

# Hardware Solution for Windows

Turn-Tilt Fittings Style 180°

Turn-Tilt Fittings Standard

Turn-Tilt Fittings Heavy Duty

Dual Turn-Tilt Fitting

Opening Restrictor



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## Maximum opening widths and bearing capacity

The three new WSS TT fitting systems are characterised by their suitability for a variety of applications, their modular design and high-level of innovation. With the Style 180°, we finally have a tilt-turn fitting with concealed hinge side and 180° opening. The leaf no longer projects into the room. This new, concealed basic fitting is suitable for leaf weights of up to 130kg and can be upgraded for use with weights of up to 170kg. Added to this product range is the new WSS DK fitting Heavy Duty for leaf weights of up to 200kg. A simple upgrade for higher resistance classes up to RC3 (WK3) is possible.

Once again WSS has set standards with the new Dual Turn-Tilt Fitting concept for aluminium windows. The double tilt function in combination with a secondary sash fitting provides the ventilation convenience of two tilted windows while taking up a minimum amount of space - a complete window opening without an interfering central mullion. The new opening concept is an addition to the Standard, Style 180° and Heavy Duty window fitting series.

The new opening restrictors are an addition to WSS's range of window fittings. The pre-set braking force of the force-absorbing model prevents the window from slamming uncontrollably. The lockable Opening Restrictor can safeguard the ventilation and cleaning position of the window leaf. The ventilation position lock engages automatically and ensures that the window leaf can open only to the ventilation position and no further.

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# Concealed but completely open



## Turn-Tilt Fitting Style 180°



## Aesthetics and functionality

A concealed hinge side with no concession to comfort or functionality is what is demanded of contemporary window design. But, the opening systems available on the market up to now only allowed for an opening of 90° to 100°. The result: the leaf is "in the way" and damage from excess pressure can only be prevented using opening restrictors. We took on this challenge.

First of all, we managed to combine the aesthetics of a concealed hinge side with the functionality of a full 180° opening!

### The advantages of Style 180° are clear to see:

- No leaf projecting "into the room" and blocking narrow passageways or corridors
- Accessibility
- Entire space can be used
- Complete ventilation effect
- No damage from excess pressure
- Full area of emergency exit windows can be used



## 180° opening: Style 180°



The new, concealed basic fitting is suitable for leaf weights of up to 130 kg and, it can be easily upgraded with an expansion kit for applications with weights of up to 170 kg.

### Special features:

- Basic fitting for left or right
- Quick and easy to mount the leaf (install)
- Easy to upgrade from 130 kg to 170 kg
- Appealing appearance
- Fitting concept is modular in line with the modular design principle
- Two scissor sizes for leaf sizes between LW=500 mm and LW =1700 mm
- Quick and easy retro-fitting and upgrade for greater resistance classes up to RC3 (WK3)
- Corner and scissor bearing easy to fit due to pre-installed clamp plates
- No additional profile working required
- Suitable for all standard alu-euro grooves, 10–14 mm
- Overlap height minimum 8.5 mm

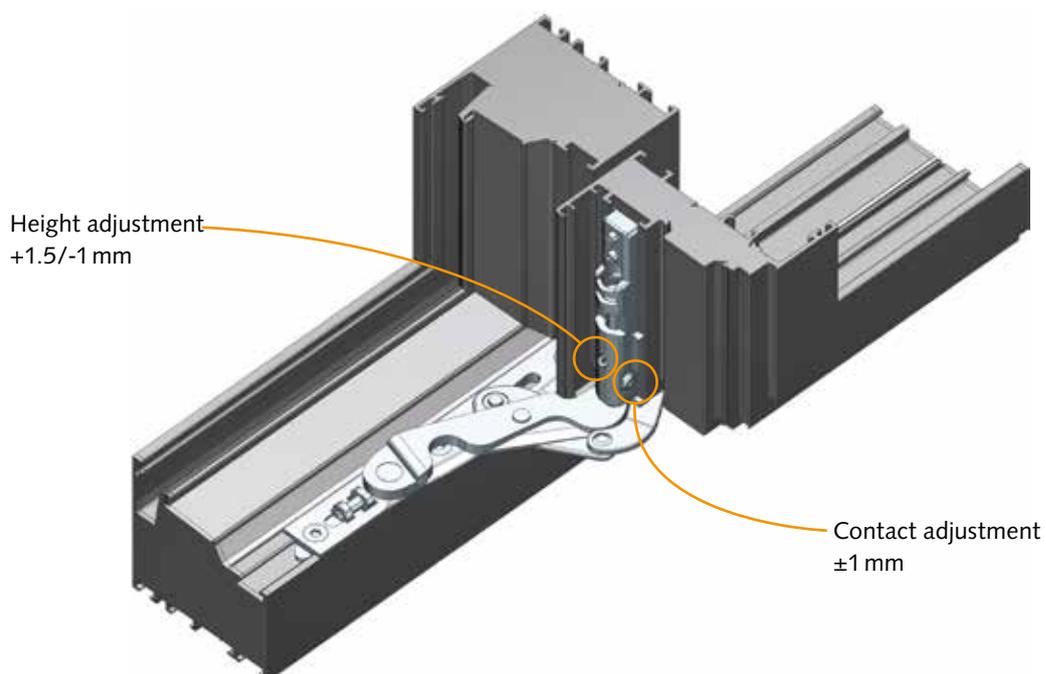
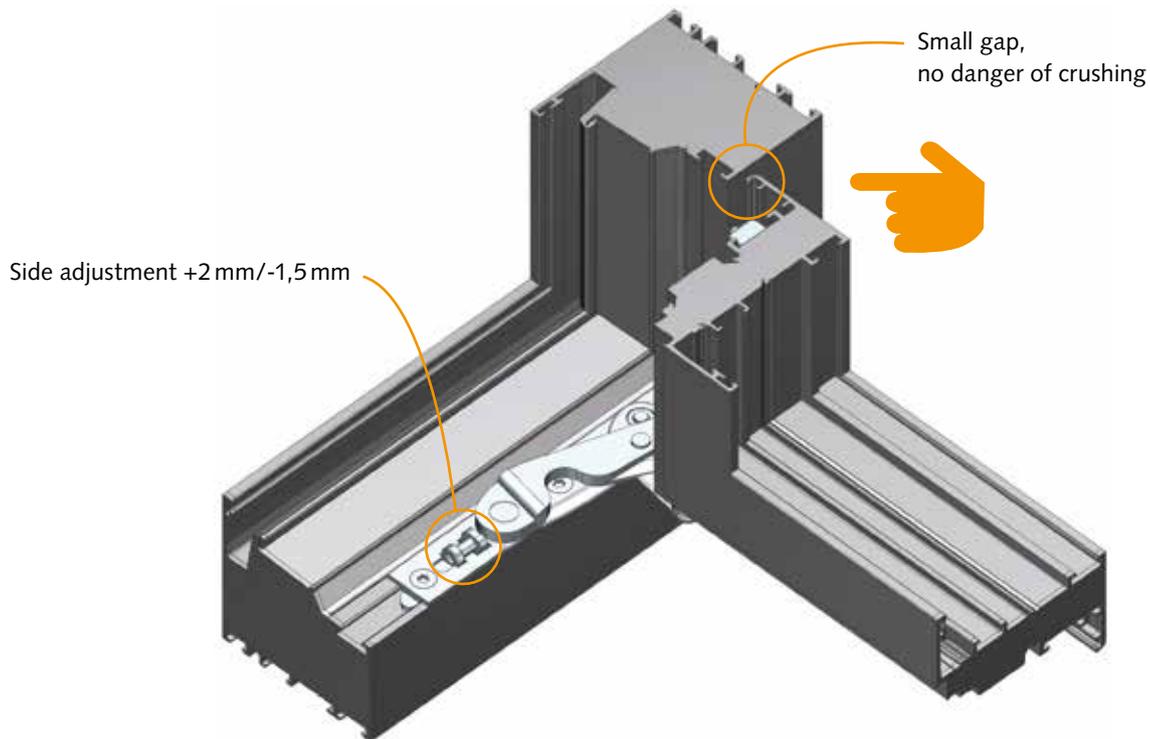
### Technical details:

Leaf weight: ..... 170 kg (with "expansion kit >130 kg")  
Leaf width scissor 1: ..... 450–700 mm  
Leaf width scissor 2: ..... 700–1.300 mm (with second scissor up to 1,600 mm)  
Adjustment options: ..... side adjustment  $\pm$  2 mm at corner bearing and scissor  
Height adjustment: ..... +1.5 mm/-1 mm  
Contact adjustment: .....  $\pm$  1 mm at corner bearing and scissor

## Easy opening, precise adjustment: Style 180°

The perfectly-designed turning radius guides the leaf through the entire opening process at a narrow distance from the frame, therefore fulfilling the anti-crush criteria.

In addition, this unique multi-joint hinge for a 180° opening has 3D adjustment – side, height and contact adjustment.



# Innovation and Design



## Turn-Tilt Fitting Standard



### Design-led functionality

provides the basis for the new WSS fittings system for aluminium windows. Interlocking coupling pieces for the operating rod, eccentric pins inserted from below and hinge parts that are flush with the leaf all highlight the aesthetic design of this new WSS fitting system.

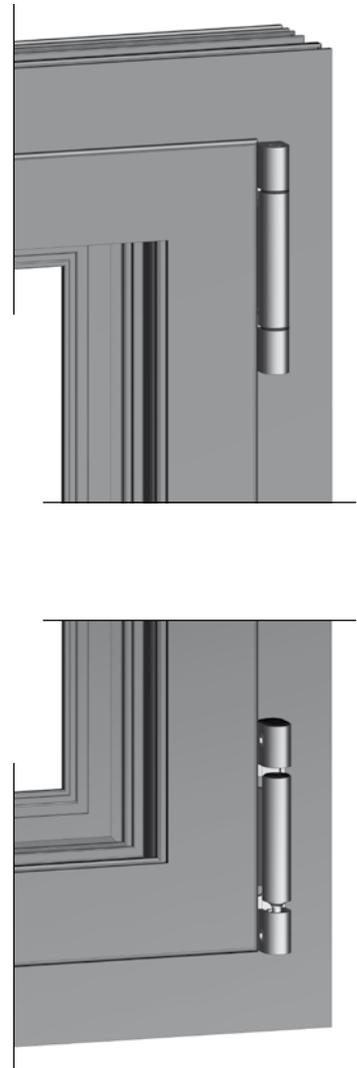
The new concept is complemented by numerous technical innovations. The modular design system offers substantial savings in terms of warehousing, material planning and administration. Manufacturing times are further reduced by up to 20% thanks to a reduction in the number of components and the option of pre-installed assemblies. Optimised screw positions and pre-installed clamp plates result in ergonomic and easy assembly.

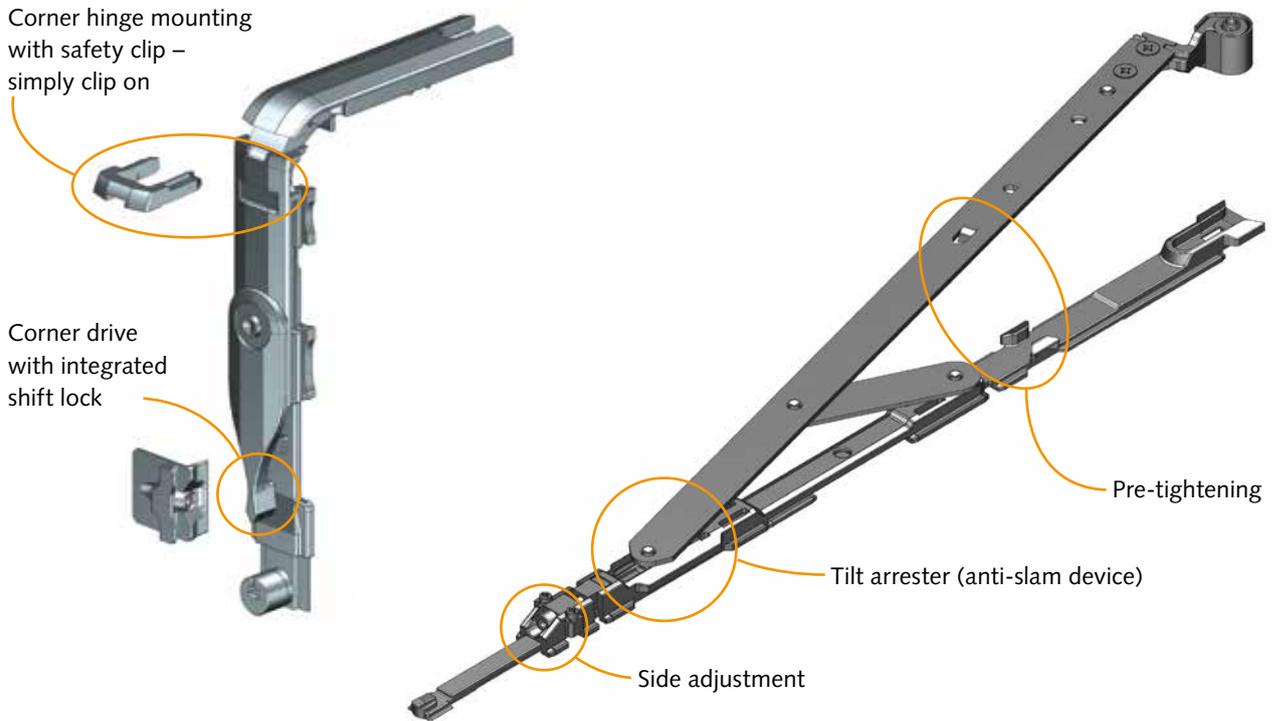
With only two scissor sizes, the system covers leaves of up to 1,700 mm in width and up to 100kg in weight. With an expansion kit, the system can be upgraded for use with leaf weights of up to 150kg. Simply adjusting the contact pressure by  $\pm 1$  mm will result in a perfect seal, even if the window has already been in use for years.

The large opening of 160mm ensures a high level of ventilation efficiency in the tilt position. A tilt arrester is also integrated to prevent the leaf from slamming shut. Overall, this shows our clear commitment to functionality, design and ergonomics, within our meaning and for your benefit.

#### The benefits for you:

- Quick and easy to retro-fit or upgrade for higher resistance classes up to RC3 (WK3).
- Appealing appearance due to flush bearing
- Scissors made of corrosion-resistant materials
- Hinge side suitable for right/left
- Corner drive mounted using safety clip
- Corner drive with integrated shift lock
- Tilt arrester (anti-slam device)





The new corner drive is seen to be consistently innovative. Its compact functionality is highlighted by the integrated shift lock that can be used for right or left and is triggered by the locking piece and a contact control  $\pm 1$  mm.

Assembly times are considerably reduced thanks to screw-free mounting of the corner drive, which is easily mounted using a safety clip. Combining the connection point with the eccentric provides the design with a locking point that cannot be levered out.

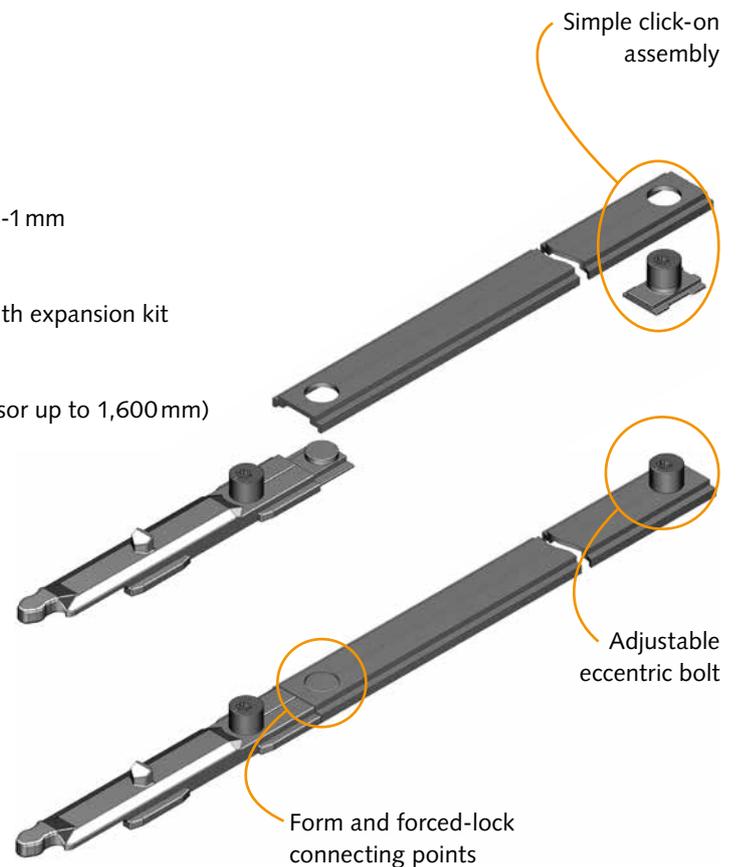
The new locking pins are inserted into the operating rod from below, requiring only a single drill hole in the rod. The pins designed as eccentrics allow for easy contact adjustment of  $\pm 1$  mm.

**Special features:**

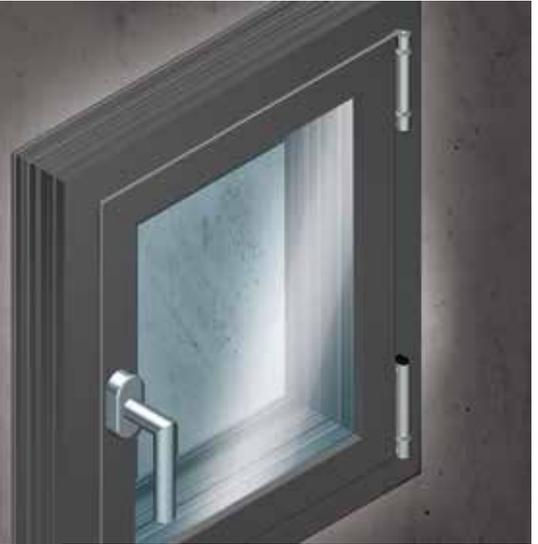
- Integrated pre-tightening (approx. 10 mm)
- Surface and rebate gear 38 mm stroke
- Corner hinge suitable for right/left
- Corner bearing side adjustable by  $\pm 1$  mm
- Corner hinge height adjustable by +1.5 mm and -1 mm

**Technical details:**

Leaf weight: .....	100kg, 150kg with expansion kit
Leaf width scissor 1: .....	370-700 mm
Leaf width scissor 2: .....	700-1,300 mm
	(with second scissor up to 1,600 mm)
Connection point: .....	10 mm $\varnothing$
Tilt width:.....	160 mm
Contact pressure adjustment:.....	$\pm 1$ mm
Side adjustment: .....	$\pm 2$ mm
Height adjustment:.....	1.5 mm/-1 mm



# Well built



## Turn-Tilt Fittings Heavy Duty



### Powerful elegance

The Heavy Duty fitting was developed to round off the new WSS window systems. This addition became necessary due to increased requirements in terms of security and thermal insulation while retaining the usual leaf sizes.

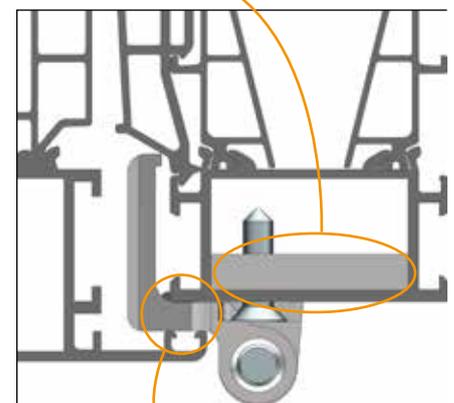
The new fitting is designed for use with heavy, robust leaf elements of up to 200kg and leaf widths between 700 and 1,700mm. Depending on the size of the window, treble or special glazing can be used, for example bullet-proof glazing.

As is the case with the standard series, this fitting system is available in a modular design. It can be easily upgraded using an expansion kit for higher resistance classes up to RC3 (WK3).

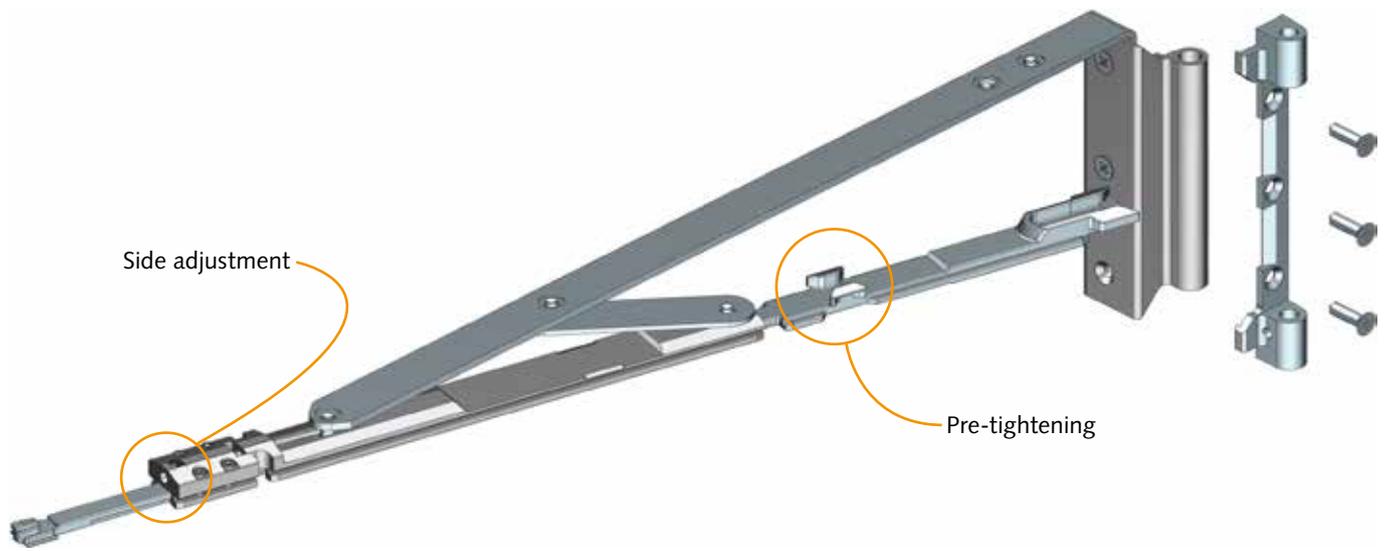
#### Special features:

- Concealed hinge screw
- Hinge mounting in min. 6mm material thickness
- Fitting suitable for left or right
- Hinge side can be screwed
- Fitting parts can be connected from below
- A single stay for leaf widths from 700 to 1,700mm (second stay from 1,100mm upwards)
- Stay made of corrosion-resistant materials
- Shift lock either on corner drive or gear

Feeder piece

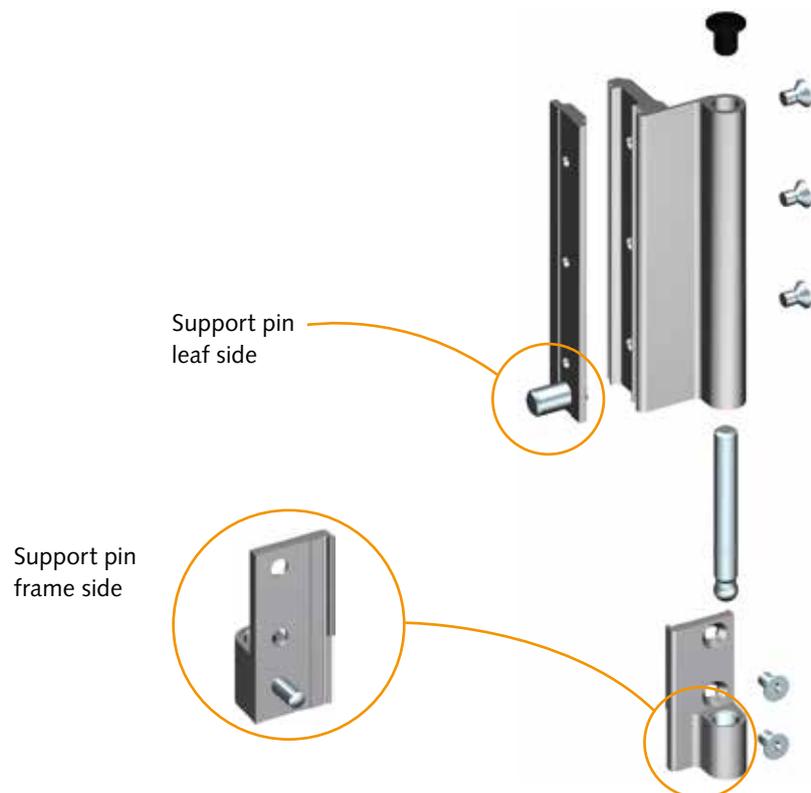


Gap 5 mm



Side adjustment

Pre-tightening



Support pin  
leaf side

Support pin  
frame side

**Technical details:**

Leaf weight max.: .....200kg  
 Leaf width max.: .....1,700mm (with second stay from 1,100mm)  
 Side adjustment: .....±2 mm at the stay  
 Height adjustment:.....+1.5 mm/-1 mm  
 Gap: .....5 mm  
 Surface and rebate gear: .....38 mm stroke

# Two functions in one



## Dual Turn-Tilt Fitting



### Double the ventilation convenience

WSS has again set standards with their new fitting concept for aluminium windows. The double turn-tilt function in combination with a secondary sash fitting provides a high level of ventilation convenience while taking up a minimum amount of space plus a complete window opening without a central mullion.

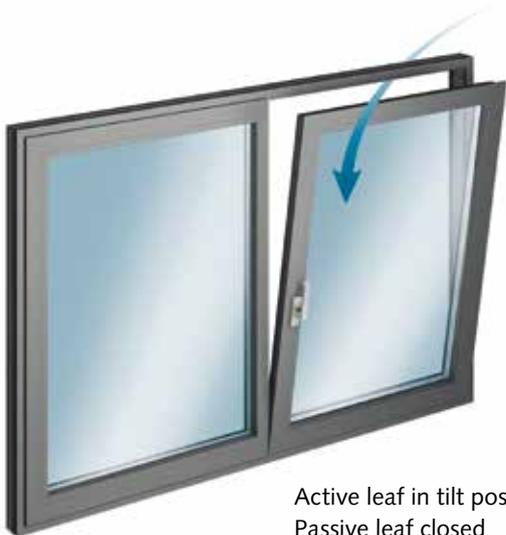
The tilt function of the passive window leaf is manually docked and actively controlled using the turning drive radius. The new fitting concept for aluminium windows thereby provides parallel tilt opening, simple tilt ventilation as well as opening one or both side-hung windows.

The fitting is an addition to the Standard, Style 180° and Heavy Duty window fitting series and allows for a window leaf weight of up to 150, 170 and/or 200kg. An elegant solution for aesthetics and ventilation with minimal space requirements.

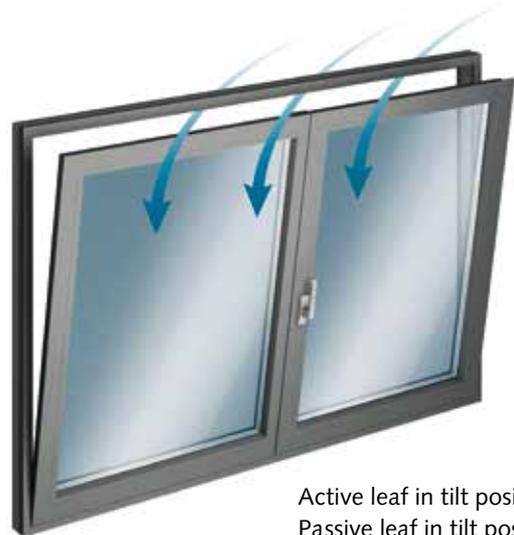
#### Features:

- Double ventilation profile in the tilt position
- Convenient one-handed operation for two window leaves
- Can be combined with all WSS window fitting series
- Easy connection to the active turn-tilt leaf with the switch lever

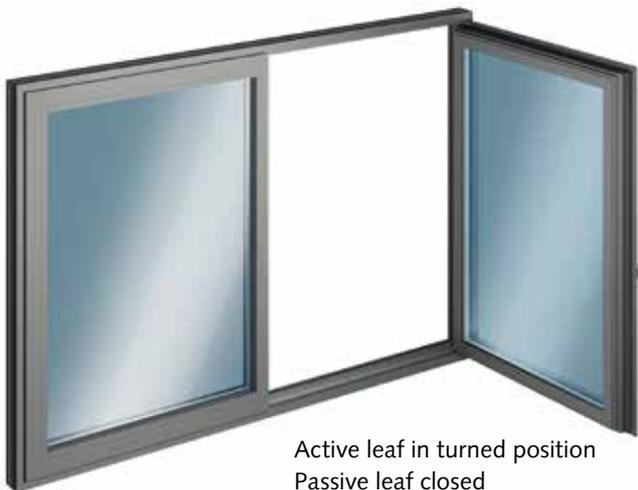
# Possible opening options



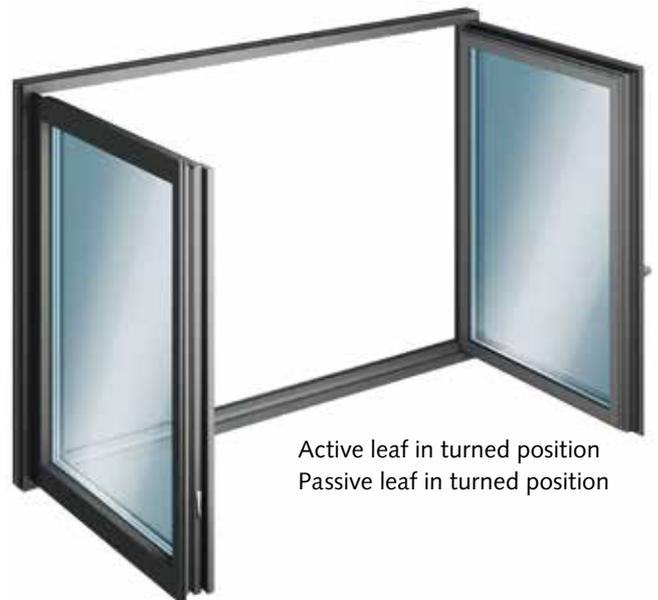
Active leaf in tilt position  
Passive leaf closed



Active leaf in tilt position  
Passive leaf in tilt position



Active leaf in turned position  
Passive leaf closed



Active leaf in turned position  
Passive leaf in turned position

Passive leaf without handle, active sash with handle

# Discreet security



## Opening Restrictor, force absorbing

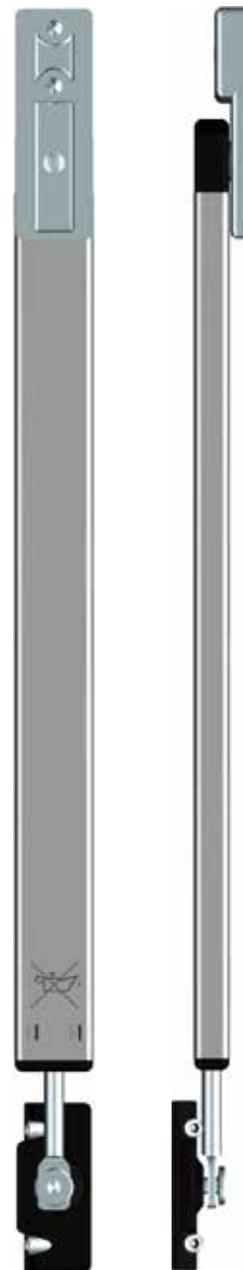
### Better securing

The pre-set braking force reliably and permanently prevents a window slamming uncontrollably due to wind or draughts. This also helps to prevent damage or personal injury in the swivel region of the window. The opening restrictor is maintenance-free thanks to stainless materials and a non-greasy damping mechanism.

Two standard sizes allow for use with leaf widths of up to 1,700mm and a max. weight of 130kg. Due to its reduced height and slim geometry, it can be used for virtually all profile series and for timber and plastic windows with a rebate clearance of at least 12 mm.

#### Special features:

- Reduces force on hinges in end position due to the absorbing effect
- Reduces uncontrolled leaf movement
- With specified braking force
- Maintenance-free
- Housing aluminium E6/C-0 anodized
- Piston rod made of stainless steel
- All parts made of non-rusting materials
- Frame gantry and casement clampable, depending on the system
- Suitable for right and left



For concealed mounting on aluminium, timber and plastic profiles with  $\geq 11.5$  mm rebate clearance.

# Limit the opening



## Opening Restrictor, smoothly adjustable

### Window limit and brake

The new generation of WSS opening restrictors can be used for covered and visible hinge sides. The opening restrictor is equipped with a freely positioned, adjustable end-position latch. This way various opening widths can be achieved and the leaf can be held in the open position.

As an option, the opening restrictor can be used with an adjustable brake for visible hinge sides in order to enable secure and controlled movement, even for large and heavy leaf components.

The stay on the frame mount is removable using the appropriate tool (T25). All components are made from rust-resistant materials.

#### Features:

- Prevents the leaf from moving on its own
- Adjustable braking power
- All parts made from rust-resistant materials
- Clamp-on frame and hinge bracket
- Can be used right and left



# Secured opening



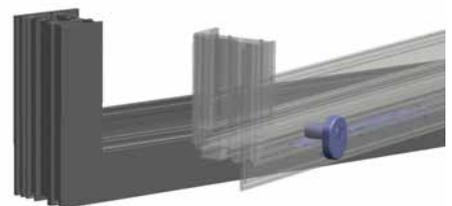
## Opening Restrictor, lockable

### Controlled opening positions

WSS's new, lockable opening restrictor performs two functions at the same time and provides automatic security. Falling protection is absolutely essential especially for floor-length windows. However, in order to avoid the use of crash bars or window grates, opening restrictors are being used more and more often. WSS has developed a system that equally ensures the ventilation and controlled opening position.

The first position of the ventilation function is determined according to the respective installation setting by the positioning of the limiting rail. Depending on the requirements, an opening width of about 89-120 mm can be set, thereby performing a safeguarding function against falling.

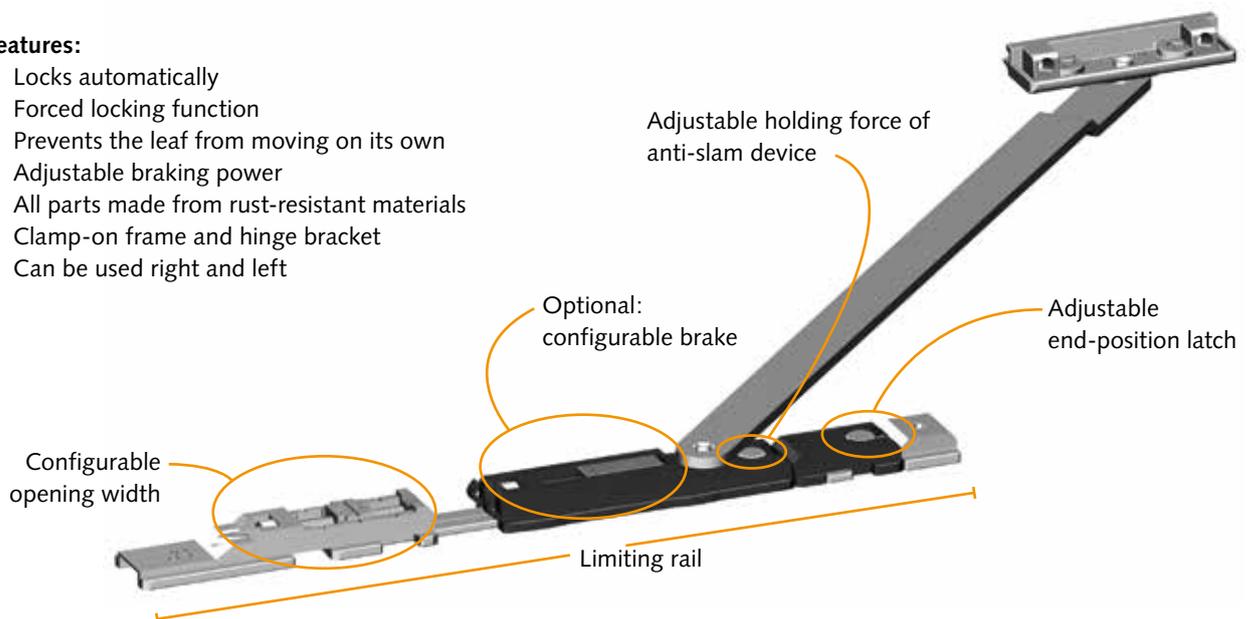
The leaf can be opened to the cleaning position using a key, which is determined by the positioning of the end-position latch. With very wide leaves the stay-arm can be removed using the appropriate tool (T25). A cylinder with a forced locking function prevents accidental lengthy unlocking. After locking the leaf it securely engages back into the first lock position and only enables the ventilation function. As an option, the Opening Restrictor can also be used with an adjustable brake.



Locking cylinder rose window

#### Features:

- Locks automatically
- Forced locking function
- Prevents the leaf from moving on its own
- Adjustable braking power
- All parts made from rust-resistant materials
- Clamp-on frame and hinge bracket
- Can be used right and left







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