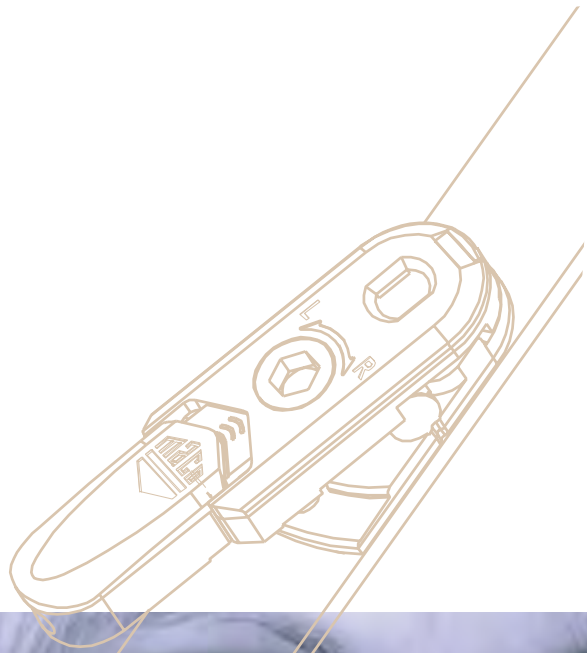


TECHNOLOGY IN MOTION



**MACO**  
**MULTI-MATIC**  
TURN AND TILT & TURN FITTINGS



Your Window Makes a Difference!

THE NEW GENERATION  
OF FITTINGS



## We bring Benefits to Your Customers



### **Sophisticated Design.**

Studies have shown that consumers increasingly have an eye for design and beauty. We put the finishing touches to your windows with a sophisticated fittings design and a range of additional features.

### **Durable, Reliable Operation for many Years.**

Quality and Functionality are at the top of every window-buyer's list of priorities.

### **Energy-Saving features and tight sealing.**

Tight sealing is essential for any window. We want to raise window-buyers' awareness of the energy they can save by using specific ventilation features.

### **Security against uninvited Guests.**

Window-buyers are still not familiar enough with those elements which can resist break-ins. The MACO MULTI-MATIC offers your customer various types of security.



## The Benefit to You as a Window Manufacturer



### **Easy-to-handle Fittings save Time and Money!**

Quick assembly thanks to a sophisticated coupling system, saving time and money. Compatible fitting parts can also be installed for special designs.

### **Many Different ways of fabrication.**

This fitting system allows you to use various types of fabrication technology, from manual assembly through partial automation right up to unmanned, fully automated fabrication technology.

### **Packaging Savings.**

The new packaging system has been designed so that less packaging material is needed. Removal of the packaging from the fitting is quick and simple.

### **Logistical solutions for the Fabrication Location.**

The correct fitting equipment and a permanent supply to the fabrication site, without excessive downtime, are essential criteria for the smooth running production of windows.



## Fitting Design



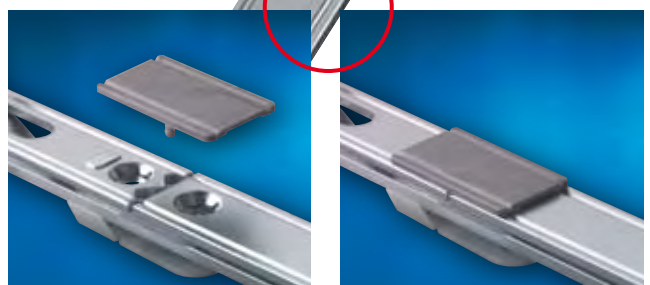
The sophisticated design, with a uniform silver-look surface and linear recesses on the faceplate, give the fittings an elegant, and slim line look.

### The Fitting Design

- Uniform silver-look surface
- Linear recesses on the faceplate give the fitting parts an elegant, and slimline look.
- Rounded edges on the striker plates and sash lifter provide a smooth contour.

### Connecting Edge Cover

- The connecting edges are covered, providing protection against corrosion and visual enhancement.



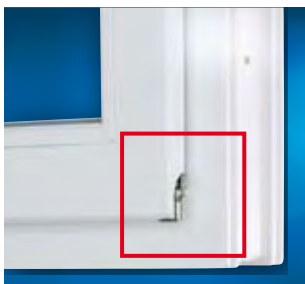


## Appearance of the Window



Concealed corner and stay hinges particularly enhance the appearance of any window. But there are also solutions for the visible hinge parts, in the form of coloured cover caps which will enhance any window. Just right for customers looking for something special.

### Does this window have no fitting?



#### MULTI MATIC TV

Partially concealed top and bottom hinges.

- Minimal free sizes.
- Special tilt & turn shapes also available.
- Opening angle up to 180°.

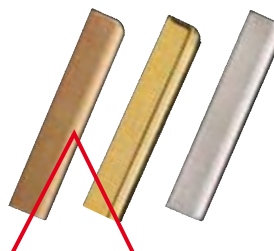
#### MULTI MATIC VV

Fully concealed corner and stay hinges.

- No milling of the sash or frame.
- Minimal free sizes.



### Matching covers



Covers for top and bottom hinges are colour coordinated to match your window handle.



## Long life



For many years, MACO has been the only fitting manufacturer to produce tilt-turn drive gears with a fixed safeguard against faulty control. Now the sash lifter has been improved even further.

### The Sash Lifter

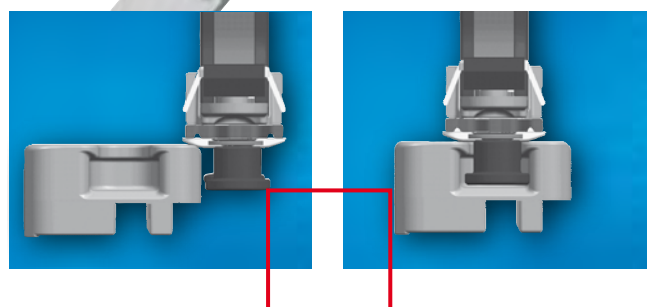
- Guarantees long life.
- Prevents mis-handling.
- Lifts the sash into the correct position without much effort thereby requiring little adjustment.
- Even heavy sashes can be closed easily, ensuring improved operation for years to come.
- Fixed to the gear – no additional part.
- Can be used for left and right handed windows.
- Height adjustable.

### Door Snapper for Balcony Doors

Reduced force as the door snapper is not active when in the tilt position. Individual height adjustable.

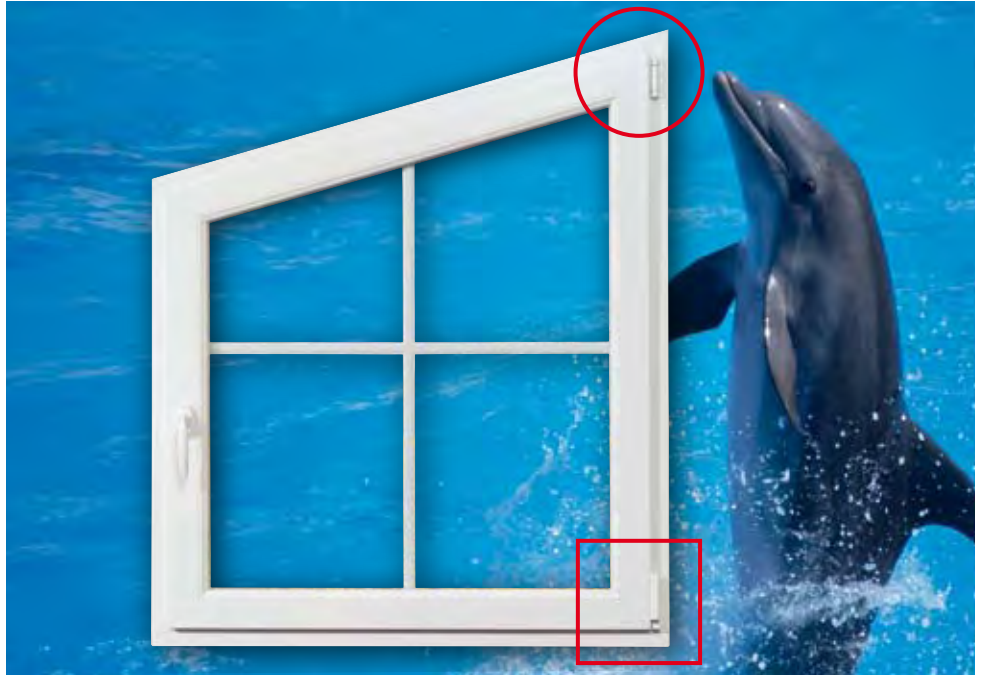
### Over-run component at the bottom

- Fixed as standard.
- Guarantees free run into the striker plate.
- Safeguards the function if a window is not properly positioned.

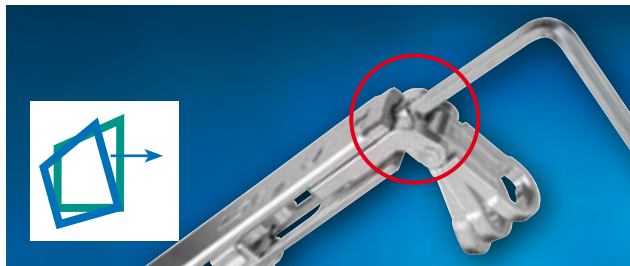




## Easy to Use

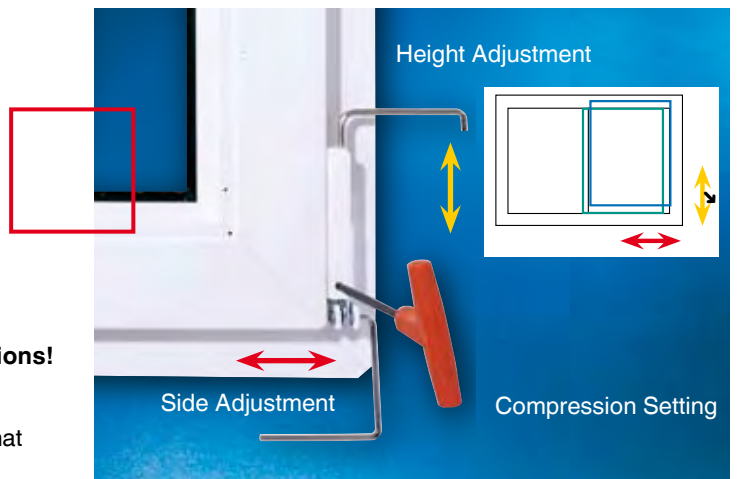


### Options for regulating at the Stay



The top hinge on angled windows has the same regulating areas as the top hinge on standard windows.

*Side Adjustment*

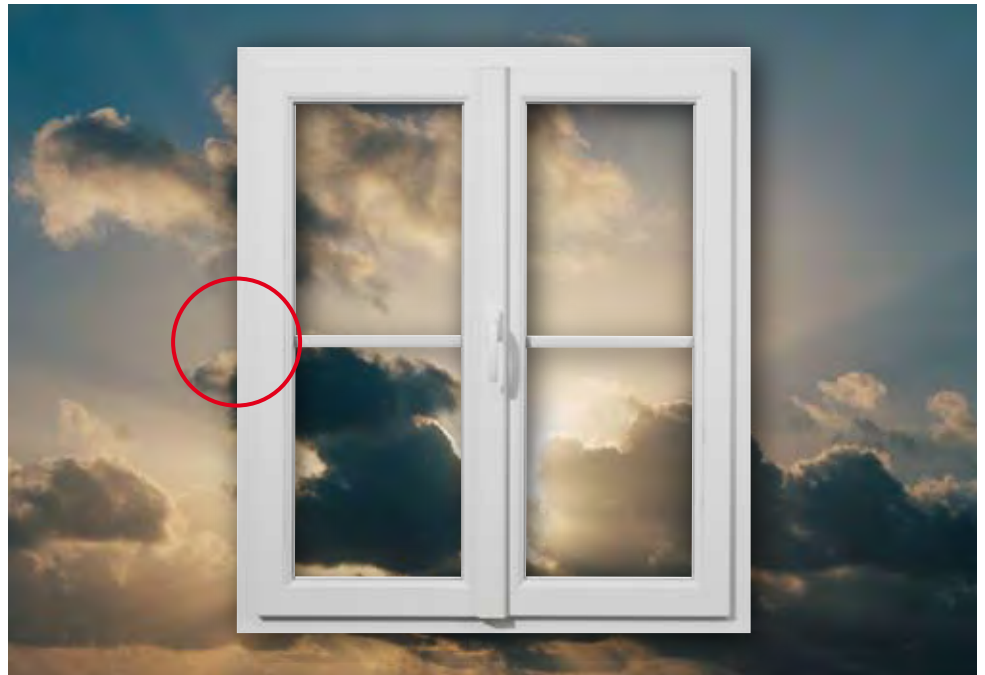


**Corner hinge can be regulated in 3 directions!**

So that you give your customers a window that provides complete satisfaction.



## Easy to use and Tightly Sealed

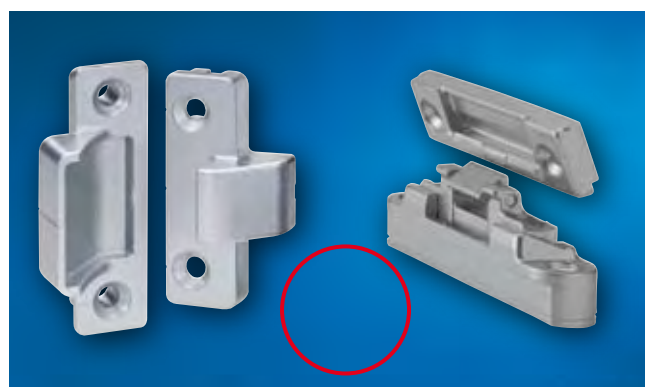


The contact pressure can easily be adjusted with i.S. cams; they seal your window tightly, save costs, ensure satisfied customers and allow you to stand out from the competition.



### Beautiful and perfect: compression lock on double-sashed elements

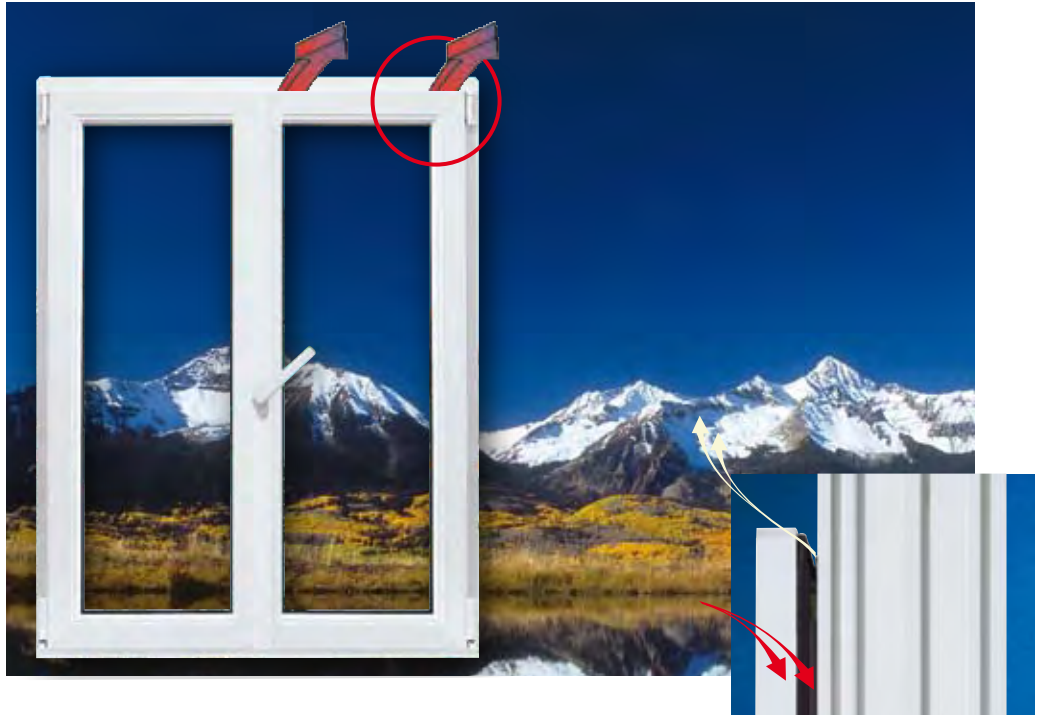
- Beautiful, because the compression lock is not visible on the turn sash.
- Perfect, because this component locks even when the air gap does not exactly fit, so that no re-adjustment is needed.
- Compression locks can be used on both left and right sides.







## Save energy with the Night Ventilation Stay



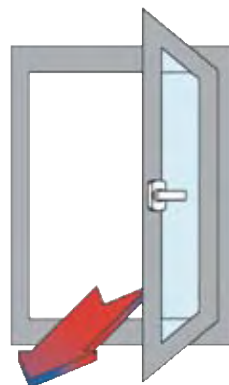
### Additional tilt setting for night ventilation

- Functions entirely in the stay – no additional part.
- When switching to the tilt setting, the sash stands out approx. 10–13 mm at 45°, according to size.
- Easy to operate.
- Anti-slam device fixed into the tilt setting.
- Large stay pull in distance (at least 21 mm), even with narrow windows.
- Just right for those months when the outside temperature never falls below 0°. The ventilation setting is not affected by draughts or wind.



### Summer Ventilation

or tilt setting for permanent exchange of air with minimal difference between the air inside and outside



### Intensive Ventilation

for a quick exchange of air. The window should not remain unattended! Danger of damage by wind and draughts.

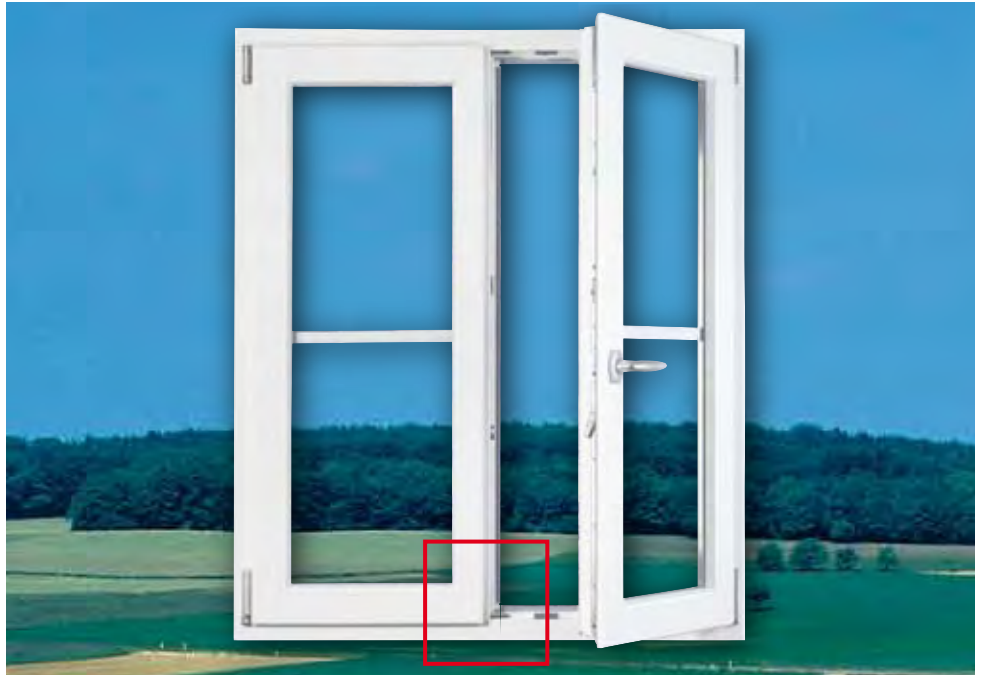


### Night Ventilation

Just right for the months when the outside temperature never falls below 0°. The ventilation setting is not affected by draughts or wind



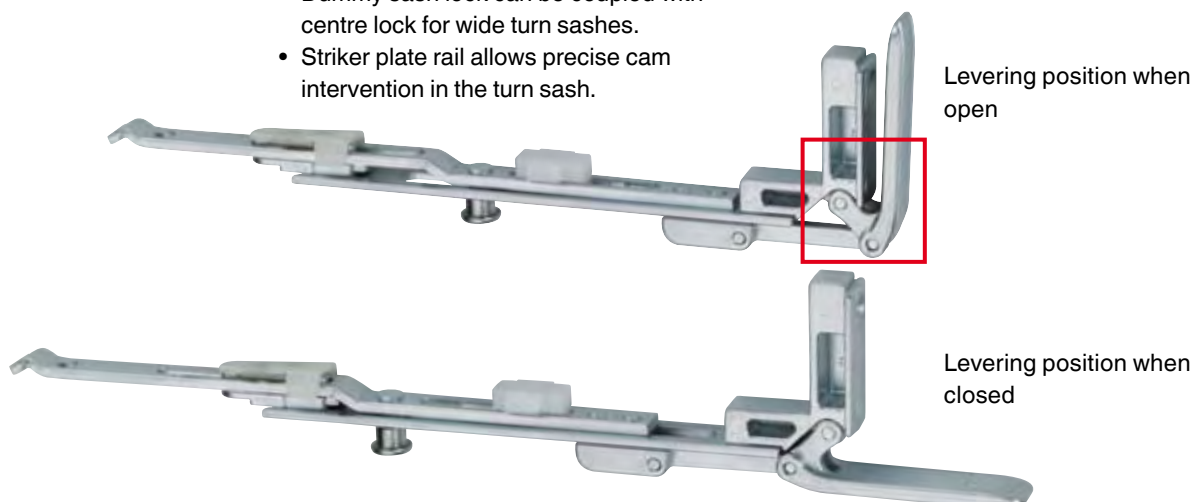
## Practical solution for double-sash Windows



The new dummy sash lock is easy to reach and can be opened without effort, furthermore the dummy sash lock can be coupled with the centre lock, making it suitable for security windows.

### Horizontal dummy sash lock

- Proven security for double sashed windows, also without dummy sash gear.
- Standard or EH (certified as resistant to break-in) striker plates can be used.
- No shootbolt striker plates needed.
- Dummy sash lock can be coupled with centre lock for wide turn sashes.
- Striker plate rail allows precise cam intervention in the turn sash.





## Comfortable and secure



### Dummy sash gear

– the solution for  
comfort windows

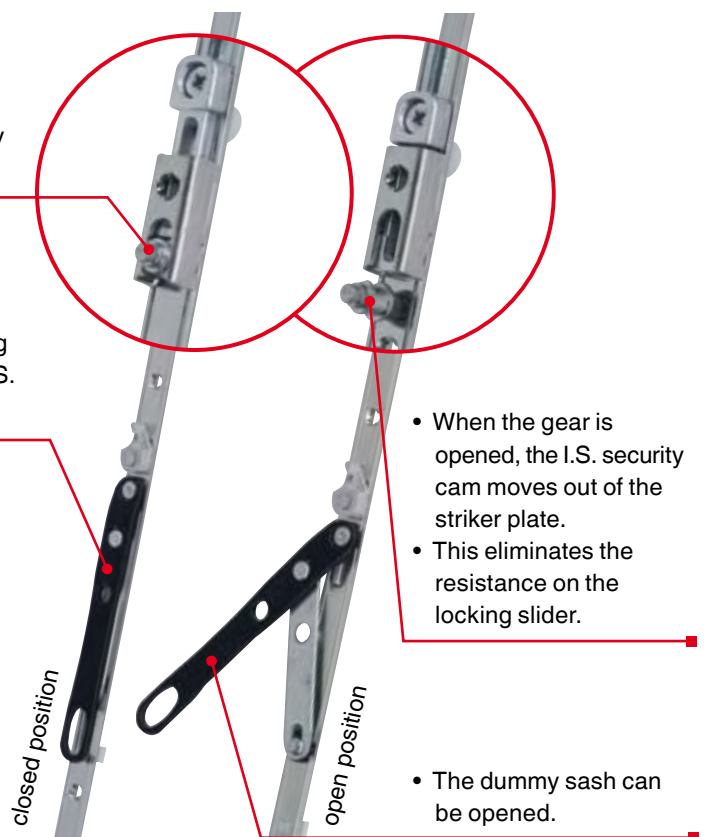
- Easy to assemble.
- Comfortable to operate.
- Only two component parts in the sash.



### Dummy sash gear with resistance to break-ins

The i.S. security cam of the gear engages into the striker plate of the dummy sash gear.

Outward opening is not possible since the locking slider is blocked by the i.S. security cam.





## Secure against Intruders



### Who breaks in, where and when?

The old saying “opportunity makes a thief” applies perfectly to burglars and intruders who spontaneously look for properties which are easy to break into.

Burglaries normally occur during the day between 12pm and 8pm. Statistics show that over 80% of the time the intruder’s path leads through the window or

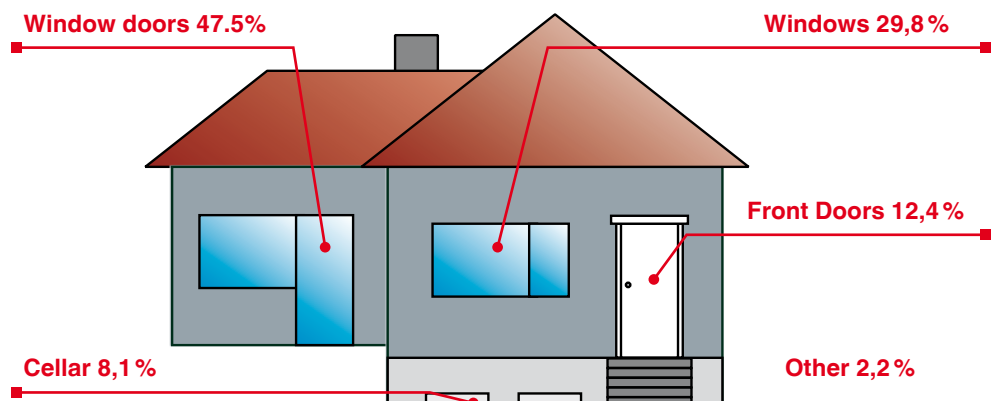
patio door and not, as is mistakenly believed, through the front door of a house or flat.

### How do they break in?

Intruders can lever out a window relatively quickly using simple tools.

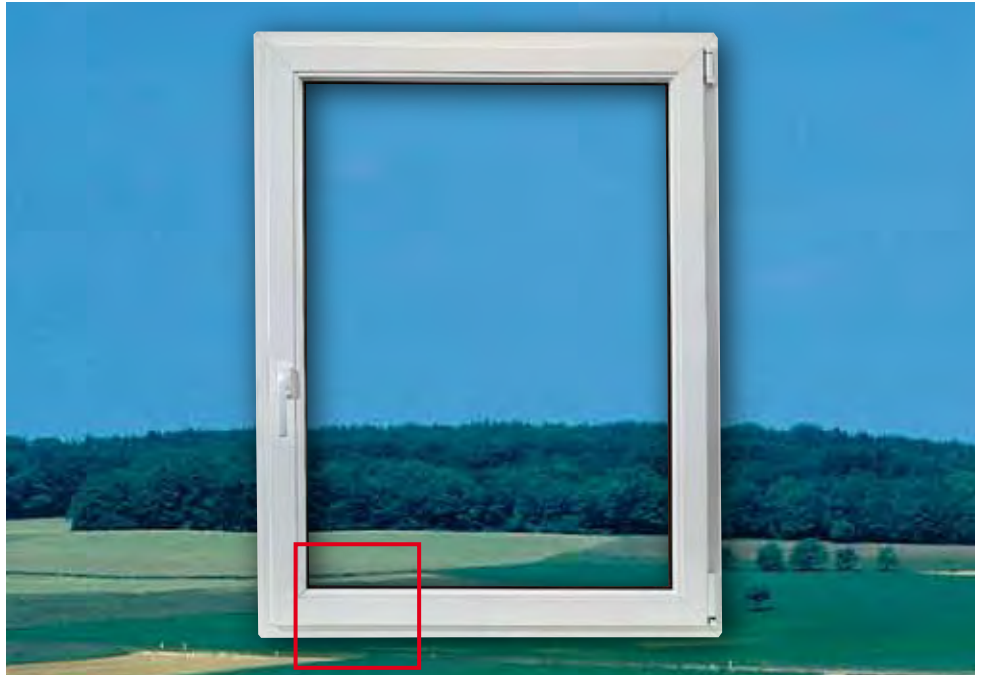
Almost 70% of break-ins through a window are carried out using a

screwdriver with a blade width of 6 to 12 mm.





## Basic Security, Always



**The MULTI-MATIC fitting system is the only one which always provides the window buyer with the i.S. security cam as standard.**

### **i.S. = intelligent security**

The i.S. security cam is the most sophisticated way of making windows secure.

- The i.S. security cam can be combined with a standard striker plate and a security striker plate.
- A special composition of materials makes it completely robust.
- The striker screw fixings will on PVCu systems fix through either two profile walls or the frame reinforcing.
- On timber windows the striker is fixed with two straight and one angled screw.



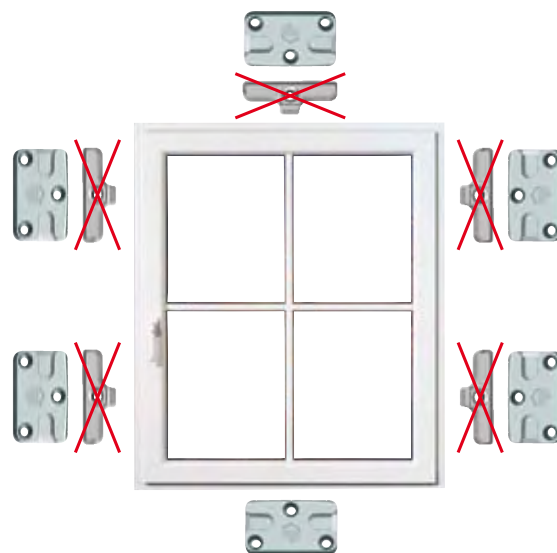
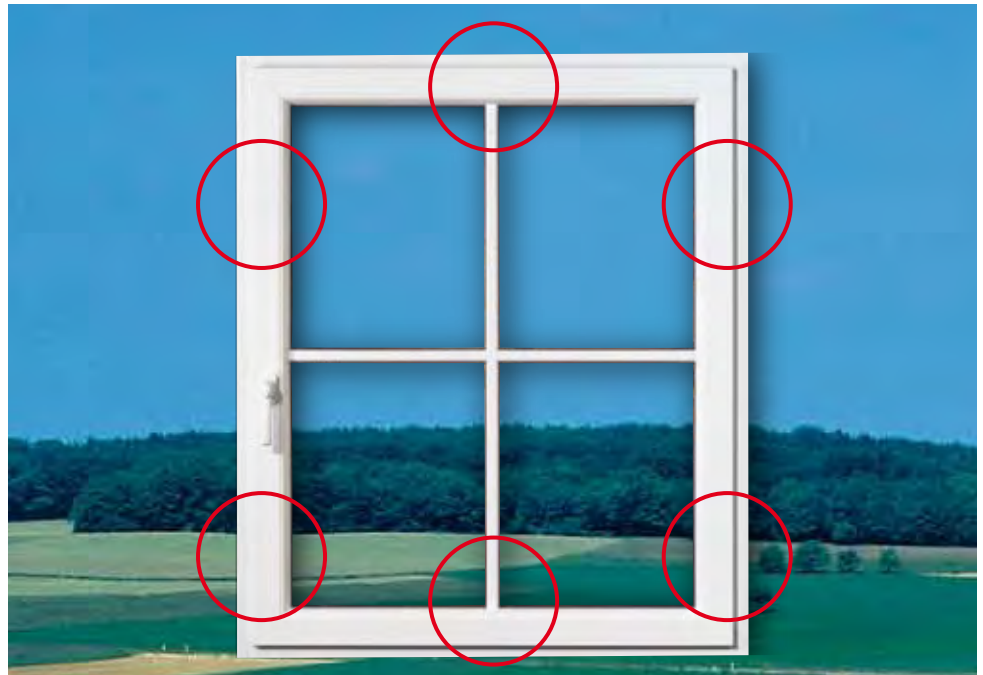
### **Secure Tilt Position**

- Basic security at the window's most critical point.
- No special striker plate.
- Protection against levering out in the tilt position.
- The striker plate can be mounted at the floating frame section.





## Unlimited Possibilities



**Fitting parts which are resistant to break-ins can easily be retro fitted**

- Should increased window security be desired at a later date, it is very easy to retrofit with i.S. security striker plates thanks to identical screw positions

### **i.S. Striker Plates:**

A special composition of materials and a very work-intensive pressure casting procedure ensure complete stability. The fittings are screwed into the frame reinforcement.

Standard striker plate

i.S.-Security striker plate

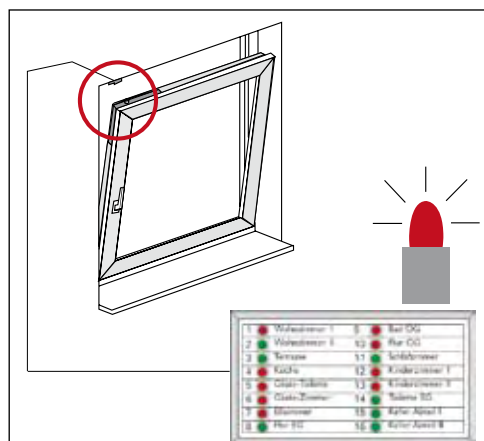
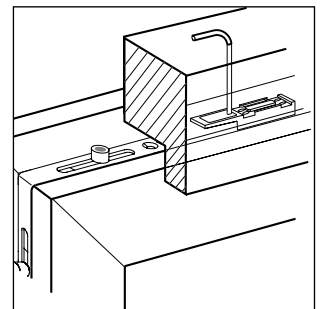
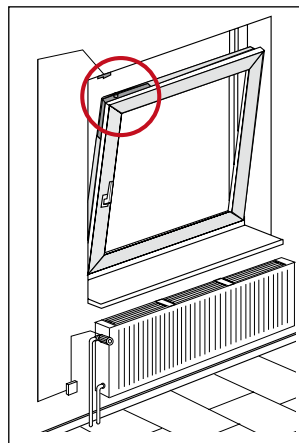




## Electronic Security



- Saves energy by being connected to a heating thermostat or an air conditioning unit. If the window is open, the heating is automatically switched off.



- Automatic window surveillance via connection to surveillance or alarm units. Because it is coupled to the fitting, the alarm unit is only activated when the fitting is locked and not just pulled to.
- The connection to a central indicator signals which windows in a building are open (tilt position counts as open for insurance purposes) and which are closed.

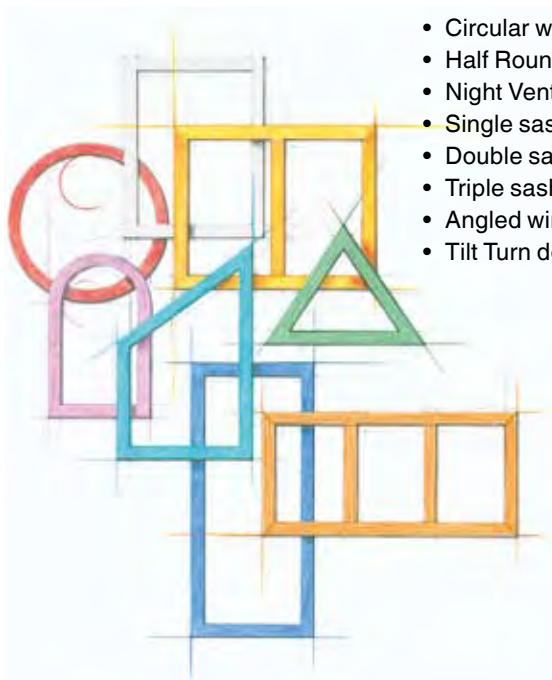


## One Fitting System for all Types of Window



### Many types of window are possible

With the MULTI-MATIC fitting system, every type of window can be manufactured using only a few special parts. With the MACO MULTI-MATIC, you need fewer parts to set up a window. This saves warehouse space and logistics time.



- Circular windows
- Half Round windows
- Night Vent windows
- Single sash windows
- Double sash windows
- Triple sash windows
- Angled windows
- Tilt Turn doors

### You save warehouse space



### The particular advantages for you

- Shorter parts.
- Fewer parts.
- This makes handling easier and saves warehouse space!





## Easy to Handle



### **Klix-fix! The Fitting clips into the Eurogroove**

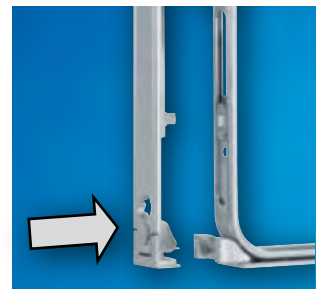
- Automatically held in the euro groove by assembly clips.

### **Short Fitting Parts**

- Coupling system without connecting plates

### **Linear hole spindle connection**

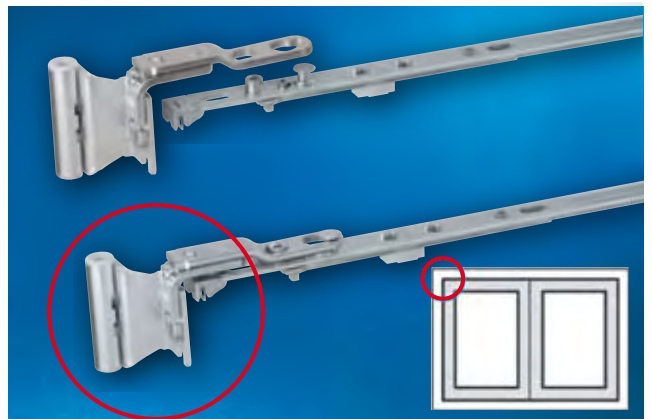
- Ensures high level of fitting accuracy.
- Linear feeding ensures automated assembly.
- No lifting loss.
- Multiple use.
- No spring guided long parts.



Coupling system

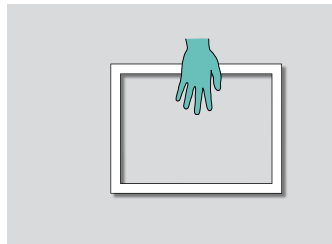
### **Turning hinge for dummy sashes**

- Fixed turning hinge.
- Turning hinge can be cut to length
- Can be coupled with corner support and middle lock.
- Therefore no second stay needed.
- Centre lock resistant to break in, to resistance level 2 (WK2).

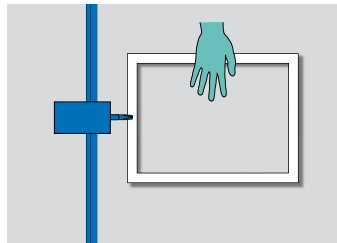




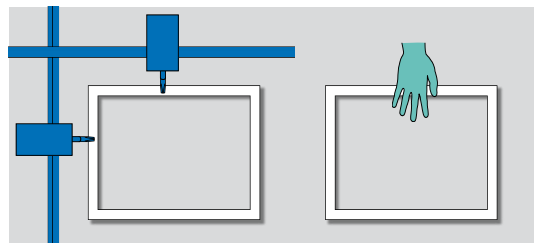
## Fitting System for all Types of Assembly



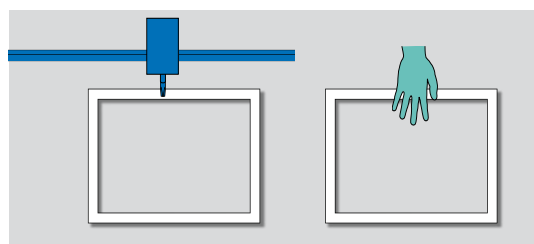
**Manual Assembly**



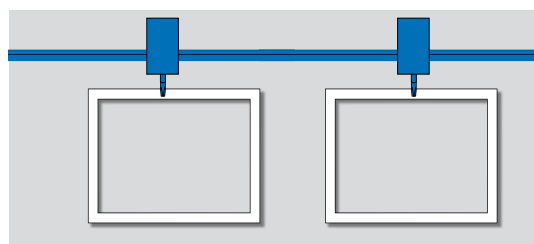
**Screw Automation in  
2 Minutes**



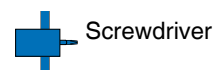
**Screw Automation in  
1 Minute**



**Partial automation in  
2 Minutes**

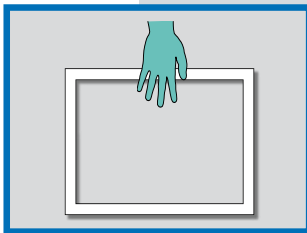


**Full automation in 1  
Minute with unmanned  
Assembly**





## Traditional Assembly – approx. 4 Minutes

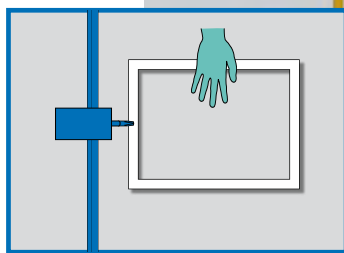
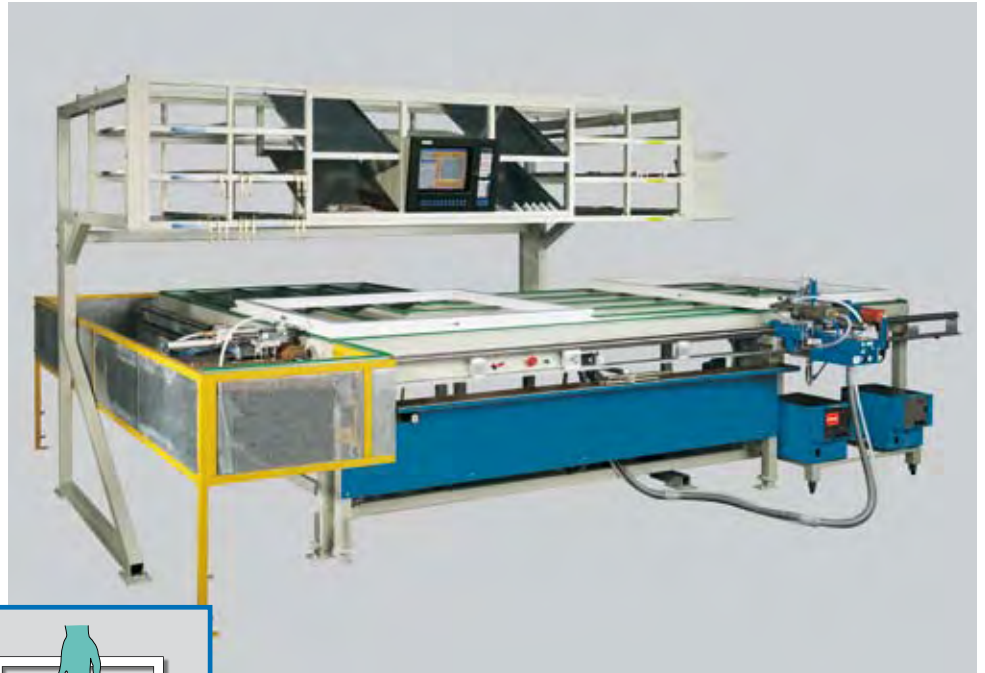


### **Complete Tilt & Turn fittings with top and bottom hinges**

- Easy to handle thanks to
  - short fitting parts.
  - linear hole spindle connection.
  - coupling system without connecting plates.
- The fitting clips into the groove.
- Only a few additional parts needed for special designs such as half round or angled windows.



## Single Axle Screwdriver for Two Minute Assembly



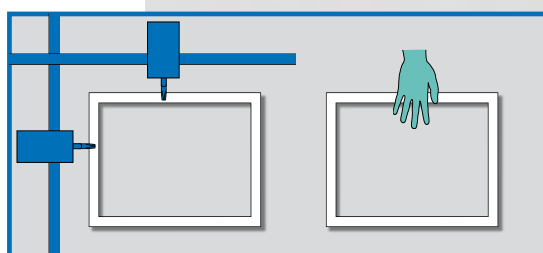
### Partially Automated Screw Fixing



- Fitting parts are inserted and cut to length, manually on one side.
- At the same time, the clipped in fitting parts are screwed on automatically.



## Double Axle Screw Fixing for One Minute Assembly



### Fixing in One Minute



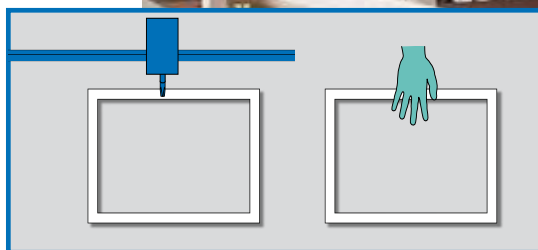
- All parts are inserted manually.



- At the same time, the parts which have already been inserted in the second sash are screwed on automatically.



## The First Steps Towards Fully Automatic Assembly



### Starting full Automation



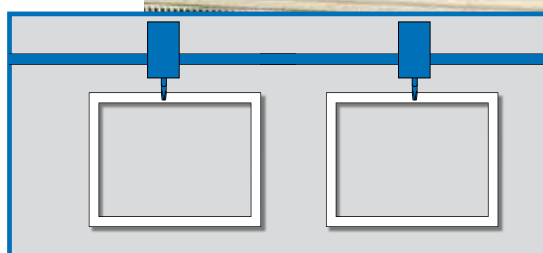
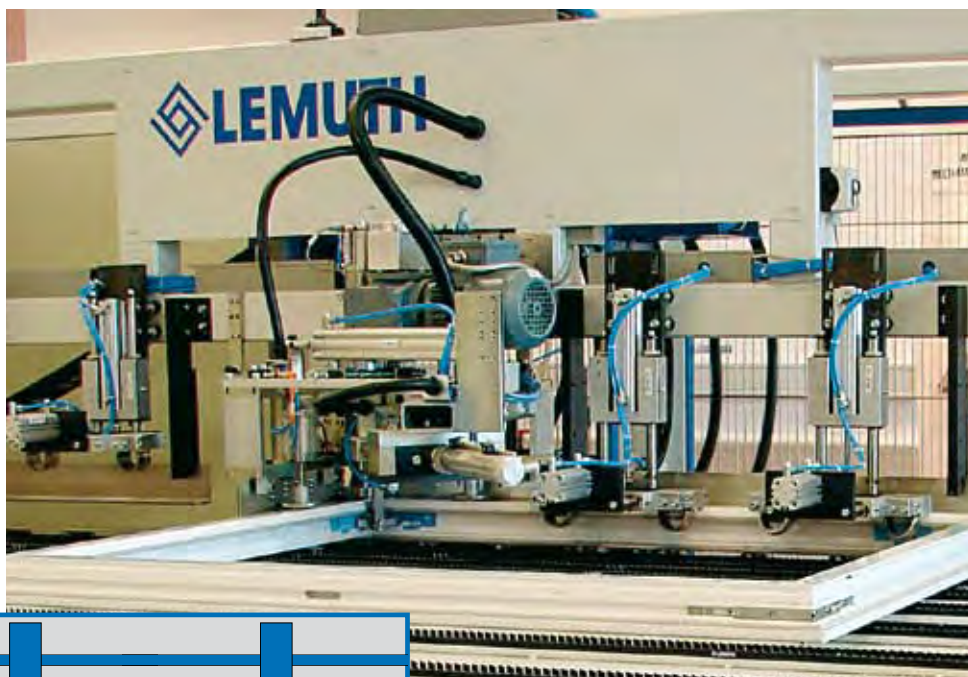
- Corner Element
- Centre lock
- Corner hinge
- Compression devices are automatically inserted into the groove and screwed on.



- Assembly of the drive gear and Scissor stay are done manually.



## Fully Automatic Unmanned Assembly



### Fully Automated Fitting Installation



- Insertion and screwing of the fitting installation is fully automated, in one operating cycle.

### Advantages

- Unmanned assembly.
- One minute duration.
- Consistently higher screwing quality as well as increased production capacity

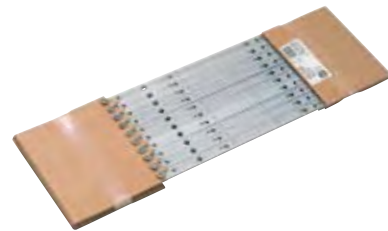


## Packaging concepts for full automation



### Intelligent Packaging Increases Productivity

In developing the new packaging system, particular attention was paid to efficiency at the processing stage.



- Less packaging material.
- Easy to remove the packaging.
- Batches of 10 for ease of individual handling or automated storage.
- Environmentally friendly material.
- Quick loading from the stacking pallet.
- Considerable savings in time and costs.
- Member of Interseroh for over ten years.

### Loading onto the fixing position

- Simple extraction from the front.
- Empty individual pallet can be exchanged from the side.
- This does not interrupt the workflow.



#### THE ENTERPRISES OF THE MACO GROUP

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