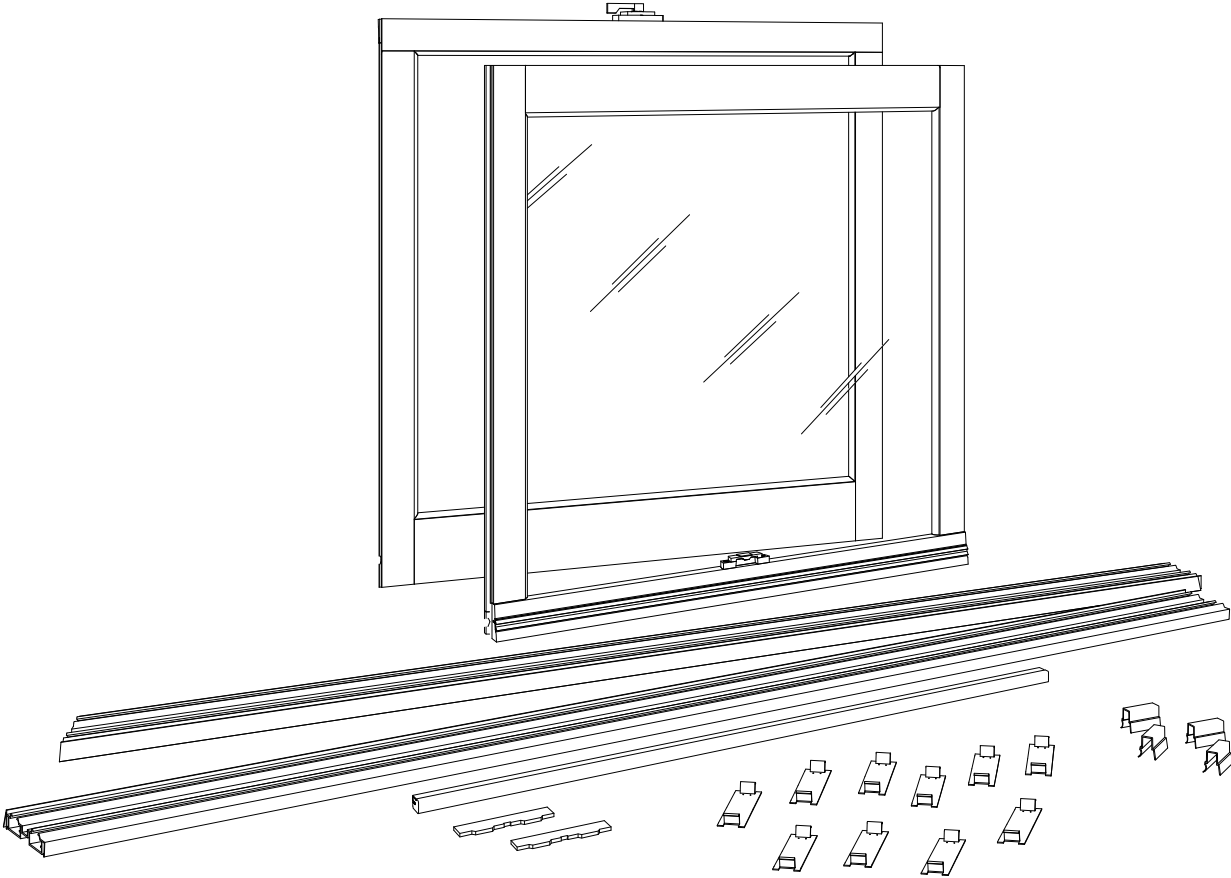


Ultimate Double Hung Tilt Pac

Installation and Finishing Instructions



BEFORE YOU BEGIN

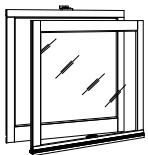
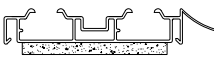
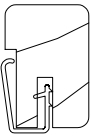
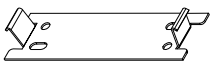
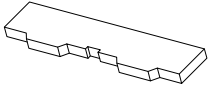
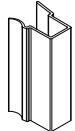
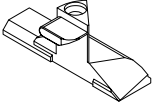
IMPORTANT: Read these instructions thoroughly before beginning to assemble and install a Tilt Pac. Failure to install as recommended will void any warranty, written or implied.

- It is the responsibility of the builder, installer and subcontractors to protect the interior and exterior of windows/doors from excessive contact with harsh chemical washes, construction material contamination and moisture. Damage to glazing, hardware, weatherstrip and cladding/wood can occur. Protect with painters tape and/or protective sheathing as required. Follow all guidelines regarding material use, preparation, personal safety and disposal.

- Alterations to Marvin products including window films, insulating or reflective interior window treatments or additional glazings can cause excessive heat buildup and/or condensation. This may lead to premature failures not covered under warranty by Marvin Windows and Doors.
- When preparing to finish the exterior of wood windows and doors fill all nail holes and staple holes with wood filler. Follow all guidelines enclosed (after warranty) and by others (from materials used) to prepare and finish.

WARNING: Practice safety! Wear safety glasses or goggles and appropriate hearing protection when installing or performing adjustments to a Marvin window or door product.

STANDARD PARTS SHIPPED WITH UNIT

ILLUSTRATIONS (not to scale)	DESCRIPTION AND COLOR	PART/PROFILE NUMBER
	Top and Bottom Sash Pair	Contact your Marvin dealer
	Jamb Liner Assembly Clip mount	Contact your Marvin dealer
	Head Jamb Parting Stop Assembly	Contact your Marvin dealer
	Jamb Liner Installation Clip	11860011
	Jamb liner top foam gasket	10500100
	Vinyl sash stop V177 Colors: White and Beige White - 11860114 Beige - 11860116	
 <i>Left hand shown</i>	Sash cam pivot pin with attaching screw - installed RH - 11869347 LH - 11869348	

YOU WILL NEED TO SUPPLY

Safety glasses	Hammer
Putty knife or pry bar	Screwdrivers (Flat and Phillips)
Finish nails	Pliers
Sash retainer plates if desired	

REPLACEMENT PARTS

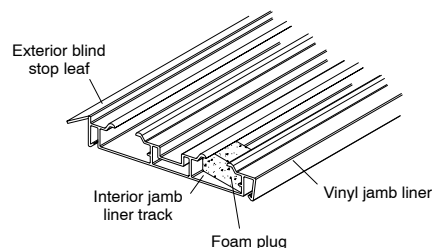
If replacement parts are needed, please contact your local Marvin Windows and Doors dealer.

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FOAM PLUGS

During shipping, the foam plugs located in the vinyl jamb liner may come loose. If so, reposition in the bottom of the interior jamb liner track as shown.



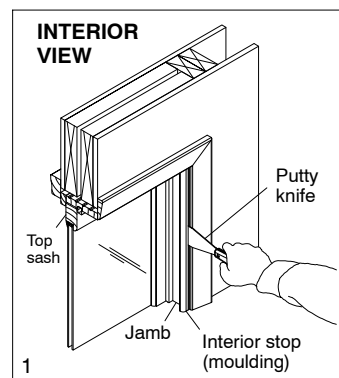
NOTE: Numbers listed in parentheses () are metric equivalents in millimeters rounded to the nearest whole number.

ATTENTION: Specifications and technical data are subject to change without notice.

REMOVING THE SASH

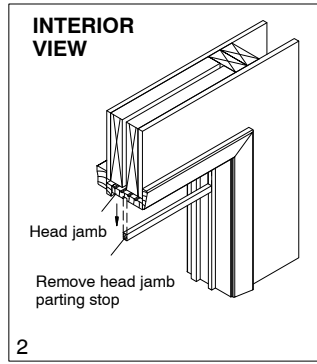
- Remove interior stop from the side jambs using a putty knife or pry bar. See illustration 1.

IMPORTANT: Do not break or damage interior jamb stops as they may be reused.



- Lift out the bottom sash. Disconnect and remove any balance mechanism attached.

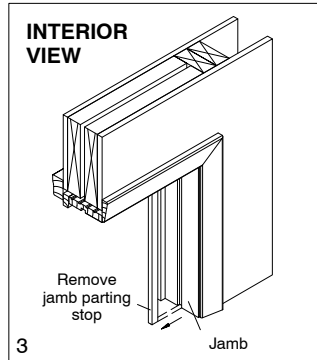
3. After removing bottom sash, slide top sash down toward sill. Remove the part stop from head jamb. See illustration 2.



4. Remove part stops from both side jambs. See illustration 3.

Remove the top sash. Disconnect and remove any balance mechanism attached.

IMPORTANT: Before proceeding, inspect existing frame for rot or deterioration of frame members. Repair or replace as needed.



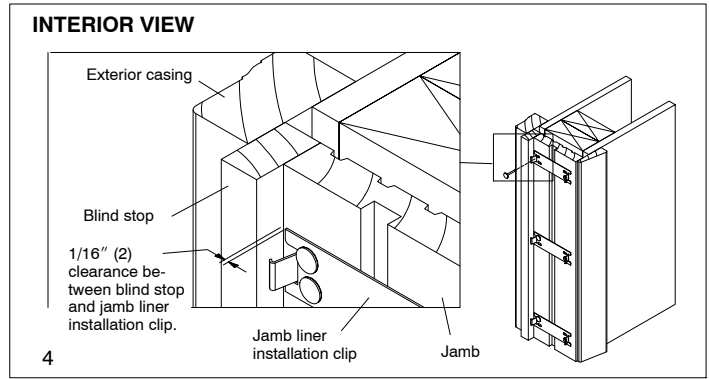
Check frame to ensure the sill, side and head jambs are straight, level and plumb. Measure frame diagonally to check frame for square. The frame **MUST** be corrected if "out" on any of the above conditions.

Recheck sash opening width (inside of side jambs), height (head jamb to point where exterior of bottom sash contacted sill), and sill bevel (standard Marvin bevel is 14 degrees) to ensure Tilt-Pac ordered will properly fit the opening.

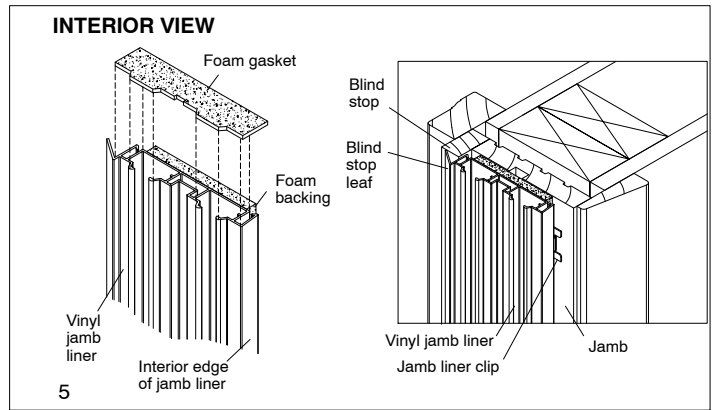
PREPARING THE FRAME

5. Remove any remaining balance mechanism hardware. If your frame utilized weight pockets at the jambs remove weights (if possible) and fill cavity with fiberglass insulation.
6. Position jamb liner installation clips for the vinyl jamb liners. Place one approximately 4" (102) from head jamb, and one 4" from sill. Align level on the jamb 1/16" (2) away from the exterior blind stop. Distribute and align other clips evenly along the jambs depending upon the size of the unit (see chart below). Fasten in place with 3/4" - 1" galvanized roofing nails, 4 per clip. See illustration 4.

Jamb liner installation clip quantities	
Call size	Quantity
20 and under	6
22-28	8
30 and over	10

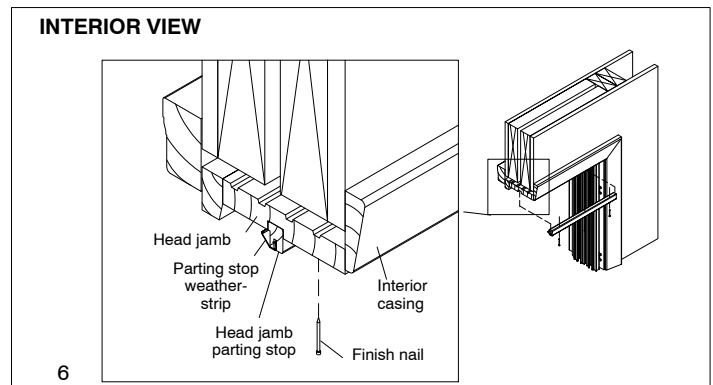


7. Place foam gasket at the top of each vinyl jamb liner. See illustration 5. Place vinyl jamb jamb liner against clips and snap into place. Make sure blind stop leaf laps over the blind stop on exterior. See illustration 5. If necessary to remove the vinyl jamb liner, the following procedures should be performed: Place a putty knife or pry bar between wood and vinyl jamb liner. While doing this, try to determine the location of the clips, which are not visible until you pry away the liner. Pry outward in order to loosen the jamb liner and clips. Repeat this procedure along the entire length of the jamb on both interior and exterior sides. Be careful not to damage wood frame members.

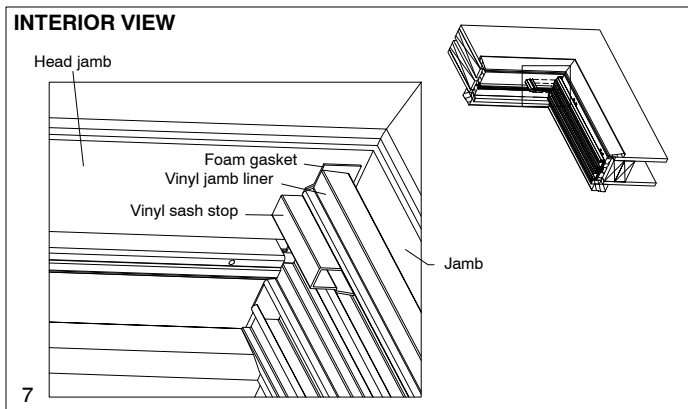


8. Place part stop into the head jamb with weatherstripping facing exterior of building. Use small finishing nails (not included) to fasten, nailing through the part stop into the head jamb. See illustration 6.

NOTE: The Marvin head jamb part stop is 1/2" (13). In some older windows the groove that the part stop is inserted into is only 3/8" (10), therefore, the part stop may have to be ripped down to fit. A 3/8" part stop (W10495) is available from Marvin. Contact your local representative for details.

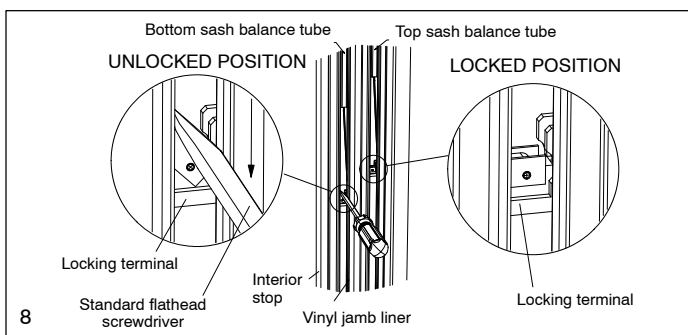


9. Install two vinyl sash stops (one per side) in the interior track at the top of each vinyl jamb liner. See illustration 7.



10. Using a flat screwdriver and holding it **firmly**, pull down the four locking terminal assemblies located in the vinyl jamb liners (2 per liner), approximately 8" - 10" (203-254) from the sill. Engage in locked position by rotating the top of screwdriver toward interior. **BE SURE TERMINALS ARE IN THE LOCKED POSITION BEFORE LETTING GO.** See illustration 8.

IMPORTANT: Immediate damage could occur if the locking terminal assemblies are not locked.

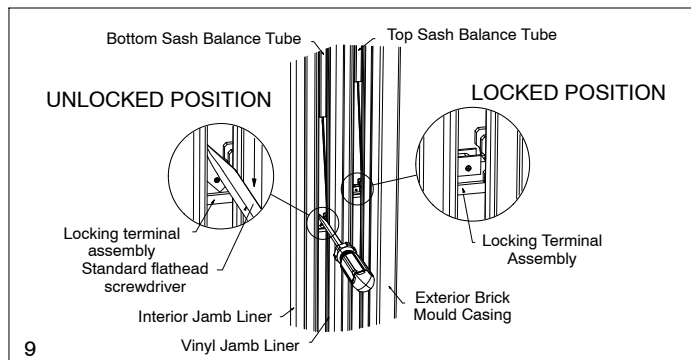


INSTALLING THE SASH

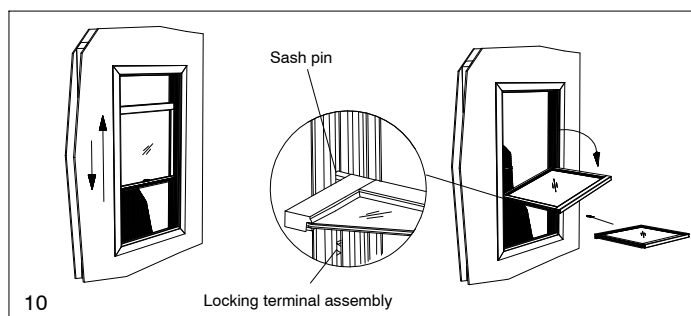
CAUTION: When replacing sash, both sash pins must be positioned above the locking terminal assembly located in the vinyl jamb liner.

WARNING: To prevent damage if sash has ogee lug option, screen and/or combination panel must be removed before installing sash.

NOTE: Should a locking terminal assembly slip upward toward the head jamb, the following procedures can be accomplished in order to properly position the locking terminal assembly. Skip to step 20 if this does not apply. Using a flat screwdriver and holding it firmly, pull down the locking terminal assembly located in the jamb liner approximately 8" - 10" from the sill. Engage in the locked position by drawing the screwdriver towards you. Be sure they are in the locked position before letting go. Immediate damage could occur if the locking terminal assemblies are not locked. See illustration 9.



11. Hold the top sash in a horizontal position. Place one sash pin above the locking terminal assembly. Raise opposite side and place sash pin above locking terminal assembly on that side. Tilt sash up, depress the vinyl jamb liner on both sides, ease sash into place. Lower sash slightly to engage locking terminal assembly. Raise the top sash to the top of frame and repeat procedure for the bottom sash. See illustration 10.



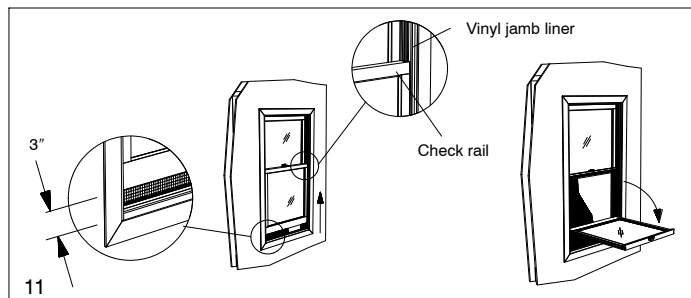
TILT FEATURE OPERATION

The Marvin Double Hung is designed with a tilt feature that allows the consumer to wash the exterior of sash without removing sash from the frame.

NOTE: Only the bottom sash may be tilted on a Single Hung unit.

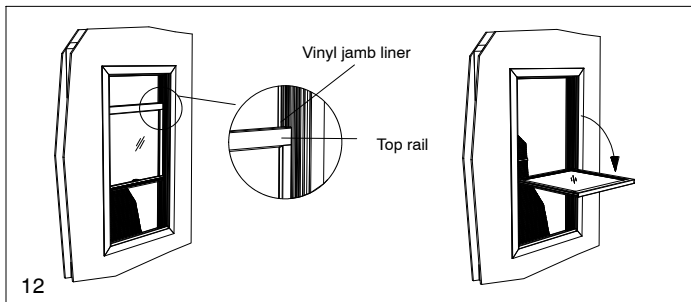
12. To tilt bottom sash, simply raise sash about 3" (76). Depress vinyl jamb liner on each side and ease top rail of bottom sash out toward you to a horizontal position. See illustration 11.

WARNING: To prevent damage if sash has ogee lug option, screen and/or combination panel must be removed before tilting sash inward.

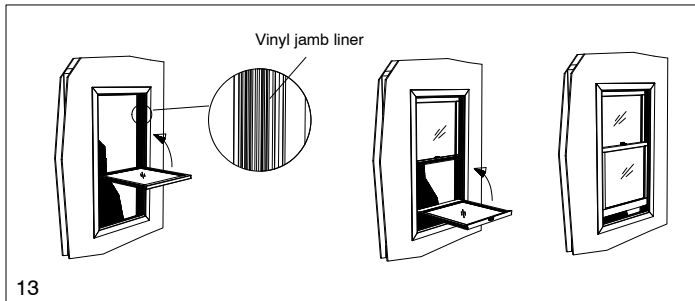


NOTE: The Single Hung top sash is not tiltable.

13. To tilt a Double Hung top sash, Marvins recommends removing the bottom sash (see step in section below). You may rest the top rail of bottom sash on a stable padded surface to prevent damage to the unit or personal injury (do not pivot beyond 90 degrees or damage may occur). Lower top sash about 1/2 way. Depress vinyl jamb liner on each side and ease top of sash toward you to a horizontal position. See illustration 12.

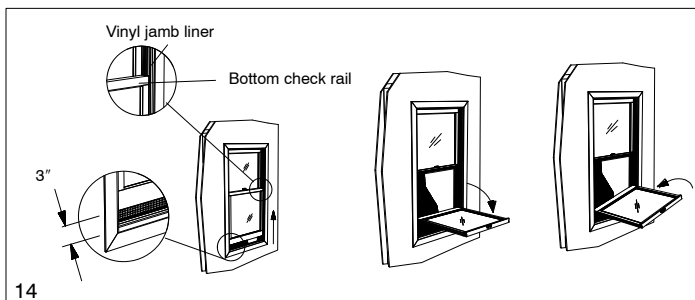


14. To tilt top sash back to the original position, tilt upward and depress vinyl jamb liner on each side and ease sash into vinyl jamb liner track. Lower sash slightly to engage locking terminal assembly. Raise sash to head jamb, check operation. Install bottom sash. To tilt sash back to original position, follow procedures listed above. See illustration 13.



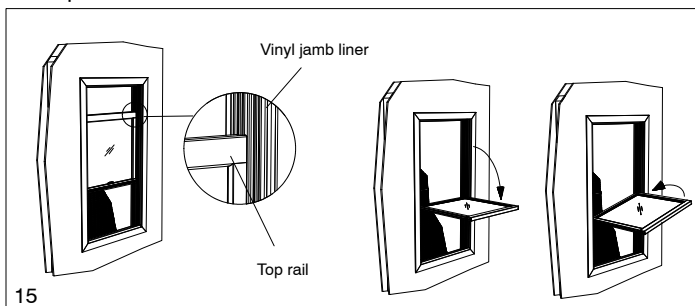
REMOVING DOUBLE HUNG SASH

15. Raise bottom sash about 3" (76). Depress vinyl jamb liner on both sides and ease top of sash toward you to a horizontal position. Lift one side and remove sash. See illustration 14.



NOTE: The Single Hung top sash is not removable.

16. Lower the Double Hung top sash about 1/2 way. Depress vinyl jamb liner and ease top of sash toward you to a horizontal position. Lift one side and remove. See illustration 15.



17. Using small finishing nails (not included) replace interior stops you removed from jambs in Step 1.
18. Check the tilt feature by raising sash 3" (76) and tilt the top corners of bottom sash to interior. This is done to assure clearance of interior jamb stops replaced in previous step. Remove and modify if needed.
19. Finish primed or bare wood surfaces as soon as possible after installation. Do not paint the side of the sash that comes in contact with the vinyl jamb liner.

OPTIONAL SASH RETAINER PLATE INSTRUCTIONS

20. With bottom sash installed, slide both sash retainer plates tight against the vinyl jamb liner. Secure each plate in place by installing the screw provided into predrilled hole in check rail. Then tighten existing screw in each sash retainer plate. **NOTE:** After securing sash retainer plates, bottom sash cannot be tilted. In order to tilt bottom sash, remove screw in round hole and loosen the one in elongated hole. Slide retainer plate away from vinyl jamb liner track. Remember to return plates to the locked position, replace and tighten screws. See illustration 16.

