



record CURVED

User manual

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Document identification

Article nr.: 121-006454188
Version: 2.0
Publication date: 27/06/2022

Translation of the original manual

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List of changes

Change	Location
Complete revision of all Sections and content	Entire document
New Section structure	Entire document
Revision of all graphics	Entire document

1 Safety

1.1 Presentation of warning signs

Various symbols are used in this guide for easier understanding:



NOTICE

Useful advice and information to ensure correct and efficient workflow of the system.



IMPORTANT

Specific details which are essential for trouble-free operation of the system.



IMPORTANT

Important details which must be read for proper function of the system.



CAUTION

Against a potential hazardous situation that can lead to minor personal injury and property damage.



WARNING

Against a latent hazardous situation that can lead to severe injuries or death and cause substantial property damage.



DANGER

Against an imminent hazardous situation that can lead to severe injury or death.



DANGER

Against an imminent or latent hazardous situation that could lead to electric shock and cause serious injury or death.

1.2 Intended purpose of use

The system is designed exclusively for use as a pedestrian passage. The installation must only occur in dry areas. If there are deviations then proper waterproofing and water drains will be required on-site.

Any other application or use beyond this purpose is not considered to be an intended purpose. The manufacturer bears no liability for any resulting damage; the operator alone shall bear the associated risk.

The intended purpose also includes observation of the operating conditions specified by the manufacturer, in addition to regular care, maintenance and repair.

Interventions in or alterations to the installation performed by non-authorized maintenance technicians exclude the manufacturer's liability for consequential damages.

1.3 General hazards

The following section lists hazards that can be caused by the system even when used as intended. To reduce the risk of malfunction, damage to property or injury to persons and to avoid dangerous situations, the safety instructions listed here must be observed.

The specific safety instructions in the other sections of this manual must also be observed.



IMPORTANT

The country-specific regulations must be observed and complied with!



IMPORTANT

To avoid malfunctions, moving objects such as flags or parts of plants must not be allowed to enter the detection range of the sensors.



CAUTION

Risk of malfunctions, material damage or injury due to improper settings!

- a) Improper settings can lead to malfunctions, material damage or personal injury.
 - ⇒ Do not disconnect the system from the power supply overnight.
 - ⇒ Settings should only be made by personnel qualified to do so.
 - ⇒ Do not disassemble, put out of operation or manipulate safety devices.
 - ⇒ Have faults rectified by specialist personnel or by personnel qualified to do so.
 - ⇒ Have service and maintenance carried out according to locally applicable regulations or according to a maintenance contract.



CAUTION

Risk of malfunctions, material damage or injuries due to insufficient or missing cleaning or care!

- a) Insufficient or inattentive cleaning or care of the system can lead to malfunctions, damage to property or injury to persons.
 - ⇒ Check the sensors regularly for dirt and clean them if necessary.
 - ⇒ Regularly remove dirt accumulations in the floor rail or under the floor mat.
 - ⇒ Keep the system free from snow and ice.
 - ⇒ Do not use aggressive or caustic cleaning agents.
 - ⇒ Use road salt or loose chippings only conditionally.
 - ⇒ Lay the floor mat without folds and flush with the floor.
 - ⇒ Equipment required for cleaning purposes such as ladders or similar must not be leaned on or attached to the system.



CAUTION

Risk of material damage or injury due to unforeseen opening, closing or turning of the door!

- a) The door can open, close or turn unexpectedly. This may result in damage to property or injury to persons.
 - ⇒ No persons may be present in the opening area of the system.
 - ⇒ Ensure that moving objects such as flags or parts of plants do not enter the detection range of the sensors.
 - ⇒ Do not make any settings on the control unit when the system is in use.
 - ⇒ Have faults rectified immediately by specialist or personnel qualified to do so.
 - ⇒ Remove objects from the opening area.
 - ⇒ Do not disassemble, put out of operation or manipulate safety devices.
 - ⇒ Do not rush through a closing system.



CAUTION

Risk of bruising and severing of limbs!

- a) If the system moves, careless behaviour can lead to serious injuries to limbs or severance of limbs.
 - ⇒ Do not reach in when parts of the system are moving.
 - ⇒ Keep a distance when parts of the system move.
 - ⇒ Do not bump into or touch the system when it is moving.
 - ⇒ Do not open or remove protective covers during operation.
 - ⇒ Do not permanently remove covers from the system.
 - ⇒ Only carry out inspection, service, maintenance and cleaning when the system is stationary and switched off.



CAUTION

Danger of material damage or injury due to non-functioning safety devices!

- a) If safety devices are not functioning, manipulated or put out of operation, there is a risk of damage to property or injuries that can lead to death.
 - ⇒ Never disable or manipulate safety devices.
 - ⇒ Have inspection, service and maintenance of the safety devices carried out according to local regulations or according to a maintenance contract.



CAUTION

Danger of malfunctions, damage to property or risk of injury if used by unauthorised persons!

- a) If unauthorised persons use the system, there is a risk of malfunction, damage to property or injury to persons.
 - ⇒ Children under 8 years of age may only use the system under supervision.
 - ⇒ Children must not play, clean or maintain the system.
 - ⇒ Persons with limited physical, sensory or mental abilities as well as persons with insufficient knowledge or experience may only use the system under supervision or must have received and understood instructions to do so.



DANGER

Danger to life due to electric current!

- a) In case of contact with live parts, there is an immediate danger to life due to electric shock. Damage to or removal of the insulation or individual components can be life-threatening.
 - ⇒ Before starting work on active parts of electrical systems and equipment, ensure that all poles are voltage free and that this is maintained for the duration of the work.
 - ⇒ Keep moisture away from live parts. This can lead to a short circuit.
 - ⇒ Never bridge fuses or put them out of operation.
 - ⇒ Do not connect the power supply until all work has been completed.
 - ⇒ Have work on the electrical system performed by qualified personnel only.



DANGER

Danger to life due to non-functioning safety devices of the fire protection system!

- a) If safety devices of the fire protection system do not function properly, there is a risk of serious or fatal injuries.
 - ⇒ Never disconnect the fire protection system from the power supply overnight.
 - ⇒ Do not disassemble, put out of operation or manipulate safety devices.
 - ⇒ Do not remove safety instructions on the system.
 - ⇒ Never block, hold open or otherwise prevent fire doors from closing.
 - ⇒ Have inspection, service and maintenance of the fire protection system carried out in accordance with locally applicable regulations or according to a maintenance contract.
 - ⇒ Have the fire protection system checked and maintained according to the state of the art.

1.4 State of technology

This system was developed using state of the art technology and officially recognized technical safety regulations. The system, depending on its options and diameter, comply with the requirements of the Machine Guidelines 2006/42/EG as well as EN 16005 and DIN 18650 (D).

Nevertheless, danger may arise if not used as intended.



IMPORTANT

Installation, commissioning, inspection, maintenance and repair work may only be conducted by qualified, trained and authorized technicians.

After commissioning or repair work, fill in the check list and give it to the customer for safe keeping.

We recommend obtaining a service agreement.

1.5 Personal protective equipment

Personal protective equipment is used to protect persons from adverse effects on health. Personnel must wear personal protective equipment during the various work activities on and with the system.

Personal protective equipment is explained below:



Hearing protection is used to protect the hearing from noise. As a rule of thumb, hearing protection is compulsory from when normal conversation with other people is no longer possible.



The head protection serves to protect against falling and flying parts and materials. It also protects the head from bumping into hard objects.



Protective goggles protect the eyes from flying parts, dust, splinters or splashes.



Protective gloves are designed to protect hands from friction, abrasions, punctures or serious injury and from burning caused by contacting hot surfaces.



Safety shoes protect the feet from crushing, falling parts and slipping on surfaces. The puncture resistance of the shoes ensures, that pointy objects do not penetrate the foot.



The high-visibility vest is used to make the personnel stand out and therefore to be seen. With improved visibility and attention, the high-visibility vest protects personnel in busy work areas from collisions with vehicles.

Depending on the place of work and the working environment, the protective equipment varies and must be adapted accordingly. In addition to protective equipment for specific work, the work site may require other protective equipment (for example a harness).

In hygiene-protected areas, special or additional requirements of personal protective equipment may be required. These requirements must be considered when choosing personal protective equipment. If there is any uncertainty regarding the choice of personal protective equipment, the safety officer must be consulted at the place of work.

1.6 Spare parts and liability

Reliable and trouble free operation of the door is only guaranteed when using parts that were recommended by the manufacturer. The manufacturer declines any liability for damages resulting from unauthorized modifications to the door or the use of parts that are not permitted.

2 General information

2.1 Purpose and use of the instructions

These instructions are an integral part of the system and enable efficient and safe handling of the system. In order to ensure proper functioning, the instructions must be accessible at all times and kept in the immediate area of the system.

Although only the male form has been chosen for reasons of better legibility, the information refers to members of both sexes.

The operator must have read and understood the manual before starting any work. The basic requirement for safe working is to follow the safety instructions and the handling instructions. In addition, the local regulations and safety rules apply.

The manual can be handed over in extracts to instructed personnel who are familiar with the operation of the system.

The illustrations are for basic understanding and may differ from the actual presentation. Specific representations are contained in the drawings.

2.2 Copyright

The copyright of the instructions remain at:

BLASI GmbH

Carl-Benz-Str. 5-15

D – 77972 Mahlberg

It is prohibited to reproduce, distribute or use the manuals for purpose of competition without the written authorization of BLASI GmbH.

Violation of the here stated copyrights will be prosecuted and fined with compensation of damage.

Subject can change without prior notice.

Differences between product and manual are thereby possible.

2.3 Product identification

The nameplate located on the door provides accurate identification of the product.

2.4 Manufacturer BLASI GmbH

BLASI GmbH Automatic Door Systems

Carl-Benz-Str. 5-15

D-77972 Mahlberg

Germany

Telephone: +49 7822-893-0

Fax: +49 7822-893-119

2.5 Target groups



CAUTION

Risk of injury if personnel are insufficiently qualified!

If unqualified personnel work on the system or are in the danger zone of the system, dangers may arise which can cause serious injuries and considerable damage to property.

- a) All work must be carried out by qualified personnel only.
- b) Keep unqualified personnel away from danger areas.

This operating manual is intended for the target groups listed below:

- Operating entity of the system:
the person who is responsible for the technical maintenance of this system
- Operator of the system:
the person who operates the system every day and has been suitably instructed

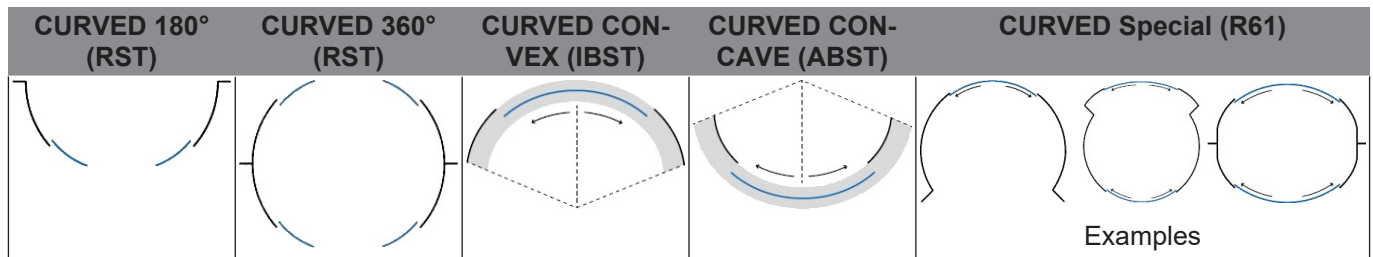
2 General information

2.6 Definition of terms

Term:	Explanation:
System	<p>The term is also used in these instructions as a synonym for the product. Door operators, revolving doors, sliding doors, etc. are referred to as a system.</p> <p>If information in these instructions refers to a specific type, this is shown accordingly in the text.</p>
User	Users are all persons who use the system.
System operator	The respective owner is referred to as the system operator, regardless of whether they operate the system as the owner or pass it on to third parties.
Authorized representative	The authorized representative takes over certain parts of the manufacturer's obligations with regard to fulfilling the requirements of the Machinery Directive. In particular, the authorized representative may also place the system on the market and/or sign EC declarations of incorporation.
Qualified personnel	<p>Qualified personnel are authorized and appropriately trained to perform the following work:</p> <ul style="list-style-type: none">– Disassembly, Assembly, Commissioning, Operation, Audit, Maintenance, Troubleshooting, Decommissioning <p>The qualified personnel have several years of professional experience in the technical field, e.g. as mechanics or machine fitters.</p> <p>The qualified personnel are aware of the residual risks arising from the installation site and, due to their professional training, knowledge and experience, are able to carry out the work assigned to them and to independently identify and avoid possible danger points.</p>
Manufacturer	The manufacturer is whoever designs and/or builds machinery or incomplete machinery under the scope of the Machinery Directive.
Life phases	All phases of the system's condition and use are referred to as life phases. This applies from the time the system leaves the factory until it is disposed of.
Personnel	All persons who carry out activities on and with the system are referred to as personnel. Personnel can be, for example, the operator, the cleaning staff, or the security staff. The personnel meet the personnel qualifications required by the manufacturer.
Service technician	Experts and specialists or representative authorized by the manufacturer to perform commissioning, maintenance and servicing.

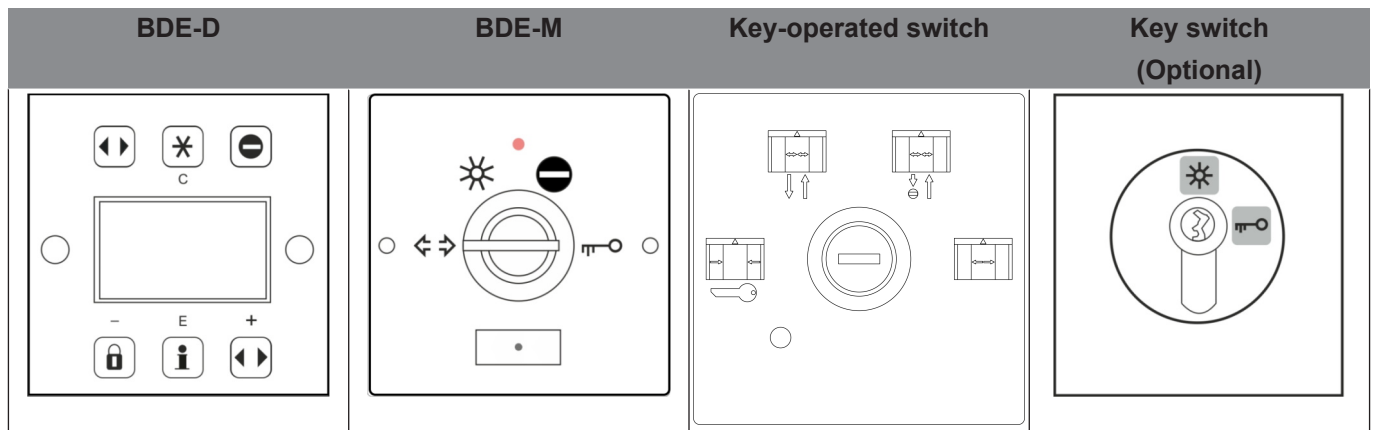
3 Description

3.1 CURVED product types



3.2 Safety features and controls

3.2.1 Control elements



3.2.2 Opening and security sensors (combined)

Each passage area is monitored with opening and security sensors. If an opening or security sensor is activated during the closing process while in **AUTOMATIC** or **ONEWAY TRAFFIC** operating mode, then the respective sliding door will re-open/reverse again.



NOTICE

The opening sensors located in the direction of the escape route (generally inside) must be set to cover the entire passage width to the depth at a depth of 1500mm and be self-monitoring.

3.2.3 Collision detection

If a door wing hits an obstacle during the closing process, then the **half round sliding door** will stop immediately and re-open. The next closing process will commence from the obstruction position at extra slow speed.

Equally, the **half round sliding door** will stop immediately if the door wings hits an obstacle during the opening process. The opening process will start anew after 3 seconds at extra slow speed.

3.2.4 Security sensors in the passage area

Each passage area is monitored with its own security sensor. If a security sensor is activated during the closing process in the **AUTOMATIC** or **ONEWAY TRAFFIC** operating mode, then the respective sliding door will re-open/reverse.

3 Description

3.3 Components of the system



NOTICE

Not all components listed are available as standard.
Depending on the design of the system, some components are optional.

Component switches and button

Control unit BDE-D	
Description:	Push-buttons for operating mode selection, menu and parameter settings including LCD display indication
Location:	Inside the building
Key switch BDE-V	
Description:	Key switch with profile half cylinder for locking and unlocking the sliding door
Location:	Below the BDE-D, e.g. in the porter's lodge
Key-operated switch	
Description:	OFF-AUTOMATIC-EXIT-OPEN – switch with removable key and integrated reset button
Location:	Interior right, integrated on the tube profile or extern

Opening and safety sensors

Combination sensors	
Description:	Opening or security sensors
Location:	On the cover and in the door drum, above in ceiling-recessed box

Lock

Bistable lock	
Description:	Bistable lock – Typ: VRR 20 for Bowden cable
Location:	In the drive technology of the exterior door
Emergency release	
Description:	Emergency release via Bowden cable with pull pin
Location:	Laterally in the passage area

Drive technology

Drive unit	
Description:	Motors ATE20(Master + Slave)
Location:	In the drive technology of the interior and exterior door
Control	
Description:	Control STM 20 RED
Location:	In the drive technology of the interior and exterior door
Control	
Description:	Control TA4
Location:	In the drive technology of the interior and exterior door
Energy storage	
Description:	Energy storage – Type: lead acid battery BAT RED-B 16
Location:	In the drive technology of the interior and exterior door

Expansion module	
Description:	Expansion module FEM-0
Location:	In the drive technology of the interior and exterior door

Light

Recessed lighting	
Description:	Recessed lighting
Location:	In the drum ceiling

LED's	
Description:	Lamp LED reflector spotlight
Location:	In the drum ceiling

Light switch	
Description:	Light switch (provided by the customer)
Location:	Inside the building

Florescent tubes	
Description:	Florescent tubes
Location:	In the drum ceiling as background lighting

4 Options

4 Options

4.1 Comparison RC 2 to RC 3



NOTICE

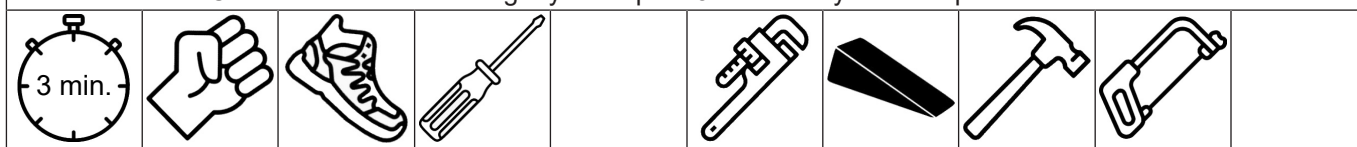
RC means "Resistance Class" and indicates the resistance class of the door. The automatic multipoint locking device, the reinforced leaf system with safety glass and the continuous floor guide guarantee high resistance to burglary attempts.

The system is RC 2 or RC 3 tested and certified according to EN 1627.

Resistance classes RC 2

The characteristics of the systems include the following:

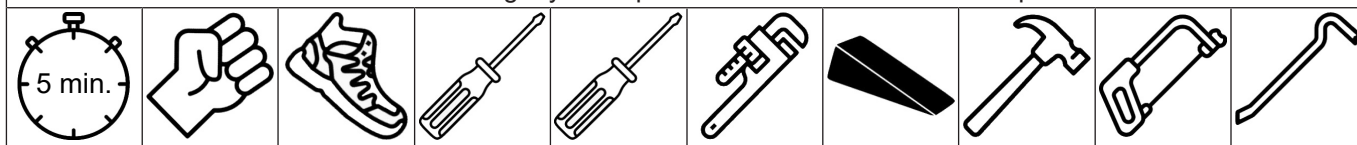
- Reinforced glass (P4A) with a structure of 10 mm on the outside. This is bullet-resistant according to the corresponding standard.
- Doors with RC 2 must withstand a burglary attempt of 3 minutes by means specified below.



Resistance classes RC 3

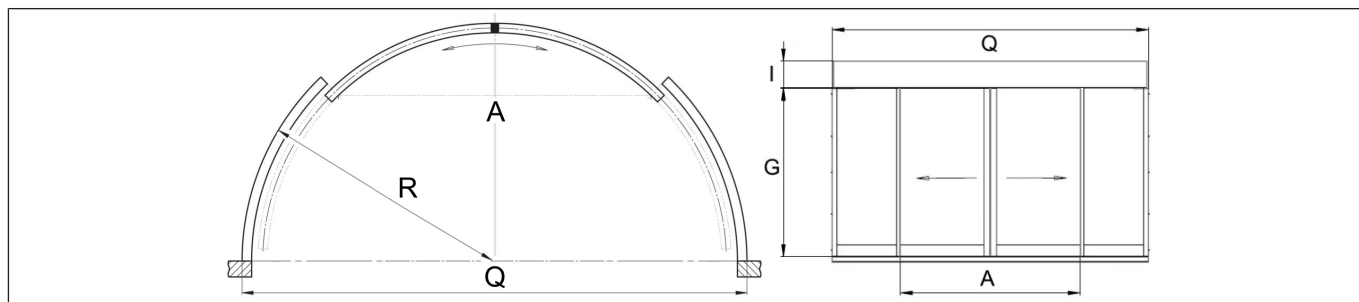
The characteristics of the systems include the following:

- A thicker security foil increases the structure of the outer glass (P5A) to 11 mm. Furthermore, additional constructive measures are taken to make it impossible to lever out the door leaves or side panels.
- Doors with RC 3 must withstand a burglary attempt of 5 minutes with the means specified below.



5 Specifications

5.1 Dimensions of the system



Dimensions	CURVED 180°	CURVED 360°	CURVED CONVEX	CURVED CONCAVE	CURVED SPECIAL
Q = Diameter	1 600–3 600 mm	1 600–3 600 mm	from 1 600 mm	from 1 600 mm	1 600–6 000 mm
R = Radius	800–1 800 mm	800–1 800 mm	from 800 mm	from 800 mm	800–3 000 mm
A = Passage width	1 000–2 400 mm	1 000–2 400 mm	from 1 000 mm	from 1 000 mm	1 000–3 300 mm
G = Passage height	2 200–3 000 mm	2 200–3 000 mm	2 200–3 000 mm	2 200–3 000 mm	2 200–4 000 mm
I = Canopy- / Cladding-height	200–300 mm	200–300 mm	200–300 mm	200–300 mm	200–1 000 mm

5.2 Electrical specifications of the system

Mains voltage:	100-240V AC (STA 20) / 115V AC (Serie 5100)
Frequency:	50-60 Hz
Mains fuse:	16A circuit breaker with tripping characteristic C or K
Power consumption:	max.: 700 VA
Control voltage:	24V DC (extra low voltage)
Fuse in the control:	T4A (depending on the door control)
Safety class:	1
Degree of protection:	IP 20

5.3 Electric lighting specifications

High power LED spots	
Transformer power supply	90-264 VAC
Frequency	50-60 Hz
Transformer secondary voltage	60 W
Capacity per LED/lamp	5.6 W
Protection class/Insulation class	2
Transformer degree of protection	IP 67



NOTICE

The power connection must be installed by a licensed electrician.
The power must be able to be shut off via a main switch or residual current circuit breaker (on-site).











5.4 Environmental conditions

Temperature range	From -15 to +50° C
Humidity range	Up to 85% rel. humidity, not condensing

6 Operation



6.1 Selection of operating modes (BDE-D)

The electronic control unit BDE-D is a user-friendly input/output module to control and customise (optional) the system operation. The backlit LCD display informs about the system status by means of symbols and plain text. Error messages are displayed as text.




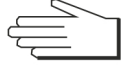


Button	Operating mode	Symbol displayed	Function
	Automatic	 Automatic	<ul style="list-style-type: none"> – Unobstructed access through the system in both directions – Maximum opening with
	Continuously open	 Cont. open	<ul style="list-style-type: none"> – System remains open until another operating mode is selected
	One-way	 One-Way	<ul style="list-style-type: none"> – System opens only in one direction (e.g. for shop closing time)
	Locked	 Locked	<ul style="list-style-type: none"> – System is closed and locked (if there is a locking device) – System remains locked even in case of power failure
	Reduced opening width	 Automatic	<ul style="list-style-type: none"> – Unobstructed access through the system in both directions – Reduced opening width



NOTICE

The reduced opening width is also effective with operating modes  (One-way) and  (Continuously open).

6.2 Selection of special functions

Key operation	Function	Display	Description
	Manual mode	 Manual	<ul style="list-style-type: none"> – Press key twice – System opens/stops on 2nd key stroke – System can be operated manually <p>Back to another operating mode</p> <ul style="list-style-type: none"> – Activation of the selected key (e.g. Automatic)
	Manual mode	 Manual	<ul style="list-style-type: none"> – Press key for 2 seconds – System can be operated manually <p>Back to another operating mode</p> <ul style="list-style-type: none"> – Activation of the selected key (e.g. Automatic)
	Single opening	 Locked	<ul style="list-style-type: none"> – System is closed and locked – 1 keystroke unlocks the system (if available) – An opening/closing cycle is performed – Once closed, system locks again

6.3 Locking the control panel with the keyboard






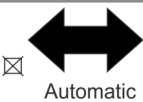
IMPORTANT





In order to prevent accidental locking of the doors during the use of the building, the choice of the operating mode for emergency exits must be protected according to the DIN EN 16005 standard.

If the "Locked" operating mode is present, it must be protected, for example, by means of an access code or a key in such a way that only authorized personnel can set a different operating mode.

It is the responsibility of the operator of the automatic door, with escape route function, to lock the control unit in the "Automatic" position while the building is in use.

The locking of an emergency exit door is not permitted according to the standard, which would also render the function of an emergency exit door invalid.

Locking the control unit				
Key sequence			Display	Description
			 Automatic	<ul style="list-style-type: none">– The control panel is locked– The locked state of the BDE-D is shown on the display– Unwanted manipulation of the control unit is made more difficult

Unlocking the control unit				
Key sequence			Display	Description
			 Automatic	<ul style="list-style-type: none">– The control panel is unlocked– The unlocked state of the BDE-D is shown on the display– Free selection of operating modes and special functions is possible



NOTICE

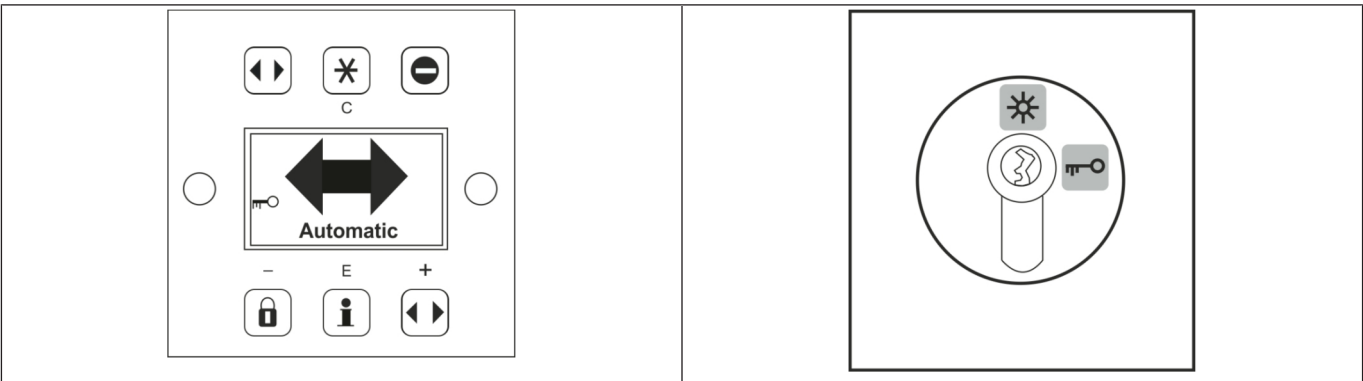
The system remains in the previously selected operating mode.

6.4 Locking the control unit with a key (option)



IMPORTANT

In order to prevent accidental locking of the doors during the use of the building, the choice of the operating mode for emergency exits must be protected according to the DIN EN 16005 standard.



If the "Locked" operating mode is present, it must be protected, for example, by means of an access code or a key in such a way that only authorized personnel can set a different operating mode.

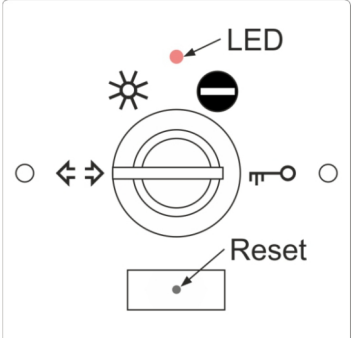
It is the responsibility of the operator of the automatic door, with escape route function, to lock the control unit in the "Automatic" position while the building is in use.





6 Operation

The locking of an emergency exit door is not permitted according to the standard, which would also render the function of an emergency exit door invalid.

The BDE-D operating unit can be effectively protected against unauthorized adjustment of the operating mode via an external operating lock.

6.5 Selection of operating modes (BDE-M)

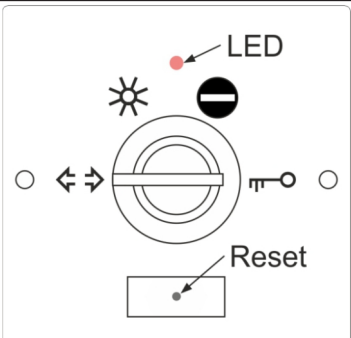
	The BDE-M mechanical operating unit is equipped with a key switch. This key switch can be used to set the various operating modes. The key switch can be removed in any position.
---	---

Key	Operating mode	Function
	Automatic mode with total opening width	This operating mode corresponds to standard operation. Activation of a triggering device (e.g. RIC 290, RAD 290) opens the door. After the hold-open time has elapsed, the door closes again.
	Continuously open and manual operation	Door opens and remains in the open position. It can then be moved manually.
	One-Way	The door opens only by activating the triggering element located on the inside of the door or by an optional key swing contact (SSK).
	Locking	The door is automatically locked after it has been closed. Only with the key swing contact (SSK) can an opening be triggered with the last valid opening width. Caution: In the event of interrupted power , door opening in the locked state, without an additional battery or without manual release, is no longer guaranteed!

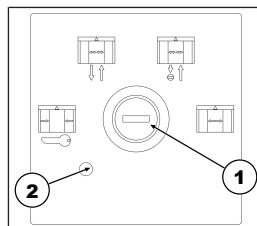
6.5.1 Operating mode display

The LED is lightening if mains voltage or battery voltage are available.

6.5.2 Reset-Button

	<ul style="list-style-type: none">– This hidden button will be actuated with a 25 mm long paper clip.– Therefore, there is a little hole in the middle of the logo.– If the reset-button will be pressed for about 5 seconds, a software-reset will happen. The pre-set settings remain unaffected.
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6.6 Key-operated switch

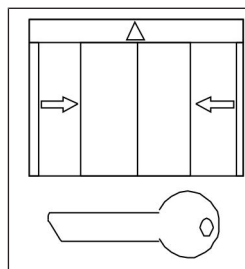


The sliding door can be placed in either OFF – AUTOMATIC – EXIT – OPEN operating mode.

The operating modes can be set with the key-operated switch (1).

The sliding door can be reinitialised with the reset button (2).

6.6.1 OFF operating mode



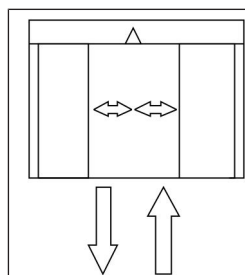
The sliding door closes and is electronically locked.

Once closed, the sliding door is additionally secured by an additional electromagnetic brake.

If the operating mode of the sliding door is switched to OFF during the closing process, then the presence sensors are turned off. This can lead to an increased risk of entrapment or tripping.

Pressure monitoring is however still activated (see pressure monitoring).

6.6.2 AUTOMATIC operating mode

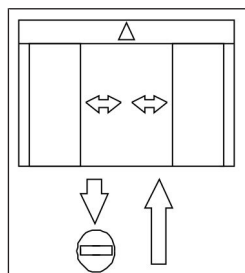


Both presence detection sensors, 1 x interior and 1 x exterior, are activated and open the sliding doors when presence is detected.

After the hold open time has expired, the sliding door closes again, as long as nobody is situated in the detection range of the presence detection sensors. The closed sliding wing is locked into position via an electromagnetic brake.

If the detection area of the presence detection sensor is entered during the closing process, then the sliding door will re-open/reverse.

6.6.3 EXIT operating mode

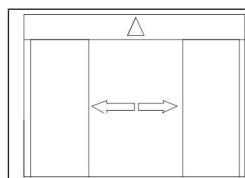


Only the interior presence detection sensor is activated and opens the sliding door when presence is detected.

After the hold open time has expired the sliding door closes again, as long as nobody is situated in the detection range of the presence detection sensors. The closed sliding wing is locked into position via an electromagnetic brake.

If the detection area of the presence detection sensor is entered during the closing process, the sliding doors will re-open/reverse.

6.6.4 OPEN operating mode



The sliding door opens immediately and remains open in this position, until a different operating mode is programmed.

6.7 Self-test (redundancy test) of operator

6.7.1 When is a self-test carried out?

As standard, the door automatically performs a so-called redundancy test at least once every 24 hours (except in the Locked operating mode). During this self-test, the door performs a slow opening and closing cycle, which checks safety-relevant functions.

The self-test is done to ensure that all components are working and can perform their service in case of emergency opening.

The redundancy test is performed after a restart of the controller and when changing from the following operating modes:

- From continuously open - to another operating mode
- From Locked - to another operating mode
- From one-way - to another operating mode



NOTICE

After a faulty self-test, the door opens and remains in the open position. An alarm is triggered and displayed on the control unit. In this case, the service center must be notified.

6.7.2 Resetting the alarm

An alarm can be activated for the following reasons:

- An error occurring during the self-test or during normal operating
- A hindrance during the opening movement

An alarm can be reset as follows:

- By pressing the E-key on the BDE-D (press key longer than 5 seconds)
- By pressing the emergency stop switch (option)

6.8 Initialize and calibrate the system

In the case of a serious disturbance, it may be necessary to move the sliding door to a defined reference position or even to recalibrate.

The initialization and calibration process will start by pressing the reset button on the key-operated switch.

6.8.1 Initialization process

Pushing the reset button on the key-operated switch for less than three seconds will start the initialization process. This results in resetting the entire processor system. The sliding door will close slowing until the reference position is found. Then the sliding door will operate again in its originally programmed mode.

This initialization process is performed after every power failure.



NOTICE

The sliding door must not be obstructed during the initialization and/or calibration process or the door parameter will be measured wrong. This leads to a non-optimized running behavior!

6.8.2 Calibration process

If the reset button on the key-operated switch is pressed for longer than 3 seconds, the calibration process will start. As by the initialization process, this will reset the entire processor system. The door open and door closed positions will now be defined by the door control by slowly closing, opening and closing the door again. In addition, acceleration, deceleration and maximum speeds are calculated specifically per door. Then the sliding door will return to its originally programmed operating mode.

6.8.3 Normalization

If the key-operated switch is turned from the “OFF” position to “AUTOMATIC”, then the sliding door will start its program and “search” for the locked position at extra slow speed. Then the sliding door is operational again.

7 Inspection and maintenance

Regular inspection and maintenance of the system by trained and authorized personal from the manufacturer, is the best guarantee for long life and trouble-free secure operation.

These control and maintenance operations are required at regular intervals, following the manufacturer's instructions and the relevant legal requirements.

7.1 General remarks

According to current legislation, the operator of an automatic door system is responsible for its maintenance and safety.

Accidents or defects can be avoided if the system operator takes good care of the system.

Testing

Type of test	Measure
Visual inspection	Check door leaves, guides, bearings, limiting devices, sensors, and the securing of crushing and shearing points for damage.
Mechanical inspection	Check fastenings for tight fit.
Safety check (exit and escape routes)	Check sensors, safety devices, and monitoring devices for tight fit and damage.
Function testing	Check functioning of switches, operators, controllers, power or energy storage devices, and sensors. Also check the adjustment of the safety devices and the setting of all movement sequences including the end points.

Servicing

Type of servicing	Measure
Adjusting and cleaning	Clean and adjust bearings, sliding points, and power transmission.

For documentation and information purposes, the testing and servicing work as well as the condition of the system are recorded in a test log book. The test log book must be kept for at least one year or until the next testing/servicing.



IMPORTANT

The testing and/or servicing interval according to the manufacturer's specification is at least 1 to 2 times a year.



IMPORTANT

The recommended and planned spare parts and wearing parts can be requested from your service center.

7.2 Operator duties

Personal protection requires compliance with the standards and guidelines for publicly accessible facilities.

According to applicable standards and guidelines, automatic door systems must be tested and serviced by qualified persons.

The system operator is responsible for carrying out testing and servicing.

7 Inspection and maintenance

System operator tasks

Task	Personnel	When?	Entered in test log book?
Maintenance and cleaning of the sensors for safety and triggering	System operator	Weekly, or as required	No
Function and safety check	System operator	Monthly	No

Tasks of qualified person

Task	Personnel	When?	Entered in test log book?
Acceptance test	Qualified person	After assembly of the door system ready for operation	Yes
Servicing	Qualified person	1 x annually, or according to country-specific standards and guidelines	Yes
Test (inspection)	Qualified person	1 x annually, or according to country-specific standards and guidelines	Yes
Test (inspection) for door systems in escape routes	Qualified person	2 x annually, or according to country-specific standards and guidelines	Yes
Testing of fire doors	Qualified person	1 x annually, or according to country-specific standards and guidelines	Yes

7.3 Monthly check-up list



Test / Control	Procedure	Expected Result
Motion detector	<ul style="list-style-type: none">– Walk at normal speed towards the door (from inside or outside)	<ul style="list-style-type: none">– The door opens in time and at an appropriate speed to allow un-hampered passage through the doorway– The sensor must cover the whole width of passage
Door leaf / side screen	<ul style="list-style-type: none">– Verify the state of the glazing– Verify the state of the seals and profiles	<ul style="list-style-type: none">– No glass damage– No seals torn off (preventing energy loss)– The door is the “visiting card” for your company. Take care that it is maintained in a perfect condition
Door leaf guides	<ul style="list-style-type: none">– Check the door leaf guides– These could be damaged by impacts (e.g. from trolleys)– Door leaf guides can show exceptional signs of wear and tear due to intensive use as well as dirt	<ul style="list-style-type: none">– Door leaf must slide smoothly– Bottom or vertical profiles show no scratch marks– Door leaf guides must not produce any unusual noise during the opening/closing phase
Full width floor track (instead of single door leaf guides)	<ul style="list-style-type: none">– Set the door on manual mode (see chapter "Selection of special functions")– Clean the track from dirt, cigarette butts, etc.	<ul style="list-style-type: none">– Door leaf must slide smoothly– The movement of the door must not be hindered by dirt

7.4 Door care

The entire system, including the sensors and safety devices, can be cleaned with a moist cloth and standard commercial cleaners (non-scouring, do not use any solvents). First test the cleaners on a hidden (not easily visible) place. Keep all guides free of dirt.



NOTICE

It is recommended that for carrying out this work, the operating mode  (Locked) or  (Continuously open) be used, so as to avoid possible injuries from unwanted door movements.

8 Malfunctions

8.1 Behavior in event of faults

In the event of an irregularity or malfunction, different displays are shown depending on the connected control unit.



IMPORTANT

If malfunctions that endanger the safety of individuals occur, the system must be turned off. It may not be turned back on until the problem has been resolved by a professional and the danger no longer exists.



NOTICE

If the system performs a slow opening or closing movement, this may be a deliberate, automatic redundancy test (self-test).





8.1.1 Display on the control unit

- Status messages are displayed with status number and text.
- The display changes alternately from white to black.
- After 10 seconds, the telephone number of the relevant service centre is alternately displayed.

8.1.2 Possible troubleshooting

- Based on the status display some errors can sometimes be eliminated
- If you are not sure, please contact the relevant service centre
- Before you call, write down the data displayed on the BDE-D. This information provides the technician with important informations for troubleshooting
- If several status messages are active at the same time, they are numbered: e.g. error 1 / 2
- Pressing the E-button permits to navigate from one error message to the next one




Example:

Which information?	Procedure	How displayed? (Example)
Status text and number	– It is automatically displayed on the BDE-D	<div>  </div> <div>AKI > active</div> <div>  </div> <div>AKI > active</div>
Software-Versions	– Press the following button on the BDE-D for 2 seconds 	<div>  Software STA20 VX.XX BDE-D VX.XX </div>

8.1.3 Resetting the control module

In some cases, the malfunction may be remedied by restarting the control unit. Please proceed as described below.



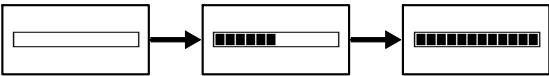

- Make sure that the drive cladding is closed and that nobody is obstructing the system or approaching it, thereby triggering an opening of the system.

Button	Selection	Display
		Press > 5 seconds
	No	No
	Yes	Reset control?
		Yes

- Restart of the installation is performed.
- The first movement after a reset occurs at reduced speed.
- If a fault is still displayed on the control unit after resetting, please contact our service centre **stating the error message**.

8.1.4 Control unit BDE-D does not react

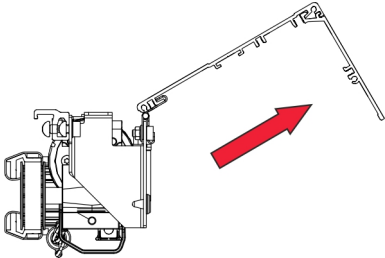
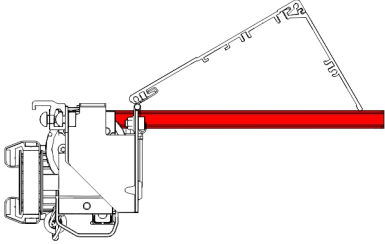
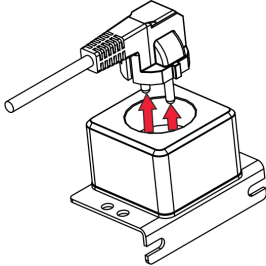
If the control panel does not react when the keys are pressed or if no message appears on the display, a reset of the control panel could eliminate the problem.
Proceed as follows:

RESET HARDWARE BDE-D	
	Press E key > 12 seconds
	Display without any message
	<p>Connecting to control unit...</p>  <p>Connection has been established (example)</p> <div> Software STA20 VX.XX BDE-D VX.XX</div>

- After resetting, the control panel is again operational
- If this is not the case, please inform our service centre

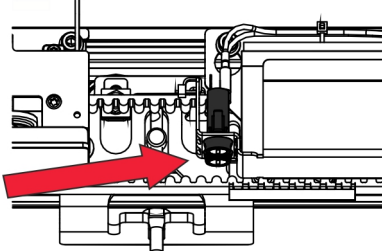
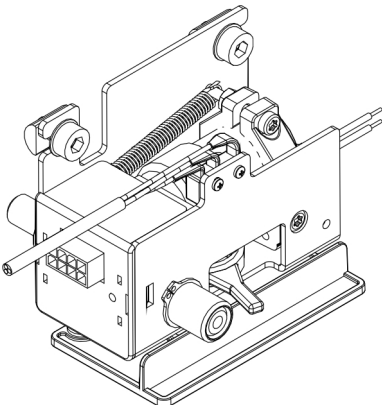
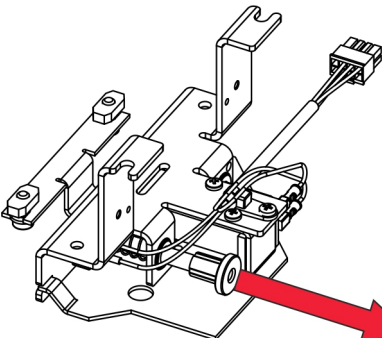
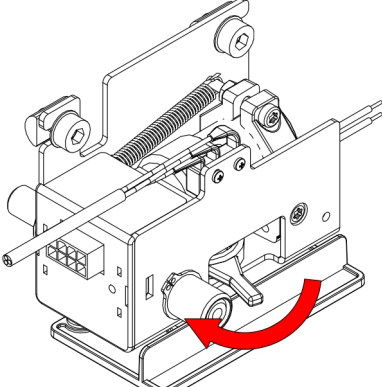
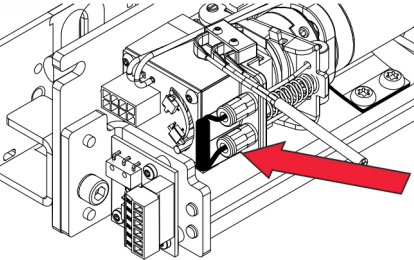
8.1.5 Manual opening (without manual unlocking device)

Initial situation: The door is blocked and locked in de-energized state, in closed position.

Example: Sequence of manual opening	
	<ul style="list-style-type: none">– Open the drive casing (swing open) <p>Note: If you pull near the hinges, it makes it easier to open the casing</p>
	<ul style="list-style-type: none">– Fold out the red support to fix the drive cover in the open position.
	<ul style="list-style-type: none">– Disconnect the equipment from the power supply.– The socket is located under the drive casing.

8 Malfunctions

Example: Sequence of manual opening

	<p>For systems with integrated emergency battery:</p> <ul style="list-style-type: none"> – In addition, unscrew the battery fuses. – The battery is located under the drive casing.
<p>Locking system 20</p>  <p>The lock is provided with an unlocking lever.</p>	<p>Locking system 20-200</p>  <p>The lock is provided with an unlocking bolt. By pulling, the door unlocks.</p>
	<ul style="list-style-type: none"> – Actuate the lever clockwise. – The door unlocks and can be pushed open manually.
<p>For multipoint locking (MPV)</p>  <p>The lock is provided with a rope loop</p> <ul style="list-style-type: none"> – Close the drive cover by applying a strong pressure in the area of the hinges. 	<ul style="list-style-type: none"> – Pull strongly on the rope loop. – The door unlocks and can be pushed open manually.

8.1.6 Manual closing





Initial situation: Power supply is present. Door remains blocked in open position.



NOTICE

Depending on the type of fault, the procedure for closing the door manually varies. Follow the steps described below.

8.1.7 Manual closing - step 1

Key	Function	Display	Description BDE-D
	Manual mode	 Manual	<ul style="list-style-type: none"> – Press key 2 x in succession – The door can be closed or opened manually Makeshift door operation (e.g. at low outside temperature)
	Locked	 Locked	<ul style="list-style-type: none"> – Night locking – Press <i>additionally</i> the Locked key – Push the door manually to the closed position – Door is closed and locked (if locking device is present) Notify service center (Phone number is shown on the display)



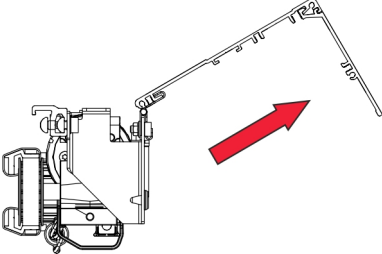
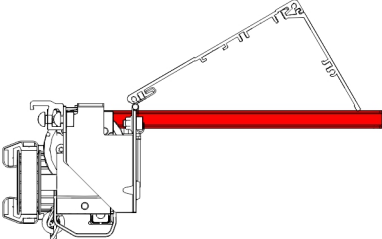
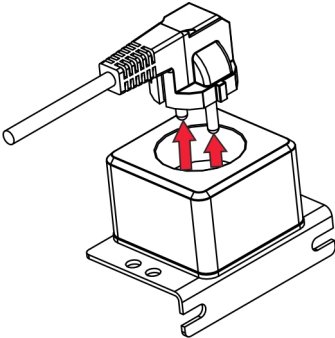
NOTICE

If the door still cannot be operated and locked manually, perform the steps described below.

8.1.8 Manual closing - step 2

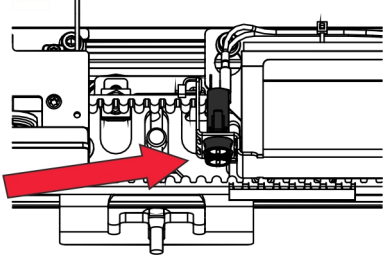
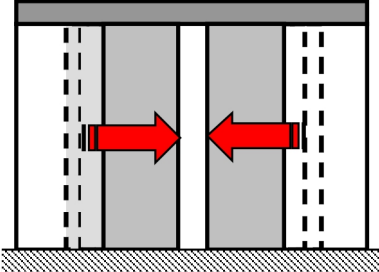
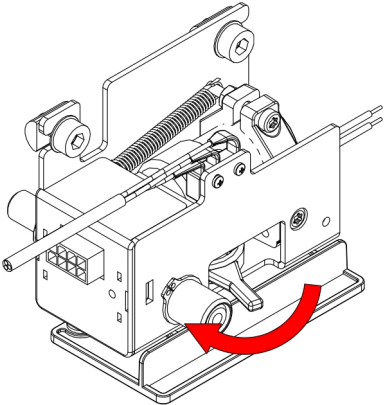
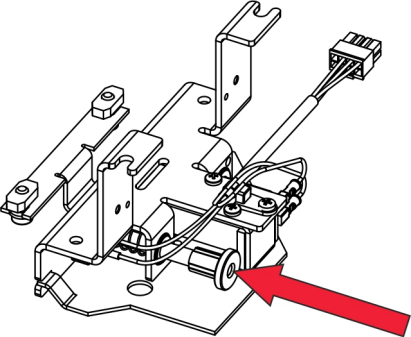
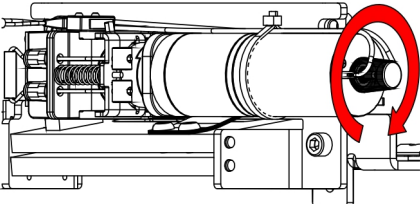
If the attempts to close and lock the door described under "step 1" have remained unsuccessful, it indicates a severe failure. Please proceed as follows:

Example: Sequence of manual closing

	<ul style="list-style-type: none"> – Set the door in manual mode with the control unit (see chapter "Manual closing - step 1"). – Open the drive casing (swing open). <p>Note:</p> <p>If you pull near the hinges, it helps open the casing.</p>
	<ul style="list-style-type: none"> – Fold out the red support to fix the drive cover in the open position.
	<ul style="list-style-type: none"> – Disconnect the equipment from the power supply. – The socket is located under the drive casing.

8 Malfunctions

Example: Sequence of manual closing

	<p>For systems with integrated emergency battery:</p> <ul style="list-style-type: none"> – In addition, unscrew the battery fuses. – The battery is located under the drive casing.
	<ul style="list-style-type: none"> – Push the door manually to the closed position.
<p>Locking system 20</p> 	<ul style="list-style-type: none"> – Operate the release lever clockwise and hold it in this position so that the door can close completely. – The door locks as soon as you release the unlocking lever.
<p>Locking system 20-200</p> 	<ul style="list-style-type: none"> – The door locks when you press the unlocking bolt inwards.
<p>With multipoint locking (MPV)</p> 	<ul style="list-style-type: none"> – Turn the red knob clockwise until you feel resistance and you cannot turn it any further. – Check by hand if the door is really locked. – Leaving the building is possible only through a second exit. <p>Notify service center (Phone number is shown on the display)</p>

8.2 Function of the round sliding door system when power is restored

Once power has been restored, the respective half round sliding door continues in its previously programmed operating mode.

8.3 Exterior door

8.3.1 LOCKED operating mode

During a power failure, the exterior door remains closed and locked. The exterior door can be unlocked and opened manually by pulling the emergency release pin in the passage area. Then the door wings can be closed and locked again manually. The emergency release pin must be reset to the locked state.

8.3.2 AUTOMATIC and ONEWAY operating mode

The last movement of the sliding door with a low battery (low capacity) can be selected – open (when not locked) or closed. Normally, when the exterior door battery is low, it will open for one last time and remain open. Then the exterior door can be closed and locked manually.

8.3.3 PERMANENTLY OPEN operating mode

The exterior door remains open.

8.4 Interior door

8.4.1 LOCKED, AUTOMATIC and ONEWAY TRAFFIC operating modes

The last movement of the half round sliding door with a low battery (low capacity) can be selected – open (when not locked) or closed. Normally, when the interior door battery is low, it will open for one last time and remain open. Then the interior door can be closed and locked manually.

8.4.2 PERMANENTLY OPEN operating mode

The interior door remains open.

9 Taking out of service and disposal

9 Taking out of service and disposal

9.1 Decommissioning

When shutting down or taking out of service, the system is disconnected from the mains supply and any existing battery is unplugged.



NOTICE

After each temporary shutdown a new commissioning must be carried out.

9.2 Dismantling and disposal



IMPORTANT

All machine parts must be sorted by type of material and disposed of according to local regulations and guidelines.



NOTICE

The door systems can be completely disassembled in reverse order.

The automatic door mainly consists of the following materials:

Aluminum:

- Linking profiles
- Gearbox, Drive panel
- Door wing profiles and side profiles
- Various profiles and small parts

Steel / iron parts:

- Stainless steel casing, Floor panel, Box recess for floor installation
- Optional spacer or reinforcement profiles
- Gear components, springs
- Various small parts like fittings, covers, linking parts, etc.

Glass:

- Door wings and side panels

Various electronic and electromechanical components:

- Sensors, control and operator components
- Lead batteries and nickel-cadmium rechargeable batteries

Various plastics:

- Rollers
- Cable clips, coupling and linking parts
- Sealing profiles
- Casing of electromechanical components and sensors

