



This guide contains procedures for common user serviceable repair tasks found on wood and clad wood double-hung windows. If a condition arises that is not covered in this guide, please contact us for professional help. This product guide covers our current JELD-WEN Custom, Sitaline, W-2500, W-3500 and W-4500 Series windows as well as our historical products with the following names: Pozzi, Caradco, Norco Sitaline EX and Tradition Plus. For help identifying your window model, refer to your product purchase paperwork or call us for additional help.

Do-It-Yourself

Technician



**INTRODUCTION**

Double-hung windows have two sashes, one upper and one lower, where both sashes operate. An insect screen is mounted on the exterior side.

**CONTACT US**

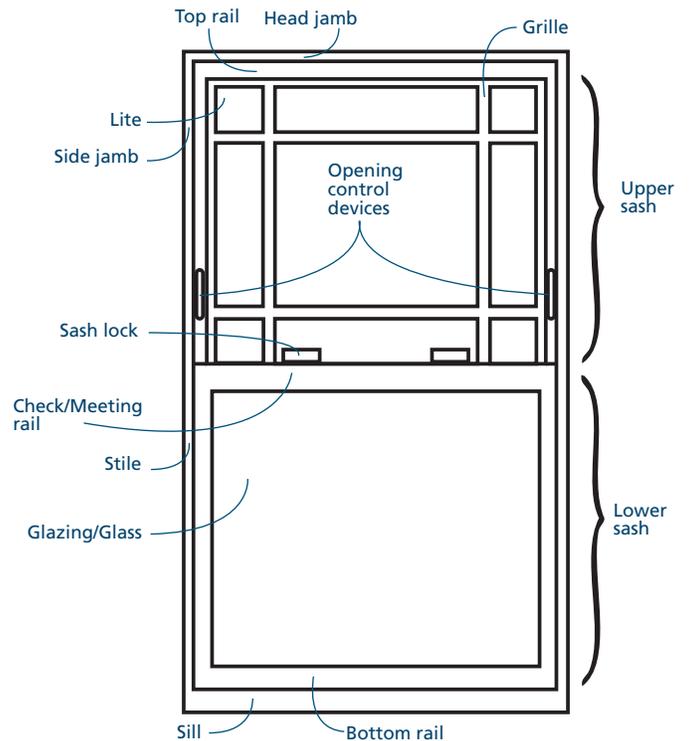
For questions, feel free to contact us by phone or email:

- Phone: 1-(800)-JELD-WEN/1-(800)-535-3936
- Email: customerserviceagents@jeld-wen.com

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**DOUBLE-HUNG WINDOW ANATOMY**



The repair tasks offered herein can be accomplished by a homeowner with some mechanical aptitude. If you are unsure, it is recommended that you hire a trained service provider such as a competent and licensed construction contractor or building professional. JELD-WEN disclaims any and all liability associated with the use and/or provision of these instructions. Any reliance upon the information or advice is at the risk of the party so relying. The information contained herein may be changed from time to time without notification.

**PRECAUTIONS AND SAFETY**

- Follow all manufacturers' instructions and labels.
- Use proper and safe equipment and precautions if servicing the exterior side of windows above ground level.
- Window insect screens are not security devices and will not prevent children, other people, or pets from falling through.
- Use extra care when driving screws near glass unit to avoid breakage.
- Use caution when tightening screws to avoid stripping the screw holes.
- Sash removal can be awkward and could cause physical injury or product damage; we recommend the help of a second person.
- Maintain a strong grip on balance when removing or installing. Balances are spring-loaded and they will relax quickly if released, possibly causing personal injury and/or product damage.
- Beware of oil causing slippery surfaces.
- Use sharp tools with care to avoid damage to wood surfaces.

**TOOLS AND MATERIALS**

**NEEDED TOOLS**

**Note!** Each tool is not required for every task.

- Tape measure
- Level
- Putty knife/prying tool
- Utility knife
- Phillips head screwdriver
- Hammer
- Drill with bits
- Spiral adjustment tool (ask your supplier for one) or locking needle-nose pliers

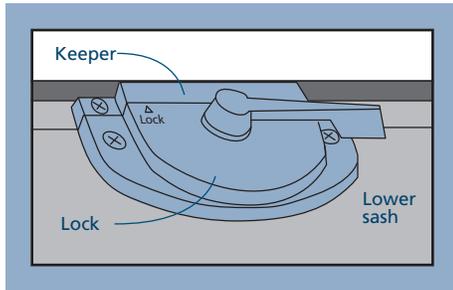
**NEEDED MATERIALS**

- String
- Tape
- Silicone sealant for stationary sash installation
- For screw hole repair:
  - Wooden toothpicks or dowels
  - Wood glue
  - Fine sandpaper
  - Finishing supplies

**BASIC OPERATION AND OPTIONAL WINDOW PARTS**

**LOCK/UNLOCK**

- To unlock, turn locking handle all the way to the right.
- To lock, make sure lock is turned fully to the right, close both sashes, make sure check rails are lined up, then turn lock latch all the way to the left.



**OPEN/CLOSE**

- To open lower sash, unlock and lift up.
- To close lower sash, pull all the way down.
- To open upper sash, unlock and pull down.
- To close upper sash, push all the way up.

**TILT FOR CLEANING**

**Note!** Remove the lower sash before tilting out the upper sash. Unlock and open sash about 6".

For windows with retainer latches:

- Slide both latches toward the center and tilt sash down.

For windows with concealed tilt latches:

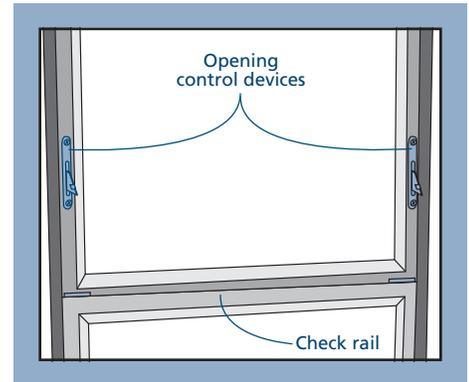
- Operate the sash lock to disengage the tilt latches then tilt the sash down.

For windows without latches:

- Using both hands, simultaneously grip both ends of sash top and press against jamb liners and tilt sash down.

**OPTIONAL WINDOW OPENING CONTROL DEVICE OPERATION**

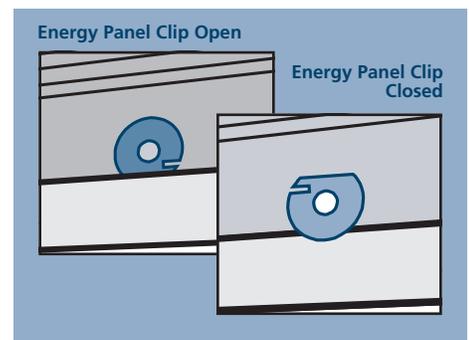
Move either sash to the opening control devices. On the upper sash, push devices in on each side until they retract and stay behind the check rail on the lower sash. Move either sash past devices. The devices will automatically reset when both sashes are sufficiently closed.



**ENERGY PANEL REMOVAL AND INSTALLATION (IF APPLICABLE)**

An energy panel is an aluminum-framed single piece of glass designed to mount on the exterior of a window to increase thermal performance. An energy panel can easily be removed for cleaning by turning the panel clips.

If an energy panel clip loosens and won't hold position, the screw hole may be stripped. If so, refer to Screw Hole Repair in "HARDWARE REPLACEMENT."



**SASH REMOVAL AND INSTALLATION**

**NEW (REPLACEMENT) SASH INSPECTION AND PREPARATION**

1. Inspect sash for proper size and type, and for any damage; do not install if damaged.
2. Paint and/or finish new sash upon delivery and let dry completely before installing hardware.
3. Remove hardware (lock, keeper, and handle) from old sash and transfer to new sash.

**Very Important!** All hardware must be installed on new sash in exact positions as on the old sash. If necessary, measure and mark all hardware positions on new sash. Reuse existing screws or replace with an exact replacement. Incorrect screws can cause damage.

4. Determine hardware locations on new sash; pay close attention to lock and keeper alignment position.
5. Pre-drill screw holes for hardware with 1/16" drill bit.
6. Install hardware (previously removed from old sash) onto new sash.

**SASH TYPES**

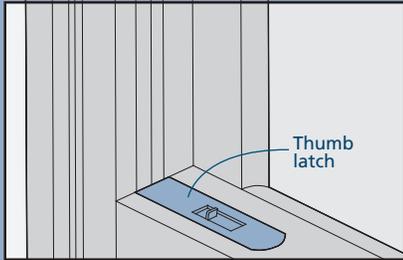
A **non-compression tilt** sash has thumb latches (sash retainer latches) on the top two corners of the sash.

A **compression tilt** sash (including Epic manufactured after 2009) does not have thumb latches, but is removed by depressing the jamb liner and pulling out the sash in a simultaneous motion.

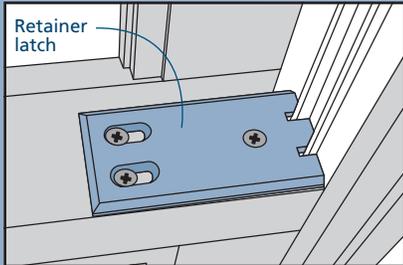
The EPIC® series Double-Hung manufactured through 2009 has a **compression tilt** sash and sash **retainer latches**. The sash is released from the jamb liner by loosening and releasing the sash retainer latches then pressing against the jamb liner and pulling out the sash at the same time.

The **concealed tilt latch** sash (Custom Double-Hung) is released from the jamb liner by one of the sash locks. Unlocking then rotating the lock mechanism counterclockwise disengages the tilt latches from the jamb liner.

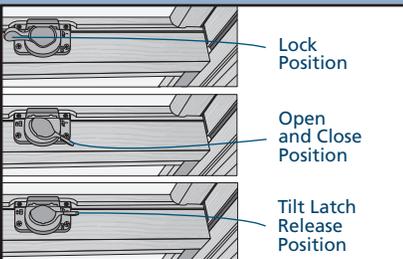
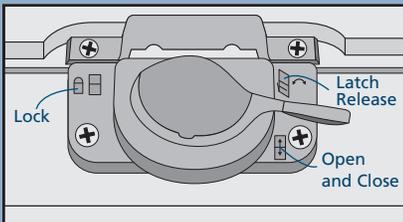
**Non-Compression Tilt**



**Compression Tilt with Retainer Latches (EPIC Series manufactured through 2009)**



**Concealed Tilt Latch**



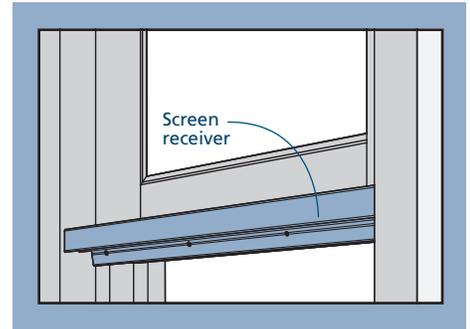
**OPERATING SASH REMOVAL AND INSTALLATION**

Double-hung windows require the lower sash be removed before the upper sash and the upper sash installed before the lower sash. Label top and bottom sash for reinstallation. The lock is on the bottom sash.

**Removal**

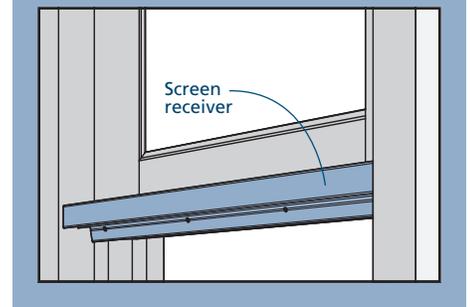
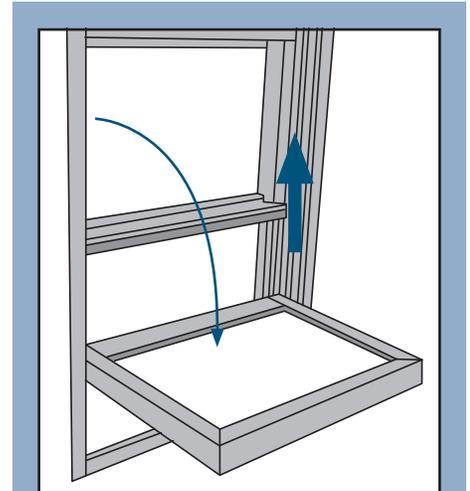
1. Open sash at least half way.
2. For windows with retainer latches, slide both latches toward the center and tilt sash down.
3. For windows without latches, using both hands, simultaneously grip both ends of sash top and press against jamb liners and tilt sash down.
4. For Epic series (manufactured through 2009):

- a. Remove screen and receiver if applicable.
- b. Remove single screws from both retainer latches and loosen end screws.
- c. Slide retainer latches toward center to release sash.
- d. Using both hands, simultaneously grip both ends of sash top and press against jamb liners and tilt sash down.



**Note!** To keep tilt pin from releasing and popping up, keep sash level while tilting.

5. Tilt sash 90°.
6. With the sash tilted at 90° lift one corner to disengage tilt pin from terminal block; remove from jamb liner.
7. Slightly swing sash out while disengaging opposite tilt pin from balance system and remove.
8. If removing the upper sash on a double-hung window, remove screen before the sash. To remove half-screens, unscrew and remove screen receiver.



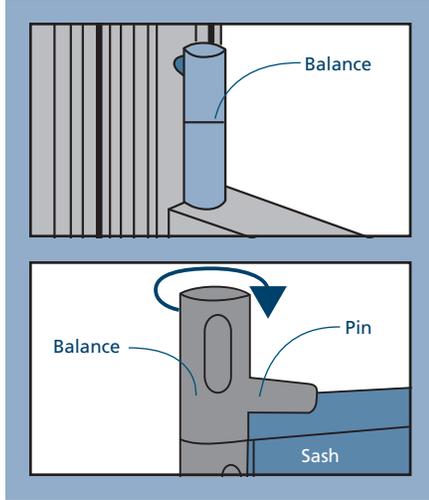
**SASH REMOVAL AND INSTALLATION - CONTINUED**

**SIDE LOAD WINDOWS**

**Note!** Carefully identify and label both sashes for later installation. The lower sash check rail has the lock, and the upper sash check rail has the keeper.

**Side Load Windows (manufactured before 1983)**

1. Open the sash at least half way.
2. Pull top of balance straight out of side jamb; turn 180° and rest pin on top of sash.
3. Press sash tight against one side jamb; release opposite side and remove sash.
4. For new sash, refer to "New Sash Preparation" earlier in this section.
5. Follow these steps in reverse for installation.



**Installation**

1. Install upper sash first in exterior jamb liner channel and lower sash second in interior jamb liner channel.
2. Hold sash (exterior side up) horizontal and perpendicular to window frame.
3. Slightly tilt sash, insert tilt pin of one corner of sash into jamb liner just above clutch. Repeat for opposite side and level sash.

**Note!** To ensure proper operation and to prevent damage to the balance system, make sure tilt pins are completely and properly engaged on both sides before tilting sash back into place.

4. Tilt sash up into place.
5. Engage retainer latches if applicable.
6. Test operation of sash by opening and closing.

**Note!** If sash does not move freely in window frame, tilt pins may not be engaged properly. Remove and reinstall, taking care to engage tilt pins on both sides.

7. If applicable, reinstall screen receiver and screen.

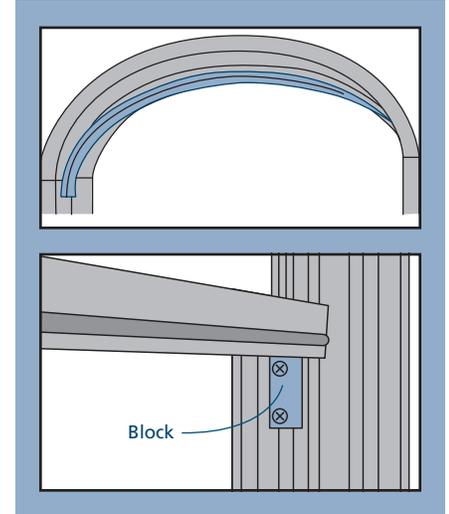
**STATIONARY SINGLE-HUNG UPPER SASH (INCLUDING RADIUS SINGLE-HUNG)**

**Removal**

1. Remove lower sash.
2. Remove insect screen and screen receiver.

**Note!** Hold the sash securely for the next steps. Once the sash block (or head stop) is removed, the upper sash may fall over if not supported. Save all screws for reinstallation.

3. Unscrew and remove sash blocks from the side jambs, or for radius single hung, remove head stop and brackets.
4. Hold upper sash to keep it from falling over. Slide down about half way.
5. Follow steps 4-6 for Operating Sash Removal.



**Installation**

1. Follow steps 1-3 for Operating Sash Installation.
2. Close sash and reinstall sash blocks.
3. Reinstall brackets, head stop (as applicable), screen receiver, screen and lower sash.

**HARDWARE REPLACEMENT AND ADJUSTMENT**

**Note!** Hardware styles have changed over the years and may vary slightly from the illustrations in this document.

**HARDWARE TYPES**

- Metal hardware offers functionality, aesthetic appeal and resistance to corrosion but is not totally corrosion proof. Replace any hardware if it becomes corroded.
- Plastic hardware offers high resistance to the elements however, over time it can deteriorate from ultraviolet light, heat, cold, and chemical exposure.
- Brass hardware has a special protective film to reduce/eliminate polishing and requires special care.
- The Balance System is located in the jamb liners in the side jambs and needs regular inspection. If the sash is not moving up and down smoothly, the balance system may need to be replaced.

Screw hole repair and hardware alignment, or realignment, are common tasks for any hardware replacement component. Follow these instructions if screw holes become stripped and/or if hardware no longer functions properly due to misalignment.

**SCREW HOLE REPAIR**

1. Cut wooden toothpicks or appropriate sized wood dowel to fit screw hole just below wood surface.
2. Fill screw hole with wood glue.
3. Insert toothpicks or dowel; let dry.
4. Fill to surface with wood putty; let dry.
5. Sand smooth and refinish; let dry.
6. Drill new pilot hole.

**HARDWARE ALIGNMENT**

Misalignment can happen if screws have become stripped and cannot be tightened. This alignment will create new screw holes.

1. Remove hardware.
2. Repair screw holes according to the procedure above.
3. Mark new screw holes as follows:
  - Lay hardware in position and hold in place.
  - If replacing a lock, turn latch to lock position to engage keeper.
  - Mark new screw locations through screw holes.
  - Remove hardware and set aside.

**HARDWARE REPLACEMENT AND ADJUSTMENT - CONTINUED**

4. Drill pilot holes with 1/16" drill bit at new marked screw hole positions no deeper than screw length.
5. Install hardware.
6. Test operation; if not operating properly, call us for assistance.

**LOCK REPLACEMENT**

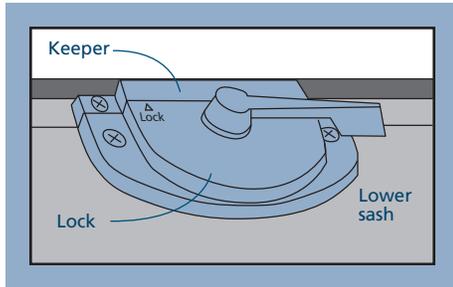
The lock sits on the top rail of the lower sash and engages into the lock keeper (located on the bottom rail of the upper sash). Operating sashes must be unlocked and open, or removed, before attempting lock removal.

**Removal**

1. Unlock sash.
2. Unscrew and remove old lock and keeper.

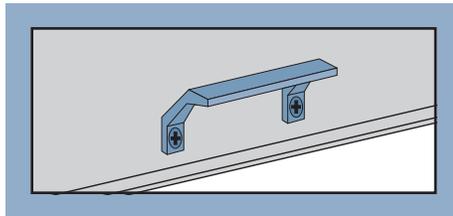
**Installation**

1. Install new lock and keeper in the same place.
2. Test operation.
3. If old lock and keeper were aligned correctly, the new lock and keeper should be aligned correctly through the same screw holes. If not, see "Screw Hole Repair," earlier in this section.



**SASH LIFT INSTALLATION/REPLACEMENT**

1. Align sash lift handle at center of interior bottom rail face 1/8" above sill stop.
2. Mark screw holes.
3. Drill marked pilot holes no deeper than screw length.
4. Position sash lift and drive screws.



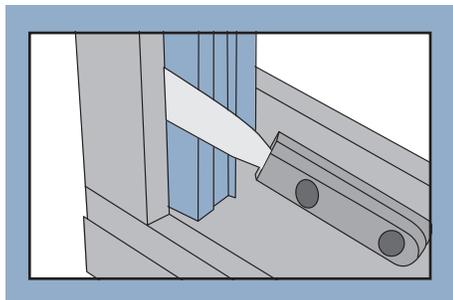
**JAMB LINER REPLACEMENT AND ADJUSTMENT**

Jamb liners are vinyl components located in the side jambs that house the balance system of the window. If your sash is not opening or closing properly, you may need to replace the jamb liner. For help determining whether or not you need to replace your jamb liner, refer to the Troubleshooting Section, or contact us or your dealer.

**Removal**

**Warning!** Remove sash from at least 8" above sill to make sure balance system tension is released enough to avoid injury during jamb liner removal.

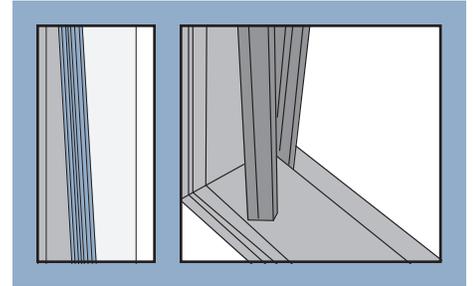
1. Remove both sashes.
2. If necessary, score head stop, then remove with putty knife.
3. For windows with concealed jamb liners (EPIC series double-hung manufactured after 2009), remove the side stops before removing the jamb liner.



4. Gently pry the lower end of the jamb liner with a putty knife starting at the bottom of the exterior edge until it comes out of the track.
5. With both hands, grip jamb liner at the bottom on both sides; squeeze and pull upward to remove.

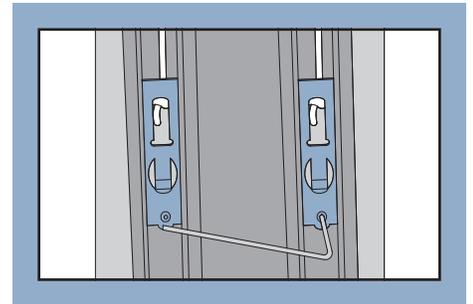
**Installation**

1. Using both hands, position jamb liner flush to head jamb. Firmly press exterior side (interior for premium windows) of jamb liner into side jamb, then fit into remaining side jamb.
2. Reinstall side stops for concealed jamb liners.
3. Reinstall head stop gently with hammer (if applicable).
4. Reinstall both sashes.



**ADJUST BALANCE TENSION (IF APPLICABLE).**

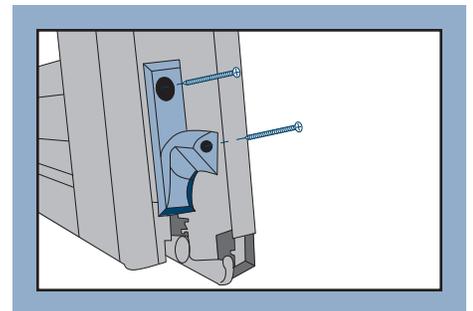
1. Remove sashes.
2. Locate tension adjusters in jamb liners on both sides.
3. Adjust with an Allen wrench; clockwise to add tension, counterclockwise to release tension. Adjust each side evenly.
4. Test operation. If not operating properly, reinstall. If not successful, call us for recommendations.



**PIVOT PIN/CAM PIVOT/TILT PIN REPLACEMENT**

Depending on the specific type of window you have, pin styles may vary slightly from the illustrations. These pins are located at the bottom corners of each sash.

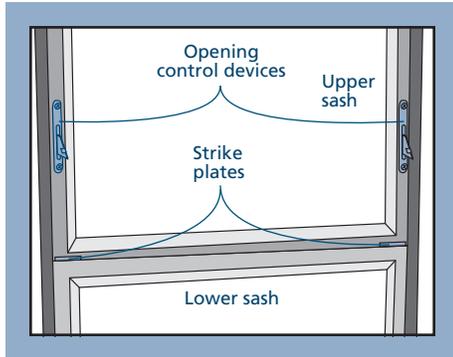
1. Remove sash.
2. Locate pins at sash corners. Note the position of the pin before removing it. Operational problems may occur if new pin is not installed in the same position.
3. Unscrew and remove pin.
4. For Torx pin, use a Torx socket wrench or vise grips, unscrew and remove.
5. For older pins, locate nail and/or screw and remove (some versions have a screw and some have a nail and screw).
6. Install new pin.
7. Replace sash and test operation. If not operating properly, remove and reinstall.



**HARDWARE REPLACEMENT AND ADJUSTMENT - CONTINUED**

**OPTIONAL WINDOW OPENING CONTROL DEVICE REPLACEMENT**

1. Unscrew and remove old opening control device and/or strike plate.
2. Install new part in the same orientation as the old part.
3. Verify device operates properly.



**WEATHERSTRIP REPLACEMENT**

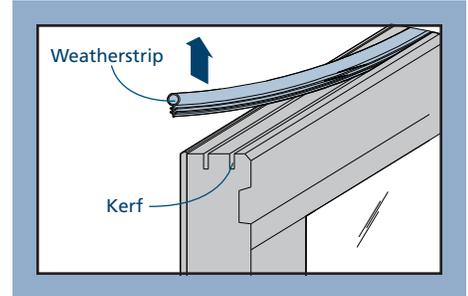
Inspecting and maintaining weatherstrip can help avoid costly structural damage from water leakage and energy loss due to air and/or water infiltration. Replace weatherstrip that is missing, torn, cracked, brittle, discolored, gummy, or that has no "bounce back" when pressed down.

**Note! When ordering, ask for the same weatherstrip type you have. If the original is not available, a suitable substitute may be provided.**

Determine amount and type needed:

1. Measure each piece needing replacement; add 2" to each measurement.
2. Add all measurements, then add an additional 10%.
3. Round up to the nearest foot.
4. Call us to order new weatherstrip.
5. If painting the sash after weatherstrip removal, make sure paint is completely dry before installing new weatherstrip.
6. Remove sash.
7. Grip and gently pull existing weatherstrip from kerf.

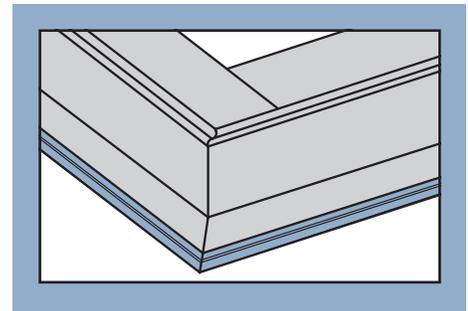
**Note! On some windows, there are two kerfs in the top and bottom rails; on the top rail, the weatherstrip goes in the interior kerf; on the bottom rail, the weatherstrip goes in the exterior kerf. On the Smart Fit, weatherstrip is located in the head jamb, check rail, and the sill.**



8. Cut new weatherstrip to length of existing weatherstrip + 1".

For sash corners:

- a. Press new weatherstrip into kerf with 1/2" extending past each corner.
- b. Trim each piece at corners the same as old weatherstrip (either at a 45° or 90° angle to fit tightly at the corners).



For frame:

- a. Press new weatherstrip into horizontal kerf at top and/or bottom of frame and trim 90° at each end.
- b. Press new weatherstrip into vertical kerf overlapping horizontal weatherstrip 1" for trimming.
- c. Trim vertical piece to overlap horizontal piece.
- d. Reinstall sash.
- e. Check window operation, if not operating correctly, remove and reinstall weatherstrip. If unsuccessful, call us for recommendations.

**PROPER WINDOW INSTALLATION**

- Proper installation is essential for keeping windows operating smoothly. If a window fails to operate properly, an inspection is necessary to determine if it was installed correctly.
- These inspection instructions apply to flat window types. Bow windows, bay windows, and unusual geometric-shaped windows are more complicated and should be inspected by a window professional.
- A contractor or installer can assist in determining the cause of a window being “out of specification” and possibly correct it. Window problems due to improper installation are usually not covered by the manufacturer’s warranty. For installation instructions, contact us or your supplier.
- The specifications and measurements referenced in this guide are taken from ASTM E2112 Standard Practice for Installation of Exterior Windows, Doors and Skylights.

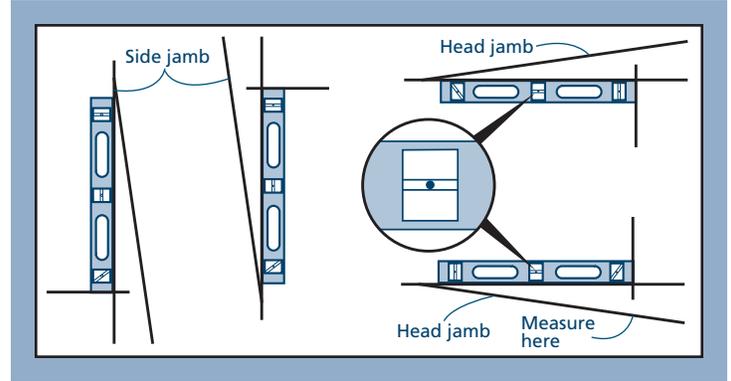
**Note:** These instructions do not address inspection for proper “water tightness” or flashing. A “water tight” inspection requires removal of the exterior siding around the window. Seek professional assistance regarding this issue.

**LEVEL INDICATOR**

Accurate measurements are essential in determining level and plumb. Most carpenters’ levels have several bubble level indicators, making it possible to measure all parts of the window.

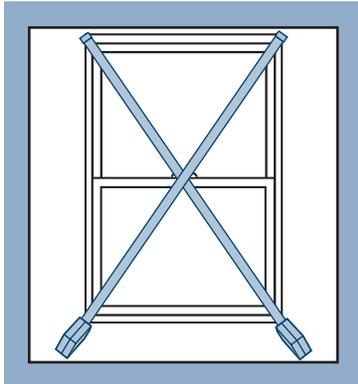
Examine the horizontal indicator. If the bubble is centered between the lines of the indicator, it is level.

If the bubble is not exactly centered, measure how far “out of level” or “out of plumb” by maneuvering the end of the level until the bubble is exactly centered. Measure the farthest gap between the level and the surface. On a 2’ level, the gap must not exceed 1/16”, or on a 4’ level (or longer), the gap must not exceed 1/8”, or the surface is out of level/plumb.



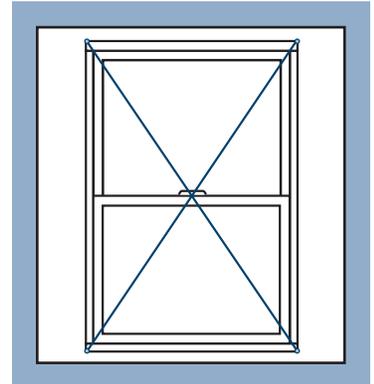
**SQUARE**

Measure frame/sash from top left to bottom right corner and from top right to bottom left corner. If measurements differ by 1/8" for windows up to 20 sq. ft. or 1/4" for windows larger than 20 sq. ft., unit is out-of-square.



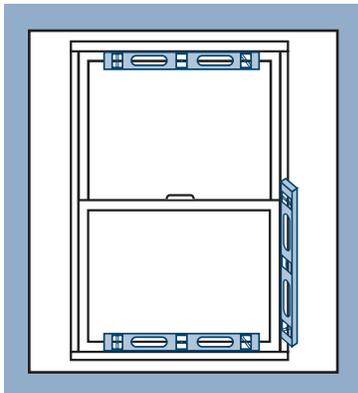
**FRAME TWISTS**

Attach two pieces of string to frame/sash, corner to corner. If there is a gap between strings at center point larger than 1/8" for windows up to 4' wide or high, or 3/16" for windows larger than 4' wide or high, the frame is not flat. Repeat by switching strings and re-measuring.



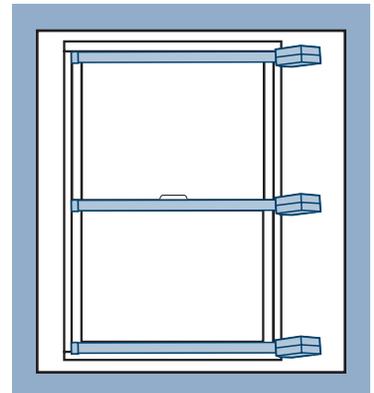
**LEVEL AND PLUMB**

For plumb, place level against each side jamb or use a plumb bob. For level, place level against head jamb and sill.



**PROPER SHIMMING**

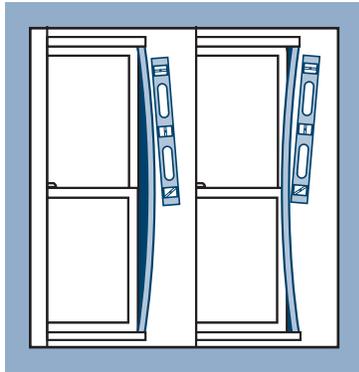
Measure width of frame at top, center, and bottom. If any two measurements differ more than 1/16", the frame is over or under shimmed. Repeat process and measure height of frame.



**PROPER WINDOW INSTALLATION - CONTINUED**

**STRAIGHT SIDE JAMBS**

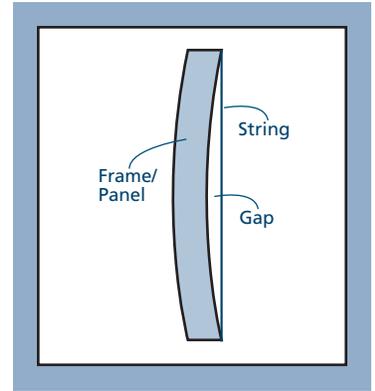
Place level against inside of side jamb. Look for gaps anywhere between level and side jamb. Repeat steps for other side jamb. Some Double-Hungs have adjustment screws located about half way up the balance. Turn screws in 1/4 turn increments until gap is less than 1/16".



**FRAME/PANEL BOW**

Inspect interior and exterior frame jambs, or stiles/rails of panel (not glass) to determine if bowed.

1. Cut piece of string slightly longer than height of frame or panel.
2. Pull tightly and stretch string to upper and lower corners of jambs, or, stiles or rails of panel. Tape securely.
3. Look for gap between string and frame or panel. If gap measures more than 1/4" at any point, the panel is bowed.



**TROUBLESHOOTING OPERATIONAL PROBLEMS**

**Note!** Please check each possible cause, including verifying proper installation, before contacting us for assistance.

PROBLEM	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
Sash will not open	Sash locked	Make sure lock latch is in unlocked position, try again.
	Obstructions	Remove obstructions/shipping blocks.
	Sash is stuck, finished or painted shut to the frame or weatherstrip.	<ul style="list-style-type: none"> <li>• Grip sash and gently shake to loosen.</li> </ul> If these solutions do not solve the problem: <ul style="list-style-type: none"> <li>• Carefully score along paint line with utility knife.</li> </ul> After sash is loose, if necessary, clean weatherstrip with small amount denatured alcohol (do not use on fuzzy weatherstrip).
	Sash damaged	Repair or replace sash
	Lock damaged or broken	Replace lock
	Keeper loose or damaged	Tighten if loose, replace if damaged.
	Weatherstrip loose or damaged	Reattach if loose, replace if damaged.
	Pivot pins damaged, misaligned, or missing	Re-align and/or replace if damaged or missing.
	Jamb liner damaged or broken	Remove sash and examine jamb liner for damage. Replace if damaged.
	There could be overshot trim nails in the balance.	Remove and re-nail overshot trim nails.
Sash will not close	Improper installation	Inspect installation
	Sash locked	Make sure lock latch is in unlocked position, try again.
	Obstructions	Remove obstructions/shipping blocks.
	Pivot pins may not be properly engaged in the balance system	Remove and reinstall sash. Make sure pins are engaged properly.
	Keeper loose or damaged	Reattach if loose, replace if damaged.
	Lock latch misaligned or damaged	Adjust if misaligned, replace if damaged.
	Weatherstrip loose or damaged	Reattach if loose, replace if damaged.
	Jamb liner damaged	Remove sash and examine jamb liner for damage. Replace if damaged.
	Pivot pins damaged or misaligned	Replace if damaged or re-align.
	Balance or clutch (inside jamb liner) misaligned or damaged	Replace balance or jamb liner assembly.
	Sashes do not line up at check (meeting) rails/stiles	Make sure both sashes are completely closed. If rails/stiles do not meet correctly, first check frame/sash for square. Then call for assistance.
	Improper installation	Inspect installation

**TROUBLESHOOTING OPERATIONAL PROBLEMS - CONTINUED**

PROBLEM	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
Sash binds or drags	Obstructions	Remove obstructions/shipping blocks.
	Weatherstrip loose or damaged	Reattach if loose, replace if damaged.
	Hardware loose, misaligned or damaged	Tighten loose hardware. Re-align if misaligned. Replace if damaged.
	Jamb liner misaligned or damaged	Remove sash and examine jamb liner. Re-align or replace if damaged.
	Pivot pins misaligned or damaged	Replace if damaged or re-align.
	Balance or clutch misaligned or damaged	Replace balance/jamb liner.
	Improper installation	Inspect installation
Sash will not lock properly	Lock misaligned or damaged	Realign if misaligned, replace if damaged.
	Sashes do not line up at check (meeting) rails/stiles	Make sure both sashes are completely closed. If rails/stiles do not meet correctly, first check frame/sash for square. Then call for assistance.
	Improper installation	Inspect installation
Sash will not stay up or down	Cam pivots (pivot pins) disengaged or damaged	Remove and reinstall sash. Replace cam pivots/pivot pins if damaged.
	Balance out of adjustment	Adjust balance (if applicable).
	Jamb liner damaged	Remove sash and examine Jamb liner for damage. Replace if damaged.
	The jamb liner could contain the wrong spring	Replace balance spring.
	Improper installation	Inspect installation
Sash appears crooked in frame	Obstructions	Remove obstructions/shipping blocks.
	Balance damaged	Remove sash and examine balance for damage. Replace if damaged.
	Improper installation	Inspect installation
The window surface fogs up	<p>Condensation. See also our Care and Maintenance Condensation document at: <a href="http://www.jeld-wen.com/product-support/documents/care-maintenance">http://www.jeld-wen.com/product-support/documents/care-maintenance</a></p>	<p>If condensation is on an interior surface:</p> <ul style="list-style-type: none"> <li>• Raise the average temperature of the house one or two degrees and do not block vents.</li> <li>• Vent all appliances to the outdoors and run exhaust fans.</li> <li>• Open window blinds for air circulation.</li> <li>• Turn humidifiers down as the temperature gets colder (unless used for medical purposes).</li> </ul> <p>If condensation is on an exterior surface:</p> <ul style="list-style-type: none"> <li>• Close window coverings to reduce cooling of the glass surface by air-conditioning.</li> <li>• Remove or trim shrubbery close to windows to promote air circulation.</li> </ul> <p>If condensation is between glass panes:</p> <ul style="list-style-type: none"> <li>• Seal failure. Replace either the insulating glass assembly or the entire sash. This determination should be made by a service representative.</li> </ul>
Water leaks through the window	Weatherstrip damaged or missing	Reattach if loose, replace if damaged.
	Sash damaged or loose at joints	Replace sash
Metal cladding is dull (metal clad windows only)	Cladding is dirty or oxidized. See the product care and maintenance guide at <a href="http://www.jeld-wen.com/product-support/documents/care-maintenance">http://www.jeld-wen.com/product-support/documents/care-maintenance</a>	<ul style="list-style-type: none"> <li>• Rinse with water from top to bottom to prevent dirty run-down and streaking. If needed, use a soft bristle brush while rinsing.</li> <li>• Air or wipe dry with chamois or soft, lint-free, dry cloth.</li> </ul> <p>Apply high quality, non-abrasive car wax to clad surface for protective finish (follow wax manufacturer's instructions).</p>

**GLOSSARY****Balance**

The hardware in the side jamb of a single or double-hung window that is part of the system that allows the window to operate up and down.

**Balance Shoe/Clutch**

A part of the balance system into which the pivot bar/tilt pin is inserted or engaged.

**Cam Lock**

A single-point locking mechanism that uses a “cam” action to lock and to pull the window sash against the frame forming a tight weather seal; large windows may have more than one cam lock.

**Double-Hung**

A window with two sashes, upper and lower, that slide vertically past each other.

**Jamb**

The vertical frame members of a window or door assembly.

**Jamb Liner**

This is the component that covers the inside surface and side jambs of a window, containing the balance components that offset the weight of the sash to allow for easier operation.

**Keeper**

A bracket utilized as a latching point.

**Pivot Bar/Tilt Pin**

The pins on the bottom corners of single- and double-hung sash that engage the balance and also allow the sash to “pivot” for easy removal and reinstallation.

**Sash**

An assembly comprised of stiles (vertical pieces), rails (horizontal pieces) and the window’s glass and glazing bead.

**Tilt Latch**

A tilt latch is a mechanism at the end of a window checkrail that allows a sash to release from the jamb liners and tilt into the structure.

**Tilt Window**

A double-hung window designed in such a way that the sashes tilt inward for easy cleaning of the outside of the glass.

**Weatherstrip**

A strip of material that covers the joint between two separate parts of a window or patio door and is used to prevent rain, snow, and cold air from entering.