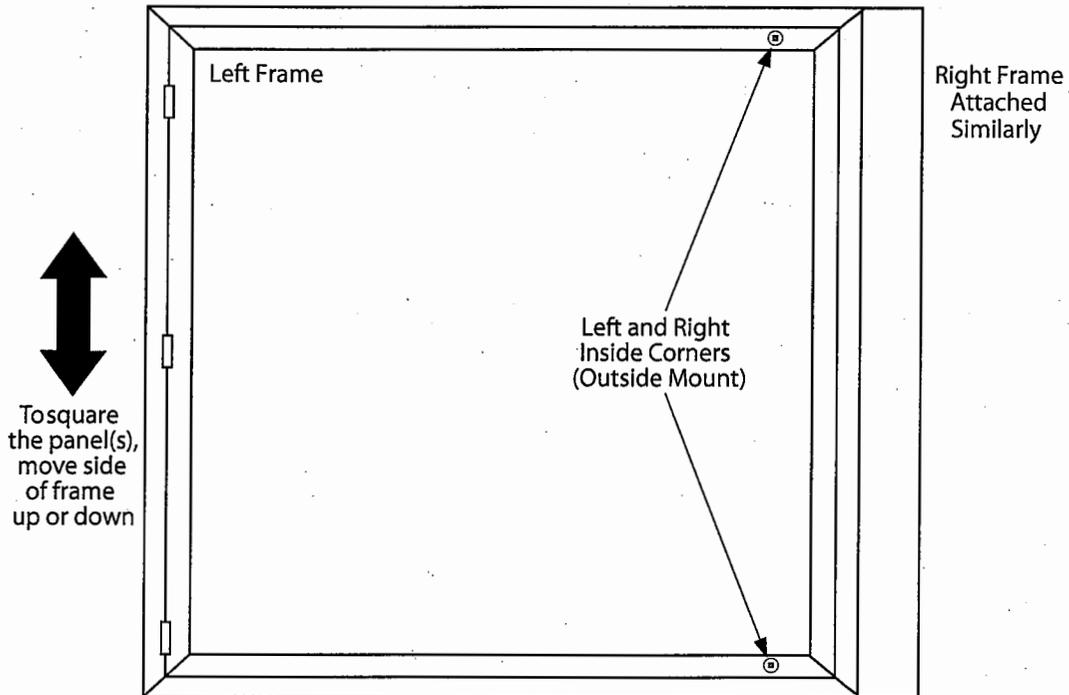
- Most frames have pre-drilled holes for ease of installation.
- Tighten the screws snugly, but do not overtighten.



# Installation Guidelines

## Corner Window Shutters

4. Hang the panel(s) in the left frame and check for proper panel alignment.
  - If the panel(s) are not square or misaligned, rack the shutters by grasping the frame at its outside corners and moving it up and down until proper alignment is achieved.
  - With larger shutters, mark this frame location.
  - Note that the panel lock system is designed to help level the panels within the frame.



5. When the panels are aligned and square within the frame, hold the bottom of the left frame in position and attach it with a screw through the middle bottom frame hole. Check that the panels are still aligned and re-adjust if necessary.
6. Insert screws into the remaining holes and check that the panels are still aligned after each screw has been tightened. Re-adjust if necessary.
7. Adjust the panel lock assemblies with a flat blade screwdriver so all doors stay firmly shut.
8. Once all screws have been installed and the panel(s) checked for alignment, insert any remaining hinge pins and cap all screw holes with the provided button plugs.
9. Repeat the panel installation and frame attachment procedures for the right frame.
10. If necessary, install magnets and plates (see page 75).
11. Perform any necessary finish work (see page 76).

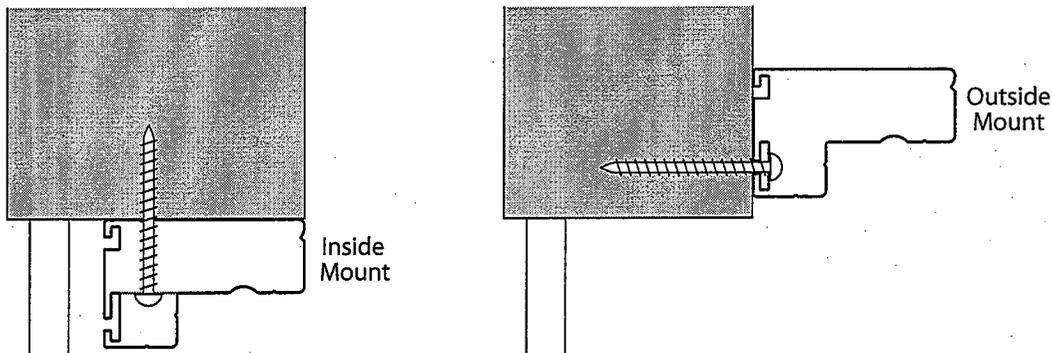
# Installation Guidelines

## Bay Window Shutters

### Bay Window Shutter Installation

Bay window shutters are three individually framed shutters (left, middle and right) abutted together in the window. Before performing a bay window installation, you should be familiar with the framed shutter installation procedures described on previous pages.

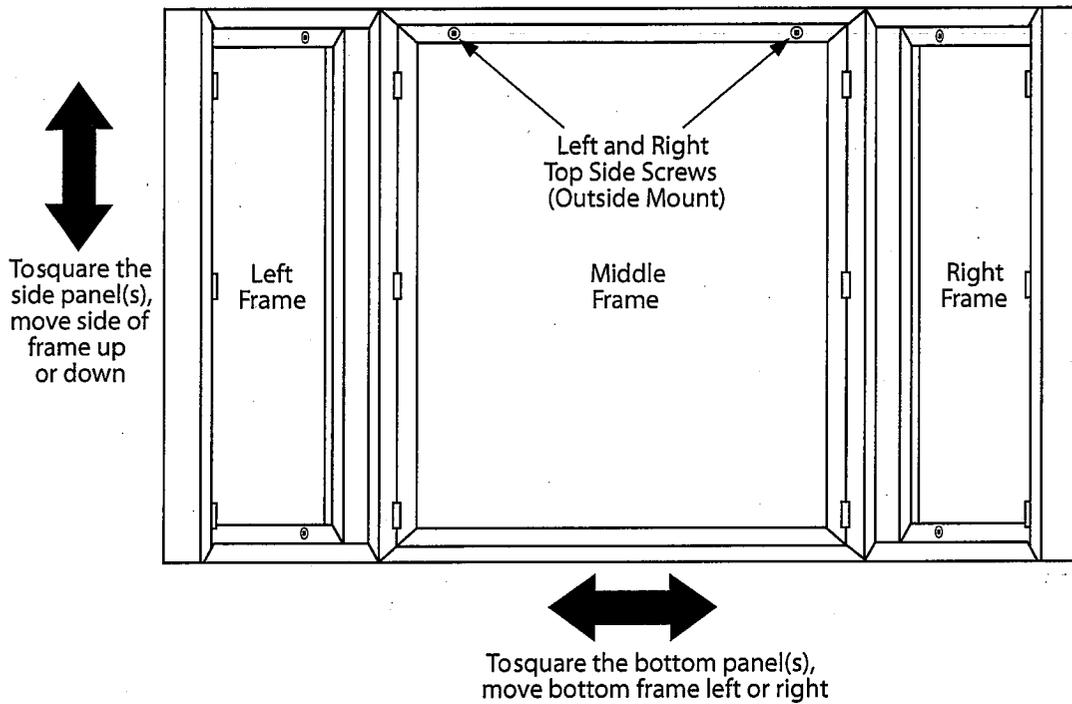
1. Place the middle frame in or over the opening.
2. Insert a Robertson screw into the left and right holes in the top of the frame.
  - Center the frame in or over the opening, then set the screws into the mounting surface. Tighten snugly, but do not overtighten.



3. Hang the panel(s) in the middle frame. Rack the panels and complete frame installation as described on previous pages.
4. Attach the left frame as you would for a corner installation with Robertson screws through the holes nearest the middle frame on the top and bottom frame pieces.
  - Abut the left frame to the middle frame.
  - Set the screws into the mounting surface. Tighten snugly, but do not overtighten.
5. Hang the panel(s) in the left frame.
  - Rack the panels by moving the left side of the left frame up or down.
  - Complete left frame frame installation, checking squareness and alignment after setting each screw.
6. Attach the right frame in a similar fashion, with Robertson screws through the holes nearest the middle frame on the top and bottom frame pieces.
  - Set the screws into the mounting surface. Tighten snugly, but do not overtighten.
7. Hang the panel(s) in the right frame.
  - Rack the panels by moving the right side of the right frame up or down.
  - Complete right frame frame installation, checking squareness and alignment after setting each screw.

# Installation Guidelines

## Bay Window Shutters



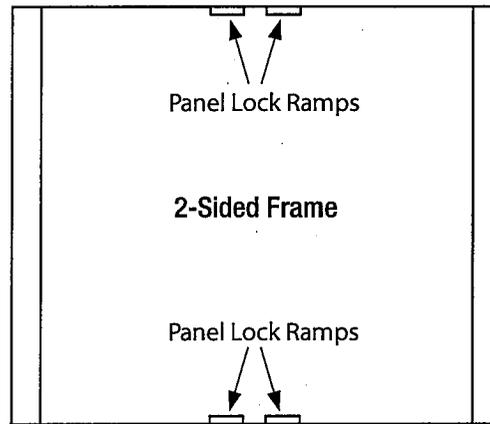
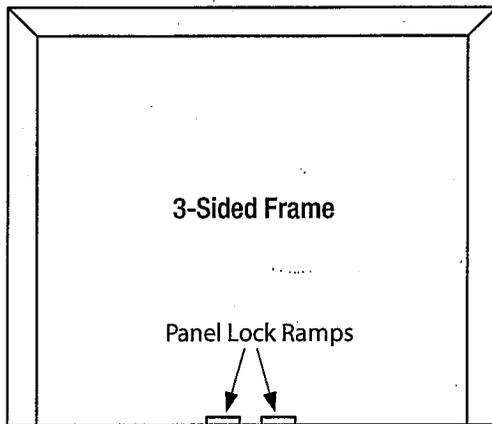
8. Adjust the panel lock assemblies with a flat blade screwdriver so all doors stay firmly shut.
9. Once all screws have been installed and the panel(s) checked for alignment, insert any remaining hinge pins and cap all screw holes with the provided button plugs.
10. If necessary, install magnets and plates (see page 75).
11. Perform any necessary finish work (see page 76).

# Installation Guidelines

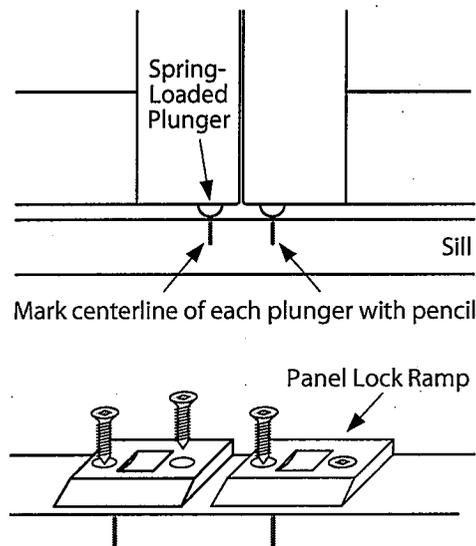
## Panel Lock System

### Install Panel Lock Ramp(s), If Applicable

The panel lock system with spring-loaded plunger is installed on panels and frames during fabrication. If your panel configuration is a 3-sided frame application, install panel lock ramps on the bottom sill. If a 2-sided frame, install the panel lock ramps on both the top and bottom sills.



1. With the shutter panel(s) closed, make a pencil mark on the sill to show where the center of each spring-loaded plunger is located.
2. Mark where to drill screw pilot holes.
  - Open the shutter panel(s). Place the panel lock ramp on the sill with the sloped edge facing front.
  - Center the panel lock ramp on the line marking the plunger location.
  - Mark the center of the ramp's screw holes. Repeat for all panel lock ramps.
3. Drill pilot holes for each panel lock ramp using a  $\frac{3}{32}$ " drill bit.
4. Attach the panel lock ramps to the sill using the Robertson screws provided.
5. Close the shutter panels to check function and closure.
6. The spring-loaded plungers can be adjusted using a flat blade screwdriver.
  - If closure is too tight, push in on the plunger and rotate clockwise to recess the plunger.
  - If closure is too loose, push in and rotate the plunger counterclockwise to extend it.
  - Rotate the plunger in one-half turn increments to maintain alignment with the style cap.



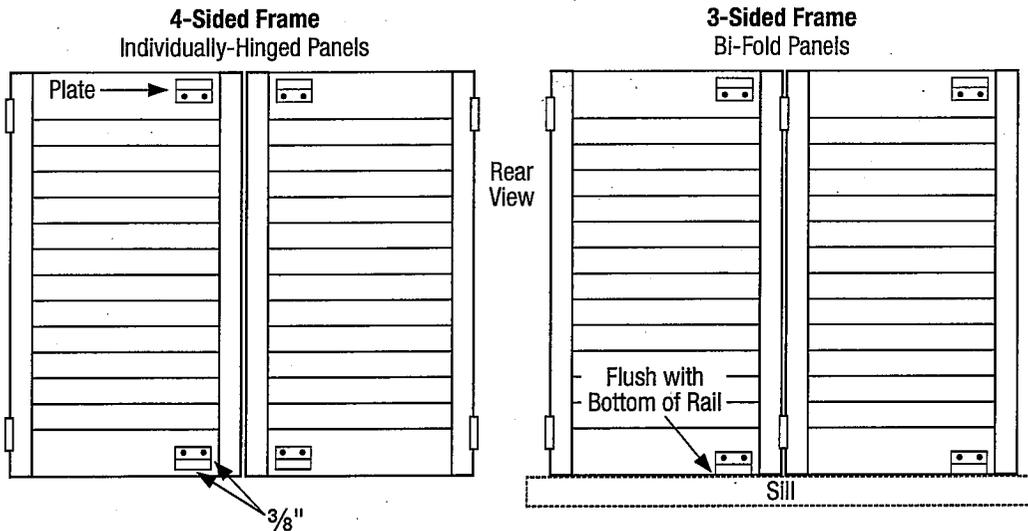
# Installation Guidelines

## Magnets and Plates

### Install Magnets and Plates, If Applicable

If the shutter panels do not have panel locks, you may need to install magnets and plates if they are not already installed.

1. Review the diagrams below. Plates are installed at the top and bottom of all shutter panels. Magnets are installed behind the plates to the frame or sill.



2. Using a pencil, mark the frame (top and bottom) where the stile meets the top and bottom rails, on the side where the shutter closes against the frame.

- With three-sided frames, mark the sill at the bottom.

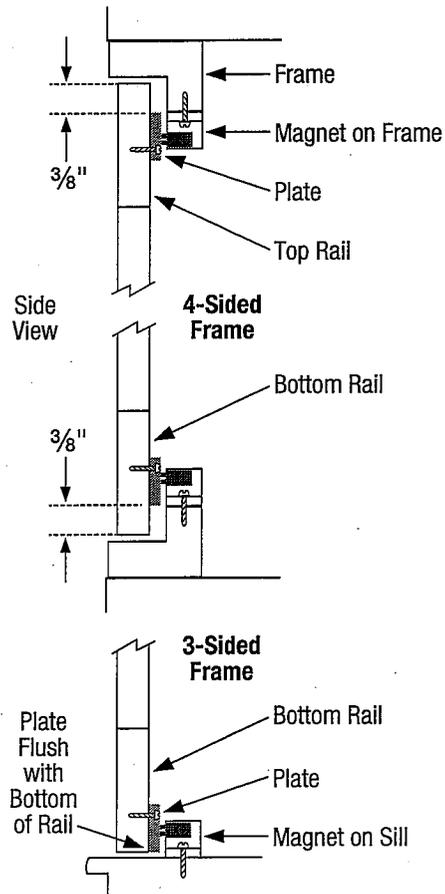
3. Install the magnets to the frame's light block so that the magnets are  $\frac{3}{8}$ " in from the mark, toward the center of the shutter panel.

- With three-sided frames, install the magnet to the sill  $\frac{3}{8}$ " in from the mark. Align the magnet with the frame's light block.

4. Install the plates on the rear of the panels so that they align with the magnets. The corner of the plates should be  $\frac{3}{8}$ " in from the stile and the edge of the top or bottom rail.

- With three-sided frames, install the bottom plates flush with the edge of the bottom rail.

5. Close the shutter panels to check function and closure. Adjust magnet or plate position, if necessary.

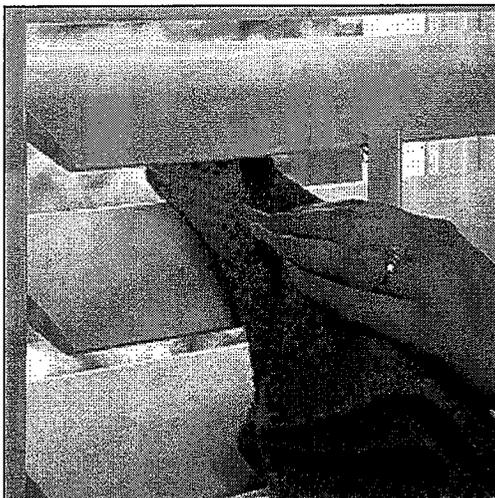
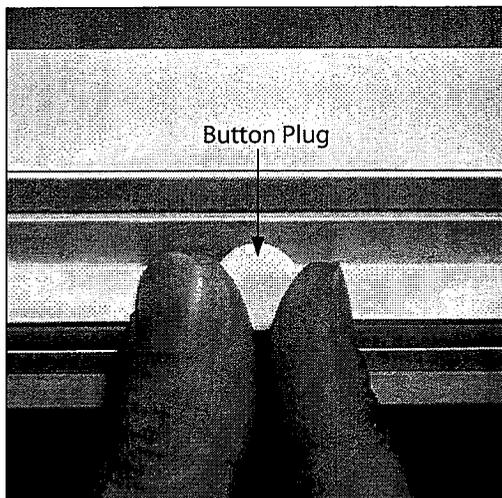


# Installation Guidelines

## Finish Work

### Perform Any Necessary Finish Work

- If you have not done so already, cap all screw holes with the provided button plugs.
- If you have not done so already, on inside-mounted L-frame applications glue L-frame cover strips to the front of the L-frame to fill gaps between the frame and window jamb.
- Apply sealant as needed to fill gaps between frames and window jambs or between mitered corners.



- Wash any dirt or grease from the shutter using a clean cloth and mild detergent solution. Never use ammonia-based products.
- Invite the home owner to inspect the installation. Give the home owner the warranty card. Demonstrate proper operation of the shutters and show the customer the location of their individual authenticity plate serial number.

# Operation and Care

## Operation

- Tilt the louvers by grasping one louver and moving it. Do not use the tilt bar to tilt the louvers.
- Open the shutter panel by grasping the stile through open louvers and pulling out. Do not use the tilt bar to open the shutter panel.

## Care

- Clean using a dry and soft feather duster, clean cloth, dust cloth or dusting mitt. A vacuum with the soft brush attachment can also be used.
- Shutters may be washed using a mild detergent solution. Never use ammonia-based products.
- Ultrasonic cleaning or use of chemical solvents and scrubbing cleansers are not recommended. This will damage the product.
- When cleaning any window, spray glass cleaner on a cloth rather than spraying directly on the window.

# Troubleshooting

## Problem: Panels Won't Stay Closed

- **Check the panel lock.** Check to ensure that the panel lock plunger is seated properly in the panel lock ramp. Possible problems include:
  - The panel lock plunger is too far inside the panel. Adjust the plunger as described in step 6 on page 74.
  - The plunger does not sit in the "dip" in the panel lock ramp. Reposition the ramp, if necessary. Refer to steps 1 through 5 on page 74.
  - Check plunger and stile cap alignment. The plunger is designed to lock into grooves on the stile cap to prevent unwanted rotation. If they are not aligned, the plunger will remain inside the cap. To adjust, use a flat blade screwdriver to rotate the plunger until it is properly aligned and able to extend beyond the stile cap.
- **Check the number of magnets.** If magnets are used for closure, check that there are two per panel, one at the top and one at the bottom. Refer to the magnet installation section on page 75. (Note: Café style shutters use only one magnet.)
- **Check magnet contact.** If magnets are used for closure, check that the magnets and magnet plates have full contact with each other. Possible problems include:
  - The magnet and plate are not aligned. The magnet or magnet plate may need to be moved to achieve proper alignment. Refer to the magnet installation section on page 75.
  - The magnet is at a slight angle, with only one side of the magnet touching the plate. Loosen one of the screws on the magnet to allow it to be straightened so that it makes full contact with the plate.
  - The magnet plate is not flush with the panel, so that only one side touches the magnet. Adjust the screws so that the magnet plate becomes flush with the panel.
- **Check panel load.** Load is created when the installation is not square. This places load on the stile, which can force the panel to open with a spring-back effect. If the load is excessive, the louvers may be difficult to close, as well. Possible solutions include:
  - If load is detected with framed applications, tighten or loosen the installation screws on the frame. (Do not use shims.) Start by removing all the installation screws except for the top. Re-install the bottom installation screw until there is no load. Continue with all other installation screws, one at a time, checking for load after each one.
  - If there is load on a bi-fold panel, remove the second bi-fold panel and resolve the problem with the first hinged panel as described above. Then re-attach the second panel and check that the problem has been resolved.
  - If load is detected with unframed applications, shim the hinges to square the panels. Remove all hinge pins except for the top and bottom. Shim those hinges as needed until the problem is resolved. Continue with the other hinges, one at a time, checking for load after each one.

# Troubleshooting

## Problem: Panels Won't Stay Closed (continued)

- Check for obstructions that prevent panels from closing. Possible problems include:
  - Window cranks can prevent panels from closing. Take the crank off the rotator and see if the panel is still obstructed. If the panel closes, replacing the window crank with a T-crank can often solve the problem. Otherwise, build-out may be required to add clearance. For panels without a frame, an extension hinge may be used to bring the panel into the room an extra  $\frac{5}{8}$ ".
  - Window locks are other possible obstructions. Add clearance as described above.
  - Patio door handles can prevent louvers from opening. If a handle stops a panel from closing, the shutter must be built-out.
  - Bowed sills or casements can prevent inside-mounted shutter panels from closing if the narrowest height and width measurements were not ordered. Double-check the inside measurements and compare them with the measurements ordered and received.
- Check for a twisted panel. Panels can sometimes be twisted by weight leaned against it or by extreme heat. Fortunately, the material can be "tweaked" back to its original shape with gentle force. To do this, use your hand to support the middle of the panel's outside stile and bend the top or bottom back into position until the panel remains closed.

## Problem: Panels Are Too Tight

- Check that the frame is installed properly. If the frame is not installed correctly, it may cause the inside opening of the frame to be too narrow at a specific point, causing the panels to be too tight. To check if the installation screws have been tightened the correct amount, measure the top or bottom width and compare it to the width where the panel appears to be too wide. Adjust the installation screws to square the frame.
- Check that the panel is in the correct opening. When multiple windows are of similar size, panels can sometimes be placed into the wrong opening or with the incorrect panel grouping. Check the labels and order form instructions to ensure that the panels are in the correct opening and with the correct panel group.
- Check that the panel width is correct. To determine a manufacturing or ordering error, check the measurement of the panel versus the measurement on the label. If the label measurements are correct, then measure the inside width of the opening in three locations to verify the correct width was ordered. If a panel is made or ordered too wide, it can possibly be cut down.
- Check that the frame width is correct. If the frame is manufactured too small, the panels will be too tight. Measure the back installation part of the frame and check it against the ordered width, taking into account the fabricator deductions.

# Troubleshooting

## Problem: Panels Are "Sagging"

- Check the squareness of the installation. If the stiles are not square, the panels can appear to be sagging.
  - Measure the top and bottom frame widths. If there is any variation, make the top and bottom widths the same by adjusting the installation screws or, in extreme cases, shimming the frame.
  - If the top and bottom frame widths are the same, check the two diagonal measurements. If uneven, the frame is out of square. Adjust it as described above.

## Problem: Louvers Are Too Tight

- Check for overtightening between the stiles and rails. If there is less play near any rail and the rail and louver widths have been checked, there is a possibility the screws attaching the stiles to the rails have been overtightened. To loosen the screws, carefully remove a stile cap and slide out the light block. This will expose the assembly holes. Use a #8 Robertson drill bit to release the tightness.
- Check panel load. Review the procedures.
- Check louver widths. There should be some play between louvers and stiles. Move the louvers side to side. If there are some louvers that appear to be tighter, measure and compare the widths of the louvers. If they are not the same, then there may be a fabrication error requiring the louvers to be replaced or cut down.
- Check rail widths. Measure all horizontal rails, including divider rails, to ensure that all are exactly the same width.

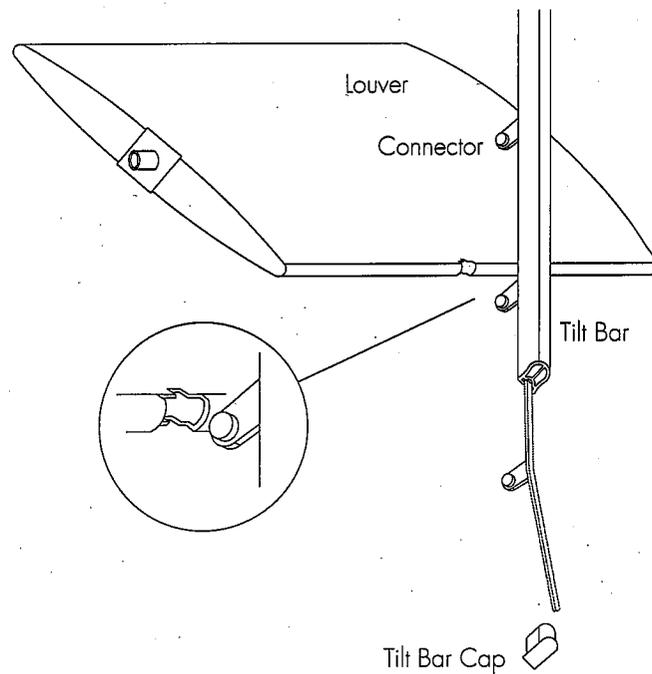
## Problem: Louvers Are Warped

- Check tolerances. This problem presents itself as variations in light penetration or light leakage when the louvers are closed. There are two possible causes:
  - Panels with louvers over 20" wide come with aluminum reinforcement to prevent sag. The polysatin material can be tweaked back to its original shape with gentle force.
  - The louver holes in the stile have a tolerance of 0.01". While this may not seem to be much, it may cause slight variations in light penetration when the louvers are closed — the louvers overlap slightly differently in different locations. This is a normal, inherent characteristic and not a defect.
  - The natural effects of gravity and heat can cause slight variations in level, especially on wider panels. However, the product should never have a level variation exceeding  $\frac{1}{16}$ ".

# Troubleshooting

## Replacing Damaged Tilt Bar Connectors

- Remove tilt bar cap. It may be tight, so use a sharp object (e.g., screwdriver).
- Slide tilt bar off connectors.
- Remove broken connector(s).
- Replace connector in slat groove by holding the louver and snapping the new connector into the T-shaped notch in the louver. Note: replace connectors with similar length piece.
- Slide tilt bar over connectors and replace cap. (New cap may be required).



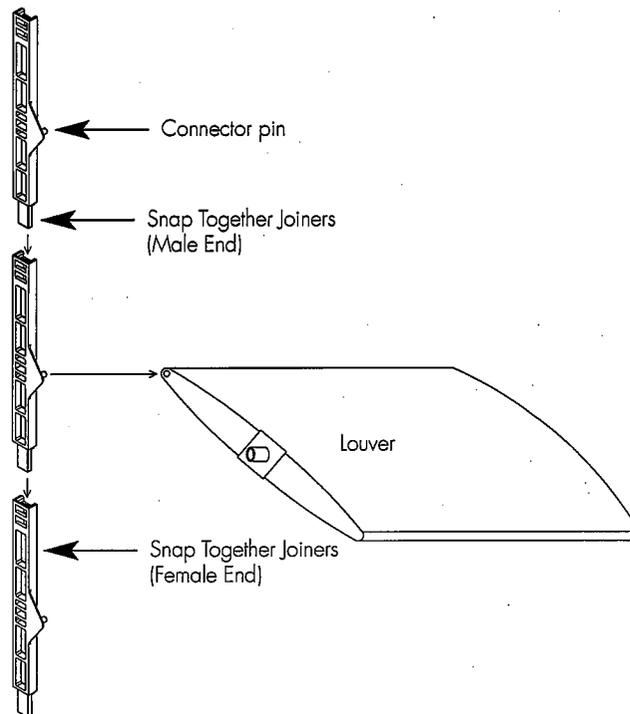
Note: It is possible to re-insert the tilt bar connectors without damage. Simply hold the louver, place the connector in the notch and press firmly. It is not necessary to remove the tilt bar.

# Troubleshooting

## Replacing Damaged Tilt Bar Connectors

- Remove broken joiners.
- Snap joiner pin into louver.
- Snap top and bottom of replacement joiner into joiner above and below the replacement joiner.
- These joiners are made to stay together. If joiners do not come apart, then replace all joiners in that section.

## Connectors for Seamless Caps



Note: The top and bottom joiners in a panel are shorter. Replace these joiners with the same type joiners.