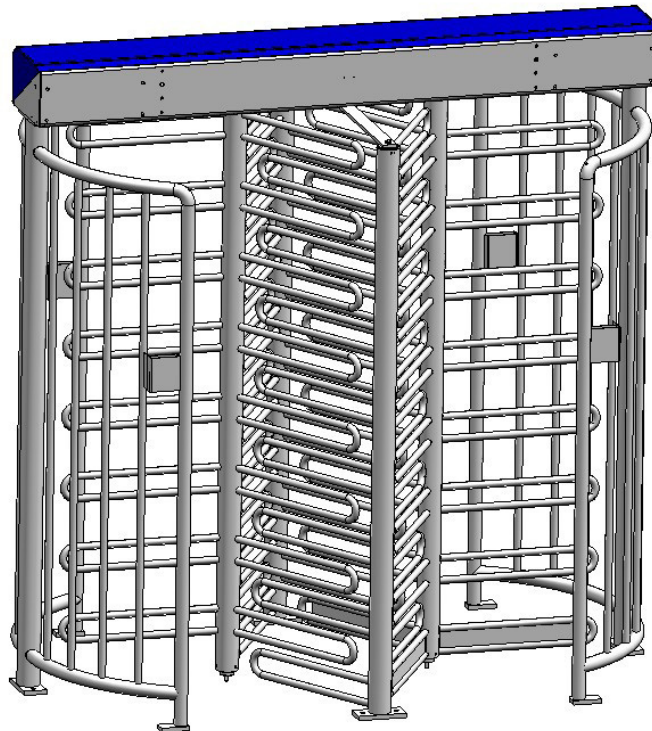


Operating instructions

Full Height Turnstile MPT-152



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Translation of the original operating instructions

MAGNETIC Autocontrol GmbH
Grienmatt 20
79650 Schopfheim
Germany

Tel.: +49 (0) 7622 695 5
Fax.: +49 (0)7622 695 602
E-Mail: info@ac-magnetic.com
Internet: www.ac-magnetic.com

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1 General

1.1 Information about the operating instructions

These operating instructions provide important information on how to deal with the MAGNETIC turnstile MPT-152. Prerequisite for safe working is the observance of all specified safety notes and instructions.

In addition, the local accident prevention regulations valid at the barrier's area of application and general safety regulations have to be complied with.

Carefully read the operating instructions before starting any work! They are a product component and must be kept in direct proximity of the barrier, well accessible to the personnel at all times.

If the pedestrian barrier is passed on to a third party, it must be accompanied by the operating instructions.

Any used optional components from other manufacturers are governed by their own safety provisions and directives. These must also be observed.

General

1.2 Pictogram explanation

Warning notes

Warning notes are characterized by pictograms in these operating instructions. The warning notes are preceded by signal words expressing the scale of the hazard.

It is absolutely essential to observe the notes and to proceed with caution in order to prevent accidents as well as bodily injuries and property damage.

⚠ DANGER



The signal word DANGER points to an immediately dangerous situation, which leads to death or severe injuries if it is not avoided.

⚠ WARNING



The signal word WARNING points to a potentially dangerous situation, which can lead to death or severe injuries if it is not avoided.

⚠ CAUTION



The signal word CAUTION points to a potentially dangerous situation, which can lead to minor injuries if it is not avoided.

NOTICE



The signal word NOTICE points to a potentially harmful situation, which can lead to property damage if it is not avoided.

Hints and recommendations



NOTE!

... highlights useful hints and recommendations as well as information for an efficient and trouble-free operation.

1.3 Limitation of liability

All specifications and notes in these operating instructions were compiled in consideration to the valid standards and regulations, state-of-the-art technology and our long-standing knowledge and experience.

The manufacturer is not liable for damage caused by:

- Non-observance of the operating instructions
- Improper use
- Deployment of non-trained personnel
- Arbitrary modifications
- Technical changes
- Use of non-approved spare and wear parts.

The actual scope of supply may differ from the explanations and illustrations described in this manual in case of special designs, if additional order options are made use of, or due to latest technical changes.

1.4 Copyright protection

Surrendering the operating instructions to third parties without written permission of the manufacturer is not permitted.

Content details, texts, drawings, pictures and other illustrations are protected by copyright and are subject to industrial property rights. Any improper use shall be liable to prosecution.

Any type and form of duplication – also of extracts – as well as the exploitation and/or communication of the contents are not permitted without the manufacturer's written declaration of consent.

General

1.5 Scope of delivery



The scope of delivery comprises:

- 2 x Cage halves, steel or stainless steel
- 2 x Center column 3 x 120°
- 1 x Support beam with drive unit, MBC control units, MMC-120 control units, if applicable additional lock unit and top cover
- 2 x Guide comb in galvanized steel or stainless steel
- 2 x bearing pins, bearing sleeve and fastening materials
- 1 x Fastening kit (only within Europe)
- 2 x Door keys (top cover)

Supplied documentation:

- 1 Operating Instructions.
- 1 Wiring diagram

1.6 Spare parts

 WARNING	
	<p>Risk of injury by incorrect spare parts!</p> <p>Incorrect or defective spare parts can result in damage, malfunctions or total failure and also impair safety.</p> <p>Use only the manufacturer's original spare parts.</p>

Procure spare parts from authorized dealers or directly from the manufacturer. Refer to Page 2 for address.

A list of spare parts can be obtained upon request.

1.7 Warranty conditions

Subject to the condition that the operating instructions are observed, and that no inadmissible operations are carried out on the technical equipment, and that the installation has suffered no mechanical damage, MAGNETIC grants a warranty on all mechanical and electrical components of the product to the extent as stated in its standard terms of sales and delivery or as contractually agreed in writing.

1.8 Disclaimer

MAGNETIC expressly disclaims all implied and statutory warranties, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose with respect to the product and the statutory warranty of non-infringement of third party rights set forth in section 2312(3) of the uniform commercial code.

1.9 Customer service

Our customer service can be contacted for any technical advice. Information about the responsible contact person can be retrieved by telephone, fax, E-mail or via the Internet at any time, refer to manufacturer's address on page 2.



NOTE!

In order to enable fast handling note the data of the type plate such as type, serial number, version etc. before calling.

1.10 EC Declaration of Conformity

For the "EC Declaration of conformity" (pursuant to EC Machinery Directive 2006/42/EC, Annex II) refer to page 63.

1.11 Environmental protection

NOTICE



Danger for the environment by improper disposal of components or the pedestrian barrier!

In case of improper disposal of components or the pedestrian barrier, damage to the environment may result.

- Observe the local and national laws and directives.
- Disassemble pedestrian barrier according to resources. Sort resources and supply them to recycling.

2 Safety


2.1 Intended use

The MAGNETIC pedestrian barrier MPT is intended solely for controlling pedestrians in areas with authorized access.

The full height turnstile is usually integrated into the fence and gate complex.

The pedestrian barrier is intended for passage of persons who can pass the pedestrian barrier safely, quickly and without help. For persons who cannot pass the pedestrian barrier safely, quickly or without help, such as little children, older persons or persons with impairments, separate access options must be provided.

The MAGNETIC control units MMC and MBC are intended solely for controlling the MAGNETIC pedestrian barriers MPT.

⚠ WARNING	
	<p>Non-intended use is dangerous!</p> <p>Any use of the barriers other than intended and/or in a different manner can cause hazardous situations.</p> <ul style="list-style-type: none"> – Only use the pedestrian barrier and the controllers for the intended use. – All specifications in these operating instructions have to be strictly complied with.

Any types of claims due to damage arising from improper use are excluded. The operator alone shall be responsible for any damage arising from improper use.


2.2 Changes and modifications

Changes, modifications and re-builds of the barrier modules can cause unforeseen danger.

A written authorization of the manufacturer is absolutely required before executing any technical changes and modifications at the barrier modules, the control unit or the control program.

2.3 Operating personnel

2.3.1 Requirements

⚠ WARNING	
	<p>Risk of injury in case of inadequate qualification!</p> <p>Improper handling can lead to considerable physical injuries and property damage.</p> <ul style="list-style-type: none"> – Have any activities only carried out by the individuals assigned for that purpose.

The operating instructions specify the following qualification requirements for the different fields of activity:

- **Instructed people**
have been instructed during instructions provided by the operator with regard to the work assigned to them and possible hazards arising from improper conduct.
- **Specialized staff**
is due to its technical training, knowledge and experience as well as due to its knowledge of the pertinent regulations able to carry out the work assigned to it and to independently recognize potential hazards.
- **Qualified electricians**
are able, due to their technical training, knowledge and experience, as well as their awareness of the relevant standards and provisions, to undertake work on electrical systems and recognize potential risks.
In Germany, qualified electricians must satisfy the provisions of the Accident Prevention Regulation BGV A3 (e.g. master electrician). Appropriate regulations apply in other countries. These applicable regulations must be observed.

Only those individuals who can be expected to work reliably are to be deployed as personnel. People, whose ability to respond is affected, e.g. by drugs, alcohol or medicines, may not be assigned. The regulations governing age and trade applicable at the point of use must also be observed for personnel selection.

2.4 Operator's Responsibility

The operator must comply with the statutory obligations regarding work safety.

In addition to the work safety notes in these operating instructions, the safety, accident prevention and environmental provisions applicable for the area the pedestrian barrier is used in must be complied with.

In particular, the operator must:

- gather information on applicable work protection provisions.
- determine additional danger in a danger analysis.
- implement the required code of conduct for operation of the pedestrian barrier on site in operating instructions.
- regularly verify throughout the pedestrian barrier's time of use that the operating instructions drawn up by him comply with the current state of the regulations.
- adapt the operating instructions to any new provisions, standards and usage conditions - where required.
- clearly determine the responsibilities for installation, operation, maintenance and cleaning of the pedestrian barrier.
- ensure that all employees that are working at or with the pedestrian barrier have read and understood the operating instructions.
- Furthermore, the operator must train personnel regarding the use of the pedestrian barrier at regular intervals and provide information on possible dangers.

Furthermore, the operator is responsible for:

- keeping the pedestrian barrier in perfect technical order and condition at all times.
- maintaining the pedestrian barrier according to the maintenance intervals and performing the safety inspections as stipulated.
- checking all protective facilities for completeness and proper function at regular intervals.

The operator is also responsible that the danger area of the pedestrian barrier cannot be accessed by any unauthorised persons, and in particular not by children, under any circumstances.

2.5 Personal protective equipment

It is necessary to wear personal protective equipment when dealing with the pedestrian barrier so as to minimize health hazards.

Before carrying out any work, properly dress the necessary protective equipment such as work clothes, protective gloves, safety shoes and wear during work.

2.6 Occupational safety and specific risks



The remaining risks resulting from the hazard analysis are specified in the following chapter.

Observe the safety notes listed here and the warning notes mentioned in the other chapters of these instructions to reduce health hazards and to avoid dangerous situations.

2.6.1 Danger symbols on the pedestrian barrier MPT-152

The relevant dangerous areas on the barriers can be identified by the following pictograms:

Electric voltage


 DANGER	
	<p>Mortal danger by electric voltage!</p> <p>... indicates life threatening situations caused by electric current. Non-observance of the safety instructions causes serious injuries or death. Necessary work may only be carried out by a qualified electrician.</p> <p>This pictogram is fixed on the following component:</p> <ul style="list-style-type: none">– Rear panel of the support beam with electrical components.

Safety


2.6.2 Hazard warnings and occupational safety

For your own safety and for the protections of the barrier modules, the following information must be observed and complied with:


Electric voltage

⚠ DANGER	
	<p>Mortal danger by electric voltage!</p> <p>Touching live parts can be lethal. Damage to the insulation or to individual components can be lethal.</p> <ul style="list-style-type: none"> – Switch off the power supply immediately in case of damage to the insulation and arrange repair. – Only electrical specialists may carry out work on the electrical system. – Switch off voltage supply and secure against re-activation before performing any work. Test for absence of voltage. – Never bypass or deactivate fuses. – When replacing fuses observe the correct amperage specification. – Keep moisture and dust away from live parts. Moisture or dust may cause a short circuit.


Electrical voltage – missing safety installations

⚠ DANGER	
	<p>Mortal danger by electric voltage!</p> <p>The safety installations that are required according to regional and local regulations must be provided by the customer. Usually these are:</p> <ul style="list-style-type: none"> – Residual current device (RCD) – Circuit-breaker – Lockable 2-pole main switch according to EN 60947-3.


Improper transport

⚠ WARNING	
	<p>Danger by falling down or tilting of a pedestrian barrier!</p> <p>The weight of the pedestrian barrier or its heavy components can cause serious physical injury and crushing!</p> <ul style="list-style-type: none"> – Have all transport work performed by trained personnel. – Use a pallet appropriate for the dead weight and dimensions of the components that can be moved by a forklift. – For lifting a pedestrian barrier, use suitable lifting gear that is designed for the weight of the barrier. – The pedestrian barrier or its heavy components must be carried and lifted from the pallet by a minimum of two people.

Heavy weight


⚠ WARNING	
	<p>Risk of injury when lifting heavy objects alone!</p> <p>The weight of heavy objects can seriously injure a person!</p> <ul style="list-style-type: none"> – The pedestrian barrier and its heavy individual components must be carried and lifted from the pallet by a minimum of two people.

Insufficient fixing


⚠ WARNING	
	<p>Risk of injury at insufficient fixing!</p> <p>Insufficient fixing of the pedestrian barrier or individual components such as the center column can cause serious physical injury and crushing!</p> <ul style="list-style-type: none"> – Before operation ensure the firm fixing of the composite anchors. – Check the firm fixing of all screws according to maintenance schedule. – Only qualified and skilled personnel are allowed to assemble the pedestrian barrier and the appropriate components.

Safety


Inadmissible operation

⚠ WARNING	
	<p>Risk of injury at inadmissible operation!</p> <p>An inadmissible operation can cause death or serious injuries.</p> <ul style="list-style-type: none"> – Before operating the barriers check all electrical and mechanical functions.

Sharp edges and spiky corners

⚠ CAUTION	
	<p>Risk of injury on edges and corners!</p> <p>Sharp edges and spiky corners can cause skin abrasions and cuts.</p> <ul style="list-style-type: none"> – Work carefully near to sharp edges and spiky corners. – In case of doubt wear protective gloves.

Signposting

⚠ CAUTION	
	<p>Risk of injury by illegible symbols!</p> <p>Labels and signs can become dirty or unrecognisable in the course of time.</p> <ul style="list-style-type: none"> – Always keep safety, warning and operating notes in a well readable condition. – Immediately renew damaged or unrecognisable signs or labels.

3 Technical data

3.1 Electrical connection

Designation	Unit	Value
Supply voltage	V AC / Hz	230 / 50
Current consumption: Barrier open/close	A	0.2
Current consumption: Barrier in motion	A	0.3
Starting current (approx. 30ms)	A	1
Power consumption: Rest position	W	25
Power consumption: Barrier in motion	W	35
Max. power consumption (if vandalized)	W	180
Duty cycle	%	100
Control voltage	V DC	42 / 30

Table 1: Electrical connection

3.2 Operating conditions

Designation	Unit	Value
Ambient temperature range	°C	-25 to +45
Protection class	–	IP 43, optional: IP 54

Table 2: Operating conditions

3.3 Weight

Designation	Unit	Value
Weight	kg	380

Table 3: Weight

3.4 Performance data

Designation	Unit	Value
Runtime for 120°	s	Adjustable 2.0 – 3.0

Table 4: Performance data

Design and function

4 Design and function

4.1 Design

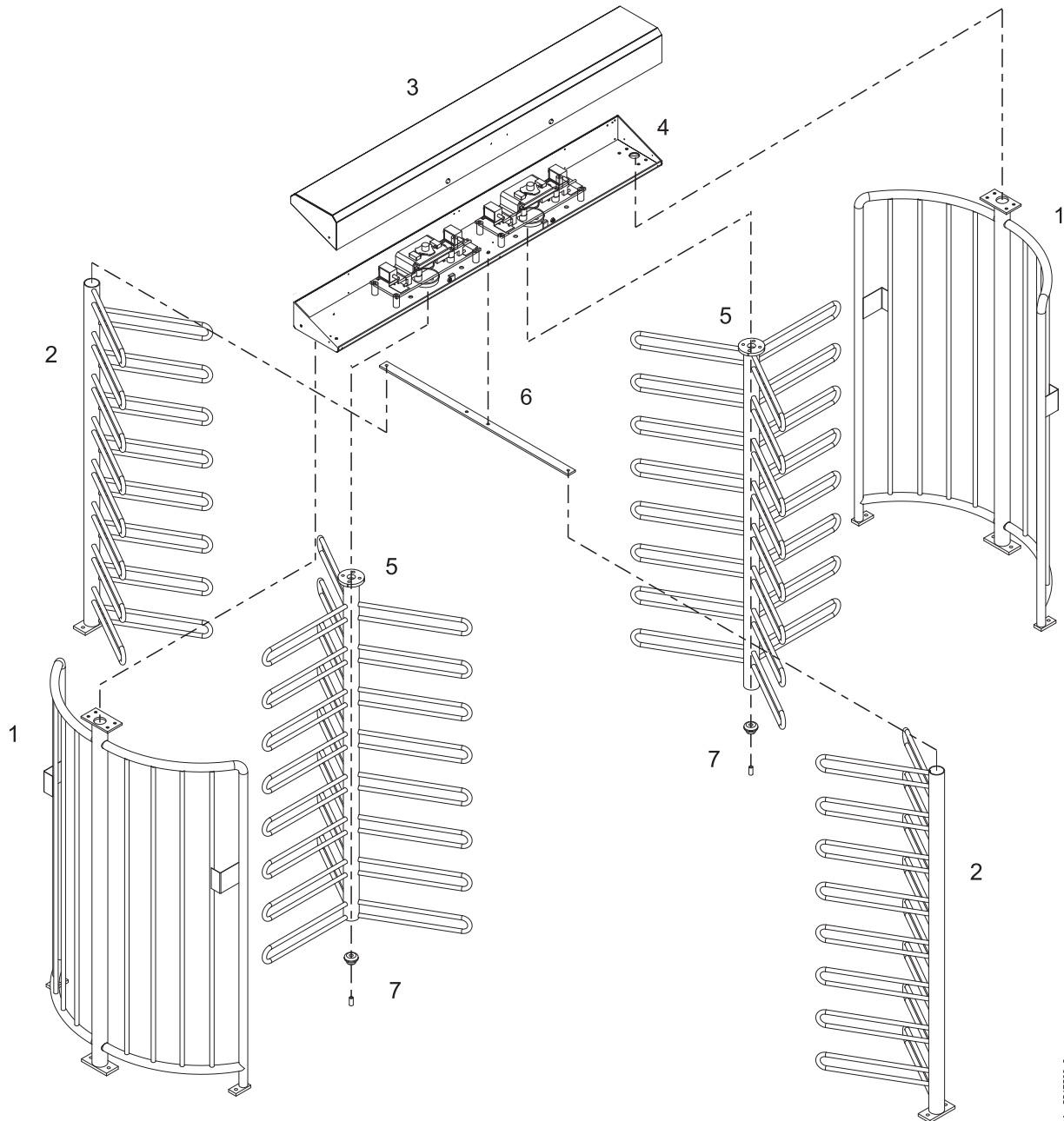


Fig. 1: Design of components

- 1 Cage halves
- 2 Guide comb
- 3 Top cover
- 4 Support beam with drive units and drive flanges
- 5 Centre column
- 6 Connecting rod
- 7 Floor bearing

4.2 Function

The pedestrian barrier MPT is intended for controlling of pedestrians in outdoor areas with a relatively high security requirement.

Basically, the pedestrian barrier can be used in both directions. In multi-lane installations with high throughput rates, the entry and exit lanes can also be configured for one-way passage.

In its normal state, the pedestrian barrier is closed. The pedestrian barrier can be cleared only after authorization by an external command transmitter, e.g. card reader. Lightly pushing the center column activates the drive. The center column moves into the next closed position by itself.

The drive technology employed in this product enables the center column to be easily blocked in any position during operation.

No slipping clutches or similar devices are used.


In the event of power failure, the center column can be freely rotated in both directions. Should a power failure occur, the center column can be mechanically locked in one or both directions by an optional lock unit.

Assembly and installation


5 Assembly and installation

5.1 Safety


General

⚠ WARNING	
	<p>Danger by inappropriate installation!</p> <p>Inappropriate installation can cause serious injuries!</p> <ul style="list-style-type: none"> – All assembly and installation work is reserved for qualified personnel who have been authorized and briefed by the contracting partner. – Prior to work, ensure that there is sufficient assembly space. – Pay attention to tidiness and cleanness at the assembly site! Loose components and tools that are left lying around cause accidents. – Ensure correct arrangement and correct fit on the components. – Install all fastening elements correctly.


Improper transport

⚠ WARNING	
	<p>Danger by falling down or tilting of a pedestrian barrier!</p> <p>The weight of the pedestrian barrier or its components can cause serious physical injury and crushing!</p> <ul style="list-style-type: none"> – Have all transport work performed by trained personnel. – Use a pallet appropriate for the dead weight and dimensions of the components that can be moved by a forklift. – To lift the pedestrian barrier or its heavy components, use a suitable hoist (slings etc.) that is rated for the weight of the pedestrian barrier. – Lifting and carrying the pedestrian barrier from the pallet should be done by a minimum of two people.

Heavy weight

⚠ WARNING	
	<p>Risk of injury when lifting heavy objects alone!</p> <p>The weights of heavy objects can seriously injure a person!</p> <ul style="list-style-type: none"> – The pedestrian barrier or its heavy components must be carried and lifted from the pallet by a minimum of two people.

Improper transport

NOTICE	
	<p>Pedestrian barrier will be damaged if transported inappropriately!</p> <p>Substantial material damages can result from improper transport.</p> <ul style="list-style-type: none"> – Have all transport work performed by trained personnel. – When unloading the packages and during in-plant transportation always proceed with utmost care and caution. – Observe the symbols on the packaging. – Observe the dimensions of the pedestrian barrier. – Loading, unloading as well as moving the pedestrian barrier must take place with utmost care. – Only remove packaging directly before assembly.

Personal protective equipment

The following must be worn during all assembly and installation work:

- Work clothes
- Protective gloves
- Safety shoes.

Assembly and installation

5.2 Requirements for assembly

The following procedures have to be observed before assembly and installation:

- Laying the foundation
- Installing the empty conduits

5.3 Foundation and empty conduits



NOTE!

To provide a trouble-free operation use separate conduits for data cables and mains cables.

The functional safety of the pedestrian barrier hinges on the accuracy of the foundation.

Foundation

The foundation must meet the following requirements:

- have sufficient load-carrying capacity.
- have a skid-proof surface.
- be horizontal and level, max. deviations 2 mm/m
- have sufficient thickness for the fastenings.

Empty conduits

The empty conduits must be positioned accurately to the drilling plan. Refer to page 25, Fig. 2.

5.3.1 Foundation plan

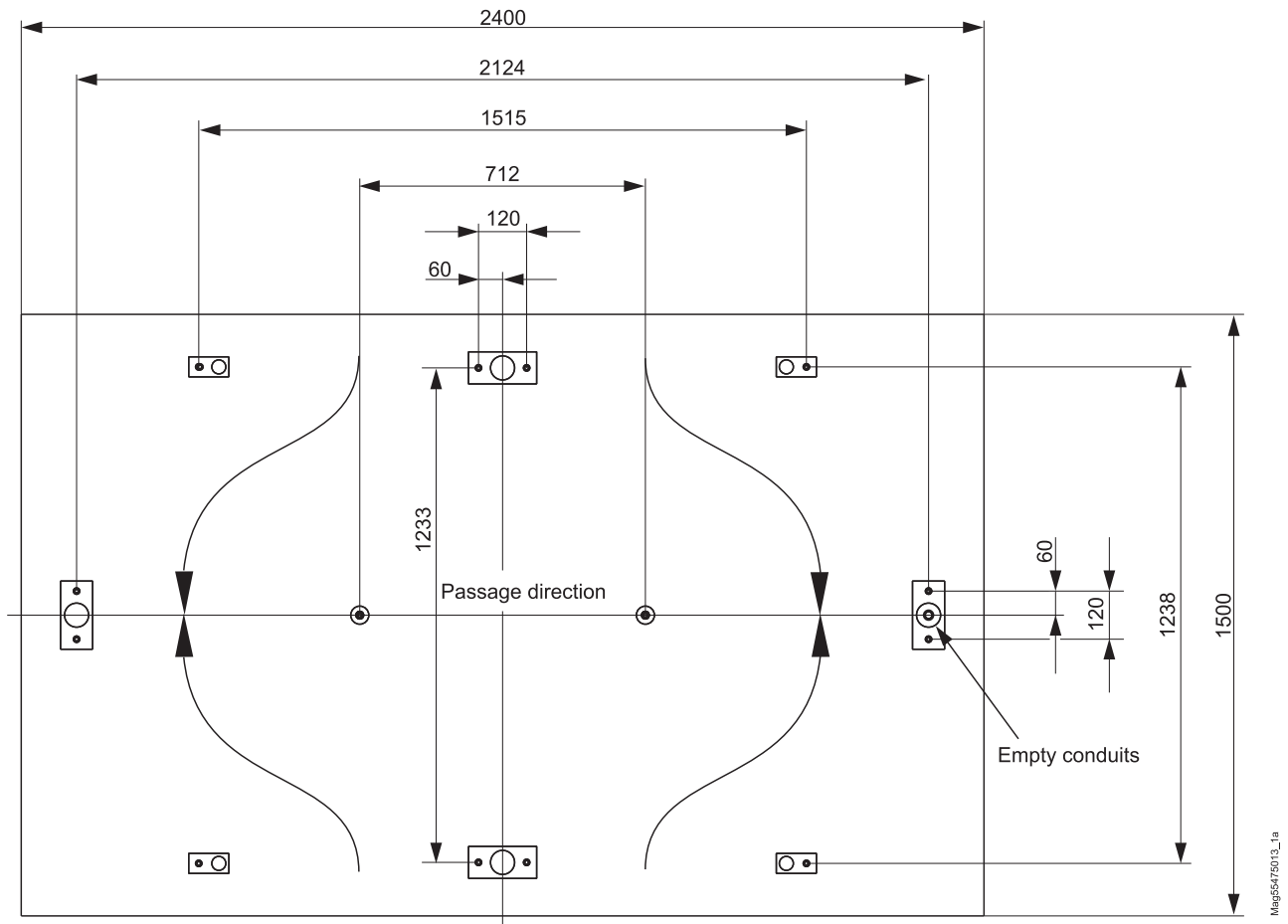
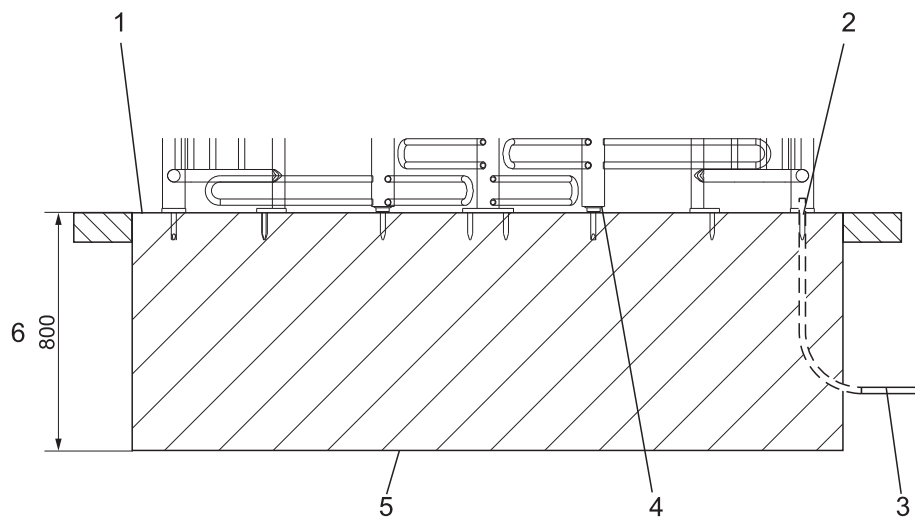


Fig. 2: Foundation plan

- Have cables overlapping for approx. 5 m of the conduits
- Composite anchors M10
- Bore hole diameter 16 mm, drilling depth 90 mm
- Conduit for mains cable and data line
- Foundation level and horizontal
- Concrete or adequately integrated industrial flooring
- With flagging, it is important to ensure that the anchor bolts grip firmly into the foundation, use longer bolts if necessary.

Assembly and installation



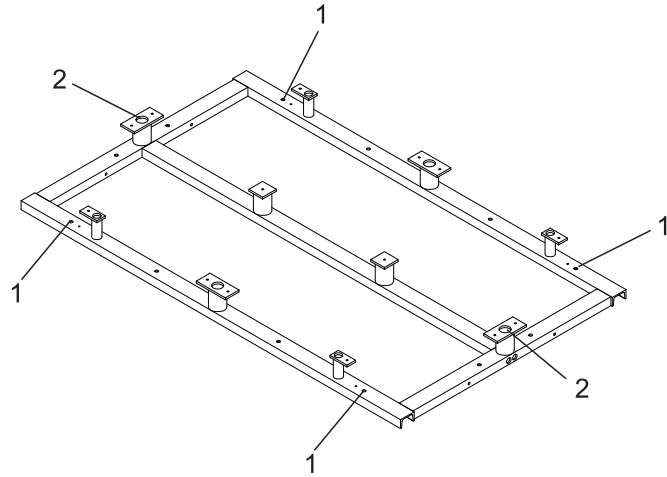
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Fig. 3: Foundation plan and layout for empty conduits

- 1 Smooth trowel finish foundation, level and horizontal
- 2 Lay data cables and power cables in separate empty conduits. Leave empty conduits approx. 50 mm above the foundation. All power cables and data cables are to protrude at least 5 m from the empty conduits.
- 3 Empty conduit $D = 25 \text{ mm}$
- 4 After insertion, glue threaded pins with Loctite 241 or similar removable adhesive as a screw retention method.
- 5 Concrete foundation C25/30 with reinforced steel
- 6 Frost depth

5.3.2 Base frame

A base frame must be used to facilitate assembly on stone pavements or similar surfaces.



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Fig. 4: Base frame

- 1 Possible cable penetration from the foundation into the full height turnstile MPT
- 2 Bore holes for leveling screws, 4-off, screws as required for aligning the base frame on the concrete, screws not shown.

Assembly and installation

5.4 Assemble the full height turnstile MPT-152

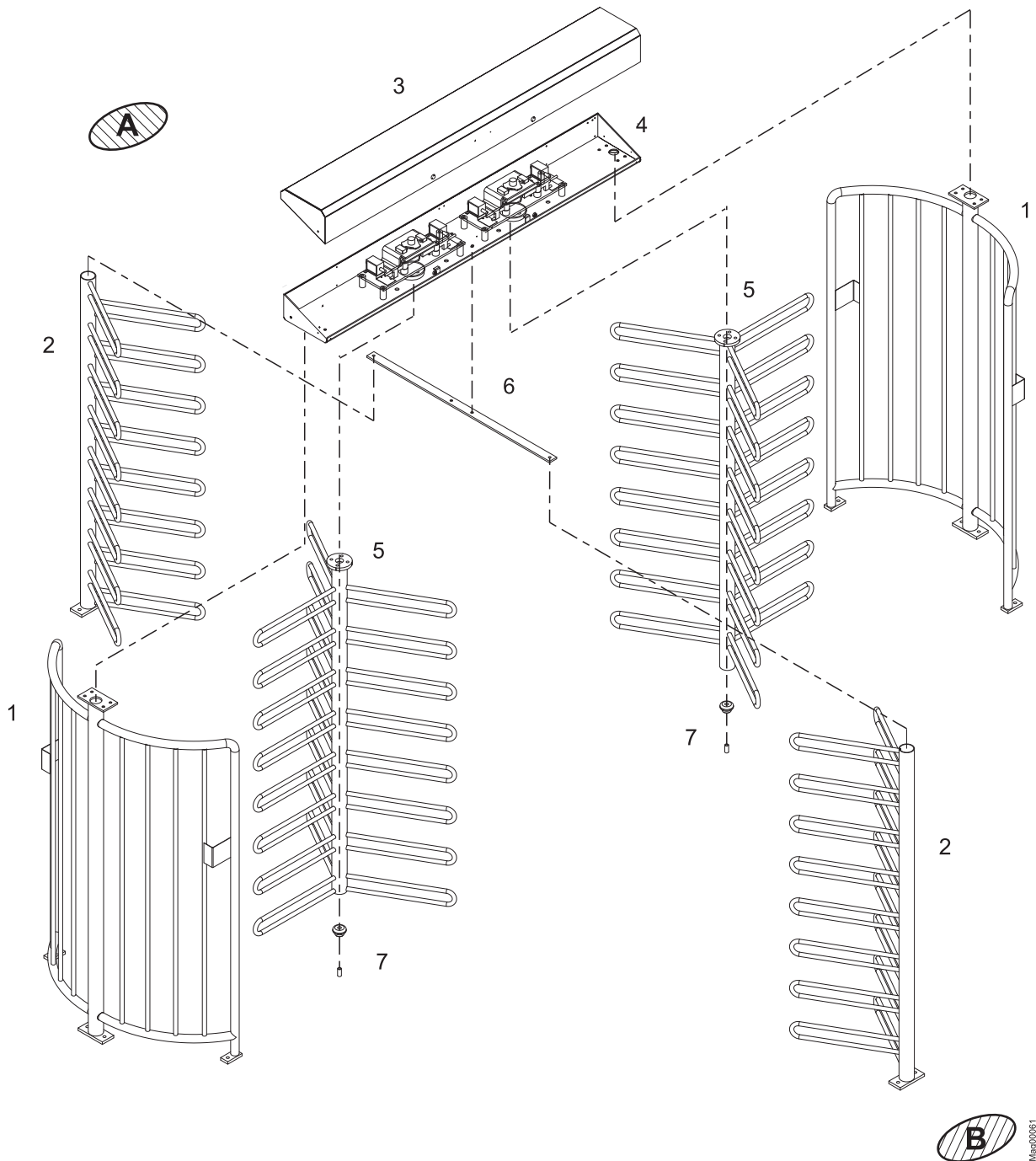


Fig. 5: Assemble full height turnstile

- | | | | |
|---|---|---|------------------|
| 1 | Cage halves | 6 | Connecting rod |
| 2 | Guide comb | 7 | Floor bearing |
| 3 | Top cover | | |
| 4 | Support beam with drive units and drive flanges | A | Unprotected area |
| 5 | Centre column | B | Protected area |

**NOTE!**

Mount the support beam so that the cover is accessible from inside, from the secured area. See Fig. 5.

5.4.1 Mounting the cage halves and guide combs on the foundation**NOTE!**

The foundation must have hardened off.

Foundation and empty conduits must be tested prior to commencing assembly.

The turnstile is mounted to the foundation by 12 composite anchors. The mounting material is included in delivery.

1. Make the bore holes as per the drilling plan (see page 25, Fig. 2). Use the drilling jig supplied.
2. Carefully remove any sand and swarf from the bore holes and their immediate vicinity.
3. Set the anchor bolts supplied as shown on the enclosed description and allow hardening.

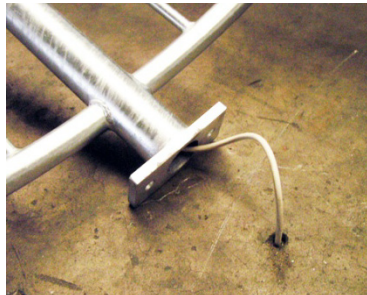


Fig. 6: Power and control cables

4. Pull the power cable and any control cables completely through the tube of the guide comb (Fig. 5, Pos. 1) and/or the cage halves half (Pos. 2).

Assembly and installation



Fig. 7: Setting up Cage halves and guide combs

5. Grease the supplied M 10 screws.
6. Mount the cage halves (Fig. 5, Pos. 1) and guide comb lock (Pos. 2) and fasten using the M 10 screws.
 - Do not allow the screws to come into contact with dust, sand or similar substances.
 - Do not tighten the screws completely.

5.4.2 Mounting the support beam

1. Open the top cover of the support beam.
The cover is secured with 4 hexagon socket screws.



Fig. 8: Open the top cover

2. Loosen the screws using a size 4 hex wrench
3. Pull top cover forwards
4. Mount the connecting rod (Fig. 5, Pos. 6) on support beam (Pos. 4) using screws M12 x 35 and locknuts.



Fig. 9: Mounting the support beam

5. Use a hoist to position support beam/connecting rod (Fig. 5, Pos. 4 and 6) onto the guide combs and cage halves. Mount the support beam so that the cover is accessible from inside, from the secured area.

**WARNING!****Risk of injury from a falling support beam!**

6. Immediately secure the support beam using the 8 M 12 x 35 countersink screws supplied and tighten.

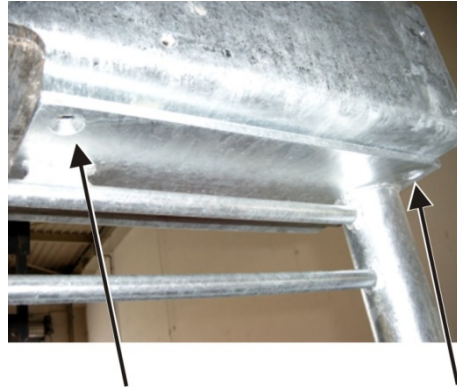


Fig. 10: Mounting the support beam

8. Mount guide combs (Fig. 5, Pos. 2) onto the connecting rod (Pos. 5) using screw M12 x 40.



Fig. 11: Tightening the fastening screws

7. Tighten the fastening screws on the foundation using a size SW 17 wrench.

Assembly and installation

5.4.3 Dismounting lock units (optional)

**NOTE!**

The drive units have various loosely fastened elements for transportation purposes.

The center column has to be partially removed before it can be mounted.

The dismounting procedure for a lock unit is described below. The second lock unit is dismounted in exactly the way as the first lock unit.

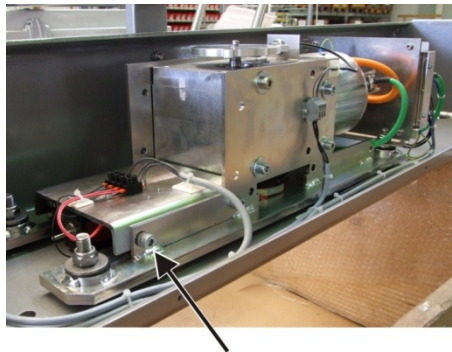


Fig. 12: Loosen hexagon socket screws on top housing with drive unit

1. Loosen the 4 hexagon socket screws on the lock unit.

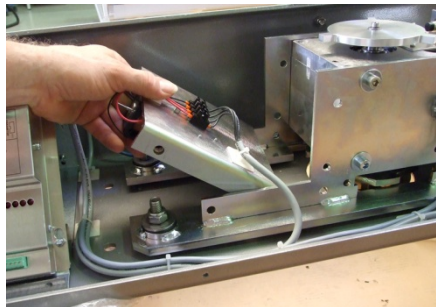


Fig. 13: Remove the lock unit.

2. Remove the lock unit.

5.4.4 Dismount locking discs

**NOTE!**

Complete the following steps, always turning the drive flange in a clockwise direction (viewed from below).

**NOTE!**

The drive units have various loosely fastened elements for transportation purposes.
The center column has to be partially removed before it can be mounted.

The dismounting procedure for the locking discs of a drive unit is described below. The locking discs of the second drive unit are dismounted in exactly the way as the locking discs for the first drive unit.

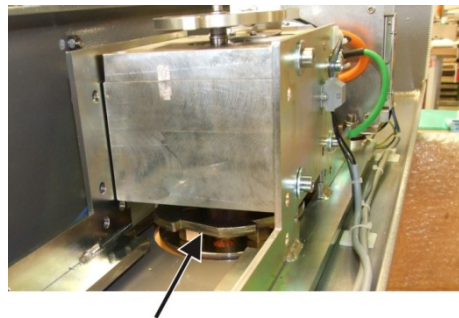


Fig. 14: Dismount locking discs



Fig. 15: Turn the screw on the drive shaft

1. Turn the screw on the drive shaft using a size 6 hex wrench until the first fixing screw (Fig. 16) becomes visible.

Assembly and installation

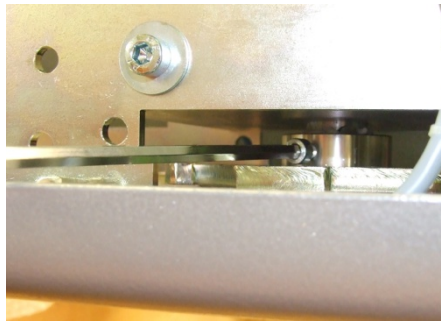


Fig. 16: Removing the fixing screw

2. Remove the 1st fixing screw.
3. Turn the drive flange 180°.
4. 2. Remove the 1st fixing screw.

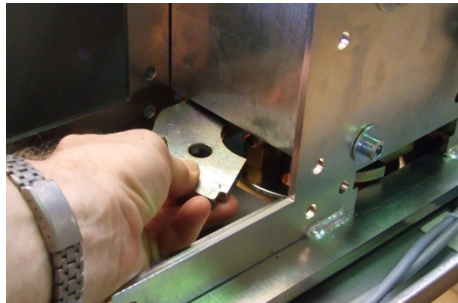


Fig. 17: Left locking plate

Note! The illustration of the locking plates does not correspond to the original.

5. Remove the left locking plate. Put the locking discs side as removed apart, making sure that they have the same position as when mounted. Affix markings.
6. Turn the drive flange.



Fig. 18: Right locking disc

7. Remove the right locking disc. Put the locking discs side as removed apart, making sure that they have the same position as when mounted. Affix markings.

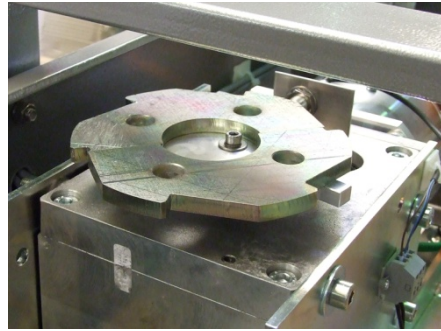


Fig. 19: Dismount locking discs

5.4.5 Dismounting centering bolts

The dismounting procedure for the centering bolts of a drive unit is described below. The centering bolts of the second drive unit are dismounted in exactly the way as the centering bolts for the first drive unit.

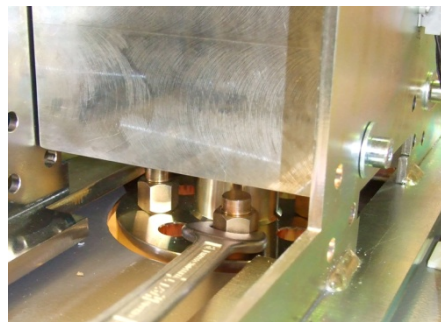


Fig. 20: Centering bolts

1. Dismount the 4 centering bolts.
2. Turn the flange so that the two bore holes for the fastening screws on the center column can be accessed from the side.

Assembly and installation

5.4.6 Mounting the floor bearing, mounting the center columns

The mounting procedure for a floor bearing and a centre column is described below. The second floor bearing and the second center column are mounted in exactly the same way as the first floor bearing and the first center column.

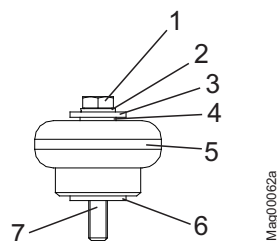
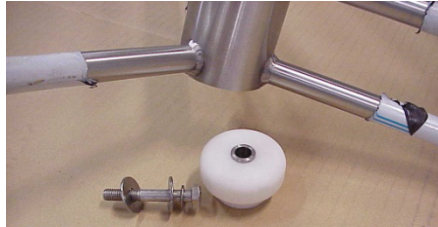


Fig. 21: Floor bearing (synthetic bearing)

- 1 Screw
- 2 Spring washer
- 3 Disc
- 4 Sleeve
- 5 Bearing pin
- 6 Disc
- 7 Bearing

1. Mount the synthetic bearings on the finished floor.



Fig. 22: Place the center column on the floor bearing

2. Place the center column on the floor bearing.



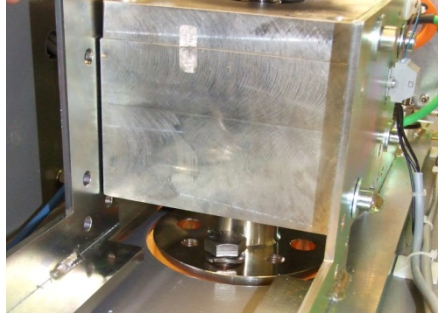
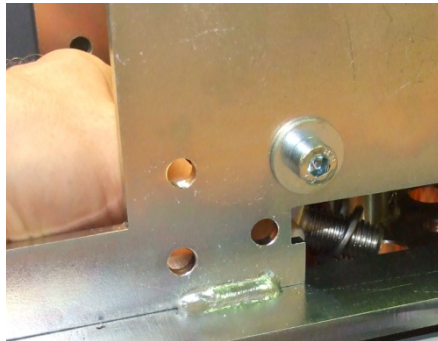


Fig. 23: Mounting centre column onto the drive flange

3. Fasten the centre column using the 4 M 16 screws supplied from the top to the drive flange.



- Screw in the fastening screw with spring washer for the centre column as shown.



- Tighten fastening screw firmly.
4. Turn the centre column, insert the rest of the fastening screws and tighten.

Assembly and installation

5.4.7 Mounting centering bolts, locking discs and lock unit

Mount the centering bolts, the lock plates and lock units (optional) in the reverse order to dismantling. See Page 32 etc., chapter 0, 0 and 5.4.5.

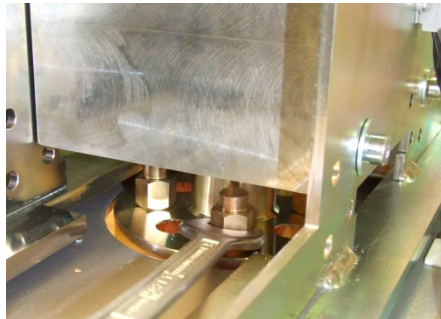


Fig. 24: Mounting the lock

1. Mount the 4 centering bolts for the two drive units.
2. Mount the left and right locking plate for the two drive units. The groove must be facing the full height turnstile!
3. Mount the 2 fixing screws for the two drive units.
4. Mount two lock units (optional).

5.4.8 Fixing the center columns to the floor bearing

How to fix a centre column to a floor bearing is described below. The second centre column is fixed in exactly the same way as the first center column.



Fig. 25: Fixing the center column

1. Fix the centre column to the floor bearing using 3 threaded pins.
2. Tighten all 3 threaded pins so that the centre column can be moved easily in both rotating directions.
3. Secure threaded pins using Loctite 241 or similar.

5.4.9 Setting the blocked position (home position)

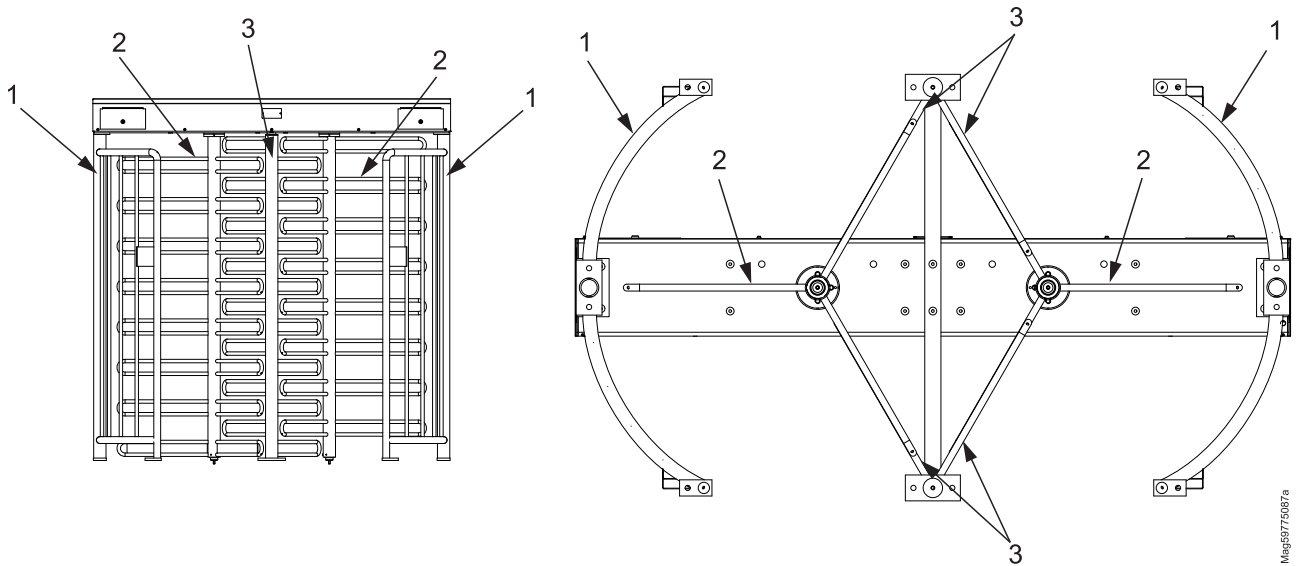


Fig. 26: Setting the full height turnstile to the "blocked" position

- 1 Cage halves
- 2 Centre column: blocked position
- 3 Guide comb

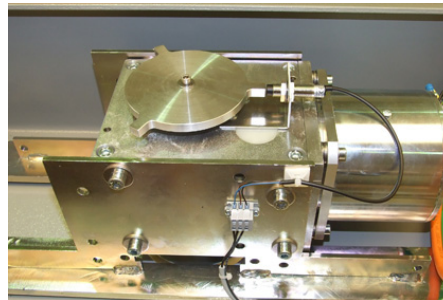


Fig. 27: Cam plate with proximity switch


1. Set the centre column to the "blocked" position (see Page 39, Fig. 26).
2. Check whether the cam plate is exactly in front of the proximity switch.
If it is clearly offset, the full height turnstile must be adjusted as follows.
3. Loosen the hexagon socket screw SW4 on the cam plate.
4. Turn the cam plate so that it is exactly in front of the proximity switch.
5. Retighten the hexagon socket screw.

Electrical connection


6 Electrical connection

6.1 Safety


General

⚠ WARNING	
	<p>Danger by inappropriate installation!</p> <p>Inappropriate installation can cause serious injuries or death.</p> <ul style="list-style-type: none"> – Only qualified personnel, authorized by the operator and instructed appropriately, may carry out installation tasks. – Pay attention to tidiness and cleanliness at the assembly site! Loose components and tools that are left lying around cause accidents. – Install all fastening elements correctly.

Electric voltage

⚠ DANGER	
	<p>Mortal danger by electric voltage!</p> <p>Touching live parts can be lethal.</p> <p>Damage to the insulation or to individual components can be lethal.</p> <ul style="list-style-type: none"> – Switch off the power supply immediately in case of damage to the insulation and arrange repair. – Only electrical specialists may carry out work on the electrical system. – Switch off voltage supply and secure against re-activation before performing any work. Test for absence of voltage. – Never bypass or deactivate fuses. – When replacing fuses observe the correct amperage specification. – Keep moisture and dust away from live parts. Moisture or dust may cause a short circuit.

Electric voltage – missing safety installations

⚠ DANGER	
	<p>Mortal danger by electric voltage!</p> <p>The safety installations that are required according to regional and local regulations must be provided by the customer. Usually these are:</p> <ul style="list-style-type: none"> – Residual current device (RCD) – Circuit-breaker – Lockable 2-pole main switch according to EN 60947-3.

6.2 Power supply connection and customer's connections

6.2.1 Connecting the power supply

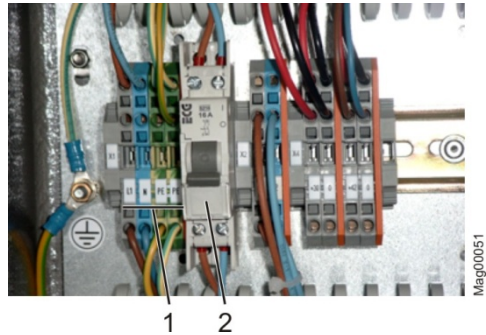


Fig. 28: Power supply

- 1 Terminals L, N, PE
- 2 2-pole mains switch

Connect the power cable only to the correct terminals L, N, PE (1).

The 2-pole main switch (2) de-energizes the entire unit.

Connection values: 230 V/50 Hz

Pre fuse: Max. 16 A

Electrical connection

6.2.2 Inputs and outputs, customer

The following connections are available for control and feedback on customer's side:

- 6 Digital inputs to control the pedestrian barrier.
- Red LEDs indicate the switching state of the inputs
- 6 Relays outputs to feed back information.
- Green LEDs indicate the switching state of the outputs

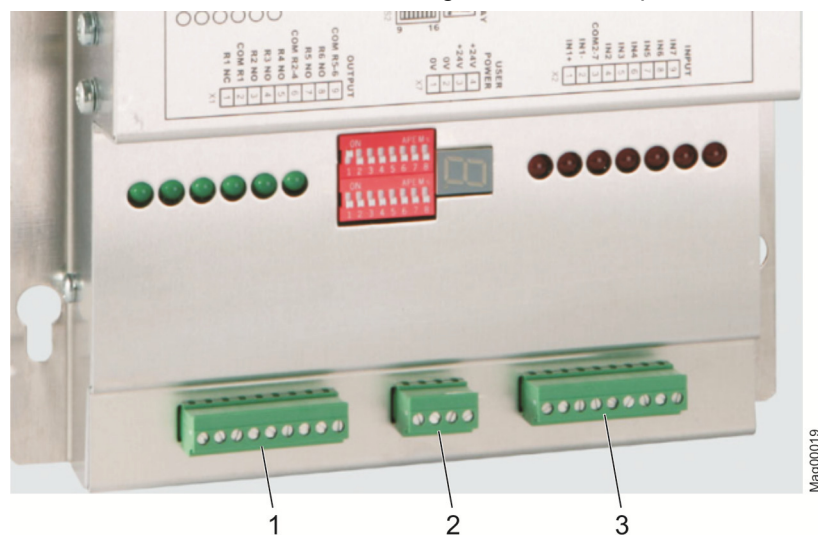


Fig. 29: Customer connections to MBC-110

- 1 Connection relay outputs, plug X1
- 2 24 V DC output, max. 300 mA, plug X7
- 3 Digital input connection, plug X2

6.3 Connection diagram

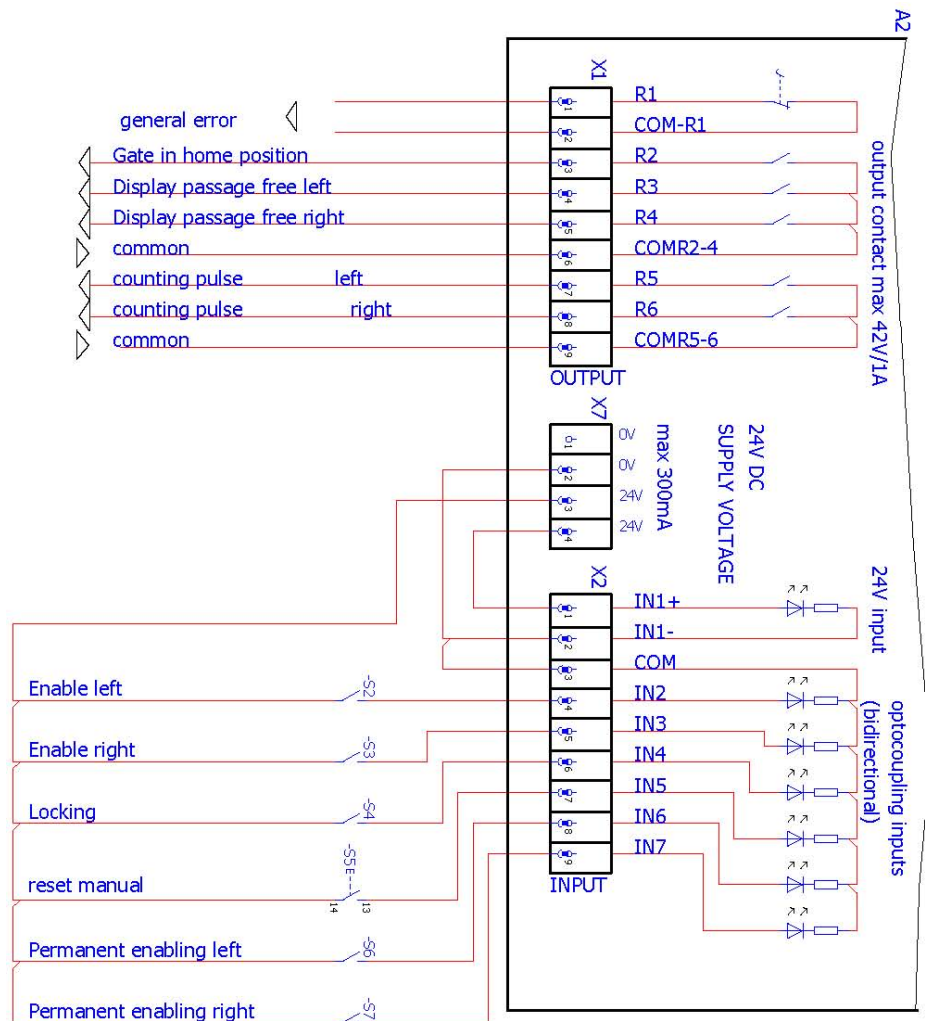


Fig. 30: MBC-110, customer's connection (5527,5119)

Electrical connection

6.4 Inputs X2

Input	Function	Description
IN1+ IN1–	Emergency (ASB signal for servo-controller) Emergency switch (defective wiring) Fire alarm system	The function of input 1 cannot be changed, as the input hardware is connected to the ASB input of the motor output stage. The servo-controller can be enabled via this input. The logic is inverted (broken wire detection), i.e. the controller is powered only if a permanent signal is present. When the signal disappears, the motor dies immediately.
IN2	Clearance right	Clearance pulse for passage to the right. Centre column then turns in a clockwise direction (viewed from above)
IN3	Clearance left	Clearance pulse for passage to the left. Centre column then turns in a counterclockwise direction (viewed from above)
IN4	Barrier	Input for blocking the unit. If this input is active, all clearance pulses and the hold-open time are cleared.
IN5	Manual reset	Input for manually resetting the controller. Required only if the "manual reset" or "security level" high function has been set
IN6	Permanent clearance right	Input for permanent clearance to the right.
IN7	Permanent clearance left	Input for permanent clearance to the left.

Table 5: Relay inputs

6.5 Relay outputs X1

- Isolated relay contacts, wired in groups
- Switched voltage 5 - 24V
- Switched current 10 mA – 1 A

Relay output	Function	Description
R1	Global error / Power failure	<p>When certain errors occur, a permanent signal is delivered via this output for as long as the error is present.</p> <p>Potential error/alarm states are:</p> <ol style="list-style-type: none"> 1 Barrier runtime too long = obstacle detected 2 CAN communication with end stage is impaired 3 Hardware error in end stage 4 Software error in end stage 5 Homing function running 6 Emergency input is activated (inverted signal no longer present) 7 Power failure 8 Manual reset expected (only if fitted)
R2	Full height turnstile in blocked position	A permanent signal is delivered via this output for as long as the full height turnstile is in one of the three rest positions.
R3	Display passage Clear left	A permanent signal is delivered via this output for as long as the passage to the left is clear.
R4	Display passage Clear right	A permanent signal is delivered via this output for as long as the passage to the right is clear.
R5	Counting pulse left	A counting pulse lasting 500 ms is delivered via this output at the start of the passage.
R6	Counting pulse right	A counting pulse lasting 500 ms is delivered via this output at the start of the passage.


Table 6: Relay outputs

Configuring the pedestrian barrier

7 Configuring the pedestrian barrier

7.1 Safety

General

⚠ WARNING	
	<p>Risk of injury due to inappropriate configuration!</p> <p>Incorrect configuration can cause injury.</p> <ul style="list-style-type: none"> – Only sufficiently qualified personnel authorized and instructed by the user are allowed for the configuration of the pedestrian barrier. – Carry out all operating steps according to the specifications of these Operating Instructions.

7.2 Parameter settings

Some functions and parameters of the pedestrian barrier can be adjusted via two blocks each equipped with 8 DIP switches. For a precise description, see Page 47, Chapter 7.2.1 and Page 50, Chapter 7.2.2.



NOTE!

Changes to DIP switch settings are adopted only after the power supply to the pedestrian barrier has been switched off and switched back on again.

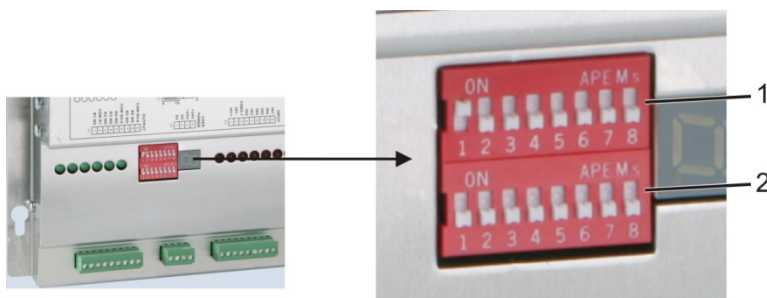


Fig. 31: DIP switch block S1 and S2

- 1 DIP switch block S1
- 2 DIP switch block S2

Mag00046

Configuring the pedestrian barrier

7.2.1 DIP switch block S1

DIP S1.x	Function	Description						
1	Pulse storage	<p>When pulse storage is deactivated, the barrier is cleared via a pulse to one of the two opening inputs. If further opening pulses are received while the barrier is still open, they are ignored.</p> <p>With opening pulse storage activated, several opening pulses can be stored. The barrier then remains open until the number of stored pulses is again zero. With each passage, the number of stored pulses is reduced by one.</p> <p>Options:</p> <ul style="list-style-type: none"> ■ OFF: No pulse stored ■ ON: Up to 5 pulses stored for each rotational direction 						
2	Buzzer function	<p>The buzzer emits permanent warning sound in the following situations:</p> <ul style="list-style-type: none"> ■ during homing ■ during a passage in the wrong direction ■ if there is a error in the control ■ if the barrier is vandalised <p>The buzzer also emits an acknowledge sound in the following situations:</p> <ul style="list-style-type: none"> ■ when the lane is free for the next passage <p>Options</p> <ul style="list-style-type: none"> ■ OFF: Buzzer completely switched off ■ ON: Buzzer switched on 						
3	Response after power is restored	<p>This option can be used to specify whether, once power has been restored, the controller first waits for a pulse at the "Manual reset" pulse or whether it starts to home immediately.</p> <p>Options</p> <table border="1" data-bbox="718 1433 1481 1601"> <thead> <tr> <th>DIP S1.3</th> <th>Response after power is restored</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>Automatic reset</td> </tr> <tr> <td>ON</td> <td>Manual reset</td> </tr> </tbody> </table>	DIP S1.3	Response after power is restored	OFF	Automatic reset	ON	Manual reset
DIP S1.3	Response after power is restored							
OFF	Automatic reset							
ON	Manual reset							

Configuring the pedestrian barrier

DIP S1.x	Function	Description															
4	Security Level	<p>The setting defines how the lock is to respond if there are several attempts to pass the barrier in the wrong direction.</p> <p>The "Security low" setting enables a complete passage in the locked direction in several steps. If the wrong direction is detected, the center column is first blocked and then cleared again immediately. If the center column continues to be pushed at this moment in time, it can move forward again until being blocked again for a brief moment, and so on. This enables a pedestrian to achieve a complete passage with repeated pushes.</p> <p>If, when the center column is cleared, the control detects that it is no longer being pushed, the drive re-approaches its original final position.</p> <p>In the case of "High security", it is not possible to repeatedly push the barrier in the wrong direction. After several attempts, the center column will not be cleared until a manual RESET has been executed.</p> <p>Options</p> <ul style="list-style-type: none"> ■ OFF: Security low ■ ON: Security high 															
5 and 6	Hold-open time	<p>The hold-open time is the maximum time for which the passage remains clear after a clearance signal if nobody starts to pass through. After the hold-open time has expired, the passage is blocked again.</p> <p>The hold-open time has four possible settings.</p> <table border="1"> <thead> <tr> <th>DIP S1.5</th> <th>DIP S1.6</th> <th>Hold-open time</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>OFF</td> <td>10 s</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>20 s</td> </tr> <tr> <td>ON</td> <td>OFF</td> <td>30 s</td> </tr> <tr> <td>ON</td> <td>ON</td> <td>infinite</td> </tr> </tbody> </table>	DIP S1.5	DIP S1.6	Hold-open time	OFF	OFF	10 s	OFF	ON	20 s	ON	OFF	30 s	ON	ON	infinite
DIP S1.5	DIP S1.6	Hold-open time															
OFF	OFF	10 s															
OFF	ON	20 s															
ON	OFF	30 s															
ON	ON	infinite															
7	Poll software version	<p>If this function is activated during operation, the software version is shown on the 7 segment display in cycles.</p> <p>Options</p> <ul style="list-style-type: none"> ■ OFF: Normal operating display ■ ON: Version is displayed 															

Configuring the pedestrian barrier

DIP S1.x	Function	Description
8	Factory settings	<p>This DIP switch can be used to restore the factory settings for all parameters. This requires the controller to be switched off. DIP switch 8 is then set to ON and the controller is reactivated. If the controller notices that the DIP switch is set to ON at activation, all parameters will be reset to the value at delivery. If the 7-segment display shows the normal operating state, the DIP switch can be set back to OFF.</p> <p>Options</p> <ul style="list-style-type: none"> ■ OFF: Normal operation ■ ON: Reset the parameters (possible only after the control has been switched on)

Table 7: DIP switch block S1

Configuring the pedestrian barrier

7.2.2 DIP switch block S2

DIP S2.x	Function	Description															
1	Heating active	<p>This DIP switch is used to specify whether or not the auxiliary heating should be activated.</p> <p>Options</p> <ul style="list-style-type: none"> ■ OFF: Auxiliary heating inactive ■ ON: Auxiliary heating active 															
2 and 3	Force for starting a passage	<p>When a clearance pending, the movement will not be started until the customer pushes the full height turnstile. There are four settings for the required force:</p>															
		<table border="1"> <thead> <tr> <th>DIP S2.3</th> <th>DIP S2.4</th> <th>Force</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>OFF</td> <td>slight</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>medium</td> </tr> <tr> <td>ON</td> <td>OFF</td> <td>medium-strong</td> </tr> <tr> <td>ON</td> <td>ON</td> <td>strong</td> </tr> </tbody> </table>	DIP S2.3	DIP S2.4	Force	OFF	OFF	slight	OFF	ON	medium	ON	OFF	medium-strong	ON	ON	strong
		DIP S2.3	DIP S2.4	Force													
		OFF	OFF	slight													
		OFF	ON	medium													
ON	OFF	medium-strong															
ON	ON	strong															
4 and 5	Speed	<p>This DIP switch can be used to select one of three defined speeds (slow/medium/fast) for normal operation:</p>															
		<table border="1"> <thead> <tr> <th>DIP S2.4</th> <th>DIP S2.5</th> <th>Speed</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>OFF</td> <td>slow</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>medium</td> </tr> <tr> <td>ON</td> <td>OFF</td> <td>fast</td> </tr> <tr> <td>ON</td> <td>ON</td> <td>fast</td> </tr> </tbody> </table>	DIP S2.4	DIP S2.5	Speed	OFF	OFF	slow	OFF	ON	medium	ON	OFF	fast	ON	ON	fast
		DIP S2.4	DIP S2.5	Speed													
		OFF	OFF	slow													
		OFF	ON	medium													
ON	OFF	fast															
ON	ON	fast															
6	Rotational direction for homing (viewed from above)	<p>This DIP switch specifies the rotational direction of the centre column during homing. This means that even during homing, no unauthorized person can pass the barrier.</p> <p>Options</p> <ul style="list-style-type: none"> ■ OFF: Counterclockwise ■ ON: Counterclockwise 															
7	Select the pedestrian barrier setup	<ul style="list-style-type: none"> ■ OFF: 3 x 120° ■ ON: No function 															
8	Software reset	<p>If the DIP-switch is in the position ON, the control automatically performs a reset approx. 10 seconds after the occurrence of a non-resettable error (errors from E20 onwards). If there are no further faults pending, homing is performed after the voltage returns and the pedestrian barrier returns to operation.</p> <ul style="list-style-type: none"> ■ ON: Software reset after a non-resettable error ■ OFF: No software reset is performed. 															

Table 8: DIP switch block S2


8 Start-up and operation

8.1 Safety

General

⚠ WARNING	
	<p>Danger by inappropriate start-up and operation! Inappropriate start-up and operation can cause serious injuries or death.</p> <ul style="list-style-type: none"> – Make sure that the top covers are correctly mounted before starting work.

Electric voltage

⚠ DANGER	
	<p>Mortal danger by electric voltage! Touching live parts can be lethal. Damage to the insulation or to individual components can be lethal.</p> <ul style="list-style-type: none"> – Switch off the power supply immediately in case of damage to the insulation and arrange repair. – Only electrical specialists may carry out work on the electrical system. – Before starting work ensure that the electrical system is dead! – Always turn the power supply off and safeguard against unintentional restarting before maintenance, cleaning, and repair work. – Never bypass or deactivate fuses. – When replacing fuses observe the correct amperage specification. – Keep moisture and dust away from live parts. Moisture or dust may cause a short circuit.

Start-up and operation

8.2 Start-up

Inspection prior to initial start-up

The following inspections must be performed prior to initial start-up:

- Check power supply.
- Check wiring emergency input IN1.
Refer to Page 43, Fig. 30.
- Check connection of digital inputs IN2 and IN3.
Refer to Page 43, Fig. 30.
- Check connection of relays outputs 1 to 6.
Refer to Page 43, Fig. 30.
- Check all screwed connections.
- Check pedestrian barrier for ease of movement.



NOTE!

Make sure that, when the power supply is switched on, there are no obstructions to operation of the barrier. The access lane must be clear.

Home position setting, see Page 39, Chapter 5.4.9.

8.2.1 Switching on and off the pedestrian barrier

Switching on

Activate main switch on the rear panel of the support beam.
See also Page 41, Fig. 28.

Switching off

Deactivate main switch on the rear panel of the support beam.
See also Page 41, Fig. 28.




NOTE!

Wait at least 10 seconds between switching off and restoring the power supply.


9 Maintenance

9.1 Safety

General

⚠ WARNING	
	<p>Danger by inappropriate maintenance! Inappropriate start-up and operation can cause severe injuries or death.</p> <ul style="list-style-type: none"> – Only qualified personnel, authorized by the operator and instructed appropriately, may carry out maintenance tasks. – Prior to work, ensure that there is sufficient assembly space. – Pay attention to tidiness and cleanness at the assembly site! Loosely stacked or lying around components and tools are accident sources. – If components have been replaced: Pay attention to correct installation of the spare parts. Reinstall all fastening elements correctly. – Before restarting, ensure that all covers are correctly installed.

Electric voltage

⚠ DANGER	
	<p>Mortal danger by electric voltage! Touching live parts can be lethal. Damage to the insulation or to individual components can be lethal.</p> <ul style="list-style-type: none"> – Switch off the power supply immediately in case of damage to the insulation and arrange repair. – Only electrical specialists may carry out work on the electrical system. – Before starting work ensure that the electrical system is dead! – Always turn the power supply off and safeguard against unintentional restarting before maintenance, cleaning, and repair work. – Never bypass or deactivate fuses. – When replacing fuses observe the correct amperage specification. – Keep moisture and dust away from live parts. Moisture or dust may cause a short circuit.

Maintenance


Personal protective equipment

The following must be worn during maintenance work:

- Work clothes
- Protective gloves
- Safety shoes.

9.2 Cleaning

Aggressive cleaning aids and substances

NOTICE	
	<p>Unit damage possible!</p> <p>Aggressive cleaning agents and substances can damage or destroy electrical cables and components.</p> <ul style="list-style-type: none"> – Do not use cleaning agents with aggressive ingredients.

Carrying out cleaning work:

1. Isolate the power supply and secure to prevent restart.
2. Remove dirt as required.
 - Clean stainless steel surfaces and power-coated parts regularly with a damp cloth and then dry off carefully.
 - Clean stainless steel surfaces with an appropriate cleaning aid. We recommend the stainless steel polish from 3M. Apply a thin even layer of stainless steel cleaning agent and rub dry using a clean and dry disposable cloth.
 - Never use wet cloth.
 - Wash off zinc surfaces using water and a soft cloth. Remove stubborn marks as soon as possible using a standard commercial cleaning agent for zinc (e.g. ROTOL New Formula A2).
3. Remove oil deposits using an absorbent material.
4. Vacuum away dust from inside the support beam.
5. After cleaning, check that all previously opened covers have been properly closed and that the functions of any safety equipment fitted have been restored.

9.3 Maintenance schedule

The following describes the maintenance work that is necessary for optimal, trouble-free operation.

If increased wear of individual components or functional groups is revealed during regular inspections, the operator must reduce the required maintenance intervals on the basis of the actual signs of wear.

In case of queries regarding the maintenance work and intervals, contact the manufacturer (service address, see Page 2).

Interval	Maintenance work	To be carried out by
Every 6 months	Check the centre column and side components for damage.	Expert
	Visual inspection of the support beam, inside and out, for damage. Clean the housing and repair paint damage as necessary.	Expert
	Check the optional lock unit	Expert
	Check play on the floor bearing and ease of movement	Expert
	Check screwed connections on the drive flange	Expert
	Check function of the residual current operated device	Qualified electrician
Every 12 months	Check electric cables for damages.	Qualified electrician
	Check if all electrical connections are firm.	Qualified electrician
	Check signs and labels for legibility.	Expert
	Check foundation fastening.	Expert
The electrical tests are to be performed in accordance with the regulations applicable at the installation site.		

Table 9: Maintenance schedule

Troubleshooting

10 Troubleshooting



NOTE!

Additionally, dispose of the diagnostic program *MBC Diag* for further diagnostics. Use this program to read-out each error status from the *MBC-110* and the associated *MMC-120*. For further information contact your authorized dealer or *MAGNET-IC* directly.

10.1 Malfunction: Logic controller MBC-110

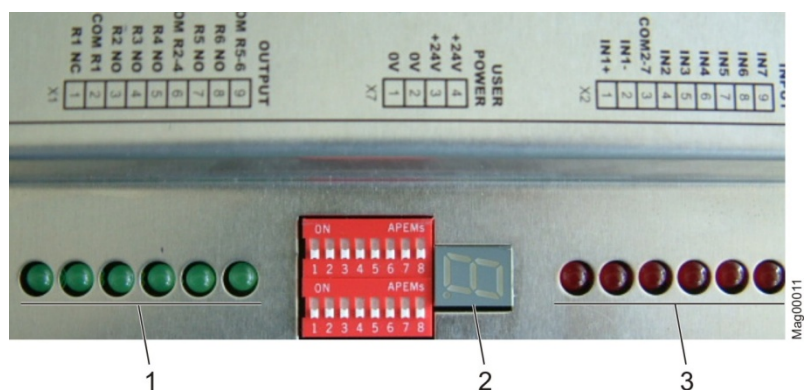


Fig. 32: LEDs and display on the logic controller MBC-110

- 1 LED for outputs = green
- 2 One-digit display
- 3 LED for inputs = red

The customer interface inputs and outputs of the MBC-110 indicate their switching status through LEDs.

- Red LED is switched on: Input is activated.
- Red LED is switched off: Input is not activated.

10.1.1 Display of the error codes at the MBC-110

When the DIP switch S1.8 is set to OFF (factory setting), the display indicates a code if an error occurs. See also page 49, Table 7.

During normal operation mode the point continuously flashes at 0.5 Hz.

The error codes are shown on the single-character display of the MBC-110. The numerals and letters in the error code are displayed successively for 2 seconds at a time.

Example

The error code E05 is displayed as follows:

1. E (Error)
2. Pause
3. 0
4. Pause
5. 5
6. Pause
7. Steps 1 to 6 are repeated.

10.1.2 Display of the software version of the MBC-110

If the DIP switch S1.7 is ON the display shows the current software. See also page 49, Table 7.

The numerals and letters in the software version are displayed successively for 2 seconds at a time.

Example

The software version 1.4 is displayed as follows:

1. u
2. 1. (1st numeral with stop)
3. 4 (2nd numeral without stop)
4. Pause
5. Steps 1 to 4 are repeated.

Troubleshooting

10.1.3 Error message on the MBC-110

Error message	Error description	Automatic reset
01	Obstruction detection with runtime monitoring	Yes
02	Emergency input is activated	Yes
03	Reserved	
04	Reserved	
05	Wrong way	Yes
06	Wrong way high security	No
07	Vandalism detection	Yes
08	Vandalism high security	No
09 – 0F	Reserved	
11 – 1F	Reserved	
20	Error occurred on servo	No
21	Servo's output stage 0 cannot be activated	No
22	Node guarding error Servo 0	No
23 – 3F	Reserved	
40	Reserved	No
41	Incorrect program code	No
42	Turnstile blocked by the drive unit	No
43-49	Reserved	
50-57	Software error	No
59-5C	Reserved	
5D	CRC error, EEPROM	No
5E	CRC error, flash	No
5F	Watchdog error	No
60	CAN Bus error: Error when initializing CAN protocol stack	No
61	CAN Bus error: Bus OFF	
62	CAN Bus error: Error when initializing CAN bus	No
63	CAN Bus error: Error with CAN servo address	No
64	Reserved	
65	I2C Bus error	No
66	CAN Bus error: Error in CANopen stack	No
67 – 6F	Reserved	
70	Servo with wrong Firmware detected → download required	No
72	Servo with wrong application detected → download required	No
74	Servo with wrong application version detected → download required	No
76	Servo with wrong hardware detected	No
78	Servo software cannot be cleared	No
7A	No communication with servo boot loader	No
7C	Error when downloading firmware to the servo	No
7E	Error when activating firmware on the servo	No
71, 73, 75, 77, 79, 7B, 7D, 7F	Reserved	
80-99	Reserved	

10.1.4 Error message – motor control unit MMC-120

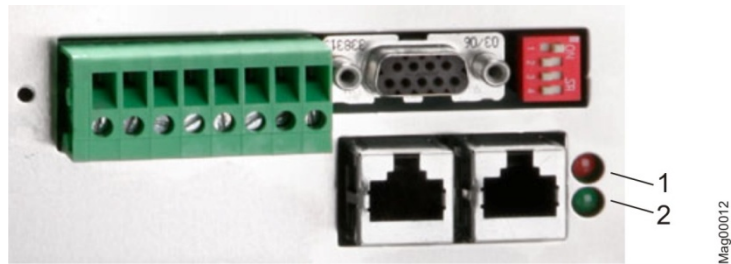


Fig. 33: LEDs on MMC-120

- 1 Red LED for error diagnosis
- 2 Green LED for indication of the power supply state and the safety input state

LED	Description	Possible cause / Troubleshooting	To be carried out by
Green LED is OFF.	No power supply	Check power supply.	Qualified electrician
Green LED is flashing	Power supply is present. Safety input signal is missing.	Missing signal at emergency input IN1 of the MBC-110. CAN connection between MBC-110 and MMC-120 defective.	Qualified electrician
Green LED is ON.	Normal operation	–	–
Red LED is OFF	No error code	–	–
Red LED is ON.	External error with emergency stop	Search for errors in the MBC-110 or in the MMC-120.	Qualified electrician
Red LED is flashing	Error Number of blink impulses indicates the error code.	See Table 11	Qualified electrician
Red and green LED are ON	Application program has been erased. Boot loader is waiting for downloading the application program.	Download has been interrupted. Refer to the following Chapter "Downloading application program".	Qualified electrician

Table 10: Description of the LEDs on the MMC-120

Troubleshooting

Error message	Description	Possible cause
2	Resolver error	Plug not properly inserted, short circuit
4	Motor phase error	Motor cable not connected. Wiring defective
5	Lifeguarding CAN	CAN communication with MBC-110 interrupted.
6	Short circuit to ground	Short circuit between motor phase and ground
7	Motor phases shorted	Short circuit between two motor phases
8	DC bus Over-voltage	DC bus voltage too high (> 56 V)
9	DC bus Under-voltage	DC bus voltage too low (< 17 V)
11	Over-temperature heat sink	Heat sink temperature too high (> 80 °C)
20	I ² t surveillance motor	Motor overloaded.

Table 11: Error message on the MMC-120

10.2 Downloading new software to logic controller MBC-110

**NOTE!**

Before a download, the position of the DIP switch on the MBC-110 must be noted so that the unit can be restored to its previous operating state following the download.


1. Note switch position of the 16 DIP switch on the MBC-110.
2. Isolate the power supply to the pedestrian barrier. Wait a few seconds until the capacitors in the power pack have discharged.
3. Set all 16 DIP switches on the MBC-110 to the ON position.
4. Restore the power supply to the pedestrian barrier.
5. The MBC-110 detects from the position of the DIP switch that a download is to be executed.
6. The MBC-110 is initializing. The display first shows "P" and then "G".
7. The MBC-110 assumes the waiting state. The display shows "L" and a flashing stop. At this point in time, the download can be cancelled by switching off the power supply.
8. Set all 16 DIP switches to the OFF position.
9. The download is executing:
 - The program memory of the logic controller is erased. The display on the MBC-110 shows "c" (clear) and a flashing stop.
 - The new software is being downloaded. The display shows "d" (download) and a flashing stop.
 - The new software is activated by booting the logic controller. A rotating bar appears in the display.
10. Isolate the power supply again.
11. Reset the DIP switches on the MBC-110 to the old position you noted down earlier.
12. Isolate the power supply again. The unit starts to operate.

**NOTE!**

If the download failed, run another download. Contact MAGNETIC if necessary.

Spare parts

11 Spare parts

⚠ WARNING	
	<p>Risk of injury by incorrect spare parts!</p> <p>Incorrect or defective spare parts can result in damage, malfunctions or total failure and also impair safety.</p> <ul style="list-style-type: none"> – Use only the manufacturer's original spare parts.

Procure spare parts from authorized dealers or directly from the manufacturer. Refer to Page 2 for address.

Spare part drawings can be obtained on request.

12 Decommissioning, disassembly and disposal

A pedestrian barrier that is no longer usable should not be recycled as a complete unit, but disassembled into individual components and recycled according to material types. Non-recyclable materials have to be disposed of in an environmental-friendly manner.

Prior to decommissioning and disposal of the pedestrian barrier, it must be completely separated from the surrounding units.

- Decommissioning, disassembly and disposal of the pedestrian barrier may only be carried out by specialised staff.
- Disassemble the pedestrian barrier in reverse order from assembly.
- The pedestrian barrier has to be disposed of in accordance with the respective country-specific regulations.



NOTE!

For expert information regarding disposal of electric equipment contact MAGNETIC or competent electricians.



Konformitätserklärung

Declaration of Conformity



Der Hersteller / manufacturer

MAGNETIC Autocontrol GmbH

Grienmatt 20-28
D-79650 Schopfheim

Telefon +49 (0) 7622 / 695-5
Telefax +49 (0) 7622 / 695-602

Dokumentationsbevollmächtigter / Documentation Engineer

Herr Stefan Wellinger

Telefax +49 (0) 7622/695-719

erklärt hiermit für das von ihm gelieferte Produkt / *this is to certify that the delivered product*

Bezeichnung / *designation*

Drehkreuz / Full high turnstile

Typ / *type*

MPT-132*

MPT-152*

Ab Serien-Nr. / *from serial no*

10276527

die Konformität nach / *corresponds to the conformity of*

Richtlinie / directive 2006/42/EG (Maschinen-Richtlinie / *machine directive*)
geändert durch / *amended by* **2009/127/EG**

Richtlinie / directive 2014/35/EU (Niederspannungs-Richtlinie / *low voltage directive*)

Richtlinie / directive 2014/30/EU (EMV-Richtlinie / *EMC directive*)

Angewandte harmonisierte Normen (oder Teile daraus) / *Realized harmonized norms (or parts of them):*

EN ISO 12100:2010

Sicherheit von Maschinen – Grundbegriffe, allgemeine Gestaltungsleitsätze – Teil 2: Technische Leitsätze / *Safety of machinery – Basic concepts, general principles for design – Part 2: Technical principles*

EN 60204-1:2006/AC:2010

Sicherheit von Maschinen – Elektrische Ausrüstung von Maschinen – Teil 1: Allgemeine Anforderungen / *Safety of machinery – Electrical equipment of machines – Part 1: Specifications for general requirements*

EN 61000-6-2:2005/AC:2005

Elektromagnetische Verträglichkeit (EMV) – Teil 6-2: Fachgrundnormen – Störfestigkeit für Industriebereiche / *Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments*

EN 61000-6-3:2007/A1:2011/AC:2012

Elektromagnetische Verträglichkeit (EMV) – Teil 6-3: Fachgrundnormen – Störaussendung für Wohnbereich, Geschäfts- und Gewerbebereiche sowie Kleinbetriebe / *Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments*

Diese Erklärung ist keine Zusicherung von Eigenschaften im Sinne des Produkthaftungsgesetzes. Die Sicherheits Hinweise der Betriebsanleitung sind zu beachten. / *This declaration is not a guarantee of characteristics in the sense of product liability law. The safety regulations of the operating instructions have to be observed.*

Schopfheim, den 20.04.2016

Ort und Datum / *place and date*



Unterschrift / *signature*

Appendix

14 Appendix

14.1 Wiring diagram

The electric circuit diagram is supplied as a separate document.

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MAGNETIC Autocontrol GmbH
Grienmatt 20
79650 Schopfheim
Germany

Tel.: +49 7622 695 5
Fax: +49 7622 695 602
e-mail: info@ac-magnetic.com