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HH Windows & Doors

German engineered. American made.

the **Aluminum Tilt & Turn** window



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Key features:

- Symmetrical, stable structural design with identical corner and T connectors
- 4 chamber coextruded hollow chamber central gasket, glass rebate insulation inserts and 9 mm thick, external glazing system gasket for improvement of frame thermal Insulation
- Extremely energy efficient: $U_w = .17$ (triple pane) $U_w = .23$ (double pane) $U_f = .24$
- 3 1/8" (80 mm) sash
- Weather and soundproof: thermally broken, triple-overlay sash and frame construction with triple gasketing (Soundproofing up to 47 dB (SSK 5))
- Can be built in extremely large sizes
- Virtually maintenance free and built to last a lifetime
- A wide range of colors: choose from the entire range of RAL colors or anodized finishes
- Screens available
- Full range of glazing options (double and triple pane)
- Multipoint locking hardware

Sizing

Multipoint locking hardware allows the Tilt & Turn window to be built significantly larger than a traditional casement window. Below is a summary of the size constraints:

Tilt-turn:

Width: 15"-61" Height: 24"-96"

French tilt-turn:

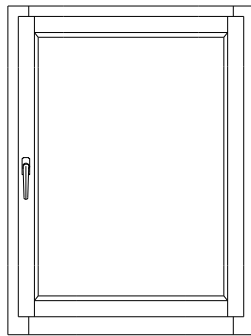
Width: 30"-120" Height: 24"-96"

Fixed window:

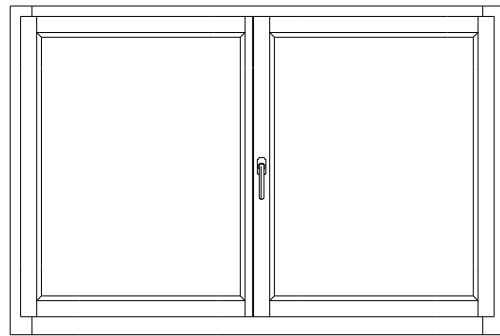
Maximum lite size: 84" x 140" (note: multiple lites available)

Configurations

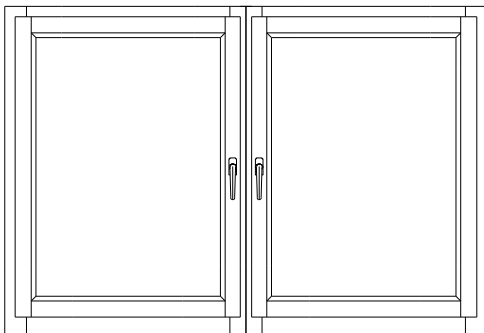
The Aluminum Tilt & Turn window can be built as a single window, or it can be mulled together with other windows. The French Tilt & Turn window is a dual sash Tilt & Turn window with a floating astragal (no meeting post).



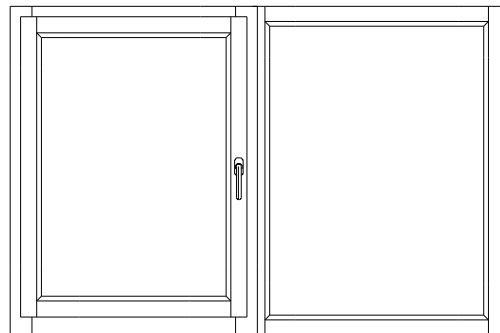
Single tilt-turn



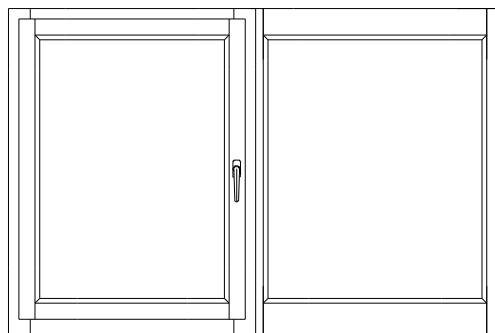
French tilt-turn



Two tilt-turns mulled together



Tilt-turn mulled to fixed



Tilt-turn mulled to fixed with matching horizontal glass line

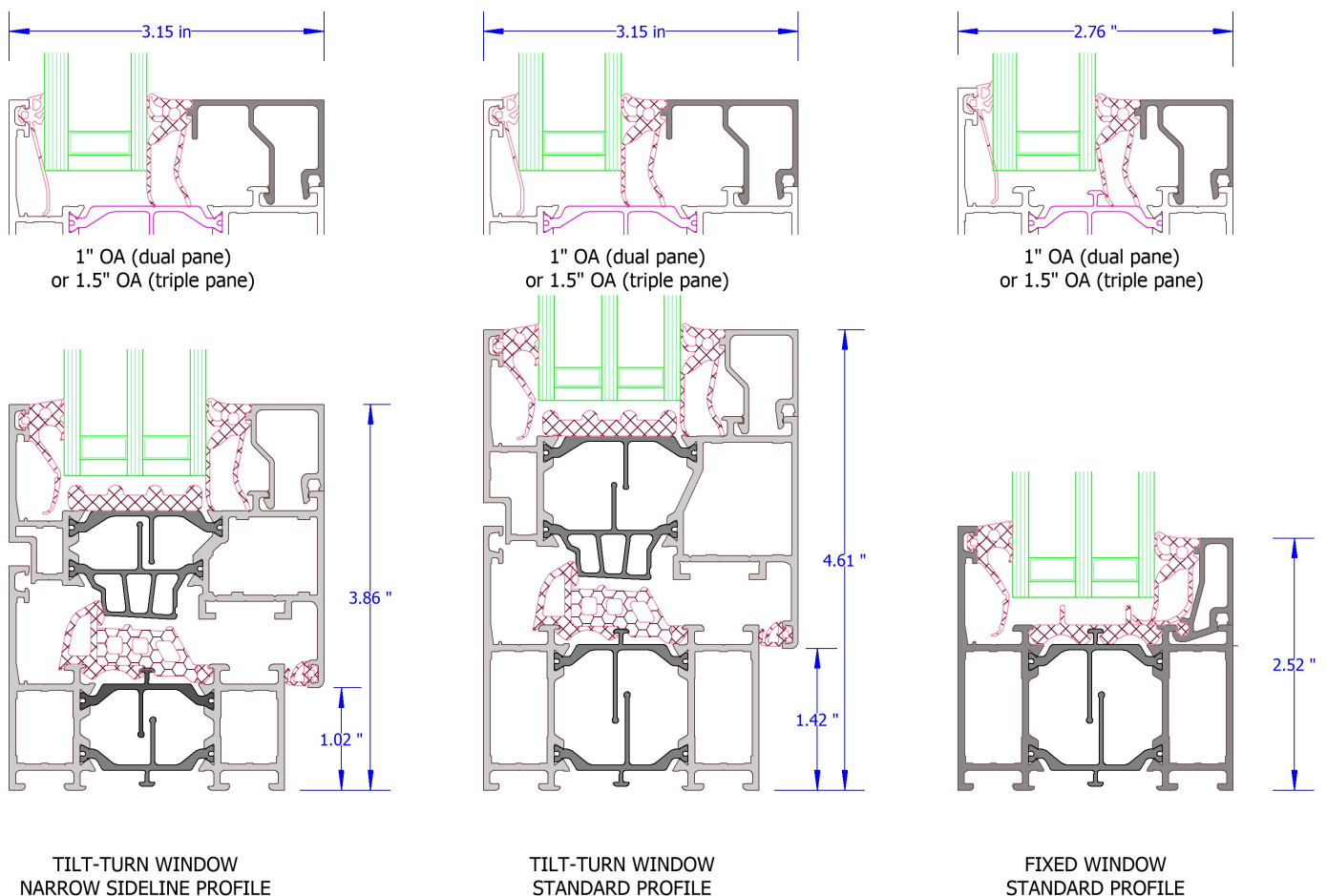
Hardware

Tilt & Turn window hardware is far and away the most advanced hardware system available. Within the individual components of fully concealed Tilt & Turn hardware, state of the art technology is hidden. It is no surprise that the Tilt & Turn hardware system prevails in many parts of the world.

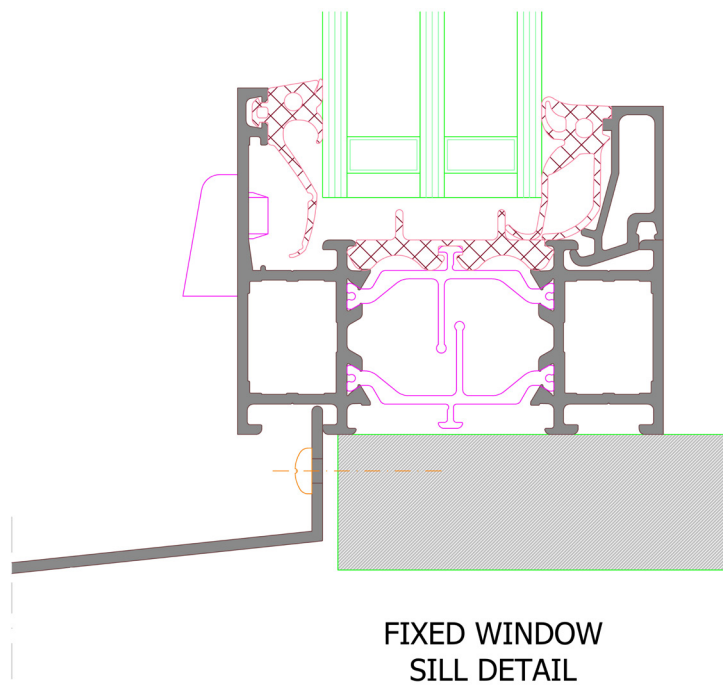
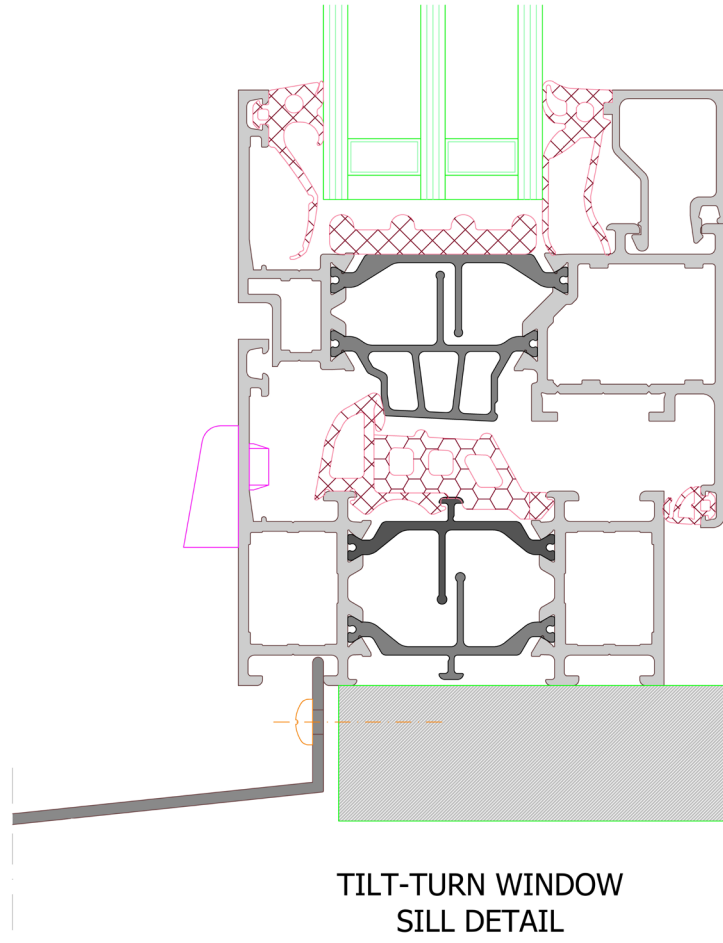
Tilt & Turn hardware contains locking points on all four edges of the window resulting in a tighter compression seal and higher security. Furthermore, Tilt & Turn hardware is fully adjustable in three directions (left/right + up/down + in/out) making the Tilt & Turn system more durable than any other product on the market.

Compared with standard American window hardware, Tilt & Turn hardware is extremely stable, making it suitable for larger window sizes and significantly heavier sash weights. Therefore Tilt & Turn hardware caters to the global trend towards increasingly large windows and doors with thermally insulated, soundproof, and laminated glazing.

Section drawings

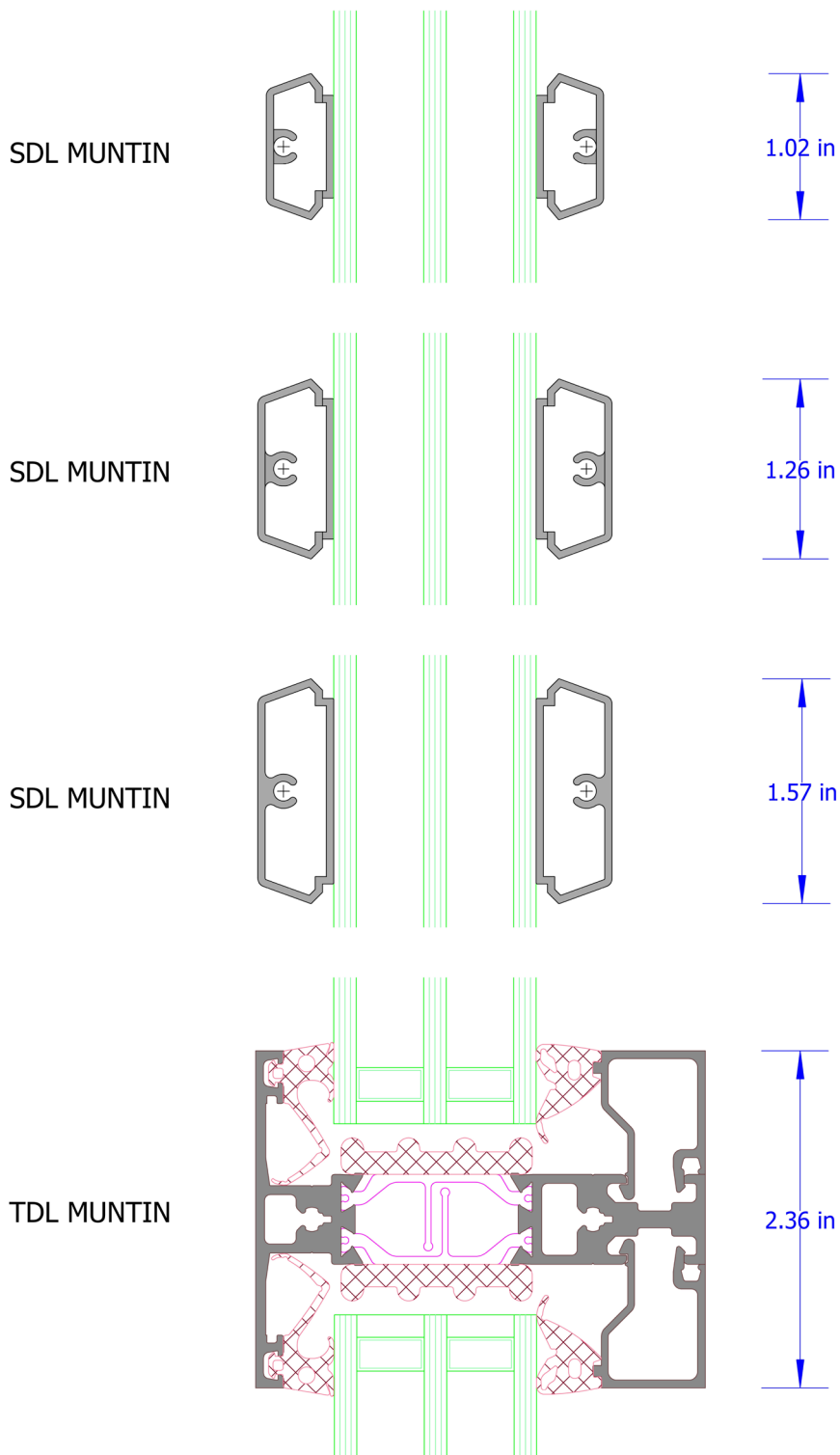


Optional sill



Muntins and stops

The Aluminum Tilt & Turn window can be built with a single lite or with a grid pattern. There are two ways to apply a grid pattern to the window. A Simulated Divided Lite (SDL) grid pattern contains one Insulated Glass Unit with aluminum muntins applied to the interior and exterior of the window (thus it does not actually divide the glass). A True Divided Lite (TDL) grid pattern consists of several Insulated Glass Units separated by TDL muntins. Note that adding a grid pattern can significantly increase the price of the window. Consider therefore using a simple grid pattern or no grid pattern at all to enjoy an uninterrupted view.

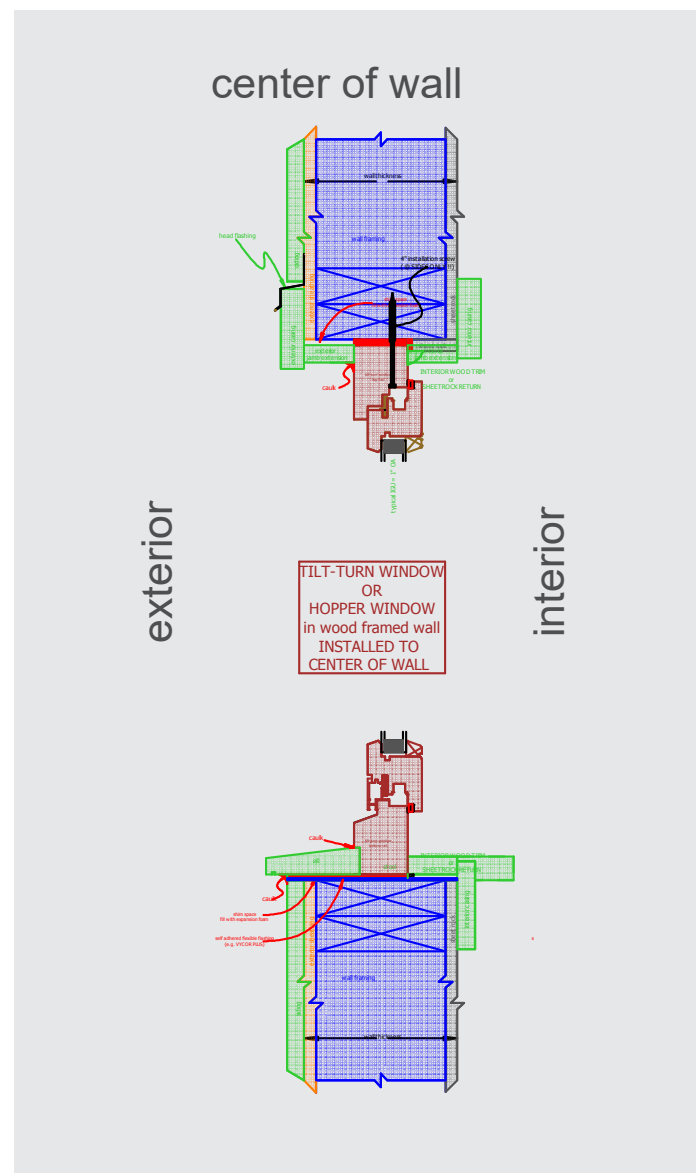
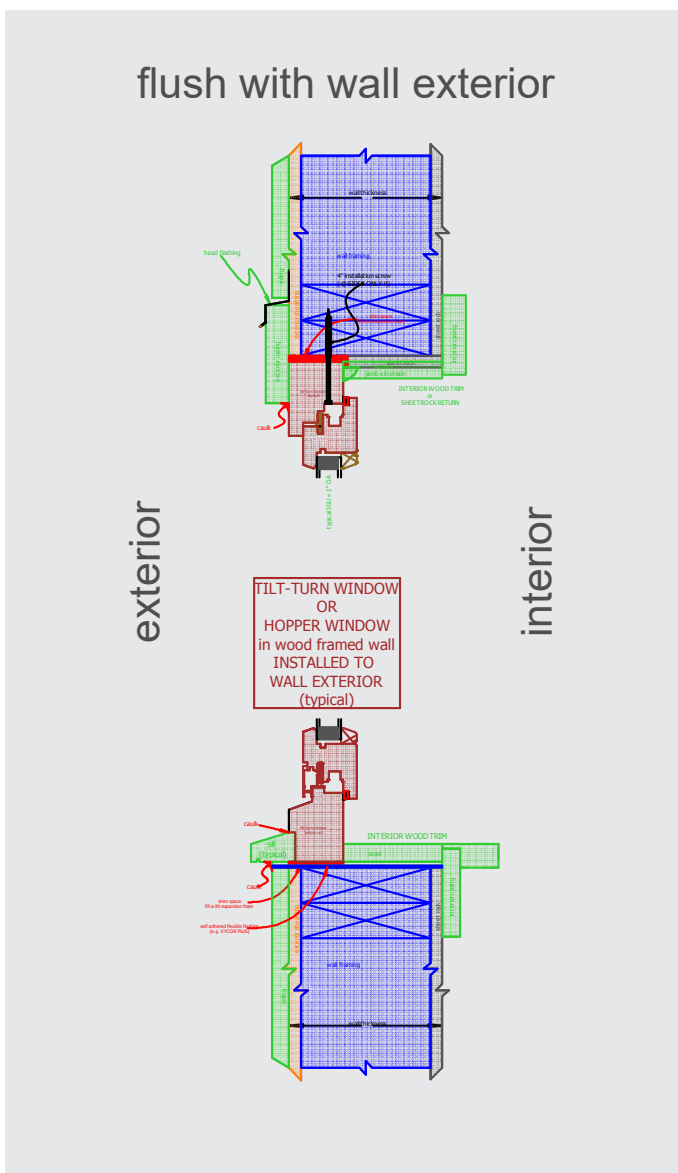


Installation

HH Windows & Doors is a window and door manufacturer and therefore does not specialize in installation. However, we work closely with a handful of exceptionally skilled craftsmen with vast experience installing the entire spectrum of European style windows and doors. Alternatively, if you choose to have your own contractor manage the install, HH Windows & Doors will provide detailed installation instructions and provide support when needed. It is in our best interest to ensure that the installation of your windows and doors is easy and painless.

Plane of installation

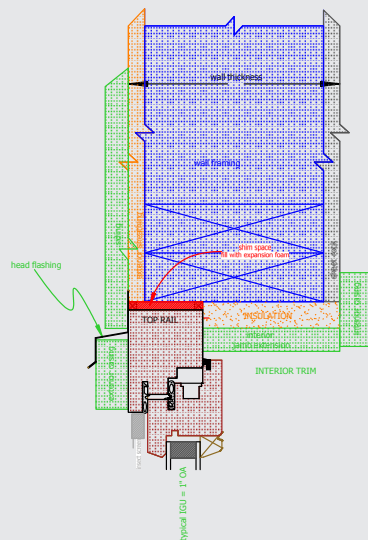
The Aluminum Tilt & Turn window can be installed flush with the wall exterior, at the wall center, or anywhere in between. The closer to the wall center that the window is installed, the better the thermal performance will be. For complete installation instructions, please contact HH Windows & Doors directly.



Reducing the glasslines

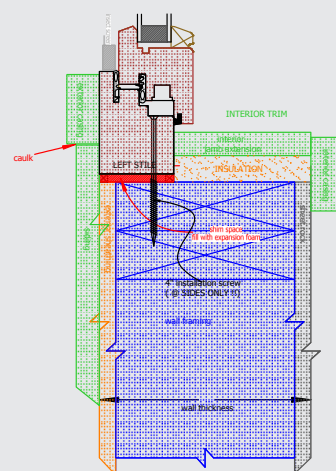
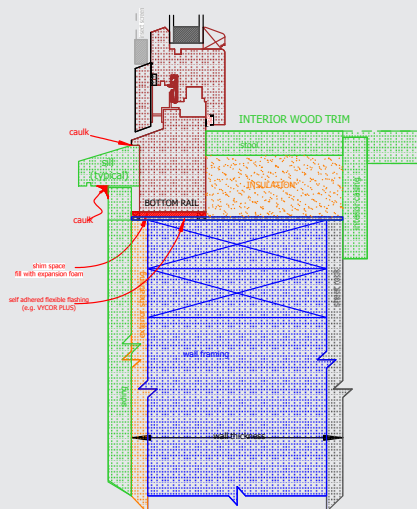
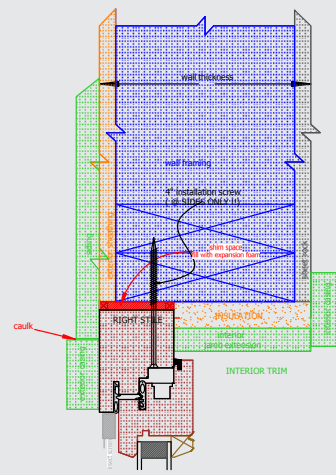
By incorporating exterior casing, the Aluminum Tilt & Turn window can have ultra thin glasslines compared with its European counterparts. Note: because every home has its own unique installation scenario, casing is not provided by HH Windows & Doors.

exterior



TILT-TURN WINDOW
in wood framed wall
with TRIM DETAIL TO MINIMIZE SIDELIGHT WIDTH

interior





Glazing

HH Windows & Doors offers a wide selection of glazing options, and can tailor to virtually any U-value.

Standard glazing

Cardinal dual strength annealed glass
2 panes
1" overall thickness
LoE²180 / Clear
Argon gas fill
Warm edge spacer

2 pane LoE coatings

LoE²180
LoE²240
LoE²270
LoE²272
LoE²366
LoE²i81

Further glazing options

1 pane
3 panes
Safety glass (laminated or tempered)
Customized overall thickness
Breather tube
5/32", 3/16", 1/4" pane thickness
Obscure glass
Tinted glass
Art glass

3 pane LoE coatings

1 LoE²: 180, 240, 270, 272, 366
2 LoE² combo: 180, 240, 270, 272, 366
3 LoE² combo: 180, 240, 270, 272, 366, i81

Screens

HH Windows & Doors manufactures optional removable screens to custom fit each window. The screens have an aluminum frame with polyester mesh and sit flush with the exterior face of the window.



Exterior view



Interior view

Handles

The Aluminum Tilt & Turn window comes with a RotoLine tilt-turn handle, in either silver or medium bronze, without the Roto logo. The RotoLine handle is a modern and elegant handle manufactured in Germany by the founders of the tilt-turn hardware system.



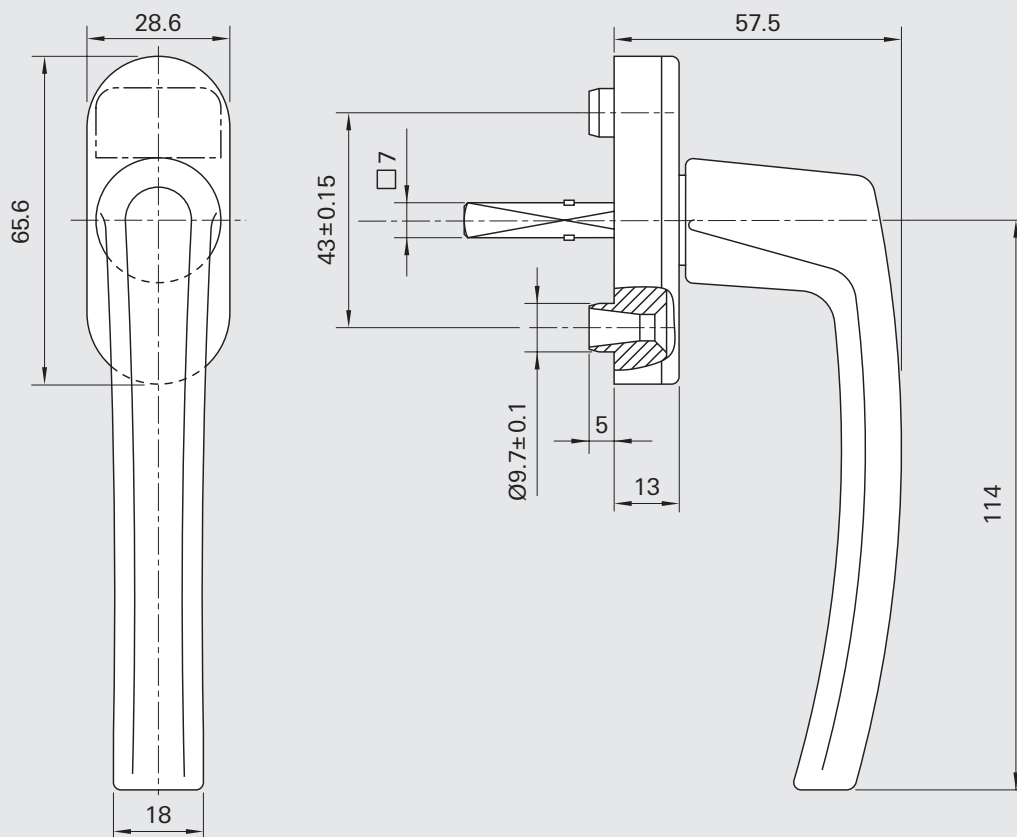
R 01.1 anodised silver, F1



R 05.3 anodised medium bronze, C33

While HH Windows & Doors carries the Rotoline handle system, there are endless handle options available which can be purchased independent of HH Windows & Doors using the specifications provided below.

Spindle length: 30mm



Colors

The Aluminum Tilt & Turn window can be finished in one of two ways:

1. **Anodic oxidation**, also called “anodising”: This anodic oxidation is the electrolytic oxidation of aluminium surfaces. This procedure results in extremely hard and scratch-resistant surfaces while maintaining the metallic nature of the aluminium.
2. **Powder coating**: This method makes surfaces long-lasting and functional while also producing a decorative appearance. The procedure does not involve solvents and covers the entire range of RAL colours. Special colours, different textures as well as different surface appearance effects, such as matt, shiny, or metallic are possible as well. Powder-coated surfaces can be produced in a highly weatherproof quality.



RAL Standard-Farben/Standard RAL colours

GUTMANN Farbfächer	GUTMANN Colour Fan Deck
1013	Perlweiß / Oyster white
1015	Hellelfenbein / Light ivory
3003	Rubinrot / Ruby red
3004	Purpurrot / Purple red
3005	Weinrot / Wine red
3011	Braunrot / Brown red
5002	Ultramarinblau / Ultramarine blue
5003	Saphirblau / Sapphire blue
5007	Brillantblau / Brilliant blue
5008	Graublau / Grey blue
5011	Stahlblau / Steel blue
5014	Taubenblau / Pigeon blue
5023	Fernblau / Distant blue
6005	Moosgrün / Moss green
6009	Tannengrün / Fir green
6012	Schwarzgrün / Black green
7001	Silbergrau / Silver grey
7004	Signalgrau / Signal grey
7011	Eisengrau / Iron grey
7012	Basaltgrau / Basalt grey
7015	Schiefergrau / Slate grey
7016	Anthrazitgrau / Anthracite grey
7021	Schwarzgrau / Black grey
7022	Umbragrau / Umbra grey
7024	Graphitgrau / Graphite grey
7031	Blaugrau / Blue grey
7035	Lichtgrau / Light grey
7036	Platingrau / Platinum grey
7037	Staubgrau / Dusty grey
7038	Achatgrau / Agate grey
7039	Quarzgrau / Quartz grey
7040	Fenstergrau / Window grey
7045	Telegau 1 / Telegrey 1
7046	Telegau 2 / Telegrey 2
7047	Telegau 4 / Telegrey 4
8001	Ockerbraun / Ochre brown
8003	Lehm Braun / Clay brown
8007	Rehbraun / Fawn brown
8011	Nussbraun / Nut brown

Mikrolierte Oberflächen / Micro-polished surfaces

M1/C31 Edelstahllook / Stainless-steel look

Trendfarben / Trend colours

tr01	Trendblau / Trend blue
tr06	Trendgrün / Trend green
tr08	Trendweiß / Trend white
tr05	Trendrot / Trend red
tr02	Trendgrau / Trend grey

Baubronze-Design / Bronze design

029/60995	Baubronze mf matt / Bronze mf matt
029/60990	Baubronze metallic glatt matt Bronze metallic smooth matt

Strukturdesign / Structure design

029/50370	Grün sprenkel / Green speckle
029/80081	Ironglimmer P 7 / Iron glimmer effect P7
029/30401	ca. RAL 3004 matt/mf approx. RAL 3004 matt/mf
029/90092	Silberglimmer fs matt/mf Silver glimmer effect fs matt/mf
029/40782	Dark blue / Dark blue

RAL Standard-Farben/Standard RAL colours

GUTMANN Farbfächer	GUTMANN Colour Fan Deck
8014	Sepiabraun / Sepia brown
8016	Mahagonibraun / Mahogany brown
8017	Schokobraun / Chocolate brown
8019	Graubraun / Grey brown
8022	Schwarzbraun / Black brown
9001	Cremeweiß / Cream
9006	Weißaluminium / White aluminium
9007	Graualuminium / Grey aluminium
9010	Reinweiß / Pure white
9011	Graphitschwarz / Graphite black
9023	Perldunkelgrau / Pearl dark grey

Decoralfarben / Decoral colours

MKW 01	Douglas 1 / Douglas 1
MKW 02	Douglas 2 / Douglas 2
MKW 03	Kirsch 1 / Cherry 1
MKW 04	Kirsch 2 / Cherry 2
MKW 05	Eiche 1 / Oak 1
MKW 06	Eiche 2 / Oak 2
MKW 07	Kiefer 2 / Pine 2
MKW 08	Golden Oak 1 / Golden Oak 1
MKW 09	Golden Oak 2 / Golden Oak 2
MKW 10	Mahagoni 1 / Mahogany 1
MKW 11	Antik 1 / Antique 1
MKW 12	Nuss 1 / Walnut 1

Eloxalfarben / Anodised colours

E6/EV1	Natur / Natural
E6/G216	Dunkelbronze / Dark bronze
E6/G214	Mittelbronze / Middle bronze

Metalldesign / Metallic design

029/80341	Schwarz metallic / Black metallic
029/41100	Blau metallic / Blue metallic
029/72100	Grau metallic / Grey metallic

