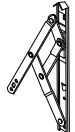
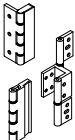
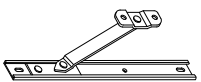
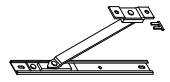




## Architectural Windows

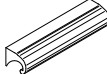


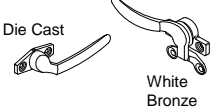
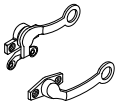
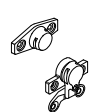
## Projected and Casement

COMPONENT	MATERIAL	FINISH	WINDOW SERIES													FEATURES		
			2-3-4250i INvent™	All -XLT INvent™	All INvent Retro	3-4250i-HP Hurr. Imp	2250XP INventPLUS	4250i Sim. Dbl. Hung	2-3-4250i-BHM Blast	2-3-4250 Series	3-4250i-V Visuline™	3250-HP Hurr Impact	4000i-DT Psych	3250-Z ZSL	4250-Z Multi-lock		TD-4250i Terrace	2200 (Web only)
<b>HINGES</b>																		
<b>Four-Bar Hinges</b>  10" 16" 24"  	Stainless Steel	Uncoated	●	●	●	●	●	●	●	●	○		●	●	●	Our most popular hinge selection. High-performance concealed hinges with friction adjustment. Recommended casement vent weight limit is 115 lbs. Projected weight limits vary, please consult with Wausau on projected vents over 15 sq ft.		
<b>Butt Hinges</b>  Half-Mortise Concealed Surface Mounted  	Aluminum	Exposed Surfaces Match Window	○	○	○		○	○	○	○	●	●	●	○	●	High-strength extruded aluminum hinges with coated stainless steel pins, nylon separators and end caps. Recommended for egress or large vent size. Always used in conjunction with friction adjusters.		
<b>VENT CONTROL DEVICES</b>																		
Friction Adjuster  	Stainless Steel	Uncoated	○	○	○	○	○	○	○	○	○	○	○	○	○	○	Limits casement swing to 85°. Adjusting set screw applies friction for smooth operation. Always use with butt hinges. * Terrace doors must be fitted with closers.	
Limited Opening Device  			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	Limits opening for low sills, child safety, buffeting wind, limited projection or emergency ventilation. Keyed release to extend opening. * Terrace doors must be fitted with closers.
Keyed Support Arm  			○	○	○		○	○		○	○						○	Used on top-hinged-inswing vents if height exceeds 25" or if weight is a concern. First setting locks at 1 ½" extension; key release for extended opening. Consult Wausau for recommended usage on awnings.
Limited Opening Stop Block  			Aluminum	Mill	○	○	○	○	○	○	○	○	○		○	○	○	Installed in track of four-bar hinge to limit opening, as an alternate to (a) separate limited opening device(s).

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## Architectural Windows

## Projected and Casement (continued)





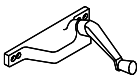
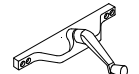
COMPONENT	MATERIAL	FINISH	WINDOW SERIES														FEATURES	
			2-3-4250i INvent™	All -XLT INvent™	All INvent Retro	3-4250i-HP Hurr. Imp	2250iXP INventPLUS	4250i Sim. Dbl. Hung	2-3-4250i-BHM Blast	2-3-4250 Series	3-4250i-V Visuline™	3250-HP Hurr Impact	4000i-DT Psych	3250-Z ZSL	4250-Z Multi-lock	TD-4250i Terrace		2200 (Web only)
<b>PULL HANDLES</b>																		
Waterfall Pull 	Aluminum	To Match Window	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	Applied to hand-operated project-out casement and awning vents when keeper locks are employed.
Pull Bead 	Aluminum	To Match Window	○	○			○	○			○						○	Pull handle extruded into profile of glazing beads.
Pole Ring 	White Bronze	Clear E-Coat									○	○					○	Used when vents are out of reach. Most common on hopper vents. Available for awnings. Extruded aluminum pole operator and eye hook provided.
<b>LOCKS</b>																		
Cam Handles LH or RH Project-in or Project-out 	Zinc Die Cast	Brushed Copper Nickel, Standard Painted Colors	●	●	●	●	●	●	●	●	○						●	Die cast handles are a contemporary, economical alternative to the rich, smooth, retro appearance of white bronze.
Ring Cams 	or	or									○	○					○	Used when vents are out of reach. Most common on hopper vents. Available for awnings. Extruded aluminum pole operator and eye hook provided.
Handle-less Cam with Removable Key 	White Bronze	Clear E-Coat									○	○					○	Used for custodial operation of casements, hoppers and awnings.

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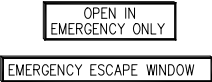
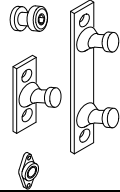
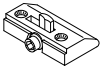
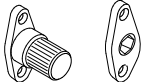
## Projected and Casement (continued)

COMPONENT	MATERIAL	FINISH	WINDOW SERIES												FEATURES						
			2-3-4250i INvent™	All -XLT INvent™	All INvent Retro	3-4250i-HP Hurr. Imp	2250iXP INventPLUS	4250i Sim. Dbl. Hung	2-3-4250i-BHM Blast	2-3-4250 Series	3-4250i-V Visuline™	3250-HP Hurr Impact	4000i-DT Psych	3250-Z ZSL		4250-Z Multi-lock	TD-4250i Terrace	2200 (Web only)			
<b>LOCKS (continued)</b>																					
Security Lock 	Zinc Die Cast	Brushed Copper Nickel, Standard Painted Colors															●	Used for additional security on inswing casement and hopper windows. Used with an escutcheon, key is non-removable in the unlocked position.			
Euro Handle 	Aluminum	Clear or Bronze Anodized, Standard Painted Colors	○	○	○	○	○	○	○							●	●		●	A popular modern option for selected project-in and project-out casements, as well as 4250-Z awnings. Single-handle operation, with concealed locking points and optional corner drive units for large vents. Removable handle available.	
Terrace Door Lock Set 																				●	Verona-style terrace door handle with manual compression lock feature. Interior and exterior operation. * Terrace doors must be fitted with closers.
Terrace Door Thumb Turn 																				○	Supplemental interior lock for added security on terrace doors.
<b>OPERATORS</b>																					
Roto Operator (Single Arm) 	Zinc Die Cast	Brushed Copper Nickel, Standard Painted Colors	●	●	●	●	●	●	●							●	●		●	Single arm rotos used with outswing casement vents can avoid the need for wicket screens. Always use friction adjusters if rotos are used in conjunction with butt hinges.	
Roto Operator (Dual Arm) 					●	●	●	●	●	●	●						●	●		●	Dual arm rotos used with awning vents can avoid the need for wicket screens. Do not use dual arm rotos in conjunction with butt hinges.

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## Architectural Windows

## Projected and Casement (continued)

COMPONENT	MATERIAL	FINISH	WINDOW SERIES														FEATURES	
			2-3-4250i INvent™	All -XLT INvent™	All INvent Retro	3-4250i-HP Hurr. Imp	2250iXP INventPLUS	4250i Sim. Dbl. Hung	2-3-4250i-BHM Blast	2-3-4250 Series	3-4250i-V Visuline™	3250-HP Hurr Impact	4000i-DT Psych	3250-Z ZSL	4250-Z Multi-lock	TD-4250i Terrace		2200 (Web only)
<b>SPECIALTY</b>																		
Egress Tags 	Aluminum	Painted (Red on White)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	Applied to egress windows as required. Check local codes for specific requirements.
Window Washing Restraint and Tieback 	Cast Stainless Steel	Brushed or Painted to Match Window	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	Standard stabilizer, single post, double post or flush-mounted spring loaded. Check local codes for specific requirements, and consult with a window washing equipment specialist.
<b>INTEGRAL BETWEEN-GLASS VENETIAN BLIND CONTROLS</b>																		
Access Door Lock 	Zinc Die Cast in Nylon Housing	Uncoated	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	Provides custodial access to concealed raise-lower cords, and for periodic cleaning. Access doors are also equipped with pin hinges as a standard - Lift-out optional.
Venetian Blind Tilt Control 	Nylon	Black	○	○	○	○	○	○	○	○	○	○	●	○	○	○	○	Occupant tilt, concealed custodial raise-lower. Available keyed, or with removable control knob.
<p><b>GENERAL NOTE:</b> Hardware Selection Guides are intended to provide an overview of Wausau's most popular hardware options. Vent size and desired functionality can play major roles in determining appropriate hardware selection, as can local code requirements. Certain hardware types can affect the Wausau Standard Limited Warranty. Please contact Wausau for more options and detailed information.</p> <p><b>ACCESSIBILITY:</b> With proper substrate conditions, installation, final adjustment, and maintenance, certain Wausau products that are identified as accessible will meet ADA accessibility criteria per ANSI A117.1 Section 309.4 Operation, as demonstrated by testing in basic accordance with AAMA 513-12, with results subject to all scope limitations and allowances cited therein.</p>																		

## Architectural Windows

## Projected and Casement (continued)

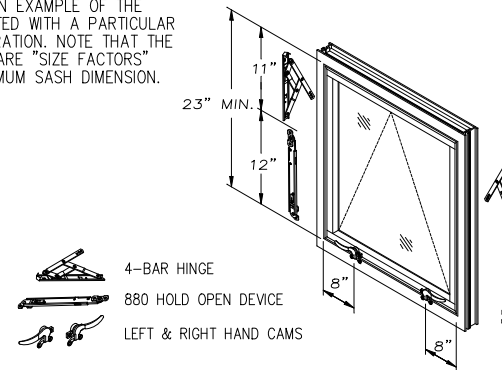
### MINIMUM VENT DIMENSIONS

SIZE FACTOR TABLE

COMPONENT	MINIMUM SIZE FACTOR	NOTES
10" Four-Bar Hinge	11"	
Keeper or Linear Operator	8"	
Keeper (Two Point)	Inquire	
Butt Hinge	14"	
Cam Lock	8"	
Limit Stop	Inquire	Dimension Varies with Degree of Opening
Support Arm	12"	Dimension Varies with Degree of Opening
Friction Adjuster	20"	
Dual Arm Roto	30"	For 10" Clear Opening
Roto/Single Arm	15"	Increases to 22" when used with Four-Bar Hinge

DIAGRAM

THE FOLLOWING IS AN EXAMPLE OF THE LIMITATIONS PRESENTED WITH A PARTICULAR HARDWARE CONFIGURATION. NOTE THAT THE SUM OF THE HARDWARE "SIZE FACTORS" DETERMINE THE MINIMUM SASH DIMENSION.



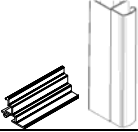
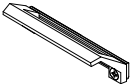


PHOTOGRAPH



## Architectural Windows



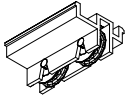
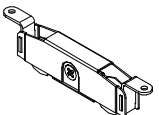
## Hung and Rolling

COMPONENT	MATERIAL	FINISH	WINDOW SERIES								FEATURES	
			310I-SH Single Hung	410I-HS Single Slide	4100I-HS Dbl. Slide	D-5100 Sl. Door	2700-HSD(Web only)	3100-DH (Web Only)	3150-DHT(Web only)	3151-SHT(Web only)		
<b>BALANCES</b>												
Block and Tackle 	Steel Housing		○						○	○	○	Provides approximately 30% lifting and closing assistance, while helping to hold sash stationary. Sash weight limit 60 pounds. Sized to fit individual sash width and height. Requires periodic replacement in heavy use applications.
Caldwell Ultralift™ Balance 	Spring-assisted Spiral Balance		●						●	●	●	Provides approximately 70% lifting and closing assistance, much more than block and tackle balances, while helping to hold sash stationary. Sash weight limit 115 pounds for side-load, 80 pounds for tilt. Sized to fit individual sash width and height. Requires periodic replacement in heavy use applications.
<b>HANDLES</b>												
Pull Bead 	Aluminum	To Match Window	●	●	●	●	●	●	●	●	●	Handles can be extruded as part of glazing beads and meeting rail members. Some continuous pull beads can be fitted with spring-loaded sash latches.
Sash Lift 	Zinc Die Cast	Black							○	○	○	Easy-to-grip contemporary lift handle. Location is adjustable on windows without between-glass blinds.
	White Bronze	Clear Coat							○	○	○	Easy-to-grip retro lift handle. Location is adjustable on windows without between-glass blinds.

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## Architectural Windows

## Hung and Rolling (continued)

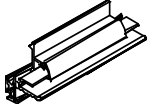
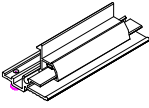
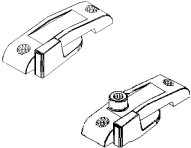
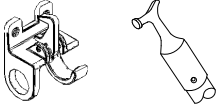
COMPONENT	MATERIAL	FINISH	WINDOW SERIES								FEATURES
			310I-SH Single Hung	410I-HS Single Slide	4100I-HS Dbl. Slide	D-5100 Sl. Gl. Door	2700-HSD(Web only)	3100-DH (Web Only)	3150-DHT(Web only)	3151-SHT(Web only)	
<b>HANDLES (Continued)</b>											
Surface Applied Pull Handle 	Aluminum	Black				○					Contemporary and economical basic sliding glass door handle with flip latch.
Mortised Truth Hardware "Signature" Pull Handle 	White Bronze	Clear Coat				●					Cast profiled handle for smooth, rich, retro appearance. Available with a variety of locking features. Our recommended sliding glass door accessory.
<b>ROLLERS</b>											
Sliding Window Roller Set 	Delrin™ Tires in Nylon Housing, SS Bearings	Natural		●	●	●					Ball bearing nylon rollers provide smooth, quiet operation. Rollers are non-adjustable. Shipping blocks prevent premature wear and damage.
Sliding Glass Door Tandem Roller Trucks 	Steel	Zinc Plated				●					Adjustable heavy-duty ball bearing rollers engage in sash bottom rails, and ride on stainless steel tracks. Tandem trucks carry doors up to 500 lbs. Nylon tires are optional for doors up to 250 lbs.
	Stainless Steel	E-Coat				○					Stainless roller assemblies are available for more aggressive environments.

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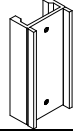

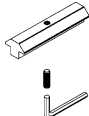
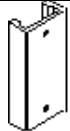
## Hung and Rolling (continued)

COMPONENT	MATERIAL	FINISH	WINDOW SERIES								FEATURES		
			310I-SH Single Hung	410I-HS Single Slide	4100I-HS Dbl. Slide	D-5100 Sl. Door	2700-HSD(Web only)	3100-DH (Web Only)	3150-DHT(Web only)	3151-SHT(Web only)			
<b>LATCHES</b>													
Spring-Loaded Bead Latch (Standard Glazing)		Aluminum	Black	●	●	●				○	○	○	Provides an automatic latching feature for inactive sash, both hung and rolling. Adjustable location.
Spring-Loaded Bead Latch (Between-Glass Blinds)		Aluminum	Black			○				○	○	○	Provides an automatic latching feature for inactive sash, both hung and rolling. Location not adjustable when between-glass blinds are used.
Meeting Rail Sweep Latch		Zinc Die Cast	Black	○	○	○				●	●	●	Contemporary and economical basic hung or rolling window latching mechanism. Provides a visual indication of lock status.
		White Bronze	Clear Coat							○	○	○	White bronze finish for smooth, rich, retro appearance. Available with tamper-resistant set screw. Provides a visual indication of lock status.
Transom Latch with Pole Ring		White Bronze	Clear Coat							○	○	○	Spring-loaded latch provide for automatic latching at head of hung windows. Pole operation possible. Located at centerline of check rail.

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## Architectural Windows

## Hung and Rolling (continued)

COMPONENT	MATERIAL	FINISH	WINDOW SERIES								FEATURES
			310I-SH Single Hung	410I-HS Single Slide	4100I-HS Dbl. Slide	D-5100 Sl. Door	2700-HSD(Web only)	3100-DH (Web Only)	3150-DHT(Web only)	3151-SHT(Web only)	
<b>LIMIT STOPS</b>											
Side-Load Limit Stop 	PVC	Black								○ ○ ●	Placed in track to prevent balance over-extension, or to stop sash at a specified dimension. Can be attached using tamper-resistant fasteners.
Tilt Window Limit Stop 	Zinc Die Cast	Uncoated								● ●	Hooked on frame legs, and secured with a set screw, to prevent balance over-extension, or to stop sash at a specified dimension. Can be attached using tamper-resistant fasteners.
Removable Limit Stop 	Aluminum	Black	● ○								Placed in track to prevent balance over-extension, or to stop sash at a specified dimension. Can be attached using tamper-resistant fasteners.
Non-Take-Out Block 	PVC	Black								○ ○ ○	Prevents sliding sash removal. Can be attached using tamper-resistant fasteners.
<p><b>GENERAL NOTE:</b> Hardware Selection Guides are intended to provide an overview of Wausau's most popular hardware options. Sash size and desired functionality can play major roles in determining appropriate hardware selection, as can local code requirements. Certain hardware types can affect the Wausau Standard Limited Warranty. Please contact Wausau for more options and detailed information.</p> <p><b>ACCESSIBILITY:</b> Wausau hung and rolling products have not been designed or tested for compliance with ANSI A117.1 accessibility requirements. Please refer to Wausau projected window "ADA" options.</p>											