

# CLEARLOCK 645

Security booth

## TECHNICAL MANUEL

*(Translated from the original English version)*

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## 1. SYMBOLS USED

The symbols below indicate a more or less state of danger. They have been included in the various chapter to draw the reader's attention.

	<p><b>Dangerous situation for people's health.</b> Failure to observe the indications with these symbols can cause serious physical damage to people.</p>
	<p><b>Potentially damaging situation or prohibited use,</b> which may cause serious damage to the machine. Failure to observe the indications bearing this symbol may result in more or less serious damage to the machine.</p>

The symbols shown below recall a state of more or less serious danger. Where necessary, they have been applied in positions of the machinery to signal its danger:

### DANGER



General danger



Electrocution danger



Electrical ground



Crushing danger



Burn danger



Danger obstacle

### PROHIBITION



Don't remove any safety gear



Don't remove/adjust in motion



Don't use water to fight fires

## 2. INTRODUCTION

This manual describes all the rules of use as well as some information regarding the maintenance in order to obtain the best results and high levels of efficiency from the machine. We therefore advise you to read all these recommendations carefully before activating the security booth. Information on repairs, adjustments and different settings from those set here is contained in the technical manuals to be requested to **Automatic Systems**.

Keep this manual with care for every future consultation.

### 2.1. WARRANTY

We remain at your complete disposal for the assistance requirements that may arise. We remind you that the failure to comply with the prescriptions described will involve the warranty revocation.

The liability related to the warranty will be cancelled if the user does not follow the use instructions or makes changes without a previous preventive written authorisation by the manufacturer and/or he uses not original spare parts.

Automatic Systems reserves all the right to make any kind of modifications that will consider necessary for a better functioning of the security booth.

### 2.2. INTENDED USE

The security booth must exclusively be used as a security door with access control.

#### Limitations of the intended use:

The booth must only be used for the purpose for which it was designed, taking into account the restrictions indicated. Other uses are considered inappropriate and wrong. The manufacturer shall not be liable for any damage caused by improper, incorrect or unreasonable use.

### 2.3. IDENTIFICATION

The metal plate shown here contains all the information about the identification and operating system.

It is placed on the internal of the structure.

Together with a possible maintenance request, it is necessary to provide the serial number written on the plate.

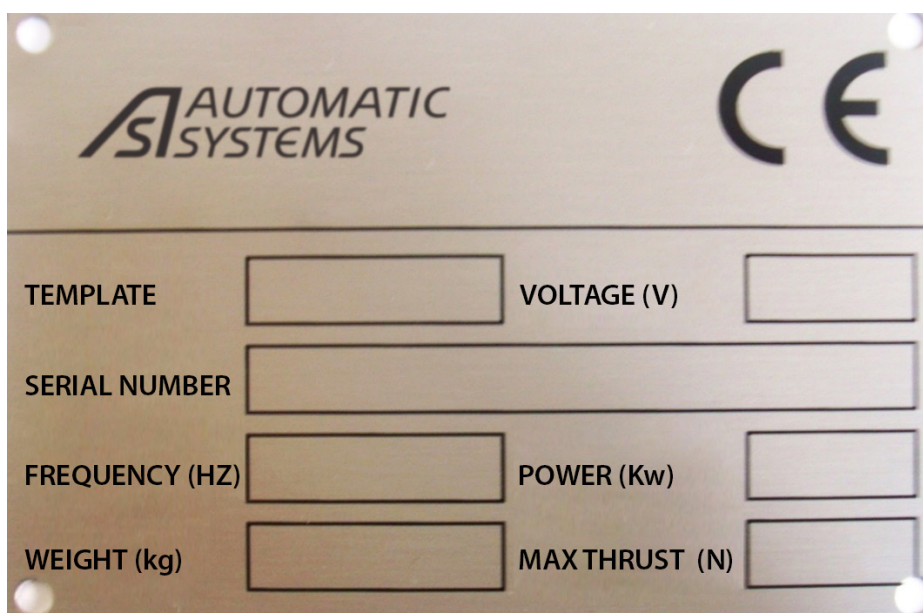


Fig. 1 - Identification label

## 2.4. GENERAL SAFETY REGULATIONS

Only special trained and authorised staff can carry out the maintenance service. The manufacturer is not responsible for any tampering or modification of the system, which has not been previously authorised.

The removal or tampering of the safety devices involves the breaking of European regulations concerning safety.

Our machines are designed to accept original spare parts only. Skilled staff must carry out their settings, respecting the instructions hereby. Please, be sure that when the system operates, all safety conditions are respected. If you notice any irregularities, please stop the system immediately and call the Automatic Systems assistance service.



Only a professionally qualified staff must service the electric system, even if the maintenance work is of small entity.

## 2.5. SAFETY DEVICES

- Manual release of the system in case of total lack of energy
- Internal button of aid call
- Inaccessible mechanic motion
- Metal plates showing the correct procedures to be followed
- Accident prevention sensor which stops and opens the door in case something is intercepted during the closing phase
- Electronic torque adjuster that regulates the door push power
- Electrical insulation
- Safety transformer
- Peripherals operating in SELV



We remind all of our customers to follow the norms in force, first of all the system grounding and safety devices.

## 2.6. RISK WARNING

The machine has been built in compliance with the safety regulations and taking into consideration the risks for the user and for the maintenance staff, following proper practice and technical criteria for any situations not foreseen by the regulations.

Nevertheless, there are still risks related to the type of machine, for the users and for the maintainers, for which it was not possible to find technical solutions, and therefore specific precautions are required.

**During normal operation, the user must not access the moving parts.**

In case of manual release or during maintenance operations, mandatory signs are placed in the considered area, calling for turning off the machine power supply before proceeding. The areas featuring electric shock risks accessible to operators are marked with the appropriate symbol as required by the CEI EN 60204-1. There is no risk of being trapped inside the booth, thanks to the manual release of the system in case of power supply failure.

### 2.6.1. WARNINGS FOR USERS



- Do not pass through the opening too quickly, collisions are possible.
- Children and animals could be in danger if left alone while crossing. While passing, keep your children and animals between your arms or close to you.
- Do not put your hands or other parts of the body in the empty spaces between the fixed and mobile parts of the structure.
- Do not force the doors during their movement; excessive force may damage the driving mechanisms preventing proper operations of the system, and may cause harm to the user.



- Do not force the door when closed; excessive power may damage the locking system and the structure of the doors, and may cause damage to the user..

## 2.6.2. WARNINGS FOR SERVICE TECHNICIANS



- Installation and maintenance must be carried out by trained and authorized staff.
- When moving the door manually during maintenance, do not put your hands inside the mechanical components.
- Activation of the machine, when the internal ceiling or the external roof are removed, could be dangerous; be careful not to put your hands inside the driving elements while the machine is turned on.
- While nobody is working on the machine, keep the internal ceiling and the outside roof assembled to the booth and secured with screws.
- Do not leave the keys in locks. Do not give the keys to untrained or unauthorized personnel.

## 2.7. RISK ASSESSMENT



Accidental risks arising from the machine can occur to people depending on their category.

We can define the following categories:

1. Carriers.
2. Installers.
3. Service technicians.
4. Cleaning staff.
5. Adult users, children, disabled people.

### CATEGORY 1 - HANDLERS

**People at risk:** Truck drivers, porters, installers.

**Type of risk:**

- Machine tilting.
- Finger and feet crushing.
- Traumas from excessive strain while moving the machine.

**Avoiding the risks:**

- Do not free the machine from its packaging before reaching the installation place.
- Pick up and move the machine using proper equipment.
- Stay away from the machine when it is lifted.

### CATEGORY 2 - INSTALLERS

**People at risk:** Assemblers, electricians, technicians.

**Type of risk:**

- Noise while drilling fixing holes.
- Danger of electrical shock while drilling the holes and while connecting the wires.
- Danger of cutting off fingers while mechanical parts are in movement when internal ceiling or external roof are removed.

**Risk avoidance:**

- Wear protective equipment.
- Use tools to check the electric voltage.
- Don't operate on mechanical parts while the door is connected to the mains.
- Don't release the door from the frame during handling.

**CATEGORY 3 – SERVICE TECHNICIANS**

**People at risk:** Maintenance and service staff.

**Type of risk:**

- Electric shock with 220V equipment.
- Cutting and trapping fingers between moving parts.
- Abnormal operation caused by failures.

**Risk avoidance:**

- Use the protective equipment.
- Check the functioning of the safety systems.
- Do not operate while mechanical parts are moving.

**CATEGORY 4 - CLEANING STAFF**

**Persons at risk:** Cleaning staff, service staff.

**Type of risk:**

- Use of harmful substances.
- Risk of cutting and entrapment of fingers among moving parts.
- Trapped cleaning cloths during doors movement.

**Risk avoidance:**

- Use appropriate protective equipment.
- Don't clean the door while it is moving.
- Disable doors movement from the control console.

**CATEGORY 5 - USERS**

**Persons at risk:** Adult and disabled users.

**Type of risk:**

- Impact on the doors while opening/closing.

**Risk avoidance:**

- Do not rush while passing.
- Do not try to go back while passing.
- Keep umbrellas and bags close to the body.

**Persons at risk:** Children accompanied by adults.

**Type of risk:**

- Impact on the doors while closing.

**Risk avoidance:**

- Children must be in front and very close to the adult.
- Do not rush while passing.
- Do not drag children by hand.
- Do not leave the children alone while crossing.

## **2.8. MAINTENANCE WARNINGS**

The security booth has been realized according to the applicable legislation and taking into consideration of the legislative provisions that transpose the European Community directives.

We recommend a periodical verification of the integrity of the device with a semi-annual frequency, to be given exclusively to qualified staff.

During the programmed maintenance perform the operations described in this manual.

## 3. FUNCTIONING

### 3.1. PRODUCT DESCRIPTION

The anti-robbery booth is equipped with a special system, which allows you to check the presence of metal objects and / or people (anti-hostage function) inside the transit compartment. On request it can be equipped with Biometric systems for the recognition of people. Information on the dimensions can be found in the manual.



**The object detection system only affects the internal compartment; it is therefore possible anchor the booth to lateral structures (frames, ceiling) without compromising its functioning!**

The structure of the anti-robbery door is made of steel plate, suitably reinforced with thick tubes.

Painting is performed using special materials that give the finished product an excellent finish resistance to atmospheric agents and impacts. The passage area is made of special high-strength materials, as are the door supports where the bullet-proof curved glass is housed.

The management logic is positioned in the upper compartment of the booth and can be easily inspected. A plastic cover protects the upper compartment from dust.

The movement of the doors is of electromechanical type managed by DC motors. There underfeeding of the engines guarantees an additional protection against accidents, in addition to the sensors of the doors.

The booth is also provided with:

- intercom system for conversation between external and control console;
- voice synthesis with one or more messages (optional);
- push-button panels that include the signaling LED (red, yellow, green color), door phone call button, microphone, door opening button;
- stop button and emergency call intercom call located inside the booth.
- mechanical key for power on of the booth and night closing.
- 90 ° exit respect to the entrance (optional).



**The use of the night-time lock with a mechanical key can give rise to the possibility that the doors remain unlocked, so they can be opened manually, in case of exhaustion of the battery charge reserve!**

## 3.2. BOOTH FUNCTIONING

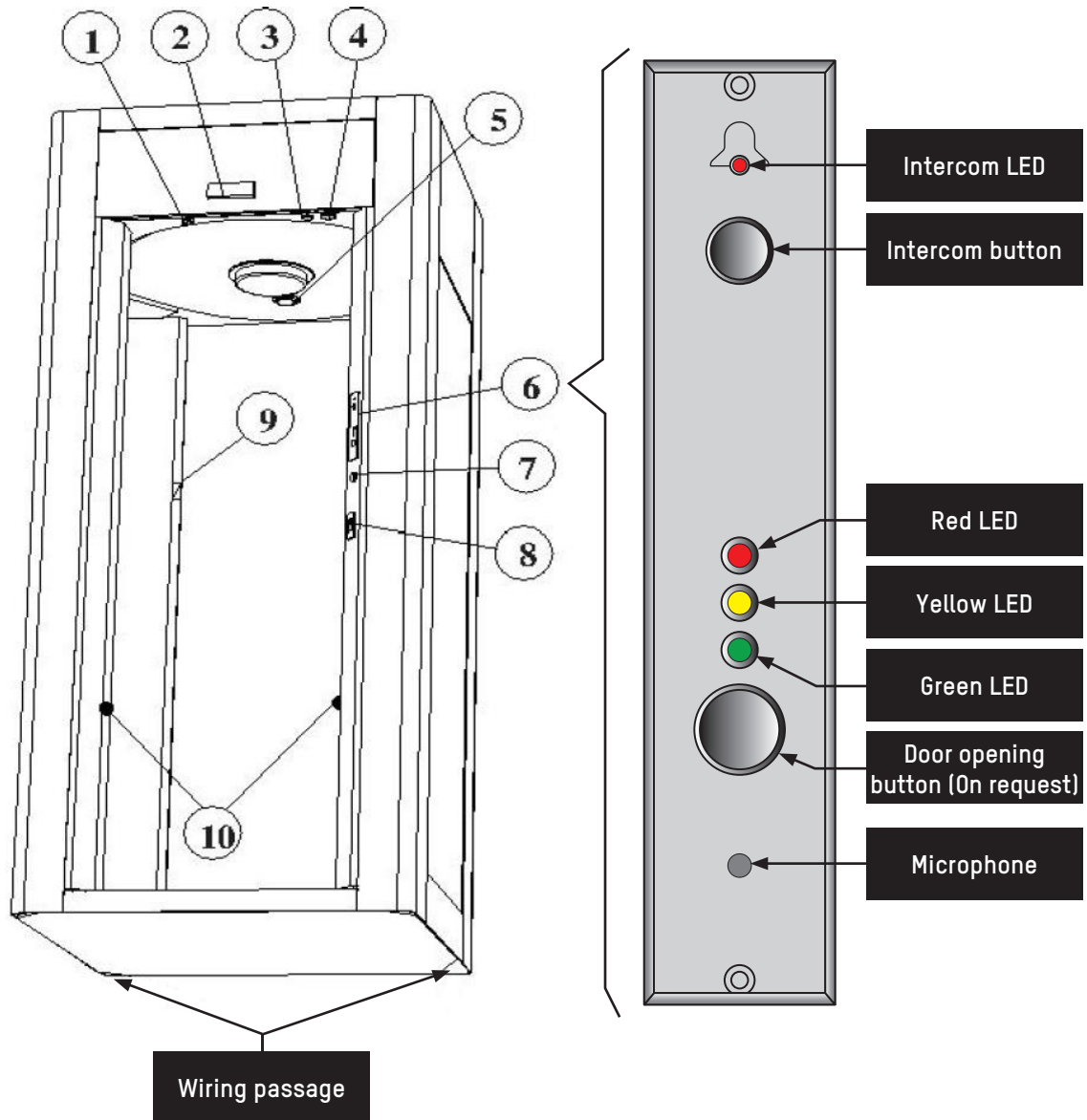


Fig. 2 - External side view

1	Mechanical lock
2	Radar (optional)
3	Electrical key (optional)
4	Speaker
5	Spotlight
6	External push-button
7	Electrical key (optional)
8	Badge reader (optional)
9	Stop and aid intercom call button
10	RX photocells (left) TX (right)

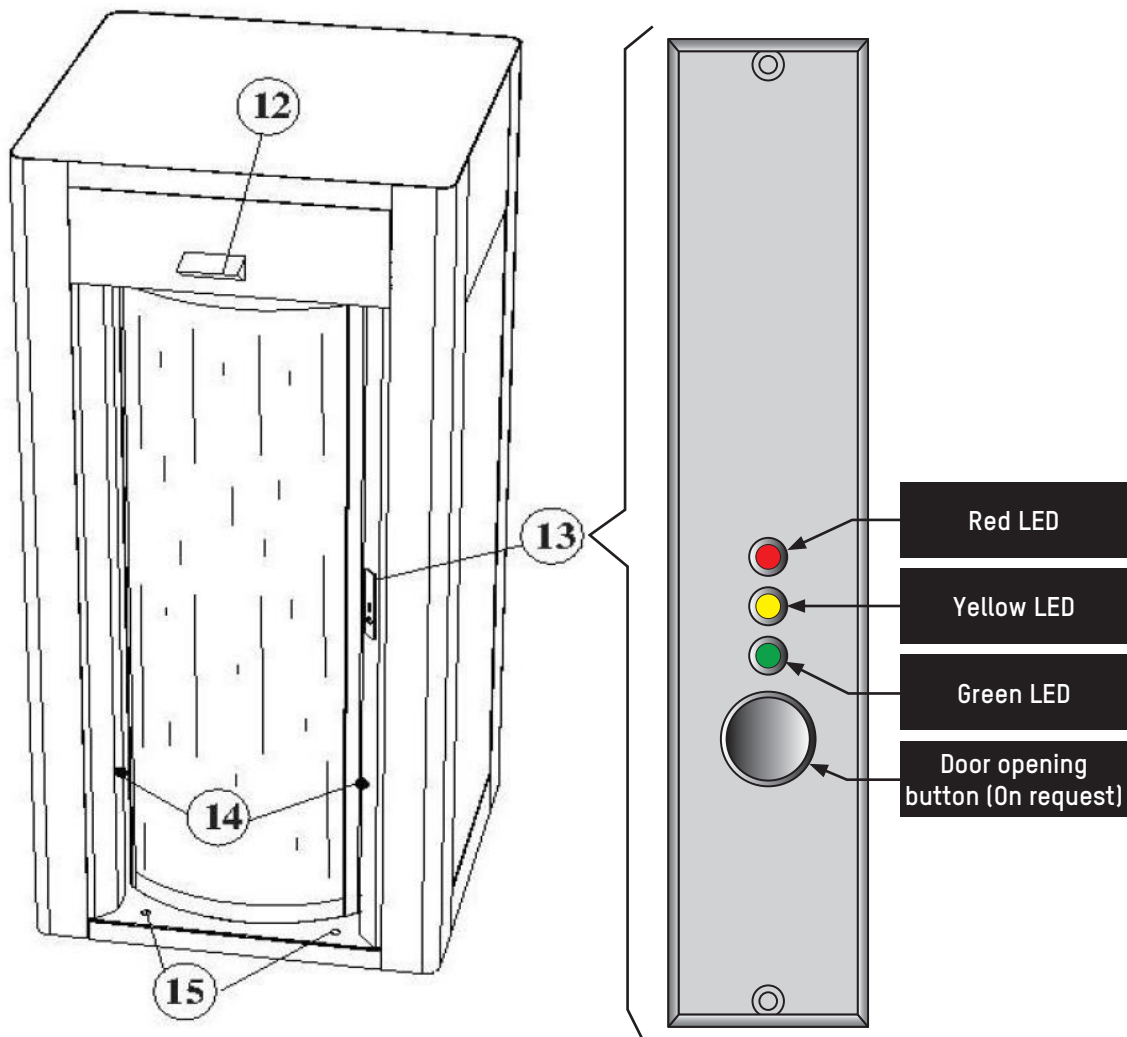


Fig. 3 - Internal side view

12	Radar (optional)
13	Internal push-button
14	RX photocells (left) TX (right)
15	Stabilization screws (n°2 internal+n°2 external)

### 3.2.1. POWER ON OF THE BOOTH

The security booth can be switched on and off with the mechanical key situated on the top of the external side of the booth (⇒ Fig. 2).

Use the previously mentioned key for the first admission and e for the last exit.

When it is switched on, a first cycle of doors opening will be automatically performed, which needs to be used for the entrance of the first person.

The mechanical key will not be present in the versions managed with the redundant management of the opening.

## 3.2.2. NORMAL TRANSIT

After the switching on, make sure that the console it is programmed for the normal transit, that must happen as below:

1. Press the call button (part 1, Fig. 2, page 11) situated on the side of the passage compartment and wait for the door to open
2. Enter inside the security booth
3. Wait for the closing of the door and the opening of the other door
4. Exit the booth

## 3.2.3. METAL DETECTOR ALARM (OPTIONAL)

Every time one customer tries to pass through the booth with a metal object, comparable in dimensions and weight to a weapon, this will cause the metal detector alarm. The state of alarm will activate an appropriate message recorded on the voice synthesis board, that will invite the user to go out and to deposit all the metal objects inside a special drawer.

The first door stays open to let the entering user go out, it will then close and automatically, a check of the transit compartment will be done, verifying the presence of metal objects within the booth. If the check is negative, the machine will auto-reset itself and it will be ready for a new transit. Otherwise the external door continues to open and close itself, as long as the registered object is not removed.

## 3.2.4. TRANSIT WITH METAL (IF PRESENT)

To allow the entrance of a person who owns metal objects or weapons (ex. Security guards, values holders etc ...) into the place to protect, the following procedure must be followed:

1. If by entering the user has caused the metal detector alarm, he must go out and wait for the alarm phase to finish. Therefore, the machine operator, with the help of the console, can exclude the metal detector, allowing the entrance.
2. If before entering, the person asks the entrance permission by interphone, the machine operator with the use the console will be able to exclude the metal detector.

In both cases, to activate again the metal detector it is enough that the machine operator puts back the metal detector in ON position.

## 3.2.5. CLOSED DOOR TO THE PUBLIC

In the hours in which you want to prevent the public to enter, it will be necessary to put the console command button in "Exit Only" mode. In this case the user has to ask to enter through the interphone.

## 3.2.6. ANTI-HOSTAGE ALARM

The volumetric control system is set for a person whose volume is equivalent to max. 120 kg of weight (unless specifically requested by the customer). This means that in the presence of a higher volume than the one set, the entry procedure will be interrupted and the external door will remain open for evacuation, meanwhile a voice synthesis will invite to contact the operator via intercom.

## 3.2.7. CONSENT PROCEDURE FOR THE TRANSIT OF TWO PERSONS

If you want to allow two people to transit at the same time (or in any case with the anti-hostage alarm activated), pressing the Reset button will allow the system to complete the entry procedure.

## 3.2.8. EMERGENCY DOOR OPENING

The emergency command on the console allows the contemporary doors opening. In case a total lack of power supply or a state of breakdown of the booth occurs, it will be necessary to proceed with the manual emergency. In this case open the inspection door positioned above the booth (on the internal bank side), switch the power supply off, remove the batteries connector and proceed with the manual opening of the doors.



Carry out this operation after deactivating the machine with the main switch.

### 3.2.9. AUTOMATIC OPERATION WHEN POWER FAILURE

In the absence of a 220V power supply, the batteries are automatically activated to ensure at least 30 minutes of further operation. After this period the doors stop and by pressing the reset switch of the electronic logic it is possible to take advantage of an additional reserve of energy to allow a certain number of door openings.



The electronic logic reset switch should only be used in emergencies as it can make battery charging critical and therefore the need to replace them. The reset function after use must be reset by turning the electronic logic off and on again by pressing the ON / OFF key.

### 3.2.10. BUTTON OF INTERNAL STOP OF THE BOOTH

If the stop function is activated with the doors in movement, those stop themselves and they can be moved just manually.

If the stop function is activated when the doors are both closed, we have the unlock of the magnet of the external door and the inhibition of the doors' movements.

To take the booth functioning back to normal you must make the reset procedure.

### 3.2.11. AUTHORIZATION OF TRANSIT

In case of recognition of undesired people or necessity to interrupt the entrance transit, it is possible to block the flow excluding the transit by enabling with the special switch in the console in OFF position.

To restore the normal transit, it is enough to put the switch back in ON position.

### 3.2.12. MANUAL FUNCTION

In case the operator wants to check the transit flow both in entrance and in exit, this is possible thanks to the special button on the console, by inserting the manual function. Then the operator does the transit through the "external door" "internal door" buttons.

### 3.2.13. FUNCTION NOT CORRECT

In case abnormalities of functioning are found, before proceeding with other checks, verify that the console commands are in the position of NORMAL TRANSIT.

Tensions swings on the power supply line or a prolonged absence of electric current, can create a bad functioning of the booth simulating, for instance, the presence of a metal object inside the passage compartment.

To restore the normal functioning conditions, switch the booth off with the console power on key and after some seconds switch it on again.

In case of blackout and terminated batteries, it is possible to unlock the two doors as described in the "emergency door opening".

In the event that malfunctions or anomalies other than those listed above persist, inform immediately our after sale service.



## 3.3. CONTROL CONSOLE

The serial control console is equipped with the main functions usually used to programme the booth operating modes; furthermore, can be used both as a single console and as a secondary console combined with the digital console.

The functions can be enabled and disabled with a key: a LED will indicate its state.

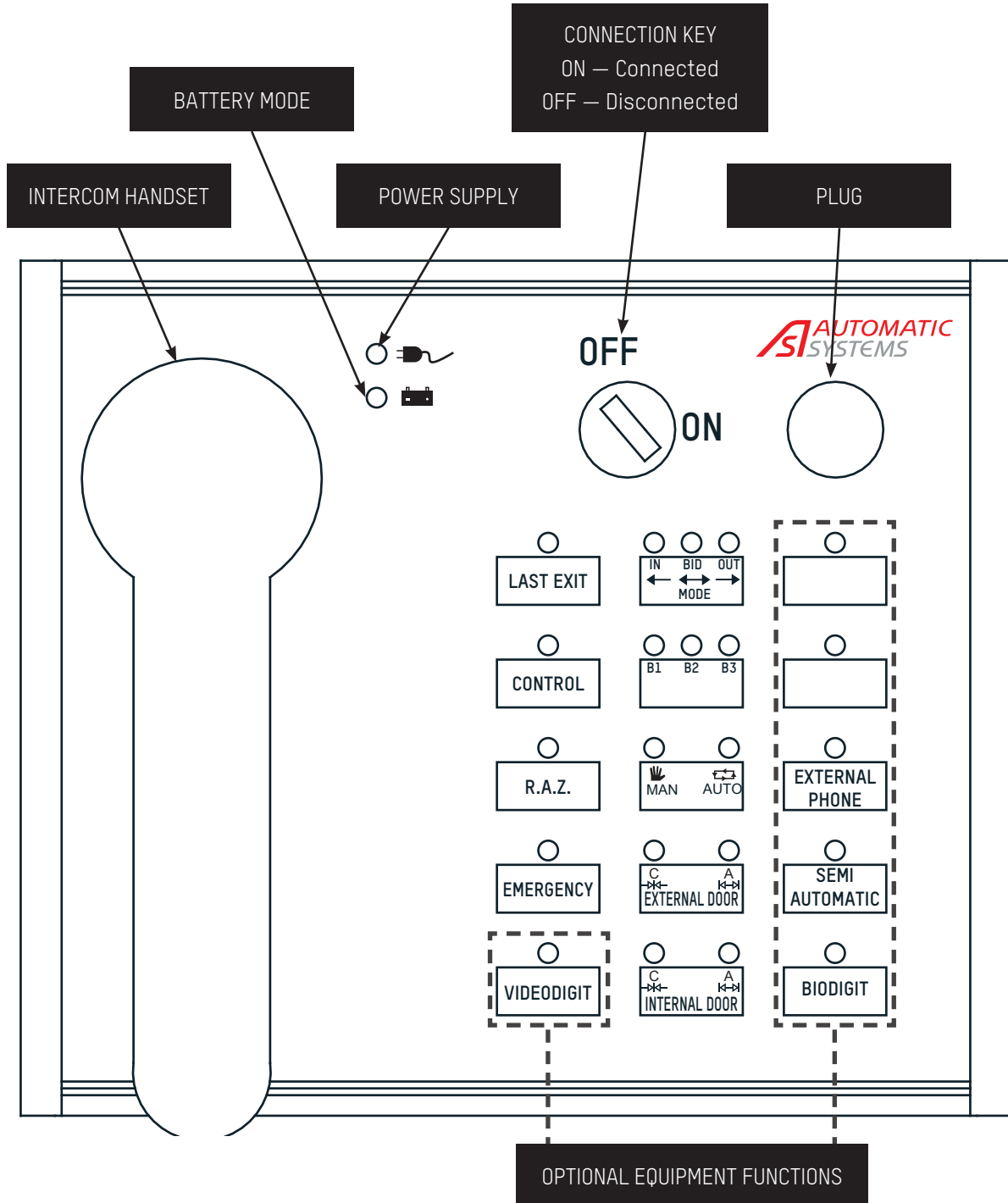


Fig. 4 - Control console

## 3.4. CONTROL CONSOLE OPERATION MODES

### ON/OFF console key

This key enables and disables the console

ON - Console enabled

OFF - Console disabled

### Last exit

By pressing this button, the access is enabled or by the mechanic door lock or with impulsive contact (lock with spring contact, electronic key, badge reader, etc.), for cleaners, maintenance workers, etc.

LED ON = function enabled

LED OFF = Standard function

### Check

This function manages the permanent exclusion of weight control.

LED ON = Check enabled

LED OFF = Check disabled

### Reset

This button allows to cancel the alarms in progress for one passage, signalled by an acoustic signal.

LED ON = Reset for one passage

LED OFF - Standard working

### Emergency

This function opens the two doors simultaneously.

LED ON = both doors open

LED OFF = Standard working

### Video-digit (optional)

It allows to connect and disconnect the video-digit control.

LED ON = video-digit enabled

LED OFF = video-digit disabled

### Mode

It gives the possibility to choose the functioning of the security booth.

Left LED ON: entry only

Central LED ON: bidirectional way

Right LED ON: exit only

### Booth (B1, B2, B3)

It controls up to three booths together using the same console. By pressing this button, it is possible to select a booth and, in case of alarm, it will move automatically.

### Automatic/Manual

By pressing this button, it is possible to control the manual and automatic modes.

Left LED ON: manual mode

Right LED ON: automatic mode

## External door

It allows to open the external door during the manual mode.

During the automatic mode this key can be used to activate / deactivate the "Lock" function for the external door. With the "Lock" function activated, the console makes a continuous alarm until the function is deactivated. In addition to this alarm, the unopened doors will be signaled by the simultaneous lighting of their two LEDs status.

Green Led ON: external door closed

Red Led ON: external door open

## Internal door

It allows to open the internal door during the manual mode.

During the automatic mode this key can be used to activate / deactivate the "Lock" function for the internal door. The function operates as described above for the external door.

Green Led ON: internal door closed

Red Led ON: internal door open

## Intercom

In case of an intercom call from a booth, a bell in the console goes on. By lifting the intercom handset, the console connects with the booth from where the call came from. When the handset is raised, and there are more booths on line, press the "B1 B2 B3" key to connect with the desired booth.

## External phone (optional equipment)

It connects and disconnects the external phone panel separated from the booth (optional equipment).

Green Led ON: internal door closed

Red Led ON: internal door open

## Semi-automatic (optional equipment)

During the semi-automatic mode, the user enters the security booth using the external electronic key reader. The external door of the security booth remains open. The console makes an intermittent sound which alerts the operator about the presence of a person inside the security booth. By pressing the Reset button, the operator enables the person who is inside the security booth to finish the transit. The exit from the sensible area is always free.

Led ON: semi-automatic mode enabled

Led OFF: semi-automatic mode disabled

## Bio-digit (optional equipment)

It allows to connect and disconnect the bio-digit control.

Led ON: bio-digit enabled

Led OFF: bio-digit disabled

## Power supply



The Led ON indicates the presence of power supply (220V).

## Battery

The Led ON indicates the battery operation mode.

## Resetting the control logic

For a complete Reset of the main panel, press the "B1 B2 B3" and "Internal Door" keys simultaneously until all the booth start reset.

		<b>While resetting, do not do other operations on the console or on the booth.</b>
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## 3.5. LIGHTS OF THE BOOTH

BOOTH STATE	EXTERNAL LIGHT	INTERNAL LIGHT
Stillness Bidirectional	Green	Green
Stillness Mono-entry	Green	Red
Stillness Mono-exit	Red	Green
Stillness Manual	Red	Red
Entry transit with external door opening /open	Green	Yellow
Entry transit with external door closing	Yellow	Yellow
Exit transit with internal door opening /open	Yellow	Green
Exit transit with internal door closing	Yellow	Yellow
Entry / exit transit with reservation on the entry side	Yellow and Green Flashing	Yellow
Entry / exit transit with reservation on the exit side	Yellow	Yellow and Green Flashing
Entry transit in manual mode with external door opening /open	Green	Red
Entry transit in manual mode with external door closing	Red	Red
Exit transit in manual mode with internal door opening /open	Red	Green
Exit transit in manual mode with internal door closing	Red	Red
Emergency	Green	Green
Resume from emergency	Red	Red
Metal Detector alarm	Red	Red
Latest exit	Red	Green
Latest exit with transit in progress	Red and Yellow	Green
Mechanical lock closed with external door closed	Red	Light off
Mechanical lock closed with external door open	Red and Green	Red and Green
Encoder error	Red and Green	Red and Green

## 4. ELECTRONIC DESCRIPTION

### 4.1. BLOCK DIAGRAM

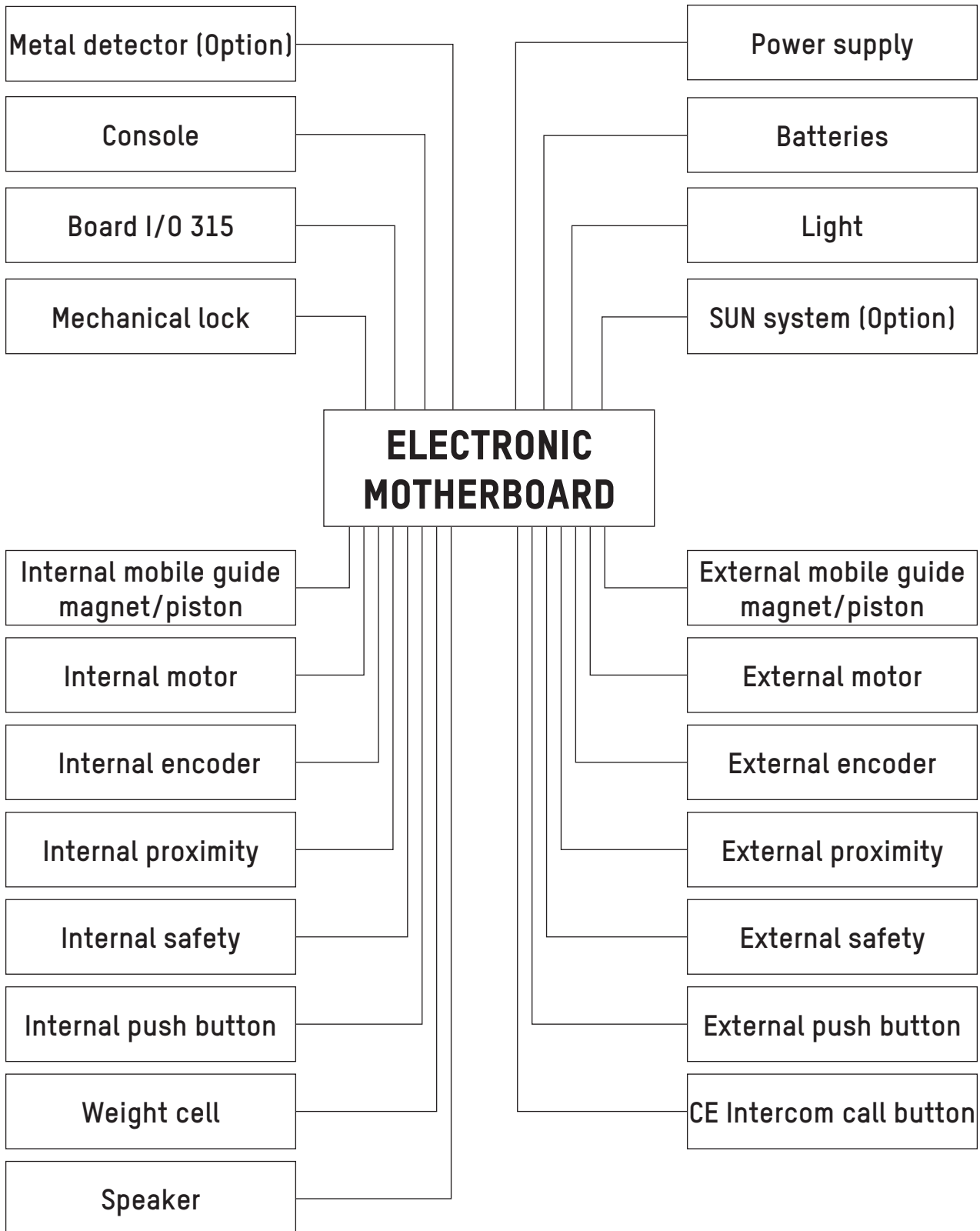


Fig. 5 - Block diagram

## 4.2. POWER SUPPLY

The booth can be equipped with two different types of power supply, depending to the required characteristics.

### 4.2.1. POWER SUPPLY 220 VAC

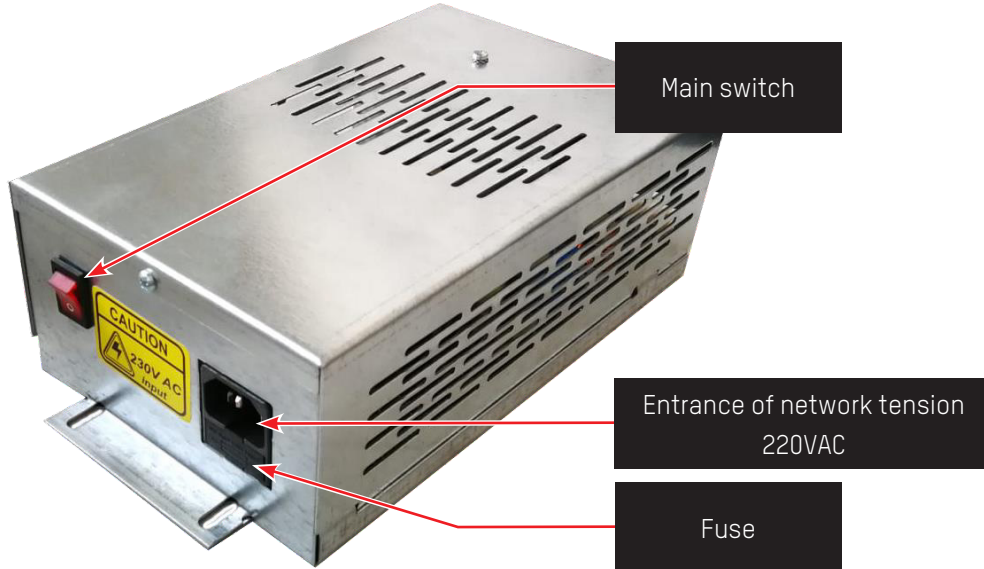
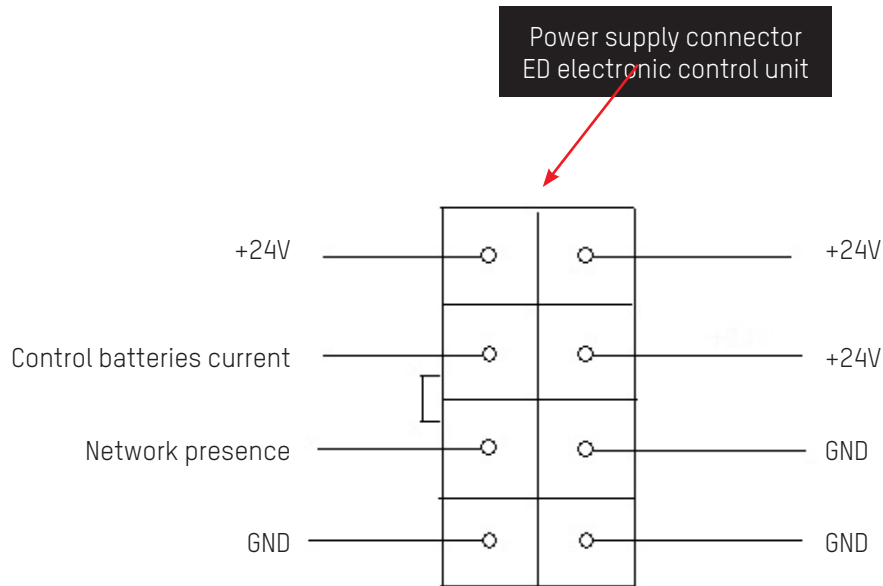


Fig. 6 - Power supply 220 VAC



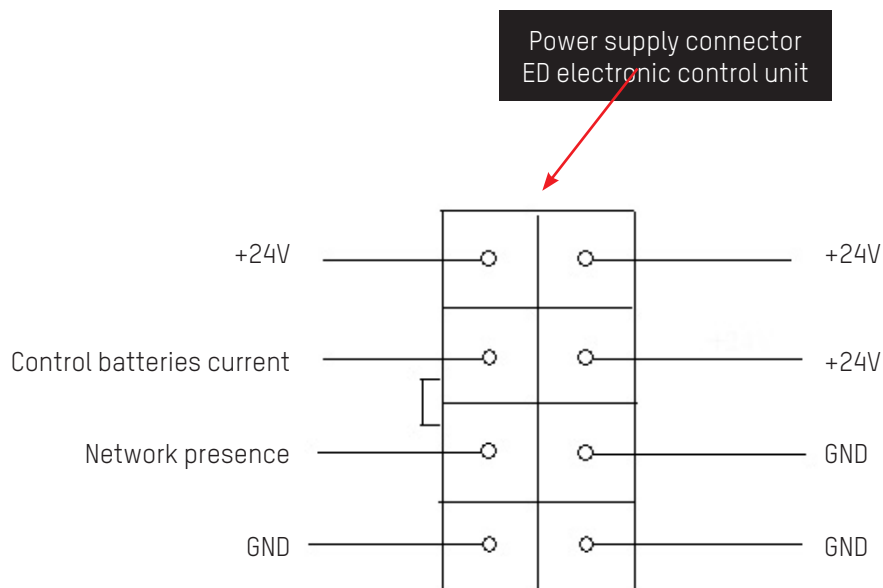
# CLEARLOCK 645



## 4.2.2. POWER SUPPLY UL - 100/240VAC 2.8A 50/60HZ



Fig. 7 - Power supply UL



## 4.3. ED ELECTRONIC CONTROL UNIT

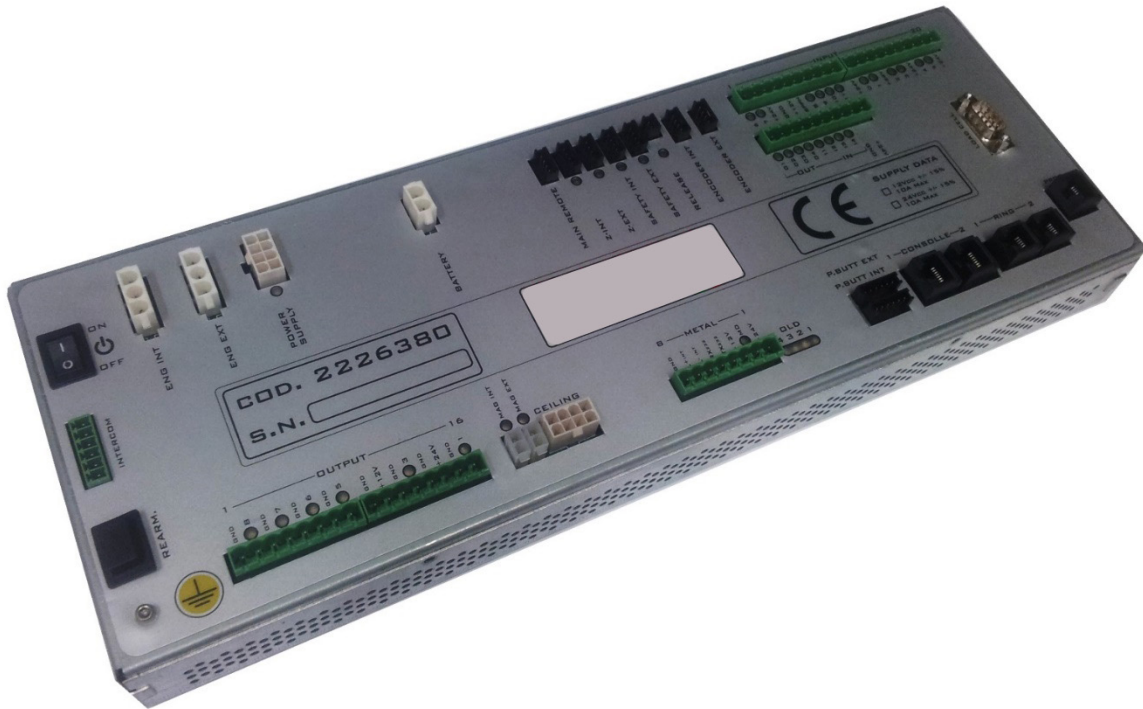


Fig. 8 - ED Electronic control unit

The board presents the following characteristics and peripherals:

- Power supply 24 V 10A
- Programmable microcontrollers
- 2 Serial lines RS485
- 1 serial RS232 dedicated to the programming
- Management of 3 intercoms
- Management of the load cell
- Management of the hardware emergency opening
- Management of 2 motors in CC
- Management/ charge of batteries 24VDC
- Management of switching on/off from remote
- 2 inputs for safety rubber
- 2 step/step encoder entrances
- 2 inputs for proximity sensors
- 16 programmable opto-isolated digital inputs
- 10 outputs in MOSFET 24VDC – 3A programmable
- 2 mosfet outputs
- Management 2 serial push buttons panels
- Dedicated connector for the management of the metal detector
- Management of the LED spotlights
- Record and reproduction of vocal synthesis



## 4.3.1. CONNECTORS

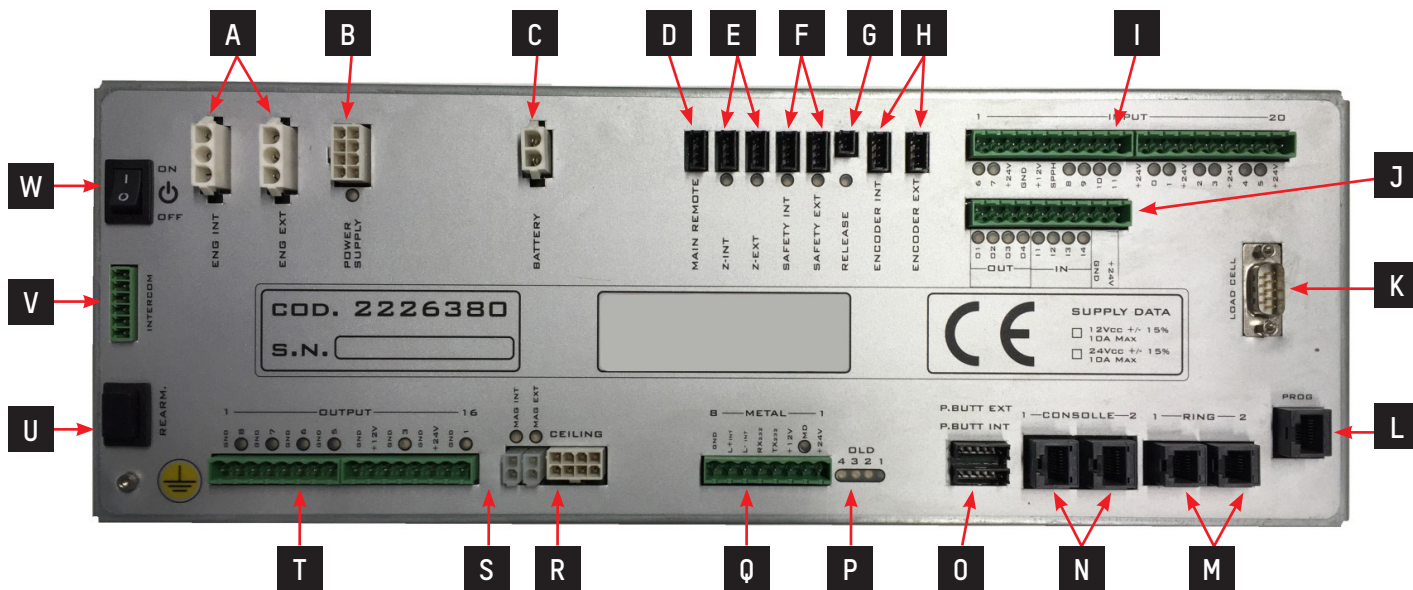
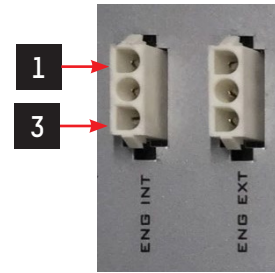


Fig. 9 - ED Electronic control unit / Connectors

Ref.	Designation
A	Connectors for external and internal motors
B	Connector of power supply
C	Batteries connector
D	Connector of remote control
E	Internal and external proximity sensors connectors
F	Internal and external safety connectors
G	Connector CE unlock
H	Internal and external encoder connectors
I	Connectors of the inputs
J	Connectors inputs and outputs
K	Connector of load cell
L	Connector of programming
M	Connectors internal serial
N	Connectors external serial
O	Internal and external pushbutton connectors
P	Led of status
Q	Connector metal
R	Connector speaker/intercom/spotlights
S	Magnets connectors internal and external
T	Connectors of outputs
U	Button of rearming
V	Connector intercom of commerce
W	Switch of powering on

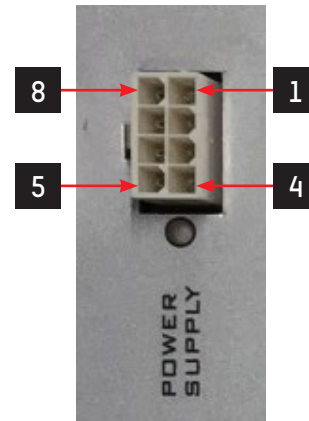
### 4.3.1.1. CONNECTORS FOR EXTERNAL AND INTERNAL ENGINES

Ref.	Designation
1	Engine
2	GND
3	Engine



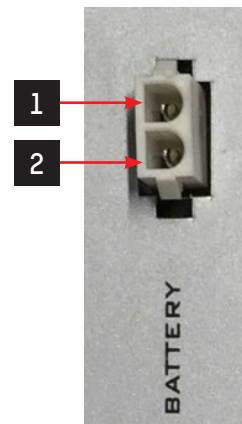
### 4.3.1.2. CONNECTOR OF POWER SUPPLY

Ref.	Designation
1	+24VDC external power supply
2	+24VDC external power supply
3	GND internal power supply
4	GND external power supply
5	+24VDC external power supply
6	Not used
7	Not used
8	GND external power supply



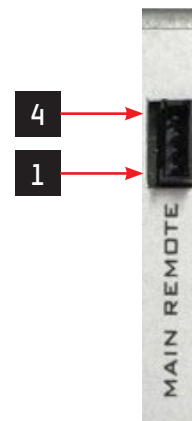
### 4.3.1.3. BATTERIES CONNECTOR

Ref.	Designation
1	+24 VDC battery
2	GND battery



### 4.3.1.4. REMOTE CONTROL CONNECTOR

Ref.	Designation
1	Not used
2	Not used
3	Contact of power on
4	GND



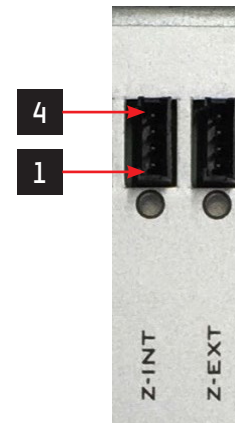
# CLEARLOCK 645



## 4.3.1.5. INTERNAL AND EXTERNAL PROXIMITY SENSORS CONNECTORS

Ref.	Designation
1	+24VDC
2	Not used
3	CONTACT PROXIMITY SENSOR
4	GND

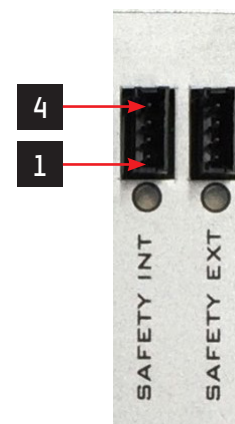
- Use a PNP - NO proximity sensor



## 4.3.1.6. INTERNAL AND EXTERNAL SAFETY CONNECTORS

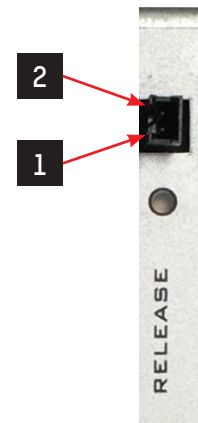
Ref.	Designation
1	+24VDC
2	Not used
3	SAFETY CONTACT
4	GND

- Use a safety NPN - NO



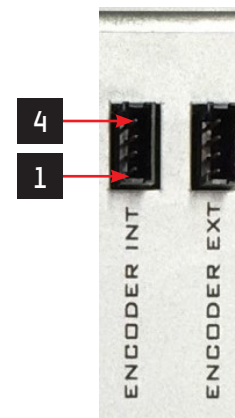
## 4.3.1.7. UNLOCK CONNECTOR CE

Ref.	Designation
1	Button
2	GND

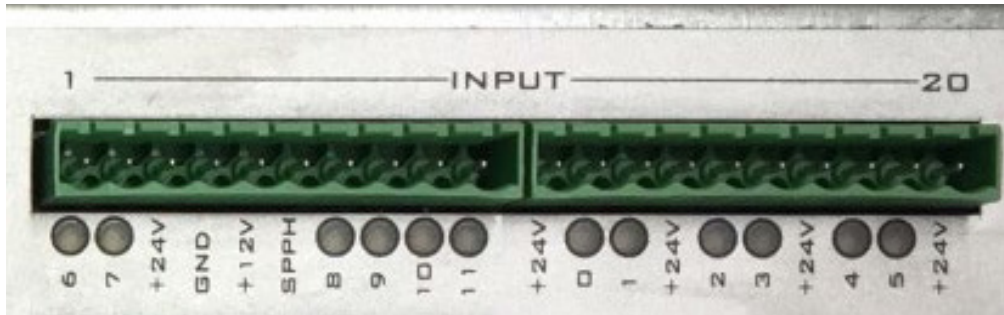


## 4.3.1.8. INTERNAL AND EXTERNAL ENCODER CONNECTORS

Ref.	Designation
1	+5VDC
2	B
3	A
4	GND



### 4.3.1.9. CONNECTORS OF THE INPUTS

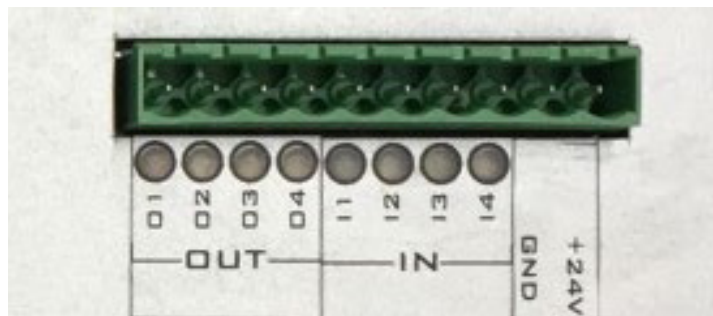


Ref.	Designation	Ref.	Designation
1	Inp6	11	+24VDC
2	Inp7	12	Inp0
3	+24VDC	13	Inp1
4	GND	14	+24VDC
5	+12VDC	15	Inp2
6	Not used	16	Inp3
7	Inp8	17	+24VDC
8	Inp9	18	Inp4
9	Inp10	19	Inp5
10	Inp11	20	+24VDC



- Inp0 – Inp7 are activated with a positive (with a tension that varies from 5VDC to 24VDC)
- Inp8 – Inp11 are activated with the GND

### 4.3.1.10. INPUTS AND OUTPUTS CONNECTORS



Ref.	Designation	Ref.	Designation
1	I/O Out1	6	I/O Inp2
2	I/O Out2	7	I/O Inp3
3	I/O Out3	8	I/O Inp4
4	I/O Out4	9	GND
5	I/O Inp1	10	+24VDC



- The inputs are activated at GND
- The outputs give a positive 24 VDC - 1,4 A

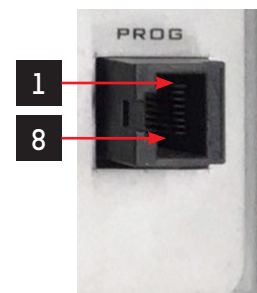
## 4.3.1.11. LOAD CELL CONNECTOR

Ref.	Designation
1	Avcc
2	Avcc
3	- Signal Load Cell 1
4	+ Signal Load Cell 1
5	Agnd
6	Agnd
7	- Signal Load Cell 2
8	+ Signal Load Cell 2



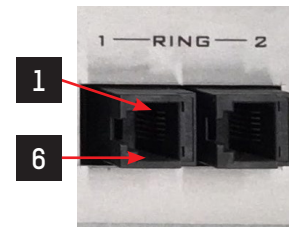
## 4.3.1.12. PROGRAMMING CONNECTOR

Ref.	Designation
1	Not used
2	Not used
3	+12 VDC
4	Reset
5	GND
6	Programming
7	RS-232
8	RS-232



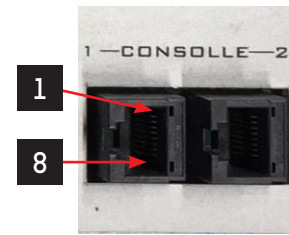
## 4.3.1.13. SERIAL INTERNAL CONNECTORS

Ref.	Designation
1	L- INT
2	L+ INT
3	+24VDC
4	GND
5	+24VDC
6	GND



### 4.3.1.14. EXTERNAL SERIAL CONNECTORS

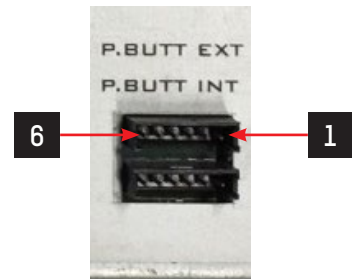
Ref.	Designation
1	L- EXT
2	L+ EXT
3	+12 VDC/+24 VDC
4	+12 VDC/+24 VDC
5	GND
6	GND
7	LISTEN
8	TALK



- Outside from the MAINBOARD it is reported if the output voltage from the connector is set up at 12 VDC or 24 VDC.

### 4.3.1.15. INTERNAL AND EXTERNAL PUSH-BUTTON CONNECTORS

Ref.	Designation
1	+12VDC
2	SDA
3	SCL
4	+ INTERCOM
5	- INTERCOM
6	GND



- In the internal push-button the intercom is only present only in certain specifications.

### 4.3.1.16. STATUS LED

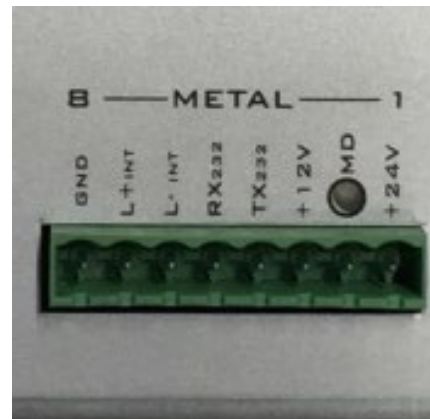
- The LEDs are used to show the functioning state of the ED mainbord
- Leds status table for types of malfunctions:

Type of error	Led 4	Led 3	Led 2	Led 1
Flash	ON	ON	ON	OFF
Encoder	OFF	OFF	OFF	ON
Wight	OFF	OFF	ON	OFF
Safety rubber edge excluding	OFF	OFF	ON	ON
Micro position	OFF	ON	OFF	OFF
Encoder direction	OFF	ON	OFF	ON
Push button	OFF	ON	ON	OFF



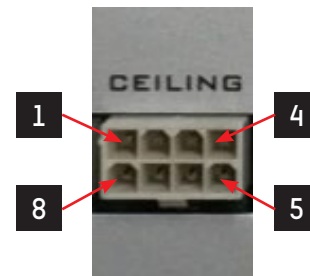
## 4.3.1.17. METAL CONNECTOR

Ref.	Designation
1	+24 VDC
2	METAL ALARM
3	+12 VDC
4	Tx232 / Reg. synthesis
5	Rx232 / Reg. synthesis
6	L- INT
7	L+ INT
8	GND



## 4.3.1.18. SPEAKER/INTERCOM/SPOTLIGHTS CONNECTOR

Ref.	Designation
1	+24 VDC / + Spotlight
2	- Spotlight
3	NO Intercom buttons
4	+ Speaker
5	- Speaker
6	+12 VDC
7	+ Microphone
8	COM Intercom button / - Speaker



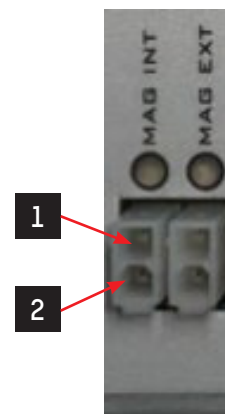
## 4.3.1.19. INTERNAL AND EXTERNAL MAGNETS CONNECTORS

### Internal Magnet

Ref.	Designation
1	+24 VDC
2	GND

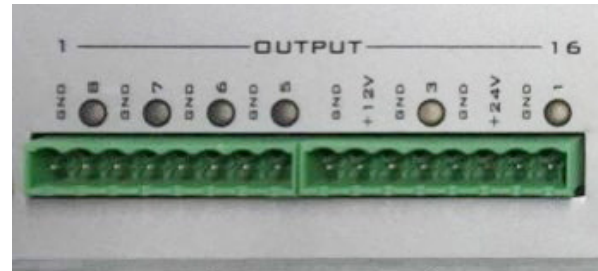
### External Magnet

Ref.	Designation
1	GND
2	+24 VDC



## 4.3.1.20. OUTPUTS CONNECTORS

Ref.	Designation
1	GND
2	Out8
3	GND
4	Out7
5	GND
6	Out6
7	GND
8	Out5
9	GND
10	+12VDC
11	GND
12	Out3
13	GND
14	+24VDC
15	GND
16	Out1



- Out5 – Out8 give +24 VDC 1,4A
- Out1 and Out3 give +24 VDC 2,8A

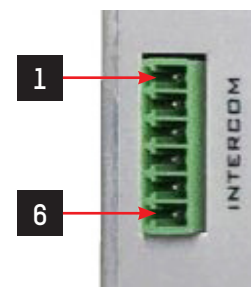
## 4.3.1.21. REARMING BUTTON

- The reset button it is used to switch again the MAINBOARD on in the case it is switched off during the status of network lack. Verify that the batteries must be plugged and sufficiently charged.



## 4.3.1.22. COMMERCIAL INTERCOM CONNECTOR

Ref.	Designation
1	+12VDC
2	+ Microphone
3	- Speaker
4	Intercom Button
5	+ Speaker
6	GND



## 4.3.1.23. IGNITION SWITCH

- The ON/OFF button is used to switch the MAINBOARD on.





## 4.3.2. PROGRAMMING



Fig. 10 - Programming Software icon



Fig. 11 - Programmer

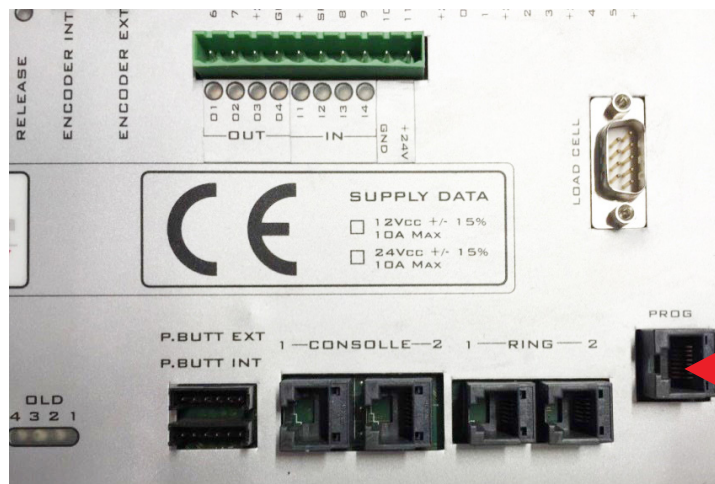


Fig. 12 - Programming connector

## 4.3.2.1. PROCEDURE

- a. Connect the programmer the PC with a RS232/USB converter
- b. Connect the programmer on the dedicated connector of the ED MAINBOARD
- c. Verify that the board is switched on and perform the instructions shown here below:
  1. Double click on the firmware to insert inside the ED MAINBOARD
  2. The **"FLASH DEVELOP TOOLKIT"** program starts automatically
  3. Select the **"DEVICE"** icon
  4. Select the **"CONFIGURE FLASH PROJECT"** voice
  5. The list of micro-processors opens automatically (CHOOSE DEVICE)
  6. Select the **"H8/3687F"** micro-processor
  7. Select **"AHEAD"**
  8. Select the COM (DOORS COMUNICATION)
  9. Select **"AHEAD"**
  10. Set the quartz frequency at 14.7456 (DEVICE SETTING)
  11. Select **"AHEAD"**
  12. (CONNECTION TYPE)
  13. Select **"AHEAD"**
  14. (PROGRAMMING OPTIONS)
  15. Select **"AHEAD"**
  16. Connect the programming interface of the **"programming"** connector
  17. Set up the programming interface on **"Prog"**
  18. Press **"Reset"** of the programming interface
  19. Connect the PC serial to the programming interface
  20. Click the **"DOWNLOAD ACTIVE FILES"** button
  21. Wait for programming
  22. End of the programming
  23. Press the **"FDT DISCONNECT"** button
  24. Wait to disconnect
  25. Close the **"FLASH DEVELOP TOOLKIT"** program
  26. Set on **"Run"** the programming interface selector
  27. Press **"Reset"** of the programming interface
  28. Programming ended
- d. Disconnect the programmer from connector the ED MAINBOARD.

## 4.3.3. PARAMETERIZATION AND DIAGNOSIS

The detection of broken parts of the booth and the variation of the parameters compared to the ones set by the firm must be done with a special software: "luppiter", given on request by Automatic Systems. The program "luppiter" has been projected to manage the operation logistics, such as the ED mainboard. The program can work just with the presence of its hardware key, in case you do not have it contact the service for technical assistance. The program communicates with the booth through a USB port of the PC via a USB/RS485 convertor.

For its operation the software needs a hardware kit formed by:

- convertor USB/RS485;
- 5819317 luppiter ED cable;
- Hardware key;



Fig. 13 - Software for parameterization icon



Fig. 14 - 5819317 luppiter ED cable



Fig. 15 - USB/RS485 converter

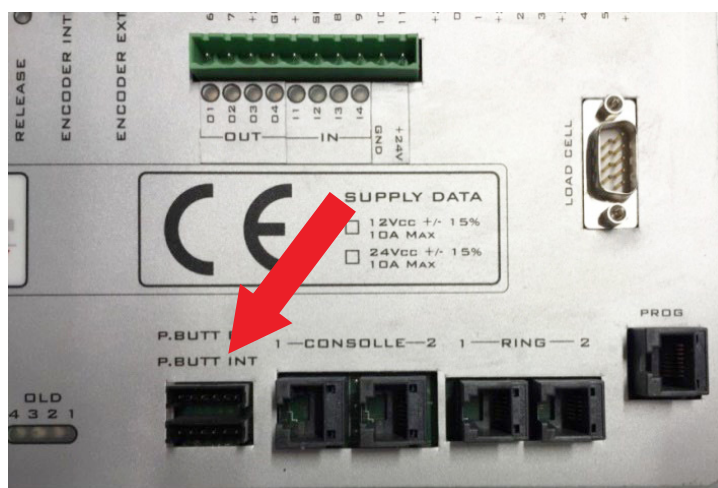


Fig. 16 - Connector for luppiter mainboard parameterization



## 4.3.3.1. IUPPITER

The Iuppiter software allows to regulate the parameters of various mainboards, the screens used for the ED CONTROL UNIT are the following:

- **ED SETUP:** activate and deactivate the various settings, that change according to the accessories connected to the ED MAINBOARD and to the different products where the ED Electronic unit is used.
- **ED I/O:** visualize in real time the status of the inputs and outputs.
- **ACTIVATION:** modify the parameters of the doors movement.
- **WEIGHT/SYNTHESIS:** visualize and modify the parameters for the functioning of the load cells and of the vocal synthesis.

For the functioning and use of Iuppiter refer to the manual, which is automatically installed with the installation package.

## 5. SYSTEM INSTALLING

### 5.1. PRELIMINARY CHECKS

Before installing the booth, it is necessary to check what follows very carefully, in order to avoid possible failures.



Possible imperfections of the holding surface can obstacle the correct mechanical operation of the system.

Verify that the booth can be carried in vertical position up to the defined point.

The booth cannot be reduced in its dimensions but can be put horizontally for a short path and then taken back to its vertical position.



This operation is dangerous and can cause mechanical damages. Therefore, we advise that such operation must be made by equipped and expert personnel. Is necessary to communicate to us when such operation is necessary.

Please inform us when this operation is necessary.

Verify that the ceiling of the installation area is at least 280 cm high. This will ensure enough space to access the top of the booth in order to carry out the assembly and the maintenance operations.

### 5.2. UNPACKING

We recommend to free the booth from the external package only after positioning it. After the unpacking operations, make sure about the integrity of all the components of the booth by checking that there are no visible damaged parts. See if there are any visibly damaged parts. In case of doubts, please contact us.



Packing parts (such as plastic bags, foam polystyrene, nails, screws, wood etc.) must be kept away from children's reach, as they can be extremely dangerous.



Put the above-mentioned materials in the special places for collection.



Once the unpackaging ended, while you wait to assemble the booth, put the material in in a clean and dry place.



Only skilled staff, which has been authorised by us, can carry out the installation and the assembly of the booth. The handbo oks must be followed.

After assembling, the technician, and the customer, will test the booth and fill in the testing form. The customer will sign the form if the test is positive.



The testing and adjustment operation, and commissioning of the booth must be performed only by a professionally qualified technician.

## 5.3. POSITIONING OF THE BOOTH

1. Put the booth in the chosen place, putting the external side towards the outside of the place. For the handling use a crane with minimum flow of 1500 kg, by using chains attached to the four upper edges "A" of the booth (⇒ Fig. 17), the crowbar on the bottom and the rollers under the base (⇒ Fig. 18).

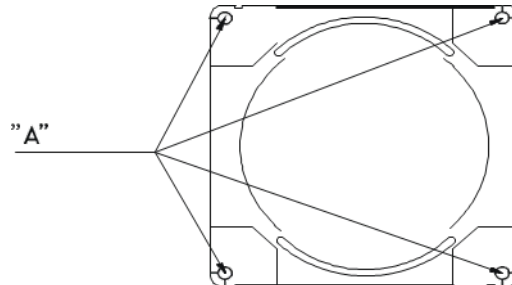


Fig. 17 - Positioning / Handling points

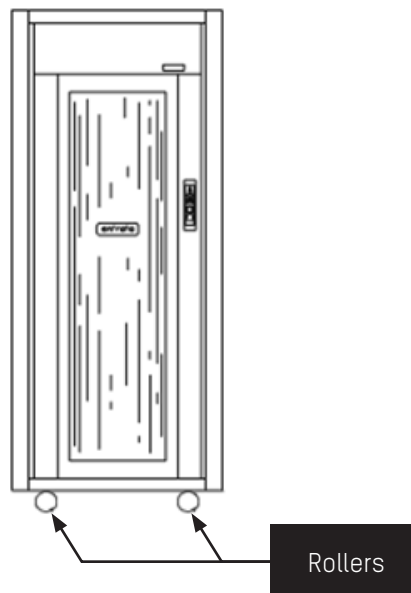


Fig. 18 - Positioning / Rollers

2. Free the booth from the external packaging protection only after the positioning.
3. Stabilize the booth in the ground so that it does not move, by using the parking feet (1-2-3-4) that are situated under the four caps placed on the rubber floor (⇒ Fig. 19). The stability is strictly necessary for a good functioning of the booth.

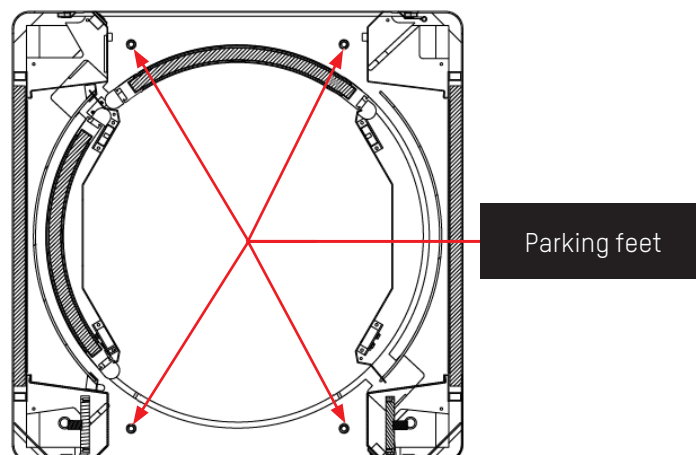


Fig. 19 - Parking feet

## 5.4. APPLICATION OF THE SIDE FRAMES

The procedure of application of the frames is as follows:

1. Put the booth in the prearranged point.
2. Position yourself with the infixing to the anchoring area prechosen on the booth (⇒ Fig. 20).
3. Pierce the fixture and the sheet metal of the booth contemporary with adequate drill and drill bit.
4. Insert some screws of proper dimensions.
5. Tighten the screws securely.

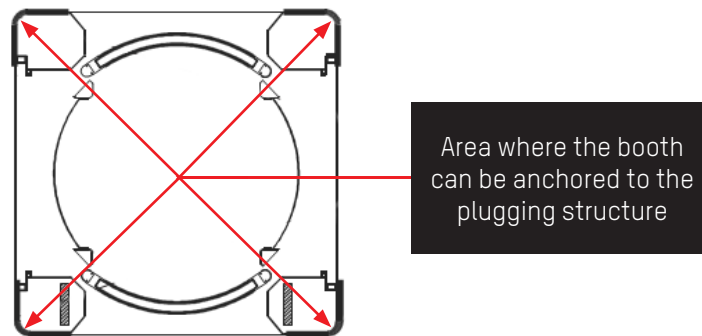


Fig. 20 - Side frames

### EXAMPLES OF INSTALLATION

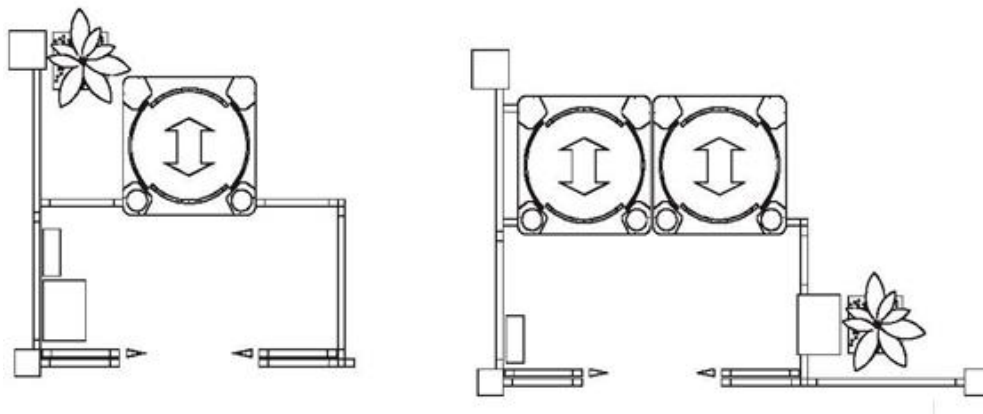


Fig. 21 - Examples

## 5.5. WIRING

Next to the place of housing of the booth, make an electric junction box, supplied by a cable of the main framework of the bank. Connect the booth with a n electric cable 3x2,5 from the clamps to the electric junction box.

We recommend to protect the power supply cable with differential switch 15A Id = 0,03A. Furthermore, verify the presence of a proper grounding implant.

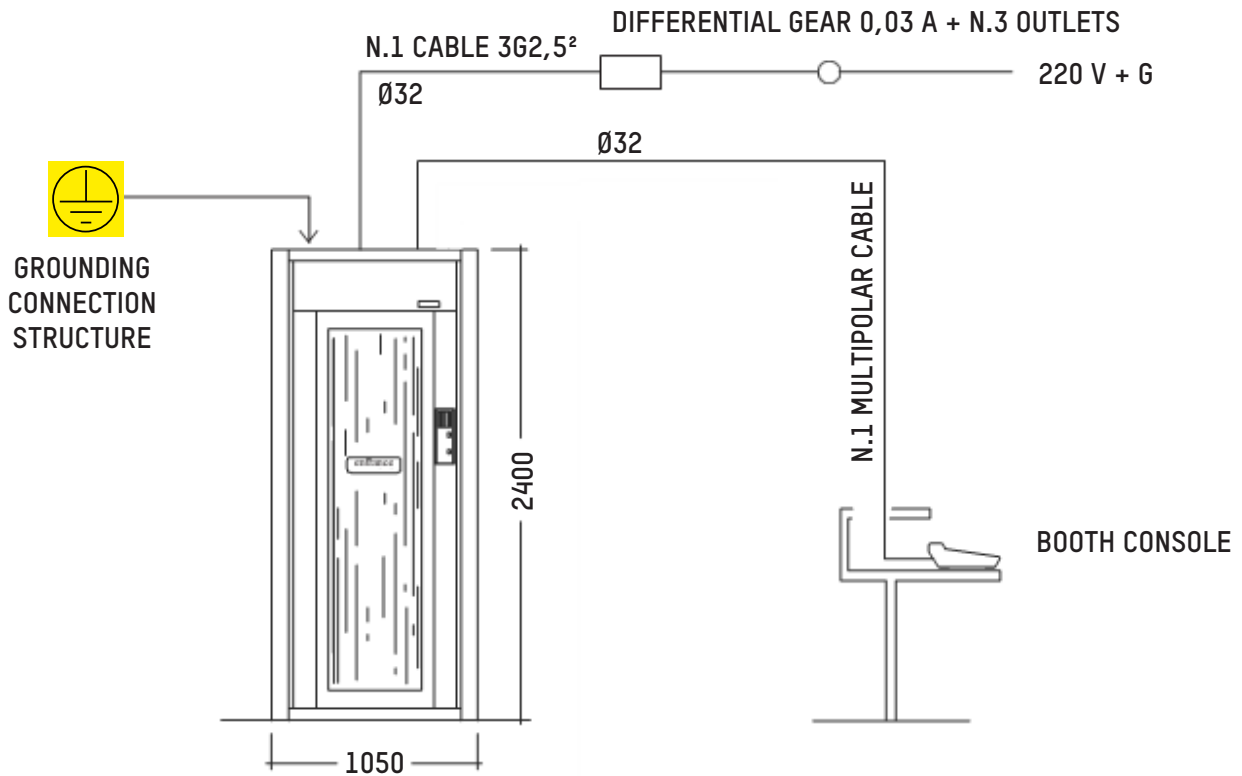


Fig. 22 - Wiring

Serial console: cable AWG CAT.5.4 TORQUES



**We advise to realize a junction box with n°2 sockets and ed integrate the differential in it.**

Prepare a connection shielded cable at 8 poles from the upper part of the booth up to the place where the operator responsible for the console will work, by using a canalization with diameter of 32 mm. Use a different canalization from the one used for the power supply cable.

In case of coupled booths, the power supply from the junction box must be separated. All the booths must be linked together for the connection to the console with a connection cable (code 5804530).

Connect the cable of the console.



**The wiring passage can be made even from the bottom (⇒ Fig. 2 - External side view). In this case, expect the wiring insertion inside the vertical holes of passage on the booth when is put on the ground.**



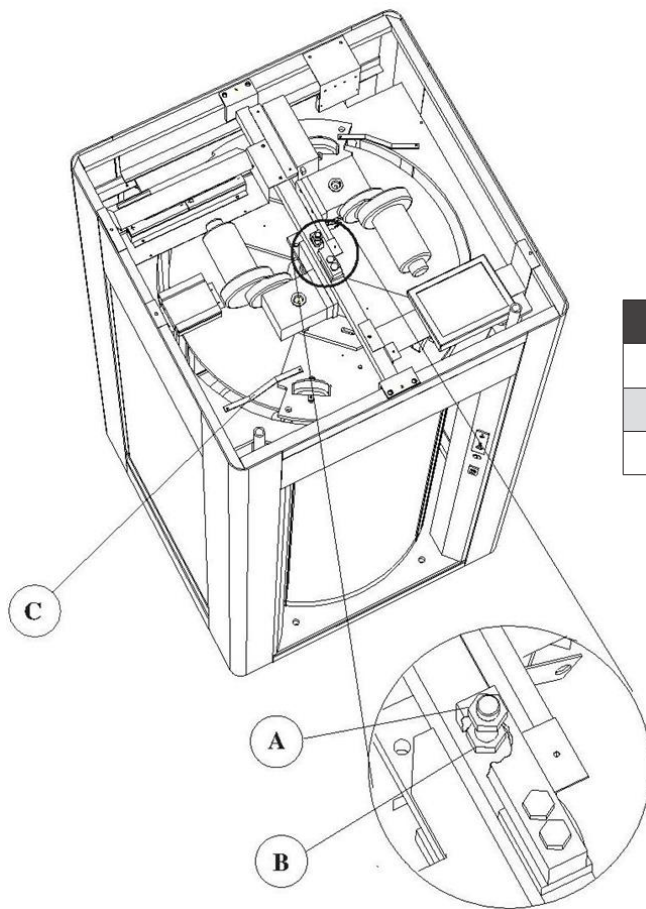


Use a different canalization from the one used for the power supply cable. In the respect of the legislation, is essential the grounding connection.

Arm the main switch of the framework of the bank that supplies the booth through a privileged line. Then arm the main switch of the booth.



Before switching the booth on, take off the door locking stirrup (particular C Fig. 23) and loose the locking nut "weighed basket" (particular B Fig. 23). Such nut needs to be slightly tight by rotating it in anticlockwise sense.



Ref.	Designation
A	Nut height record weighed basket
B	Nut weighed basket locking
C	Stirrup of door locking

Fig. 23 - Locking nuts



Do not remove the nut A from the position where it is located because directly set during the test in the factory.

Switch the booth on through the switching key located on the console and with the one located on the external side of the booth. Allow around 10 seconds to pass during which try to avoid the doors in order not to fake the tare.

Now the booth is ready for the testing procedure (to perform only with authorized personnel) in order to be used.

## 5.6. TESTING

Once the installation finished, please check:

- Operation of command control console.
- Alarm of the metal detector.
- CE release button.
- Photocells operation.
- Verify the movement of the doors.
- Verify the automatic reset.
- Verify luminous alerts.

For settings different from the already set ones, ask Automatic Systems.

## 5.7. DEACTIVATION AND PUT ASIDE

In case of prolonged inactivity of the booth, disconnect the power supply cable. Disconnect the batteries. We recommend to put the product in a dry and protected space and insulate the booth from the floor and the walls.



**We remind that the disassembly of the machinery can be performed exclusively by a qualified and equipped personnel authorized by the producer.**

## 6. INSTRUCTIONS FOR BOOTH (DIS)ASSEMBLING (IF EXPECTED)

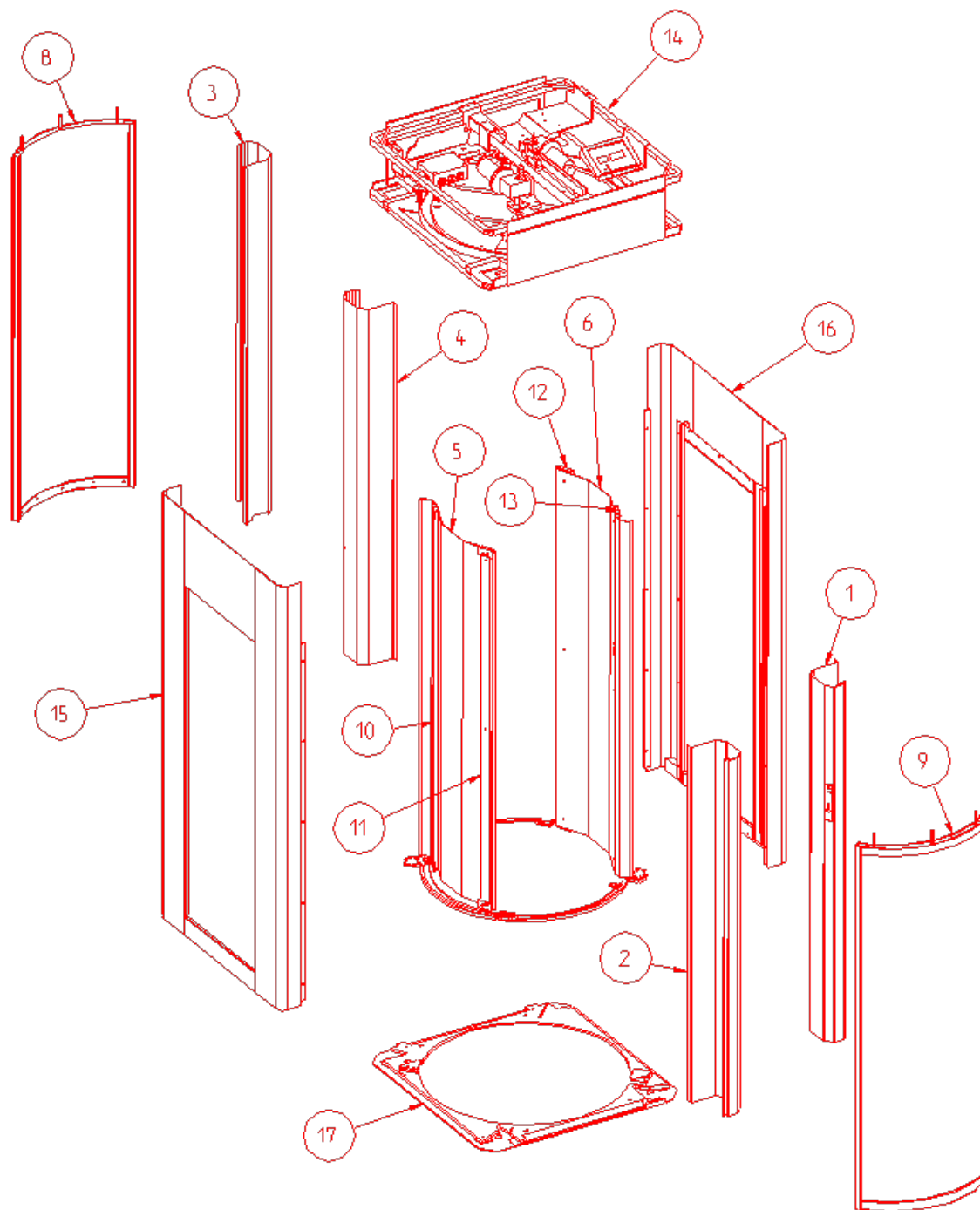


Fig. 24 - Exploded view



All the components to disassemble must be identified to allow reassembling them in the right (same) position.

Disassemble the booth as follows:

1. Disassemble the panels, details 1-2-3-4, (⇒ Fig. 24), by unscrewing the screws frontally placed under the magnetic strip.
2. Disassemble both the internal small walls, details 5 and 6, (⇒ Fig. 24).
3. Remove the 2 sliding upper devices (see detail 7, Fig. 25), by unscrewing the 3 nuts marked with A, the pin of the connected rod marked with B and the screws marked with C, which link the sliding device to the central pin.

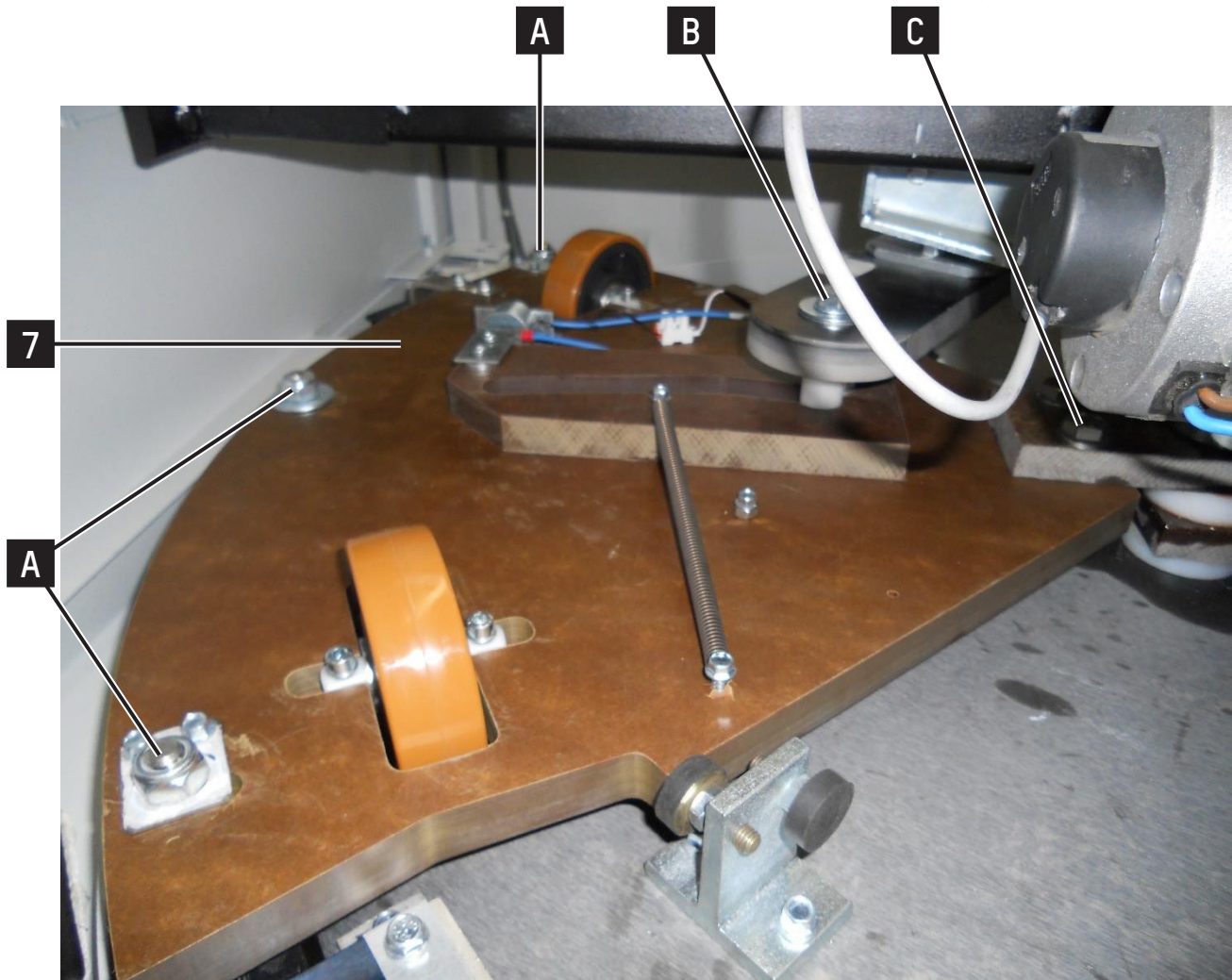


Fig. 25 - (disassembling / Photo 1

# CLEARLOCK 645



4. Remove the doors, details **8** and **9**, (⇒ Fig. 24).
5. Unscrew the piles upper screws of the internal cylinder, details **10-11-12-13**, (⇒ Fig. 24).
6. In case there are no lifting devices/systems it is possible to go on laying the booth on one side.
7. Unscrew all screws marked with **D** of the 4 angles (and pointed out in (⇒ Fig. 26), as well as the 4 ones marked with **F** on the external sides (and pointed out in (⇒ Fig. 27)).

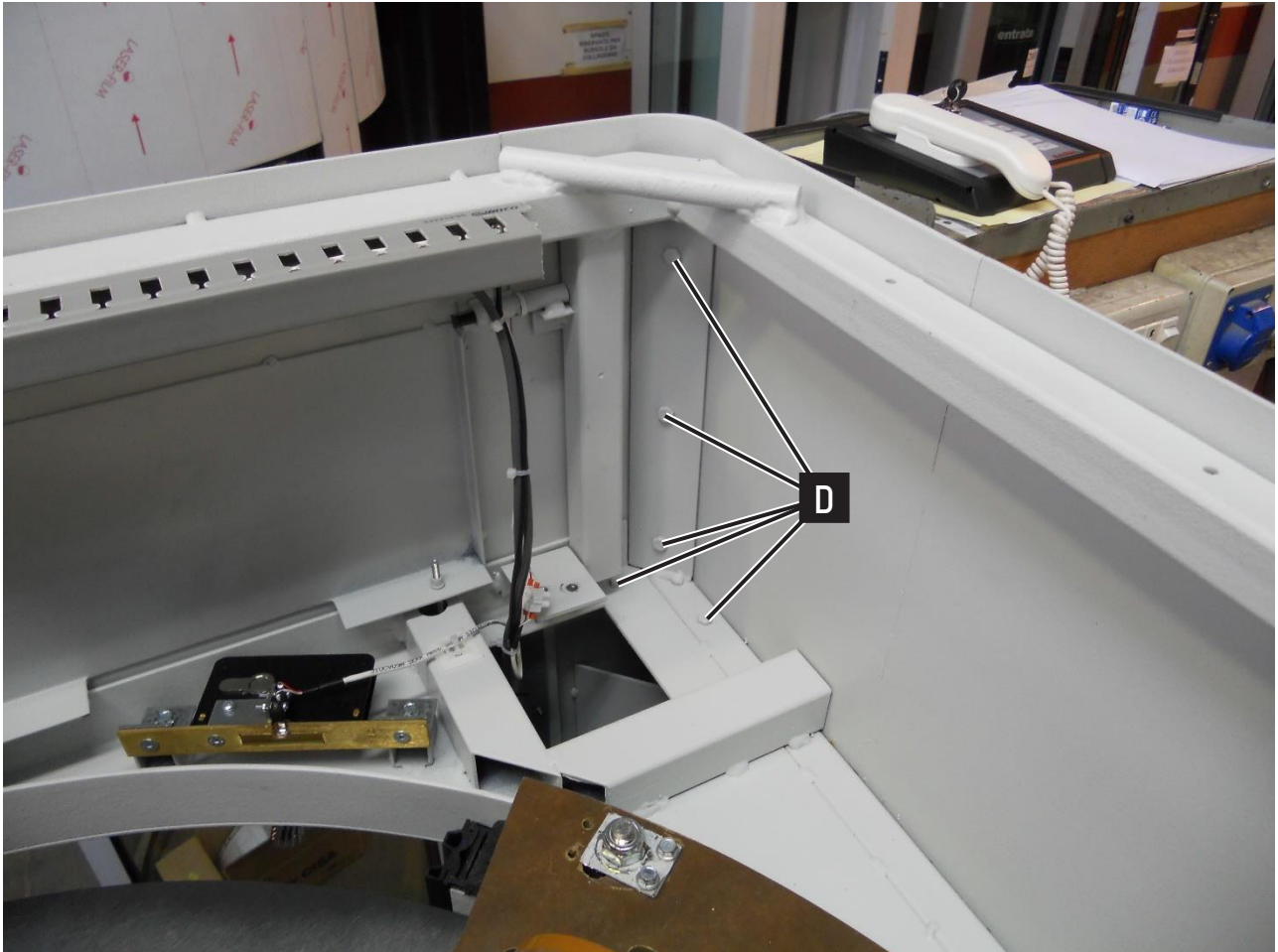


Fig. 26 - (dis)assembling / Photo 2

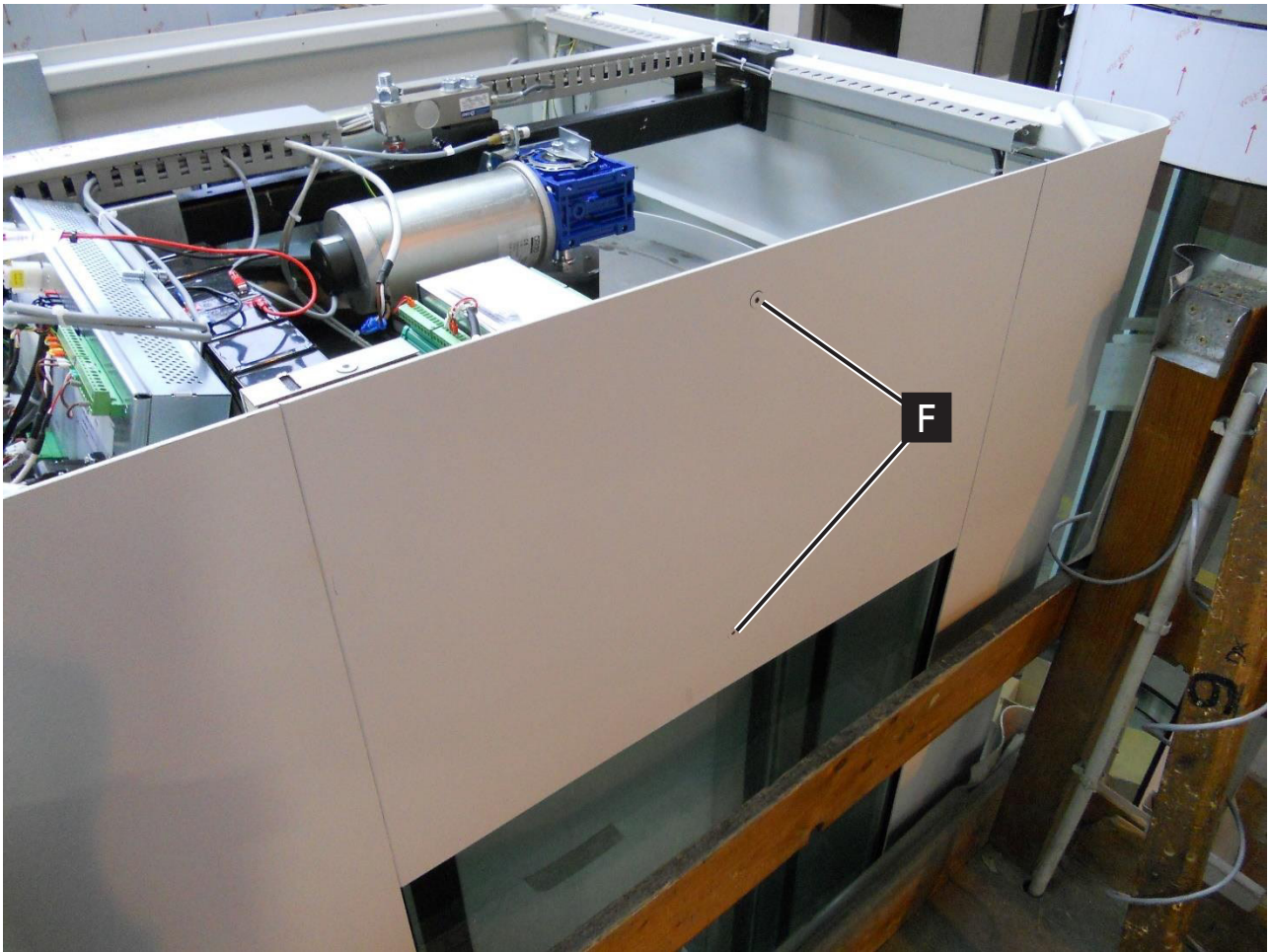


Fig. 27 - (dis)assembling / Photo 3

8. Take the upper frame out, detail **14**, (⇒ Fig. 24).
9. Disassemble the piles of the internal cylinder, details **10-11-12-13**, (⇒ Fig. 24), by unscrewing the lower screws.
10. Disassemble the 2 lateral walls, details **15** and **16**, (⇒ Fig. 24), after having unscrewing the lower screws of the angles, which are marked with **G**, and the lateral ones pointed out with **H** as shown in Fig. 28.  
In case of need, it is possible to disassemble the glass lateral walls, details **15** and **16**, (⇒ Fig. 24), after having removed the 4 glazing beads marked with **L** (and pointed out in Fig. 28).



Fig. 28 - (dis)assembling / Photo 4

The booth can be either reassembled in a horizontal position to be lift again, or it can be reassembled directly in a vertical position.

The horizontal position allows an easier assembling of the upper frame, detail 14, Fig. 24.

For the booth reassembling, please follows the instructions here below:

1. Place the basement, detail 17, Fig. 24.

ATTENTION: if the booth reassembling is made horizontally, one of the 2 sides must lay on the floor.

2. Place and fix the 2 lateral walls, detail 15 and 16, Fig. 24.

3. Put and fix the upper frame, detail 14 Fig. 24.

4. Assemble the glasses again in the lateral walls if they were disassembled, details 15 and 16, Fig. 24.

5. Put the piles in the basement and fix them, details 10-11-12-13, Fig. 24.

6. Place again the doors in their housing and fix them, details 8 and 9, Fig. 24.

7. Reassemble the 2 sliding upper parts, (detail 7 Fig. 25).

8. Reassemble the 2 internal small walls, detail 5 and 6, Fig. 24.

9. Reassemble the panels, details 1-2-3-4, Fig. 24.

## 7. INPUTS AND OUTPUTS

### 7.1. ELECTRONIC CONTROL UNIT

#### INPUTS

CLAMP	ELECTRONIC CONTROL UNIT OUTPUT	IUPPITER PAGE	REFERENCE	DESCRIPTION
1	6	ED IO	MASTER - IN 6	POWER ON (Contact N.O.)
2	7	ED IO	MASTER - IN 7	PERSON SENSOR
3	+24VDC			POWER ON (Common)
4	GND			NOT USED
5	+12VDC			NOT USED
6	SPPH			OPTO-ISOLATORS ATTIVATION
7	8	NOT VISIBLE	MASTER - IN 8	SAFETY OPENING Common GND
8	9	START		EXT UNLOCKED Common GND
9	10	START		INT UNLOCKED Common GND
10	11	NOT VISIBLE		METAL EXCLUSION 1 PASS Common GND
11	+24VDC			24 VDC
12	0	ED IO	MASTER - IN 3	MECHANICAL LOCK (Contact N.O.)
13	1	ED IO		AUXILIARY METAL INPUT ALARM (See even Metal Connector)
14	+24VDC			KEY OF FIRST INPUT (Contact C.)
15	2	ED IO	MASTER - IN 1	KEY OF FIRST INPUT (Contact N.O.)
16	3	ED IO	MASTER - IN 0	INTERNAL RADAR (Contact N.O.)
17	+24VDC			RADAR (Common)
18	4	ED IO	MASTER - IN 4	EXTERNAL RADAR (Contact N.O.)
19	5	ED IO	MASTER - IN 5	MAIL KEY (Contact N.O.)
20	+24VDC			MAIL KEY (Contact C.)

- Connect the clamp 6 to the clamp 5 to activate the inputs
- The inputs from IN 0 to IN 7 are activated with a positive (with a tension that varies from 5 VDC to 24 VDC)
- The inputs from IN 8 to IN 11 are activated with the GND



## OUTPUTS

CLAMP	ELECTRONIC CONTROL UNIT OUTPUT	IUPPITER PAGE	REFERENCE	DESCRIPTION
1	GND			GND
2	8	INVERTER	OUT 3	
3	GND			GND
4	7	INVERTER	OUT 4	
5	GND			GND
6	6	ED IO	MASTER - 0 2	
7	GND			GND
8	5			DAY-NIGHT
9	GND			GND
10	+12VDC			12 VDC
11	GND			GND
12	3	ED IO	MASTER - 0 4	
13	GND			GND
14	+24VDC			24 VDC
15	GND			GND
16	1	ED IO	MASTER - 0 3	

## 7.2. I/O 315 (OPTIONAL)

### INPUTS

FUNCTION	DESCRIPTION	N° IN BOARD I/O
04	EMERGENCY (CONTACT NC)	0
12	TRANSIT BLOCK TO ENTRY	1
13	TRANSIT BLOCK TO EXIT	2

### OUTPUTS

FUNCTION	DESCRIPTION	N° RELAY BOARD I/O
00	ENTRANCE VALIDATION	1
01	EXIT VALIDATION	2
08	OVERWEIGHT IN ENTRANCE	3
09	OVERWEIGHT IN EXIT	4
02	EMERGENCY	5

## 8. SOFTWARE OF WEIGHT MANAGING, SYNTHESIS AND DIAGNOSIS: IUPPITER

For the management of weight, Synthesis and Diagnosis it is used the Iuppiter software. Here below are indicated the pages and the standard functional settings that Automatic Systems considers important for the correct functioning of the machine, the other pages are used for other products. The values not reported in the following parameters used for the machine do not need to be modified.

In any case after the installation the correct functioning and the doors movement must be verified and, if necessary, the parametrization must be refined.

### 8.1. PARAMETRIZATION

#### 8.1.1. INVERTER PAGE

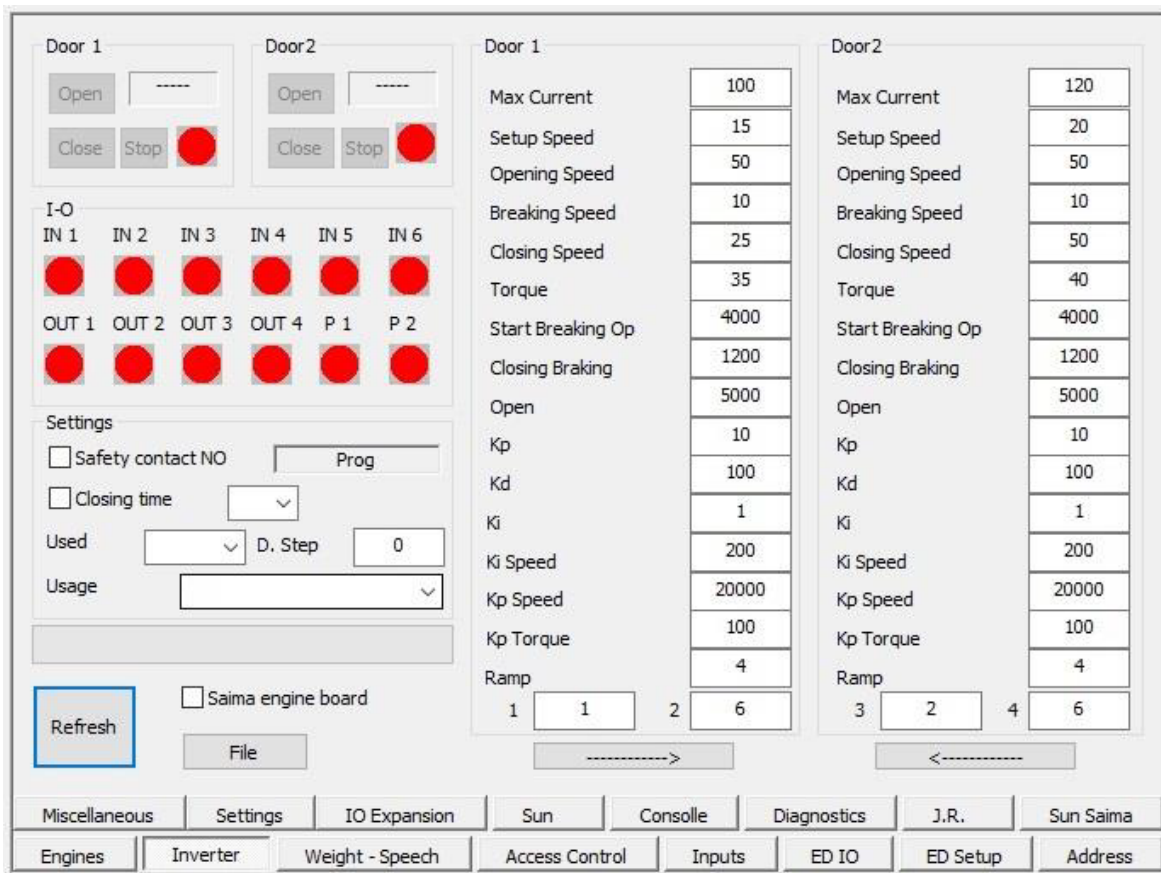


Fig. 29 - Iuppiter - Inverter page



**THE VALUES SHOWN ARE PURELY INDICATIVE AND MAYBE SIGNIFICANTLY DIFFERENT.**

In this product the Inverter cannot be used as a “stand alone” board, because it is not possible to be directly connected to it, due to the fact that the connection is made with the Master board situated inside the Electronic control unit. For this reason, the Flag “Inverter board” must not be selected, because all the commands between the PC and Inverter are made by the Master. The “Door 1” and “Door 2” control groups are not enabled, to move the doors the commands must be sent to the “Master” board through the console on the left of Iuppiter and so this last one will manage the doors movement.

Connect on one of the two connectors “plug 8 poles” and wait for few seconds. Once connected, the computer downloads the inverter parameters and makes the controls of the page full; wait to modify the parameters until the “progress bar” above the “Update” button is not completed.

The "I-0" box shows the inputs and outputs status of the inverter board. Through the "Baud Rate" check it is possible to set the baud rate of the switching on inverter, but the automatic search stays active: if the communication does not work, the inverter tries continuously to change the baud rate until it does not find an active connection. The "Usage" check allows to select the device that the inverter must manage.



**FOR THIS SPECIFIC PRODUCT THE VALUE OF THE "USAGE" MUST STAY SET AT "1".**

## PARAMETERS

**Maximum torque:** This is the check in current. The higher this value is, the less sensitive the check in current is. The possible settings go from 0 (maximum sensitivity) to 255 (the check is almost deactivated).

**Setup speed:** it is the speed used by the board during the initialization phase, both in opening and in closing.

**Opening speed:** it is the speed used by the board during the opening phase.

**Braking speed:** it is the speed used by the board during the braking, both in opening and closing.

**Closing speed:** it is the speed used by the board during the closing phase.

**Torque:** it is the force with which the inverter moves the mechanics.

**Start of opening brake:** it is the position, express in encoder steps, in which the inverter, during the opening phase, goes from "Opening Speed" to the "Braking Speed". If, for instance, the "Opening" parameter is set as 6000 and this parameter at 4500, the inverter does the first 4500 steps at opening speed, then starts the braking doing the last 1500 steps at braking speed.

**Closing braking:** it is the position expressed in encoder steps, in which the inverter, during the closing phase, goes from "Closing Speed" to "Braking Speed". If, for instance, the "Opening" parameter is set at 6000 and this parameter at 1500, the inverter does the last 1500 steps at the braking speed.

**Kp, Kd, Ki, Ki Vel, Kp Vel e Kp Torque:** those parameters can vary according to the type of mechanics used (booth, pass, etc...), they are set in the factory and they cannot be modified without a declared authorisation by Automatic Systems.

**Ramp:** it expresses the speed with which the inverter goes faster and slower. A value next to the zero creates a kind movement, a high value makes the movement so sharp. Attention, in case of a booth with metal detector you must prefer a very low value, so that you do not risk false alarms during the doors' movement. If this parameter is set on a high value, even the "Maximum Torque" value must be put up, because a sharp ramp causes higher absorptions.

### **Parameters that can vary according to the used movements:**

**1, 3:** this parameter, defines the strength with which the inverter pushes on the line all those devices that at the closure, added to the closed-door reference, force on the mechanical end stop before considering the closing movement ended.

**2, 4:** These parameters do not have a generic meaning, they will be used with different meanings according to the machine on which the inverter is used. For their meaning refer to the machine specifications.

## 8.1.2. ED SETUP PAGE - INVERTER

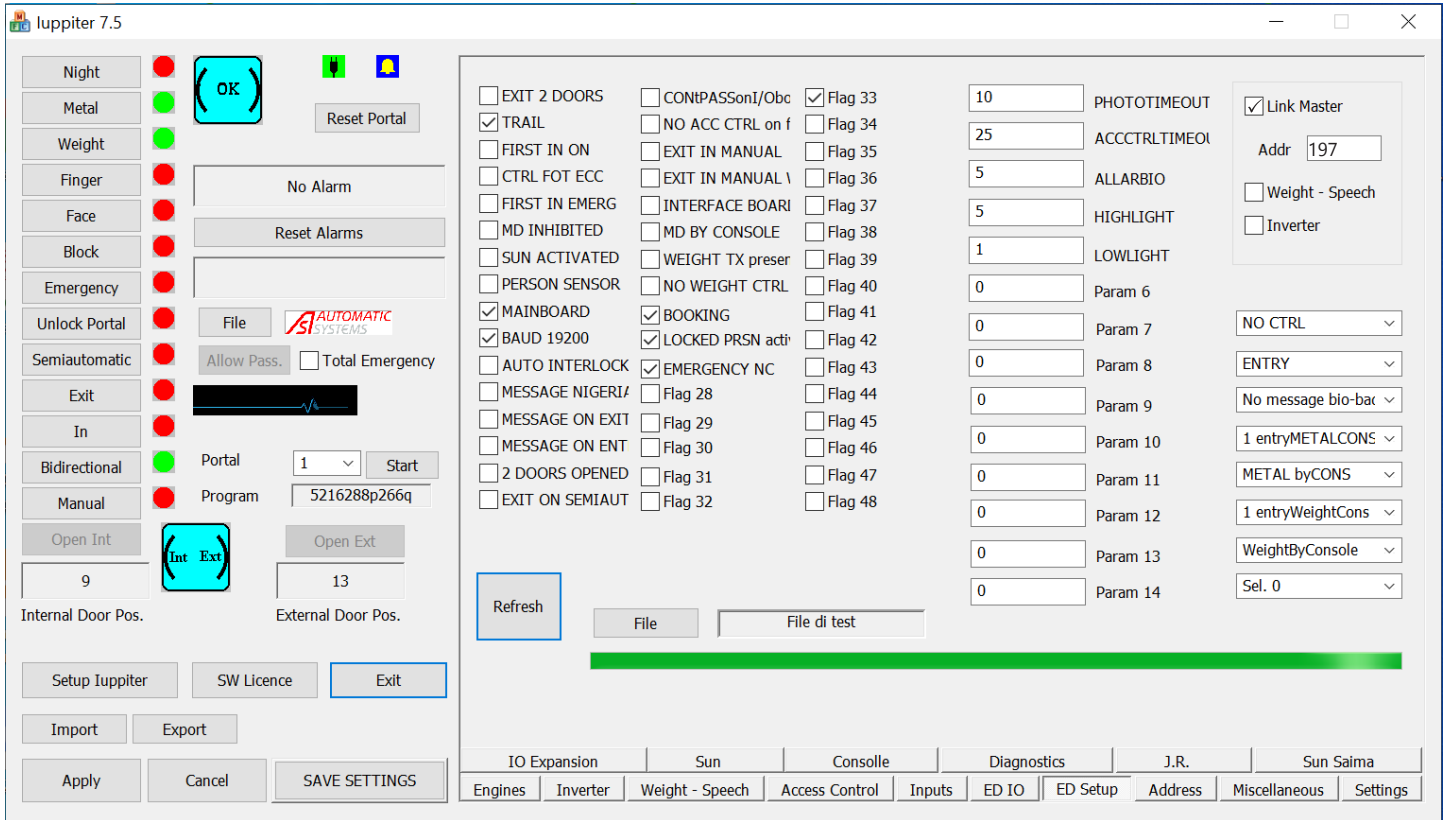


Fig. 30 - Iuppiter - ED Setup page / Inverter



**THE VALUES SHOWN ARE PURELY INDICATIVE AND MAYBE SIGNIFICANTLY DIFFERENT.**



**TO SET THE ED SETUP PAGE – INVERTER, SELECT "LINK MASTER" IN THE BOX AT THE TOP RIGHT AND SELECT ADDRESS "197".**

### FLAGS

- **FLAG 1 - EXTERNAL DOOR N.C.:** by selecting this flag the program manages the external door piston with N.C. logic; if the flag is not selected the program manages the external door piston with N.O.
- **FLAG 2 – INTERNAL DOOR N.C.:** by selecting this flag the program manages the internal door piston with N.C. logic; if the flag is not selected the program manages the external door piston with N.O.

### 1° SELECTION FIELD – TYPE OF BLOCK OF THE EXTERNAL DOOR

- SEL 0 - MOBILE GUIDE: the external door is locked by a mobile guide
- SEL 1 - BRAKE: the external door is locked with a brake
- SEL 2 - PISTON: the external door is locked by a piston

### 2° SELECTION FIELD – TYPE OF BLOCK OF THE INTERNAL DOOR

- SEL 0 - MOBILE GUIDE: the internal door is locked by a mobile guide
- SEL 1 - BRAKE: the internal door is locked with a brake
- SEL 2 - PISTON: the internal door is locked by a piston

## 8.1.3. ED SETUP PAGE - MASTER

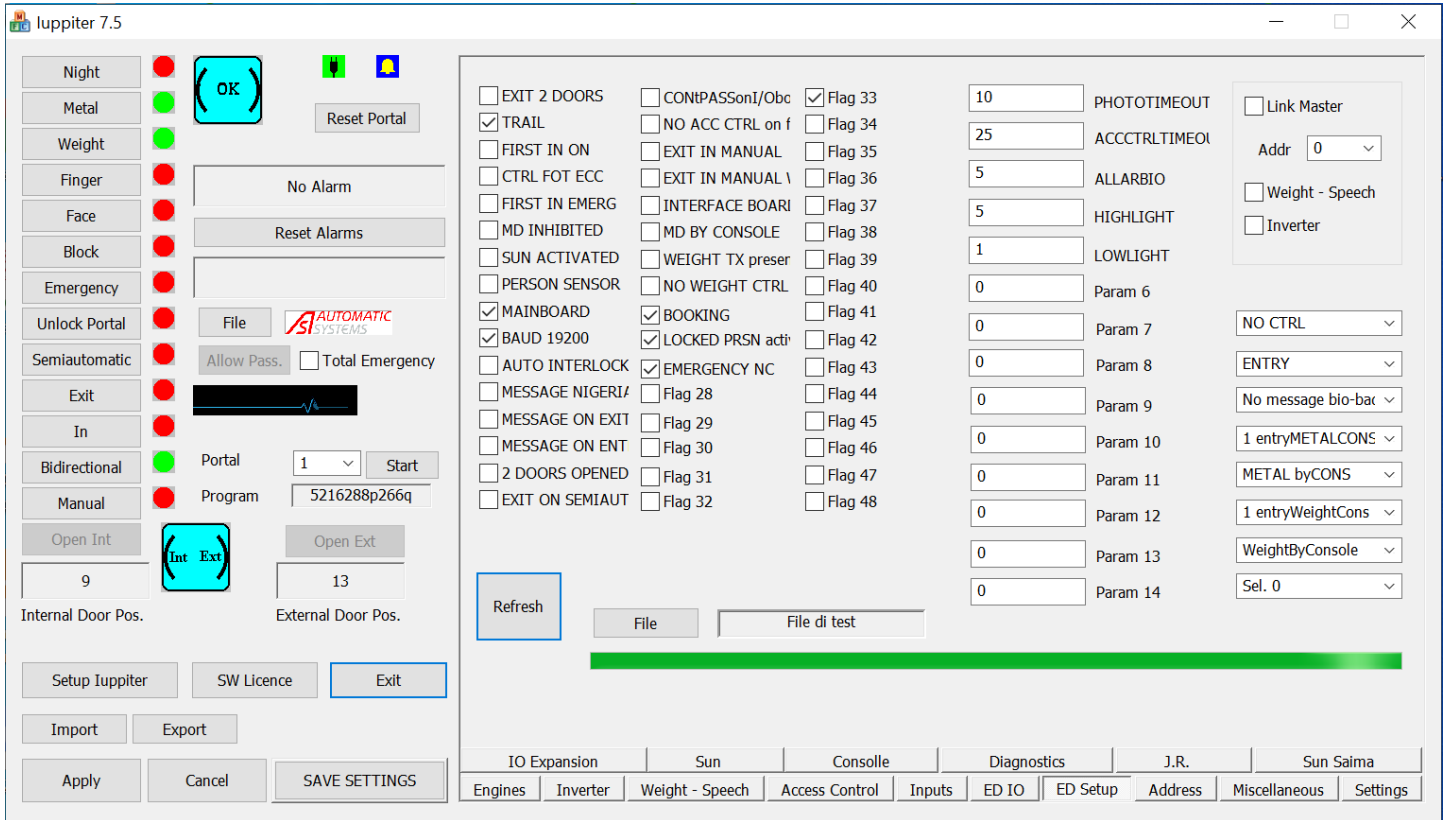


Fig. 31 - Iuppiter - ED Setup page / Master



**THE VALUES SHOWN ARE PURELY INDICATIVE AND MAYBE SIGNIFICANTLY DIFFERENT.**

### FLAGS

- **FLAG 1 - TWO DOORS EXIT:** by selecting this Flag, in Night, with the pressure of the internal button, the booth does not start a transit in exit during interlock regime, but opens both doors in Emergency.
- **FLAG 2 - SCIA:** By selecting this Flag, if at the end of a transit the person remains in the booth, the doors close again and a new transit in the opposite direction is started.
- **FLAG 3 - FIRST ENTRANCE WITH THE BOOTH SWITCHED ON:** by selecting this Flag, the booth allows the first entrance even in Day
- **FLAG 4 - EXCESSIVE PHOTOCELLS CONTROL:** by selecting this Flag, the control of the of entrance coherence inside the booth through accident prevention photocells is activated. A time-out is available for passing through the photocells, if a major time of that set through PARAM 1 is used, the booth creates an alarm equivalent to the excessive weight.
- **FLAG 5 - FIRST ENTRANCE IN EMERGENCY:** by selecting this Flag, in Night, turning the mechanical key, the booth does not start a transit in entrance during interlock regime, but opens both doors in Emergency.
- **FLAG 6 - M.D INHIBITION:** by selecting this Flag, the Metal Detector is deactivated with booth in quiet and then, in case of a transit request, first M.D. is activated, then the door is opened.
- **FLAG 7 - SUN ACTIVE:** Select this flag when the booth uses the SUN board to detect possible objects after a metal alarm
- **FLAG 8 - PERSON SENSOR:** by selecting this Flag, the booth considers the reporting of a person inside the booth coming from the sensor (contact) and not from the weighed base
- **FLAG 9 - ELECTRONIC UNIT:** Select this flag in presence of the ELECTRONIC UNIT
- **FLAG 10 - BAUD 19200:** by selecting this Flag, the Baud Rate is set at 19200 on the internal ring



- **FLAG 11 - AUTOMATIC INTERLOCK** (reserved)
- **FLAG 12 - SYNTHESIS DURING THE TRANSIT** (reserved)
- **FLAG 13 - SYNTHESIS IN EXIT:** by selecting this Flag, during the transit in exit, the message "Goodbye" is activated
- **FLAG 14 - SYNTHESIS IN ENTRANCE:** by selecting this Flag, during the transit in entrance, the message "Welcome" is activated
- **FLAG 15 - CONTEMPORARY OPENING OF THE TWO DOORS:** By selecting this Flag, in Emergency, the two doors open at the same time
- **FLAG 16 - EXIT IN SEMIAUTOMATIC:** by selecting this Flag, the transit in exit happens in semiautomatic function (with the same modalities of the semiautomatic transit in entrance)
- **FLAG 17 - CONTINUE TRANSIT STARTED FROM I/O 315:** by selecting this Flag, the booth lets the person closed inside the booth carry on the transit started from the contacts of the I/O 315 "Open internal in Manual" or "Open external in Manual"
- **FLAG 18 - NO BIO FIRST ENTRANCE:** by selecting this Flag, the booth does not make the biometric control during the first entrance
- **FLAG 19 - EXIT IN MANUAL:** by selecting Flag, in Manual, the booth allows the transit in exit
- **FLAG 20 - EXIT IN MANUAL NO FIRST ENTRANCE** – If activated, in Manual, the exit is allowed and the first entrance is not allowed. If the booth is in Night, the first entrance works independently from this Flag
- **FLAG 21 - INTERFACE BOARD:** Select this flag in presence of INTERFACE BOARD
- **FLAG 22 - METAL FROM CONSOLE:** by selecting this Flag, is possible to vary the parameters of the Metal Detector, if present, by using the console
- **FLAG 23 - TX WEIGHT PRESENT:** select this flag in presence of "TX WEIGHT" board.
- **FLAG 24 - NO WEIGHT CONTROL IN EXIT:** by selecting this Flag, the booth does not perform the weight control during transit in exit, even if the control is selected from the console
- **FLAG 25 - BOOKING:** by selecting this Flag, if during a transit another one is requested, the request is memorized and, at the end of the first transit, a second one starts immediately
- **FLAG 26 - PERSON BLOCKED ACTIVE:** by selecting this Flag, if the booth detects a person's presence with closed doors, or opens the opposite door to the last opened (if the SCIA Flag is selected and with the booth in two-way operation) or opens the last opened door (if the SCIA flag is not selected with booth in one-way operation).
- **FLAG 27 - EMERGENCY N.C.:** by selecting this Flag, the emergency of I / O 315 will act with logic N.C. instead of the N.O.
- **FLAG 28 - BLOCK ON ALARM EXCESSIVE WEIGHT AND TIMER MAXIMUM TIME OF TRANSIT START:** by selecting this Flag in case of excessive weight alarm, the booth does not allow to finish the transit even if the weight becomes regular at a later time. Furthermore, at the beginning of a transit with a badge, a time delay of "Param 2" in seconds on the "Ed Setup" page starts. If at the end of the time delay the first door still has not closed, the transit stops and the overweight alarm is activated. The alarm ends with doors closed with no people inside. This is because transit validation is accepted by access controls only within a defined time.
- **FLAG 29 - DYNAMIC WEIGHT EXCLUSION WITH BADGE:** if active during transits that start with badges, the dynamic weight will be excluded but the excessive weight threshold value will always be checked. So if the compass has the active dynamic weight and the excess weight threshold is set at 180 kg, during a transit started with the badges, a dynamic weight alarm will not be considered but an alarm will be generated if the compass weight is higher at 180 kg. The badges must be connected on the inputs of the radars in a mainboard.
- **FLAG 30 - INTERCOM ON THE INTERNAL ENTRANCE PANEL:** if active, it allows the internal entrance push-button to be used as an intercom instead of the external one. It will therefore be sufficient to invert the two push-button panels and activate this flag to use the intercom on the internal door and no longer on the external one.

## PARAMETERS

- **PARAM 1 – PHOTOCELLS TIME:** maximum time available to go through the accident prevention photocells during the entrance inside the booth; this time is expressed in hundreds of milliseconds (10 = 1 second). To activate this control, the FLAG 4 must be selected.
- **PARAM 2 – TIMEOUT BIO:** time (in seconds) that passes between the closure of a person inside the booth during a un biometric control and the opening of the last opened door in case the biometric system has not given an answer (user not recognized).
- **PARAM 3 – ALARM BIO:** time (in seconds) that passes between the closure of a person inside the booth during a biometric control and the activation of the buzzer in Console.
- **PARAM 4 – HIGH LIGHT:** value of the maximum intensity of the spotlights.  
This parameter determines how long the turnstile must be in the area of the emergency button before it is activated; the time is expressed in seconds and the default value is 10.
- **PARAM 5 – LOW LIGHT:** value of the lowest intensity of the spotlights.

## 1° SELECTION FIELD – TYPE OF ACCESS CONTROL

- SEL 0 - NO CONTROL: no type of access control
- SEL 1 - BIODIGIT: biometric access control with the Biodigit system (fingerprint)
- SEL 2 - VIDEODIGIT: biometric access control with the Videodigit system (face)
- SEL 3 - BIVIDEO: biometric access control with the Bivideo system S (fingerprint and face)
- SEL 4 - CONTACTS: access control with system, not necessarily Automatic Systems, at contacts.

## 2° SELECTION FIELD – DIRECTION OF ACCESS CONTROL

- SEL 0 - ENTRANCE: access control in entrance only
- SEL 1 - EXIT: access control in exit only
- SEL 2 - BIDIRECTIONAL: access control both in entrance and exit

## 3° SELECTION FIELD – TYPE OF THE ACCESS CONTROL SYNTHESIS

- SEL 0 - NO SYNTHESIS BIO / BADGE: no type of synthesis for the access control
- SEL 1 - BADGE SYNTHESIS: specific synthesis for the access control at contacts
- SEL 2 - BIO SYNTHESIS: specific synthesis for the biometric access control with fingerprint / face

## 4° SELECTION FIELD -METAL CONTROL FIRST ENTRANCE

- SEL 0 - METAL CONTROL FIRST ENTRANCE FROM CONSOLE: control can be activated from Console
- SEL 1 – NEVER METAL CONTROL FIRST ENTRANCE: control never active
- SEL 2 – ALWAYS METAL CONTROL FIRST ENTRANCE: control always active

## 5° SELECTION FIELD – METAL CONTROL

- SEL 0 - METAL CONTROL FROM CONSOLE: control can be activated from Console
- SEL 1 – NEVER METAL CONTROL: control never active
- SEL 2 – ALWAYS METAL CONTROL: control always active

## 6° SELECTION FIELD – WEIGHT CONTROL FIRST ENTRANCE

- SEL 0 - WEIGHT CONTROL FIRST ENTRANCE FROM CONSOLE: control can be activated from Console
- SEL 1 – NEVER WEIGHT CONTROL FIRST ENTRANCE: control never active
- SEL 2 – ALWAYS WEIGHT CONTROL FIRST ENTRANCE: control always active

## 7° SELECTION FILED – WEIGHT CONTROL

- SEL 0 - WEIGHT CONTROL FROM CONSOLE: control can be activated from the Console
- SEL 1 – NEVER WEIGHT CONTROL: control never active
- SEL 2 – ALWAYS WEIGHT CONTROL: control always active

## 8.1.4. WEIGHT PAGE - SYNTHESIS: ED ELECTRONIC UNIT

Fig. 32 - Iuppiter - Weight page



**THE VALUES SHOWN ARE PURELY INDICATIVE AND MAYBE SIGNIFICANTLY DIFFERENT.**



**IN THE SECTION THRESHOLDS ARE REPORTED THE STANDARD VALUES, DO NOT MODIFY IF NOT AUTHORISED.**



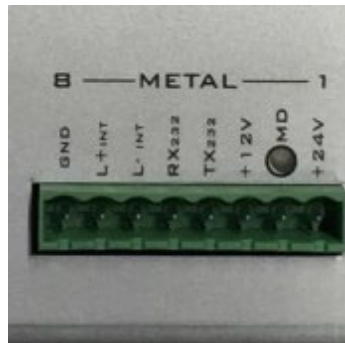
# CLEARLOCK 645



## 8.1.4.1. WEIGHT PROCEDURE

1. Select the tab "Weight - Synthesis"
2. Verify that the platform is empty
3. Press **CALCULATE TARE**, press **APPLY** and **SAVE SETTINGS**
4. Insert a known weight higher than the **PERSON WEIGHT** above the platform
5. Put the weight within the field **SAMPLE WEIGHT (in KG)**
6. Press **CALCULATE GAIN**
7. As the result has stabilized, press **APPLY** and **SAVE SETTINGS**
8. Verify that in the **WEIGHT INTO THE PORTAL** field the real weight of the object in the footboard is present.
9. Take the object off the platform and verify that it is around the 0 (tolerance of + 4KG).

## 8.1.4.2. REGISTRATION SYNTHESIS PROCEDURE



1. Connect with a PC audio output to a metal connector on the pin:
  - RX232
  - TX232
2. In the section **RECORD** press the button +.
3. Select the file to upload within the mainboard, inserting first the file in the 0 position.
4. Press **OK** and wait for few seconds that the system finishes the registration.
5. Listen again to the messages through the Vocal synthesis panel.

## 8.2. DIAGNOSIS

### 8.2.1. EXPANSION I/O 315 PAGE (OPTIONAL)

The screenshot displays the 'I/O 315' page in the Iuppiter 7.5 software. On the left, a vertical sidebar contains status indicators for various system components: Night (red), Metal (green), Weight (green), Finger (red), Face (red), Block (red), Emergency (red), Unlock Portal (red), Semiautomatic (red), Exit (red), In (red), Bidirectional (green), Manual (red), and Open Int (red). Below these are buttons for 'Reset Portal', 'No Alarm', 'Reset Alarms', 'File', 'Allow Pass.', 'Total Emergency', 'Portal' (dropdown: 1), 'Start', 'Program' (text: 5216288p266q), 'Open Int' (dropdown: Int Ext), 'Open Ext', 'Internal Door Pos.' (text: 9), and 'External Door Pos.' (text: 13). At the bottom left are buttons for 'Setup Iuppiter', 'SW Licence', 'Exit', 'Import', 'Export', 'Apply', 'Cancel', and 'SAVE SETTINGS'. The main area is divided into 'Input' and 'Output' sections. The 'Input' section lists Clamps 10-3 and INGs 0-7, each with a dropdown menu and a status indicator (ON/OFF). The 'Output' section lists Clamps 38-39-40 to 17-18-19 and various output functions (OUT 1-23) with dropdown menus and status indicators (OFF). A 'Refresh' button is located below the tables. At the bottom, there are navigation tabs for 'IO Expansion', 'Sun', 'Consolle', 'Diagnostics', 'J.R.', and 'Sun Saima'. The 'IO Expansion' tab is currently selected, showing sub-tabs for 'Engines', 'Inverter', 'Weight - Speech', 'Access Control', 'Inputs', 'ED IO', 'ED Setup', 'Address', 'Miscellaneous', and 'Settings'.

Fig. 33 - Iuppiter - I/O 315 page



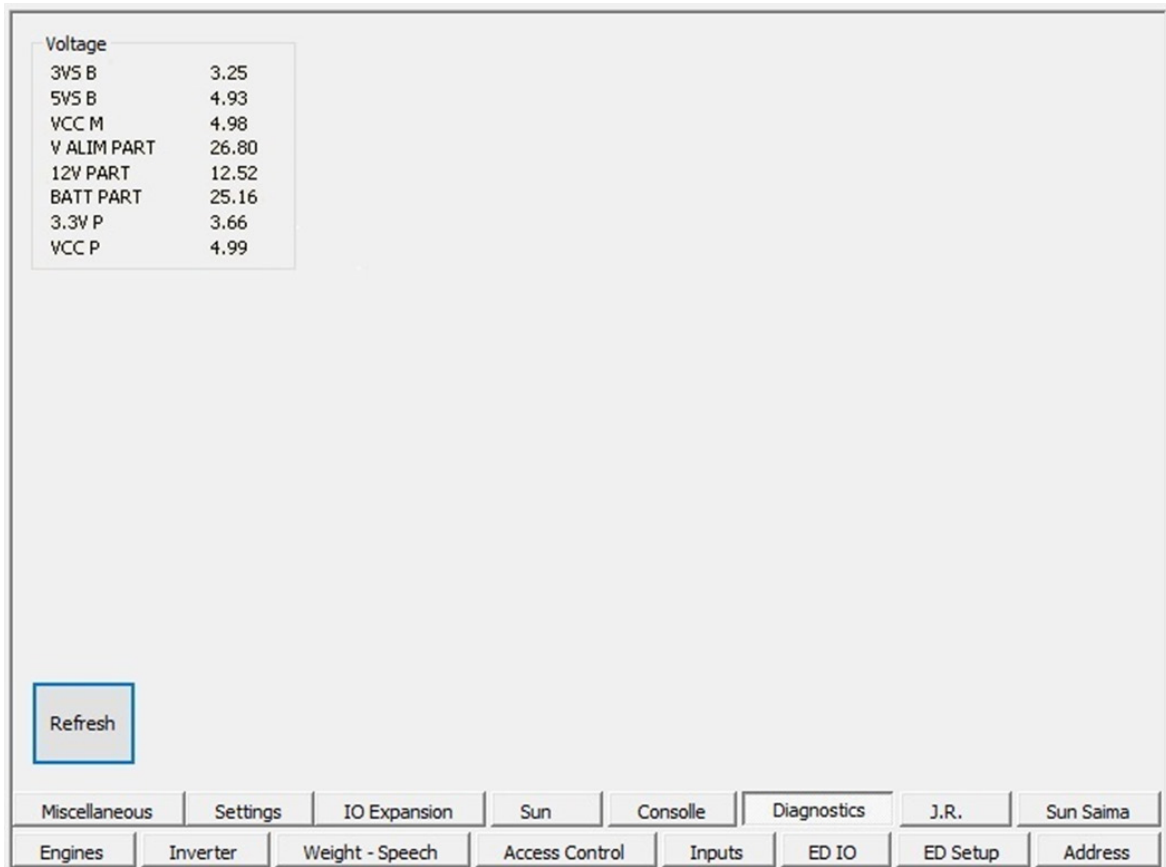
**THE VALUES SHOWN ARE PURELY INDICATIVE AND MAYBE SIGNIFICANTLY DIFFERENT.**

This page represents real-time feedback on the operation of the product based on the equipment set-up and the operating mode selected for the product.



**FOR THE MEANINGS OF THE LED OF THIS PAGE, SEE INPUTS AND OUTPUTS.**

## 8.2.2. DIAGNOSTICS PAGE



The screenshot displays the 'Diagnostics' page of the Iuppiter system. It features a table of voltage readings and a navigation menu at the bottom.

Voltage	
3V5 B	3.25
5V5 B	4.93
VCC M	4.98
V ALIM PART	26.80
12V PART	12.52
BATT PART	25.16
3.3V P	3.66
VCC P	4.99

Below the table is a 'Refresh' button. At the bottom, there is a navigation menu with the following tabs: Miscellaneous, Settings, IO Expansion, Sun, Console, Diagnostics (selected), J.R., Sun Saima, Engines, Inverter, Weight - Speech, Access Control, Inputs, ED IO, ED Setup, and Address.

Fig. 34 - Iuppiter - Diagnostics page



**THE VALUES REPORTED ON THIS PAGE, STAND FOR THE VARIOUS TENSIONS PRESENT WITHIN THE MAINBOARD, THEY CAN VARY OF A  $\pm 10\%$ .**

## 9. SOURCES OF DISORDER OF METAL DETECTOR (OPTIONAL)

The metal detector is a sensitive device to the parasitic electromagnetic disturbs, in order to get the best performances, especially at high sensitivity levels, is necessary to perform some precautions in the structures where it is inserted.

The sources of disturbance can be of two kinds:

- mechanical
- electrical

### 9.1. DISORDERS OF MECHANICAL ENTITY

The metal detector includes a generator of electromagnetic field able to induce, in the recipient section, an electromotive strength that, if modified by metallic objects in transit, determines the intervention of the appliance. The flow of the magnetic field covers, somehow, even the space surrounding the sensor. Possible metallic neighbouring structures can therefore cause field absorptions that can be caused by:

- a. Movement of important metallic bodies or particularly closed to the antennas.
- b. Fixed metallic structures put next to the metal detector can be substituted by panels made of Formica, Bakelite, polycarbonate or other kind of insulating materials.
- c. Doors: if they are made out of metal, they must be separated for at least 60 cm. The coil made of metallic profiles of the door must be isolated. If the doors are made out of insulating material (blindovis with wood, etc...) the precautions showed above are not necessary.
- d. Presence of electromagnetic coils made of parts of the frame (metallic frames, glazed doors, slats for metal ceilings, etc...) that, due to movements or vibrations, do not have a stable nature. If the coils are subjected to movement, they must withdraw from the antennas or taken off by insulation. In case the coils are fixed, because are made by structures and profiles that surround the metal detector, they must be insulated through a special cut or made electrically stable through rivets or electric connections of bypass (in case of painting, take off the layer of paint on the contact surfaces of the screws and use serrated washers).

### 9.2. DISORDERS OF ELECTRICAL ENTITY

They can be attributed to the proximity of the antennas to power cables (electromagnetic field generated by alternated currents) or sources of impulsive electromagnetic disturbs (electric engines with strong starting absorption and correspondent power supply cables, fluorescent lamps, generators of emergency, teleprinters, air conditioners, contactors, etc...)

- a. The power cables must be removed of at least 20 cm from the columns, in particular from the receiving one (the distance goes according to the intensity of current) and twisted with passage not over 2,5 cm (in case this is impossible, insert in a shielding pipe, made out of iron of at least 2 mm of thickness).
- b. The impulsive sources must be kept away, taken off or shielded.
  - b1. **Fluorescent lamps:** the lamps and the correspondent reactors must be kept away from the metal detector and, in particular, from the correspondent receiving column. Where applicable, replace the fluorescent lamps with filament ones.
  - b2. **Electro-door lock:** if positioned next to the columns of the metal detector, we advise to use a type equipped of shielding. It is better the use of motorized door locks, that have a minor starting current.

## 10. MAINTENANCE

### 10.1. ORDINARY MAINTENANCE

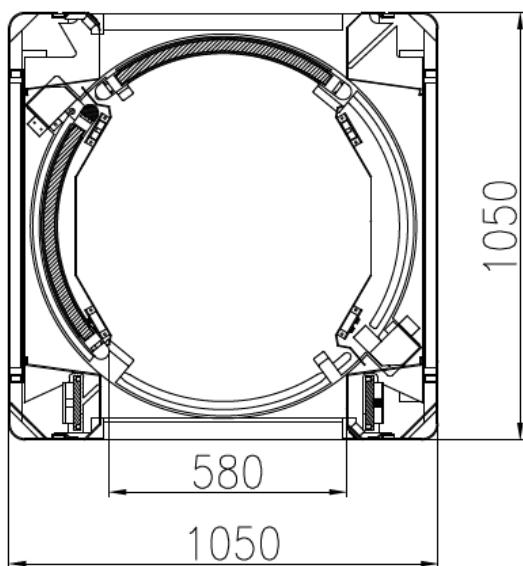
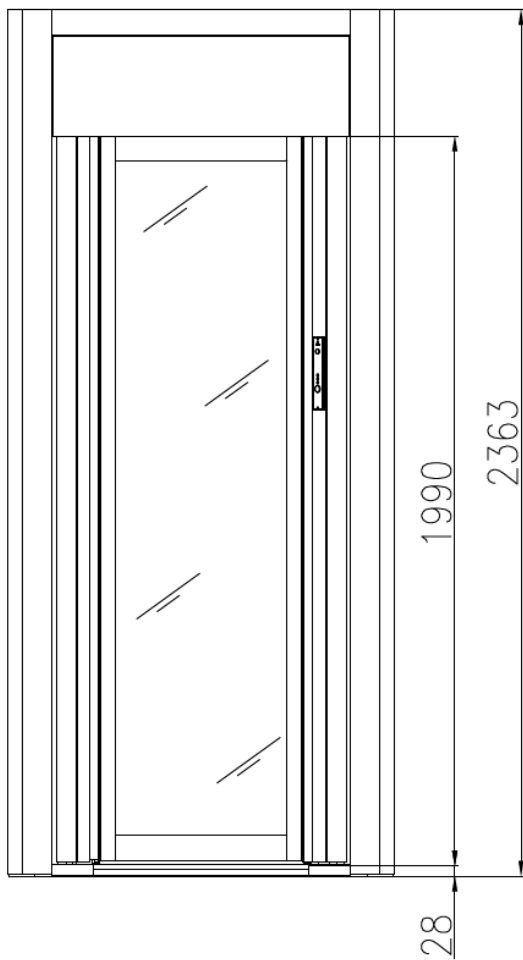
FREQUENCE IN CYCLES/TIME	ACTIVITY/ OBJECT TO BE CONTROLLED	ACTIVITY
6 months / 500.000 cycles	Cleaning	<ul style="list-style-type: none"> <li>- Cleaning of the internal and external glazed parts .</li> <li>- Cleaning and lubrication of guides, arms and bearings.</li> <li>- Basement cleaning.</li> </ul>
6 months / 500.000 cycles	Carpet	<ul style="list-style-type: none"> <li>- Verify the integrity of the materials</li> </ul>
6 months / 500.000 cycles	Safety	<ul style="list-style-type: none"> <li>- Verify the integrity of the rubber supports.</li> <li>- Check the sensibility of the health and safety sensors.</li> <li>- Verify the maximum torque.</li> </ul>
6 months / 500.000 cycles	Pushbutton and ceiling lamp	<ul style="list-style-type: none"> <li>- Check luminous signals.</li> <li>- Check the opening buttons and the bell.</li> </ul>
6 months / 500.000 cycles	Weighing system	<ul style="list-style-type: none"> <li>- Verify the floors alignment.</li> <li>- Verify the answer to the persons' weight, return to zero with <math>\pm 4\text{Kg}</math> tolerance.</li> </ul>
6 months / 500.000 cycles	Games on moving parts	<ul style="list-style-type: none"> <li>- Check the sliding and wear of the moving parts.</li> <li>- Check the condition of the moving cables.</li> <li>- Check motor noise and kinematics.</li> </ul>
6 months / 500.000 cycles	Metal detector (opt.)	<ul style="list-style-type: none"> <li>- Tests with passage of people without metal objects and with metal objects comparable as mass to a gun.</li> </ul>
6 months / 500.000 cycles	Peripheral equipment (opt.)	<ul style="list-style-type: none"> <li>- Check (if present) biometric systems, cameras and monitors.</li> </ul>
6 months / 500.000 cycles	Electric control unit	<ul style="list-style-type: none"> <li>- Control that must not be infiltrated liquids.</li> <li>- Control that must not be overheated parts.</li> <li>- Control the LED of the machine.</li> </ul>
6 months / 500.000 cycles	Command console	<ul style="list-style-type: none"> <li>- Verify the functioning of the switches.</li> <li>- Verify the functioning of the buttons.</li> <li>- Verify the LED functioning.</li> <li>- Control and calibration, if necessary, of the intercoms' volume.</li> </ul>
6 months / 500.000 cycles	Motorization	<ul style="list-style-type: none"> <li>- Control that must not be oil leaking within the geared motors.</li> <li>- Control games on the mobile parts in the static condition.</li> </ul>
6 months / 500.000 cycles	Power supply system	<ul style="list-style-type: none"> <li>- Batteries control and their possible substitution.</li> <li>- Control the machine functioning without network supply (just the internal lamp of the booth must stay off).</li> <li>- Verify the functioning of the network/batteries supply groups.</li> <li>- Control of the technical data of load, tension, resistance and absorption of the machine at the level of the command apparatus and of the supply groups.</li> <li>- Verify the power supply tension empty and under load.</li> <li>- Verify the whole machine absorption.</li> <li>- Control of the ground connections.</li> </ul>
6 months / 500.000 cycles	Cylinders and keys	<ul style="list-style-type: none"> <li>- Control of functioning mechanical lock, electrics and the related keys, if present.</li> </ul>

FREQUENCE IN CYCLES/TIME	ACTIVITY/ OBJECT TO BE CONTROLLED	ACTIVITY
6 months / 500.000 cycles	System of booth closure	<ul style="list-style-type: none"> <li>- Verify the electric piston functioning and cleaning.</li> <li>- Verify the electromagnets functioning and cleaning.</li> </ul>
6 months / 500.000 cycles	Structure	<ul style="list-style-type: none"> <li>- Control of glazing fixing.</li> <li>- Ceiling control and fixing.</li> <li>- Door fixing and adjustment control.</li> </ul>

## 10.2. RESOLUTION OF DAMAGES

PROBLEME	CAUSE	INTERVENTION
The doors do not open	Power Supply Mechanical lock Console Handling Safety Braking engine	<ul style="list-style-type: none"> <li>- Verify that the booth is on</li> <li>- Verify that the booth is in the right position</li> <li>- Verify that the emergency function is not active</li> <li>- Verify that the movements are free</li> <li>- Verify that the safety is working</li> <li>- Verify that the brake is not active</li> <li>- Verify the status of the sliding doors</li> </ul>
The doors do not close		<ul style="list-style-type: none"> <li>- Verify that there are not 2 people inside the booth</li> <li>- verify that there is not a person with excessive weight or an adult with child inside the booth</li> </ul>
Booth in alarm	Load cell Safety	<ul style="list-style-type: none"> <li>- Verify the weight settings through luppiter</li> <li>- Verify the functioning of the safety</li> </ul>
Door that open and close continuously	Safety	<ul style="list-style-type: none"> <li>- Verify the functioning of the Safety</li> </ul>
Users not able to transit	Load cell	<ul style="list-style-type: none"> <li>- Verify the weight settings through luppiter</li> </ul>
The booth allows transits just in one direction	Console	<ul style="list-style-type: none"> <li>- Verify that the mono-directional function is not inserted</li> </ul>
The door doesn't open with the red lights	Tumbler system	<ul style="list-style-type: none"> <li>- Verify that the key isn't turned in the closed position</li> <li>- Verify the door lock contacts</li> </ul>
The booth allows the transit to more than one user with just one validation	Console Load cell	<ul style="list-style-type: none"> <li>- Verify that the control must be inserted</li> <li>- Verify the weight settings through luppiter</li> </ul>

## 11. TECHNICAL SPECIFICATIONS



90° Exit (Optional)

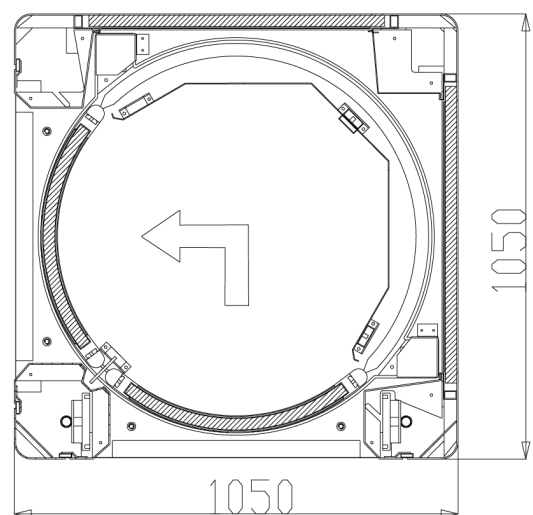


Fig. 35 - General dimensions

## 12. TECHNICAL CHARACTERISTICS

Power supply	220 VAC or 100-240 VAC 3,4 A 50/60 Hz (see chapter Power supply)
Maximum absorbed power	200 W
Operating temperature	-10° C/+55° C
Maximum humidity revealed	85 % (without condensation)
Degree of protection	IP20
Backup battery	n. 2 batteries 12V-2Ah
Motor	n. 2 engine 24 Vcc
Management logics	programmable by micro-processor
Autonomy without power supply	60 minutes with 200 passages
Transit speed	6 passages per minute 8/9 passages per minute in both directions (such data do not consider the possible working times due to utilization of card/badge readers).
Dimensions	Total dimensions (mm): Height 2363, Length 1150 Passage dimensions (mm): Height 1990, Width 580
Weight	820 kg
MTBF/MCBF	2 years/ 1.000.000 of passages respecting the ordinary maintenance
MTRR	1 hours
CE	Comply with the European standards







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