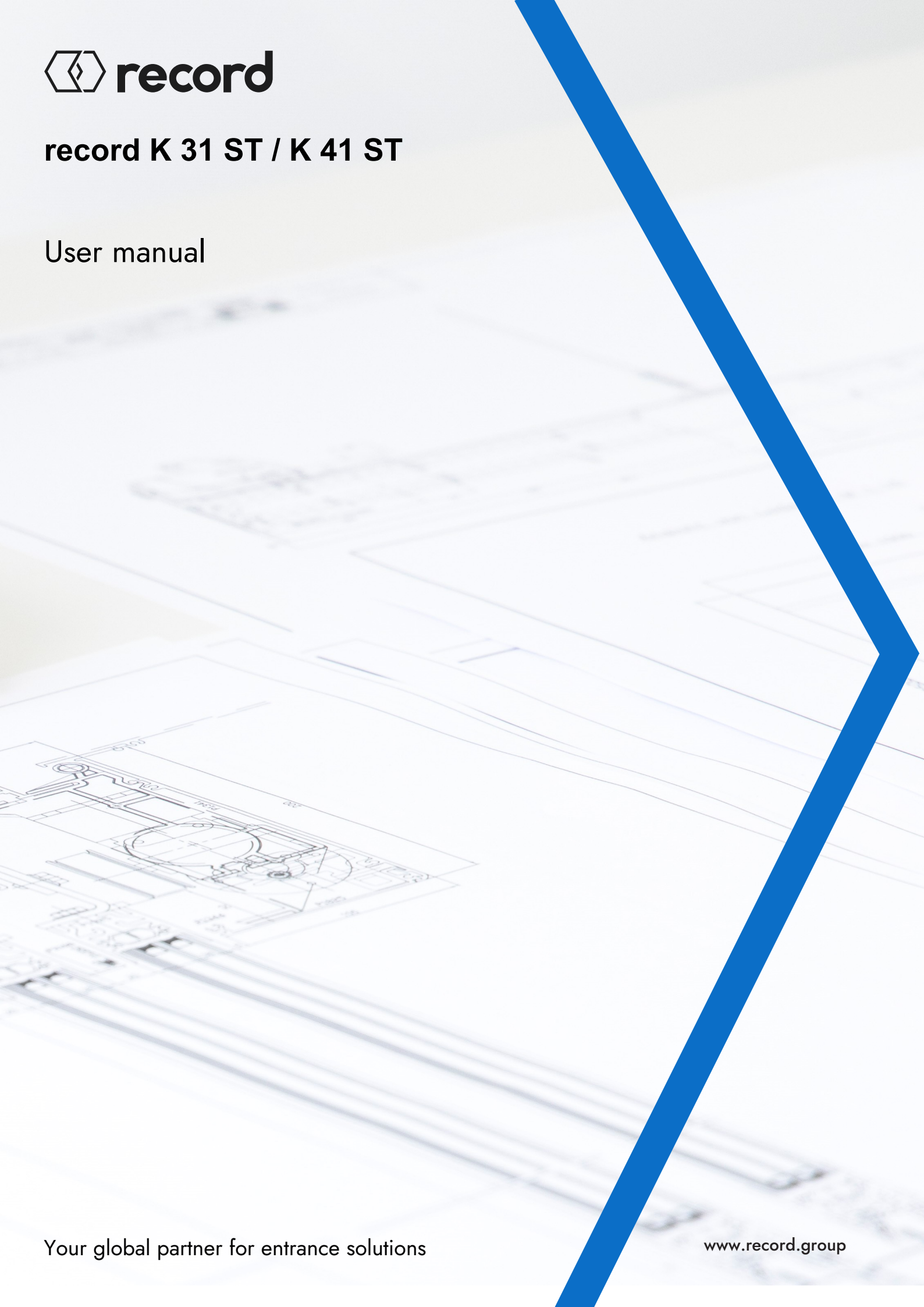
record

record K 31 ST / K 41 ST

User manual



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Translation of the original manual

Table of Contents

Table of Contents

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.

NOTICE

The operation of an automatic door in combination with a wicket door may only take place if the latter is in a secured position.

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!

WARNING

Serious injuries and major property damage.

Incorrect mounting can lead to serious injuries and/or cause major damage to property.

a) Observe and comply with all important instructions regarding safe assembly.

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.

NOTICE

The installation must be inspected during the function and safety check for imbalance and signs of wear or damage to cables, springs and fastening parts.
The equipment must NOT be used if repair or adjustment work needs to be carried out.

NOTICE

Checking, repairs, service, maintenance and cleaning may only be carried out when the system is at a standstill and switched off. Before work can be started, persons must be barred from the system and the danger area.

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 (cleaning, maintenance, replacement) 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

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

2.6 Definition of terms

Term:	Explanation:
System	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. If information in these instructions refers to a specific type, this is shown accordingly in the text.
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	Qualified personnel are authorized and appropriately trained to perform the following work: – Disassembly, Assembly, Commissioning, Operation, Audit, Maintenance, Troubleshooting, Decommissioning The qualified personnel have several years of professional experience in the technical field, e.g. as mechanics or machine fitters. 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.
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 Description of the door

The door with single passage function consists of three or four turnstile wings.

The revolving door has a microprocessor-controlled drive system, which can be used in several operating modes. A key-operated switch is used to switch operating modes. An integrated error analyzer detects malfunctions.

3.1.1 Optical displays of the door

The LED displays are generally installed 1x on the inside and 1x on the outside to the right of the drum wall profiles at a height of 1600 mm.

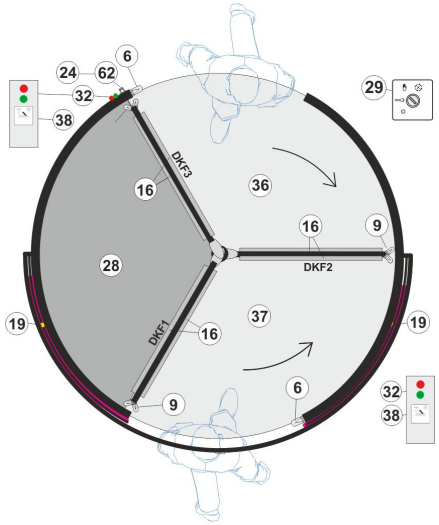
The LED displays can also be installed in the vertical column.

The LED displays indicate the flow status for each direction for the corresponding door:

LED red:	The door system is blocked for passage in this direction.
LED green:	The door system is open for passage in this direction.

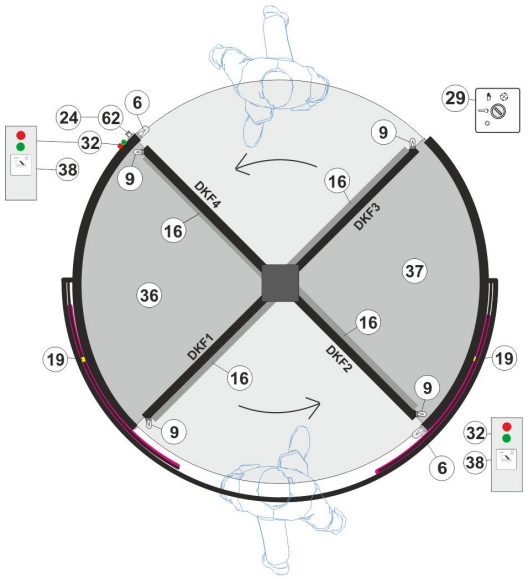
3.2 Single passage positions of the door

Single passage position K31

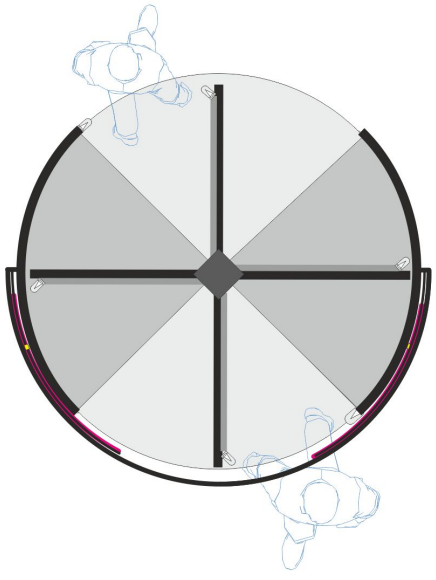


Single passage position K41

Home position (X-Position)



Position after power failure (+-Position)



Position	Designation
6	Vertical safety strips drum edges
9	Vertical safety strips turnstile wings
16	Horizontal heel protection safety strips
19	Monitoring contact night shield
24	Emergency stop switch
28	Contact mat locked segment or optical sensors in the ceiling
29	Key-operated switch
32	Traffic light red / green (alternatively in the standing column)
36	Contact mat exit direction or optical sensors in the ceiling
37	Contact mat entrance direction or optical sensors in the ceiling
38	On-site code card reader (1x interior and 1x exterior)
62	Sticker STOP

3.3 Single passage in "AUTOMATIK" position

3.3.1 Entrance direction K31

Authorization via code card reader

In the idle position the turnstile is stopped and locked by a motorized electromagnetic brake. Both optical displays are lit up **RED**.

An authorized person uses the code card reader from the exterior. This transmits a release impulse to the door control, which unlocks the turnstile and releases the motorized electric brake for an adjustable period of time (4-20 sec.). The optical display on the exterior switches from **RED** to **GREEN**, but the interior one remains **RED**.

If the authorized person now steps onto the contact mat during the release time or is detected by the active infrared safety sensors in the **entrance direction**, the turnstile will start to rotate automatically at walking speed. The turnstile stops rotating after 120°. Once the release time has expired the turnstile will lock again.

If an unauthorized person attempts to enter door from the **exit direction**, they will step onto a contact mat or will be detected by an active infrared safety sensor in a blocked segment. Both optical displays will switch to **RED**.

The turnstile will rotate backwards at slow speed and force the unauthorized person back to the inside. Any attempt to override the system will result in resistance and the turnstile will block, gently pushing the unauthorized out. The authorized person will also be forced back to the exterior.

If another person enters the blocked segment from the exterior while the door is pushing the other unauthorized person out, they will get trapped inside. The turnstile will start up at slow speed moving forwards and force the person back to the exterior. After a pause of approx. 5 seconds the turnstile will rotate backwards again to the home position!

The authorized person will have to use the exterior code card reader again. The door control will receive a new release impulse and proceed as described above.

The entrance direction of the door can also be unlocked from a reception desk with a release button!

3.3.2 Exit direction K31

Authorization via code card reader or with a release button

In the idle position the turnstile is stopped and locked by a motorized electromagnetic brake. Both optical displays are lit up **RED**.

An authorized person uses the code card reader or presses the release button from the interior. This transmits a release impulse to the door control, which unlocks the turnstile and releases the motorized electric brake for an adjustable period of time. The optical display on the exterior switches from **RED** to **GREEN**, but the exterior one remains **RED**.

If the authorized person now steps onto the contact mat during the release time or is detected by the active infrared safety sensors in the **exit direction**, the turnstile will start to rotate automatically at walking speed. The turnstile stops rotating after 120°. Once the release time has expired the turnstile will lock again.

If an unauthorized person attempts to enter the door from the **entrance direction**, , they will step onto a contact mat or will be detected by an active infrared safety sensor in a blocked segment. Both optical displays will switch to **RED**.

The turnstile will rotate backwards at slow speed and force the unauthorized person back to the outside. Any attempt to override the system will result in resistance and the turnstile will block, gently pushing the unauthorized person back to the interior. The authorized person will also be forced back to the interior.

If another person enters the blocked segment from the interior while the door is pushing the other unauthorized person out, they will get trapped inside. The turnstile will start up at slow speed moving forwards and force the person back into the interior. After a pause the turnstile will rotate backwards again to the home position!

The authorized person will have to use the interior code card reader or release button again. The door control will receive a new release impulse and proceed as described above.

3.3.3 Entrance direction K41

Authorization via code card reader

In the idle position the turnstile is stopped and locked by a motorized electromagnetic brake.

Both optical displays are lit up **RED**.

If an authorized person uses the exterior code card reader the turnstile will start to rotate counter clockwise. The optical display on the exterior switches from **RED** to **GREEN**, but the interior one remains **RED**.

The person now has approx. 20 seconds time (release time) to enter into the door in the entrance direction.

If the person does not pass through the door to the inside, the turnstile will stop after the release time in the **X-Position** and lock. If the person does go through the door in the entrance direction, the turnstile will stop in the **X-Position** immediately after the passage.

If additional people pass through to the interior after the initial use of the exterior code card reader, then the release time starts over, meaning each authorized person has an additional 20 seconds to pass through the door.

If an unauthorized person tries to enter the door from the **exit direction** while it is rotating, they will step onto a contact mat or will be detected by the active infrared safety sensors in the exit direction. Both optical displays will switch to **RED**.

The turnstile rotates clockwise back to the **+-Position** and forces the unauthorized person back to the interior. Attempts to override the system are met by gentle resistance. As soon as the unauthorized person exits the door and the contact mat and safety sensors are disabled, the turnstile will rotate counter clockwise back to the **X-Position**, come to a stop and lock.

Afterwards, it must be ensured that nobody stands on a contact mat or within detection range of the safety sensor until the release has expired. The exterior optical display switches from **RED** to **GREEN**, but the interior one remains **RED**.

The authorized person can re-enter the door, without using the code card reader again, as long as the release time is still activated.

If the release time has expired, the authorized person will have to use the code card reader again. The door control will receive a new release impulse and proceed as described above.

The entrance direction of the door can also be unlocked from a reception desk with a release button.

NOTICE

If no authorized person passes through the door during the release time, it will be necessary to use the code card reader again.

It is possible to enter the door on both sides by using the code card reader from the interior and the exterior.

The door control can register up to 10 passages. If several people use the code card reader successively, the turnstile will continue to rotate an additional 90° for each registered passage after the initial normal rotation. During this time, the corresponding optical display permanently shines **GREEN**.

3.3.4 Exit direction K41

Authorization via a code card reader or with a release button

In the idle position, the turnstile is stopped and locked by a motorized electromagnetic brake.

Both optical displays are lit up **RED**.

An authorized person uses the code card reader or presses the release button from the interior, the turnstile will start to rotate counter clockwise. The optical display on the interior switches from **RED** to **GREEN**, but the exterior one remains **RED**.

The person now has approx. 20 seconds time to enter into the door in the exit direction.

If the person does not pass through the door to the outside, the turnstile will stop after the release time in the **X-Position** and lock. If the person does go through the door in the exit direction, the turnstile will stop in the **X-Position** immediately after the passage.

If additional people pass through to the exterior after the initial use of the exterior code card reader, then the release time starts over, meaning each authorized person has an additional 20 seconds to pass through the door to the exterior.

If an unauthorized person tries to enter the door from the **entrance direction** while it is rotating, they will step onto a contact mat or will be detected by the active infrared safety sensors in a locked segment. Both optical displays will switch to **RED**.

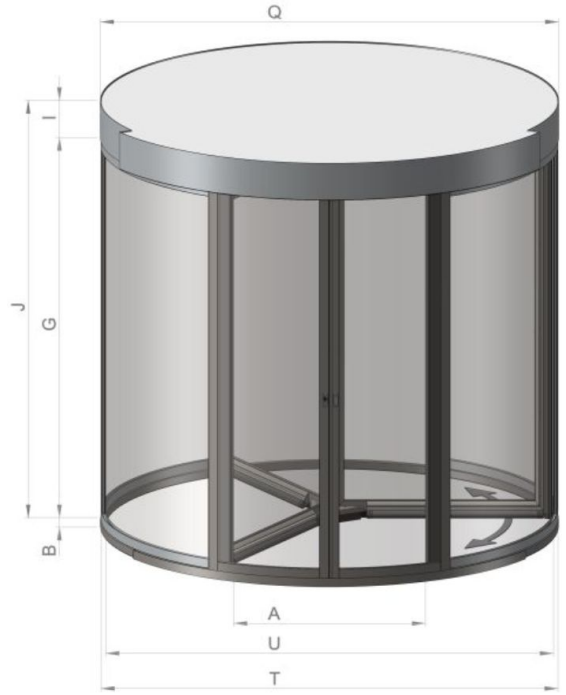
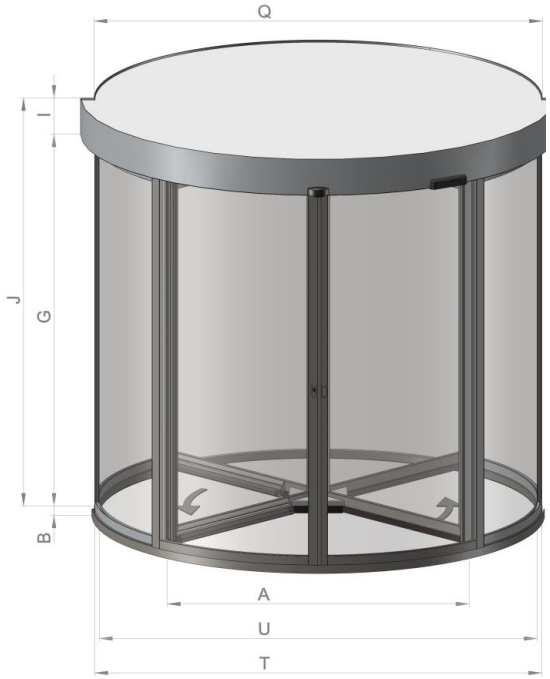
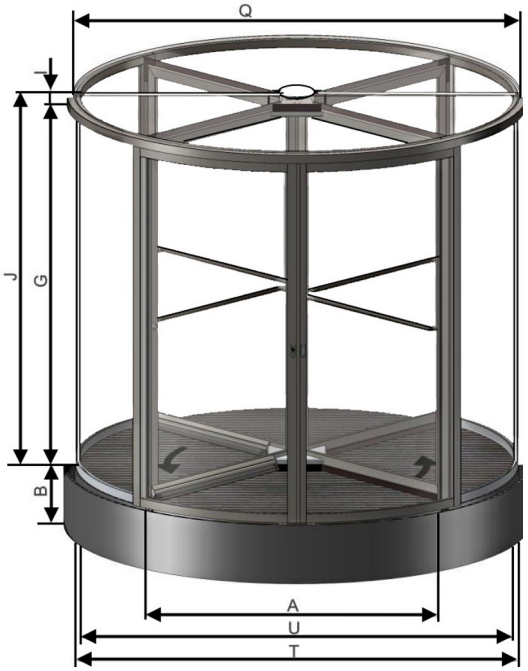
The turnstile rotates clockwise back to the **+-Position** Position and forces the unauthorized person back to the exterior. Attempts to override the system are met by gentle resistance. As soon as the unauthorized person exits the door and the contact mat and safety sensors are disabled, the turnstile will rotate counter clockwise back to the **X-Position**, come to a stop and lock.

Afterwards, it must be ensured that nobody stands on a contact mat or within detection range of the safety sensor until the release has expired. The interior optical display switches from **RED** to **GREEN**, but the exterior one remains **RED**.

The authorized person can re-enter the door, without using the code card reader again, as long as the release time is still activated.

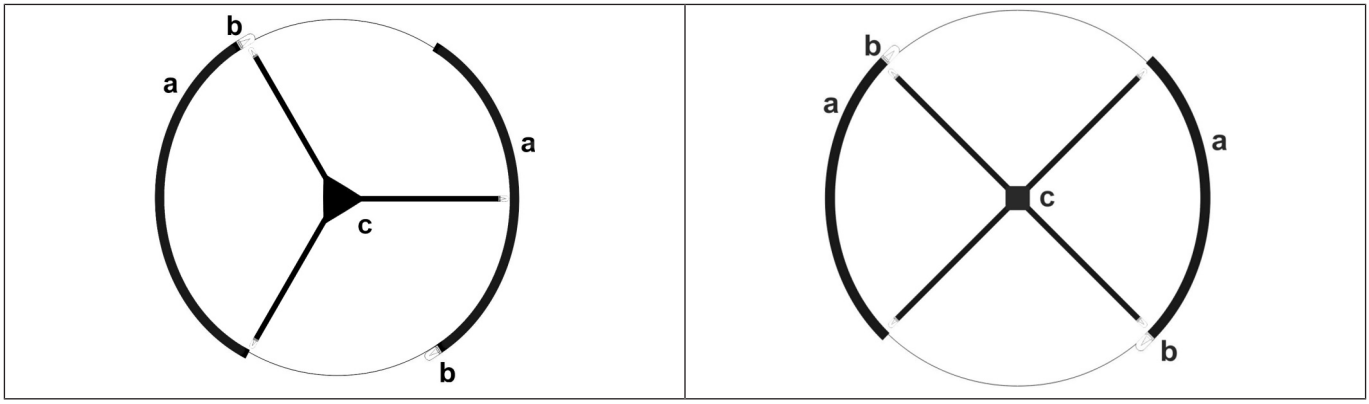
If the release time has expired, the authorized person will have to re-use the code card reader or press the release button again. The door control will receive a new release impulse and proceed as described above.

3.4 Graphical display K31 / K41-ST

K31-ST/NMA with single passage function	K41-ST/NMA with single passage function
	
K31-ST/SU/NMA with single passage function	**K41-ST/SU/NMA with single passage function**
	

Abbreviation	Description		
A	Passage width	B	Floor ring height
G	Passage height	I	Cladding height
J	Total height	Q	Total diameter
T	Exterior diameter	U	Interior diameter

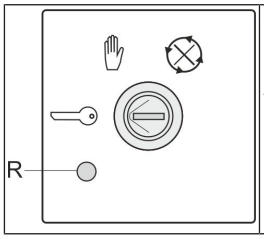
3.5 Main mechanical components



Abbreviation	Description
a	**Drum wall** Curved, fixed aluminum frame for supporting curved glass or panelling.
b	**Drum wall edge** Fixed structure made of vertical frame profiling for accommodating control units.
c	**Rotation unit turnstile** Rotating inner part of the door.

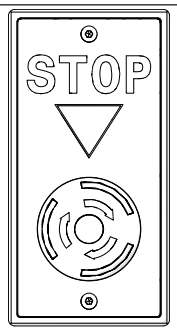
3.6 Safety features and controls

3.6.1 Key-operated switch



The operating modes LOCKED - MANUAL - AUTOMATIC can be selected on the key-operated switch.
A reset button (R) is also integrated in the key-operated switch, which when pressed reinitializes the door.

3.6.2 Emergency stop button



When the emergency stop button is pushed, the rotation of the turnstile is stopped immediately, the lock is closed, the turnstile is released and can be rotated manually to the next locked position.

After resetting the emergency stop button, the door control must be normalized before the preset operating mode will run again.

NOTICE

The turnstile cannot be turned manually on a subfloor door with a geared motor!

3.6.3 Information on safety strips

CAUTION

Risk of destruction Safety edge

a) Personal injury and damage to property due to malfunctions on the safety edge

⇨ Do not use pointed or sharp-edged objects when working on the safety edge.

⇨ Do not use aggressive cleaning agents such as mineral oils or petrol when working on the safety edge.

NOTICE

On the drum wall edges of the system and on the lower and outer turnstile profiles of the turnstile wings, vertical and horizontal safety bars made of soft rubber are mounted in the direction of rotation. When a safety bar is actuated, the turnstile stops turning immediately. When the safety bar is no longer actuated, the turnstile resumes turning.

3.7 Overview of adjustable door parameters

NOTICE

The door parameters and special functions can only be set and adjusted by a service technician with a Service-IBS (intelligent operating switch).

Door parameters K31-ST

Software versions	K31_ST_007
Door type	K31-ST

MP	Description	Factory settings	Setting range			
02	Acceleration time	08	00 .. 15			
03	Crawl distance	10	01 .. 255			
04	Crawl speed	08	05 .. 20 [%]			
05	Slow speed	30	10 .. 100 [%]			
06	Fast speed	50	10 .. 100 [%]			
07	Power surge	70	10 .. 100 [%]			
08	Emergency stop brake time	05	00 .. 15			
09	Activation point locked mat „entrance direction“	00	00 .. 176 [0 .. 60°]			
10	Activation point locked mat „exit direction“	00	00 .. 176 [0 .. 60°]			
11	Starting angle (for manual start)	00	00 [man. Start OFF] | 01 .. 255 [00 .. 90°]			
12	Sensor crawl time	08	00 .. 15			
13	Return run time to drum wall strip	10	05 .. 40 [0.5 .. 4.0 sec]			
14	Type of lock	00	**Type**	**Without power**	***VRM**	**Value**
			monostable	CLOSED	yes	0
			monostable	OPEN	yes	1
			monostable	CLOSED	no	2
			monostable	OPEN	NO	3
15	Exit permanent release	01	0 .. 1 [with CKL / without CKL]			
16	120° operation	00	0 .. 1 [OFF / ON]			
17	Automatic start after release time	00	0 .. 1 [OFF / ON]			

MP	Description	Factory settings	Setting range
18	Always decrement release (even if segment is empty!)	00	0 .. 1 [OFF / ON]
19	Lock reaction after activating the emergency stop switch	01	0 .. 1 [unlocked / locked]
20	Release time	20	4 .. 20 [sec]
21	Basic status of the traffic lights in INTERLOCK mode	00	0 .. 1 [red / green]

*VRM = lock mechanism status indicator

Door parameters K41-ST

Software versions	K41_ST_X_001
Door type	K41-ST

MP	Description	Factory settings	Setting range			
02	Acceleration time	08	00 .. 15			
03	Crawl distance	15	01 .. 255			
04	Crawl speed	05	05 .. 20 [%]			
05	Slow speed	20	10 .. 100 [%]			
06	Fast speed	50	10 .. 100 [%]			
07	Power surge	100	10 .. 100 [%]			
08	Emergency stop time	05	00 .. 15			
09	Inactivation area 1Safe instead of control mat	150	10 .. 190 [+-4° … +-33°]			
12	Security when exiting	0 … 01	0 = OFF / 1 = ON			
13	Type of lock	00	**Type**	**Without power**	***VRM**	**Value**
			monostable	CLOSED	no	0
			monostable	OPEN	no	1

*VRM = lock mechanism status indicator

4 Options

4.1 Power surge detection

When the turnstile rubs hard on the floor surface or runs into an obstacle and blocks, without activating any security devices, this is considered a power surge. The control shuts the drive down. The message [08] is displayed on the optional IBS –Display. This is then followed by a restart attempt in the preset speed.

4.2 Battery emergency power supply

The charge level of the integrated battery is permanently monitored. If a discharge is determined, the message [17] will be shown on the optional IBS-System display.

4.3 Night shield

NOTICE

The door is equipped with a night shield located on the exterior entrance.
If it is manually pushed out of the open position while rotating, the turnstile will immediately stop for safety reasons.
For safety reasons, the automatic mode only functions if the night shield is completely open.
During a power failure, the status of the night shield remains LOCKED or UNLOCKED.

4.3.1 Manual night shield

Night shield with mechanical bar-bolt lock or hook bolt lock

The night shield can be locked and unlocked with profile cylinder locks integrated in the door frames. If the night shield is in locked position, then it must be unlocked and completely pushed open manually.

Then the operating mode of the door can be selected.

4.3.2 Night shield - deadman

CAUTION

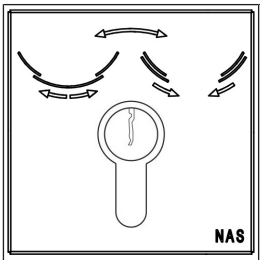
Night shield crushing danger

a) Fingers or hands getting crushed, sheared or pulled in

⇨ To avoid crushing, the operator must have a clear view of the night shield during the OPENING and CLOSING process.

NOTICE

If the night shield is manually locked (i.e. with a bar lock), then please ensure that the night shield wings are manually unlocked before using the key reversing switch.



Switch example

It can be operated with the key reversing switch.

Opening process: the night shield is opened by turning the key reversing switch to the right (see arrow direction) and holding the position. If the night shield is locked electrically, then it will simultaneously unlock. The opening process will stop when the key reversing switch is no longer being turned or held. The opening process will resume by turning the key to the right again and holding the position.

Closing process: the night shield is closed by turning the key reversing switch to the left and holding the position. The closing process will stop when the key reversing switch is no longer being turned or held. If the night shield is locked electrically, then it will lock automatically in the locked position.

Collision detection: if a night shield wing hits an obstacle during the opening or closing process, the night shield will stop and remain stopped. The next opening or closing process will start when the key reversing switch is turned and held in position again.

5 Specifications

5.1 Electrical specifications of the system H+V+ST+SU

Mains voltage:	220-240 V / 115 V
Frequency:	50-60Hz
Mains fuse:	16A circuit breaker with tripping characteristic C or K
Power consumption:	max. 300 VA
Additionally per slave control:	approx. 250 VA
Control voltage:	24 V DC (extra low voltage)
Motor voltage:	58 V (pulsed)
Fuse in the control:	TA4
Safety class:	1
Degree of protection:	IP 20
Safety class for subfloor systems:	3
Degree of protection for subfloor systems:	IP 54 (subfloor)

An additional external upstream RCD circuit breaker In = 30mA (FI circuit breaker) must be installed on subfloor systems provided by the customer.

5.2 Electrical lighting specifications

High-Power LED-Spots	
Mains connection Transformer	100-240 VAC
Frequency	50-60 Hz
Secondary transformer power	120 W
Output per luminaire/illuminant	4.5 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).

5.3 Environmental conditions

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

6 Operation

6.1 Operating modes of the door K31 / K41-ST

6.1.1 Operating switch in the “LOCKED” position

The turnstile is in the starting position. All of the impulse transmitters are out of order and the turnstile is locked electrically.

Both optical displays are red (turnstile is locked).

Lock mechanism status indicator VRM

The lock status of the turnstile is permanently monitored and is reported to the system via a dry contact for on-site application.

6.1.2 Operating switch in the “MANUAL” position

The turnstile in unlocked and can be rotated manually in the direction of rotation. All controls and sensors on the door are out of order.

Both optical displays are green (turnstile is unlocked).

6.1.3 Operating switch in the “AUTOMATIC” position

The door wings rotate **CLOCKWSIE** (only K31-ST) or **COUNTER CLOCKWISE**, depending on the direction of flow.

In the idle position, the turnstile is locked and secured by an electromagnetic brake.

Via the code card reader or the release button, the door control receives an opening impulse.

An authorized person can pass through the door for an adjustable amount of time.

Once the adjusted amount of time has expired, the turnstile will locked again.

6.2 Initialization – Activate the restart lock with the reset button (R)

Initialization starts automatically after the power has been restored. An electronic restart lock is activated for security reasons.

A reset button (R) has been integrated on the front of the key-operated switch in order to eliminate malfunctions. Pressing (less than 2 sec.) can also start the initialization process.

6.3 Normalization – Cancel the restart lock with the key-operated switch

Before the turnstile can start, the restart lock must be disabled by normalization. To do this, turn the key-operated switch from AUTOMATIC to LOCKED and back again. The turnstile will start at slow speed and “search” for the home position. The direction of rotation must not be hindered! The door is then ready for use.

6.4 Calibrate - Position the turnstile with the reset button

Calibration is required for the exact positioning of the turnstile. If the reset button on the key-operated switch is pushed for longer than five seconds, calibration will start regardless in of the operating mode. Like with initialization, the entire processor system will be reset. In doing so, the turnstile will rotate 1-2 times at crawl speed. After that the calibration process is complete the door is ready for use.

7 Malfunctions

7.1 Notice power shutdown

NOTICE

A trouble free operating door is only guaranteed with a continuous supply of power. Therefore, never disconnect the power supply!

If the main power supply is disconnected, the door control will have to be normalized first after switching the power back on. To do so, turn the key-operated switch from AUTOMATIC to LOCKED and back again.

Now the door is operational again.

7.2 Conduct during malfunctions

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 long exists.

7.3 Possible troubleshooting

NOTICE

Some malfunctions can be rectified by the operator themselves (see troubleshooting tips). If the tips do not resolve the problem, please contact your local service centre.
Before calling, please note the information shown on the optional IBS system display. This information provides the technician with important information for troubleshooting.

7.4 Tips on troubleshooting

To eliminate malfunctions, it is necessary to disable the electronic restart lock on the door control through normalization. For this, turn the key-operated switch from LOCKED to AUTOMATIC operating mode and back again. The turnstile will start at slow speed and “search” for the home position. Then the door is operational again.

Malfunctions and their causes, as well as possible solutions which can be performed by the operator, are listed below. If the solutions listed are not successful, the operator must disconnect the main power supply and call the service centre.

Malfunctions	Causes	Solutions
Turnstile is blocked, can not be electrically unlocked	– Lock does not open – Lock is jammed in the lock latch – Lock is defective	– Switch to MANUAL operating mode and shake turnstile briefly

Door does not function or turnstile rotates irregularly	– Press emergency stop button – Cable break – Short circuit – No power supply or restart lock is activated – Over current pressure control activated. Excessive friction on the turnstile wing sealing brushes between the floor and the drum wall – Obstacle in the rotation area – Geared motor damage – Door control defective – Electric safety strips activated – Safety sensors activated by a person or object – Foreign object jammed – Safety sensors surface is dirty – Pivot wing (if available) is not engaged properly in the locking device – Night shield is not completely open – Night shield limit switch is defective – Control is defective	– Reset emergency stop button – Check power supply, call electrician if necessary! – Eliminate floor inequalities, if necessary remove the dirt accumulated under the mat – Remove obstacles – Check electric safety strips for damages, clean surface with soapy water – Remove foreign objects

7.5 Functions of the door K31 / K41-ST during a power failure

CAUTION

Danger of people being trapped inside the turnstile.

a) Bruises and contusions through from the turnstile wing.

⇨ Visual inspection, check whether people are trapped inside.

Two different locking modes can be during a power failure.

UNLOCKED WITHOUT POWER or **LOCKED WITHOUT POWER**

Revolving door K31-ST

If set to “unlocked without power” the turnstile remains unlocked in any position and can be rotated manually.

If set to “locked without power”, the turnstile is locked in the locked position. The rotating turnstile stops in its current position and can only be rotated manually to the next locked segment.

Revolving door K41-ST

If set to “unlocked without power” the turnstile will rotate to the **+-Position** (see graphic “Position after power failure” form the chapter Single passage positions of the door) during a power failure and remain in this position. The turnstile can be rotated manually.

If set to “locked without power” the turnstile also rotates to the **+-Position** and then locks.

NOTICE

The locked mode “unlocked without power” is mainly used on doors with a night shield!

7.6 Function when power is restored

After the power is restored an electronic restart lock is activated. In order to return to AUTOMATIC mode, the door control needs to be normalized. To do so, turn the key-operated switch briefly from AUTOMATIC to the LOCKED and then back again. The turnstile will start and “search” for the home position at slow speed. Then the door is operational again.

8 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.

8.1 General remarks

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 (cleaning, maintenance, replacement) 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.

IMPORTANT

Specific checks and maintenance may only be carried out by a specialist or a person trained for this purpose. The authorization of these persons is carried out exclusively by the manufacturer. The scope, result and time of the periodic inspections and maintenance must be recorded in an inspection book and a checklist. These documents must be kept by the operator.

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

With the care of the installation by the operator, accidents or defects can be avoided.

Testing

Type of test	Action
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	Action
Adjustment 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 centre.

8.2 Monthly inspection work performed by the operator

The monthly tests and inspections of the individual components that must be conducted by the operator take little time and in particular, prevent accidents caused by improper handling of the door system. We recommend that you conduct the following inspections dependent on the model of the door.

Test / Inspection	Procedure	Expected results
Visual inspection safety strips	– Select MANUAL mode. – Visually inspect the safety strips.	– The safety strips can not have any mechanical damage and they must be installed correctly and firmly over the entire length.
Function test contact mats or sensors as triggering devices	– Select AUTOMATIC mode. – Once the turnstile comes to a stop, a sensor has to be triggered for rotation to start. A person must step on the contact mat or enter into the detection range of a sensor from the interior or exterior.	– The turnstile starts and rotates.
Function test lock	– Select LOCKED mode. (Do not enter the door!) – Push the turnstile to test whether it is securely locked.	– The turnstile must be locked securely.

CAUTION

Risk of burns, hot surfaces!

a) Risk of burning hands when replacing bulbs!

⇨ Allow bulb to cool at least 5 minutes before replacing and/ or wear protective gloves.

Visual inspection lighting	– Verify whether the lights are installed correctly and turn them on.	– Lights must be installed correct and function.
Visual inspection of the instructions and labeling (buttons / switches)	– Verify that all labels are present and legible.	– All labels must be present, legible and firmly applied.
Visual inspection of the glass label	– Verify that the label is present.	– The glass label must be firmly attached at eye level.
Visual inspection of the floor covering	– Verify the floor covering for possible tripping hazards, unevenness, damages, and dirt accumulation.	– The floor covering must be free from tripping hazards, unevenness, damages and dirt accumulation.

8.3 Cleaning and care

DANGER

Warning: risk of fatal electric shock!

a) Risk of death by electrocution

⇨ Do not touch the drive system while the main power is connected.

⇨ Do not spray water into the drive system.

NOTICE

Before cleaning, select MANUAL mode and also press the emergency stop button. Rinse cleaned surfaces with a clean, damp cloth.

IMPORTANT

Keep the system clean from dirt, leaves, snow and ice!

a) If heavily soiled, please contact a professional.

b) Do not use road salt or gravel in front of the entrance area or within the system.

c) We recommend that you impregnate the safety strips with water repellent care products.

IMPORTANT

Any other cleaning products, not mentioned here, should not be used!

What	Interval	Cleaning agent
General parts	Weekly	Damp cloth, neutral to low alkaline, wetting agent solution / vinegar diluted with water
Sensors / safety strips	Weekly	Synthetic cleaner
Floor mats	Weekly	Vacuum cleaner / carpet cleaner
Display cases	Weekly	Commercial glass cleaner

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 according to local regulations and guidelines.

NOTICE

The door systems can be completely disassembled in reverse order.

The installation 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
- Batteries and rechargeable batteries

Various plastics:

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

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