

Sash Replacement



for Andersen® 400 and 200 Series Casement and Perma-Shield® Casement Windows
Manufactured 1966 to Present

Thank you for choosing Andersen.

For questions call 1-888-888-7020 Monday - Friday, 7 a.m. to 7 p.m. and Saturday, 8 a.m. to 4 p.m. central time. For more information and/or guides visit andersenwindows.com.

Please leave this guide with building owner.

- ▶ **Read guide from beginning to end before starting installation. Read all warnings and cautions during unit installation.**

NOTICE

- For standard size sash, use dash (I) and Circular (⊙) marks on the sash for hardware locations.
- For custom-size sash, use measurements indicated in step for hardware locations.

- ▶ Tape broken glass before removal to reduce glass fragmentation.
- ▶ Keep all hardware parts and screws for reuse.

⚠ WARNING

Use caution when working at elevated heights and around unit openings. Follow manufacturers' instructions for ladders and/or scaffolding. Failure to do so may result in injury or death.

⚠ WARNING

Follow manufacturers' instructions for hand or power tools. Always wear safety glasses. Failure to do so may result in injury and/or product damage.

⚠ WARNING

Windows and doors can be heavy. Use safe lifting techniques and a reasonable number of people with enough strength to lift, carry and install window and door products to avoid injury and/or product damage.

⚠ WARNING

Sash must be supported during entire removal and installation procedures. Failure to support Sash may result in injury or product damage.

⚠ WARNING

Wear gloves, safety glasses goggles or eye shields when handling glass. Tape broken glass with filament or duct tape before removal to reduce glass fragmentation.

CAUTION

When drilling into the Sash, drill only 1/8" deep to avoid penetrating the glass area or drilling through the Sash.

NOTICE

- Check the sash size, glass type, color, and kit contents to verify all parts are correct.
- The unit / sash opening must be plumb, level, square, and free of any bowed jambs. To check, measure frame diagonally from corner to corner. The measurements must be within 1/8" of each other.
- Inspect for any damage to the frame and vinyl cover. Repair as needed.
- If any of the above requirements are not met, have a qualified carpenter, builder, or contractor determine whether the window frame should be replaced or reinstalled, or if there are structural problems that need to be corrected before sash replacement.

CAUTION

Identify the hardware style that corresponds to the hardware on your window unit in one of the following sections A-G. Proceed to that section in the guide for detailed instructions on replacing your sash.

Table 1 - Keeper Position Dimensions

(Sections A & B)

Dimension "A" is the distance from the edge of the sash to lower screw hole on the **bottom keeper**.

Dimension "B" is the distance from the edge of the sash to the lower screw hole on the **top keeper**.

Overall Sash Height Dim.	DIM. "A"	DIM. "B"
C2 or 22 1/2"	9 15/16"	N/A
C25 or 22 5/8" - 26 3/4"	12 1/8"	N/A
C3 or 26 7/8" - 34 3/8"	15 7/8"	N/A
C35 or 34-1/2" - 39 1/4"	18 5/16"	N/A
C4 or 39 3/8" - 46 3/8"	9 1/2"	34 5/16"
C45 or 46 1/2" - 51 1/4"	11 7/8"	36 3/4"
C5 or 51 3/8" - 58 1/4"	9 11/16"	46"
C55 or 58 3/8" - 63 1/4"	12 3/16"	48 7/16"
C6 or 63 3/8" - 70 1/4"	15 11/16"	52"

**Straight Arm
October 2011 through Present**

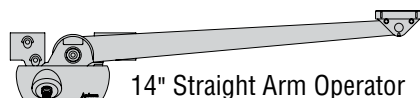
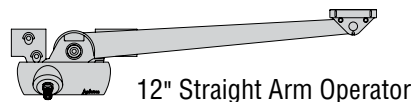
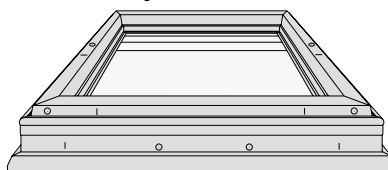
Parts Included

- (1) Sash
- (1) Installation Guide

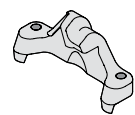
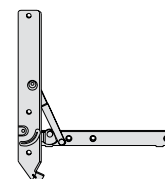
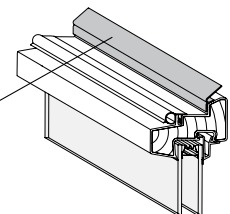
Installation Tools Needed:

- Safety Glasses
- Phillips Screwdriver
- Pliers
- Pencil
- Electric Drill
- 3/32" Drill Bit
- Pry Bar
- Utility Knife

Component Identification



Waterbar
Weatherstrip
(Located on
Top of Sash)



SECTION

A

Split Arm September 1998 to Current

SECTION

B

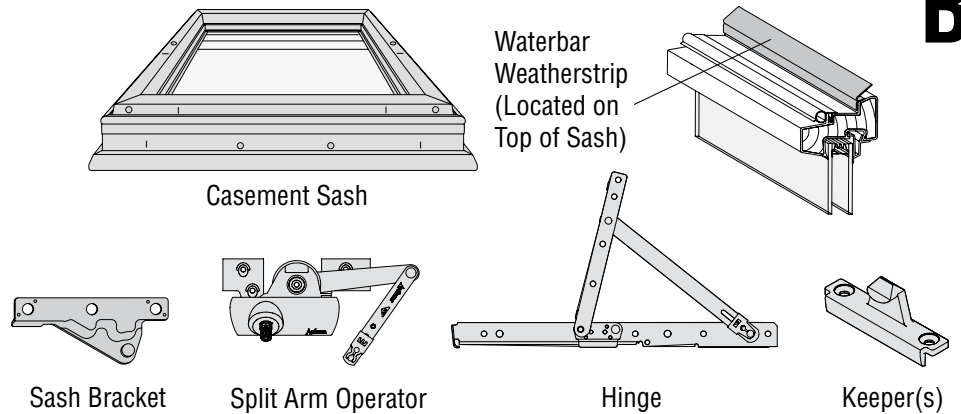
Parts Included

- (1) Sash (*custom sizes will not be pre-marked for hardware placement*)
- (1) Installation Guide

Installation Tools Needed:

- Safety Glasses
- Phillips Screwdriver
- Flat Blade Screwdriver
- Pencil
- Drill / Driver
- 3/32" Drill Bit

Component Identification



Straight Arm September 1998 to September 2011

SECTION

C

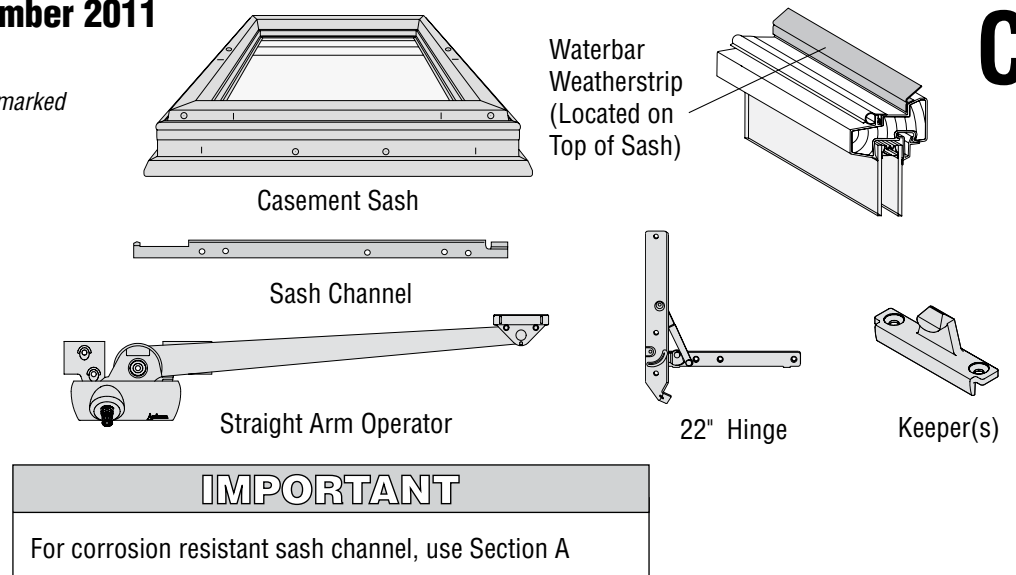
Parts Included

- (1) Sash (*custom sizes will not be pre-marked for hardware placement*)
- (1) Installation Guide

Installation Tools Needed:

- Safety Glasses
- Phillips Screwdriver
- Pencil
- Drill / Driver
- 3/32" Drill Bit
- Pry Bar
- Utility Knife
- Pliers

Component Identification



Split Arm May 1995 through September 1998

SECTION

D

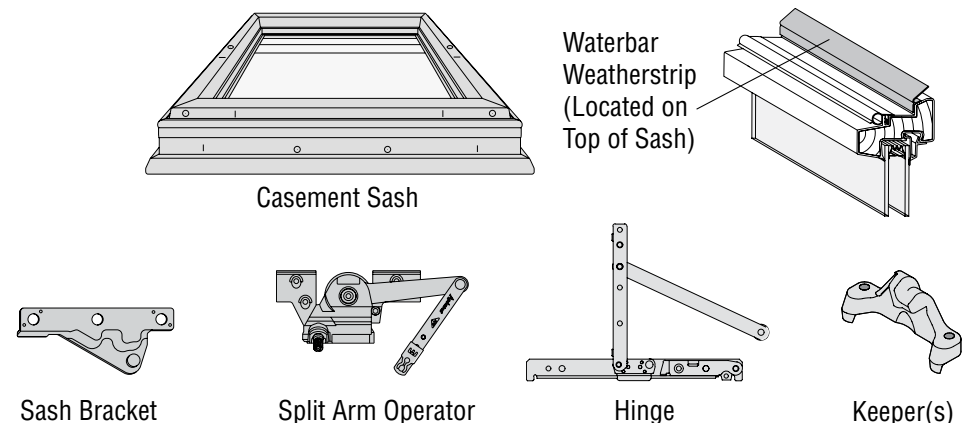
Parts Included

- (1) Sash
- (1) Installation Guide

Installation Tools Needed:

- Safety Glasses
- Phillips Screwdriver
- Flat Blade Screwdriver
- Pencil
- Drill / Driver
- 3/32" Drill Bit

Component Identification



Straight Arm May 1995 through September 1998

Component Identification

SECTION

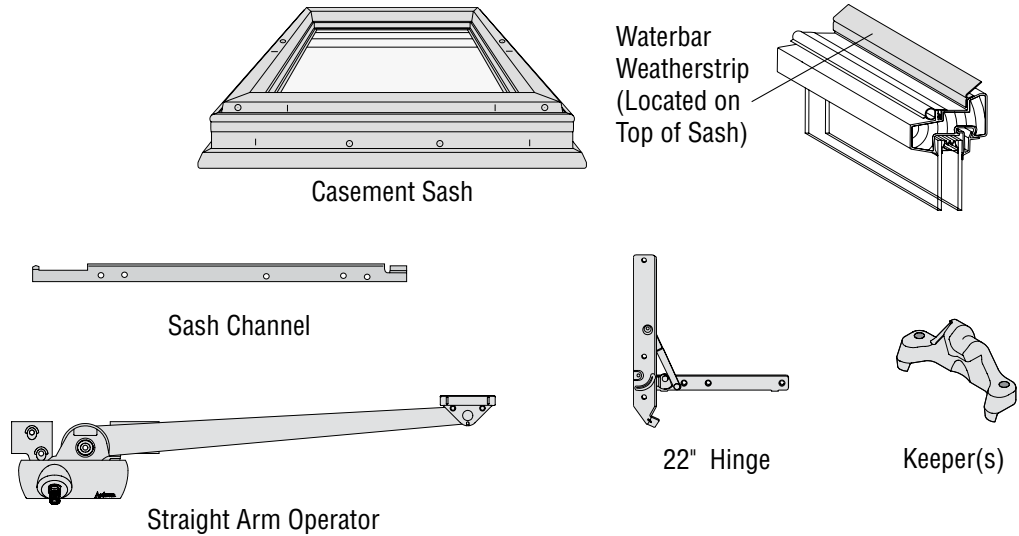
E

Parts Included

- (1) Sash
- (1) Installation Guide

Installation Tools Needed:

- Safety Glasses
- Phillips Screwdriver
- Pliers
- Pencil
- Drill / Driver
- 3/32" Drill Bit
- Pry Bar
- Utility Knife



Split Arm 1966 through May 1995

Component Identification

SECTION

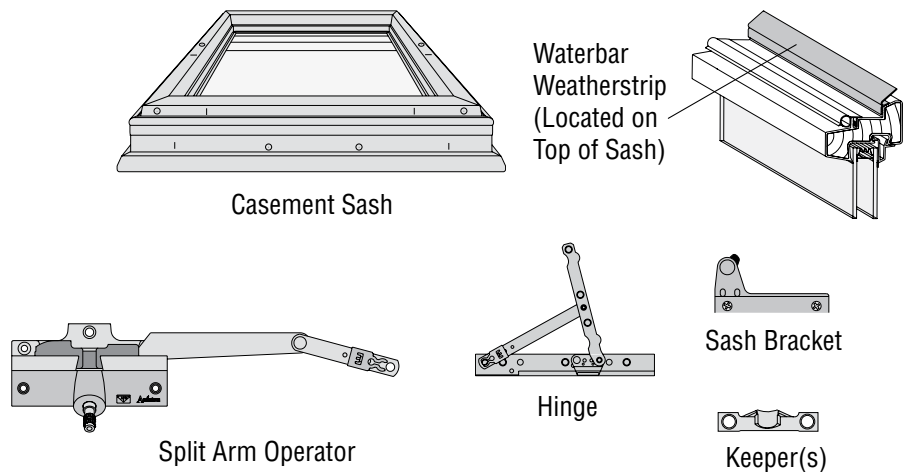
F

Parts Included

- (1) Sash
- (1) Installation Guide

Installation Tools Needed:

- Safety Glasses
- Phillips Screwdriver
- Pencil
- Drill / Driver
- 3/32" Drill Bit



Straight Arm 1966 through May 1995

Component Identification

SECTION

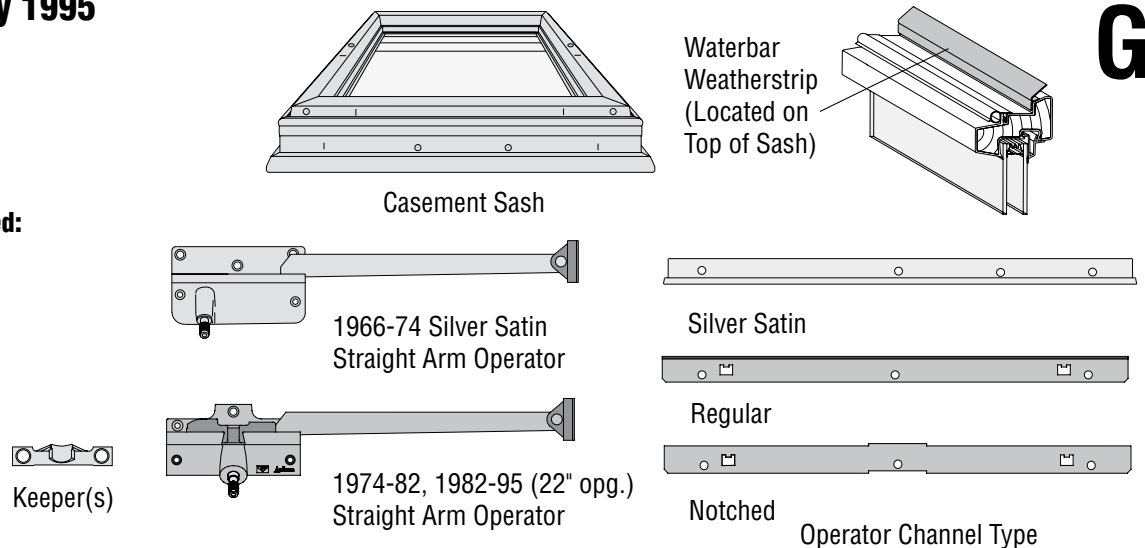
G

Parts Included

- (1) Sash
- (1) Installation Guide

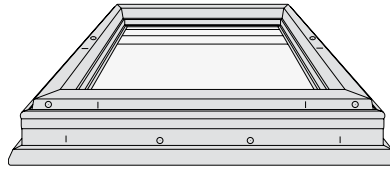
Installation Tools Needed:

- Safety Glasses
- Phillips Screwdriver
- Pencil
- Drill / Driver
- 3/32" Drill Bit
- Pry Bar
- Utility Knife



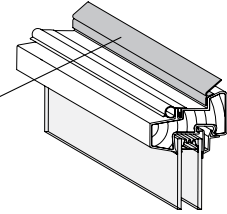
Stationary 1966 through Present

Component Identification



Casement Sash

Waterbar
Weatherstrip
(Located on
Top of Sash)



Parts Included

- (1) Sash
- (1) Installation Guide

Installation Tools Needed:

- Safety Glasses
- Hammer
- Drill / Driver
- 3/32" Drill Bit
- Small Pry Bar
- Thin Blade Putty Knife
- Glass Clamps
- Vise Grips
- Pliers
- 4d Finish Nails

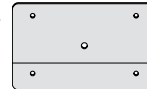
Additional Parts Required

(Available at your Andersen Dealer)

- (1) Package 11/16" Flat Head Nails
- (1) Package Sash Clips
- (1) Package 1/2" x #6 Screws

1966 through April 1995,
December 1998 to Present
Sash Clip

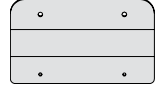
Part Number
1359408



11/16" Flat
Head Nails

May 1995 through
December 1998
Sash Clip

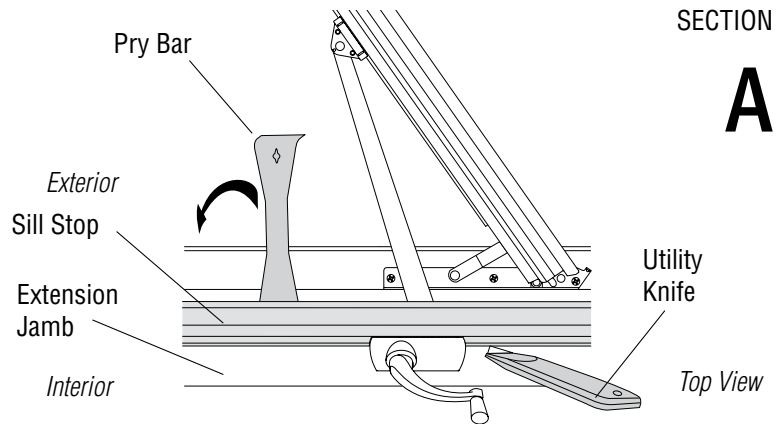
Part Number
1359410



1/2" x #6
Screws

1. Remove Sill Stop

- Break varnish or paint seal by scoring between *Sill Stop* and *Extension Jamb* with a utility knife.
- Pry under *Sill Stop* from the exterior to remove *Sill Stop*. Use care to avoid damaging *Sill Stop*.
- Remove finish nails in *Sill Stop* by pulling through back side with pliers.

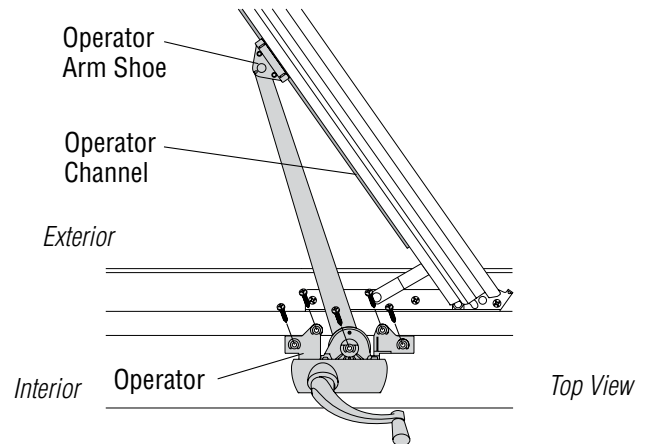


2. Remove Operator

⚠ WARNING

Removing Operator allows Sash to swing freely. During windy conditions, Sash may suddenly swing out and break free causing injury, product, and/or property damage. Support Sash during the entire replacement process.

- Remove screws from *Operator* base. Only three (3) of the five (5) screws shown are used depending on left or right hand operation. Keep screws for reuse.
- Slide *Operator Arm Shoe* off *Operator Channel* on bottom of Sash.



3. Remove Hinge Plate Screws

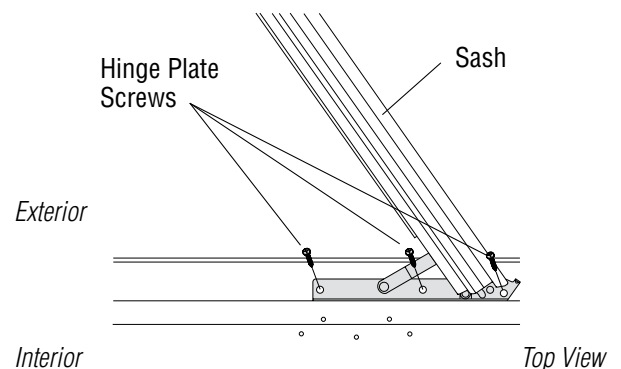
⚠ WARNING

When Hinge Screws are removed Sash is free to come out. To avoid injury, product, and/or property damage, use a reasonable number of people to support the Sash during the replacement process.

⚠ WARNING

Use extreme care when working around window opening. Never leave a window opening unattended, especially when children are present. Falling from window opening may result in severe injury or death.

- Open Sash sufficiently to access screw in *Top* and *Bottom Hinge Plate*. *Top* and *Bottom Hinge* remain attached to Sash. It may be necessary to move Sash for access to all screw locations. Keep screws for reuse.



4. Remove Sash Hardware

- Remove *Top* and *Bottom Hinges* from Sash.
- Remove *Operator Channel* from bottom of Sash.
- Remove *Keeper(s)* from Sash.
- Remove *Snugger Screw(s)* from Sash if present.

5. Attach Operator Channel

NOTICE

Dash (I) and Circular (⊙) marks on the Sash are predrill locations for standard size sash. Use only the mark indicated in each instruction.

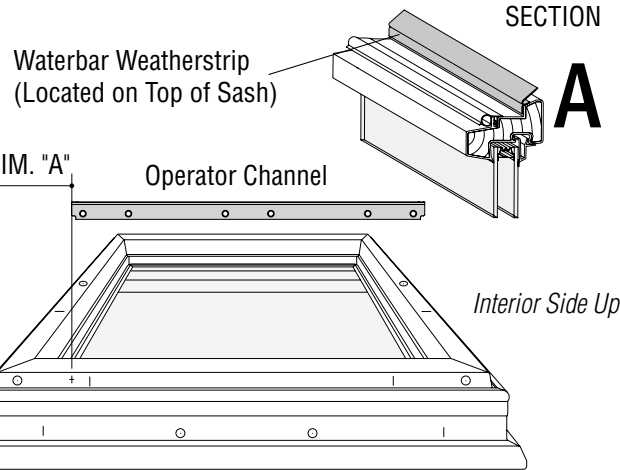
These marks are **NOT** used in **Step 5** for Operator Channel location.

- Position *Replacement Sash*, interior side up, with top of Sash facing away. Apply *Operator Channel* to bottom of Sash using measurement "A" found in table. Dimension "A" is measured from the opposite side of *Keeper(s)* location.

CAUTION

Drill only 1/8" deep to avoid sash or glass damage.

- Drill 3/32" holes 1/8" deep using *Operator Channel* as a template. Fasten using previously removed screws.



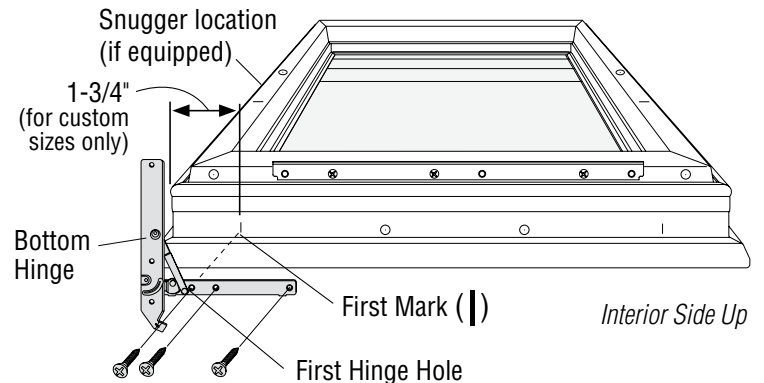
Casement Sash with Channel Positioned on Right Hand Unit

Dimension "A" is the distance from the edge of the sash (hinge side) to edge of Sash Channel. Dimension varies depending on sash size.

Overall Sash Width Dim.	DIM. "A"
C or 23" (12" Track)	2 5/8"
CW or 23 1/2 - 27 1/4" (12" Track)	5-3/4"
CX or 27 1/8 - 30-3/8" (14" Track)	7-3/4"
CXW or 30 1/2" - 34-3/4" (14" Track)	7-3/4"

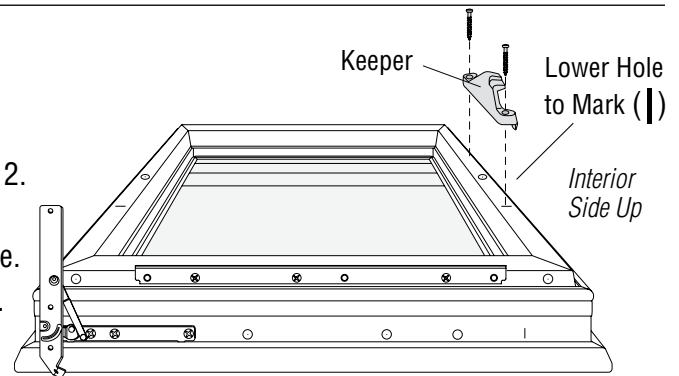
6. Attach Hinges

- Position *Bottom Hinge* with first screw hole over the (I) mark on the new Sash for standard sizes or at measured location for custom sizes.
- Predrill through (I) mark or measured location, 1/8" deep with a 3/32" drill bit and secure with previously removed 5/8" flat head stainless steel hinge screw. Repeat for remaining hinge holes.
- Repeat procedure for *Top Hinge*.
- Install *Snugger Screw*, using old Sash for location, measuring from end of Sash.



7. Attach Keepers

- Position keeper(s) according to location on old sash.
 - For standard sizes, position lower hole at (I) mark.
 - For custom sizes, measure according to **Table-1** on page 2.
- Predrill through (I) mark(s) or measured location(s) 1/8" deep with a 3/32" drill bit, using *Keeper(s)* as a template. Note the open part of the *Keeper* faces away from the glass.
- Fasten using previously removed screws.



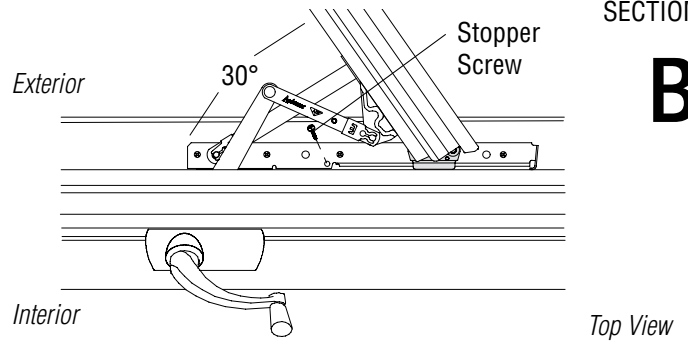
8. Install New Sash

- Install new *Sash* in frame opening reversing **Steps 1, 2, and 3.**
- Fasten *Top and Bottom Hinge Plate* to frame using hinge screws removed in **Step 3.**

- Fasten *Operator* using screws removed in **Step 2.**
- Fasten *Sill Stop* using finish nails.

1. Remove Stopper Screws

- Open the *Sash* to about 30° and remove the *Stopper Screws* from the *Top* and *Bottom Hinge Channel*.
- Keep screw for reuse.

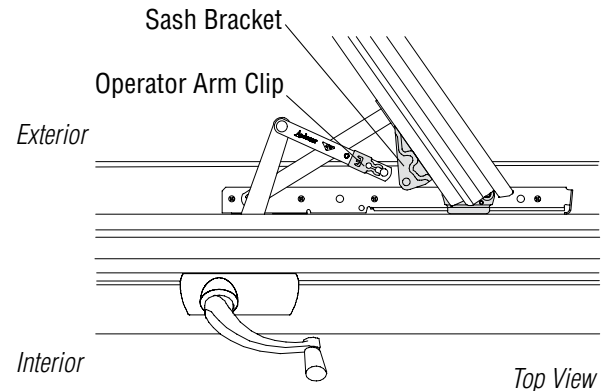


2. Release Operator Arm

⚠ WARNING

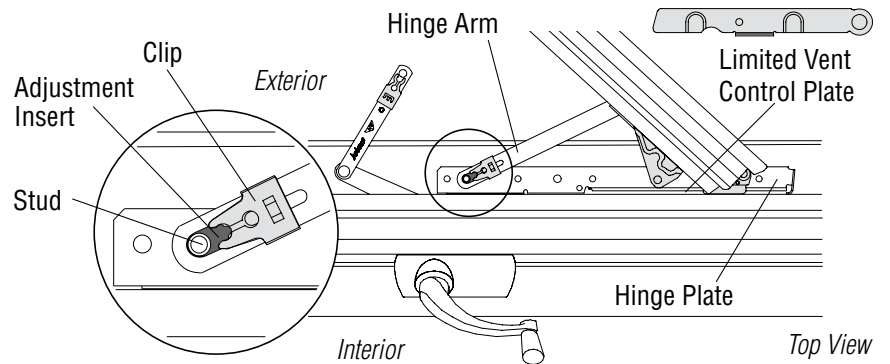
Releasing Operator Arm allows Sash to swing freely. During windy conditions, Sash may suddenly swing out and break free causing injury and/or product damage. Support Sash during entire replacement process.

- Release the *Operator Arm Clip* from the *Sash Bracket* using a flat blade screwdriver.
- Crank *Operator* open to clear Sash.
- Lift *Operator Arm* and swing out under Sash.



3. Release Hinge Arm

- Lift *Hinge Arm* off *Stud* being careful to keep *Adjustment Insert* attached to arm.
- If *Limited Vent Control Plate* is present, remove screw and slide it off *Hinge Plate*.

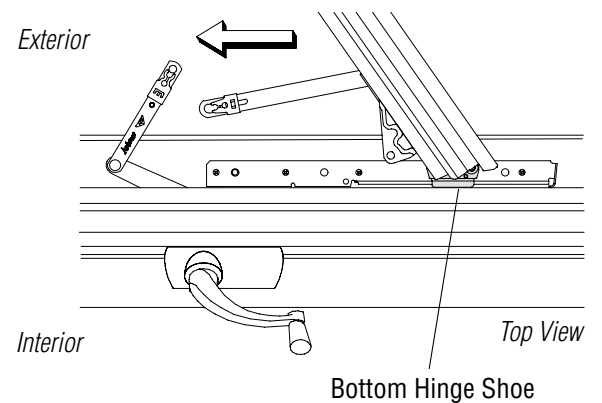


4. Remove Sash

⚠ WARNING

Use extreme care when working around window opening. Never leave a window opening unattended, especially when children are present. Falling from window opening may result in severe injury or death.

- Hold Sash firmly and slide *Top* and *Bottom Hinge Shoes* off ends of hinge channels and remove *Sash*.
- Place *Sash* on a flat working surface with interior facing up.



5. Remove Sash Hardware

- Remove *Top* and *Bottom Hinges* from Sash.
- Remove *Sash Bracket* from bottom of Sash.
- Remove *Keeper(s)* from Sash.
- Remove *Snugger Screw(s)* from Sash if present.
- Keep screws for reuse.

6. Attach Sash Bracket

NOTICE

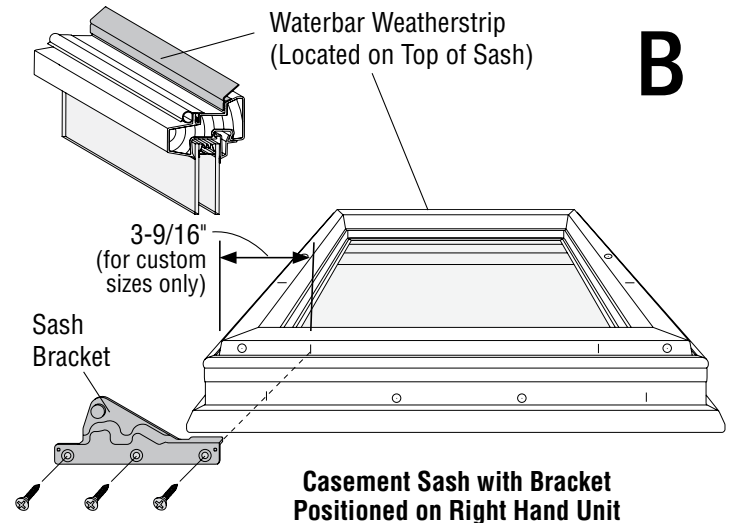
Dash (|) and Circular (⊙) marks on the Sash are predrill locations for standard size sash. For custom-size sash, use measurements shown. Use only the mark indicated in each instruction.

- Position replacement Sash, interior side up, with top of Sash facing away. Position *Sash Bracket* to bottom of Sash at the pre-marked dash (|) for standard sizes or at measured location for custom sizes.

CAUTION

Drill only 1/8" deep to avoid sash or glass damage.

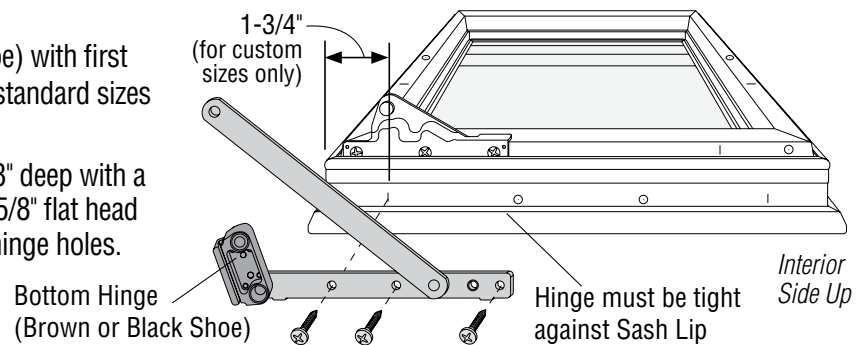
- Predrill through (|) mark or measured location, 1/8" deep with a 3/32" drill bit. Using *Sash Bracket* as a template, drill remaining holes and secure with previously removed screws.



Interior Side Up

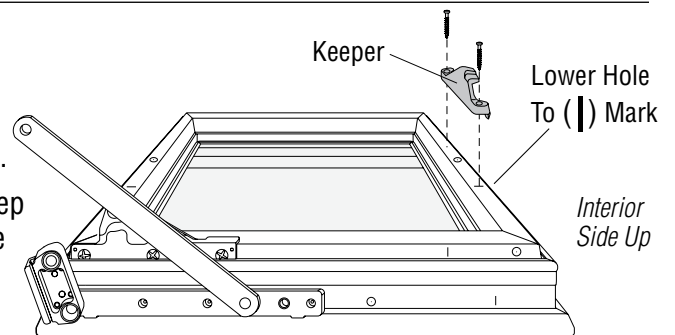
7. Attach Hinges

- Position *Bottom Hinge* (black or brown Hinge Shoe) with first screw hole over the (|) mark on the new Sash for standard sizes or at measured location for custom sizes.
- Predrill through (|) mark or measured location, 1/8" deep with a 3/32" drill bit and secure with previously removed 5/8" flat head stainless steel hinge screw. Repeat for remaining hinge holes.
- Repeat procedure for *Top Hinge* (white or almond Hinge Shoe).



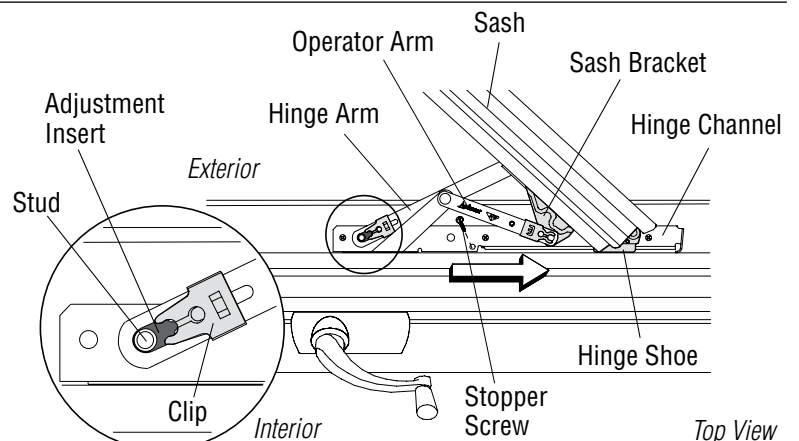
8. Attach Keepers

- Position keeper(s) according to location on old sash.
 - For standard sizes, position lower hole at (|) mark(s).
 - For custom sizes, measure according to **Table-1** on page 2.
- Predrill through (|) mark(s) or measured location(s) 1/8" deep with a 3/32" drill bit, using *Keeper(s)* as a template. Note the open part of the *Keeper* faces away from the glass.
- Fasten using previously removed screws.



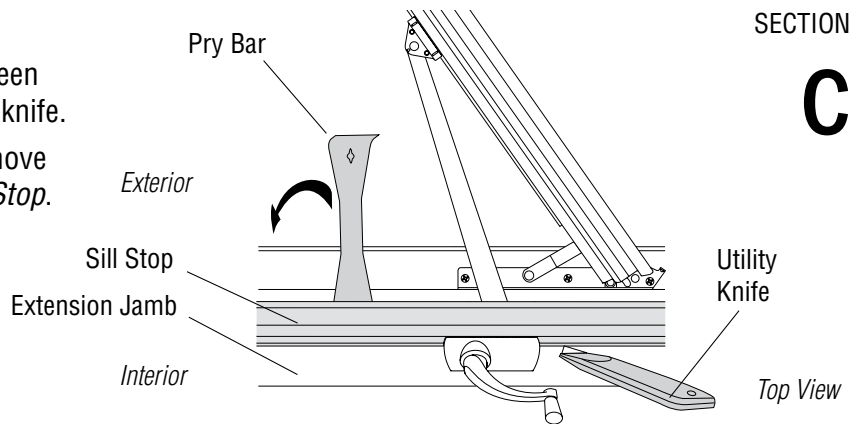
9. Install New Sash

- Install new *Sash* in frame opening reversing **Steps 1, 2, 3, and 4.**
- Slide *Top* and *Bottom Hinge Shoes* onto *Hinge Channels* toward frame's side jamb.
- Insert and secure previously removed *Stopper Screws* in *Top* and *Bottom Hinge Channel*.
- Attach *Top* and *Bottom Hinge Arms* to frame using *Adjustment Insert* and *Clip*.
- Attach *Operator Arm* to *Sash Bracket* using screwdriver to snap *Stud Fastener* in place.



1. Remove Sill Stop

- Break varnish or paint seal by scoring between *Sill Stop* and *Extension Jamb* with a utility knife.
- Pry under *Sill Stop* from the exterior to remove *Sill Stop*. Use care to avoid damaging *Sill Stop*.
- Remove finish nails in *Sill Stop* by pulling through back side with pliers.

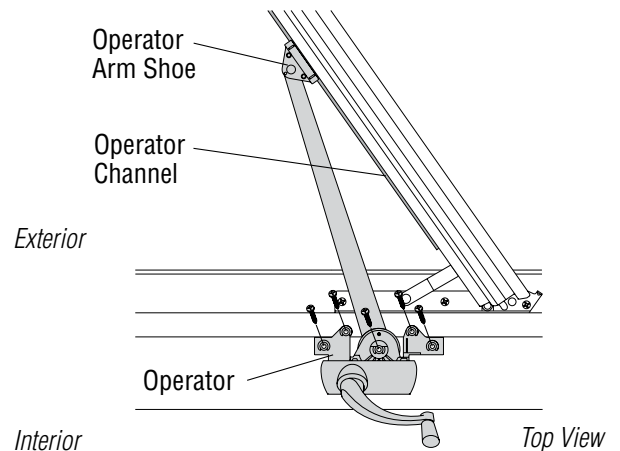


2. Remove Operator

⚠ WARNING

Removing Operator allows Sash to swing freely. During windy conditions, Sash may suddenly swing out and break free causing injury, product, and/or property damage. Support Sash during the entire replacement process.

- Remove screws from *Operator* base. Only three (3) of the five (5) screws shown are used depending on left or right hand operation. Keep screws for reuse.
- Slide *Operator Arm Shoe* off *Operator Channel* on bottom of Sash.



3. Remove Hinge Plate Screws

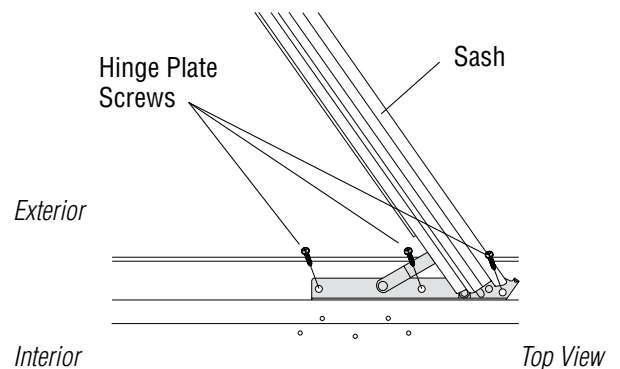
⚠ WARNING

When Hinge Screws are removed Sash is free to come out. To avoid injury, product, and/or property damage, use a reasonable number of people to support the Sash during the replacement process.

⚠ WARNING

Use extreme care when working around window opening. Never leave a window opening unattended, especially when children are present. Falling from window opening may result in severe injury or death.

- Open Sash sufficiently to access screw in *Top* and *Bottom Hinge Plate*. *Upper* and *Lower Hinge* remain attached to Sash. It may be necessary to move Sash for access to all screw locations. Keep screws for reuse.



4. Remove Sash Hardware

- Remove *Top* and *Bottom Hinges* from Sash.
- Remove *Operator Channel* from bottom of Sash.
- Remove *Keeper(s)* from Sash.
- Remove *Snugger Screw(s)* from Sash if present.

5. Attach Operator Channel

NOTICE

Dash (I) and Circular (⊙) marks on the Sash are predrill locations for standard size sash. Use only the mark indicated in each instruction.

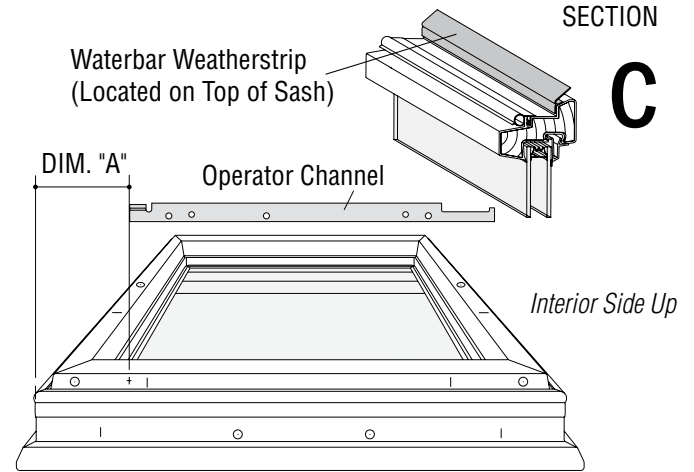
These marks are **NOT** used in **Step 5** for Operator Channel location.

- Position *Replacement Sash*, interior side up, with top of Sash facing away. Apply *Operator Channel* to bottom of Sash using measurement "A" found in table. Dimension "A" is measured from the opposite side of *Keeper(s)* location.

CAUTION

Drill only 1/8" deep to avoid sash or glass damage.

- Drill 3/32" holes 1/8" deep using *Operator Channel* as a template. Fasten using previously removed screws.



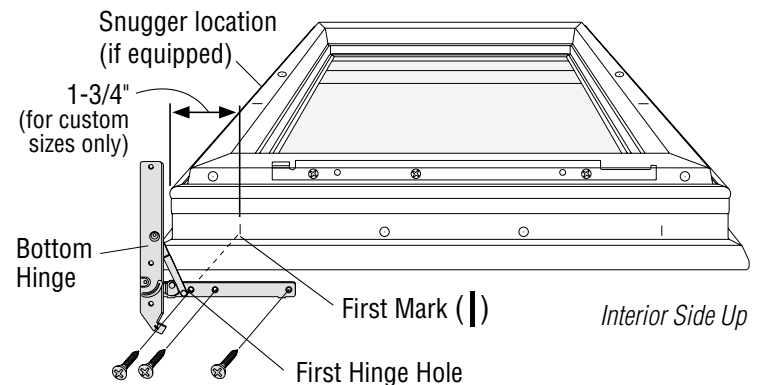
Casement Sash with Channel Positioned on Right Hand Unit

Dimension "A" is the distance from the edge of the sash (hinge side) to edge of Sash Channel. Dimension varies depending on sash size.

Overall Sash Width Dim.	DIM. "A"
C or 23"	6"
CW or 23 1/2" - 27 1/4"	9-1/8"
CX or 27 1/8" - 30-3/8"	9-1/8"
CXW or 30 1/2" - 34-3/4"	9-1/8"

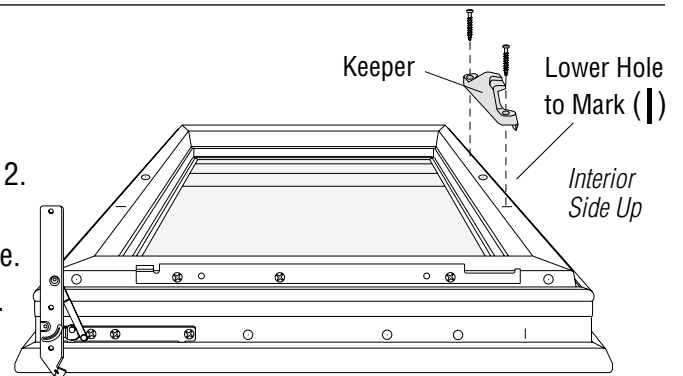
6. Attach Hinges

- Position *Bottom Hinge* with first screw hole over the (I) mark on the new Sash for standard sizes or at measured location for custom sizes.
- Predrill through (I) mark or measured location, 1/8" deep with a 3/32" drill bit and secure with previously removed 5/8" flat head stainless steel hinge screw. Repeat for remaining hinge holes.
- Repeat procedure for *Top Hinge*.
- Install *Snugger Screw*, using old Sash for location, measuring from end of Sash.



7. Attach Keepers

- Position keeper(s) according to location on old sash.
 - For standard sizes, position lower hole at (I) mark.
 - For custom sizes, measure according to **Table-1** on page 2.
- Predrill through (I) mark(s) or measured location(s) 1/8" deep with a 3/32" drill bit, using *Keeper(s)* as a template. Note the open part of the *Keeper* faces away from the glass.
- Fasten using previously removed screws.



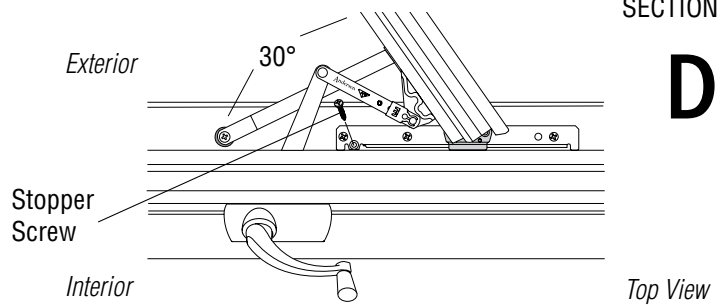
8. Install New Sash

- Install new *Sash* in frame opening reversing **Steps 1, 2, and 3**.
- Fasten *Top and Bottom Hinge Plate* to frame using hinge screws removed in **Step 3**.

- Fasten *Operator* using screws removed in **Step 2**.
- Fasten *Sill Stop* using finish nails.

1. Remove Stopper Screws

- Open the *Sash* to about 30° and remove the *Stopper Screws* from the Upper and Lower Hinge Channel.
- Keep screws for reuse.

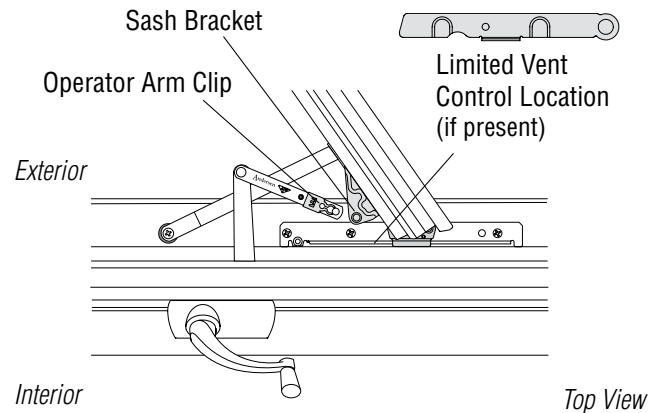


2. Release Operator Arm

⚠ WARNING

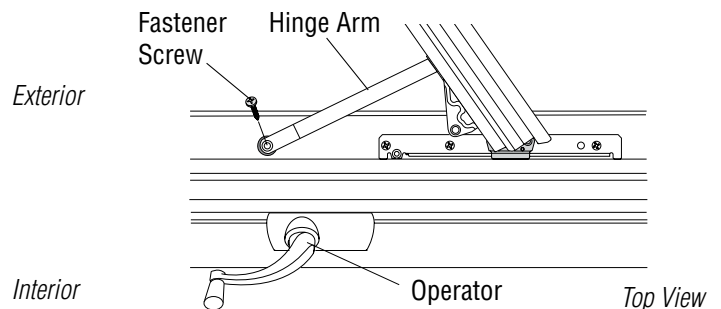
Releasing Operator Arm allows Sash to swing freely. During windy conditions Sash may suddenly swing out and break free causing injury and/or product damage. Support Sash during entire replacement process.

- Release the *Operator Arm Clip* from the *Sash Bracket* using a flat blade screwdriver.
- If there is a sash *Limited Vent Control Plate*, remove screw and slide it off from the hinge plate.



3. Release Hinge Arms

- Remove *Fastener Screw* from *Top* and *Bottom-Hinge Arms* and window frame.
- Crank *Operator* open to clear Sash.

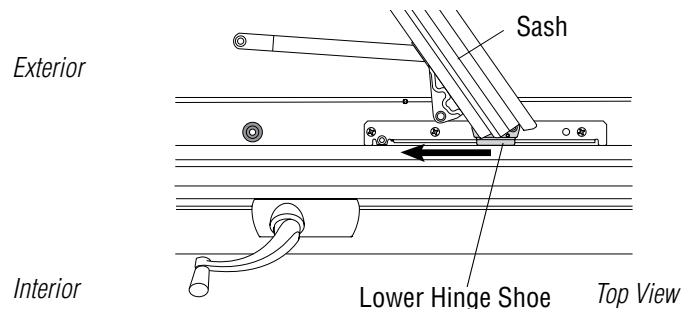


4. Remove Sash

⚠ WARNING

Use extreme care when working around window opening. Never leave a window opening unattended, especially when children are present. Falling from window opening may result in severe injury or death.

- Hold Sash firmly and slide *Top* and *Bottom Hinge Shoes* off ends of hinge channels and remove *Sash*.
- Place *Sash* on a flat working surface with the interior facing up.



5. Remove Sash Hardware

- Remove *Top* and *Bottom Hinges* from Sash.
- Remove *Sash Bracket* from bottom of Sash.
- Remove *Keeper(s)* from Sash noting difference between upper and lower keepers.
- Remove *Snugger Screw(s)* from Sash if present.
- Keep screws for reuse.

6. Attach Sash Bracket

NOTICE

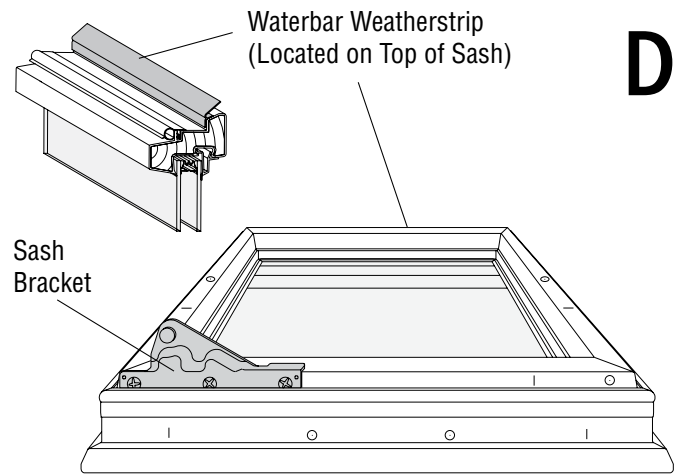
Dash (|) and Circular (⊙) marks on Sash indicate predrill locations. Use only the mark indicated in each instruction.

- Position replacement Sash, interior side up, with top of Sash facing away. Apply *Sash Bracket* to bottom of Sash using the (|) mark on the new Sash.

CAUTION

Drill only 1/8" deep to avoid sash or glass damage.

- Predrill through (|) mark 1/8" deep with a 3/32" drill bit. Using *Sash Bracket* as a template, drill remaining holes and secure with previously removed screws.

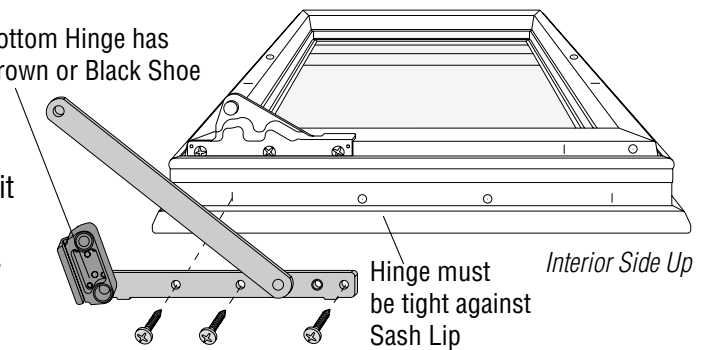


Casement Sash with Bracket Positioned on Right Hand Unit

7. Attach Hinges

- Position *Bottom Hinge* (black or brown Hinge Shoe) with first screw hole over the (|) mark located on the replacement sash.
- Predrill through (|) mark(s) 1/8" deep with a 3/32" drill bit and secure with previously removed 5/8" flat head stainless steel hinge screw. Repeat for remaining hinge holes.
- Repeat procedure for *Top Hinge* (white or almond Hinge Shoe).

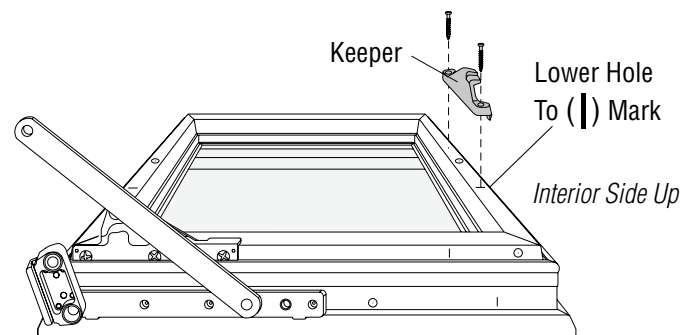
Bottom Hinge has Brown or Black Shoe



Hinge must be tight against Sash Lip

8. Attach Keepers

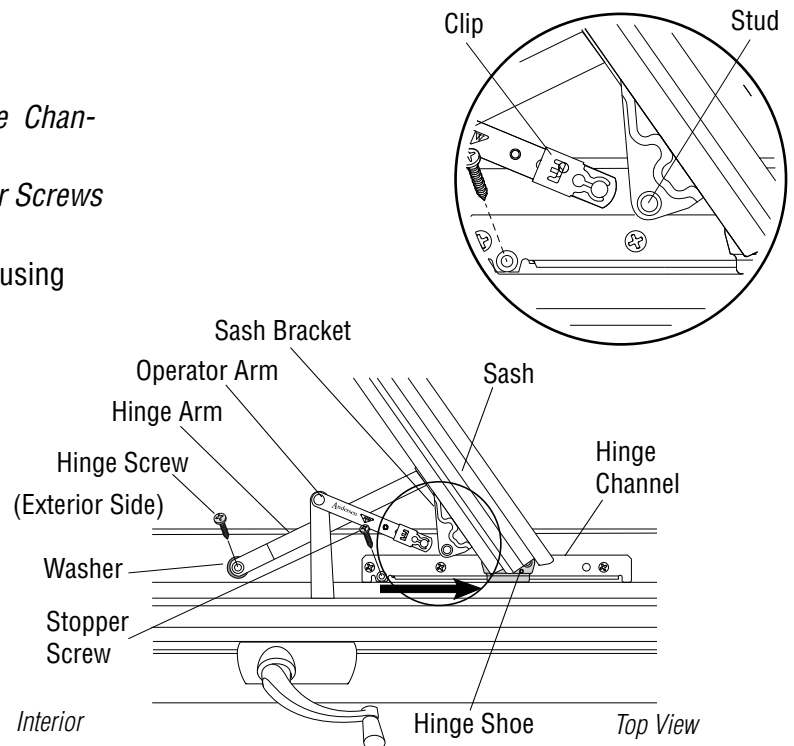
- Position *Keeper(s)* on Sash according to location on old Sash.
- Predrill through (|) mark(s) 1/8" deep with a 3/32" drill bit, using *Keeper(s)* as a template. Note the open part of the *Keeper* faces away from the glass.
- Fasten using previously removed screws.



Keeper Lower Hole To (|) Mark

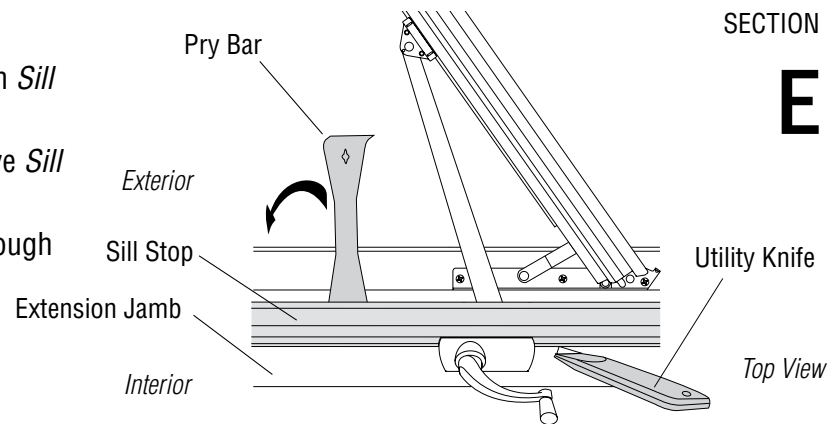
9. Install New Sash

- Position Sash in frame opening and reverse procedure, Steps 4, 3, 2, and 1.
- Slide *Top* and *Bottom Hinge Shoes* onto *Hinge Channels* towards frame's side jamb.
- Insert and secure previously removed *Stopper Screws* in the *Top* and *Bottom Hinge Channel*.
- Attach *Top* and *Bottom Hinge Arms* to frame using washer and *Hinge Screw*.
- Attach *Operator Arm* to *Sash Bracket* using screwdriver to snap *Stud Fastener* in place.



1. Remove Sill Stop

- Break varnish or paint seal by scoring between *Sill Stop* and *Extension Jamb* with a utility knife.
- Pry under *Sill Stop* from the exterior to remove *Sill Stop*. Use care to avoid damaging *Sill Stop*.
- Remove finish nails in *Sill Stop* by pulling through back side with pliers.

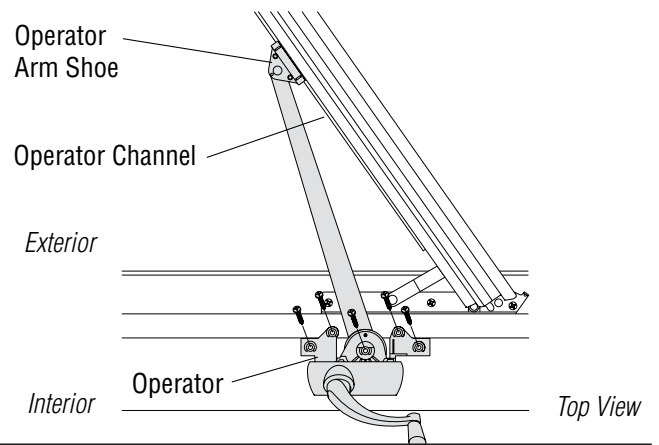


2. Remove Operator

⚠ WARNING

Removing Operator allows Sash to swing freely. During windy conditions, Sash may suddenly swing out and break free causing injury and/or product damage. Support Sash during the entire replacement process.

- Remove screws from *Operator* base. Only three (3) of the five (5) screws shown are used depending on left or right hand operation. Keep screws for reuse.
- Slide *Operator Arm Shoe* off *Operator Channel* on bottom of Sash.



3. Remove Hinge Plate Screws

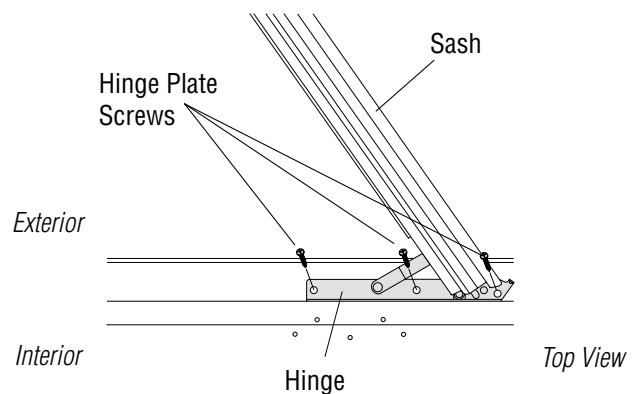
⚠ WARNING

When Hinge Screws are removed Sash is free to come out. To avoid injury, product, and/or property damage, use a reasonable number of people to support the Sash during the replacement process.

⚠ WARNING

Use extreme care when working around window opening. Never leave a window opening unattended, especially when children are present. Falling from window opening may result in severe injury or death.

- Open Sash sufficiently to access screw in *Upper* and *Lower Hinge Plate*. *Top* and *Bottom Hinge* remain attached to Sash. It may be necessary to move Sash for access to all screw locations. Keep screws for reuse.



4. Remove Sash Hardware

- Remove *Top* and *Bottom Hinges* from Sash.
- Remove *Operator Channel* from bottom of Sash.
- Remove *Keeper(s)* from Sash noting difference between upper and lower keepers.
- Remove *Snugger Screw(s)* from Sash if present.

5. Attach Operator Channel

NOTICE

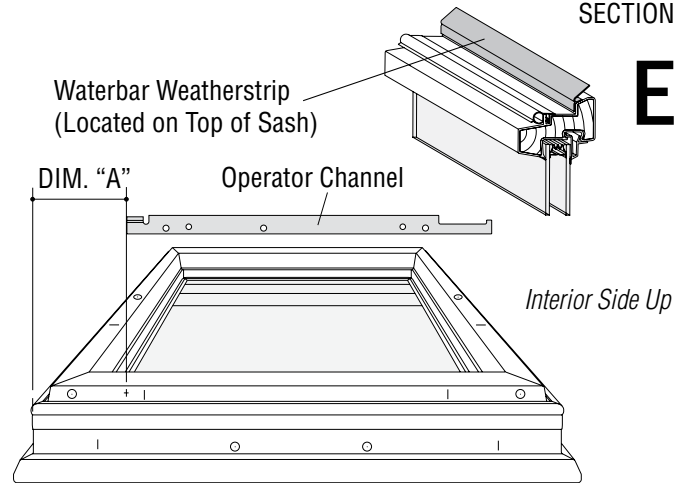
The Dash (|) and Circular (⊙) marks on the Sash are locations for predrilling. Use only the mark indicated in each instruction. These marks are NOT used in Step 5 for Operator Channel location.

- Position replacement Sash exterior side down with top of Sash facing away. Apply *Operator Channel* to bottom of Sash using measurement "A" found in table. Dimension "A" is measured from the opposite side of the *Keeper(s)* location.

CAUTION

Drill only 1/8" deep to avoid sash or glass damage.

- Predrill screw holes 1/8" deep with a 3/32" drill bit, using *Operator Channel* as a template and secure with previously removed screws.



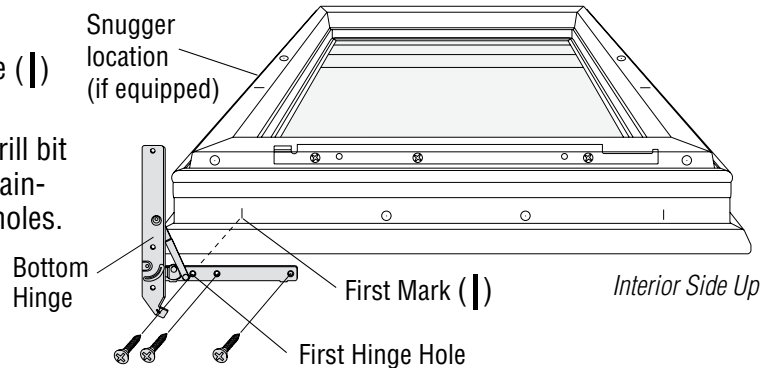
Casement Sash with Channel Positioned on Right Hand Unit

Dimension "A" is the distance from the edge of the sash (hinge side) to the edge of the Sash Channel, which varies depending on sash size.

	Overall Sash Width Dim.	DIM. "A"
C	22-15/16"	6"
CW	27-1/4"	9-1/8"
CXW	34-3/4"	9-1/8"

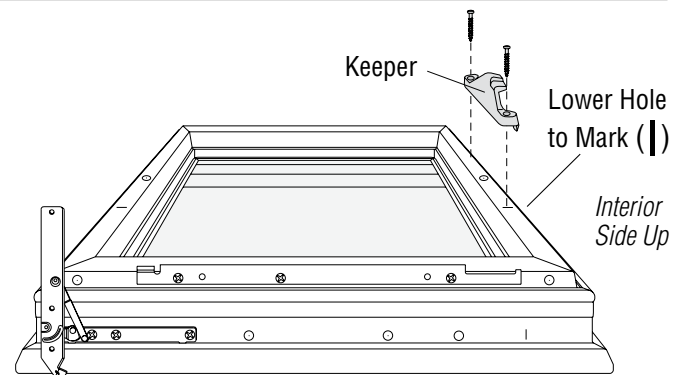
6. Attach Hinges

- Position *Bottom Hinge* with first screw hole over the (|) mark located on the replacement Sash.
- Predrill through (|) mark(s) 1/8" deep with a 3/32" drill bit and secure with previously removed 5/8" flat head stainless steel hinge screw. Repeat for remaining hinge holes.
- Repeat procedure for *Top Hinge*.
- Install *Snigger Screw*, using old Sash for location, measuring from end of Sash.



7. Attach Keepers

- Position *Keeper(s)* on Sash according to location on old Sash.
- Predrill through (|) mark(s) 1/8" deep with a 3/32" drill bit, using *Keeper(s)* as a template. Note the open part of the *keeper* faces away from the glass.
- Fasten using previously removed screws.

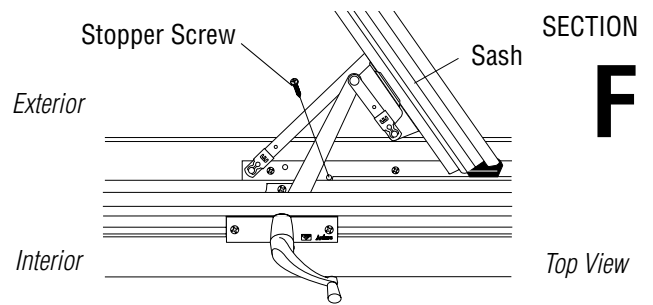


8. Install New Sash

- Install new *Sash* in frame opening and reverse procedure, Steps 3, 2, and 1.
- Secure *Top* and *Bottom Hinge Plate* to frame with hinge screws removed in Step 3.
- Attach *Operator* using screws removed in Step 2.
- Attach *Sill Stop* using finish nails.

1. Remove Stopper Screws

- Open the *Sash* to about 30° and remove the *Stopper Screws* from the Upper and Lower Hinge Channel.
- Keep screws for reuse.

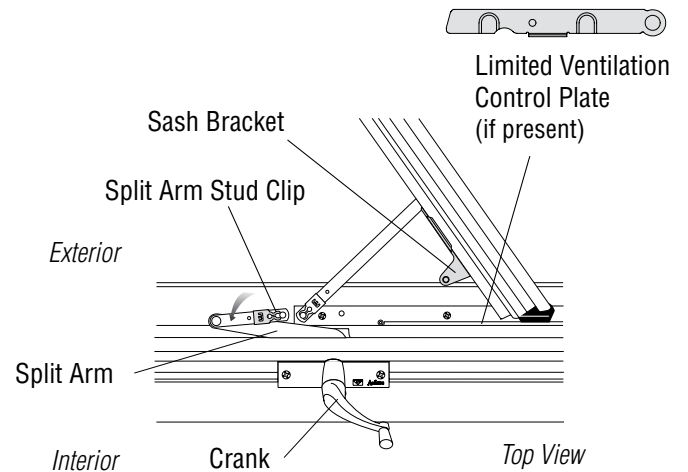


2. Release Split Arm Stud Clip

⚠ WARNING

Releasing Operator Arm allows Sash to swing freely. During windy conditions, Sash may suddenly swing out and break free causing injury and/or product damage. Support Sash during entire replacement process.

- Release the *Split Arm Stud Clip* from the *Sash Bracket* using a flat blade screwdriver.
- If there is a sash *Limited Ventilation Control Plate*, remove screw and slide it off from the hinge plate.
- Crank detached *Split Arm* out of the way for Sash removal.

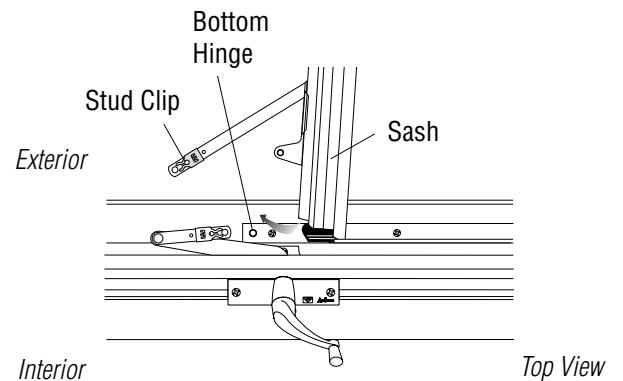


3. Remove Sash

⚠ WARNING

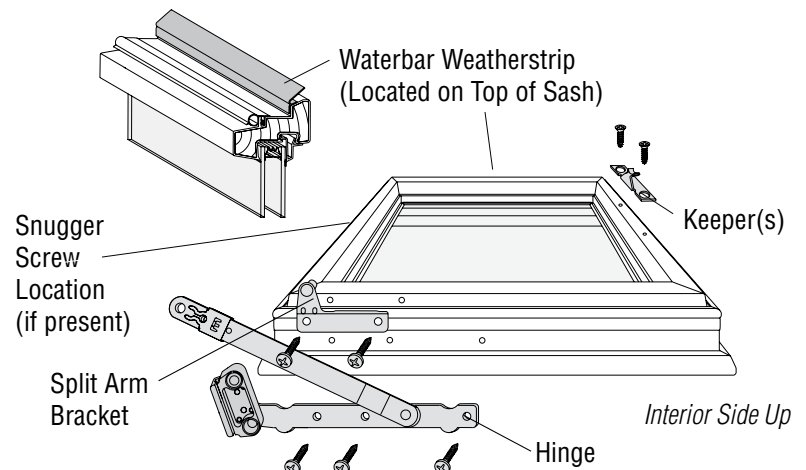
Use extreme care when working around window opening. Never leave a window opening unattended, especially when children are present. Falling from window opening may result in severe injury or death.

- Release *Stud Clips* on the *Top* and *Bottom Hinge* using a screwdriver.
- Hold *Sash* firmly and slide the *Top* and *Bottom Hinge Shoes* off ends of hinge channels and remove *Sash*.
- Place *Sash* on a flat working surface with the interior facing up.



4. Remove Sash Hardware

- Remove *Top* and *Bottom Hinges* from Sash.
- Remove *Sash Bracket* from bottom of Sash.
- Remove *Keeper(s)* from Sash noting difference between upper and lower keepers.
- Remove *Snigger Screw(s)* from *Sash*, if present.
- Keep screws for reuse.



5. Attach Hinges

NOTICE

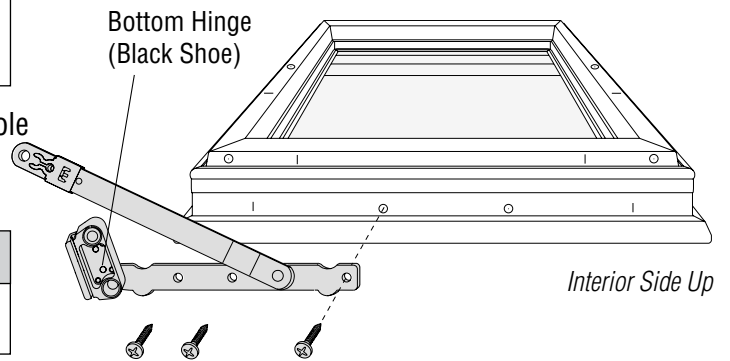
Sash are designed for universal replacement. The Dash (|) and Circular (⊙) marks on the Sash are locations for predrilling. Use only the mark indicated in each instruction.

- Position *Bottom Hinge* with first countersunk screw hole over the (⊙) mark located on the new Sash. (*Bottom Hinge* has a black shoe, *Top Hinge* has a white shoe.)

CAUTION

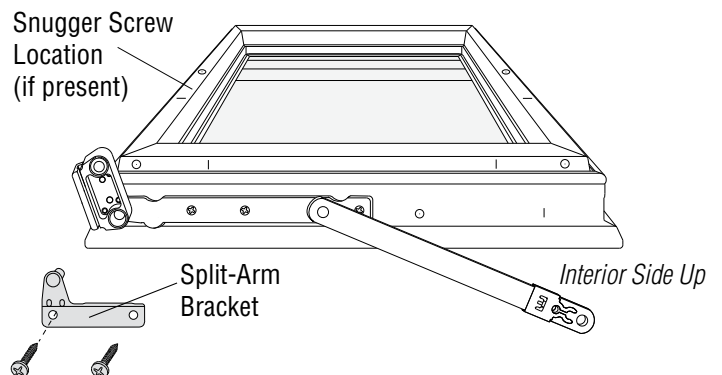
Drill only 1/8" deep to avoid sash or glass damage.

- Predrill through (⊙) mark(s) 1/8" deep with a 3/32" drill bit and secure with previously removed 5/8" flat head stainless steel hinge screw. Repeat for remaining hinge holes.
- Repeat for *Top Hinge*.



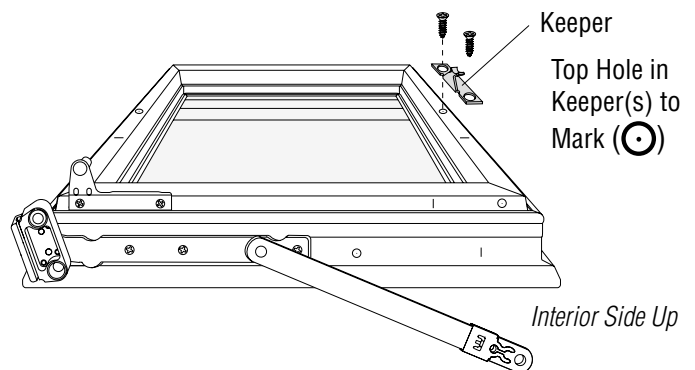
6. Attach Split Arm Bracket

- Position *Split Arm Bracket* with first screw hole over the (⊙) mark located on the new Sash.
- Predrill through (⊙) mark(s) 1/8" deep with a 3/32" drill bit and secure with previously removed 5/8" flat head stainless steel hinge screw. Repeat for remaining hinge holes.
- Install *Snugger Screw*, using old sash for location, measuring from end of Sash.



7. Attach Keepers

- Position *Keeper(s)* on Sash according to location on old Sash.
- Predrill through (⊙) mark(s) 1/8" deep with a 3/32" drill bit, using *Keeper(s)* as a template. Note the open part of the *Keeper* faces away from the glass.
- Fasten using previously removed screws.

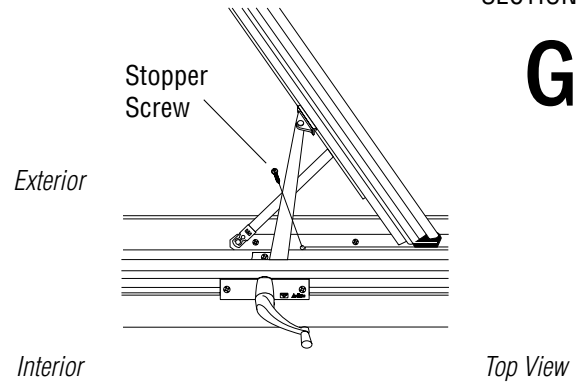


8. Install New Sash

- Position *Sash* in frame opening and reverse procedure, Steps 1, 2, and 3.
- Secure *Top and Bottom Hinge Plate* to frame with hinge screws removed in Step 3.
- Attach *Operator* using screws removed in Step 2.
- Attach *Sill Stop* using finish nails.

1. Remove Stopper Screws

- Open the *Sash* to about 30° and remove the *Stopper Screws* from the *Top* and *Bottom Hinge Channel*.
- Keep screws for reuse.



2. Remove Sash

⚠ WARNING

Releasing the Operator Arm allows the Sash to swing freely. During windy conditions, the Sash may suddenly swing out and break free causing injury and/or product damage. Support the Sash during the entire replacement process.

⚠ WARNING

Use extreme care when working around window opening. Never leave a window opening unattended, especially when children are present. Falling from window opening may result in severe injury or death.

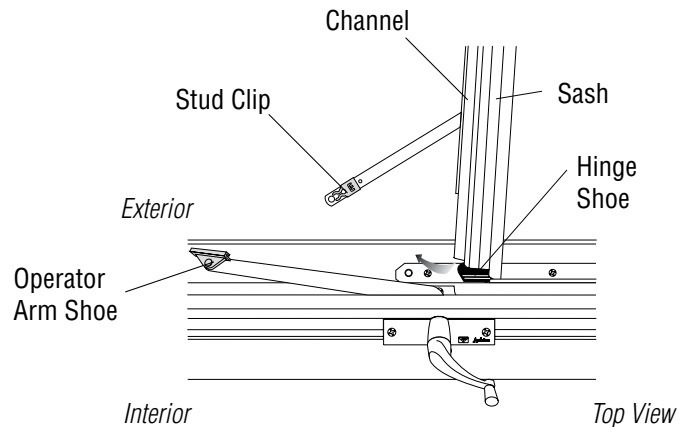
- Release *Stud Clips* on the *Top* and *Bottom Hinge* using a screwdriver.

Notched Channel

- Hold Sash firmly and slide the *Operator Arm Shoe* to the notch, lift shoe up to release the *Operator Arm*.

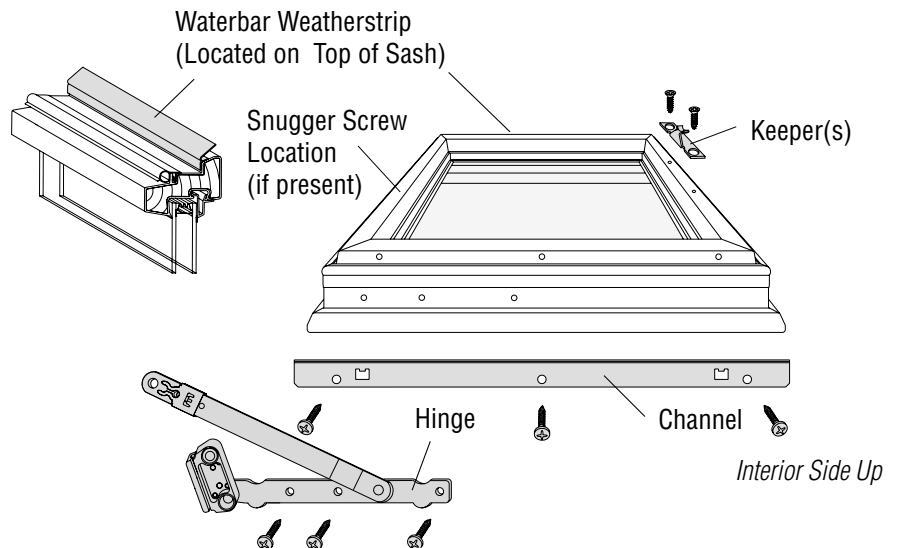
Satin or Regular Channel

- Hold Sash firmly and slide the *Operator Arm Shoe* from its channel while sliding the *Top* and *Bottom Hinge Shoes* off the ends of the hinge channels and remove *Sash*.
- Place *Sash* on a flat working surface with the interior facing up.



3. Remove Sash Hardware

- Remove *Upper* and *Lower Hinges* from Sash.
- Remove *Channel* from bottom of Sash.
- Remove *Keeper(s)* from Sash noting difference between upper and lower keepers.
- Remove *Snugger Screw(s)* from Sash if present.
- Keep screws for reuse.



4. Attach Hinges

NOTICE

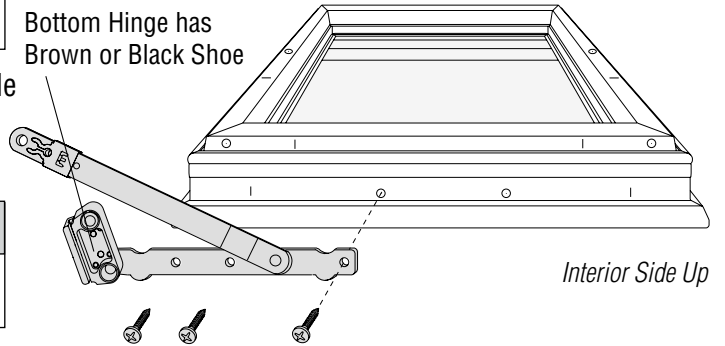
Sash are designed for universal replacement. The Dash (|) and Circular (⊙) marks on the Sash are locations for predrilling. Use only the mark indicated in each instruction.

- Position *Bottom Hinge* with first countersunk screw hole over the (⊙) mark located on the new Sash. (*Bottom Hinge* has a black shoe, *Top Hinge* has a white shoe.)

CAUTION

Drill only 1/8" deep to avoid sash or glass damage.

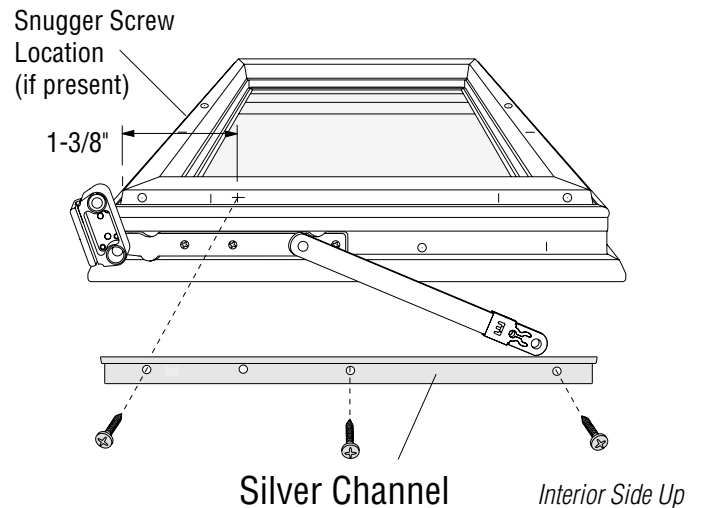
- Predrill through (⊙) mark(s) 1/8" deep with a 3/32" drill bit and secure with previously removed 5/8" flat head stainless steel hinge screw. Repeat for remaining hinge holes.
- Repeat for *Top Hinge*.



5. Attach Operator Channel

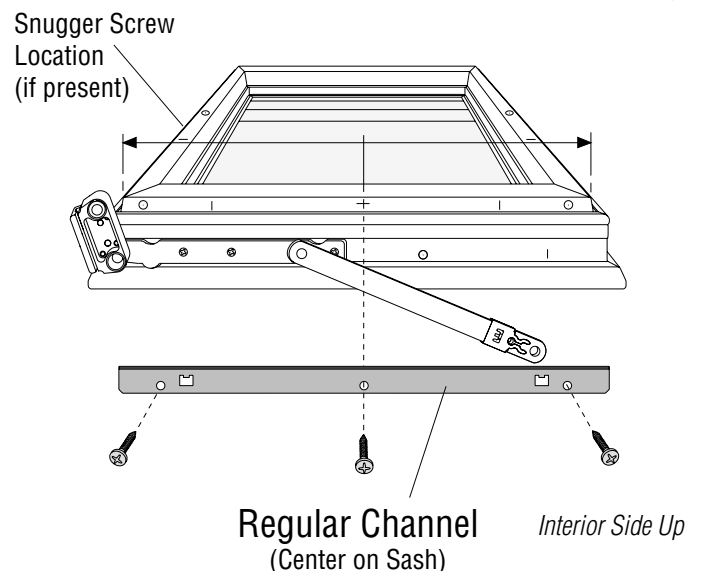
Silver Channel

- Position edge of *Silver Channel* 1-3/8" in from Sash corner.
- Predrill screw hole 1/8" deep with a 3/32" drill bit and secure with previously removed screws in Step 3. Repeat for remaining Channel holes.
- Install *Snugger Screw* if present, using old sash for location, measuring from end of Sash.



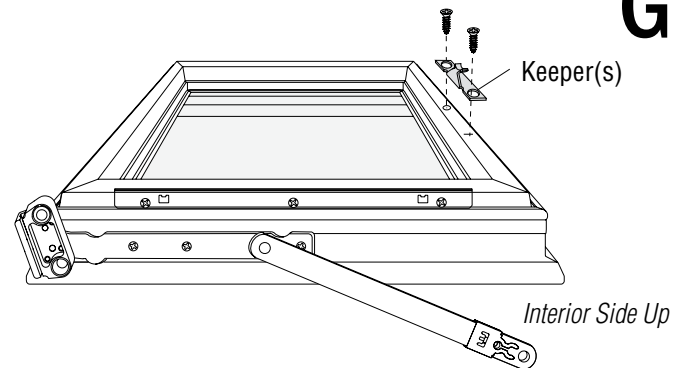
Regular Channel

- Position *Regular Channel* centered on Sash.
- Predrill screw hole 1/8" deep with a 3/32" drill bit and secure with previously removed screws in Step 3. Repeat for remaining Channel holes.
- Install *Snugger Screw* if present, using old Sash for location, measuring from end of Sash.



6. Attach Keepers

- Position *Keeper(s)* on Sash according to location on old Sash.
- Predrill through (⊙) mark(s) 1/8" deep with a 3/32" drill bit, using *Keeper(s)* as a template. Note the open part of the *Keeper* faces away from the glass.
- Fasten using previously removed screws.

**7. Install New Sash**

- Position *Sash* in frame opening and reverse procedure, Steps 1, 2, and 3.
- Secure *Top* and *Bottom Hinge Plate* to frame with hinge screws removed in Step 3.
- Attach *Operator* using screws removed in Step 2.
- Attach *Sill Stop* using finish nails.

1. Determine Vintage of Unit

- Determine vintage of unit, by date on glass, pre or post April 1995.
- Locate unit size in chart below. The number in center of unit determines amount of clips required, marks on Sash indicate clip location.
- Use appropriate Clip Package or combination of packages. Properly dispose of any extra clips.

1966 through April 1995, December 1998 to Present Clip Packages

Quantity
14

Part Number
1359408

April 1995 through December 1998 Clip Packages

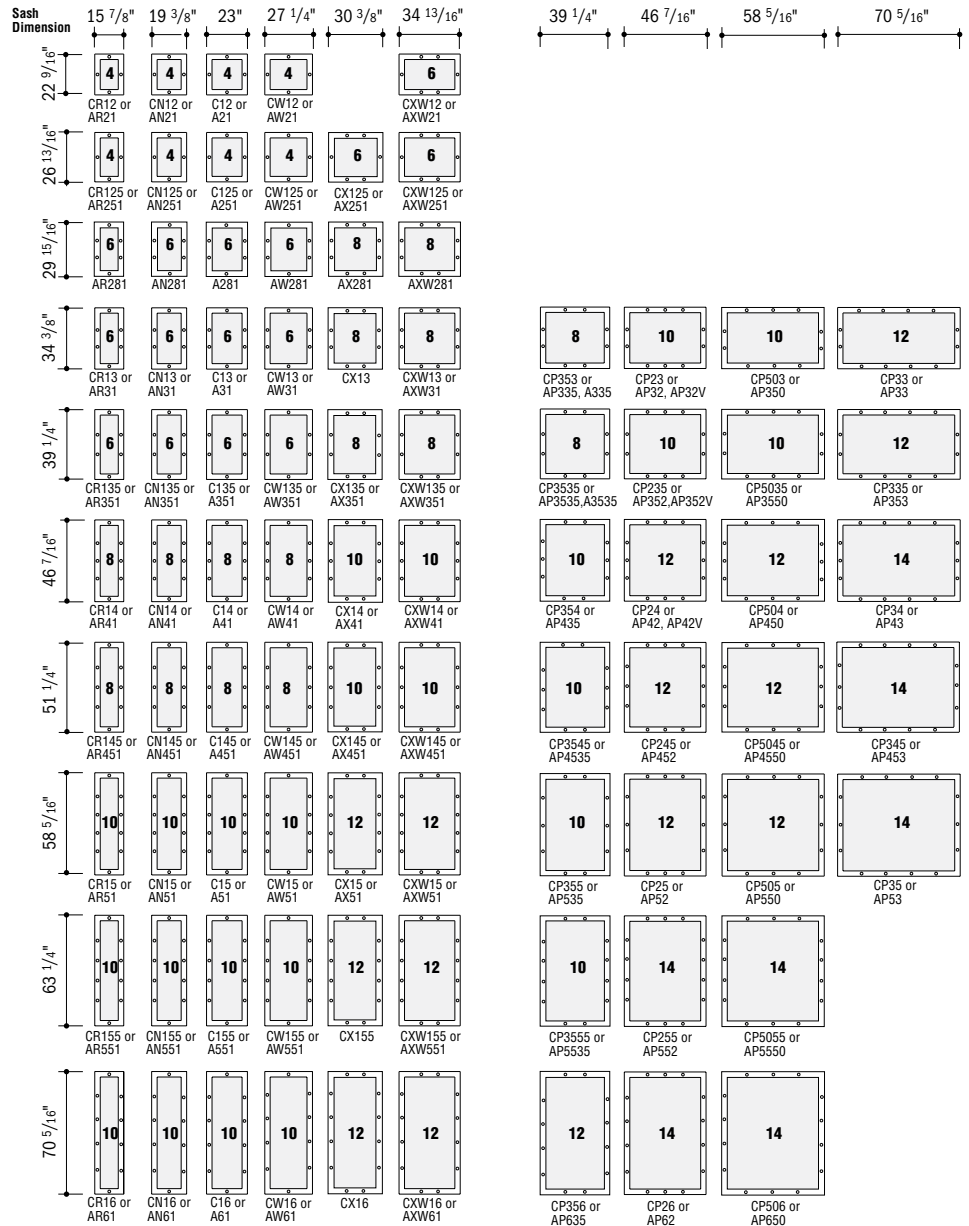
Quantity
14

Part Number
1359410

Stationary Casement/Awning and Picture Window Clip Location

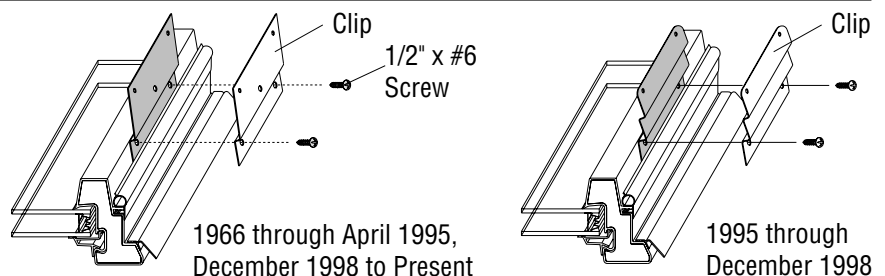
IMPORTANT

- Number in center of unit shows number of *Sash Clips* required. Marks on *Sash* indicate clip location.
- For custom size sash use clip quantity of next wider or taller sash.



2. Position and Attach Clips

- Place *Sash* on a clean surface with the interior facing up.
- Locate *Clip* location and number of clips according to above chart.
- Use *Clip* as a template to drill 3/32" pilot holes 1/16" deep for *Clip* attachment.
- Attach *Clips* using 1/2" x #6 Screws provided.



1966 through April 1995 and December 1998 to Present

1. Remove Sash Stops and Remove Sash

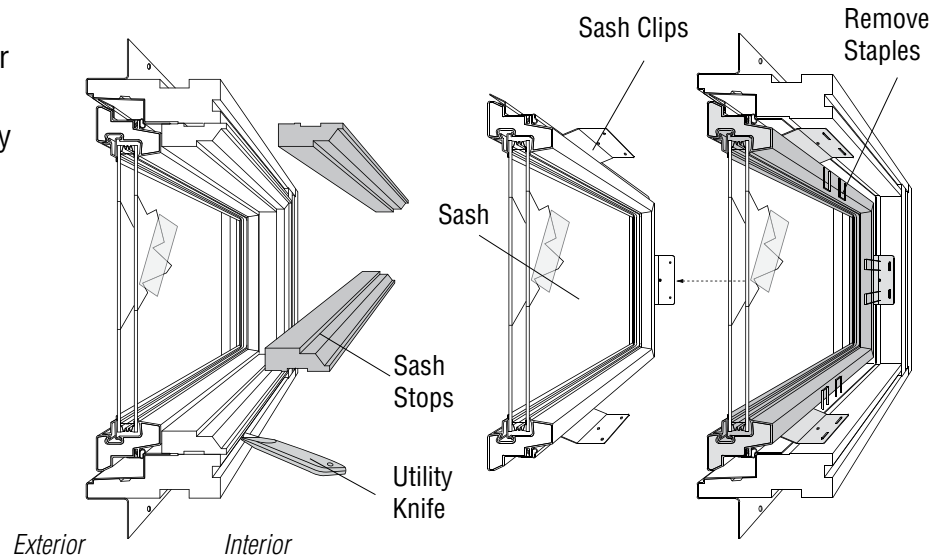
⚠ WARNING

Use extreme care when working around window opening. Never leave a window opening unattended, especially when children are present. Falling from window opening may result in severe injury or death.

⚠ WARNING

Windows and doors can be heavy. Use safe lifting techniques and a reasonable number of people with enough strength to lift, carry and install window and door products to avoid injury and/or product damage.

- Break the varnish or paint seal by scoring with a thin blade putty knife or utility knife.
- Remove *Sash Stops* using a small pry bar. Gently pry up *Sash Stops* and carefully remove without scratching surrounding trim.
- With one person holding the *Sash* from the interior with glass clamps and/or vise grips and one person holding the *Sash* from the exterior with glass clamps, use a small pry bar to pry *Sash Clips* loose removing staples with a pliers.
- Remove the *Sash*.

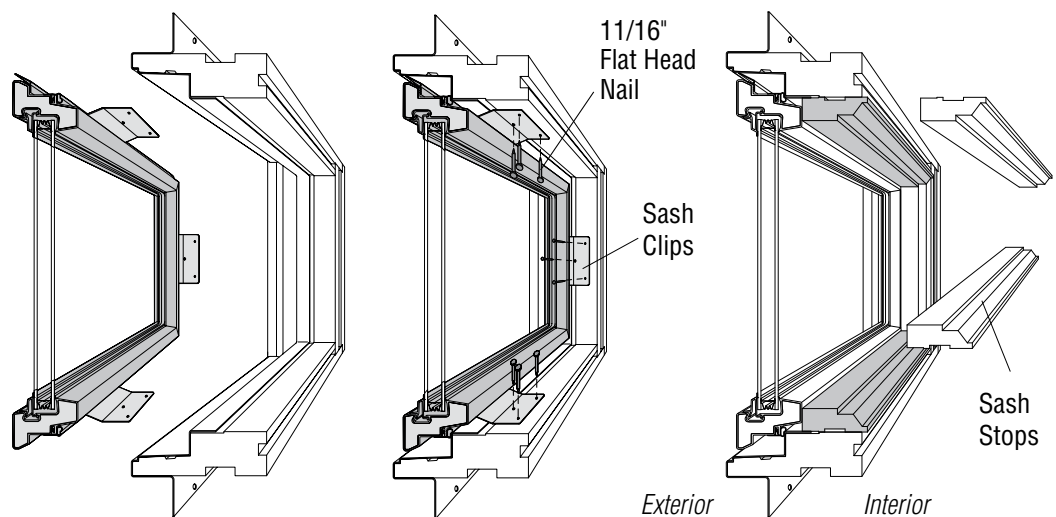


2. Install Sash and Apply Sash Stops

NOTICE

Sash Stops can be painted or stained prior to installation.

- While holding *Sash* securely with glass clamps, position it in the opening. Pull *Sash* inward tight against the frame with glass clamps or by gripping the *Sash Clips* with vise grips. Push the *Sash* tight from the exterior. **DO NOT** push on the glass.
- Fasten *Sash Clips* using 11/16" Flat Head Nails.
- Reposition the *Sash Stops* and secure them using 4d *Finish Nails*. Leave a 1/32" space between the *Sash Stops* and the *Sash*.



May 1995 through December 1998

1. Remove Sash Stops and Remove Sash

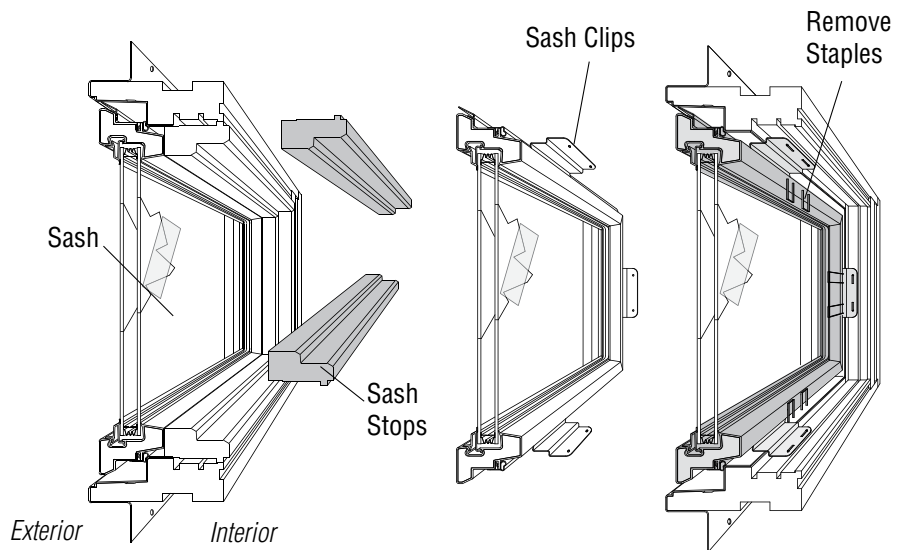
⚠ WARNING

Use extreme care when working around window opening. Never leave a window opening unattended, especially when children are present. Falling from window opening may result in severe injury or death.

⚠ WARNING

Windows and doors can be heavy. Use safe lifting techniques and a reasonable number of people with enough strength to lift, carry and install window and door products to avoid injury and/or product damage.

- Break the varnish or paint seal with a thin blade putty knife.
- Remove *Sash Stops* using a small pry bar. Gently pry up *Sash Stops* and carefully remove without scratching surrounding trim.
- With one person holding the *Sash* from the interior with glass clamps and/or vise grips and one person holding the *Sash* from the exterior with glass clamps, use a small pry bar to pry the *Sash Clips* loose removing staples with a pliers.
- Remove the *Sash*.



2. Install Sash and Apply Sash Stops

CAUTION

Sash Stops can be painted or stained prior to installation.

- While holding *Sash* securely with glass clamps, position it in the opening. Pull *Sash* inward tight against the frame with glass clamps or by gripping the *Sash Clips* with vise grips. Push the *Sash* tight from the exterior. **DO NOT** push on the glass.
- Fasten *Sash Clips* using 11/16" Flat Head Nails.
- Reposition the *Sash Stops* and secure them using 4d Finish Nails. Leave a 1/32" space between the *Sash Stops* and the *Sash*.

