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Part Number: 81JA0100

INSTALLATION INSTRUCTION
STANDARD SUBFRAME AND T-SUBFRAME

The Subframe provides adaptability of clad windows to existing openings. In most cases, only the sash of existing windows will have to be removed. The Subframe permits the installation of the units from the inside of the building. Installation recommendations for other types of wall construction, wall systems, conditions, multiple windows or bow/bay windows, may be obtained from Pella Corporation or a local Pella retailer. Building designs, construction methods, building materials, and site conditions unique to your project may require an installation method different from these instructions, and additional care on your part. Determining the appropriate installation method is the responsibility of you, your architect, or other construction professional.components, and other design issues relevant to each project. The determination of the suitability of all building components for each project, as well as the design and installation of flashing and sealing systems, are the responsibility of the building owner, architect, contractor, installer and/or consumer.

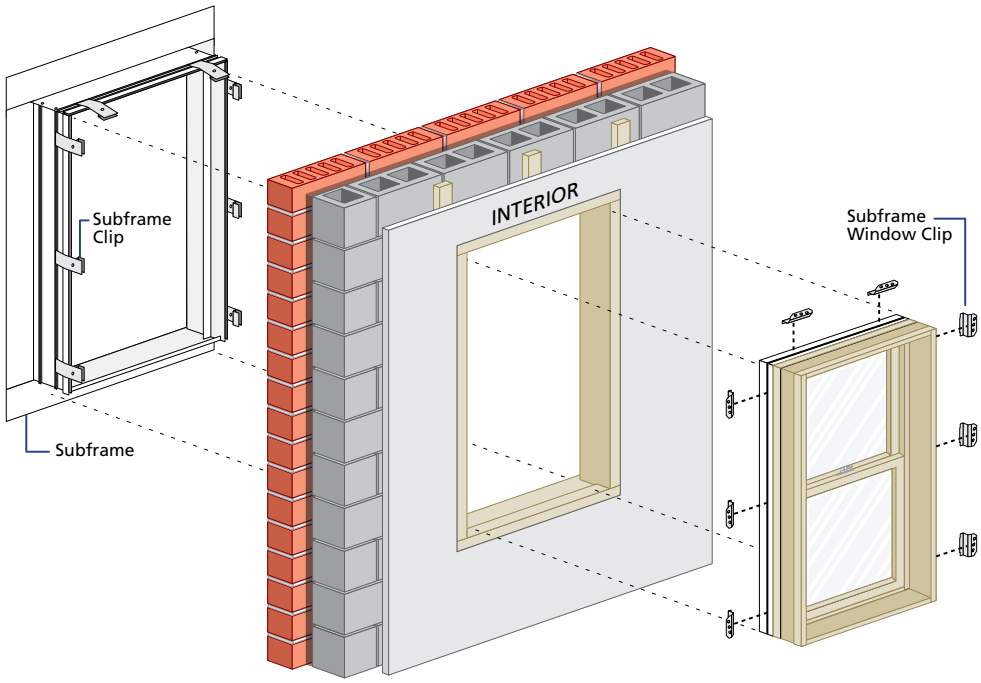
YOU WILL NEED TO SUPPLY:

- Cedar or Impervious shims/spacers (12 to 20)
- Pella Window and Door Installation Sealant or equivalent high quality, multi-purpose sealant (1 tube per window)
- Low expansion, low pressure polyurethane insulating window and door foam sealant - DO NOT use high pressure or latex foams
- Subframe clips
- Subframe window clips
- Subframe vinyl receptor gasket
- #8 x 1-1/4" flat head stainless steel screws
- Subframe Head (1), Sill (1) and Jamb (2)
- Wood blocking
- #8 x 5/8" pan head stainless steel screws
- #8 x 1" stainless steel pan head screws (for arched units)
- Reinforcing plates and #6 x 1/4" self tapping screws for curved head assembly.
- #8 x 1-1/4" screws

TOOLS REQUIRED:

- Tape measure
- Level
- Hammer
- Phillips screwdriver
- Sealant gun
- Drill
- Hack saw (metal-cutting saw)
- Electric shear or saw
- Table with smooth soft covering to prevent scratching of subframe finish
- Quick Grip clamps (for curved-top units)

REMEMBER TO USE APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT.



Always read the Pella® Limited Warranty before purchasing or installing Pella products. By installing this product, you are acknowledging that this Limited Warranty is part of the terms of the sale. Failure to comply with all Pella installation and maintenance instructions may void your Pella product warranty. See written Limited Warranty for details, including exceptions and limitations at pella.com/warranty, or contact Pella Customer Service at 877-473-5527

1 PREPARE EXISTING OPENING

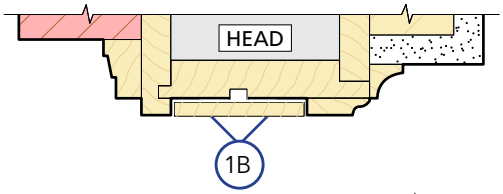
For Standard Subframe:

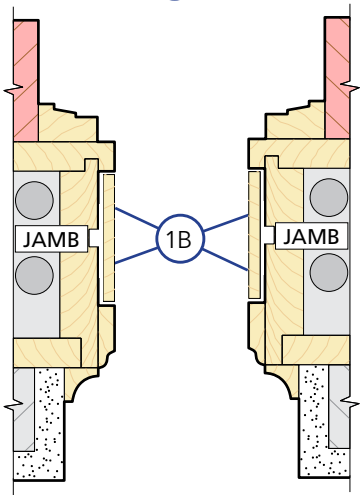
Note: Standard subframe is designed for use with an existing wood window frame.

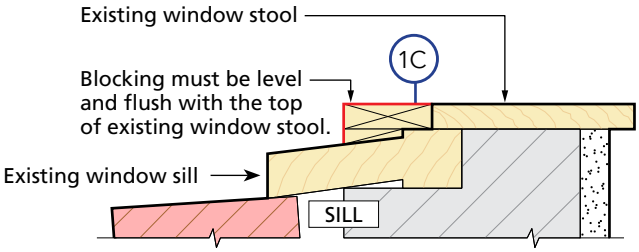
A. **Remove the interior stop**, sash and parting stop from the existing window.

B. **Check the condition of the existing window frame.** Repair damaged frame members and install wood blocking in the existing sash channels flush with the blind stop.

C. **Prepare the existing opening.** Install treated wood blocking as required. Blocking at the sill must be level and flush with the top of the existing window stool.





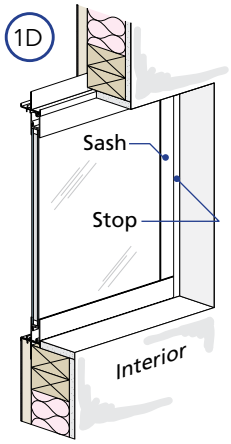


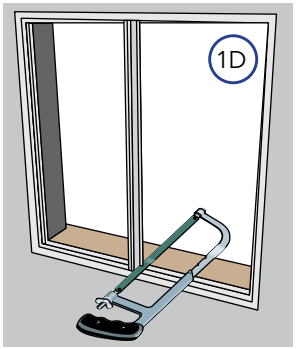
For T-Subframe:

D. **Prepare the window opening** by removing the sash and/or glass from the existing metal window frame.

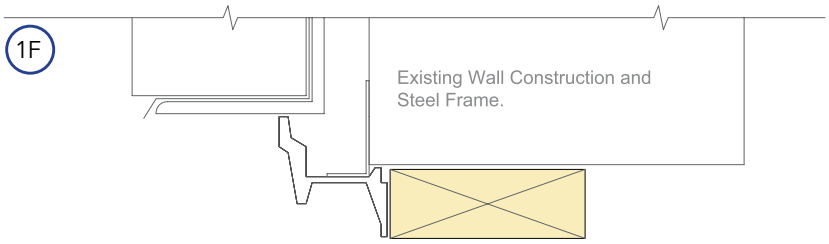
Note: It may be necessary to cut the divider between vent and fixed glass areas with a hacksaw. The existing metal frame is left in place so as not to disturb the existing exterior wall flashing or drainage system.

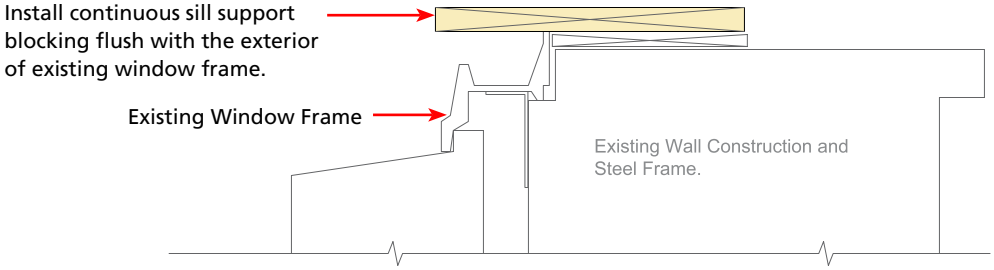
E. **Remove any debris**, old sealant, paint or stucco from the exterior face of the existing window frame. Clean any dirt or debris from the existing sill and ensure the weep holes are open and clear.





F. **Prepare the existing opening,** install treated wood blocking as required. Head and jamb blocking must be flush with the existing frame. Blocking at the sill must provide full depth support for a level and solid base on which the replacement window will be placed (shim blocking as needed).



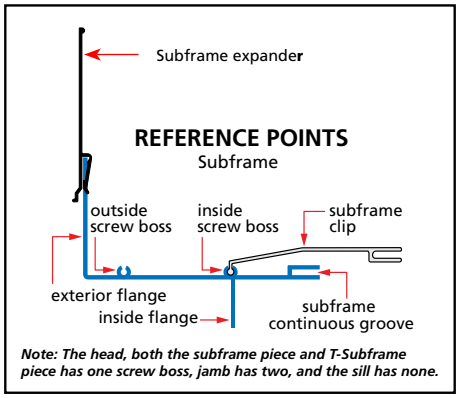


2 ASSEMBLE THE SUBFRAME

Note: Standard Subframe and T-Subframe assembly is similar, Standard Subframe is depicted in the following steps.

See Page 15 for lineal length subframe cutting and notching instructions.

Double-Hung subframe sill assembly is offset to the exterior. Refer to Step 5C details.



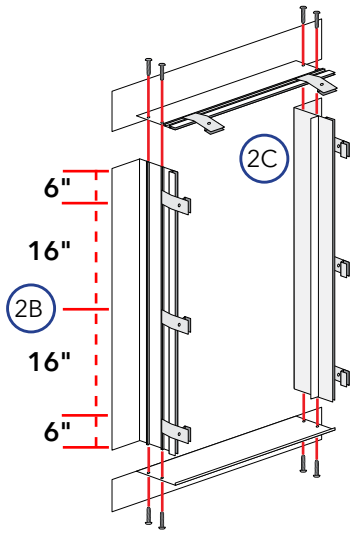
Note: The head, both the subframe piece and T-Subframe piece has one screw boss, jamb has two, and the sill has none.

A. **Layout the head, sill and jamb subframe pieces** in their appropriate position on a table with the exterior flange facing down.

Note: The table should be covered with carpet or other material to prevent scratches to the subframe painted surfaces.

B. **Install the subframe clips.** Slide clips into the inside screw boss of the head and jamb subframes, placing one clip 6" from each end of the subframe and no more than 16" on center. To hold the clips at the proper spacing, the screw boss may be crimped or the clips held with tape at the desired spacing.

Note: A minimum of two subframe clips per jamb and head are required.



For Arch Heads see Step 7 And For Springlines see Step 8

C. **Assemble the subframe** using #8 x 5/8" pan head stainless steel screws. Drive the screws through the pre-drilled screw holes in the head and sill subframe pieces into the outside and inside screw boss of the jamb subframe members.

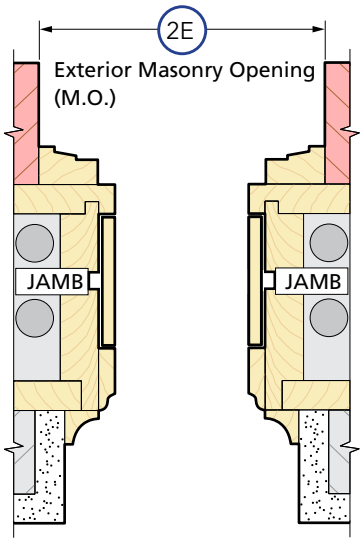
D. **Measure the width and height** of the masonry opening and the assembled subframe prior to cutting subframe flanges to ensure that cutting the flanges will not make the subframe too small for the masonry opening.

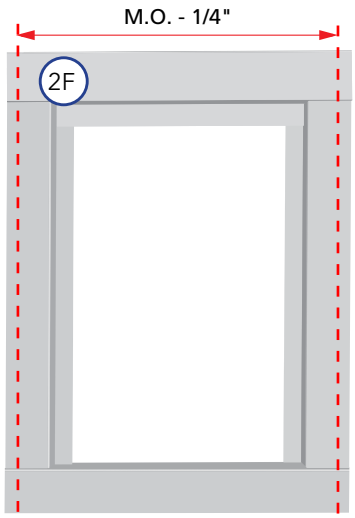
Note: The following measurement will be used to remove the excess material from the subframe jamb flanges.

E. **Measure the existing exterior masonry opening** (M.O.) width and subtract 1/4" from this dimension.

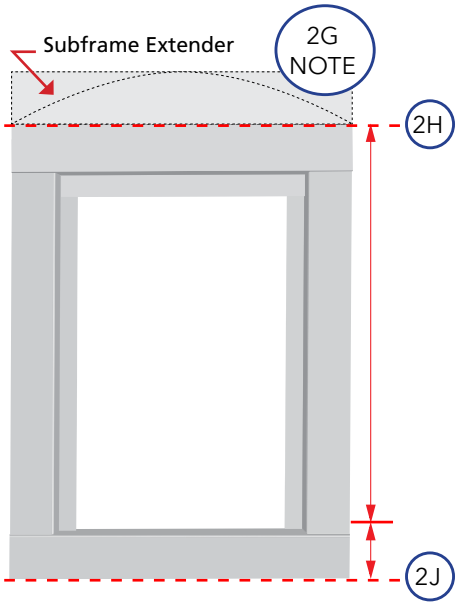
F. **Using the final dimension from Step E,** equally trim the exterior subframe jamb flanges to this overall width using an electric shear or saw.

Note: The following measurement will be used to remove the excess material from the subframe head flange.





2 ASSEMBLE THE SUBFRAME (CONTINUED)



G. **Measure from the head** of the masonry opening to the top of the existing window stool and subtract 1/8" from this dimension.

NOTE: The subframe extender may be used when the masonry opening is larger than the height of the subframe or cut to match an arched opening.

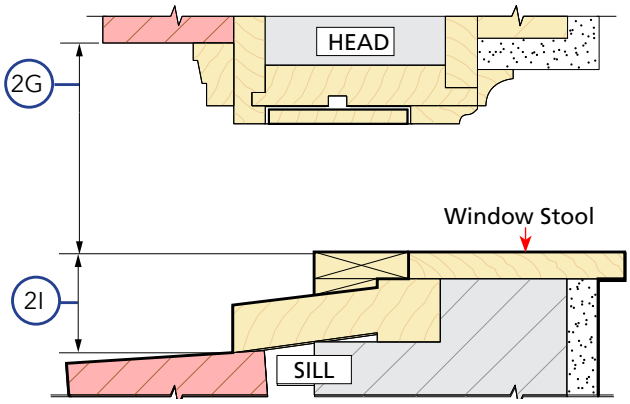
H. **Using the final dimension from Step G**, measure from the interior bottom of the subframe sill to the dimension on the head flange. Trim the exterior head flange.

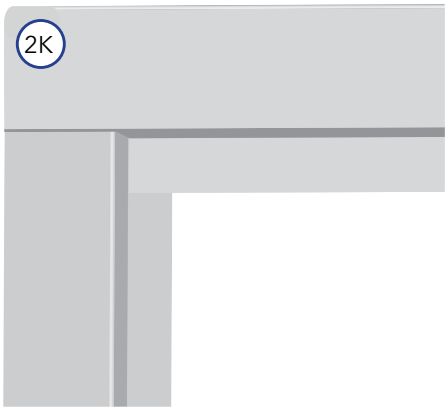
Note: The following measurement will be used to remove the excess material from the subframe sill.

I. **Measure from the sill** of the masonry opening to the top of the existing window stool and subtract 1/8".

J. **Using the final dimension from Step I,** measure from the interior bottom of the subframe sill to this dimension on the exterior sill flange. Trim the sill flange.

Note: At existing windows where an excessive sloped sill is present, the standard subframe sill flange may not be long enough. In this case a metal flashing must be attached to the existing wood window sill prior to the installation of the subframe.



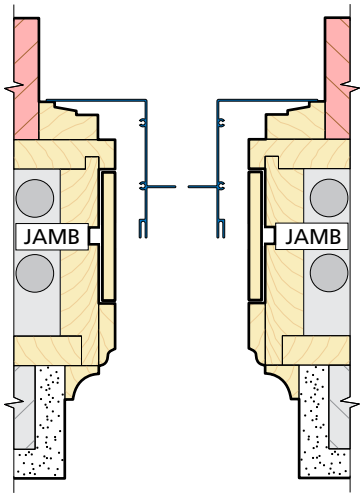


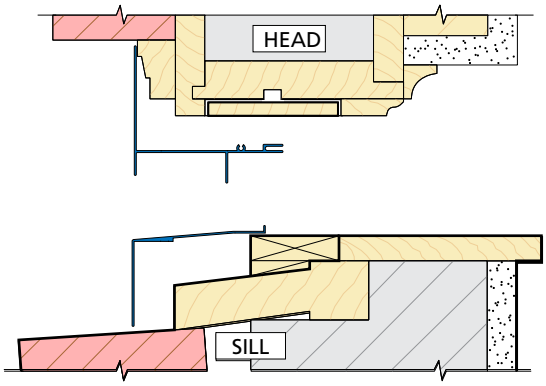
K. **Round or bevel all four corners** of the subframe flanges to ease installation into the opening.

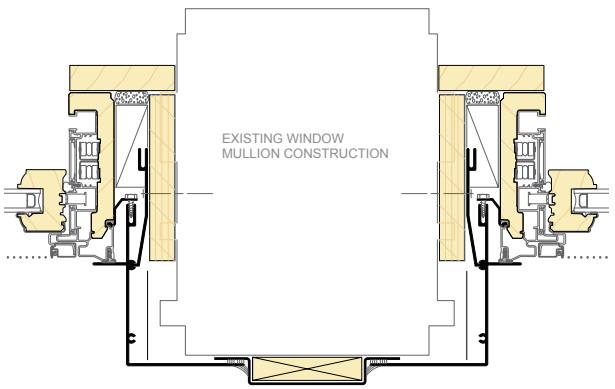
3 INSTALLING SUBFRAME

A. **Dry fit the subframe into the opening.** The exterior subframe flange should fit snug to the existing window exterior trim. If subframe flanges require additional trimming, mark the location of the areas requiring adjustment. Check to make sure all the subframe clips will be attached to solid material. Make any adjustments required to the subframe assembly before proceeding to the next step.

NOTE: Aluminum trim may installed at this time to cover existing mullions (if applicable).



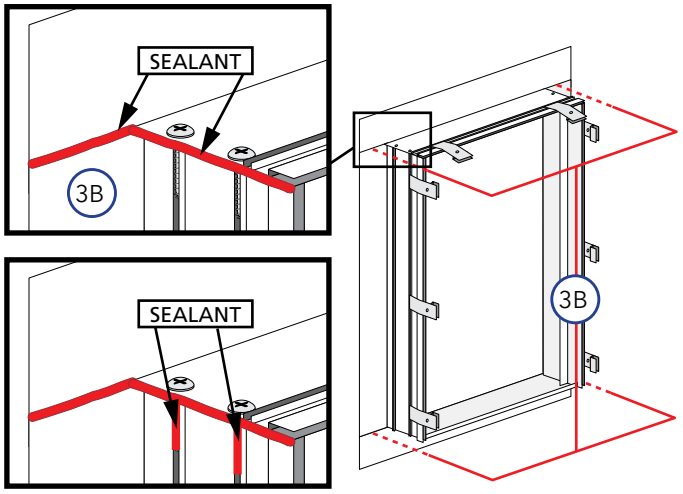




3 INSTALLING SUBFRAME (CONTINUED)

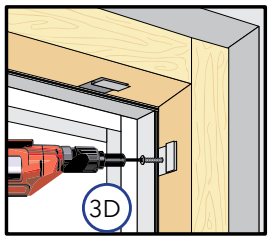
B. **Apply sealant bead** on the back of the subframe exterior flanges at top and bottom where the vertical and horizontal members meet. Apply sealant bead on the back side of the subframe corners. Place sealant over the visible screw threads at each screw boss, then plug each screw boss with sealant at the bottom of the screw threads.

Note: Prior to installation of T-Subframe assemblies, place a bead of sealant on the back side of the flanges around the perimeter of the T-Subframe assembly. Be sure to leave 1" weep gaps in the sealant on the back side of the sill flange 6" from each corner.



C. **Position the subframe assembly into the opening.** Level the sill. Shim the subframe to plumb and square within the opening.

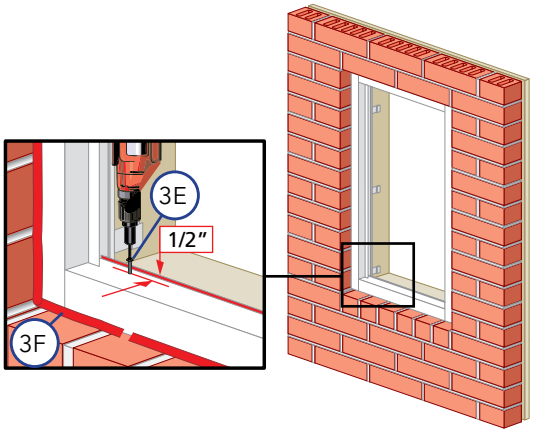
Note: Confirm subframe width at center matches head and jamb width.



D. **Fasten the subframe clips to the opening.** Using #8 x 1-1/4" screws, attach the subframe clips to the existing window frame or blocking. Shim between the clips and existing window frame, if required, to prevent the subframe from twisting.

E. **For openings wider than 36",** drive #8 x 1-1/4" flat head stainless steel screws through the subframe sill into the blocking and/or existing stool at 6" from jambs and at the center. Install screws within 1/2" from the interior edge of the subsill frame. Pre-drill and counter-sink as required. Apply sealant over screw locations.

F. **Apply a corner bead of sealant** around the exterior perimeter of the subframe flange, sealing the flange to the masonry opening. Provide 1" wide weep gaps in sealant 6" from each jamb.

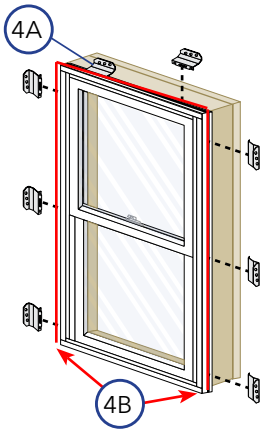


4 PREPARING THE WINDOW(S) FOR INSTALLATION

Note: If windows are to be mulled together, follow the instructions for mulling clad windows.

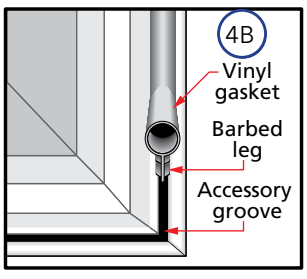
A. **Install window clips into window frame fin groove** at head and jambs. Place clips 4" from each corner and not more than 12" on center. Compare the window clip locations to the subframe clip locations. Adjust the window clip location, if necessary, to prevent interference with the subframe clips.

Note: For mulled windows, place clips 4" from each side of the mullion joint, and not more than 12" on center.



B. **Insert the continuous vinyl gasket** in the accessory groove at the head and jambs of the window(s). Begin at the bottom of one jamb and insert the barbed leg of the gasket into the accessory groove, and continue around the upper corners, end at the bottom of the opposite jamb.

Note: When applying the vinyl gasket to mulled windows, notch the barbed leg on the back of the gasket at the mullion joint.



5 SETTING AND FASTENING THE WINDOW

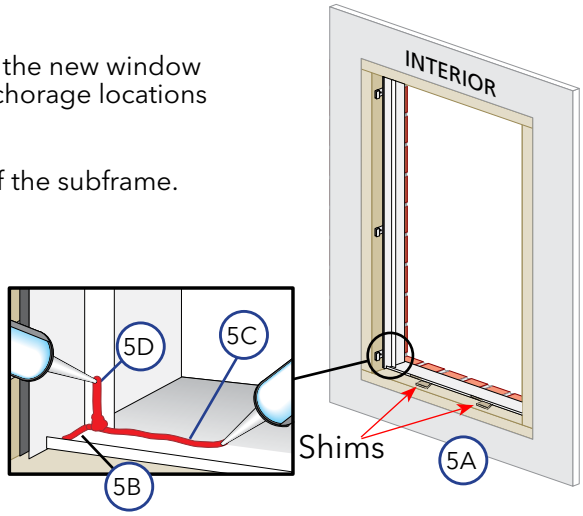
A. **Pre-apply 1/16" shims on the existing interior stool** at the location where the new window will sit. Place shims 1" from each subframe jamb and as required at sill anchorage locations referenced in Step H. Shims to be flush with top of subframe sill surface.

B. **Apply a continuous bead of sealant** within the interior jamb/sill corners of the subframe.

C. **Apply a 1/4" continuous bead of sealant** across the subframe sill; position the sealant bead 1/4" from the interior flanges (toward the interior).

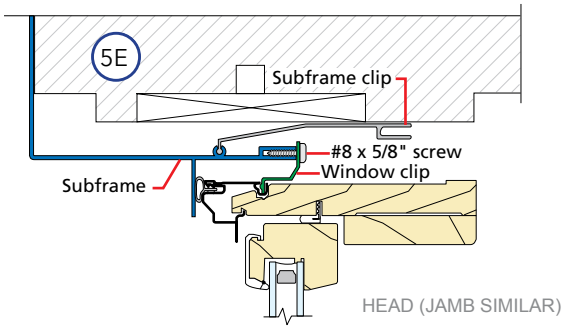
D. **Apply a generous bead of sealant** approximately 1" up the center of the interior jamb flanges on the subframe.

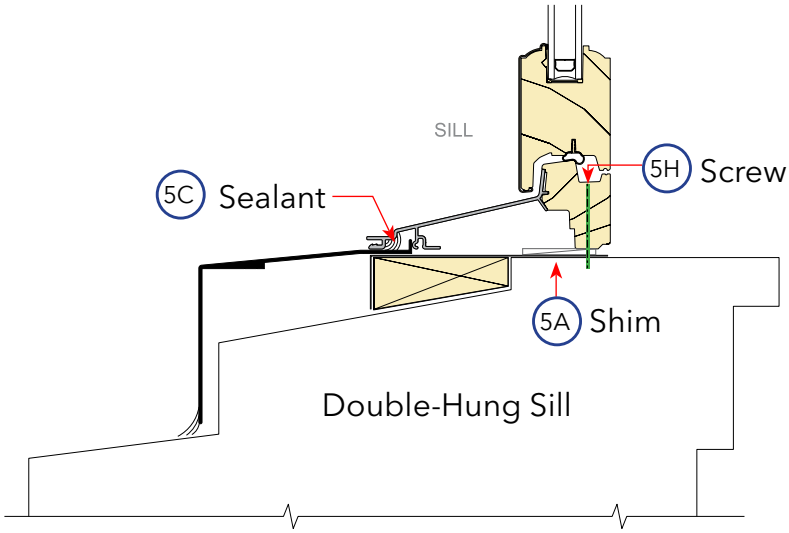
Note: All sill sealant beads must connect.

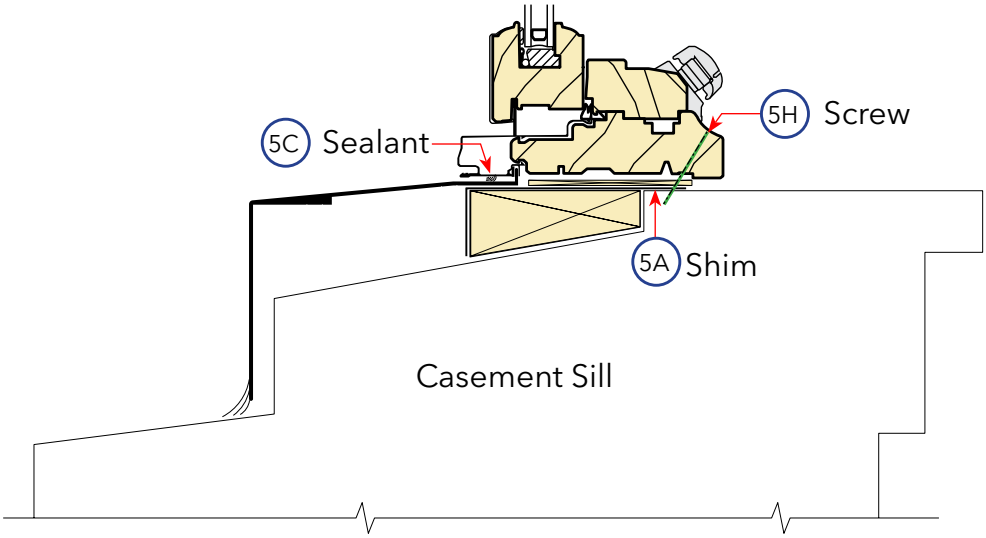


E. **Set the window into the subframe from the interior.** Hold the window to the top of the subframe opening and center it between the subframe jambs. Push the window to the exterior. Slowly allow the window to slide to the bottom of the subframe opening seating in the line of sealant.

Note: Ensure the sill of the window is all the way in and against the subframe flange. DO NOT smear the sealant at the sill while installing the window.

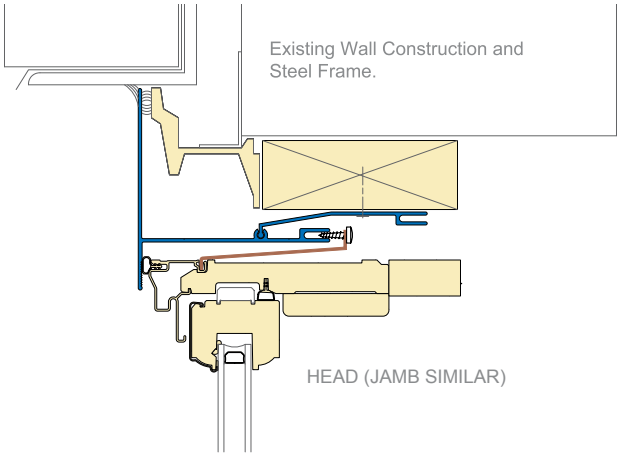


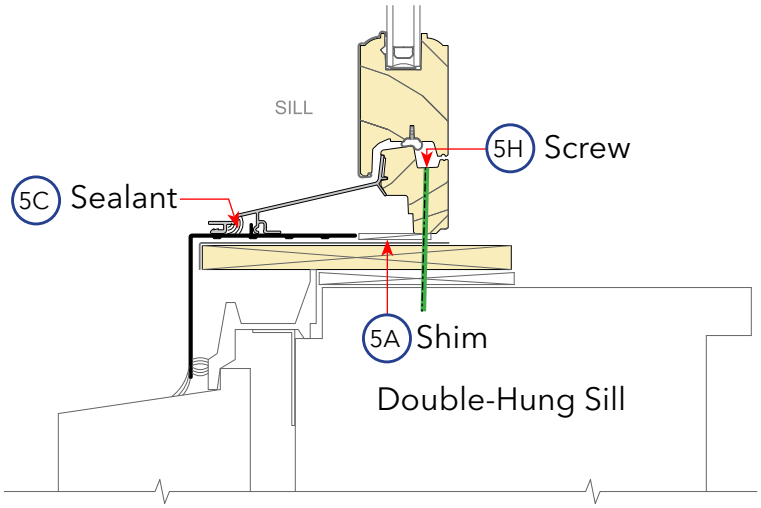


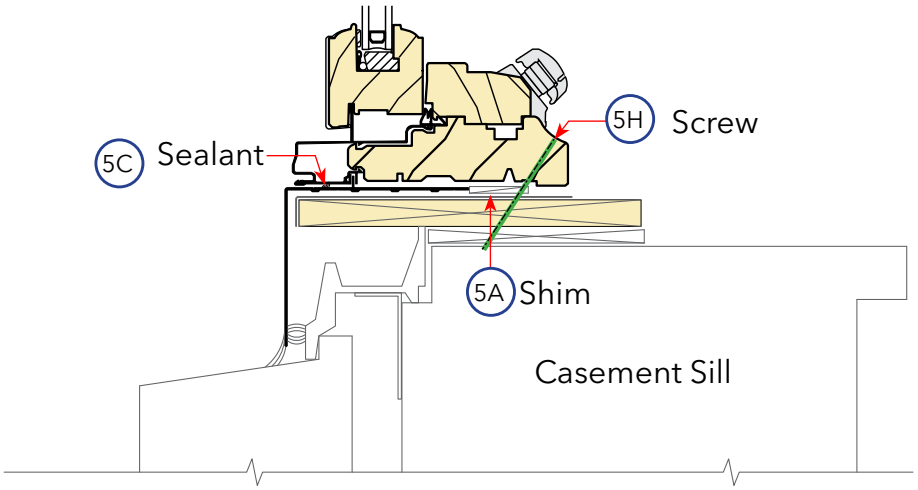


Standard Subframe

5 SETTING AND FASTENING THE WINDOW (CONTINUED)



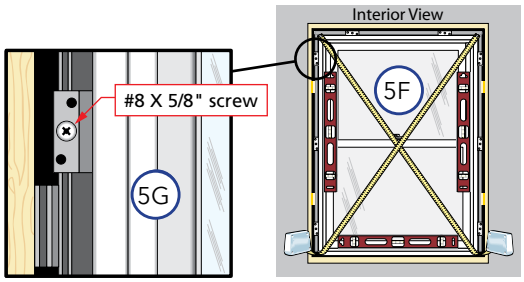




T-Subframe

F. **While holding the window in the opening,** plumb and square window. Place shims 1" from the bottom and top of the window between the window and the sides of the opening. Adjust the shims as required.
For windows up to 53" tall: Place an additional shim at the midpoint of each side of the window to keep jambs straight.
For windows over 53" tall: Place three additional shims along each side of the window, to keep jambs straight evenly spacing them between the top and bottom shims.

Note: DO NOT shim above the window. DO NOT over shim.

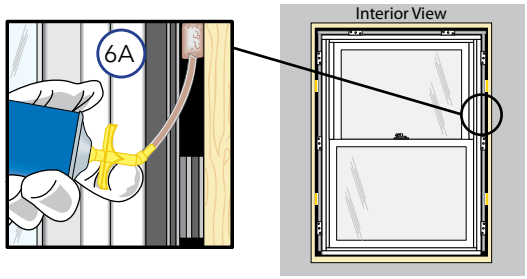


G. **Fasten the window to the subframe** by driving #8 x 5/8" pan head screws through each window clip, into the continuous groove of the subframe.

H. **At windows over 36"** in width pre-drill 1/8" pilot holes at the sill and attach with #8 X 3" finish head screws to the existing window stool at 4" from corners (and mullions) and no more than 16" on center.

6 INTERIOR SEAL

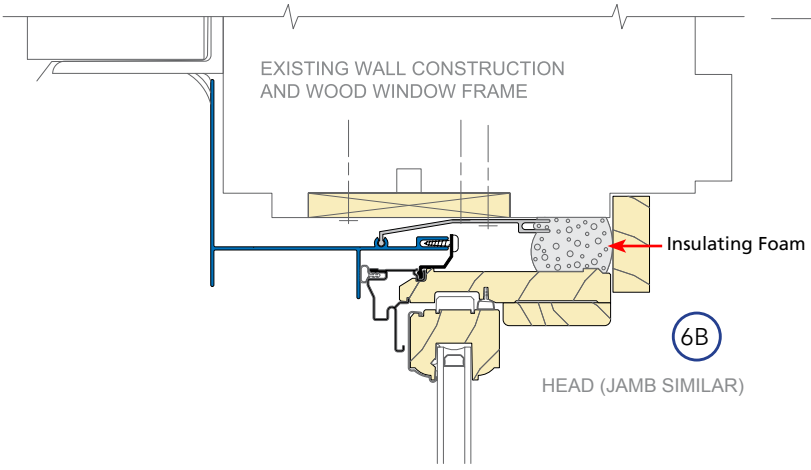
Caution: Ensure use of low pressure polyurethane window and door insulating foams and strictly follow the foam manufacturer's recommendations for application. Use of high pressure foams or improper application of the foam may cause the window to bow and hinder operation.

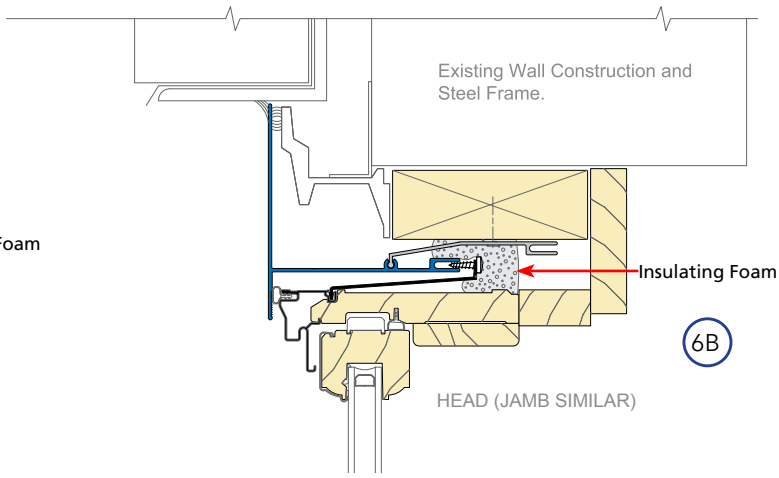


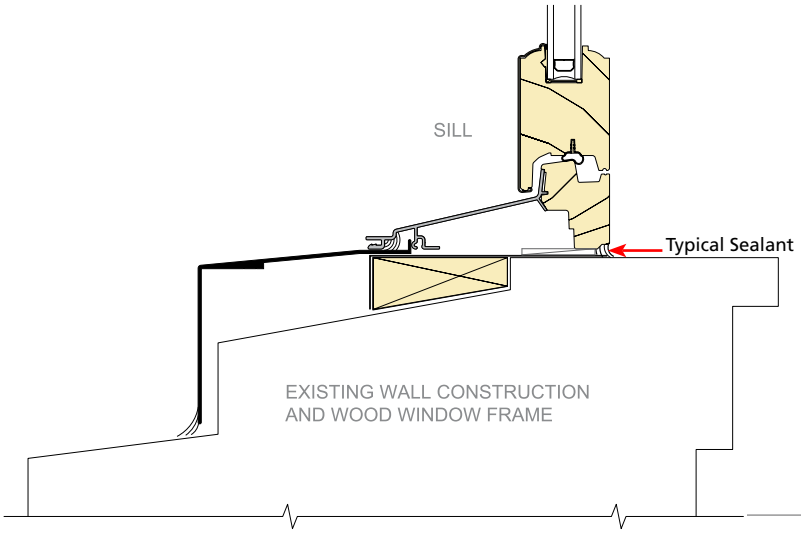
A. **Apply insulating foam sealant.** From the interior, insert the nozzle of the applicator approximately 1" deep in the space between the window and rough opening and apply a 1" deep bead of foam. This will allow room for expansion of the foam and minimize squeeze out. Follow foam manufacturer's instructions. Seal completely around and over the attachment clips.

B. **Seal the window sill to the rough opening with a corner bead of sealant.** Ensure the sealant at each end connects to the insulating foam at the window jambs.

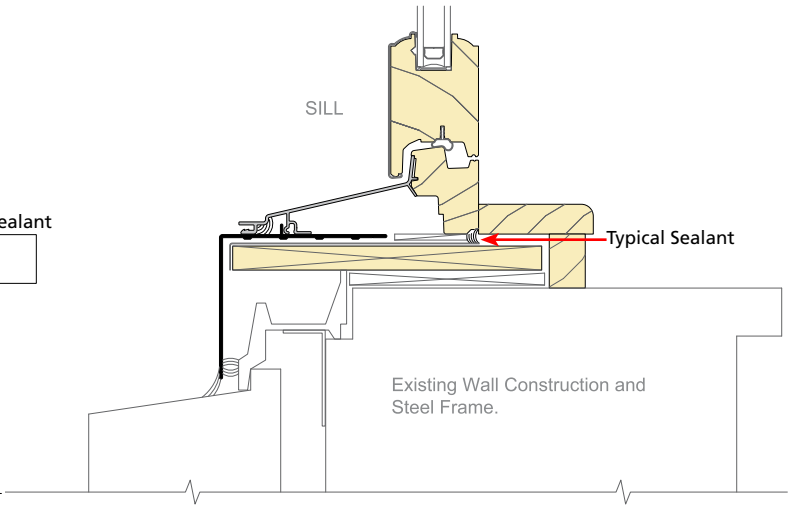
Note: Trim shims as needed to not interfere with sealant application.







Standard Subframe



T-Subframe

C. **Check window operation** by opening and closing the window.

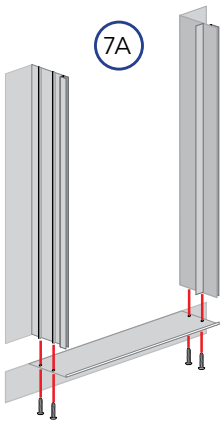
Note: If the window does not operate correctly, check to make sure it is still plumb, level, square and that the sides are not bowed. If adjustments arerequired, remove the foam with a serrated knife. Adjust the shims, and reapply the insulating foam sealant.

D. **Install the interior trim.**

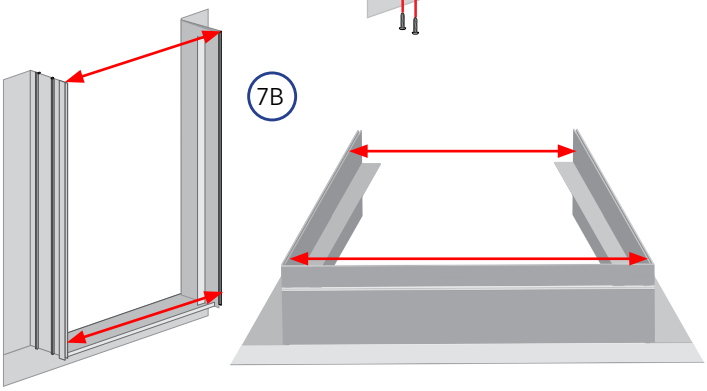
7 ARCH HEAD UNIT SUBFRAMES

See the last page of this instruction for lineal length subframe cutting and notching instructions.

A. **Assemble the subframe jambs** to the sill using #8 x 5/8" pan head stainless steel screws. Drive the screws through the pre-drilled screw holes in the sill subframe piece into the outside and inside screw boss of the jamb subframe members.

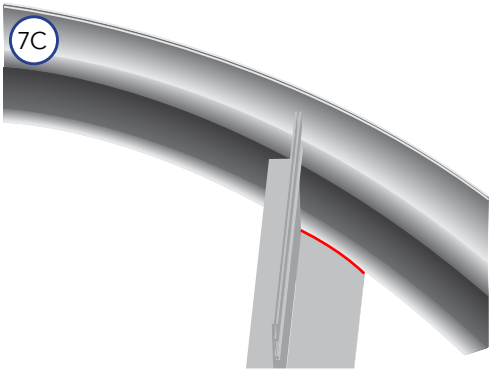


B. **Lay the assembly with the exterior flanges flat** on a protected table top. Confirm the distance between jambs is equal at sill and head of the assembled sill and jamb pieces.

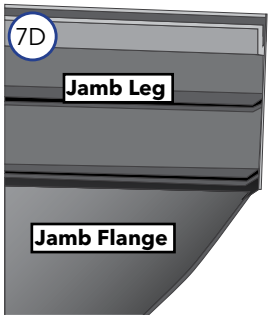


Prepare to cut the Arch Head piece: (Springline go to Step 8)

C. **Place the curved head subframe over the jambs** and outline the interior radius onto the jamb flange.



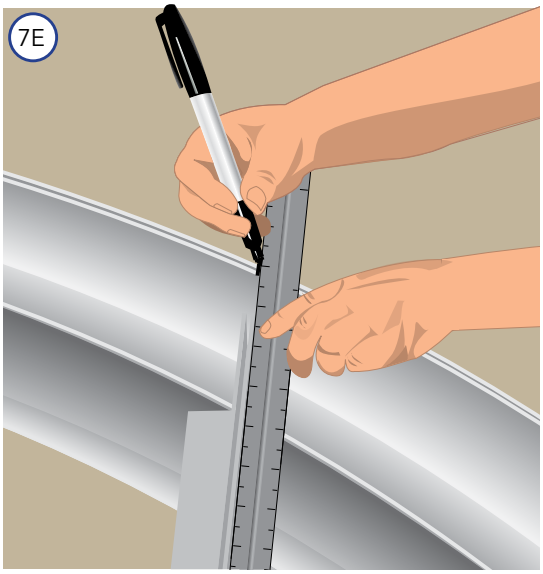
D. **Cut each jamb following the outline.** Cut the leg of the subframe following the radius maintaining the interior leg height.



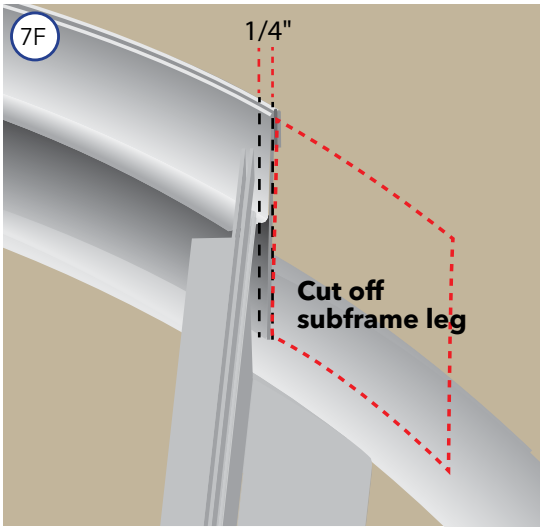
7 ARCH HEAD UNIT SUBFRAMES (CONTINUED)

E. **Place the radius head subframe above the assembled jambs** with the exterior flange flat on the table. Use a straight edge to make a mark extending from each outer jamb side onto the head subframe leg as shown.

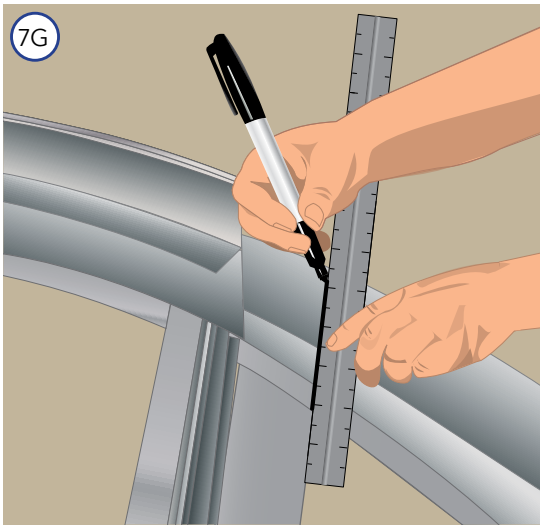
Note: Be sure to maintain the subframe width as noted in Step 7B.



F. **Add 1/4" beyond the jamb edge from the extended mark** and cut off the subframe leg on each end of the curved piece leaving the flat front exterior painted surface attached.

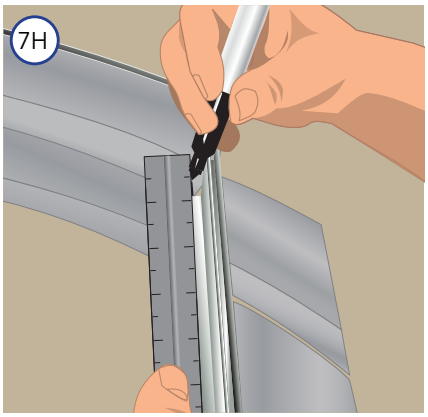


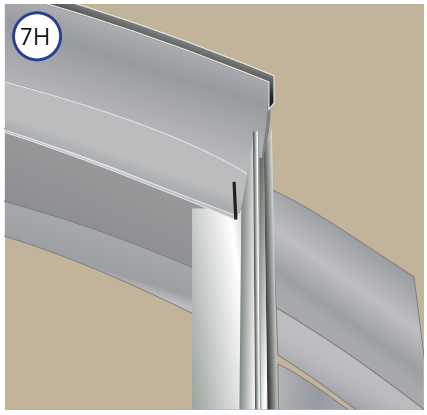
G. **Make a mark extended from each outer edge of the jamb** subframe exterior flange on to the head subframe flange as shown. Cut off the flange on each end of the curved piece at the mark.



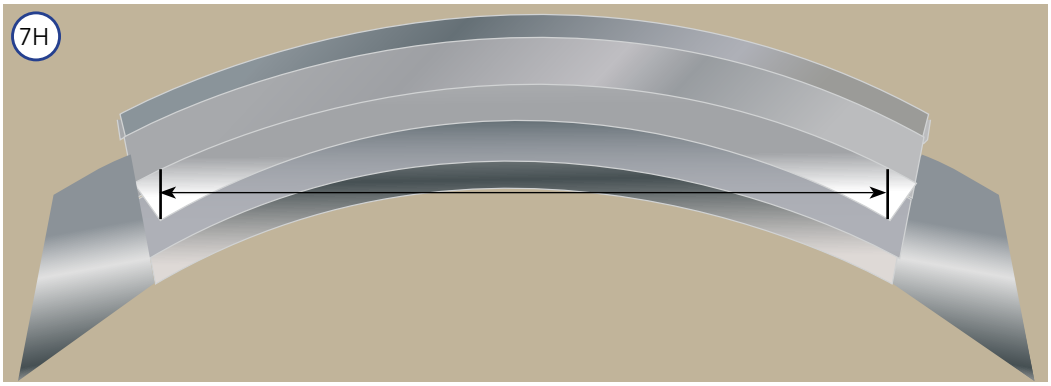
7 ARCH HEAD UNIT SUBFRAMES (CONTINUED)

H. **Mark the interior face** of the curved subframe interior flange by aligning a straight edge with the inside flange of each jamb and extend the mark onto the curved interior flange.

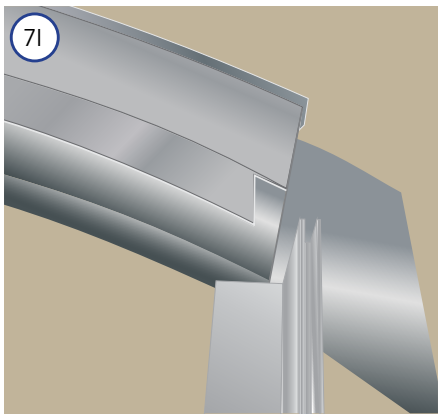


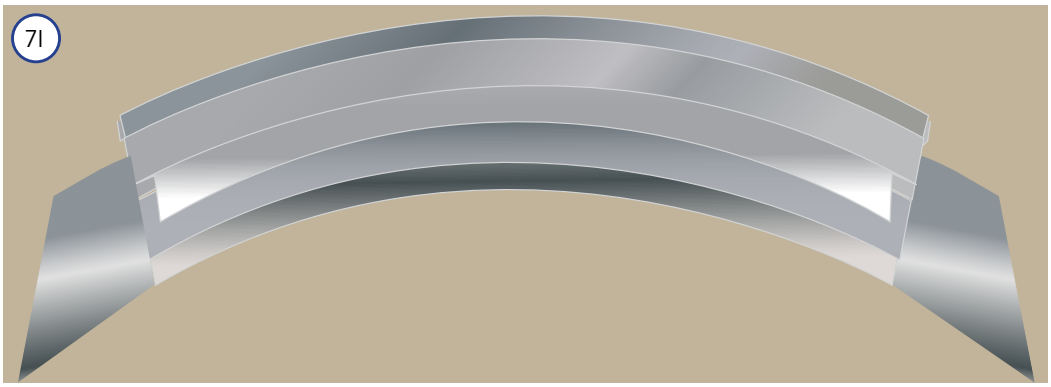


Note: the width of the inside flange should be equal to the distance taken in step 7B.



I. **Cut each inside flange as shown.**

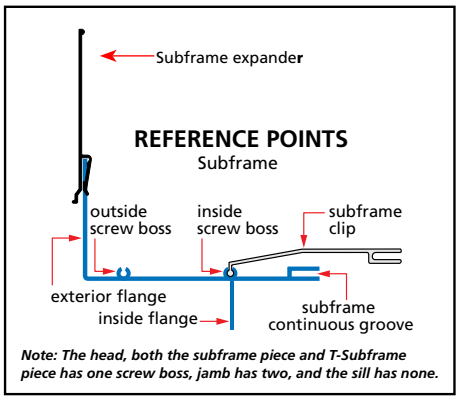




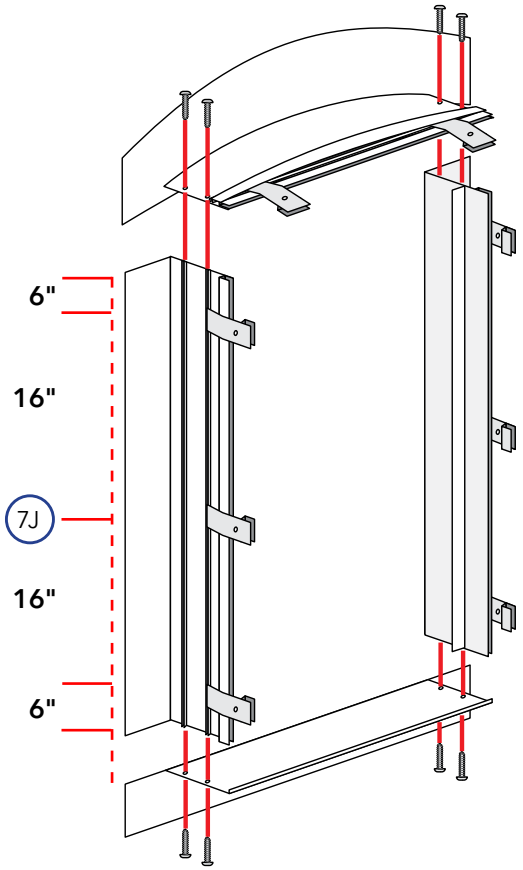
7 ARCH HEAD UNIT SUBFRAMES (CONTINUED)

J. **Install the subframe clips.** Slide clips into the inside screw boss of the head and jamb subframes, placing one clip 6" from each end of the subframe and no more than 16" on center. To hold the clips at the proper spacing, the screw boss may be crimped or the clips held with tape at the desired spacing.

Note: A minimum of two subframe clips per jamb and head are required.

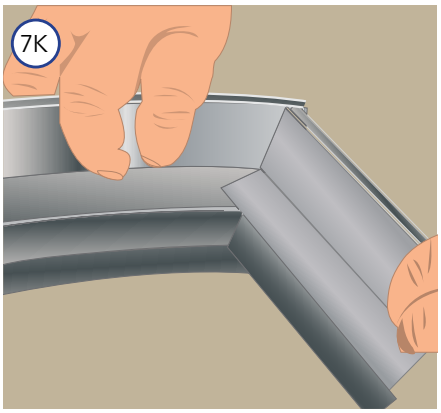


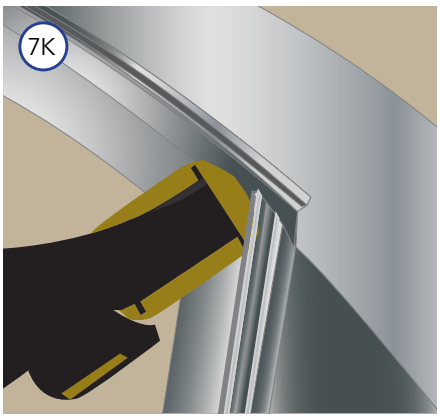
Note: The head, both the subframe piece and T-Subframe piece has one screw boss, jamb has two, and the sill has none.



K. **Place each jamb** so it overlaps the head and clamp both ends together.

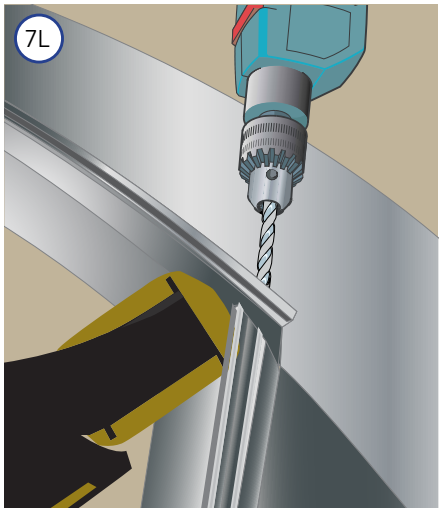
Note: From the exterior the head flange overlaps the jamb flanges.

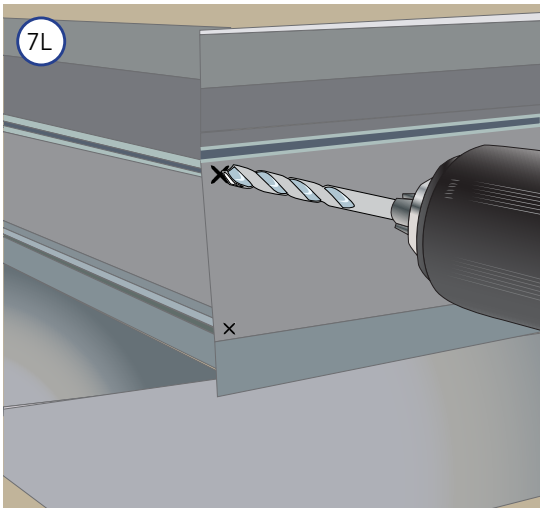




L. **Mark and drill two 5/32" holes** at each end of the head subframe over the inside and outside screw bosses of the jamb.

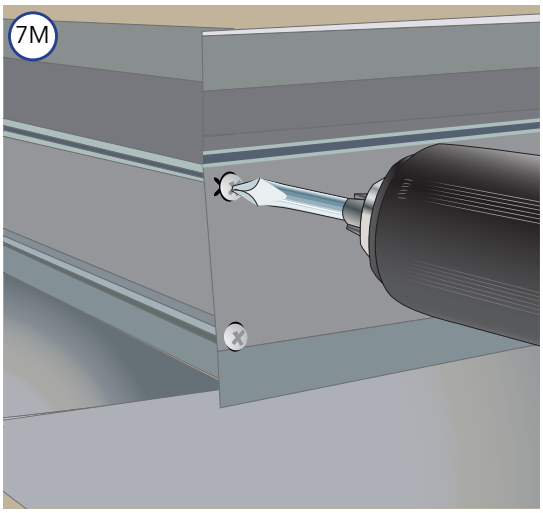
Note: Use clamps to hold the jamb and head flanges together.





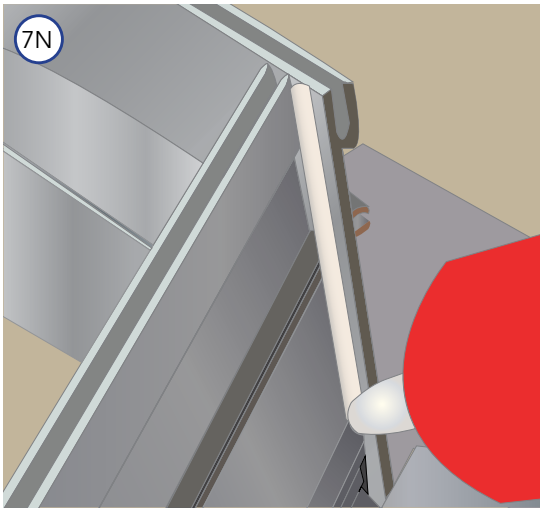
7 ARCH HEAD UNIT SUBFRAMES (CONTINUED)

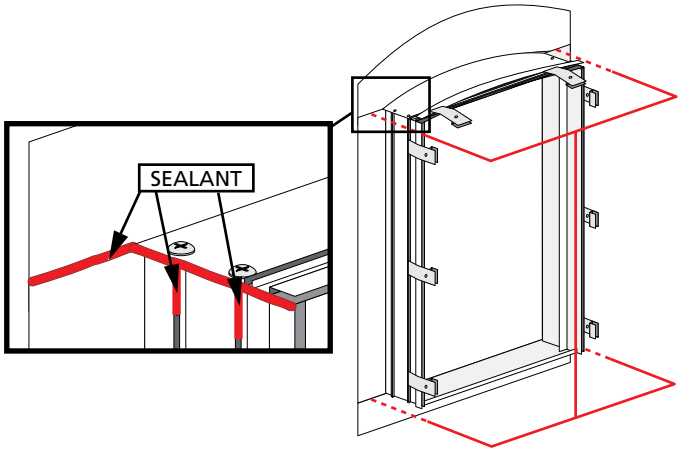
M. **Assemble the curved-top head** portion of the subframe jambs using #8 x 1" pan head stainless steel screws. Drive the screws through the pre-drilled screw holes in the head subframe piece into the outside and inside screw boss of the jamb subframe members.



N. **Apply a bead of sealant** on the back of the subframe flanges where the jamb and head members meet. Apply a bead of sealant on the back side of the subframe corners. Apply sealant over the visible screw threads at each screw boss, then plug each screw boss with sealant at he bottom of the screw threads. Continue sealing the ends at the sill as well.

Note: Apply all sealant before applying flashing tape.

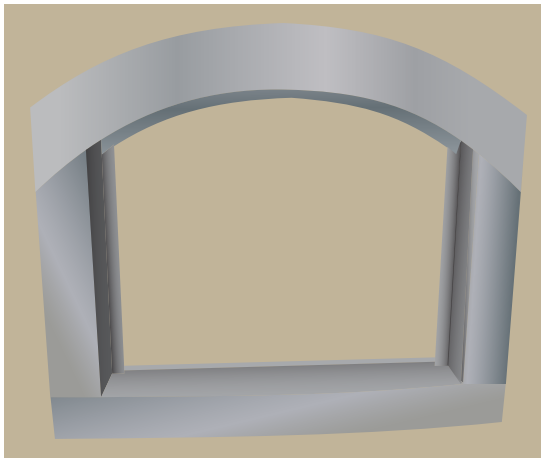


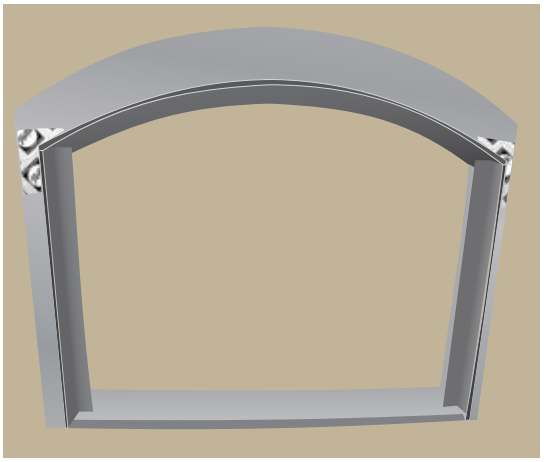


7 ARCH HEAD UNIT SUBFRAMES (CONTINUED)

O. **Apply Pella flashing tape** on the back side of the exterior flanges at each end where the jamb and head flanges overlap.







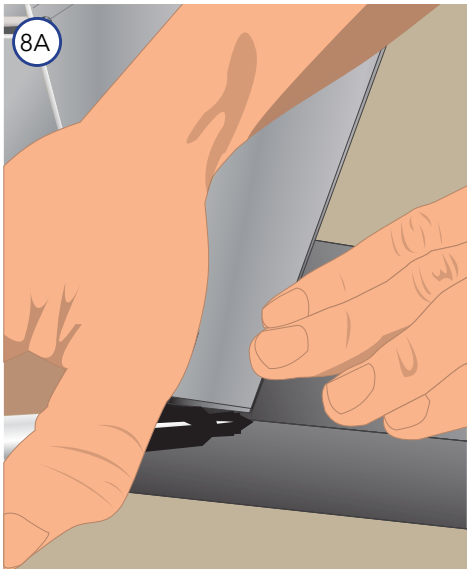
Exterior and interior views of assembled Arch Head Standard Subframe

8 SPRINGLINE UNIT SUBFRAMES

A. **Lay the sill of the subframe** face onto the face of the head piece so the ends of the sill are flush (tangent) with both sides of the curve. Make a small mark on the side of the head piece, remember this surface will be exposed.

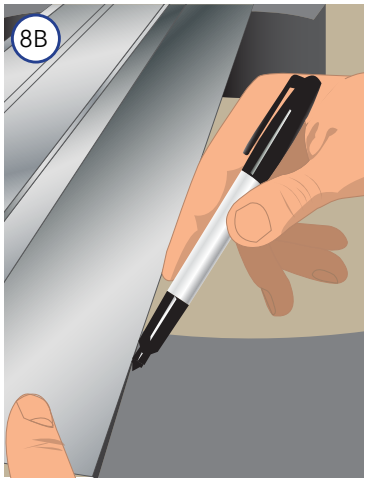
Note: Be careful not to scratch the finished of the subframe.

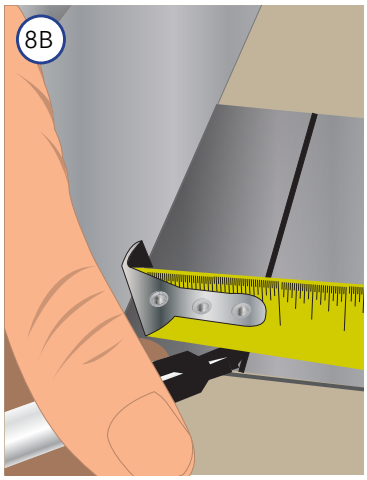




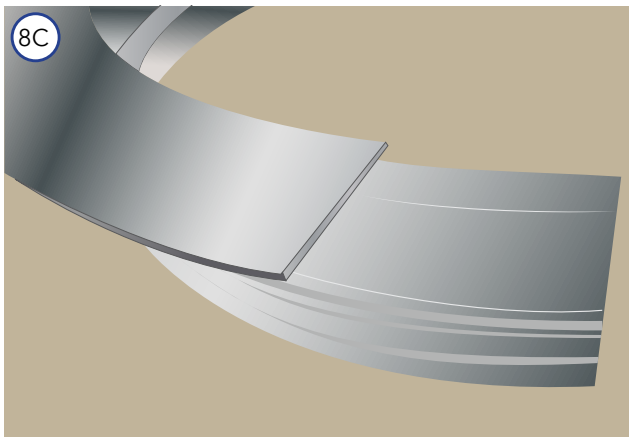
8 SPRINGLINE UNIT SUBFRAMES (CONTINUED)

B. **Measure 1" down** from the mark made on step 8A, and make a horizontal mark connecting the points on both sides. Use the edge of the sill to obtain a straight line.

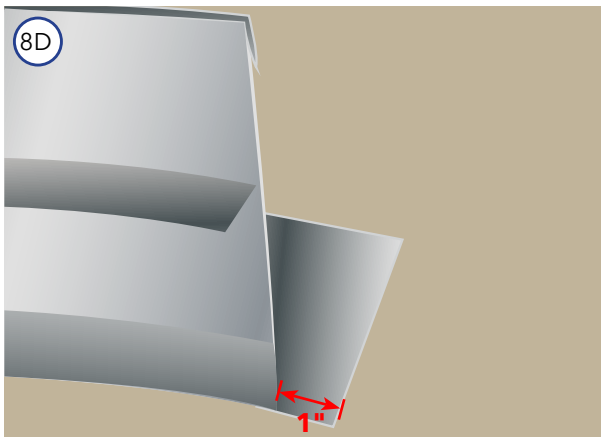




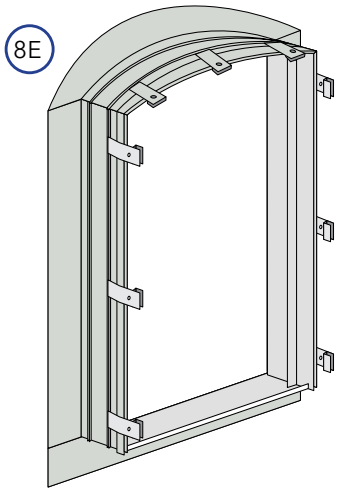
C. **Cut and remove the exterior flange** of the subframe through the line made on step 8B.



D. **Cut and remove 1" of the leg** on both sides of the arch head as shown.



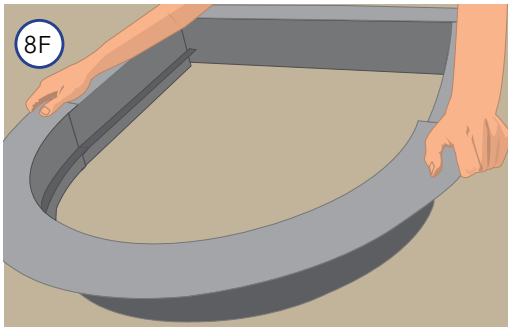
E. **Install the subframe clips** in jambs and head prior to assembly. Install at 6" from ends and 16" on center.

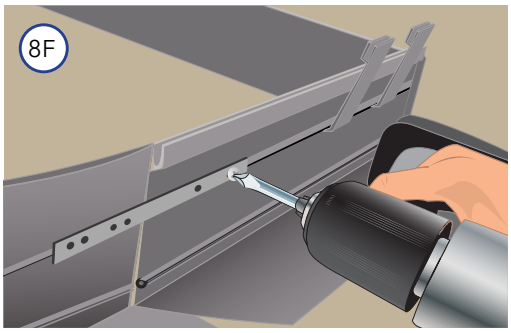


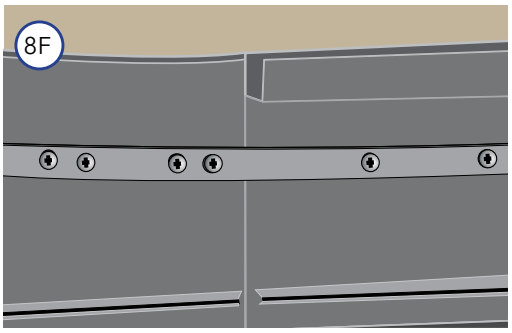
8 SPRINGLINE UNIT SUBFRAMES (CONTINUED)

F. **Align the head and jamb,** and anchor both parts using metal plates (suggested: " Impervia 1/2" or 2" reinforcing plate" # 01E20000) and secure the plates to the screw bosses with 1/4" x 6 self tapping screws.

Note: From the exterior the head exterior flange overlaps the jamb flange.

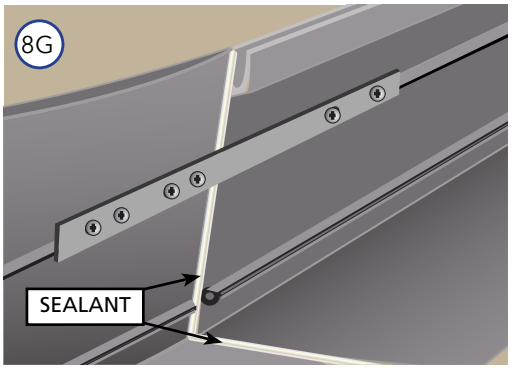




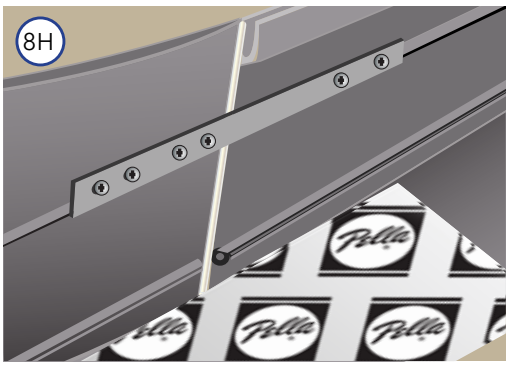


G. **Place a bead of sealant** on the back of the subframe flanges where the jamb and head members meet. Place a bead of sealant on the back side of the subframe corners. Continue sealing the ends at the sill as shown in Step 7M.

Note: Apply all sealant before applying flashing tape.

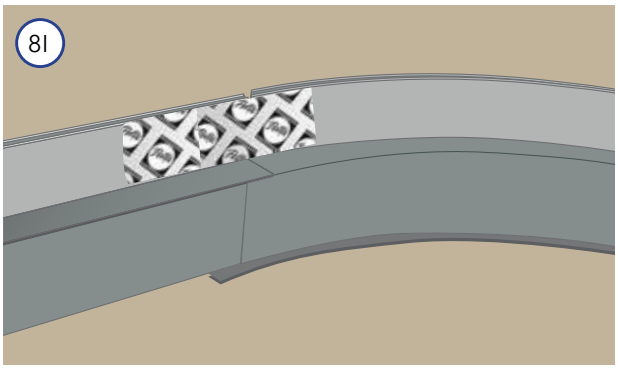


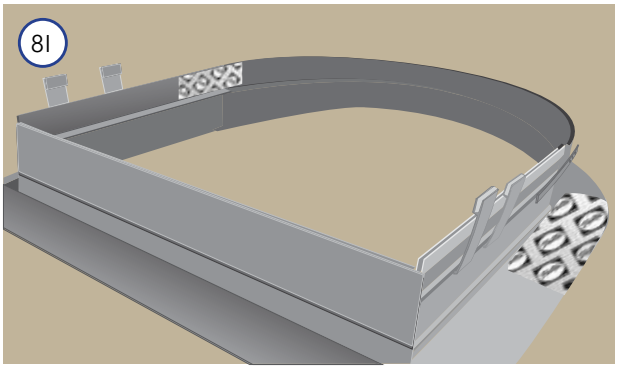
H. **Apply Pella flashing tape** on the back side of the exterior flanges at each end where the jamb and head flanges overlap.

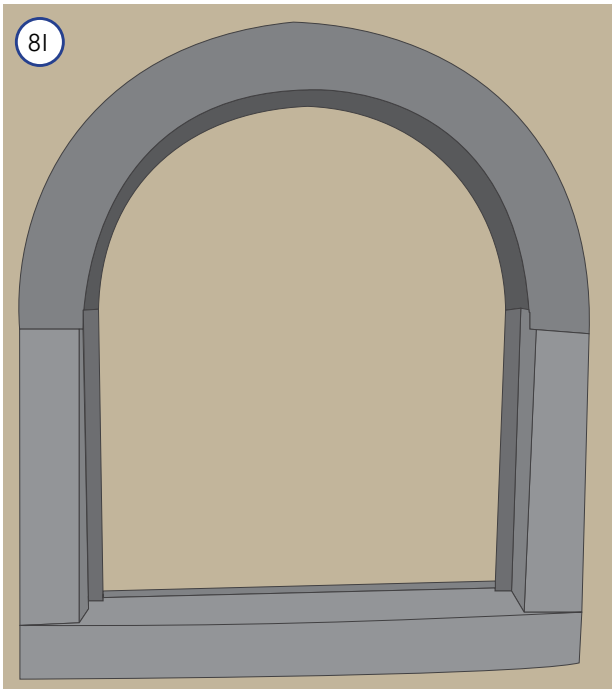


8 SPRINGLINE UNIT SUBFRAMES (CONTINUED)

I. **Apply Pella flashing tape** on the interior face of the subframe leg joint as shown.







Exterior view of the assembled springline standard subframe.

IMPORTANT NOTICE

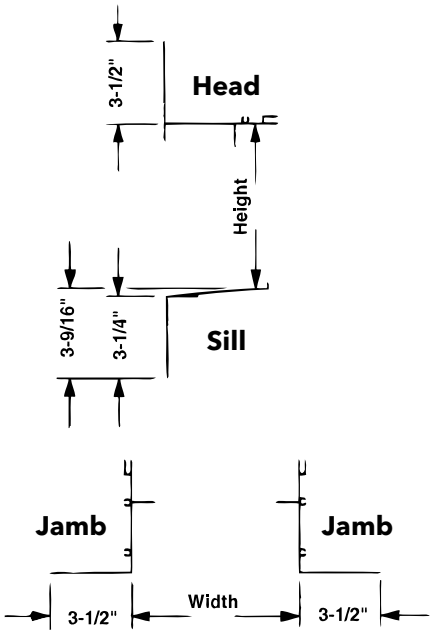
Because all construction must anticipate some water infiltration, it is important that the wall system be designed and constructed to properly manage moisture. Pella Corporation is not responsible for claims or damages caused by anticipated and unanticipated water infiltration; deficiencies in building design, construction and maintenance; failure to install Pella products in accordance with Pella's installation instructions; or the use of Pella products in wall systems which do not allow for proper management of moisture within the wall systems. The determination of the suitability of all building components, including the use of Pella products, as well as the design and installation of allow for proper management of moisture within the wall systems. The determination of the suitability of all building components, including the use of Pella products, as well as the design and installation of flashing and sealing systems are the responsibility of the Buyer or User, the architect, contractor, installer, or other construction professional and are not the responsibility of Pella.

Pella products should not be used in barrier wall systems which do not allow for proper management of moisture within the wall systems, such as barrier Exterior Insulation and Finish Systems, (EIFS) (also known as synthetic stucco) or other non-water managed systems. Except in the states of California, New Mexico, Arizona, Nevada, Utah, and Colorado, **Pella makes no warranty of any kind on and assumes no responsibility for Pella windows and doors installed in barrier wall systems. In the states listed above, the installation of Pella Products in barrier wall or similar systems must be in accordance with Pella's installation instructions.**

Product modifications that are not approved by Pella Corporation will void the Limited Warranty.

SUBFRAME AND T-SUBFRAME LINEAL LENGTH AND KNOCK DOWN ASSEMBLY INSTRUCTIONS

Subframe material is available for local cutting into size and assembly. The Subframe provides adaptability of clad windows to existing openings, enabling the use of standard-size units in many situations. In most cases, only the sash of existing windows will have to be removed. The Subframe permits the installation of the units from the inside of the building.



1. For lineal lengths, cut subframe parts to length, notch the ends and drill holes.
   - For the Subframe Sill, dimension "A" equals 3/16" for Clad Casement and Clad Frame units.
   - Dimension "A" equals 7/16" for Clad Double-Hung units.

2. The pilot guide grooves in the Subframe Head and Sill locate the centerline of the screws. The outer flange may be field-cut to fit the opening at head, jamb or sill.

*If the subframe jamb outer flange is cut back in the field, the head and sill "Width" dimension will have to be decreased accordingly.

Height of Jambs for Arch Head units = Frame Height + 1/8″ + 9/32″

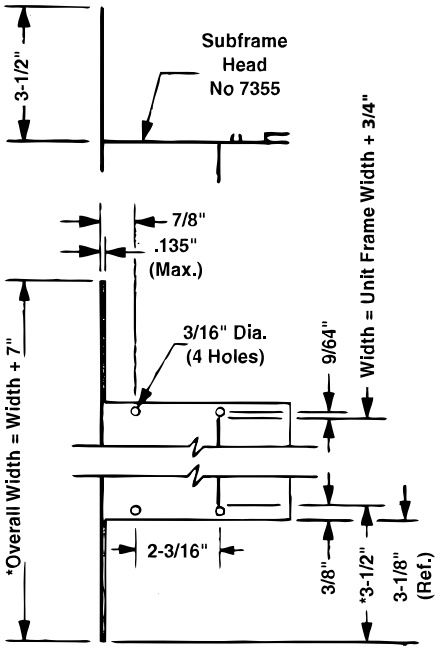
Height of Jambs for Springline units = Frame Height + 9/32″

Height of Jambs for Rectangle units = Frame Height + 3/8″ + 9/32″

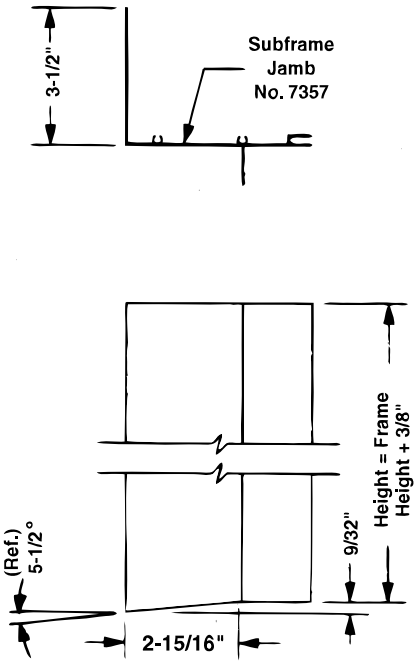
Note: At Standard Subframe exterior flange; add 9/32" in length to provide a bevel on the jamb lower end to accommodate the subframe sill slope.

Note: T-Subframe DO NOT add 9/32", no slope needed at sill.

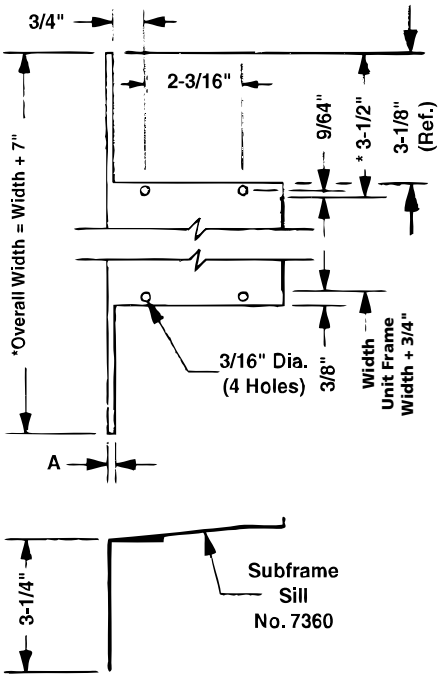
NOTCHING AND DRILLING:



BOTTOM VIEW



SIDE VIEW



TOP VIEW

T-SUBFRAME:

