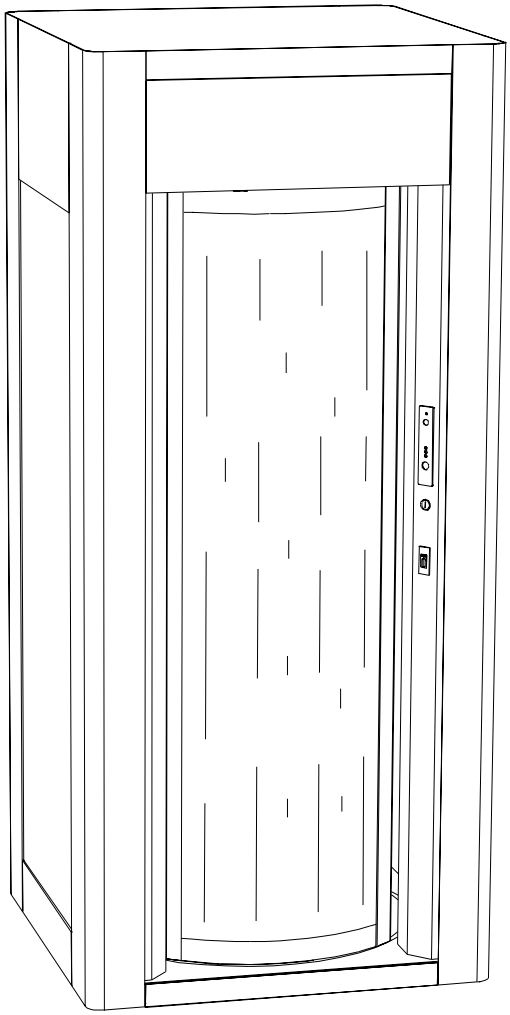
SAIMA

Revised 1.2 - 14/02/02

ELE 2000



TECHNICAL HANDBOOK

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CE

SUMMARY

SYSTEM MAINTENANCE

PLACING AND MAINTENANCE

This handbook must be used only by qualified technicians

and authorised by SAIMA SICUREZZA Spa

Warnings

- Do not walk on the booth's roof.

- Before you do any type of maintenance switch the main power off.

- Do not close circuit the batteries.

- Before moving the booth make sure that the weight basket is anchored to the casing with the blocking system.

- Always place the protection guard behind the panel after maintenance.

- There is a small internal panel where the main switch can be accessed and the security system can be adjusted.

- After unpacking and before you proceed to assemble the booth, put away all the material in a dry and clean place.

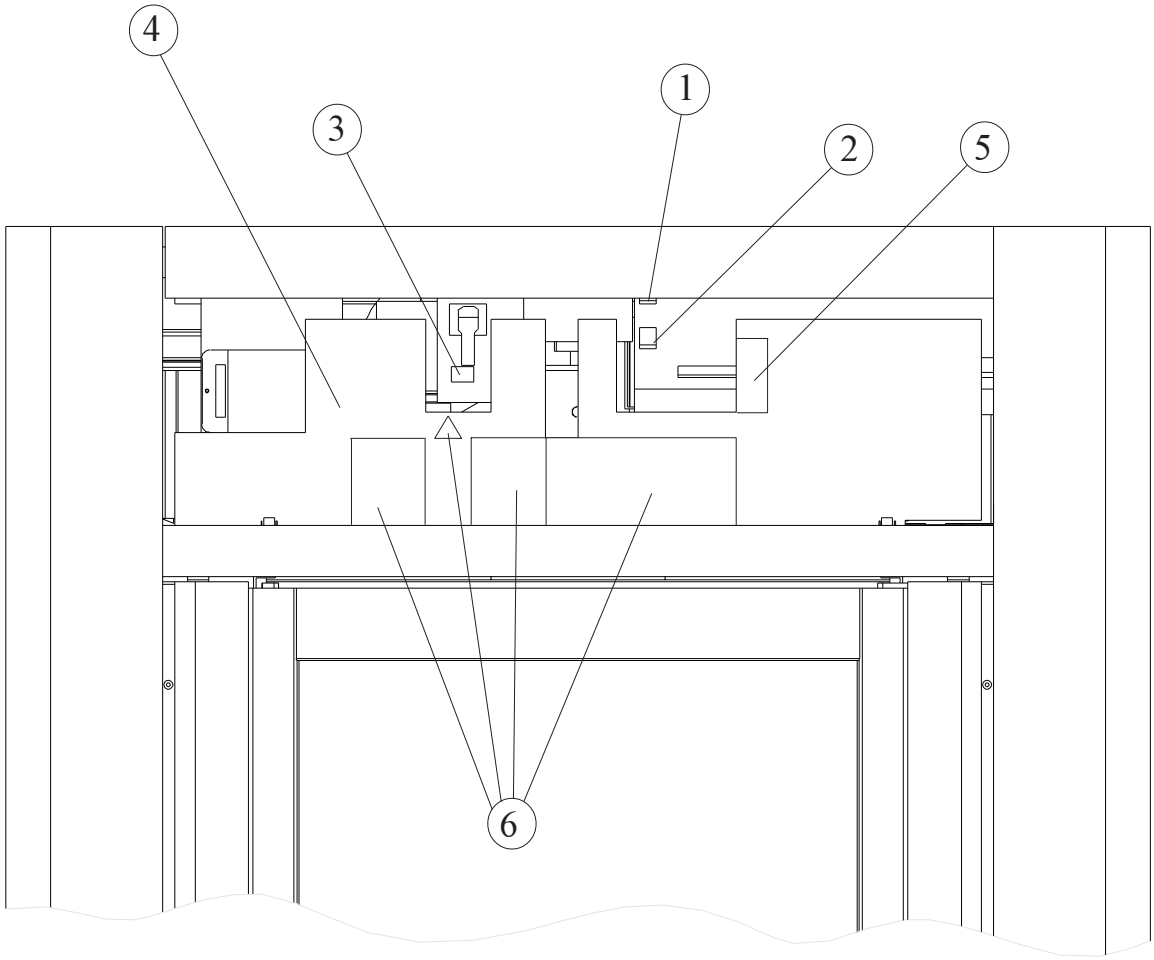
- Testing, adjustments and activating the booth must be done only by a qualified professional technician.

- All maintenance even if minor, must be done by a qualified professional technician.

I – STRUCTURE AND COMPONENTS

Main switch and on switch

Table 01



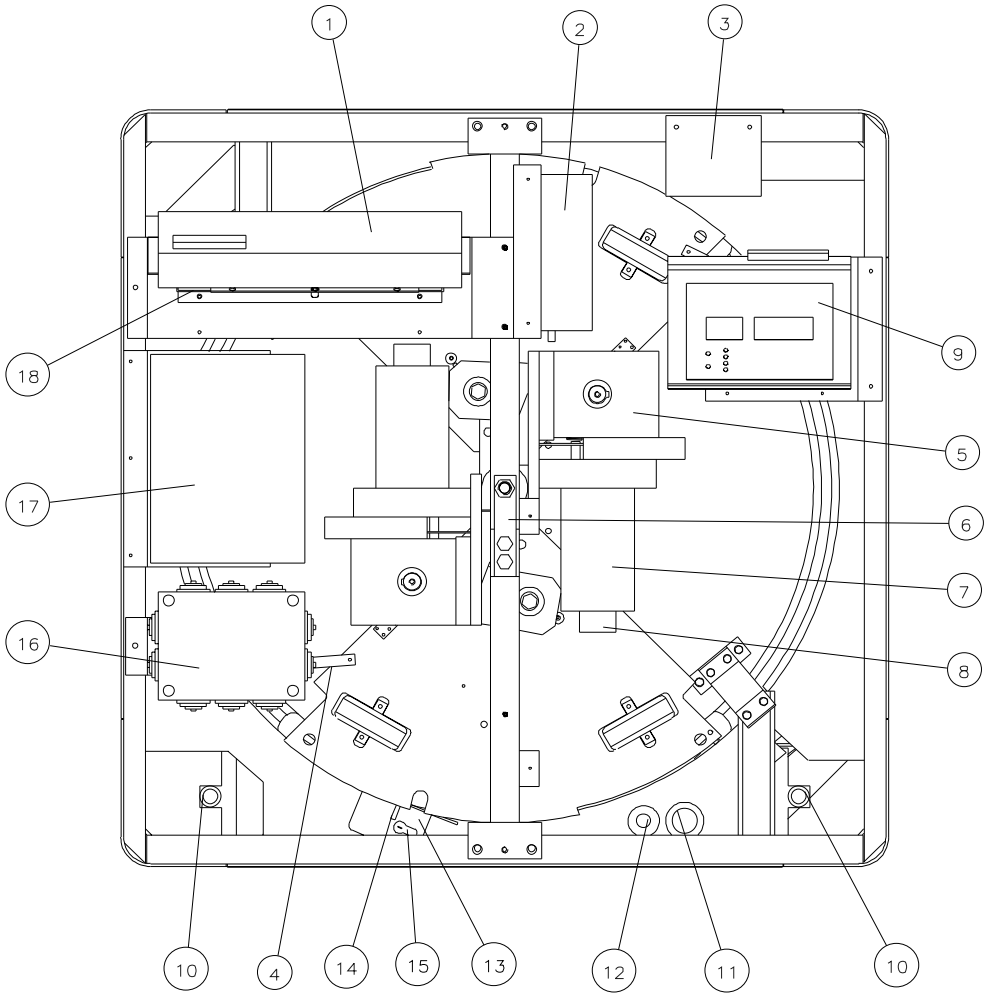
Inside view with open inspection panel

1) – Booth's ON/OFF switch
2) – Switch to run booth on batteries.
3) - Switch 220 V.
4) – Anti accident guard.
5) – Battery check stick on.
6) – Instructions stick on.

Top view

Table 02

Internal



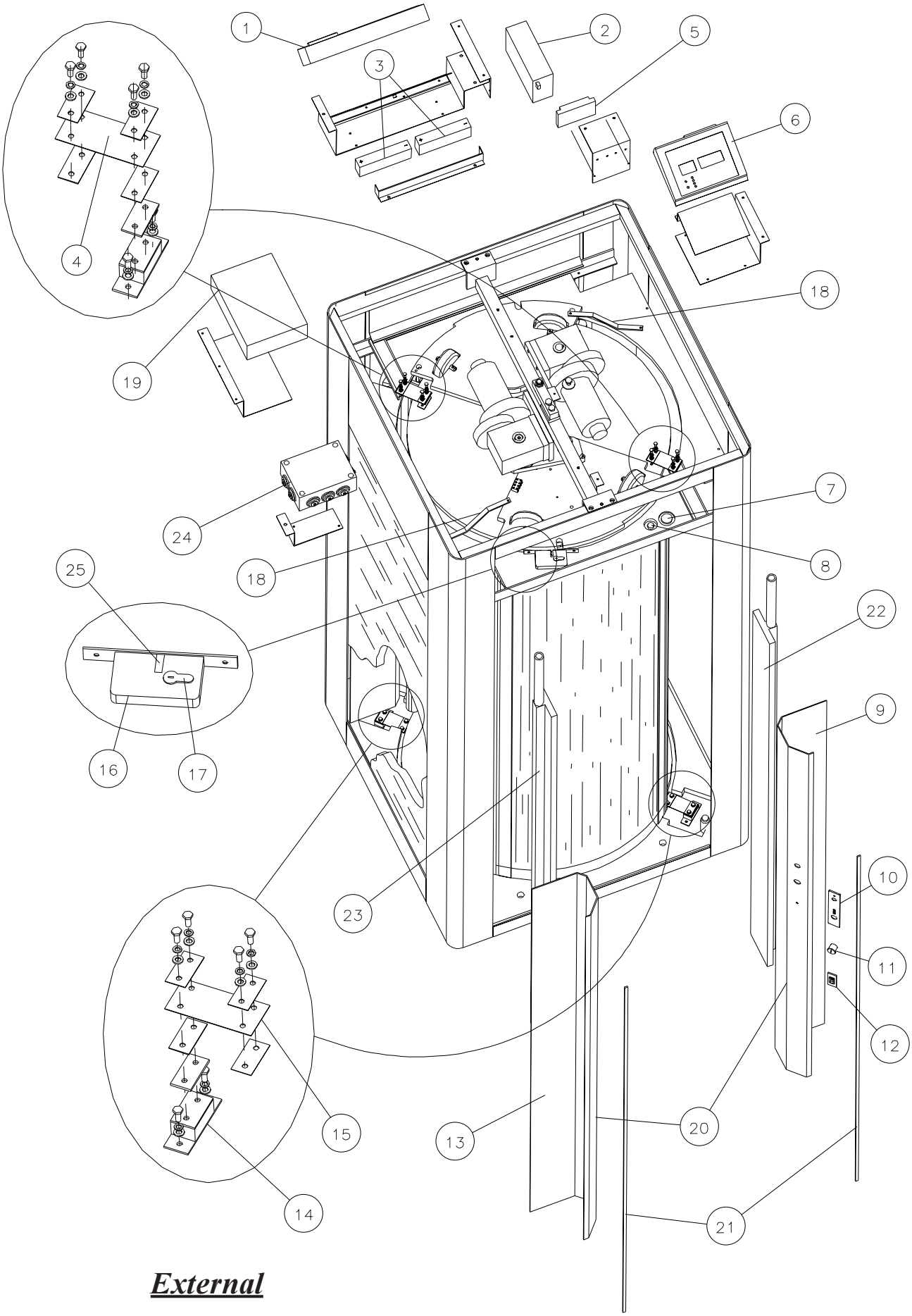
External

Components list table 02.

PARTICULARS.	Q.TY.	CODE.
1 - Main board.	1	**5205305**
2 - Power supply.	1	**5205727**
3 - Main anti accident photocell board	1	**5205078**
4 - Door blocking stirrup	2	**350789364**
5 - Reducer.	2	**5005904**
6 - Loading Cell.	1	**509T500**
7 - Motor.	2	**5105226**
8 - Encoder.	2	**5206032**
5+7+8 –Motor reducer group	2	**5105903**
9 - Metal Detector Main Board.	1	**5206089**
10 - Stirrup to fix stalk M.D.	2	**440205605R1**
11 - Speaker	1	**5805868**
12 – Electronic key (optional).	1	
13 – Mechanical lock:	1	**5300961**
14 – Mechanical lock Micro switch	1	**5200067**
15 – Mechanical lock cylinder	1	**5303656**
16 – Box for auxiliary board I/0 315 (optional).	1	**5207391**
17 – Management box for emergency exit (optional).	1	**5207851**
18 – Emergency batteries	2	**50982A12V**

Section design main view

Table 03



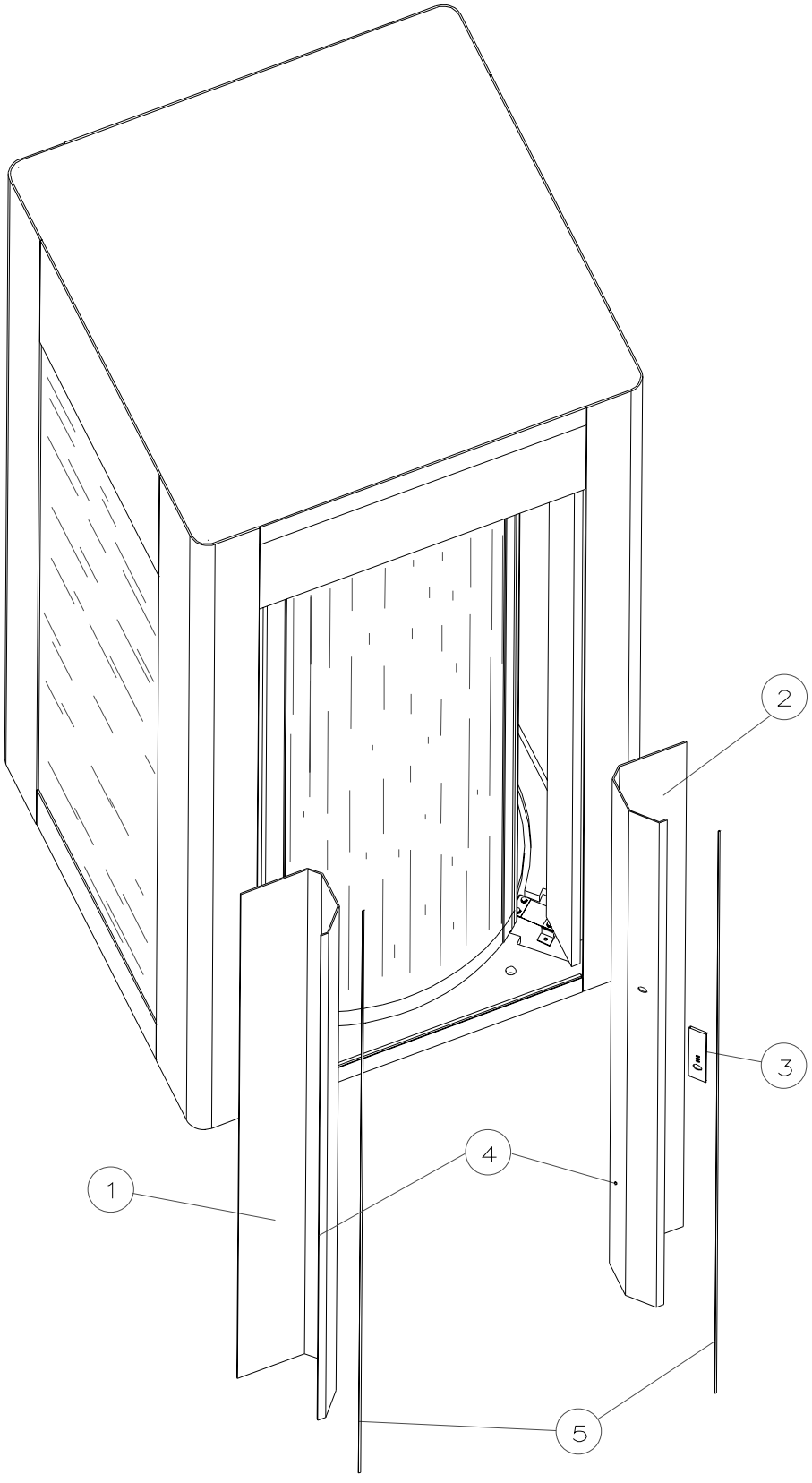
External

Components list table 03.

PARTICULARS.	Q.TY.	CODE.
1 - Main board.	1	**5205305**
2 - Power supply.	1	**5205727**
3 - Emergency batteries.	2	**50982A12V**
4 - Long leaf Spring.	2	**4401124**
5 - Main anti accident photocell board.	1	**5205078**
6 - Metal Detector Main Board.	1	**5206089**
7 - Speaker.	1	**5805868**
8 - Electronic key (optional).	1	
9 - Push button panel.	1	**410586364**
10 – Push button panel with intercom.	1	**5205306**
11 – Electric key (optional).	1	
12 – Electronic key (optional).	1	
13 – Unmarked panels.	1	**4101794**
14 – Leaf spring support.	4	**4401518**
15 – Short leaf spring	2	**4400861**
16 – Mechanical lock.	1	**5300961**
17 – Mechanical lock cylinder.	1	**5303656**
16- Door blocking stirrup.	2	**350789364**
19 – Management box for emergency exit (optional).	1	**5207851**
20- Accident prevention photocells.	2 Pairs	**5204239**
21 – Magnets.	4	**4400267**
22- Metal Detector TX Panel.	1	**5207151**
23- Metal Detector RX Panel.	1	**5207152**
24 – Box for auxiliary board I/0 315 (optional).	1	**5207391**
25 – Mechanical lock Micro switch.	1	**5200067**

Internal Section diagram

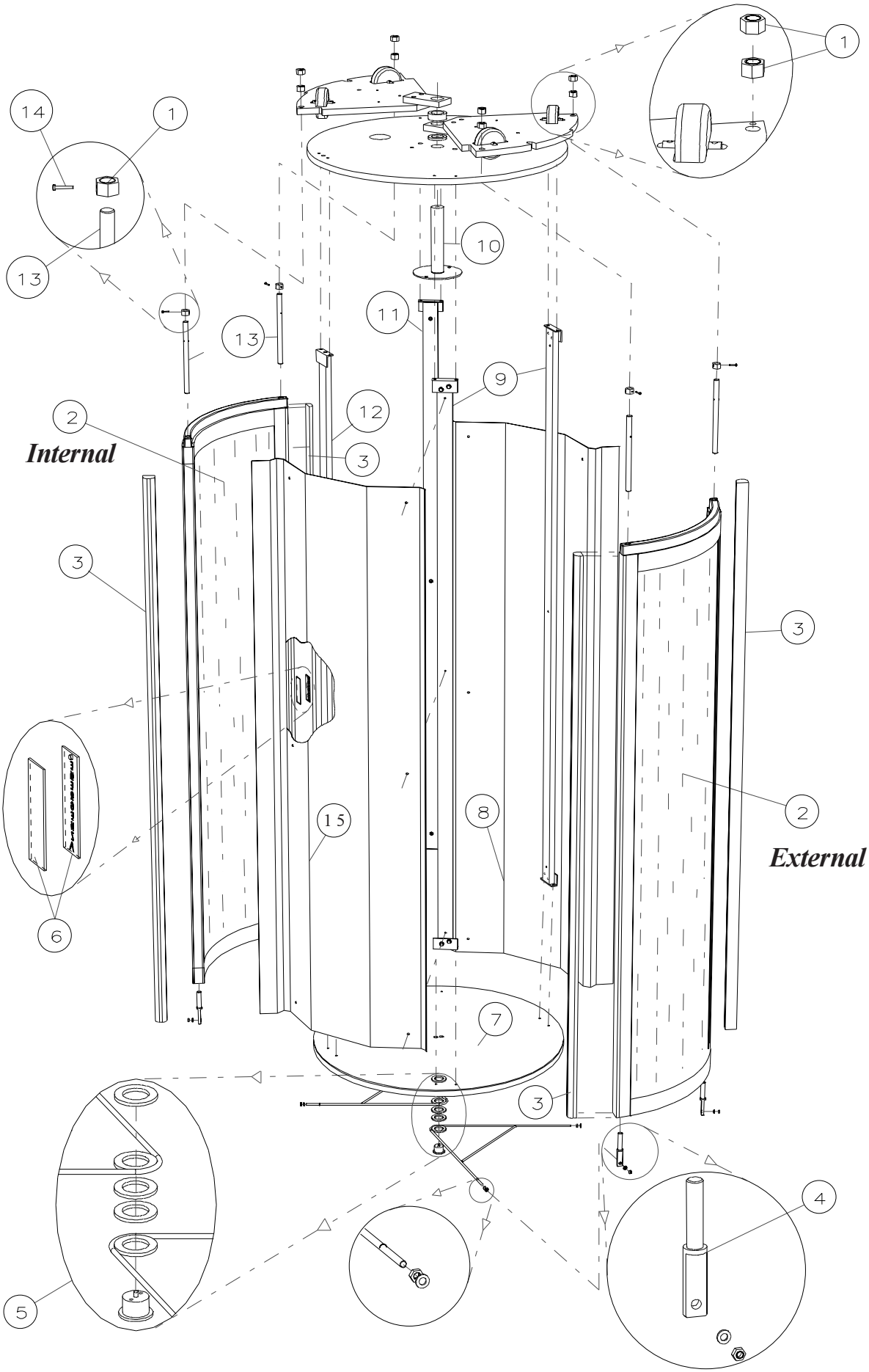
Table 04



Internal

Weight Internal space

Table 05



Components list table 04.

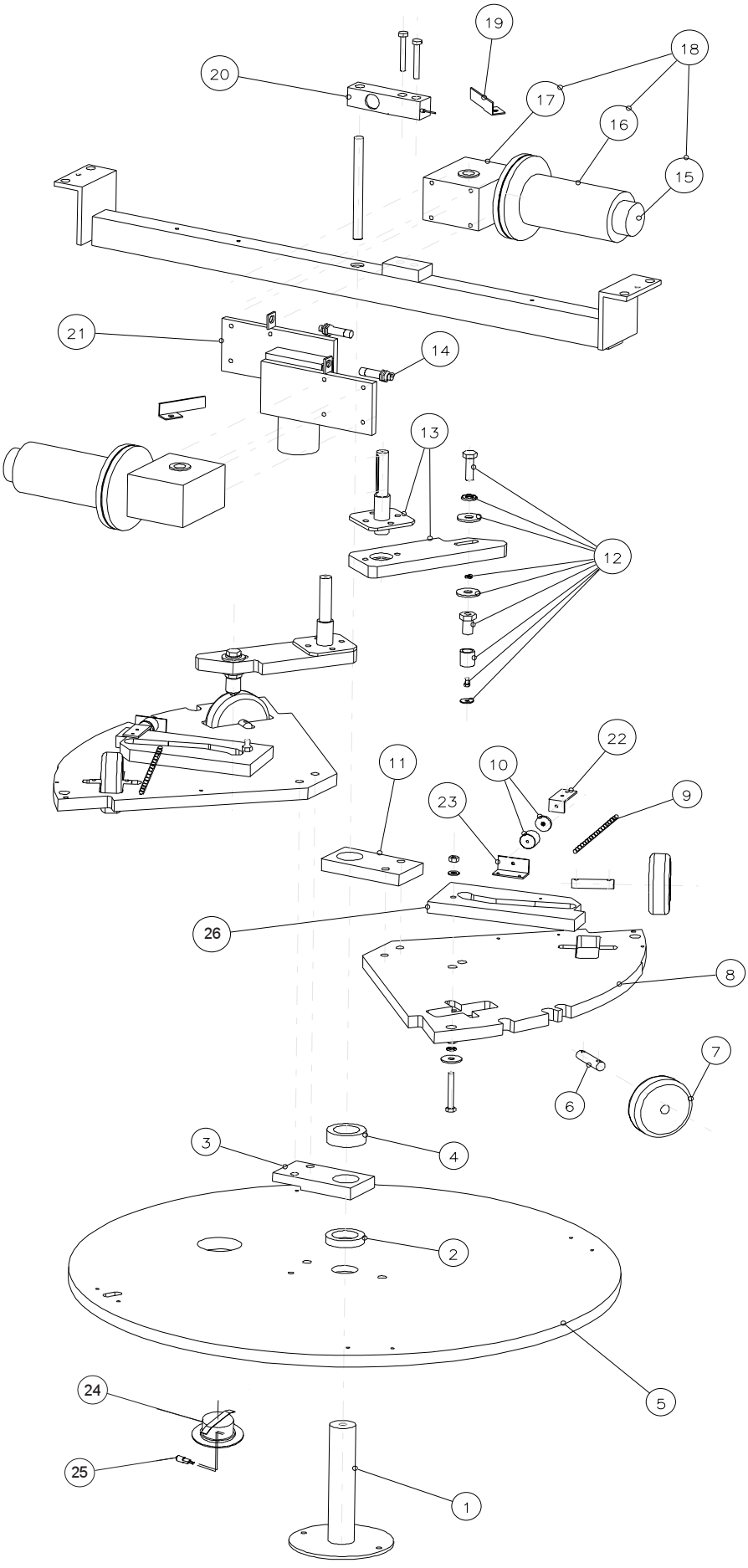
PARTICULARS.	Q.TY.	CODE.
1 - Unmarked panels.	1	**3504267**
2 - Push button panel.	1	**350586564**
3 - Push button panel without intercom.	1	**5205307**
4 - Accident prevention photocells.	2 Pairs	**5204239**
5 - Magnets.	4	**4400267**

Components list table 05.

PARTICULARS.	Q.TY.	CODE.
1 - Nylon bolt M16 H15.	12	**5400519**
2 - Assembled door.	2	**230698664**
3 - Door's rubber side non active.	4	**4401070**
4 - Door's lower arm attachment.	4	**4302523**
5 - Door's lower arm attachment parts.	1	**2202007**
6 - CE complete push button panel.	1	**2207304**
7 - Basket's bubble floor.	1	**440719064**
8A – Glass basket wall.	1	**430756764**
8B- Unmarked basket wall.	1	**430756864**
9 - Phenol basket panel.	2	**440717964**
10 - Basket support shaft.	1	**4401957**
11 – Basket iron stanchion.	1	**350717764**
12 – Basket side CE iron stanchion.	1	**350717864**
13 – Door attachment screw.	4	**4300518**
14 - Screw M.	8	
15A - Basket side glass wall CE.	1	**430726864**
15B – Unmarked basket wall side CE	1	**430726964**

Mechanical Movement

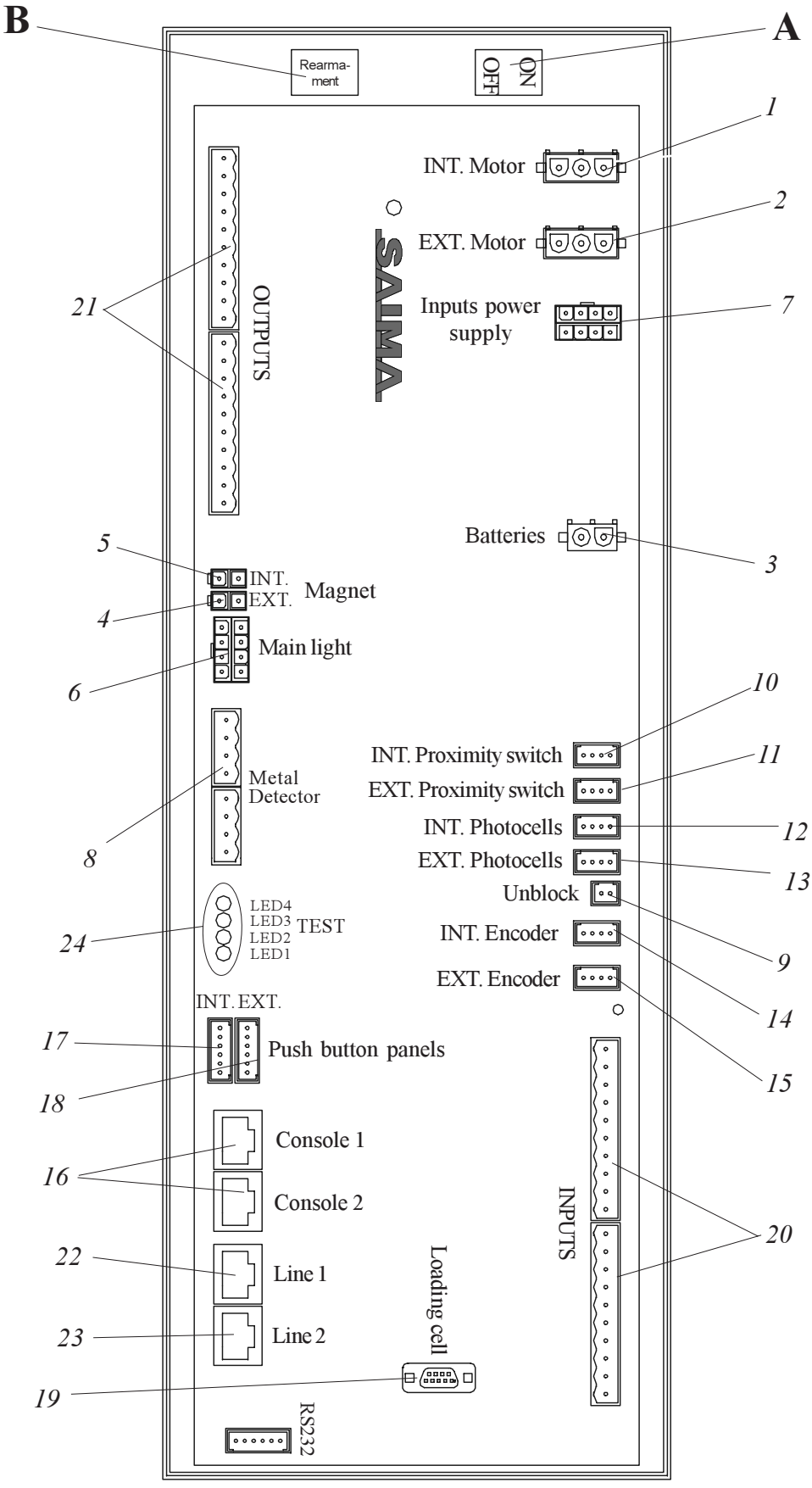
Table 06



Components list table 06.

PARTICULARS.	Q.TY.	CODE.
1 - Basket support shaft.	1	**4401957**
2 - Top hub spacer ring.	1	**4302624**
3 - Internal cabin attachment plate.	1	**4402588**
4 - Top hub spacer ring.	1	**4302623**
5 - Basket ceiling.	1	**440719164**
6 - Carrier wheel pin.	4	**4302531**
7 - Carrier wheel.	4	**504117100**
8 - Carrier.	2	**440818794R2**
9 - Unblocking door spring.	2	**4402653**
10 - Electromagnet stabilizer.	2	**5105867**
11 - Internal cabin attachment plate.	1	**4402587**
12 - Pin parts to move carrier.	2	**2209307**
13 - Motor reducer connecting rod parts.	2	**2209308**
14 - Proximity Sensor.	2	**5092PNO**
15 - Encoder.	2	**5206032**
16 - Motor.	2	**5108258**
17 - Reducer.	2	**5008150**
18 - Motor reducer group.	2	**5108259**
19 - Proximiti small reading square.	2	**350844394**
20 - Loading Cell	1	**509T500**
21 - Motor reducer support.	1	**350818394R1**
22 - Magnet attachment plate.	2	**350818894**
23 - Small reading square attachment for electromagnet.	2	**350818194**
24 - Light.	2	**5801285**
25 - Light bulb.	1	**50912V10W**
26 - Cam.	2	**430667964R3**

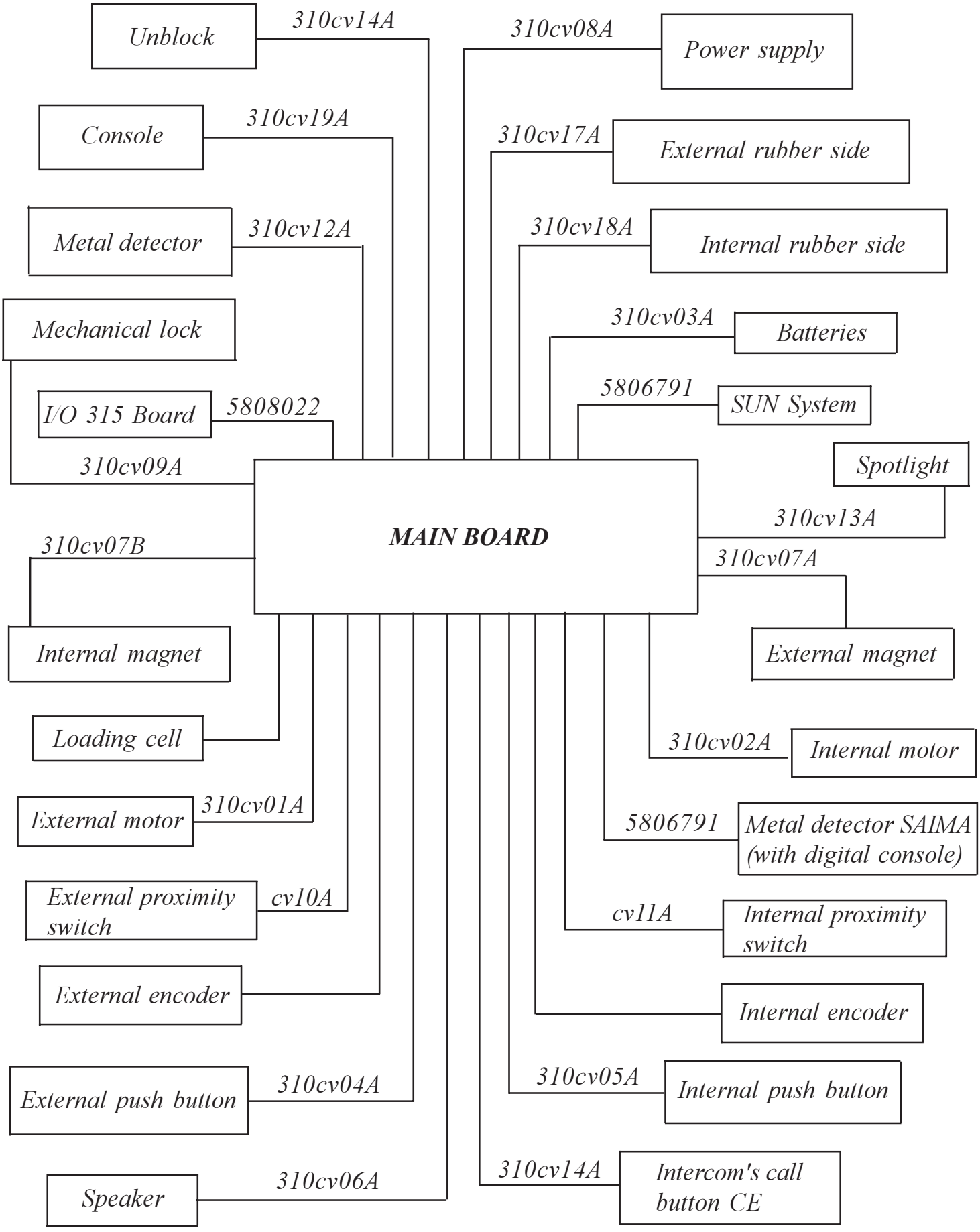
II - Electronic main board.



Connections to main board

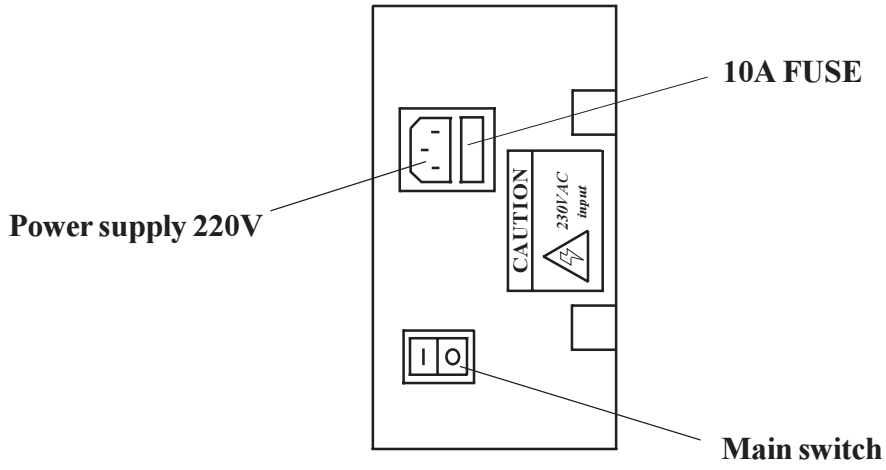
A – Booth's ON/OFF switch.
B - Re-able switch with emergency batteries after discharging.
1 - Cable cv02A connection to the internal motor.
2 - Cable cv01A connection to the external motor.
3 - Cable cv03B connection to emergency batteries.
4 - Cable cv07B connection to the unblock magnet for the internal door emergency.
5 - Cable cv07A connection to the unblock magnet for the external door emergency.
6 - Cable cv06A connection to the voice message speaker.
Cable cv13A connection to the spotlight.
Cable cv14A connection to the intercom's call button (main push button panel) CE.
7 - Cable cv08A power connection.
8 - Cable cv12A connection to the metal detector's main board.
9 - Cable cv14A connection to the emergency button (main push button panel) CE.
10 – Cable cv11A connection to the internal proximeter.
11 – Cable cv10A connection to the external proximeter.
12 – Cable cv17A connection to the door's external rubber side contact.
13 – Cable cv18A connection to the internal rubber side and main board power contact.
14 – Connection with encoder cable to internal encoder.
15 – Connection with encoder cable to external encoder.
16– Cable cv19A connection to the console.
17 – Cable cv05A connection to the internal push button panel.
18 – Cable cv04A connection to the external push button panel.
19 – Connection with loading cell cable to loading cell.
20 – Input connections:
- clamps 1 and 3 activating bridge.
- clamps 11 and 12 cable cv09A connection to mechanical lock.
- clamps 15 and 20 first entrance bridge.
21 – Exit connections.
22- Cable 5806791 connection to the SUN system (only booth's with Sun system).
23 - Cable 5806791 connection to the SAIMA metal detector with digital console.
24- Auto diagnostic led.

Block diagram

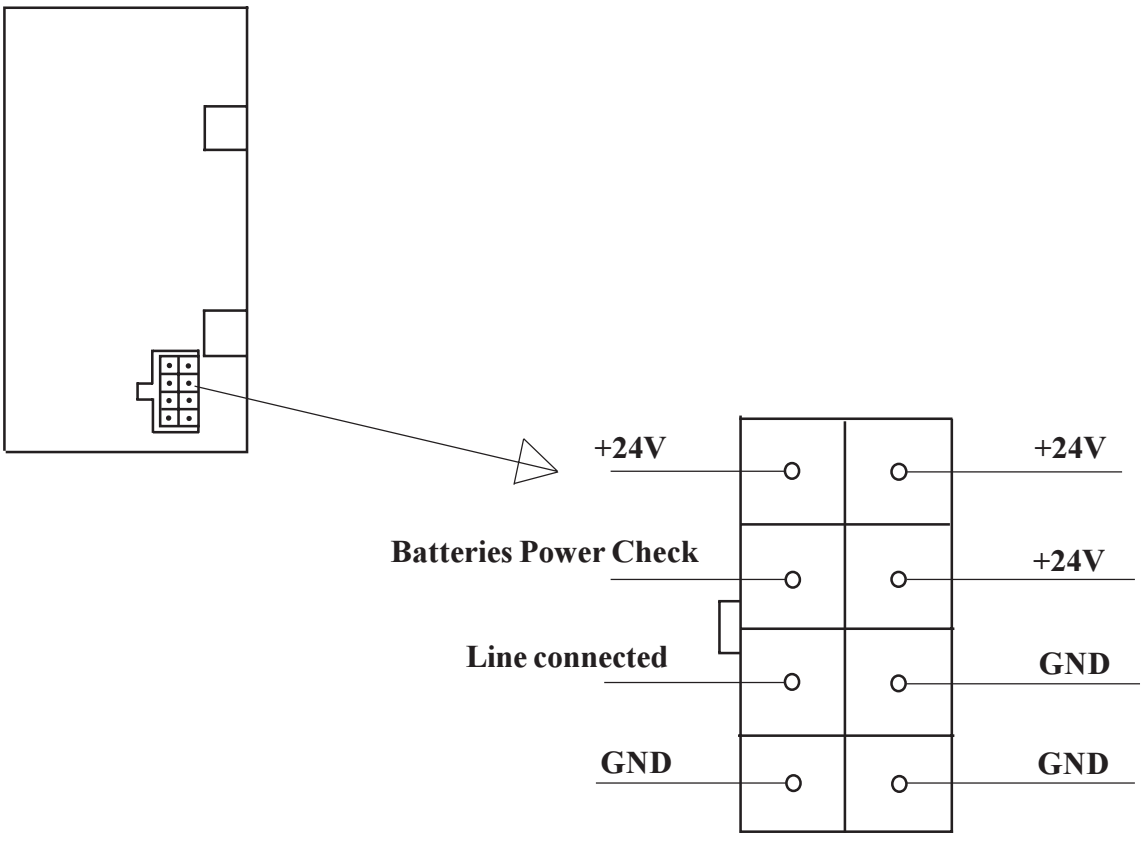


Power Supply

Back view

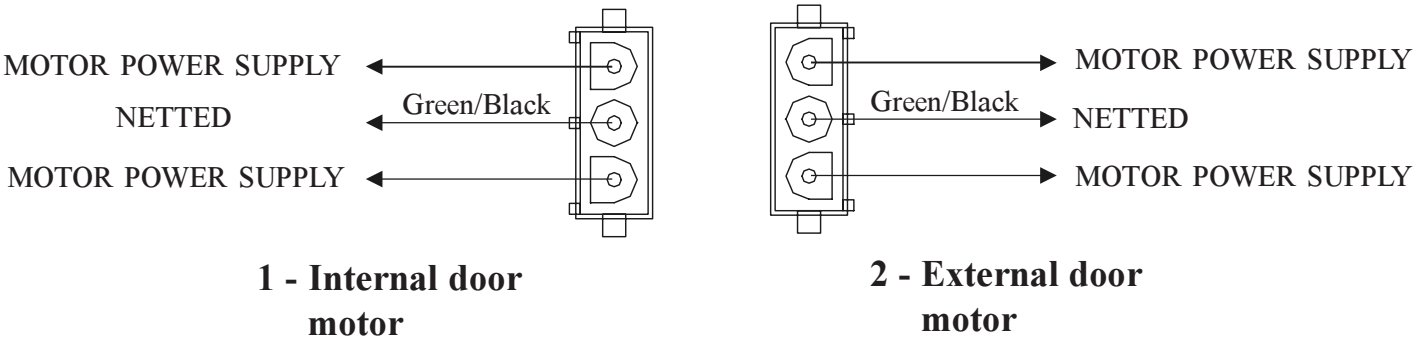


Side back view



Connections (main board)

Motors



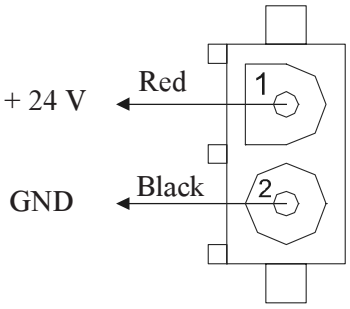
1 - Internal door motor

2 - External door motor

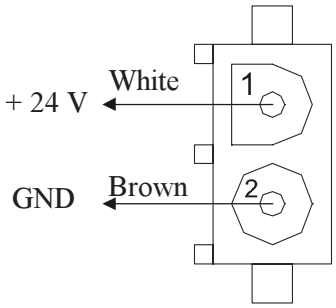
Cable/colour motor connection chart

MOTOR / ***BOOTH***	***INTERNAL***	***EXTERNAL***
MIDDLE	*1 BROWN* *3 WHITE*	*1 BROWN* *3 WHITE*
LEFT	*1 BROWN* *3 WHITE*	*1 WHITE* *3 BROWN*
RIGHT	*1 BROWN* *3 WHITE*	*1 WHITE* *3 BROWN*

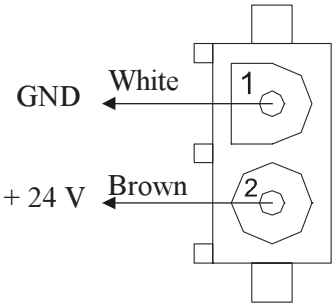
3 - Batteries



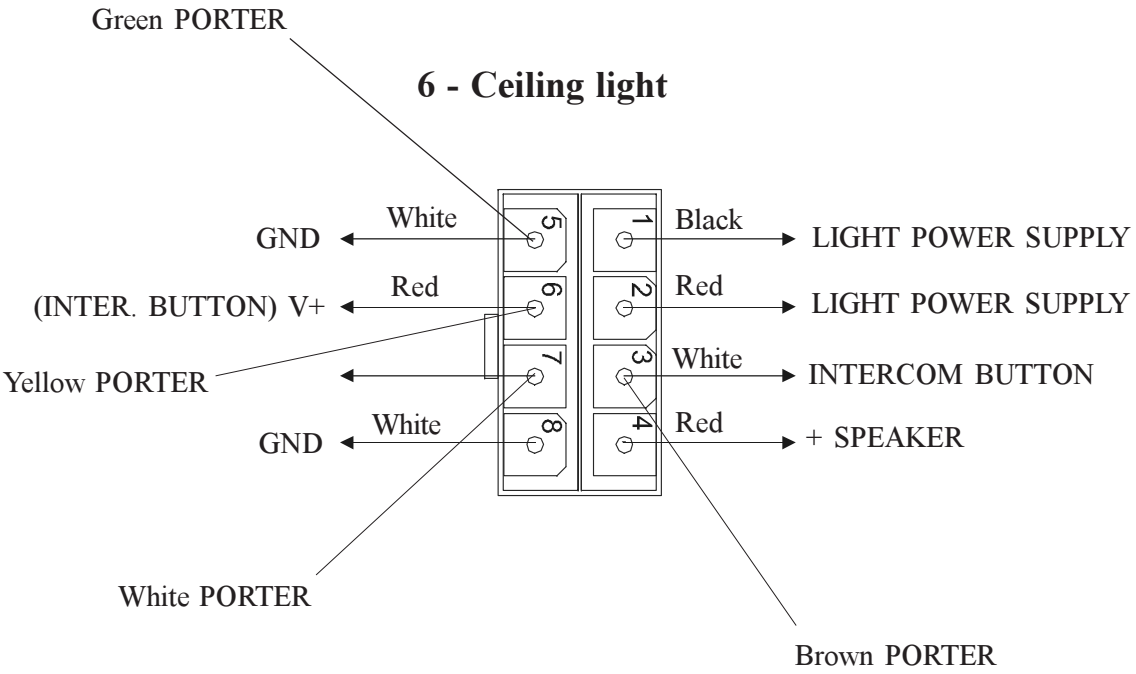
4 - Int. magnet



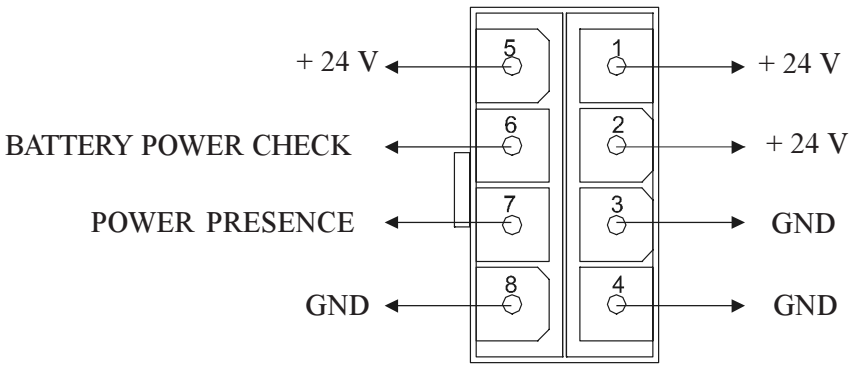
5 - Ext. magnet



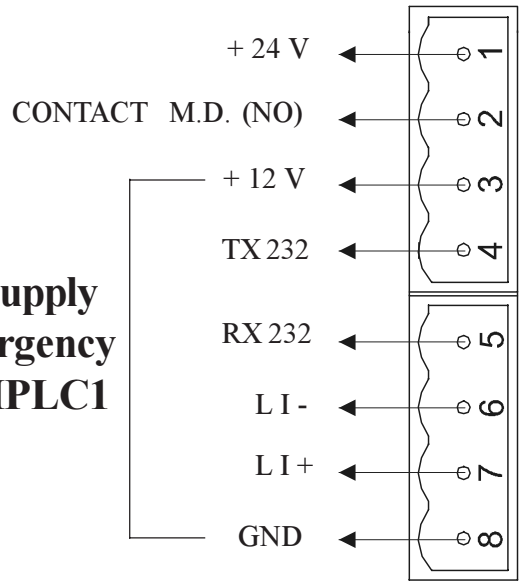
6 - Ceiling light



7 - Power supply

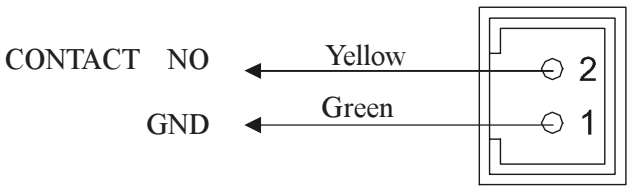


8 - Metal Detector

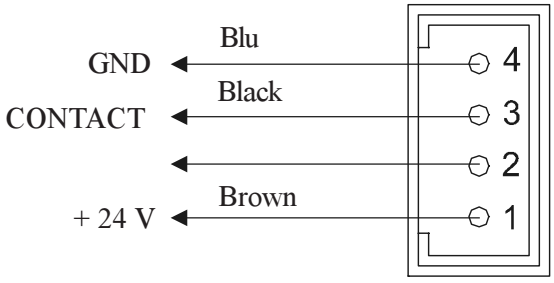


Power supply for emergency exit EMPLC1

9 - Unblock

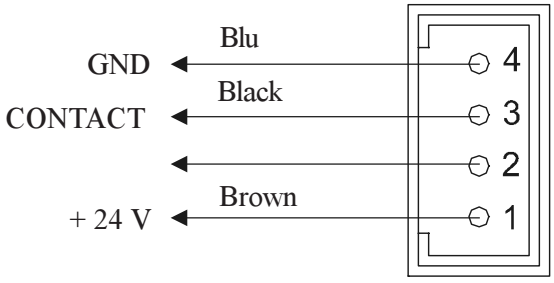


10 - 11 - Proximity switch



PNPNO 24V

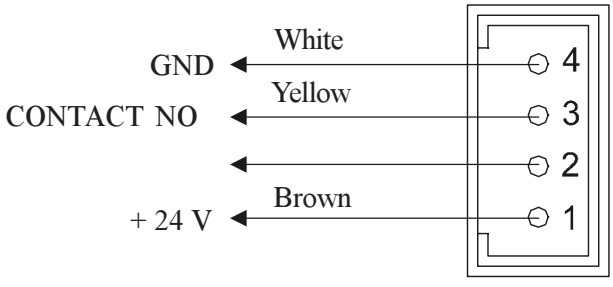
INT.10



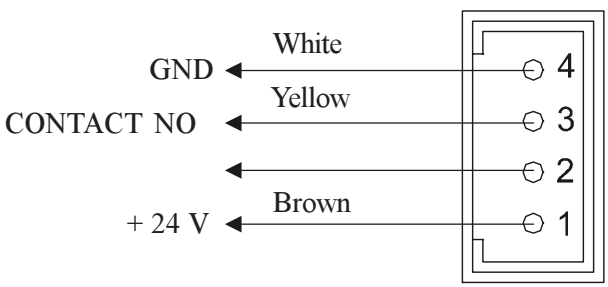
PNPNO 24V

EXT.11

12 - 13 - Accident prevention photocells

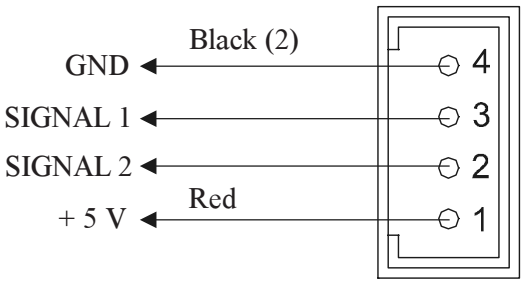


INT.12

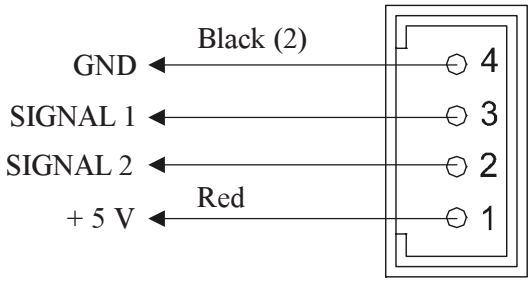


EXT.13

14 - 15 - Encoders



INT.14

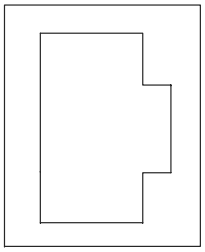


EXT.15

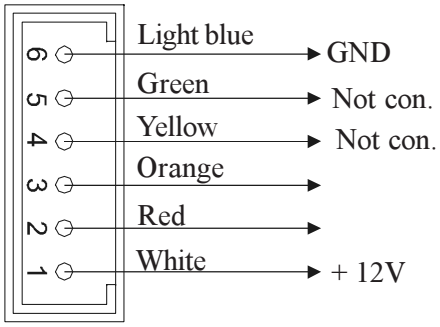
Cable/colour encoder connection chart

ENCODER / ***BOOTH***	***INTERNAL***	***EXTERNAL***
MIDDLE	*1 GREEN* *3 YELLOW*	*1 GREEN* *3 YELLOW*
LEFT	*1 GREEN* *3 YELLOW*	*1 YELLOW* *3 GREEN*
R IGHT	*1 GREEN* *3 YELLOW*	*1 YELLOW* *3 GREEN*

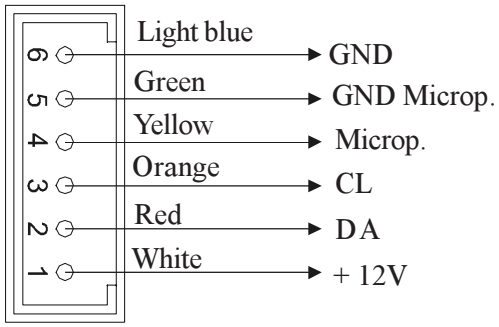
16 - Main Console



17 - 18 - Push button panels

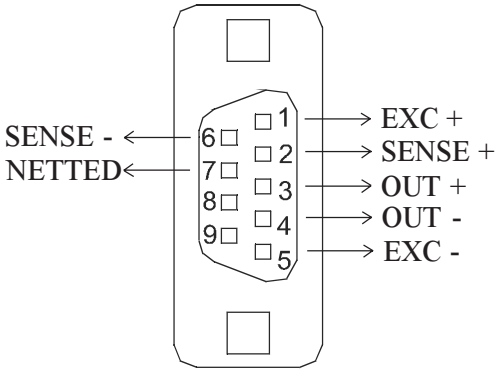


INT.17



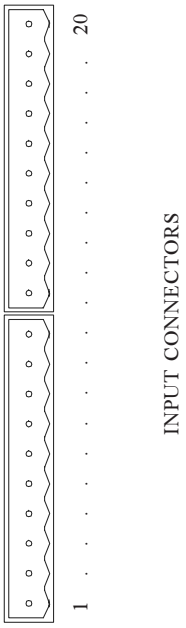
EXT.18

19 - Loading cell



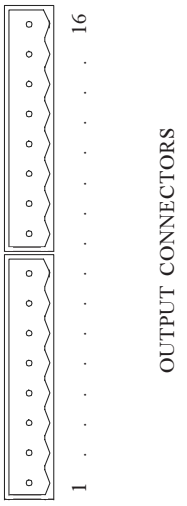
20 - Inputs

N°	NAME	ORDER
1	ING 6	TURN ON (Contact NC)
2	ING 7	Person Sensor
3	+ 24 V	TURN ON (Common)
4	GND	Not used
5	+ 12 V	Not used
6	+ 12 V EXT	Power photocouppler
7	ING 8	Rubber side opening
8	ING 9	Ext. unblocked
9	ING 10	Int. unblocked
10	ING 11	Escluded m.d. first passage
11	+ 24 V	Mechanical lock (contact C)
12	ING 0	Mechanical lock (contact NO)
13	ING 1	Input auxiliary metal alarm (also see metal connector)
14	+ 24 V	First entrance key (contact C)
15	ING 2	First entrance key (contact NC)
16	ING 3	Internal Radar (contact NO)
17	+ 24 V	Radar (Common)
18	ING 4	External radar (contact NO)
19	ING 5	Post Key (contact NC)
20	+ 24 V	Post Key (contact C)

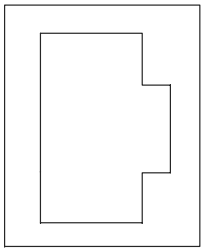


21 - Outputs

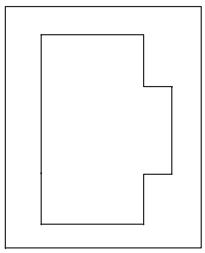
N°	NAME	PREDISPOSIZIONE
1	GND	Not used
2	OUT 8	Cycle TV camera
3	GND	Not used
4	OUT 7	un-able m.d. Ceia
5	GND	Not used
6	OUT 6	Person presence
7	GND	Not used
8	OUT 5	Night function
9	GND	Not used
10	+ 12 V OUT	Protected power supply 12 V (external use)
11	GND	Outside ground
12	OUT 3	Not used
13	GND	Not used
14	+ 24 V OUT	**Protected power supply 12 V** (external use)
15	GND	Outside ground
16	OUT 1	Not used



22 - Line 1 (SUN SYSTEM where used)



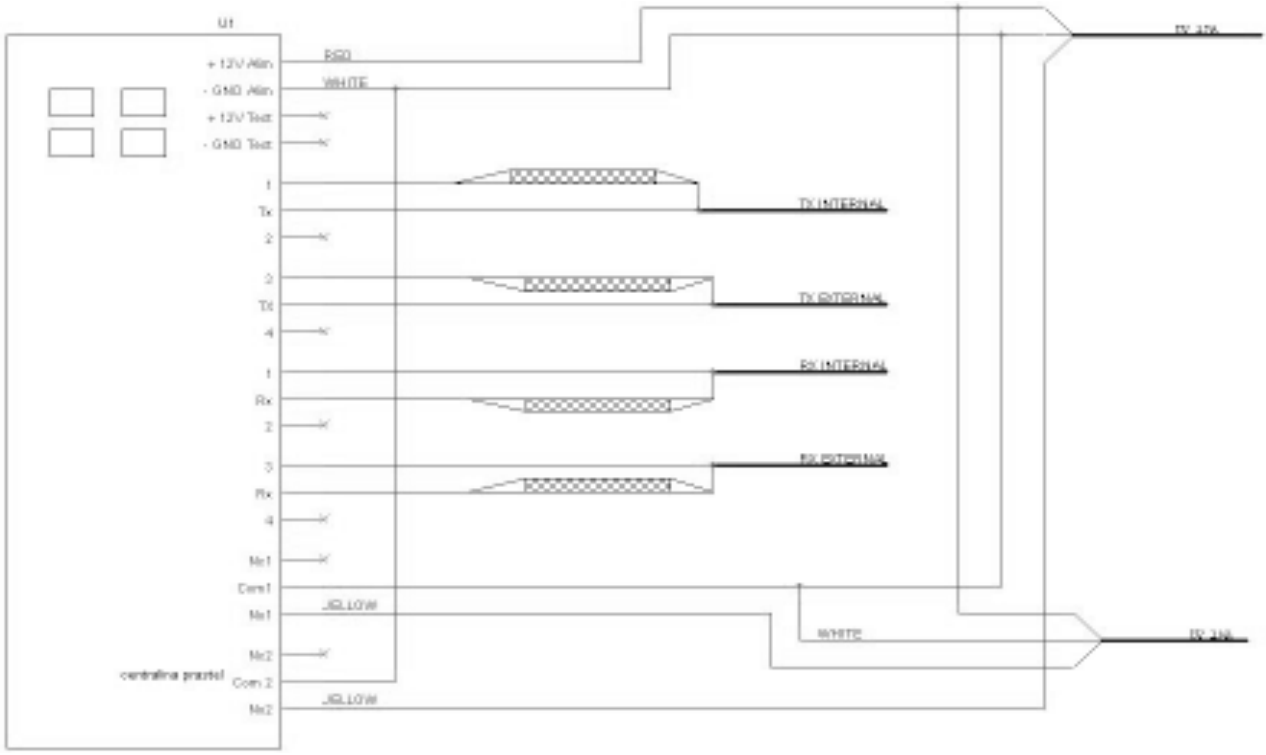
23 - Line 2 (SAIMA Metal Detector with digital console)



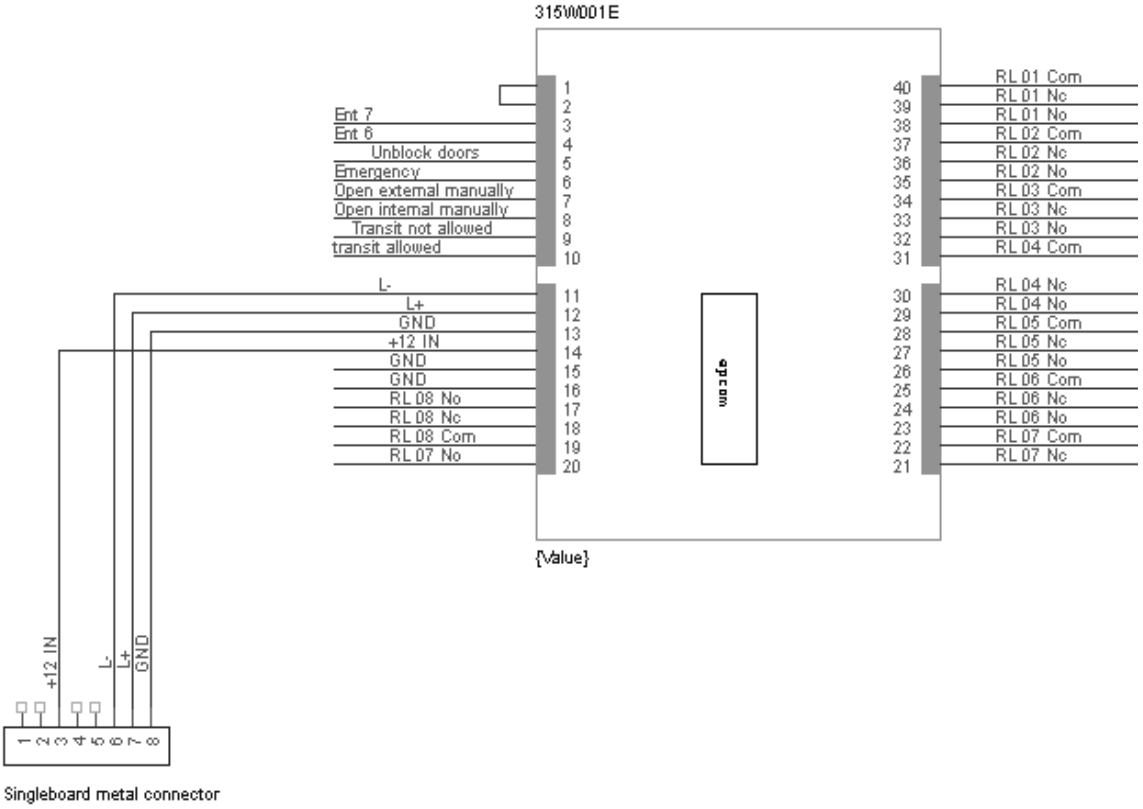
24 - Auto diagnostic led

LED CONDITION	MEAN
OLD 1 on	Encoder error
OLD 2 on	Weight error
OLD 1 e 2 on	One rubber side excluded
OLD 3 on	Micro position error
OLD 1 e 3 on	Encoder direction error

Photocell connection diagram



Auxiliary board I/O315 connection diagram



RL 01 ENTRANCE TRANSIT VALIDATION

RL 02 EXIT TRANSIT VALIDATION

RL 03 BOOTH CONTACT IN EMERGENCY

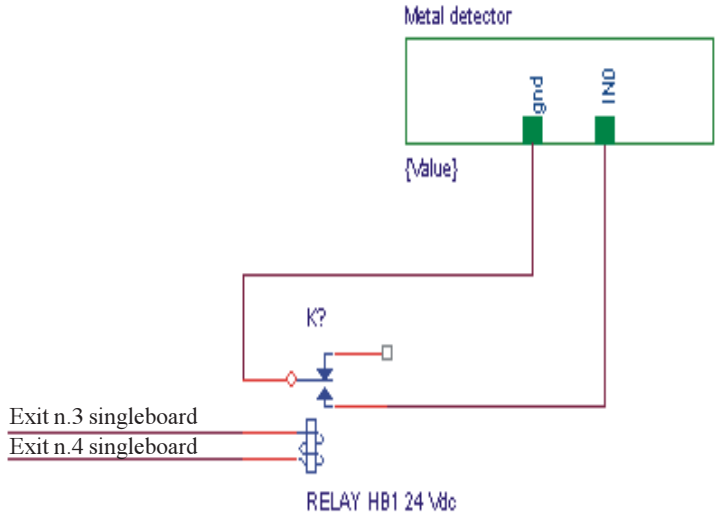
RL 04 CONDITION CONTACT INTERNAL DOOR

RL 05 CONDITION CONTACT EXTERNAL DOOR

RL 06 ECCESSIVE WEIGHT SIGNAL

RL 07 INTERCOM SIGNAL

Metal Detector CEIA cut off diagram



III - PROGRAMMING AND ANALYSIS

Testing for bad or broken booth components and changes to the parameters different from those set by the factory, must be made with the "Power Console" software available on request from Saima Sicurezza.
The "Power Console" program has been created to manage the Saima booth functions, of the "Single board type.
This program works only with a hardware key. Should you need one, please contact Saima technical assistance service.
This program communicates with the booth using a serial door on the PC through a RS232/RS485 converter.
In order to work the software needs the following kit:
- RS232/RS485 converter.
- converter cable DB9 female, DB9 male.
- interface cable converter/logic 8 prong plug.
- programming cable with button.
- hardware key.

The minimum required to install is:
- Windows 2000 Professional.
- RAM 128 Mb.
- 100 Mb of free space on the hard disk.

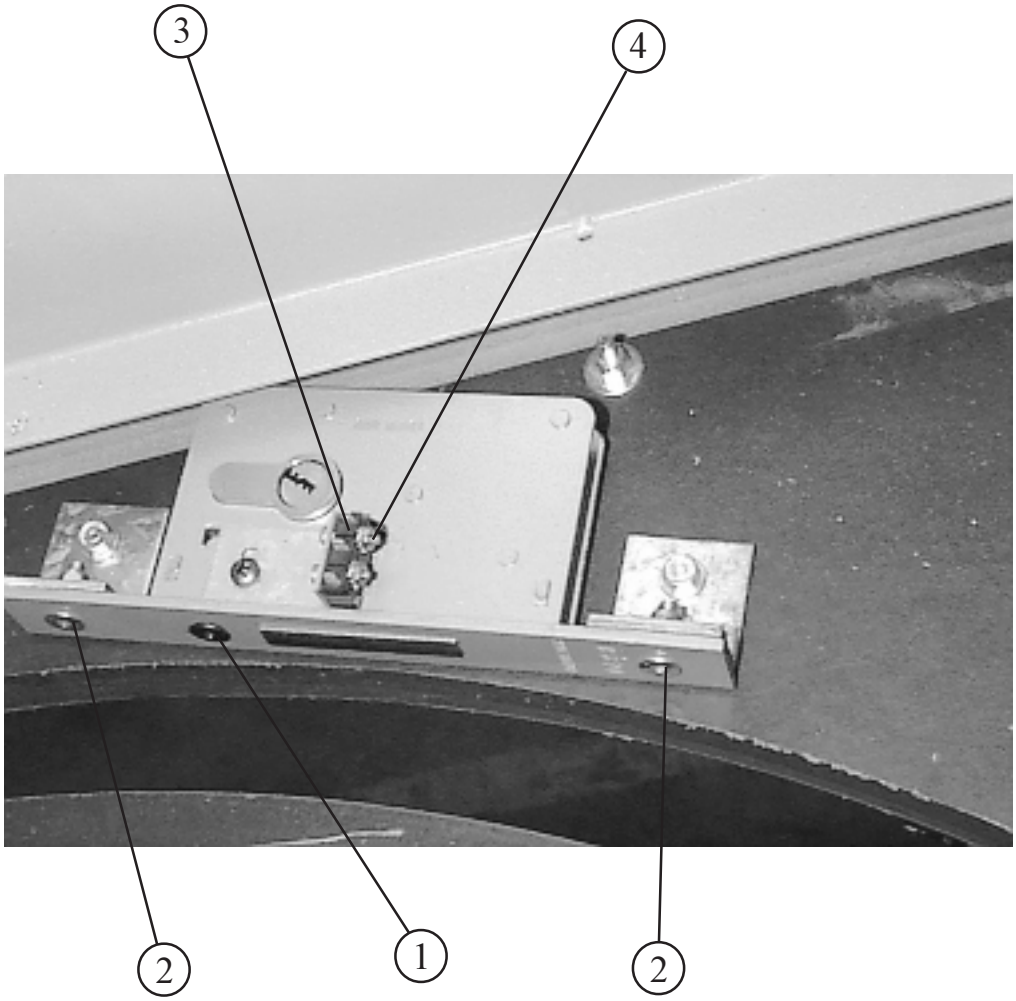
Installing the "Power Console" program.
Click on "hdd32.exe" and choose typical installation. This will install the driver for the hardware key.
2 Install "Power Console".

ATTENTION: If a system error called "ENCODER ERROR" appears on the input status screen, while opening the program, this could mean that:
- The power supply of the motors is inverted.
- Counting of the encoder rotation stage is inverted.
-Some type of hindrance prevents the doors to move toward the closed position.

For instructions on how to use the "Power Console" software, you can request the handbook by calling Saima technical assistance service.
For Metal Detector maintenance or to change the parameters set by Saima you must request the operating manual or contact Saima assistance service.

IV – CHANGING COMPONENTS

Lock



WARNING: Turn off the booth before you do any maintenance using the single board's ON/OFF switch and open the door manually.

SUBSTITUTING THE CYLINDER

1. Untighten the screw (1).
2. Being a security cylinder rotate the key from its position only a few degrees just enough to allow the cylinder to come out.
3. Take out the cylinder.

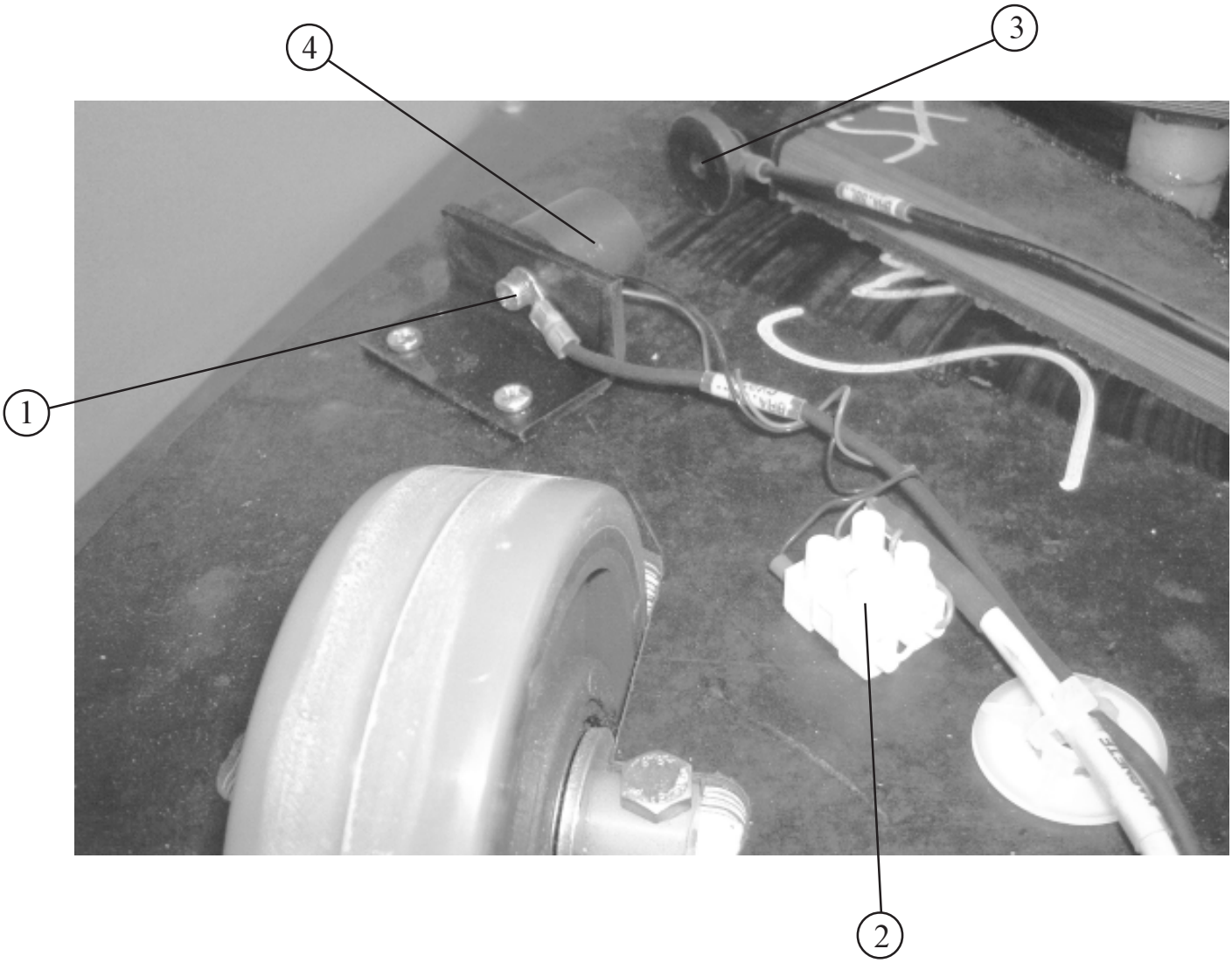
SUBSTITUTING THE MECHANICAL LOCK

1. Untighten the screw (1).
2. Remove the cylinder as described on top.
3. Unscrew the screws (2).
4. Remove the mechanical lock.

SUBSTITUTING THE MICROSWITCH

1. Untighten the screw (4).
2. Remove the micro switch (3) and substitute.
3. Screw in making sure not to damage the micro Switch.
4. Activate the lock with the key to verify that the micro switch is working.
5. If the lock does not work properly un-tighten the screws (4) and change the micro switch's inclination.

Emergency unblock magnet



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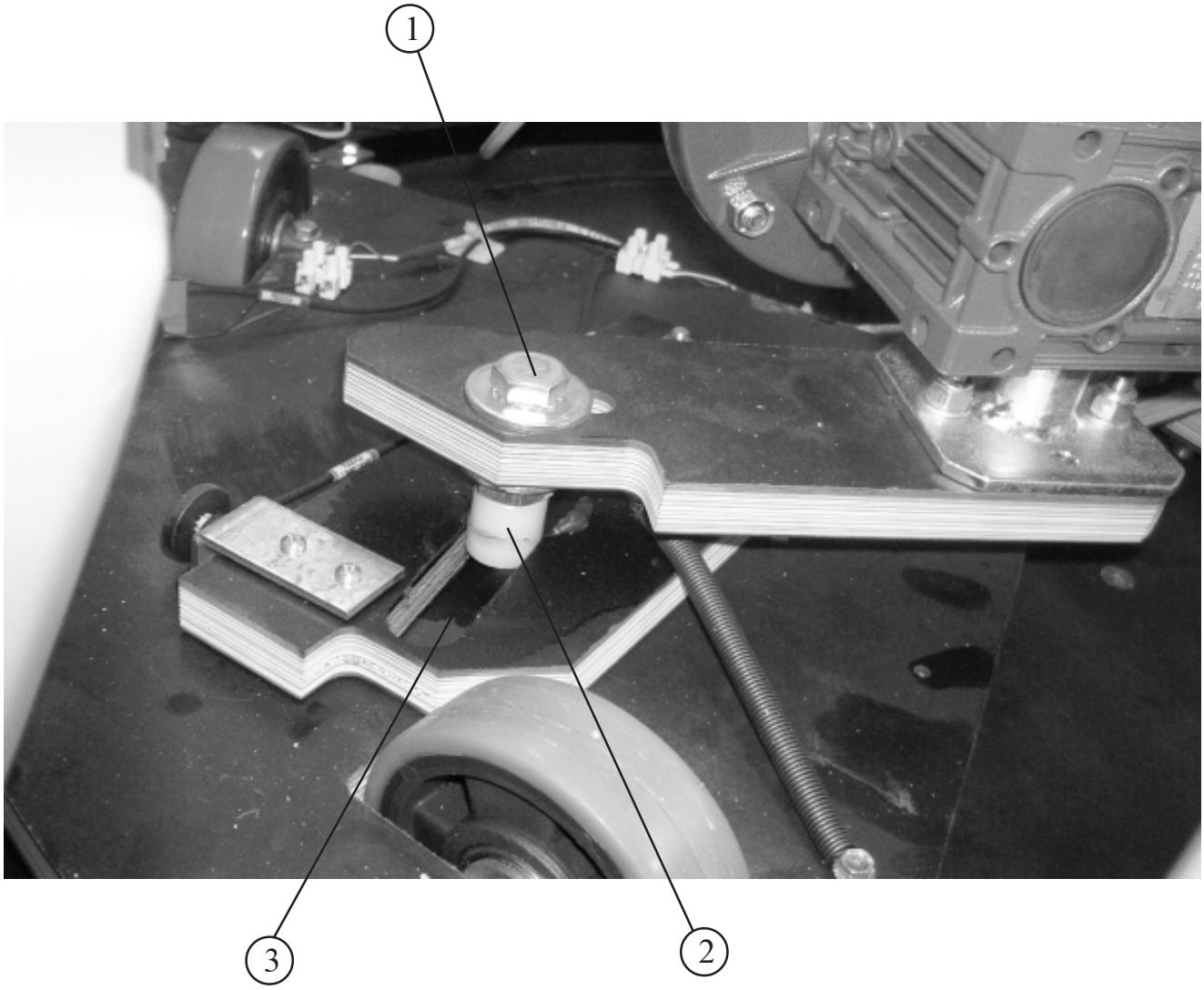
CHANGING THE MAGNET

1. Disconnect the cables from the clamp (2).
2. Remove the screw (1) holding the magnet (4) with your hand.
3. Mount the new magnet with the screws and contacts in the exact sequence.

N.B. : the magnet (4) is in the correct position when it is perfectly aligned and in contact with the plate (3) when the door is closed.

Motor reducer connecting rod



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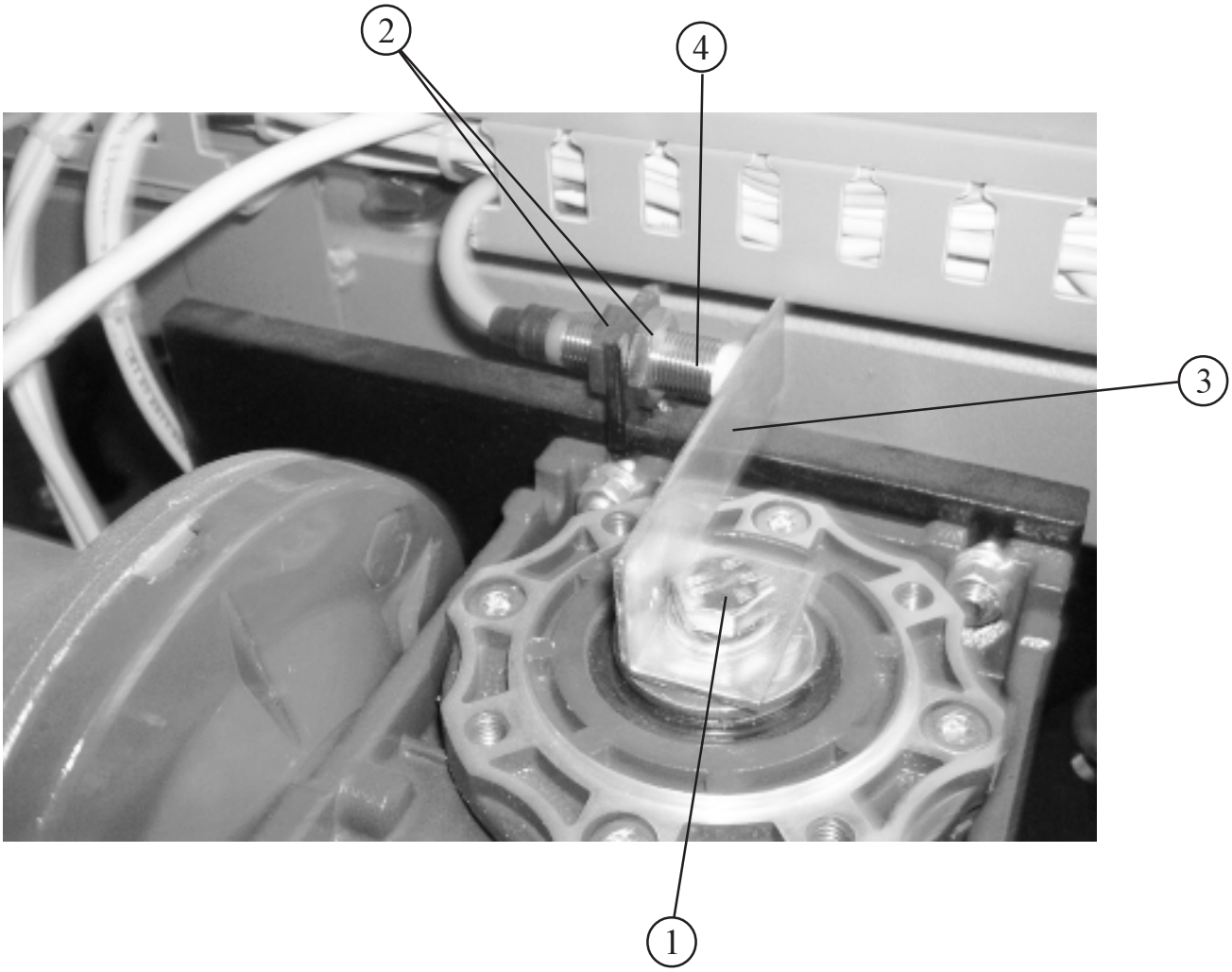
ADJUSTING THE DOOR'S CLOSING POINT

Un-tighten the bolt (1) and move the pin (2) in the door's frame (3) until it closes properly.

WARNING: After adjusting tighten the bolt (1) to it's maximum torque (about 90 Nm).

Proximity Sensor



WARNING: Turn off the booth before you do any maintenance using the single board's ON/OFF switch and open the door manually.

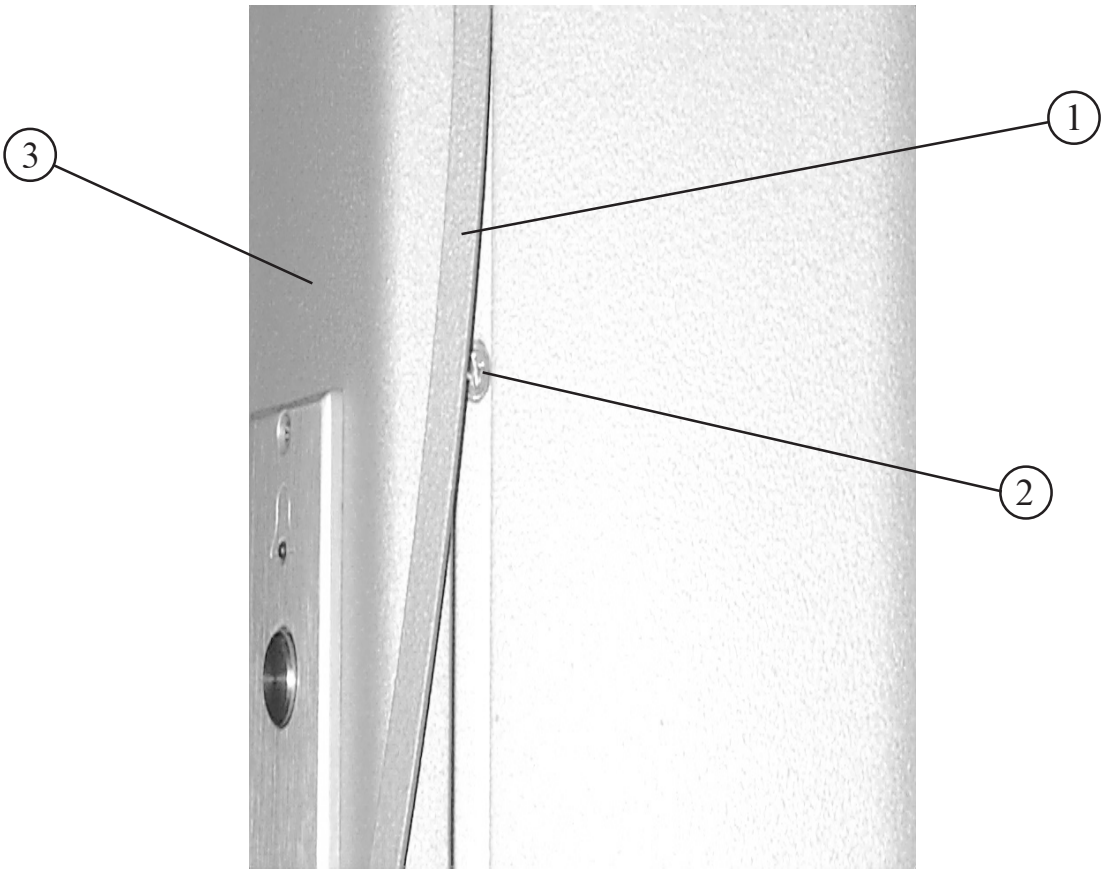
PROXIMITY SENSOR ADJUSTMENT

1. Loosen the bolt (2) and counter bolt.
2. Ad just the proximity sensor (4) to the reading clamp (3) leaving a space of about 1-2 mm with the door in closed position.
3. Verify that the proximity sensor's head is perpendicular to the reading clamp (3).

If the reading staff is not perpendicular to the proximity sensor:

1. Loosen the bolt (1).
2. Adjust the reading clamp.
3. Tighten the bolt (1).

Entrance panel edge



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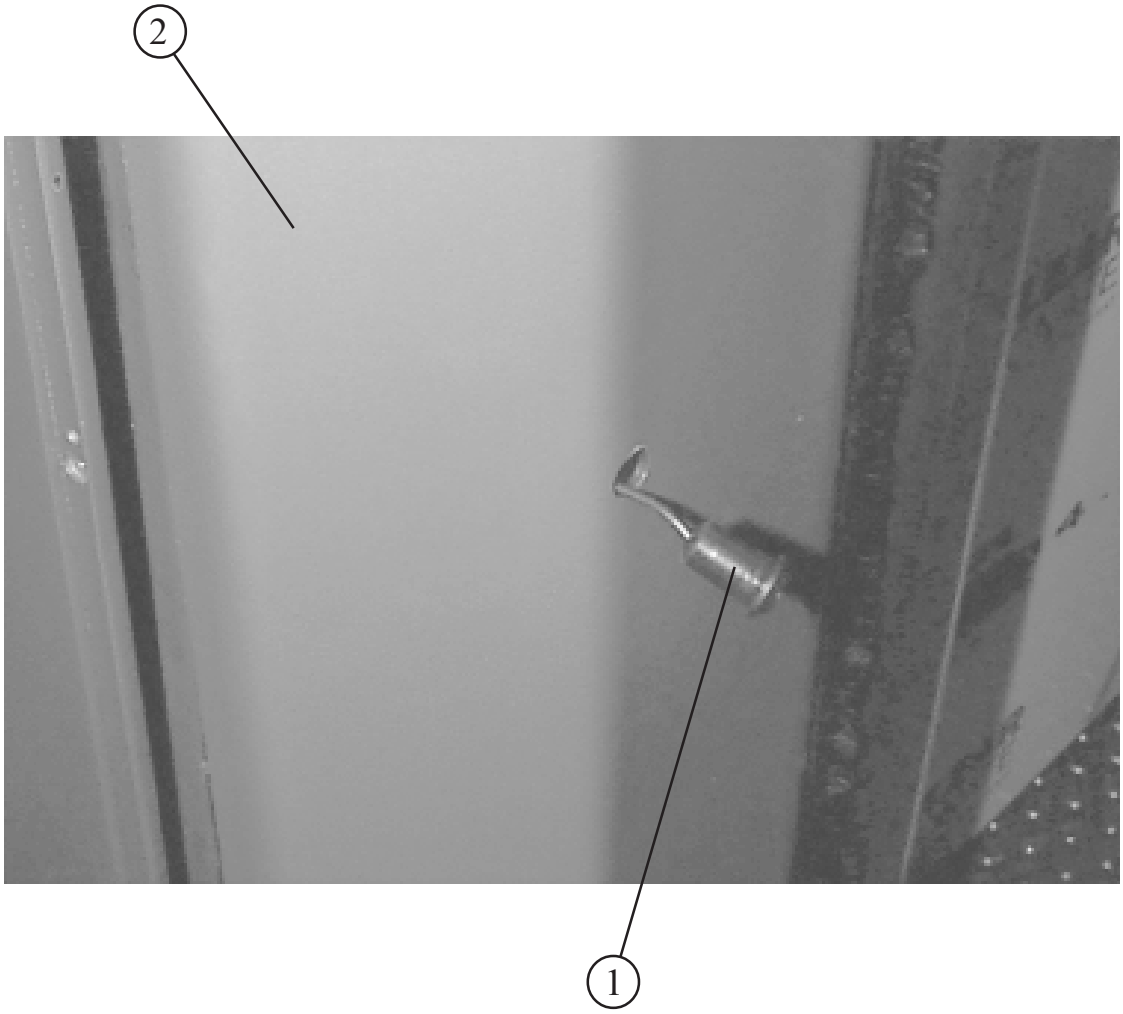
DISSEMBLING THE PANEL

1. Remove the magnetic strip (1) starting from its end.
2. Un-tighten and remove screws (2).
3. To remove the panel (3) apply pressure.

While re-assembling the panel, make sure that its internal part is inserted in the booth and fits properly.

Accident prevention photocells



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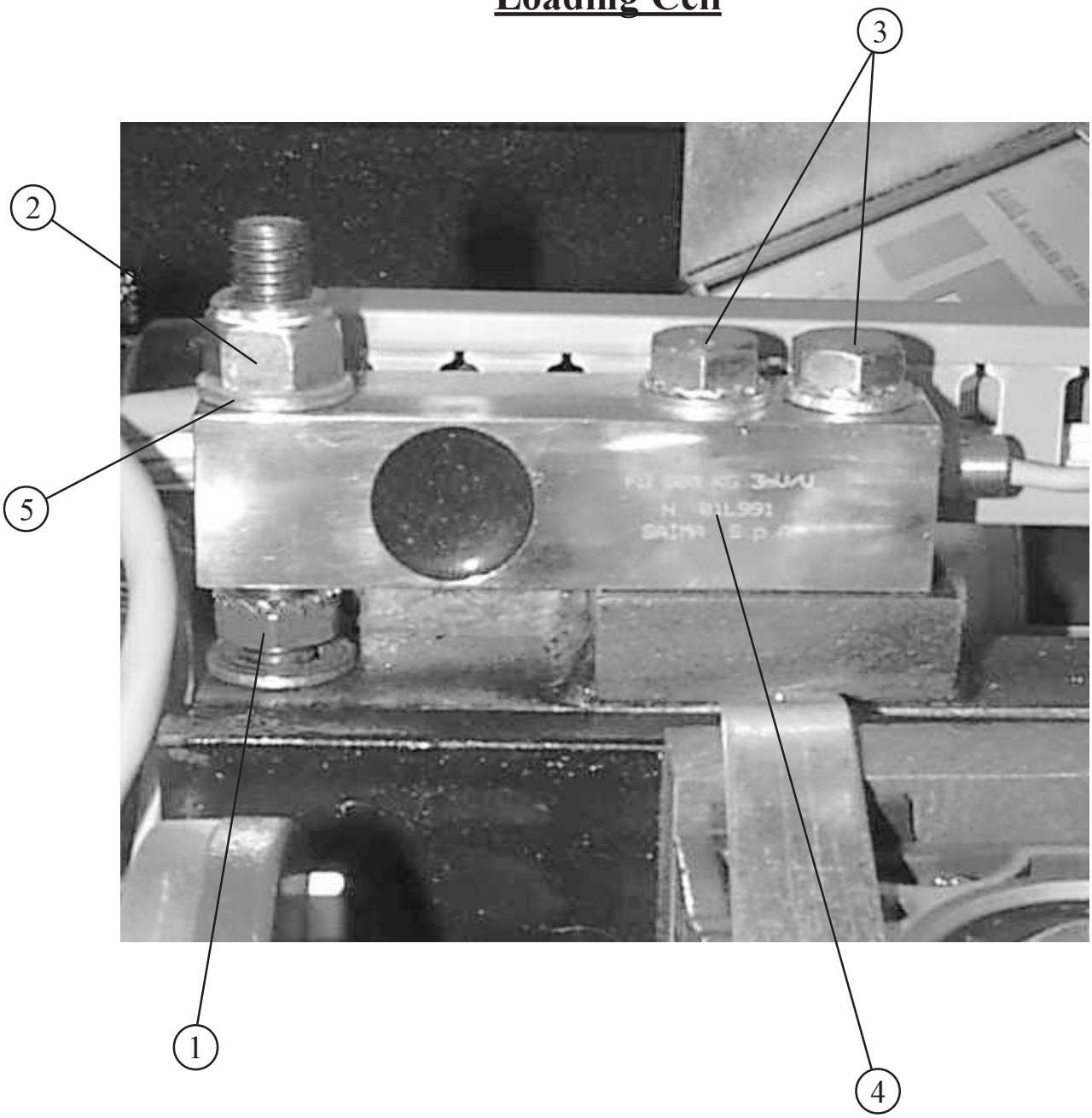
SUBSTITUTING THE PHOTOCELL

1. Remove the panel (2) from the edge (see "Removing the panel").
2. Remove the photocell (1) as in the photograph.
3. Free the photocell's cable from inside the panel and the raceways.
4. Disconnect the cable and remove it.
5. Insert the new photocell, position and connect the cable as it was .

Loading Cell



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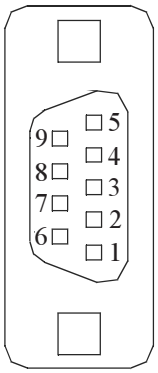
SUBSTITUTING THE LOADING CELL

1. Tighten the bolt (1) until the washer (5) is free.
2. Un-tighten and remove the bolt (2).
3. Un-tighten and remove the bolts (3).
4. Remove the loading cell (4) freeing the cable from the raceway and disconnect from the "Single board".
5. Position the new loading cell and force tighten the bolts (3).

6. Tighten the bolt (2) leaving the washer (5) free (like in point 1).
7. Un-tighten the bolt (1) moving it slightly to the loading cell.
8. Reposition the cable and connect (with connector) to the "Single board"

N.B. : If the cable is not fitted with a connector use the one from the replaced cell and solder it to the cable following the diagram:

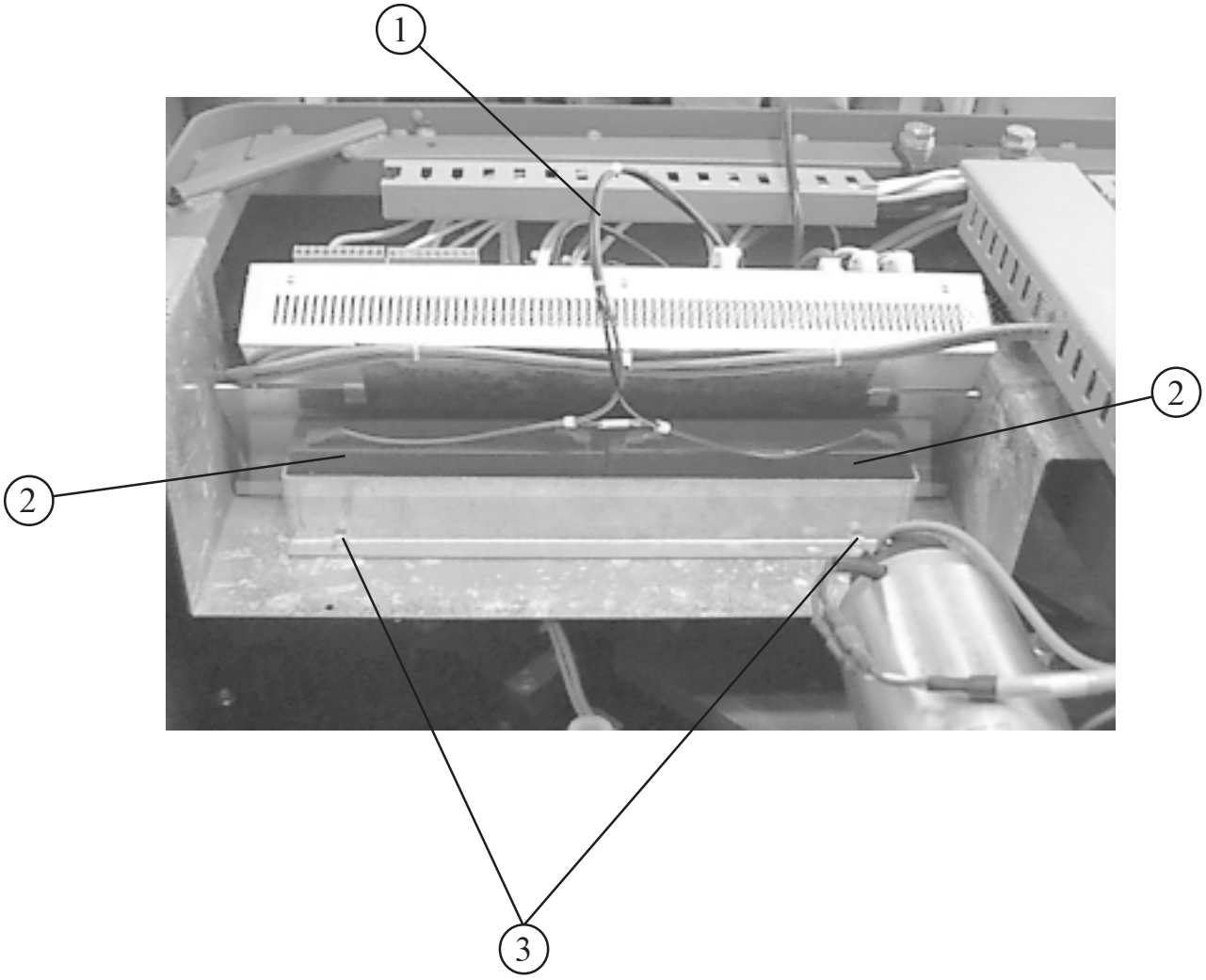


LOADING CELL MODEL. GEFRAN
1 White
2 Empty
3 Red
4 Yellow
5 Green
6 Empty
7 Screen Wire

LOADING CELL MODEL. SAIMA o NBC
1 Red
2 White
3 Yellow
4 Green
5 Blue
6 Black
7 Screen Wire

LOADING CELL MODEL. TEDEA
1 Red
2 Blue
3 Green
4 White
5 Black
6 Brown
7 Screen Wire

Batteries



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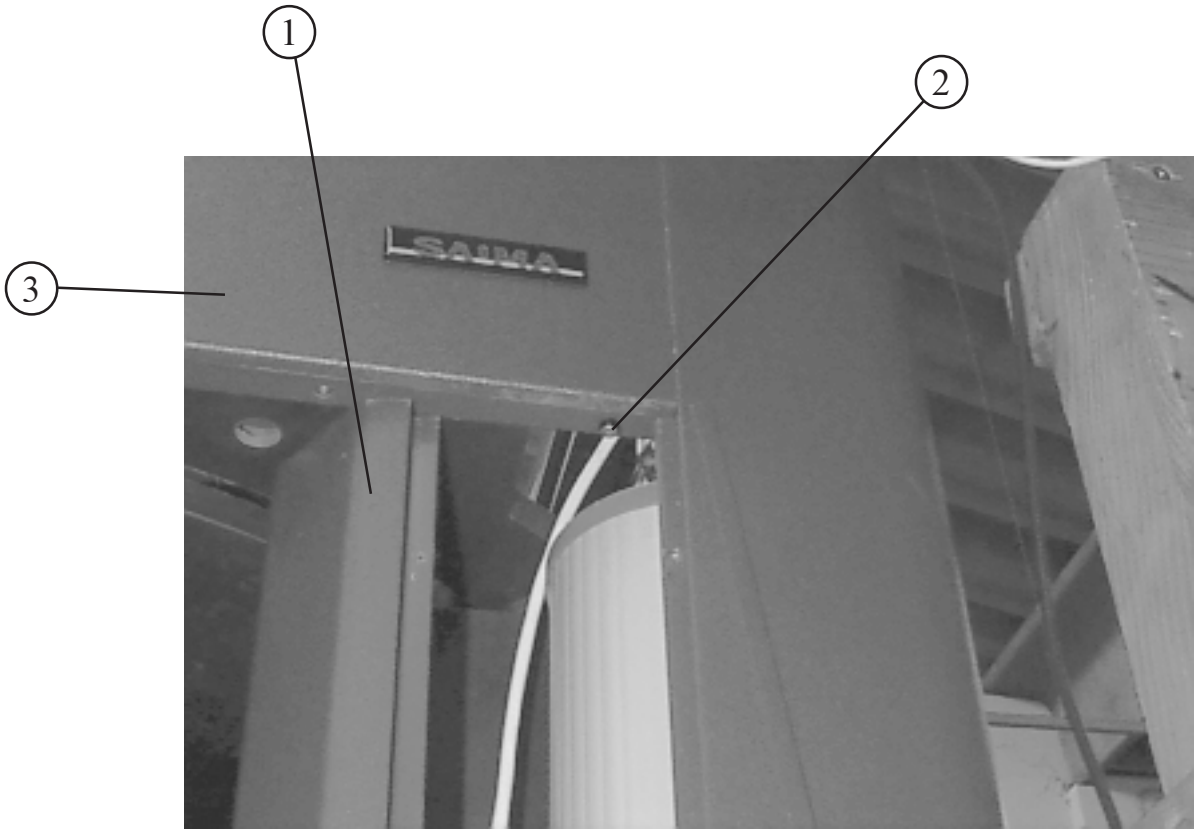
SUBSTITUTING THE BATTERIES

1. Disconnect the cables (1) from the batteries.
2. Un-tighten and remove the screws (3).
3. Substitute the batteries (2) and reconnect the cables (1) respecting the polarity (Red positive, Black negative).

External door panel

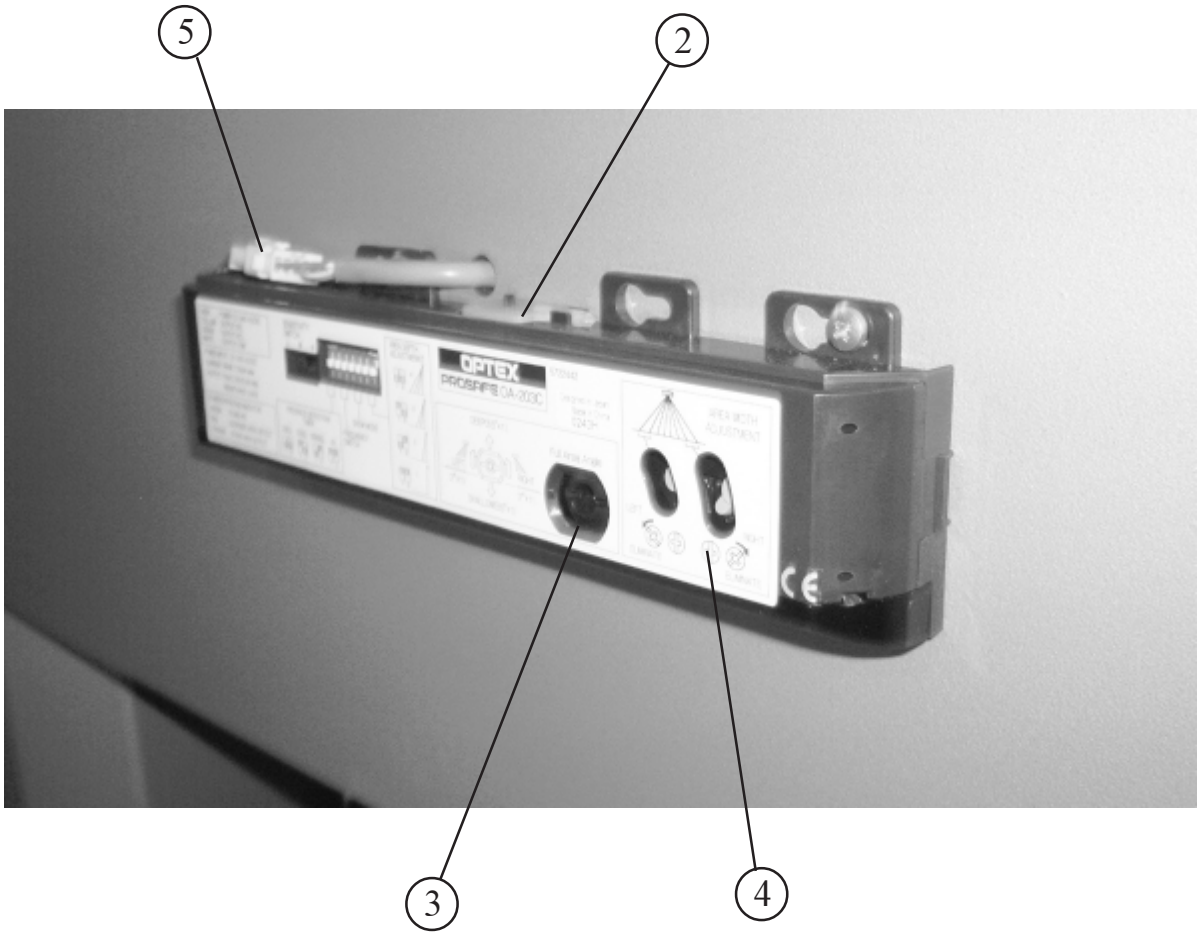


WARNING: Turn off the booth before you do any maintenance using the single board's ON/OFF switch and open the door manually.

Opening the door panel

1. Move the external edge panels (1) (see "Removing panels") until the screws (2) appear.
2. Un-tighten and remove screws (2).
3. Lift the panel door (3).

External radar (opening door)

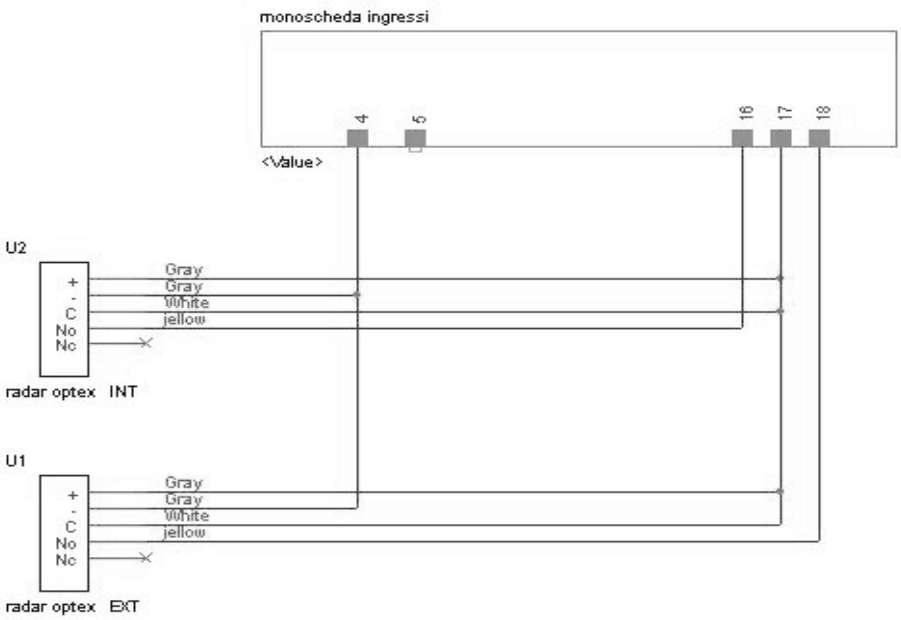


WARNING: Turn off the booth before you do any maintenance using the single board's ON/OFF switch and open the door manually.

ADJUSTING THE OPTEX RADAR

1. Take the top off (1).
2. Modify the inclination of the optex radar using the key (2) in the sliding lever and full area angle (3), if it is necessary to move the sensitivity of the radar further away or to bring it closer to the door.
3. To modify the inclination of the optex radar towards the right or the left use the key (2) in the area width adjustment leaver (4).

Radar connection diagram

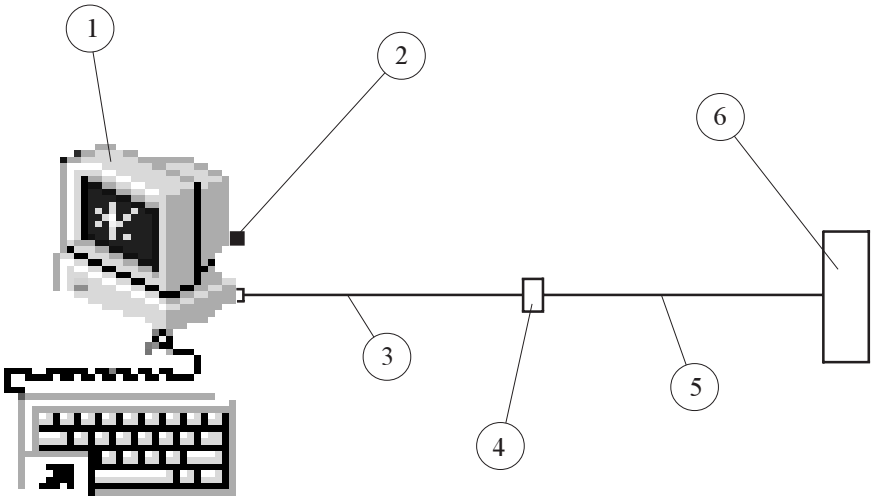


V - FUNCTION ANOMALIES

ANOMALY	*POSSIBLE SOLUTIONS*
The external door opens and closes constantly a voice message asks to "Please put all metal objects in the box"	**1) Check and see if any dangerous or suspicius object has been abandoned in the booth.** Please do not do anything and ring the alarm. If it is a different object remove it as follows: 1.1) Do a "Reset" on the serial console and press "Enter" on the digital console. 1.2) Open the internal door using the exit button and remove the object. 1.3) After the door closes repeat the procedure described in point 1.1. **2) After having verified that the booth is empty follow the procedure described in point 1.1.** **3) Should this problem arise immeditely after or after a short period of time please contact Saima's assistance service.**
The door does not close.	**1) Two people are in the booth at the same time:** 1.1) Through the intercom ask one person to leave. **2) A person that weighs too much is inside the booth or an adult with a child:** 2.1) Push "Enter" on the digital console and "Reset" on the serial console if you want to allow the person/people to pass. If not use the intercom and ask the person to leave. **3) The booth is empty:** 3.1) Check the console's condition. See that the "block" function is not active on both the serial console and the digital console. **4) The booth is empty and none of the above conditions apply. (1-2-3):** 4.1) Push "Enter" on the digital console and "Reset" on the serial console. **5) The photocell on the side of the passage is covered:** 5.1) Remove the object in front of the photocell. 5.2) Clean the photocell's glass. 5.3) Turn off the photocell. If it is the external photocell push 10 on the serial console or 11 for the internal door. Press 7 for a second at the same time. The booth is reset, but you must call Saima's assistance service. **6) Please contact Saima's assistance service.**

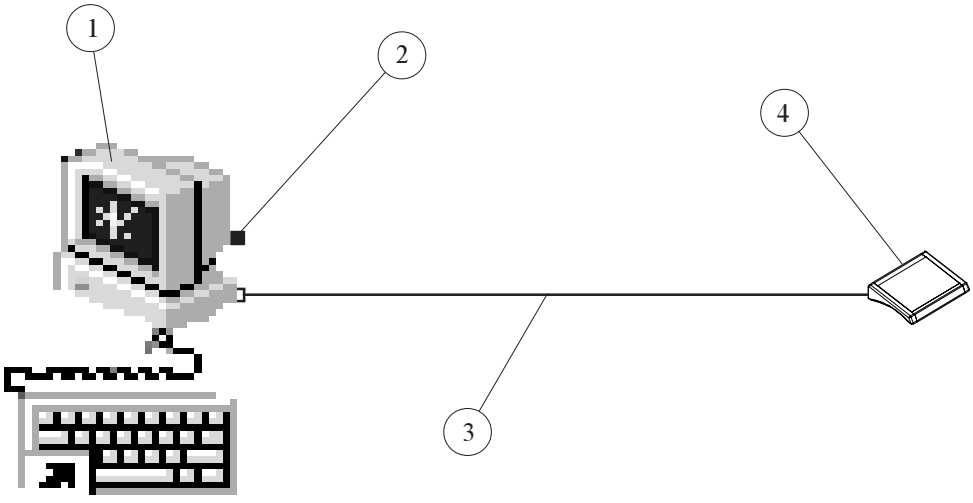
ANOMALY	*POSSIBLE SOLUTIONS*
The door does not work properly.	1) Verify the settings ont the console. 2) Do a console "Reset" (only the serial console).
The metal detector's alarm goes off constantly.	1) Make sure that there are no metal objects near the external door. 2) Make sure that there are no maintenance workers or equipment near the booth. 3) On the serial console press "Control" to de-activate the metal detector and call Saima assistance service . 4) On the digital console it is possible to lower the metal detector's sensitivity (call Saima assistance service).

CONNECTION PLAN COMPUTER - MAIN ELECTRONIC SYSTEM



1 - Personal computer.
2 - Hardware key.
3 - Serial cable DB9 female, DB9 male.
4 - RS232 / RS485 converter.
5 - Converter cable - 8 pin.
6 - Main electronic system.

CONNECTION PLAN COMPUTER - METAL DETECTOR



1 - Personal computer.
2 - Hardware key.
3 - Serial cable RS232 - DB9 female, DB9 male.
4 - Metal Detector main electronic system.