

# Security Booth ClearLock



## **TECHNICAL MANUAL** (Translation of the original French text) Rev. 0

### **TECHNICAL MANUAL ClearLock-MT-EN**

## Document Revision

Rev.	Date	Written by	Checked by	Subject
00	2011-06-28	MFy	MLB + JB	First version

## TECHNICAL MANUAL ClearLock-MT-EN

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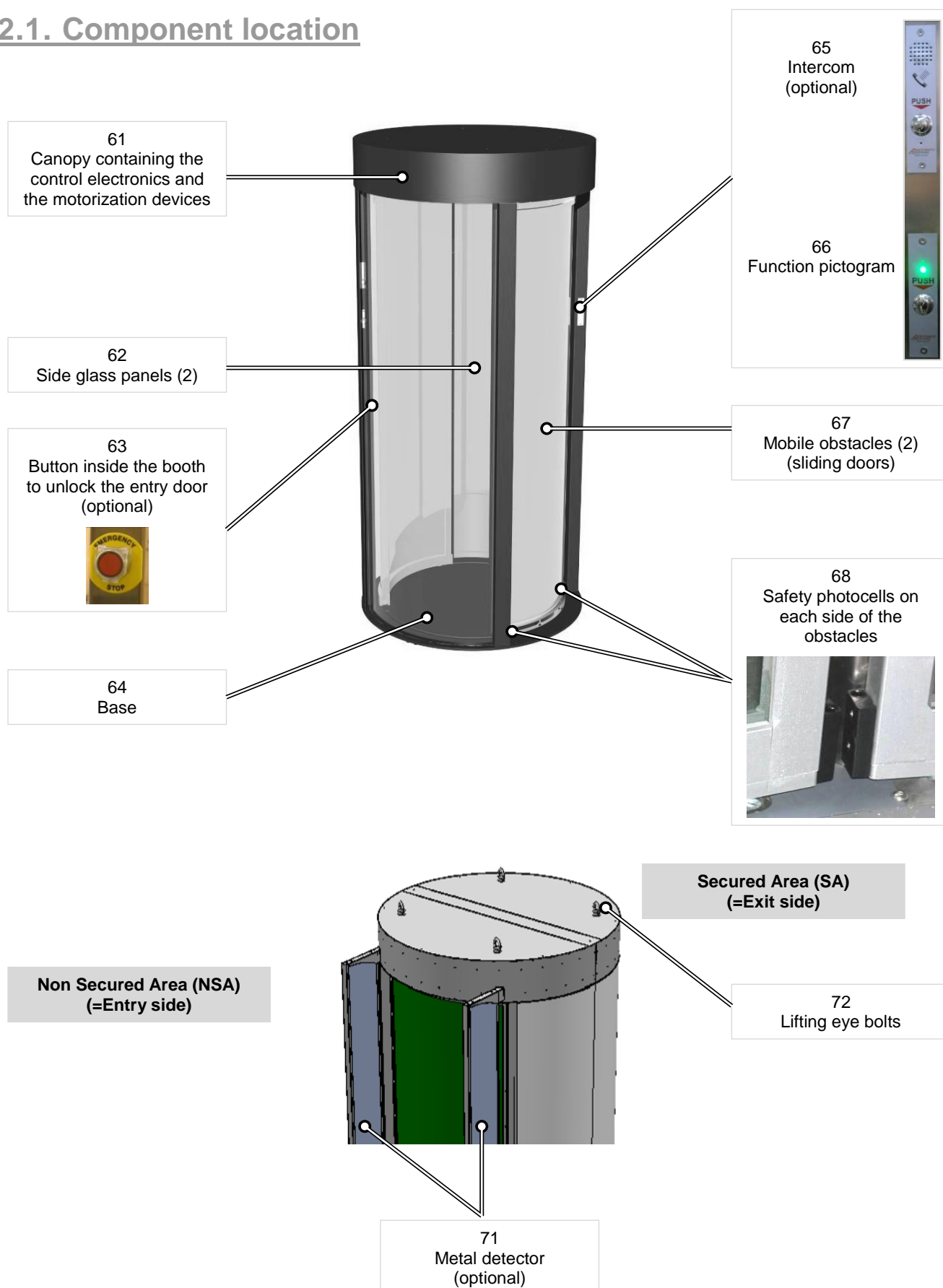
# 1. SAFETY WARNINGS

- This manual must be made available to any person who works with the equipment, e.g., installers, maintenance technicians, end users, etc.
- This equipment has been designed to control and manage pedestrian access and flow and cannot be applied to any other use without risk to users or to the integrity of the equipment. Automatic Systems cannot be held responsible for damages caused by improper use of the equipment.
- It is strongly recommended that children be **supervised** as they pass through the door. Extreme care is also required with animals, which should be kept on a leash and under the control of their owners.
- Do not add non-approved accessories (contact between different metals causes an electrolytic effect that decreases the equipment's corrosion resistance or a malfunction of the metal detector).
- The Contractor shall comply with local standards when installing the equipment.
- Any work on the equipment must be performed by qualified personnel. Automatic Systems shall reserve the full right to automatically refuse our warranty if any unauthorized work or work performed by an unqualified technician is performed on this product.
- Access to the mechanism is reserved for personnel who are aware of the electrical and mechanical dangers in the case of negligent operation. This personnel is obliged to close off access to the mechanical equipment after completing any work.
- For any operation that does not require the equipment to be powered on, disconnect the electrical power using the SYSTEM switch on the console ⇒ OFF (or open the breaker on the client distribution panel) **AND** disconnect the batteries.
- Any internal element that may be live or that could move should be handled with caution.
- The equipment is factory configured in "minimal risk" mode for its users. Parameters should only be changed by qualified personnel with full knowledge of the consequences, and this shall in no way entail any liability on the part of Automatic Systems.
- The equipment must be completely visible to the user/operator before being put into operation.
- After a collision, even if there is no visible damage, the equipment must be checked by a qualified technician.

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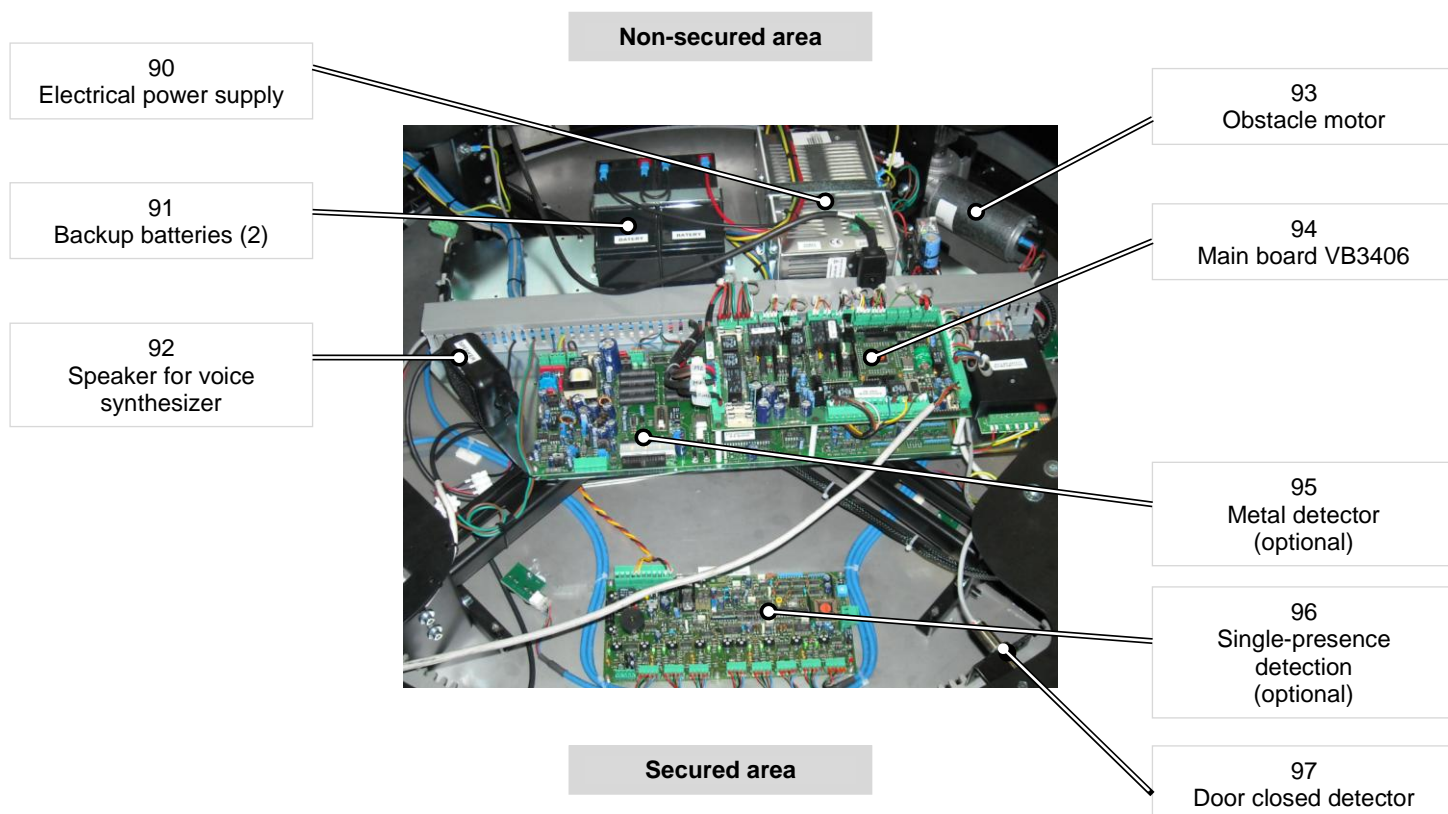
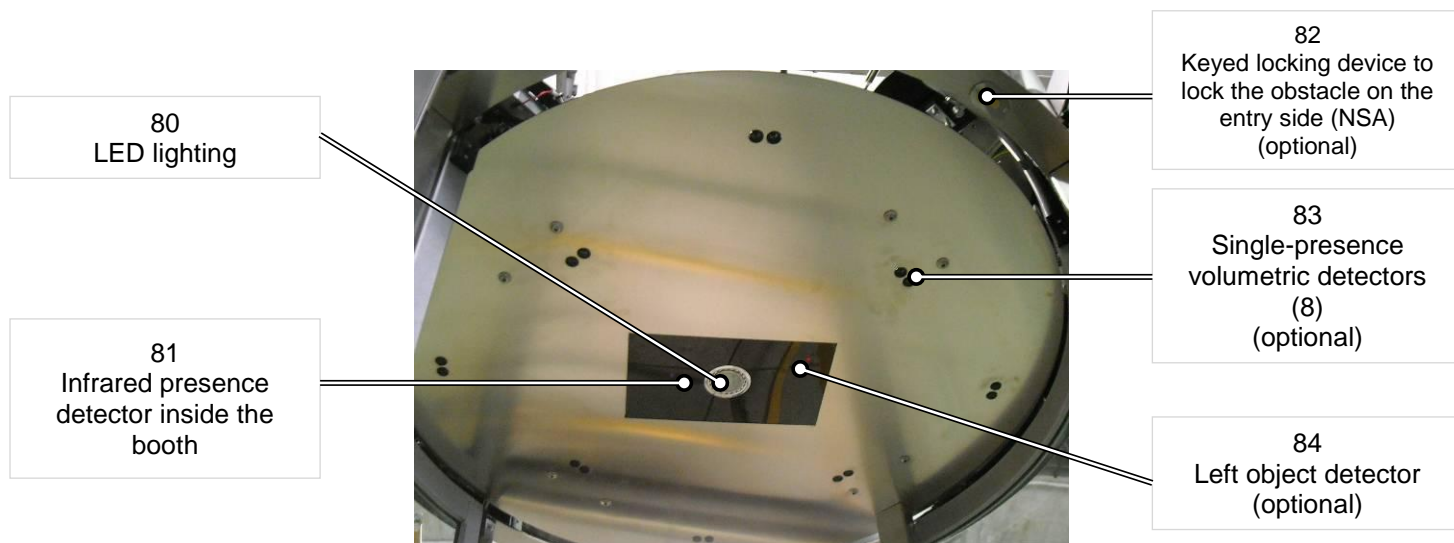
## 2. DESCRIPTION

### 2.1. Component location



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## 3. INSTALLATION

### 3.1. Site preparation work

Prior to installation, preparation work must be performed in accordance with the implementation drawing (see Chapter 8). The following requirement in particular must be met:

- Booth installation and canopy maintenance require sufficient floor-to-ceiling height.
- The ground must be able to sustain the pressure exerted by the equipment.
- The ground must be perfectly flat (smooth).
- The maximum tolerated floor inclination in all directions is 0.3% (6 mm over 2 m).
- The slope must be constant (no direction change).

### 3.2. Storage before installation

Before installation, protect equipment from impact and store it in its original packaging in a dry area protected from dust, heat and the weather.

Store between 22°F (-30°C) and 176°F (80°C).

### 3.3. Required tools

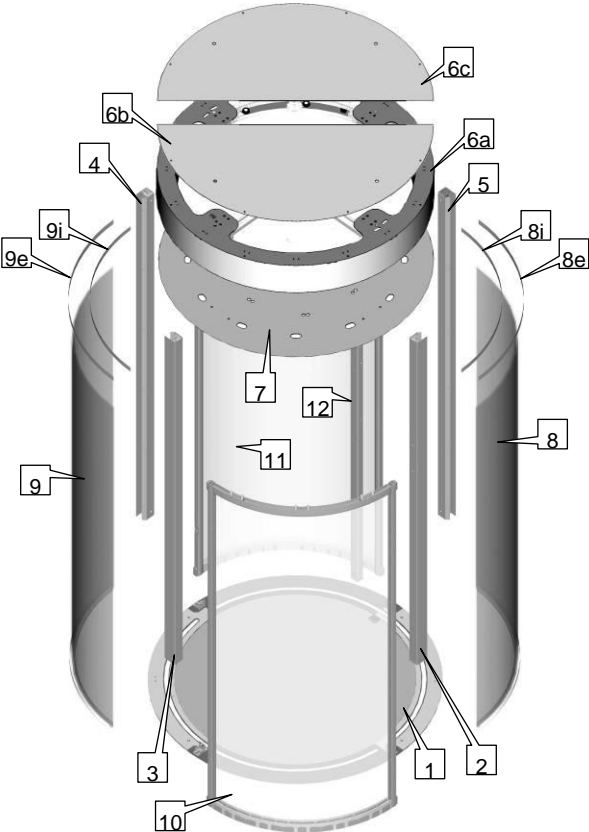
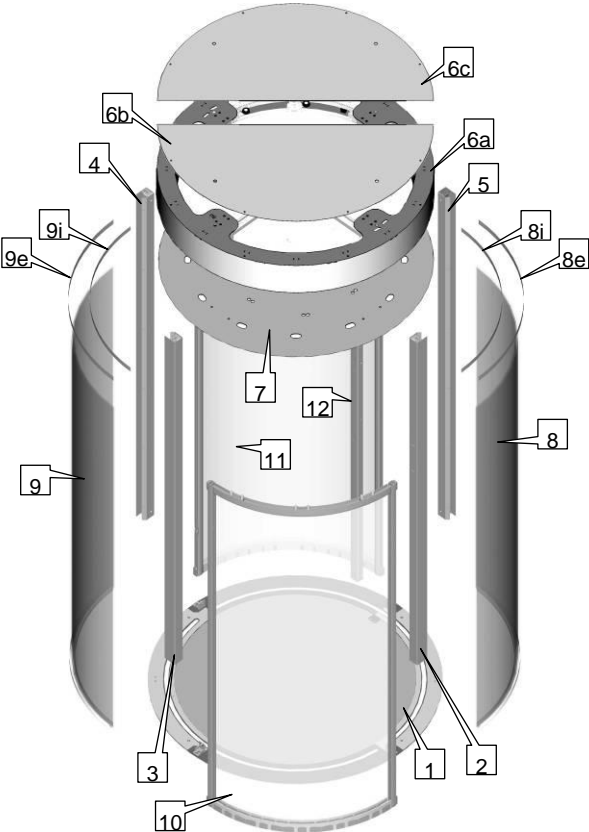













**WARNING:** Because the various components are heavy—the side glass panels, the doors and the canopy all weigh more than 50 kg each—a minimum of 2 persons are required to assemble the equipment.

- Device capable of lifting 400 to 1000 kg, if the equipment is delivered assembled
- Lift truck to install the canopy (100 kg), if the equipment is delivered unassembled
- 3-m straps (2) or vacuum discs (4) to handle the glass panels
- ⚠ Safety footwear, gloves, helmet and goggles
- Percussion drill and drill bit set (3 mm to 10 mm)
- Flat, Phillips and Tork screwdriver sets
- Step ladder (2 m high)
- 13-mm open-end wrench
- Allen key set
- Pry bar
- Flat file
- Cutter
- Flat nose pliers (200 mm)
- Wire cutter
- Caulking gun (silicone cartridge included)
- Bubble level (30 cm long)
- Vacuum
- Window cleaner
- Stainless steel cleaner
- Toweling paper
- Masking tape

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### 3.4. Packing list

**If the booth is delivered unassembled:**





	Ref.	Qty	Description	Location (most of the screws are on the specified component or assembly)
1		1	Base	
2		1	Right upright NSA	
3		1	Left upright NSA	
4		1	Right upright SA	
5		1	Left upright SA	
6		1	Canopy	
			6a: Canopy with electronics 6b: Canopy cover – section 1 6c: Canopy cover – section 2	
7		1	Ceiling mount with detectors	
8		1	Right-side glass panel	
			8e: Glass panel bracing 8i: Glass panel bracing	
9		1	Left-side glass panel	
			9e: Glass panel bracing 9i: Glass panel bracing	
10		1	Mobile obstacle NSA	
11		1	Mobile obstacle SA	
12		1	Inside column	
30		4	#5-M8 x 20 Flat socket cap screw	2, 3, 4, 5
31		8	#3-M5 x 10 Button socket cap screw	6a, 6b, 6c
32		4	#5-M8 x 20 Flat socket cap screw	6a, 2, 3, 4, 5
33		4	Ring	6a, 2, 3, 4, 5
34		qs	Plastic shims	6a, 8, 9
35		3	Gray silicone cartridge	8, 9
36		12	M8 x 35 Hex cap screw (13-mm wrench)	6a, 10, 11
37		12	M8 Lock washer	6a, 10, 11
38		12	Nylon washer	6a, 10, 11
39		8	#4-M6 x 16 Button socket cap screw	6a, 7
40		10	#2.5-M4 x 10 Button socket cap screw	12
41		4	#4-M5 x 16 Socket cap screw	1, 6a, 12b
42		4	M5 Flat washer	1, 6a, 12b
43		4	M5 Lock washer	1, 6a, 12b

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**Accessory box**

50		Control console 2 keys (ref. APEM A126) 2 keys (ref. APEM 601) 50-m cable and 2 connectors
51		Intercom 50-m cable and a connector
52		Connector for standard power cable 115/230 VAC–24 VDC
53		Display for volumetric single-presence detection configuration (optional)

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54		Metal detector programming terminal Key (optional)
55		Keys to manually lock the exterior obstacle (optional)
	4 lifting eye bolts	

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### 3.5. Equipment assembly (if delivered unassembled)

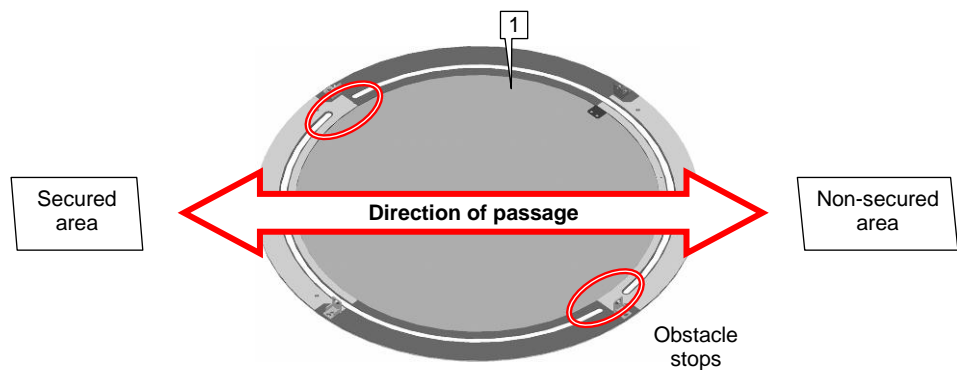
Installation work must be done in accordance with the safety warnings (see Chapter 1).

#### 3.5.1. Base

1. Lay down the base (1) (approximately 50 kg):

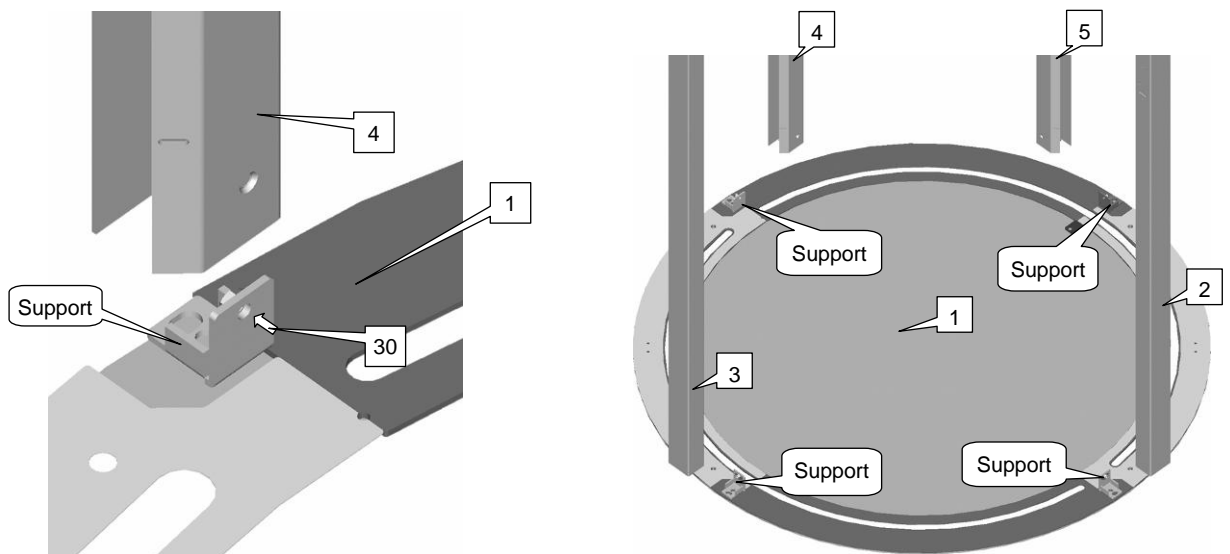
- Ensure the rubber side is facing up;
- Ensure the base is properly aligned with respect to passage direction; use the tracks as a reference point to determine where the obstacles should stop in a closed position.

**Note:** The base is symmetric and does not need to be oriented with respect to the secured and non-secured areas.



#### 3.5.2. Uprights

1. Remove the screw (30) from the base support (1).
2. Install the upright (4) on the support.
3. Fasten the upright (4) to the support with the screw (30).
4. Repeat the previous steps for the 3 other uprights (2, 3 and 5).

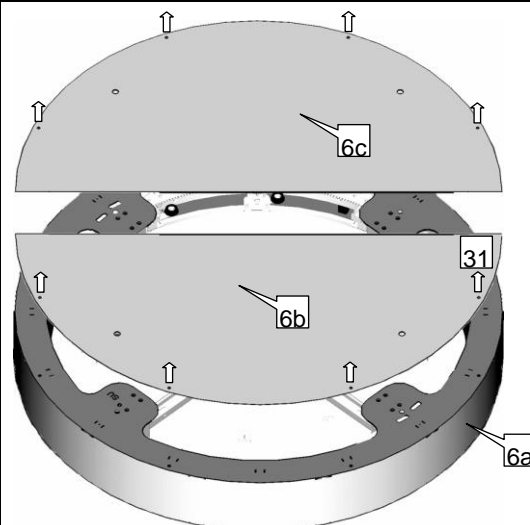


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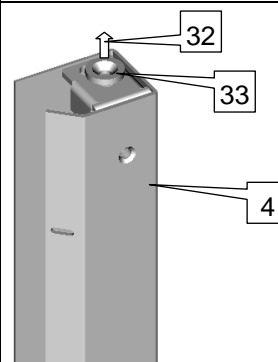
### 3.5.3. Canopy

1. Remove the screws (31) and the covers (6b and 6c) from the canopy (6a).

**Note:** Covers of booths with wider diameters have 3 sections.



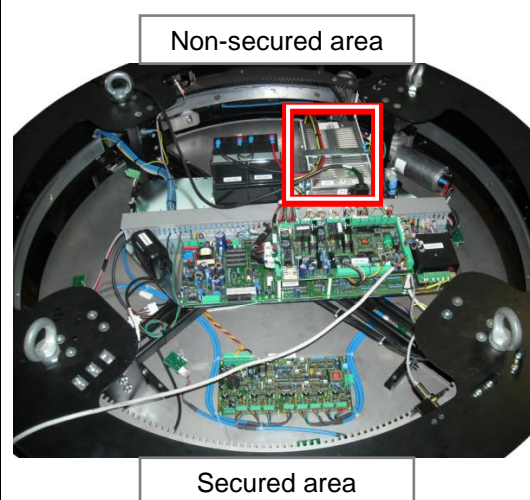
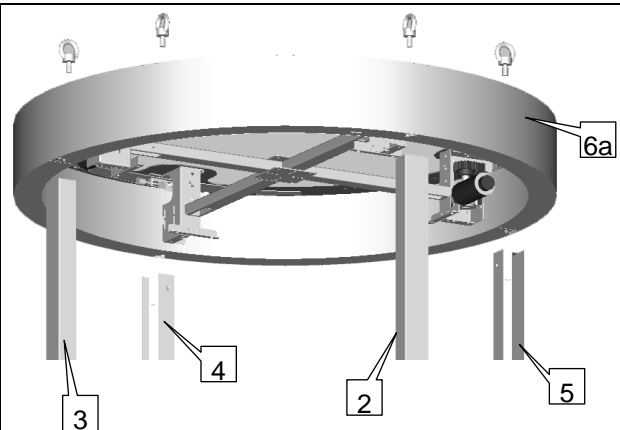
2. Remove the screws (32) from the uprights (2, 3, 4, 5) and remove the rings (33).



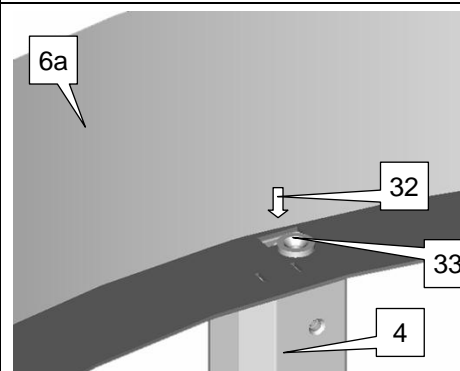
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3. Fasten the 4 M16 lifting eye bolts to the canopy (6a) (approximate canopy weight is 100 kg).

Install the canopy on the uprights (2, 3, 4, 5) in the proper orientation: electrical power on the non-secured side.



4. Loosely fasten the canopy (so the side glass panels can be installed) to the uprights using the rings (33) and the screws (32).



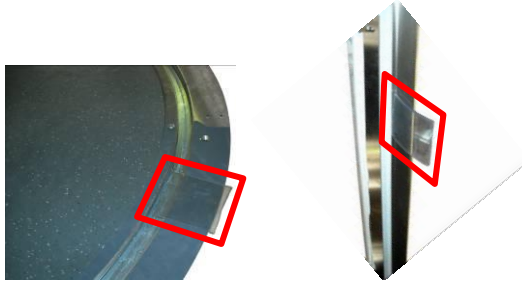
5. Install the covers only after running the electric cables (see section 3.7).

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### 3.5.4. Side glass panels

**⚠ WARNING:** The glass panels weigh more than 50 kg and must be handled by 2 or more persons with the help of vacuum discs and/or straps.

1. Loosen the 2 screws (30) of the upright (3).
2. Turn the upright (3) to insert the glass panel more easily; to do so, loosen the screw (32) holding the canopy (6a) to the upright (3).
3. Install 2 rubber patches on the base as well as on the uprights to prevent the glass from touching the metal.



4. Insert the glass panel (9) (weight > 50 kg) in the upright (4).
5. Insert the glass panel (9) in the upright (3) and pivot the upright to return it to its initial direction.
6. Tighten the screws (30 and 32).
7. Center the glass panel (9) between the 2 uprights (3 and 4).

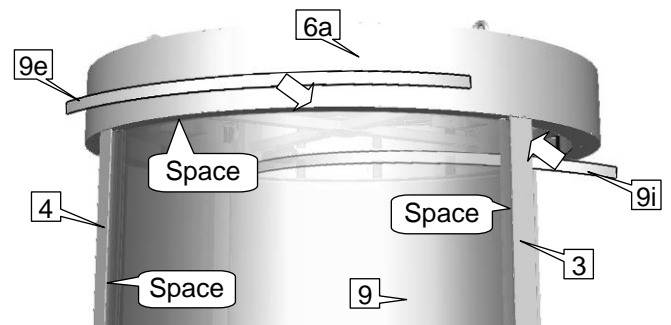
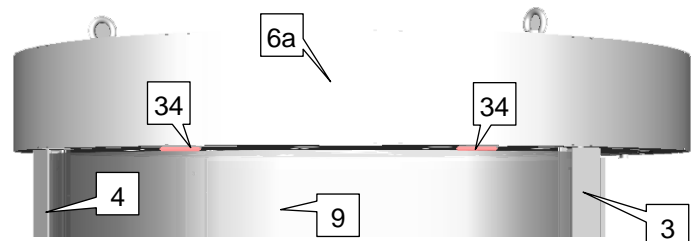
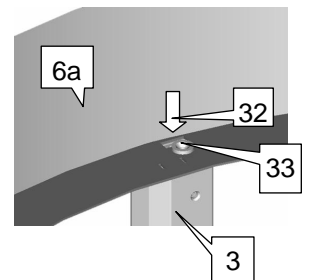
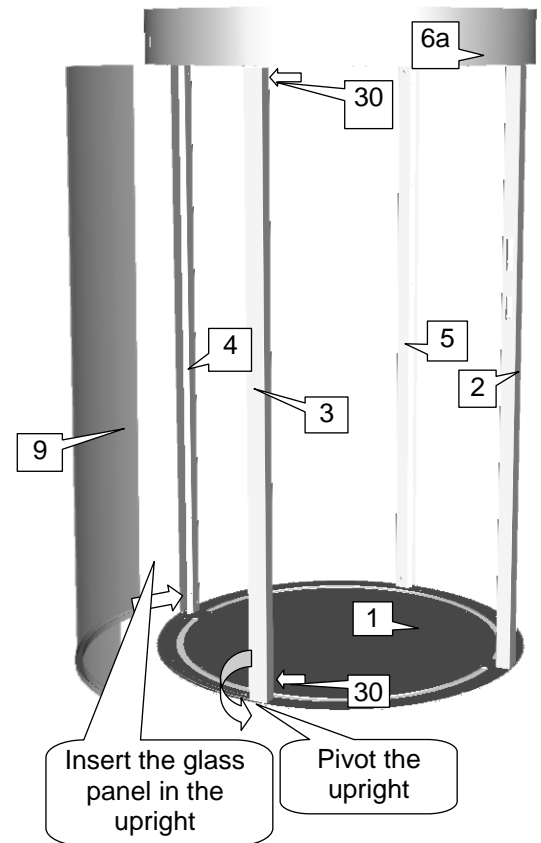
8. Install shims (34) between the glass panel (9) and the canopy (6a) to lock the panel in place; ensure the panel remains plumb.

9. Repeat the previous steps for the other side glass panel (8).

10. Cut the rubber patches so they are flush with the glass panels, and apply a silicone joint in the spaces between the glass panels (8 and 9), the canopy (6a) and the uprights (2, 3, 4, 5).

11. Use silicone to adhere the braces (8e, 9e, 8i, 9i) between the glass panels and the canopy. Hold the braces in place with masking tape until the silicone sets.

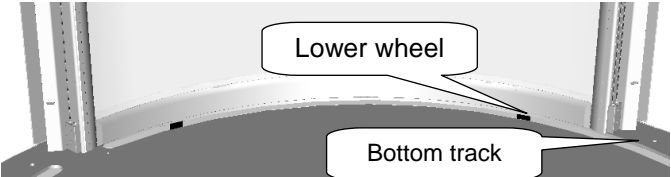
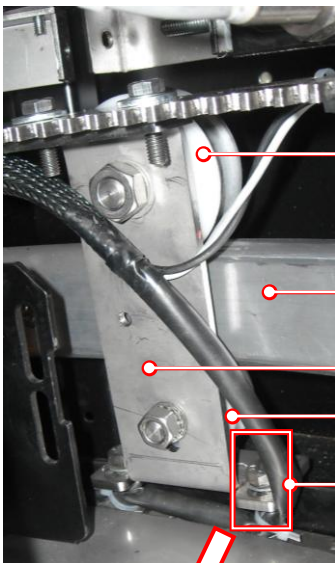
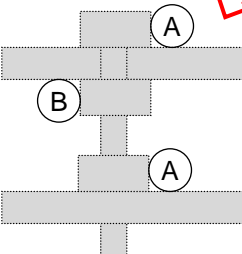
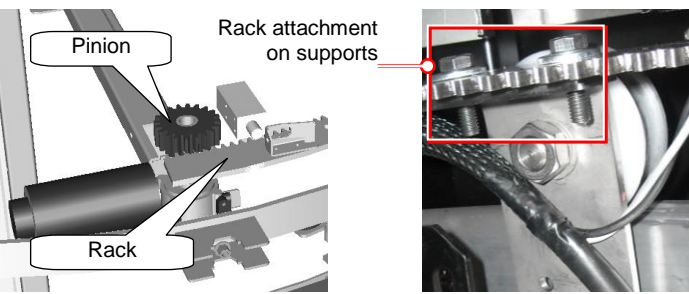
**Note:** Apply the silicone. Allow 24 hours to dry before using the booth. Clean any silicone residue once dried.



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### 3.5.5. Mobile obstacles

**⚠ WARNING:** The mobile obstacles weigh more than 50 kg and must be handled by at least 2 persons with the help of vacuum discs and/or straps.

<p>1. Insert the lower wheels of the door into the bottom track of the base, then tilt the door back into an upright position.</p>	 <p>Lower wheel</p> <p>Bottom track</p>
<p>2. Set the 2 upper wheels on the guide rail.</p> <p>3. Adjust the door on its supports so that:</p> <ul style="list-style-type: none"> <li>• The door is plumb and aligned with the uprights.</li> <li>• There is no contact between the lower wheels of the door and the bottom track of the base (there should be a 2- to 3-mm space).</li> <li>• The door does not touch the ceiling mount once installed.</li> <li>• The door slides freely throughout its entire rotation.</li> <li>• The lower wheel is only slightly touching the guide rail.</li> </ul>	 <p>Upper wheel</p> <p>Guide rail</p> <p>Door support</p> <p>Lower wheel</p> <p>Adjustment nuts</p>  <p>A- Door height adjustment</p> <p>B- Loosen to adjust the distance between the door and the fixed side glass panel.</p>
<p>4. Adjust the rack on the supports so there is a small gap between the rack and the pinion.</p>	 <p>Pinion</p> <p>Rack</p> <p>Rack attachment on supports</p>
<p>5. Repeat the previous steps for the second door.</p>	

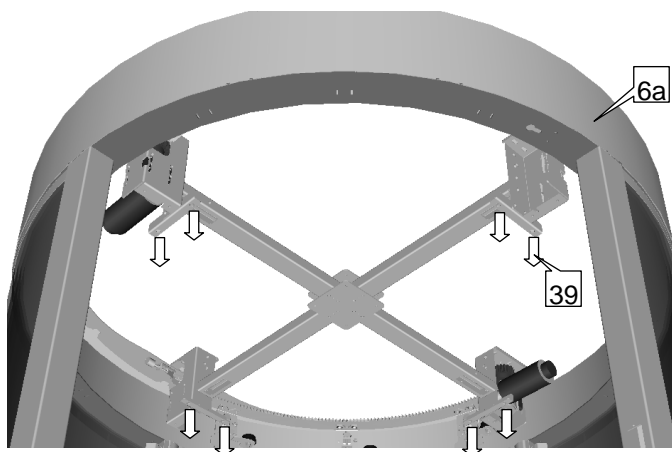
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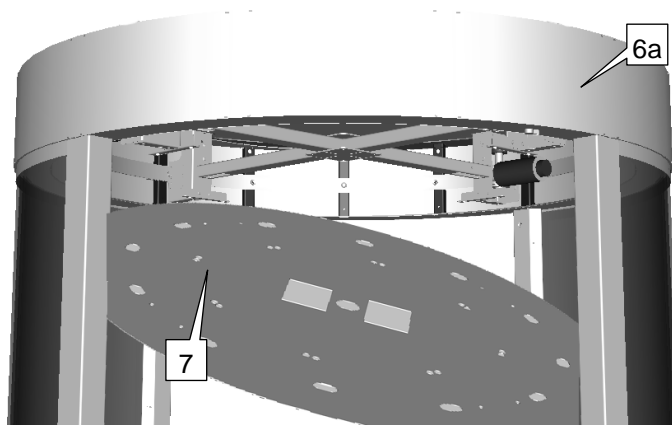


### 3.5.6. Ceiling mount

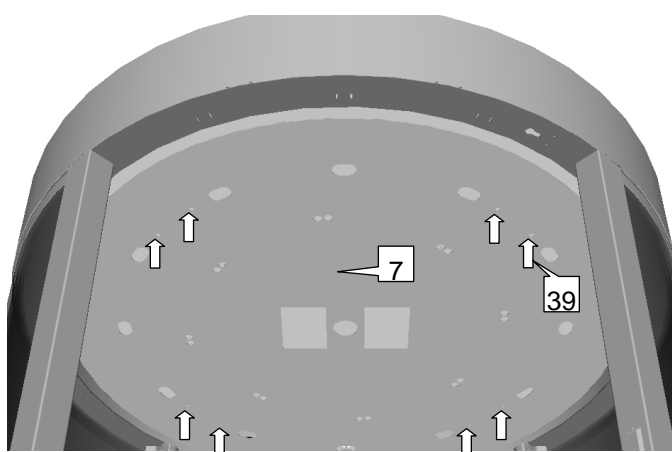
1. Remove the screws (39) from the canopy (6a) braces.



2. Tilt the ceiling mount (7) to insert it under the canopy. Center it over the braces.



3. Fasten the ceiling mount (7) to the canopy braces with the screws (39).



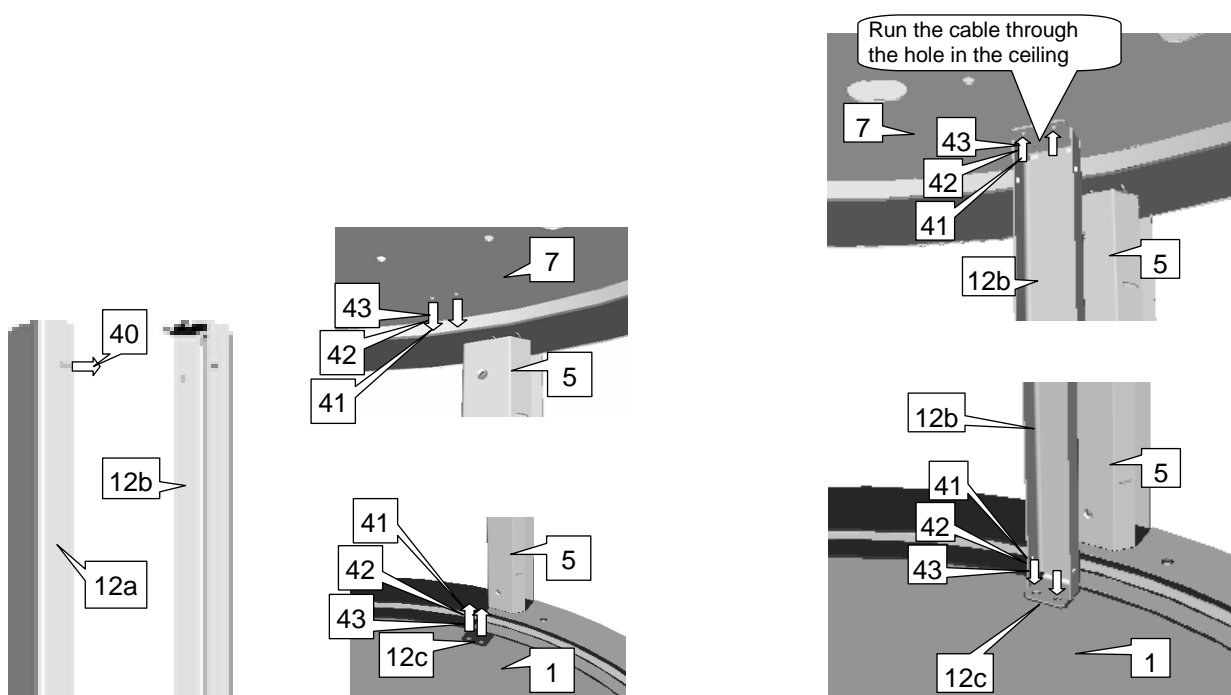
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### 3.5.7. Inside column

1. Remove the screws (40) and the cover (12a) of the column (12b).
2. Remove the screws and washers (41, 42 and 43) from the ceiling mount (7) and the base (1).
3. Position the column (12b) between the ceiling mount (7) and the base (1).  
**Note:** Run the cable (if any) through the hole in the ceiling mount.
4. Fasten the column (12b) to the ceiling mount (7) and the corner bracket (12c) of the base (1) with the screws and washers (41, 42 and 43).
5. Fasten the cover (12a) to the column (12b) with the screws (40).



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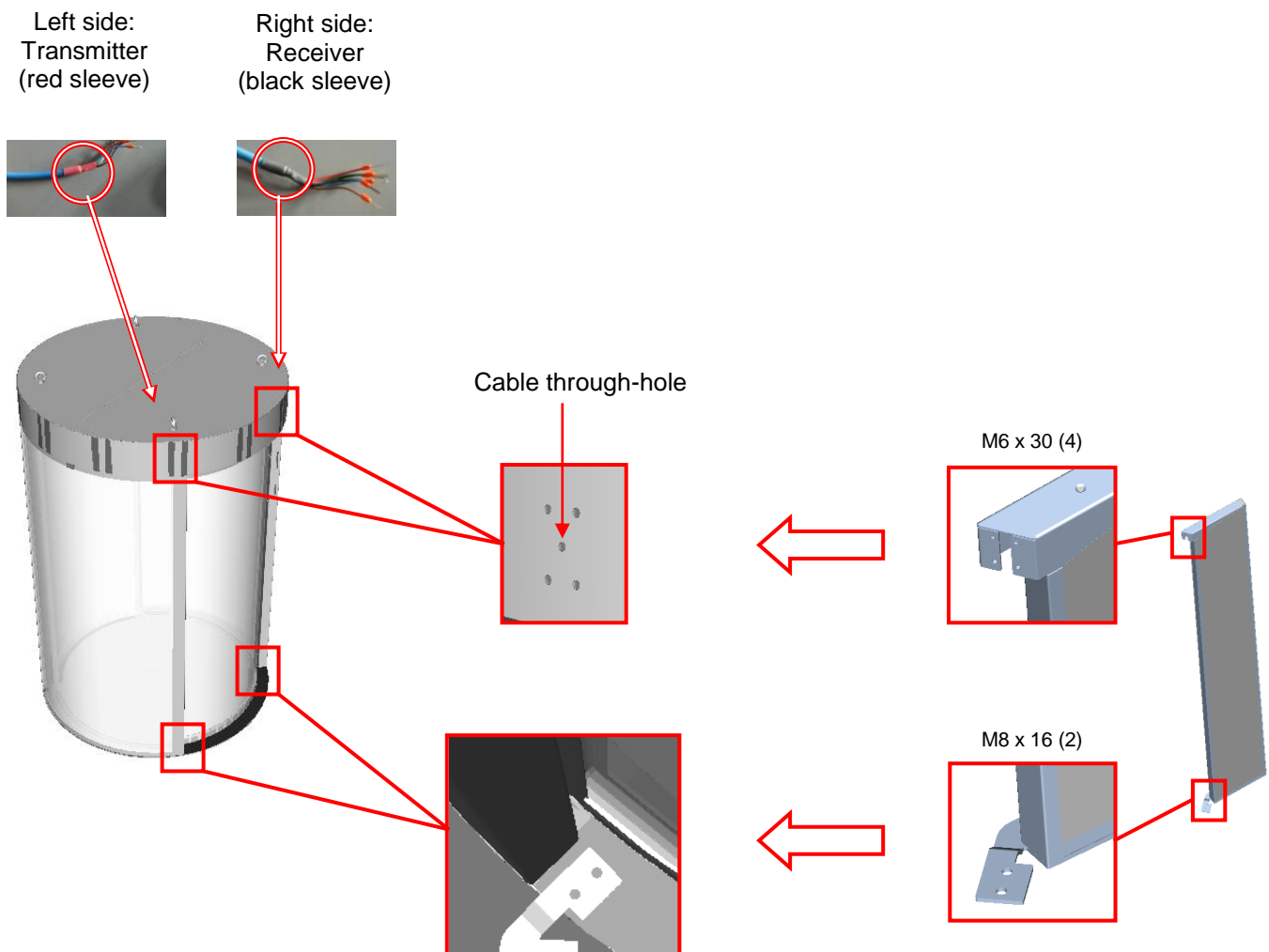
### 3.5.8. Metal detector (optional)

**Note:** The operation of the metal detector can be hindered by:

- Devices generating electromagnetic fields or vibrations:
  - Underground or overhead power lines
  - Transformers
  - Radio transmitters
  - Fluorescent lamps
  - Elevators
  - Air conditioners
  - Monitors, television sets
  - Change machines
  - Revolving doors
- Metal structures in the surrounding area (e.g., beams, suspended ceilings or floating floors)  
**It is also imperative to prevent contact with all metal components.**

#### **Assembly:**

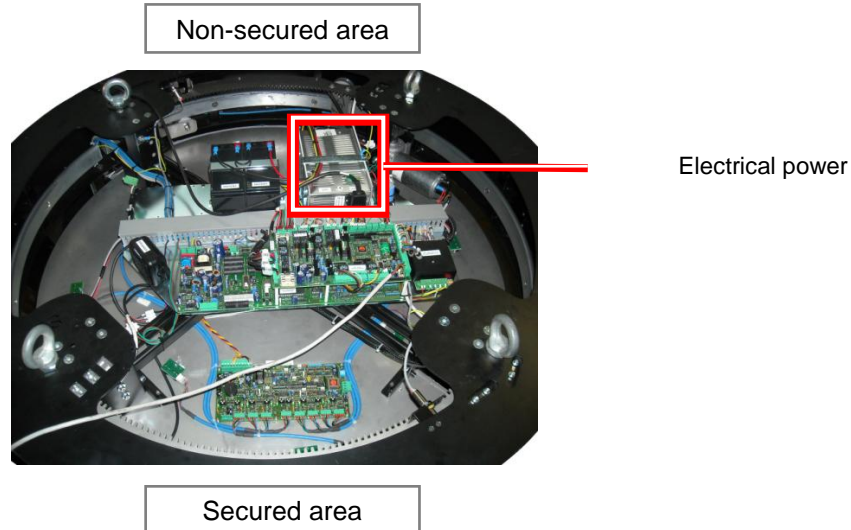
- With the bolts provided, attach the 2 antennas on both sides of the entry door (with respect to the orientation).
- Connect the cables to the metal detector board (see section 3.7.1).



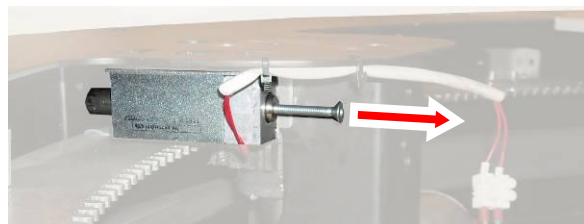
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### 3.6. Equipment installation (assembled)

- Bring the booth to its location (booth weight is indicated in Chapter 6) with a device such as a crane, a pallet truck, cylinders, etc. (not included).
- Position the booth correctly, i.e., with the electrical power on the non-secured side.



- If the equipment comes with the optional metal detector, **then the equipment must be insulated from all other metal components.**  
If the floor is metal, use a rubber mat between the floor and the booth and between the floor and the antennas of the metal detector.
- Adjust the level of the booth by inserting shims under the base at the floor attachment points, where required.
- To access the booth's floor attachment points, the obstacles can be manually moved.  
If required, pull on the rod of the electromagnetic lock to free the door (the electromagnetic lock can be accessed via the canopy cover).



- Bolt the equipment to the floor with 4 anchors that are a maximum of 8 mm in diameter.
  - o **The equipment must be bolted to the ground before being used.**
  - o The methods and procedure used to bolt the equipment to the ground must be adapted based on the environment and the nature of the ground on which it will be bolted.
  - o The work must also be validated by a professionally qualified engineer.
  - o Automatic Systems cannot be held responsible for any accident or damage caused to the equipment due to improper floor attachment.
- Clean the glass panels and the base of the booth.
- Remove the protection film from the lights.

## TECHNICAL MANUAL ClearLock-MT-EN

## 3.7. Electrical connections

**WARNING:** All tasks must be performed in accordance with the safety warnings (see Chapter 1). In particular, electrical power must be cut before performing the tasks described below.

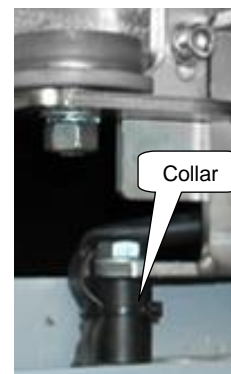
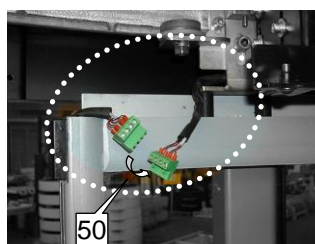
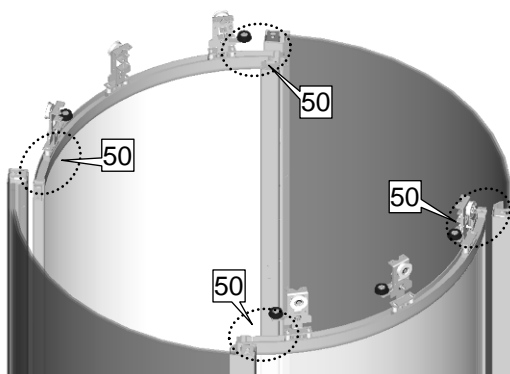
**Note:** Connections must be done **in accordance with the wiring diagrams** included inside the equipment, **as these represent the primary reference instructions.**

### 3.7.1. Connections required when the booth is delivered unassembled

#### **Safety photocells (see item 68 in section 2.1)**

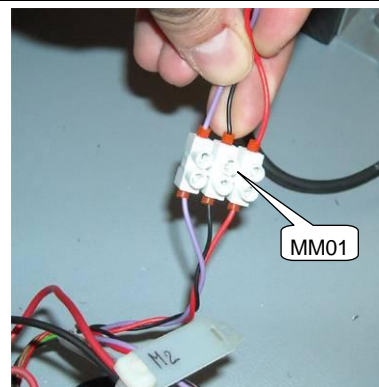
Connect both parts of the 4 connectors (50).

Hold the cables in place with a collar so door movement is not hindered.



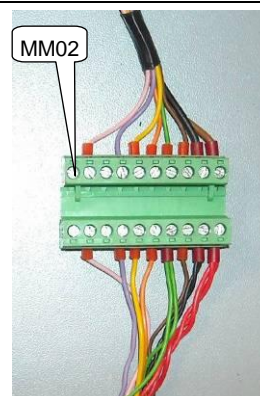
#### **Emergency stop**

Connect the emergency stop button (see item 63 in section 2.1) of the inside column to the connector (MM01) located inside the canopy. Follow the wire color coding.



#### **Canopy components**

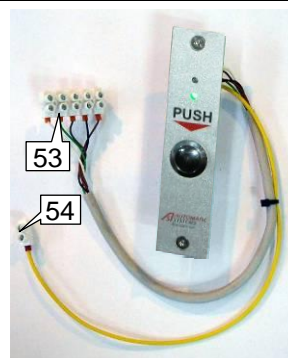
Connect both parts of the connector (MM02) to link the canopy components (lights, optional detectors, etc.) to the electronic board.



## TECHNICAL MANUAL ClearLock-MT-EN

### **Function pictograms**

- Remove the pictogram front plates.
- Run cable W002 through the upright (2) (NSA).
- Run cable W003 through the upright (4) (SA).
- Connect the cables to the connectors (53 and 54 [GND]). Follow the wire color coding.
- Fasten the pictogram front plates to the uprights.



### **Metal detector (optional)**

- Connect the transmitter antenna (TX, red marker) to connectors M4 and M5 of the metal detector board (see section 5.13).
- Connect the receiving antenna (RX, black marker) to connectors M7 and M8 of the metal detector board.
- Configure the device as indicated in section 5.13.

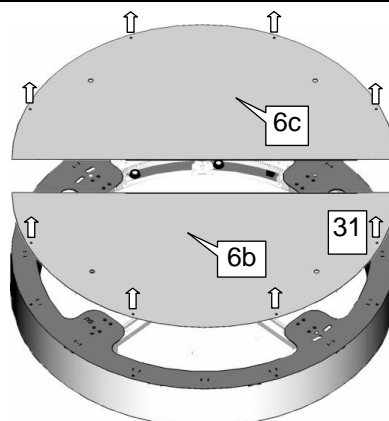
### **Ground leads**

Attach the yellow/green leads between the metal components.

## **TECHNICAL MANUAL ClearLock-MT-EN**

### 3.7.2. External booth connections

- Cut an opening in the cover to pass the cables out: power supply, console, intercom, access control device, etc. (refer to the implementation drawing).
- Use appropriate devices to pass the cables through the cover, such as grommets or glands, in accordance with local standards.
- Remove the socket cap screws (31) and then the covers to gain access to the canopy components.



#### **Control console**

Connect the control console(s) to connector M4 of board VB3406.



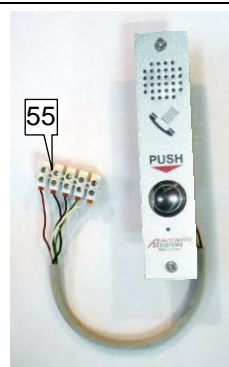
#### **Door opening control (reader included)**

Connect the door opening controls (NSA and SA) to connectors CON2 of the pictogram front plates (NSA and SA).

See wiring diagram.

#### **Intercom (optional)**

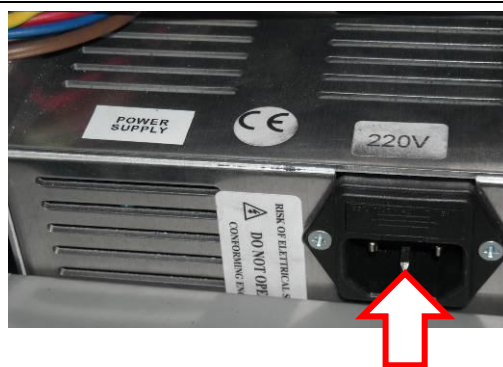
- Remove the intercom front plate.
- Run cable W001 through the upright (2) (NSA).
- Connect the cable to the connector (55). Follow the wire color coding.
- Fasten the intercom front plate to the upright.



## TECHNICAL MANUAL ClearLock-MT-EN

### **Power supply**

- Verify all the characteristics of the power supply on the booth's identification plate.
- Protect the line upstream with a 10-A circuit breaker.
- Connect the power cable to the connector (52) (see section 3.4).
- Connect the power cable to case VB4313 (picture).



Remove the **hygroscopic salt** pouches, if present.

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### 3.8. Start-up

1. Turn the SYSTEM key switch of the console to the ON position (see section 4.8).  
**WARNING:** The system undergoes an initialization phase that lasts approximately 1 minute (SA obstacle opens and closes, then NSA obstacle opens and closes); during this phase, the safety devices are not operational and the booth cannot be used.
2. Complete several opening and closing cycles using the various controls available (console, reader, push-button, etc.)  
Ensure the SA obstacle is properly locked when closed.
3. Complete a few passages and ensure the light and sound signals are working properly.
4. Ensure obstacles open completely when the emergency stop is activated (EMERG key switch of the console in the ON B position).
5. Ensure the entry door unlocks when the emergency stop push-button is pressed inside the booth (see item 63 in section 2.1).
6. Verify operation of the booth upon power failure (see section 4.6). Depending on the assembly of the electromechanical locks, the entry or exit door must remain locked when the booth is operating with its backup batteries.
7. Ensure the entry door remains locked after the key is turned in the outer lock.

## TECHNICAL MANUAL ClearLock-MT-EN

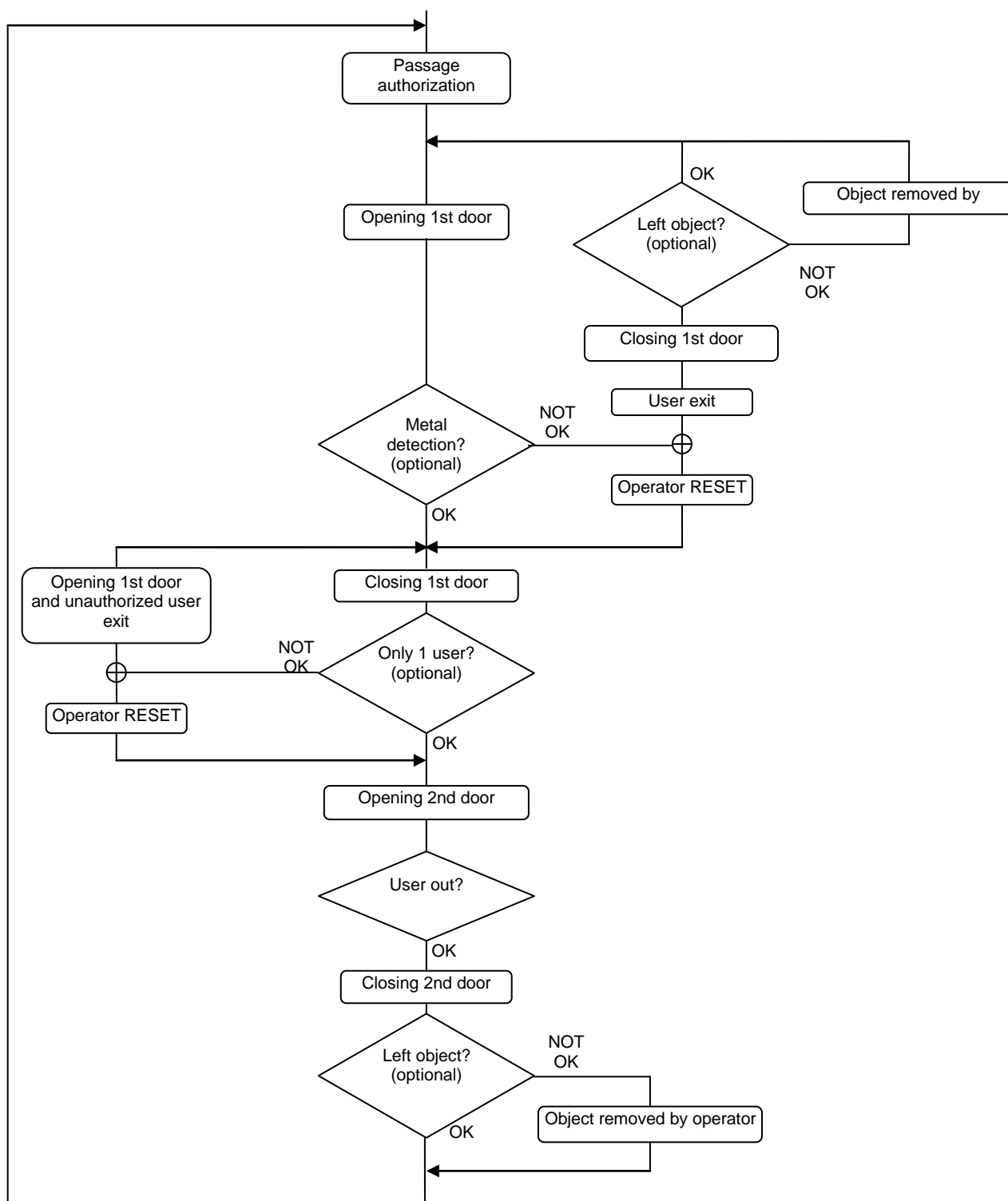


## 4. OPERATION

### 4.1. Operating principle

The bidirectional booth allows users to pass in 2 directions (entry and exit) according to the sequence illustrated below (same sequence in both directions).

However, the console makes it possible to operate the booth in only one direction of passage and to configure 3 different operating modes (see section 4.8).



## TECHNICAL MANUAL ClearLock-MT-EN

## 4.2. Passage authorization

A passage authorization can be granted via:

- The operator, i.e., the operator pushes on opening buttons on the console (see section 4.8);
- An access control device (not included), i.e., push-button, badge reader or other device to be connected as specified in section 3.7.2.

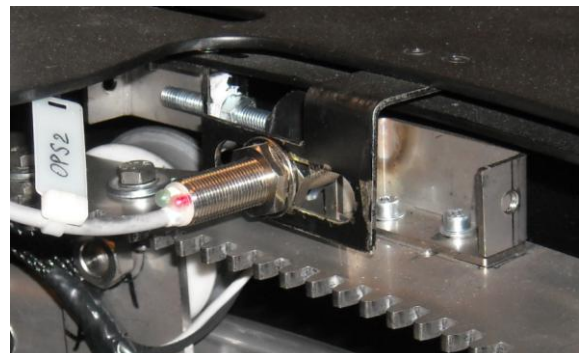
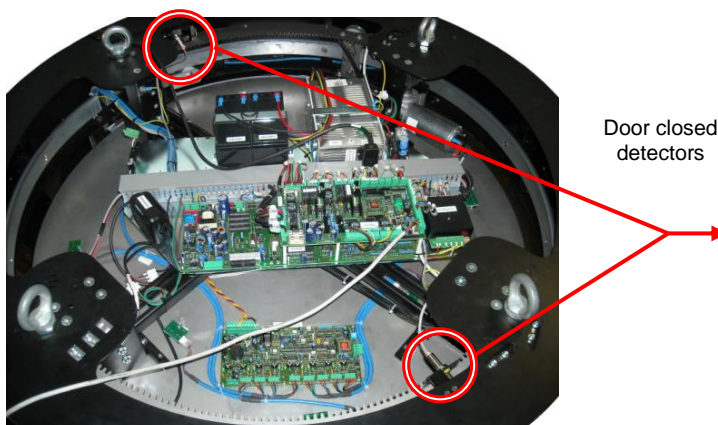
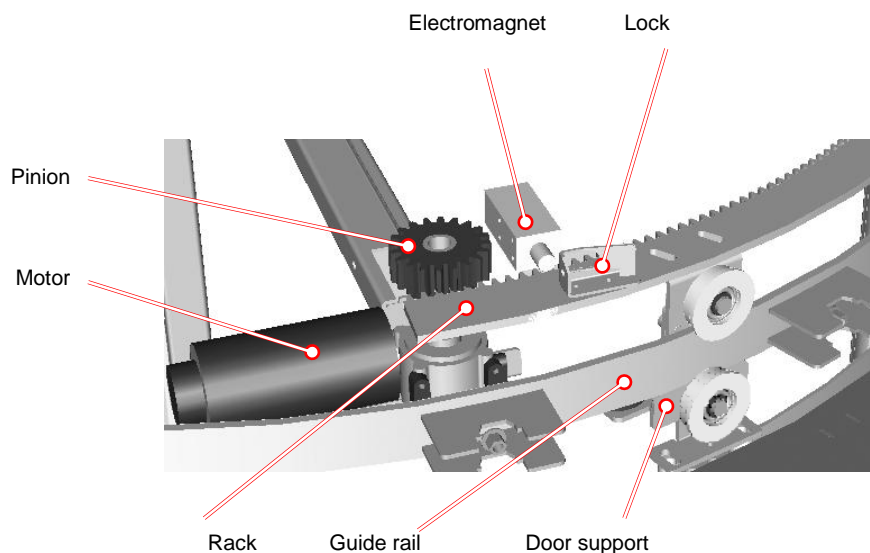
A passage must be completed before the booth can handle another passage authorization request.

## 4.3. Mechanical drive system

The pinion is driven by the motor, and the pinion drives the rack. The door is driven by its rack via 2 wheeled supports and slides along the guide rail.

An electromagnet keeps the door in the closed position via the lock attached to the rack to prevent manual opening of the door.

Two proximity detectors (OPS1 and OPS2) validate the closed status of the doors (the U bracket attached to the rack is detected).



## TECHNICAL MANUAL ClearLock-MT-EN

## 4.4. Obstacle locking and unlocking

- An electromagnet locks the entry door (non-secured side), which is only unlocked when a passage authorization is granted.
- When the booth is powered off, the entry door is unlocked and can move freely.
- When the emergency stop push-button is pressed (see item 63 in section 2.1), the entry door is unlocked.
- The entry door can be manually locked with a keyed locking device (see item 82 in section 2.1) (optional).  
To lock the obstacle, turn the key counterclockwise.
- An electromagnet locks the exit door, which is unlocked only when the passage is authorized (no fraud detected).  
**Note:** To manually unlock the door, pull on the rod of the electromagnet (accessible through the cover or the ceiling mount of the canopy) (see section 3.6).
- No matter what operating mode the booth is in, the 2 moving obstacles can be locked simultaneously with the LOCK button of the console (see section 4.8).

## 4.5. Evacuation mode (emergency stop)

As soon as evacuation mode is activated, i.e., when the EMERG key switch of the console is turned to the ON B position (see section 4.8), the 2 obstacles are opened and remain opened to allow free passage in both directions.

Evacuation mode remains active for as long as the input is active.

This operating mode has priority over all other modes.

## 4.6. Power failure

In the event of a power failure, the booth continues to operate normally for about 100 cycles on its backup batteries (see item 91 in section 2.1).

Once the backup batteries have discharged, the entry door (non-secured side) is unlocked, and function pictograms and detection systems are deactivated.

When the system is powered back on, the equipment starts by performing an initialization cycle (see section 3.8).

## 4.7. Safety photocells

The photocells (see item 68 in section 2.1) ensure user safety. They immobilize the obstacle when a presence is detected.

They are transmitter/receiver type photocells: The signal sent by the transmitter cells is captured by the receiving cells, which in turn send the signal to the control logic.

**WARNING:** Safety photocells are not operational during the booth initialization cycle (i.e., when the booth is powered on).

## **TECHNICAL MANUAL ClearLock-MT-EN**





## 4.8. NCD<sup>2</sup> control console



### 4.8.1. Console description

LCD	Displays parameter values, booth status, alarms (see section 5.2).	
SYSTEM (key No. 1)	OFF	Shuts down power to the unit and all its components (main board VB3406 remains powered on). The booth is in power failure mode (see section 4.6).
	ON	<p>Turns on power to the unit:</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;">           Prog. xxxxxxxx.xxx PLEASE WAIT...         </div> <p><b>WARNING:</b> The system undergoes an initialization phase that lasts approximately 1 minute (SA obstacle opens and closes, then NSA obstacle opens and closes); during this phase, the safety devices are not operational and the booth cannot be used.</p> <p>The version of the program encoded in the microprocessor of main board VB3406 is displayed on screen.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;">           DAYTIME    USER(S) OUT            MODE        M.D.            DIREC       USER(S) IN         </div> <p>When the initialization phase is completed, the booth is operational in accordance with the set parameters.</p> <p><b>Note:</b> The parameters used are those set when the console is powered off. Parameter <u>status</u> is displayed on screen; the parameters can be changed via the PROGRAM function of the SYSTEM key switch (see section 4.8.2).</p> <p><b>DAYTIME:</b> Operating mode selected (AM / PM / NIGHT)  <b>MODE:</b> Automatic or operator-controlled opening  <b>DIREC:</b> Direction(s) of passage that are in use  <b>M.D.:</b> Metal detector (optional) activated or deactivated  <b>CONS:</b> Type of console activated (1 = master; 2 = slave; 3 = master + slave)  <b>USER(S) IN:</b> single-presence detection on entry side (NSA to SA) activated or deactivated  <b>USER(S) OUT:</b> single-presence detection on exit side (SA to NSA) activated or deactivated</p> <p><b>PROGRAM</b> Program mode enables console parameter modification (see section 4.8.2).</p>

## TECHNICAL MANUAL ClearLock-MT-EN

EMERG (key No. 2)	OFF	Normal operation of the booth.
	ON	Opening command sent to an optional separate evacuation door (not included).
	ON B	Opening command sent simultaneously to the 2 obstacles for evacuation in both directions of passage.
	<div style="border: 1px solid black; padding: 5px; display: inline-block;">           RELEASE            EXT OP      INT OP         </div> <i>"EXtErnal (NSA) and INTernal (SA) doors OPened".</i>	
1*	INT	SA door opening.
2*	EXT	NSA door opening.
3*	RESET	Acknowledge alarm to continue the normal cycle. <b>Note:</b> When the system triggers a false alarm (e.g., false detection of a left object), the acknowledgement procedure is different. <ul style="list-style-type: none"> <li>▪ EMERG key switch to the ON B position</li> <li>▪ RESET</li> </ul>
4*	LOCK	Closing and locking of the obstacles. If a user is in the booth when this button is pressed, the first door opens to allow the user to exit. This function has priority over all commands except the evacuation command (EMERG key switch in the ON or ON B position). Press the button again to unlock the obstacles and return to normal operation.
5		<i>(Accessible in program mode only.)</i>
6		<i>(Accessible in program mode only.)</i>
7	AM	<i>(Accessible in program mode only.)</i>
8	PM	<i>(Accessible in program mode only.)</i>
9	NIGHT	<i>(Accessible in program mode only.)</i>
0	F5	<i>(Accessible in program mode only.)</i>
*		Stops the buzzer when an alarm is active.
#		<i>(Accessible in program mode only.)</i>
11	F1	<i>(Accessible in program mode only.)</i>
12	F2	<i>(Accessible in program mode only.)</i>
13	F3	<i>(Accessible in program mode only.)</i>
14	F4	<i>(Accessible in program mode only.)</i>

\* **Note:** On slave consoles, only buttons 1, 2, 3 and 4 are operational.

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## 4.8.2. Console parameter programming

**Note 1:** The program is encoded in the microprocessor of main board VB3406. Program modification entails microprocessor replacement.

**Note 2:** The booth is designed to operate with the control console. If the console is not used, a specific program is required, and terminals 1 and 2 of connector M4 of board VB3406 must be bridged.

Program mode of the console (SYSTEM key switch in the PROGRAM position) is used to modify program parameters.

COMMAND MODE  
 7=>AM 8=>PM 9=>NIGHT  
 4=>CONSOLE  
 5=>FUNCTIONS 6=>DATE

Changeable parameters are displayed on screen.

⇒ Press the console button with the corresponding number to modify the parameter.

7 (AM)	AM operating mode; operation in accordance with parameters set in the FUNCTIONS menu.	
8 (PM)	PM operating mode; operation in accordance with parameters set in the FUNCTIONS menu.	
9 (NIGHT)	NIGHT operating mode; operation in accordance with parameters set in the FUNCTIONS menu.	
4 (CONSOLE)	Selection of the active consoles.	
	<div>CONSOLE 1=&gt; MAIN ONLY 2=&gt; SLAVE ONLY 3=&gt; BOTH</div>	1: Booth controlled only via the master console (see section 5.11 for console type selection) 2: Booth controlled only via the slave console 3: Booth controlled via the 2 consoles simultaneously
	<div>SLAVE CONSOLE NOT PRESENT</div>	Message displayed when only one console is connected to the main board.
5 (FUNCTIONS)	<div>DAYTIME 7=&gt;AM 8=&gt;PM 9=&gt;NIGHT</div>	Three different parameter sets can be configured and stored in 3 memories: AM, PM, NIGHT. <b>Note:</b> These modes are not linked to time slots. Press button 7, 8 or 9 to select the parameter set to modify.
	<div>1=&gt; M.D. 2=&gt; MODE 3=&gt; DIREC 4=&gt; U.(S) IN 5=&gt; U.(S) OUT 6=&gt; D.OP</div>	List of changeable parameters for each* of the 3 modes: <b>*Note:</b> For NIGHT mode, only parameters 1, 4 and 5 can be modified.
	<div>1=&gt; M.D.  METAL DETECTOR 1 =&gt; ON 2 =&gt; OFF ON</div>	1 (ON): Metal detector (optional) activated. When metal is detected on a user, the 2nd door remains closed and a voice message is broadcast telling the user to exit. The alarm is cancelled when the user exits the detection zone or when the RESET button is pressed. 2 (OFF): Metal detector (optional) deactivated. The last line of the display indicates the setting. Press button 1 or 2 to confirm or change the setting and return to the previous screen.

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	<b>2 ==&gt; MODE</b> <div>           MODE            1 ==&gt; AUTOM    2 ==&gt; OPERATOR            AUTOMATIC         </div>	<p>1 (AUTOM): Door opening is managed by an access control system (e.g., push-button, badge reader).</p> <p>2 (OPERATOR): Button EXT manages NSA obstacle opening and button INT manages SA obstacle opening.</p> <p>In both cases, the first obstacle closes and the second obstacle opens via automatic management.</p> <p>The last line of the display indicates the setting.</p> <p>Press button 1 or 2 to confirm or change the setting and return to the previous screen.</p>
	<b>3 ==&gt; DIREC</b> <div>           DIRECTION            1 ==&gt; 2 WAY    2 ==&gt; IN    3 ==&gt; OUT            ENTRANCE ONLY         </div>	<p>1 (2 WAY): The booth is used in both directions of passage.</p> <p>2 (IN = ENTRANCE): Passage is only allowed from the NSA to the SA.</p> <p>3 (OUT = EXIT): Passage is only allowed from the SA to the NSA.</p> <p>The last line of the display indicates the setting.</p> <p>Press button 1 or 2 to confirm or change the setting and return to the previous screen.</p>
	<b>4 ==&gt; USER(S) IN</b> <div>           USER(S) IN            1 ==&gt; ONE    2 ==&gt; MORE            ONE USER         </div>	<p>If this detection option is available, there is activation or deactivation of single-presence detection inside the booth; this allows or prevents multiple-user passage through the booth in direction SA → NSA.</p> <p>1 (ONE): Single-presence detection activated.</p> <p>2 (MORE): Single-presence detection deactivated.</p> <p>The last line of the display indicates the setting.</p> <p>Press button 1 or 2 to confirm or change the setting and return to the previous screen.</p>
	<b>5 ==&gt; USER(S) OUT</b> <div>           USER(S) OUT            1 ==&gt; ONE    2 ==&gt; MORE            ONE USER         </div>	<p>If this detection option is available, there is activation or deactivation of single-presence detection inside the booth; this allows or prevents multiple-user passage through the booth in direction NSA → SA.</p> <p>1 (ONE): Single-presence detection activated.</p> <p>2 (MORE): Single-presence detection deactivated.</p> <p>The last line of the display indicates the setting.</p> <p>Press button 1 or 2 to confirm or change the setting and return to the previous screen.</p>
	<b>6 ==&gt; D.OP</b>	(Function not available.)

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6 (DATE)	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; text-align: center;">           DAY (xx)            NO*                      YES#         </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; text-align: center;">           MONTH (xx)            NO*                      YES#         </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; text-align: center;">           YEAR (xxxx)            NO*                      YES#         </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; text-align: center;">           HOUR (xx)            NO*                      YES#         </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; text-align: center;">           MINUTES (xx)            NO*                      YES#         </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">           DO YOU CONFIRM            NO*                      YES#            DATE                      TIME         </div>	<p>System date and time setting.</p> <p>(xx) is the current value for this parameter.          Confirm the value with button #, or increase the value by 1 with button * and then press button # to confirm and go to the next parameter.</p>
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### 4.8.3. Alarm messages

⇒ See section 5.2.

## TECHNICAL MANUAL ClearLock-MT-EN



#### 4.8.4. Obstacle initialization

- Turn the SYSTEM key switch of the console to the PROGRAM position.
- Press F3, then F4 and then 1 to access the SERVICE menu.

SERVICE MENU
1= READ PATH
2= MOTOR PARAMETERS

- Press button 1 or 2 of the console to access the corresponding menu.

#### 1 = READ PATH: Position sensor initialization

DOOR SELECTION
1= INTERNAL DOOR
2= EXTERNAL DOOR

- Press button 1 or 2 to initialize the corresponding obstacle (1 for the SA obstacle and 2 for the NSA obstacle) and perform the following sequence:

READ INT PATH	
xx	
3= Reset	7= Save
4= Open	8= Close

- Press and hold button 8 until the obstacle is completely closed (press it even if it is already closed).
- Press button 3 to zero out the current values (00 will be displayed on screen instead of xx).
- Press and hold button 4 until the obstacle is completely open.
- Press button 7 to access the SAVE menu:

SAVE DATA AND RECORD	
THE PATH ?	
3= Cancel	7= Save

- Press button 7 to save the new coordinates.  
**WARNING:** When new coordinates are saved, the system performs an opening/closing cycle during which the safety sensors are not activated.

To exit the menu without saving the new coordinates, press button 3.

- Follow the same procedure to initialize the other obstacle.
- Turn the SYSTEM key switch to the ON position to exit the READ PATH menu.

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## 2 = MOTOR PARAMETER: obstacle speed curve configuration

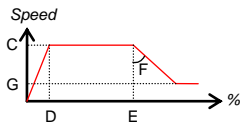
DOOR SELECTION  
1= INTERNAL DOOR  
2= EXTERNAL DOOR

- Press button 1 or 2 to initialize the corresponding obstacle (1 for the SA obstacle and 2 for the NSA obstacle).

A) PROTECTION THRESH.

xx  
5=> Inc | EXT | 6=> Dec  
4=> Pre #=>OK 8=> Next

A: Curve parameter

	Min.	Default value			Max.
		Slow	Normal	Fast	
<b>A) PROTECTION THRESH.:</b> Strength of the obstacle to overcome resistance to its movement.	1		25		100
<b>B) INITIALIZ. SPEED:</b> Obstacle speed during initialization phase and inversion (i.e., when obstacles start moving in the opposite direction after safety sensors have detected a presence).	1	30	30	30	100
<b>C) OPEN: SPEED:</b> Obstacle speed when opening.	1		85		100
<b>D) OPEN: % PATH ACCEL:</b> Percentage of the path over which the obstacle accelerates to reach its opening speed (C).	1		30		100
<b>E) OPEN: START BRAKE:</b> Percentage of the path before the obstacle decelerates.	1		75		100
<b>F) OPEN: TIME BRAKE:</b> Obstacle breaking duration (milliseconds).	1		500		1000
<b>G) OPEN: BRAKE SPEED:</b> Obstacle speed after breaking.	1		15		100
<b>H – I – L – M – N):</b> Same thing as C – D – E – F – G but for obstacle closing.					

xx: Parameter value.

EXT: Selected obstacle (INTernal/EXTernal).

5: Increment parameter.

6: Decrement parameter.

4: Go to previous parameter.

5: Go to next parameter.

#: Save parameters.

SAVE DATA AND RECORD  
THE PATH ?  
3= Cancel 7= Save

3: Exit menu without saving the new parameters.

7: Save new parameters, followed by an opening/closing cycle by the obstacle.

**WARNING:** Safety sensors are not operational during the initialization phase.

- Configure the obstacle speed curve of the other obstacle in the same way.
- Turn the SYSTEM key switch to the ON position to exit the MOTOR PARAMETER menu.

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## 4.9. Pictogram

The pictogram contains a dual light emitting diode (LED) system.

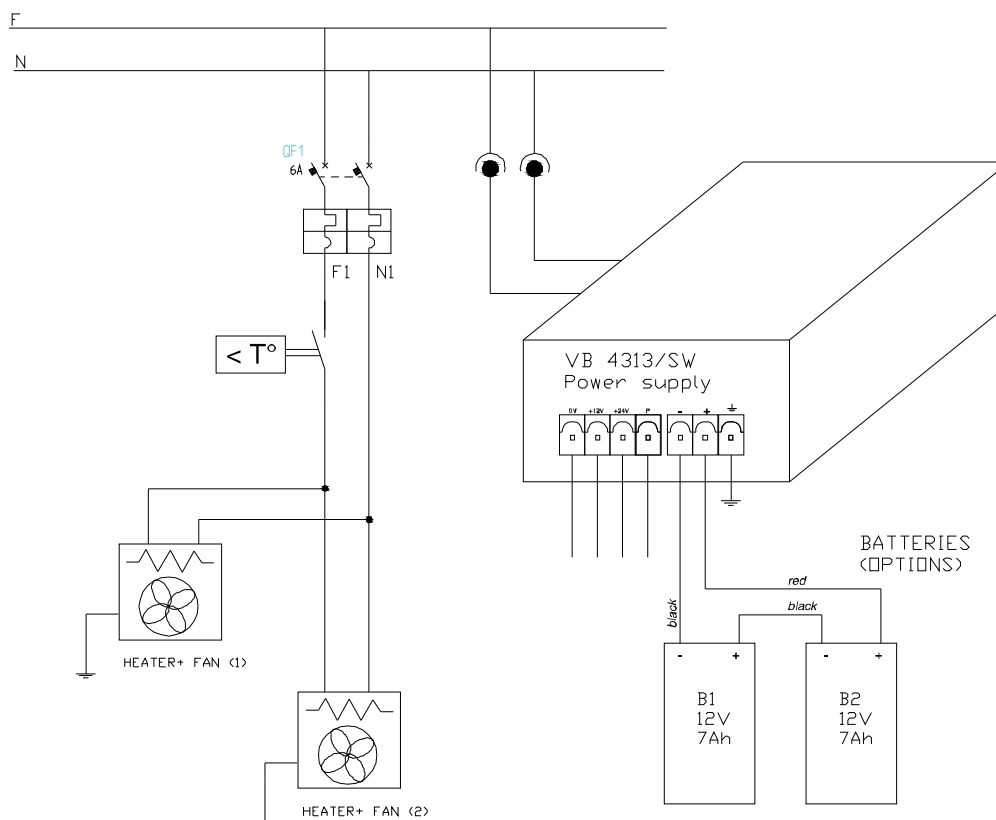
It informs users on the availability status of the booth.

- Green: Booth operational—on standby for a passage authorization or in evacuation mode.
- Red: Passage ongoing.

## 4.10. Heater (optional)

The heating system is located in the canopy to maintain a higher temperature than the set temperature. Heating resistor(s) are activated by the thermostat, and fan(s) circulate warm air across the entire canopy\*.

\* Booths with a Ø of 1485 mm are equipped with 2 sets of heating resistors and fans.




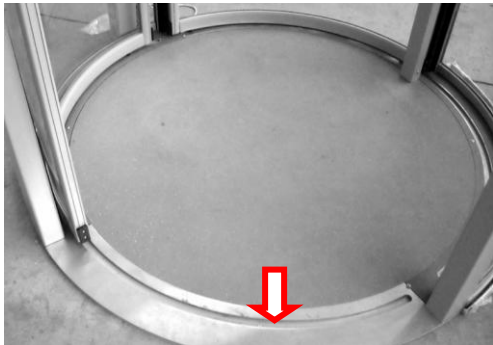
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## 5. MAINTENANCE

### 5.1. Preventive maintenance

Maintenance must be performed in accordance with the safety warnings described in Chapter 1.

Service interval	Tasks
1 week	Open the doors with buttons 1 and 2 of the control console (see section 4.8).
	Inspect the booth (damaged housing, broken obstacle, broken or scratched cell shading screens, etc.).
	Clean the housing with a product suitable for stainless steel. Automatic Systems can provide a product approved for this purpose (0/6031/000). <b>Note:</b> DO NOT use any products containing chlorine on stainless steel.
	Clean the mobile obstacles and the side glass panels with a window cleaner. Automatic Systems can provide a product approved for this purpose (0/3081/000).
	Dust and clean the cell shading screens with a soft lint-free cloth moistened with a mild antistatic cleaning product suitable for plastic. DO NOT use thinner or any other organic solvent.
	
	Remove objects that could hinder complete obstacle closing and opening, and clean the 2 tracks with a vacuum.
	
	Ensure that the obstacles do not touch the side panels as they close and open.
	Verify that the mobile obstacles are aligned with the side panels in both the closed and open positions.

## TECHNICAL MANUAL ClearLock-MT-EN

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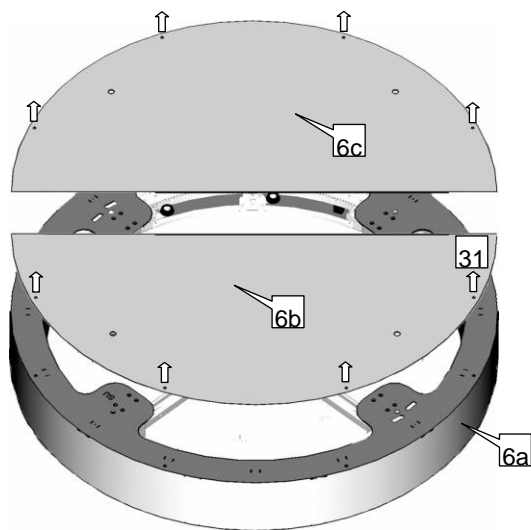
6 months



Disconnect the electrical power before opening the covers of the canopy.

Remove the screws (31) and the covers (6b and 6c) from the canopy (6a).

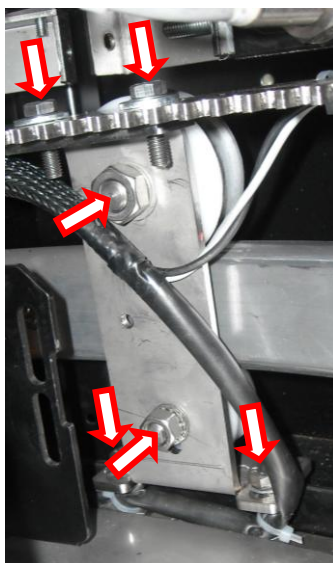
**Note:** Covers of booths with wider diameters have 3 sections.



Dust the inside of the canopy with a soft lint-free cloth.

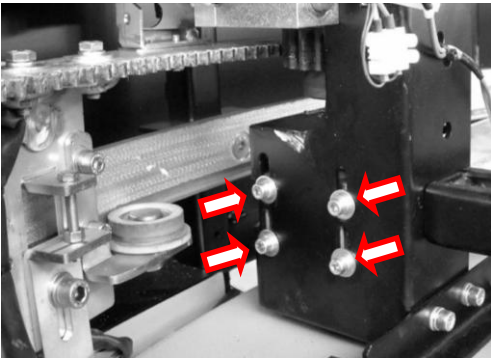
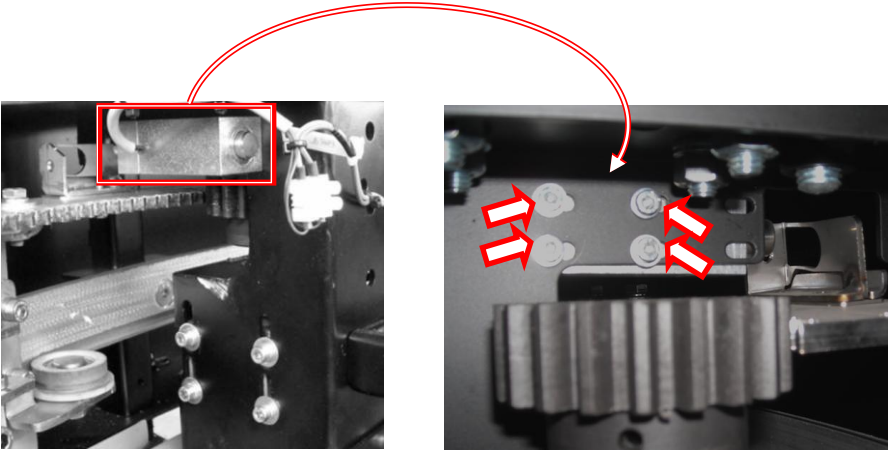

Ensure all nuts and bolts are properly tightened, particularly those of moving components.

Ensure all nuts and bolts of mobile obstacles supports are properly tightened.



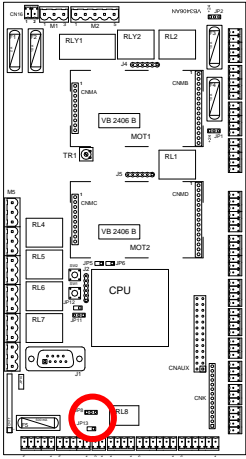
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	<p>Ensure all nuts and bolts of the 2 motors are properly tightened.</p> 
	<p>Ensure the lock of the SA obstacle is properly tightened.</p> 
	<p>Ensure the booth floor supports are properly tightened.</p>
	<p>Inspect all electrical connections and ensure they are properly tightened.</p>
	<p>Ensure the gear motor is sealed (greased-for-life).</p>
	<p>Inspect the opening and closing bumpers of the doors (see section 5.6) and replace if necessary.</p>
	<p> Turn on power to the booth.  <b>WARNING:</b> When the booth is powered on, the obstacles undergo an opening and closing cycle.  <b>WARNING:</b> For the following tasks, handle any live components with the proper insulating protection.</p>
	<p>Verify the 12-VDC and 24-VDC output voltages on the power supply (see item 90 in section 2.1).</p>
	<p>Complete a few passages and verify the proper operation of all components:</p> <ul style="list-style-type: none"> <li>- Pictograms;</li> <li>- Metal detector (optional);</li> <li>- Presence detector;</li> <li>- Single-presence detector (optional);</li> <li>- Left object detector (optional);</li> <li>- Emergency stop (optional);</li> <li>- Intercom (optional).</li> </ul>

## TECHNICAL MANUAL ClearLock-MT-EN

## 5.2. Problems and troubleshooting (alarms)

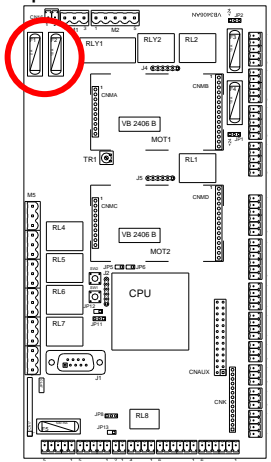
SYMPTOM	CAUSE	SOLUTION
<p>The 2 LEDs of board VB3406 do not blink.</p> 	<p>Communication is interrupted between the electronic boards.</p>	<p>Check connections.</p>
<p>Message displayed on the console</p> <div>MAINS FAILURE</div>	<p>The breaker powering the booth is open.</p>	<p>Close the breaker in the electrical panel.</p>
	<p>The breaker powering the booth is not powered on.</p>	<p>Contact the utility provider and check the characteristics of the electrical power.</p>
	<p>The connection between the breaker and board VB4313 is defective.</p>	<p>Check the condition of the cable and ensure the cable is connected at the right place.</p>
	<p>The connection between power supply VB4313 and board VB3405 is defective.</p>	<p>Check the condition of the cable and ensure the cable is connected at the right place (see wiring diagram).</p>
	<p>Power supply VB4313 defective.</p>	<p>Replace.</p>
<p>Message displayed on the console</p> <div>M.D. ALARM</div> <p>+ Voice message telling the user to exit and to remove all metal objects.</p>	<p>Metal objects detected on the user (only if the optional metal detector is activated: SYSTEM &gt; PROGRAM &gt; FUNCTIONS).</p>	<ul style="list-style-type: none"> <li>• The user must exit the booth, allow the first door to close, and remove any metal objects from his or her person before returning to the front of the metal detector.</li> <li>• The operator can cancel the alarm by pressing button 3 (RESET) to allow the normal cycle to continue.</li> </ul>

## TECHNICAL MANUAL ClearLock-MT-EN

SYMPTOM	CAUSE	SOLUTION
Message displayed on the console <div>LEFT OBJECT INSIDE</div> + Buzzer	Object detected in the booth when the user has exited (only if the optional left object detector is activated).	<ul style="list-style-type: none"> <li>Adjustment: SYSTEM &gt; PROGRAM &gt; FUNCTIONS &gt; Mode &gt; Operator.</li> <li>Open one of the obstacles with button INT or EXT on the console.</li> <li>Remove the object from the booth.</li> <li>Press button RESET to close the obstacle and reset the system.</li> </ul> <p><b>Note:</b> When the system triggers a false alarm (e.g., false detection of a left object), the acknowledgement procedure is different.</p> <ul style="list-style-type: none"> <li>SYSTEM key switch in the PROGRAM position.</li> <li>RESET</li> <li>SYSTEM key switch in the ON position.</li> </ul>
Message displayed on the console <div>ALARM TWO PEOPLE IN</div> + Voice message specifying that only one user is authorized inside the booth.	More than one user is detected inside the booth (only if the optional single-presence detector is activated: SYSTEM > PROGRAM > USERS).	<ul style="list-style-type: none"> <li>The user must exit the booth.</li> <li>The operator can cancel the alarm by pressing button 3 (RESET) to allow the normal cycle to continue.</li> </ul>
Initialization does not start with one of the obstacles closing.	Connections to the corresponding motor are inverted.	Check connections. See wiring diagram.
Obstacles do not move upon initialization.	Motor connections are incorrect.	Check connections. See wiring diagram.
	Board VB3406 is not powered on.	Ensure there is a 24 VDC supply at connector M2 of board VB3406.
	Fuses F2, F3 or F4 of board VB3406 are burnt out.	Replace.
	Board VB2406 (on board VB3406) is not properly connected.	Check.
Obstacles do not move correctly upon initialization.	Motor position encoders are not properly connected or are out-of-service.	Check the connections (see wiring diagram) or replace.
	Manual lock activated.	Unlock.
	Obstacle movement is hindered.	Clean the track (see section 5.1. ).

## TECHNICAL MANUAL ClearLock-MT-EN



SYMPTOM	CAUSE	SOLUTION
The obstacle stops before finishing its opening or closing motion.	The safety photocell shading screen (see item 68 in section 2.1) is dirty.	Clean (see section 5.1. ).
	The 2 components (transmitter/receiver) of the safety photocells are not correctly aligned or are out-of-service.	Align or replace the photocells.
	Something is obstructing the track of the obstacle.	Clean the track (see section 5.1. ).
Obstacle NSA does not move.	Emergency button is activated.	Deactivate.
	Emergency stop is improperly connected.	Check the connection (see wiring diagram).
The obstacle does not move or moves incorrectly.	Console parameters are not set correctly.	Check the settings: <ul style="list-style-type: none"> <li>• Operating mode (manual/automatic)</li> <li>• Direction of passage</li> <li>• Obstacle operation</li> </ul>
The console is powered off.	SYSTEM key switch of the console is in the OFF position.	Turn the key switch to the ON position.
	Faulty connection between the console and board VB3406.	See wiring diagram.
	Fuses F1 or F2 of board VB3406 are burnt out.	Replace. 
A function pictogram does not light up.	The pictogram is out-of-service.	Replace.
The 2 function pictograms do not light up.	The connection to board VB3406 is defective.	Check the connection (see wiring diagram).
The single-presence detection option (if activated) does not prevent more than one person from completing a passage.	The buzzer sounds (an infraction is detected): Board VB1290 is operational.	Check cable connections between boards VB1290 and VB3406 (see wiring diagram).
	The buzzer does not sound: Board VB1290 is not configured properly or is defective.	Configure it in accordance with the procedure in section 5.12 or replace the board.

## TECHNICAL MANUAL ClearLock-MT-EN

### 5.3. Recommended tightening torques

Recommended tightening torques for screws and nuts:

Screw type	Torque (Nm)
M2	0.32
M3	1.15
M4	2.65
M5	5.2
M6	8.9
M7	14.5
M8	22

Screw type	Torque (Nm)
M10	43
M12	75
M14	119
M16	182
M18	250
M20	355
M22	480

### 5.4. Fixed obstacle replacement

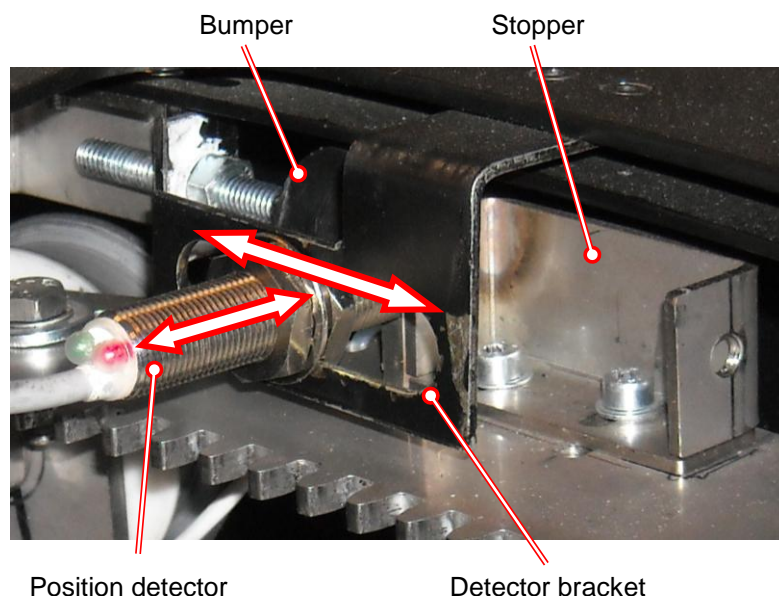
Refer to section 3.5.4.

### 5.5. Mobile obstacle replacement

Refer to section 3.5.5.

### 5.6. Door closed position adjustment

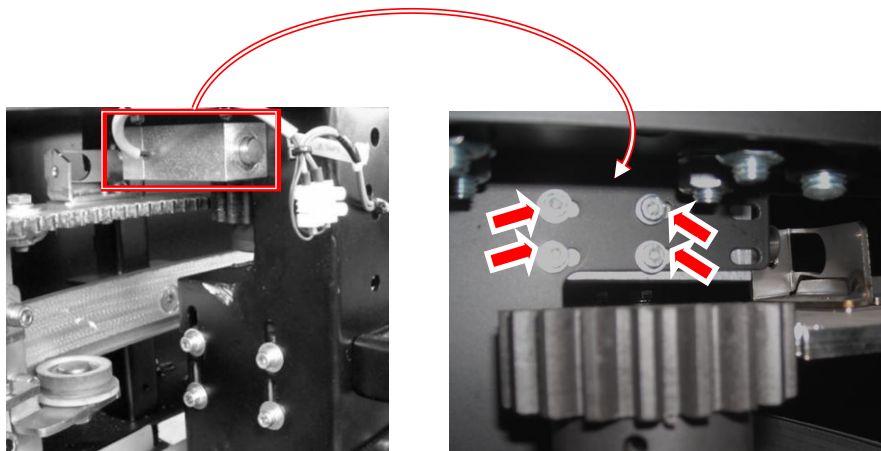
1. The door is attached to the rack. Adjust the position of the bumper so that it halts the stopper (also attached to the rack) in the desired position.
2. Adjust the position (width and depth) of the detector in its bracket so that it detects the stopper when the door is closed.



## **TECHNICAL MANUAL ClearLock-MT-EN**

## 5.7. Obstacle lock adjustment

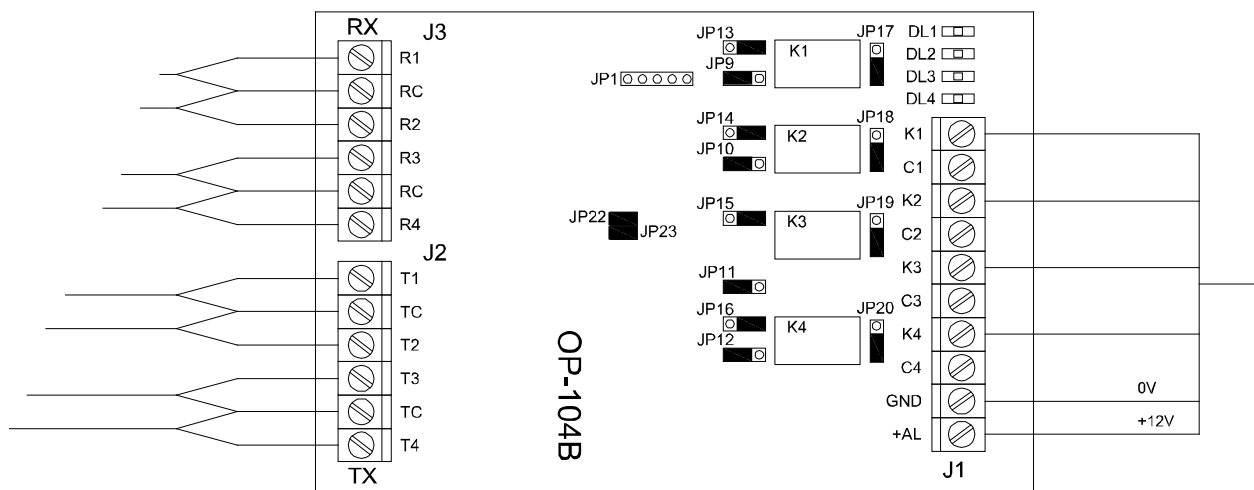
Adjust the 4 screws of the locks so that the locks activate when the doors are properly closed.



## 5.8. Safety photocell adjustment (see item 68 in section 2.1)

Connect the photocells as specified on the wiring diagram.

Position the jumpers as illustrated below:



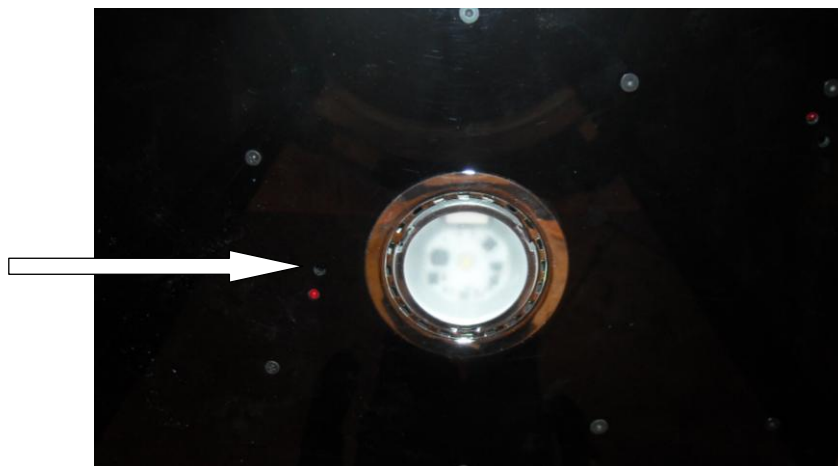
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## 5.9. Adjustment of the presence detector located inside the booth

Adjust the sensitivity of the presence detector using the button located on the canopy.

Increasing the sensitivity increases the risk of false error messages due to obstacle movement.



## 5.10. Left object detector adjustment (optional)

Adjust the sensitivity of the presence detector using the button located on the canopy.

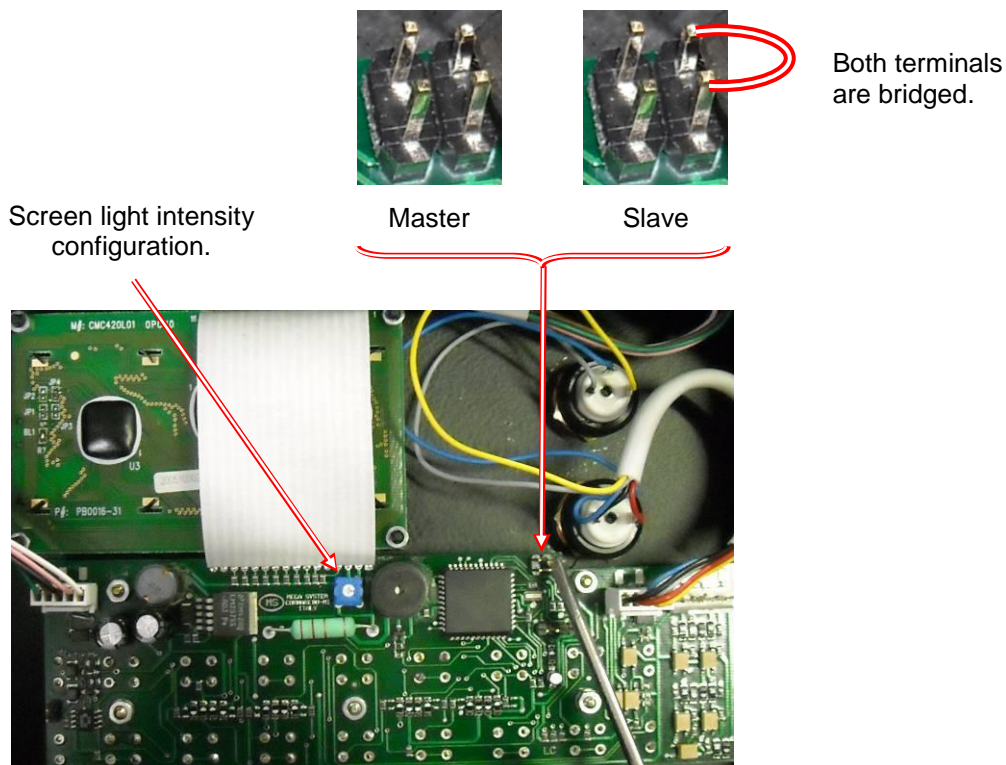
Increasing the sensitivity increases the risk of false error messages due to obstacle movement.



## **TECHNICAL MANUAL ClearLock-MT-EN**

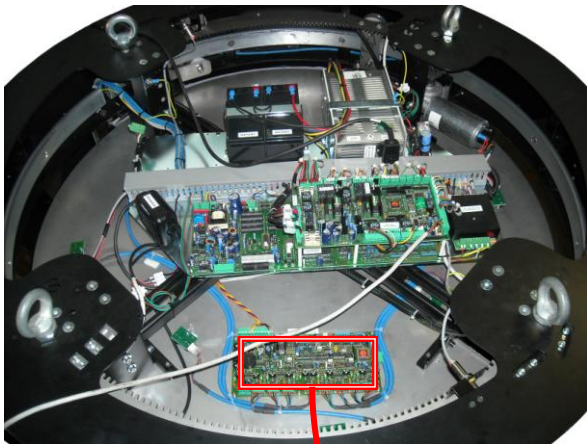
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## 5.11. NCD<sup>2</sup> console configuration

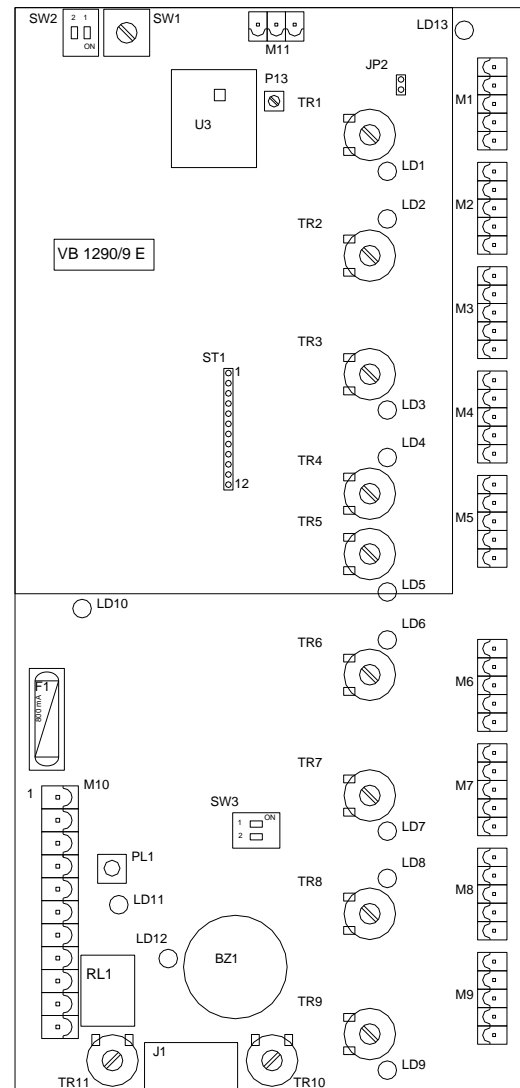


For parameter setting see section 4.8.

## 5.12. Single-presence detection adjustment (optional)



Board  
VB1290/9



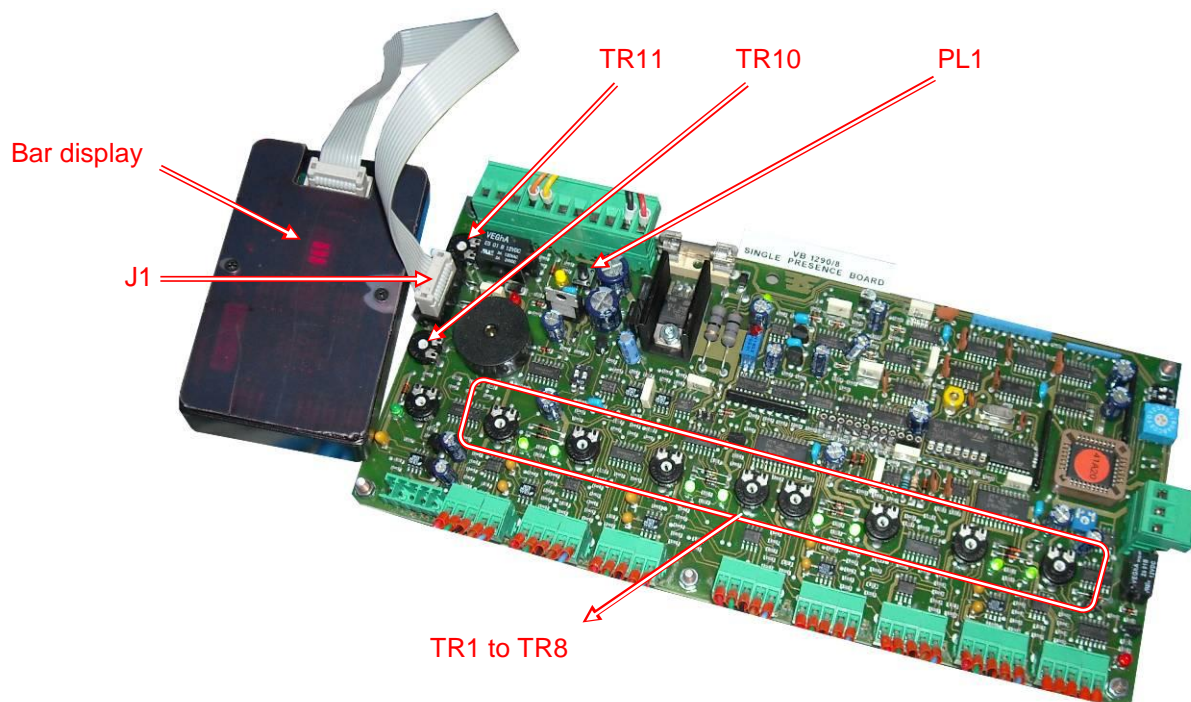
- M1 to M8: Transducer connectors
- LD1 to LD8: LED signal of the corresponding transducer
- J1: Bar display connector
- TR1 to TR8: Signal intensity of corresponding transducer  
Clockwise rotation => signal intensity increase
- TR10: Signal compression  
Clockwise rotation => compression reduction (i.e., increased security)
- TR11: Sensitivity  
Clockwise rotation => sensitivity increase
- SW3, DIP2: ON => Buzzer activation when more than one person is detected in the booth
- LD12: LED lights up when more than one person is detected in the booth
- PL1 + LD11: RESET button + LED signal
- F1: 800-mA fuse

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Adjustment procedure:



1.	<p>Activate the manual door opening and closing function via buttons 1 and 2 of the control console (see section 4.8.2):</p> <p>Turn the SYSTEM key switch to the PROGRAM position</p> <p>Select the current operating mode ⇒ 7, 8 or 9</p> <p>Access the FUNCTIONS menu ⇒ 5</p> <p>Access the MODE menu ⇒ 2</p> <p>Select OPERATOR ⇒ 2</p> <p>Exit the program mode ⇒ SYSTEM key switch in the ON position.</p>	
2.	Connect the bar display (included) to connector J1.	
3.	When the booth is empty, set TR11 so that there are 3 low intensity bars on the display.	
4.	Completely turn TR10 clockwise.	
5.	Ask someone with a relatively strong or heavy build to enter the booth and let the door close.	
6.	<p>Use the same setting—1 or 2 high intensity bars on the display—for components TR1 to TR8 (same angular position).</p> <ul style="list-style-type: none"> <li>- Turn clockwise to increase the number of bars.</li> <li>- Turn counterclockwise to decrease the number of bars.</li> </ul>	
7.	Ask the person to exit the booth.	
8.	Press PL1.	
9.	Ask someone to enter the booth and let the door close. Turn TR10 counterclockwise so that no bars are shown on the display.	Ask 2 persons to enter the booth and let the door close. Turn TR10 until at least 2 bars are shown on the display.
10.	Press PL1.	
11.	Disconnect the bar display.	

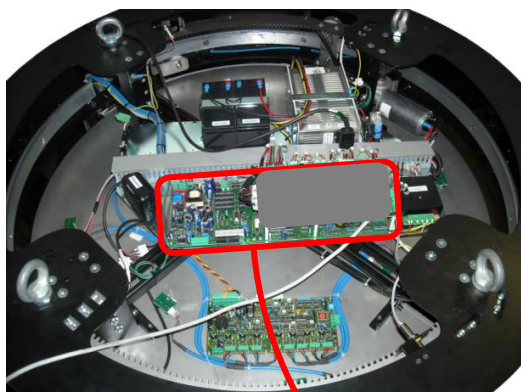
**Note:** Verifications and adjustments must be done while the doors are closed.  
TR potentiometers must only be slightly turned.

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## 5.13. Metal detector adjustment (optional)



LD10-9-8-7

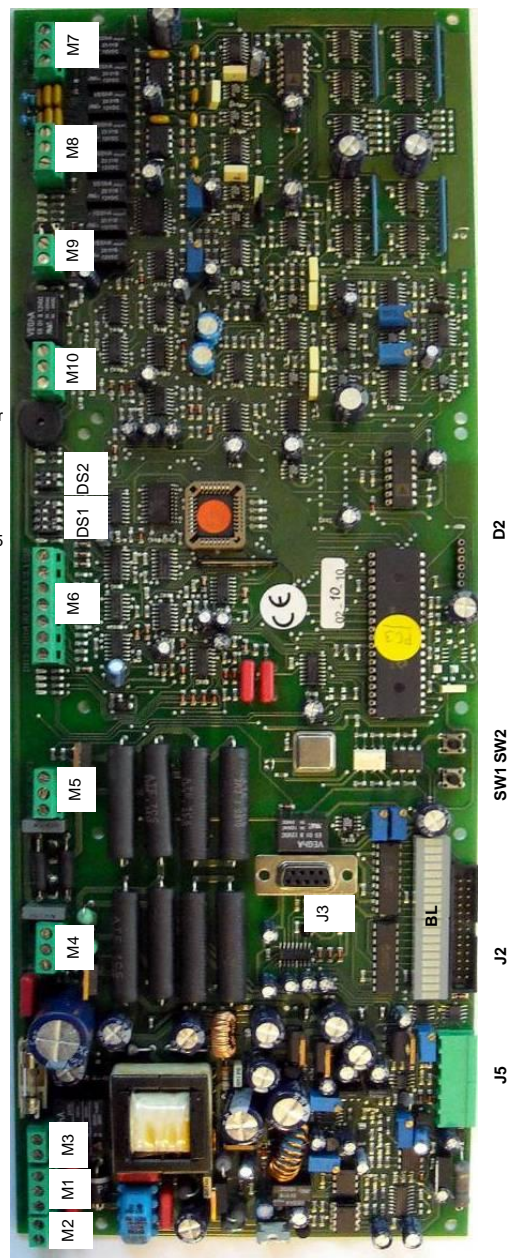
LD12-11  
P11

Buzzer

LD14-13

LD5

LD1-2-3-4



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DS1: Synchronization of the antennas installed in line (see Function 1 below).

DS2: Buzzer activation and deactivation.

DIP1 ON: Buzzer activated when metal is detected.

DIP1 OFF: Buzzer not activated when metal is detected.

DIP2 ON: Buzzer activated when a technical failure occurs.

DIP2 OFF: Buzzer not activated when a technical failure occurs.

BZ: Buzzer (activated by DIP switch DS2).

J5: Connector for metal detector programming terminal.

F1: Main fuse, max 2.5 A.

LD1-2-3-4: Red LEDs light up when detection antennas are not operating properly.

LD5: LED lit upon normal operation and off upon metal detection.

LD6: LED off upon normal operation and lit upon metal detection.

LD7: Red LED lit upon generalized failure.

If LD7 is lit at the same time as LD3 / LD4, check the wiring of connectors M7 / M8 and ensure there is no apparent damage to the receiving antenna.

If LD7 is lit at the same time as LD1 / LD2, the board is defective and must be replaced.

LD8: Green LED lit when the RESET control (M9) is activated.

LD9-10-11-12: Green LED lit when filters 1-2-3-4 are selected on the programming terminal, respectively (see Function 11 below).

LD13: Green LED lit when input INIB of connector M6 is activated (i.e., when the metal detector is deactivated).

D2: Yellow LED lit when data is being sent to the programming terminal.

P11: Reset.

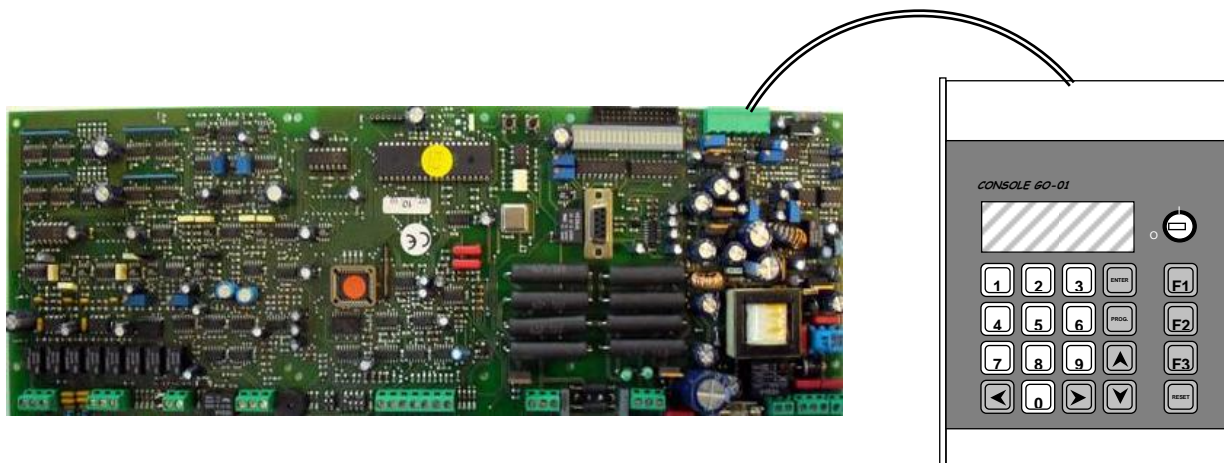
SW1: Microprocessor reset (for test procedures).

SW2: Password reset to value "123456".

## TECHNICAL MANUAL ClearLock-MT-EN

### 5.13.1. Programming

Program mode can be selected using the dedicated programming terminal connected to connector J5.



Keys 1 to 12 + ENTER ⇒ selection of functions 1 to 12 (detailed here after)

- ▲ Return to previous function
- ▼ Go to next function
- ◀ Decrease value
- ▶ Increase value

**PROGR:** Confirms the value set.



**Note:** For each function set, the selected value must be confirmed by pressing the PROGR button before exiting the function menu.

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Activate the metal detector by simultaneously pressing the RESET\* button and turning the key switch of the programming terminal to the I position.

**\*Note:** If the RESET button is pressed while activating the programming terminal, the menu can be accessed for an undefined duration, otherwise it will be limited to 20 seconds.

The following will be displayed on the programming terminal:

Introduce password  
0 to 9 buttons  
Enter to confirm

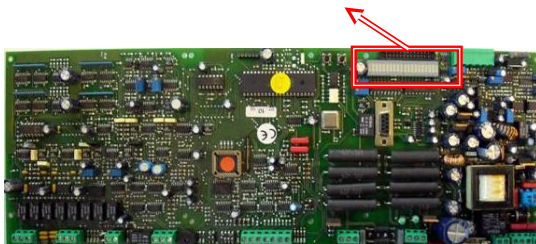
The preset password is 58; to change the password, refer to Function 8.

**Note:** If you forget the password, press the SW2 button on the board; this will reset the password to 123456.

### **Function 1 – Working frequency selection**

This function is used to set an optimum working frequency based on the environment where the metal detector is installed to prevent outside noises (neon signs, motors, electric devices, etc.) from hindering the operation of the metal detector.

The level of noise present can be visualized on the BL LED bar (located on the board): LED A has an irregular motion.



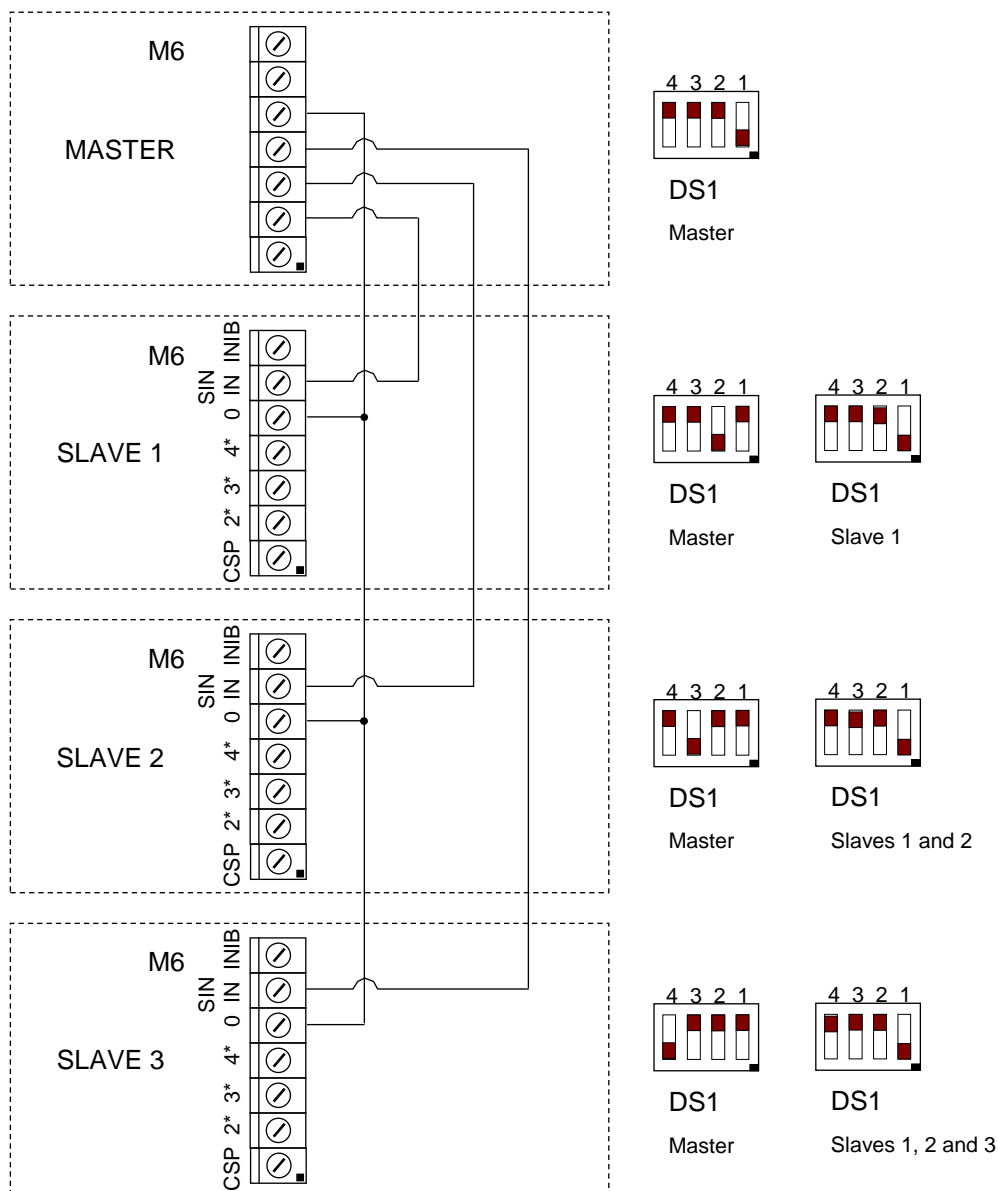
To change the preset parameter, increase or decrease the value (increments of 0.6 Hz) until the appropriate frequency is found (the LED in the center of the BL LED bar is stable).

The working frequency of the metal detector has to be between 450 Hz and 971.8 Hz.

**Note:** If several metal detectors are installed in line.

- Do not adjust the Function 1 parameter.
- Separately adjust the Function 2 to Function 12 parameters for each booth while the others are turned off.
- Ensure all booths are synchronized. Electric connections on connector M6 and DIP switch adjustment on DS1 as follows:

## **TECHNICAL MANUAL ClearLock-MT-EN**



- Turn all the booths on.
- Adjust the Function 1 parameter on the master booth only.

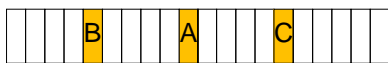
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## **Function 2 – Sensitivity level adjustment.**

This function is used to set the sensitivity level of the metal detector. The value must be between 0 (minimum sensitivity) and 255 (maximum sensitivity).

The sensitivity level can also be visualized on the BL LED bar.



A: Measured signal (in the center when the metal detector is in standby, i.e., when no metal objects are detected between the 2 antennas).

B/C: Sensitivity range. This range is increased or decreased—LEDs B and C move away from or closer to A, respectively—through the Function 2 parameter.

⇒ An alarm is triggered when A is outside the range defined by B and C.

## **Function 3 – Object detection sensitivity**

This function is used to set the detection sensitivity when an object passes across the detection range of the 2 antennas, depending on the noise generated by the environment of the metal detector: the lower the noise, the higher the object detection sensitivity.

There are 4 levels available:

- |                  |  |
|------------------|--|
| 5 = Low          | ⇒ Minimum object detection sensitivity + maximum noise damping (less interference).  |
| 10 = Medium-low  |  |
| 15 = Medium-high |  |
| 20 = High        | ⇒ Maximum object detection sensitivity (i.e., detection of smaller metal objects or objects passing quickly across the detection range of the antennas) + minimum noise damping (i.e., false metal detection alarms due to noise). |

**Note:** For the ClearLock metal detector, the suggested value is 10.

**Note:** The transmitter antenna (red marker) must be installed on the side of potential noise sources (e.g., X-ray device).

## **Function 4 – Automatic refresh time**

This function is used to set the automatic refresh time of the metal detector for canceling false alarms due to environmental noises that vary from one location to the other.

There are 5 levels ranging from 0 (no correction in case of environmental noises) to 4 (maximum correction in case of environmental noises).

**Note:** For the ClearLock metal detector, the suggested value is 4.

## **Function 5 – Pre-amplification setting**

This function is used to set the pre-amplification parameters for the selected metal detector antennas and program (see Function 10).

The ranges are 1:1, 1:2 or 1:4.

**Note:** For the ClearLock metal detector, the suggested value is 1:2.

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### **Function 6 – Vibration noise damping channel 1 and channel 2**

This function is used to optimize the operation of the metal detector by damping noises due to antenna movement and/or vibrations.

Each channel has to be set independently; switch off the other channel via Function 12.  
 The proper setting will generate minimum LED oscillations on the BL LED bar when the 2 antennas are slightly shaken.

**Note:** When program 0 is used with the ClearLock metal detector (see Function 10), the value should be between 220 and 250.

Press PROG to confirm the value and repeat for the other channel.

### **Function 7 – Static/dynamic mode**

In Static mode a continuous alarm is maintained upon metal detection.

In Dynamic mode a short alarm is triggered upon metal detection.

The choice of the appropriate option depends on the client's needs.

**Note:** For the ClearLock metal detector, the suggested setting is Dynamic.

### **Function 8 – Password selection**

This function is used to change the preset password. Enter a number (12 digits maximum) on the programming terminal and press ENTER.

Press PROGR.

### **Function 9 – Channel amplification selection (final booster)**

The value must be between 1 and 4, depending on the selected program (see Function 10) and the type of antenna installed.

**Note:** For the ClearLock metal detector, the value must be 3.

### **Function 10 – Program selection**

This function is used to change the operation program.

**Note:** For the ClearLock metal detector, the program must be 0.

Program	Vibration noise damping (Function 6)	Filter selection (Function 11)
0	≈ 230	1=ON
1	≈ 230	1=ON
2	≈ 180	1=ON
3	≈ 170	4=ON
4	≈ 230	1=ON
5	≈ 220	1=ON
6	≈ 230	1=ON
7	---	---
8	≈ 60	1=ON 4=ON
9	≈ 220	1=ON
10	≈ 140	4=ON

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**Function 11 – Filter selection**

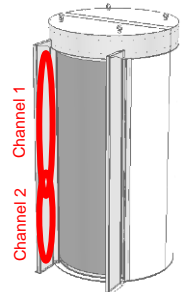
Four types of filters can be used, depending on the program used (see Function 10) and the electromagnetic noise in the metal detector environment.

**Note:** Except in special conditions, filter 1 must be set to ON and filters 2, 3 and 4 to OFF for the ClearLock metal detector.

**Function 12 – ON/OFF status of channel 1 and channel 2**

The antenna is transmitting on 2 channels. This function allows channel 1 to be switched off so that the Function 6 parameter can be set.

Confirm with the PROGR button before accessing Function 6.

**5.14. Prolonged stop / disposal**

If the equipment is not used for a long period of time, the following suggestions should be applied:

- Maintain the equipment in the same conditions as those recommended in section 3.2.
- Keep it powered on to maintain a constant temperature in the canopy; this avoids condensation problems and prevents oil from congealing in the speed reduction unit.  
**Note:** If the equipment was stored without power, it is important to warm it up before turning it on if the ambient temperature is below 5°F (-15°C). The optional heating system must be activated a minimum of 30 minutes before powering up the equipment.

When the equipment is taken out of service, dispose of the components (metal, glass, electronic components, etc.) in the appropriate manner and in accordance with applicable legislation.

## 6. TECHNICAL SPECIFICATIONS

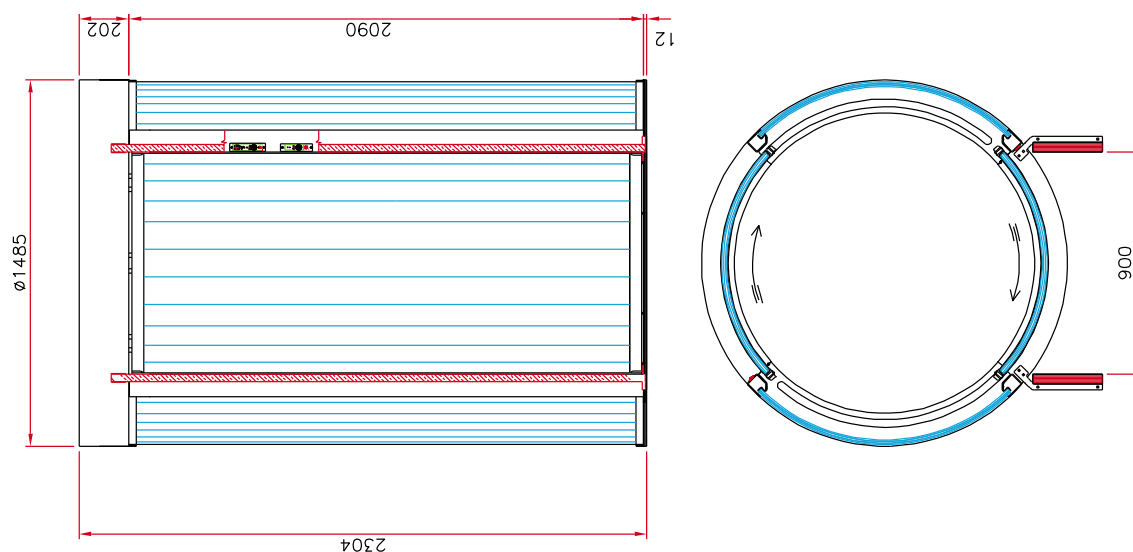
- Mechanical components galvanized against corrosion (RoHS).
- Painted steel housing (stainless steel optional).
- Weight, depending on the glass:
  - ± 400 to 600 kg (ClearLock 630)
  - ± 440 to 650 kg (ClearLock 631)
  - ± 570 to 750 kg (ClearLock 632)
- Input power: 230 V single phase, 50/60 Hz.
- Secondary power supply: 24 VDC.
- Motor: 24 VDC – 50 W
- Consumption:
  - 150 W
  - 475 W with optional heating resistor and fan
  - 875 W with double optional heating resistors and fans (ClearLock 632)
- Backup batteries (2 x 7 AH), last for approximately 100 cycles upon power failure.
- Operating temperature: -10°C<sup>(\*)</sup> to 45°C. (\*) -20°C with optional heating system
- Protection index: IP33 (with roof option).
- Impact resistance: IK09 (housing).
- MCBF (Mean Cycles Before Failure): 2 million (with recommended maintenance).

### TECHNICAL MANUAL ClearLock-MT-EN

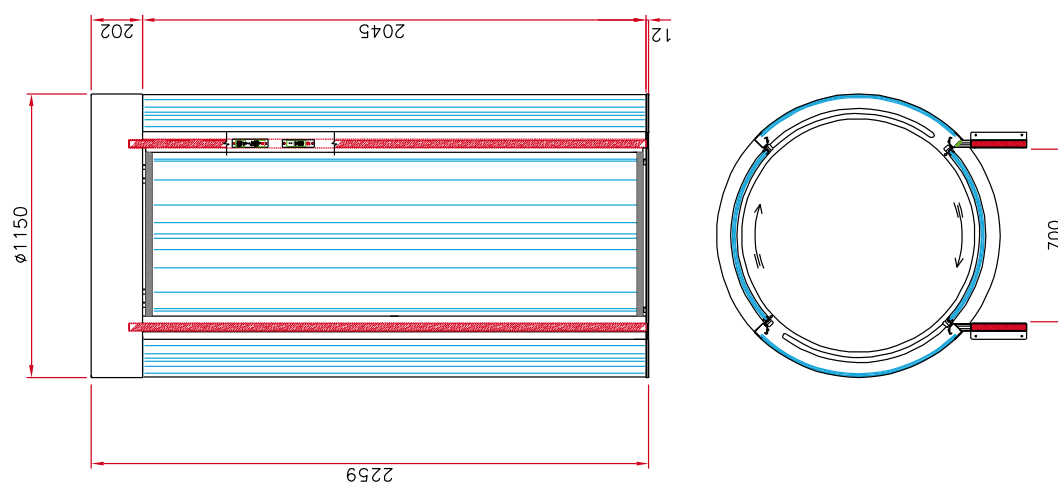
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## 7. DIMENSIONS

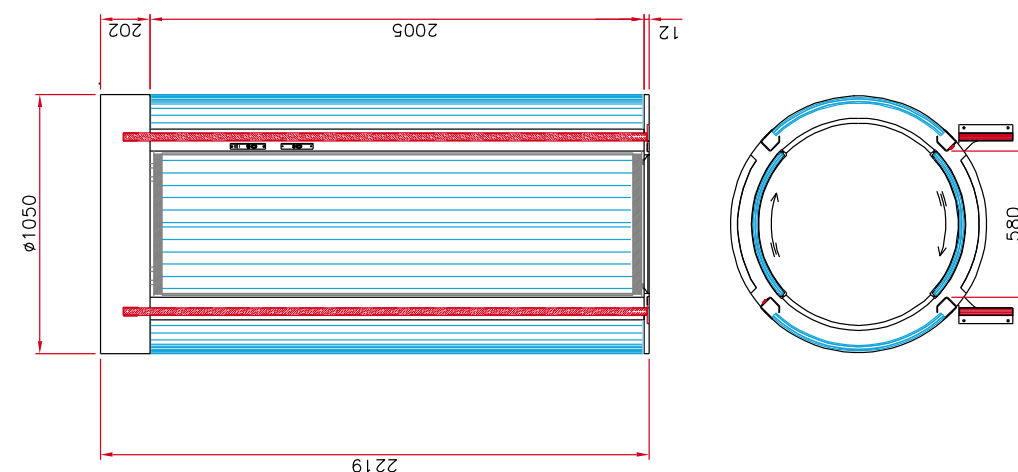
**ClearLock 632**



**ClearLock 631**



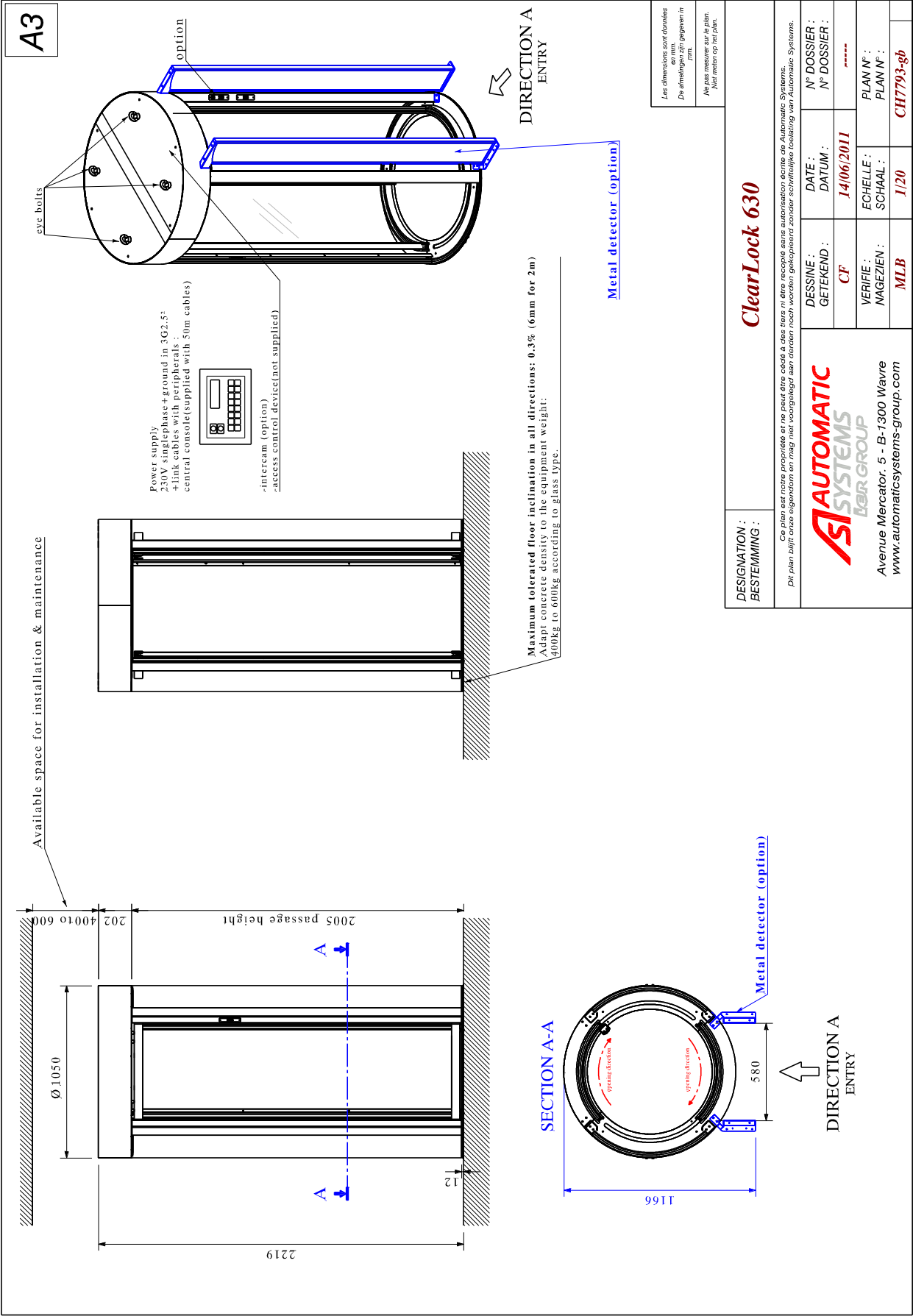
**ClearLock 630**



### TECHNICAL MANUAL ClearLock-MT-EN

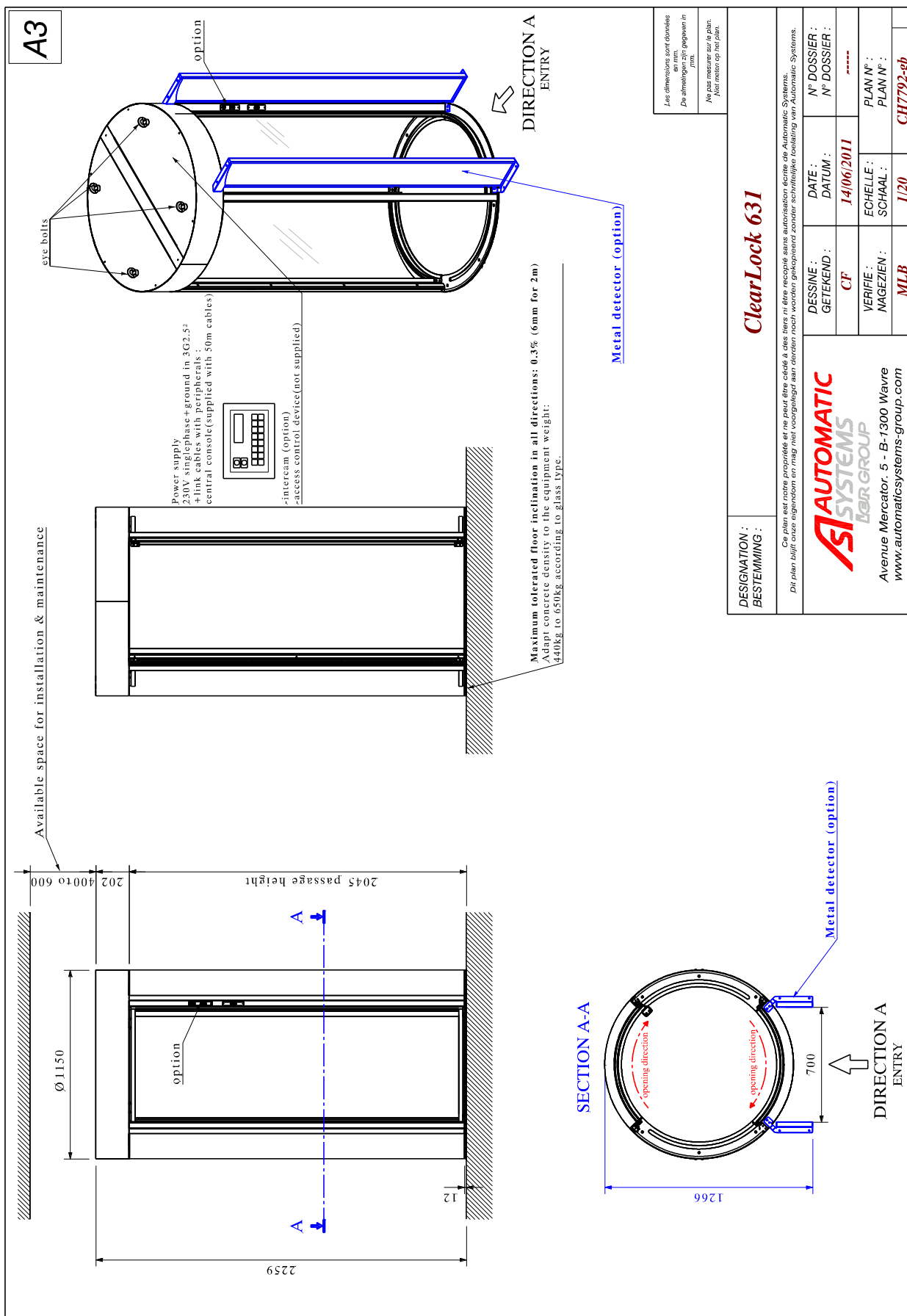
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8. IMPLEMENTATION DRAWINGS



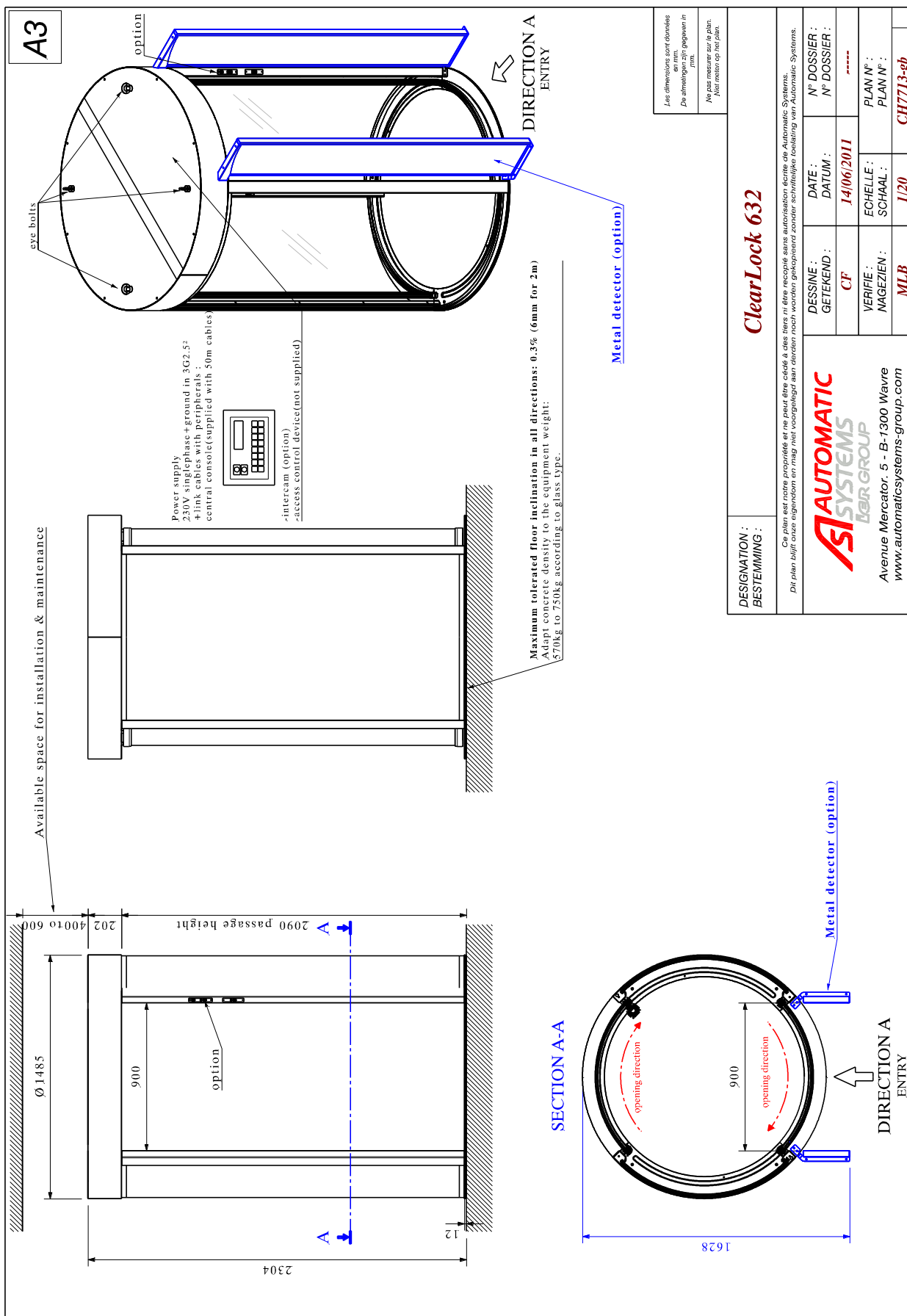
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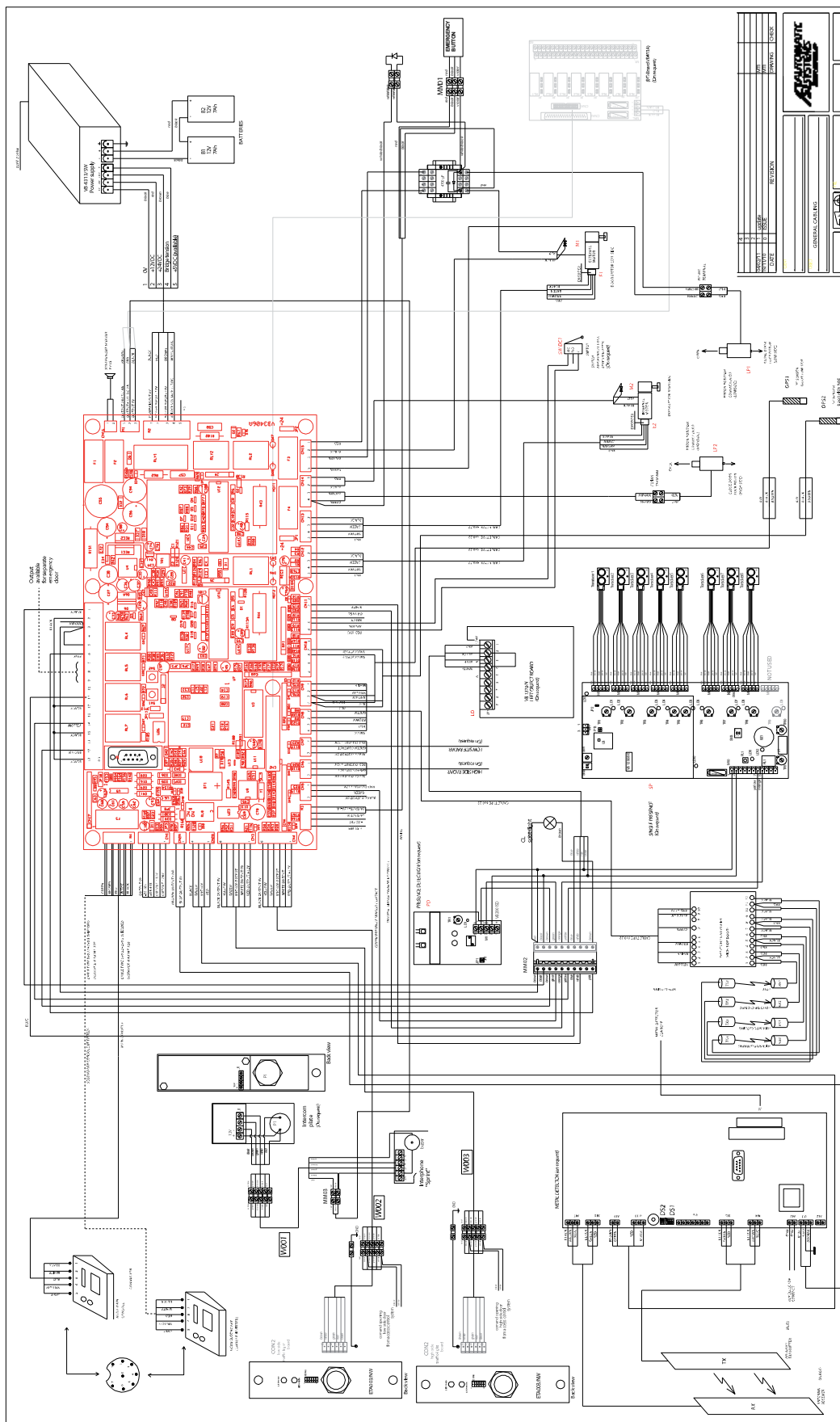


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## 9. WIRING DIAGRAM

**Note:** Description of standard equipment. The diagram included with the equipment is the reference diagram.



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## 10. TERMINAL AND INPUT/OUTPUT ALLOCATION

### Board VB3406A:

Connector	Terminal	Allocation
M1	1	+24 VDC
	2	+12 VDC
	3	0 V
M2	1	0 V
	2	+12 VDC
	3	+24 VDC
	4	Bridge tension
	5	+VDC
M3	1	+12 VDC
	2	0 V
	3	/
	4	/
M4	1	0 V
	2	Power input
	3	+12 VDC
	4	+RS485
	5	-RS485
M5	1	0 V
	2	0 V
	3	+24 VDC
	4	+12 VDC
	5	+V CL
	6	-V CL
	7	Distinct emergency opening: normally closed contact
	8	Distinct emergency opening: normally open contact
	9	Common
	10	Normally closed contact
	11	Normally open contact
	12	Common
	13	Normally closed contact
	14	Single-presence detection: Reset
	15	Common
	16	Normally closed
	17	Presence detector: Reset
	18	Common
CN1	1	See wiring diagram
	2	See wiring diagram
	3	See wiring diagram
	4	See wiring diagram
	5	See wiring diagram
CN2A	1	See wiring diagram
	2	See wiring diagram
CN2B	1	See wiring diagram
	2	See wiring diagram
	3	See wiring diagram
	4	See wiring diagram
CN3	1	+12 VDC
	2	Opening button
	3	Red pictogram
	4	Green pictogram
	5	/
	6	0 V
CN4	1	+12 VDC
	2	Opening button

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	3	Red pictogram
	4	Green pictogram
	5	/
	6	0 V
CN5	1	+12 VDC
	2	Presence detector contact
	3	0 V
CN6	1	Radar (optional)
	2	Radar (optional)
	3	Radar (optional)
CN7	1	Radar (optional)
	2	Radar (optional)
	3	Radar (optional)
CN8	1	Safety photocells: opening protection
	2	Safety photocells: closing protection
	3	Safety photocells: +12 VDC
	4	Safety photocells: 0 V
CN9	1	Safety photocells: opening protection
	2	Safety photocells: closing protection
	3	Encoder position sensors (OPS): +12 VDC
	4	Encoder position sensors (OPS): 0 V
CN10	1	/
	2	Encoder position sensors: OPS2
	3	Encoder position sensors: OPS1
	4	/
	5	/
	6	/
CN11	1	+12 VDC
	2	/
	3	Single-presence detection contact
	4	/
	5	Obstacle manual locking: contact
	6	Obstacle manual locking: 0 V
CN12	1	See wiring diagram
	2	See wiring diagram
	3	See wiring diagram
	4	See wiring diagram
	5	See wiring diagram
CN13	1	See wiring diagram
	2	See wiring diagram
	3	See wiring diagram
	4	See wiring diagram
	5	See wiring diagram
CN14	1	SA motor
	2	SA motor
	3	+24 VDC
	4	Obstacle lock
CN15	1	NSA motor
	2	NSA motor
	3	+24 VDC
	4	Obstacle lock
	5	/
CN16	1	+ speaker
	2	- speaker
Fuses	F1 + F2	Power supply protection 12 V + 24 V
	F3 + F4	Motor protection
	F5	NCD <sup>2</sup> console protection

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