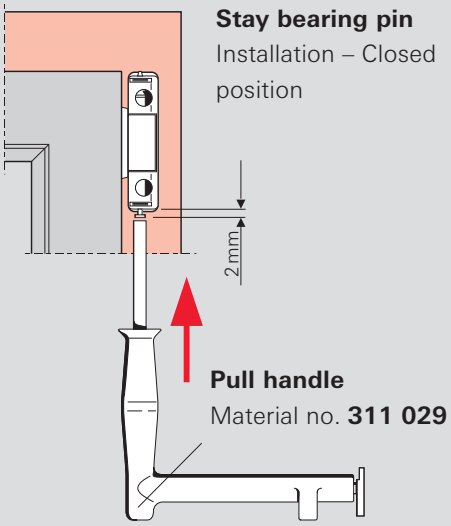
Hinging the sash

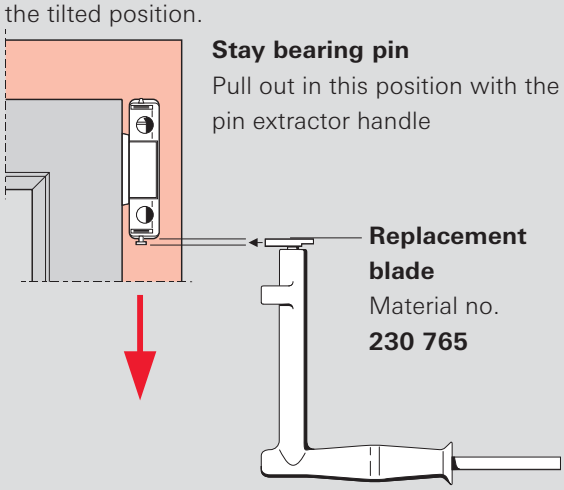
Insert the stay bearing pin with the sash closed and the handle in the tilted position.



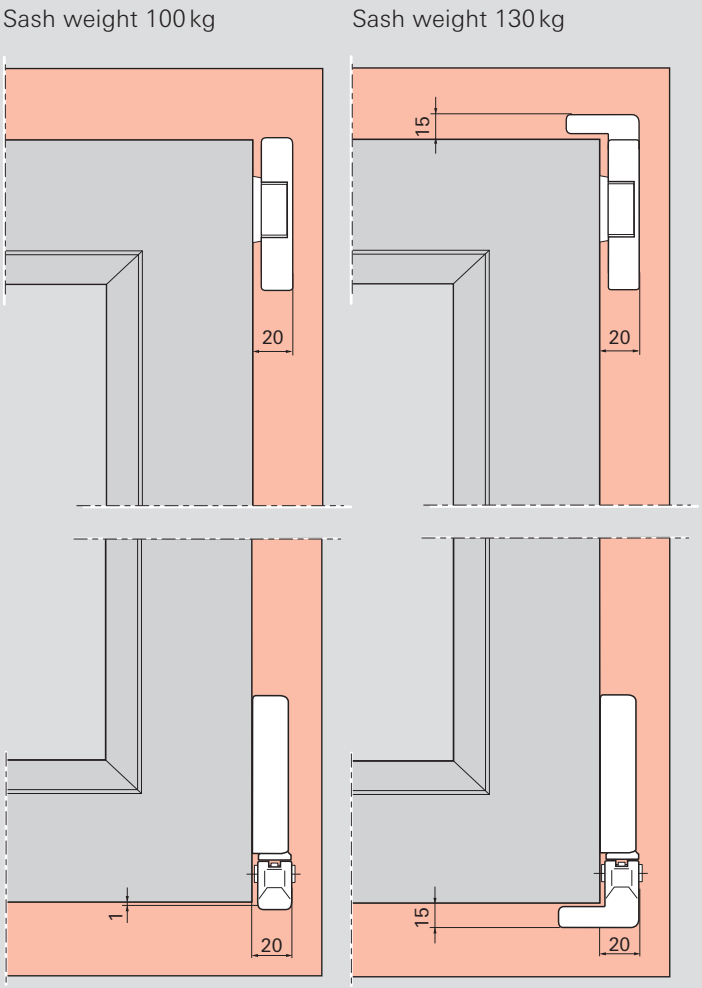
1. Slide in the stay bearing pin manually
2. Push in the stay bearing pin w. the pin extractor handle

Unhinging the sash

Remove the stay bearing pin using the pin extractor handle while the sash is closed and the handle is in the tilted position.

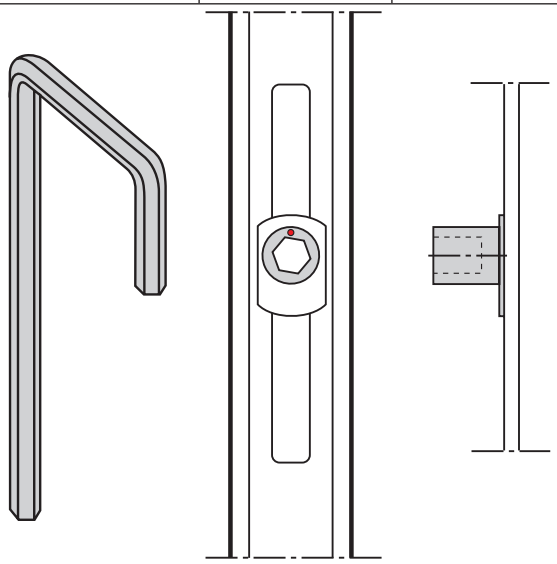


Frame clearances (incl. cover cap)

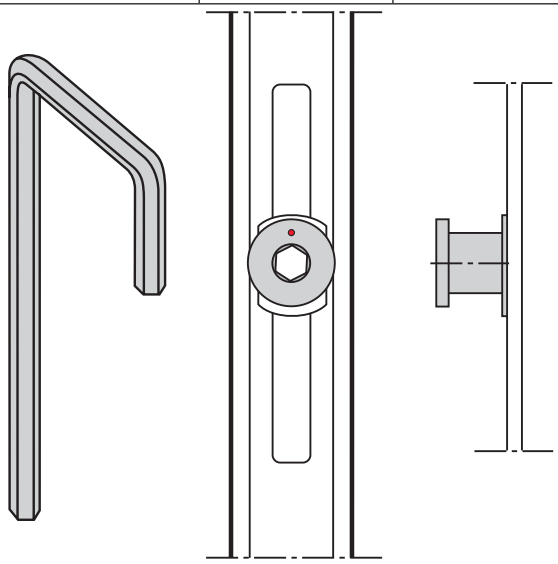


Locking cam adjustment instructions

Locking cam adjustment instructions

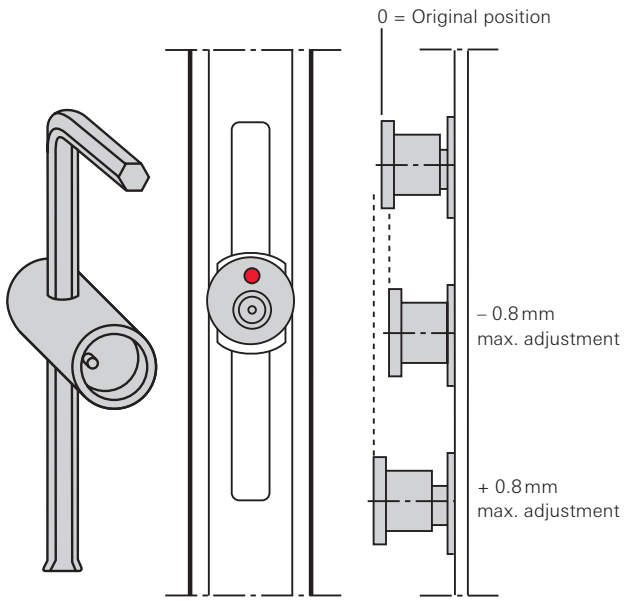
Locking cam E	Adjustment range in °	Gasket-compression adj./mm
	Original position	–
	90° 90°	+/– 0.8
		

Locking cam adjustment instructions

Locking cam P	Adjustment range in °	Gasket-compression adj./mm
	Original position	–
	90° 90°	+/– 0.8
		

Locking cam adjustment instructions

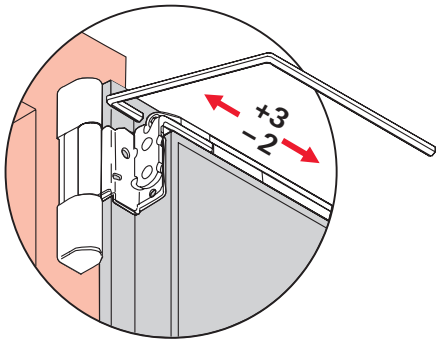
Locking cam V

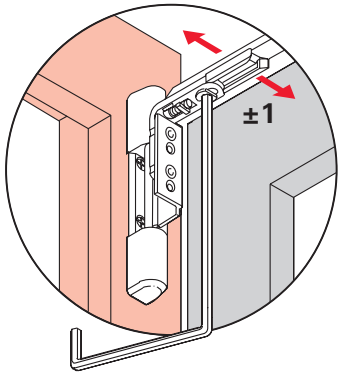


Adjustment range in °	Gasket-compression adjustment/mm	Height adjustment/mm
Original position	–	–
90° 90°	+/– 0.8	+/– 0.2
180° 180°	–	+/– 0.4
270° 270°	+/– 0.8	+/– 0.6
360° 360°	–	+/– 0.8

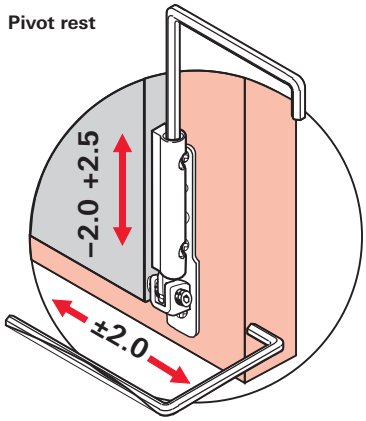
Hinge-side K

Stay bearing



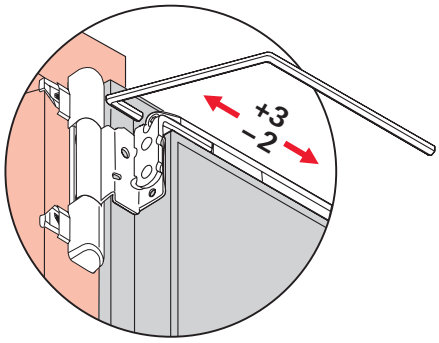


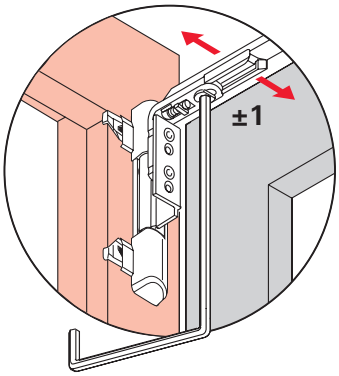
Pivot rest



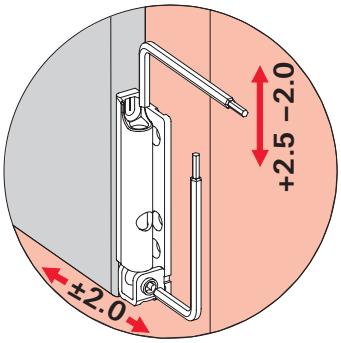
Hinge-side A *

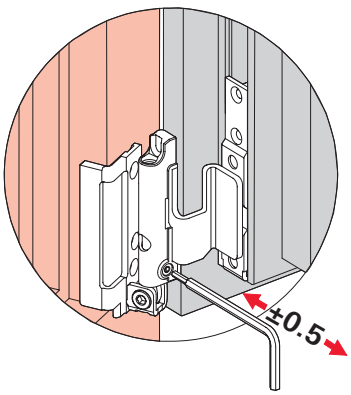
Stay bearing





Pivot rest





The windows you have produced have high-quality Roto hardware.
This means: a high level of 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
- Hardware damage

Smooth operation

The hardware's smooth operation can be checked by means of moving the window handle. The locking and unlocking torque of the window handle is specified in accordance with DIN 18055 (German Industrial Norm) with a maximum value of 10 Newton metres. The inspection can be carried out with a torque wrench.
The smooth operation can be improved by means of **grease/oil** or by adjusting the hardware. Roto Tilt&Turn hardware is designed with 2D/3D adjusting possibilities. 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.

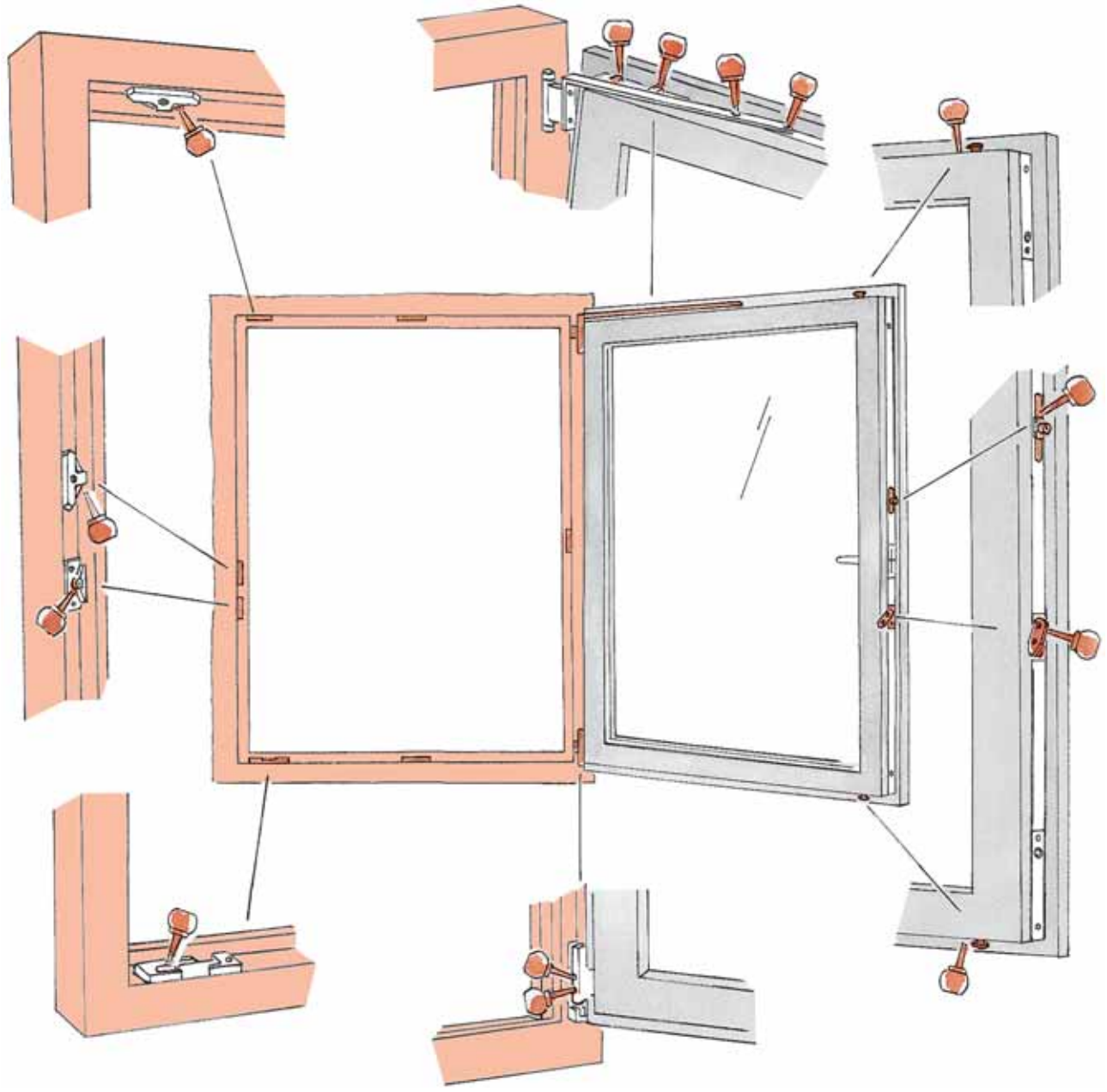
Hardware wear and tear

All function-relevant hardware components are to be **lubricated respectively oiled** in accordance with our information in order to avoid wear and tear.

Hardware damage

Damaged hardware components are to be replaced, especially if it concerns supporting 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.

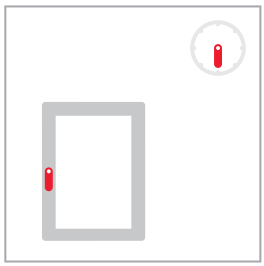
No legal claims can be derived from these recommendations, the application is to be conveyed for each concrete individual case.
Roto Frank AG recommends window-fabricators to make maintenance agreements with their end users.



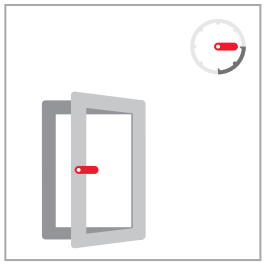
Maintenance

By means of regular **greasing and oiling**(*) (at least once a year) of all operation-relevant components in the sash and frame, you maintain the smooth operation of your Roto hardware and protect against premature wear and tear. Security strikers made of steel require continuous greasing in order to avoid unnecessary abrasion. In addition, the individual screws are to be checked. Possible loose screws or broken off screw-heads are to be replaced immediately by a specialised company.

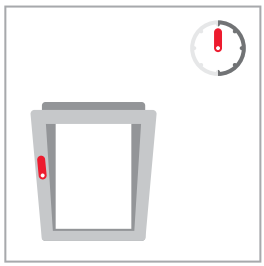
(*) Please use acid free (non-corroding) and non resinous grease and/or oil from a specialised dealer.



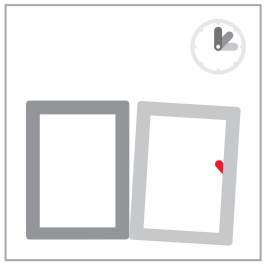
Closed



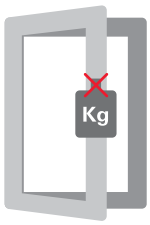
Open



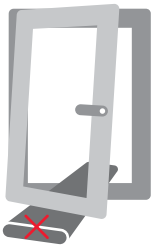
Tilted



Avoid mishandling!

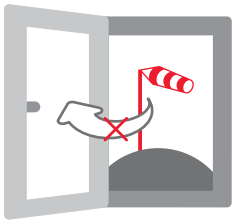


Do not subject the sash to additional loads.

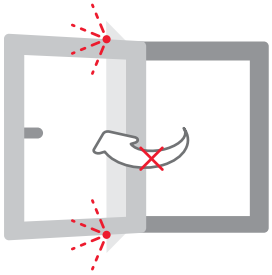


Do not place any objects between the sash and frame.

Risk of injury!
There is a risk of injury by catching one's finger 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 sashes open in the turn-modus during strong winds.



Do not allow the sash to hit or press up against the window reveal.

Risk of falling out!
Where children or other endangered persons have access to the window, the sash is to be safeguarded against turning. Install for example a turn lock (inhibits turn-modus, permits tilt-modus) or a key-lockable handle.