WINDOW SYSTEM SOLUTIONS

Overview of GEZE Window Systems

Natural Ventilation and RWA

OVERVIEW OF GEZE WINDOW SYSTEMS

Contents

Window Systems

FOR SAFETY AND COMFORT

Everything from drive systems for natural ventilation to complete solutions for fire and smoke ventilation. Backed up by a range of software programmes we can ensure the right solution for your project increasing the safety and comfort in your building.

AT GEZE WE KEEP THINGS SIMPLE.

We have the tools to take the design drawings or floor plans and turn them into a tailor-made ventilation solution.

From a CAD drawing all dimensions can be taken and manipulated to include any of GEZE's range of window technology products producing a design that demonstrates the suitability of the system in each particular project.

GEZE offers a complete range of products for natural ventilation and smoke and heat extraction.

Tailored Solutions

GEZE's team of window technology experts can offer advice and guidance on selecting the most suitable system for your project.

Full technical support and advice for the supply only or supply and installation of the range of ventilation and indoor climate control products and smoke and heat extraction systems is available.

A full site survey is carried out before going ahead to double check everything e.g. the airflow is correct to the calculations. GEZE produce a set of drawings for the customer to approve giving complete peace of mind.

Only once the customer is happy can an installation date be set.

GEZE offers a complete supply and installation service from technical advice and design support through to installation, we provide a customer specific package. Once the solution is specified our project managers take over the project offering advice at every stage and coordinating with our engineers and manufacturing teams to ensure your window systems are installed smoothly and efficiently.

GEZE installation engineers are employed directly by GEZE and are fully trained by GEZE. The company installs, commissions and certifies that the products and installation is fit for purpose.

Once installed GEZE Aftersales can facilitate the most appropriate Planned Maintenance and service for your needs.

WINCALC

WinCalc does the calculations for you!

Specially designed for GEZE WinCalc is the in-house software that ensures optimum airflow. By inputting data – size of windows and orientation – WinCalc gives a recommendation of the actuator type, opening angle, geometric and aerodynamic free area. A full quotation can then be provided.

WinCalc allows GEZE to specify and select the correct products according to customer requirements.

SHEV (Smoke and Heat Exhaust Ventilation) Systems

A SHEV system is an important part of preventative fire protection, the aim is to protect both human life and property. When planned correctly a SHEV can limit the damage caused by fire and smoke. However a SHEV must be selected properly for the type of building taking into account various legal principles, regulations and recommendations and accurate calculations to ensure the smoke and heat ventilation system will direct the smoke out of the building and save lives.

WHAT IS A SHEV?

A SHEV, a smoke and heat exhaust ventilation system, consists of an actuator and an 'opening'. This may be roof lights, glass skylights or opening vents in glass roofs or windows.

The operating principle is based on physics - that warm air rises. Therefore natural smoke extraction is possible by the thermal lift that is generated by opening the roof or window. This in turn offers the possibility of keeping the building smoke-free, or at last the lower parts of it, in the event of a fire and so lives can be saved.

SHEVs can be opened automatically or manually.

GEZE SHEV systems are fully tested for wind and heat resistance, cycle tested and fully accredited.

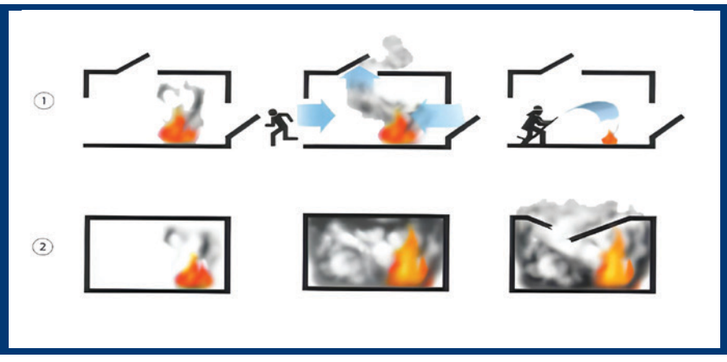


Diagram showing how natural ventilation assists in removing heat and smoke from a building allowing occupants to escape, and damage to building to be limited.

1 – Smoke spreading with RWA
2 – Smoke spreading without RWA

SMOKE CONTROL ASSOCIATION

GEZE UK is a member of the Smoke Control Association.

"The Smoke Control Association's (SCA) aim is to promote and enhance the design, manufacture, installation and maintenance of life safety smoke ventilation systems across all types of building. Our members strive to lead the market and to ensure that all smoke ventilation systems and products are designed and installed in accordance with all relevant regulations and standards, for the benefit of building owners, building occupants and the wider community."

www.smokecontrol.org.uk

GEZE installation engineers are employed directly by GEZE and are fully trained by GEZE. In addition GEZE UK hold the Smoke Control Association's SDI 19 accreditation and GEZE train engineers to that standard.

BS EN 12101

BS EN 12101 is the standard for natural smoke ventilators and smoke and heat control systems.

It is the European standard which specifies the requirements and provides the test methods for natural smoke ventilators. GEZE provide compliance to two parts:

- **Part 2** Actuators such as GEZE's Slimchain, Powerchain and K 600
- **Part 10** Control Panels such as GEZE's THZ, MBZ products

GEZE are fully certified with a range of product manufacturers and always expanding their certification.

SCHÜCO ALUPROF ALUMINIUM SYSTEMS KAWNEER AN ARCONIC COMPANY Metal Technology WICONA TECHNIK FÜR IDEEN CORTIZO

PRODUCT PASSPORT

GEZE holds a detailed report for every manufacturer that GEZE products have been tested with.

1 – Exhaust air system e.g. spindle drive (E 250 NT), opening and locking system (RWA 100 NT), chain drive (Slimchain)
2 – Fresh air system e.g. retractable arm drive (K 600)
3 – Ventilation signals
4 – Alarm signals
5 – Signal inputs, rain and window control

GEZE offers a complete system for ventilation and indoor climate control.

Modular in design the system can be customised to suit customer specific needs, whether for small or large buildings. Indoor climate control is recommended for a range of buildings, for example commercial buildings such as offices and architect practices or public buildings such as schools, hospitals and gymnasiums.

Convenient, economic, and practical GEZE's ventilation and indoor climate control provides those using the building with a more comfortable environment.

Benefits of ventilation and indoor climate control

→ Energy and cost savings

- Integrating window drives, blinds and air conditioning systems in one intelligent control increases the efficiency of the individual components
- The control decides how the individual components are to be activated depending on sun radiation, inside/outside temperature and condensation keeping energy consumption to a minimum

→ Health and well being

- The automatic dissipation of 'used' air low in oxygen improves concentration ability and boosts the immune system
- In hospitals, the reduced use of air conditioning systems prevents hospital germs being circulated

→ Education

- Fresh air is critical for learning, as CO2 increases in classrooms concentration fades negatively affecting learning and knowledge retention. Adequate indoor air quality in classrooms is one way to address this.

→ Safety

- Property is protected from the weather; as soon as condensation, high winds or strong sun are detected, the windows and blinds are closed automatically
- Windows are only open when required or outdoor conditions allow, windows being left open overnight are a thing of the past due to the intelligent window drive control

→ Environmentally friendly

- The efficiency of the system and its use of 'real' fresh air means it is an environmentally friendly alternative to air conditioning

GEZE window technology for electrically operated ventilation and RWA at a glance

GEZE has numerous solutions for automatic opening and closing of windows in all kinds of different applications. The wide range of products on offer extend from a large selection of drive systems for daily ventilation through to complete fresh and exhaust air solutions for safe and fast natural smoke extraction.

The GEZE product portfolio for electrically operated ventilation and RWA systems includes easy to install and use electrically operated chain drives as direct openers and powerful electric spindle drives which, as direct openers and flush-mounted on the frame profile, can also be used in an opening and locking system. Combined with electric linear drives, GEZE slimline fanlight scissors can also be operated electrically.

The smoke and heat extraction system (RWA) is actuated via the GEZE RWA emergency power control unit. GEZE also offers systems as fresh air solutions.

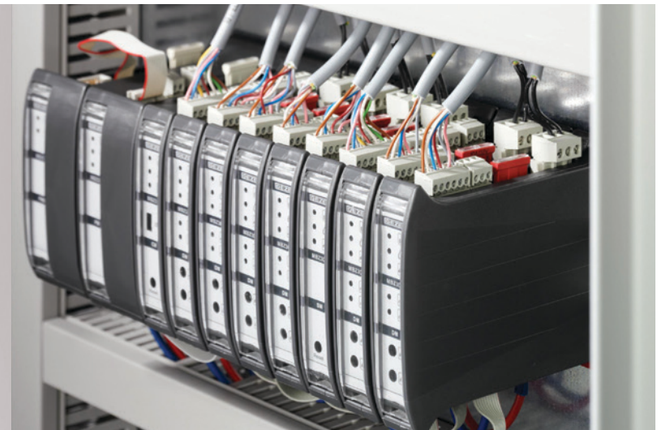
CHAIN DRIVES

SPINDLE DRIVES

OPENING AND LOCKING SYSTEMS

FRESH AIR SYSTEMS

RWA CONTROL UNITS



	Chain drives			Spindle drives					Opening and locking systems						Fresh air systems
	ECchain	Slimchain	Powerchain	E 250 NT	E 350 N	E 1500 N	E 1500 S	E 3000	RWA 100 NT	OL 350 EN	RWA 105 NT	OL 370 EN	RWA 110 NT	OL 360 EN	RWA K 600
Applications															
Natural ventilation	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Smoke and heat extraction system (RWA)		●	●	●	●[1]	●	●	●	●		●		●		●
Natural smoke and heat exhaust ventilator (SHEV)		●	●	●	●[1]		●	●	●		●		●		●
Function															
Exhaust air (as smoke exhaust (SHEV) or smoke removal)		●	●	●		●	●	●	●		●		●		
Fresh air		●	●	●		●			●		●		●		●
Location															
Façade	●	●	●	●		●			●	●	●	●	●	●	●
Roof			●	●		●	●	●							●[2]
Door															●
Casement types															
Bottom-hung casement	●	●	●	●		●			●	●	●	●	●	●	●
Side-hung casement	●	●	●	●		●			●	●	●	●	●	●	●
Top-hung casement	●	●	●	●		●			●	●	●	●	●	●	●
Horizontally pivot-hung casement			●												
Vertically pivoted casement			●												
Roof casement			●	●		●	●	●							●
Louvre window				●											
Type of opening															
Inward opening	●	●	●	●		●			●	●	●	●			●
Outward opening	●	●	●	●		●	●	●					●	●	●
Installation options															
Frame	●	●	●	●		●	●	●	●				●		●
Leaf		●	●	●		●					●				●
Integrated		●[3]													
Opening width [mm] / Opening angle [°]	200	300	600	100		300	300	300	58°		75°		56°		90°
	400	500	800	150		400	400	500							
		800	1200	200		500	500	750							
				230			600	1000							
				300			750								
				500			1000								
				750			1200								
				1000											
Connection to RWA control units															
THZ		●	●	●		●			●		●		●		●
THZ Comfort		●	●	●		●			●		●		●		●
E 260 N		●	●	●		●	●	●	●		●		●		●
MBZ 300		●	●	●		●	●	●	●		●		●		●
Use for ventilation 230 V															
with power supply and IQ gear		●	●	●					●		●				

1) 24 V version only
2) Depends on specific use
3) Special variant, separate planning, depends on profile

GEZE CHAIN DRIVES

Direct openers for ventilation and smoke and heat extraction

The electrically operated chain drives are designed for vertically installed, rectangular bottom-hung, top-hung and side-hung horizontally and vertically pivoted windows in dry rooms. They are suitable for daily room ventilation, for smoke and heat extraction systems and as natural smoke and heat exhaust ventilator (SHEV). The drives are positioned parallel to the window and, depending on the colouring chosen, harmoniously match the window architecture. They have a special chain which can transfer both pulling and pushing forces. When closed the chain is concealed, it is rolled up in the drive housing.

→ ECchain: simple automation options for ventilation (230 V)

- Cost effective and efficient starter model
- Universal use, especially in private housing
- Integrated stroke adjustment to 200 mm or 400 mm enables adaptation to different ventilation requirements as and when needed
- Universal fixtures and brackets for standard profile systems
- Different colour options for optimum attachment on existing window profiles
- Fast and easy installation with the drilling template (optionally available)

→ Slimchain: universal chain drive with attractive design

- Fulfils the highest design standards thanks to its slim and discrete look
- Use as RWA (24 V), in SHEVs in accordance with BS EN 12101-2 and for natural ventilation (230 V in conjunction with a power supply)
- Intelligent electronics: continuously adjustable drive stroke and individual speeds for ventilation and RWA mode
- Integrated Syncro module for synchronising max. 3 drives without external control unit
- DIP switches for changing over the operating mode (Solo/Syncro, active/passive)
- Fast and easy installation with the GEZE Smart fix installation system

→ Powerchain: powerful chain drive for large and heavy window elements

- Fast opening speeds mean the windows, even very heavy windows, can be opened quickly for the extraction of smoke and heat
- Use as RWA (24 V), in SHEVs in accordance with BS EN 12101-2 and for natural ventilation (230 V in conjunction with a power supply)
- Intelligent electronics: continuously adjustable drive stroke and individual speeds for ventilation and RWA mode
- Integrated Syncro module for synchronising max. 3 drives without external control unit
- DIP switches for changing over the operating mode (Solo/Syncro, active/passive)
- Fast and easy installation with the GEZE Smart fix installation system

GEZE SPINDLE DRIVES

Direct openers for ventilation and for smoke and heat exhaust

The RWA electric spindle drives are suitable for the automatic opening and closing of bottom-hung, top-hung and side-hung casements, roof windows and light domes. They are suitable for daily room ventilation, for smoke and heat extraction systems (RWA) and as natural smoke and heat exhaust ventilation (SHEV).

→ E 250 NT: compact design spindle drive with large range of uses

- For direct opening of heavy and wide windows
- Use as RWA (24 V), in SHEVs in accordance with BS EN 12101-2 and for natural ventilation (230 V in conjunction with a power supply)
- Intelligent electronics: continuously adjustable drive stroke and individual speeds for ventilation and RWA mode
- Integrated Syncro module for synchronising max. 3 drives without external control unit
- DIP switches for changing over the operating mode (Solo/Syncro, active/passive)
- Range of brackets for bottom-hung, top-hung and pivot-hung casements, roof windows and skylight domes
- The E 250 NT AB version for outdoor use and use in moisture-prone areas

→ E 1500 N: RWA spindle drive for heavy casements

- High-quality drive for heavy window elements in façades and roofs
- Narrow dimensions for the highest design standards
- Use as RWA (24 V) and for natural ventilation (230 V in conjunction with a power supply)
- Robust, corrosion-resistant design with built-in end-position damping
- Syncro set consisting of two E 1500 N with integrated synchronic control unit for particularly heavy and wide casements from 1200 mm primary closing edge
- Synchronisation of up to 3 drives

→ E 1500 S: fast spindle drive for heavy roof windows

- Convincingly large compressive force and high speed
- For outward-opening windows in the roof
- Use as RWA (24 V), in SHEVs in accordance with BS EN 12101-2 and for natural ventilation (230 V in conjunction with a power supply)
- Robust, corrosion-resistant design with built-in end-position damping
- Full stroke (up to 1000 mm) in less than 60 seconds
- For leaf widths over 1200 mm the E 1500 S synchro drive sets are available, which are controlled via the integrated synchronic control unit

→ E 3000: spindle drive for particularly heavy roof windows

- High tensile and compressive forces (3000 N) open and close even very heavy roof windows up to 600 kg in synchronic mode
- Use as RWA (24 V), in SHEVs in accordance with BS EN 12101-2 and for natural ventilation (230 V in conjunction with a power supply)
- Robust, corrosion-resistant design
- For leaf widths over 1200 mm synchro drive sets are available, which are controlled via the integrated synchronic control unit

→ E 350 N: compact design spindle drive in 230 V version

- Use for natural ventilation (230 V)
- For direct opening of heavy windows in façades, roofs and domelights
- Inward-opening and outward-opening casements
- Only for Solo mode. For Syncro mode use the E 250 NT with a power supply

GEZE OPENING AND LOCKING SYSTEMS

For natural smoke and heat exhaust ventilation and for ventilation

RWA 100 NT, RWA 105 NT and RWA 110 NT are opening and locking systems for RWA. They are suitable for daily room ventilation, for smoke and heat extraction systems (RWA) and as natural smoke and heat exhaust ventilator (SHEV). Due to the mechanical locking it is not necessary to use additional electrical locking drives. The systems consist of a mechanical bracket set combined with the high-quality RWA electric spindle drive.

→ RWA 100 NT: RWA system for bottom-hung, top-hung and side-hung windows inward opening

- Combination of an E 250 NT electric spindle drive flush-mounted on the frame profile in frame installation and a mechanical bracket set with locking
- Use as RWA (24 V), in SHEVs in accordance with BS EN 12101-2 and for natural ventilation (230 V in conjunction with a power supply or OL 350 EN)
- Available in four stroke lengths for all standard vertically installed types of casement
- Mechanical locking on the primary closing edge, with the option of using a mechanical additional locking device on the secondary closing edge
- Large opening widths with small spindle stroke in less than 60 seconds
- Synchronic mode on wide casements by using two RWA 100 NTs

→ RWA 105 NT: RWA system for post-rail-constructions

- Combination of an E 250 NT electric spindle drive flush-mounted on the frame profile and a mechanical bracket set with double locking
- Use as RWA (24 V), in SHEVs in accordance with BS EN 12101-2 and for natural ventilation (230 V in conjunction with a power supply or OL 370 EN)
- Available in three stroke lengths for vertically installed, inward-opening casements
- Double mechanical locking for burglar resistance and for high tightness
- Large opening widths with small spindle stroke in less than 60 seconds
- Synchronic mode on large casements by using the RWA 105 NT Syncro set

→ RWA 110 NT: RWA system for bottom-hung, top-hung and side-hung windows, outward opening

- Combination of an E 250 NT electric spindle drive flush-mounted on the frame profile in leaf installation and a mechanical bracket set with locking
- Use as RWA (24 V), in SHEVs in accordance with BS EN 12101-2 and for natural ventilation (230 V in conjunction with a power supply or OL 360 EN)
- Available in three stroke lengths for all standard vertically installed types of casement
- Mechanical locking on the primary closing edge
- Large opening widths with small spindle stroke in less than 60 seconds
- Synchronic mode on wide casements by using two RWA 110 NT

GEZE FRESH AIR SYSTEMS

Optimum interaction of fresh and exhaust air openings

Adequately dimensioned fresh air areas are always required for safe, reliable functioning of natural smoke and heat exhaust ventilation. Cold air flows in via the fresh air areas in the lower part of the building so that – due to the stack effect – any existing smoke rises and can be drawn out through the extraction areas in the upper part of the building. GEZE offers a range of several completely coordinated fresh air systems for the interaction between fresh and exhaust air openings.

→ RWA K 600: retractable arm drive for opening doors and windows

- Universal use on windows and doors, on the hinge and on the opposite hinge side
- Enables opening angles of over 90° at windows and doors (90° reached in less than 60 seconds)
- Use as RWA (24 V), in SHEVs in accordance with BS EN 12101-2 and for natural ventilation (230 V in conjunction with a power supply)
- The integrated control enables synchronised multiple operation and door closing selection without an additional module
- Integrated status contact for direct connection of a door opener
- Powerful drive with high torque

→ RWA K 600 F: retractable arm drive for installation on windows

- Integrated status contact for feedback signals
- Integrated Syncro module that can operate max. two drives without external control unit
- Tested as a natural smoke and heat exhaust ventilation device (SHEV) in accordance with BS EN 12101-2

→ RWA K 600 T: retractable arm drive for air intake systems for installation on doors

- Integrated status contact for electric strike control unit or feedback signals
- Door remains freely accessible due to the freely positioned activation of the lever by means of a pressure roller

→ RWA K 600 G: retractable arm drive for installation on doors and windows with fixed connection via guide rail

- Integrated status contact for feedback signals
- Integrated Syncro module that can operate max. two drives without external control unit
- Tested as a natural smoke and heat exhaust ventilation device (SHEV) in accordance with BS EN 12101-2

→ RWA K 600 G + TS 5000 closer

- Combining the RWA K 6000 G with a TS 5000 overhead door closer allows a door to be used manually for normal day to day use but in the event of a fire the RWA K 600 activates pushing the door open to allow smoke to escape

GEZE RWA CONTROL UNITS

Central control units for control of individual components

Emergency power control units enable the coordinated actuation and release of fresh air supply and exhaust air openings, which are equipped with electromotive drives. Release in case of fire occurs through automatic smoke detectors, manual RWA buttons or external alarm signalling devices. Vent switches enable drives on the windows and smoke extraction openings to be controlled for normal ventilation. GEZE offers different types and sizes of control units, so that the right solution can be found for every RWA.

→ THZ: the complete RWA solution for staircases

- Safe supply and control of RWAs for compliance with the fire safety regulations
- In combination with the FT4 K RWA button it is an inexpensive solution for smaller RWAs, e.g. in a staircase
- Compact control unit with plain design for installation within the visible area
- Parameterisation options for individual adjustment, e.g. to automatic ventilation systems
- Combination with the GEZE emergency exit system (RWS) enables its use on emergency exits

→ THZ Comfort: the additional safety and convenience in staircases

- Illumination of the integrated RWA button results in improved detectability and therefore more safety
- Completely robust metal housing - suitable for use in public areas
- Time savings during installation, as the integrated RWA buttons and vent switches no longer have to be wired separately
- Stylish and with minimum dimensions, it can be installed in a space-saving way within the visible area, even in narrow staircases
- Fast and easy commissioning with the ST 220 service tool

→ THZ Link

- Simple, easy to install control unit for smoke and heat extraction systems
- Modular design enables many control units to be linked up as required; more can be easily added to the system as needed
- Fully tested to VdS 2581 and VdS 2593, the THZ Link also complies with EN 12101 Part 9 and Part 10
- Completely flexible: suitable for use on both new buildings and older buildings and can easily be retro-fitted
- Can be used as a stand-alone control unit with GEZE smoke detectors local to each fire and smoke zone or interfaced with the fire alarm panel
- Won't interfere with the building's fire strategy – it is now possible to have windows that can be used for both a fire management strategy and still be opened for natural ventilation!

	THZ / THZ LINK	THZ COMFORT
Outer dimensions	193 x 285 x 89 mm	140 x 248 x 85 mm
Housing material	Plastic	Diecast aluminium
Colour	White	Lower part: grey RAL 7035 Cover: orange RAL 2011 or following implementation (VdS approval for orange colour only)
Type of installation	On the surface, installation within visible area possible	
Cable insertion	From above, surface or flush installation possible	
Enclosure rating	IP 30	
Ambient temperature	-5 to 40 8C	

→ MBZ 300: bus control unit for flexible adaptation to specific building or project requirements

- Modular design and diverse setting options make it possible to provide an RWA control unit for specific buildings or projects
- The control unit can be extended flexibly and easily thanks to the individual modules
- Fast hardware configuration possible by clicking on the modules
- PC software for enhanced configuration and control of the control unit for updates and for saving important operating states and the service settings
- Direct user interface and state display on the modules enables simple functional tests

→ Several variants are available:

- **MBZ 300 special version:** complete Modular smoke and heat extraction control panel for the central control of individual smoke and heat extraction system components. Can be configured: Modules and their sequence, special software, rechargeable battery etc.
- **MBZ 300 N8:** Modular smoke and heat extraction control panel for the central control of the individual components of a smoke and heat extraction system with an output power of 8A
- **MBZ 300 N10:** Modular smoke and heat extraction control panel for the central control of the individual components of a smoke and heat extraction system with an output power of 10 A
- **MBZ 300 N24:** Modular smoke and heat extraction control panel for the central control of the individual components of a smoke and heat extraction system with an output power of 24 A
- **MBZ 300 N48K:** Modular smoke and heat extraction control panel for the central control of the individual components of a smoke and heat extraction system with an output power of 48 A
- **MBZ 300 N48G:** Modular smoke and heat extraction control panel for the central control of the individual components of a smoke and heat extraction system with an output power of 48A
- **MBZ 300 N72:** Modular smoke and heat extraction control panel for the central control of the individual components of a smoke and heat extraction system with an output power of 72 A

GEZE MANUAL VENTILATION SYSTEMS

Daily ventilation made easy

The manual window opening systems are used for convenient daily ventilation. The fanlight opening systems offer large variant diversity and can be opened easily and reliably. The cranked turn and tilt hardware is the perfect solution for large, heavy windows. The range of applications includes rectangular vertically installed, inward-opening, bottom-hung or top-hung casements and vertically installed outward-opening, top-hung windows. Solutions are also available for special shapes, e.g. vertically installed, inward-opening angular, triangular, semi-circular and segmental arch windows.

→ OL 90 N: surface-mounted slimline fanlight opener with an opening width of 170 mm

- Large opening width of 170 mm
- The façade's appearance remains unchanged, because the flat scissor design and link arm require little space
- Problem-free installation: the scissors and the link arm can be installed from the front
- Safe casement locking thanks to locking in the scissor
- OL 90 N top-hung casement, outward opening: with burglar resistant locking (SKG certified)
- OL 90 N for special shapes: with the help of the extensive accessories, solutions can be implemented for different special window shapes

→ OL 95: surface-mounted slimline fanlight opener with an opening width of 220 mm

- Improved ventilation due to an opening width of 220 mm
- Inconspicuous installation in post-rail-construction due to small overall height
- Safe casement locking thanks to locking in the scissor
- Convenient window cleaning from the inside and outside by easily unhooking the scissor
- Small space requirement above and to the side of the casement

→ OL 320: surface-mounted slimline fanlight opener with an opening width of 320 mm

- Large opening width: approx. 320 mm (on request approx. 220 mm), for high leaf widths up to 250 kg
- Locking device in the scissor
- Problem-free installation even in deep reveals, as the scissors and link arm can be installed from the front
- Only one leaf bracket for all overlap heights and materials
- Small space requirement above and to the side of the casement

→ F 1200: crank turn and tilt hardware system for large and heavy windows

- Fulfils special robustness and stability requirements
- Continuously adjustable ventilation - from the gap ventilation to the tilted end position
- Functional safety due to weight-independent crank handle actuation with control display
- Additional protection against incorrect operation and overload friction coupling
- Secure locking due to the arrangement of virtually any number of bolt positions on all four sides
- Arrangement of all fitting parts on the inner casement shell

→ F1200 +

Powerful ventilation drive for convenient and safe automation of aluminium bottom-hung and tilt-turn windows.

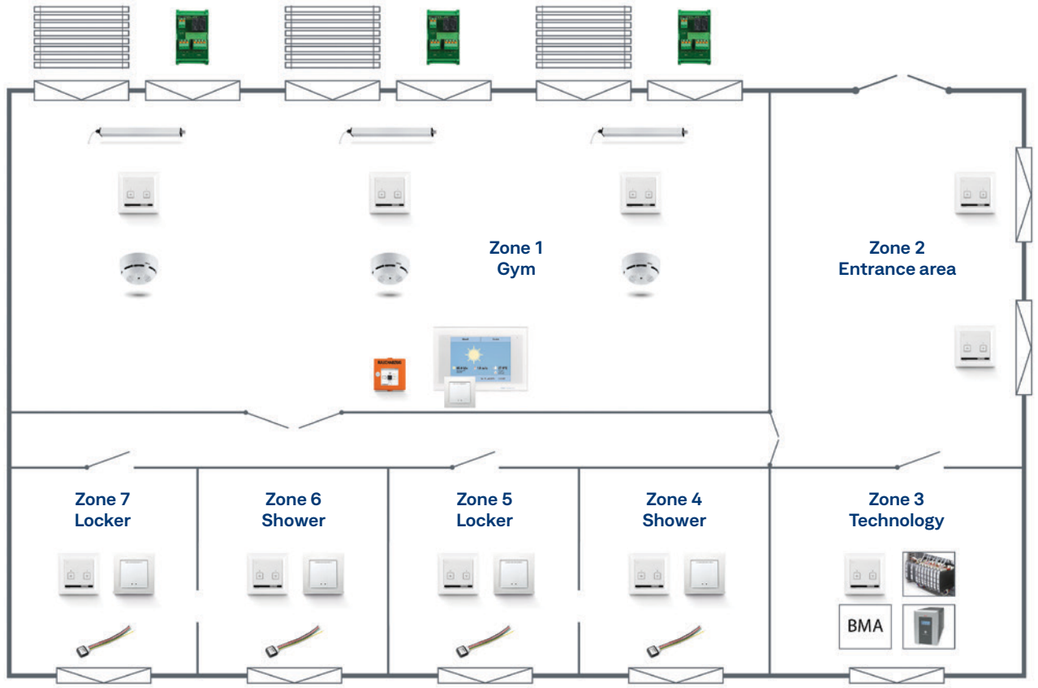
- Tilt and locking function plus manual turn function combined in one drive
- Achieves the full opening width of 180 mm for all leaf heights
- Ventilation with variable adjustment - from gap ventilation to the tilted end position
- Safe use thanks to limitation of bottom opening width and authorised operation of the turn function
- Excellent operating comfort due to non-powered, barrier-free and safe operation, variable drive positioning and user feedback
- Proximity sensor activates the control panel when the user approaches
- Brightness sensor adjusts illumination of the control panel to the ambient brightness
- Low-noise drive improves indoor comfort
- IQ windowdrive - intelligent drive control

→ OL Line

- Natural ventilation system for operating high level windows and roof lights
- Manual control system that provides easy and reliable opening even for hard to reach windows
- Modular system – it consists of a manual opener fitted to the opening vent linked via lengths of conduit and cable to a wall mounted operator – has been designed to be flexible
- The conduit can be bent around obstructions enabling the operator handle to be positioned within easy reach
- Multiple vents can be operated easily from a single operator in a choice of installation arrangements offering flexibility in design
- The system can be fitted to most styles of windows, even on roof lights and for heavier window loads
- Perfect for retrofitting due to its modular design
- Easy to install and easy to use
- OL Line system offers flexible solutions

Sample System

GYMNASIUM WITH HEAT AND SMOKE VENTILATION/INDOOR CLIMATE CONTROL



Requirements / situation description

The building includes the gymnasium, an entrance area, a technology room, locker rooms, and shower rooms.

Each room represents a zone.

During rain and strong wind, all windows close automatically using a rain/wind sensor on the roof of the gymnasium.

→ Zone 1 – gymnasium

- Motorised skylights are installed in the roof of the gymnasium and will vent smoke out from the gymnasium if smoke is produced.
- Motorised fanlight windows opening to the outside are integrated into the façade of the gymnasium.
- The façade is equipped with shutters for shade which automatically extend depending on brightness and sun position.
- It must be ensured that the fanlight windows and shades do not collide.
- The access doors to the gymnasium, the entrance doors in the entrance area, and the connecting doors to the hallway (zone 2) serve as air vent opening.
- During normal operation, the gymnasium is automatically ventilated depending on interior and exterior temperature, humidity, and air quality (CO2) through the fanlight windows.
- Ventilation buttons can also be used to manually open or close the fanlight windows in separate groups.
- A UPS ensures that 230 V devices (shutters) securely open in case of a fire.

→ Zone 2 – entrance area

- Motorised façade windows are integrated into the entrance area.
- These windows are controlled manually using push buttons.
- Windows close automatically outside of operating hours

→ Zone 3 – technology room

- A motorised façade window is located in the technology room.
- The window is controlled manually using a push button.
- The window in the technology room closes automatically after a pre-set time (e.g. 30 minutes).

→ Zone 4 / 6 – shower rooms

- There are 2 motorised fanlights in each shower room.
- Fanlights are controlled depending on the humidity, interior, and exterior temperatures.
- Windows can also be operated manually using a push button.

→ Zone 5 / 7 – locker rooms

- There are 2 motorised fanlights in each locker room.
- Fanlights are controlled depending on the air quality, humidity, interior, and exterior temperatures.
- Windows can also be operated manually using a push button.

Accessories

SWITCHES

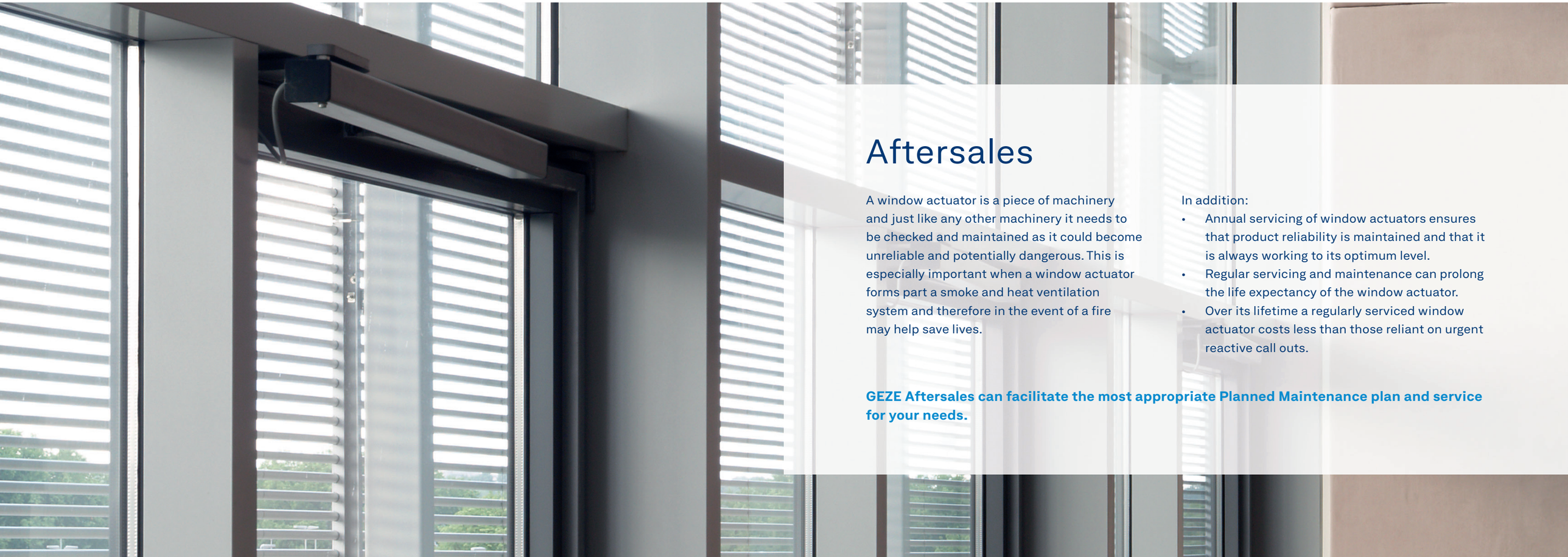
GEZE offers a range of switches for use with natural ventilation and indoor climate control as well as connection to the control panels THZ, THZ Comfort and MBZ 300 range. The LTA 24 AZ and LTA 230 can be used with all GEZE'S 24v and 230v actuators.

They offer open/stop/close control keys; in addition the LTA 24 AZ offers LED function display.

WEATHER STATION

GEZE's weather station and control unit monitors for wind and rain and operates automatic closing of windows in adverse conditions when in ventilation mode. Suitable for wall or post installation they are to be used with control panels and ventilation control units THZ, THZ Comfort and MBZ 300.

- Heated and corrosion-resistant sensor surface
- Wind speed sensor without mechanical components
- Control unit with integrated power supply and LEDs for rain/wind display
- Switching point of the wind speed sensor adjustable
- Output of wind and rain signals individually or together via potential-free contacts



Aftersales

A window actuator is a piece of machinery and just like any other machinery it needs to be checked and maintained as it could become unreliable and potentially dangerous. This is especially important when a window actuator forms part a smoke and heat ventilation system and therefore in the event of a fire may help save lives.

In addition:

- Annual servicing of window actuators ensures that product reliability is maintained and that it is always working to its optimum level.
- Regular servicing and maintenance can prolong the life expectancy of the window actuator.
- Over its lifetime a regularly serviced window actuator costs less than those reliant on urgent reactive call outs.

GEZE Aftersales can facilitate the most appropriate Planned Maintenance plan and service for your needs.

Connecting expertise – building solutions.

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