

Window and Door Technology



## Roto NT

The world's biggest selling Tilt&Turn hardware system for windows and balcony doors



## A window can do a lot more than you would think

Windows open up rooms, create an atmosphere and at the same time form the transparent boundary of the living space. To achieve all this, not only must they work perfectly, they must also have as attractive an appearance as possible. After all, windows characterise the appearance of every room in the building. You buy windows to last for decades. This means that it is worthwhile paying particular attention to the quality of the design and the window system. Today's windows can do a lot more than just open and close – they make your home more secure and comfortable, and also save energy.

### All the tasks of window hardware

The hardware is responsible for all a window's functions: opening, tilting, locking and controlling various functions for greater comfort and security. A window without hardware would be a motionless frame with a pane of glass. On the other hand, the individual components of window hardware conceal state-of-the-art technology.

### Roto: Brand name quality from the inventors of Tilt&Turn

Roto's founder Wilhelm Frank was one of the first people to focus intensively on technology of window hardware. He became a pioneer with the first industrially-produced Tilt&Turn hardware in 1935. Today, Roto is synonymous with innovative window technology that's geared towards comfort, security and design, and the biggest-selling Tilt&Turn hardware in the world.





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## Roto has the right solution for every room and to suit all requirements

### 1 Ground floor: Security

The freely accessible windows on the ground floor are preferred targets for intruders. Swing hooks, reverse-action centre locks, lockable handles and intelligent, electromechanical solutions allow you to incorporate the highest level of burglary protection.

### 2 Living room: Designo

The hardware with no visible technology fulfils the strictest design demands and, thanks to its wide opening angle, allows an uninterrupted view to the outside.

### Comfortable balcony and terrace doors

If the balcony door is open, furniture and decorations can be damaged by a gust of wind. Balcony doors that slam suddenly leave behind ugly dark marks on curtains. Roto has this base covered also, and has developed solutions to tackle it.

### 3 Safer children's rooms

Children at play can easily open windows and put themselves at risk. With the new "Tilt before Turn" technology, Roto offers the safe solution for young explorers. When the handle is locked, the window can only be tilted.





**4 Automatic air exchange, e.g. in the bathroom**

When someone takes a shower, the bathroom often becomes very humid. Yet in the morning rush, there's usually no time to ventilate it. Roto E-Tec Drive allows regular, automatically controlled ventilation. Mould has no chance.

**5 Ventilation as required in the bedroom**

When the window is tilted, the room often cools down greatly during the night in winter, whereas in summer the ventilation might not be sufficient. An additional hardware component, the arrestable ventilation stay, makes the tilt position variably adjustable.

**6 Greater comfort, for example in the study**

Roto eliminates tiresome stretching in order to open the window. Wherever a window is difficult to reach, the Roto comfort window makes operation easy.

**7 Sliding windows in the kitchen**

In comparison with a tilted window, these allow wide opening for a speedy exchange of air. They also take up less space when opened: Window sashes don't jut into the room.

## Only a secure home creates a sense of security

### How to make life difficult for the light-fingered

Your home should be a place to relax and feel at ease. But you can only do that if you know that unwanted guests are being kept outside. In Germany, a house or apartment is broken into every four minutes. Windows and terrace doors on the ground floor are particularly vulnerable. The frame or the hardware is jimmied out in around 70% of burglaries via windows.

This is where the right security technology comes in, because unsuccessful break-in attempts are usually aborted after only a few minutes. When it comes to security, put your trust in Roto.

### Roto provides the best protection for windows and balcony doors

The current security standard for "burglar-resistant windows and doors" makes a distinction between three resistance grades for residen-

tial construction (RC). And at the same time, it imposes strict requirements on the entire window system.

In terms of the hardware, Roto NT meets the requirements with aplomb. Even the basic version of Roto NT hardware comes with a high level of basic security. For stricter security requirements, you should consult your windows expert as early as in the planning stage. Roto can provide the right protective mechanisms for precisely these applications.

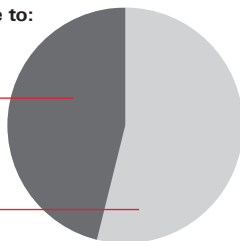
### Technical security

is the reason why almost half of all attempted break-ins fail.

#### Break-in aborted due to:

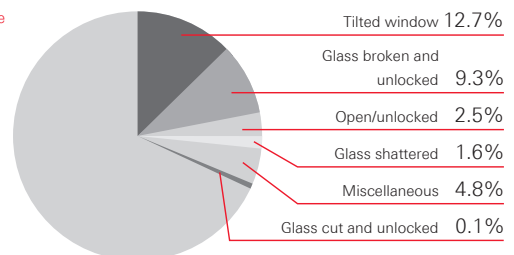
Security measures  
45.3%

Other reasons  
54.7%



### Breaking into apartments via the window.

Jimmied frame  
69.0%



### Burglars preferred routes into single-family houses

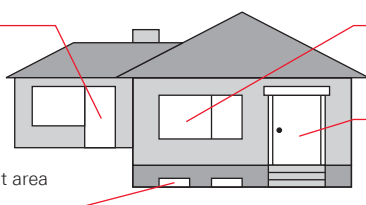
Balcony doors  
52.0%

Windows  
26.5%

Main doors  
13.9%

Basement area  
7.0%

Miscellaneous  
0.6%



### Protection made to measure – the European Burglary Resistance Grades

#### Burglary Resistance Grade 1 (RC1N):

Basic protection against physical force, for example kicking and heaving.

#### Burglary Resistance Grade 2 (RC2 / RC2N):

Protection against burglary tools such as screwdrivers, pliers, and wedges.

#### Burglary Resistance Grade 3 (RC3):

Additional protection against tools such as crowbars.



## Roto NT: a high level of basic security to the highest protection

Even in the basic version, Roto NT provides a high degree of security and so provides better protection against attempted break-ins right from the start. **Additional mechanical and electronic security elements** can be integrated on an individual basis – for maximum security and protection against break-ins, as well as against dangers such as fire, gas and water.

### 1 Steel hooks for windows and balcony doors

The hardened steel hooks engage like swing hooks securely from above or below into the sturdy steel strikers in the frame. For optimum protection. A hook construction taken from the “high security main door” field makes a window or balcony door as secure as a main door.

### 2 Reverse-action centre lock

Two mushroom cams simultaneously engage both sides of the security striker.

This locking mechanism provides effective protection against attempts to jemmy out the window by forcibly heaving it at the side.

### 3 Security handles

The lockable window handles variant provides security if somebody attempts to displace the entire hardware from the outside. The Roto Swing Secustik® window handle (see fig. 3) is the most attractive way of achieving security on windows, as it is not visible. A special mechanism prevents violent manipulation of the window handle from the outside. Simply beautiful: Neither a push-button nor a cylinder lock detracts from the design.

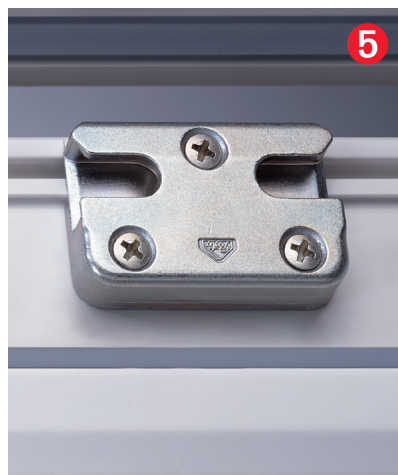
#### Mechanical security systems for different resistance grades







**Security locking cams with a mushroom head**  
 provide high security in conjunction with security strikers



## Roto's child safe window – simply reassuring

Windows open up the world for us. But for small explorers, they can also pose a risk. A friend's calling from outside. The child, while still concentrating on something else, opens the window, leans out and already it's too late. Roto has thought of this and has developed a special type of technology – "Tilt before Turn" – to cover it.

### An intelligent safety mechanism

The so-called „TiltFirst“ technology from Roto locks the window sash in the tilt mode, with the handle in the horizontal position. The lockable handle thereby prevents the possibility of changing from tilting to turning in order to fully open the window.

The handle can only be unlocked with a key.

### Safe ventilation

Whether the window is open or closed – it can only be fully opened by someone with the key. And it goes without saying that the key must be kept out of the hands of children. This increases safety and, at the same time, permits safe ventilation in the tilted position for a regular exchange of air. If the children's room is to be used at a later date for some other purpose, the safety latching can simply be removed.

- 1 Tilt ventilation
- 2 Open in the turn position after unlocking





## Greater comfort for balcony and terrace doors

Balcony and terrace doors are frequently used exit routes. So why shouldn't they have some added comfort? Roto NT makes windows and terrace doors even easier to use.

### **Ideal for terrace/balcony doors – the magnetic bullet catch**

A touch of the balcony door is enough: The sash closes over gently and independently, attracted by magnetic force. The magnetic field ensures a secure hold even without using the handle lock.

You'll appreciate this added comfort particularly in the summer when you often use the balcony door to go outside. Slamming of the sash is prevented, even when it's windy.

### **No more lubricant marks on the curtains**

If you don't lock an ordinary terrace door, a curtain can get trapped when there's a sudden gust of wind, and can get dirty from the lubricants, or even damaged. The Roto magnetic bullet catch however needs no lubricant and is also not subject to mechanical wear.

### **The magnetic bullet catch**

The perfect closure: gentle and quiet





**The arrestable brake-stay**  
Eliminates the need for makeshift measures like this

### **The arrestable brake-stay fixes the sash**

This Roto NT comfort component lets you lock the balcony door in any turn position you want by moving the handle into the vertical locking position – providing a simple yet secure hold, even when there's a sudden gust of wind.

## Effortless opening – the Roto 'Comfort' window

Roto's aim is to make everyday living more pleasant. Which is why we have developed intelligent solutions. One good example: the Roto NT 'Comfort' window. Its special handle simplifies the opening and closing of hard-to-reach windows.

### **Tilting and closing windows without arduous stretching**

In studies, large desks often impede access to the window; in the kitchen it's the base units or utensils. The Roto NT 'Comfort' window is the ideal solution here: Everything from the intelligent placement of the handle, its special shape and function, to the integrated positive control.

### **Simple and comfortable operation**

The handle of the Roto 'Comfort' window is fitted horizontally at the bottom of the window. This makes it easy to reach even when you're sitting down. It is also longer than a standard handle, which means that its lever arm is larger. This makes even larger and heavier windows effortless to operate. The integrated positive control automatically moves the window into the tilted position, which significantly reduces the manual effort needed.



#### **The 'Comfort' window**

The specially shaped handle is positioned horizontally at the bottom of the window



## Correct ventilation made easy

Achieving the right ventilation in rooms isn't just a matter of comfort, because fresh air is healthy. When outside temperatures are frosty, excessive ventilation or draughts can cause discomfort. Roto has a flexible solution for this problem too.

### **The arrestable ventilation-stay: variable ventilation in the tilted position**

The arrestable ventilation-stay lets you variably adjust the tilt range of your windows.

Taking a bedroom window as an example, this means: less risk of catching a cold in winter, and sufficient fresh air in summer.

### **Integrated at no additional charge: the anti-slam device**

The anti-slam device prevents windows from slamming suddenly due to a draught when, for example, a door is opened on the opposite side of the apartment.



### **Arrestable ventilation-stay**

Rotating the handle through 45° enables the window sash to be fixed in any desired tilting position. The anti-slam device automatically locks the tilted window in place







**The elegant shape of the tilt ventilation**

E-Tec Drive lies concealed in the hardware and cannot be seen from the outside. This means that the living ambience remains unaffected.

Automatically improve the room's climate with E-Tec Drive. Windows that take care of ventilation themselves – day in, day out. Reliably and as needed: E-Tec Drive makes it possible. Your window is automatically tilted at a set time and is securely locked again when closed.

It can also be opened manually at any time, and then closes automatically after a certain time. To prevent mould from growing, particular attention should be paid to ventilation in the bathroom. Yet this is often overlooked in the morning rush. E-Tec Drive does this job.

## Elegant: Roto NT Designo, the aesthete amongst window hardware

### Owners of attractive homes also want attractive window designs

Energy-saving windows and windows with large glass surfaces are in growing demand. At the same time, there is also a growing preference for aesthetic shapes and slim-line profiles.

### Roto NT Designo meets the strictest design demands

Only the handle is visible. No hinges visible from the outside, no cover caps to come loose, nothing disturbs the appearance of the window. In addition to which you also save time when it comes to window cleaning. The wide sash opening is also unusual: With Roto NT Designo you can open your window to a maximum angle of 100 degrees, giving you an uninterrupted view outside.

**A wide field of vision**  
Roto NT Designo can be opened up to 100 degrees

**High security**  
thanks to a tapered T-entry and anti-jimmy protection



### A well thought-through security concept

Roto NT Designo offers outstanding burglary protection for concealed hardware up to a burglary resistance grade of RC2 / RC2N according to DIN EN 1627-1630 – with security components like anti-jimmy protection in the corner hinge and a T-entry in the tilt mechanism.

### The challenge: high stability and an attractive design

Large sash elements with multi-glazing for improved thermal insulation or soundproof glazed surfaces are attractive but at the same time heavy. Sash weights of over 100 kg are not uncommon. That's why the demand is for unobtrusive hardware for "elegant heavyweights", without visible hinges, stable and easy to install.



### The solution: Roto NT Designo 150 kg

The completely concealed hardware for especially large and heavy sashes weighing up to 150 kg. The decisive advantage: Only two additional special components (also invisible from the outside) are enough to achieve the highest weight stability in conjunction with the NT Designo standard hardware. And retrofitting is no problem at all. One simple tool is all that's needed.

**Maximum stability for sash weights**  
of up to 150 kg thanks to the robust load transfer device





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**From a single source: Optimum hardware systems to meet all challenges:**

- Roto Tilt&Turn** | The Tilt&Turn hardware system for windows and balcony doors
- Roto Sliding** | Hardware systems for large sliding windows and doors
- Roto Door** | Matching hardware technology "everything about doors"
- Roto Equipment** | Additional technology for windows and doors