



Heritage Series Product Catalog

KOLBE
WINDOWS & DOORS



We're for the visionaries.TM



We're for people who take building to new levels.

We're for people who are passionate about design, who care about the big picture and the smallest detail. We're for people who aren't satisfied with mainstream options. They push the limits of what's possible with the options, innovations and custom solutions that can only be found in Kolbe windows and doors.



We're for expertise.

We're for people who dream of a personalized design experience. That's why you can't find Kolbe windows and doors in the aisles of a home center. You can only purchase our products from a Kolbe dealer, because Kolbe dealers are as passionate about windows and doors as you are about bringing your vision to life.

Leave the details in the hands of a Kolbe window specialist. They'll work with you to make your dream a concrete reality.

We're for quality craftsmanship.

We're for a tradition of excellence that outlasts the latest design fad. The Kolbe story began with a family and a vision. Almost 70 years after the Kolbe brothers began their commitment to producing premium quality windows and doors, products bearing their family name can be found in some of North America's most impressive homes.



We're for possibilities.

We're for people who don't want to compromise their vision to fit anyone else's idea of "standard." We're for handmade touches and virtually limitless options that can't be found within the aisles of a home center.

At Kolbe, each product is truly built to order. Our team members are craftsmen who focus on building one window or door at a time, so they can create custom-built products to fulfill your vision.



We're for innovation.

We're for people who want to take building to new levels of performance, with advancements in not only extraordinary sizes and shapes, but also ground breaking products. We're for creative thinking that redefines what's possible.

Only Kolbe builds windows and doors that do the things you dream about. We're constantly reimagining our windows and doors to take building to new levels.

Let us bring your vision to life.



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Photo courtesy of Kenneth M Wyner Photography, Inc.



Photo courtesy of Kenneth M Wyner Photography, Inc.

The Kolbe Difference

We're well-known for our custom capabilities and have worked with many architects to build unique windows and doors. So, whether you're envisioning windows or doors in a special wood species, looking to bring a historical building back to a state of beauty, or planning an unusual shape or grille pattern, we will work with you to find the perfect solution for your needs.



Residential Construction

Years of innovation at Kolbe have led to products with great design flexibility for high-end residential construction. Whether it's renovation or new construction, we offer products ready to add your signature style into your home. Your design reflects not only an architectural style, but also your individualism – from colonial to contemporary, Kolbe has the products to help you express yourself.




Commercial Capabilities

Each of our windows and doors are built-to-order and uniquely crafted to each project's specifications, providing options and configurations that can be geared toward design solutions for commercial projects. Our technical specialists can help provide support on various aspects of your commercial project.



Historical Renovation

Our reputation of producing high-end windows and doors with attention to intricate details lends itself perfectly to historical renovation projects. Our products are designed to marry traditional design aesthetics with new advances in technology, and we offer numerous options to restore beauty to your project. In addition to providing striking design aesthetics, Kolbe can work with you to meet building codes and historical district requirements.



Energy Efficiency

Kolbe windows and doors are available with a wide variety of glass options to meet your energy needs in any climate. In fact, many Kolbe products meet or exceed ENERGY STAR® guidelines in most climate zones while reducing energy costs for home and business owners.





Sustainable Design

Most components used in Kolbe products are sourced from within 500 miles of our factory, proving we are committed to maintaining ecological sustainability. The species available for our wood products are renewable resources sourced from managed forests, while our standard glass contains 25-30% recycled content. In addition, we have achieved FSC Chain-of-Custody certification and can provide FSC®-certified wood for many of our window and door products (FSC license code FSC-C019541).



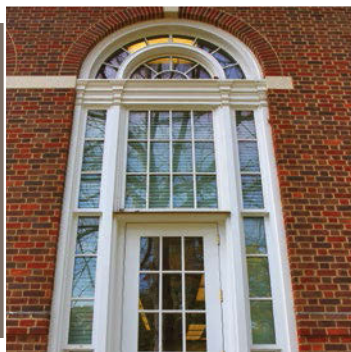
Impact Certification

K-Force® impact modifications are available on a number of Kolbe windows and doors. K-Force products are specially designed with the strength and durability to withstand hurricane force winds and flying debris, and are independently tested to meet or exceed strict building codes in coastal regions. There are no unsightly rods or extra locks to fasten, so Kolbe's impact-certified products offer the same beautiful appearance as non-impact products.



Design Options

For almost 70 years, Kolbe products have been all about customization. We offer many options for our windows and doors, including different wood species, custom divided light patterns, tailor-made shapes, and many interior and exterior finishes to perfectly complement the design aesthetic of any project. We're known worldwide for our custom capabilities and have worked with many architects to build distinctive windows and doors – we can help bring your most innovative ideas to life.



Universal Design

Universal design is the concept of creating spaces that are accessible and comfortable for individuals of diverse physical ability levels. Kolbe offers options for a variety of windows and doors that are not only designed to make independent living possible, but to do it with quality, style and flexibility. Kolbe's options such as sill ramps, motorized operators, larger cranks and lever door handles can help make independent living easier.





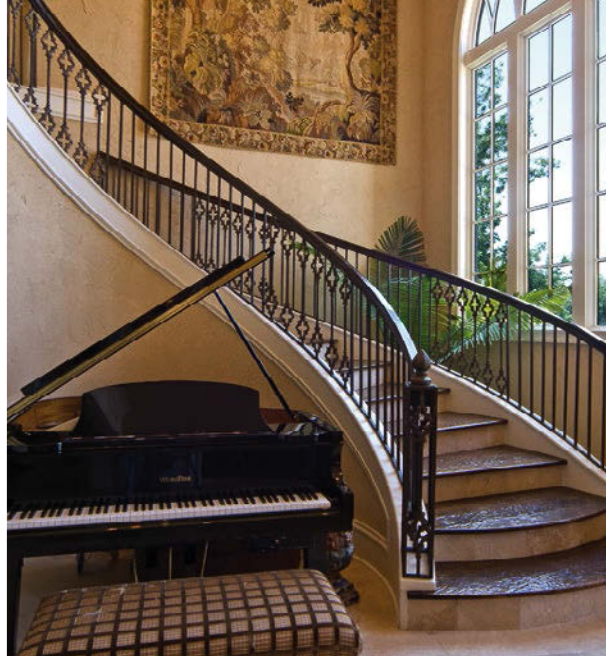


Photo courtesy of Los Gatos Hotel

Casements

Offering convenience and plenty of daylight, Heritage Series casements provide excellent energy efficiency. Easy to operate handles, corrosion resistant hardware and a secure, concealed multi-point locking system on most products contribute to the integrity of these windows. A multitude of styles are available, including French, push-out, inswing, segment head and half-circle top casements.

*Crank-Out Casements | French Casements | Push-out Casements
Inswing Casements | Picture & Transom Units
Picture Combination | Units Bow & Bay Units | Segment Head & Half-Circle Top Units*



Photo courtesy of Los Gatos Hotel



Photo courtesy of Kenneth M Wyner Photography, Inc.



Kolbe Heritage Series

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Crank-Out Casements



Kolbe's crank-out casements combine a simple cranking operation with many options for customization to create a uniquely crafted window with an unobstructed view of the outdoors. By opening and closing easily and effectively, they provide excellent ventilation. Crank handles fold down when not in use to prevent interference with blinds.

Crank-Out Casement Standard Features

- ▶ 1-3/4" thick sash
- ▶ Overall jamb width is 4-9/16"
- ▶ Constructed of pine, with pine interior stops and wood mull casings on mull units
- ▶ Energy efficient, insulating LoE²-270 glass
- ▶ Glazed to the interior with beveled wood glazing beads
- ▶ 1-15/16" exterior brickmould applied
- ▶ All exterior wood parts are preservative-treated
- ▶ Exterior frame and sash are latex primed
- ▶ Fully weatherstripped for a tight seal
- ▶ Interior screens with clay-colored aluminum frames and BetterVue® fiberglass mesh
- ▶ Clay-colored folding handles, operator covers and multi-point locks
- ▶ Dual-arm operators with concealed, adjustable hinges (single-arm operators with concealed, adjustable hinges on "S" Series casements; single-arm operators with Euro hinges for added support on segment head and half-circle top units)

NOTE: All measurements are nominal.

1-15/16" brickmould applied as standard



Hardware

Clay-colored, folding handles are applied to crank-out casement units as standard. Other finishes available are White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, and Matte Black. Multi-point lock handles will match operator handle colors.



Folding handle in Clay
(closed)

Folding handle in Clay
(open)

Multi-Point Lock

Heritage Series crank-out casements feature a multi-point locking system as standard. Up to three locking points are operated to quickly and securely lock units from one convenient location. A sleek, slim-line handle and escutcheon makes windows more attractive. Handles and escutcheons are Clay as standard. Other finishes available are White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, and Matte Black finishes.



NOTE: Not available on French casements.



Crank-Out Casement Optional Features

Glass (pgs. 184-185):

- ▶ LoE-180
- ▶ LoE² -240
- ▶ LoE³ -366
- ▶ ThermaPlus™ LoE
- ▶ Patterned, bronze- or gray-lite
- ▶ Tempered or laminated
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4" or 4-1/2" bars
- ▶ True divided lites with 5/8" LoE² insulating glass and 1-1/8" bars
- ▶ Grilles-in-the-airpace
- ▶ Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds

Exterior Finishes (pg. 189):

- ▶ K-Kron II exterior paint finish

Other Options: (custom options are also available)

- ▶ French casements
- ▶ Other wood species and FSC-certified wood (pg. 188)
- ▶ Interior prefinishing (pg. 188)
- ▶ Interior casing (pg. 190)
- ▶ Prep for stool
- ▶ 3-1/2" flat or profiled brickmould, backband on 3-1/2" brickmould and other custom millwork (pg. 190)
- ▶ Projected sill nosing, extended sill horns or no nosing

NOTE: All measurements are nominal.

- ▶ Ovolo and square profile glazing beads and interior divided lite bars (pg. 192)
- ▶ Hardware, multi-point locks and operator covers in White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, and Matte Black finishes. Oil-Rubbed* finish is available upon request.
- ▶ Universal design casement handle and lock in White or Clay
- ▶ Fall protection devices and window opening control devices
- ▶ Motorized window system
- ▶ Single-arm operators with Euro hinges
- ▶ Screens with White, Beige, Brass, Dark Bronze Anodized, Clear Anodized and Coal Black frames (Brass frames are not available on radius top units)
- ▶ Screens with aluminum or UltraVue® fiberglass mesh (not available with brass frames)
- ▶ Wood wrapped screens (not available on radius top or "S" series units)
- ▶ Retractable screen kit (pg. 191)
- ▶ Retractable screen covers available as beveled (standard) or square
- ▶ Extension jambs (up to 12" applied; over 12" shipped loose for field application)
- ▶ Galvanized steel installation clips
- ▶ Bow and bay options: insulated platforms, support brackets and oak-veneered head and seat boards
- ▶ High performance or K-Force® impact performance modifications

Push-out Casements



Photo courtesy of Kenneth M Wyner Photography, Inc.

Kolbe's push-out casements have a uniquely simple operation. Simply unlock a handle to push open or pull closed. A tight seal, plus weatherstripping to prevent air infiltration, makes these windows an excellent, energy efficient choice.

Push-Out Casement Standard Features

- ▶ 1-3/4" thick sash
- ▶ Overall jamb width is 4-9/16" (*basic box width is 3-1/2" on wood units, plus extensions*)
- ▶ Constructed of pine, with pine interior stops and wood mull casings on mull units
- ▶ Energy efficient, insulating LoE²-270 glass
- ▶ Glazed to the interior with beveled wood glazing beads
- ▶ 1-15/16" exterior brickmould applied
- ▶ All exterior wood parts are preservative-treated
- ▶ Exterior frame and sash are latex primed
- ▶ Fully weatherstripped for a tight seal
- ▶ Single-point lever handle in an Oil-Rubbed* finish
- ▶ Concealed hinges (*segment head and half-circle top units use Tri-Euro hinges for added support*)

NOTE: All measurements are nominal.

Hardware

Push-out casement handles are single-point in an Oil-Rubbed* finish as standard. Other finishes available are Natural Brass or Satin Nickel. Multi-point handles are also available in Oil-Rubbed,* Natural Brass or Satin Nickel finishes.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.

	Oil-Rubbed*	Natural Brass	Satin Nickel		Oil-Rubbed*	Natural Brass	Satin Nickel
Single-point				Multi-point			



Photo courtesy of Kenneth M Wyner Photography, Inc.

Push-Out Casement Optional Features

Glass (pgs. 184-185):

- ▶ LoE-180
- ▶ LoE² -240
- ▶ LoE³ -366
- ▶ ThermaPlus™ LoE
- ▶ Patterned, bronze- or gray-lite
- ▶ Tempered or laminated
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4", or 4-1/2" bars
- ▶ True divided lites with 5/8" LoE² insulating glass and 1-1/8" bars
- ▶ Grilles-in-the-airpace
- ▶ Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds

Exterior Finishes (pg. 189):

- ▶ K-Kron II exterior paint finish

Other Options: (custom options are also available)

- ▶ French push-out casements
- ▶ Other wood species and FSC-certified wood (pg. 188)

NOTE: All measurements are nominal.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.

- ▶ Interior prefinishing (pg. 188)
- ▶ Interior casing (pg. 190)
- ▶ Prep for stool
- ▶ 3-1/2" flat or profiled brickmould, backband on 3-1/2" brickmould and other custom millwork (pg. 190)
- ▶ Projected sill nosing, extended sill horns or no nosing
- ▶ Ovolo and square profile glazing beads and interior divided lite bars (pg. 192)
- ▶ Multi-point handles in Oil-Rubbed,* Natural Brass, or Satin Nickel finishes
- ▶ Wood frame hinged/swinging screen or retractable screen with BetterVue® fiberglass mesh (segment head and half-circle top casements are only available with a hinged/swinging screen)
- ▶ Retractable screen covers available as beveled (standard) or square
- ▶ Screens with UltraVue® fiberglass mesh (hinged/swinging screen only)
- ▶ Extension jambs (up to 12" applied; over 12" shipped loose for field application)
- ▶ Galvanized steel installation clips
- ▶ High performance or K-Force® impact performance modifications

Inswing Casements



Kolbe's inswing casements are inspired by classic French design with modern updates to meet energy efficiency standards, proving it's possible to honor traditionally beautiful design while making a modern architectural statement. Inswing casements open in for ventilation and are available in single or French units.

Inswing Casement Standard Features

- ▶ Constructed of pine, with pine interior stops and wood mull casings on mullied units
- ▶ 1-3/4" thick sash
- ▶ Bottom rail height is 3-1/2"
- ▶ Overall jamb width is 4-9/16"
- ▶ All exterior wood parts are preservative-treated
- ▶ Exterior frame and sash are latex primed
- ▶ Energy efficient, insulating LoE²-270 glass
- ▶ Glazed to the interior with beveled wood glazing beads
- ▶ Fully weatherstripped for a tight seal
- ▶ 1-15/16" exterior brickmould applied to wood units
- ▶ A drip-lip applied to the bottom exterior of the sash and a weep channel system on the sill guard against water infiltration
- ▶ Exterior screens with BetterVue® fiberglass mesh and aluminum screen frames in a variety of colors
- ▶ Solid, polished brass handle set as standard
- ▶ Sash hang on 3-1/2" x 3-1/2" butt hinges in a Bright Brass finish
- ▶ Multi-point locking hardware secures the unit

NOTE: All measurements are nominal.

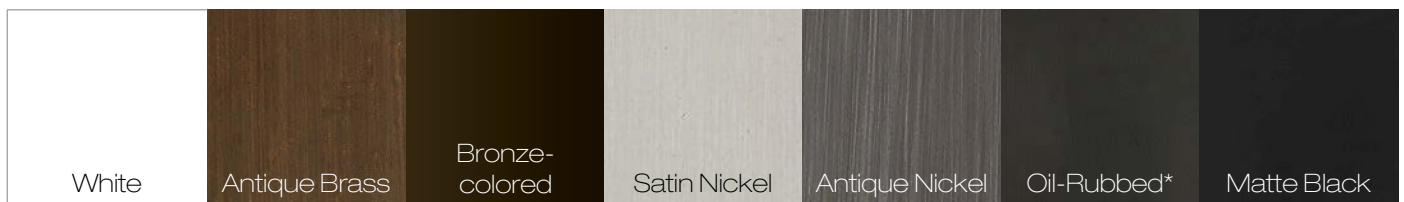
Hardware

Inswing casement windows have a Bright Brass handle set as standard. Other handle finish options include White, Antique Brass, Bronze-colored, Satin Nickel, Antique Nickel, Oil-Rubbed,* or Matte Black. Custom finish options are also available.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.



Bright Brass (standard)





Inswing Casement Optional Features

Glass (pgs. 184-185):

- ▶ LoE-180
- ▶ LoE² -240
- ▶ LoE³ -366
- ▶ ThermaPlus™ LoE
- ▶ Patterned, bronze- or gray-lite
- ▶ Tempered or laminated
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4", or 4-1/2" bars
- ▶ True divided lites with 5/8" LoE² insulating glass and 1-1/8" bars
- ▶ Grilles-in-the-airpace
- ▶ Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds

Exterior Finishes (pg. 189):

- ▶ K-Kron II exterior paint finish

NOTE: All measurements are nominal.

Other Options: (custom options are also available)

- ▶ French inswing casements
- ▶ Other wood species and FSC-certified wood (pg. 188)
- ▶ Interior prefinishing (pg. 188)
- ▶ Interior casing (pg. 190)
- ▶ Prep for stool
- ▶ 3-1/2" flat or profiled brickmould, backband on 3-1/2" brickmould and other custom millwork (pg. 190)
- ▶ Projected sill nosing, extended sill horns or no nosing
- ▶ Ovolo and square profile glazing beads and interior divided lite bars (pg. 192)
- ▶ Handles in Antique Brass, White, Satin Nickel, Antique Nickel, Oil-Rubbed*, Matte Black, or Bronze-colored finishes
- ▶ Screens will match exterior color
- ▶ Screens with aluminum or UltraVue® fiberglass mesh
- ▶ Extension jambs (up to 7")
- ▶ Galvanized steel installation clips

Casements | Elevation Charts

Casements | Single Units

U.D.	1'-6 1/2"	1'-10 1/2"	2'-2 1/2"	2'-6 1/2"	2'-8 1/2"	2'-10 1/2"	3'-2 1/2"
R.O.	1'-4 1/2"	1'-8 1/2"	2'-0 1/2"	2'-4 1/2"	2'-6 1/2"	2'-8 1/2"	3'-0 1/2"
G.S.	11 1/4"	15 1/4"	19 1/4"	23 1/4"	25 1/4"	27 1/4"	31 1/4"
G.S.**	9 13/16"	13 13/16"	17 13/16"	21 13/16"	23 13/16"	25 13/16"	29 13/16"
2'-2"							
2'-8"							
3'-2"							
3'-8"							
4'-2"							
4'-8"							
5'-2"							
5'-8"							
6'-2"							

Dimension Calculations

Elevation charts provide wood unit dimensions for units with the standard 1 15/16" brickmould. Below are the calculations to determine the frame size of units with brickmould.

	Width	Height
1-15/16" brickmould; U.D. to F.S.	-2 1/2"	-2"
3-1/2" flat or profiled casing; U.D. to F.S.	-5 5/8"	-3 9/16"
3-1/2" casing and backband; U.D. to F.S.	-7 1/8"	-4 5/16"

F.S. to Sash O.S.M.	-1 15/16"	1 15/16"
Sash O.S.M. to G.S.	-2 13/16"	2 13/16"
G.S. to D.L.O.	-1"	-1"
G.S. to Screen O.S.M.	+1 9/16"	+1/2"
U.D. to G.S. (for push-outs)	-8 11/16"	-8 3/16"

Note: Clear opening dimensions can be found on pgs. 196-198.

F.S. = Frame Size • G.S. = Glass Size • O.S.M. = Outside Measurement
D.L.O. = Daylight Opening • U.D. = Unit Dimension

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Units meet most national emergency escape and rescue requirements

** Glass size for push-out casements

† Push-out units are only available with single-point hardware

PRODUCT CODES:

To order, add "KW" before the product number (Ex: KWE16). For push-out casements, have dealer specify push-out when placing order for unit. Specify stationary, left or right venting when ordering single units. Venting is viewed from the window exterior.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

Casements | "S" Series (1'-4" wide)

U.D.	1'-6 1/2"	2'-10 1/2"	4'-2 1/2"	5'-6 1/2"	6'-10 1/2"
R.O.	1'-4 1/2"	2'-8 1/2"	4'-0 1/2"	5'-4 1/2"	6'-8 1/2"
G.S.**	11 1/4"	11 1/4"	11 1/4"	11 1/4"	11 1/4"
G.S.**	9 13/16"	9 13/16"	9 13/16"	9 13/16"	9 13/16"
2'-2"					
2'-8"					
3'-2"					
3'-8"					
4'-2"					
4'-8"					
5'-2"					
5'-8"					
6'-2"					

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mulled units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

** Glass size for push-out casements

† Push-out units are only available with single-point hardware














































PRODUCT CODES:

To order, add "KW" before the product number (Ex: KWS22). For push-out casements, have dealer specify push-out when placing order for unit. Specify stationary, left or right venting when ordering single units. Venting is viewed from the window exterior.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Casements | Elevation Charts

Casements | "N" Series (1'-8" wide)

U.D.	1'-10 1/2"	3'-6 1/2"	5'-2 1/2"	6'-10 1/2"	8'-6 1/2"
R.O.	1'-8 1/2"	3'-4 1/2"	5'-0 1/2"	6'-8 1/2"	8'-4 1/2"
G.S.	15 1/4"	15 1/4"	15 1/4"	15 1/4"	15 1/4"
G.S.**	13 13/16"	13 13/16"	13 13/16"	13 13/16"	13 13/16"
2'-2"					
2'-8"					
3'-2"					
3'-8"					
4'-2"					
4'-8"					
5'-2"					
5'-8"					
6'-2"					

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mulled units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

** Glass size for push-out casements

† Push-out units are only available with single-point hardware

PRODUCT CODES:

To order, add "KW" before the product number (Ex: KWN22). For push-out casements, have dealer specify push-out when placing order for unit. Specify stationary, left or right venting when ordering single units. Venting is viewed from the window exterior.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Casements | "W" Series (2'-0" wide)

U.D.	2'-2 1/2"	4'-2 1/2"	6'-2 1/2"	8'-2 1/2"	10'-2 1/2"	12'-2 1/2"
R.O.	2'-0 1/2"	4'-0 1/2"	6'-0 1/2"	8'-0 1/2"	10'-0 1/2"	12'-0 1/2"
G.S.	19 1/4"	19 1/4"	19 1/4"	19 1/4"	19 1/4"	19 1/4"
G.S.**	17 13/16"	17 13/16"	17 13/16"	17 13/16"	17 13/16"	17 13/16"
2'-2"						
2'-8"						
3'-2"						
3'-8"						
4'-2"						
4'-8"						
5'-2"						
5'-8"						
6'-2"						

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mulled units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

** Glass size for push-out casements

† Push-out units are only available with single-point hardware

PRODUCT CODES:

To order, add "KW" before the product number (Ex: KWW22). For push-out casements, have dealer specify push-out when placing order for unit. Specify stationary, left or right venting when ordering single units. Venting is viewed from the window exterior.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Casements | Elevation Charts

Casements | "L" Series (2'-4" wide)

U.D.	2'-6 1/2"	4'-10 1/2"	7'-2 1/2"	9'-6 1/2"	11'-10 1/2"	14'-2 1/2"
R.O.	2'-4 1/2"	4'-8 1/2"	7'-0 1/2"	9'-4 1/2"	11'-8 1/2"	14'-0 1/2"
G.S.	23 1/4"	23 1/4"	23 1/4"	23 1/4"	23 1/4"	23 1/4"
G.S.**	21 13/16"	21 13/16"	21 13/16"	21 13/16"	21 13/16"	21 13/16"
2'-2"						
2'-8"						
3'-2"						
3'-8"						
4'-2"						
4'-8"						
5'-2"						
5'-8"						
6'-2"						

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mullied units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Units meet most national emergency escape and rescue requirements when modified with single-arm operators and Euro hinges.

** Glass size for push-out casements

† Push-out units are only available with single-point hardware

PRODUCT CODES:

To order, add "KW" before the product number (Ex: KWL22). For push-out casements, have dealer specify push-out when placing order for unit. Specify stationary, left or right venting when ordering single units. Venting is viewed from the window exterior.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Casements | “X” Series (2'-6" wide)

U.D.	2'-8 1/2"	5'-2 1/2"	7'-8 1/2"	10'-2 1/2"	12'-8 1/2"
R.O.	2'-6 1/2"	5'-0 1/2"	7'-6 1/2"	10'-0 1/2"	12'-6 1/2"
G.S.	25 1/4"	25 1/4"	25 1/4"	25 1/4"	25 1/4"
G.S.**	23 13/16"	23 13/16"	23 13/16"	23 13/16"	23 13/16"
2'-2"					
2'-8"					
3'-2"					
3'-8"					
4'-2"					
4'-8"					
5'-2"					
5'-8"					
6'-2"					

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mullied units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Units meet most national emergency escape and rescue requirements.

** Glass size for push-out casements

† Push-out units are only available with single-point hardware


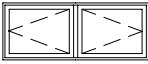
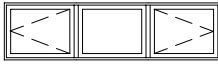
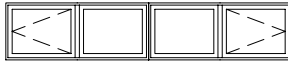
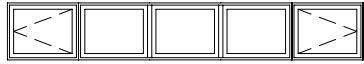

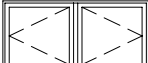




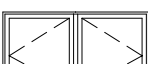





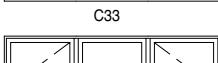
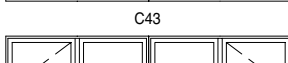
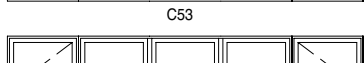











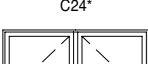
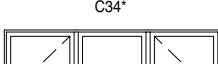

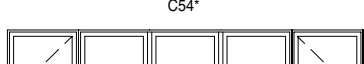

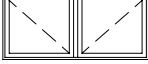




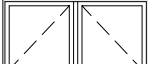



PRODUCT CODES:

To order, add “KW” before the product number (Ex: KWX22). For push-out casements, have dealer specify push-out when placing order for unit. Specify stationary, left or right venting when ordering single units. Venting is viewed from the window exterior.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Casements | Elevation Charts

Casements | "C" Series (2'-8" wide)

	2'10 1/2"	5'6 1/2"	8'2 1/2"	10'10 1/2"	13'6 1/2"
U.D.	2'8 1/2"	5'4 1/2"	8'0 1/2"	10'8 1/2"	13'4 1/2"
R.O.	27 1/4"	27 1/4"	27 1/4"	27 1/4"	27 1/4"
G.S.	25 13/16"	25 13/16"	25 13/16"	25 13/16"	25 13/16"
G.S.**	25 13/16"	25 13/16"	25 13/16"	25 13/16"	25 13/16"
2' 2"					
2' 8"					
3' 2"					
3' 8"					
4' 2"					
4' 8"					
5' 2"					
5' 8"					
6' 2"					

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mulled units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Units meet most national emergency escape and rescue requirements.


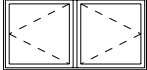





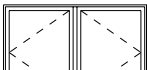













** Glass size for push-out casements

PRODUCT CODES:

To order, add "KW" before the product number (Ex: KWX22). For push-out casements, have dealer specify push-out when placing order for unit. Specify stationary, left or right venting when ordering single units. Venting is viewed from the window exterior.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Casements | "E" Series (3'-0" wide)

U.D.	3'-2 1/2"	6'-2 1/2"	9'-2 1/2"
R.O.	3'-0 1/2"	6'-0 1/2"	9'-0 1/2"
G.S.	31 1/4"	31 1/4"	31 1/4"
G.S.**	29 13/16"	29 13/16"	29 13/16"
3'-2"			
3'-8"			
4'-2"			
4'-8"			
5'-2"			
5'-8"			
6'-2"			

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mulled units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Units meet most national emergency escape and rescue requirements.

** Glass size for push-out casements

PRODUCT CODES:

To order, add "KW" before the product number (Ex: KWE23). For push-out casements, have dealer specify push-out when placing order for unit. Specify stationary, left or right venting when ordering single units. Venting is viewed from the window exterior.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Casements | Elevation Charts

Casements | Rectangular Transoms & Picture Units

U.D.	1'-6 1/2"	1'-10 1/2"	2'-2 1/2"	2'-8 1/2"	2'-10 1/2"	3'-2 1/2"	3'-6 1/2"	4'-2 1/2"	4'-8 1/2"	5'-2 1/2"	6'-2 1/2"
R.O.	1'-4 1/2"	1'-8 1/2"	2'-0 1/2"	2'-6 1/2"	2'-8 1/2"	3'-0 1/2"	3'-4 1/2"	4'-0 1/2"	4'-6 1/2"	5'-0 1/2"	6'-0 1/2"
G.S.	11 1/4"	15 1/4"	19 1/4"	25 1/4"	27 1/4"	31 1/4"	35 1/4"	43 1/4"	49 1/4"	55 1/4"	67 1/4"
G.S.*	9 13/16"	13 13/16"	17 13/16"	23 13/16"	25 13/16"	29 13/16"	33 13/16"	41 13/16"	47 13/16"	53 13/16"	65 13/16"
1'-6"											
1'-8"											
1'-10"											
2'-2"											
2'-8"											
3'-2"											
3'-8"											
4'-2"											
4'-8"											
5'-2"											
5'-8"											
6'-2"											

NOTE: All measurements are nominal. Elevation charts are not to scale.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.


















** Glass size for units to match operating push-out casements

PRODUCT CODES:

To order, add "KW" before the product number (Ex: KWW36P). If unit is to be mulled with a push-out casement, have dealer specify push-out when placing order for unit.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size








French Casements






















U.D.	3'-6 1/2"	4'-2 1/2"	5'-2 1/2"
R.O.	3'-4 1/2"	4'-0 1/2"	5'-0 1/2"
G.S.	16 1/8"	20 1/8"	26 1/8"
G.S.**	14 11/16"	18 11/16"	24 11/16"
3'-2"			
	N23	W23	X23
3'-8"			
	N236	W236	X236*
4'-2"			
	N24	W24	X24*
4'-8"			
	N246	W246	X246*
5'-2"			
	N25	W25	X25*
5'-8"			
	N256		
6'-2"			
	N26		

Inswing Casements

Single Unit

Two-Wide French

U.D.	2'-2 3/4"
R.O.	2'-1"
G.S.	19 13/16"
3'-1 3/4"	
	KWIW13
3'-7 3/4"	
	KWIW136
4'-1 3/4"	
	KWIW14
4'-7 3/4"	
	KWIW146
5'-1 3/4"	
	KWIW15
5'-7 3/4"	
	KWIW156
6'-1 3/4"	
	KWIW16

U.D.	3'-6 1/4"	4'-2 1/4"	5'-2 1/4"
R.O.	3'-4 1/2"	4'-0 1/2"	5'-0 1/2"
G.S.	15 13/16"	19 13/16"	25 13/16"
3'-1 3/4"			
	FWIN23	FWIW23	FWIX23*
3'-7 3/4"			
	FWIN236	FWIW236	FWIX236*
4'-1 3/4"			
	FWIN24	FWIW24	FWIX24*
4'-7 3/4"			
	FWIN246	FWIW246	FWIX246*
5'-1 3/4"			
	FWIN25	FWIW25	FWIX25*
5'-7 3/4"			
	FWIN256	FWIW256	FWIX256*
6'-1 3/4"			
	FWIN26	FWIW26	FWIX26*

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Units meet most national emergency escape and rescue requirements.

** Glass size for push-out casements

PRODUCT CODES:

To order, add "FW" before the product number (Ex: FWN26).

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Casements | Elevation Charts

Casements | “N” Series Picture Unit Combinations

U.D.	5'-2 1/2"	5'-2 1/2"	6'-10 1/2"	6'-10 1/2"	6'-10 1/2"	8'-6 1/2"
R.O.	5'-0 1/2"	5'-0 1/2"	6'-8 1/2"	6'-8 1/2"	6'-8 1/2"	8'-4 1/2"
G.S.**	15 1/4" 35 1/4"	35 1/4" 15 1/4"	15 1/4" 35 1/4" 15 1/4"	15 1/4" 55 1/4"	55 1/4" 15 1/4"	15 1/4" 55 1/4" 15 1/4"
G.S.**	13 13/16" 33 13/16"	33 13/16" 13 13/16"	13 13/16" 33 13/16" 13 13/16"	13 13/16" 53 13/16"	53 13/16" 13 13/16"	13 13/16" 53 13/16" 13 13/16"
3'-2"						
3'-0 1/2"	N33PL	N33PR	N43P	N43PL	N43PR	N53P
3'-8"						
3'-6 1/2"	N336PL	N336PR	N436P	N436PL	N436PR	N536P
4'-2"						
4'-0 1/2"	N34PL	N34PR	N44P	N44PL	N44PR	N54P
4'-8"						
4'-6 1/2"	N346PL	N346PR	N446P	N446PL	N446PR	N546P
5'-2"						
5'-0 1/2"	N35PL	N35PR	N45P	N45PL	N45PR	N55P
5'-8"						
5'-6 1/2"	N356PL	N356PR	N456P	N456PL	N456PR	N556P
6'-2"						
6'-0 1/2"	N36PL	N36PR	N46P	N46PL	N46PR	N56P

NOTE: All measurements are nominal. Elevation charts are not to scale.

Venting is viewed from the exterior.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

** Glass size for push-out casements.

PRODUCT CODES:

To order, add "KW" before the product number (Ex: KWN56P). For push-out casements, have dealer specify push-out when placing order for unit.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

Casements | “W” Series Picture Unit Combinations

U.D.	6'-2 1/2"	6'-2 1/2"	8'-2 1/2"	8'-2 1/2"	8'-2 1/2"	10'-2 1/2"
R.O.	6'-0 1/2"	6'-0 1/2"	8'-0 1/2"	8'-0 1/2"	8'-0 1/2"	10'-0 1/2"
G.S.**	19 1/4" 43 1/4"	43 1/4" 19 1/4"	19 1/4" 43 1/4" 19 1/4"	19 1/4" 67 1/4"	67 1/4" 19 1/4"	19 1/4" 67 1/4" 19 1/4"
G.S.**	17 13/16" 41 13/16"	41 13/16" 17 13/16"	17 13/16" 41 13/16" 17 13/16"	17 13/16" 65 13/16"	65 13/16" 17 13/16"	17 13/16" 65 13/16" 17 13/16"
3'-2"						
3'-6"						
4'-2"						
4'-6"						
5'-2"						
5'-6"						
6'-2"						

NOTE: All measurements are nominal. Elevation charts are not to scale.

Venting is viewed from the exterior.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

** Glass size for push-out casements.



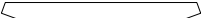

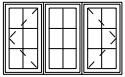
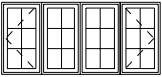
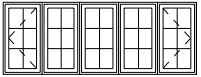
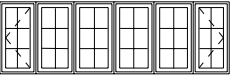
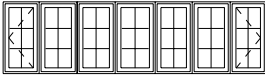
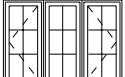




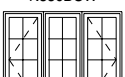
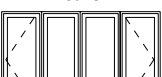





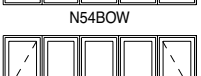







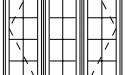

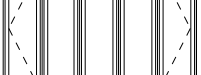
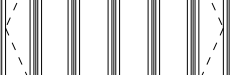
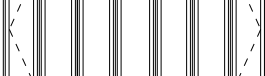
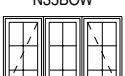
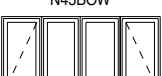
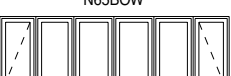

PRODUCT CODES:

To order, add "KW" before the product number (Ex: KWW56P). For push-out casements, have dealer specify push-out when placing order for unit.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

Casements | Elevation Charts

Casements | "N" Series Bow Windows

UNIT PROJECTION:		5"	8 9/16"	12 1/16"	17 1/4"	22 5/16"
						
U.D.		5'-2 3/8"	6'-9 1/2"	8'-4 1/16"	9'-9 15/16"	11'-3 1/16"
R.O.		4'-11 13/16"	6'-6 3/4"	8'-1 1/8"	9'-6 11/16"	10'-11 1/4"
G.S.		15 1/4"	15 1/4"	15 1/4"	15 1/4"	15 1/4"
3'-2"	3'-2"					
		N33BOW	N43BOW	N53BOW	N63BOW	N73BOW
3'-8"	3'-8"					
		N336BOW	N436BOW	N536BOW	N636BOW	N736BOW
4'-2"	4'-2"					
		N34BOW	N44BOW	N54BOW	N64BOW	N74BOW
4'-8"	4'-8"					
		N346BOW	N446BOW	N546BOW	N646BOW	N746BOW
5'-2"	5'-2"					
		N35BOW	N45BOW	N55BOW	N65BOW	N75BOW
5'-8"	5'-8"					
		N356BOW	N456BOW	N556BOW	N656BOW	N756BOW
6'-2"	6'-2"					
		N36BOW	N46BOW	N56BOW	N66BOW	N76BOW

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used. Add 1'-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bow units without head and seat boards, typically used for walk-out applications, are different.

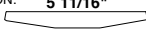
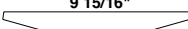
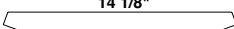
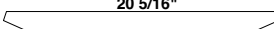
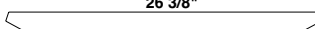
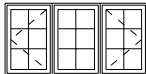

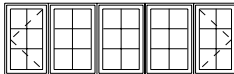
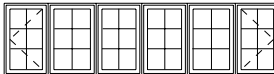
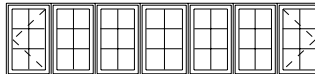





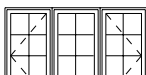




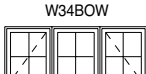

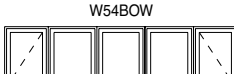












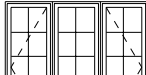




Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

PRODUCT CODES:

To order, add "KW" before the product number (Ex: KWN76BOW).

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Casements | “W” Series Bow Windows

UNIT PROJECTION:		5 11/16"	9 15/16"	14 1/8"	20 5/16"	26 3/8"
						
U.D.		6'-2 1/4"	8'-1 3/16"	9'-11 7/16"	11'-8 7/8"	13'-5 7/16"
R.O.		5'-11 11/16"	7'-10 1/2"	9'-8 1/2"	11'-5 5/8"	13'-1 9/16"
G.S.		19 1/4"	19 1/4"	19 1/4"	19 1/4"	19 1/4"
3'-2"	3'-0 1/2"					
		W33BOW	W43BOW	W53BOW	W63BOW	W73BOW
3'-8"	3'-6 1/2"					
		W336BOW	W436BOW	W536BOW	W636BOW	W736BOW
4'-2"	4'-0 1/2"					
		W34BOW	W44BOW	W54BOW	W64BOW	W74BOW
4'-8"	4'-6 1/2"					
		W346BOW	W446BOW	W546BOW	W646BOW	W746BOW
5'-2"	5'-0 1/2"					
		W35BOW	W45BOW	W55BOW	W65BOW	W75BOW
5'-8"	5'-6 1/2"					
		W356BOW	W456BOW	W556BOW	W656BOW	W756BOW
6'-2"	6'-0 1/2"					
		W36BOW	W46BOW	W56BOW	W66BOW	W76BOW

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used. Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bow units without head and seat boards, typically used for walk-out applications, are different.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

PRODUCT CODES:

To order, add "KW" before the product number (Ex: KWW76BOW).

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Casements | Elevation Charts

Casements | "S" Series 30° Bay Windows

UNIT PROJECTION: 10 7/16"

U.D.	4'-2 11/16"	5'-6 11/16"	6'-10 11/16"	
R.O.	3'-10 7/8"	5'-2 7/8"	6'-6 7/8"	
G.S.	11 1/4"	11 1/4"	11 1/4"	
3'-2"				
3'-0 1/2"	S13-13-13	S13-23-13	S13-33-13	
3'-8"				
3'-6 1/2"	S136-136-136	S136-236-136	S136-336-136	
4'-2"				
4'-0 1/2"	S14-14-14	S14-24-14	S14-34-14	
4'-8"				
4'-6 1/2"	S146-146-146	S146-246-146	S146-346-146	
5'-2"				
5'-0 1/2"	S15-15-15	S15-25-15	S15-35-15	
5'-8"				
5'-6 1/2"	S156-156-156	S156-256-156	S156-356-156	
6'-2"				
6'-0 1/2"	S16-16-16	S16-26-16	S16-36-16	

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional.

If the cable support system and/or insulated platforms & support brackets are not being used, other means of proper support must be used. Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

PRODUCT CODES:

To order, add "30KW" before the product number (Ex: 30KWS13-13-13).

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Casements | “N” Series 30° Bay Windows

UNIT PROJECTION: 12 7/16"

U.D.	5'-1 5/8"	6'-9 5/8"	6'-9 5/8"	8'-5 5/8"	8'-5 5/8"
R.O.	4'-9 3/4"	6'-5 3/4"	6'-5 3/4"	8'-1 3/4"	8'-1 3/4"
G.S.	15 1/4"	15 1/4"	15 1/4" 35 1/4" 15 1/4"	15 1/4"	15 1/4" 55 1/4" 15 1/4"
3'-2"					
3'-0 1/2"	N13-13-13	N13-23-13	N13-23P-13	N13-33-13	N13-33P-13
3'-8"					
3'-6 1/2"	N136-136-136	N136-236-136	N136-236P-136	N136-336-136	N136-336P-136
4'-2"					
4'-0 1/2"	N14-14-14	N14-24-14	N14-24P-14	N14-34-14	N14-34P-14
4'-8"					
4'-6 1/2"	N146-146-146	N146-246-146	N146-246P-146	N146-346-146	N146-346P-146
5'-2"					
5'-0 1/2"	N15-15-15	N15-25-15	N15-25P-15	N15-35-15	N15-35P-15
5'-8"					
5'-6 1/2"	N156-156-156	N156-256-156	N156-256P-156	N156-356-156	N156-356P-156
6'-2"					
6'-0 1/2"	N16-16-16	N16-26-16	N16-26P-16	N16-36-16	N16-36P-16

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used. Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

PRODUCT CODES:

To order, add "30KW" before the product number (Ex: 30KWN16-36P-16).

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Casements | Elevation Charts

Casements | "W" Series 30° Bay Windows

UNIT PROJECTION: 14 7/16"

	6'-0 9/16"	8'-0 9/16"	8'-0 9/16"	10'-0 9/16"	10'-0 9/16"
U.D.	5'-8 11/16"	7'-8 11/16"	7'-8 11/16"	9'-8 11/16"	9'-8 11/16"
R.O.	19 1/4"	19 1/4"	19 1/4" 43 1/4" 19 1/4"	19 1/4"	19 1/4" 67 1/4" 19 1/4"
G.S.					
3'-2"					
3'-0 1/2"	W13-13-13	W13-23-13	W13-23P-13	W13-33-13	W13-33P-13
3'-8"					
3'-6 1/2"	W136-136-136	W136-236-136	W136-236P-136	W136-336-136	W136-336P-136
4'-2"					
4'-0 1/2"	W14-14-14	W14-24-14	W14-24P-14	W14-34-14	W14-34P-14
4'-8"					
4'-6 1/2"	W146-146-146	W146-246-146	W146-246P-146	W146-346-146	W146-346P-146
5'-2"					
5'-0 1/2"	W15-15-15	W15-25-15	W15-25P-15	W15-35-15	W15-35P-15
5'-8"					
5'-6 1/2"	W156-156-156	W156-256-156	W156-256P-156	W156-356-156	W156-356P-156
6'-2"					
6'-0 1/2"	W16-16-16	W16-26-16	W16-26P-16	W16-36-16	W16-36P-16

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used. Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

PRODUCT CODES:

To order, add "30KW" before the product number (Ex: 30KWW16-36P-16).

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Casements | “X” Series 30° Bay Windows

UNIT PROJECTION: 17 7/16"

	U.D.	7'-4 5/8"	9'-10 5/8"	12'-4 5/8"
	R.O.	7'-1 1/8"	9'-7 1/8"	12'-1 1/8"
	G.S.	25 1/4"	25 1/4"	25 1/4"
3'-2"	3'-0 1/2"	31 1/4"		
		X13-13-13	X13-23-13	X13-33-13
3'-8"	3'-6 1/2"	37 1/4"		
		X136-136-136	X136-236-136	X136-336-136
4'-2"	4'-0 1/2"	43 1/4"		
		X14-14-14	X14-24-14	X14-34-14
4'-8"	4'-6 1/2"	49 1/4"		
		X146-146-146	X146-246-146	X146-346-146
5'-2"	5'-0 1/2"	55 1/4"		
		X15-15-15	X15-25-15	X15-35-15
5'-8"	5'-6 1/2"	61 1/4"		
		X156-156-156	X156-256-156	X156-356-156
6'-2"	6'-0 1/2"	67 1/4"		
		X16-16-16	X16-26-16	X16-36-16

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used. Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

PRODUCT CODES:

To order, add "30KW" before the product number (Ex: 30KWX13-13-13).

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Casements | Elevation Charts

Casements | "S" Series 45° Bay Windows

UNIT PROJECTION: 14 5/8"

U.D.	3'-10 15/16"	5'-2 15/16"	6'-6 15/16"
R.O.	3'-5 15/16"	4'-9 15/16"	6'-1 15/16"
G.S.	11 1/4"	11 1/4"	11 1/4"
3'-2"			
3'-0 1/2"	S13-13-13	S13-23-13	S13-33-13
3'-8"			
3'-6 1/2"	S136-136-136	S136-236-136	S136-336-136
4'-2"			
4'-0 1/2"	S14-14-14	S14-24-14	S14-34-14
4'-8"			
4'-6 1/2"	S146-146-146	S146-246-146	S146-346-146
5'-2"			
5'-0 1/2"	S15-15-15	S15-25-15	S15-35-15
5'-8"			
5'-6 1/2"	S156-156-156	S156-256-156	S156-356-156
6'-2"			
6'-0 1/2"	S16-16-16	S16-26-16	S16-36-16

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used. Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.


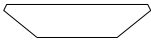
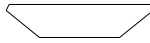
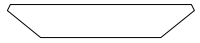
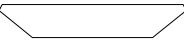
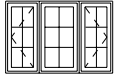
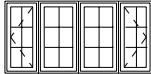
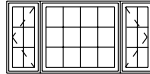
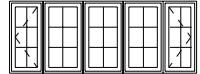
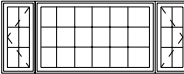
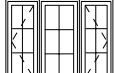
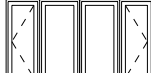




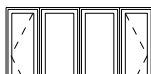










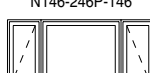

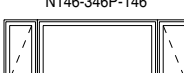


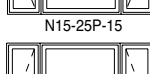
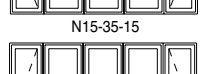
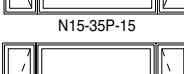
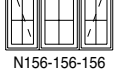
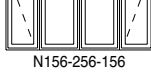
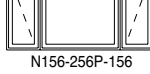
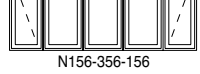
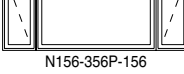
PRODUCT CODES:

To order, add "45KW" before the product number (Ex: 45KWS13-13-13).

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Casements | “N” Series 45° Bay Windows

UNIT PROJECTION: 17 1/2"

						
U.D.	4'-8 9/16"	6'-4 9/16"	6'-4 9/16"	8'-0 9/16"	8'-0 9/16"	
R.O.	4'-3 5/8"	5'-11 5/8"	5'-11 5/8"	7'-7 5/8"	7'-7 5/8"	
G.S.	15 1/4"	15 1/4"	15 1/4" 35 1/4" 15 1/4"	15 1/4"	15 1/4" 55 1/4" 15 1/4"	
3'-2"						
3'-6 1/2"	N13-13-13	N13-23-13	N13-23P-13	N13-33-13	N13-33P-13	
3'-8"						
3'-10 1/2"	N136-136-136	N136-236-136	N136-236P-136	N136-336-136	N136-336P-136	
4'-2"						
4'-6 1/2"	N14-14-14	N14-24-14	N14-24P-14	N14-34-14	N14-34P-14	
4'-8"						
4'-10 1/2"	N146-146-146	N146-246-146	N146-246P-146	N146-346-146	N146-346P-146	
5'-2"						
5'-6 1/2"	N15-15-15	N15-25-15	N15-25P-15	N15-35-15	N15-35P-15	
5'-8"						
5'-10 1/2"	N156-156-156	N156-256-156	N156-256P-156	N156-356-156	N156-356P-156	
6'-2"						
6'-6 1/2"	N16-16-16	N16-26-16	N16-26P-16	N16-36-16	N16-36P-16	

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. Follow chart down from top row and across from left column to determine divided lites configurations.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used. Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

PRODUCT CODES:

To order, add "45KW" before the product number (Ex: 45KWN16-36P-16).

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Casements | Elevation Charts

Casements | “W” Series 45° Bay Windows

UNIT PROJECTION: 20 5/16"

U.D.	5'-6 1/4"	7'-6 1/4"	7'-6 1/4"	9'-6 1/4"	9'-6 1/4"
R.O.	5'-1 1/4"	7'-1 1/4"	7'-1 1/4"	9'-1 1/4"	9'-1 1/4"
G.S.	19 1/4"	19 1/4"	19 1/4" 43 1/4" 19 1/4"	19 1/4"	19 1/4" 67 1/4" 19 1/4"
3'-2"					
3'-0 1/2"	W13-13-13	W13-23-13	W13-23P-13	W13-33-13	W13-33P-13
3'-8"					
3'-6 1/2"	W136-136-136	W136-236-136	W136-236P-136	W136-336-136	W136-336P-136
4'-2"					
4'-0 1/2"	W14-14-14	W14-24-14	W14-24P-14	W14-34-14	W14-34P-14
4'-8"					
4'-6 1/2"	W146-146-146	W146-246-146	W146-246P-146	W146-346-146	W146-346P-146
5'-2"					
5'-0 1/2"	W15-15-15	W15-25-15	W15-25P-15	W15-35-15	W15-35P-15
5'-8"					
5'-6 1/2"	W156-156-156	W156-256-156	W156-256P-156	W156-356-156	W156-356P-156
6'-2"					
6'-0 1/2"	W16-16-16	W16-26-16	W16-26P-16	W16-36-16	W16-36P-16

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used. Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

PRODUCT CODES:

To order, add "45KW" before the product number (Ex: 45KWW16-36P-16).

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

UNIT PROJECTION: 24 9/16"

Kolbe Heritage Series | 35

Casements | Elevation Charts

Casements | 90° Bay Windows

UNIT PROJECTION: 23 1/2"

U.D.	4'-9 1/2"	4'-9 1/2"	6'-9 1/2"
R.O.	4'-0 1/2"	4'-0 1/2"	6'-0 1/2"
G.S.	19 1/4"	43 1/4"	67 1/4"
3'-2"			
3'-0 1/2"	S13-W23-S13	S13-W23P-S13	S13-W33-S13
3'-8"			
3'-6 1/2"	S136-W236-S136	S136-W236P-S136	S136-W336-S136
4'-2"			
4'-0 1/2"	S14-W24-S14	S14-W24P-S14	S14-W34-S14
4'-8"			
4'-6 1/2"	S146-W246-S146	S146-W246P-S146	S146-W346-S146
5'-2"			
5'-0 1/2"	S15-W25-S15	S15-W25P-S15	S15-W35-S15
5'-8"			
5'-6 1/2"	S156-W256-S156	S156-W256P-S156	S156-W356-S156
6'-2"			
6'-0 1/2"	S16-W26-S16	S16-W26P-S16	S16-W36-S16

NOTE: All measurements are nominal. Elevation charts are not to scale.

Only flanker sash vent on 90° bay windows.

Divided lites are optional. Sizes and divided lite configurations for flanker sash can be found on the Casements - "S" Series chart on pg. 15.

If the cable support system and/or insulated platforms and support brackets are not being used, other means of proper support must be used. Add 1-11/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.
























































Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

PRODUCT CODES:

To order, add "90KW" before the product number (Ex: 90KWS16-W36P-S16).

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Segment Head Casements | Single Units

U.D.	1'-6 1/2"	1'-10 1/2"	2'-2 1/2"	2'-6 1/2"	2'-8 1/2"	2'-10 1/2"	3'-2 1/2"
R.O.	1'-4 1/2"	1'-8 1/2"	2'-0 1/2"	2'-4 1/2"	2'-6 1/2"	2'-8 1/2"	3'-0 1/2"
G.S.*	11 1/4"	15 1/4"	19 1/4"	23 1/4"	25 1/4"	27 1/4"	31 1/4"
G.S.**	9 13/16"	13 13/16"	17 13/16"	21 13/16"	23 13/16"	25 13/16"	29 13/16"
2'-8"							
2'-6 1/2"							
2'-6 1/2"							
3'-2"							
3'-0 1/2"							
3'-0 1/2"							
3'-8"							
3'-6 1/2"							
3'-6 1/2"							
4'-2"							
4'-0 1/2"							
4'-0 1/2"							
4'-8"							
4'-6 1/2"							
4'-6 1/2"							
5'-2"							
5'-0 1/2"							
5'-0 1/2"							
5'-8"							
5'-6 1/2"							
5'-6 1/2"							
6'-2"							
6'-0 1/2"							
6'-0 1/2"							

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Approximate glass sizes are given; true glass sizes vary depending on the radius involved.

** Glass size for push-out casements.

*** Units meet most national emergency escape and rescue requirements.

† Push-out units are only available with single-point hardware.

























PRODUCT CODES:

To order, add "KW" before the product number (Ex: KWN16-SEG). For push-out casements, have dealer specify push-out when placing order for unit. Specify stationary, left or right venting when ordering single units. Venting is viewed from the window exterior.

























U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

Casements | Elevation Charts

Segment Head Casements "S" Series

U.D.	1'-6 1/2"	2'-10 1/2"	4'-2 1/2"
R.O.	1'-4 1/2"	2'-8 1/2"	4'-0 1/2"
G.S.*	11 1/4"	11 1/4"	11 1/4"
G.S.**	9 13/16"	9 13/16"	9 13/16"
2'-8"			
3'-2"			
3'-8"			
4'-2"			
4'-8"			
5'-2"			
5'-8"			
6'-2"			

Segment Head Casements "N" Series

U.D.	1'-10 1/2"	3'-6 1/2"	5'-2 1/2"
R.O.	1'-8 1/2"	3'-4 1/2"	5'-0 1/2"
G.S.*	15 1/4"	15 1/4"	15 1/4"
G.S.**	13 13/16"	13 13/16"	13 13/16"
2'-8"			
3'-2"			
3'-8"			
4'-2"			
4'-8"			
5'-2"			
5'-8"			
6'-2"			

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mulled units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Approximate glass sizes per sash are given; true glass sizes vary depending on the radius involved.

** Glass size for push-out casements.

† Push-out units are only available with single-point hardware.

PRODUCT CODES: To order, add "KW" before the product number (Ex: KWS36-SEG). For push-out casements, have dealer specify push-out when placing order for unit. Specify stationary, left or right venting when ordering single units. Venting is viewed from the window exterior.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Segment Head Casements “W” Series

U.D.	2'-2 1/2"	4'-2 1/2"	6'-2 1/2"
R.O.	2'-0 1/2"	4'-0 1/2"	6'-0 1/2"
G.S.*	19 1/4"	19 1/4"	19 1/4"
G.S.**	17 13/16"	17 13/16"	17 13/16"
2'-8"			
3'-2"			
3'-8"			
4'-2"			
4'-8"			
5'-2"			
5'-8"			
6'-2"			

Segment Head Casements “L” Series

U.D.	2'-6 1/2"	4'-10 1/2"	7'-2 1/2"
R.O.	2'-4 1/2"	4'-8 1/2"	7'-0 1/2"
G.S.*	23 1/4"	23 1/4"	23 1/4"
G.S.**	21 13/16"	21 13/16"	21 13/16"
2'-8"			
3'-2"			
3'-8"			
4'-2"			
4'-8"			
5'-2"			
5'-8"			
6'-2"			

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mulled units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Approximate glass sizes per sash are given; true glass sizes vary depending on the radius involved.

** Glass size for push-out casements.

† Push-out units are only available with single-point hardware.

PRODUCT CODES: To order, add "KW" before the product number (Ex: W24-SEG). For push-out casements, have dealer specify push-out when placing order for unit. Specify stationary, left or right venting when ordering single units. Venting is viewed from the window exterior.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Casements | Elevation Charts

Segment Head Casements "X" Series

U.D.	2'-8 1/2"	5'-2 1/2"	7'-8 1/2"
R.O.	2'-6 1/2"	5'-0 1/2"	7'-6 1/2"
G.S.*	25 1/4"	25 1/4"	25 1/4"
G.S.**	23 13/16"	23 13/16"	23 13/16"
2'-8"			
3'-2"			
3'-8"			
4'-2"			
4'-8"			
5'-2"			
5'-8"			
6'-2"			

Segment Head Casements "C" Series

U.D.	2'-10 1/2"	5'-6 1/2"	8'-2 1/2"
R.O.	2'-8 1/2"	5'-4 1/2"	8'-0 1/2"
G.S.*	27 1/4"	27 1/4"	27 1/4"
G.S.**	25 13/16"	25 13/16"	25 13/16"
2'-8"			
3'-2"			
3'-8"			
4'-2"			
4'-8"			
5'-2"			
5'-8"			
6'-2"			

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mulled units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Approximate glass sizes per sash are given; true glass sizes vary depending on the radius involved.

** Glass size for push-out casements.

*** Units meet most national emergency escape and rescue requirements.





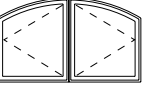
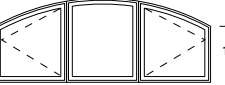

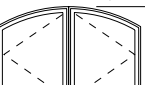
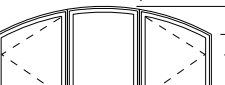

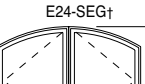










† Push-out units are only available with single-point hardware.

§ Only available as stationary units.

PRODUCT CODES: To order, add "KW" before the product number (Ex: E16-SEG). For push-out casements, have dealer specify push-out when placing order for unit. Specify stationary, left or right venting when ordering single units. Venting is viewed from the window exterior.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Segment Head Casements “E” Series

U.D.	3'-2 1/2"	6'-2 1/2"	9'-2 1/2"
R.O.	3'-0 1/2"	6'-0 1/2"	9'-0 1/2"
G.S.*	31 1/4"	31 1/4"	31 1/4"
G.S.**	29 13/16"	29 13/16"	29 13/16"
3'-2 1/2"			
3'-8"			
4'-2"			
4'-8"			
5'-2"			
5'-8"			
6'-2"			

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. The divided lite configurations shown for single sash are typical for each sash of mullied units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Approximate glass sizes per sash are given; true glass sizes vary depending on the radius involved.

** Glass size for push-out casements.

† Units meet most national emergency escape and rescue requirements.

§ Only available as stationary units.
























































PRODUCT CODES:

To order, add "KW" before the product number (Ex: E16-SEG). For push-out casements, have dealer specify push-out when placing order for unit. Specify stationary, left or right venting when ordering single units. Venting is viewed from the window exterior.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Casements | Elevation Charts

Segment Head Casements | Picture Units

U.D.	3'-6 1/2"	4'-2 1/2"	4'-8 1/2"	5'-2 1/2"	6'-2 1/2"
R.O.	3'-4 1/2"	4'-0 1/2"	4'-6 1/2"	5'-0 1/2"	6'-0 1/2"
G.S.*	35 1/4"	43 1/4"	49 1/4"	55 1/4"	67 1/4"
G.S.**	33 13/16"	41 13/16"	47 13/16"	53 13/16"	65 13/16"
1'-6"					
1'-10"					
2'-2"					
2'-8"					
3'-2"					
3'-8"					
4'-2"					
4'-8"					
5'-2"					
5'-8"					
6'-2"					

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. Follow down from top row and across from left column to determine divided lite configurations.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Approximate glass sizes are given; true glass sizes vary depending on the radius involved.

** Glass size for units to match operating push-out casements.

PRODUCT CODES:

To order, add "KW" before the product number (Ex: 4636P-SEG). If unit is to be muller with a push-out casement, have dealer specify push-out when placing order for unit.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

Half-Circle Top Casements

U.D.	1'-6 1/2"	1'-10 1/2"	2'-2 1/2"	2'-6 1/2"	2'-8 1/2"	2'-10 1/2"	3'-2 1/2"
R.O.	1'-4 1/2"	1'-8 1/2"	2'-0 1/2"	2'-4 1/2"	2'-6 1/2"	2'-8 1/2"	3'-0 1/2"
G.S.*	11 1/4"	15 1/4"	19 1/4"	23 1/4"	25 1/4"	27 1/4"	31 1/4"
G.S.**	9 13/16"	13 13/16"	17 13/16"	21 13/16"	23 13/16"	25 13/16"	29 13/16"
2'-8"							
2'-6 1/2"	S126-HC†	N126-HC†	W126-HC†	L126-HC†	X126-HC†	C126-HC†	E126-HC†
3'-2"							
3'-0 1/2"	S13-HC	N13-HC	W13-HC	L13-HC	X13-HC	C13-HC	E13-HC
3'-8"							
3'-6 1/2"	S136-HC	N136-HC	W136-HC	L136-HC	X136-HC	C136-HC	E136-HC
4'-2"							
4'-0 1/2"	S14-HC	N14-HC	W14-HC	L14-HC	X14-HC***	C14-HC***	E14-HC***
4'-8"							
4'-6 1/2"	S146-HC	N146-HC	W146-HC	L146-HC	X146-HC***	C146-HC***	E146-HC***
5'-2"							
5'-0 1/2"	S15-HC	N15-HC	W15-HC	L15-HC	X15-HC***	C15-HC***	E15-HC***
5'-8"							
5'-6 1/2"	S156-HC	N156-HC	W156-HC	L156-HC	X156-HC***	C156-HC***	E156-HC***
6'-2"							
6'-0 1/2"	S16-HC	N16-HC	W16-HC	L16-HC	X16-HC***	C16-HC***	E16-HC***

NOTE: All measurements are nominal. Elevation charts are not to scale.

Units are stationary as standard, however, some may be ordered as venting units. Contact your local dealer for details.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Approximate glass sizes are given; true glass sizes vary depending on the radius involved.

** Glass size for push-out casements.

*** Units meet most national emergency escape and rescue requirements when ordered as venting units.

† Push-out units are only available with single-point hardware.

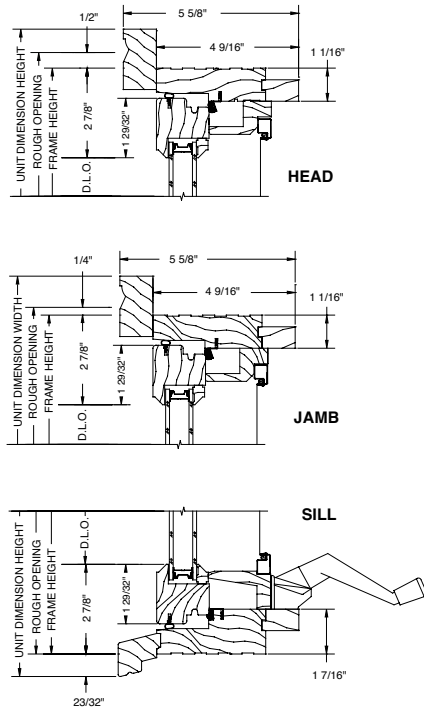
PRODUCT CODES:

To order, add "KW" before the product number (Ex: L15-HC). For push-out casements, have dealer specify push-out when placing order for unit.

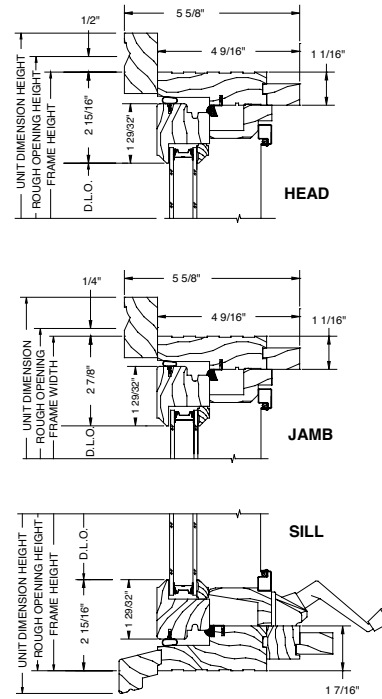
U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

Casements | Cross Section Drawings

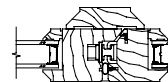
Crank-Out Casement



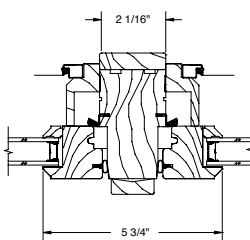
French Casement



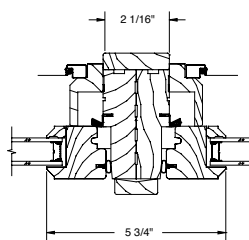
Wood Meeting Stiles



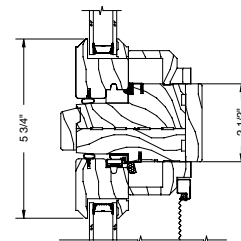
Crank-Out Casement Standard Mullion



Crank-Out Casement Narrow Mullion

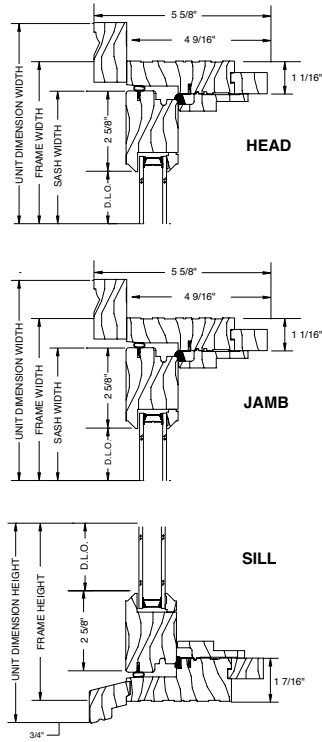


Rectangular Transoms Stacked over Crank-Out Casement



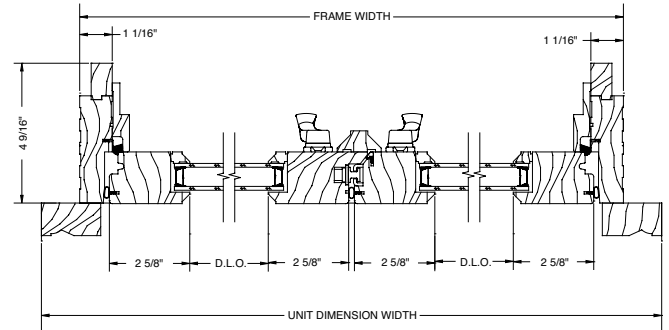
NOTE: Drawings are not to scale. Segment head and half-circle top casement drawings are similar to standard casement drawings shown. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

Push-Out Casement

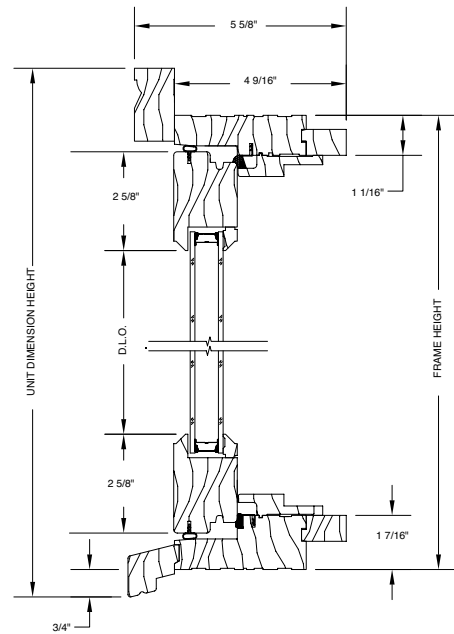


French Push-Out Casement

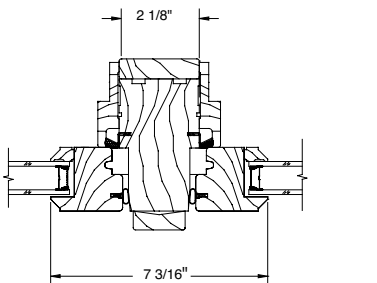
Horizontal Section



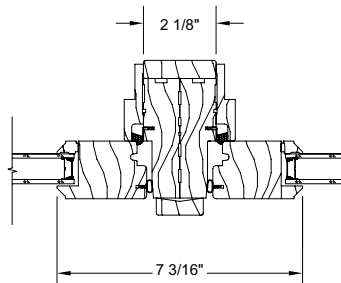
Vertical Section



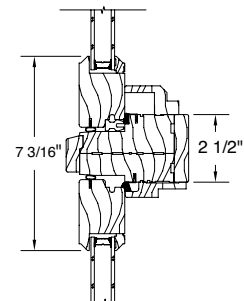
Push-Out Casement Standard Mullion



Push-Out Casement Narrow Mullion



Rectangular Transom Stacked over Push-Out Casement

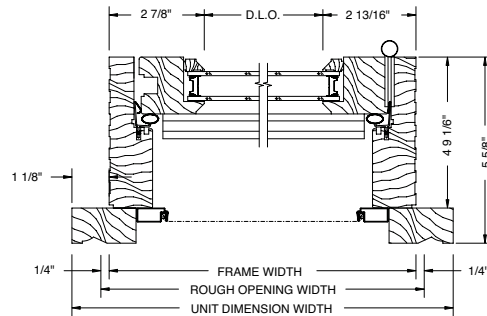


NOTE: Drawings are not to scale. Segment head and half-circle top casement drawings are similar to standard casement drawings shown. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

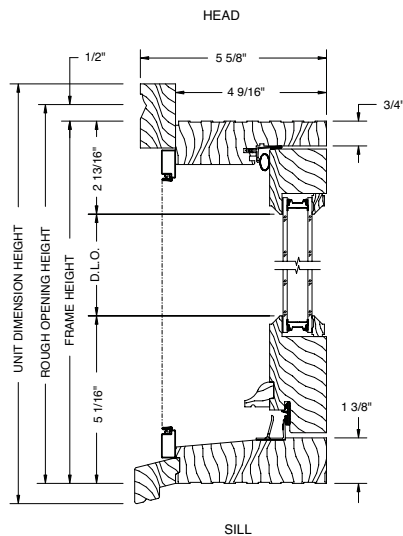
Casements | Cross Section Drawings

Inswing Casement

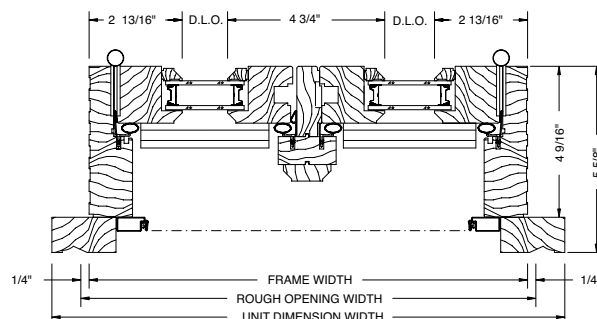
Horizontal Section



Vertical Section



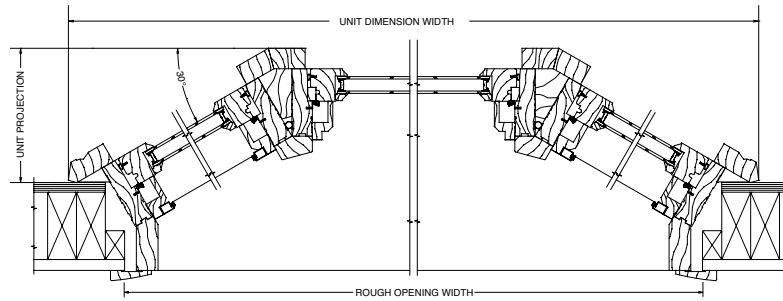
Two-Wide French Horizontal Section



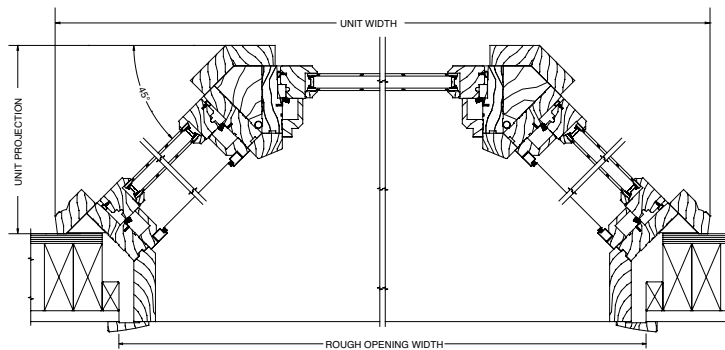
NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

Casement Bay Window

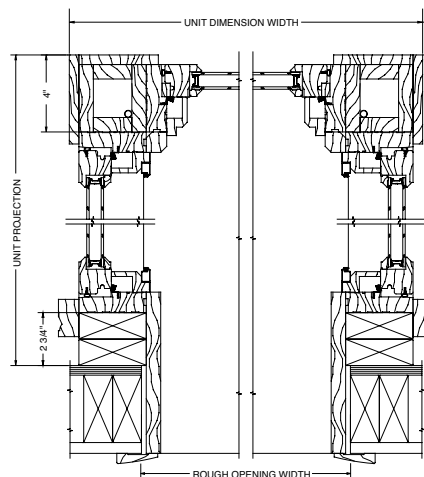
30° Horizontal Section



45° Horizontal Section



90° Horizontal Section

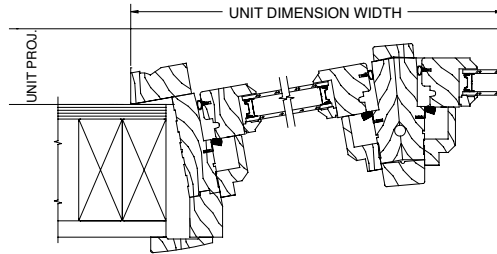


NOTE: Drawings are not to scale. Casement bay vertical drawings are similar to casement bow vertical drawings. See the following page for casement bow window drawings. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

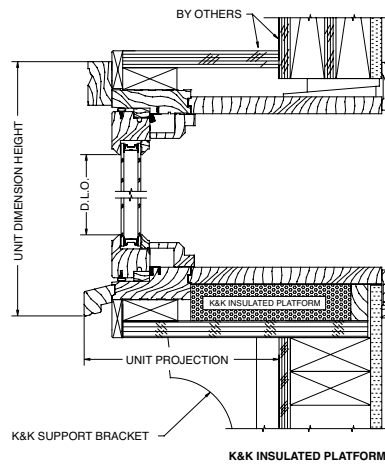
Casements | Cross Section Drawings

Casement Bow Window

Horizontal Section



Vertical Section



NOTE: Drawings are not to scale. Casement bay vertical drawings are similar to casement bow vertical drawings. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.







Awnings

Operating outward from the bottom, Heritage Series awning windows offer ventilation while keeping the exterior elements at bay. Their versatility can also create architectural interest in small space. Combined with awning picture windows, awnings can help to create a room with plenty of natural light and a terrific view.

*Awnings | Push-out Awnings | Picture Units | Picture Combination Units
Mulled Configurations*



Crank-Out Awnings



Crank-out awnings open out from the bottom with a crank handle that folds down when not in use. Choose motorized operators for an effortless way to open and close your window, especially if it's in a hard-to-reach place.

Crank-Out Awning Standard Features

- ▶ 1-3/4" thick sash
- ▶ Overall jamb width is 4-9/16" (*basic box width is 3-1/2"*)
- ▶ Constructed of pine, with pine interior stops and wood mull casings on mullied units
- ▶ Energy efficient, insulating LoE²-270 glass
- ▶ Glazed to the interior with beveled wood glazing beads
- ▶ 1-15/16" exterior brickmould applied
- ▶ All exterior wood parts are preservative-treated
- ▶ Exterior frame and sash are latex primed
- ▶ Fully weatherstripped for a tight seal
- ▶ Interior screens with Clay-colored aluminum frames and BetterVue[®] fiberglass mesh
- ▶ Clay-colored folding handles, operator covers and multi-point locks
- ▶ Folding corrosion resistant operators with concealed, adjustable hinges

NOTE: All measurements are nominal.

1-15/16" brickmould applied as standard



Hardware

Clay-colored, folding handles are applied to crank-out awning units as standard. Other finishes available are White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, and Matte Black. Multi-point lock handles will match operator handle colors.



folding handle in Clay
(closed)

folding handle in Clay
(open)

Multi-Point Lock

Heritage Series crank-out awnings feature a multi-point locking system as standard, which quickly and securely locks units from one convenient location. A sleek, slim-line handle and escutcheon makes windows more attractive. Handles and escutcheons are Clay as standard. Other finishes available are White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, and Matte Black finishes.



NOTE: Not available on units with a box size smaller than 1' 4".



Crank-Out Awning Optional Features

Glass (pgs. 184-185):

- ▶ LoE-180
- ▶ LoE²-240
- ▶ LoE³-366
- ▶ ThermaPlus™ LoE
- ▶ Patterned, bronze- or gray-lite
- ▶ Tempered or laminated
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4", or 4-1/2" bars
- ▶ True divided lites with 5/8" LoE² insulating glass and 1-1/8" bars
- ▶ Grilles-in-the-airspace
- ▶ Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds

Exterior Finishes (pg. 189):

- ▶ K-Kron II exterior paint finish

Other Options: (custom options are also available)

- ▶ Other wood species and FSC-certified wood (pg. 188)
- ▶ Interior prefinishing (pg. 188)
- ▶ Interior casing (pg. 190)
- ▶ Prep for stool

- ▶ 3-1/2" flat or profiled brickmould, backband on 3-1/2" brickmould and other custom millwork (pg. 190)
- ▶ Projected sill nosing, extended sill horns or no nosing
- ▶ Ovolo and square profile glazing beads and interior divided lite bars (pg. 192)
- ▶ Operator covers, handles and multi-point locks in White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, and Matte Black finishes. Oil-Rubbed* finish is available upon request.
- ▶ Universal design awning handle and lock in White or Clay
- ▶ Motorized window system
- ▶ Screens with White, Beige, Brass, Dark Bronze Anodized, Clear Anodized, and Coal Black frames (Brass frames are not available on radius top units)
- ▶ Screens with aluminum or UltraVue® fiberglass mesh (not available with brass frames)
- ▶ Wood wrapped screens
- ▶ Retractable screen kit (pg. 191)
- ▶ Retractable screen covers available as beveled (standard) or square
- ▶ Extension jambs (up to 12" applied; over 12" shipped loose for field application)
- ▶ Galvanized steel installation clips
- ▶ High performance or K-Force® impact performance modifications

NOTE: All measurements are nominal.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.

Push-out Awnings



The exceedingly simple operation of push-out awning windows makes them ideal for adding ventilation to any room. The sash pushes out and pulls in tightly to the frame. Weather-stripping prevents air infiltration, making them another great energy-efficient option.

Push-Out Awning Standard Features

- ▶ 1-3/4" thick sash
- ▶ Overall jamb width is 4-9/16" (*basic box width is 3-1/2" on wood units, plus extensions*)
- ▶ Constructed of pine, with pine interior stops and wood mull casings on mull units
- ▶ Energy efficient, insulating LoE²-270 glass
- ▶ Glazed to the interior with beveled wood glazing beads
- ▶ 1-15/16" exterior brickmould applied
- ▶ All exterior wood parts are preservative-treated
- ▶ Exterior frame and sash are latex primed
- ▶ Fully weatherstripped for a tight seal
- ▶ Single-point lever handle in an Oil-Rubbed* finish
- ▶ Concealed hinges (*segment head and half-circle top units use Tri-Euro hinges for added support*)

NOTE: All measurements are nominal.

Hardware

Push-out awning handles are single-point in an Oil-Rubbed* finish as standard. Other finishes available include Natural Brass and Satin Nickel. Multi-point handles are also available in Natural Brass, Satin Nickel, or Oil-Rubbed.*

* The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.

	Oil-Rubbed*	Natural Brass	Satin Nickel		Oil-Rubbed*	Natural Brass	Satin Nickel
Single-point				Multi-point			



Push-Out Awning Optional Features

Glass (pgs. 184-185):

- ▶ LoE-180
- ▶ LoE² -240
- ▶ LoE³ -366
- ▶ ThermaPlus™ LoE
- ▶ Patterned, bronze- or gray-lite
- ▶ Tempered or laminated
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4", or 4-1/2" bars
- ▶ True divided lites with 5/8" LoE² insulating glass and 1-1/8" bars
- ▶ Grilles-in-the-airspace
- ▶ Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds

Exterior Finishes (pg. 189):

- ▶ K-Kron II exterior paint finish

Other Options: (custom options are also available)

- ▶ Other wood species and FSC-certified wood (pg. 188)
- ▶ Interior prefinishing (pg. 188)

NOTE: All measurements are nominal.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.

- ▶ Interior casing (pg. 190)
- ▶ Prep for stool
- ▶ 3-1/2" flat or profiled brickmould, backband on 3-1/2" brickmould and other custom millwork (pg. 190)
- ▶ Projected sill nosing, extended sill horns or no nosing
- ▶ Ovolo and square profile glazing beads and interior divided lite bars (pg. 192)
- ▶ Multi-point handles in Oil-Rubbed,* Natural Brass or Satin Nickel finishes
- ▶ Wood frame hinged/swinging screen or retractable screen with BetterVue® fiberglass mesh (segment head and half-circle top casements are only available with a hinged/swinging screen)
- ▶ Retractable screen covers available as beveled (standard) or square
- ▶ Screens with UltraVue® fiberglass mesh (hinged/swinging screen only)
- ▶ Extension jambs (up to 12" applied; over 12" shipped loose for field application)
- ▶ Galvanized steel installation clips
- ▶ High performance or K-Force® impact performance modifications

Awnings | Elevation Charts

Awnings | Single Units

U.D.	2'-2 1/2"	2'-8 1/2"	2'-10 1/2"	3'-2 1/2"	3'-8 1/2"	4'-2 1/2"
R.O.	2'-0 1/2"	2'-6 1/2"	2'-8 1/2"	3'-0 1/2"	3'-6 1/2"	4'-0 1/2"
G.S.	19 1/4"	25 1/4"	27 1/4"	31 1/4"	37 1/4"	43 1/4"
G.S.	17 13/16"	23 13/16"	25 13/16"	29 13/16"	35 13/16"	41 13/16"
1'-10"						
1'-8 1/2"	2018	2618	2818	3018	3618	4018
2'-2"						
2'-0 1/2"	2020	2620	2820	3020	3620	4020
2'-8"						
2'-6 1/2"	2026	2626	2826	3026	3626	4026
3'-2"						
3'-0 1/2"	2030	2630	2830	3030	3630	4030

Awnings | Single Picture Units

U.D.	2'-2 1/2"	2'-8 1/2"	2'-10 1/2"	3'-2 1/2"	3'-8 1/2"	4'-2 1/2"
R.O.	2'-0 1/2"	2'-6 1/2"	2'-8 1/2"	3'-0 1/2"	3'-6 1/2"	4'-0 1/2"
G.S.	19 1/4"	25 1/4"	27 1/4"	31 1/4"	37 1/4"	43 1/4"
G.S.	17 13/16"	23 13/16"	25 13/16"	29 13/16"	35 13/16"	41 13/16"
4'-2"						
4'-0 1/2"	2040	2640	2840	3040	3640	4040
5'-2"						
5'-0 1/2"	2050	2650	2850	3050	3650	4050
6'-2"						
6'-0 1/2"	2060	2660	2860	3060	3660	4060

Dimension Calculations

Elevation charts provide wood unit dimensions for units with the standard 1 15/16" brickmould. Below are the calculations to determine the frame size of units with brickmould.

	Width	Height
1-15/16" brickmould; U.D. to F.S.	-2 1/2"	-2"
3-1/2" flat or profiled casing; U.D. to F.S.	-5 5/8"	-3 9/16"
3-1/2" casing and backband; U.D. to F.S.	-7 1/8"	-4 5/16"

F.S. to Sash O.S.M.	-1 15/16"	-1 15/16"
Sash O.S.M. to G.S.	-2 13/16"	-2 13/16"
G.S. to D.L.O.	-1"	-1"
G.S. to Screen O.S.M.	+1 9/16"	+1/2"
U.D. to G.S. (for push-outs)	-8 11/16"	-8 3/16"

F.S. = Frame Size • G.S. = Glass Size • O.S.M. = Outside Measurement
D.L.O. = Daylight Opening • U.D. = Unit Dimension

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Glass size for push-out awnings

PRODUCT CODES:

To order single units, add "KW" before the product number and number "1" after (Ex: KW40301). For push-out awnings, have dealer specify push-out when placing order for unit.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

Awning Units & Mull Configurations

2' 0" widths

U.D.	2'-2 1/2"	4'-2 1/2"	6'-2 1/2"
R.O.	2'-0 1/2"	4'-0 1/2"	6'-0 1/2"
G.S.	19 1/4"	19 1/4"	19 1/4"
G.S.*	17 13/16"	17 13/16"	17 13/16"
1'-6"			
2'-10"	20141	20142	20143
4'-2"	201412	201422	201432
4'-0 1/2"	201413	201423	201433
1'-8"			
3'-2"	20161	20162	20163
4'-6 1/2"	201612	201622	201632
4'-0 1/2"	201613	201623	201633
1'-10"			
3'-6"	20181	20182	20183
5'-2"	201812	201822	201832
5'-0 1/2"	201813	201823	201833
2'-2"			
4'-2"	20201	20202	20203
6'-2"	202012	202022	202032
6'-0 1/2"	202013	202023	202033
2'-8"			
5'-0 1/2"	20261	20262	20263
5'-2"	202612	202622	202632
3'-2"			
6'-2"	20301	20302	20303
6'-0 1/2"	203012	203022	203032
4'-2"			
8'-2"	20401	20402	20403
8'-0 1/2"	204012	204022	204032

Awning Picture Units

2' 0" widths

U.D.	2'-2 1/2"	4'-2 1/2"	6'-2 1/2"
R.O.	2'-0 1/2"	4'-0 1/2"	6'-0 1/2"
G.S.	19 1/4"	19 1/4"	19 1/4"
G.S.*	17 13/16"	17 13/16"	17 13/16"
4'-2"	20401	20402	20403
5'-2"	20501	20502	20503
6'-2"	20601	20602	20603

Awning Unit Combinations

2' 0" widths

U.D.	2'-2 1/2"	4'-2 1/2"	6'-2 1/2"
R.O.	2'-0 1/2"	4'-0 1/2"	6'-0 1/2"
G.S.	19 1/4"	19 1/4"	19 1/4"
G.S.*	17 13/16"	17 13/16"	17 13/16"
4'-10"	2030181	2030182	2030183
5'-2"	2030201	2030202	2030202
5'-10"	2040181	2040182	2040183
6'-2"	2040201	2040202	2040203
6'-10"	2050181	2050182	2050183

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Glass size for push-out awnings

PRODUCT CODES:

To order single units, add "KW" before the product number and number "1" after (Ex: KW40301). For push-out awnings, have dealer specify push-out when placing order for unit.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

Awnings | Elevation Charts

Awning Units & Mull Configurations

2' 6" widths

U.D.	2'-8 1/2"	5'-2 1/2"	7'-8 1/2"
R.O.	2'-6 1/2"	5'-0 1/2"	7'-6 1/2"
G.S.	25 1/4"	25 1/4"	25 1/4"
G.S.	23 13/16"	23 13/16"	23 13/16"
1'-6"	26141	26142	26143
2'-10"	261412	261422	261432
4'-2"	261413	261423	261433
4'-0 1/2"	26161	26162	26163
3'-0 1/2"	261612	261622	261632
4'-6 1/2"	261613	261623	261633
13 1/4"	26181	26182	26183
11 13/16"	261812	261822	261832
13 13/16"	261813	261823	261833
5'-2"	26201	26202	26203
5'-0 1/2"	262012	262022	262032
6'-2"	262013	262023	262033
6'-0 1/2"	26261	26262	26263
5'-0 1/2"	262612	262622	262632
3'-2"	26301	26302	26303
3'-0 1/2"	263012	263022	263032
4'-2"	26401	26402	26403
4'-0 1/2"	264012	264022	264032

Awning Picture Units

2' 6" widths

U.D.	2'-8 1/2"	5'-2 1/2"	7'-8 1/2"
R.O.	2'-6 1/2"	5'-0 1/2"	7'-6 1/2"
G.S.	25 1/4"	25 1/4"	25 1/4"
G.S.	23 13/16"	23 13/16"	23 13/16"
4'-2"	26401	26402	26403
4'-0 1/2"	26501	26502	26503
5'-2"	26601	26602	26603
6'-2"			

Awning Unit Combinations

2' 6" widths

U.D.	2'-8 1/2"	5'-2 1/2"	7'-8 1/2"
R.O.	2'-6 1/2"	5'-0 1/2"	7'-6 1/2"
G.S.	25 1/4"	25 1/4"	25 1/4"
G.S.	23 13/16"	23 13/16"	23 13/16"
4'-10"	2630181	2630182	2630183
4'-8 1/2"	2630201	2630202	2630203
5'-2"	2640181	2640182	2640183
5'-0 1/2"	2640201	2640202	2640203
5'-8 1/2"	2650181	2650182	2650183
6'-2"			

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. The divided lite configuration shown for single units are typical for each sash of mullied units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Glass size for push-out awnings























































PRODUCT CODES:

To order, add "KW" before the product number (Ex: KW263032). For push-out awnings, have dealer specify push-out when placing order for unit.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)










Awning Units & Mull Configurations

2' 8" widths

U.D.	2'-10 1/2"	5'-6 1/2"	8'-2 1/2"
R.O.	2'-8 1/2"	5'-4 1/2"	8'-0 1/2"
G.S.	27 1/4"	27 1/4"	27 1/4"
G.S.*	25 13/16"	25 13/16"	25 13/16"
1'-6"			
2'-10"			
4'-2"			
1'-8"			
3'-2"			
4'-8"			
1'-10"			
3'-6"			
5'-2"			
5'-0 1/2"			
6'-2"			
6'-0 1/2"			
5'-2"			
5'-0 1/2"			
6'-2"			
6'-0 1/2"			
8'-2"			
8'-0 1/2"			
















Awning Picture Units

2' 8" widths

U.D.	2'-10 1/2"	5'-6 1/2"	8'-2 1/2"
R.O.	2'-8 1/2"	5'-4 1/2"	8'-0 1/2"
G.S.	27 1/4"	27 1/4"	27 1/4"
G.S.*	25 13/16"	25 13/16"	25 13/16"
4'-2"			
5'-2"			
6'-2"			

Awning Unit Combinations

2' 8" widths

U.D.	2'-10 1/2"	5'-6 1/2"	8'-2 1/2"
R.O.	2'-8 1/2"	5'-4 1/2"	8'-0 1/2"
G.S.	27 1/4"	27 1/4"	27 1/4"
G.S.*	25 13/16"	25 13/16"	25 13/16"
4'-10"			
5'-2"			
5'-8"			
6'-2"			
6'-10"			

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. The divided lite configuration shown for single units are typical for each sash of mullied units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Glass size for push-out awnings

PRODUCT CODES:

To order, add "KW" before the product number (Ex: KW263032). For push-out awnings, have dealer specify push-out when placing order for unit.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Awning Units & Mull Configurations

3' 0" widths

U.D.	3'-2 1/2"	6'-2 1/2"	9'-2 1/2"
R.O.	3'-0 1/2"	6'-0 1/2"	9'-0 1/2"
G.S.	31 1/4"	31 1/4"	31 1/4"
G.S.*	29 13/16"	29 13/16"	29 13/16"
4'-2" 1'-6"			
4'-0 1/2" 2'-8 1/2"			
11 1/4" 11 1/4"			
9 13/16" 9 13/16"			
4'-2" 2'-10"			
4'-0 1/2" 2'-8 1/2"			
11 1/4" 11 1/4"			
9 13/16" 9 13/16"			
4'-2" 1'-8"			
3'-2" 3'-0 1/2"			
4'-6 1/2" 3'-4 1/2"			
4'-6 1/2" 3'-4 1/2"			
13 1/4" 13 1/4"			
11 13/16" 11 13/16"			
11 13/16" 11 13/16"			
5'-2" 3'-6"			
5'-0 1/2" 3'-4 1/2"			
15 1/4" 15 1/4"			
13 13/16" 13 13/16"			
5'-2" 2'-2"			
5'-0 1/2" 2'-0 1/2"			
19 1/4" 19 1/4"			
17 13/16" 17 13/16"			
6'-2" 4'-2"			
6'-0 1/2" 2'-6 1/2"			
25 1/4" 25 1/4"			
23 13/16" 23 13/16"			
6'-2" 3'-2"			
6'-0 1/2" 3'-0 1/2"			
31 1/4" 31 1/4"			
29 13/16" 29 13/16"			
8'-2" 4'-2"			
8'-0 1/2" 4'-0 1/2"			
43 1/4" 43 1/4"			
41 13/16" 41 13/16"			

Awning Picture Units

3' 0" widths

R.O.	3'-0 1/2"	6'-0 1/2"	9'-0 1/2"
G.S.	31 1/4"	31 1/4"	31 1/4"
G.S.*	29 13/16"	29 13/16"	29 13/16"
4'-2" 4'-0 1/2"			
4'-0 1/2" 4'-0 1/2"			
5'-2" 5'-0 1/2"			
5'-0 1/2" 5'-0 1/2"			
6'-2" 6'-0 1/2"			
6'-0 1/2" 6'-0 1/2"			

Awning Unit Combinations

3' 0" widths

U.D.	3'-2 1/2"	6'-2 1/2"	9'-2 1/2"
R.O.	3'-0 1/2"	6'-0 1/2"	9'-0 1/2"
G.S.	31 1/4"	31 1/4"	31 1/4"
G.S.*	29 13/16"	29 13/16"	29 13/16"
4'-10" 4'-8 1/2"			
4'-8 1/2" 4'-8 1/2"			
5'-2" 5'-0 1/2"			
5'-0 1/2" 5'-0 1/2"			
5'-10" 5'-8 1/2"			
5'-8 1/2" 5'-8 1/2"			
6'-2" 6'-0 1/2"			
6'-0 1/2" 6'-0 1/2"			
6'-10" 6'-8 1/2"			
6'-8 1/2" 6'-8 1/2"			

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. The divided lite configuration shown for single units are typical for each sash of mull units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Glass size for push-out awnings

PRODUCT CODES:

To order, add "KW" before the product number (Ex: KW303032). For push-out awnings, have dealer specify push-out when placing order for unit.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Awning Units & Mull Configurations

3' 6" widths

U.D.	3'-8 1/2"	7'-2 1/2"	10'-8 1/2"
R.O.	3'-6 1/2"	7'-0 1/2"	10'-6 1/2"
G.S.	37 1/4"	37 1/4"	37 1/4"
G.S.*	35 13/16"	35 13/16"	35 13/16"
1'-6"	36141	36142	36143
1'-4 1/2"	361412	361422	361432
1'-4 1/4"	361413	361423	361433
2'-10"	36161	36162	36163
2'-8 1/2"	361612	361622	361632
2'-8 1/4"	361613	361623	361633
3'-2"	36181	36182	36183
3'-0 1/2"	361812	361822	361832
3'-0 1/4"	361813	361823	361833
4'-8"	36201	36202	36203
4'-6 1/2"	362012	362022	362032
4'-6 1/4"	362013	362023	362033
6'-2"	36261	36262	36263
6'-0 1/2"	362612	362622	362632
6'-0 1/4"	36301	36302	36303
6'-0 1/2"	363012	363022	363032
8'-2"	36401	36402	36403
8'-0 1/2"	364012	364022	364032
8'-0 1/4"	364013	364023	364033

Awning Picture Units

3' 6" widths

U.D.	3'-8 1/2"	7'-2 1/2"	10'-8 1/2"
R.O.	3'-6 1/2"	7'-0 1/2"	10'-6 1/2"
G.S.	37 1/4"	37 1/4"	37 1/4"
G.S.*	35 13/16"	35 13/16"	35 13/16"
4'-2"	36401	36402	36403
4'-0 1/2"	364012	364022	364032
4'-0 1/4"	364013	364023	364033
5'-2"	36501	36502	36503
5'-0 1/2"	365012	365022	365032
5'-0 1/4"	365013	365023	365033
6'-2"	36601	36602	36603
6'-0 1/2"	366012	366022	366032
6'-0 1/4"	366013	366023	366033

Awning Unit Combinations

3' 6" widths

U.D.	3'-8 1/2"	7'-2 1/2"	10'-8 1/2"
R.O.	3'-6 1/2"	7'-0 1/2"	10'-6 1/2"
G.S.	37 1/4"	37 1/4"	37 1/4"
G.S.*	35 13/16"	35 13/16"	35 13/16"
4'-10"	3630181	3630182	3630183
4'-8 1/2"	3630201	3630202	3630203
4'-8 1/4"	3640181	3640182	3640183
5'-2"	3640201	3640202	3640203
5'-0 1/2"	3650181	3650182	3650183
5'-0 1/4"	3650201	3650202	3650203
6'-2"	3660181	3660182	3660183
6'-0 1/2"	3660201	3660202	3660203
6'-0 1/4"	3660181	3660182	3660183
6'-10"	3660201	3660202	3660203

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. The divided lite configuration shown for single units are typical for each sash of mullied units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Glass size for push-out awnings

PRODUCT CODES:

To order, add "KW" before the product number (Ex: KW363032). For push-out awnings, have dealer specify push-out when placing order for unit.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Awnings | Elevation Charts

Awning Units & Mull Configurations

4' 0" widths

U.D.	4'-2 1/2"	8'-2 1/2"	12'-2 1/2"
R.O.	4'-0 1/2"	8'-0 1/2"	12'-0 1/2"
G.S.	43 1/4"	43 1/4"	43 1/4"
G.S.*	41 13/16"	41 13/16"	41 13/16"
Basic Unit 4014	40141 1'-6" 1'-4 1/2" 1'-1 1/4"	40142 1'-6" 1'-4 1/2" 1'-1 1/4"	40143 1'-6" 1'-4 1/2" 1'-1 1/4"
Basic Unit 4016	401412 4'-2" 4'-0 1/2" 11 1/4"	401422 4'-2" 4'-0 1/2" 11 1/4"	401432 4'-2" 4'-0 1/2" 11 1/4"
Basic Unit 4018	401413 4'-2" 4'-0 1/2" 11 1/4"	401423 4'-2" 4'-0 1/2" 11 1/4"	401433 4'-2" 4'-0 1/2" 11 1/4"
Basic Unit 4020	40161 4'-8" 4'-6 1/2" 13 1/4"	40162 4'-8" 4'-6 1/2" 13 1/4"	40163 4'-8" 4'-6 1/2" 13 1/4"
Basic Unit 4022	401612 4'-8" 4'-6 1/2" 13 1/4"	401622 4'-8" 4'-6 1/2" 13 1/4"	401632 4'-8" 4'-6 1/2" 13 1/4"
Basic Unit 4024	401613 4'-8" 4'-6 1/2" 13 1/4"	401623 4'-8" 4'-6 1/2" 13 1/4"	401633 4'-8" 4'-6 1/2" 13 1/4"
Basic Unit 4026	40181 5'-2" 5'-0 1/2" 15 1/4"	40182 5'-2" 5'-0 1/2" 15 1/4"	40183 5'-2" 5'-0 1/2" 15 1/4"
Basic Unit 4028	401812 5'-2" 5'-0 1/2" 15 1/4"	401822 5'-2" 5'-0 1/2" 15 1/4"	401832 5'-2" 5'-0 1/2" 15 1/4"
Basic Unit 4030	401813 5'-2" 5'-0 1/2" 15 1/4"	401823 5'-2" 5'-0 1/2" 15 1/4"	401833 5'-2" 5'-0 1/2" 15 1/4"
Basic Unit 4032	40201 6'-2" 6'-0 1/2" 19 1/4"	40202 6'-2" 6'-0 1/2" 19 1/4"	40203 6'-2" 6'-0 1/2" 19 1/4"
Basic Unit 4034	402012 6'-2" 6'-0 1/2" 19 1/4"	402022 6'-2" 6'-0 1/2" 19 1/4"	402032 6'-2" 6'-0 1/2" 19 1/4"
Basic Unit 4036	402013 6'-2" 6'-0 1/2" 19 1/4"	402023 6'-2" 6'-0 1/2" 19 1/4"	402033 6'-2" 6'-0 1/2" 19 1/4"
Basic Unit 4038	40261 5'-2" 5'-0 1/2" 25 1/4"	40262 5'-2" 5'-0 1/2" 25 1/4"	40263 5'-2" 5'-0 1/2" 25 1/4"
Basic Unit 4040	402612 5'-2" 5'-0 1/2" 25 1/4"	402622 5'-2" 5'-0 1/2" 25 1/4"	402632 5'-2" 5'-0 1/2" 25 1/4"
Basic Unit 4042	40301 6'-2" 6'-0 1/2" 31 1/4"	40302 6'-2" 6'-0 1/2" 31 1/4"	40303 6'-2" 6'-0 1/2" 31 1/4"
Basic Unit 4044	403012 6'-2" 6'-0 1/2" 31 1/4"	403022 6'-2" 6'-0 1/2" 31 1/4"	403032 6'-2" 6'-0 1/2" 31 1/4"
Basic Unit 4046	40401 4'-2" 4'-0 1/2" 41 13/16"	40402 4'-2" 4'-0 1/2" 41 13/16"	40403 4'-2" 4'-0 1/2" 41 13/16"
Basic Unit 4048	404012 4'-2" 4'-0 1/2" 41 13/16"	404022 4'-2" 4'-0 1/2" 41 13/16"	404032 4'-2" 4'-0 1/2" 41 13/16"

Awning Picture Units

4' 0" widths

U.D.	4'-2 1/2"	8'-2 1/2"	12'-2 1/2"
R.O.	4'-0 1/2"	8'-0 1/2"	12'-0 1/2"
G.S.	43 1/4"	43 1/4"	43 1/4"
G.S.*	41 13/16"	41 13/16"	41 13/16"
Basic Unit 4040	40401 4'-2" 4'-0 1/2" 41 13/16"	40402 4'-2" 4'-0 1/2" 41 13/16"	40403 4'-2" 4'-0 1/2" 41 13/16"
Basic Unit 4050	40501 5'-2" 5'-0 1/2" 53 13/16"	40502 5'-2" 5'-0 1/2" 53 13/16"	40503 5'-2" 5'-0 1/2" 53 13/16"
Basic Unit 4060	40601 6'-2" 6'-0 1/2" 65 13/16"	40602 6'-2" 6'-0 1/2" 65 13/16"	40603 6'-2" 6'-0 1/2" 65 13/16"

Awning Unit Combinations

4' 0" widths

U.D.	4'-2 1/2"	8'-2 1/2"	12'-2 1/2"
R.O.	4'-0 1/2"	8'-0 1/2"	12'-0 1/2"
G.S.	43 1/4"	43 1/4"	43 1/4"
G.S.*	41 13/16"	41 13/16"	41 13/16"
Basic Unit 4030 over 4018	4030181 4'-10" 4'-8 1/2" 15 1/4"	4030182 4'-10" 4'-8 1/2" 15 1/4"	4030183 4'-10" 4'-8 1/2" 15 1/4"
Basic Unit 4030 over 4020	4030201 5'-2" 5'-0 1/2" 19 1/4"	4030202 5'-2" 5'-0 1/2" 19 1/4"	4030203 5'-2" 5'-0 1/2" 19 1/4"
Basic Unit 4040 over 4018	4040181 5'-10" 5'-8 1/2" 15 1/4"	4040182 5'-10" 5'-8 1/2" 15 1/4"	4040183 5'-10" 5'-8 1/2" 15 1/4"
Basic Unit 4040 over 4020	4040201 6'-2" 6'-0 1/2" 19 1/4"	4040202 6'-2" 6'-0 1/2" 19 1/4"	4040203 6'-2" 6'-0 1/2" 19 1/4"
Basic Unit 4050 over 4018	4050181 6'-10" 6'-8 1/2" 15 1/4"	4050182 6'-10" 6'-8 1/2" 15 1/4"	4050183 6'-10" 6'-8 1/2" 15 1/4"

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. The divided lite configuration shown for single units are typical for each sash of mullied units.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Glass size for push-out awnings

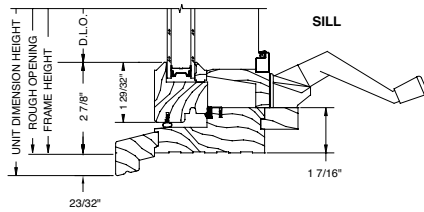
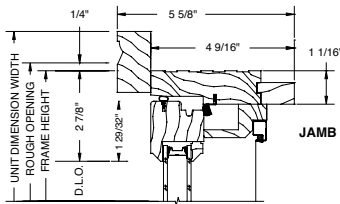
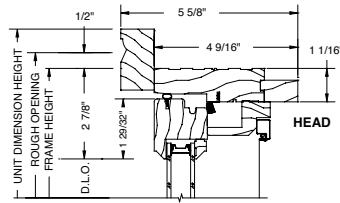
PRODUCT CODES:

To order, add "KW" before the product number (Ex: KW403032). For push-out awnings, have dealer specify push-out when placing order for unit.

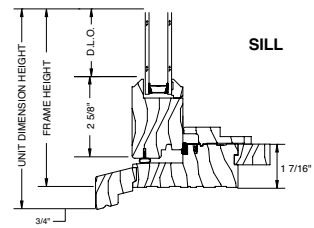
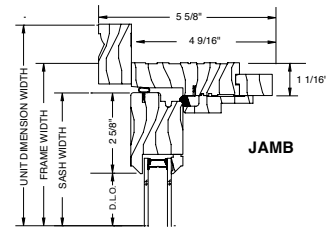
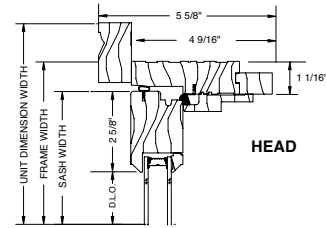
U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per sash)

Awnings | Cross Section Drawings

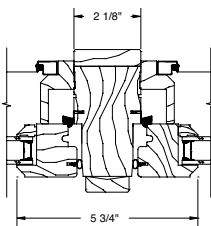
Crank-Out Awning



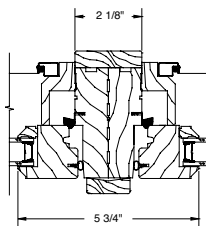
Push-out Awning



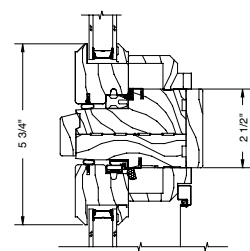
Crank-Out Awning Standard Mullion



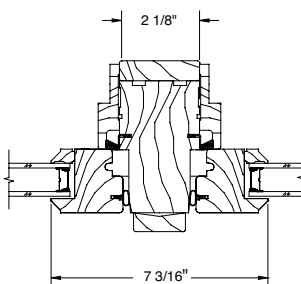
Crank-Out Awning Narrow Mullion



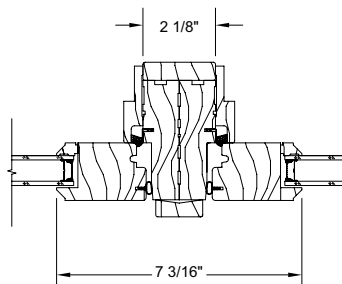
Picture Unit Stacked Over Crank-Out Awning



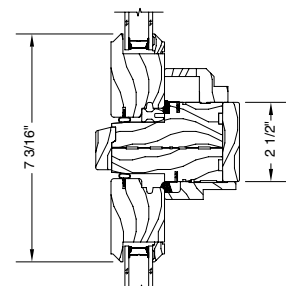
Push-out Awning Standard Mullion



Push-out Awning Narrow Mullion



Picture Unit Stacked Over Push-out Awning



NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.





Double Hungs

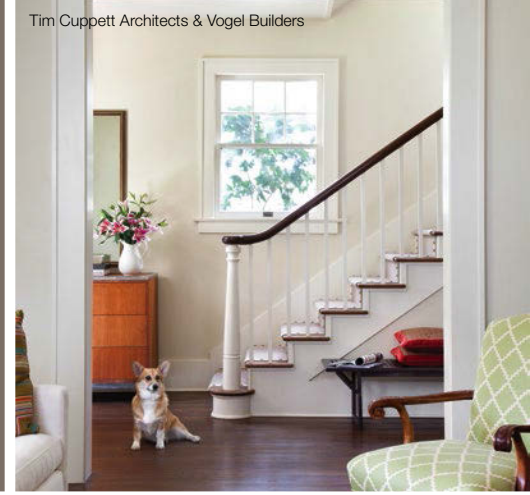
Smooth operation, venting options, removable sash for easy cleaning, and classic styling are only the most obvious features of Heritage Series double hung windows. Kolbe offers a variety of double hung models to suit your project, whether it be residential, commercial, large scale, historic preservation or remodeling. There are many options and configurations to choose from as well, including bow and bay units, cottage-style units or triple pane glass options for increased energy efficiency.

*Sterling Double Hungs | Majesta® Double Hungs | Traditional Double Hungs
Magnum Double Hungs | Old World Classic Double Hungs
Cottage-Style & Reverse-Cottage Style | Studio & Transom Units
Picture Combination Units | Bay Units | Segment Head & Half-Circle Top Units
Single Hungs | Replacement Sash Kits*



Sterling Double Hungs

Patents 7,296,381 | 7,448,164 | 8,196,355 | 8,429,856



Sterling double hungs are made to blend seamlessly with the grandest décor. A patented interior wood cover conceals the jambliner, while giving the windows a rich, full-wood appearance. The lock system boosts performance to a level not often reached by double hung windows.

Sterling Double Hung Standard Features

- ▶ 1-3/4" thick sash
- ▶ Overall jamb width is 4-9/16" (*basic box width is 4-9/16"*)
- ▶ Frame thickness is 3/4" at side jambs and head
- ▶ Sill thickness is 1-3/16", slope is 14°
- ▶ Constructed of pine, with pine interior stops and wood mull casings on muller units
- ▶ Energy efficient, insulating LoE²-270 glass
- ▶ Glazed to the interior with beveled wood glazing beads
- ▶ 1-15/16" exterior brickmould applied
- ▶ All exterior wood parts are preservative-treated
- ▶ Exterior frame and sash are latex primed
- ▶ Wood interior head parting stop
- ▶ Fully weatherstripped for a tight seal
- ▶ Clay-colored heavy duty sash lock with a dual positioning lever allows sash to be unlocked, operated and tilted in from one location
- ▶ Spring-loaded block-and-tackle mechanical balances to carry the sash weight
- ▶ Concealed PVC jambliners
- ▶ Patented wood-wrapped jambliner closure on the interior (*unless interior is prefinished white or primed, then jambliner will be white*) and a primed, extruded aluminum jambliner closure on the exterior hides PVC jambliners
- ▶ Pine-veneered head and seat boards; unique narrow mullions on bay units



A wood wrapped jambliner closure on the interior (shown) and a primed, extruded aluminum jambliner closure on the exterior hide the PVC jambliners.



Heavy duty sash lock with dual positioning lever allows sash to be unlocked, operated, and tilted in from one location.

NOTE: All measurements are nominal.

Hardware

Sterling double hungs feature a pick resistant cam lock with a concealed locking mechanism and tilt latches installed into an interlock channel. Optional sash lift handles are available for easy operation. All double hung hardware is available in Clay (*standard*), White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, and Matte Black finishes.



Sash lock in Clay
(*standard*)



Square style sash lift
handle in Satin Nickel



Traditional style sash lift
handle in Matte Black



Photo courtesy of Kenneth M. Wyner Photography

Sterling Double Hung Optional Features

Glass (pgs. 184-185):

- ▶ LoE-180
- ▶ LoE²-240
- ▶ LoE³-366
- ▶ ThermaPlus™ LoE
- ▶ Patterned, bronze- or gray-lite
- ▶ Tempered or laminated
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4", or 4-1/2" bars
- ▶ True divided lites with 5/8" LoE² insulating glass and 1-1/8" bars
- ▶ Grilles-in-the-air-space
- ▶ Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds

Exterior Finishes (pg. 189):

- ▶ K-Kron II exterior paint finish

Other Options: (custom options are also available)

- ▶ Other wood species and FSC-certified wood (pg. 188)
- ▶ Interior prefinishing (pg. 188)
- ▶ Interior casing (pg. 190)
- ▶ Prep for stool
- ▶ 3-1/2" flat or profiled brickmould, backband on 3-1/2" brickmould and other custom millwork (pg. 190)
- ▶ Projected sill nosing, extended sill horns or no nosing

NOTE: All measurements are nominal.

- ▶ Ovolo and square profile glazing beads and interior divided lite bars (pg. 192)
- ▶ Class 5 balances available for larger units
- ▶ Sash locks in White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, and Matte Black finishes
- ▶ Sash lift handles in Clay, White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, and Matte Black finishes
- ▶ Custodial locks
- ▶ Universal design crank handle hardware kit in White
- ▶ Full or half screens with aluminum frames and options for BetterVue® or UltraVue® fiberglass screen mesh or aluminum screen mesh in either aluminum or charcoal colors; frames will match the exterior color of the unit
- ▶ Retractable screen kit (pg. 191)
- ▶ Retractable screen covers available as beveled (standard) or square
- ▶ StormGuard combination storm/screen units (pg. 191)
- ▶ Extension jambs (up to 12" applied; over 12" shipped loose for field application)
- ▶ Sash limiters for safety
- ▶ Galvanized steel installation clips
- ▶ Insulated platforms, support brackets and oak-veneered head and seat boards for bay units
- ▶ High performance and K-Force® impact performance modifications

Majesta® Double Hungs



Majesta double hungs are made-to-order in sizes as large as 6 feet wide by 12 feet tall to allow even larger openings in the most expansive of spaces. The balances are specially made to match the size of the window and the hardware is positioned in an easily accessible place, so this extra large window is very easy to operate.

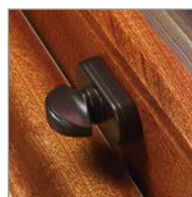
Majesta® Double Hung Standard Features

- ▶ 2-1/4" thick sash
- ▶ Overall jamb width is 6-9/16" (*basic box width is 6-9/16"*)
- ▶ Frame thickness is 3/4" at side jambs and head
- ▶ Sill thickness is 1-3/16", slope is 14°
- ▶ Top rail is 3", stiles are 2-1/8", and bottom rail is 4-1/8"
- ▶ Constructed of pine with pine interior head parting stops and side stops
- ▶ Horizontal sash parts are constructed with engineered core for added strength
- ▶ Energy efficient, insulating LoE²-270 glass
- ▶ 1-15/16" exterior brickmould applied
- ▶ Exterior frame and sash are latex primed
- ▶ All exterior wood parts are preservative-treated
- ▶ Innovative, Bright Brass, heavy-duty sash locks; top lock eliminates sash drop and is located at the center of the top rail on the top sash; bottom lock is located at the center of the bottom rail on the bottom sash for operating convenience
- ▶ Class 5 balance system capable of carrying sash up to 200 lbs.
- ▶ Concealed jambliners and balance system using a wood-wrapped jambliner closure on the interior and an aluminum closure on the exterior
- ▶ Double row of heavy duty weatherstrip around all sides of the sash for a tight seal
- ▶ Innovative design secures the sash in place allowing this unit to meet ratings up to CW-PG65 for certain units.

NOTE: All measurements are nominal.

Hardware

The innovative design of the Majesta locking hardware provides both performance and security. The turn knob and locking pin on the bottom sash tightly secure the window, while the heavy duty locking hardware on the top rail of the top sash eliminates sash drop. Optional hardware includes a keyed custodial lock and sash lift handles. An optional hook and pole device to help unlock and lower the top sash is also available. All Majesta hardware is available in Brass (*standard*), Rustic Umber and Satin Nickel finishes.



Turn knob lock on the bottom rail of the bottom sash in the closed position



Turn knob and locking pin on the bottom of the bottom sash in the open position



Optional sash lift handle helps to raise the bottom sash



Heavy duty locking hardware on the top rail of the top sash



Concealed wood jambliners provide a clean look



Optional triple pane glazing for added energy efficiency



Majesta® Double Hung Optional Features

Glass (pgs. 184-185):

- ▶ LoE-180
- ▶ LoE²-240
- ▶ LoE³-366
- ▶ ThermaPlus™ LoE
- ▶ Triple pane
- ▶ Patterned, bronze- or gray-lite
- ▶ Tempered or laminated
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4", or 4-1/2" bars
- ▶ True divided lites with 7/8" LoE² insulating glass and 1-1/8" bars
- ▶ Grilles-in-the-airspace

Exterior Finishes (pg. 189):

- ▶ K-Kron II exterior paint finish

Other Options: (custom options are also available)

- ▶ Other wood species and FSC-certified wood (pg. 188)
- ▶ Interior prefinishing (pg. 188)

NOTE: All measurements are nominal.

- ▶ Interior casing (pg. 190)
- ▶ Prep for stool
- ▶ 3-1/2" flat or profiled brickmould, backband on 3-1/2" brickmould and other custom millwork (pg. 190)
- ▶ Projected sill nosing, extended sill horns or no nosing
- ▶ Ovolo and square profile glazing beads and interior divided lite bars (pg. 192)
- ▶ Standard locks in Rustic Umber and Satin Nickel finishes
- ▶ Keyed custodial locks
- ▶ Sash lift handles (two per sash) will match other hardware
- ▶ Hook pole device to help unlock and lower the top sash
- ▶ Half screens with BetterVue® fiberglass screen mesh and aluminum frames that match the exterior color of the unit
- ▶ Sash limiters for safety
- ▶ Extension jambs (up to 12" applied; over 12" shipped loose for field application)
- ▶ Galvanized steel installation clips

Traditional Double Hungs



Kolbe's traditional double hungs are a beautifully modern version of a classic style. The sloped sill creates a traditional appearance and helps guard against water damage. Kolbe's traditional double hungs open and close smoothly and effortlessly, and the sash can be tilted in or removed for easy cleaning.

Traditional Double Hung Standard Features

- ▶ 1-3/8" thick sash
- ▶ Overall jamb width is 4-9/16" (*basic box width is 4-9/16"*)
- ▶ Frame thickness is 3/4" at side jambs and head
- ▶ Sill thickness is 1-3/16", slope is 14°
- ▶ Constructed of pine, with pine interior stops and wood mull casings on mull units
- ▶ Energy efficient, insulating LoE²-270 glass
- ▶ Glazed to the interior with beveled wood glazing beads
- ▶ 1-15/16" exterior brickmould applied
- ▶ All exterior wood parts are preservative-treated
- ▶ Exterior frame and sash are latex primed
- ▶ Rigid PVC head parting stop with flexible fins and waterseal at the sill
- ▶ Fully weatherstripped for a tight seal
- ▶ Clay-colored heavy duty sash lock
- ▶ Machined finger grooves on the top rail of the upper sash and bottom rail of the lower sash
- ▶ Spring-loaded block-and-tackle mechanical balances to carry the sash weight
- ▶ Beige PVC jambliners with compression foam backing
- ▶ Pine-veneered head and seat boards; unique narrow mullions and cable support system on bay units

NOTE: All measurements are nominal.

1-15/16" brickmould applied as standard



Hardware

Clay-colored cam locks are factory-applied to Traditional double hung units as standard. Other finishes available are White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, Oil-Rubbed,* and Matte Black. For units without finger grooves, sash lift handles in Clay, White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, and Matte Black finishes are available.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.



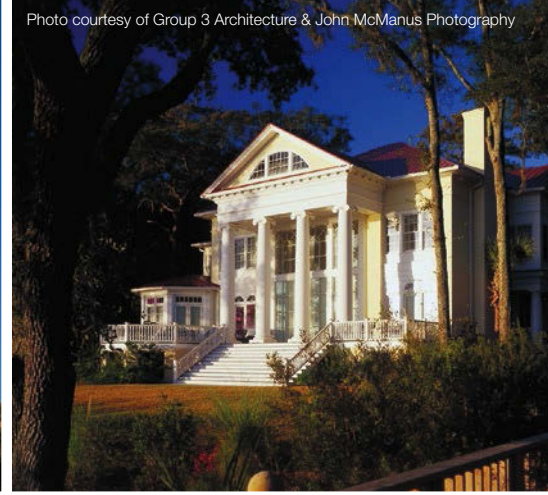
Sash lock in Clay
(standard)



Square style sash lift
handle in Satin Nickel



Traditional style sash lift
handle in Matte Black



Traditional Double Hung Optional Features

Glass (pgs. 184-185):

- ▶ LoE-180
- ▶ LoE²-240
- ▶ LoE³-366
- ▶ ThermaPlus™ LoE
- ▶ Patterned, bronze- or gray-lite
- ▶ Tempered or laminated
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4", or 4-1/2" bars
- ▶ True divided lites with 1/2" LoE² insulating glass and 1-1/8" bars
- ▶ Grilles-in-the-air-space
- ▶ Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds

Exterior Finishes (pg. 189):

- ▶ K-Kron II exterior paint finish

Other Options: (custom options are also available)

- ▶ Other wood species and FSC-certified wood (pg. 188)
- ▶ Interior prefinishing (pg. 188)
- ▶ Interior casing (pg. 190)
- ▶ Prep for stool

NOTE: All measurements are nominal.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.

- ▶ 3-1/2" flat or profiled brickmould, backband on 3-1/2" brickmould and other custom millwork (pg. 190)
- ▶ Projected sill nosing, extended sill horns or no nosing
- ▶ Ovolo and square profile glazing beads and interior divided lite bars (pg. 192)
- ▶ No finger grooves in top, bottom or both sash
- ▶ Sash locks in White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, Oil-Rubbed* and Matte Black finishes
- ▶ Sash lift handles in Clay, White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, Oil-Rubbed* and Matte Black finishes
- ▶ Universal design crank handle hardware kit in White
- ▶ White jamb liners
- ▶ Full or half screens with aluminum frames and options for BetterVue® or UltraVue® fiberglass screen mesh or aluminum screen mesh; frames will match the exterior color of the unit
- ▶ StormGuard combination storm/screen units (pg. 191)
- ▶ Extension jambs (up to 12" applied, over 12" shipped loose for field application)
- ▶ Sash limiters for safety
- ▶ Galvanized steel installation clips
- ▶ Insulated platforms, support brackets, and oak-veneer head and seat boards for bay units
- ▶ Available as replacement sash kits (pg. 76)

Magnum Double Hungs



Magnum double hungs have a thicker sash than traditional double hung windows. Their distinctive, classically inspired design works efficiently thanks to their high-quality operational mechanisms. These state-of-the-art windows are ideal for enhancing exceptionally large spaces.

Magnum Double Hung Standard Features

- ▶ 1-3/4" thick sash
- ▶ Overall jamb width is 5-9/16" (*basic box width is 5-9/16"*)
- ▶ Frame thickness is 1-1/16" at side jambs and head
- ▶ Sill thickness is 1-5/16"; slope is 14°
- ▶ Stiles and top rail width is 2-9/16", bottom rail width is 3-5/8"
- ▶ Constructed of pine, with pine interior stops and wood mull casings on mulled units with jambs wider than 5-9/16"
- ▶ Energy efficient, insulating LoE²-270 glass
- ▶ Glazed to the interior with beveled wood glazing beads
- ▶ 1-15/16" exterior brickmould applied
- ▶ All exterior wood parts are preservative-treated
- ▶ Exterior frame and sash are latex primed
- ▶ Rigid PVC head parting stop with flexible fins and waterseal at the sill
- ▶ Fully weatherstripped for a tight seal
- ▶ Two clay-colored heavy duty sash locks
- ▶ Spring-loaded block-and-tackle mechanical balances to carry the sash weight (*four per sash*)
- ▶ Beige PVC jambliners with compression foam backing

NOTE: All measurements are nominal.



1-15/16" brickmould applied as standard

Hardware

Two Clay-colored cam locks are factory-applied to Magnum double hung units as standard. Other finishes available are White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, Oil-Rubbed,* and Matte Black. Sash lift handles are optional.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.



Sash lock in Clay
(standard)



Square style sash lift
handle in Satin Nickel



Traditional style sash lift
handle in Matte Black



Magnum Double Hung Optional Features

Glass (pgs. 184-185):

- ▶ LoE-180
- ▶ LoE²-240
- ▶ LoE³-366
- ▶ ThermaPlus™ LoE
- ▶ Patterned, bronze- or gray-lite
- ▶ Tempered or laminated
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4", or 4-1/2" bars
- ▶ True divided lites with 5/8" LoE² insulating glass and 1-1/8" bars
- ▶ Grilles-in-the-airspace
- ▶ Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds

Exterior Finishes (pg. 189):

- ▶ K-Kron II exterior paint finish

Other Options: (custom options are also available)

- ▶ Other wood species and FSC-certified wood (pg. 188)
- ▶ Interior prefinishing (pg. 188)
- ▶ Interior casing (pg. 190)

NOTE: All measurements are nominal.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.

- ▶ Prep for stool
- ▶ 3-1/2" flat or profiled brickmould, backband on 3-1/2" brickmould and other custom millwork (pg. 190)
- ▶ Projected sill nosing, extended sill horns or no nosing
- ▶ Ovolo and square profile glazing beads and interior divided lite bars (pg. 192)
- ▶ White jamb liners
- ▶ Sash locks in White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, Oil-Rubbed* and Matte Black finishes
- ▶ Sash lift handles in Clay, White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, Oil-Rubbed* and Matte Black finishes
- ▶ Full or half screens with aluminum frames and options for BetterVue® or UltraVue® fiberglass screen mesh or aluminum screen mesh; frames will match the exterior color of the unit
- ▶ Extension jambs (up to 12" applied; over 12" shipped loose for field application)
- ▶ Galvanized steel installation clips
- ▶ Narrow mull covers
- ▶ Available as replacement sash kits (pg. 76)

Old World Classic Double Hungs



Old World Classic double hungs replicate the charm of historical double hung windows for historically-accurate renovations and projects. Their visible brass pulley system with solid brass chains and alloyed weights create seamless operation. What's more, every Old World Classic window is engineered especially for each unique project, offering an unprecedented level of customization.

Old World Classic Double Hung Standard Features

- ▶ 1-3/4" thick sash
- ▶ Basic frame jamb width is 6-9/16"
- ▶ Constructed of pine with pine interior head parting stops and side stops
- ▶ Energy efficient, insulating LoE²-270 glass
- ▶ 1-15/16" exterior brickmould applied
- ▶ Exterior frame and sash are latex primed
- ▶ All exterior wood parts are preservative-treated
- ▶ Heavy duty sash lock with Brass finish
- ▶ Brass chains and pulleys
- ▶ Fully weatherstripped for a tight seal
- ▶ A proportionate balance between sash and alloyed weights creates a one-to-one ratio

NOTE: All measurements are nominal.



Brass chains
and pulleys



Brass sash locks



Optional ogee
lugs

Hardware

Heavy duty cam locks in a Brass finish are factory-applied to Old World Classic double hung units as standard. Sash lift handles are optional. All double hung hardware is available in Clay, White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, Oil-Rubbed,* and Matte Black.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.



Sash lock in Brass
(standard)



Square style sash lift
handle in Satin Nickel



Traditional style sash lift
handle in Matte Black



Old World Classic Double Hung Optional Features

Glass (pgs. 184-185):

- ▶ LoE-180
- ▶ LoE²-240
- ▶ LoE³-366
- ▶ ThermaPlus™ LoE
- ▶ Patterned, bronze- or gray-lite
- ▶ Tempered or laminated
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4", or 4-1/2" bars
- ▶ True divided lites with 5/8" LoE² insulating glass and 1-1/8" bars
- ▶ Grilles-in-the-airspace
- ▶ Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds

Exterior Finishes (pg. 189):

- ▶ K-Kron II exterior paint finish

Other Options: (custom options are also available)

- ▶ Available as single, double or triple hung
- ▶ Other wood species and FSC-certified wood (pg. 188)

NOTE: All measurements are nominal.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.

- ▶ Interior prefinishing (pg. 188)
- ▶ Interior casing (pg. 190)
- ▶ 3-1/2" flat or profiled brickmould, backband on 3-1/2" brickmould and other custom millwork (pg. 190)
- ▶ Projected sill nosing, extended sill horns or no nosing
- ▶ Ovolo and square profile glazing beads and interior divided lite bars (pg. 192)
- ▶ Prep for stool
- ▶ Ogee lugs integrated into the top sash stiles
- ▶ Cam locks in White, Clay, Beige, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, Oil-Rubbed* and Matte Black finishes
- ▶ Sash lift handles (finish will match other hardware)
- ▶ Oil-Rubbed,* Polished Nickel and Satin Nickel chains and pulleys
- ▶ Half or full screens with BetterVue® or UltraVue® fiberglass screen mesh, or aluminum mesh, and aluminum frames that match the exterior color of the unit
- ▶ Galvanized steel installation clips
- ▶ High performance modifications

Replacement Double Hung Sash Kits



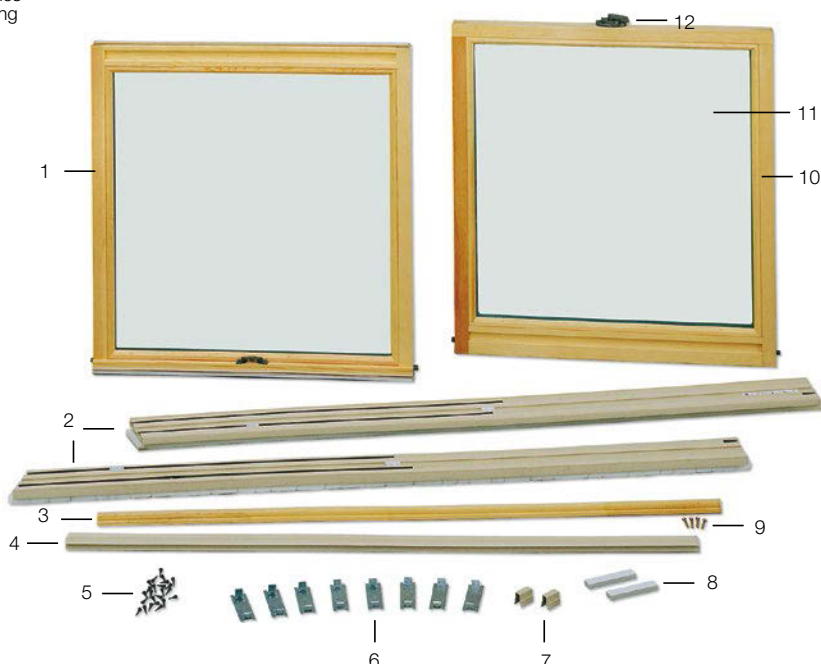
Replacement Sash Kits

Updating your project with new, energy-efficient windows that have the convenience of tilt-in sash is easy with Kolbe's double hung replacement sash kits. There are no worries about tearing into walls or ruining specialty mouldings that provide character and charm because sash are made to fit into your existing window frames. Plus, installation is a snap and is done from the interior, so installation can be done from any height. Kits are available with Traditional or Magnum double hung sash and include spring-loaded, counter balanced jambliners. Both sash open for ventilation and tilt in or may be removed for easy cleaning. Sash are also available as cottage-style and reverse cottage-style double hungs. Many options such as exterior finishes, glazing options and divided lite options help to preserve the original design of your home or add a new twist. Standard and optional features for replacement sash are the same as fully framed Traditional (*see pg. 70*) or Magnum double hung sash (*see pg. 72*).

NOTE: The same standard and optional features of Heritage Series Traditional double hung and Heritage Series Magnum double hung windows apply to replacement sash kits.

Double Hung Replacement Sash Kits Include:




































































































- (1) Top sash
- (2) PVC jambliners with compression-foam backing
- (3) Wood head parting stop
- (4) Vinyl head parting stop
- (5) Tacks
- (6) Jambliner clips
- (7) Vinyl sash stops
- (8) Foam pads
- (9) Screws
- (10) Bottom sash
- (11) Energy efficient, insulating LoE²-270 glass
- (12) Heavy duty sash lock (*Magnum sash have two*)
- (13) Spring-loaded block-and-tackle mechanical balances (*not pictured*)





Double Hungs | Elevation Charts

Sterling & Traditional Double Hungs | Single Units

	1'-11 7/8"	2'-3 7/8"	2'-7 7/8"	2'-9 7/8"	2'-11 7/8"	3'-1 7/8"	3'-3 7/8"	3'-7 7/8"	3'-11 7/8"
	1'-10"	2'-2"	2'-6"	2'-8"	2'-10"	3'-0"	3'-2"	3'-6"	3'-10"
	1'-8"	2'-0"	2'-4"	2'-6"	2'-8"	2'-10"	3'-0"	3'-4"	3'-8"
	16"	20"	24"	26"	28"	30"	32"	36"	40"
3'-2 1/8"									
	DH1614	DH2014	DH2414	DH2614	DH2814	DH3014	DH3214	DH3614	DH4014
3'-6 1/8"									
	DH1616	DH2016	DH2416	DH2616	DH2816	DH3016	DH3216	DH3616	DH4016
4'-2 1/8"									
	DH1620	DH2020	DH2420	DH2620	DH2820	DH3020	DH3220	DH3620	DH4020
4'-6 1/8"									
	DH1622	DH2022	DH2422	DH2622	DH2822	DH3022	DH3222	DH3622	DH4022
4'-10 1/8"									
	DH1624	DH2024	DH2424	DH2624	DH2824	DH3024	DH3224	DH3624	DH4024
5'-2 1/8"									
	DH1626	DH2026	DH2426	DH2626	DH2826	DH3026**	DH3226*	DH3626*	DH4026*
5'-6 1/8"									
	DH1628	DH2028	DH2428	DH2628	DH2828**	DH3028*	DH3228*	DH3628*	DH4028*
5'-10 1/8"									
	DH1630	DH2030	DH2430	DH2630**	DH2830*	DH3030*	DH3230*	DH3630*	DH4030*
6'-2 1/8"									
	DH1632	DH2032	DH2432**	DH2632*	DH2832*	DH3032*	DH3232*	DH3632*	DH4032*
6'-6 1/8"									
	DH1634	DH2034	DH2434*	DH2634*	DH2834*	DH3034*	DH3234*	DH3634*	DH4034*
6'-10 1/8"									
	DH1636	DH2036	DH2436*	DH2636*	DH2836*	DH3036*	DH3236*	DH3636*	DH4036*

NOTE: All measurements are nominal. Elevation charts are not to scale.

Single units shown are also available as single hung units and replacement sash kits with Traditional sash only.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.

* Units meet most national emergency escape and rescue requirements.

** Only Traditional sash units meet most national emergency escape and rescue requirements.

PRODUCT CODES:

To order, add "W" before the product number and "-1," "-2," or "-3" after to denote a single, twin or triple unit, respectively (Ex: WDH4036-1). Specify Traditional or Sterling sash.

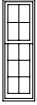






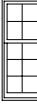

U.D. = Unit Dimension

R.O. = Rough Opening

S.O. = Sash Opening

G.S. = Glass Size

Sterling & Traditional Double Hungs | Cottage-Style

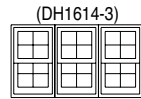
U.D.	1'-11 7/8"	2'-3 7/8"	2'-7 7/8"	2'-9 7/8"	2'-11 7/8"	3'-1 7/8"	3'-3 7/8"	3'-7 7/8"	3'-11 7/8"
R.O.	1'-10"	2'-2"	2'-6"	2'-8"	2'-10"	3'-0"	3'-2"	3'-6"	3'-10"
S.O.	1'-8"	2'-0"	2'-4"	2'-6"	2'-8"	2'-10"	3'-0"	3'-4"	3'-8"
G.S.	16"	20"	24"	26"	28"	30"	32"	36"	40"
									
	DH1624/36	DH2024/36	DH2424/36	DH2624/36	DH2824/36	DH3024/36	DH3224/36	DH3624/36	DH4024/36

Width Dimensions for Twin-Mulled Units



Glass (per-sash)	16"	20"	24"	26"	28"	30"	32"	36"	40"
R.O.	3'-7 1/2"	4'-3 1/2"	4'-11 1/2"	5'-3 1/2"	5'-7 1/2"	5'-11 1/2"	6'-3 1/2"	6'-11 1/2"	7'-7 1/2"
U.D.	3'-9 3/8"	4'-5 3/8"	5'-1 3/8"	5'-5 3/8"	5'-9 3/8"	6'-1 3/8"	6'-5 3/8"	7'-1 3/8"	7'-9 3/8"

Width Dimensions for Triple-Mulled Units



Glass (per-sash)	16"	20"	24"	26"	28"	30"	32"	36"	40"
R.O.	5'-5"	6'-5"	7'-5"	7'-11"	8'-5"	8'-11"	9'-5"	10'-5"	11'-5"
U.D.	5'-6 7/8"	6'-6 7/8"	7'-6 7/8"	8'-0 7/8"	8'-6 7/8"	9'-0 7/8"	9'-6 7/8"	10'-6 7/8"	11'-6 7/8"

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e., installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary. For rough opening recommendations, see pg. 196.

PRODUCT CODES:

To order, add "W" before the product number and "-1," "-2," or "-3" after to denote a single, twin or triple unit, respectively (Ex: WDH1624/36-1). Specify Traditional or Sterling sash.

U.D. = Unit Dimension • R.O. = Rough Opening

S.O. = Sash Opening • G.S. = Glass Size

Dimension Calculations

Elevation charts provide wood unit dimensions for units with the standard 1 15/16" brickmould. Below are the calculations to determine the frame size of units with brickmould.

	Width	Height
1-15/16" brickmould; U.D. to F.S.	-2 3/8"	-1 11/16"
3-1/2" flat or profiled casing; U.D. to F.S.	-5 51/2"	-3 1/4"
3-1/2" casing and backband; U.D. to F.S.	-7"	-4 3/16"











































F.S. to S.O.	-1 1/2"	-2 7/16"
S.O. to G.S.	-4"	-6 1/2"
G.S. to D.L.O.	-1"	-1"

Note: Clear opening dimensions can be found on pgs. 198-201.
Cottage-style dimension calculations are different; please contact your dealer.

F.S. = Frame Size • G.S. = Glass Size • O.S.M. = Outside Measurement
D.L.O. = Daylight Opening • U.D. = Unit Dimension

Double Hungs | Elevation Charts

Double Hungs | Rectangular Transoms

U.D.	1'-11 7/8"	2'-3 7/8"	2'-7 7/8"	2'-11 7/8"	3'-3 7/8"	3'-7 7/8"	3'-11 7/8"
R.O.	1'-10"	2'-2"	2'-6"	2'-10"	3'-2"	3'-6"	3'-10"
S.O.	1'-8"	2'-0"	2'-4"	2'-8"	3'-0"	3'-4"	3'-8"
G.S.	16"	20"	24"	28"	32"	36"	40"
1'-1 1/8"							
1'-4"							
1'-5 1/8"							
1'-7 1/8"							
1'-9 1/8"							
1'-11 1/8"							

NOTE: All measurements are nominal. These dimensions apply only for transoms with flat sills. Contact your supplier for dimensions of units with beveled sills. Elevation charts are not to scale.

Transom units are only available with a 1-3/4" sash. The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.
































































The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.

PRODUCT CODES:

To order transoms, add "W" before the product number (Ex: WDHT4024).

U.D. = Unit Dimension • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size

Double Hungs | Studio Units

U.D.	4'-3 7/8"	4'-7 7/8"	5'-3 7/8"	5'-11 7/8"	6'-7 7/8"	7'-3 7/8"	8'-7 7/8"
R.O.	4'-2"	4'-6"	5'-2"	5'-10"	6'-6"	7'-2"	8'-6"
S.O.	4'-0"	4'-4"	5'-0"	5'-8"	6'-4"	7'-0"	8'-4"
G.S.	44 1/2"	48 1/2"	56 1/2"	64 1/2"	72 1/2"	80 1/2"	96 1/2"
4'-2 1/8"							
	DHS40310	DHS44310	DHS50310	DHS58310	DHS64310	DHS70310	DHS84310
4'-6 1/8"							
	DHS4042	DHS4442	DHS5042	DHS5842	DHS6442	DHS7042	DHS8442
4'-10 1/8"							
	DHS4046	DHS4446	DHS5046	DHS5846	DHS6446	DHS7046	DHS8446
5'-2 1/8"							
	DHS40410	DHS44410	DHS50410	DHS58410	DHS64410	DHS70410	DHS84410
5'-6 1/8"							
	DHS4052	DHS4452	DHS5052	DHS5852	DHS6452	DHS7052	DHS8452
5'-10 1/8"							
	DHS4056	DHS4456	DHS5056	DHS5856	DHS6456	DHS7056	DHS8456
6'-2 1/8"							
	DHS40510	DHS44510	DHS50510	DHS58510	DHS64510	DHS70510	DHS84510
6'-6 1/8"							
	DHS4062	DHS4462	DHS5062	DHS5862	DHS6462	DHS7062	DHS8462
6'-10 1/8"							
	DHS4066	DHS4466	DHS5066	DHS5866	DHS6466	DHS7066	DHS8466

NOTE: All measurements are nominal. Elevation charts are not to scale.

Studio units are only available with a 1-3/4" sash.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.

* To match cottage-style double hungs with divided lites, 5'-6" high (S.O.) units must be ordered 5 lites high.

PRODUCT CODES:

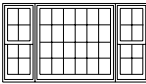
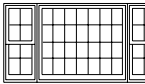
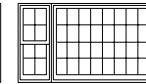
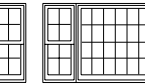
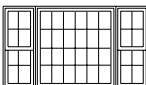


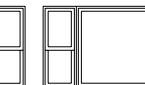

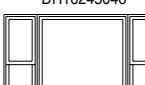
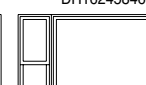
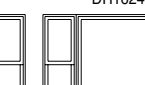
To order, add "W" before the product number (Ex: WDHS8466).

U.D. = Unit Dimension • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size

Double Hungs | Elevation Charts

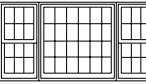
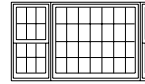
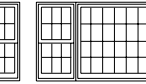
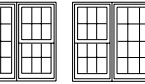
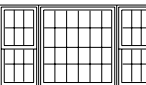

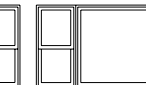
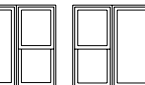
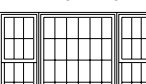

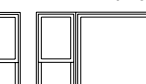
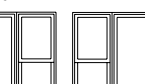
Sterling & Traditional Double Hungs | Picture Units

16" flankers

U.D.	8'-2 7/8"		8'-10 7/8"		9'-6 7/8"		10'-2 7/8"	
R.O.	8'-1"		8'-9"		9'-5"		10'-1"	
S.O.	1'-8" 4'-4" 1'-8"		1'-8" 5'-0" 1'-8"		1'-8" 5'-8" 1'-8"		1'-8" 6'-4" 1'-8"	
G.S.*	16" 48 1/2" 16"		16" 56 1/2" 16"		16" 64 1/2" 16"		16" 72 1/2" 16"	
4'-6 1/8"								
	DH16224442		DH16225042		DH16225842		DH16226442	
4'-10 1/8"								
	DH16244446		DH16245046		DH16245846		DH16246446	
5'-6 1/8"								
	DH16284452		DH16285052		DH16285852		DH16286452	

Sterling & Traditional Double Hungs | Picture Units

20" flankers

U.D.	8'-10 7/8"		9'-6 7/8"		10'-2 7/8"		10'-10 7/8"	
R.O.	8'-9"		9'-5"		10'-1"		10'-9"	
S.O.	2'-0" 4'-4" 2'-0"		2'-0" 5'-0" 2'-0"		2'-0" 5'-8" 2'-0"		2'-0" 6'-4" 2'-0"	
G.S.*	20" 48 1/2" 20"		20" 56 1/2" 20"		20" 64 1/2" 20"		20" 72 1/2" 20"	
4'-6 1/8"								
	DH20224442		DH20225042		DH20225842		DH20226442	
4'-10 1/8"								
	DH20244446		DH20245046		DH20245846		DH20246446	
5'-6 1/8"								
	DH20284452		DH20285052		DH20285852		DH20286452	

NOTE: All measurements are nominal. Elevation charts are not to scale.

Center picture units are only available with a 1-3/4" sash. Flanker sash must be specified as either Traditional or Sterling sash when ordering.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.

* The first number of the glass size height is the height (per sash) for each flanker sash. The second number is the glass height for the center picture unit.

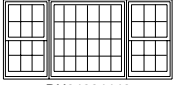
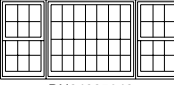
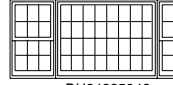
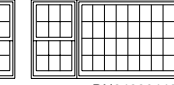
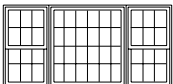



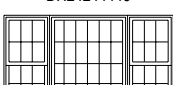



PRODUCT CODES:

To order, add "W" before the product number (Ex: WDH20286452).

U.D. = Unit Dimension • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size

Sterling & Traditional Double Hungs | Picture Units

24" flankers

U.D.	9'-6 7/8"	10'-2 7/8"	10'-10 7/8"	11'-6 7/8"
R.O.	9'-5"	10'-1"	10'-9"	11'-5"
S.O.	2'-4" 4'-4" 2'-4"	2'-4" 5'-0" 2'-4"	2'-4" 5'-8" 2'-4"	2'-4" 6'-4" 2'-4"
G.S.*	24" 48 1/2" 24"	24" 56 1/2" 24"	24" 64 1/2" 24"	24" 72 1/2" 24"
4'-6 1/8"				
4'-10 1/8"				
5'-6 1/8"				

NOTE: All measurements are nominal. Elevation charts are not to scale.

Center picture units are only available with a 1-3/4" sash. Wood flanker sash must be specified as either Traditional or Sterling sash when ordering.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.

* The first number of the glass size height is the height (per sash) for each flanker sash. The second number is the glass height for the center picture unit.

PRODUCT CODES:

To order, add "W" before the product number (Ex: WDH24286452).

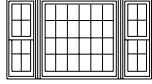
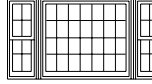
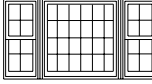
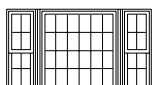

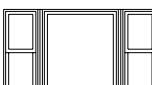
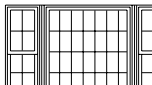
U.D. = Unit Dimension • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size

Double Hungs | Elevation Charts

Sterling & Traditional Double Hungs | 30° Bay Windows

16" flankers

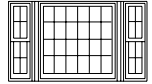
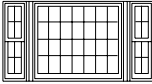
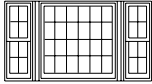
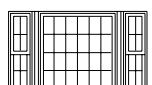
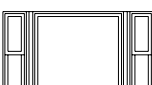
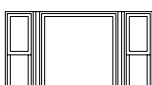
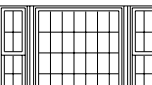
20" flankers

UNIT PROJECTION: 13 3/8"		UNIT PROJECTION: 15 7/16"	
U.D.	8'-2 11/16"	8'-10 11/16"	8'-9 5/8"
R.O.	7'-10 15/16"	8'-6 15/16"	8'-5 7/8"
S.O.	1'-8" 4'-4" 1'-8"	1'-8" 5'-0" 1'-8"	2'-0" 4'-4" 2'-0"
G.S.	16" 48 1/2" 16"	16" 56 1/2" 16"	20" 48 1/2" 20"
4'-6 1/8"			
4'-5 11/16"	DH30-16224442	DH30-16225042	DH30-20224442
4'-2"			DH30-20225042
4'-10 1/8"			
4'-9 11/16"	DH30-16244446	DH30-16245046	DH30-20244446
4'-6"			DH30-20245046
5'-6 1/8"			
5'-5 11/16"			DH30-20285052
5'-2"			
28"			

Sterling & Traditional Double Hungs | 45° Bay Windows

16" flankers

20" flankers

UNIT PROJECTION: 18 13/16"		UNIT PROJECTION: 21 11/16"	
U.D.	7'-9 11/16"	8'-5 11/16"	8'-3 3/16"
R.O.	7'-4 3/4"	8'-0 3/4"	7'-10 3/8"
S.O.	1'-8" 4'-4" 1'-8"	1'-8" 5'-0" 1'-8"	2'-0" 4'-4" 2'-0"
G.S.	16" 48 1/2" 16"	16" 56 1/2" 16"	20" 48 1/2" 20"
4'-6 1/8"			
4'-5 11/16"	DH45-16224442	DH45-16225042	DH45-20224442
4'-2"			DH45-20225042
4'-10 1/8"			
4'-9 11/16"	DH45-16244446	DH45-16245046	DH45-20244446
4'-6"			DH45-20245046
5'-6 1/8"			
5'-5 11/16"			DH45-20285052
5'-2"			
28"			

NOTE: All measurements are nominal. Elevation charts are not to scale.

Center picture units are only available with a 1-3/4" sash. Flanker sash must be specified as either Traditional or Sterling sash when ordering.

Divided lites are optional.

If the cable support system and/or insulated platforms & support brackets are not being used, other means of proper support must be used. Add 1-13/16" to the R.O. height if an insulated platform is being used. R.O.'s for bay units without head and seat boards, typically used for walk-out applications, are different.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.

* The first number of the glass size height is the height (per sash) for each flanker sash. The second number is the glass height for the center picture unit.




































































































PRODUCT CODES:

To order, add "W" before the product number

(Ex: WDH45-20285052).

U.D. = Unit Dimension • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size

Sterling & Traditional Segment Head Double Hungs

U.D.	1'-11 7/8"	2'-3 7/8"	2'-7 7/8"	2'-9 7/8"	2'-11 7/8"	3'-1 7/8"	3'-3 7/8"	3'-7 7/8"	3'-11 7/8"
R.O.	1'-10"	2'-2"	2'-6"	2'-8"	2'-10"	3'-0"	3'-2"	3'-6"	3'-10"
S.O.	1'-8"	2'-0"	2'-4"	2'-6"	2'-8"	2'-10"	3'-0"	3'-4"	3'-8"
G.S.*	16"	20"	24"	26"	28"	30"	32"	36"	40"
3'-2 1/8"									
3'-6 1/8"									
4'-2 1/8"									
4'-6 1/8"									
4'-10 1/8"									
5'-2 1/8"									
5'-6 1/8"									
5'-10 1/8"									
6'-2 1/8"									
6'-6 1/8"									
6'-10 1/8"									

NOTE: All measurements are nominal. Elevation charts are not to scale.

The venting of the bottom sash of segment head units is limited due to the radius on the top sash.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.

* Approximate glass sizes per sash are given; true glass sizes vary depending on the radius involved.

PRODUCT CODES:

To order, use the product code shown and specify Traditional or Sterling sash, wood profile.

U.D. = Unit Dimension • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size

Double Hungs | Elevation Charts

Sterling & Traditional Segment Head Double Hungs | Cottage-Style

U.D.	1'-11 7/8"	2'-3 7/8"	2'-7 7/8"	2'-9 7/8"	2'-11 7/8"	3'-1 7/8"	3'-3 7/8"	3'-7 7/8"	3'-11 7/8"
R.O.	1'-10"	2'-2"	2'-6"	2'-8"	2'-10"	3'-0"	3'-2"	3'-6"	3'-10"
S.O.	1'-8"	2'-0"	2'-4"	2'-6"	2'-8"	2'-10"	3'-0"	3'-4"	3'-8"
G.S.*	16"	20"	24"	26"	28"	30"	32"	36"	40"
	WDH1624/36-SEG	WDH2024/36-SEG	WDH2424/36-SEG	WDH2624/36-SEG	WDH2824/36-SEG	WDH3024/36-SEG	WDH3224/36-SEG	WDH3624/36-SEG	WDH4024/36-SEG

NOTE: All measurements are nominal. Elevation charts are not to scale.

The venting of the bottom sash of segment head units is limited due to the radius on the top sash.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.






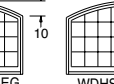






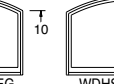
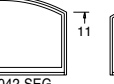




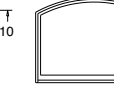
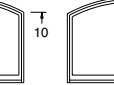
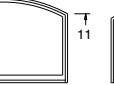
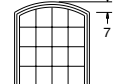


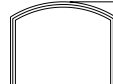
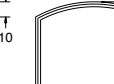
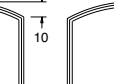
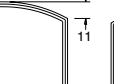
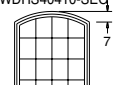


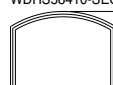

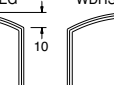
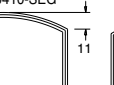



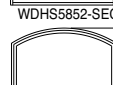

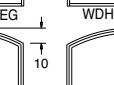




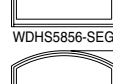

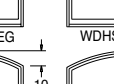

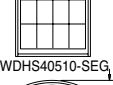


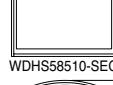



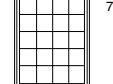




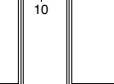

* Approximate glass sizes per sash are given; true glass sizes vary depending on the radius involved.

PRODUCT CODES:

To order, use the product code shown and specify Traditional or Sterling sash.

U.D. = Unit Dimension • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size

Segment Head Double Hungs | Studio Units

U.D.	4'-3 7/8"	4'-7 7/8"	5'-3 7/8"	5'-11 7/8"	6'-7 7/8"	7'-3 7/8"	8'-7 7/8"
R.O.	4'-2"	4'-6"	5'-2"	5'-10"	6'-6"	7'-2"	8'-6"
S.O.	4'-0"	4'-4"	5'-0"	5'-8"	6'-4"	7'-0"	8'-4"
G.S.*	44 1/2"	48 1/2"	56 1/2"	64 1/2"	72 1/2"	80 1/2"	96 1/2"
4'-2 1/8"							
4'-6 1/8"							
4'-10 1/8"							
5'-2 1/8"							
5'-6 1/8"							
5'-10 1/8"							
6'-2 1/8"							
6'-6 1/8"							
6'-10 1/8"							

NOTE: All measurements are nominal. Elevation charts are not to scale.

Studio units are only available with a 1-3/4" sash.

Divide lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.

* Approximate glass sizes per sash are given; true glass sizes vary depending on the radius involved.

























































































































































PRODUCT CODES:

To order, use the product code shown and specify wood profile.

U.D. = Unit Dimension • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size

Double Hungs | Elevation Charts

Sterling & Traditional Half-Circle Top Single Hungs

U.D.	1'-11 7/8"	2'-3 7/8"	2'-7 7/8"	2'-9 7/8"	2'-11 7/8"	3'-1 7/8"	3'-3 7/8"	3'-7 7/8"	3'-11 7/8"
R.O.	1'-10"	2'-2"	2'-6"	2'-8"	2'-10"	3'-0"	3'-2"	3'-6"	3'-10"
S.O.	1'-8"	2'-0"	2'-4"	2'-6"	2'-8"	2'-10"	3'-0"	3'-4"	3'-8"
G.S.*	16"	20"	24"	26"	28"	30"	32"	36"	40"
3'-2 3/16"									
3'-5 1/16"									
3'-8 3/16"									
4'-2 3/16"									
4'-5 1/16"									
4'-8 3/16"									
4'-10 3/16"									
5'-2 3/16"									
5'-5 1/16"									
5'-8 3/16"									
5'-10 3/16"									
6'-2 3/16"									
6'-5 1/16"									
6'-8 3/16"									
6'-10 3/16"									
									
									
									

NOTE: All measurements are nominal. Elevation charts are not to scale.

The venting of the bottom sash of half-circle top units is limited due to the radius on the top sash.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.

* Approximate glass sizes per sash are given; true glass sizes vary depending on the radius involved.

PRODUCT CODES:

To order, use the product code shown and specify Traditional or Sterling sash, wood profile.










U.D. = Unit Dimension

R.O. = Rough Opening

S.O. = Sash Opening

G.S. = Glass Size

Sterling & Traditional Half-Circle Top Single Hungs | Cottage-Style

U.D.	1'-11 7/8"	2'-3 7/8"	2'-7 7/8"	2'-9 7/8"	2'-11 7/8"	3'-1 7/8"	3'-3 7/8"	3'-7 7/8"	3'-11 7/8"
R.O.	1'-10"	2'-2"	2'-6"	2'-8"	2'-10"	3'-0"	3'-2"	3'-6"	3'-10"
S.O.	1'-8"	2'-0"	2'-4"	2'-6"	2'-8"	2'-10"	3'-0"	3'-4"	3'-8"
G.S.*	16"	20"	24"	26"	28"	30"	32"	36"	40"
5'-10 3/16" 5'-9 1/16" 5'-6" 36" 24"									
	WDH1624/36-HC	WDH2024/36-HC	WDH2424/36-HC	WDH2624/36-HC	WDH2824/36-HC	WDH3024/36-HC	WDH3224/36-HC	WDH3624/36-HC	WDH4024/36-HC

NOTE: All measurements are nominal. Elevation charts are not to scale.

The venting of the bottom sash of half-circle top units is limited due to the radius on the top sash.

Divided lites are optional.

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* Approximate glass sizes per sash are given; true glass sizes vary depending on the radius involved.

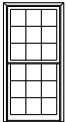
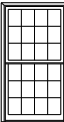
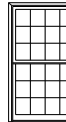


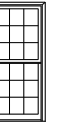
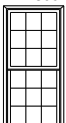





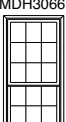
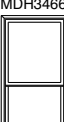
















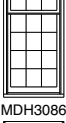





PRODUCT CODES:

To order, use the product code shown and specify Traditional or Sterling sash, wood profile.

U.D. = Unit Dimension • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size

Double Hungs | Elevation Charts

Magnum Double Hungs

WOOD U.D.	3'-3 7/8"	3'-7 7/8"	3'-11 7/8"	4'-3 7/8"	4'-7 7/8"	4'-11 7/8"
R.O.	3'-2 5/8"	3'-6 5/8"	3'-10 5/8"	4'-2 5/8"	4'-6 5/8"	4'-10 5/8"
S.O.	3'-0"	3'-4"	3'-8"	4'-0"	4'-4"	4'-8"
D.S.	29 9/16"	33 9/16"	37 9/16"	41 9/16"	45 9/16"	49 9/16"
6'-6 5/8"						
MDH3062	MDH3462	MDH3862	MDH4062	MDH4462	MDH4862	
6'-10 5/8"						
MDH3066	MDH3466	MDH3866	MDH4066	MDH4466	MDH4866	
7'-6 5/8"						
MDH3072	MDH3472	MDH3872	MDH4072	MDH4472	MDH4872	
8'-2 5/8"						
MDH30710	MDH34710	MDH38710	MDH40710	MDH44710	MDH48710	
8'-10 5/8"						
MDH3086	MDH3486	MDH3886	MDH4086	MDH4486	MDH4886	
9'-2 5/8"						
MDH30810	MDH34810	MDH38810	MDH40810	MDH44810	MDH48810	

Dimension Calculations

Elevation charts provide wood unit dimensions for units with the standard 1 15/16" brickmould. Below are the calculations to determine the frame size of units with brickmould.

	Width	Height
1-15/16" brickmould; U.D. to F.S.	-1 3/4"	-1 7/16"
3-1/2" flat or profiled casing; U.D. to F.S.	-4 7/8"	-3"
3-1/2" casing and backband; U.D. to F.S.	-6 3/8"	-3 15/16"
F.S. to S.O.	-2 1/8"	-3 3/16"
S.O. to G.S.	-6 7/16"	-6 7/8" ÷ 2"
G.S. to D.L.O.	-1"	-1"

F.S. = Frame Size • G.S. = Glass Size • O.S.M. = Outside Measurement
D.L.O. = Daylight Opening • U.D. = Unit Dimension

NOTE: All measurements are nominal. Elevation charts are not to scale.

Single units shown are also available as single hung units and replacement sash kits.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

The side jambs of double hung units extend above the head jamb; additional space for the rough opening height may be necessary.

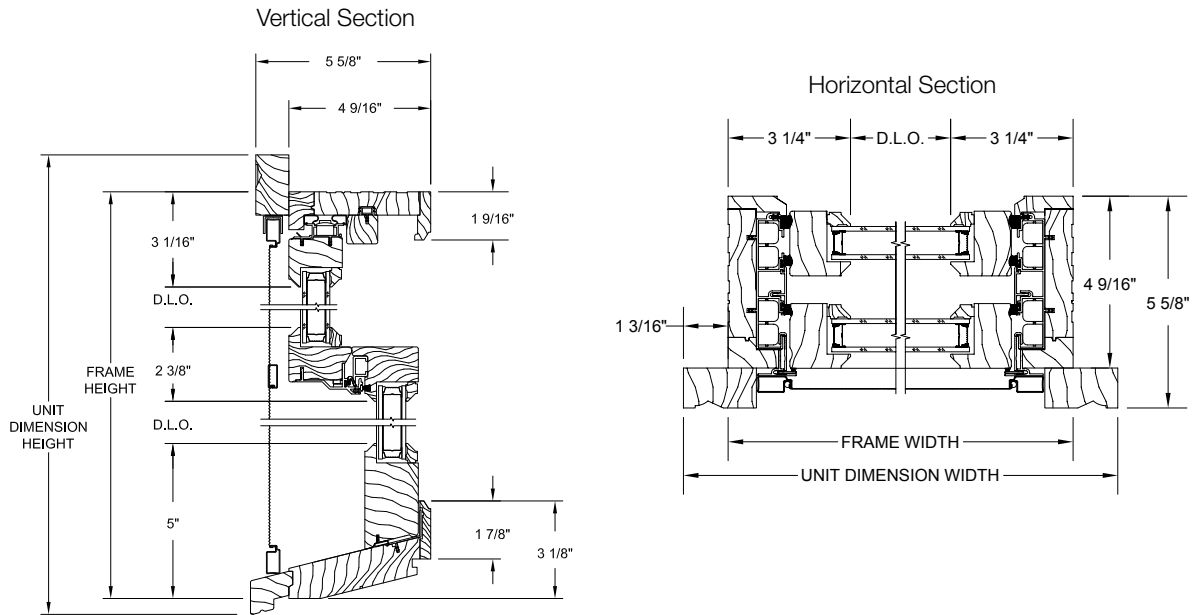
PRODUCT CODES:

To order, add "W" before the product number and "-1," "-2," or "-3" after to denote a single, twin or triple unit, respectively (Ex: WMDH3062-1).

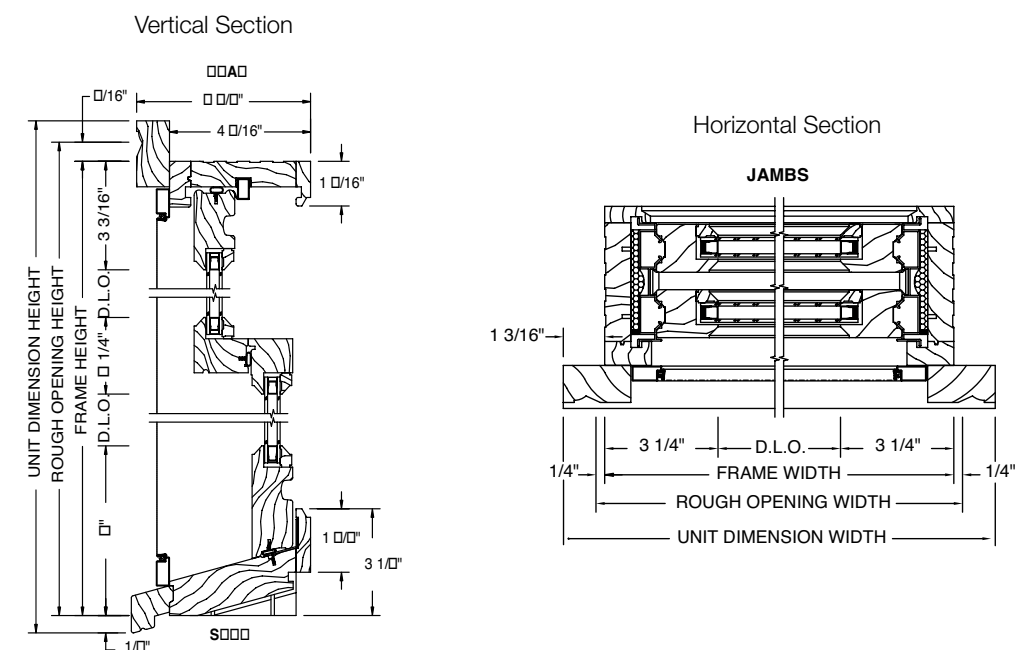
U.D. = Unit Dimension • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size (Glass sizes are given per sash.)

Double Hungs Cross Section Drawings

Sterling Double Hung



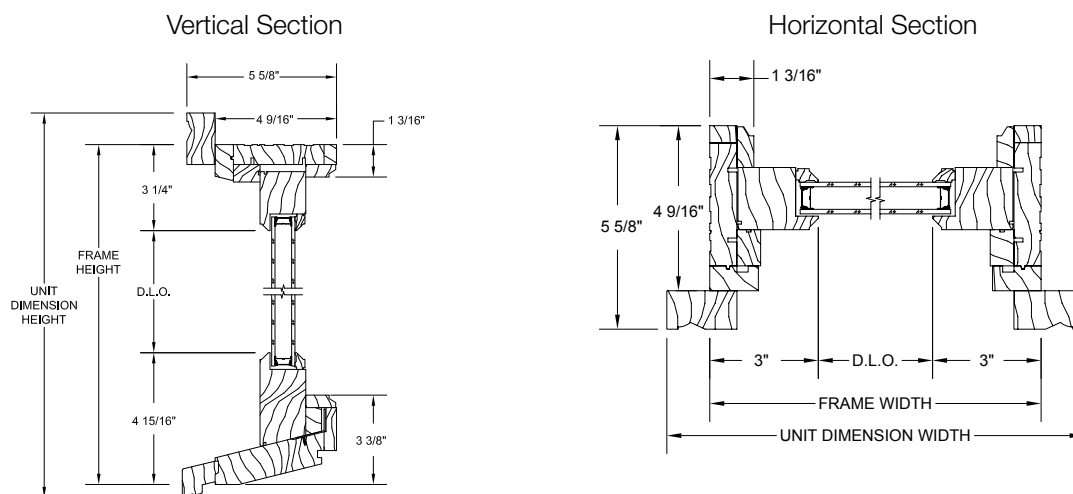
Traditional Double Hung



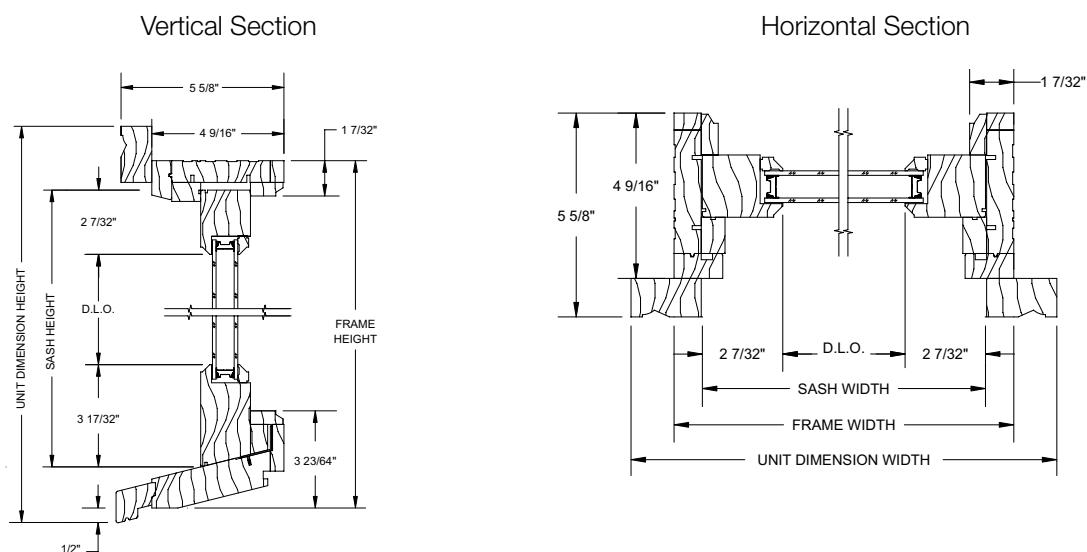
NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

Double Hungs Cross Section Drawings

Sterling Double Hung Studio Unit



Traditional Double Hung Studio Unit

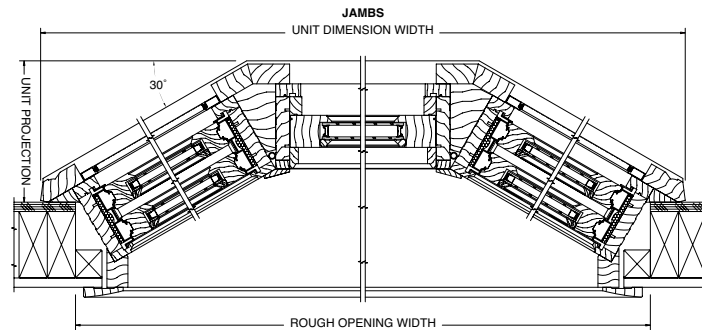


NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

Double Hungs Cross Section Drawings

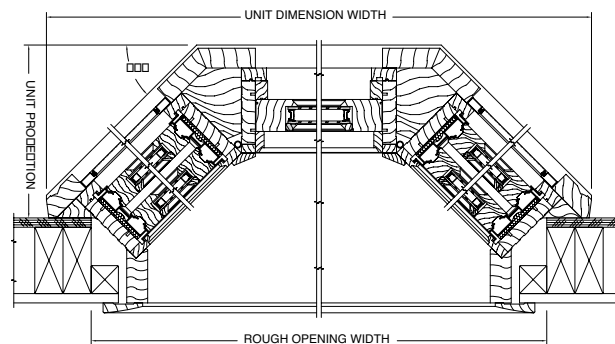
Traditional Double Hung 30° Bay Window

Horizontal Section



Traditional Double Hung 45° Bay Window

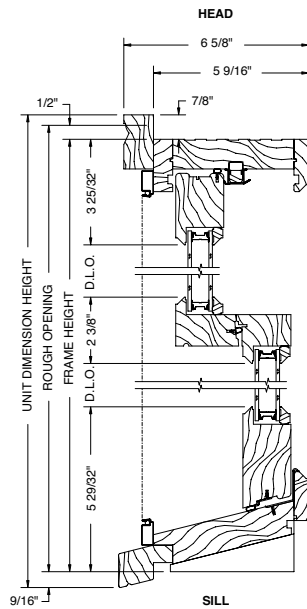
Horizontal Section



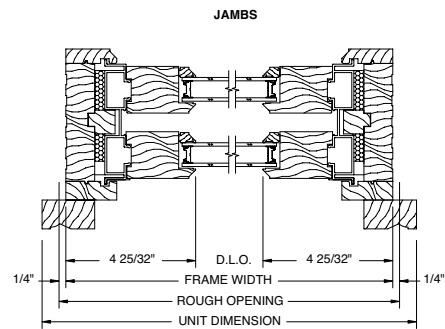
NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

Magnum Double Hung

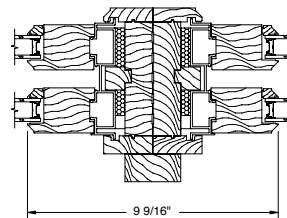
Vertical Section



Horizontal Section



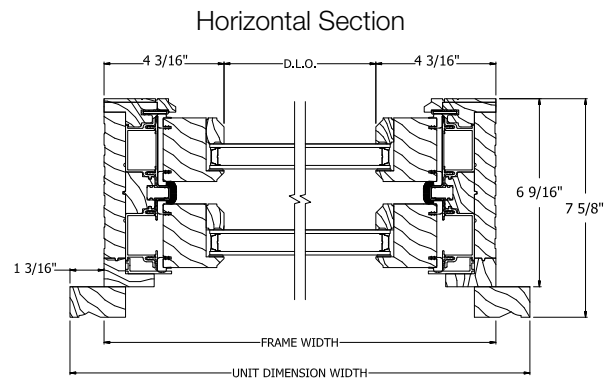
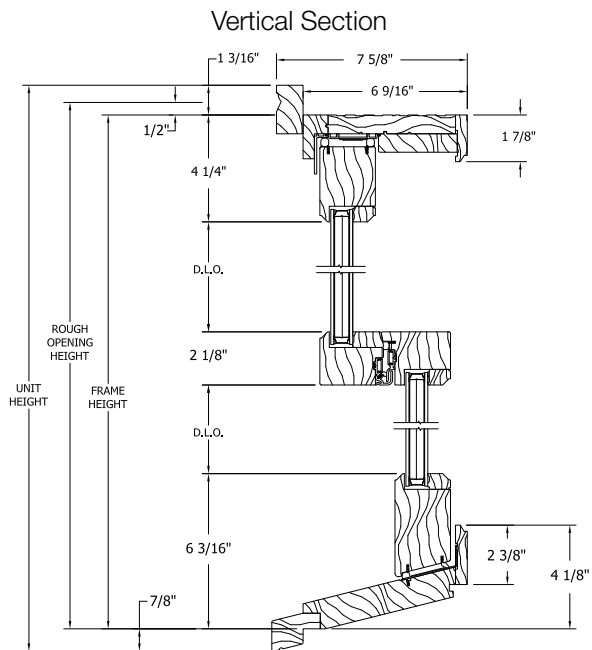
Narrow Mullion



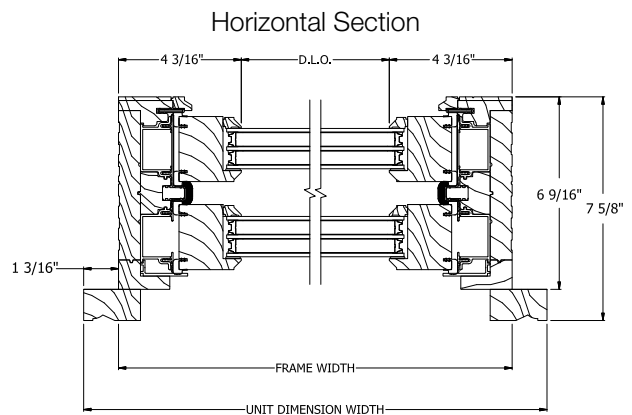
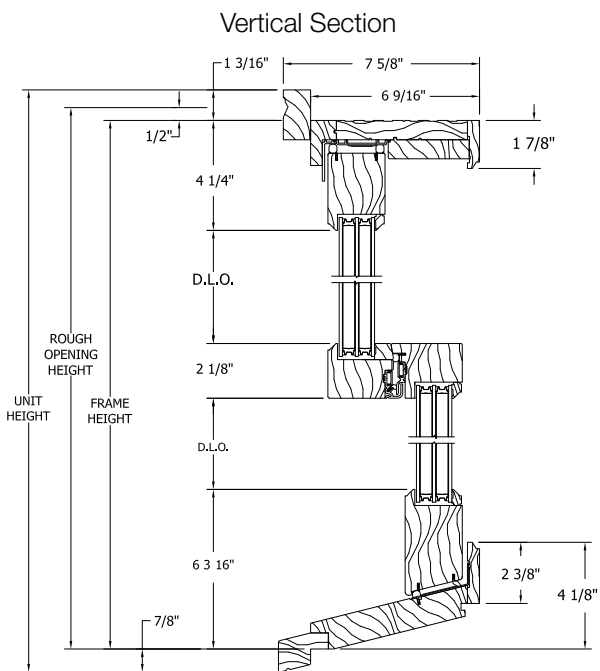
NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

Double Hungs Cross Section Drawings

Dual Pane Majesta Double Hung



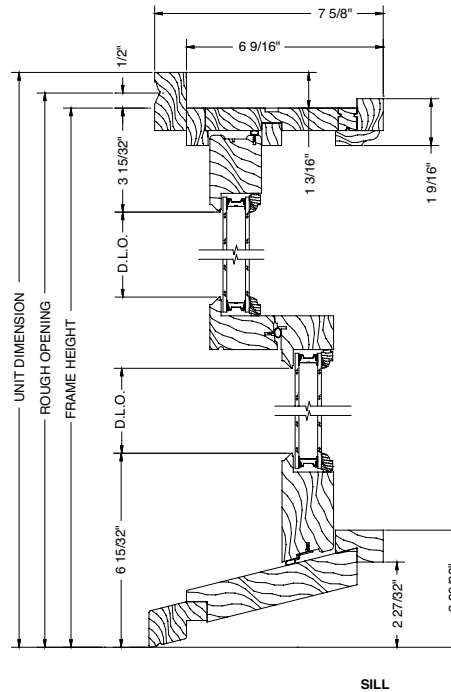
Triple Pane Majesta Double Hung



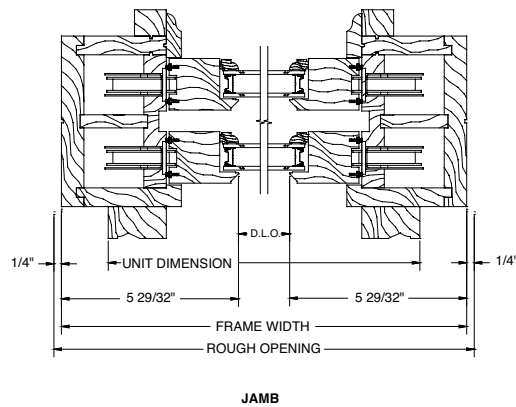
NOTE: There are no standard sizes for Majesta double hungs. Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

Old World Classic Double Hung

Vertical Section



Horizontal Section



NOTE: There are no standard sizes for Old World Classic double hungs. Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.





Photo courtesy of Kenneth M Wyner Photography, Inc.



Folding Windows, Tilt-Turns & Sliders

Kolbe is well-known in the window and door industry for innovative products. Folding windows are a perfect example, made for projects needing a pass-through type serving system. Our tilt-turns put a modern twist on a classic European window, with special hardware that allows them to open as a top-venting hopper window or an inswing casement. For traditionalists, Kolbe's slider windows offer a large, unobstructed view of the outdoors. Sash operate from side-to-side, making slider windows ideal for areas with limited space.

Folding Windows | Tilt-Turns | Traditional Double Sliders | Traditional Triple Sliders



Folding Windows



Folding windows can infuse a room with a remarkable amount of fresh air by offering openings up to 52 feet. With up to eight panels per side, folding windows are highly customizable with a number of different configurations available.

Folding Window Standard Features

- ▶ 1-3/4" thick sash
- ▶ 6-9/16" minimum jamb width
- ▶ Folding windows feature LVL locking stiles; stiles and rails are a nominal 3" wide
- ▶ Frame setup up to 177" wide x 77-1/8" tall; all others knocked down
- ▶ Constructed of pine with pine interior stops
- ▶ All exterior wood parts are preservative-treated
- ▶ Exterior frame is latex primed
- ▶ Energy efficient, insulating LoE²-270 glass
- ▶ Glazed to the interior with beveled wood glazing beads
- ▶ Fully weatherstripped for a tight seal
- ▶ Bronze weep sill
- ▶ Grooved guide rollers with adjustable, ball-bearing wheels carry the folding panels
- ▶ Multi-point* mortise latch with handle set in a Bright Brass finish
- ▶ Face-mounted flush bolt locking hardware on folding panels
- ▶ Thick oak interior threshold

NOTE: All measurements are nominal.

Minimum panel height is 36", minimum panel width is 16", maximum panel height is 72" and maximum panel width is 39-3/8".

* Minimum panel height for multi-point hardware is 36".

Hardware

Lock Bolts for Folding Panels



Flush Bolt

As standard, folding panels have surface-mounted flush bolts factory-applied. Sizes available include 7-1/2", 17-23/32" or 23-5/8". (shown in Matte Black; also available in Bright Brass, Chrome and Satin Nickel)



Concealed Shoot Bolt

Additionally, folding panels with concealed shoot bolts are available with an Uno or Aria handle set (below).

Handles for Folding Panels with Concealed Shoot Bolts

Folding panels with concealed shoot bolts are available with handles in two styles, Uno and Aria. Uno handles are available in Dull (Brushed) Chrome (shown) and Matte Black. Aria handles are available in Bright Brass, Chrome, Dull (Brushed) Chrome (shown) and Matte Black.

Uno

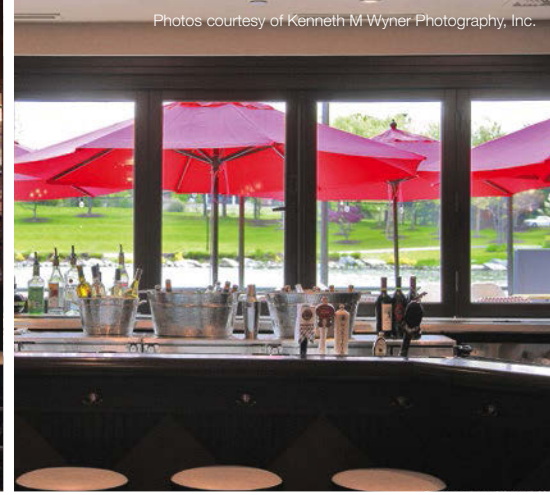


Aria



Handles for Swinging Panels

Folding windows can have a swinging panel for easy access. The swinging panel features a Toronto handle set as standard; other optional handle styles include, München, Dallas and Verona. Swinging panel hardware is available in numerous colors; see page 136 for handle style photos.



Folding Window Optional Features

Glass (pgs. 184-185):

- ▶ LoE-180
- ▶ LoE²-240
- ▶ LoE³-366
- ▶ ThermaPlus™ LoE
- ▶ Neat®
- ▶ Patterned, bronze- or gray-lite
- ▶ Laminated or tempered
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4", or 4-1/2" bars
- ▶ True divided lites with 5/8" LoE² insulating glass and 1-1/8" bars
- ▶ Grilles-in-the-air space
- ▶ Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds

Exterior Finishes (pg. 189):

- ▶ Urethane primer
- ▶ K-Kron II exterior paint finish

Other Options: (custom options are also available)

- ▶ Stile and top rail options: 4-5/8" or 6"

NOTE: All measurements are nominal.

Hinge color options for folding windows include Bright Brass, Chrome, Satin Nickel and Matte Black.

Finger Pulls for Folding Windows

When panels are configured such that the final panel does not have a hinge handle to pull in the panel, a finger pull can be installed so that the panel can be pulled in and secured. Finger pulls are available in Bright Brass, Chrome, Satin Nickel (shown at right) and Matte Black.



- ▶ Bottom rail options: 4-5/8", 6", 7-9/16" or 12-5/8"
- ▶ 2-1/4" thick panel
- ▶ Other wood species and FSC-certified wood (pg. 188)
- ▶ Interior prefinishing (pg. 188)
- ▶ Interior casing (pg. 190)
- ▶ Ovolo and square profile glazing beads and interior divided lite bars (pg. 192)
- ▶ Single-point hardware for access panel
- ▶ Black pleated sliding screens only available on units with the frame setup
- ▶ Exterior brickmoulds and casing (pg. 190)
- ▶ Toronto, Verona, Dallas or München handle set for access panel (pg. 136)
- ▶ Concealed shootbolt locking hardware for folding panels
- ▶ Uno or Aria handle set for folding panels with concealed shoot bolts
- ▶ Recessed floor track sill (interior), weep or non-weep in Bronze Anodized finish
- ▶ Recessed weep sill, Bronze Anodized finish
- ▶ Weep sill, Clear Anodized finish
- ▶ Extension jambs in a wide variety of sizes (shipped loose for field application if over 12")
- ▶ Galvanized steel installation clips
- ▶ Magnetic latch available to assist in keeping windows stationary while open

Magnetic Latch for Folding Windows

When panels are in an open position, some movement can occur due to wind or other factors. When magnetic latches are attached to the panel, the panels remain stationary. The purpose of this latch is to prevent movement, thereby keeping the panels in a fully open position.



Tilt-Turns



Tilt-turns put a modern twist on a classic European window. These units have special hardware that allows them to operate as a top-venting hopper window or an inswing casement. Tilt-turns combine versatility with classic style.

Tilt-Turn Standard Features

- ▶ Sash are 2-1/4" thick with 3-1/4" wide stiles and rails
- ▶ Basic frame jamb width is 2-7/16"
- ▶ Finished frame jamb width is 4-9/16"
- ▶ Constructed of pine, with pine interior stops and wood mull casings on muller units
- ▶ Energy efficient, insulating LoE²-270 glass
- ▶ Glazed to the interior with ovolo-profiled wood glazing beads
- ▶ 1-15/16" exterior brickmould applied to finished frame units
- ▶ All exterior wood parts are preservative-treated
- ▶ Exterior frame and sash are latex primed
- ▶ Fully weatherstripped for a tight seal
- ▶ Solid brass handles with a Bright Brass finish
- ▶ Unit can be operated as a hopper and inswing casement

NOTE: All measurements are nominal.

Hardware

Tilt-Turn windows have a solid, Bright Brass handle set as standard. Other handle options include solid brass with an Antique Brass finish or aluminum alloy with a White or Bronze-colored finish. Oil-Rubbed* and custom finish options are also available. Keyed handles in the same finishes are available as well.



*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.



Hopper operation



Inswing operation



Tilt-Turn Optional Features

Glass (pgs. 184-185):

- ▶ LoE -180
- ▶ LoE² -240
- ▶ LoE³ -366
- ▶ ThermaPlus™ LoE
- ▶ Patterned, bronze- or gray-lite
- ▶ Tempered or laminated
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4", or 4-1/2" bars
- ▶ Grilles-in-the-airspace
- ▶ Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds

Exterior Finishes (pg. 189):

- ▶ K-Kron II exterior paint finish

Other Options: (custom options are also available)

- ▶ Other wood species and FSC-certified wood (pg. 188)
- ▶ Interior prefinishing (pg. 188)
- ▶ Interior casing (pg. 190)
- ▶ 3-1/2" flat or profiled brickmould, backband on 3-1/2" brickmould and other custom millwork (pg. 190)
- ▶ Projected sill nosing, extended sill horns or no nosing on finished units
- ▶ Beveled and square profile glazing beads and interior divided lite bars (pg. 192)
- ▶ Solid brass handles with an Antique Brass finish, or aluminum alloy handles in either a White or Bronze-colored finish. Oil-Rubbed* finish is also available.
- ▶ Keyed handles, either solid brass with a Bright Brass or Antique Brass finish, or aluminum alloy with either a White or Bronze-colored finish. Oil-Rubbed* finish is also available.
- ▶ Screens with BetterVue® or UltraVue® fiberglass screen mesh, or aluminum screen mesh
- ▶ Unit operation as hopper only or inswing only
- ▶ Extension jambs for finished units (up to 4-9/16" applied to the exterior over 4-9/16" applied to the interior)
- ▶ Galvanized steel installation clips

NOTE: All measurements are nominal.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.

Sliders



Sliders create a streamlined look with simple functionality, which makes them ideal for hard-to-reach spaces or behind furniture. Sash can be easily removed for convenient cleaning.

Slider Standard Features

- ▶ 1-3/8" thick sash
- ▶ Energy efficient, insulating LoE²-270 glass
- ▶ Overall jamb width is 4-9/16" (*basic box width is 4-9/16"*)
- ▶ Constructed of pine, with pine interior stops
- ▶ Glazed to the interior with beveled wood glazing beads
- ▶ 1-15/16" exterior brickmould applied
- ▶ All exterior wood parts are preservative-treated
- ▶ Exterior frame and sash are latex primed
- ▶ Rigid PVC waterseal at the sill
- ▶ Fully weatherstripped for a tight seal
- ▶ Clay-colored heavy duty sash locks
- ▶ Machined finger grooves on the outermost stiles
- ▶ Beige extruded vinyl head and sill tracks with compression foam backing on the head track

NOTE: All measurements are nominal.

1-15/16" brickmould
applied as standard



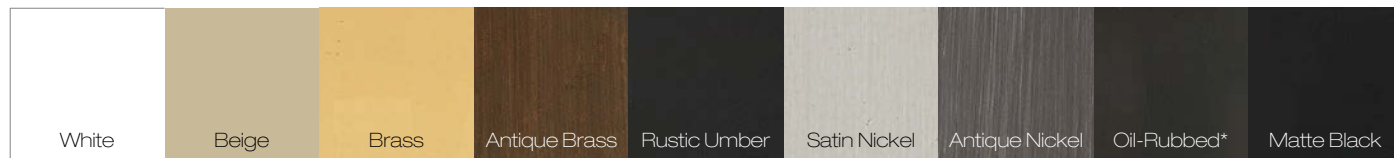
Hardware

Clay-colored cam locks are factory-applied to slider units as standard. Other finishes available are White, Beige, Brass, Antique Brass, Rustic Umber, Satin Nickel, Antique Nickel, Oil-Rubbed* and Matte Black.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.



Clay (standard)





Slider Optional Features

Glass (pgs. 184-185):

- ▶ LoE-180
- ▶ LoE²-240
- ▶ LoE³-366
- ▶ ThermaPlus™ LoE
- ▶ Patterned, bronze- or gray-lite
- ▶ Tempered or laminated
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4", or 4-1/2" bars
- ▶ True divided lites with 1/2" LoE² insulating glass and 1-1/8" bars
- ▶ Grilles-in-the-air-space
- ▶ Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds

Exterior Finishes (pg. 189):

- ▶ K-Kron II exterior paint finish

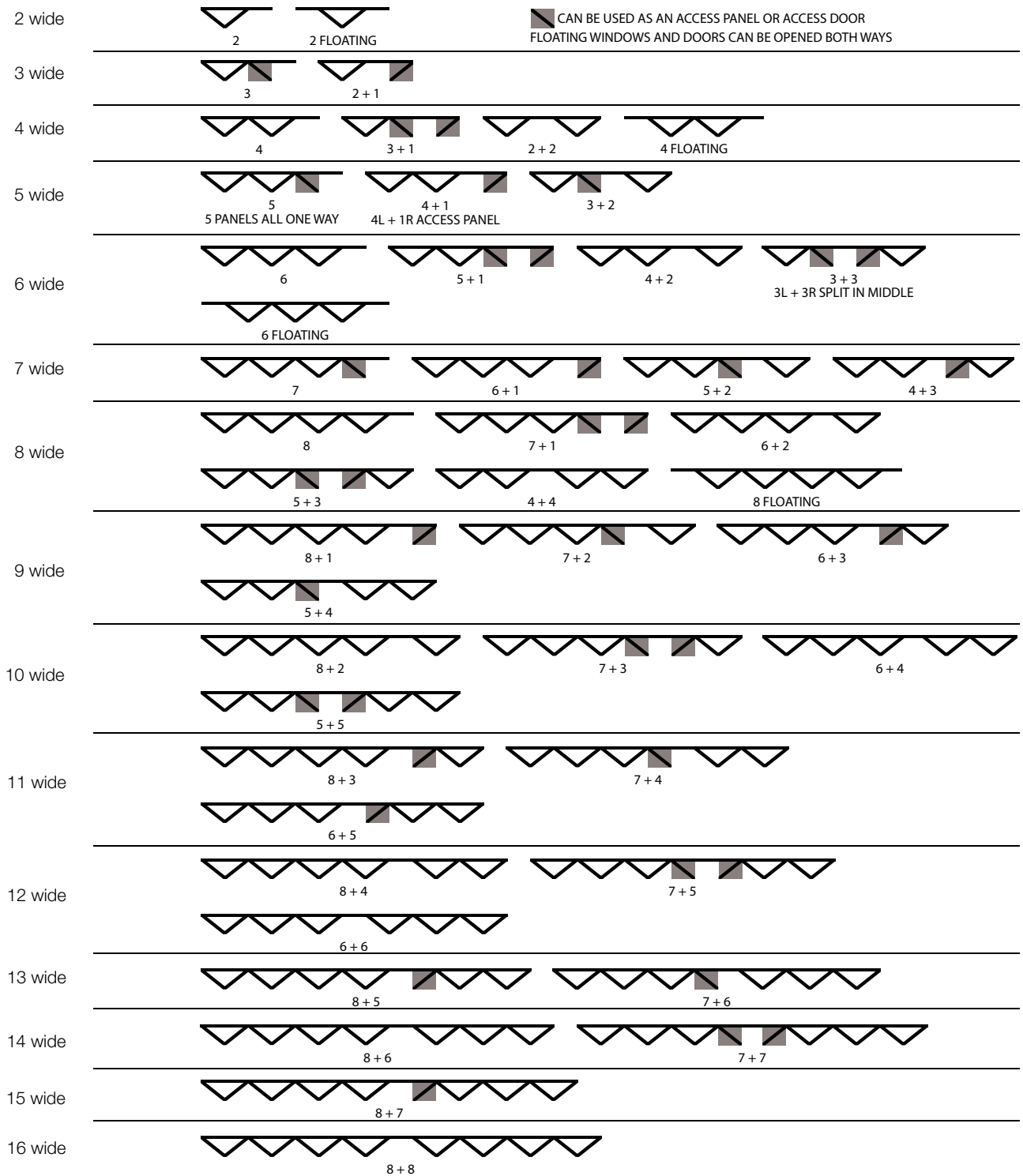
Other Options: (custom options are also available)

- ▶ Other wood species and FSC-certified wood (pg. 188)
- ▶ Interior prefinishing (pg. 188)
- ▶ Interior casing (pg. 190)
- ▶ Prep for stool
- ▶ 3-1/2" flat or profiled brickmould, backband on 3-1/2" brickmould and other custom millwork (pg. 190)
- ▶ Projected sill nosing, extended sill horns or no nosing
- ▶ Ovolo and square profile glazing beads and interior divided lite bars (pg. 192)
- ▶ Sash locks in White, Beige, Brass, Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, Oil-Rubbed* and Matte Black finishes
- ▶ Full screens or half screens with aluminum frames and options for BetterVue® or UltraVue® fiberglass screen mesh or aluminum screen mesh; frames will match the exterior color of the unit
- ▶ StormGuard combination storm/screen units (pg. 191)
- ▶ Extension jambs (up to 12" applied; over 12" shipped loose for field application)
- ▶ Galvanized steel installation clips

NOTE: All measurements are nominal.

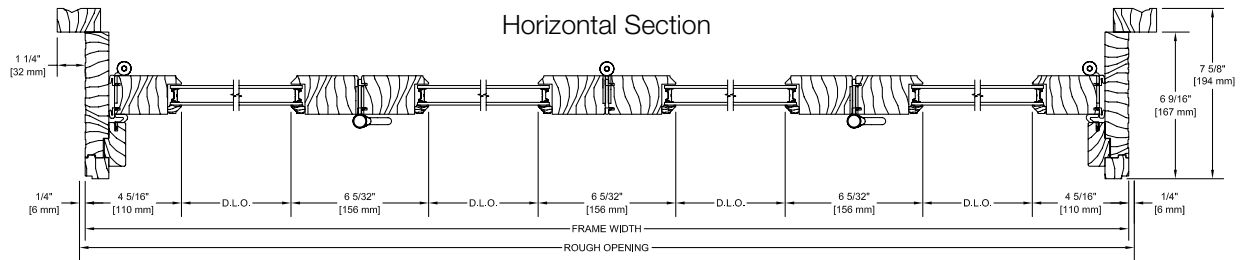
*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.

Folding Windows Panel Configurations

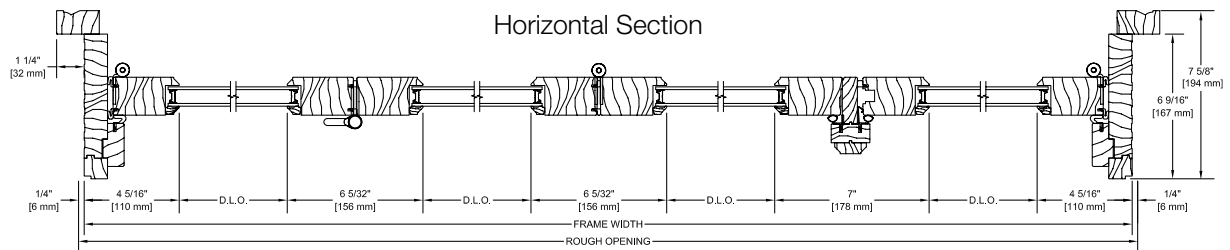


Folding Windows Cross Section Drawings

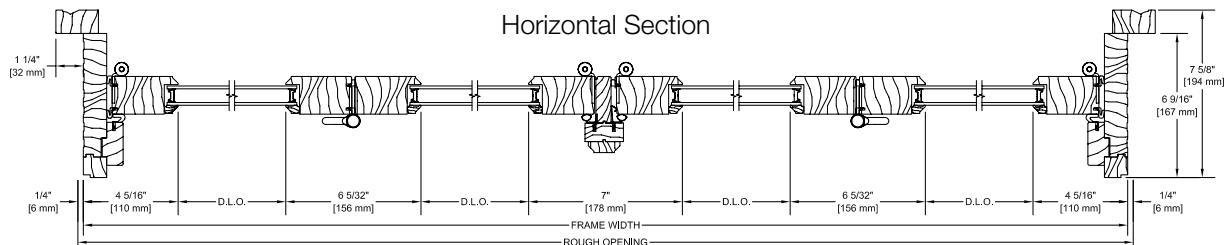
Four-Wide: Folding One-Way



Four-Wide: One Left & Three Right



Four-Wide: Two Left & Two Right



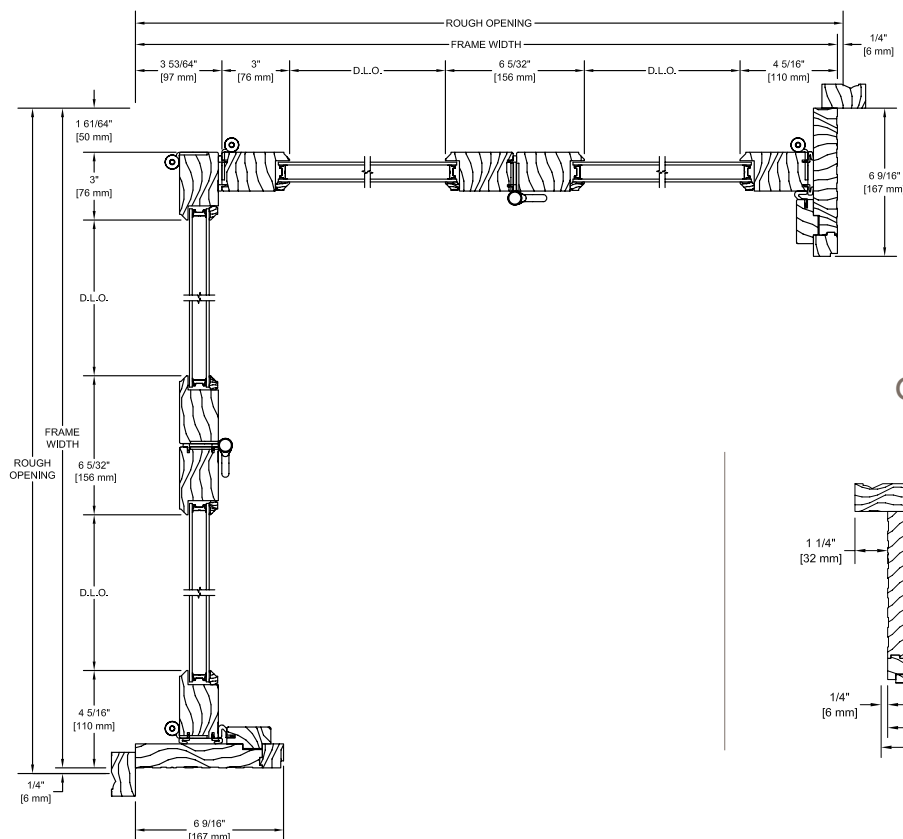
Operation is viewed from the exterior.

NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

Folding Windows Cross Section Drawings

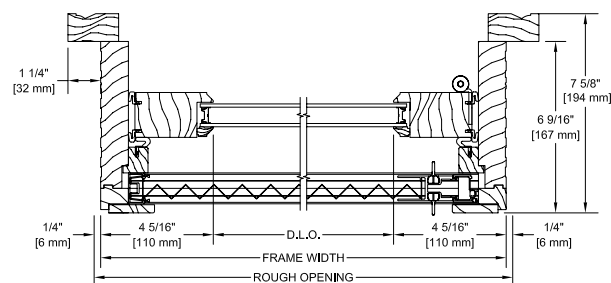
Corner Unit

Horizontal Section



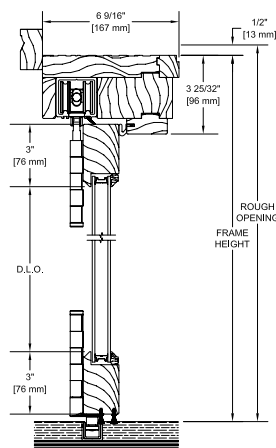
One Wide with Screen

Horizontal Section



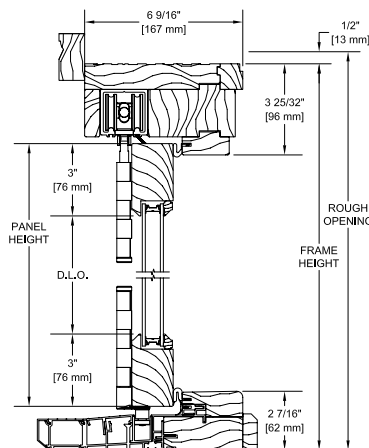
1.75 Panel with Recessed Sill

Vertical Section



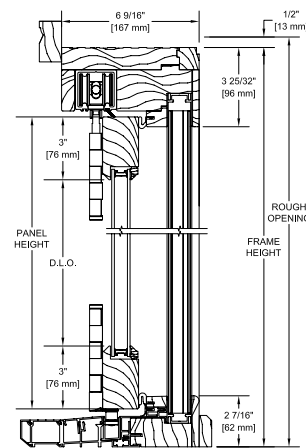
1.75 Panel with Weep Sill

Vertical Section



1.75 Panel with Weep Sill and Screen

Vertical Section

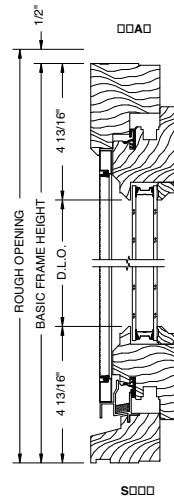


NOTE: Drawings are not to scale. Corner unit cross section will change when an odd number of panels are used. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

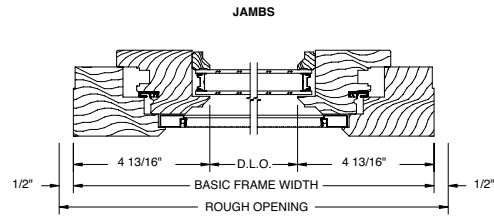
Tilt-Turns | Cross Section Drawings

Tilt-Turn Basic Frame

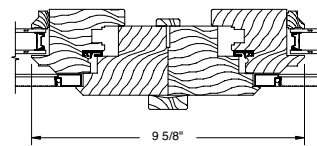
Vertical Section



Horizontal Section

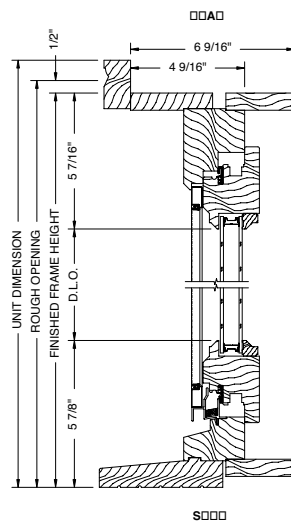


Mullion

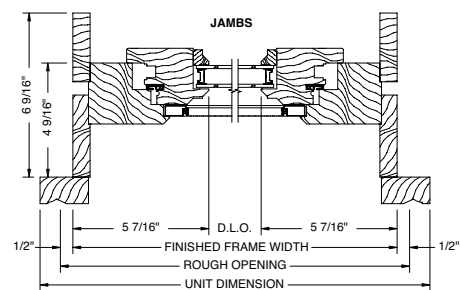


Tilt-Turn Finished Frame

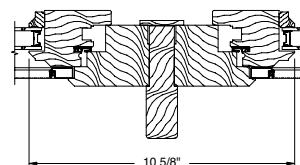
Vertical Section



Horizontal Section
















































Mullion



NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

Sliders | Elevation Charts

Double Sliders

U.D.	3'-4 7/8"	4'-0 7/8"	4'-8 7/8"	5'-4 7/8"	6'-0 7/8"
R.O.	3'-3"	3'-11"	4'-7"	5'-3"	5'-11"
S.O.	3'-1"	3'-9"	4'-5"	5'-1"	5'-9"
G.S.	16" 16"	20" 20"	24" 24"	28" 28"	32" 32"
2'-0 1/2"					
2'-4 1/2"					
2'-8 1/2"					
3'-0 1/2"					
3'-4 1/2"					
3'-8 1/2"					
4'-0 1/2"					
4'-4 1/2"					
4'-8 1/2"					

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

The side jambs of slider units extend above the head jamb; additional space for the rough opening height may be necessary.

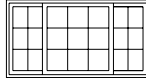
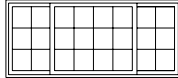
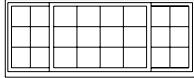

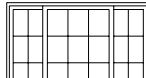



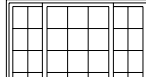



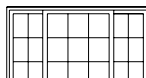



* Units meet most national emergency escape and rescue requirements.

PRODUCT CODES:

To order, add "W" before the product number (Ex: WSL3248).

U.D. = Unit Dimension • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size

Triple Sliders

U.D.	6'-1 7/8"	7'-5 7/8"	8'-1 7/8"	8'-9 7/8"
R.O.	6'-0"	7'-4"	8'-0"	8'-8"
S.O.	5'-10"	7'-2"	7'-10"	8'-6"
G.S.	16" 31 1/2" 16"	20" 39 1/2" 20"	20" 47 1/2" 20"	24" 47 1/2" 24"
3'-4 1/2"				
3'-3 3/8"	TSL163232	TSL204032	TSL204832	TSL244832*
4'-0 1/2"				
3'-11 3/8"	TSL163240	TSL204040*	TSL204840*	TSL244840*
4'-4 1/2"				
4'-3 3/8"	TSL163244	TSL204044*	TSL204844*	TSL244844*
4'-8 1/2"				
4'-7 3/8"	TSL163248	TSL204048*	TSL204848*	TSL244848*
4'-5"				
47 1/2"				

Dimension Calculations

Elevation charts provide wood unit dimensions for units with the standard 1 15/16" brickmould. Below are the calculations to determine the frame size of units with brickmould.

	Width	Height
1-15/16" brickmould; U.D. to F.S.	-2 3/8"	-1 11/16"
3-1/2" flat or profiled casing; U.D. to F.S.	-5 1/2"	-3 1/4"
3-1/2" casing and backband; U.D. to F.S.	-7"	-4 3/16"

F.S. to S.O.	-1 1/2"	-1 13/16"
R.O. to G.S.	-7" ÷ 2	-7 3/8"
G.S. to D.L.O.	-1"	-1"

Note: Clear opening dimensions can be found on pg. 202.

F.S. = Frame Size • G.S. = Glass Size • S.O. = Sash Opening
 R.O. = Rough Opening • D.L.O. = Daylight Opening
 U.D. = Unit Dimension

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

The side jambs of slider units extend above the head jamb; additional space for the rough opening height may be necessary.

* Units meet most national emergency escape and rescue requirements.




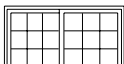



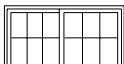

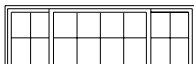



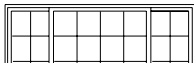
PRODUCT CODES:

To order, add "W" before the product number (Ex: WTSL244848).

U.D. = Unit Dimension • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size

Sliders | Elevation Charts

Sliders | Remodeling Sizes

U.D.	2'-1 7/8"	3'-1 7/8"	4'-1 7/8"	5'-1 7/8"	6'-1 7/8"	8'-1 7/8"
R.O.	2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	8'-0"
S.O.	1'-10"	2'-10"	3'-10"	4'-10"	5'-10"	7'-10"
G.S.	8 1/2" 8 1/2"	14 1/2" 14 1/2"	20 1/2" 20 1/2"	26 1/2" 26 1/2"	32 1/2" 32 1/2"	20" 47 3/4" 20"
2'-1 1/8"						
2'-0"						
3'-1 1/8"						
3'-0"						
4'-1 1/8"						
4'-0"						
5'-1 1/8"						
5'-0"						
4'-9 5/8"						
4'-9 5/8"						

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

The side jambs of slider units extend above the head jamb; additional space for the rough opening height may be necessary.

* Units meet most national emergency escape and rescue requirements.

PRODUCT CODES:

To order, add "ARW" before the product number (Ex: ARWTSLSL8050).

U.D. = Unit Dimension • R.O. = Rough Opening • S.O. = Sash Opening • G.S. = Glass Size



RECREATIONAL EQUIPMENT

THE DENVER TRAMWAY POWER CO.
1861

STARBUCKS
COFFEE



Complementary Windows

Heritage Series complementary windows are available in a variety of sizes and styles. Add radius or geometric units to other windows and doors to make that final dramatic statement to your design. To achieve a unique look, choose Kolbe's radius windows. Half-circle or elliptical units stacked above other Kolbe windows and doors create gracious curves and allow more light to enter your room. Make your design truly distinctive with Kolbe's geometric windows. Any combination will provide a light-filled room and a terrific view. Comprise a window wall with a variety of triangles, trapezoids, parallelograms, octagons, pentagons, diamonds, hexagons or any shape you can imagine to create a unique space that is sure to be eye-catching.

Radius Windows | Geometric Windows



Radius Windows



Kolbe makes radius windows in stand-alone full circles, half-circles, quarter-circles, elliptical, ovals and custom shapes. Half-circle or elliptical windows can be stacked over other Kolbe windows and doors to create larger window walls. We build our radius windows to order so that their profiles match those of the windows they complement.

Radius Standard Features

- ▶ 1-3/4" thick sash
- ▶ Overall jamb width is 4-9/16"; 5-9/16" for Magnum radius units *(basic box width matches the unit being complemented)*
- ▶ 3" straight legs on half-circles
- ▶ Constructed of pine, with pine interior stops and wood mull casings on mull units
- ▶ Energy efficient, insulating LoE²-270 glass
- ▶ Glazing is sash set to the interior with beveled wood glazing beads
- ▶ 1-15/16" exterior brickmould applied
- ▶ All exterior wood parts are preservative-treated
- ▶ Exterior frame and sash are latex primed
- ▶ Fully weatherstripped for a tight seal

NOTE: All measurements are nominal.

1-15/16" brickmould
applied as standard





Radius Optional Features

Glass (pgs. 184-185):

- ▶ LoE-180
- ▶ LoE² -240
- ▶ LoE³ -366
- ▶ ThermaPlus™ LoE
- ▶ Patterned, bronze- or gray-lite
- ▶ Tempered or laminated
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4", or 4-1/2" bars
- ▶ True divided lites with 5/8" LoE² insulating glass and 1-1/8" bars
- ▶ Grilles-in-the-airspace
- ▶ Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds

Exterior Finishes (pg. 189):

- ▶ K-Kron II exterior paint finish

NOTE: All measurements are nominal.

Other Options: (custom options are also available)

- ▶ Custom shapes such as bell-tops and gothic-tops
- ▶ Other wood species and FSC-certified wood (pg. 188)
- ▶ Interior prefinishing (pg. 188)
- ▶ Interior casing (pg. 190)
- ▶ 3-1/2" flat or profiled brickmould, backband on 3-1/2" brickmould and other custom millwork (pg. 190)
- ▶ Projected sill nosing, extended sill horns or no nosing
- ▶ Ovolo and square profile glazing beads and interior divided lite bars (pg. 192)
- ▶ Glazing may be direct set
- ▶ Extended legs or no legs on half-circles
- ▶ Extension jambs (up to 12" applied; over 12" shipped loose for field application)
- ▶ Galvanized steel installation clips
- ▶ High performance or K-Force® impact performance modifications

Geometric Windows



Geometric Units

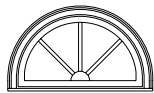
Angled for interest, geometric windows are attention-grabbers. Kolbe can produce a nearly infinite variety of window shapes and sizes, with a vast array of glazing options. Geometric units are sash set as standard and built with specifications to complement our standard windows and doors. We take the time to make sure the profiles of the specific geometric unit chosen closely match the unit it is milled to or aligned with. We offer geometric windows in triangles, octagons, hexagons, pentagons, trapezoids and diamonds. If you're envisioning a different shape, we also build custom shapes. Decorative 1-15/16" brickmould and sill nose trim are applied to wood unit exteriors. Many glazing, divided lite and exterior finish options are available on Kolbe geometric windows, however, certain options may depend on the shape of the unit ordered. Contact your dealer about adding Kolbe custom geometric windows to your plans.



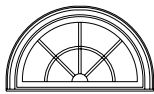


Radius | Elevation Charts

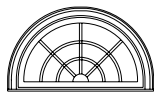
Radius Divided Lite Patterns



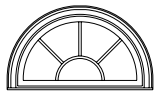
Sunburst



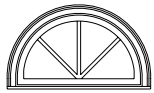
Double Cut
Sunburst



Triple Cut
Sunburst



Open Hub
Sunburst



Starburst



Spider
Web



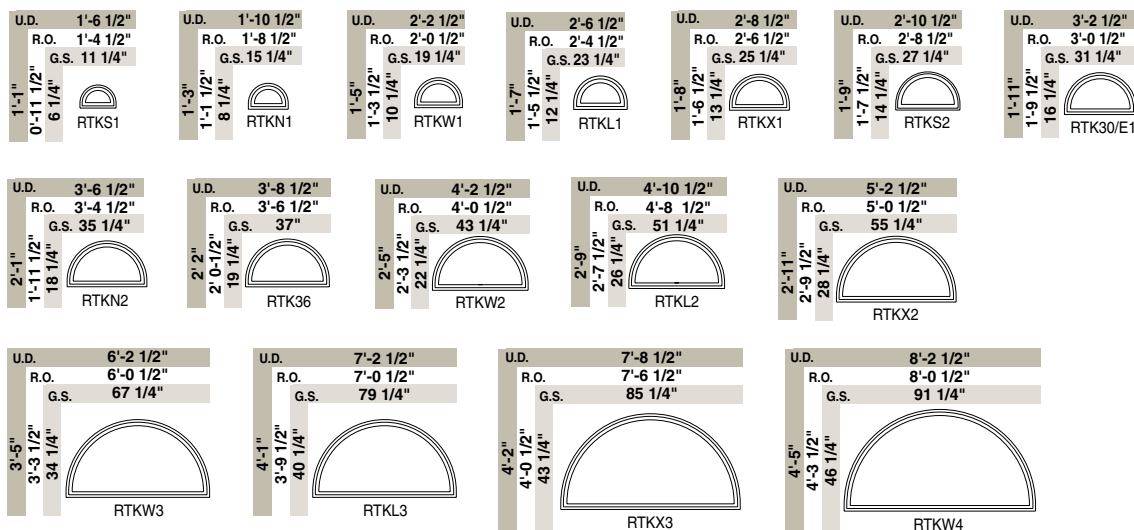
Elliptical
Sunburst

NOTE:
2-1/4" PDL bars are not available for patterns with curved bars.
Some designs may have a composite material for the exterior
PDL bar.

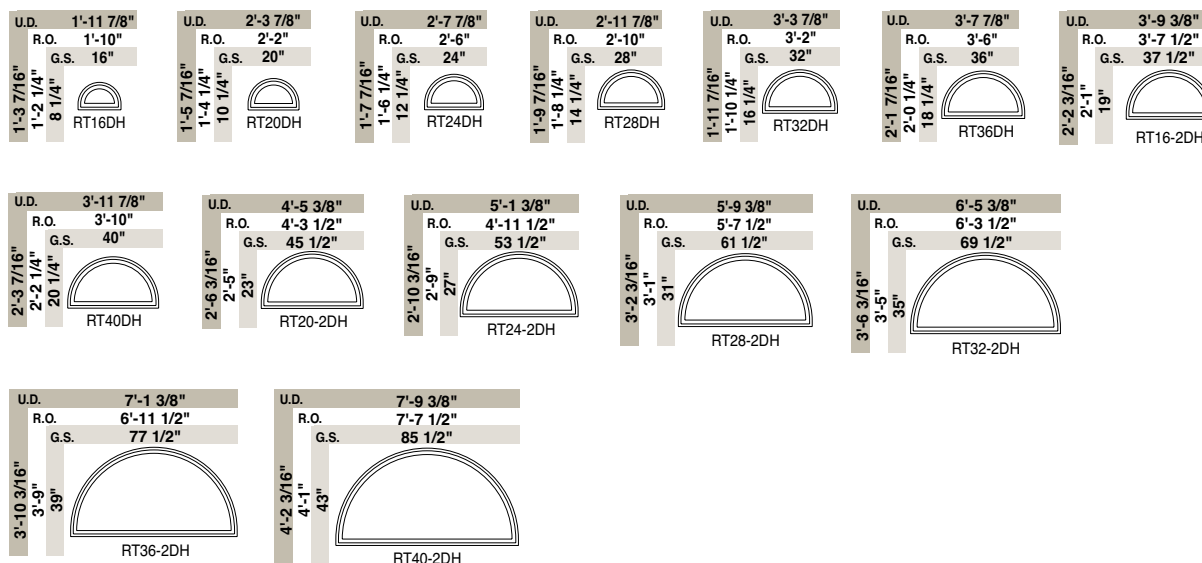
Dimension Calculations

Dimension calculation formulas for radius units vary depending on the unit and application. Please contact your Kolbe dealer if formulas are needed.

Half-Circle Units | Casement



Half-Circle Units | Double Hung



NOTE: All measurements are nominal. Elevation charts are not to scale.

Radius units are sash set as standard. Direct set units are available. Glass sizes differ for direct set units. Contact your supplier for details.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lites are optional. Divided lite pattern options are shown on pg. 120.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

Product Codes:

To order, add "W" before the product number (Ex: WRTKW4).

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

Radius | Elevation Charts

Half-Circle Units | Magnum Double Hung

WOOD U.D. 3'-3 7/8" R.O. 3'-2 5/8" 1'-11 13/16" 1'-10 9/16" MRT30DH	WOOD U.D. 3'-7 7/8" R.O. 3'-6 5/8" 2'-1 13/16" 2'-0 9/16" MRT34DH	WOOD U.D. 3'-11 7/8" R.O. 3'-10 5/8" 2'-3 13/16" 2'-2 9/16" MRT38DH	WOOD U.D. 4'-3 7/8" R.O. 4'-2 5/8" 2'-5 13/16" 2'-4 9/16" MRT40DH	WOOD U.D. 4'-7 7/8" R.O. 4'-6 5/8" 2'-7 13/16" 2'-6 9/16" MRT44DH
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Half-Circle Units | Garden-Aire Sliding Patio Door

U.D. 5'-2 1/4" R.O. 5'-0 1/2" G.S. 54 1/2" 2'-10 5/8" 2'-9 1/2" 27 1/2" RTG50	U.D. 6'-2 1/4" R.O. 6'-0 1/2" G.S. 66 1/2" 3'-4 5/8" 3'-3 1/2" 33 1/2" RTG60	U.D. 6'-8 1/4" R.O. 6'-6 1/2" G.S. 72 1/2" 3'-7 5/8" 3'-6 1/2" 36 1/2" RTG66	U.D. 8'-2 1/4" R.O. 8'-0 1/2" G.S. 90 1/2" 4'-4 5/8" 4'-3 1/2" 45 1/2" RTG80
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Half-Circle Units | Inswing Patio Door

U.D. 2'-8 1/2" R.O. 2'-6 1/2" G.S. 24 1/2" 1'-7 3/4" 1'-6 1/2" 12 1/2" RTS26	U.D. 3'-2 1/2" R.O. 3'-0 1/2" G.S. 30 1/2" 1'-10 3/4" 1'-9 1/2" 15 1/2" RTS30	U.D. 5'-1 11/16" R.O. 4'-11 11/16" G.S. 53 11/16" 2'-10 3/8" 2'-9 1/8" 27 1/8" RTS411	U.D. 6'-1 11/16" R.O. 5'-11 11/16" G.S. 65 11/16" 3'-4 3/8" 3'-3 1/8" 33 1/8" RTS511
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Half-Circle Units | Inswing Exterior Door

U.D. 2'-3 7/8" R.O. 2'-1 7/8" G.S. 19 7/8" 1'-5 9/16" 1'-4 3/16" 10 3/16" RTXD20	U.D. 2'-9 7/8" R.O. 2'-7 7/8" G.S. 25 7/8" 1'-8 9/16" 1'-7 3/16" 13 3/16" RTXD26	U.D. 2'-11 7/8" R.O. 2'-9 7/8" G.S. 27 7/8" 1'-9 9/16" 1'-8 3/16" 14 3/16" RTXD28	U.D. 3'-3 7/8" R.O. 3'-1 7/8" G.S. 31 7/8" 1'-11 9/16" 1'-10 3/16" 16 3/16" RTXD30	U.D. 4'-4 7/16" R.O. 4'-2 7/16" G.S. 42 7/16" 2'-5 7/8" 2'-4 1/2" 22 1/2" RTXD40
U.D. 5'-4 7/16" R.O. 5'-2 7/16" G.S. 56 7/16" 2'-11 7/8" 2'-10 1/2" 28 1/2" RTXD50	U.D. 5'-8 7/16" R.O. 5'-6 7/16" G.S. 60 7/16" 3'-1 7/8" 3'-0 1/2" 30 1/2" RTXD54	U.D. 6'-4 7/16" R.O. 6'-2 7/16" G.S. 68 7/16" 3'-5 7/8" 3'-4 1/2" 34 1/2" RTXD60		

NOTE: All measurements are nominal. Elevation charts are not to scale.

Radius units are sash set as standard. Direct set units are available. Glass sizes differ for direct set units. Contact your supplier for details.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lites are optional. Divided lite pattern options are shown on pg. 120.

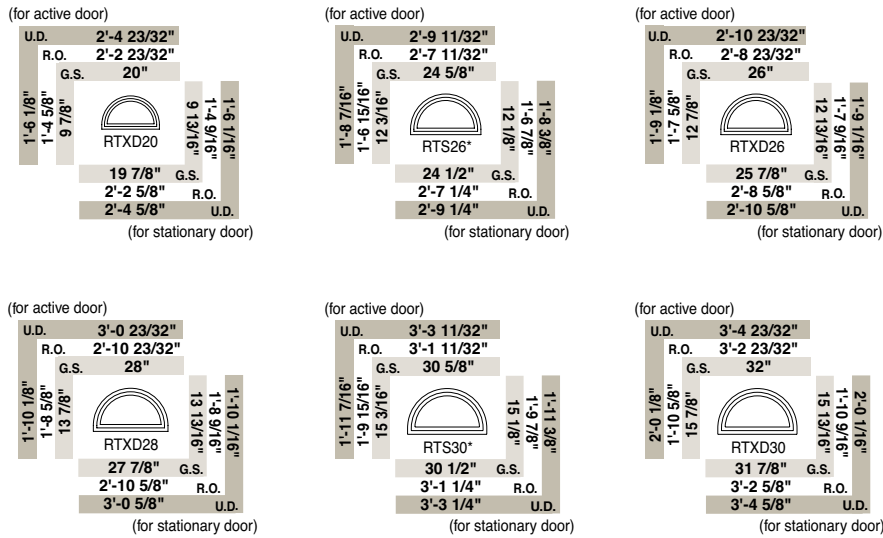
Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

PRODUCT CODES:

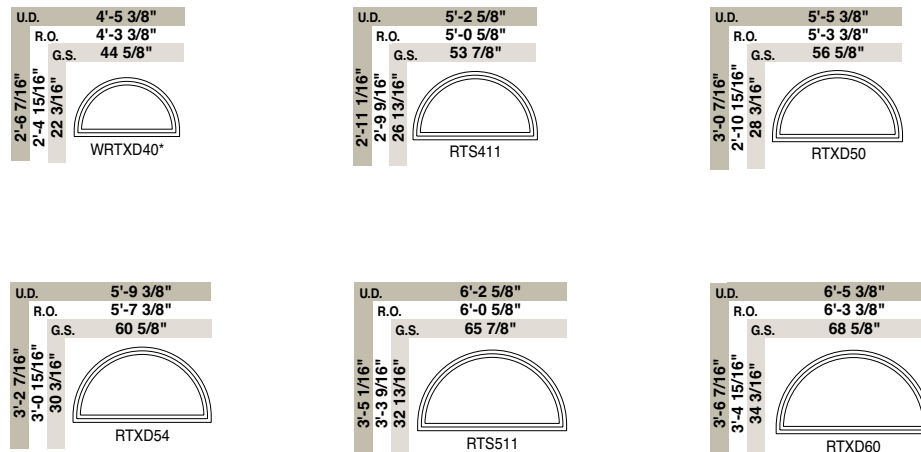
To order, add "W" before the product number. (Ex: WRTG80). Specify inswing entrance door when ordering inswing entrance door half-circles.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

Half-Circle Units | One-Wide Outswing Entrance Door



Half-Circle Units | Two-Wide Outswing Entrance Door



NOTE: All measurements are nominal. Elevation charts are not to scale.

Radius units are sash set as standard. Direct set units are available. Glass sizes differ for direct set units. Contact your supplier for details.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lites are optional. Divided lite pattern options are shown on pg. 120.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Patio door sizes






PRODUCT CODES:

To order, add "W" before the product number (Ex: WRTXD26). Specify outswing, active or stationary.








U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size







Radius | Elevation Charts

Elliptical Units | Casement





U.D.	4'-2 1/2"	5'-2 1/2"	6'-2 1/2"	7'-8 1/2"	8'-2 1/2"
R.O.	4'-0 1/2"	5'-0 1/2"	6'-0 1/2"	7'-6 1/2"	8'-0 1/2"
G.S.	43 1/4"	55 1/4"	67 1/4"	85 1/4"	91 1/4"
1'-8"					
1'-6 1/2"					
13 1/4"					
					
	EHKW2	EHKX2	EHKW3	WEHKX3	WEHKW4

Elliptical Units | Double Hung



U.D.	3'-9 3/8"	4'-5 3/8"	5'-1 3/8"	5'-9 3/8"	6'-5 3/8"	7'-1 3/8"	7'-9 3/8"
R.O.	3'-7 1/2"	4'-3 1/2"	4'-11 1/2"	5'-7 1/2"	6'-3 1/2"	6'-11 1/2"	7'-7 1/2"
G.S.	37 1/2"	45 1/2"	53 1/2"	61 1/2"	69 1/2"	77 1/2"	85 1/2"
1'-7 11/16"							
1'-6 1/2"							
12 1/2"							
							
	WEH16-2DH	WEH20-2DH	WEH24-2DH	EH28-2DH	EH32-2DH	WEH36-2DH	WEH40-2DH

U.D.	5'-6 7/8"	6'-6 7/8"	7'-6 7/8"	8'-6 7/8"	9'-6 7/8"	10'-6 7/8"
R.O.	5'-5"	6'-5"	7'-5"	8'-5"	9'-5"	10'-5"
G.S.	59"	71"	83"	95"	107 1/8"	119"
1'-7 11/16"						
1'-6 1/2"						
12 1/2"						
						
	WEH16-3DH	WEH20-3DH	WEH24-3DH	WEH28-3DH	WEH32-3DH	WEH36-3DH





Elliptical Units | Garden-Aire Sliding Patio Door

U.D.	5'-2 1/4"	6'-2 1/4"	6'-8 1/4"	8'-2 1/4"
R.O.	5'-0 1/2"	6'-0 1/2"	6'-6 1/2"	8'-0 1/2"
G.S.	54 1/2"	66 1/2"	72 1/2"	90 1/2"
1'-7 5/8"				
1'-6 1/2"				
12 1/2"				
				
	WEHG50	WEHG60	WEHG66	WEHG80





Elliptical Units | Inswing Patio Door

U.D.	5'-1 7/16"	6'-1 7/16"
R.O.	4'-11 11/16"	5'-11 11/16"
G.S.	53 11/16"	65 11/16"
1'-7 5/8"		
1'-6 1/2"		
12 1/2"		
		
	WEHS411	EHS511



Elliptical Units | Inswing Entrance Door

U.D.	4'-4 3/16"	5'-4 3/16"	5'-8 3/16"	6'-4 3/16"
R.O.	4'-2 7/16"	5'-2 7/16"	5'-6 7/16"	6'-2 7/16"
G.S.	44 9/16"	56 9/16"	60 9/16"	68 9/16"
1'-7 5/8"				
1'-6 1/2"				
12 1/2"				
				
	WEHXD40	EHXD50	WEHXD54	WEHXD60

Elliptical Units | Outswing Entrance Door

U.D.	4'-5 3/8"	5'-5 3/8"	5'-9 3/8"	6'-5 3/8"
R.O.	4'-3 3/8"	5'-3 3/8"	5'-7 3/8"	6'-3 3/8"
G.S.	44 5/8"	56 5/8"	60 5/8"	68 5/8"
1'-8"				
1'-6 1/2"				
11 3/4"				
				
	WEHXD40	EHXD50	WEHXD54	WEHXD60

Elliptical Units | Outswing Patio Door

U.D.	5'-2 5/8"	6'-2 5/8"
R.O.	5'-0 5/8"	6'-0 5/8"
G.S.	53 15/16"	65 15/16"
1'-7 23/32"		
1'-6 1/2"		
11 3/4"		
		
	WEHS411	EHS511

NOTE: All measurements are nominal. Elevation charts are not to scale.

Radius units are sash set as standard. Direct set units are available. Glass sizes differ for direct set units. Contact your supplier for details.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lites are optional. Divided lite pattern options are shown on pg. 120.

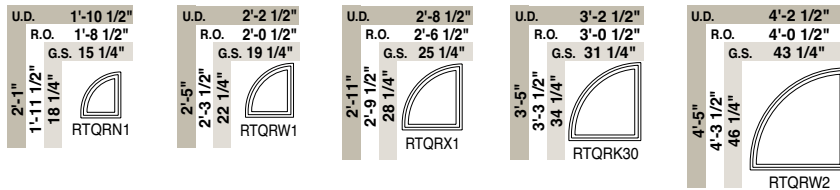
Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

PRODUCT CODES:

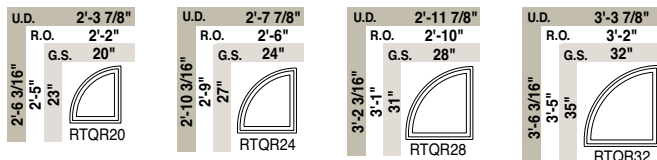
Product codes that begin with "W" are units available as wood or clad profile. Specify when ordering. Product codes that begin with "E" are units available as wood only. Add "W" before the product code when ordering. For elliptical units above doors specify inswing patio or entrance, outswing patio or outswing entrance.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

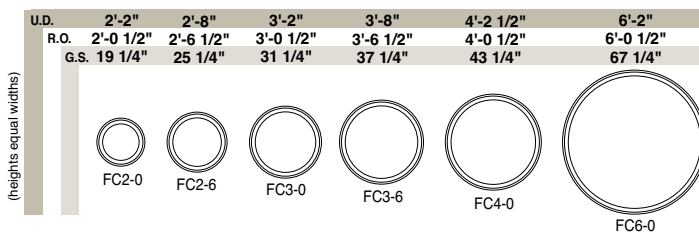
Quarter-Circle Units | Casement



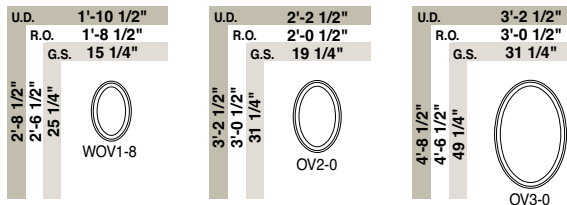
Quarter-Circle Units | Double Hung



Full Circle Units



Oval Units



NOTE: All measurements are nominal. Elevation charts are not to scale.

Radius units are sash set as standard. Direct set units are available.

Glass sizes differ for direct set units. Contact your supplier for details.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lites are optional. Divided lite pattern options are shown on pg. 120.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

PRODUCT CODES:

To order, add "W" before the product number (Ex: WFC6-0).

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

Radius | Cross Section Drawings

Sash Set Units

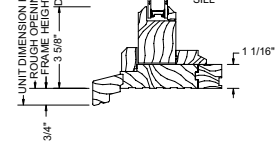
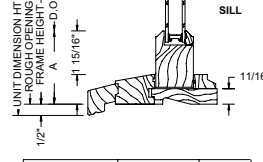
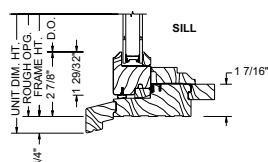
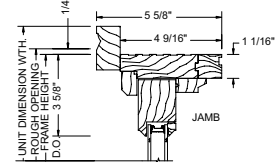
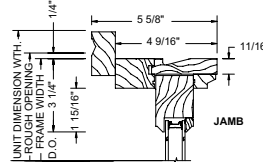
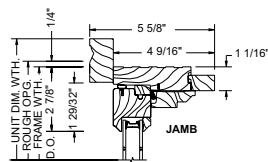
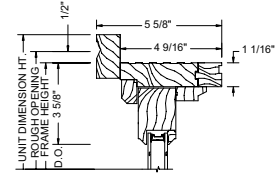
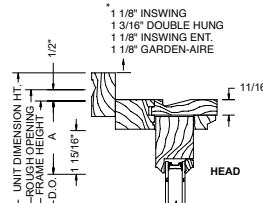
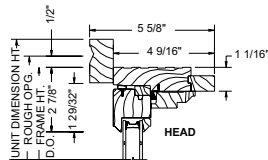
Vertical Section

Horizontal Section

To Match
Casements

To Match Double
Hungs & Doors
(except outswing)

To Match
Outswing Doors



UNIT TYPE	STILE & RAIL SIZE	A
INSWING	2 1/2"	3 1/4"
DOUBLE HUNG	2 1/2"	3 1/4"
INSWING ENT.	2 1/2"	3 1/4"
GARDEN-AIRE	3 5/16"	4 1/16"

* The amount the brickmould extends beyond the frame varies depending on the unit the radius is stacked on.

Direct Set Units

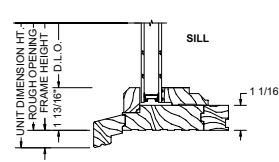
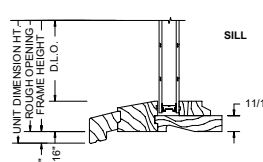
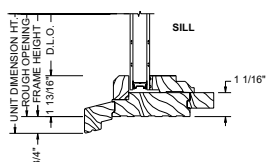
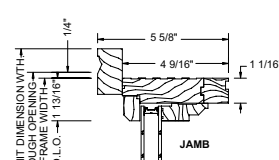
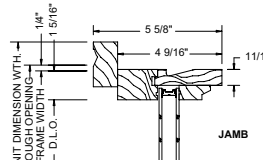
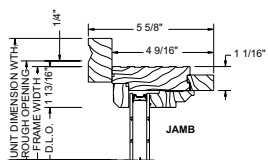
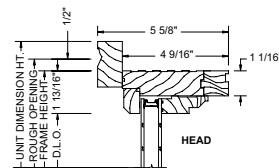
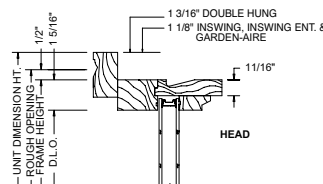
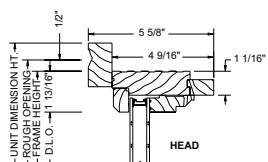
Vertical Section

Horizontal Section

To Match
Casements

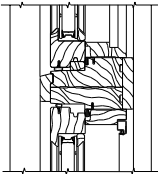
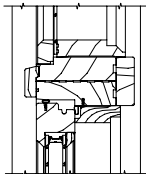
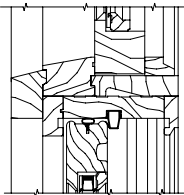
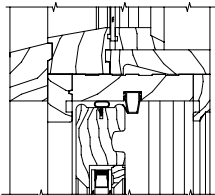
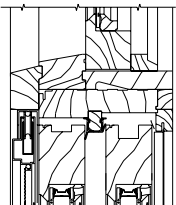
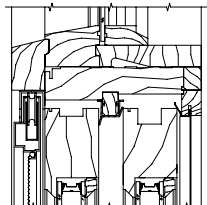
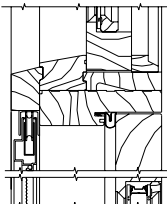
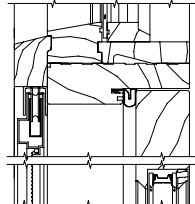
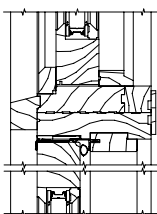
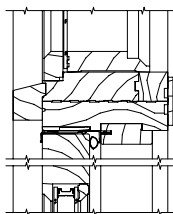
To Match Double
Hungs & Doors
(except outswing)

To Match
Outswing Doors



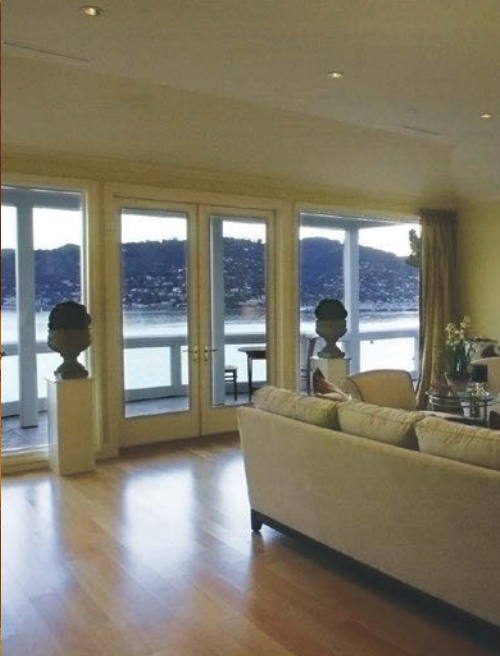
NOTE: Drawings are not to scale. Radius cross section drawings to complement Magnum double hungs can be obtained from Kolbe's website. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

Radius Unit Stacking Details

	Sash Set	Direct Set
Stacked over Casements		
Stacked over Double Hungs		
Stacked over Garden-Aire Siding Patio Doors		
Stacked over Inswing Patio or Inswing Entrance Doors		
Stacked over Outswing Entrance Doors		

NOTE: Drawings are not to scale. Radius cross section drawings to complement Magnum double hungs can be obtained from Kolbe's website. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

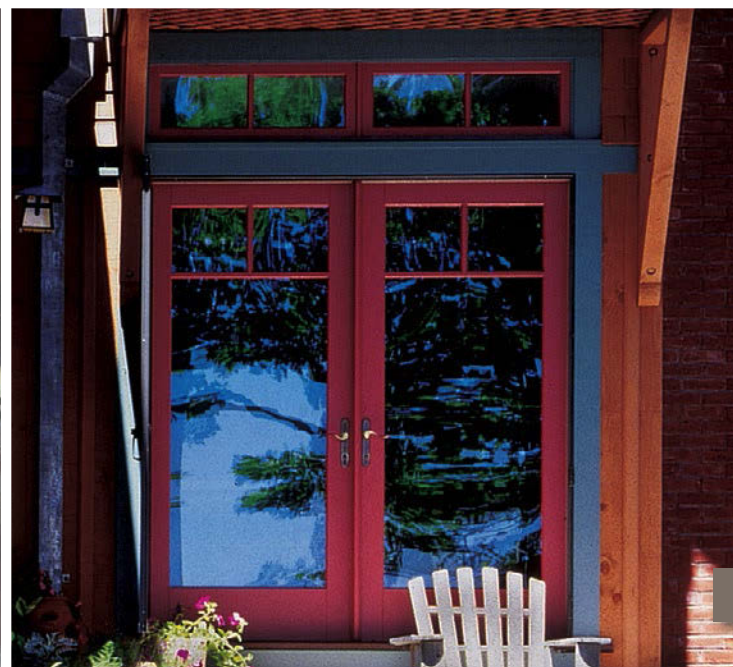




Patio Doors

Heritage Series patio doors add warmth and elegance to any project. Sliding patio doors are the perfect solution for an attractive and space-saving opening to a terrace or garden. Or, choose inswing or French patio doors to provide a convenient way to access a patio or even an adjoining room. To allow for additional light and a panoramic view, mull a series of patio doors together – or include matching transoms or radius units. Stylish hardware with finishes to match any decor will add beauty and originality to your passageway.

Garden-Aire Sliding Patio Doors | Inswing Patio Doors | Folding Doors



Garden-Aire Sliding Patio Doors



Sliding patio doors are a space-saving way to connect your indoor and outdoor living spaces. Slide the doors from side-to-side to operate and create access to the outdoors. Sliding patio doors are available in various sizes to accommodate new construction or remodeling projects.

Garden-Aire Sliding Patio Door Standard Features

- ▶ 1-3/4" thick sash
- ▶ Standard jamb width is 5"
- ▶ 3" wide LVL stiles and rails
- ▶ Frame setup
- ▶ Constructed of pine, with pine interior stops and wood mull casings on muller units
- ▶ Energy efficient, insulating LoE²-270 glass
- ▶ Glazed to the interior with beveled wood glazing beads
- ▶ All wood interior for clean look
- ▶ 1-15/16" exterior brickmould applied
- ▶ All exterior wood parts are preservative-treated
- ▶ Exterior frame and panels are latex primed
- ▶ Fully weatherstripped for a tight seal
- ▶ Tandem rollers with adjustable, ball-bearing wheels carry the sliding panel
- ▶ Single-point mortise latch with handle set in a Bright Brass finish
- ▶ Screens with BetterVue[®] fiberglass mesh and extruded aluminum frames
- ▶ One-piece, pultruded fiberglass sill with continuous aluminum sill nosing and fiberglass sill filler
- ▶ Thick oak interior threshold

NOTE: All measurements are nominal.

Hardware

As standard, a single-point mortise latch is factory-applied to each Garden-Aire sliding patio door, with a Bright Brass handle set shipped loose for field installation. A multi-point lock and handle is also available. Handle sets and finish options are shown below.

	Bright Brass	Antique Brass	Satin Nickel	Antique Nickel	Rustic Umber	Matte Black	Oil-Rubbed*	Smoky Gray
Standard Handle								N/A
Multi-point Handle								
	PVD†		PVD†	PVD†				PVD†



Optional "arch" escutcheon

The arch escutcheon option for multi-point handle sets for sliding doors will complement Verona swinging door handle sets

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.



Garden-Aire Sliding Patio Door Optional Features

Glass (pgs. 184-185): (all door glass is tempered)

- ▶ LoE-180
- ▶ LoE²-240
- ▶ LoE³-366
- ▶ ThermaPlus™ LoE
- ▶ Patterned, bronze- or gray-lite
- ▶ Laminated glass
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4", or 4-1/2" bars
- ▶ True divided lites with 5/8" LoE² insulating glass and 1-1/8" bars
- ▶ Grilles-in-the-air space
- ▶ Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds

Exterior Finishes (pg. 189):

- ▶ Urethane primer
- ▶ K-Kron II exterior paint finish

Other Options: (custom options are also available)

- ▶ Available with wide stiles and rails (stiles and top rail are a nominal 4-5/8", bottom rail is 7-9/16" or 12 5/8")
- ▶ Other wood species and FSC-certified wood (pg. 188)

NOTE: All measurements are nominal.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.

- ▶ Available as a 3-wide unit in an Active-Fixed-Active configuration
- ▶ Interior casing (pg. 190)
- ▶ Two types of escutcheon styles: bell (standard) and arch (optional on multi-point only)
- ▶ 3-1/2" flat or profiled brickmould, backband on 3-1/2" brickmould and other custom millwork (pg. 190)
- ▶ Ovolo or square profile glazing beads and interior divided lite bars (pg. 192)
- ▶ Handle set and mortise latch in Antique Brass, Satin Nickel, Antique Nickel, Rustic Umber, Matte Black, Oil-Rubbed* and Smoky Gray finishes
- ▶ Multi-point lock
- ▶ Keyed lock
- ▶ Secondary security lock
- ▶ Corrosion-resistant hardware
- ▶ "Ultra" sliding screen with fiberglass mesh and extruded aluminum screen frames
- ▶ Screens with UltraVue® fiberglass mesh or aluminum mesh
- ▶ Extension jambs in a wide variety of sizes (shipped loose for field application)
- ▶ Galvanized steel installation clips
- ▶ High performance and K-Force® impact performance modifications
- ▶ Universal design aluminum sill ramp kits

Inswing Patio Doors



Swinging patio doors swing in or out to provide convenient access to the outdoors. Corresponding radius or transom units can allow even more light to illuminate your home. Mull together with additional patio doors to create custom-configured panoramic views.

Inswing Patio Door Standard Features

- ▶ 1-3/4" thick sash panel prehung in the 1-5/16" frame
- ▶ Standard jamb width is 4-9/16"
- ▶ LVL locking stiles; stiles and top rails are a nominal 4-5/8" wide; bottom rail is a nominal 7-9/16" high
- ▶ Constructed of pine, with pine interior stops and wood mull casings on mull units
- ▶ Energy efficient, insulating LoE²-270 glass
- ▶ Glazed to the interior with beveled wood glazing beads
- ▶ 1-15/16" exterior brickmould applied
- ▶ All exterior wood parts are preservative-treated
- ▶ Exterior frame is latex primed
- ▶ Fully weatherstripped for a tight seal
- ▶ Toronto handle set in a Bright Brass finish
- ▶ HLS 9000 stainless steel multi-point locking hardware on single door panels, French doors have a 3-point lock on the active panel and a 2-point lock on the less active panel
- ▶ Adjustable, 4" x 3-5/8" hinges with 5/8" radius corners in a Gold-painted finish
- ▶ "Ultra" sliding screens with BetterVue® fiberglass mesh and extruded aluminum frames
- ▶ Bronze-anodized aluminum, self-draining exterior sill with an oak interior threshold

NOTE: All measurements are nominal.

1-15/16" brickmould
applied as standard





Inswing Patio Door Optional Features

Glass (pgs. 184-185): (all door glass is tempered)

- ▶ LoE-180
- ▶ LoE²-240
- ▶ LoE³-366
- ▶ ThermaPlus™ LoE
- ▶ Patterned, bronze- or gray-lite
- ▶ Laminated glass
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4", or 4-1/2" bars
- ▶ True divided lites with 5/8" LoE² insulating glass and 1-1/8" bars
- ▶ Grilles-in-the-airspace
- ▶ Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds

Exterior Finishes (pg. 189):

- ▶ Urethane primer
- ▶ K-Kron II exterior paint finish

Other Options: (custom options are also available)

- ▶ 3" or 6" optional stiles
- ▶ Optional 12 5/8" bottom rail
- ▶ Other wood species and FSC-certified wood (pg. 188)
- ▶ Interior prefinishing (pg. 188)
- ▶ Interior casing (pg. 190)
- ▶ 3-1/2" flat or profiled brickmould, backband on 3-1/2" brickmould and other custom millwork (pg. 190)
- ▶ Ovolo and square profile glazing beads and interior divided lite bars (pg. 192)

- ▶ Toronto, München, Verona and Dallas[†] handle set in Bright Brass PVD, Antique Brass, Satin Nickel PVD, Antique Nickel PVD, Oil-Rubbed*, Rustic Umber, Matte Black, or Smoky Gray PVD finishes (pg. 136)
- ▶ 2-point flush bolt lock on less active panel of French doors
- ▶ Single-point locking system
- ▶ Adjustable, 4" x 3-5/8" hinges with 5/8" radius corners in Bright Brass, Bright Brass PVD, Antique Brass, Brushed Chrome PVD, Satin Nickel, Satin Nickel PVD, Antique Nickel, Smoky Gray PVD, Oil-Rubbed*, Rustic Umber and Matte Black finishes (pg. 137)
- ▶ Non-adjustable, residential, 4" x 4" ball-bearing hinges with 1/4" radius corners in Bright Brass, Antique Brass, Satin Nickel, Antique Nickel, Stainless Steel, Oil-Rubbed*, and Matte Black finishes (pg. 137)
- ▶ Non-adjustable, commercial-grade, 4" x 4" ball-bearing hinges with square corners in Bright Brass, Antique Brass, Stainless Steel, Oil-Rubbed* Matte Black, and Satin Nickel finishes (pg. 137)
- ▶ Non-adjustable, commercial-grade, 4-1/2" x 4-1/2" hinges in Bright Brass, Oil-Rubbed*, and Stainless Steel finishes (pg. 137)
- ▶ Self-closing, swinging screen includes a spring-loaded lock, aluminum screen frame to match unit exterior and choice of BetterVue® or UltraVue® fiberglass mesh or aluminum mesh
- ▶ Clear Anodized weep sill
- ▶ Adjustable sills in Bronze or Clear Anodized
- ▶ Thermal and non-thermal ADA-compliant sills
- ▶ Factory-applied extension jambs in a variety of sizes
- ▶ Galvanized steel installation clips

NOTE: All measurements are nominal.

[†] Dallas handle set is only available in Bright Brass PVD, Satin Nickel PVD, Matte Black, and Smoky Gray PVD.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.

Folding Doors



Breathe in the fresh air, add architectural interest and merge outdoor and indoor space by using folding doors. Choose from a variety of operating styles: doors that swing out, fold to one side, or split and fold to either side.

Folding Door Standard Features

- ▶ 1-3/4" thick sash
- ▶ 6-9/16" minimum jamb width
- ▶ Folding doors feature LVL locking stiles; stiles and top rails are a nominal 4-5/8" wide; bottom rail is a nominal 7-9/16" high
- ▶ Frame setup up to 177" wide x 106" tall; all others knocked down
- ▶ Constructed of pine with pine interior stops
- ▶ All exterior wood parts are preservative-treated
- ▶ Exterior frame is latex primed
- ▶ Energy efficient, insulating LoE²-270 glass *(tempered glass is standard on folding doors)*
- ▶ Glazed to the interior with beveled wood glazing beads
- ▶ Fully weatherstripped for a tight seal
- ▶ Bronze weep sill
- ▶ Grooved guide rollers with adjustable, ball-bearing wheels carry the folding panels
- ▶ Multi-point mortise latch with handle set in a Bright Brass finish
- ▶ Face-mounted flush bolt locking hardware on folding panels
- ▶ Thick oak interior threshold

NOTE: All measurements are nominal.

Minimum panel height is 72", minimum panel width is 23-3/4", maximum panel height is 120" and maximum panel width is 39-3/8".

Hardware

Lock Bolts for Folding Doors



Flush Bolt

As standard, folding doors have surface-mounted flush bolts factory-applied. Sizes available include 7-1/2", 17-23/32", 23-5/8" or 39". *(shown in Matte Black; also available in Bright Brass, Chrome and Satin Nickel)*



Concealed Shoot Bolt

Additionally, folding doors with concealed shoot bolts are available with an Uno or Aria handle set *(below)*.

Handles for Folding Doors with Concealed Shoot Bolts

Folding panels with concealed shoot bolts are available with handles in two styles, Uno and Aria. Uno handles are available in Dull (Brushed) Chrome *(shown)* and Matte Black. Aria handles are available in Bright Brass, Chrome, Dull (Brushed) Chrome *(shown)* and Matte Black.

Uno



Aria



Handles for Swinging Doors

Folding doors can have a swinging door for easy access. The swinging door features a Toronto handle set as standard; other optional handle styles include, München, Dallas and Verona. Swinging door hardware is available in numerous colors; see page 136 for handle style photos.



Folding Door Optional Features

Glass (pgs. 184-185): (all door glass is tempered)

- ▶ LoE-180
- ▶ LoE²-240
- ▶ LoE³-366
- ▶ ThermaPlus™ LoE
- ▶ Neat®
- ▶ Patterned, bronze- or gray-lite
- ▶ Laminated or tempered
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4", or 4-1/2" bars
- ▶ True divided lites with 5/8" LoE² insulating glass and 1-1/8" bars
- ▶ Grilles-in-the-air space
- ▶ Interior removable wood grilles with 7/8" or 1-1/8" bars and full surrounds

Exterior Finishes (pg. 189):

- ▶ Urethane primer
- ▶ K-Kron II exterior paint finish

Other Options: (custom options are also available)

- ▶ Stile and top rail options: 3"†† or 6"
- ▶ Bottom rail options: 4-5/8", 6" or 12-5/8"

†† When folding doors are ordered with 3" stiles and panel size is larger than 8', panel thickness must be 2-1/4".

NOTE: All measurements are nominal.

Hinge color options for folding doors include Bright Brass, Chrome, Satin Nickel and Matte Black.

Finger Pulls for Folding Doors

When panels are configured such that the final panel does not have a hinge handle to pull in the panel, a finger pull can be installed so that the panel can be pulled in and secured. Finger pulls are available in Bright Brass, Chrome, Satin Nickel (shown at right) and Matte Black.



- ▶ 2-1/4" thick panel
- ▶ Other wood species and FSC-certified wood (pg. 188)
- ▶ Interior prefinishing (pg. 188)
- ▶ Interior casing (pg. 190)
- ▶ Ovolo and square profile glazing beads and interior divided lite bars (pg. 192)
- ▶ Single-point hardware for access door
- ▶ Black pleated sliding screens available up to 177" wide x 102" tall (screen opening size; screen only available on units with the frame setup)
- ▶ Exterior brickmoulds and casing
- ▶ Toronto, Verona, Dallas or München handle set for access door (pg. 136)
- ▶ Concealed shootbolt locking hardware for folding panels
- ▶ Uno or Aria handle set for folding panels with concealed shoot bolts
- ▶ Recessed floor track sill (interior), weep or non-weep in Bronze Anodized finish
- ▶ Recessed weep sill, Bronze Anodized finish
- ▶ Weep sill, Clear Anodized finish
- ▶ Extension jambs in a wide variety of sizes (shipped loose for field application if over 12")
- ▶ Galvanized steel installation clips
- ▶ Magnetic latch available to assist in keeping doors stationary while open

Magnetic Latch for Folding Doors

When panels are in an open position, some movement can occur due to wind or other factors. When magnetic latches are attached to the panel, the panels remain stationary. The purpose of this latch is to prevent movement, thereby keeping the panels in a fully open position.































Swinging Patio Door Hardware



Photo courtesy of Group 3 Architecture & John McManus Photography

Hardware

To truly customize your patio door, numerous hardware options are available.

	Bright Brass PVD†	Antique Brass	Satin Nickel PVD†	Antique Nickel PVD†	Oil-Rubbed*	Rustic Umber	Matte Black	Smoky Gray PVD†
Toronto								
München								
Verona								
Dallas		N/A		N/A	N/A	N/A		

† PVD (Physical Vapor Deposition) finish is an application over the color which helps protect the hardware against tarnishing, peeling and cracking.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.



Non-Adjustable Hinges

Residential, 4" x 4"
ball-bearing, with
1/4" radius corners



Bright
Brass



Antique
Brass



Satin
Nickel



Antique
Nickel



Stainless
Steel



Oil-
Rubbed*



Matte
Black

Adjustable Hinges



Gold-
painted



Bright
Brass



Bright
Brass
PVD†



Antique
Brass



Brushed
Chrome
PVD†



Satin
Nickel



Satin
Nickel
PVD†



Antique
Nickel



Smoky
Gray
PVD†



Oil-
Rubbed*



Rustic
Umber



Matte
Black

Non-Adjustable Hinges

Commercial-
grade, 4" x 4"
ball-bearing, with
square corners



Bright
Brass



Antique
Brass



Stainless
Steel



Oil-
Rubbed*



Matte
Black



Satin
Nickel

Commercial-grade,
4-1/2" x 4-1/2"



Bright
Brass



Oil-
Rubbed*



Stainless
Steel

†PVD (Physical Vapor Deposition) finish is an application over the color which helps protect the hardware against tarnishing, peeling and cracking.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.

Garden-Aire Patio Doors Elevation Charts

Garden-Aire Sliding Patio Doors

U.D.	2'-10 3/4"	3'-4 3/4"	3'-7 1/2"	4'-4 3/4"	5'-2 1/4"	6'-2 1/4"	6'-7 3/4"	8'-2 1/4"	7'-10 3/4"	9'-4 3/4"	10'-1"	12'-4 3/4"
R.O.	2'-9"	3'-3"	3'-5 3/4"	4'-3"	5'-0 1/2"	6'-0 1/2"	6'-6"	8'-0 1/2"	7'-9"	9'-3"	9'-11 1/4"	12'-3"
G.S.	25 1/4"	34 1/4"	34"	43 1/4"	25 1/4"	31 1/4"	34"	43 1/4"	25 1/4"	34 1/4"	34"	43 1/4"
G.S.*	22"	28"	30 3/4"	40"	22"	28"	30 3/4"	40"	22"	28"	30 3/4"	40"
6'-11 9/16"												
7'-3 9/16"												
8'-3 9/16"												

3-Wide Garden-Aire Sliding Patio Doors

U.D.	9'-8 1/8"	11'-8 1/8"	15'-8 1/8"
R.O.	9'-6 3/8"	11'-6 3/8"	15'-6 3/8"
G.S.	25 1/4" 51 1/2" 25 1/4"	31 1/4" 63 1/2" 31 1/4"	43 1/4" 87 1/2" 43 1/4"
G.S.*	22" 48 1/4" 22"	28" 60 1/4" 28"	40" 84 1/4" 40"
6'-11 9/16"			
7'-3 9/16"			
8'-3 9/16"			

Operation is viewed from the exterior.

Standard operation is shown. Please specify if other operational configurations are needed.

4-Wide Garden-Aire Sliding Patio Doors

U.D.	10'-0 9/16"	12'-0 9/16"	16'-0 9/16"
R.O.	9'-10 13/16"	11'-10 13/16"	15'-10 13/16"
G.S.	25 1/4"	31 1/4"	43-1/4"
G.S.*	22"	28"	40"
6'-11 9/16"			
7'-3 9/16"			
8'-3 9/16"			

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. The configuration shown for a single panel is typical for each panel.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Glass size for wide-style Garden-Aire.

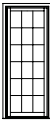


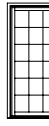





PRODUCT CODES:

To order, add "GAW" before the product number (Ex: GAW4-16080).












































U.D. = Unit Dimension • R.O. = Rough Opening

G.S. = Glass Size (Glass sizes are shown per panel.)

Garden-Aire Sliding Patio Doors | Remodeling Sizes

U.D.	2'-10 1/4"	5'-1 1/4"	7'-9 1/4"	3'-4 1/4"	6'-1 1/4"	9'-3 1/4"	4'-4 1/4"	8'-1 1/4"	12'-3 1/4"
R.O.	2'-8 1/2"	4'-11 1/2"	7'-7 1/2"	3'-2 1/2"	5'-11 1/2"	9'-1 1/2"	4'-2 1/2"	7'-11 1/2"	12'-1 1/2"
G.S.	24 3/4"	24 3/4"	24 3/4"	30 3/4"	30 3/4"	30 3/4"	42 3/4"	43 3/4"	43 3/4"
G.S.*	21 1/2"	21 1/2"	21 1/2"	27 1/2"	27 1/2"	27 1/2"	39 1/2"	39 1/2"	39 1/2"
									
	2866	4166	7766	3266	51166	9166	4266	71166	12166

Garden-Aire | Rectangular Transoms

U.D.	2'-10 3/4"	3'-4 3/4"	3'-7 1/2"	4'-4 3/4"	5'-2 1/4"	6'-2 1/4"	6'-8 1/4"	8'-2 1/4"
R.O.	2'-9"	3'-3"	3'-5 3/4"	4'-3"	5'-0 1/2"	6'-0 1/2"	6'-6 1/2"	8'-0 1/2"
G.S.	25 1/4"	31 1/4"	34"	43 1/4"	52 3/4"	64 3/4"	70 3/4"	88 3/4"
								
	2910	3310	3610					
								
	2914	3314	3614	4314	5014	6014	6614	8014
								
	2916	3316	3616	4316	5016	6016	6616	8016
								
	2918	3318	3618	4318	5018	6018	6618	8018
								
	2920	3320	3620	4320	5020	6020	6620	8020
								
	2926	3326	3626	4326	5026	6026	6626	8026

Operation is viewed from the exterior.

Standard operation is shown. Please specify if other operational configurations are needed.

NOTE: All measurements are nominal. Elevation charts are not to scale.

Rectangular transom units are sash set as standard. The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lites are optional. The configuration shown for a single panel is typical for each panel.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Glass size for wide stile Garden-Aire.

PRODUCT CODES:

To order remodeling sizes, add "GAW" before the product number (Ex: GAW12166). To order rectangular transoms, add "GAWT" before the product number (Ex: GAWT2910).

U.D. = Unit Dimension • R.O. = Rough Opening

G.S. = Glass Size (Glass sizes are shown per panel.)

Dimension Calculations

Elevation charts provide wood unit dimensions for units with the standard 1 15/16" brickmould. Below are the calculations to determine the frame size of units with brickmould.

	Width	Height
1-15/16" brickmould; U.D. to F.S.	-2 1/4"	-1 1/8"
3-1/2" flat or profiled casing; U.D. to F.S.	-5 3/8"	-2 11/16"
3-1/2" casing and backband; U.D. to F.S.	-6 7/8"	-3 7/16"

F.S. to Panel O.S.M.	+1/2" ÷ 2	-2 3/4"
Panel O.S.M. to G.S. (standard stiles & rails)	-5"	-4 11/16"
G.S. to D.L.O.	-1"	-1"

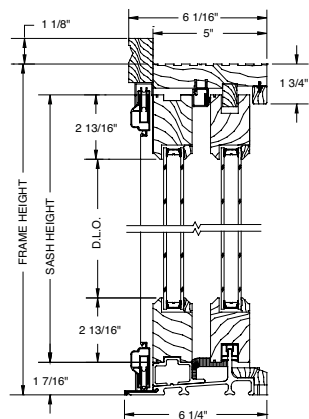
Note: Clear opening dimensions can be found on pg. 203.
Contact supplier for 4-wide Garden-Aire dimension calculations.

F.S. = Frame Size • G.S. = Glass Size • O.S.M. = Outside Measurement
D.L.O. = Daylight Opening • U.D. = Unit Dimension

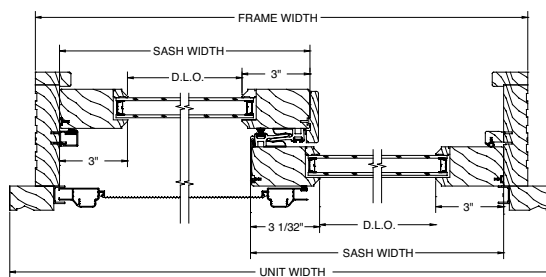
Garden-Aire Patio Doors Cross Section Drawings

Standard Garden-Aire

Vertical Section

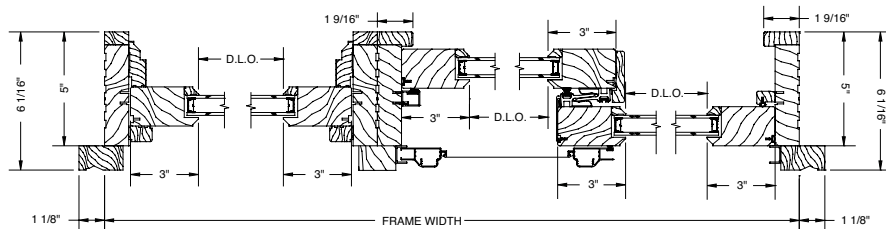


Horizontal Section



Garden-Aire with Sidelite

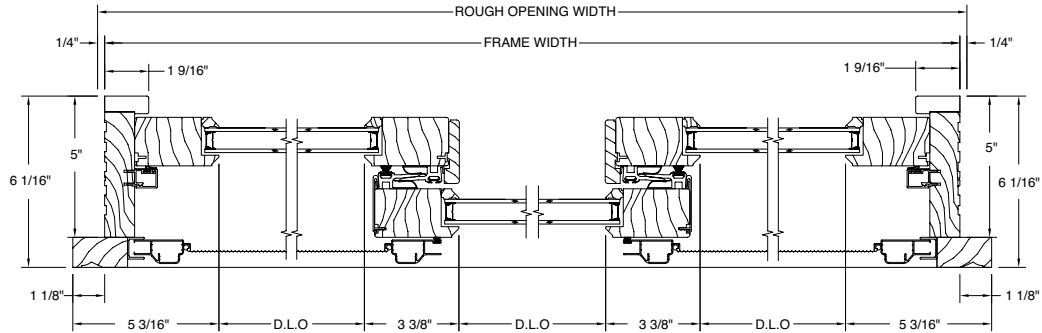
Horizontal Section



NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

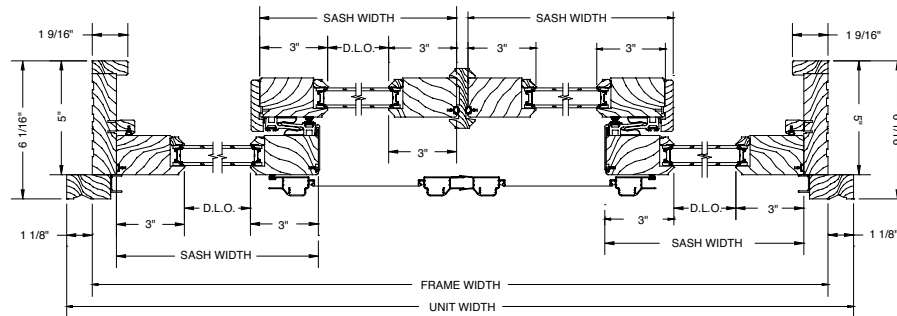
3-Wide Garden-Aire

Horizontal Section

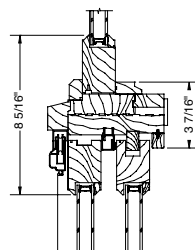


4-Wide Garden-Aire

Horizontal Section



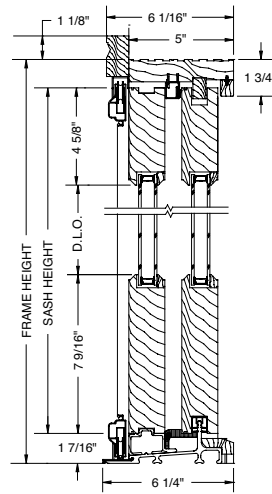
Rectangular Transom Stacked over Garden-Aire Doors



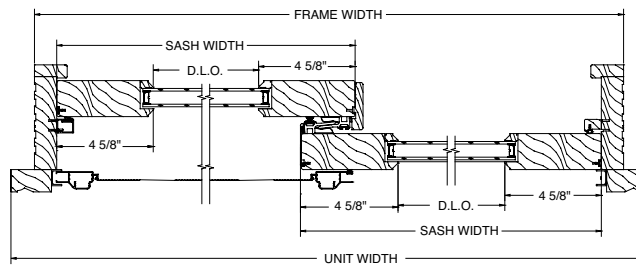
NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

Garden-Aire Patio Doors Cross Section Drawings

Wide-Stile Garden-Aire
Vertical Section

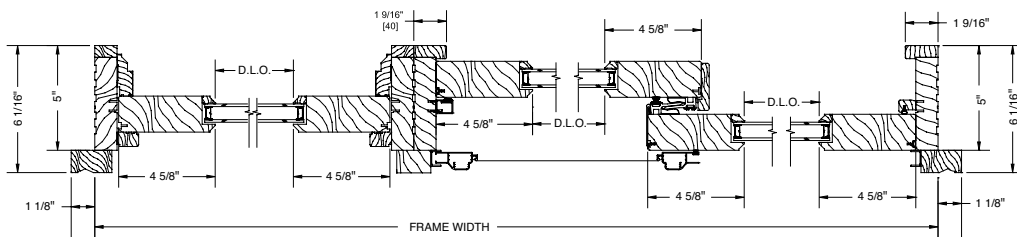


Horizontal Section



Garden-Aire with Sidelite

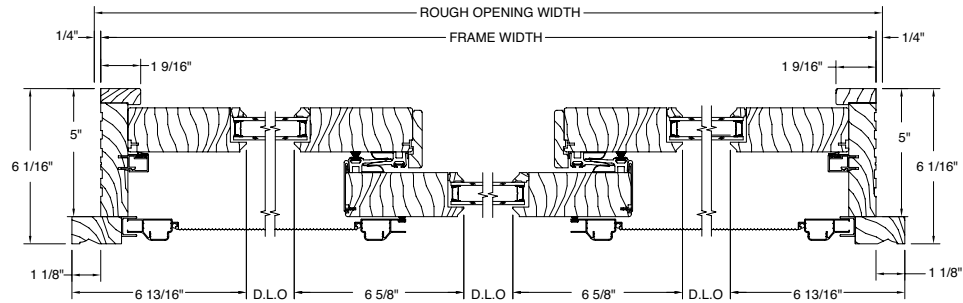
Horizontal Section



NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

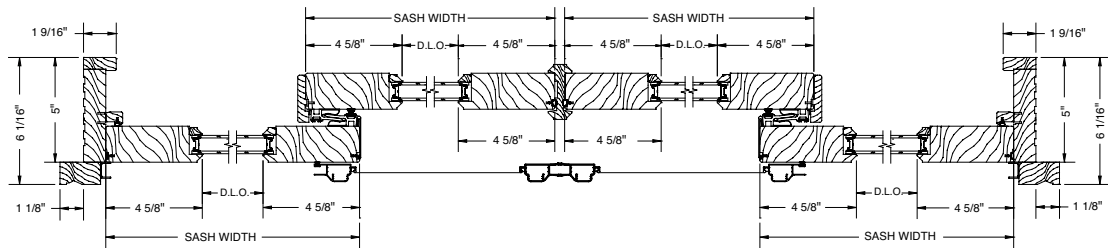
3-Wide Garden-Aire

Horizontal Section

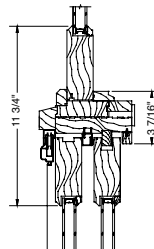


4-Wide Garden-Aire

Horizontal Section



Rectangular Transom Stacked over Garden-Aire Doors



NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

Inswing Patio Doors | Elevation Charts

Inswing Patio Doors

U.D.	2'-8 1/2"	5'-1 11/16"	5'-1 11/16"	7'-6 7/8"	7'-6 7/8"	3'-2 1/2"	6'-1 11/16"	6'-1 11/16"	8'-0 7/8"	8'-0 7/8"
R.O.	2'-6 3/4"	4'-11 15/16"	4'-11 15/16"	7'-5 1/8"	7'-5 1/8"	3'-0 3/4"	5'-11 15/16"	5'-11 15/16"	8'-11 1/8"	8'-11 1/8"
G.S.	20 5/16"	20 5/16"	20 5/16"	20 5/16"	20 5/16"	26 5/16"	26 5/16"	26 5/16"	26 5/16"	26 5/16"
6'-8 5/8"										
6'-8"	2666	41166AS	41166SA	7566SASR	7566SASL	3066	51166AS	51166SA	81166SASR	81166SASL
65 11/16"										
8'-0 23/32"										
8'-0 1/8"	2680*	41180AS*	41180SA*	7580SASR*	7580SASL*	3080*	51180AS*	51180SA*	81180SASR*	81180SASL*
81 25/32"										

Operation is viewed from the interior.

Dimension Calculations

Elevation charts provide wood unit dimensions for units with the standard 1 15/16" brickmould. Below are the calculations to determine the frame size of units with brickmould.

	Width	Height
1-15/16" brickmould; U.D. to F.S.	-2 1/4"	-1 1/8"
3-1/2" flat or profiled casing; U.D. to F.S.	-5 3/8"	-2 11/16"
3-1/2" casing and backband; U.D. to F.S.	-6 7/8"	-3 7/16"

F.S. to Panel O.S.M. (1-wide, active)	-1 13/16"	-2 23/32"
(1-wide, stationary)	-1 3/4"	-2 23/32"
(2-wide)	-2 9/16" ÷ 2	-2 23/32"
(3-wide)	-3 5/16" ÷ 3	-2 23/32"

Panel O.S.M. to G.S.	-8 1/8"	-11 3/32"
G.S. to D.L.O.	-1"	-1"

Note: Clear opening dimensions can be found on pg. 204.

F.S. = Frame Size • G.S. = Glass Size • O.S.M. = Outside Measurement
D.L.O. = Daylight Opening • U.D. = Unit Dimension

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. The configuration shown for a single panel is typical for each panel in the unit.

Additional swinging door sizes are available in the Entrance Door section.

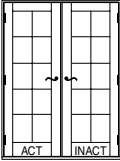
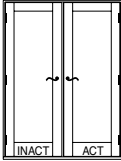
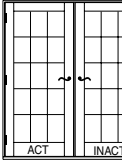
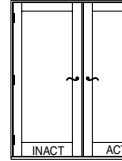
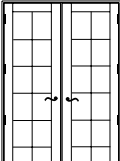
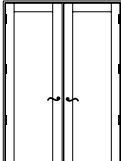
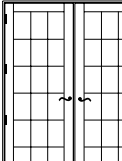
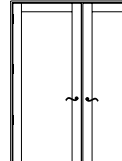
Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

PRODUCT CODES:

To order, add "SPW" before the product number (Ex: SPW81180SASL). When ordering single units, specify stationary, hinged left or hinged right. Operation is viewed from the interior.

























U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per panel.)

Inswing Patio Doors | French Doors

U.D.	5'-1 11/16"	5'-1 11/16"	6'-1 11/16"	6'-1 11/16"
R.O.	4'-11 15/16"	4'-11 15/16"	5'-11 15/16"	5'-11 15/16"
G.S.	20 5/16"	20 5/16"	26 5/16"	26 5/16"
6'-8 5/8"				
6'-8"				
65 11/16"				
				
	41166AL	41166AR	51166AL	51166AR
8'-0 23/32"				
8'-0 1/8"				
81 25/32"				
				
	41180AL	41180AR	51180AL	51180AR

Operation is viewed from the interior.

Inswing Patio Doors | Rectangular Transoms

U.D.	2'-8 1/2"	3'-2 1/2"	5'-1 11/16"	6'-1 11/16"
R.O.	2'-6 1/2"	3'-0 1/2"	4'-11 11/16"	5'-11 11/16"
G.S.	24 1/2"	30 1/2"	53 11/16"	65 11/16"
1'-1 1/4"				
	2610	3010	41110	51110
1'-0"				
	2614	3014	41114	51114
1'-5 1/4"				
	2616	3016	41116	51116
1'-4"				
	2618	3018	41118	51118
1'-7 1/4"				
	2620	3020	41120	51120
1'-9 1/4"				
	2626	3026	41126	51126

NOTE: All measurements are nominal. Elevation charts are not to scale.

Rectangular transom units are sash set as standard.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lite configurations must be specified when ordering.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

PRODUCT CODES:

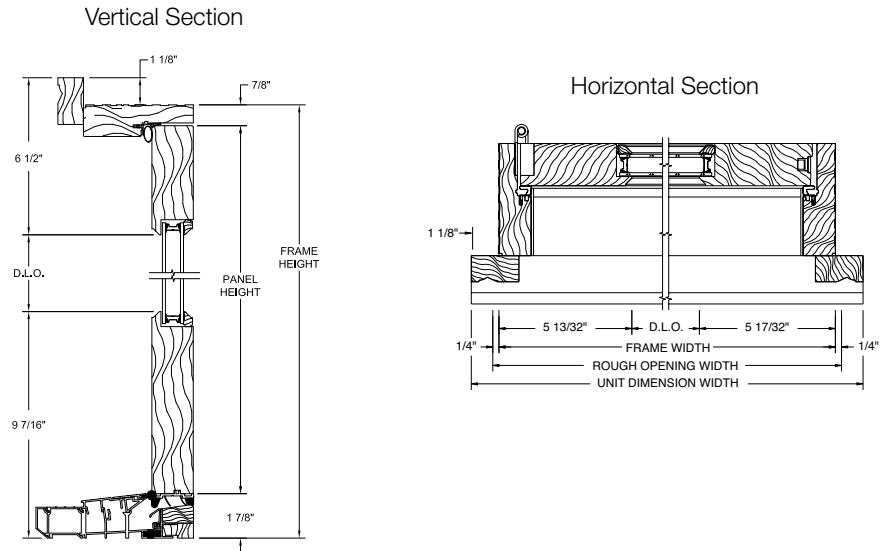
To order, add "SPWT" before the product number (Ex: SPWT2610).

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

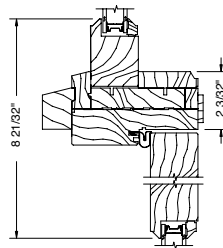
Inswing Patio Doors

Cross Section Drawings

Standard Inswing Patio Door



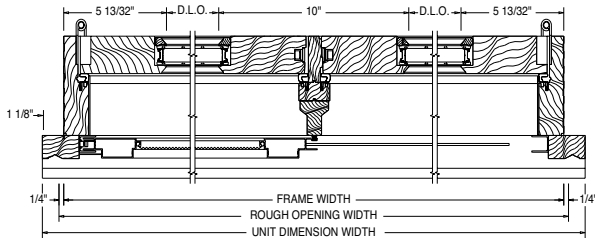
Rectangular Transom Stacked over Inswing Patio Door



NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

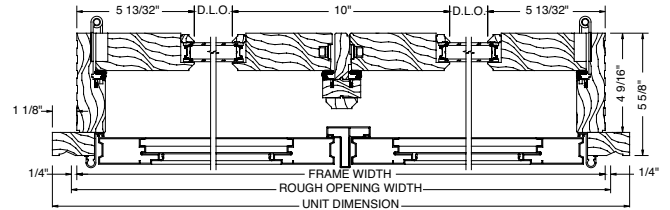
Two-Wide Inswing French Doors

Horizontal Section



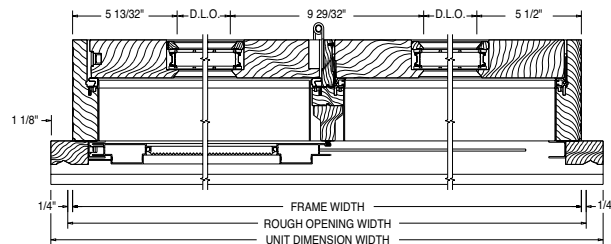
Two-Wide Inswing French Doors with Swinging Screen

Horizontal Section



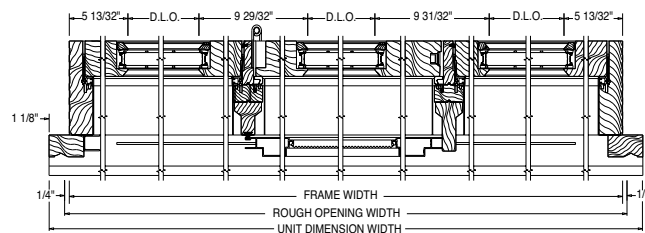
Two-Wide Inswing Doors - Stationary/Active

Horizontal Section



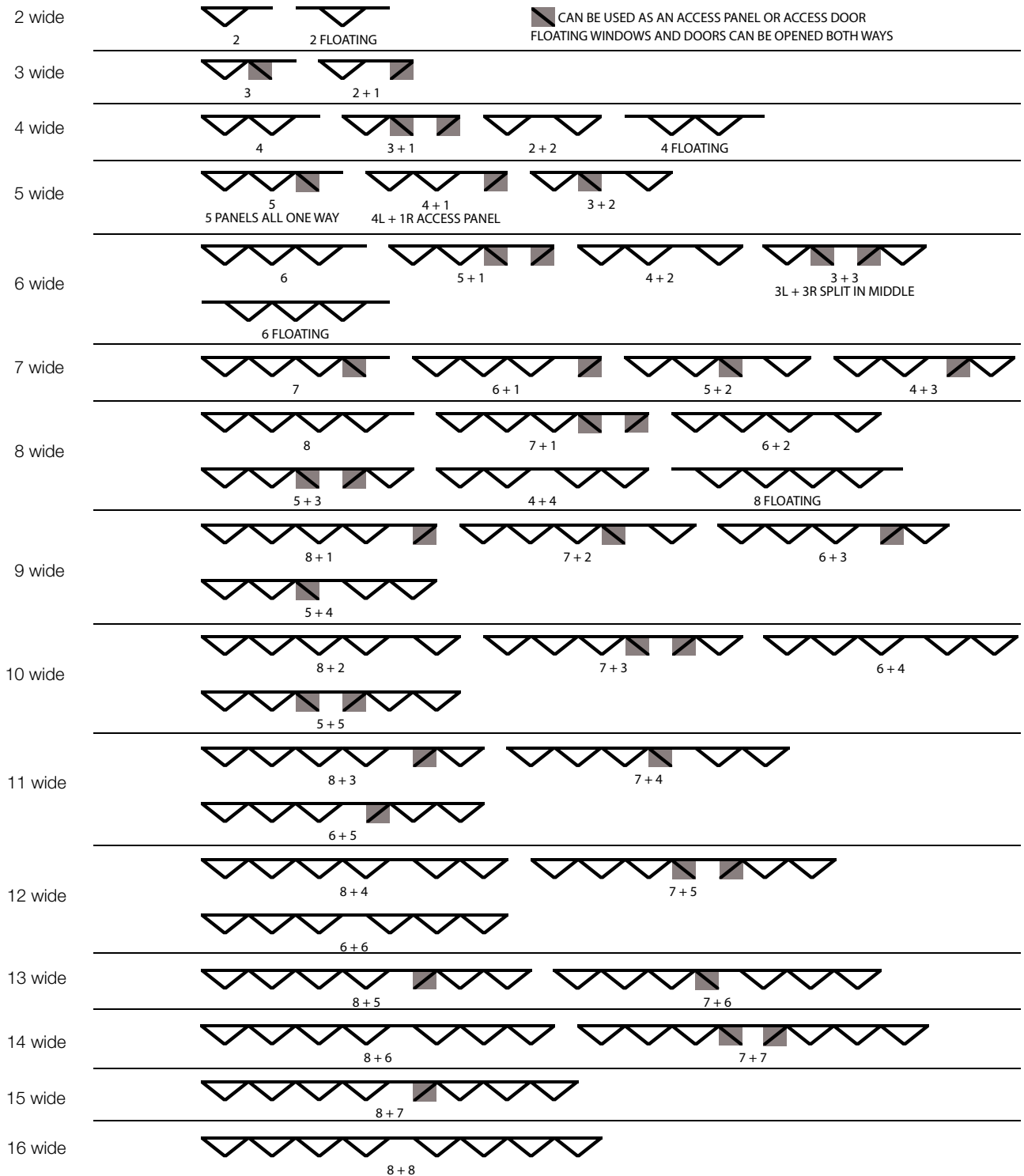
Three-Wide Inswing Doors

Horizontal Section



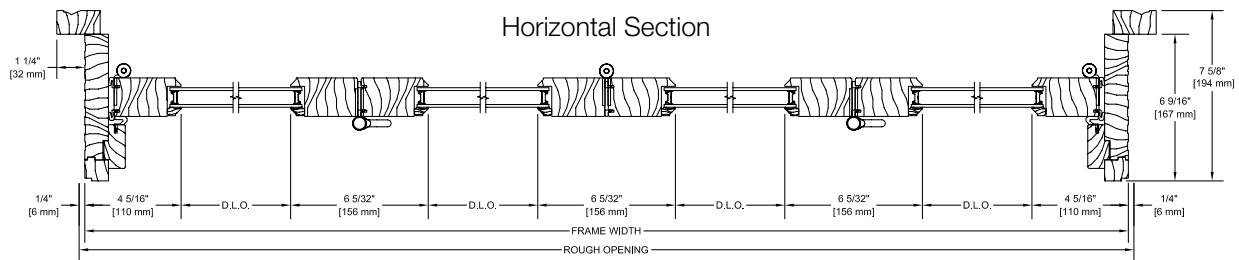
NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

Folding Doors | Panel Configurations

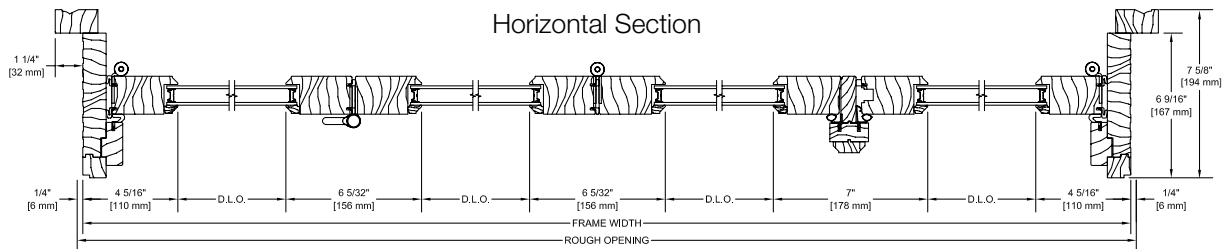


Folding Doors Cross Section Drawings

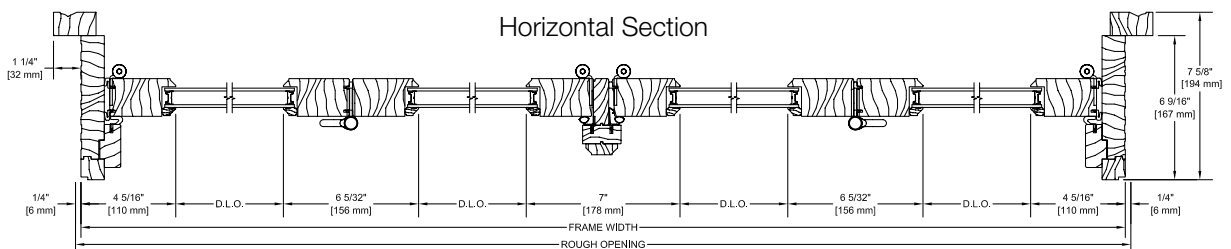
Four-Wide: Folding One-Way



Four-Wide: One Left & Three Right



Four-Wide: Two Left & Two Right



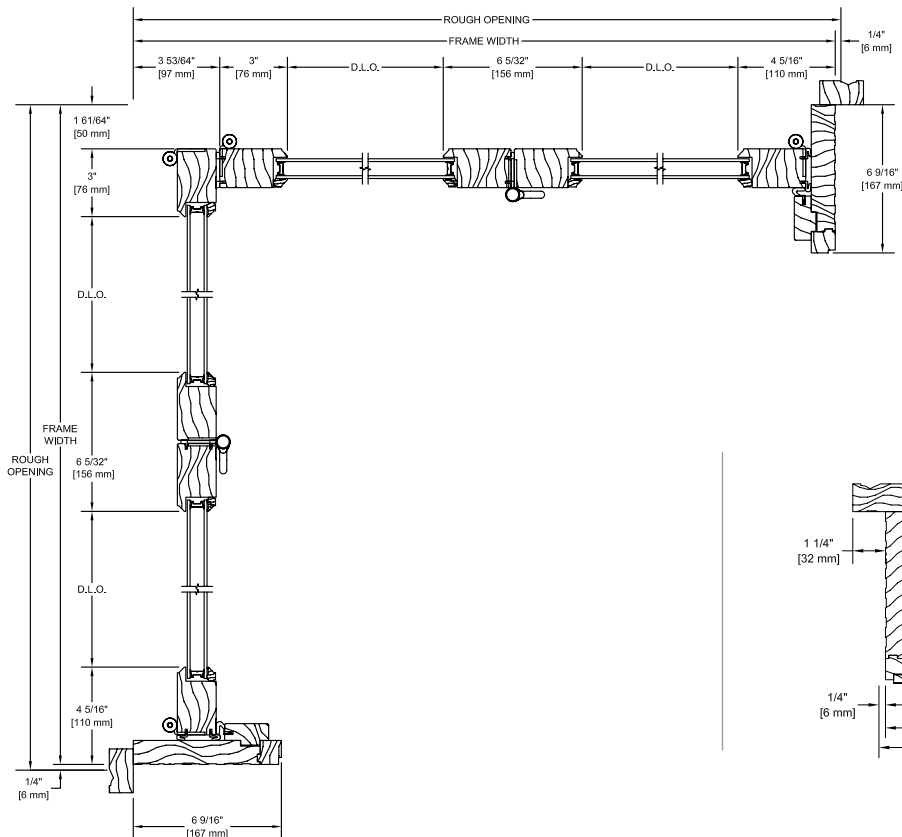
Operation is viewed from the exterior.

NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

Folding Doors Cross Section Drawings

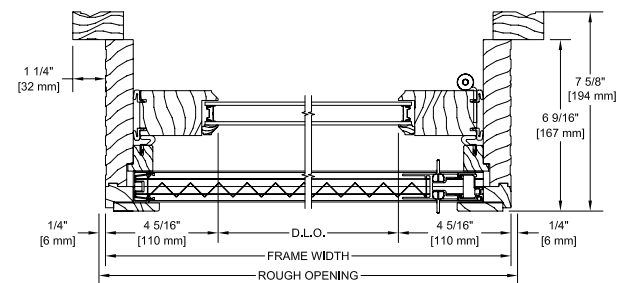
Corner Unit

Horizontal Section



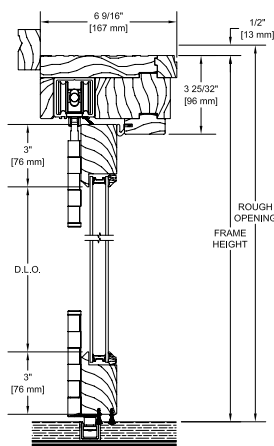
One Wide with Screen

Horizontal Section



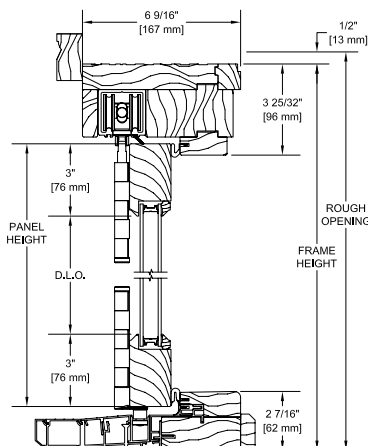
1.75 Panel with Recessed Sill

Vertical Section



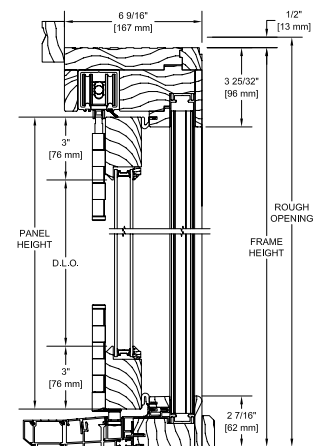
1.75 Panel with Weep Sill

Vertical Section



1.75 Panel with Weep Sill and Screen

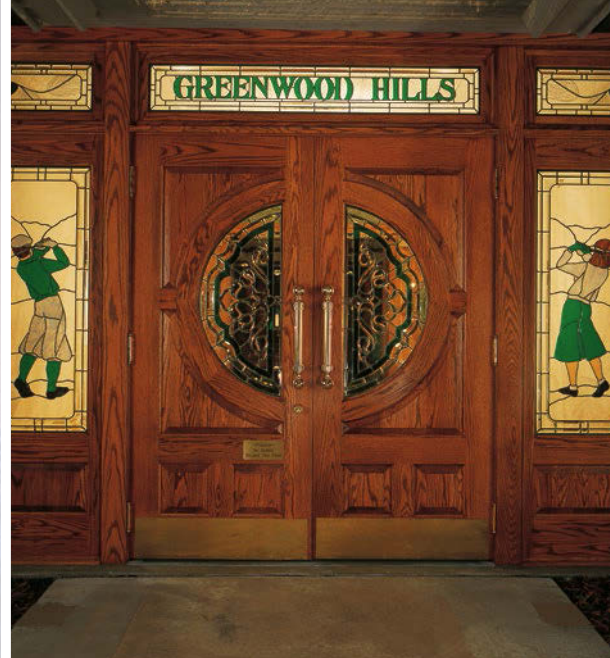
Vertical Section



NOTE: Drawings are not to scale. Corner unit cross section will change when an odd number of panels are used. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.







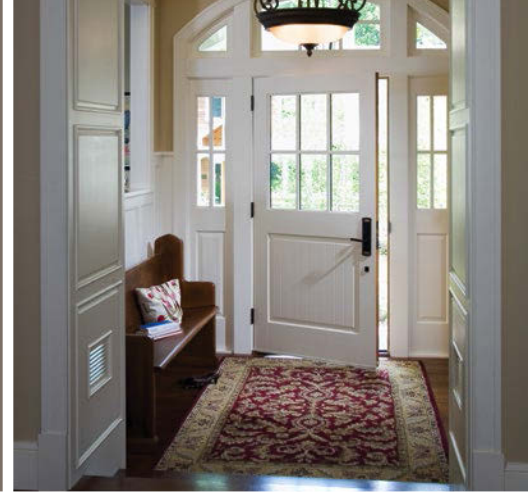
Entrance Doors

Create a dramatic focal point for your project with Heritage Series entrance doors. Choose an inswing or an outswing door, also available with French and raised panel options. To add a unique touch, decorate your entrance with Craftsman Collection doors. Combine with matching transoms and sidelites or select from a variety of special wood species and an array of glass and divided lite options to further enhance your design. Complete the appearance of your entryway by adding one of the attractive hardware options available in a variety of different finishes.

*Inswing Entrance Doors | Outswing Entrance Doors | Craftsman Collection Entrance Doors
Raised Panel Doors | Sidelites & Transoms*



Inswing Entrance Doors



Entrance doors are a defining feature of your home, which is why Kolbe offers a multitude of glass, panel configuration and wood species options to ensure that every entrance door creates a grand statement. Inswing entrance doors are available in single, double and French units, and can be customized with sidelites or transoms to create a distinctive entryway.

Inswing Entrance Door Standard Features

- ▶ 1-3/4" thick sash panel, prehung in the 3/4" frame with a 9/16" stop
- ▶ Standard jamb width is 4-9/16"
- ▶ LVL locking stiles; stiles and top rails are a nominal 4-5/8" wide; bottom rail is a nominal 7-9/16" high on all doors
- ▶ Constructed of pine, with pine interior stops and wood mull casings on mullied units
- ▶ Joints between stiles and rails are fastened with splined hardwood dowels
- ▶ Energy efficient, insulating LoE²-270 glass
- ▶ Glazed to the interior with beveled wood glazing beads
- ▶ 1-15/16" exterior brickmould applied
- ▶ All exterior wood parts are preservative-treated
- ▶ Exterior frame is latex primed
- ▶ Fully weatherstripped for a tight seal
- ▶ Adjustable, 4" x 3-5/8" hinges with 5/8" radius corners in a Gold-painted finish
- ▶ Bronze-anodized aluminum, self-draining exterior sill with an oak interior threshold

NOTE: All measurements are nominal.



1-15/16" brickmould applied as standard



Inswing Entrance Door Optional Features

Glass (pgs. 184-185): (all door glass is tempered)

- ▶ LoE-180
- ▶ LoE² -240
- ▶ LoE³ -366
- ▶ ThermaPlus™ LoE
- ▶ Patterned, bronze- or gray-lite
- ▶ Finely crafted glass in predetermined or custom patterns
- ▶ Laminated glass
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4", or 4-1/2" bars
- ▶ True divided lites with 5/8" LoE² insulating glass and 1-1/8" bars
- ▶ Grilles-in-the-airspace
- ▶ Interior removable wood grilles with 1-1/8" bars and full surrounds

Exterior Finishes (pg. 189):

- ▶ Urethane primer
- ▶ K-Kron II exterior paint finish (not recommended for raised panel doors)

Other Options: (custom options are also available)

- ▶ 2-1/4" thick door panels
- ▶ Other wood species and FSC-certified wood (pg. 188)
- ▶ Interior prefinishing (pg. 188)
- ▶ Interior casing (pg. 190)
- ▶ 3-1/2" flat or profiled brickmould, backband on 3-1/2" brickmould and other custom millwork (pg. 190)
- ▶ Ovolo and square profile glazing beads and interior divided lite bars (pg. 192)
- ▶ High profile panel moulding
- ▶ 3" or 6" optional stiles and optional 12 5/8" bottom rail
- ▶ Toronto, München, Verona and Dallas[†] handle set in Bright Brass PVD, Antique Brass, Satin Nickel PVD, Antique Nickel PVD, Oil-Rubbed*, Rustic Umber, Matte Black, or Smoky Gray PVD finishes (pg. 160)

- ▶ HLS 9000 stainless steel multi-point locking hardware on single panel doors, French doors have a 3-point lock on the active panel and a 2-point lock on the less active panel
- ▶ 2-point flush bolt lock on less active panel of French doors
- ▶ Single-point locking system
- ▶ Adjustable, 4" x 3-5/8" hinges with 5/8" radius corners in Bright Brass, Bright Brass PVD, Antique Brass, Brushed Chrome PVD, Satin Nickel, Satin Nickel PVD, Antique Nickel, Smoky Gray PVD, Oil-Rubbed*, Rustic Umber and Matte Black finishes (pg. 161)
- ▶ Non-adjustable, residential, 4" x 4" ball-bearing hinges with 1/4" radius corners in Bright Brass, Antique Brass, Satin Nickel, Antique Nickel, Stainless Steel, Oil-Rubbed*, and Matte Black finishes (pg. 161)
- ▶ Non-adjustable, commercial-grade, 4" x 4" ball-bearing hinges with square corners in Bright Brass, Antique Brass, Stainless Steel, Oil-Rubbed* Matte Black, and Satin Nickel finishes (pg. 161)
- ▶ Non-adjustable, commercial-grade, 4-1/2" x 4-1/2" hinges in Bright Brass, Oil-Rubbed*, and Stainless Steel finishes (pg. 161)
- ▶ "Ultra" sliding screens with fiberglass or aluminum mesh and extruded aluminum frames
- ▶ Self-closing, swinging screen includes a spring-loaded lock, aluminum screen frame to match unit exterior and choice of BetterVue® or UltraVue® fiberglass mesh or aluminum mesh
- ▶ Extension jambs in a variety of sizes
- ▶ Clear Anodized weep sill
- ▶ Adjustable sills in Bronze or Clear Anodized
- ▶ Oak and Mahogany sills
- ▶ Thermal break or non-thermal break ADA-compliant sills
- ▶ Galvanized steel installation clips

NOTE: All measurements are nominal.

[†] Dallas handle set is only available in Bright Brass PVD, Satin Nickel PVD, Matte Black, and Smoky Gray PVD.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.

Outswing Entrance Doors



Outswing entrance doors are available with the same multitude of options as other entrance doors, but swing outward for areas that have space constraints. Outswing entrance doors are available in single, double and French units, and can be customized with sidelites or transoms to create a distinctive entryway.

Outswing Entrance Door Standard Features

- ▶ 1-3/4" thick sash panel, prehung in the 1-1/16" frame with a 1/2" rabbeted-in stop
- ▶ Standard jamb width is 4-9/16"
- ▶ LVL locking stiles; stiles and top rails are a nominal 4-5/8" wide; bottom rail is a nominal 7-9/16" high on all doors
- ▶ Constructed of pine, with pine interior stops and wood mull casings on mullied units
- ▶ Joints between stiles and rails are fastened with splined hardwood dowels
- ▶ Energy efficient, insulating LoE²-270 glass
- ▶ Glazed to the interior with beveled wood glazing beads
- ▶ 1-15/16" exterior brickmould applied to wood units
- ▶ All exterior wood parts are preservative-treated
- ▶ Exterior frame is latex primed
- ▶ Fully weatherstripped for a tight seal
- ▶ Non-adjustable, residential, 4" x 4" ball-bearing hinges with 1/4" radius corners in a Bright Brass finish
- ▶ Bronze-anodized aluminum bumper sill with oak interior threshold

NOTE: All measurements are nominal.



1-15/16" brickmould applied as standard



Outswing Entrance Door Optional Features

Glass (pgs. 184-185): (all door glass is tempered)

- ▶ LoE-180
- ▶ LoE² -240
- ▶ LoE³ -366
- ▶ ThermaPlus™ LoE
- ▶ Patterned, bronze- or gray-lite
- ▶ Finely crafted glass in predetermined or custom patterns
- ▶ Laminated glass
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4", or 4-1/2" bars
- ▶ True divided lites with 5/8" LoE² insulating glass and 1-1/8" bars
- ▶ Grilles-in-the-air space
- ▶ Interior removable wood grilles with 1-1/8" bars and full surrounds

Exterior Finishes (pg. 189):

- ▶ Urethane primer
- ▶ K-Kron II exterior paint finish (not recommended for raised panel doors)

Other Options: (custom options are also available)

- ▶ 3" or 6" optional stiles and optional 12 5/8" bottom rail
- ▶ 2-1/4" thick door panels
- ▶ Other wood species and FSC-certified wood (pg. 188)
- ▶ Interior prefinishing (pg. 188)
- ▶ Interior casing (pg. 190)
- ▶ 3-1/2" flat or profiled brickmould, backband on 3-1/2" brickmould and other custom millwork (pg. 190)
- ▶ Ovolo and square profile glazing beads and interior divided lite bars (pg. 192)
- ▶ High profile panel moulding

NOTE: All measurements are nominal.

[†] Dallas handle set is only available in Bright Brass PVD, Satin Nickel PVD, Matte Black, and Smoky Gray PVD.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.

- ▶ Toronto, München, Verona and Dallas[†] handle set in Bright Brass PVD, Antique Brass, Satin Nickel PVD, Antique Nickel PVD, Oil-Rubbed*, Rustic Umber, Matte Black, or Smoky Gray PVD finishes (pg. 160)
- ▶ HLS 9000 stainless steel multi-point locking hardware on single panel doors, French doors have a 3-point lock on the active panel and a 2-point lock on the less active panel
- ▶ 2-point flush bolt lock on less active panel of French doors
- ▶ Single-point locking system
- ▶ Non-adjustable, residential, 4" x 4" ball-bearing hinges with 1/4" radius corners in Antique Brass, Satin Nickel, Antique Nickel, Stainless Steel, Oil-Rubbed*, and Matte Black finishes (pg. 161)
- ▶ Adjustable, 4" x 3-5/8" hinges with 5/8" radius corners in Gold Painted, Bright Brass, Bright Brass PVD, Antique Brass, Brushed Chrome PVD, Satin Nickel, Satin Nickel PVD, Antique Nickel, Smoky Gray PVD, Oil-Rubbed*, Rustic Umber and Matte Black finishes (pg. 161)
- ▶ Non-adjustable, commercial-grade, 4" x 4" ball-bearing hinges with square corners in Bright Brass, Antique Brass, Stainless Steel, Oil-Rubbed* Matte Black, and Satin Nickel finishes (pg. 161)
- ▶ Non-adjustable, commercial-grade, 4-1/2" x 4-1/2" hinges in Bright Brass, Oil-Rubbed*, and Stainless Steel finishes (pg. 161)
- ▶ Extension jambs (up to 12" applied; over 12" shipped loose for field application)
- ▶ Clear Anodized bumper sill
- ▶ Oak bumper sills
- ▶ Oak and Mahogany sills
- ▶ Thermal break or non-thermal break ADA-compliant sills
- ▶ Galvanized steel installation clips
- ▶ High performance or K-Force® impact performance modifications for units with or without glass

Craftsman Collection Doors



Wood panel Craftsman style entrance doors are the perfect match for Arts & Crafts style homes. Constructed of Vertical Grain Douglas Fir, Knotty Alder, or a custom wood species, these doors add classic warmth to any entryway.

Craftsman Door Standard Features

- ▶ 1-3/4" thick door panel
- ▶ Panel is constructed of unfinished vertical grain Douglas Fir
- ▶ Exterior frame is latex primed
- ▶ 5-1/2" wide stiles, 4-1/2" wide top rails, 7-1/2" wide cross rails, and a 7-9/16" bottom rail on all door heights
- ▶ Joints between stiles and rails are fastened with splined hardwood dowels
- ▶ Energy efficient, insulating LoE²-270 glass
- ▶ Glazed to the interior with wood glazing beads
- ▶ All exterior wood parts are preservative-treated
- ▶ Exterior frame is latex primed
- ▶ Ovolo sticking
- ▶ Inswing and outswing operation available

NOTE: All measurements are nominal.

Craftsman door panels may be prehung as inswing or outswing units.



Ovolo Sticking
(standard, shown on
a raised panel)



Square Sticking
(optional, shown on
a flat panel)



Craftsman Door Optional Features

Glass (pgs. 184-185): (all door glass is tempered)

- ▶ LoE-180
- ▶ LoE² -240
- ▶ LoE³ -366
- ▶ ThermaPlus LoE
- ▶ Patterned, bronze- or gray-lite
- ▶ Finely crafted glass
- ▶ Laminated glass
- ▶ Other options standard to the industry

Divided Lites (pgs. 186-187):

- ▶ Performance divided lites with 1-1/8" bars; wood both interior and exterior

Exterior Finishes (pg. 189): (frames only)

- ▶ Urethane primer
- ▶ K-Kron II exterior paint finish

Other Options: (custom options are also available)

- ▶ Other wood species and FSC-certified wood (pg. 188)
- ▶ Square sticking
- ▶ Interior clear coat or stain (pg. 188)
- ▶ Wire brushing for distressed appearance
- ▶ Mantel detailing
- ▶ Interior casing (pg. 190)
- ▶ 3-1/2" flat or profiled wood brickmould, backband on 3-1/2" brickmould and other custom millwork (pg. 190)
- ▶ Toronto, München, Verona and Dallas[†] handle set in Bright Brass PVD, Antique Brass, Satin Nickel PVD, Antique Nickel PVD, Oil-Rubbed*, Rustic Umber, Matte Black, or Smoky Gray PVD finishes (pg. 160)

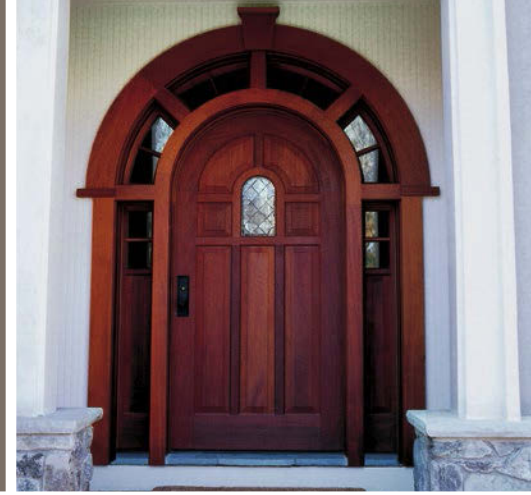
NOTE: All measurements are nominal.

[†] Dallas handle set is only available in Bright Brass PVD, Satin Nickel PVD, Matte Black, and Smoky Gray PVD.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.





























- ▶ HLS 9000 stainless steel multi-point locking hardware on single doors; 3-point lock on the active door and a 2-point lock on the less active door of French doors
- ▶ 2-point flush bolt lock on the less active door of French doors
- ▶ Single-point locking system
- ▶ Non-adjustable, residential, 4" x 4" ball-bearing hinges with 1/4" radius corners in Bright Brass, Antique Brass, Satin Nickel, Antique Nickel, Stainless Steel, Oil-Rubbed*, and Matte Black finishes (pg. 161)
- ▶ Adjustable, 4" x 3-5/8" hinges with 5/8" radius corners in Gold Painted, Bright Brass, Bright Brass PVD, Antique Brass, Brushed Chrome PVD, Satin Nickel, Satin Nickel PVD, Antique Nickel, Smoky Gray PVD, Oil-Rubbed*, Rustic Umber and Matte Black finishes (pg. 161)
- ▶ Non-adjustable, commercial-grade, 4" x 4" ball-bearing hinges with square corners in Bright Brass, Antique Brass, Stainless Steel, Oil-Rubbed* Matte Black, and Satin Nickel finishes (pg. 161)
- ▶ Non-adjustable, commercial-grade, 4-1/2" x 4-1/2" hinges in Bright Brass, Oil-Rubbed*, and Stainless Steel finishes (pg. 161)
- ▶ Extension jambs in a variety of sizes
- ▶ Oak bumper sills for outswinging doors
- ▶ Oak and Mahogany sills
- ▶ Bronze or Clear Anodized weep sills for inswinging doors
- ▶ Galvanized steel installation clips

Entrance Door Options



Hardware

As standard, inswing entrance and Craftsman inswing doors feature Gold-painted adjustable hinges. Outswing entrance and Craftsman outswing doors feature Bright Brass 4" x 4" non-adjustable hinges with 1/4" radius corners. Handle sets, boring or locking systems are not standard on entrance doors. The following hinges and handles are available as an option.

	Bright Brass PVD†	Antique Brass	Satin Nickel PVD†	Antique Nickel PVD†	Oil-Rubbed*	Rustic Umber	Matte Black	Smoky Gray PVD†
Toronto								
München								
Verona								
Dallas		N/A		N/A	N/A	N/A		

†PVD (Physical Vapor Deposition) finish is an application over the color which helps protect the hardware against tarnishing, peeling and cracking.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.



Non-Adjustable Hinges

Residential, 4" x 4"
ball-bearing, with
1/4" radius corners



Bright
Brass



Antique
Brass



Satin
Nickel



Antique
Nickel



Stainless
Steel



Oil-
Rubbed*



Matte
Black

Adjustable Hinges



Gold-
painted



Bright
Brass



Bright
Brass
PVD†



Antique
Brass



Brushed
Chrome
PVD†



Satin
Nickel



Satin
Nickel
PVD†



Antique
Nickel



Smoky
Gray
PVD†



Oil-
Rubbed*



Rustic
Umber



Matte
Black

Non-Adjustable Hinges

Commercial-
grade, 4" x 4"
ball-bearing, with
square corners



Bright
Brass



Antique
Brass



Stainless
Steel



Oil-
Rubbed*



Matte
Black



Satin
Nickel

Commercial-grade,
4-1/2" x 4-1/2"



Bright
Brass



Oil-
Rubbed*



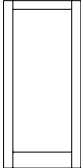
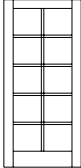
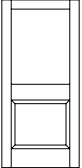
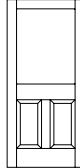
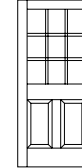


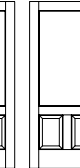


Stainless
Steel

†PVD (Physical Vapor Deposition) finish is an application over the color which helps protect the hardware against tarnishing, peeling and cracking.

*The Oil-Rubbed finish is a living finish, which means that it will change appearance over time with use.

Inswing Entrance Doors Panel Designs

Inswing Entrance Door Panel Designs

										
Sash Design#:	KK610	KK625	KK6110	KK6210	KK6233	KK108-6	KK6110-30	KK6210-30	KK6110-24	KK6210-24
	Full Lite	2W5H Pattern	1 Lite over 1 Panel, 8" Cross Rail at 40"	1 Lite over 2 Panels, 8" Cross Rail at 40"	1 Lite over 2 Panels, 8" Cross Rail at 40" with 3W3H Pattern	6 Panels	1 Lite over 1 Panel, 4-5/8" Cross Rail at 30"	1 Lite over 2 Panels, 4-5/8" Cross Rail at 30"	1 Lite over 1 Panel, 4-5/8" Cross Rail at 24"	1 Lite over 2 Panels, 4-5/8" Cross Rail at 24"

NOTE: Sash design KK625 has TDL or PDL in the configuration shown. If a different configuration pattern is needed, specify sash design KK610 or KK6210 and the type of divided lite configuration desired.

Not all panel designs are available in all sizes.

Not all panel designs are shown; see your local Kolbe distributor for further assistance.

Dimension Calculations

Elevation charts provide wood unit dimensions for units with the standard 1 15/16" brickmould. Below are the calculations to determine the frame size of units with brickmould.

	Width	Height
1-15/16" brickmould; U.D. to F.S.	-2 1/4"	-1 1/8"
3-1/2" flat or profiled casing; U.D. to F.S.	-5 3/8"	-2 11/16"
3-1/2" casing and backband; U.D. to F.S.	-6 7/8"	-3 7/16"

F.S. to Panel O.S.M. (1-wide, active)	-1 13/16"	-2 23/32"
(1-wide, stationary)	-1 3/4"	-2 23/32"
(2-wide)	-2 9/16" ÷ 2	-2 23/32"
(3-wide)	-3 5/16" ÷ 3	-2 23/32"
Panel O.S.M. to G.S. (wood 6-8 ht.)	-8 1/8"	-11 3/32"
G.S. to D.L.O.	-1"	-1"

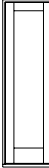
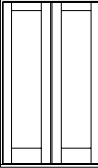
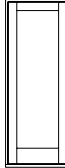
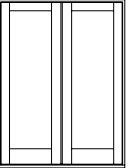

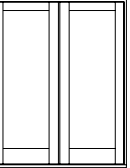
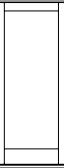
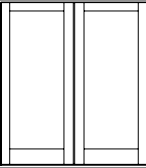
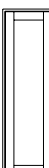
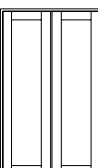
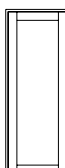
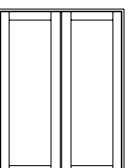
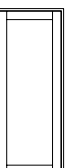
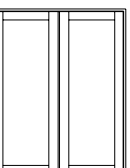
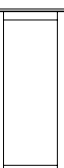
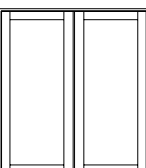
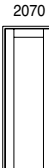
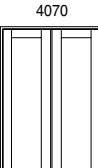
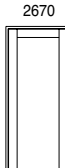
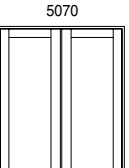
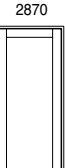
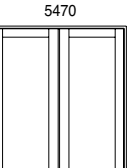

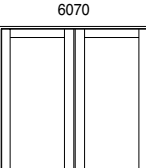
Note: Dimension calculations for sidelites and transoms may be obtained from your Kolbe dealer.
Clear opening dimensions can be found on pg. 196.

F.S. = Frame Size • G.S. = Glass Size • O.S.M. = Outside Measurement
D.L.O. = Daylight Opening • U.D. = Unit Dimension

Outswing Entrance Doors

Elevation Charts

Inswing Entrance Doors

U.D.	2'-3 7/8"	4'-4 7/16"	2'-9 7/8"	5'-4 7/16"	2'-11 7/8"	5'-8 7/16"	3'-3 7/8"	6'-4 7/16"
R.O.	2'-2 1/8"	4'-2 11/16"	2'-8 1/8"	5'-2 11/16"	2'-10 1/8"	5'-6 11/16"	3'-2 1/8"	6'-2 11/16"
G.S.*	15 11/16"	15 11/16"	21 11/16"	21 11/16"	23 11/16"	23 11/16"	27 11/16"	27 11/16"
6'-11 27/32"								
6'-11 7/32"	2068	4068	2668	5068	2868	5468	3068	6068
7'-3 27/32"								
7'-3 7/32"	2070	4070	2670	5070	2870	5470	3070	6070
72 29/32"								
8'-3 27/32"	2080	4080	2680	5080	2880	5480	3080	6080
8'-3 7/32"								
84 29/32"								

NOTE: All measurements are nominal. Elevation charts are not to scale.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Glass size widths are shown per panel for one-lite glass. For TDL glass sizes contact your supplier.

PRODUCT CODES:

To order, add "WXD" before the product number (Ex: WXD2068). Specify inswing. When ordering single units, specify stationary, hinged left or hinged right. Operation is viewed from the interior.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

Inswing Entrance Doors Elevation Charts

Segment Head Inswing Entrance Doors

U.D.	2'-3 7/8"	4'-4 7/16"	2'-9 7/8"	5'-4 7/16"	2'-11 7/8"	5'-8 7/16"	3'-3 7/8"	6'-4 7/16"
R.O.	2'-2 1/8"	4'-2 11/16"	2'-8 1/8"	5'-2 11/16"	2'-10 1/8"	5'-6 11/16"	3'-2 1/8"	6'-2 11/16"
G.S.*	15 11/16"	15 11/16"	21 11/16"	21 11/16"	23 11/16"	23 11/16"	27 11/16"	27 11/16"
6'-11 27/32"								
7'-3 27/32"								
8'-3 27/32"								

NOTE: All measurements are nominal. Elevation charts are not to scale.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.


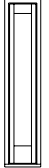



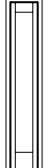



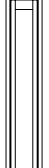


* Approximate glass sizes are given; true glass sizes may vary depending on the radius involved.

PRODUCT CODES:


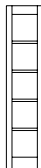



To order use the product shown and specify inswing. When ordering single units, specify stationary, hinged left or hinged right. Operation is viewed from the interior.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

Inswing Entrance Door Sidelites

U.D.	1'-4"	1'-6"	1'-8"	1'-10"
R.O.	1'-2 1/4"	1'-4 1/4"	1'-6 1/4"	1'-8 1/4"
G.S.*	7 3/4"	9 3/4"	11 3/4"	13 3/4"
6'-11 27/32"				
6'-11 7/32"				
68 29/32"				
7'-3 27/32"				
7'-3 7/32"				
68 29/32"				
8'-3 27/32"				
8'-3 7/32"				
84 29/32"				

Inswing Entrance Door Sidelite Panel Designs

					
Sash Design#:	KK510	KK515	KK5110	KK5110-30	KK5110-24
Full Lite	Full Lite	1W5H Pattern	1 Lite over 1 Panel, 8" Cross Rail at 40"	1 Lite over 1 Panel, 4-5/8" Cross Rail at 30"	1 Lite over 1 Panel, 4-5/8" Cross Rail at 24"

NOTE: All measurements are nominal. Elevation charts are not to scale.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Glass size widths are shown for one-lite glass. For TDL glass sizes, contact your Kolbe window and door supplier.

PRODUCT CODES:

To order, use the product code shown and specify wood profile.

Sidelite sash design KK515 has TDL or PDL in the configuration shown. If a different configuration pattern is needed, specify sash design KK510 or KK5110 and the type of configuration desired.

















































Not all panel designs are available in all sizes.

Not all panel designs are shown; see your local Kolbe distributor for further assistance.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

Inswing Entrance Doors Elevation Charts

Inswing Entrance Doors | Rectangular Transoms

U.D.	2'-3 7/8"	2'-9 7/8"	2'-11 7/8"	3'-3 7/8"	4'-4 7/16"	5'-4 7/16"	5'-8 7/16"	6'-4 7/16"
R.O.	2'-1 7/8"	2'-7 7/8"	2'-9 7/8"	3'-1 7/8"	4'-2 7/16"	5'-2 7/16"	5'-6 7/16"	6'-2 7/16"
G.S.	19 7/8"	25 7/8"	27 7/8"	31 7/8"	44 7/16"	56 7/16"	60 7/16"	68 7/16"
1'-1 3/8"								
1'-0"	2010	2610	2810	3010	4010	5010	5410	6010
1'-5 3/8"								
1'-4"	2014	2614	2814	3014	4014	5014	5414	6014
1'-6"								
1'-7 3/8"	2016	2616	2816	3016	4016	5016	5416	6016
1'-8"								
1'-9 3/8"	2018	2618	2818	3018	4018	5018	5418	6018
2'-0"								
2'-1 3/8"	2020	2620	2820	3020	4020	5020	5420	6020
2'-6"								
2'-7 3/8"	2026	2626	2826	3026	4026	5026	5426	6026

NOTE: All measurements are nominal.

Rectangular transom units are sash set as standard.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lite configurations must be specified when ordering. Specify inswing when ordering.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

PRODUCT CODES:

To order, add "WXDT" before the product number (Ex: WXDT6026).

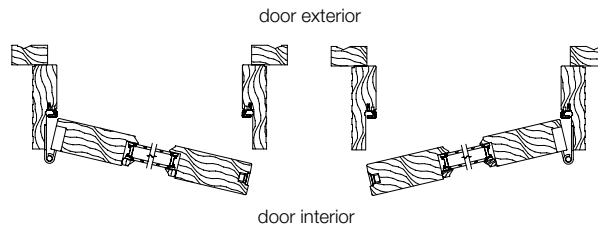
U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

Inswing Entrance Doors Cross Section Drawings

Hinging For Inswing Entrance Doors

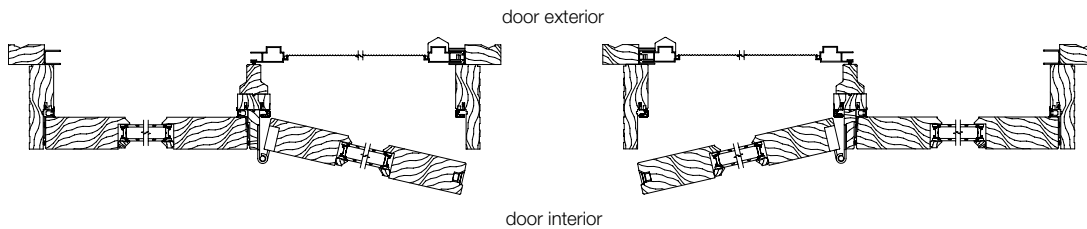
HL (Hinged Left)

HR (Hinged Right)



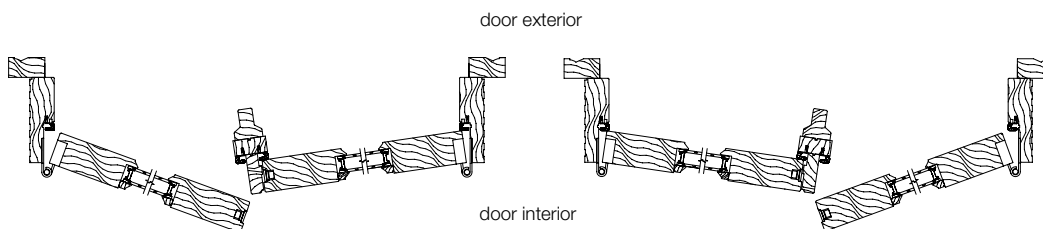
SAL (Stationary, Active Hinged Left)

ASR (Active Hinged Right, Stationary)



AL (French, Hinged Left, Active)

AR (French, Hinged Right, Active)



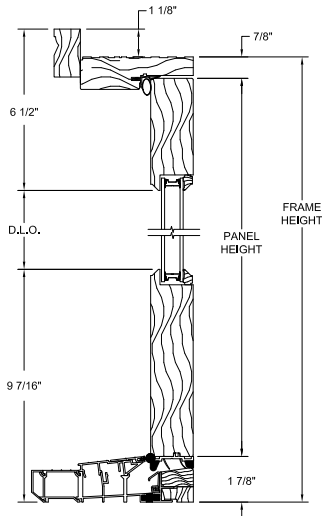
NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

Inswing Entrance Doors

Cross Section Drawings

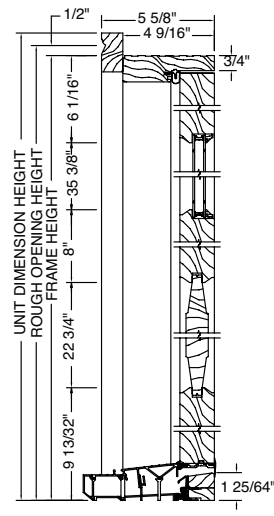
Standard Inswing Entrance Door

Vertical Section



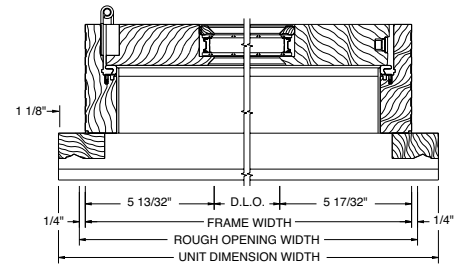
Full lite panel

Vertical Section



60-8" EXAMPLE HEIGHT
ALUMINUM WEEP SILL
Raised panel

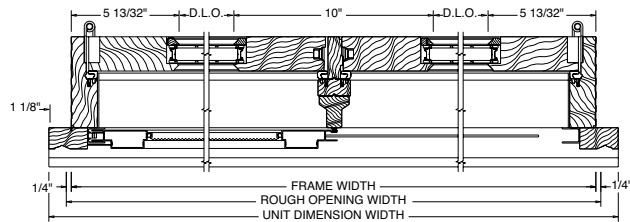
Horizontal Section



NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

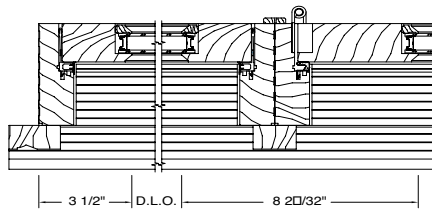
Two-Wide Inswing Entrance French Doors

Horizontal Section

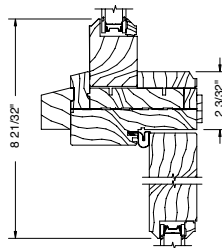


Inswing Entrance Door with Sidelite

Horizontal Section



Rectangular Transom Stacked over Inswing Entrance Doors

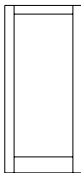
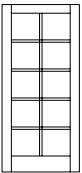
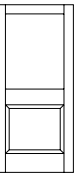
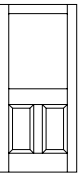
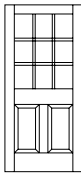
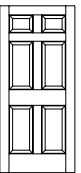
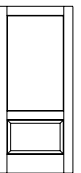
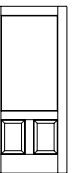
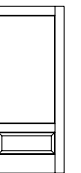
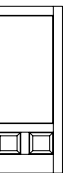


NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

Outswing Entrance Doors

Panel Designs

Outswing Entrance Door Panel Designs

										
Sash Design#:	KK610	KK625	KK6110	KK6210	KK6233	KK108-6	KK6110-30	KK6210-30	KK6110-24	KK6210-24
	Full Lite	2W5H Pattern	1 Lite over 1 Panel, 8" Cross Rail at 40"	1 Lite over 2 Panels, 8" Cross Rail at 40"	1 Lite over 2 Panels, 8" Cross Rail at 40" with 3W3H Pattern	6 Panels	1 Lite over 1 Panel, 4-5/8" Cross Rail at 30"	1 Lite over 2 Panels, 4-5/8" Cross Rail at 30"	1 Lite over 1 Panel, 4-5/8" Cross Rail at 24"	1 Lite over 2 Panels, 4-5/8" Cross Rail at 24"

NOTE: Sash design KK625 has TDL or PDL in the configuration shown. If a different configuration pattern is needed, specify sash design KK610 or KK6210 and the type of divided lite configuration desired.

Not all panel designs are available in all sizes.

Not all panel designs are shown; see your local Kolbe distributor for further assistance.

Dimension Calculations

Elevation charts provide wood unit dimensions for units with the standard 1 15/16" brickmould. Below are the calculations to determine the frame size of units with brickmould.

	Width	Height
1-15/16" brickmould; U.D. to F.S.	-2 1/2"	-1 1/4"
3-1/2" flat or profiled casing; U.D. to F.S.	-5 5/8"	-2 13/16"
3-1/2" casing and backband; U.D. to F.S.	-7 1/8"	-3 9/16"

F.S. to Panel O.S.M. (1-wide, wood)	-2 13/32"	-2 19/32"
Panel O.S.M. to G.S. (1-wide, wood)	-8 1/8"	-11 3/32"
Panel Opening Width to G.S. (2-wide)	-17 3/8" ÷ 2	
(3-wide)	-26 5/16" ÷ 3	
F.S. to Panel Opening Width	-2 1/8"	
G.S. to D.L.O.	-1"	-1"


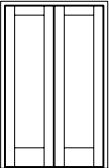
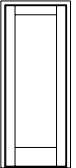
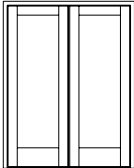
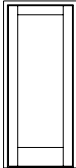
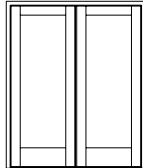

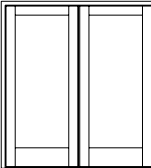

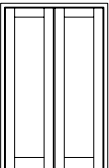
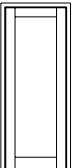
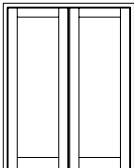
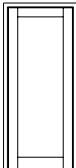
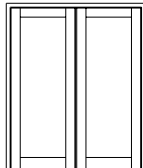

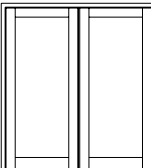

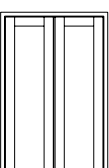
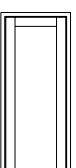
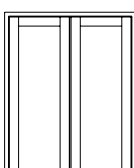
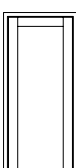
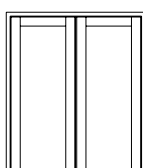

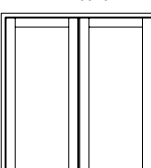
Note: Dimension calculations for sidelites and transoms may be obtained from your Kolbe dealer.
Clear opening dimensions can be found on pg. 205.

F.S. = Frame Size • G.S. = Glass Size • O.S.M. = Outside Measurement
D.L.O. = Daylight Opening • U.D. = Unit Dimension

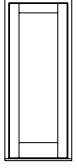
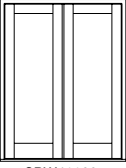
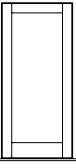
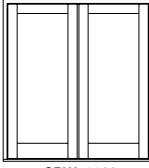
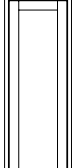
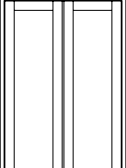
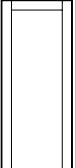
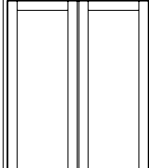
Outswing Entrance Doors

Elevation Charts

Outswing Entrance Doors

U.D.	2'-4 23/32"	4'-5 3/8"	2'-10 23/32"	5'-5 3/8"	3'-0 23/32"	5'-9 3/8"	3'-4 23/32"	6'-5 3/8"
R.O.	2'-2 23/32"	4'-3 3/8"	2'-8 23/32"	5'-3 3/8"	2'-10 23/32"	5'-7 3/8"	3'-2 23/32"	6'-3 3/8"
G.S.*	15 11/16"	15 11/16"	21 11/16"	21 11/16"	23 11/16"	23 11/16"	27 11/16"	27 11/16"
6'-11 27/32"								
6'-11 3/32"								
68 29/32"								
7'-3 27/32"								
7'-3 3/32"								
72 29/32"								
8'-3 27/32"								
8'-3 3/32"								
84 29/32"								

Outswing Patio Doors

U.D.	2'-9 11/32"	5'-2 5/8"	3'-3 11/32"	6'-2 5/8"
R.O.	2'-7 11/32"	5'-0 5/8"	3'-1 11/32"	6'-0 5/8"
G.S.*	20 5/16"	20 5/16"	26 5/16"	26 5/16"
6'-8 5/8"				
6'-7 7/8"				
65 11/16"				
8'-0 23/32"				
7'-11 31/32"				
81 25/32"				

NOTE: All measurements are nominal. Elevation charts are not to scale. Dimensions are given for active units; dimensions of stationary units may vary.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Glass size widths are shown per panel for one-lite glass. For TDL glass sizes contact your supplier.

PRODUCT CODES:

To orders, use the product number shown, specify outswing. When ordering single units, specify stationary, hinged left or hinged right. Operation is viewed from the exterior.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

Outswing Entrance Doors Elevation Charts

Segment Head Outswing Entrance Doors

U.D.	2'-4 23/32"	4'-5 3/8"	2'-10 23/32"	5'-5 3/8"	3'-0 23/32"	5'-9 3/8"	3'-4 23/32"	6'-5 3/8"
R.O.	2'-2 23/32"	4'-3 3/8"	2'-8 23/32"	5'-3 3/8"	2'-10 23/32"	5'-7 3/8"	3'-2 23/32"	6'-3 3/8"
G.S.*	15 11/16"	15 11/16"	21 11/16"	21 11/16"	23 11/16"	23 11/16"	27 11/16"	27 11/16"
6'-11 27/32"								
7'-3 27/32"								
8'-3 27/32"								

NOTE: All measurements are nominal. Elevation charts are not to scale.

Dimensions are given for active units; dimensions of stationary units may vary.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.






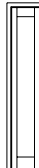






* Approximate glass sizes are given; true glass sizes may vary depending on the radius involved.

PRODUCT CODES:


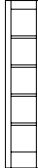



To order, use the product number shown and specify outswing. When ordering single units, specify stationary, hinged left or hinged right. Operation is viewed from the exterior.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

Outswing Entrance Door Sidelites

U.D.	1'-4 3/4"	1'-6 3/4"	1'-8 3/4"	1'-10 3/4"
R.O.	1'-2 3/4"	1'-4 3/4"	1'-6 3/4"	1'-8 3/4"
G.S.*	7 5/8"	9 5/8"	11 5/8"	13 5/8"
6'-11 27/32"				
6'-11 3/32"	WXD1068S	WXD1268S	WXD1468S	WXD1668S
68 29/32"				
7'-3 27/32"				
7'-3 3/32"	WXD1070S	WXD1270S	WXD1470S	WXD1670S
72 29/32"				
8'-3 27/32"				
8'-3 3/32"	WXD1080S	WXD1280S	WXD1480S	WXD1680S
84 29/32"				

Outswing Entrance Door Sidelite Panel Designs

					
Sash Design#:	KK510	KK515	KK5110	KK5110-30	KK5110-24
	Full Lite	1W5H Pattern	1 Lite over 1 Panel, 8" Cross Rail at 40"	1 Lite over 1 Panel, 4-5/8" Cross Rail at 30"	1 Lite over 1 Panel, 4-5/8" Cross Rail at 24"

NOTE: All measurements are nominal. Elevation charts are not to scale.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

* Glass size widths are shown for one-lite glass. For TDL glass sizes, contact your Kolbe window and door supplier.

PRODUCT CODES:

To order, use the product code shown and specify wood profile.

Sidelite sash design KK515 has TDL or PDL in the configuration shown. If a different configuration pattern is needed, specify sash design KK510 or KK5110 and the type of configuration desired.

















































Not all panel designs are available in all sizes.

Not all panel designs are shown; see your local Kolbe distributor for further assistance.

























U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

Outswing Entrance Doors Elevation Charts

Outswing Entrance Doors | Rectangular Transoms

U.D.	2'-4 23/32"	2'-10 23/32"	3'-0 23/32"	3'-4 23/32"	4'-5 3/8"	5'-5 3/8"	5'-9 3/8"	6'-5 3/8"
R.O.	2'-2 23/32"	2'-8 23/32"	2'-10 23/32"	3'-2 23/32"	4'-3 3/8"	5'-3 3/8"	5'-7 3/8"	6'-3 3/8"
G.S.	20 3/32"	26 3/32"	28 3/32"	32 3/32"	44 3/4"	56 3/4"	60 3/4"	68 3/4"
1'-1 1/8"								
1'-0"								
1'-5 1/8"								
1'-4"								
1'-7 1/8"								
1'-6"								
2'-1 1/8"								
2'-0"								
2'-7 1/8"								
2'-6"								
23 3/8"								

Outswing Patio Doors | Rectangular Transoms

U.D.	2'-9 11/32"	3'-3 11/32"	5'-2 5/8"	6'-2 5/8"
R.O.	2'-7 11/32"	3'-1 11/32"	5'-0 5/8"	6'-0 5/8"
G.S.	24 3/4"	30 3/4"	54"	66"
1'-1 1/8"				
1'-0"				
1'-5 1/8"				
1'-4"				
1'-7 1/8"				
1'-6"				
2'-1 1/8"				
2'-0"				
2'-7 1/8"				
2'-6"				
23 3/8"				

NOTE: All measurements are nominal. Elevation charts are not to scale.

Rectangular transom units are sash set as standard.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Transom dimensions shown are for units stacked above active doors; dimensions for transoms stacked above stationary doors may vary.

Divided lite configurations must be specified when ordering.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

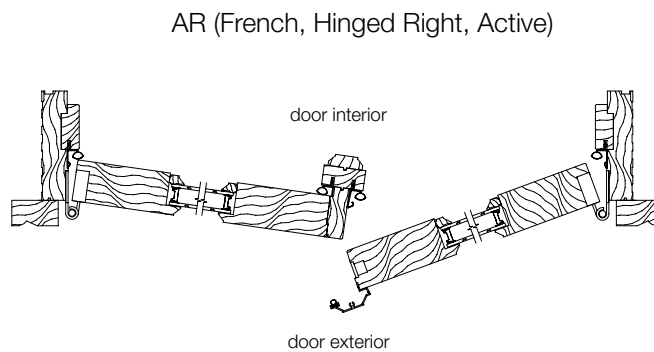
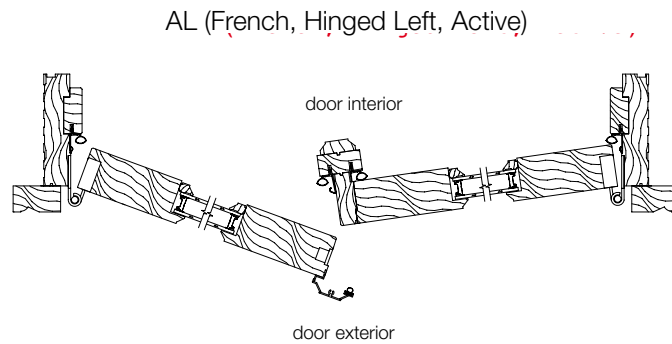
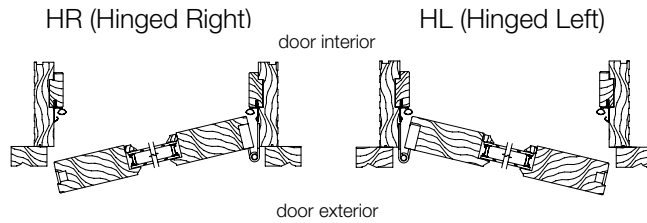
PRODUCT CODES:

To order transoms, use the product number shown.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

Outswing Entrance Doors Cross Section Drawings

Hinging For Outswing Entrance Doors



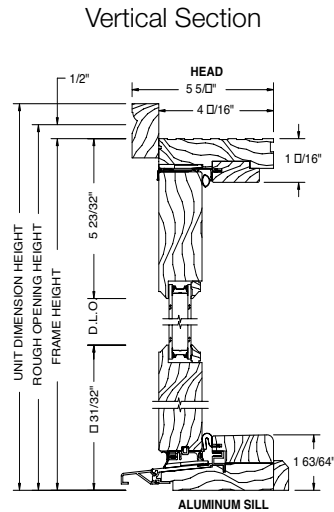
Operation is viewed from the exterior.

NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

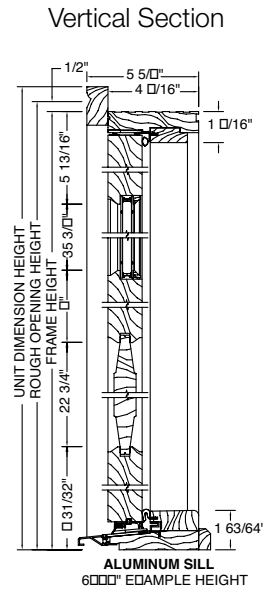
Outswing Entrance Doors

Cross Section Drawings

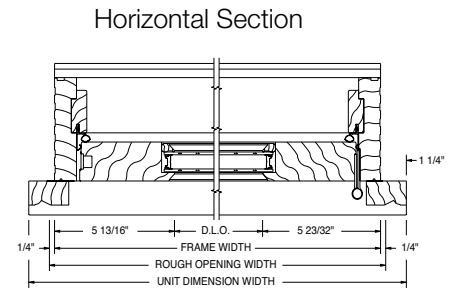
Standard Outswing Entrance Door



Full lite panel



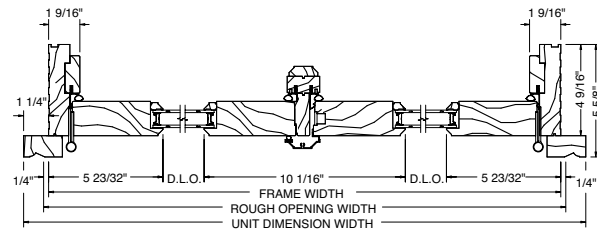
Raised panel



NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

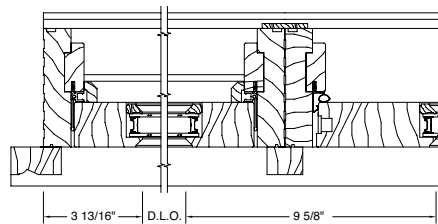
Two-Wide Outswing French Doors

Horizontal Section

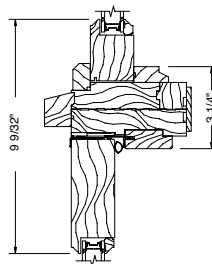


Outswing Entrance Door with Sidelite

Horizontal Section



Rectangular Transom Stacked over Outswing Entrance Door

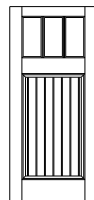


NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

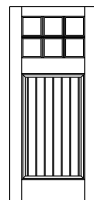
Craftsman Collection Panel Designs

Craftsman Door Panel Designs

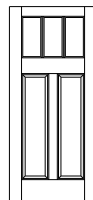
Square Panels and Glass Lites



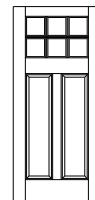
PA 4661-3



PA 4661-6



PA 4662-3

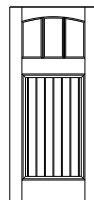


PA 4662-6

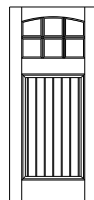


PA 4982

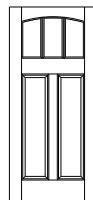
Square Panels and Arch-Top Glass Lites



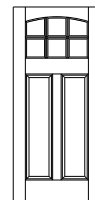
PR 4661-3



PR 4661-6



PR 4662-3

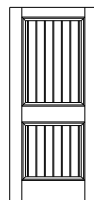


PR 4662-6



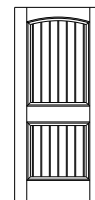
PR 4982

Square, Beaded 2-Panel



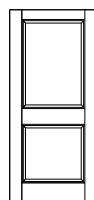
PL 4082

Arch-Top, Beaded 2-Panel



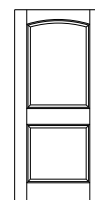
S 4082

Square 2-Panel



R 4082

Arch-Top 2-Panel



T 4082

NOTE: All measurements are nominal. Elevation drawings are not to scale.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 196.

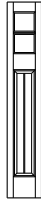
PRODUCT CODES:

To order, specify Craftsman Collection, the number shown, as well as inswing or outswing operation. If ordering single doors, specify right or left hinging.

Craftsman Sidelites



PAS 4661-1



PAS 4661-2



PAS 4662-1



PAS 4662-2



PAS 4982

Inswing Rough Openings

Single Doors		Double Doors	
2-6	32-1/8"	5-0	62-11/16"
2-8	34-1/8"	5-4	66-11/16"
3-0	38-1/8"	6-0	74-11/16"
3-6	44-1/8"		
Sidelites		Heights	
1-0	14-1/4"	6-8	83-7/32"
1-2	16-1/4"	7-0	87-7/32"
1-4	18-1/4"	8-0	99-7/32"
1-6	20-1/4"		

Outswing Rough Openings

Single Doors		Double Doors	
2-6	32-23/32"	5-0	63-3/8"
2-8	34-23/32"	5-4	67-3/8"
3-0	38-23/32"	6-0	75-3/8"
3-6	44-23/32"		
Sidelites		Heights	
1-0	14-3/4"	6-8	83-3/32"
1-2	16-3/4"	7-0	87-3/32"
1-4	18-3/4"	8-0	99-3/32"
1-6	20-3/4"		

Dimension Calculations

Inswing

	Width	Height
F.S. to Panel O.S.M. (1-wide, active)	-1 13/16"	-2 23/32"
(1-wide, sidelite)	-1 3/4"	-2 23/32"
(2-wide, French)	-2 9/16" ÷ 2	-2 23/32"

Outswing

	Width	Height
F.S. to Panel O.S.M. (1-wide, active)	-2 13/32"	-2 19/32"
(1-wide, sidelite)	-2 3/8"	-2 19/32"
(2-wide, French)	-3 1/4" ÷ 2	-2 19/32"

Note: Dimension calculations for transoms may be obtained from your supplier.

Elevation charts provide frame sizes for units without brickmould.

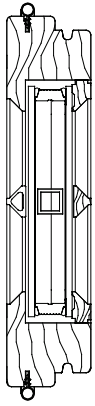
Below are the calculations to determine overall unit dimensions for units with brickmould.

1-15/16" brickmould; F.S. to U.D.	+2 1/4"	+1 1/8"
3-1/2" flat or profiled casing; F.S. to U.D.	+5 3/8"	+2 11/16"
3-1/2" flat casing & backband; F.S. to U.D.	+6 7/8"	+3 7/16"

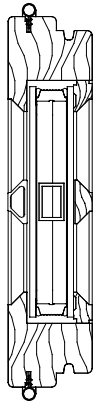
F.S. = Frame Size • O.S.M. = Outside Measurement
U.D. = Unit Dimension

Divided Lites | Cross Section Drawings

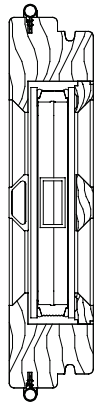
Beveled Performance Divided Lites



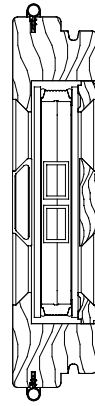
5/8"
beveled
PDL



7/8"
beveled
PDL



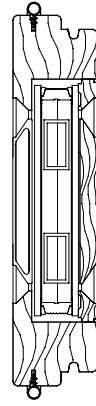
1-1/8"
beveled
PDL



1-3/4"
beveled
PDL

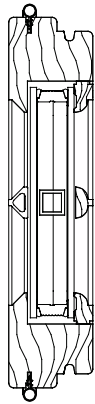


2-1/4"
beveled
PDL

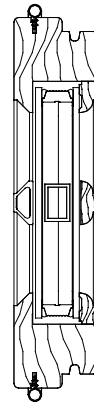


4-1/2"
beveled
PDL

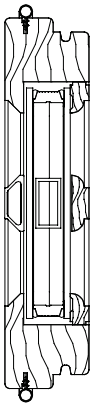
Ovolo Performance Divided Lites



5/8"
ovolo
PDL



7/8"
ovolo
PDL



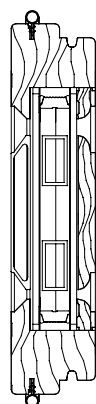
1-1/8"
ovolo
PDL



1-3/4"
ovolo
PDL



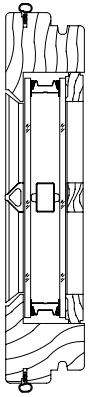
2-1/4"
ovolo
PDL



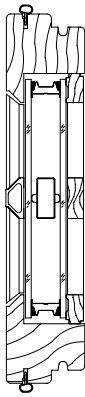
4-1/2"
ovolo
PDL

NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.

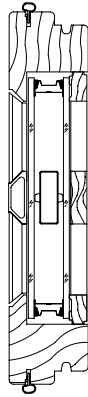
Square Performance Divided Lites



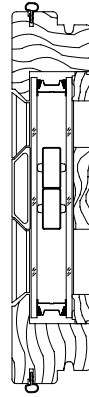
5/8"
square
PDL



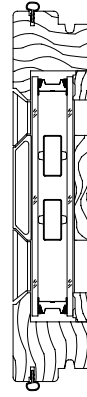
7/8"
square
PDL



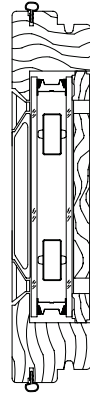
1-1/8"
square
PDL



1-3/4"
square
PDL

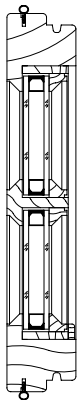


2-1/4"
square
PDL

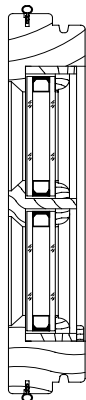


4-1/2"
square
PDL

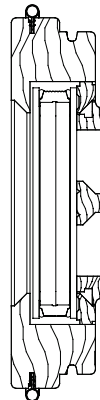
True Divided Lites



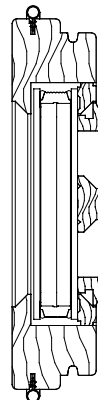
1-1/8"
beveled
TDL



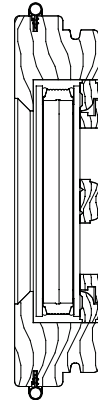
1-1/8"
ovolo
TDL



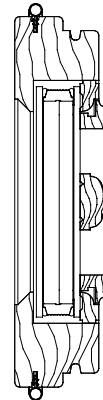
7/8" beveled
removable
grilles



1-1/8" beveled
removable
grilles



7/8" ovolo
removable
grilles



1-1/8" ovolo
removable
grilles

Wood Removable Grilles

NOTE: Drawings are not to scale. Additional and the most current drawings are available in the Architect Library at www.kolbe-kolbe.com.





Options

Craftsmanship and artistry are hallmarks of Kolbe products. We build innovative windows and doors with a wide array of options. But, don't let the standard options limit your imagination.

At Kolbe, we love a good challenge. We welcome projects that require special wood species, custom divided lite patterns, unique shapes, custom finish colors, unusual mulling configurations – you dream it, we'll build it. We can even help inspire and develop your designs. Whatever the opening, we will help you fill it with style. Our windows and doors are built to order, which allows you to choose the options that best fit with the design of your home and vision for your project. We offer many customizable options that blend beautifully with your home's décor.



Glass Options

Kolbe offers numerous options to achieve the optimum energy efficiency for the geographic region in which you live.

LoE Coatings

To improve thermal efficiency, microscopically thin coatings are applied to the glass that is used in the insulated glass units incorporated into our windows and doors. The state-of-the-art application of the LoE coating is known as sputter coating. There are a number of coating options available, and the appropriate one should be chosen for either the specific geographic region or building construction design required to help achieve the highest level of energy performance possible. As standard, we use double strength annealed glass in most units, with double-pane insulating LoE²-270 glass. In energy zones with a warmer climate, LoE coatings can be used to significantly block the amount of heat transfer, reducing the load of air conditioning systems. In colder climate zones, LoE coatings can be used to allow for high solar heat gain, resulting in reduced heating and cooling costs throughout the year. LoE coatings also reduce the potential for condensation, as well as provide protection against fading of furniture, fabrics and carpeting. Numerous glass options and combinations are available for different applications and various geographic regions. Special glass requests are also welcomed.

LoE-180

When the weather turns frigid, LoE-180 glass is the perfect cold remedy. It keeps homes warmer and more comfortable by blocking heat loss to the outside and letting the sun's heat stream in to increase solar heat gain.

LoE²-240

Wherever glare is a problem, LoE²-240 glass is a solution to maintain year-round comfort in warmer climates. In summer, it blocks oppressive solar heat gain and maintains cool glass temperatures. When winter rolls around, it keeps inside glass temperatures warm.

LoE²-270

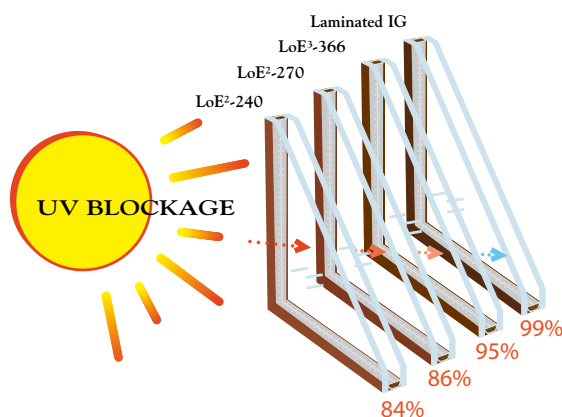
LoE²-270 glass delivers year-round comfort in most types of weather. Offering a balance of high clarity and low solar heat gain, LoE²-270 is standard in most Kolbe products. In summer, it rejects the sun's heat and damaging UV rays. In winter, it reflects heat back into the room.

LoE³-366

For warm climates, LoE³-366 delivers a balance of solar control and high visibility. This coating helps provide protection of fading, blocking up to 95% of the sun's damaging rays.

ThermaPlus™ LoE

ThermaPlus LoE is an additional interior coating applied to help meet the strictest energy requirements and provide protection against heat loss and UV damage.



NOTE: Tested units include argon. The laminate has 1/4" inner pane. Based on Lawrence Berkeley Lab (LBL) Window 5.2 © 2003 analysis for classical UV transmission data.

Argon Gas

Argon gas is a colorless, odorless, non-toxic, naturally-occurring element that is inert, meaning it will not react with other elements or gasses. Because argon gas has a thermal conductivity 30% lower than air, the use of argon gas in a LoE coated insulated glass unit allows it to provide for an incremental improvement to the overall U-factor of the unit. For increased energy efficiency, argon is supplied, at no additional cost, in all LoE coated insulated glass units, with the exception of those units when glass dimensions are less than 14" x 14" or units that require capillary/breather tubes due to being shipped over or installed in high altitude elevations. Units constructed without argon gas will have higher U-values.

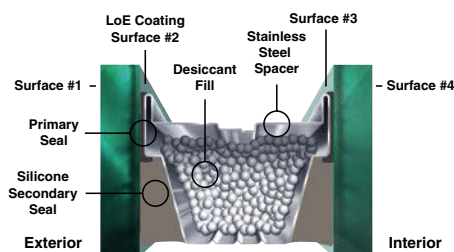
High altitude situations occur when Kolbe double pane insulated glass units are shipped over or installed in areas that begin at 5000 feet above sea level. For triple pane insulated glass units, high altitude begins at 3500 feet above sea level. To find the energy performance for units in high altitude situations, use our energy database at kolbe-kolbe.com and select **Air** as the fill option for double or triple pane glass.

Thermal Efficiency

Inert gas dissipates over the life of the insulated glass unit. Kolbe does not warrant the amount or percentage of argon present in insulating glass or a specific level of unit thermal efficiency at any time after manufacture. Visit the energy data section of our website at kolbe-kolbe.com to select and view your specific window and its listed energy performance values.

Thermo-Edge Spacer

Kolbe's standard glass offerings are complemented by a state-of-the-art, stainless steel spacer bar system on most units. The advanced design of this system incorporates a stainless steel spacer with airtight bent corners and a dual-seal construction of compressed polyisobutylene (PIB) and silicone. Desiccants are contained in the spacer to eliminate the potential for moisture. These features combine to reduce the thermal transmission through the edge seal, creating better energy performance and increasing the roomside glass temperature while reducing the potential for condensation at the sash to glass interface as compared to aluminum spacer designs. Thermo-Edge spacers are one of the many quality details that define Kolbe windows and doors. Thermo-Edge spacers are not available on very small radius units, units with 1/2" insulated glass, with the champagne or dark Bronze Anodized spacer option, units with "pencil" bar grilles-in-the-airspace, or true divided lites. Available in stainless steel (standard) and black painted.



Additional Glass Options

Triple Pane

Provides a greater energy performing window that keeps indoor air warm and comfortable, prevents heat loss and lowers your heating bills. Available with a variety of LoE coatings that best suit your needs.

Mountain Air Energy Package

Specifically designed to meet a U-factor of .30 without argon gas. Consists of a specially-constructed frame, second-generation ThermoPlus glass with LoE³-366 and a capillary/breather tube within the insulating glass unit. Available on Crank-Out Casements and Awnings, Sterling Double Hungs, and Studio/Picture, Transom and Direct Set units to match Crank-Out Casements and Sterling Double Hungs.



Preserve Film

A protective film that protects the glass surfaces from scratches during transit and construction, as well as reducing the time involved in job site clean-up.

Tinted, Colored or Patterned

Provides shading, privacy or visual interest.

Finely Crafted Glass *(not available with argon gas)*

Decorative glass created with a variety of coming options.

Tempered

Standard in Kolbe doors to address safety concerns. Also available in window units to meet specific building codes.

Laminated

Benefits include safety, security, sound control and provides the ultimate in UV blockage.

Impact

Glazing utilized to withstand harsh environmental conditions, especially in coastal regions. Combined with an impact product, such as K-Force®, this product offers the highest level of security.

Neat®

Harnesses the sun's UV rays to loosen dirt so water can rinse it away, leaving windows virtually spotless. A special sputter-coating process makes the exterior glass surface ultra smooth, so the water "sheets off" more readily than it would on uncoated glass, allowing you to spend less time cleaning.

NOTE: Not all glass is available on all products. Please contact your Kolbe dealer for product specifics.

LoE², LoE²-240, LoE²-270, LoE³-366, Neat and Preserve are trademarks of Cardinal IG.

LoE insulating glass with a stainless steel spacer bar carries a 20-year warranty. Not all glass options listed have the same glass warranty. Please contact your dealer for details.

Divided Lites

Expand the character of your home or project by adding one of our divided lite options to your windows and doors. Choose anything from a traditional, colonial-style pattern to a unique, custom design to accentuate the overall appearance of your project. Kolbe offers four types of divided lites: grilles-in-the-airspace, wood removable grilles, performance divided lites and true divided lites. As standard, wood bars have a beveled profile, however, an ovolo profile or a square profile is also available. (See pg. 192, *Glazing Beads & Muntin Bars*.) Divided lite cross section drawings can be found on pgs. 180-181.

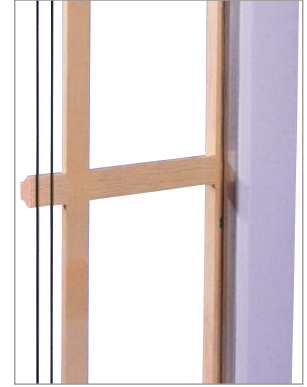


Performance Divided Lites

Kolbe's performance divided lite (PDL) glazing system gives the appearance of true divided lites without sacrificing energy efficiency. Extruded aluminum bars are adhered to the exterior and unfinished pine bars are adhered to the interior of the single lite of insulating glass. Aesthetically pleasing spacer bars are installed within the insulating glass unit. Together, these bars create the illusion of true divided lites. PDL bars are available in 5/8", 7/8", 1-1/8", 1-3/4", 2-1/4" or 4-1/2" bar widths. The exterior finish of the aluminum bars will match the exterior finish on the unit. Variations on the PDL option may include custom grille patterns, custom bar widths or no spacer bars. Some designs may have a composite material for the exterior PDL bar.

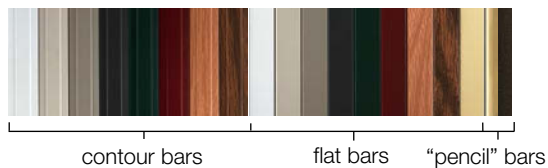
True Divided Lites

True divided lites (TDL) give each unit the traditional look often found in historical projects. Units with TDL are comprised of wood muntin bars in between glass panes. The horizontal and vertical, colonial-style wood TDL bars use interlocking half-lap joints. Profile shadow lines enhance the warm, richness of the wood on both the interior and exterior. The exterior finish on the bars will match the exterior finish of the unit. TDL options include custom patterns and bar widths, other wood species and interior stain or paint finishes. Depending on glass options chosen, standard bar widths are available in 7/8" or 1-1/8". TDL glass units are not filled with argon gas.



Grilles-in-the-Airspace

Grilles-in-the-airspace are constructed with aluminum bars sealed between two panes of insulating glass, offering the look of divided panes while reducing cleaning time. For units with 7/8" insulating glass, contoured, 3/4" wide bars are standard in White, Beige, Sand, Rustic, Hartford Green and Chutney. Optional colors are light wood and dark wood faux finishes. Flat, 5/8" wide grille bars are also available in White, Beige, Sand, Rustic, Hartford Green, Chutney, light wood and dark wood faux finishes and Brass. Two-tone contour or flat grilles are available with either light or dark wood faux finishes to the interior and White to the exterior. Also available for 7/8" insulating glass are 5/16" wide Brass and Pewter pencil bars.



Wood Removable Grilles

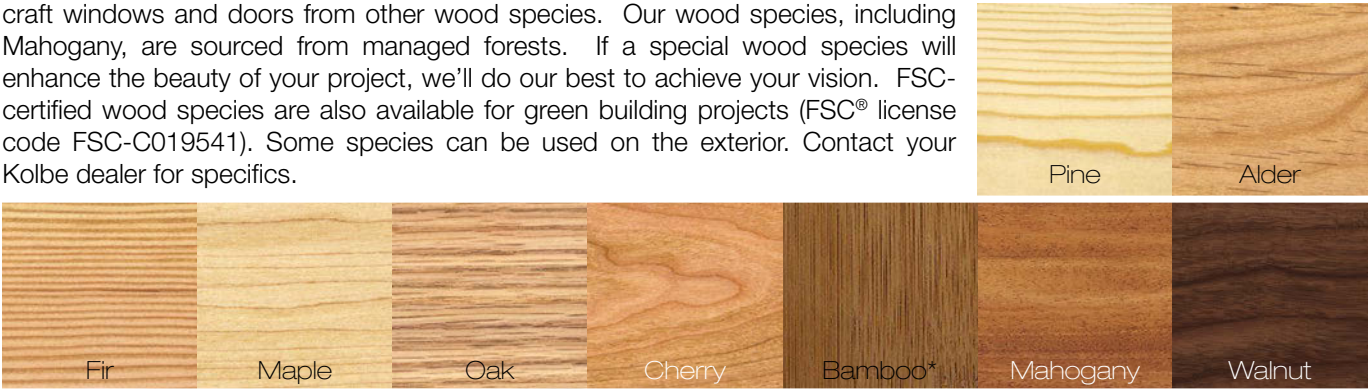
Wood grilles are built with a full surround frame and bars that interlock at the joints for stability. Grilles are applied to the interior of the window using an exclusive hidden clip system.* This system makes unsightly pins and attachment points unnecessary and removal or replacement easy. As standard, bars are constructed of unfinished pine and are 7/8" wide on windows and 1-1/8" wide on doors. Custom grille patterns, bar widths, wood species and interior stains may be available upon request.

* A clear pin system will be used for Garden-Aire sliding patio doors.

Wood Finish Options

Wood Species

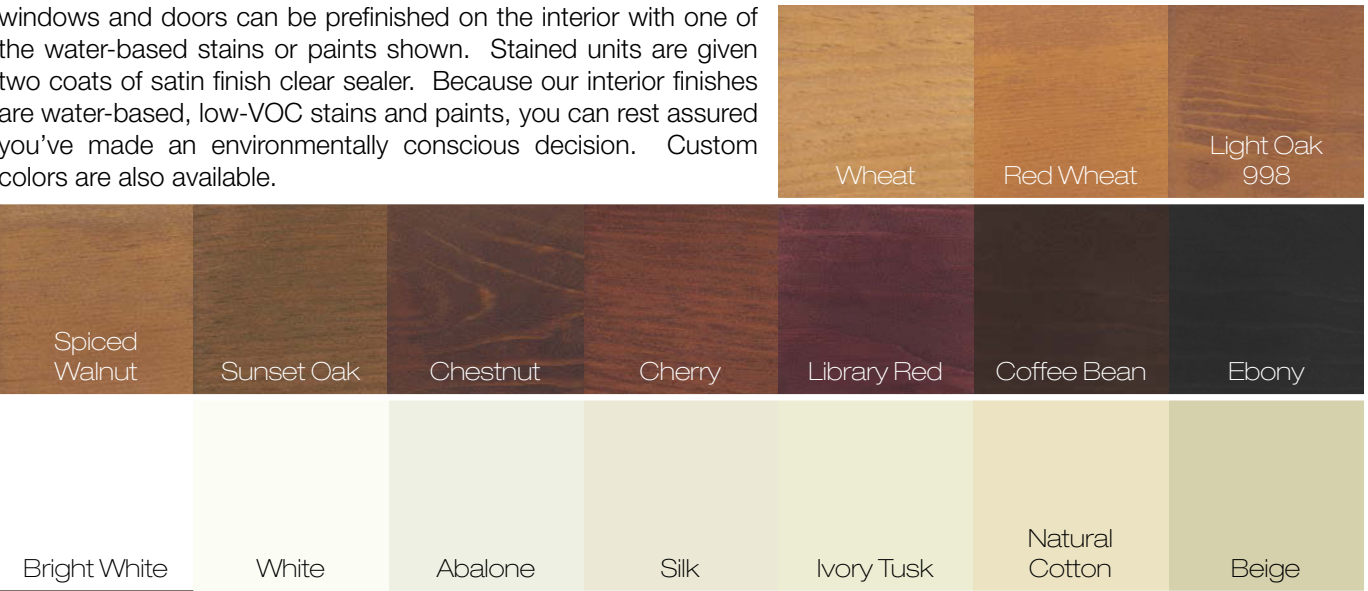
Most of our wood windows and doors are built from pine as standard, but we often craft windows and doors from other wood species. Our wood species, including Mahogany, are sourced from managed forests. If a special wood species will enhance the beauty of your project, we'll do our best to achieve your vision. FSC-certified wood species are also available for green building projects (FSC® license code FSC-C019541). Some species can be used on the exterior. Contact your Kolbe dealer for specifics.



* Sourced from companies such as Lamboo, Inc.

Interior Finish Options

For units that are ready to install upon delivery, Kolbe's wood windows and doors can be prefinished on the interior with one of the water-based stains or paints shown. Stained units are given two coats of satin finish clear sealer. Because our interior finishes are water-based, low-VOC stains and paints, you can rest assured you've made an environmentally conscious decision. Custom colors are also available.



Printed images of wood species and stain options will vary from actual product colors. Selections should be made based on color samples available from your Kolbe dealer. Stain colors are shown on pine. A double coat clear finish is also offered. Since no two trees are identical, wood can be expected to differ both in color and graining. These factors will influence the stain's final color.

Exterior Finish Options

Primer

Most Heritage Series windows are coated on the exterior with latex primer, ready for your choice of topcoat. An optional urethane primer is available on most Heritage Series windows and doors.

K-Kron II

Kolbe's Heritage Series wood products can be coated on the exterior with K-Kron II, our exterior paint finish that offers a way to enhance and preserve the look of wood windows and doors. Custom colors are also available. Contact your dealer for exterior finish samples. The K-Kron II finishing system consists of three steps. **Step 1:** Wood preservatives are applied to help resist water, insects and fungus. **Step 2:** A urethane primer is applied using a controlled multi-step spray method to help seal the wood and provide a tough bonding surface for the final topcoat. **Step 3:** The topcoat finish is applied using a controlled spray system, which provides consistent coverage to the exterior surface. K-Kron II carries a 10-year warranty to help resist chalking, chemical attack, as well as damage from salt, wind, sleet and snow. K-Kron II is offered in over 30 colors, with custom colors available.

				Ultra Pure White	White	Abalone
Alabaster	Rustic	Sand	Mudpie	Beige	Spiced Vinegar	Camel
Natural Cotton	Gingersnap	Truffle	Slate	Frosted Jade	Kiwi	Bay Leaf
Pumpkin Spice	Butterscotch	Hartford Green	Mystic Ivy	Green Tea Leaf	Basil	Manchester
Chutney	Antique Red	Merlot	Patriotic Blue	Cape Cod	Waterford	Timberwolf

Some options for our products may have limited color offerings or may incur a nominal charge. Check with your Kolbe dealer for further details on pricing and availability. Printed images of exterior finishes may vary slightly from actual colors. Selections should be made based on actual color samples available from your Kolbe dealer.

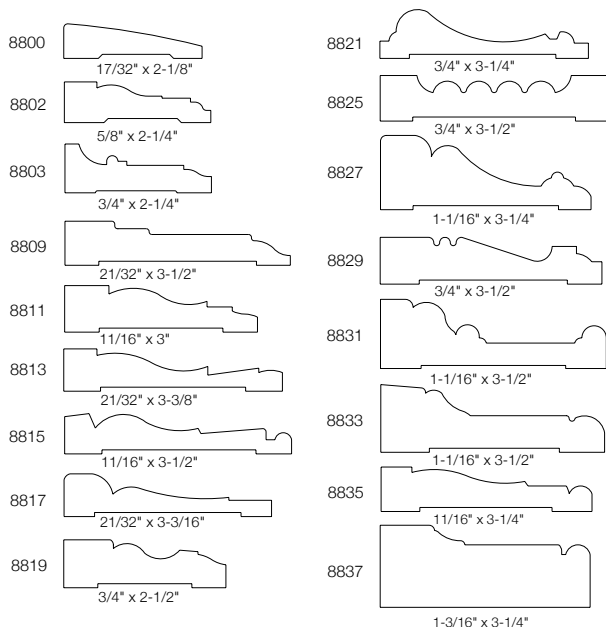
Options & Accessories

Interior Casing

Accent the interior of windows and doors with interior casing by Kolbe. As standard, choose either 2-1/8" wide ranch casing or 2-1/4" wide colonial casing. Ranch and colonial casings are available in unfinished pine or oak, ready for paint or stain. Curved radius casing is available to match the curves of Kolbe radius units.



Specialty mouldings are available in pine, oak and other wood species. Shipped loose for field application, specialty mouldings are available in a wide variety of profiles, some of which are shown below.



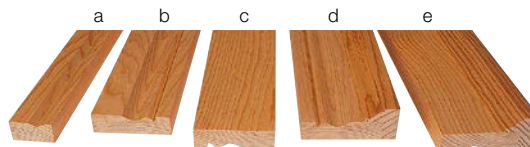
Corner Blocks

Giving windows and doors a signature look has never been easier. Kolbe offers corner blocks and rosettes in pine or oak to complement interior and exterior architecture.



Exterior Brickmoulds & Casings

Accentuate the beauty of your windows and doors with Kolbe exterior brickmoulds and casings. As standard, Heritage Series units have Kolbe's 1-15/16" profiled brickmould (a). Options available include 3-1/2" profiled brickmould (b), 3-1/2" flat casing (c), 3-1/2" profiled brickmould with backband (d), or 3-1/2" flat casing with backband (e). Custom brickmoulds and casings are available. Contact your local Kolbe dealer for more information.



Wire Brush Finish

Most Kolbe wood windows and doors can be further enhanced by our wire brushed finish. Wire brushing creates a rugged texture and adds character – the perfect option to complement any rustic-styled home. Due to the nature of the finish, certain limitations apply. Contact your local Kolbe dealer for more information.

StormGuard

Kolbe's durable StormGuard combination storm/screen units provide extra protection from the outdoor elements, as well as provide greater energy efficiency. Units feature two glass inserts and one screen insert that can be removed from the interior for cleaning. Frames are constructed of extruded aluminum made of a lightweight alloy, which is easy to handle without sacrificing performance. Weatherstripping along the top and sides of all three inserts ensures a tight fit that will withstand harsh weather. Weep holes channel water out to help prevent damage to the window sill. The sight lines and profiles of StormGuard units closely match the window it complements, which means the unit will blend in and your view will not be obscured. Screen inserts have fiberglass mesh as standard; aluminum mesh is optional. StormGuards for Heritage Series windows are available in Ultra Pure White, White, Beige, Sand, Rustic, Hartford Green and Chutney. Only available for Sterling and Traditional double hungs as well as double sliders.



Double Hung
StormGuard
in White



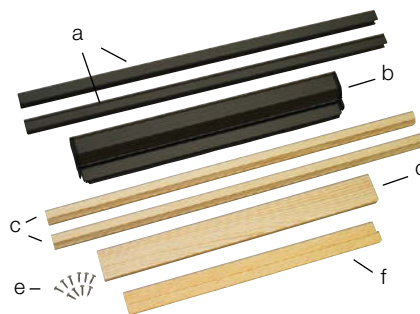
Slider
StormGuard
in Beige



Sterling Double Hung Retractable Screen Kit

A retractable screen kit is offered for Kolbe Sterling double hungs, for those who prefer an unobstructed view at times. Wood components that match the interior wood species and finish disguise the screen hardware, revealing only the beauty of the window. When you do want to open your window and use the screen, operation is practically effortless. Simply press the pull bar down to the sill to engage the screen. A gentle push toward the exterior allows the screen to retract. BetterVue® fiberglass screen mesh is used as standard for a clearer view.

Included in the kit are all the components necessary for field installation on a Heritage Series Sterling double hung.



Sterling Double Hung Retractable Screen Kit components:

- | | |
|--|----------------------------|
| a - Side rails | d - Wood trim for housing |
| b - Cassette
(housing and pull bar) | e - Screws |
| c - Wood trim for side rails | f - Wood trim for pull bar |

Options & Accessories

Swinging Screen Doors

Swinging screen doors are available for field installation with Kolbe single and double inswing doors. Screen doors feature an adjustable self-closing mechanism. Double swinging screen doors are equipped with spring-loaded locking mechanisms on the head and sill of the passive door. Energy efficiency is provided by weatherstripping around the frame perimeter and on the astragal of double screen doors; rubber door sweeps meet the sill. Swinging screen door frames are available in over 30 colors, plus custom colors.

Keystones & Pediment Heads

Keystones and pediment heads add a classic touch to the exterior of Heritage Series windows or doors. Pine keystones and pediment heads may be ordered unfinished, primed or prefinished with K-Kron II to match your windows or doors. Ask your Kolbe dealer for more details.



Keystone



Pediment Head

Glazing Beads & Muntin Bars

As standard, glazing beads have a beveled profile, but may also be ordered with a square or ovolo profile. Matching muntin bars are available on units with true divided lites (TDL), performance divided lites (PDL) and wood removable grilles. Units ordered with TDL and PDL will have ovolo muntin bars on the interior and beveled muntin bars on the exterior regardless of the profile chosen for the interior. *(See divided lite cross section drawings on pgs. 180-181.)*



Beveled Profile



Ovolo Profile



Square Profile

Product Performance Modifications

Most Kolbe products can be modified to meet even the most strict building code requirements. Depending on the criteria, Kolbe offers high performance and K-Force® impact performance products



to improve air, water and structural ratings or sound transmittance ratings. With each level of modification, window and door strength is enhanced. This could be by using additional sash locks, alternate glazing methods or K-Force impact laminated glass. Contact your Kolbe dealer for further details.

Universal Design

To meet the needs of homeowners with physical limitations, Kolbe offers a variety of window and door options that are designed to make independent living possible. From door sills that create a flush surface for easier passage between the interior and exterior, to window and door hardware that provides ease of operation, we have numerous options that will help make living at home far easier. Whether your project is new construction or you are adapting an existing residence for a special need, Kolbe's windows and doors with universal design options will give you the freedom and style you are seeking. Below are some examples.

Casements



Longer crank handles with large knobs for casement windows make operating easier. Available in white or clay.



Larger levers for multi-point casement locks make locking of a casement window easy. Available in white or clay.



Motorized operators make opening and closing casement windows simple and effortless. Available in white or clay.

Double Hungs



A crank handle hardware kit for double hungs allows the bottom sash to be operated with minimal effort. Available in white.

Swinging Doors



Wider door sizes help provide additional space for those who use mobility aids.



ADA-compliant sills (thermal break and non-thermal break) for swinging doors create a flush surface for easy access to pass through.



Lever handles for swinging doors are available in a variety of styles and finishes and make operation easier than doors with knobs.

Sliding Doors



Aluminum sill ramp kits for Garden-Aire sliding patio doors allow smooth transitioning between the interior and exterior of the home.

Many of these options meet standards of the Americans with Disabilities Act. Other options such as taller bottom rails on doors are also available to meet these standards. Certain product limitations and modifications may apply. Please contact your local Kolbe dealer for more information.





Technical Data

Kolbe windows and doors offer not only superior craftsmanship, but also superior performance. Our windows and doors undergo independent testing to ensure the highest quality products available. With Kolbe's participation in programs such as the Energy Star and WDMA Hallmark Certification programs, you can rest assure that our products are tested to industry standards, allowing them to meet and exceed today's stricter building codes and standards for energy efficiency.



Clear Opening Dimensions

Rough Opening Recommendations:

The Kolbe standard rough opening dimensions published in our product literature are provided as a guideline to maintain a minimum 1/4" space between the window or patio door and the building structure. There are certain situations where Kolbe recommends a gap larger than our published 1/4" standard:

- ▶ When installation clips are used, the gap should be increased to 1/2" on the sides, top and bottom of the unit.
- ▶ When mulls are installed in the opening, the gap all around should be increased to 1/2". For installation consistency, the same gap should be used on all units in the project.
- ▶ If a sill pan drainage system is used, the gap should be increased to 1/2" on the top and bottom of the unit.

Because every installation is different, Kolbe strongly recommends consultation with the local supplier or an experienced contractor, architect or structural engineer prior to the installation of any Kolbe product. Installation of Kolbe products, including sizing of rough opening, method of attachment, fastener selection, and code compliance is the sole responsibility of the architect, building owner, contractor and/or consumer. Unless otherwise specified, if units are ordered by rough opening, Kolbe will size the units using our standard minimum 1/4" gap - regardless of the options or construction of the product ordered.

Definitions of Acceptable Emergency Escape & Rescue Openings:

"Egress" has long been the term used to describe the clear opening dimensions of a window or door necessary to enter or exit a building in case of an emergency. With the release of the International Building Code (IBC) and International Residential Code (IRC), "egress" is no longer the appropriate term.

IBC and IRC have set the following as basic requirements for Emergency Escape & Rescue Openings.

- ▶ Minimum Opening Width: 20 inches (508 mm)
- ▶ Minimum Opening Height: 24 inches (610 mm)
- ▶ Minimum Opening Area: 5.7 sq. ft. (0.53 m²)

NOTE:

Please check your local codes to confirm that these Emergency Escape & Rescue Opening requirements are applicable. Other requirements may also apply.

Note For Casement Windows:

- ▶ Clear opening widths shown are for standard casements with multi-point locks and concealed hinges.

Exposed Hinges (a.k.a. Euro Hinges) - The Euro hinge is the default hinge used when standard concealed casement hinges can not be utilized (radius head units, high performance units and impact performance units), or if this type of hinge is requested.

In most cases single-arm operators are used with Euro hinges, which changes the clear opening widths. For units with this type of hinge, add 3-7/16" to widths shown for one sash open. For French casements add 6-7/8" to widths shown for two sash open. Two sash open may or may not be considered as an acceptable emergency escape and rescue opening per the local building inspector.

- ▶ All dimensions are taken with sash open to 90°, except for an "E" Series unit with dual-arm operator and concealed hinges, which opens to 75°.
- ▶ Shaded units meet most national building codes for emergency escape and rescue requirements.

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Casements						
S12	0.99	7-5/16"	19-1/2"	1.30	1.59	2.67
S126	1.29	7-5/16"	25-1/2"	1.73	2.08	3.33
S13	1.60	7-5/16"	31-1/2"	2.15	2.57	4.00
S136	1.90	7-5/16"	37-1/2"	2.58	3.06	4.67
S14	2.21	7-5/16"	43-1/2"	3.01	3.55	5.33
S146	2.51	7-5/16"	49-1/2"	3.43	4.04	6.00
S15	2.82	7-5/16"	55-1/2"	3.86	4.53	6.67
S156	3.12	7-5/16"	61-1/2"	4.29	5.02	7.33
S16	3.43	7-5/16"	67-1/2"	4.72	5.51	8.00
N12	1.53	11-5/16"	19-1/2"	1.81	2.13	3.33
N126	2.00	11-5/16"	25-1/2"	2.40	2.79	4.17
N13	2.47	11-5/16"	31-1/2"	2.99	3.45	5.00
N136	2.95	11-5/16"	37-1/2"	3.59	4.10	5.83
N14	3.42	11-5/16"	43-1/2"	4.18	4.76	6.67
N146	3.89	11-5/16"	49-1/2"	4.77	5.41	7.50
N15	4.36	11-5/16"	55-1/2"	5.37	6.07	8.33
N156	4.83	11-5/16"	61-1/2"	5.96	6.73	9.17
N16	5.30	11-5/16"	67-1/2"	6.56	7.38	10.00
W12	2.07	15-5/16"	19-1/2"	2.31	2.67	4.00
W126	2.71	15-5/16"	25-1/2"	3.07	3.50	5.00
W13	3.35	15-5/16"	31-1/2"	3.83	4.32	6.00
W136	3.99	15-5/16"	37-1/2"	4.59	5.14	7.00
W14	4.63	15-5/16"	43-1/2"	5.35	5.97	8.00
W146	5.26	15-5/16"	49-1/2"	6.12	6.79	9.00
W15	5.90	15-5/16"	55-1/2"	6.88	7.61	10.00
W156	6.54	15-5/16"	61-1/2"	7.64	8.43	11.00
W16	7.18	15-5/16"	67-1/2"	8.40	9.26	12.00
L12	2.62	19-5/16"	19-1/2"	2.82	3.22	4.67
L126	3.42	19-5/16"	25-1/2"	3.75	4.21	5.83
L13	4.22	19-5/16"	31-1/2"	4.67	5.20	7.00
L136	5.03	19-5/16"	37-1/2"	5.60	6.18	8.17
L14	5.83	19-5/16"	43-1/2"	6.53	7.17	9.33
L146	6.64	19-5/16"	49-1/2"	7.46	8.16	10.50
L15	7.44	19-5/16"	55-1/2"	8.38	9.15	11.67
L156	8.25	19-5/16"	61-1/2"	9.31	10.14	12.83
L16	9.05	19-5/16"	67-1/2"	10.24	11.13	14.00
X12	2.89	21-5/16"	19-1/2"	3.07	3.49	5.00
X126	3.77	21-5/16"	25-1/2"	4.08	4.56	6.25
X13	4.66	21-5/16"	31-1/2"	5.09	5.63	7.50
X136	5.55	21-5/16"	37-1/2"	6.10	6.71	8.75
X14	6.44	21-5/16"	43-1/2"	7.12	7.78	10.00
X146	7.33	21-5/16"	49-1/2"	8.13	8.85	11.25
X15	8.21	21-5/16"	55-1/2"	9.14	9.92	12.50
X156	9.10	21-5/16"	61-1/2"	10.15	11.00	13.75
X16	9.99	21-5/16"	67-1/2"	11.16	12.07	15.00
E13	5.63	25-3/4"	31-1/2"	6.35	6.95	9.00
E136	6.71	25-3/4"	37-1/2"	7.62	8.27	10.50

NOTE: For the most up to date data, please visit the Kolbe website at www.kolbe-kolbe.com.

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Casements (continued)						
E14	7.78	25-3/4"	43-1/2"	8.88	9.59	12.00
E146	8.85	25-3/4"	49-1/2"	10.14	10.91	13.50
E15	9.92	25-3/4"	55-1/2"	11.40	12.24	15.00
E156	11.00	25-3/4"	61-1/2"	12.66	13.56	16.50
E16	12.07	25-3/4"	67-1/2"	13.92	14.88	18.00

Product #	Sq. Ft. Clear Opg.	Clear Opg.		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Frame Dim.
		Width	Height			
Push-out Casements						
S12	0.91	6-3/4"	19-1/2"	1.03	1.73	2.67
S126	1.20	6-3/4"	25-1/2"	1.40	2.26	3.33
S13	1.48	6-3/4"	31-1/2"	1.76	2.79	4.00
S136	1.76	6-3/4"	37-1/2"	2.13	3.32	4.67
S14	2.04	6-3/4"	43-1/2"	2.50	3.85	5.33
S146	2.32	6-3/4"	49-1/2"	2.86	4.38	6.00
S15	2.60	6-3/4"	55-1/2"	3.23	4.91	6.67
S156	2.88	6-3/4"	61-1/2"	3.60	5.45	7.33
S16	3.16	6-3/4"	67-1/2"	3.97	5.98	8.00
N12	1.46	10-3/4"	19-1/2"	1.50	2.27	3.33
N126	1.90	10-3/4"	25-1/2"	2.03	2.97	4.17
N13	2.35	10-3/4"	31-1/2"	2.56	3.66	5.00
N136	2.80	10-3/4"	37-1/2"	3.10	4.36	5.83
N14	3.25	10-3/4"	43-1/2"	3.63	5.06	6.67
N146	3.70	10-3/4"	49-1/2"	4.16	5.76	7.50
N15	4.14	10-3/4"	55-1/2"	4.70	6.46	8.33
N156	4.59	10-3/4"	61-1/2"	5.23	7.15	9.17
N16	5.04	10-3/4"	67-1/2"	5.77	7.85	10.00
W12	2.00	10-3/4"	19-1/2"	1.96	2.81	4.00
W126	2.61	14-3/4"	25-1/2"	2.66	3.67	5.00
W13	3.23	14-3/4"	31-1/2"	3.36	4.54	6.00
W136	3.84	14-3/4"	37-1/2"	4.06	5.40	7.00
W14	4.46	14-3/4"	43-1/2"	4.76	6.27	8.00
W146	5.07	14-3/4"	49-1/2"	5.47	7.13	9.00
W15	5.68	14-3/4"	55-1/2"	6.17	8.00	10.00
W156	6.30	14-3/4"	61-1/2"	6.87	8.86	11.00
W16	6.91	14-3/4"	67-1/2"	7.57	9.73	12.00
L12	2.54	18-3/4"	19-1/2"	2.43	3.35	4.67
L126	3.32	18-3/4"	25-1/2"	3.30	4.38	5.83
L13	4.10	18-3/4"	31-1/2"	4.16	5.41	7.00
L136	4.88	18-3/4"	37-1/2"	5.03	6.45	8.17
L14	5.66	18-3/4"	43-1/2"	5.90	7.48	9.33
L146	6.45	18-3/4"	49-1/2"	6.77	8.51	10.50
L15	7.23	18-3/4"	55-1/2"	7.63	9.54	11.67
L156	8.01	18-3/4"	61-1/2"	8.50	10.57	12.83
L16	8.79	18-3/4"	67-1/2"	9.37	11.60	14.00

Product #	Sq. Ft. Clear Opg.	Clear Opg.		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Frame Dim.
		Width	Height			
Push-out Casements (continued)						
X12	2.81	20-3/4"	19-1/2"	2.66	3.62	5.00
X126	3.67	20-3/4"	25-1/2"	3.61	4.74	6.25
X13	4.54	20-3/4"	31-1/2"	4.56	5.85	7.50
X136	5.40	20-3/4"	37-1/2"	5.51	6.97	8.75
X14	6.27	20-3/4"	43-1/2"	6.47	8.08	10.00
X146	7.13	20-3/4"	49-1/2"	7.42	9.20	11.25
X15	8.00	20-3/4"	55-1/2"	8.37	10.31	12.50
X156	8.86	20-3/4"	61-1/2"	9.32	11.42	13.75
X16	9.73	20-3/4"	67-1/2"	10.27	12.54	15.00
E13	5.85	26-3/4"	31-1/2"	5.76	7.16	9.00
E136	6.97	26-3/4"	37-1/2"	6.97	8.53	10.50
E14	8.08	26-3/4"	43-1/2"	8.17	9.89	12.00
E146	9.20	26-3/4"	49-1/2"	9.37	11.26	13.50
E15	10.31	26-3/4"	55-1/2"	10.57	12.62	15.00
E156	11.42	26-3/4"	61-1/2"	11.77	13.99	16.50
E16	12.54	26-3/4"	67-1/2"	12.97	15.35	18.00

Product #	Sq. Ft. Clear Opg.		Clear Opg. Width		Clear Opg. Ht.	Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
French Casements								
N23	2.66	5.71	12-3/16"	26-3/16"	31-3/8"	6.35	7.93	10.00
N236	3.16	6.80	12-3/16"	26-3/16"	37-3/8"	7.62	9.44	11.67
N24	3.67	7.89	12-3/16"	26-3/16"	43-3/8"	8.88	10.96	13.33
N246	4.18	8.98	12-3/16"	26-3/16"	49-3/8"	10.14	12.47	15.00
N25	4.69	10.07	12-3/16"	26-3/16"	55-3/8"	11.40	13.99	16.67
N256	5.19	11.16	12-3/16"	26-3/16"	61-3/8"	12.66	15.50	18.33
N26	5.70	12.25	12-3/16"	26-3/16"	67-3/8"	13.92	17.02	20.00
W23	3.53	7.45	16-3/16"	34-3/16"	31-3/8"	8.04	9.67	12.00
W236	4.20	8.87	16-3/16"	34-3/16"	37-3/8"	9.63	11.52	14.00
W24	4.88	10.30	16-3/16"	34-3/16"	43-3/8"	11.22	13.37	16.00
W246	5.55	11.72	16-3/16"	34-3/16"	49-3/8"	12.82	15.22	18.00
W25	6.22	13.15	16-3/16"	34-3/16"	55-3/8"	14.41	17.06	20.00
X23	4.83	10.06	22-3/16"	46-3/16"	31-3/8"	10.56	12.28	15.00
X236	5.76	11.99	22-3/16"	46-3/16"	37-3/8"	12.65	14.63	17.50
X24	6.68	13.91	22-3/16"	46-3/16"	43-3/8"	14.74	16.98	20.00
X246	7.61	15.84	22-3/16"	46-3/16"	49-3/8"	16.84	19.33	22.50
X25	8.53	17.76	22-3/16"	46-3/16"	55-3/8"	18.93	21.68	25.00

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Clear Opening Dimensions

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Inswing Casements						
W13	4.42	19-1/2"	32-5/8"	3.67	4.96	6.13
W136	5.23	19-1/2"	38-5/8"	4.46	5.87	7.15
W14	6.04	19-1/2"	44-5/8"	5.24	6.78	8.17
W146	6.86	19-1/2"	50-5/8"	6.03	7.69	9.19
W15	7.67	19-1/2"	56-5/8"	6.81	8.60	10.21
W156	8.48	19-1/2"	62-5/8"	7.59	9.51	11.23
W16	9.29	19-1/2"	68-5/8"	8.38	10.42	12.25

Product #	Sq. Ft. Clear Opg.		Clear Opg. Width		Clear Opg. Ht.	Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
French Inswing Casements								
N23	3.51	7.17	15-1/2"	31-5/8"	32-5/8"	5.79	8.47	10.00
N236	4.16	8.48	15-1/2"	31-5/8"	38-5/8"	7.02	10.03	11.67
N24	4.80	9.80	15-1/2"	31-5/8"	44-5/8"	8.25	11.58	13.33
N246	5.45	11.12	15-1/2"	31-5/8"	50-5/8"	9.49	13.14	15.00
N25	6.10	12.44	15-1/2"	31-5/8"	56-5/8"	10.72	14.70	16.67
N256	6.74	13.75	15-1/2"	31-5/8"	62-5/8"	11.96	16.25	18.33
N26	7.39	15.07	15-1/2"	31-5/8"	68-5/8"	13.19	17.81	20.00
W23	4.42	8.98	19-1/2"	39-5/8"	32-5/8"	7.35	10.28	12.00
W236	5.23	10.63	19-1/2"	39-5/8"	38-5/8"	8.92	12.17	14.00
W24	6.04	12.28	19-1/2"	39-5/8"	44-5/8"	10.48	14.06	16.00
W246	6.86	13.93	19-1/2"	39-5/8"	50-5/8"	12.05	15.95	18.00
W25	7.67	15.58	19-1/2"	39-5/8"	56-5/8"	13.62	17.84	20.00
W256	8.48	17.23	19-1/2"	39-5/8"	62-5/8"	15.19	19.73	22.00
W26	9.29	18.88	19-1/2"	39-5/8"	68-5/8"	16.75	21.62	24.00
X23	5.78	11.70	25-1/2"	51-5/8"	32-5/8"	9.69	13.00	15.00
X236	6.84	13.85	25-1/2"	51-5/8"	38-5/8"	11.76	15.39	17.50
X24	7.90	16.00	25-1/2"	51-5/8"	44-5/8"	13.83	17.78	20.00
X246	8.96	18.15	25-1/2"	51-5/8"	50-5/8"	15.90	20.17	22.50
X25	10.03	20.30	25-1/2"	51-5/8"	56-5/8"	17.96	22.56	25.00
X256	11.09	22.45	25-1/2"	51-5/8"	62-5/8"	20.03	24.95	27.50
X26	12.15	24.60	25-1/2"	51-5/8"	68-5/8"	22.10	27.34	30.00

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Sterling Double Hungs						
1614	1.54	17-31/32"	12-3/8"	2.71	1.54	5.44
1616	1.79	17-31/32"	14-3/8"	3.13	1.79	6.04
1620	2.29	17-31/32"	18-3/8"	3.96	2.29	7.23
1622	2.54	17-31/32"	20-3/8"	4.38	2.54	7.83
1624	2.79	17-31/32"	22-3/8"	4.79	2.79	8.43
1626	3.04	17-31/32"	24-3/8"	5.21	3.04	9.02
1628	3.29	17-31/32"	26-3/8"	5.63	3.29	9.62
1630	3.54	17-31/32"	28-3/8"	6.04	3.54	10.22
1632	3.79	17-31/32"	30-3/8"	6.46	3.79	10.82
1634	4.04	17-31/32"	32-3/8"	6.88	4.04	11.41
1636	4.29	17-31/32"	34-3/8"	7.29	4.29	12.01
2014	1.89	21-31/32"	12-3/8"	3.43	1.89	6.45
2016	2.19	21-31/32"	14-3/8"	3.96	2.19	7.16
2020	2.80	21-31/32"	18-3/8"	5.01	2.80	8.58
2022	3.11	21-31/32"	20-3/8"	5.54	3.11	9.29
2024	3.41	21-31/32"	22-3/8"	6.07	3.41	9.99
2026	3.72	21-31/32"	24-3/8"	6.60	3.72	10.70
2028	4.02	21-31/32"	26-3/8"	7.13	4.02	11.41
2030	4.33	21-31/32"	28-3/8"	7.65	4.33	12.12
2032	4.63	21-31/32"	30-3/8"	8.18	4.63	12.83
2034	4.94	21-31/32"	32-3/8"	8.71	4.94	13.54
2036	5.24	21-31/32"	34-3/8"	9.24	5.24	14.24
2414	2.23	25-31/32"	12-3/8"	4.15	2.23	7.47
2416	2.59	25-31/32"	14-3/8"	4.79	2.59	8.28
2420	3.31	25-31/32"	18-3/8"	6.07	3.31	9.92
2422	3.67	25-31/32"	20-3/8"	6.71	3.67	10.74
2424	4.04	25-31/32"	22-3/8"	7.35	4.04	11.56
2426	4.40	25-31/32"	24-3/8"	7.99	4.40	12.38
2428	4.76	25-31/32"	26-3/8"	8.63	4.76	13.20
2430	5.12	25-31/32"	28-3/8"	9.26	5.12	14.02
2432	5.48	25-31/32"	30-3/8"	9.90	5.48	14.84
2434	5.84	25-31/32"	32-3/8"	10.54	5.84	15.66
2436	6.20	25-31/32"	34-3/8"	11.18	6.20	16.48
2614	2.40	27-31/32"	12-3/8"	4.51	2.40	7.97
2616	2.79	27-31/32"	14-3/8"	5.21	2.79	8.85
2620	3.57	27-31/32"	18-3/8"	6.60	3.57	10.60
2622	3.96	27-31/32"	20-3/8"	7.29	3.96	11.47
2624	4.35	27-31/32"	22-3/8"	7.99	4.35	12.35
2626	4.73	27-31/32"	24-3/8"	8.68	4.73	13.22
2628	5.12	27-31/32"	26-3/8"	9.38	5.12	14.10
2630	5.51	27-31/32"	28-3/8"	10.07	5.51	14.97
2632	5.90	27-31/32"	30-3/8"	10.76	5.90	15.85
2634	6.29	27-31/32"	32-3/8"	11.46	6.29	16.72
2636	6.68	27-31/32"	34-3/8"	12.15	6.68	17.60
2814	2.58	29-31/32"	12-3/8"	4.88	2.58	8.48
2816	2.99	29-31/32"	14-3/8"	5.63	2.99	9.41
2820	3.82	29-31/32"	18-3/8"	7.13	3.82	11.27

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Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Sterling Double Hungs (continued)						
2822	4.24	29-31/32"	20-3/8"	7.88	4.24	12.20
2824	4.66	29-31/32"	22-3/8"	8.63	4.66	13.13
2826	5.07	29-31/32"	24-3/8"	9.38	5.07	14.06
2828	5.49	29-31/32"	26-3/8"	10.13	5.49	14.99
2830	5.91	29-31/32"	28-3/8"	10.88	5.91	15.92
2832	6.32	29-31/32"	30-3/8"	11.63	6.32	16.85
2834	6.74	29-31/32"	32-3/8"	12.38	6.74	17.78
2836	7.15	29-31/32"	34-3/8"	13.13	7.15	18.71
3014	2.75	31-31/32"	12-3/8"	5.24	2.75	8.98
3016	3.19	31-31/32"	14-3/8"	6.04	3.19	9.97
3020	4.08	31-31/32"	18-3/8"	7.65	4.08	11.94
3022	4.52	31-31/32"	20-3/8"	8.46	4.52	12.93
3024	4.97	31-31/32"	22-3/8"	9.26	4.97	13.91
3026	5.41	31-31/32"	24-3/8"	10.07	5.41	14.90
3028	5.86	31-31/32"	26-3/8"	10.88	5.86	15.89
3030	6.30	31-31/32"	28-3/8"	11.68	6.30	16.87
3032	6.74	31-31/32"	30-3/8"	12.49	6.74	17.86
3034	7.19	31-31/32"	32-3/8"	13.29	7.19	18.84
3036	7.63	31-31/32"	34-3/8"	14.10	7.63	19.83
3214	2.92	33-31/32"	12-3/8"	5.60	2.92	9.49
3216	3.39	33-31/32"	14-3/8"	6.46	3.39	10.53
3220	4.33	33-31/32"	18-3/8"	8.18	4.33	12.61
3222	4.81	33-31/32"	20-3/8"	9.04	4.81	13.66
3224	5.28	33-31/32"	22-3/8"	9.90	5.28	14.70
3226	5.75	33-31/32"	24-3/8"	10.76	5.75	15.74
3228	6.22	33-31/32"	26-3/8"	11.63	6.22	16.78
3230	6.69	33-31/32"	28-3/8"	12.49	6.69	17.82
3232	7.17	33-31/32"	30-3/8"	13.35	7.17	18.86
3234	7.64	33-31/32"	32-3/8"	14.21	7.64	19.91
3236	8.11	33-31/32"	34-3/8"	15.07	8.11	20.95
3614	3.26	37-31/32"	12-3/8"	6.32	3.26	10.50
3616	3.79	37-31/32"	14-3/8"	7.29	3.79	11.65
3620	4.84	37-31/32"	18-3/8"	9.24	4.84	13.96
3622	5.37	37-31/32"	20-3/8"	10.21	5.37	15.11
3624	5.90	37-31/32"	22-3/8"	11.18	5.90	16.27
3626	6.43	37-31/32"	24-3/8"	12.15	6.43	17.42
3628	6.95	37-31/32"	26-3/8"	13.13	6.95	18.57
3630	7.48	37-31/32"	28-3/8"	14.10	7.48	19.72
3632	8.01	37-31/32"	30-3/8"	15.07	8.01	20.88
3634	8.54	37-31/32"	32-3/8"	16.04	8.54	22.03
3636	9.06	37-31/32"	34-3/8"	17.01	9.06	23.18
4014	3.61	41-31/32"	12-3/8"	7.04	3.61	11.51
4016	4.19	41-31/32"	14-3/8"	8.13	4.19	12.78
4020	5.36	41-31/32"	18-3/8"	10.29	5.36	15.31
4022	5.94	41-31/32"	20-3/8"	11.38	5.94	16.57
4024	6.52	41-31/32"	22-3/8"	12.46	6.52	17.83
4026	7.10	41-31/32"	24-3/8"	13.54	7.10	19.10

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Sterling Double Hungs (continued)						
4028	7.69	41-31/32"	26-3/8"	14.63	7.69	20.36
4030	8.27	41-31/32"	28-3/8"	15.71	8.27	21.63
4032	8.85	41-31/32"	30-3/8"	16.79	8.85	22.89
4034	9.44	41-31/32"	32-3/8"	17.88	9.44	24.15
4036	10.02	41-31/32"	34-3/8"	18.96	10.02	25.42
1624/36	2.79	17-31/32"	22-3/8"	6.04	2.79	10.22
2024/36	3.41	21-31/32"	22-3/8"	7.65	3.41	12.12
2424/36	4.04	25-31/32"	22-3/8"	9.26	4.04	14.02
2624/36	4.35	27-31/32"	22-3/8"	10.01	4.35	14.97
2824/36	4.66	29-31/32"	22-3/8"	10.88	4.66	15.92
3024/36	4.97	31-31/32"	22-3/8"	11.68	4.97	16.87
3224/36	5.28	33-31/32"	22-3/8"	12.49	5.28	17.82
3624/36	5.90	37-31/32"	22-3/8"	14.10	5.90	19.72
4024/36	6.52	41-31/32"	22-3/8"	15.71	6.52	21.63

Notes for Sterling Double Hung Windows:

- For Sterling high performance units, deduct 2-1/8" from the clear opening heights.
- Shaded units meet most national building codes for emergency escape and rescue requirements.

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Traditional Double Hungs						
1614	1.70	18-1/4"	13-7/16"	2.71	1.70	5.44
1616	1.96	18-1/4"	15-7/16"	3.13	1.96	6.04
1620	2.46	18-1/4"	19-7/16"	3.96	2.46	7.23
1622	2.72	18-1/4"	21-7/16"	4.38	2.72	7.83
1624	2.97	18-1/4"	23-7/16"	4.79	2.97	8.43
1626	3.22	18-1/4"	25-7/16"	5.21	3.22	9.02
1628	3.48	18-1/4"	27-7/16"	5.63	3.48	9.62
1630	3.73	18-1/4"	29-7/16"	6.04	3.73	10.22
1632	3.98	18-1/4"	31-7/16"	6.46	3.98	10.82
1634	4.24	18-1/4"	33-7/16"	6.88	4.24	11.41
1636	4.49	18-1/4"	35-7/16"	7.29	4.49	12.01
2014	2.08	22-1/4"	13-7/16"	3.43	2.08	6.45
2016	2.39	22-1/4"	15-7/16"	3.96	2.39	7.16
2020	3.00	22-1/4"	19-7/16"	5.01	3.00	8.58
2022	3.31	22-1/4"	21-7/16"	5.54	3.31	9.29
2024	3.62	22-1/4"	23-7/16"	6.07	3.62	9.99
2026	3.93	22-1/4"	25-7/16"	6.60	3.93	10.70
2028	4.24	22-1/4"	27-7/16"	7.13	4.24	11.41
2030	4.55	22-1/4"	29-7/16"	7.65	4.55	12.12
2032	4.86	22-1/4"	31-7/16"	8.18	4.86	12.83
2034	5.17	22-1/4"	33-7/16"	8.71	5.17	13.54
2036	5.48	22-1/4"	35-7/16"	9.24	5.48	14.24
2414	2.45	26-1/4"	13-7/16"	4.15	2.45	7.47

NOTE: For the most up to date data, please visit the Kolbe website at www.kolbe-kolbe.com.

Clear Opening Dimensions

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Traditional Double Hungs (continued)						
2416	2.81	26-1/4"	15-7/16"	4.79	2.81	8.28
2420	3.54	26-1/4"	19-7/16"	6.07	3.54	9.92
2422	3.91	26-1/4"	21-7/16"	6.71	3.91	10.74
2424	4.27	26-1/4"	23-7/16"	7.35	4.27	11.56
2426	4.64	26-1/4"	25-7/16"	7.99	4.64	12.38
2428	5.00	26-1/4"	27-7/16"	8.63	5.00	13.20
2430	5.37	26-1/4"	29-7/16"	9.26	5.37	14.02
2432	5.73	26-1/4"	31-7/16"	9.90	5.73	14.84
2434	6.10	26-1/4"	33-7/16"	10.54	6.10	15.66
2436	6.46	26-1/4"	35-7/16"	11.18	6.46	16.48
2614	2.64	28-1/4"	13-7/16"	4.51	2.64	7.97
2616	3.03	28-1/4"	15-7/16"	5.21	3.03	8.85
2620	3.81	28-1/4"	19-7/16"	6.60	3.81	10.60
2622	4.21	28-1/4"	21-7/16"	7.29	4.21	11.47
2624	4.60	28-1/4"	23-7/16"	7.99	4.60	12.35
2626	4.99	28-1/4"	25-7/16"	8.68	4.99	13.22
2628	5.38	28-1/4"	27-7/16"	9.38	5.38	14.10
2630	5.77	28-1/4"	29-7/16"	10.07	5.77	14.97
2632	6.17	28-1/4"	31-7/16"	10.76	6.17	15.85
2634	6.56	28-1/4"	33-7/16"	11.46	6.56	16.72
2636	6.95	28-1/4"	35-7/16"	12.15	6.95	17.60
2814	2.82	30-1/4"	13-7/16"	4.88	2.82	8.48
2816	3.24	30-1/4"	15-7/16"	5.63	3.24	9.41
2820	4.08	30-1/4"	19-7/16"	7.13	4.08	11.27
2822	4.50	30-1/4"	21-7/16"	7.88	4.50	12.20
2824	4.92	30-1/4"	23-7/16"	8.63	4.92	13.13
2826	5.34	30-1/4"	25-7/16"	9.38	5.34	14.06
2828	5.76	30-1/4"	27-7/16"	10.13	5.76	14.99
2830	6.18	30-1/4"	29-7/16"	10.88	6.18	15.92
2832	6.60	30-1/4"	31-7/16"	11.63	6.60	16.85
2834	7.02	30-1/4"	33-7/16"	12.38	7.02	17.78
2836	7.44	30-1/4"	35-7/16"	13.13	7.44	18.71
3014	3.01	32-1/4"	13-7/16"	5.24	3.01	8.98
3016	3.46	32-1/4"	15-7/16"	6.04	3.46	9.97
3020	4.35	32-1/4"	19-7/16"	7.65	4.35	11.94
3022	4.80	32-1/4"	21-7/16"	8.46	4.80	12.93
3024	5.25	32-1/4"	23-7/16"	9.26	5.25	13.91
3026	5.70	32-1/4"	25-7/16"	10.07	5.70	14.90
3028	6.14	32-1/4"	27-7/16"	10.88	6.14	15.89
3030	6.59	32-1/4"	29-7/16"	11.68	6.59	16.87
3032	7.04	32-1/4"	31-7/16"	12.49	7.04	17.86
3034	7.49	32-1/4"	33-7/16"	13.29	7.49	18.84
3036	7.94	32-1/4"	35-7/16"	14.10	7.94	19.83
3214	3.20	34-1/4"	13-7/16"	5.60	3.20	9.49
3216	3.67	34-1/4"	15-7/16"	6.46	3.67	10.53
3220	4.62	34-1/4"	19-7/16"	8.18	4.62	12.61

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Traditional Double Hungs (continued)						
3222	5.10	34-1/4"	21-7/16"	9.04	5.10	13.66
3224	5.57	34-1/4"	23-7/16"	9.90	5.57	14.70
3226	6.05	34-1/4"	25-7/16"	10.76	6.05	15.74
3228	6.53	34-1/4"	27-7/16"	11.63	6.53	16.78
3230	7.00	34-1/4"	29-7/16"	12.49	7.00	17.82
3232	7.48	34-1/4"	31-7/16"	13.35	7.48	18.86
3234	7.95	34-1/4"	33-7/16"	14.21	7.95	19.91
3236	8.43	34-1/4"	35-7/16"	15.07	8.43	20.95
3614	3.57	38-1/4"	13-7/16"	6.32	3.57	10.50
3616	4.10	38-1/4"	15-7/16"	7.29	4.10	11.65
3620	5.16	38-1/4"	19-7/16"	9.24	5.16	13.96
3622	5.69	38-1/4"	21-7/16"	10.21	5.69	15.11
3624	6.23	38-1/4"	23-7/16"	11.18	6.23	16.27
3626	6.76	38-1/4"	25-7/16"	12.15	6.76	17.42
3628	7.29	38-1/4"	27-7/16"	13.13	7.29	18.57
3630	7.82	38-1/4"	29-7/16"	14.10	7.82	19.72
3632	8.35	38-1/4"	31-7/16"	15.07	8.35	20.88
3634	8.88	38-1/4"	33-7/16"	16.04	8.88	22.03
3636	9.41	38-1/4"	35-7/16"	17.01	9.41	23.18
4014	3.94	42-1/4"	13-7/16"	7.04	3.94	11.51
4016	4.53	42-1/4"	15-7/16"	8.13	4.53	12.78
4020	5.70	42-1/4"	19-7/16"	10.29	5.70	15.31
4022	6.29	42-1/4"	21-7/16"	11.38	6.29	16.57
4024	6.88	42-1/4"	23-7/16"	12.46	6.88	17.83
4026	7.46	42-1/4"	25-7/16"	13.54	7.46	19.10
4028	8.05	42-1/4"	27-7/16"	14.63	8.05	20.36
4030	8.64	42-1/4"	29-7/16"	15.71	8.64	21.63
4032	9.22	42-1/4"	31-7/16"	16.79	9.22	22.89
4034	9.81	42-1/4"	33-7/16"	17.88	9.81	24.15
4036	10.40	42-1/4"	35-7/16"	18.96	10.40	25.42
1624/36	2.97	18-1/4"	23-7/16"	6.04	2.97	10.22
2024/36	3.62	22-1/4"	23-7/16"	7.65	3.62	12.12
2424/36	4.27	26-1/4"	23-7/16"	9.26	4.27	14.02
2824/36	4.92	30-1/4"	23-7/16"	10.88	4.92	15.92
3224/36	5.57	34-1/4"	23-7/16"	12.49	5.57	17.82
3624/36	6.23	38-1/4"	23-7/16"	14.10	6.23	19.72
4024/36	6.88	42-1/4"	23-7/16"	15.71	6.88	21.63

Notes for Traditional Double Hung Windows

- ▶ For Traditional single hungs, deduct 1/4" from the clear opening widths.
- ▶ For Traditional double hung high performance units, deduct 1-1/4" from the clear opening heights.
- ▶ Shaded units meet most national building codes for emergency escape and rescue requirements.

NOTE: For the most up to date data, please visit the Kolbe website at www.kolbe-kolbe.com.

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Magnum Double Hungs						
3062	7.56	33-3/8"	32-5/8"	12.92	7.56	20.44
3066	8.02	33-3/8"	34-5/8"	13.71	8.02	21.50
3072	8.95	33-3/8"	38-5/8"	15.30	8.95	23.61
30710	9.88	33-3/8"	42-5/8"	16.88	9.88	25.73
3086	10.81	33-3/8"	46-5/8"	18.47	10.81	27.85
30810	11.27	33-3/8"	48-5/8"	19.26	11.27	28.91
3462	8.47	37-3/8"	32-5/8"	14.73	8.47	22.58
3466	8.99	37-3/8"	34-5/8"	15.63	8.99	23.75
3472	10.02	37-3/8"	38-5/8"	17.44	10.02	26.09
34710	11.06	37-3/8"	42-5/8"	19.25	11.06	28.43
3486	12.10	37-3/8"	46-5/8"	21.06	12.10	30.77
34810	12.62	37-3/8"	48-5/8"	21.96	12.62	31.94
3862	9.37	41-3/8"	32-5/8"	16.54	9.37	24.72
3866	9.95	41-3/8"	34-5/8"	17.55	9.95	26.01
3872	11.10	41-3/8"	38-5/8"	19.58	11.10	28.57
38710	12.25	41-3/8"	42-5/8"	21.61	12.25	31.13
3886	13.40	41-3/8"	46-5/8"	23.64	13.40	33.69
38810	13.97	41-3/8"	48-5/8"	24.66	13.97	34.97
4062	10.28	45-3/8"	32-5/8"	18.34	10.28	26.87
4066	10.91	45-3/8"	34-5/8"	19.47	10.91	28.26
4072	12.17	45-3/8"	38-5/8"	21.72	12.17	31.05
40710	13.43	45-3/8"	42-5/8"	23.98	13.43	33.83
4086	14.69	45-3/8"	46-5/8"	26.23	14.69	36.61
40810	15.32	45-3/8"	48-5/8"	27.36	15.32	38.01
4462	11.19	49-3/8"	32-5/8"	20.15	11.19	29.01
4466	11.87	49-3/8"	34-5/8"	21.39	11.87	30.52
4472	13.24	49-3/8"	38-5/8"	23.87	13.24	33.52
44710	14.62	49-3/8"	42-5/8"	26.34	14.62	36.53
4486	15.99	49-3/8"	46-5/8"	28.82	15.99	39.54
44810	16.67	49-3/8"	48-5/8"	30.06	16.67	41.04
4862	12.09	53-3/8"	32-5/8"	21.96	12.09	31.16
4866	12.83	53-3/8"	34-5/8"	23.31	12.83	32.77
4872	14.32	53-3/8"	38-5/8"	26.01	14.32	36.00
48710	15.80	53-3/8"	42-5/8"	28.71	15.80	39.23
4886	17.28	53-3/8"	46-5/8"	31.41	17.28	42.46
48810	18.02	53-3/8"	48-5/8"	32.75	18.02	44.07

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Old World Classic Double Hungs						
3062	8.01	35"	32-15/16"	14.10	8.01	23.04
3066	8.49	35"	34-15/16"	14.97	8.49	24.24
3072	9.46	35"	38-15/16"	16.70	9.46	26.63
30710	10.44	35"	42-15/16"	18.44	10.44	29.02
3086	11.41	35"	46-15/16"	20.17	11.41	31.41
30810	11.89	35"	48-15/16"	21.04	11.89	32.60
3462	8.92	39"	32-15/16"	15.91	8.92	25.19
3466	9.46	39"	34-15/16"	16.89	9.46	26.49
3472	10.55	39"	38-15/16"	18.85	10.55	29.10
34710	11.63	39"	42-15/16"	20.80	11.63	31.72
3486	12.71	39"	46-15/16"	22.76	12.71	34.33
34810	13.25	39"	48-15/16"	23.73	13.25	35.63
3862	9.84	43"	32-15/16"	17.72	9.84	27.33
3866	10.43	43"	34-15/16"	18.81	10.43	28.75
3872	11.63	43"	38-15/16"	20.99	11.63	31.58
38710	12.82	43"	42-15/16"	23.17	12.82	34.42
3886	14.02	43"	46-15/16"	25.34	14.02	37.25
38810	14.61	43"	48-15/16"	26.43	14.61	38.67
4062	10.75	47"	32-15/16"	19.53	10.75	29.48
4066	11.40	47"	34-15/16"	20.73	11.40	31.00
4072	12.71	47"	38-15/16"	23.13	12.71	34.06
40710	14.01	47"	42-15/16"	25.53	14.01	37.11
4086	15.32	47"	46-15/16"	27.93	15.32	40.17
40810	15.97	47"	48-15/16"	29.13	15.97	41.70
4462	11.67	51"	32-15/16"	21.34	11.67	31.62
4466	12.37	51"	34-15/16"	22.65	12.37	33.26
4472	13.79	51"	38-15/16"	25.27	13.79	36.54
44710	15.21	51"	42-15/16"	27.89	15.21	39.81
4486	16.62	51"	46-15/16"	30.52	16.62	43.09
44810	17.33	51"	48-15/16"	31.83	17.33	44.73
4862	12.58	55"	32-15/16"	23.15	12.58	33.76
4866	13.34	55"	34-15/16"	24.57	13.34	35.51
4872	14.87	55"	38-15/16"	27.42	14.87	39.01
48710	16.40	55"	42-15/16"	30.26	16.40	42.51
4886	17.93	55"	46-15/16"	33.10	17.93	46.01
48810	18.69	55"	48-15/16"	34.53	18.69	47.76

Notes for Majesta Double Hung Windows:

There are no standard sizes for Majesta windows.

Minimum Frame Size = 42" wide x 67-1/2" high

Minimum Glass Size = 34-5/8" wide x 28-7/16" (per sash)

Egress Clearance = 37" wide x 24" high

NOTE: For the most up to date data, please visit the Kolbe website at www.kolbe-kolbe.com.

Clear Opening Dimensions

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Double Sliders						
1616	1.94	15-3/8"	18-1/8"	3.13	1.94	6.10
1620	2.36	15-3/8"	22-1/8"	3.96	2.36	7.17
1624	2.79	15-3/8"	26-1/8"	4.79	2.79	8.24
1628	3.22	15-3/8"	30-1/8"	5.63	3.22	9.31
1632	3.64	15-3/8"	34-1/8"	6.46	3.64	10.38
1636	4.07	15-3/8"	38-1/8"	7.29	4.07	11.45
1640	4.50	15-3/8"	42-1/8"	8.13	4.50	12.52
1644	4.92	15-3/8"	46-1/8"	8.96	4.92	13.59
1648	5.35	15-3/8"	50-1/8"	9.79	5.35	14.65
2016	2.44	19-3/8"	18-1/8"	3.96	2.44	7.37
2020	2.98	19-3/8"	22-1/8"	5.01	2.98	8.66
2024	3.52	19-3/8"	26-1/8"	6.07	3.52	9.95
2028	4.05	19-3/8"	30-1/8"	7.13	4.05	11.24
2032	4.59	19-3/8"	34-1/8"	8.18	4.59	12.53
2036	5.13	19-3/8"	38-1/8"	9.24	5.13	13.82
2040	5.67	19-3/8"	42-1/8"	10.29	5.67	15.12
2044	6.21	19-3/8"	46-1/8"	11.35	6.21	16.41
2048	6.74	19-3/8"	50-1/8"	12.40	6.74	17.70
2416	2.94	23-3/8"	18-1/8"	4.79	2.94	8.63
2420	3.59	23-3/8"	22-1/8"	6.07	3.59	10.15
2424	4.24	23-3/8"	26-1/8"	7.35	4.24	11.66
2428	4.89	23-3/8"	30-1/8"	8.63	4.89	13.18
2432	5.54	23-3/8"	34-1/8"	9.90	5.54	14.69
2436	6.19	23-3/8"	38-1/8"	11.18	6.19	16.20
2440	6.84	23-3/8"	42-1/8"	12.46	6.84	17.72
2444	7.49	23-3/8"	46-1/8"	13.74	7.49	19.23
2448	8.14	23-3/8"	50-1/8"	15.01	8.14	20.74
2816	3.45	27-3/8"	18-1/8"	5.63	3.45	9.90
2820	4.21	27-3/8"	22-1/8"	7.13	4.21	11.64
2824	4.97	27-3/8"	26-1/8"	8.63	4.97	13.37
2828	5.73	27-3/8"	30-1/8"	10.13	5.73	15.11
2832	6.49	27-3/8"	34-1/8"	11.63	6.49	16.85
2836	7.25	27-3/8"	38-1/8"	13.13	7.25	18.58
2840	8.01	27-3/8"	42-1/8"	14.63	8.01	20.32
2844	8.77	27-3/8"	46-1/8"	16.13	8.77	22.05
2848	9.53	27-3/8"	50-1/8"	17.63	9.53	23.79
3216	3.95	31-3/8"	18-1/8"	6.46	3.95	11.17
3220	4.82	31-3/8"	22-1/8"	8.18	4.82	13.13
3224	5.69	31-3/8"	26-1/8"	9.90	5.69	15.09
3228	6.56	31-3/8"	30-1/8"	11.63	6.56	17.04
3232	7.44	31-3/8"	34-1/8"	13.35	7.44	19.00
3236	8.31	31-3/8"	38-1/8"	15.07	8.31	20.96
3240	9.18	31-3/8"	42-1/8"	16.79	9.18	22.92
3244	10.05	31-3/8"	46-1/8"	18.51	10.05	24.88
3248	10.92	31-3/8"	50-1/8"	20.24	10.92	26.84

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Double Sliders, remodeling sizes						
2020	1.03	7-7/8"	18-3/4"	1.63	1.03	3.82
3020	1.81	13-7/8"	18-3/4"	2.93	1.81	5.78
3030	2.96	13-7/8"	30-3/4"	5.18	2.96	8.74
3040	4.12	13-7/8"	42-3/4"	7.43	4.12	11.69
4040	5.90	19-7/8"	42-3/4"	10.73	5.90	15.65
4050	7.56	19-7/8"	54-3/4"	13.98	7.56	19.61
5030	5.53	25-7/8"	30-3/4"	9.78	5.53	14.64
5040	7.68	25-7/8"	42-3/4"	14.03	7.68	19.60
5050	9.84	25-7/8"	54-3/4"	18.28	9.84	24.56
6030	6.81	31-7/8"	30-3/4"	12.09	6.81	17.60
6040	9.46	31-7/8"	42-3/4"	17.34	9.46	23.55
6050	12.12	31-7/8"	54-3/4"	22.59	12.12	29.51

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Triple Sliders						
163232	4.13	17-7/16"	34-1/8"	13.02	6.78	19.27
163240	5.10	17-7/16"	42-1/8"	16.39	8.37	23.24
163244	5.59	17-7/16"	46-1/8"	18.07	9.17	25.23
163248	6.07	17-7/16"	50-1/8"	19.75	9.96	27.22
204032	5.08	21-7/16"	34-1/8"	16.47	8.68	23.58
204040	6.27	21-7/16"	42-1/8"	20.72	10.71	28.44
204044	6.87	21-7/16"	46-1/8"	22.84	11.73	30.88
204048	7.46	21-7/16"	50-1/8"	24.97	12.75	33.31
204832	5.08	21-7/16"	34-1/8"	18.19	9.67	25.74
204840	6.27	21-7/16"	42-1/8"	22.89	11.94	31.05
204844	6.87	21-7/16"	46-1/8"	25.23	13.07	33.70
204848	7.46	21-7/16"	50-1/8"	27.58	14.21	36.35
244832	6.03	25-7/16"	34-1/8"	19.91	10.58	27.90
244840	7.44	25-7/16"	42-1/8"	25.05	13.05	33.65
244844	8.15	25-7/16"	46-1/8"	27.62	14.29	36.52
244848	8.85	25-7/16"	50-1/8"	30.19	15.53	39.40
Triple Sliders, remodeling sizes						
8040	6.36	21-7/16"	42-3/4"	23.32	12.12	31.54
8050	8.15	21-7/16"	54-3/4"	30.38	15.52	39.52

Notes for Slider Windows:

- ▶ For units with high performance sills, deduct 3/8" from the clear opening heights.
- ▶ Shaded units meet most national building codes for emergency escape and rescue requirements.

Notes for Tilt-Turn Windows:

- ▶ There are no standard sizes for tilt-turn windows.
- ▶ To calculate the clear opening dimension, use the following formula:

Finished Frame Width minus 1.25" = Basic Frame Width
 Finished Frame Height minus 1.65" = Basic Frame Height

Basic Frame Width minus 6.5" = Clear Opening Width
 Basic Frame Height minus 6.1875" = Clear Opening Height

Clear Opening Width x Clear Opening Height ÷ 144 = Sq. Ft. of Clear Opening

NOTE: For the most up to date data, please visit the Kolbe website at www.kolbe-kolbe.com.

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim
		Width	Height			
Garden-Aire Sliding Patio Doors						
2968	–	–	–	12.46	–	18.61
3368	–	–	–	15.55	–	22.04
3668	–	–	–	17.09	–	23.76
4368	–	–	–	21.71	–	28.91
2980	–	–	–	15.16	–	22.22
3380	–	–	–	18.91	–	26.32
3680	–	–	–	20.78	–	28.37
4380	–	–	–	26.41	–	34.52
5068	12.01	22"	78-5/8"	24.92	12.01	34.35
6068	15.29	28"	78-5/8"	31.09	15.29	41.22
6668	16.93	31"	78-5/8"	34.17	16.93	44.65
8068	21.84	40"	78-5/8"	43.42	21.84	54.96
5080	14.46	22"	94-5/8"	30.31	14.46	41.02
6080	18.40	28"	94-5/8"	37.81	18.40	49.22
6680	20.37	31"	94-5/8"	41.56	20.37	53.32
8080	26.28	40"	94-5/8"	52.81	26.28	65.63
7968	12.01	22"	78-5/8"	37.39	12.01	52.95
9368	15.29	28"	78-5/8"	46.64	15.29	63.26
10068	16.93	31"	78-5/8"	51.26	16.93	68.41
12368	21.84	40"	78-5/8"	65.14	21.84	83.87
7980	14.46	22"	94-5/8"	45.47	14.46	63.23
9380	18.40	28"	94-5/8"	56.72	18.40	75.54
10080	20.37	31"	94-5/8"	62.34	20.37	81.69
12380	26.8	40"	94-5/8"	79.22	26.28	100.15
Garden-Aire Sliding Patio Doors, remodeling sizes						
2866	–	–	–	10.72	–	17.76
3266	–	–	–	14.77	–	21.09
4266	–	–	–	20.73	–	27.76
41166	11.37	21-1/2"	76-1/8"	23.59	11.37	32.75
51166	14.54	27-1/2"	76-1/8"	29.54	14.54	39.41
71166	20.88	39-1/2"	76-1/8"	41.46	20.88	52.74
7766	11.37	21-1/2"	76-1/8"	35.38	11.37	50.52
9166	14.54	27-1/2"	76-1/8"	44.32	14.54	60.51
12166	20.88	39-1/2"	76-1/8"	62.19	20.88	80.49
2968	–	–	–	9.84	–	18.61
3368	–	–	–	12.65	–	22.04
3668	–	–	–	14.06	–	23.76
4368	–	–	–	18.27	–	28.91
2980	–	–	–	12.17	–	22.22
3380	–	–	–	15.65	–	26.32
3680	–	–	–	17.39	–	28.37
4380	–	–	–	22.61	–	34.52
5068	12.01	22"	78-5/8"	19.68	12.01	34.35
6068	15.29	28"	78-5/8"	25.30	15.29	41.22
6668	16.93	31"	78-5/8"	28.11	16.93	44.65
8068	21.84	40"	78-5/8"	36.55	21.84	54.96

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim
		Width	Height			
Garden-Aire Sliding Patio Doors - wide stile (continued)						
5080	14.46	22"	94-5/8"	24.35	14.46	41.02
6080	18.40	28"	94-5/8"	31.30	18.40	49.22
6680	20.37	31"	94-5/8"	34.78	20.37	53.32
8080	26.28	40"	94-5/8"	45.21	26.28	65.63
7968	12.01	22"	78-5/8"	29.52	12.01	52.95
9368	15.29	28"	78-5/8"	37.95	15.29	63.26
10068	16.93	31"	78-5/8"	42.17	16.93	68.41
12368	21.84	40"	78-5/8"	54.82	21.84	83.87
7980	14.46	22"	94-5/8"	36.52	14.46	63.23
9380	18.40	28"	94-5/8"	46.95	18.40	75.54
10080	20.37	31"	94-5/8"	52.17	20.37	81.69
12380	26.28	40"	94-5/8"	67.82	26.28	100.15
Garden-Aire Sliding Patio Doors - wide stile, remodeling sizes						
2866	–	–	–	9.25	–	17.76
3266	–	–	–	11.96	–	21.09
4266	–	–	–	17.37	–	27.76
41166	11.37	21-1/2"	76-1/8"	18.50	11.37	32.75
51166	14.54	27-1/2"	76-1/8"	23.91	14.54	39.41
71166	20.88	39-1/2"	76-1/8"	34.74	20.88	52.74
7666	11.37	21-1/2"	76-1/8"	27.75	11.37	50.52
9166	14.54	27-1/2"	76-1/8"	35.87	14.54	60.51
12166	20.88	39-1/2"	76-1/8"	52.11	20.88	80.49

Product #	Sq. Ft. Clear Opg.		Clear Opg. Width		Clear Opg. Ht.	Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
Garden-Aire Sliding Patio Doors - 4-wide								
4-10068	12.32	24.78	22-9/16"	45-3/8"	78-5/8"	49.85	24.78	67.75
4-12068	15.60	31.33	28-9/16"	57-3/8"	78-5/8"	62.18	31.33	81.49
4-16068	22.15	44.43	40-9/16"	81-3/8"	78-5/8"	86.85	44.43	108.97
4-10080	14.83	29.82	22-9/16"	45-3/8"	94-5/8"	60.63	29.82	80.90
4-12080	18.77	37.70	28-9/16"	57-3/8"	94-5/8"	75.63	37.70	97.31
4-16080	26.65	53.47	40-9/16"	81-3/8"	94-5/8"	105.63	53.47	130.12
Garden-Aire Sliding Patio Doors - 4-wide, wide stile								
4-10068	12.32	24.78	22-9/16"	45-3/8"	78-5/8"	39.36	24.78	67.75
4-12068	15.60	31.33	28-9/16"	57-3/8"	78-5/8"	50.60	31.33	81.49
4-16068	22.15	44.43	40-9/16"	81-3/8"	78-5/8"	73.09	44.43	108.97
4-10080	14.83	29.82	22-9/16"	45-3/8"	94-5/8"	48.69	29.82	80.90
4-12080	18.77	37.70	28-9/16"	57-3/8"	94-5/8"	62.60	37.70	97.31
4-16080	26.65	53.47	40-9/16"	81-3/8"	94-5/8"	90.42	53.47	130.12

NOTE: For the most up to date data, please visit the Kolbe website at www.kolbe-kolbe.com.

Clear Opening Dimensions

Product #	Sq. Ft. Clear Opg.		Clear Opg. Width		Clear Opt. Ht.	Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
Inswing Patio Doors - 1-wide								
2666	13.65	–	25-3/4"	–	76-11/32"	8.68	14.65	16.70
3066	16.83	–	31-3/4"	–	76-11/32"	11.37	17.83	20.01
2680	16.53	–	25-3/4"	–	92-7/16"	10.83	17.73	20.08
3080	20.38	–	31-3/4"	–	92-7/16"	14.20	21.58	24.06
Inswing Patio Doors - 2-wide (stationary/active)								
41166	13.65	–	25-3/4"	–	76-11/32"	17.35	14.62	32.81
51166	16.83	–	31-3/4"	–	76-11/32"	22.74	17.80	39.44
41180	16.53	–	25-3/4"	–	92-7/16"	21.67	17.70	39.46
51180	20.38	–	31-3/4"	–	92-7/16"	28.40	21.55	47.42
Inswing Patio Doors - French								
41166	13.65	26.64	25-3/4"	50-1/4"	76-11/32"	17.35	30.12	32.81
51166	16.83	33.00	31-3/4"	62-1/4"	76-11/32"	22.74	36.48	39.44
41180	16.53	32.26	25-3/4"	50-1/4"	92-7/16"	21.67	36.47	39.46
51180	20.38	39.96	31-3/4"	62-1/4"	92-7/16"	28.40	44.17	47.42
Inswing Patio Doors - 3-wide (stationary/active/stationary)								
7566	13.65	–	25-3/4"	–	76-11/32"	26.03	14.62	48.93
81166	16.83	–	31-3/4"	–	76-11/32"	34.11	17.80	58.87
7580	16.53	–	25-3/4"	–	92-7/16"	32.50	17.70	58.83
81180	20.38	–	31-3/4"	–	92-7/16"	42.60	21.55	70.78

Notes for Inswing Patio Doors:

- For units with ADA-compliant sills, add 5/8" to the clear opening heights.
- One or both sash open to 90°

Product #	Sq. Ft. Clear Opg.		Clear Opg. Width		Clear Opg. Ht.	Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
Outswing Doors - patio sizes, 1-wide								
2666	13.60	–	25-27/32"	–	75-25/32"	8.68	14.59	17.00
3066	16.76	–	31-27/32"	–	75-25/32"	11.37	17.74	20.31
2680	16.49	–	25-27/32"	–	91-7/8"	10.83	17.69	20.45
3080	20.32	–	31-27/32"	–	91-7/8"	14.20	21.51	24.43
Outswing Doors - patio sizes, 2-wide (stationary/active)								
41166	13.60	–	25-27/32"	–	75-25/32"	17.35	14.57	33.14
51166	16.76	–	31-27/32"	–	75-25/32"	22.74	17.73	39.76
41180	16.49	–	25-27/32"	–	91-7/8"	21.67	17.67	39.86
51180	20.32	–	31-27/32"	–	91-7/8"	28.40	21.49	47.82
Outswing Doors - patio sizes, French units								
41166	13.60	27.13	25-27/32"	51-9/16"	75-25/32"	17.35	30.00	33.14
51166	16.76	33.45	31-27/32"	63-9/16"	75-25/32"	22.74	36.31	39.76
41180	16.49	32.90	25-27/32"	51-9/16"	91-7/8"	21.67	36.37	39.86
51180	20.32	40.55	31-27/32"	63-9/16"	91-7/8"	28.40	44.02	47.82
Outswing Doors - patio sizes, 3-wide (stationary/active/stationary)								
7566	13.60	–	25-27/32"	–	75-25/32"	26.03	14.57	49.26
81166	16.76	–	31-27/32"	–	75-25/32"	34.11	17.73	59.19
7580	16.49	–	25-27/32"	–	91-7/8"	32.50	17.66	59.25
81180	20.32	–	31-27/32"	–	91-7/8"	42.60	21.49	71.19

Notes for Outswing Patio Doors:

- For units with ADA-compliant sills, add 1-1/8" to the clear opening heights.
- One or both sash open to 90°.

NOTE: For the most up to date data, please visit the Kolbe website at www.kolbe-kolbe.com.

Product #	Sq. Ft. Clear. Opg.		Clear Opg. Width		Clear Opg. Ht.	Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
Inswing Entrance Doors - 1-wide								
2068	11.67	–	21-1/8"	–	79-9/16"	6.93	12.71	14.72
2668	14.99	–	27-1/8"	–	79-9/16"	9.76	16.02	18.17
2868	16.09	–	29-1/8"	–	79-9/16"	10.70	17.13	19.32
3068	18.30	–	33-1/8"	–	79-9/16"	12.59	19.34	21.61
2070	12.26	–	21-1/8"	–	83-9/16"	7.33	13.35	15.43
2670	15.74	–	27-1/8"	–	83-9/16"	10.33	16.83	19.05
2870	16.90	–	29-1/8"	–	83-9/16"	11.33	17.99	20.25
3070	19.22	–	33-1/8"	–	83-9/16"	13.33	20.31	22.66
2080	14.02	–	21-1/8"	–	95-9/16"	8.56	15.26	17.57
2680	18.00	–	27-1/8"	–	95-9/16"	12.05	19.25	21.68
2880	19.33	–	29-1/8"	–	95-9/16"	13.22	20.57	23.05
3080	21.98	–	33-1/8"	–	95-9/16"	15.55	23.23	25.79
Inswing Entrance Doors - 2-wide (stationary/active)								
4068	11.67	–	21-1/8"	–	79-9/16"	13.85	12.68	28.83
5068	14.99	–	27-1/8"	–	79-9/16"	19.51	16.00	35.72
5468	16.09	–	29-1/8"	–	79-9/16"	21.40	17.10	38.02
6068	18.30	–	33-1/8"	–	79-9/16"	25.17	19.31	42.62
4070	12.26	–	21-1/8"	–	83-9/16"	14.67	13.32	30.22
5070	15.74	–	27-1/8"	–	83-9/16"	20.66	16.80	37.45
5470	16.90	–	29-1/8"	–	83-9/16"	22.66	17.96	39.86
6070	19.22	–	33-1/8"	–	83-9/16"	26.65	20.28	44.68
4080	14.02	–	21-1/8"	–	95-9/16"	17.12	15.23	34.41
5080	18.00	–	27-1/8"	–	95-9/16"	24.11	19.21	42.63
5480	19.33	–	29-1/8"	–	95-9/16"	26.44	20.54	45.38
6080	21.98	–	33-1/8"	–	95-9/16"	31.10	23.30	50.86
Inswing Entrance Doors - French								
4068	11.67	22.65	21-1/8"	41"	79-9/16"	13.85	26.28	28.83
5068	14.99	29.28	27-1/8"	53"	79-9/16"	19.51	32.91	35.72
5468	16.09	31.49	29-1/8"	57"	79-9/16"	21.40	35.12	38.02
6068	18.30	35.91	33-1/8"	65"	79-9/16"	25.71	39.54	42.62
4070	12.26	23.79	21-1/8"	41"	83-9/16"	14.67	27.60	30.22
5070	15.74	30.76	27-1/8"	53"	83-9/16"	20.66	34.56	37.45
5470	16.90	33.08	29-1/8"	57"	83-9/16"	22.66	36.89	39.86
6070	19.22	37.72	33-1/8"	65"	83-9/16"	26.65	41.53	44.68
4080	14.02	27.21	21-1/8"	41"	95-9/16"	17.12	31.56	34.41
5080	18.00	35.17	27-1/8"	53"	95-9/16"	24.11	39.53	42.63
5480	19.33	37.83	29-1/8"	57"	95-9/16"	26.44	42.18	45.38
6080	21.98	43.14	33-1/8"	65"	95-9/16"	31.10	47.49	50.86

Notes for Inswing Entrance Doors:

- ▶ For units with optional oak or ADA-compliant sills, add 5/8" to the clear opening heights.
- ▶ One or both sash open to 90°.

Product #	Sq. Ft. Clear Opg.		Clear Opg. Width		Clear Opg Ht.	Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
	1 Open	2 Open	1 Open	2 Open				
Outswing Entrance Doors - 1-wide								
2068	11.64	–	21-7/32"	–	79"	6.93	12.67	15.04
2668	14.93	–	27-7/32"	–	79"	9.76	15.96	18.48
2868	16.03	–	29-7/32"	–	79"	10.70	17.06	19.63
3068	18.22	–	33-7/32"	–	79"	12.59	19.25	21.92
2070	12.23	–	21-7/32"	–	83"	7.33	13.31	15.77
2670	15.69	–	27-7/32"	–	83"	10.33	16.77	19.37
2870	16.84	–	29-7/32"	–	83"	11.33	17.92	20.58
3070	19.15	–	33-7/32"	–	83"	13.33	20.23	22.98
2080	14.00	–	21-7/32"	–	95"	8.56	15.24	17.95
2680	17.96	–	27-7/32"	–	95"	12.05	19.19	22.06
2880	19.28	–	29-7/32"	–	95"	13.22	20.51	23.43
3080	21.92	–	33-7/32"	–	95"	15.55	23.15	26.17
Outswing Entrance Doors - 2-wide (stationary/active)								
4068	11.64	–	21-7/32"	–	79"	13.85	12.65	29.18
5068	14.93	–	27-7/32"	–	79"	19.51	15.94	36.06
5468	16.03	–	29-7/32"	–	79"	21.40	17.04	38.36
6068	18.22	–	33-7/32"	–	79"	25.17	19.24	42.95
4070	12.23	–	21-7/32"	–	83"	14.67	13.29	30.59
5070	15.69	–	27-7/32"	–	83"	20.66	16.75	37.81
5470	16.84	–	29-7/32"	–	83"	22.66	17.90	40.22
6070	19.15	–	33-7/32"	–	83"	26.65	20.21	45.03
4080	14.00	–	21-7/32"	–	95"	17.12	15.21	34.83
5080	17.96	–	27-7/32"	–	95"	24.11	19.17	43.05
5480	19.28	–	29-7/32"	–	95"	26.44	20.49	45.79
6080	21.91	–	33-7/32"	–	95"	31.10	23.13	51.27
Outswing Entrance Doors - French								
4068	11.64	23.21	21-7/32"	42-5/16"	79"	13.85	26.20	29.18
5068	14.93	29.80	27-7/32"	54-5/16"	79"	19.51	32.78	36.06
5468	16.03	31.99	29-7/32"	58-5/16"	79"	21.40	34.97	38.36
6068	18.22	36.38	33-7/32"	66-5/16"	79"	25.17	39.36	42.95
4070	12.23	24.39	21-7/32"	42-5/16"	83"	14.67	27.52	30.59
5070	15.69	31.30	27-7/32"	54-5/16"	83"	20.66	34.44	37.81
5470	16.84	33.61	29-7/32"	58-5/16"	83"	22.66	36.74	40.22
6070	19.15	38.22	33-7/32"	66-5/16"	83"	26.65	41.36	45.03
4080	14.00	27.91	21-7/32"	42-5/16"	95"	17.12	31.50	34.53
5080	17.96	35.83	27-7/32"	54-5/16"	95"	24.11	39.42	43.05
5480	19.28	38.47	29-7/32"	58-5/16"	95"	26.44	42.06	45.79
6080	21.91	43.75	33-7/32"	66-5/16"	95"	31.10	47.34	51.27

Notes for Outswing Entrance Doors:

- ▶ For units with ADA-compliant sills, add 1-1/8" to the clear opening heights.
- ▶ One or both sash open to 90°.

NOTE: For the most up to date data, please visit the Kolbe website at www.kolbe-kolbe.com.

Energy Performance Data

ENERGY STAR® – United States

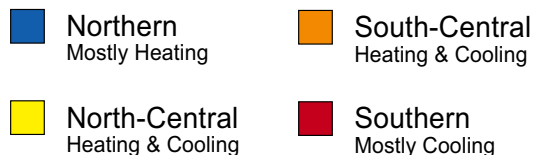
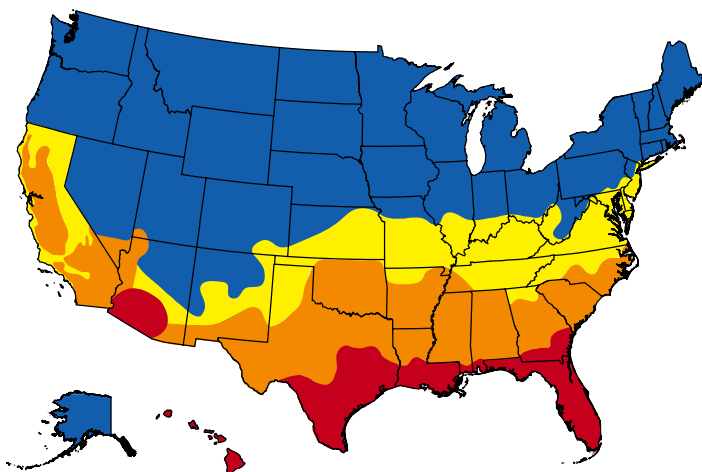


ENERGY STAR is a government-regulated program that was created by the Environmental Protection Agency (EPA), and the U.S. Department of Energy (DOE), to help consumers quickly and easily identify energy saving products. The ENERGY STAR program

uses energy values obtained by window and door manufacturers through the National Fenestration Rating Council (NFRC) program. NFRC ratings are based on the energy performance of the total window or door – both glass and frame.

The ENERGY STAR program for the United States divides the nation into four separate climate zones – Northern, North-Central, South-Central, and Southern.

The performance criteria that needs to be met in order to be ENERGY STAR compliant in a specific climate zone (effective January 1, 2015) is shown in the charts provided.



Kolbe demonstrates a commitment to providing accurate energy data by having products independently simulated, tested, inspected and listed in the NFRC certification program, and making that data available on our website and window labels.

NOTE: Energy performance data and air, water, structural data is updated on a continuous basis. For the most current information, visit www.kolbe-kolbe.com or contact your local Kolbe dealer.

Energy Performance Terminology

- ▶ U-Factor refers to a measure of heat transfer through the window or door unit. A lower U-factor means less heat escapes during winter weather, thus reducing heating costs in cold climates.
- ▶ R-Value refers to resistance to heat flow. A high R-value indicates that a window or door has good heat insulating properties.
- ▶ Solar Heat Gain Coefficient (SHGC) is a measure of how much solar energy is passing through the unit's glass. The lower a window or door unit's SHGC, the less solar heat is transmitted into a room, thus allowing for lower cooling bills in hot climates.
- ▶ Visible Transmittance (VT) is a measure of the portion of visible light that passes through a window or door. The higher a window or door unit's VT Total, the more visible light is transmitted into a room. This value is influenced by both the glass selection and by the ratio of glazing and frame area.

2015 ENERGY STAR Qualification Criteria for Windows

Climate Zones - U.S.		U-Factor	SHGC
■	Northern**	≤ 0.30	Any
	Northern**	$= 0.31$	≥ 0.35
	Northern**	$= 0.32$	≥ 0.40
■	North-Central	≤ 0.30	≤ 0.40
■	South-Central	≤ 0.30	≤ 0.25
■	Southern	≤ 0.40	≤ 0.25

** Northern zone windows can meet prescriptive (1st row) or alternative energy performance (2nd & 3rd row) criteria to qualify for ENERGY STAR.

2016 ENERGY STAR Qualification Criteria for Windows

The effective date for the Northern Zone prescriptive and equivalent energy performance criteria for windows is January 1, 2016. North-Central, South-Central, and Southern criteria will continue to follow 2015 guidelines.

Climate Zones - U.S.		U-Factor	SHGC
■	Northern**	≤ 0.27	Any
	Northern**	$= 0.28$	≥ 0.32
	Northern**	$= 0.29$	≥ 0.37
	Northern**	$= 0.30$	≥ 0.42

** Northern zone windows can meet prescriptive (1st row) or alternative energy performance (2nd, 3rd, and 4th rows) criteria to qualify for ENERGY STAR.

2015 ENERGY STAR Qualification Criteria for Doors

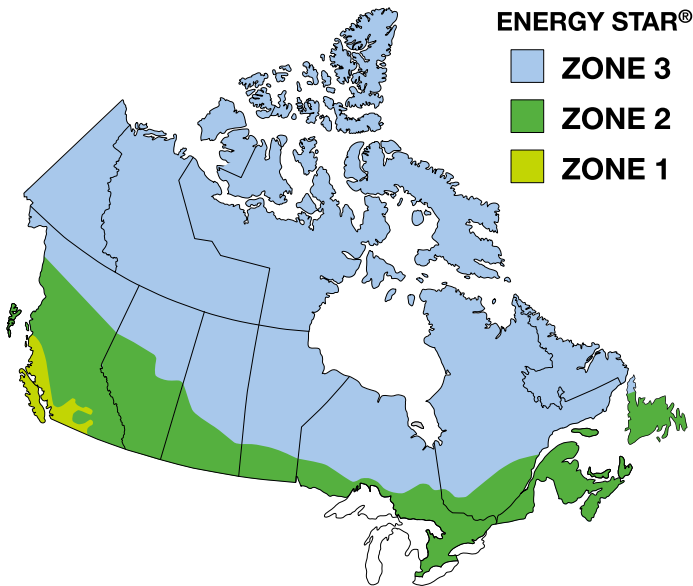
Glazing	U-Factor	SHGC	
Opaque	≤ 0.17	No rating	
$\leq 1/2$ -Lite	≤ 0.25	≤ 0.25	
$> 1/2$ -Lite	≤ 0.30	Northern North-Central	≤ 0.40
		Southern South-Central	≤ 0.25

ENERGY STAR® – Canada

Products may comply for Canada's ENERGY STAR program based on these compliance paths: their total U-factor, their Energy Rating (ER), or both. The Energy Rating is based on a product's overall performance based on three criteria: (1) solar heat gain, (2) U-factor, and (3) average air tightness. The higher the ER number, the better the product's thermal performance.



The U-factor and ER criteria for Canada's three climate zones is shown in the charts provided. For more detailed information about their Energy Rating system and Kolbe products that qualify for Canada's ENERGY STAR Program, visit their website at www.oe.nrcan.gc.ca/energystar.



ENERGY STAR - Canada Qualification Criteria for Windows and Sliding Doors† after February 1, 2015

Zone	COMPLIANCE PATHS		
	Minimum Energy Rating (ER)	or	Maximum U-Factor / Minimum ER
1	25	or	≤ 0.28 / 16
2	29	or	≤ 0.25 / 20
3	34	or	≤ 0.21 / 24

† Windows and sliding doors can qualify based on either a combination of the U-factor & a minimum Energy Rating, or just the Energy Rating.

ENERGY STAR - Canada Qualification Criteria for Swinging Doors after February 1, 2015

Zone	COMPLIANCE PATHS		
	Minimum Energy Rating (ER)	or	Maximum U-Factor
1	25	or	≤ 0.28
2	29	or	≤ 0.25
3	34	or	≤ 0.21

U-FACTOR EQUIVALENCY

Imperial	Metric
0.35	2.00
0.32	1.80
0.28	1.60
0.25	1.40
0.21	1.20

NOTE: Energy performance data and air, water, structural data is updated on a continuous basis. For the most current information, visit www.kolbe-kolbe.com or contact your local Kolbe dealer.




For professionals: www.kolbe-kolbe.com
For homeowners: www.kolbewindows.com

KOLBE
WINDOWS & DOORS

1323 S. 11th Avenue | Wausau, WI 54401-5998
715.842.5666

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