

Roto NT – Arrestable brake-stay

Installation instructions

for timber and PVC windows and balcony doors



Roto NT – Arrestable brake-stay



Liability exclusion

All specifications in this brochure were diligently compiled and validated. Changes due to technical progress, changes in legislation and the passage of time are unavoidable. We therefore hope you understand that we cannot be held liable for the accuracy or completeness of the contents.

All rights, in particular the right to copy and circulate, reserved.

Imprint

Copyright: June 2012

Roto Frank AG

Wilhelm-Frank-Platz 1

D-70771 Leinfelden-Echterdingen

Telephone: +49 711 7598 0

Telefax: +49 711 7598 253

info@roto-frank.com

www.roto-frank.com



General advice	Product liability guidelines 4
	General advice 7
	Information on the arrestable brake-stay 9
Hardware overview	Application ranges and installation dimensions 10
	Hinge side K, E5, A – Turn-Only sash, Tilt&Turn sash 10
	Hinge side Designo – Turn-Only sash, Tilt&Turn sash 11
Installation	Spring stop for arrestable brake-stay 12
	Information on hinging scissor-stay arm 13
	Releasing the slider 14
	Adjusting the centre position 14
	Profile-related components 15
Maintenance and operation information	 16
Safety instructions	 17

Tilt&Turn hardware for windows and balcony doors

According to the defined manufacturer's liability described in paragraph 4 of the 'product liability law', the following information regarding Turn-Only and Tilt&Turn hardware for window and balcony door sashes should be observed. Non-compliance exempts the manufacturer of his liability.

1. Product information and stipulated application

1.1 Turn-Only and Tilt&Turn hardware

Definition: Turn-Only and Tilt&Turn hardware as covered by this definition is one-hand-operation Turn-Only and Tilt&Turn hardware for windows and balcony doors in building construction. This is used to enable windows and balcony-door sashes into a turning position by operating a 'hand-lever' (handle) or into a limited tilting position in the case of the scissors (sash-stay) version.

Application: Turn-Only and Tilt&Turn hardware is used on vertically installed windows and balcony-doors made of timber, PVC, aluminium or steel and their corresponding material combinations. Conventional Turn-Only and Tilt&Turn hardware as covered by this definition, locks window and balcony-door sashes or enables various ventilating positions. When closing, the gasket counter force must be overcome as a rule.

1.2 Sliding hardware

Definition: Sliding hardware as covered by this definition, is hardware for sliding sashes for balcony doors and windows that are mainly used as glazed exterior structures. In combination with the sliding sashes, fixed-glazing-units and/or further sashes i.e. Turn-Only sashes for cleaning purposes can be situated in a window element.

Application: Sliding hardware is used on vertically installed windows and balcony-door sashes made of timber, PVC, aluminium or steel, and their corresponding material combinations. Sliding hardware as covered by this definition is equipped with a locking mechanism that fastens the sliding sash as well as rollers located on the bottom

horizontal plane of the sliding sash. In addition, scissor stay-arms for tilting and mechanisms to lift and/or parallel-retract the sashes can be specified. By means of the hardware, the sashes are locked, brought into the ventilation position and pushed to the side.

Depending on the outside temperature, relative air humidity of the ambient air, as well as the application location of the sliding element, a temporary formation of condensation water on the aluminium track on the inside may occur. This is particularly promoted when the air circulation is hindered; for example due to deep reveals, curtains as well as unfavourable radiator positioning and the like.

1.3 Differing application – Liability exclusion

All applications differing from § 1.1 and/or 1.2 are regarded as non-stipulated applications and exclude any liability on our part.

1.4 Advice concerning restrictions of use

Opened balcony-doors and window sashes, as well as window and balcony-door sashes not locked or in the tilting position, provide only a shielding function and do not meet any demands on joint impermeability, water tightness, sound reduction, heat-insulation and burglary resistance.☒

In the case of wind and draught, the window and balcony-door sashes must be closed and locked. Wind and draught is present, if a window or balcony-door sash while in one of its opening positions, can open or close on its own, in an uncontrolled manner by means of either air pressure or air suction. A static opening position of windows and balcony-door sashes can only be achieved by means of additional hardware.

1.5 Particular necessary agreements for extended requirements

Burglar-resistant windows and balcony doors, windows and balcony doors for damp rooms and those for use in environments with aggressive,

corrosive air content, require hardware adapted for the respective application and individually agreed upon performance features.

The resistance against wind loads in a closed and locked state is dependent on the respective designs of windows & balcony doors. If wind loading tests need to be carried out (for example in accordance with DIN EN 12210 – in particular pressure test p3), suitable hardware compilations are to be matched in relation to the respective window design and frame material, and each case individually agreed upon.

Generally speaking, the hardware defined in § 1.1 and/or § 1.2 fulfils the requirements for barrier-free dwellings (for example, in accordance with DIN 18025). However corresponding hardware compilations and installations for windows and balcony doors are necessary, which must be coordinated and each case individually agreed upon.

2. Misuse

Misuse – therefore not the stipulated product utilisation – occurs in particular with hardware for windows and balcony doors as described in § 1.1 and/or § 1.2 in particular:

- if obstacles are inserted in the opening vicinity between frame and sash, thus preventing or inhibiting its proper specified use,
- if additional loads are put on windows or balcony-door sashes (for example if children swing on the window or balcony-door sash),
- if window and balcony-door sashes are pressed adversatively or uncontrolled (for example by the wind) up against the window reveals, so that the hardware or the frame material or other individual window or balcony-door components are damaged or destroyed and/or if consequential damage can arise,

- if while closing (or sliding) someone reaches between the sash and frame, and/or a person (or parts thereof) are in the vicinity (can cause bodily harm / be lethal).

3. Liability

The respective entire hardware set may only consist of hardware components from Roto's NT system. In the case of non factory-approved combinations by Roto Frank AG and/or inappropriately assembled hardware, and/or the use of non-original and/or non factory-approved accessory components, no liability is accepted.

For professional fixing, the "Implementation regulations for the fixing of supporting hinge sided hardware components" is to be adhered (refer to the chapter 'Roto information').

When using PVC or aluminium profiles, the profile manufacturer's and/or system owner's information is to be observed.

The window fabricator is essentially responsible for the compliance of the specified system-related dimensions (for example, the gasket gap dimensions). These specified system-related dimensions are to be checked regularly, in particular when using new hardware components for the first time, and also during production as well as during the window installation process. The hardware components should in principle be designed in such a manner, that the system-related dimensions can be adjusted to the extent that they are affected by the hardware. Should there be a deviation from these dimensions that leads to a fault that has not been noted before the window installation, no liability is accepted for the additional expenses incurred.

4. Product performance – Manufacturer's application advice

4.1 Maximum sash weights

The listed maximum sash weights for the individual hardware versions may not be exceeded. The building component with the least permissible load-carrying capacity determines the maximum sash weight.

Application diagrams and component classification are to be adhered to. (refer to chapter Diagrams / Profile cross sections)

4.2 Sash sizes

The description of the application diagrams in the planning documentation, product catalogues or installation instructions depict the relationships between the permissible sash rebate widths and sash rebate heights, depending on various glass weights and/or thickness. The resulting sash dimensions or sash formats (portrait and/or landscape format) – as well as the maximum sash weight – may not under any circumstance be exceeded.

4.3 Hardware combination

The manufacturer's regulations that deal with the combination of hardware are obligatory (for example: the application of additional stay arms, the hardware design for burglar-resistant window sashes and balcony-door leaves etc.).

5. Product maintenance

Security relevant hardware components are to be examined at least once a year for stability and wear and tear. Depending on the requirements, the fixing screws are to be tightened and/or parts to be replaced. In addition to this, the following maintenance work is to be carried out at least once a year:

- All movable parts and all locking points of the hardware are to be lubricated and tested.
- Only cleaning and maintenance agents that do not damage the corrosion protection of the hardware components are to be used.

The hardware adjustments – particularly in the vicinity of the pivot rests, the bogies and the scissor stays – as well as replacing parts and the unhinging & hinging of the active sash are to be carried out by a specialist company.

When coating – for example when painting or varnishing – the windows' and balcony doors hardware is to be excluded from this

process and is also to be protected against any impurities (paint/varnish splashes).

5.1 Preservation of the surface-finish

Electrolytically applied zinc coatings are not attacked in a normal room climate, if no condensation can form on the hardware or occasionally formed condensation can dry rapidly.

In order to permanently preserve the hardware's surface quality and to avoid deterioration by corrosion, it is imperative to observe the following points:

- The hardware and/or the rebate areas are to be ventilated sufficiently in particular during the building phase so that they are not exposed either to direct wetness nor to condensation. In any case, necessary steps are to be taken to ensure that (permanent) moist ambient air cannot condense in the rebate areas.
- The hardware is to be kept free from deposits and soiling from building materials (building dust, plaster, cement etc.). Possible soiling from plaster, mortar or similar materials is to be removed with water before it cures.
- Aggressive vapours (for example: by means of formic acid or acetic acid, ammonia, amine or ammonia compounds, aldehydes, phenols, tannic acid etc.) in connection with even small formations of condensation can lead to fast corrosion of the hardware. For this reason, evaporation in the vicinity of the windows is to be absolutely avoided.
- On windows and balcony doors made of oak or other types of timber with a high concentration of (tannic-) acid, ensure that by means of a suitable window surface treatment, these content substances can not evaporate out of the timber. The hardware may not come in direct contact with untreated timber surfaces.

(Continued on the next page)

- Furthermore no acetic-acid or crosslinked acidic sealing compounds or those with the above mentioned contents may be used, since both the direct contact with the sealing compound and its vaporisation can attack the hardware's surface.
- The hardware may only be cleaned with mild, pH-neutral cleaning agent in diluted form. Under no circumstances may aggressive, acidiferous cleaners or abrasive cleaning agents whose contents are listed in the above paragraph be used.
- Basically only zinc-plated and passivated screws are to be used for fixing the hardware components. By no means may stainless-steel screws be used, as this promotes the corrosion of zinc-plated surfaces.

6. Obligation to issue information and instructions

The following documentation in particular is available in order to fulfil the information and instruction duties, as well as implementing

maintenance operations. This documentation is to be passed on to dealers, intermediaries, fabricators and end users.

- Planning documentation
- Product catalogues
- Installation instructions
- Maintenance and care instructions as well as operating instructions

This is described subsequently as 'product information' – whether in whole or in part.

In order to safeguard the relevant function of windows and balcony doors:

- Planning engineers are obliged to request and comply with the manufacturers or authorised dealers 'product information'.
- Specialised dealers are obliged to observe the 'product information' from the manufacturer – particularly valid for advertising measure – and to pass this on to subsequent dealers and/or fabricators, and to point out to them that they are also obliged to pass this on to their customers.

- Fabricators are obliged to observe the 'product information' and in particular, to pass on service & maintenance instructions as well as operating manuals to the builders and end users.

7. Use of related hardware

The variations possible within individual hardware systems (e.g. Tilt-Only and Top-Hung hardware, or hardware that provides a circumferential ventilation-gap by parallel-retracting the sash instead of, or in addition to the tilted position) are to be treated according to the corresponding valid features of product information, stipulated application, misuse, product performance, product maintenance, information & instruction obligations.



12 mm clearance
9/13 mm hardware axis

Hardware functional safety

- To ensure continual functional safety of the hardware, the following should be observed:
 1. Professional installation of the hardware components in accordance with these installation instructions.
 2. Professional installation of the elements throughout the window installation process.
 3. The window fabricator is obliged to give the maintenance and operation instructions and where appropriate, the product liability guidelines to the user.
 4. The entire hardware may consist of only original Roto system components. The use of non-Roto components excludes any liability on our part.

Product liability regulations

- For fixing the hardware components, 3.9/4.1 x ... zinc-plated steel fenestration screws are to be used.
The window fabricator must ensure adequate fixing of the hardware components, consulting the screw manufacturer if necessary.
When fixing **security relevant**, supportive hardware components such as **stay bearings** and **pivot rests**, the tearing-forces vertical to the sash plane surface must be reached in accordance with the following table (the tractive-force values depend on the sash weights from the RAL-RG 607/3 standard).

Sash weight in kg	Tractive force in N ⁽¹⁾
60	1650
70	1900
80	2200

⁽¹⁾ acceptable tolerance -10%.

The stated values refer to the stay bearing. These are also valid for the pivot rest if the fixing is carried out in the same manner as with the stay bearing.

On sash weights up to 80 kg the table's values are reached as a rule, if high-quality screws are applied and the screw-fixing into the profile penetrates at least 2 profile walls, whereby the first profile-chamber wall should be at least 2.8 mm thick.

Do not use any acid cross-linked sealing compounds that could lead to corrosion of the hardware components.

The glazing spacer-block regulations for the glazing method are to be adhered to.

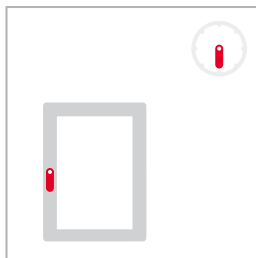
Product liability – Liability exclusion

- The hardware manufacturer is not liable for malfunctions or damage to the hardware and to the windows or balcony doors equipped with the hardware, if any such malfunctions or damage have been caused by inadequate tendering procedures, failure to adhere to the installation instructions or application drawings, or was exposed to stringent soiling.
The warranty covers only original Roto components.

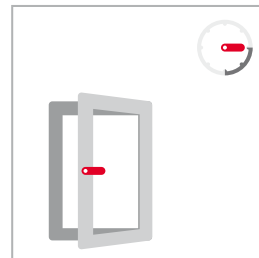
- Locking of Turn-Only and Tilt&Turn sashes in turn position.
- Application as Top-Hung hardware on both sides.
- Max. sash weight of 80 kg, depends on which hinge side is used.
- Process the arrestable brake-stay only in combination with the sash lifter instead of the mishandling device.
- The arrestable brake-stay and the scissor-stay arm are delivered separately and can be combined tool-free during installation.
- The sash can be locked in every position from 10° up to the maximum opening angle. The locking is executed by turning the handle from the centre position in the bottom or top final position. For Tilt&Turn sashes only in locking position.

Operation

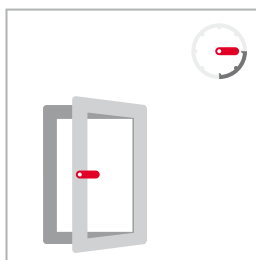
closed



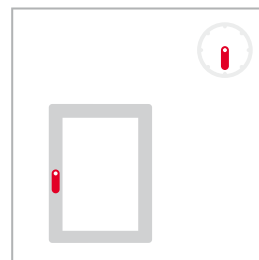
releasing



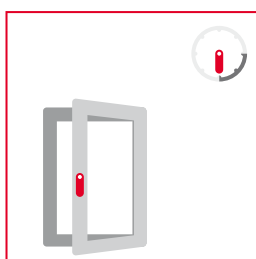
opening



closing



fixing



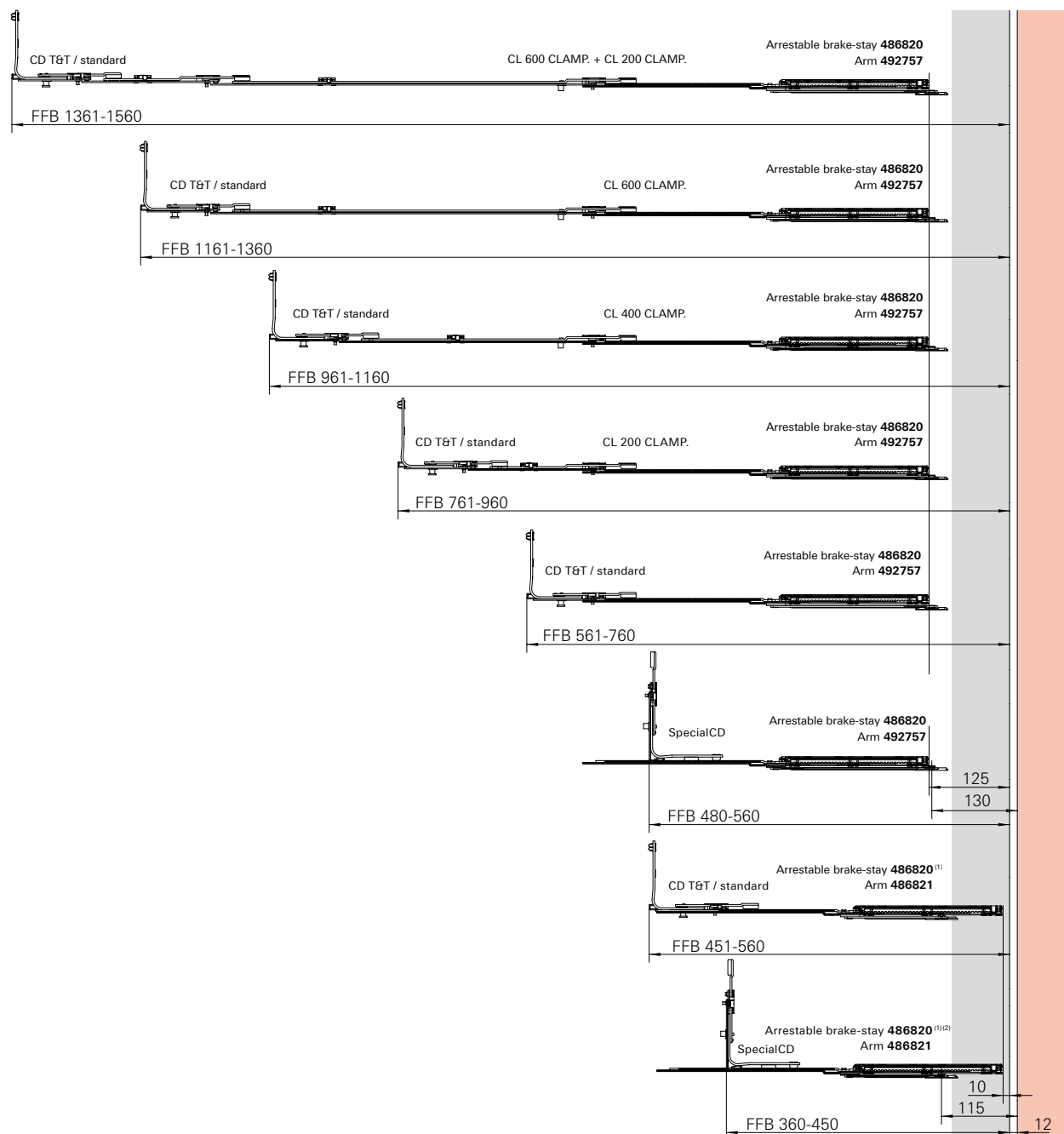
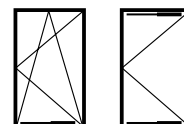
Application ranges and installation dimensions

Hinge side K, E5, A – Turn-Only sash, Tilt&Turn sash

Application range

Sash Rebate Width (SRW) 360 – 1560 mm

Depending on the available space, check in each individual case the suitability of the hinges.



Application ranges and installation dimensions hinge sides K, E5 and A – Turn-Only sashes and Tilt&Turn sashes

Sash Rebate Width (SRW)/mm	Corner drive	Centre lock	Arrestable brake-stay	Arm	Frame dimension	Sash dimension
360 – 450 ^{(1) (2)}	Special corner drive	–	486820	486821	115	10
451 – 560 ⁽¹⁾	Corner drive T&T / standard	–	486820	486821	115	10
480 – 560	Special corner drive	–	486820	492757	130	125
561 – 760	Corner drive T&T / standard	–	486820	492757	130	125
761 – 960	Corner drive T&T / standard	Coupleable CL 200	486820	492757	130	125
961 – 1160	Corner drive T&T / standard	Coupleable CL 400	486820	492757	130	125
1161 – 1360	Corner drive T&T / standard	Coupleable CL 600	486820	492757	130	125
1361 – 1560	Corner drive T&T / standard	Coupleable CL 600 Coupleable CL 200	486820	492757	130	125

⁽¹⁾ Only in combination with frame component with reduced construction height (currently frame component 491798) possible. Only in combination with hinges that are not screw-fixed in the horizontal hardware groove.

⁽²⁾ Only Turn-Only sash.

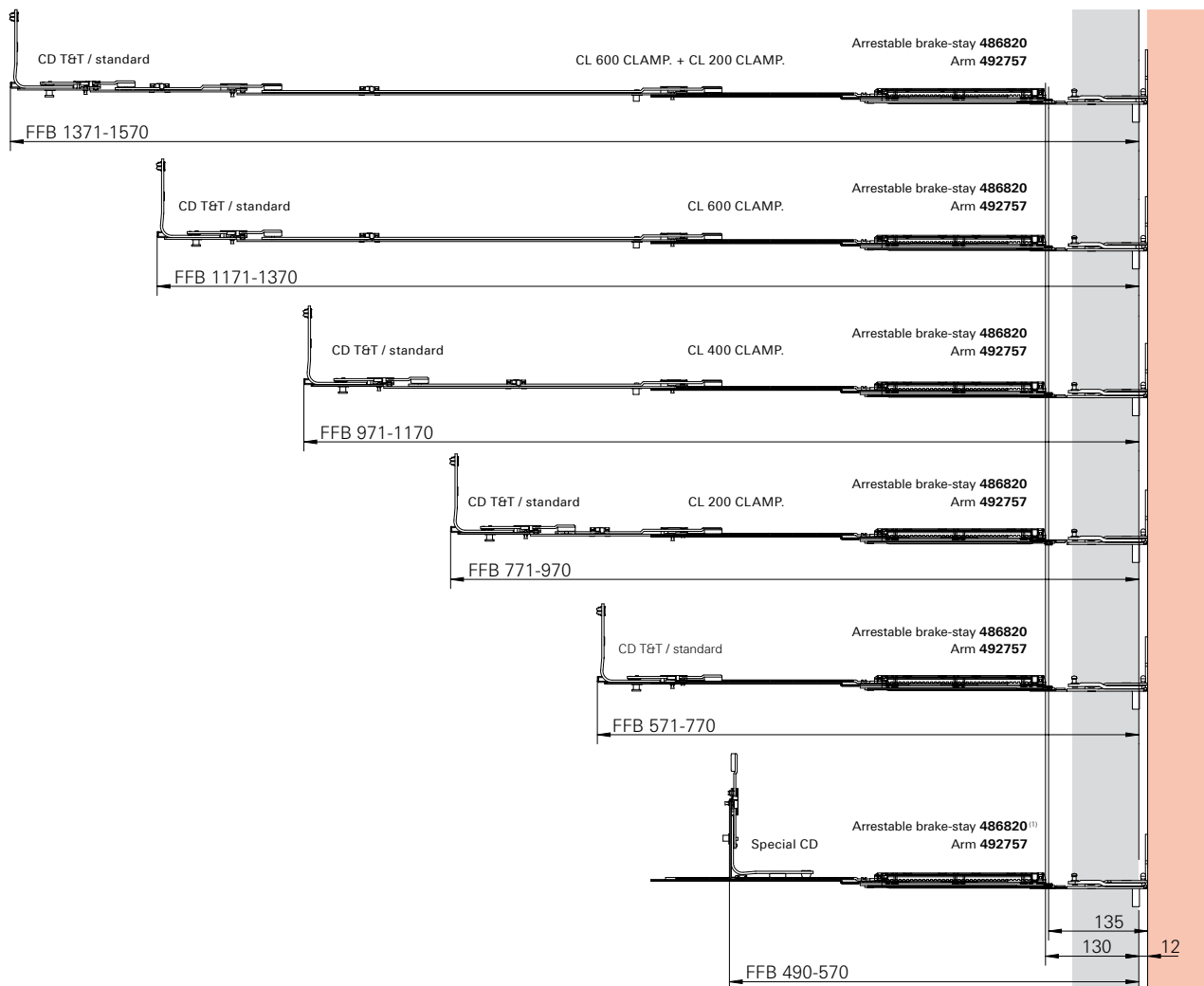
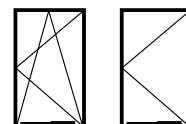
Application ranges and installation dimensions

Hinge side Designo – Turn-Only sash, Tilt&Turn sash



Application range

Sash Rebate Width (SRW) 571 – 1570 mm



Application ranges and installation dimensions Designo hinge side – Turn-Only sashes and Tilt&Turn sashes

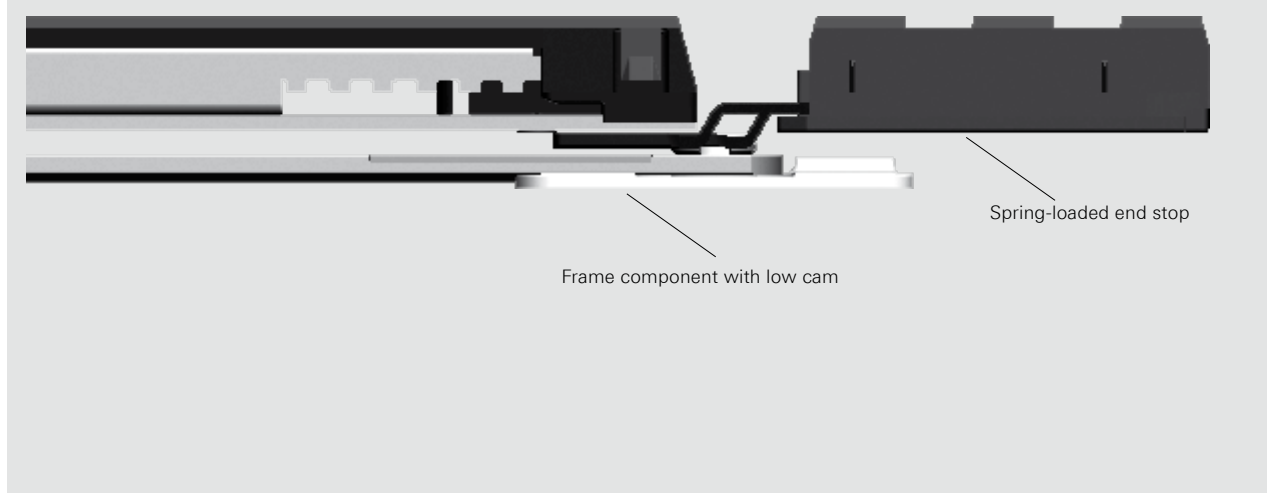
Sash Rebate Width (SRW)/mm	Corner drive	Centre lock	Arrestable brake-stay	Arm	Frame dimension	Sash dimension
490 – 570 ⁽¹⁾	Special corner drive		486820	492757	135	130
571 – 770	Corner drive T&T / standard	–	486820	492757	135	130
771 – 970	Corner drive T&T / standard	Coupleable CL 200	486820	492757	135	130
971 – 1170	Corner drive T&T / standard	Coupleable CL 400	486820	492757	135	130
1171 – 1370	Corner drive T&T / standard	Coupleable CL 600	486820	492757	135	130
1371 – 1570	Corner drive T&T / standard	Coupleable CL 600	486820	492757	135	130
		Coupleable CL 200				

⁽¹⁾ Only Turn-Only sash.

Spring stop for arrestable brake-stay

Spring-loaded end stop for installation behind the sash part of the arrestable brake-stay

Use of the spring-loaded end stop 491797 is possible only with low cam (currently possible only with frame component 491798). According to the available space and the hinges, the maximum opening angle may deviate.

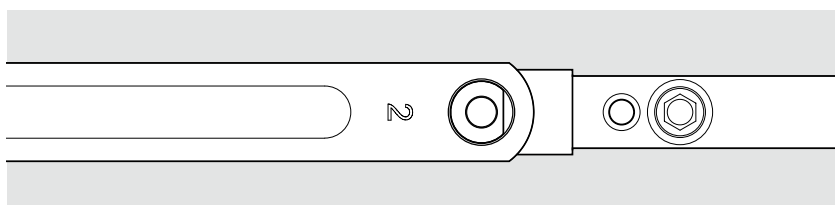
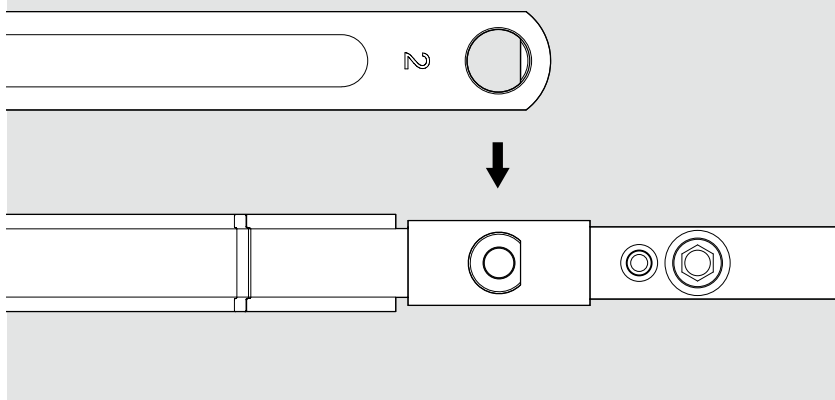


- The screw-fixing of the spring-loaded end stop must penetrate at least 2 profile walls or the reinforcement profile.
- For PVC profiles, the screw-fixing of the frame component should be carried out in the reinforcement profile.

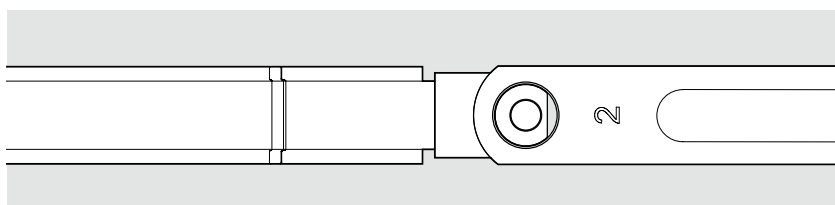
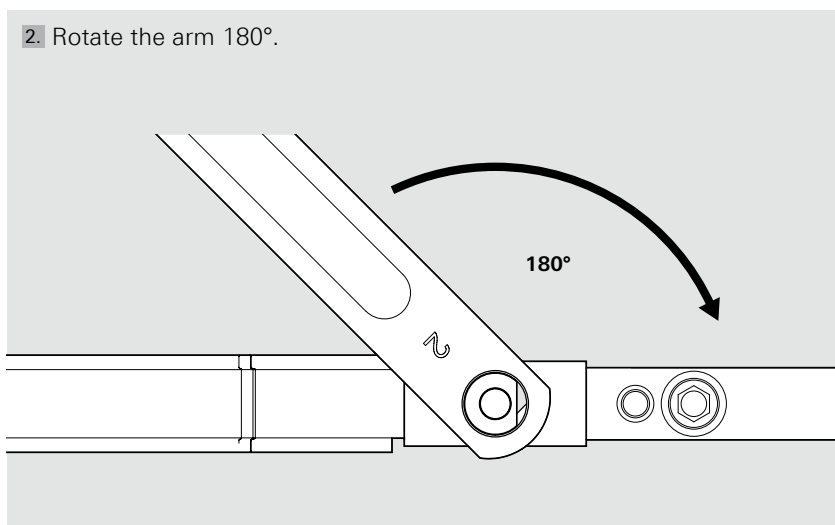


Information on hinging scissor-stay arm

1. Place the scissor-stay arm on the arrestable brake-stay using the alignment aid.



2. Rotate the arm 180°.

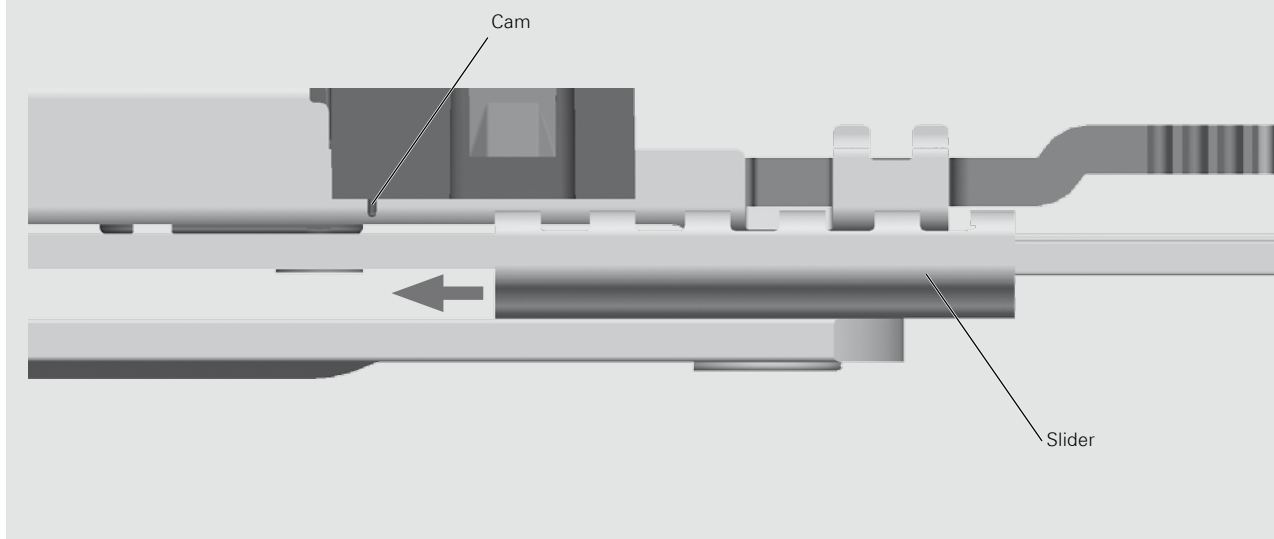


Releasing the slider

Adjusting the centre position

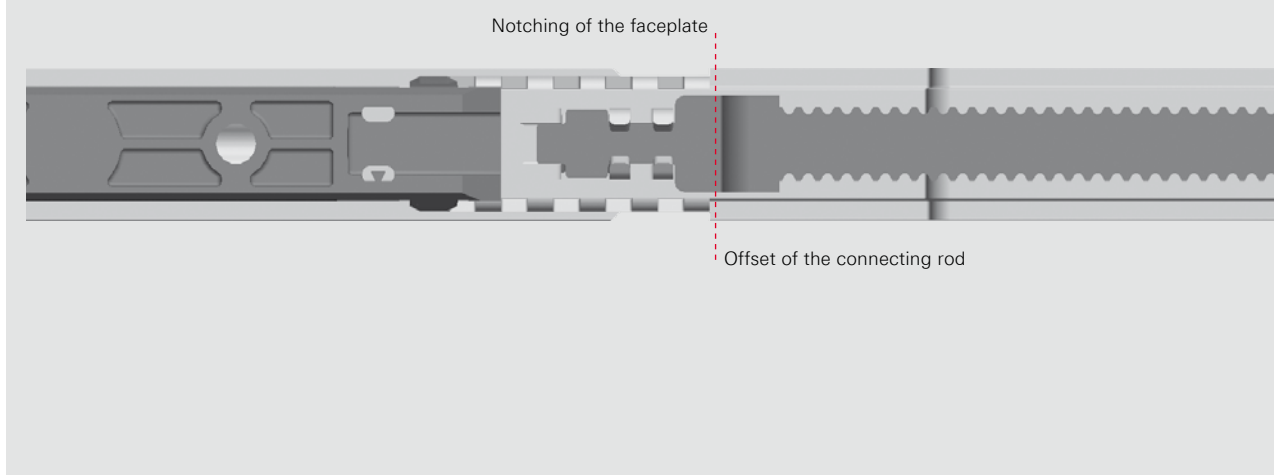
Releasing the slider

For releasing the installation security device, move the slider from the end position with a jerk; in doing so, knock off the cam (←→). Then hinge the scissor-stay arm on the frame component.



Adjust centre position (if centre-fixing is released)

With released centre-fixing, the centre position of the connecting rod can be achieved by positioning the offset of the connecting rod on the notching of the faceplate.





Profile-related components

Manufacturer	Profile system	Profile number	Arrestable brake-stay frame component	Remark
Aluplast	Aluplast Ideal 2000		477848	
	Aluplast Ideal 3000		477848	
	Aluplast Ideal 4000	230	490128	
	Aluplast Ideal 5000	230	490128	
	Aluplast Ideal 6000	230	490128	
Brüggmann	AD 13		477848	
	MD 13		477848	
Dimex	Dimex Contour		477848	The keder profile has to be milled around or pressed down.
Gealan	Gealan S 3000		477848	
	Gealan S 7000		477848	
	Gealan S 8000		477848	
Inoutic	AD/MD 13	207	490133	
	Favorite AD 13	207	490133	
	Prestige AD/MD	207	490133	
KBE	AD		477848	
	MD	212	477849	
Kömmerling	EuroFutur		477848	
	Eurodur MPF		477848	
Rehau	S 730		477848	
	S 735		477848	
	S 796		477848	
	S 799		477848	
Salamander	2D/3D		477848	
	2D/3D/SL 76/MD 13		477848	
Schüco	CT 70 AD/MD		477848	
	CT 70 AD/MD		477848	
Trocal	900	212	477849	
	Innonova 70/2000	260	490159	
	Innonova 70 AD/MD Plus		477848	
Veka	Euroline AD13		477848	
	Softline AD/MD9		477848	
	Softline MD13		477848	
	Topline AD/MD13		477848	
Timber	Euro-rebate 18mm with supporting-pins		337754	
	Euro-rebate 20mm	276	491798	Low cam
	Euro-rebate 20mm with supporting-pins		337754	



Maintenance and operating information

The windows you have produced are equipped with high-quality Roto hardware. This means: ease of operation, perfect function, and high durability.

The precondition for the function and smooth operation of the hardware is the compliance with our regulations concerning sash size and sash weight, as well as our product liability guidelines.

Function and condition of the hardware is to be checked in accordance with the following criteria:

- **Smooth operation**
- **Hardware fixing**
- **Hardware wear and tear**
- **Damage to the hardware**
- **Maintenance**

■ **Smooth operation**

The hardware's smooth operation can be checked by means of moving the window handle. In accordance with DIN 18055, the locking and unlocking moment of the window handle is determined to max. 10 Nm. It can be checked using a torque wrench.

The smooth operation can be improved by **greasing/oiling** or adjusting the hardware.

Roto Tilt&Turn hardware components can be adjusted bi- or trilaterally. Incorrect and/or inappropriate retro-adjustments to the hardware can result in the windows not fulfilling their function anymore.

■ **Hardware fixing**

The window's function and its operational safety depend on the solid fixing of the hardware. Stability and location of the individual screws in the PVC are to be checked. Should it be revealed, that for example screws have loosened or that screw heads have broken off, these are to be tightened or replaced immediately.

■ **Hardware wear and tear**

To protect them against wear and tear, all function-relevant hardware components are to be **greased respectively oiled** according to our specifications.

■ **Damage to the hardware**

Damaged hardware components are to be replaced, especially if they are load-bearing hardware components. The hardware may only be cleaned with a soft cloth and mild, pH-neutral cleaning agent in diluted form. Never use aggressive, acidiferous cleaners or abrasive cleaning agents. This can lead to hardware damage.

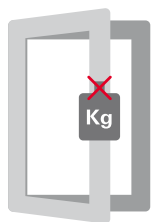
■ **Maintenance**

By means of regular **greasing and oiling** (at least once a year) all operation-relevant components in the sash and frame, you maintain the smooth operation of your Roto hardware and you protect against premature wear and tear. Please use acid free and non resinous grease and/or oil from a specialised dealer.

No legal claims can be derived from these recommendations, the application is to be conveyed for each concrete individual case. Roto Frank AG recommends window-fabricators to make maintenance agreements with their end users.



Safety instructions



Do not burden the sash with additional weight.



Do not insert any objects between the sash and frame.

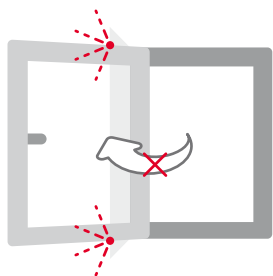


Risk of injury!

There is a risk of injury by catching one's fingers or other body parts in the opening gap between the sash and frame. While closing, do not grasp between the sash and frame.



Do not leave the sash open in the turn mode when it is windy.

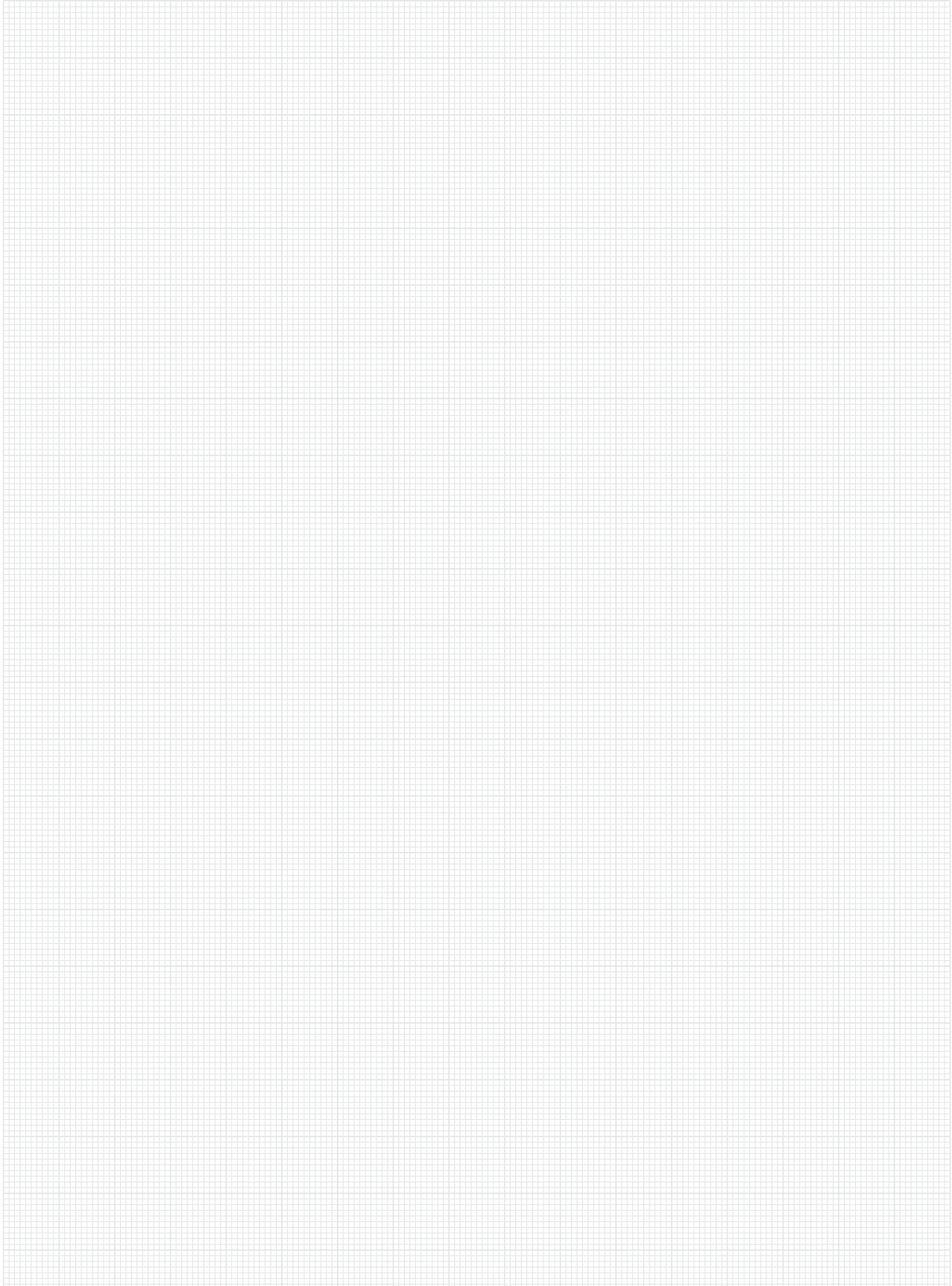


Do not force the sash up against the wall reveal.



Risk of falling out!

Prevent the sashes turn mode where children or other vulnerable people have access to the window. Install a child safety lock or a lockable handle.



Roto Frank AG
Window and door technology

Wilhelm-Frank-Platz 1
D-70771 Leinfelden-Echterdingen
Telephone +49 711 7598 0
Telefax +49 711 7598 253
info@roto-frank.com
www.roto-frank.com



Roto International

All locations and sales partner details at:
www.roto-frank.com

Argentina	China	Great Britain	Mexico	Slovenia
Austria	Croatia	Greece	Poland	Spain
Belarus	Czech Republic	Holland	Portugal	Switzerland
Belgium	Estonia	Hungary	Romania	Turkey
Bosnia and Herzegovina	France	Italy	Russia	Ukraine
Chile	Georgia	Latvia	Serbia	USA
	Germany	Lithuania	Singapore	Vietnam