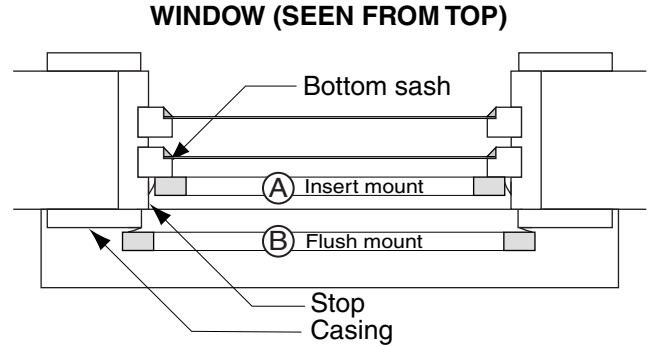


Double-Glazed Storm Panel Instructions

STEP 1. Examine window to see if a storm panel is practical. The two mounting possibilities are:

- A) *Inserted* between stops, against the sash
- B) *Flush* against the window casings.

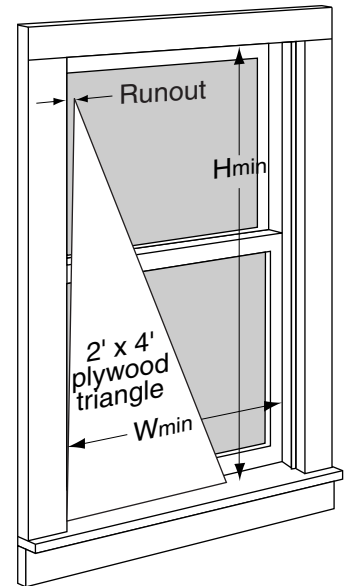
Possible obstructions include blinds, shades, interior shutters, or casement-window cranks. Often the obstruction may be moved.



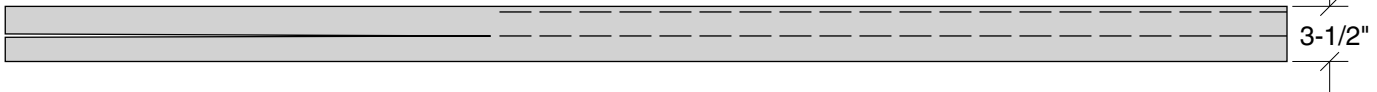
STEP 2. Assuming an insert mount is possible, measure and record W_{min} & H_{min} inside the window stops. Place the short leg of a framing square on the window sill and check the squareness of the window frame. If the window frame appears to be out of square by more than $1/4"$ at the top, construct a larger $2' \times 4'$ triangle using a factory-edge corner of a sheet of lauan plywood, and measure the runout (gap, as shown in illustration) at the tip of the triangle.

If the runout measures more than $3/8"$, you have two options: 1) duplicate runout in the panel using the triangle as reference during gluing of the frame, and 2), build a flush-mount panel.

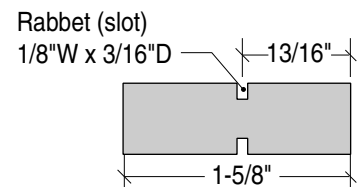
To build a flush-mount panel, simply add $2"$ to W_{min} and $1"$ to H_{min} so that the panel overlaps the side and top casings by an inch, providing surfaces for the V-strip weatherstrip to seal against.



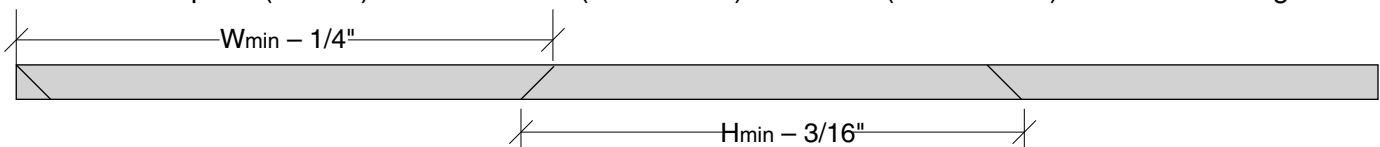
STEP 3. Using a table saw, rip pre-primed pine 1×4 ($3/4" \times 3-1/2"$). Because the width of the 1×4 may be slightly variable, set the blade at $1-5/8"$ and take two passes. This will produce two identical $1-5/8"$ strips.



STEP 4. Using a table saw and a blade with $1/8"$ wide teeth (outside blades of a dado set and many older blades have such teeth), mill rabbets dead center on both faces of rails and stiles. Double check the rabbet depth as it is critical to fully engage the screen spline. Round over the edges of the rabbet with any blunt tool in order to make insertion of the spline easier.



STEP 5. Cut pairs (2 each) of mitered rails ($W_{min} - 1/4"$) and stiles ($H_{min} - 3/16"$) in maximum length.



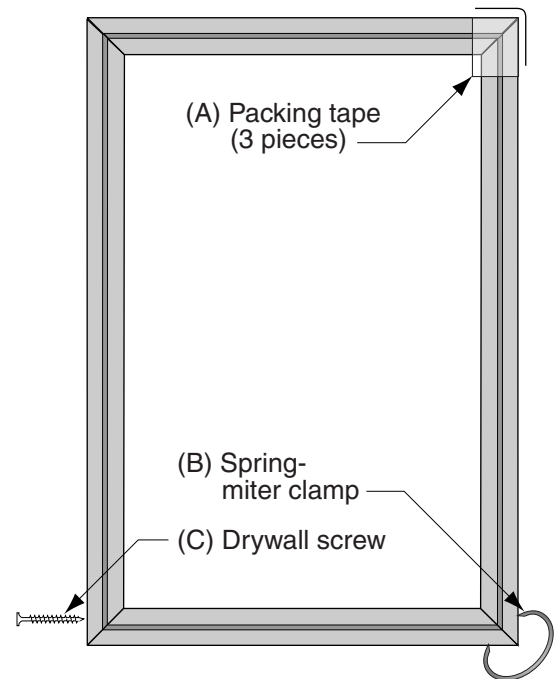
STEP 6. Glue up the frame. Clear space on a flat surface. If a table or workbench is not available, the bare floor will do.

Two types of adhesive are recommended:

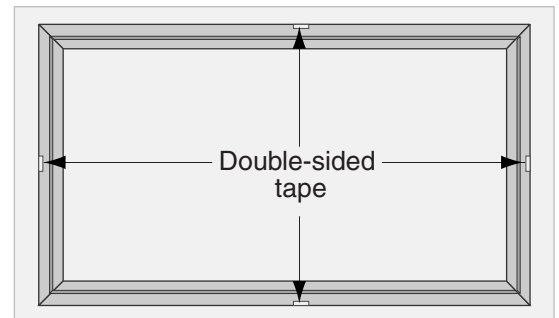
- 1) *5-minute epoxy*—expensive, but cures in 15 minutes and doesn't require clamping
- 2) *Carpenter's (yellow) glue*—inexpensive, but requires clamping for several hours, which may delay application of the film until the next day.

Three "clamping" methods are illustrated:

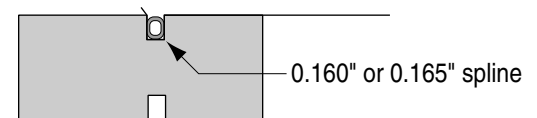
- A) 2" x 2" packing tape on both sides of joints and around the corners (recommended only for epoxy adhesive because it applies no pressure)
- B) Spring-miter clamps (best by far, if you have them)
- C) 2-inch pilot hole and 2-1/2" drywall screw



STEP 7. After the adhesive cures, apply short strips of double-sided tape as shown, then lay out a sheet of film and press into the tape. The tape simply serves as additional "hands" to keep the film roughly in place while you apply the screen spline. Some people prefer taping the film to the work surface instead.



STEP 8. Starting at the midpoint of one edge, press the film into the rabbet with screen spline and spline roller. Press in about 6" of spline, then repeat on the opposite edge. Work your way around the frame, alternating sides and working toward the corners until done.



STEP 9. Using a heat gun (a hair dryer will work, but is slower), shrink the film, then trim the excess with a utility knife. DO NOT overheat the film, or it will perforate. Better to leave a few tiny wrinkles.

STEP 10. CLEAN THE FILM, then repeat STEPS 7–9 on opposite side. The film attracts dust, so wipe the interior surface with a damp cloth before applying the second film, or you will live with the dust forever.

STEP 11. Apply self-adhesive V-strip weatherstrip. The strips may be applied either to the edges of the panel (flat faces in case of the flush mount), or to the window frame. The former leaves the window frame untouched, but the latter is simpler and makes it easier to store the panels in summer. Your choice.

STEP 12. Install the panel. If an insert mount, press the panel up against the window sash, then secure against blow-out with two push-pins (from a stationery store). If a flush mount, drill holes (4 total) in the vertical panel strips a quarter way from top and bottom on each side, and secure to the casing with screws.

MATERIALS: Pre-primed 1x4 pine is available at any lumberyard or home center. Heat shrink film is available in 3- and 10-window kits at Walmart and Ace Hardware stores. The screen spline may be purchased from any glass store, and white V-strip is available at Ace Hardware in 17-foot lengths. For Maine residents, Coastal Glass and Window in Bath (207-443-2156) stocks both 0.0160" gray screen spline and white V-strip and sells both at greatly discounted prices.