

TECHNOLOGY IN MOTION



Always the  
safe solution



**QUALITY FITTINGS  
FOR WINDOWS**



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## **TURN-ONLY AND TILT&TURN FITTINGS**



## MULTI MATIC system concept

Central lock, i.S. security roller cams and sash lifter provide the basis for each set. Combine further MULTI MATIC individual components according to the additional functions required.

To achieve the burglar-resistant version of your window units, use i.S security striker plates instead of the standard striker plates and arrange them according to the desired resistance class.

- Sophisticated friction and positive connection systems
- For every commercially available profile in timber, PVC and aluminium (with hardware groove)
- Partially automated and fully automated
- Reduced number of components and optimized logistics
- Intelligently packaged
- Face-fitted and flush
- Fully concealed
- Numerous colours
- Turn and tilt
- Sophisticated design
- Energy saving
- Surface quality
- Accessibility
- Security
- Leak-tightness
- Ventilation

## Advantages for the producer

- Installation: by hand, partially automated or fully automated (un-manned)
- Lean throughput times in production



## Variable opening mechanisms and wide variety of window functions

- Versatile retrofit capability for burglary resistance or mechanical ventilation at any time
- Process any commercially available profile face-fitted or flush, partially or fully concealed
- For timber and PVC units
- As visible components, the pivot post and scissor stay hinge are available in seven standard colours
- Unmistakeable design slim contours and rounded corners
- Smooth Silver-look finish
- Optional extremely corrosion-resistant TRICOAT-PLUS
- MATIC can be used with any window shape
- Also possible for renovation applications
- The fully concealed hinges enable integration of the skylight
- Double-sashed windows with skylight can be implemented without transome
- Multiple use of the MULTI MATIC components allows you to keep the entire range in stock, while reducing quantities





## Deluxe hardware

Operating windows easily should not be a luxury; rather, part of normal day-to-day life. Embedded in the motto "accessibility", which has long since become established in the world of architecture and living

Sometimes, everyone finds it difficult to reach a window: behind the sink in the kitchen, in the bathroom or stairway.

The MACO-MULTI deluxe hardware for PVC and timber windows let all users handle any tilt-and-turn window unhindered. In any installation, situation and at any age.

The window handle is positioned where it is easily accessible for every user: at a low level - horizontally or vertically on the bottom casement.

The window tilts and closes without the user having to exert any pressure on the window. The MULTI deluxe hardware does the work.

- The window is automatically tilted and locked again by handle actuation
- Max. 80 kg sash weight
- Tilt opening width approx. 100 mm

- Circumferential central locking with enhanced scissors
- Central locking from the standard range
- SKB handle
- Horizontal or vertical handle installation
- Horizontal installation: MACO turn lock mandatory
- Vertical installation: Convenient operation with handle position offset downwards
- Available in extremely corrosion-resistant TRICOAT-PLUS



## Accessibility for every user



## Advantages for the producer

- Producer can offer the desired solution to bodies inviting to tender (legally regulated requirements)

## Benefits for the end user

- The window is automatically tilted and locked again by handle actuation
- Complies with the requirements for the disabled and elderly
- Operate windows that are difficult to access
- Less effort required with the MACO SKB handle due to the long handle element
- Optional motorized support



## Skylights with handle-operated deluxe opening

- Operation of the skylights via the window handle on the turn-only sash
- Automatic tilt function of the skylight (handle-driven via the hardware)
- For single-sash and double-sashed windows
- Skylight with turn and tilt function
- Only one additional routing needed (in the transome)
- Only turn sash in bottom window
- Only for PVC windows with centre seal





## Deluxe opening

### Window handle in lock position

All sashes are closed and locked

### Window handle in turn position:

The main sash is in the turn position, skylight can be opened at the window sash

### Window handle in tilt position:

Main sash is locked, skylight is tilted



*The connection kinematics is incorporated in the transome*

## Advantages for the producer

- Ideal solution for renovations (listed buildings)
- Works with MACO MULTI MATIC hardware
- Standard hardware fitting
- No restrictor and cleaning stay
- No contact between hardware components of the skylight opener
- Less clearance compared to conventional skylight openers

## Benefits for the end user

- Tilted skylight is difficult for burglars to access
- Deluxe ventilation version
- Convenient operation
- No external hardware components (cleaning)
- Tidy appearance
- Reliable cleaning
- Manual emergency operation



## Motor-driven hardware for automatic and manual window operation

In modern architecture, energy-efficient construction and unrestricted home comfort go hand-in-hand. Unhindered access is no longer an issue for special user groups only. It is an integral part of the living comfort of all users – irrespective of their age or physical constitution.

The logical consequence of this development is the automation of the window units.

The increase in technical requirements for comfort and easy operation have re-defined the technology for conventionally operated windows.

True to the motto "Man defines the action", MACO has added a new product to window automation: The new system solution combines secure, convenient tilting with a continued manual operability.

The MULTI deluxe hardware brings enhanced operational convenience and unhindered access to all users – with no restrictions.





## Ultimate operating convenience



*Fitting disappears when installed  
in the hardware groove*

- Up to 30 window elements can be operated and prioritized when suitable home control systems and ventilation centres are used
- Clear definition of a zero-potential interface for a variety of home control systems
- Operating voltage 24 V
- 6 m cable length included
- Window sash weights up to 80 kg
- Overall glass weight up to 50 kg/m<sup>3</sup>
- Clear differentiation between window manufacturers and electricians



## Advantages for the producer

- Defined contact point between window sash and frame
- No cabling in the sash or in the glass groove
- Hinge and un hinge the sash at ease
- No cable separations due to electrical contact transitions
- Mishandling impossible
- Fixed contact separation
- Adaptive commissioning unit - function tests directly on site
- Invisible - does not disturb the appearance
- Easy to install in the sash
- Commissioning unit for initial testing on site
- Integrated wind force reversal to protect the motor
- Compliance with protection class 3 in accordance Machinery Directive for force-operated windows 2006/42/EG

## Benefits for the end user

- Convenient and The appearance of the window is not affected
- Alternate manual or motor- driven operation from any position
- After manual operation, the drive adjusts automatically
- Low energy consumption
- Direction change possible at any time in the case of misuse
- Security with low voltage [24 V] a the window
- Fully concealed in the sash



## MULTI POWER

- Fully concealed hardware without additional load distribution
- Flush-mounted and face-fitted window systems with shadow joints from 4 mm
- Windows up to 130 kg sash weight, French doors up to 150 kg sash weight
- For timber and PVC for 9 and 13 mm hardware axis
- Tilt-and-turn, turn-only or tilt-only versions
- For single-sash, double-sash and multi-sash windows
- PVC cover with customised logo possible
- Pivot post adjusts in three dimensions, all setting points are readily visible and easy to access
- Opening angle 100° with integrated end stop, opening restrictor and turn restrictor therefore optional
- Extremely corrosion-resistant TRICOAT-plus available as an option
- Profile packer for all conventional PVC profiles
- Sash rebate widths from 370 up to a maximum of 1400 mm
- Sash rebate heights from 360 up to a maximum of 2600 mm
- Approved for all MACO system tests for burglary resistance up to resistance class RC 2



## Extended performance range of the MULTI POWER



- Additional night vent and T&T design
- Uniform scissor stay faceplate for turn&tilt and tilt&turn
- Gasket compression adjustment in the scissor stay
- Maintenance-free PVC slider in the scissor stay
- Optimized lubrication (glide coating)
- Solutions for timber and PVC units with threshold
- Increased maximum sash rebate width for three-sashed windows
- Reduced base plate of the 3-sash hinge components
- Reduced minimal application range for tilt and turn hinge faceplate
- Automated installation of fittings possible on the sash
- Approved for all MACO system tests for burglary resistance up to resistance class RC 2

MACO  
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## MULTI POWER



*Fully concealed hardware, also for  
tilt&turn solution*



*Compact design of the pivot post*



*MULTI POWER pivot post for PVC unit*



## Advantages for the producer

- Clear differentiation with stable hinges and fixed axes
- No need to open the guide slots in the pivot post hinge
- Compact design
- Cover caps with customised logo possible
- No need for locking point directly below the scissor stay
- Automated processing, scissor stay faceplate and pivot post hinges with gripping positions
- No holes or routing, straightforward installation
- Low frame clearance makes for slim profiles

## Benefits for the end user

- The window sash does not swing inwards when opening, maximum opening and visibility are thus guaranteed
- No thermal bridges, no seal interruptions, no condensation
- Improved slider in the scissor stay for reduced maintenance
- No visible white grease
- Visually appealing with flush design
- The small clearance allows trouble-free placement of the operating elements for shading
- Caps



## MULTI POWER plus threshold

### Timber unit

- MULTI-POWER adapter for TRANSIT threshold with sealing strip
- Attachment for MULTI POWER pivot post hinge to compensate bottom 18 mm air gap
- Threshold height 20 mm (barrier-free) or 24 mm
- Cut the the interior threshold to length and join it to the adapter
- The thermal separation must be milled
- Push the interior threshold plus adapter into the thermal break
- Pivot post sash rebate depth 24 mm is positioned via the adapter

### PVC unit

- Attachment for MULTI POWER pivot post hinge to compensate the bottom 18 mm air gap
- Separate PVC pivot post for threshold
- Existing vertical profile adaptations can be used
- Threshold adaptations on request - currently tests on GKG threshold
- Positioning with MULTI-POWER drilling jigs



## MULTI POWER for threshold



*MULTI POWER pivot post for timber unit*



*Transit threshold with sealing strip*



*MULTI POWER pivot post for PVC unit with threshold*

**NEW**



*Threshold for PVC units*

## Advantages for the producer

- All the benefits of the Transit threshold with sealing strip can be combined with MULTI POWER
- All benefits of the thresholds available on the market for PVC unit can be combined with MULTI POWER

## Benefits for the end user

- Barrier-free in conjunction with the fully concealed MULTI POWER version

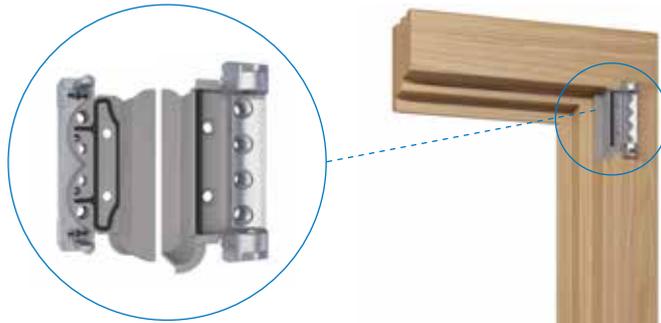


## Pivot post and scissor stay hinge double pot for sash weights up to 160 kg

- Double pot basic profile made of glass-fibre reinforced plastic with integrated rubber seal
- Thermal break between hinge components and frame
- Fully compatible with existing MULTI MATIC components
- Same routing pattern
- CAUTION: Modified drilling pattern and screw pattern
- Three dimensional settings
- Top and bottom clearance is zero, side clearance 20 mm
- Pivot post with two 25-mm long supporting pins
- Scissor stay hinge with two 15-mm long supporting pins
- Scissor stays and scissor stay support arm from MULTI MATIC standard range
- Up to 130 KG, pivot post hinges from MULTI MATIC standard range
- From 130 KG, pivot post hinges with rebate-leg screw fixing
- Caps for pivot post and scissor stay hinge
- Routing covers for 4 mm air gap
- All 4 and 12 mm air gap versions as for MULTI MATIC standard range



## Double pot 160 kg



*Thermally separated scissor stay hinge with sealing lip*



*Thermally separated pivot post with sealing lip*



## Advantages for the producer

- Extended product spectrum up to 160 kg
- Thermal separation on the base of the double pot serves as height compensation
- The modular design, which is compatible with the standard range, makes for easy storage
- Routing covers for 4 mm air gap

## Benefits for the end user

- Heavy units in same hinge design
- Thermal break design



GIGANTIC  
**3.6 m<sup>2</sup>**  
Format size

## Pivot post and scissor stay hinge MAMMUT for sash weights up to 180 kg

The pivot post and scissor stay hinges for sash weights up to 180 kg are designed to hold and move French doors and large-format windows.

The hardware mechanism is complemented by the retainer pin of the scissor stay hinge. Optionally, the pivot post and scissor stay hinges are available in white, silver, titanium, and the extremely corrosion-resistant TRICOAT-PLUS.

- Maximum sash rebate height 2800 mm
- Maximum sash rebate width 1800 mm
- For timber and PVC units
- Separate optimized pivot post for PVC version
- Large-scale units up to 3.6 m<sup>2</sup> possible
- System test for burglar resistance up to resistance class RC 2



## Secure hold for heavyweights



### Extended scope of services

- Tilt width approx. 127 mm (depending on the profile)
- Anti-slam device integrated in the scissor stay (firm snapper)
- Optional tilt limitation, tilt width approx. 90 mm (depending on the profile)
- Anti-slam device with light snapper force (for light units)

### Advantages for the producer

- Special formats and weights (e.g. for passive houses)
- Adjustable laterally and in height
- Central locking system (except the scissor mechanism) unchanged
- Rebated scissor stay support arm, pre-mounted  
Robust appearance
- No frame routings required
- Only sash routing necessary (except for 'large' rebate leg gasket)

### Benefits for the end user

- For large-format units with heavy glass weights (low-energy houses)
- Extremely robust design for enhanced security
- Also as ceiling-height units



## Safety pin - a must for public buildings

Security is a basic need. At home and in the public building In nursery schools, schools, hospitals, residential care homes or office buildings. Everywhere people live, learn or work.

“Safety Pin” additionally secures all turn-only and T&T windows and all doors up to 180 kg sash weight to prevent the sashes from falling out.

This can happen to any unit independently of the actual sash weight. Even a supposed "light weight" of just 60 kg.

This is why the MACO safety pin retainer is generally recommended in private dwellings (e.g. for children's rooms and in living areas for elderly or physically handicapped persons).

The MACO Safety Pin should be the standard for public buildings.

- For timber and PVC windows
- Also available as TRICOAT-PLUS
- Can be used for turn-only and T&T windows

- Integrates into the central clock
- Does not eliminate the need for hardware maintenance



## Additional safety for windows and glazed door sashes



### Advantages for the producer

- Security argument for public tenders
- Differentiating feature in relation to the competition
- Retrofittable
- Support pins used to fasten to the frame

### Benefits for the end user

- Protects in private living space and public buildings (nursery schools, schools, hospitals) from the possible consequences of misuse or overloading
- Certainty that improper use can hardly result in personal injury
- Prevents the window sash from fall out completely in the case of improper use



## Integrated intermediate drive gear negative backset 6 mm

The challenge for 2-sashed windows with stop bead is to centre the window handle properly. This is because the stop bead prevents the handle from engaging directly in the sash profile. The result is a negative backset of six millimetres. The integrated intermediate drive gear is deployed to enable easy installation of the unit.

- For turn-only and T&T windows
- Suitable for PVC, timber and aluminium
- Use for two-sashed windows with stop bead – this allows the handle to be positioned centred on the stop bead
- Separate design for turn-only windows
- T&T drive gear to match the existing French casement drive gears
- Sash lifter fitted as standard for T&T drive gears
- Adapter as connection between drive gear and square spindle
- Intermediate layer used to cover the spindle and screws



## Integrated intermediate DM -6 drive gear for turn-only sashes

- No milling required in the hardware groove



- No front routing
- Low installation height of the gearbox
- Sash rebate heights from 431 up to 2200 mm
- Fixed and variable handle dimension
- The integrated design allow regreasing of gearbox

**MACO  
MULTI**



## Integrated intermediate DM -6 drive gear for T&T sashes



- No front routing and no routing in the hardware groove
- Low installation height of the gearbox
- Sash rebate heights from 431 up to 2450 mm
- Fixed and variable handle dimension
- Spindle adapter for standard window handle



## Advantages for the producer

- No routing under the stop bead (for T&T and turn-only drive gears)
- No routing work inside the hardware groove (for turn-only drive gears)
- Compatible with a variety of locking options (shootbolt, French casement drive gear, supporting-pin positions as with turn & tilt MULTI MATIC)
- Low installation height of the gearbox (10.4 mm), this retains a sufficient adjustment range
- All commercially available window handles can be used Easy and efficient assembly in production

## Benefits for the end user

- Visually sophisticated with centred handle position
- Straightforward operation
- Greasing of the intermediate drive gear possible during maintenance



## Twin Fit

Tilt only one sash on two-sash windows, or tilt both together - that is a good argument when air circulation, space savings and aesthetics are required.

If the window is locked in tilt position, the full width of the unit can be utilized using the dual function of the two sashes. This produces an optical harmony between the unit and a living space.

The patented double tilt function is switched over via the corner element by lifting and turning the snapper and thereby by switching over a hardware component fitted to the French window to single tilt (standard tilt function). The easy operation corresponds to a tilt operation.

- For two-sash windows that have no mullion
- Easy operation for single or double-tilt via handle operation
- Handle drive gear for active control
- By operating the first-opening sash, it is possible to tilt and lock both sashes
- The operating sequence is the same as for T&T windows
- Double tilt function can be turned on or off by simply shifting a hardware component
- Optionally available in TRICOAT-PLUS
- Combinable with security hardware up to RC 1 N
- The amount of ventilation is increased enlarging the top air gap of the French window
- MULTI-MATIC sash rebate heights between 430 - 1590 mm and sash rebate widths from 320 - 1050 mm



## Two in one go



### Mode of operation



### Advantages for the producer

- With a standard T&T system plus special French casement drive gear and corner element, usable both on PVC profiles and wooden systems
- Stands out against the competition
- User argumentation: Air circulation volume, space savings, aesthetics

### Benefits for the end user

- Tilt only one sash on two-sash windows, or tilt both together
- Extended ventilation version
- Larger ventilation cross-section than "standard" 2-sash windows
- Switchover facility between single tilt and double tilt
- Same look as single-sash windows



## Composite hardware for aluminium cladding

Weatherproof outside, flexible material inside This permits the combination of the benefits of a PVC or timber window with those of an outer aluminium shell. If a further glass pane is integrated in the aluminium cladding, a spacing results between the cladding and the glazed window It is easy to integrate interior blinds here.

The same components are used for the lock and sash rebate. The axis pin is fastened to the sash rebate. Its extremely corrosion-resistant TRICOAT-PLUS coating makes the composite strap an excellent functional partner of the cladding for resistance to weathering.





## Composite hardware for aluminium cladding



- Special design with straight fastening for aluminium cladding
- Fastening to the composite frame
- For timber and PVC windows
- Suitable for glass thickness up to 8 mm
- Version only with TRICOAT-PLUS
- Axis pin with screw

## Advantages for the producer

- Same components for the lock and sash rebate
- Low installation height  
Straightforward assembly

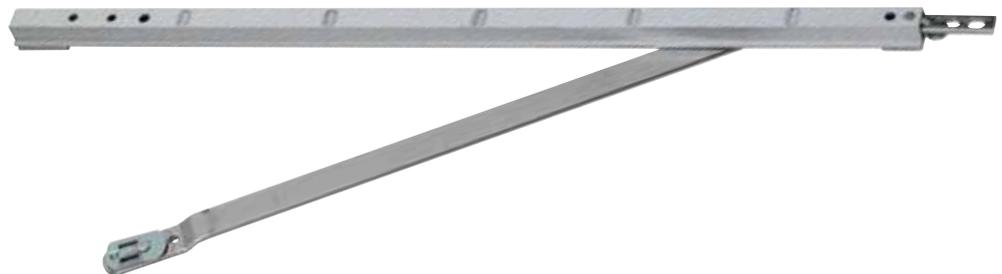
## Benefits for the end user

- Interior shading and sun-protection
- Improved thermal and noise protection
- Retrofit solution
- Enhanced aesthetics



## Brake stay

- Prevents accidental slamming open and shut of the window sash
- The opened sash is retained with the handle in the closed position
- Only for PVC windows
- Connection to central lock
- Two sizes (from 510 - 800 mm and 801 - 1650 mm)
- Flexible opening width for ventilation
- No sash lifter possible



## Advantages for the producer

- Additional function at window

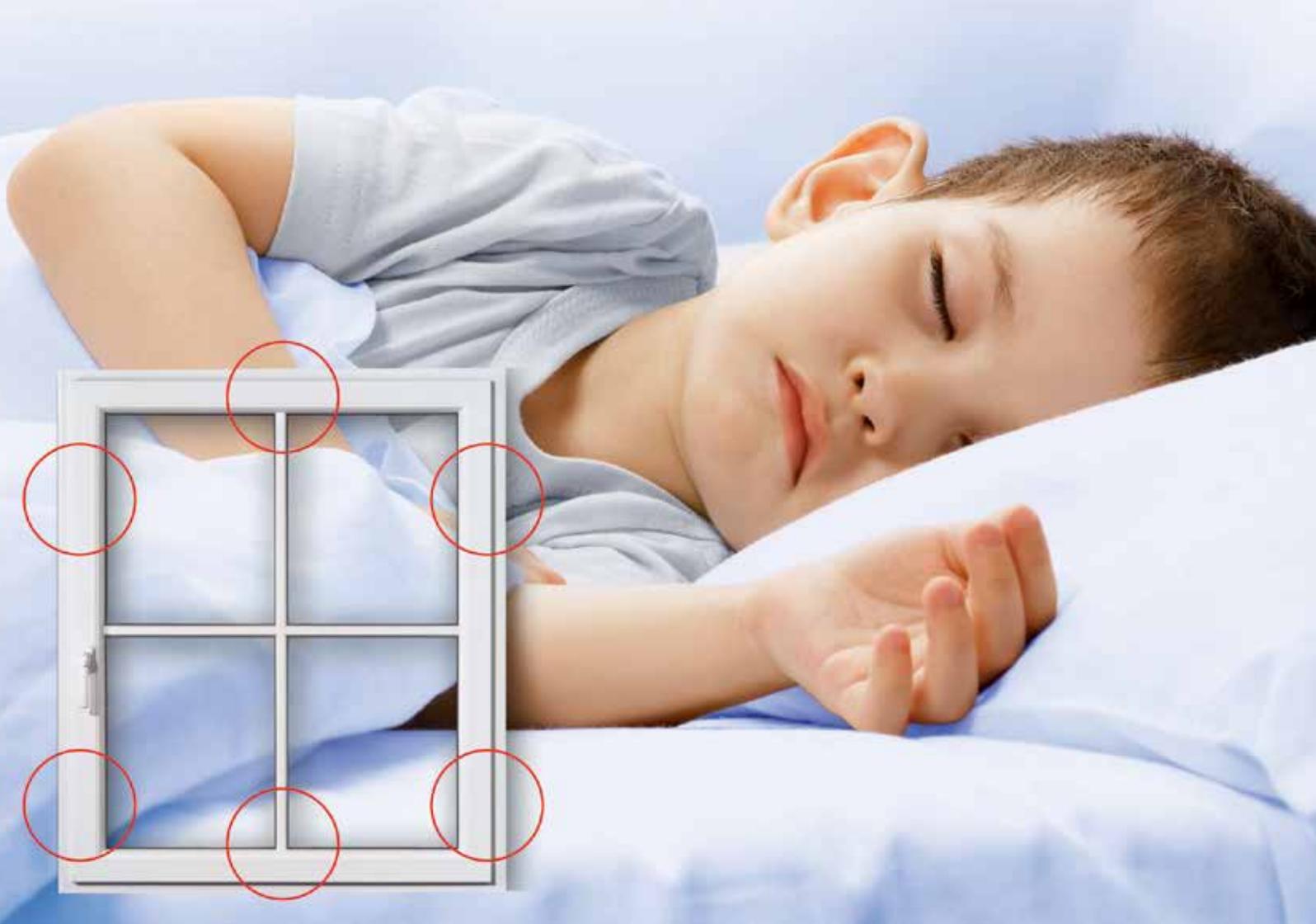
## Benefits for the end user

- Flexible ventilation setting with catch to prevent accidental slamming open and shut of the window





**SECURITY**



## Burglary protection

Every MACO producer can become a licensed producer. This means that MACO checks the profile systems and the producer uses the test certificates under license. Prerequisite for the license contract is that the profile system used by the producer has already been tested by MACO.

The system tests at MACO here apply for resistance class RC 2. The tests are based on EN 1627 – 1630. According to expert approval all tests performed to

EN 1627 – 1630 (status 2011) are assessed in accordance with RC 2 N and RC 2, and certified according to the correlation table.

Since 2004, MACO has been offering licensed producers on-site training at the MACO Headquarters in Salzburg or Schöllnach.

- MACO MULTI with i.S. security hardware for timber, timber/aluminium and a variety of PVC profiles



## Produce and offer burglar-resistant windows and doors without the need for in-house testing



### The typical weak points in a house

(in % of all burglaries)

- ① Patio door or slider unit, ground floor (41 %)
- ② Windows 1st floor (28.7 %)
- ③ Entrance doors (12.4 %)
- ④ Balcony doors 1st floor (6.5 %)
- ⑤ Windows 1st floor (1.1 %)

## Advantages for the producer

- MACO system testing replaces testing that the producer would have to arrange in testing institutes
- System extensions (new profiles, etc.) are notified automatically per email
- All MACO hinge systems can be used with windows and doors: Standard, MULTI POWER and MULTI MAMMUT
- The MULTI i.S. system is certified and monitored once a year by a notified institute

## Benefits for the end user

- Security at home means a better quality of life
- A peaceful night's sleep because you know that it is not easy for an intruder to gain access to private sphere
- Protects your private sphere
- Same operating convenience of the windows with MACO i.S. security roller cam
- Enhanced burglary resistance with several i.S. security locks
- MACO i.S. security lock provide greater resistance to simple burglary tools
- The lockable MACO Tresor window handle prevents sliding of the hardware
- Additional drilling protection also covers the Tresor window handle on the outside



*Corner deflection with reed contact for lock monitoring.*

*The reed contact in the lock monitoring system can be adjusted in all four directions via the elongated hole and carriage.*

## Cable-bound electronic window and door monitoring

The electronics itself cannot prevent or delay an burglary. However, it can ward off an attempt - comparable to motion detectors attached on the outside or alarm sirens. The electronic window and door monitoring systems makes sense especially because they send additional notification to the alarm system or to a connected station if burglary is attempted.

The MACO window and door monitoring systems with VdS approval is the ideal complement to mechanical burglary protection.

Each reed contact is used in combination with a magnet. Here, the magnetic field is used to open the contacts in the reed switch, or to keep them closed. The type of contact depends on the design of the reed contact.

Changing the magnetic field by moving the magnets causes a change in the switching state in the reed contact.



## Electronic protection against burglary



- Combined with the magnetic cam, the contact strikers act as signalling contacts to issue status signals to the central monitoring system.
- The contact strikers can be integrated in all conventional bus systems.
- They monitor the proper locking of the window.



## Advantages for the producer

- Numerous variants and hardware solutions
- Also for use with special windows
- Ideally combined with mechanical safety
- BUS-integration for building automation
- Adjustable in all four directions via elongated hole and carriage
- EN 50131-2-6, Grade 2 (opening monitoring to EN)
- VdS class B/C
- Suitable for all conventional plastic profiles with additional shapes
- The MACO lock monitoring system can be used with MULTI turn-only and T&T hardware, PROTECT door locks and RAIL-SYSTEMS sliding hardware

## Benefits for the end user

- Electronic window monitoring through connection to central monitoring and alarm system.
- Not visible (in the rebate)
- Cannot be manipulated from the outside using external magnets
- 100% notification via the locking network
- Automatic re-adjustment possible
- Functional and operational security
- Protection against burglary



## WINDOW HANDLES



## MACO EMOTION window handles

The window handle is an important functional and stylistic feature. It moves the hardware to tilt and open the window and close it again. Here, the handle must lie well in your hand and operate the hardware smoothly. A window handle that can do this makes operating the window a pleasure, both functionally and in terms of look and feel.

MACO window handles meet the stated requirements in terms of form and function. Here, the handles blend with modern, architectural environments equally as well as with renovated windows in old half-timbered houses.

The "resist" handle developed by MACO with its high-strength metal core makes

the "resist" windows handles really "invincible". The core is covered with a 3-mm plastic protective layer. The wear-resistant, non-fading, extremely robust surface of the anodised window handles makes them long-lasting over the full service life of the window.



## Full range

- Model line Rhapsody, Harmony, Symphony and Tentazione
- Tailored to the turn&tilt and tilt&turn hardware
- With locking function as child-proof safety lock and burglar-resistant up to resistance class RC 3: TRESOR window handle with locking button or locking cylinder
- Tentazione design window handle fits almost flush into the sash
- Latch sets, handle and escutcheon cover sets, wing escutcheon covers, classic window pulls, service handles
- Finger pulls for balcony doors and side entrances
- Handle lever for lift&slide and slide&tilt doors



*MACO EMOTION Rhapsody handle range*



*MACO EMOTION Harmony handle range*



*Tentazione window handle*



## Advantages for the producer

- Full range
- Matches the window profile system
- Simply, rapid installation with uniform routings and "standard-compliant" screw spacings
- "Quick" installation with pre-inserted screws on the window handle
- Wide range of colours, individual colours on request
- Produced in accordance with RAL guidelines
- Optional manufacturer logo on the handle cover



## Benefits for the end user

- Matching handle for any style of construction
- Aesthetically matched handle systems
- Elegantly tailored look and feel of the finger pulls
- Night vent and/or tilt ventilation
- Variety of security levels
- Easy to clean, extremely wear-resistant surface finish
- 12-year functional guarantee





## SHUTTER FITTINGS



## Narrow locks

Window shutters are being increasingly designed in aluminium. Often, narrow profiles are used, for which existing shutter latches are too wide. The current solution for such shutters is not popular. It is the Cremonese hardware (with window handle). It produces complaints, extra installation work and high costs. For aesthetic reasons, producers and end customers prefer to see a shutter end piece.

With immediate effect, MACO is offering two new shutter end pieces that require much less space

- Snapper 26 mm wide
- Shutter end piece "1F" 40 mm wide



## Snapper 26 mm wide

- The previous solution on the market (Cremonese hardware with window handle) with its optical, technical and price deficits has been omitted
- The new snapper with space requirement 26 mm matches all profiles
- The lock is also suitable for single-sash shutters and for shutters with tilting ribs
- Spring-action locking hook and rod guide, both 26 mm wide

### Benefits for the end user

- Aesthetically designed hardware solution, no disturbing window handle
- Long service life and tested quality, technical problems are ruled out



## Shutter end piece "1F" 40 mm wide

- The typical Italian "Espagnolette lock" is preferred and can be used from a profile width of 40 mm in the future.
- The new snapper lock can be used from width 26 mm to 40 mm
- The previous solution with optical deficits has been omitted
- The lock is also suitable for single-sash shutters and for shutters with tilting ribs
- Spring-action locking hook

### Benefits for the end user

- Familiar appearance and operation, no disturbing window handle
- Long service life and tested quality, technical problems are ruled out



## Concealed hinges for aluminium shutters

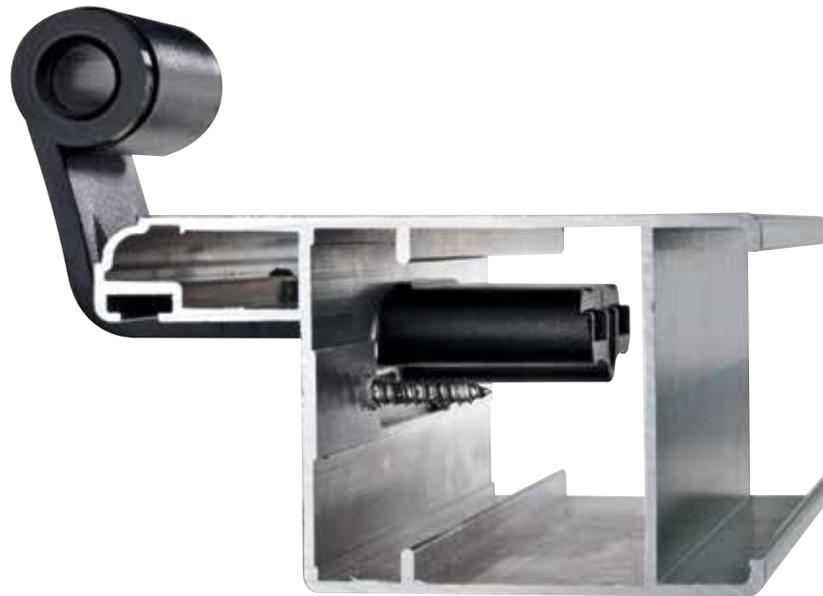
Aluminium shutters are widespread, their market share is rising. In Italy, profiles with quite characteristic features are being used increasingly:

- Rebate leg (approx. 22-26 mm)
- Raised outside surface finish (case-to-case differentiation)
- Narrow profile width (for low-cost shutters)

For these profiles, it is not possible to install conventional (contacting) hinges. The proposed solution is concealed hardware. MACO offers both top-grade hinges and shutter pins with regulator and standard products without adjustment options.



## Concealed hinges for aluminium shutters



### Advantages for the producer

- Subtle appearance
- Suitable for narrow and raised profiles
- Four offsets available, also for folding shutters
- Top-grade and economy versions available for selection
- Hinges either with or without lateral adjustment
- Shutter pin either with or without height adjustment

### Benefits for the end user

- Appearance (concealed hardware)
- Shutters can be subsequently adjusted (laterally and vertically)

**MACO  
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