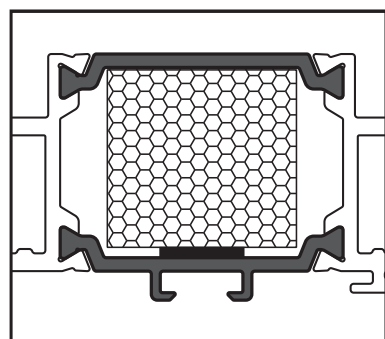
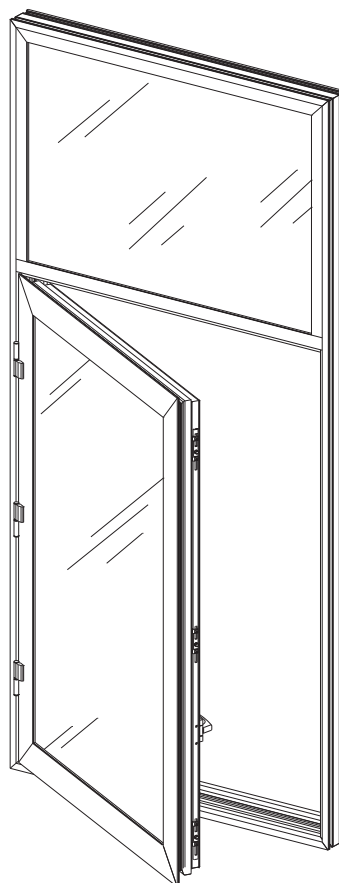


# YOW 350 XT Thermally Broken Operable Window System



**MegaTherm®**  
Glass Fiber  
With 6/6 Nylon  
Thermal Break



## YOW 350 XT SYSTEM DESCRIPTION

- 3-1/2" Overall Frame Depth
- MegaTherm® Thermal Break
- Construction:  
Frame & Vents – Mitered, Crimped & Sealed
- Operation:  
Fixed, Casement Out, Project Out, &  
Combination
- Factory Glazing

## YOW 350 XT PERFORMANCE FEATURES

- AAMA/WDMA/CSA 101/I.S.2/A440-08
- AW-80 Rating (Operable)
- AW-100 Rating (Fixed)
- AW-80 Rating (Combinations)

Thermal	U-Value*	CRF <sub>f</sub> **	CRF <sub>g</sub> **
Fixed	0.34 <sub>(1)</sub>	77	68
Casement	0.35 <sub>(1)</sub>	75	68
Project	0.35 <sub>(1)</sub>	76	68

(1) Values acquired using aluminum spacer and air fill.

\*Simulated using software recognized by NFRC.

\*\*When tested in accordance with AAMA 1503.

## Installation Manual



**TABLE OF CONTENTS**

Installation Notes ..... Page ii & iii

**INSTALLATION**

Determine Window Reference Point ..... Page 1

Determine Type of Anchors to Be Used..... Page 1 & 2

Ventilator Installation and Adjustment ..... Page 2

**GLAZING**

Glass Size Charts..... Page 3

Prep Casement Windows ..... Page 4

Prep Fixed and Projected Windows ..... Page 5

Install Glass ..... Page 6

Install Center Joint Gasket ..... Pages 6 & 7

Apply Cap Bead ..... Page 7

**INSTALLATION OPTIONS**

Install Optional Stacking Mullions / Mullion Clips..... Page 8

**HARDWARE & ACCESSORIES**

Anchoring Parts List ..... Page 9

Hardware Guide ..... Page 10

Hardware ..... Pages 11 to 13

Accessories ..... Page 14

## **INSTALLATION NOTES**

**CAUTION:** Do not fasten ceiling support angles, blind pockets, drapery tracks, convactor covers or stools to the windows or the receptors. The window system is not designed to support the additional load and must be free to expand and contract under normal thermal cycling conditions.

1. Do not drop, roll or drag boxes of aluminum framing. Move and stack boxes with proper support to prevent distortion. If fork lifts are used, be especially careful about striking the boxes when lifting or moving.
2. Store in a dry, out of the way area. If rain exposure, condensation or any water contact is likely, then all packaging material should be removed. Wet packaging materials will discolor and may stain aluminum finishes and paints.
3. All materials should be checked for quantity and quality upon receipt, YKK AP must be notified immediately of any discrepancies in shipment. Check to make sure that you have the required shims, sealants, supplies, and tools necessary for the installation.
4. Carefully check the openings and surrounding conditions that will receive your material. Remember, if the construction is not per the construction documents, it is your responsibility to notify the general contractor in writing. Any discrepancies must be brought to the general contractor's attention before you proceed with the installation.
5. Collect your shop drawings, materials, packing list, and this installation manual. Carefully review parts location, the sequence of installation, when you glaze it, and how you seal it. Installation instructions are of a general nature and may not cover every condition you will encounter. The shop drawings and/or installation manuals were prepared specifically for the product.
6. Any material substitutions must be of equal or greater quality.
7. Make certain that material samples have been sent for compatibility testing for all manufacturer's sealants involved. Make certain that sealants have been installed in strict accordance with the manufacturer's recommendations and specifications.
8. Consult sealant manufacture for proper sealant and backer rod selection.
9. Remember to isolate, in a approved manner, all aluminum from uncured masonry or other incompatible materials.
10. System-to-structure fasteners are not supplied by YKK AP. Fasteners called out on shop drawings are to indicate minimum sizes for design loading.

## INSTALLATION NOTES

**11. For product applications not covered by this manual, please contact DirecTech, your YKK AP representative, or your local service center.**

12. YKK AP window installation is typically completed before drywall, flooring and other products which may still be in process. Take the extra time to wrap and protect the installed material.

13. Cutting tolerances are plus or minus one thirty second unless otherwise specified.

14. YKK AP Model YOW 350 XT windows are pre-finished, prefabricated, and preassembled products, and must be protected against damage.

15. Concrete, mortar, plaster, muriatic acid and other alkaline and acid based construction and cleaning materials may be very harmful to window finishes and should be removed with water and mild soap immediately or permanent damage or staining of the finishes will occur. A spot test is recommended before any cleaning agent is used, and abrasive type cleaners must never be used.

16. Windows are never to be used as ladders, step stools, scaffolds or scaffold supports.

17. All work must start from, and be referenced to benchmarks, offset lines and/or column centerlines established by the architectural drawings and the general contractor.

18. All windows must be installed plumb, square, and level, and in accordance with approved shop drawings and these installation instructions.

19. Thermally broken frame and ventilator sections: Do not drill, punch, penetrate or modify the MegaTherm® thermal barrier in any way. All perimeter anchor fasteners must be staggered from the front to back of the thermal barrier as noted in these instructions.

20. Glass and glazing building codes governing the design and use of products vary widely. YKK AP America Inc. does not control the selection of products, product configurations, operating hardware and function, or glazing materials, and YKK AP assumes no responsibility for these design considerations. It is the responsibility of the design professional, owner, architect, specifier, general contractor, and the installer to make these selections in strict accordance with all applicable codes.

21. Check our website, [www.ykkap.com](http://www.ykkap.com), for the latest installation manual update prior to commencing work.



## INSTALLATION

### STEP 1

#### DETERMINE WINDOW REFERENCE POINT

Establish the window reference lines or the exterior/interior plane of the windows to be installed using either bench marks, offset lines, or column centerlines provided by the general contractor and referenced on the shop drawings. Use the established reference points to determine the installation points for each window opening at the head, jambs, and sill.

### STEP 2

#### DETERMINE THE TYPE OF WINDOW ANCHORS TO BE USED

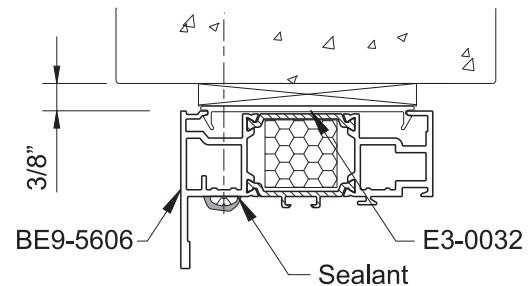
The type of window anchoring used will depend on the job conditions and the installer's preference. Consult the shop drawings and engineering calculations.

See **Details 1 through 3.**

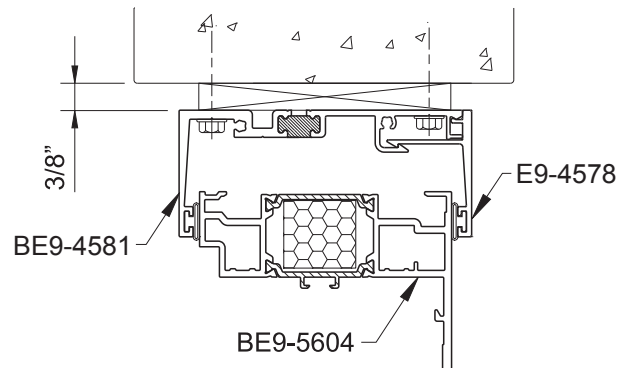
Location of fasteners:

- A maximum of 3" from the corner of all frames and receptors.
- At 15" on center staggered from the front to the back.
- A maximum of 3" on each side from the centerline of ventilator locking points.
- Shim solidly between the window and building substrate and do not "open" window joinery when anchoring.
- Add anchorage at hinges, especially butt hinges.

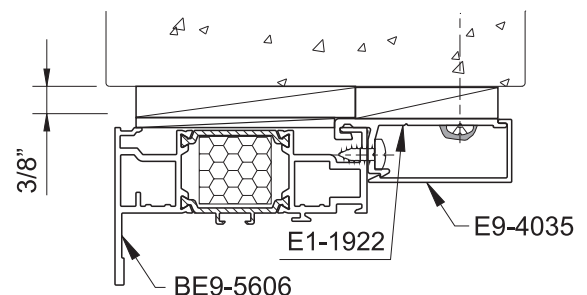
**Note:** For fabrication and installation of head receptors, sill flashings, strap anchors, steel twist anchors, edge clip anchors, and trim & clip anchors, refer to the **Window Accessories Installation Manual**.



**DETAIL 1**



**DETAIL 2**  
Window Receptor



**DETAIL 3**  
Aluminum Clip Anchor

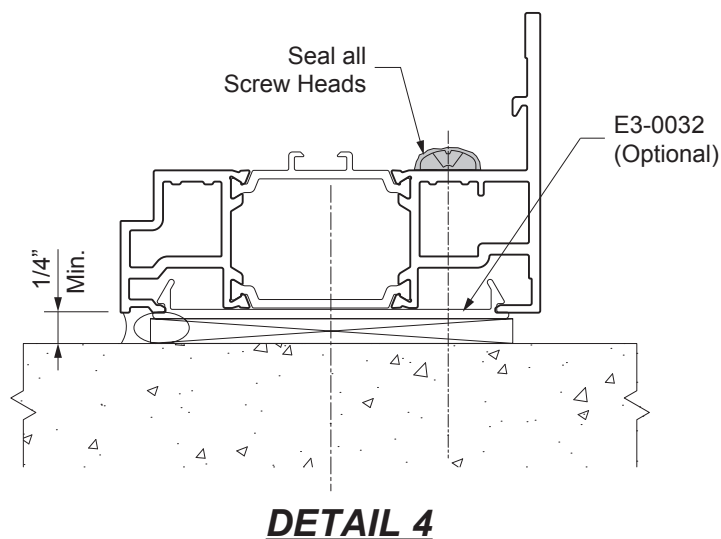
## INSTALLATION

### STEP 2 (Continued)

#### DETERMINE THE TYPE OF WINDOW ANCHORS TO BE USED

Refer to the specific fastener manufacturer's recommendations for proper edge distance, embedment, and spacing for masonry applications. Seal all screw heads that penetrate the framing and make water tight.

See **Detail 4**.



### STEP 3

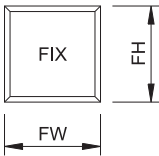
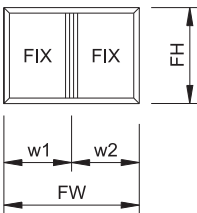
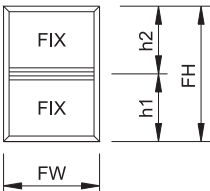
#### VENTILATOR INSTALLATION AND ADJUSTMENT

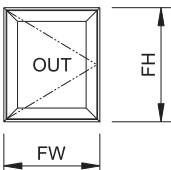
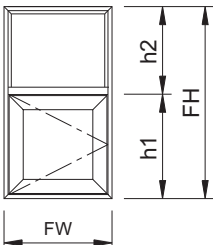
- All operating hardware and components must be checked for proper alignment, margins, and operation.
- If necessary adjust the hinges, keepers, friction arms and pivots to ensure the proper operation of locking devices and the compression of the weather seal.
- Push hinges as close to the hinge jamb as possible and as tight towards the interior as possible.
- Check gasket compression between frame and vent. Insert a piece of paper between the frame and vent. Close the vent. Moderate resistance to pulling the paper should be felt. Check all four sides of the vent.
- All hardware must be cleaned to provide smooth operation.

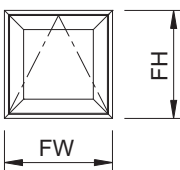
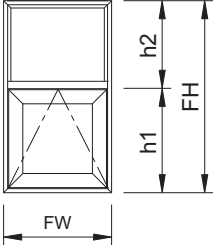
**Note:** To re-install 4-bar hinges after loosening or removal, tighten the fasteners by hand using a screwdriver or allen wrench, depending on fastener type. Aggressive over-tightening may strip the fasteners.



**GLASS SIZE CHARTS**

<b>FIXED WINDOW</b>				
<b>FIXED GLASS SIZE</b>	<b>GLASS W</b>	FW – 3" [76.2mm]	w1,w2 – 2-1/4" [57.2mm]	FW – 3" [76.2mm]
	<b>GLASS H</b>	FH – 3" [76.2mm]	FH – 3" [76.2mm]	h1,h2 – 2-1/4" [57.2mm]

<b>CASEMENT OUT</b>				
<b>VENT</b>	<b>GLASS W</b>	FW – 7-5/8" [193.7mm]	FW – 7-5/8" [193.7mm]	
	<b>GLASS H</b>	FH – 7-5/8" [193.7mm]	h1 – 6-7/8" [174.6mm]	
<b>FIXED GLASS SIZE</b>	<b>GLASS W</b>	N/A	FW – 3" [76.2mm]	
	<b>GLASS H</b>	N/A	h2 – 2-1/4" [57.2mm]	

<b>PROJECT OUT</b>				
<b>VENT</b>	<b>GLASS W</b>	FW – 7-5/8" [193.7mm]	FW – 7-5/8" [193.7mm]	
	<b>GLASS H</b>	FH – 7-5/8" [193.7mm]	h1 – 6-7/8" [174.6mm]	
<b>FIXED GLASS SIZE</b>	<b>GLASS W</b>	N/A	FW – 3" [76.2mm]	
	<b>GLASS H</b>	N/A	h2 – 2-1/4" [52.2mm]	

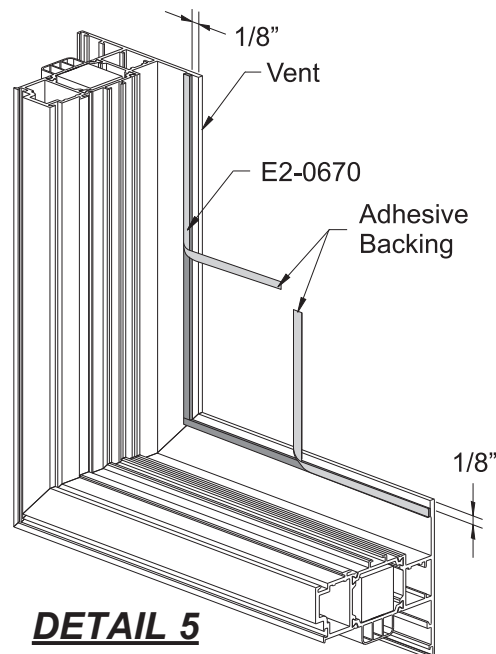
**NOTE:** GLASS BITE = 11/16"

## GLAZING

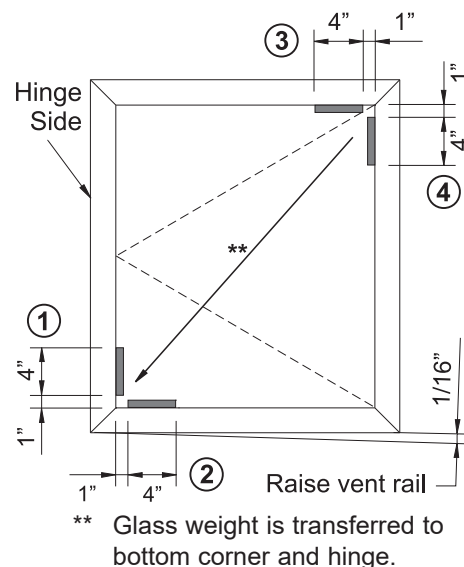
### STEP 4

#### PREP CASEMENT WINDOWS

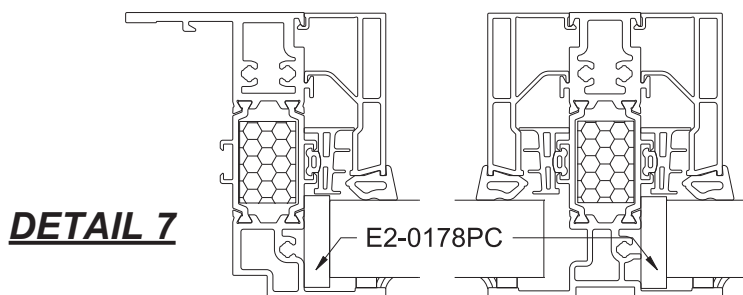
1. Verify that the frame and vent are properly aligned with a 1/8" margin around the entire perimeter of the vent.
2. Remove the glazing beads and clean the exterior glazing leg with an approved cleaning agent using the "two cloth cleaning" method.
3. Install exterior glazing tape, E2-0670, on all four sides, as shown, leaving a 1/8" gap between the edge of the tape and the edge of the ventilator.
- Make certain that the corners of the tape do not overlap as this will prevent full contact around the perimeter of the glass.*
4. Peel back the tape adhesive backing 3" to 4" at each corner and fold them towards the inside of the vent. See **Detail 5**.
5. Set glass per **Steps 6 & 8 on Pages 6 & 7**.
6. Casement windows require "Corner Blocking" for proper operation. Install setting blocks at locations 1,2 and 4.
7. Unlock the ventilator lock and install a setting block at location 3.
8. Change setting blocks as required to square up the vent.
9. Raise up the vent's locking rail 1/16" and shim so that as setting block 3 compresses the locks will align properly. See **Detail 6**.
10. Side blocking is required as shown to prevent movement of glazing during shipment. Units must be shipped in vertical position, or on left side only. Side blocking is not required for field glazed units. See **Detail 7**.



**DETAIL 5**



**DETAIL 6**



**DETAIL 7**

## GLAZING

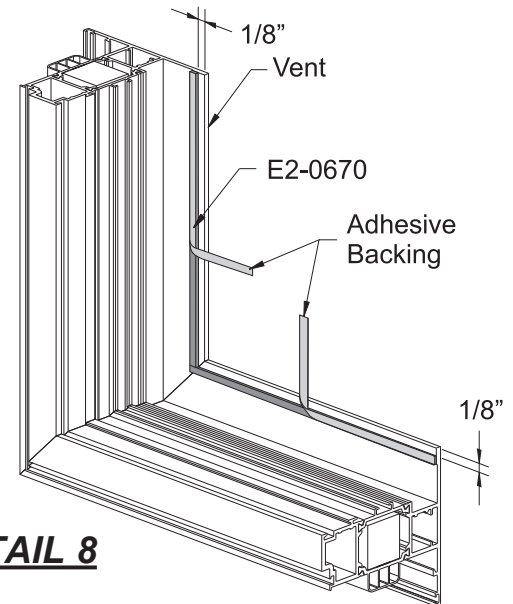
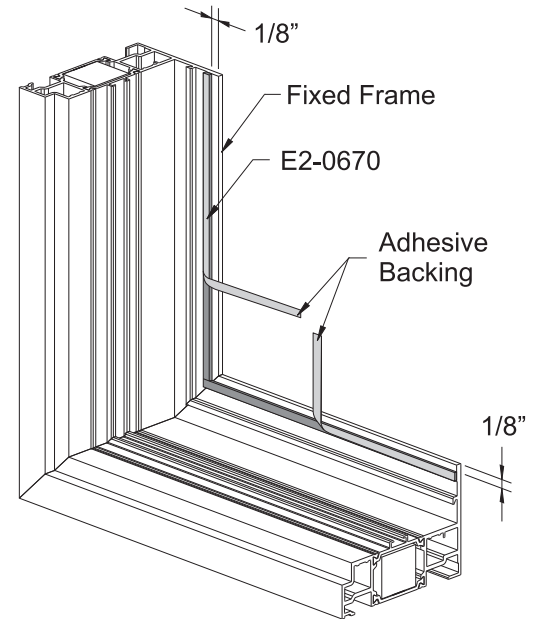
### STEP 5

#### PREP FIXED AND PROJECTED WINDOWS

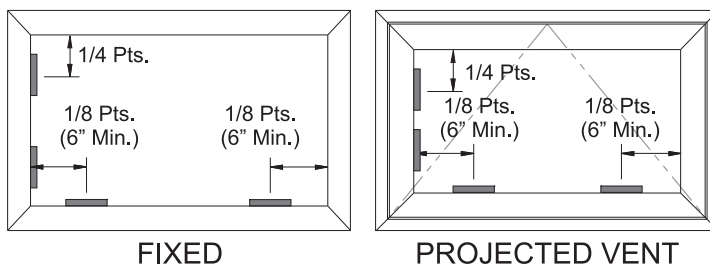
1. Verify that the frame and vent are properly aligned with a 1/8" margin around the entire perimeter of the vent.
2. Remove the glazing beads and clean the exterior glazing leg with an approved cleaning agent using the "two cloth cleaning" method.
3. Install exterior glazing tape, E2-0670, on all four sides, as shown, leaving a 1/8" gap between the edge of the tape and the edge of the ventilator..

*-Make certain that the corners of the tape do not overlap as this will prevent full contact around the perimeter of the glass.*

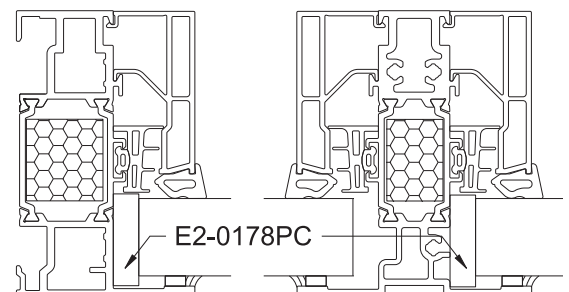
4. Peel back the tape adhesive backing 3" to 4" at each corner and fold them towards the inside of the vent. See **Detail 8**.
5. Install setting blocks at 1/8 points (at least 6" from jambs) for fixed frames, vents, and intermediate horizontal mullions.
6. Install (2) side blocks at 1/4 points for fixed frames and (1) side block at 1/3 points for projected vents as shown. See **Detail 9**.
7. Set glass per **Steps 6 & 8 on Pages 6 & 7**.
8. Side blocking is required as shown to prevent movement of glazing during shipment. Units must be shipped in vertical position, or on left side only. Side blocking is not required for field glazed units. See **Detail 10**.



**DETAIL 8**



**DETAIL 9**



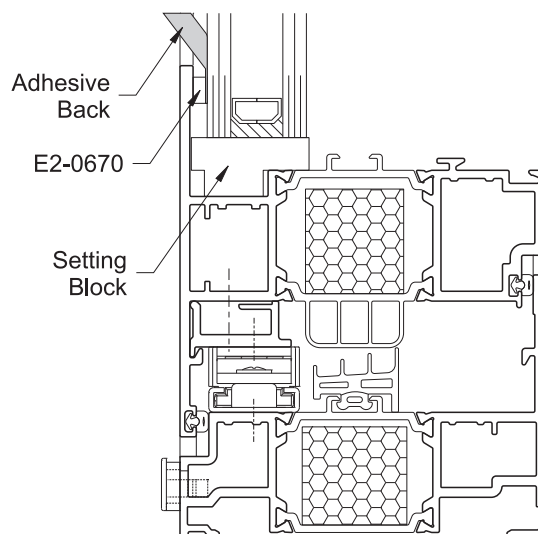
**DETAIL 10**

## GLAZING

### STEP 6 INSTALL GLASS

1. Center the glass and carefully set the unit down onto the setting blocks.
2. From the exterior of the window gently pull the folded adhesive backing ends to remove it and adhere the glass to glazing tape.
3. Press the glass firmly against the exterior glazing tape.

See **Detail 11**.

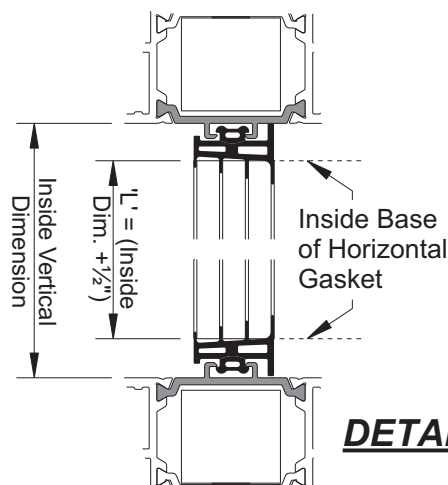
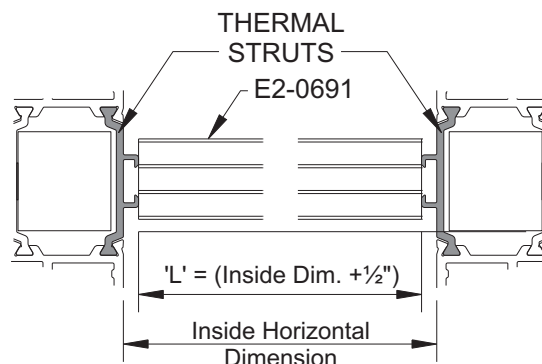


**DETAIL 11**

### STEP 7 INSTALL CENTER GASKET

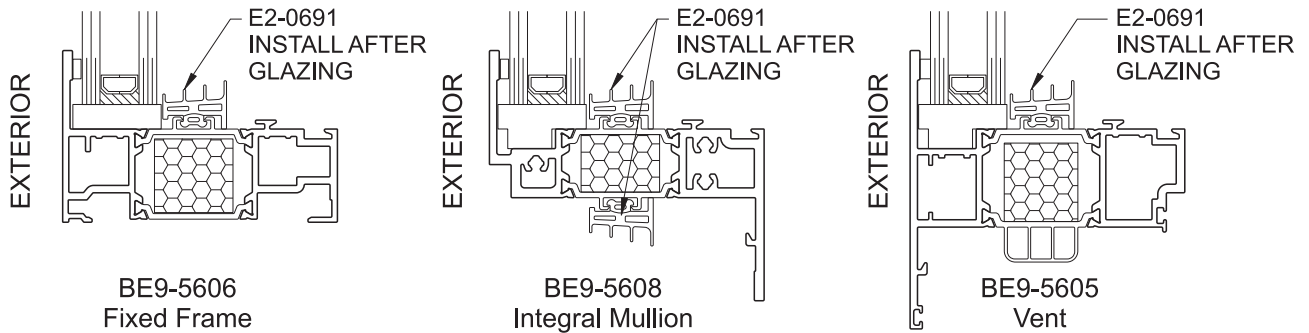
1. For BE9-5606 fixed frame, BE9-5605 operable vent, and BE9-5608 integral mullion the E2-0691 center joint gasket must be installed prior to the glass stop, interior wedge gasket, and application of cap bead.
2. Avoid stretching the gasket during installation.
3. Install enough gasket to accommodate shrinkage.
4. Measure as shown, ensuring that gasket faces exterior.
5. Install horizontal gaskets first.
6. All horizontal gasket runs from thermal strut to thermal strut.
7. All vertical gasket runs from inside base of cavity gasket to inside base of cavity gasket. Horizontal gaskets should overlap the vertical gasket.

See **Details 12 and 13**.



**DETAIL 12**

## GLAZING



### DETAIL 13

#### STEP 8

#### COMPLETE GLASS INSTALLATION

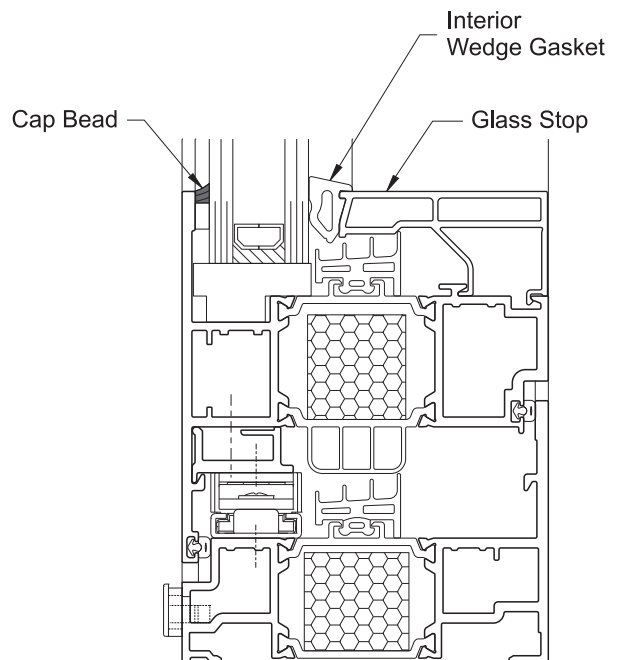
1. Install the interior glass stops.
2. Cut interior wedge gasket to the day light opening dimension plus 1/8" per foot.
3. Install the wedge gasket by first installing each end and then the center of the gasket; push in the remainder of the gasket working from the center toward each end.

See **Detail 14**.

#### STEP 9

#### APPLY CAP BEAD

1. Apply Tremco Tremsil® 600 sealant or equal to the joint between the glass and glazing leg. When applying sealant vertically, start at the bottom and work your way up. Make sure the sealant completely fills the joint.
2. Using a non-scratching implement, tool the sealant immediately after running the bead. Exert positive pressure to ensure that the sealant makes complete contact with all surfaces. Cap bead should cover at least 50% of the external glazing leg. Be careful not to remove too much sealant.




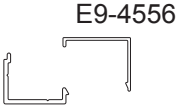

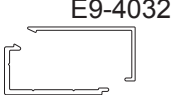
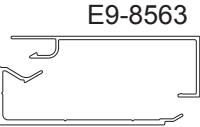
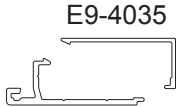
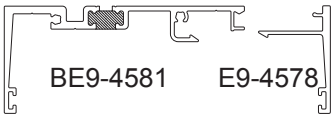
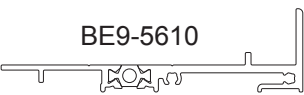
### DETAIL 14

See **Detail 14**.

**INSTALLATION OPTIONS****STEP 10 (Optional)****INSTALL OPTIONAL STACKING MULLIONS / MULLION CLIPS**

Refer to the **Window Accessories Installation Manual** for installation of optional stacking mullions or mullion clips.

## ANCHORING PARTS LIST

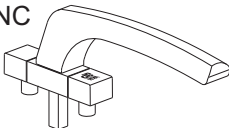

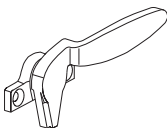


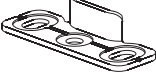
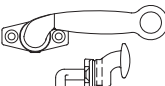
PART	DETAIL	DESCRIPTION	MATERIAL
FLAT ANCHOR	E3-0032 	Fame filler for head, jamb & sill. Use optional E3-0038 with Trim & Clip.	PVC
1" x 1-1/4" TRIM & CLIP	E9-4556 E9-4557 	Trim & clip anchor for head, jamb, & sill.	ALUMINUM
1" x 1-11/16" TRIM & CLIP	E9-8538 E9-8537 	Trim & clip anchor for head, jamb, & sill.	ALUMINUM
1" x 2" TRIM & CLIP	E9-4032 E9-4031 	Trim & clip anchor for head, jamb, & sill.	ALUMINUM
1-1/8" x 3-1/2" TRIM & CLIP	E9-8563 E9-8562 	Trim & clip anchor for head, jamb, & sill.	ALUMINUM
ANCHOR CLIP	E9-4035 E1-1922 	2" long edge clip with trim cover for head, jamb, & sill.	ALUMINUM
HEAD/JAMB RECEPTOR	 BE9-4581 E9-4578	Head or Jamb Receptor. Used with E2-0051 bulb gasket.	ALUMINUM
SILL FLASHING	BE9-5610 	Sill flashing used with E2-0367 spacer. Optional sill extensions also available.	ALUMINUM

## YOW 350 XT HARDWARE GUIDE

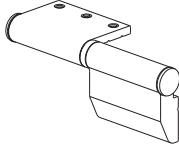
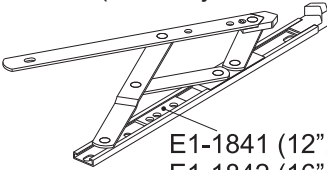
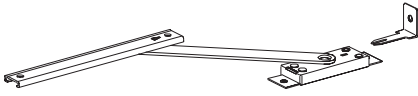
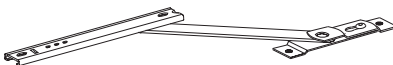
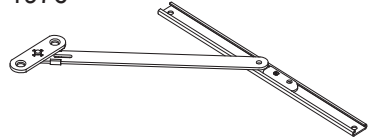
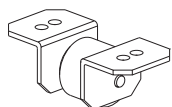

	DESCRIPTION	CASEMENT OUT	PROJECT OUT
LOCKING HARDWARE	CAM HANDLES	STANDARD	STANDARD
	CUSTODIAL CAM LOCK (HEX KEY)	OPTIONAL	OPTIONAL
	MULTI-LOCK HANDLE	OPTIONAL	OPTIONAL
	CUSTODIAL MULTI-LOCK (HEX KEY)	OPTIONAL	OPTIONAL
	POLE RING LOCKS	OPTIONAL	OPTIONAL
HINGE & LIMIT STOP HARDWARE	4 BAR HINGES	STANDARD	STANDARD
	BUTT HINGES	OPTIONAL	
	FRICTION ADJUSTERS	STANDARD W/ BUTT HINGES	
	4-BAR EGRESS HINGES	OPTIONAL	
	SUPPORT ARM		OPTIONAL
	LIMIT STOP IN 4-BAR HINGE ONLY	OPTIONAL	OPTIONAL
	KEYED LIMIT DEVICE	OPTIONAL	OPTIONAL
	4" LIMIT DEVICE (APPROVED FOR NEW YORK CITY)	OPTIONAL	OPTIONAL
	SCREENS	OPTIONAL	OPTIONAL



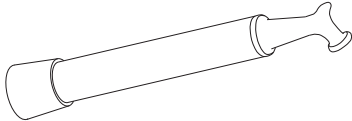
## HARDWARE

NAME	DETAIL	DESCRIPTION	MATERIAL
YKK AP MULTI-LOCK HANDLE	3K-18657NC 	YKK AP multi-lock handles are standard on all operable units.	DIE-CAST ZINC
MULTI-LOCK HANDLE SCREW COVER	 PLAIN: 3K-18657-H P.O. w/Logo: 4K-12484-A C.O. w/Logo: 3K-18657-I	Covers multi-lock handle mounting screws.	ABS
CAM HANDLES	E1-1541(RH) E1-1542(LH) 	White bronze cam handle locks for manual operation of vents are standard on all operable vents.	WHITE BRONZE
CUSTODIAL LOCKS	E1-1596 	Custodial locks are offered for maintenance operation and are used in place of cam handle locks.	WHITE BRONZE
STRIKE	 E1-1519	Strike for use with outswing cam locks.	WHITE BRONZE
KEEPER	 4K-18584	Keeper for use with YKK AP vent mounted multi point locks.	STAINLESS STEEL
POLE RING CAM HANDLE (OPTIONAL)	E1-1853 (LH) → INSWING E1-1854 (RH) → E1-1882 (LH) → E1-1881 (RH) → OUTSWING 	Pole ring handles are offered for windows inaccessible through normal means.	WHITE BRONZE

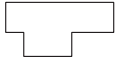

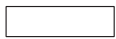
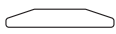
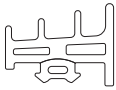



**HARDWARE**

NAME	DETAIL	DESCRIPTION	MATERIAL
BUTT HINGES	E1-1714 E1-1715 	Butt hinges are used on case- ment windows in lieu of four bar hinges.	ALUMINUM
FOUR BAR HINGES  LIMIT STOPS	4K-14207 (12") 4K-14208 (16", Casement Only) 5K-15284 (16", Project Out Only)  E1-1841 (12", 45°) E1-1842 (16", 45°)	4-bar hinges allow for efficient and durable operation of projected and casement vents.  Limit stops allow vents to be opened to a preset maximum opening.	STAINLESS STEEL  ALUMINUM
CONCEALED LIMIT DEVICES	 E1-1572   E1-1904 NYC Limit Device	Permits the window to be opened a specified dimension, and return to the closed position without use of a special tool or key. When neces- sary for maintenance or washing, a key releases the window from the limit arm and allows full opening.	STAINLESS STEEL
FRICTION ADJUSTER (STANDARD)	E1-1976 	Friction adjuster standard on all butt hinge casement windows.	STAINLESS STEEL
GUIDE ROLLER (Vent)  BASE (Frame)	K-10639   E1-1924 	Guide roller assembly helps position the vent properly in the sill of casement windows.	STAINLESS STEEL BASE/ POLYACETAL ROLLER  ALUMINUM

**HARDWARE**

PART	DETAIL	DESCRIPTION	MATERIAL
PULL RING POLE ASSEMBLY (OPTIONAL)	E1-9930 	White bronze pull ring pole operates the pole ring cam handle. Available in lengths of 4', 6', and 8'.	WHITE BRONZE

**ACCESSORIES**

NAME	DETAIL	DESCRIPTION	MATERIAL
E2-0694 PC SETTING BLOCK		Side and setting block for project out, casement vent, & fixed over operable mullion.	PEROXIDE CURED BLACK EPDM
E2-0695 PC SETTING BLOCK		Side and setting block for casement vent, head end.	PEROXIDE CURED BLACK EPDM
E2-0178 PC SETTING BLOCK		Side and setting block for fixed frame.	PEROXIDE CURED BLACK EPDM
E2-0698 PC SETTING BLOCK		For side blocking at fixed side of combination window frame.	PEROXIDE CURED BLACK EPDM
CENTER JOINT GASKET E2-0691		Push-in gasket used in frame and vent cavities.	BLACK EPDM AND CLOSED CELL EPDM FOAM
PUSH-IN GASKET E2-0672		Push-in gasket used for window glazing, provides 1/4" face clearance.	BLACK EPDM
AIR TIGHT GASKET E2-0693		Push-in gasket used at frame vent perimeter to provide weather seal.	BLACK EPDM AND CLOSED CELL EPDM FOAM
GLAZING TAPE E2-0670		Used to hold glazing in place prior to insertion of push-in gasket, and application of cap bead.	POLYURETHANE FOAM





101 Marietta Street NW  
Suite 2100  
Atlanta, Georgia 30303  
[www.ykkap.com](http://www.ykkap.com)