**LIFTINGITALIA S.r.l.**
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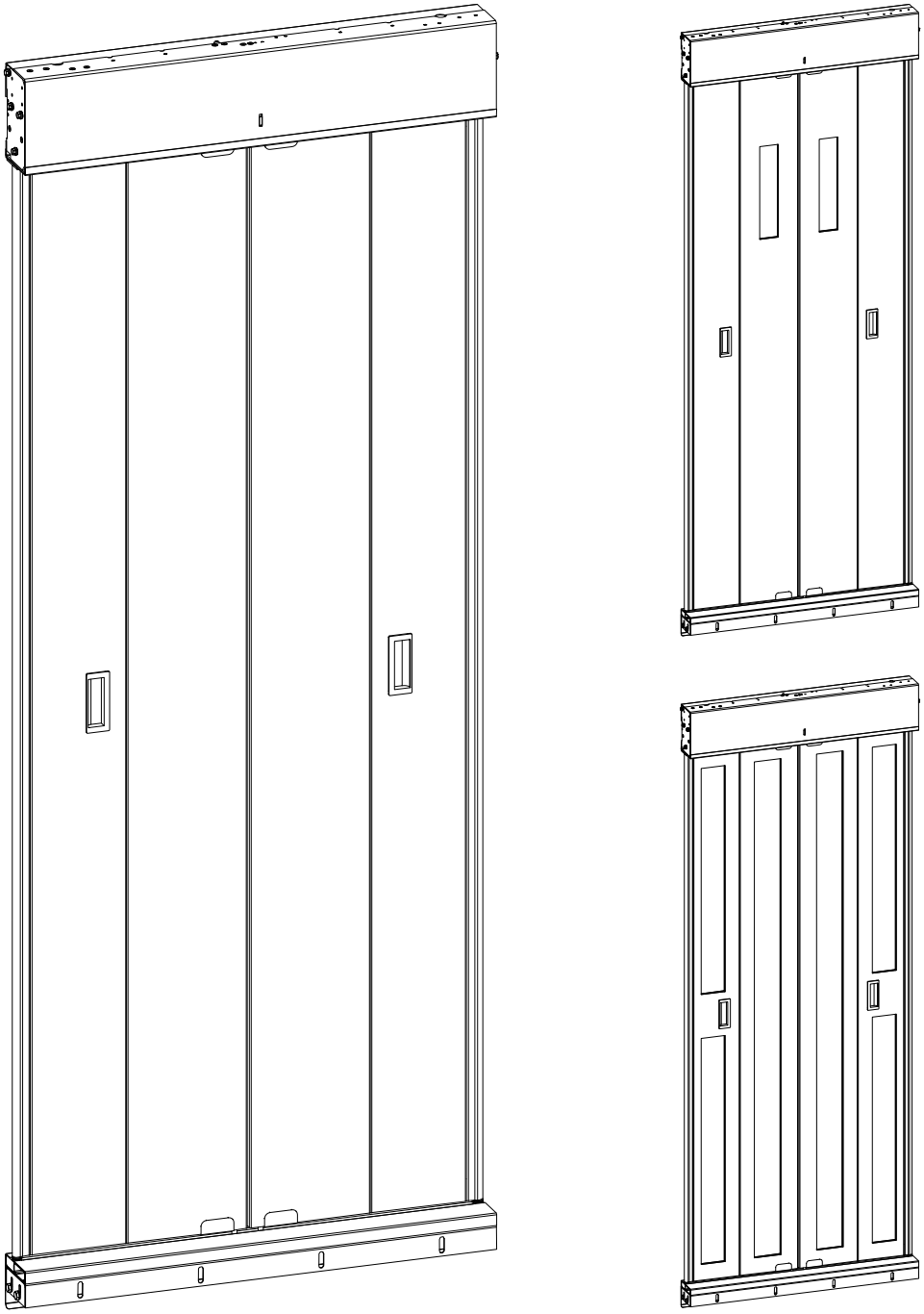
# TWIST

Automatic folding car door



## INSTALLATION AND COMMISSIONING INSTRUCTIONS

| | | |
|---|---|---|
| 8 | General update | 08.04.2019 |
| 7 | Update pages 15 e chapter 8 | 11.09.2017 |
| 6.1 | Update pages 5, 12, 14 | 27.02.2014 |
| 6 | General update | 24.09.2012 |
| 5 | General update | 28.05.2012 |
| 4 | AT18 ruled out | 16.12.2011 |
| *Rev.* | *Description* | *Data* |

## INDEX



## PURPOSE OF THE MANUAL

The purpose of this manual is to provide correct information on the installation of the product, in order to contribute to personal safety and to the proper functioning of the system. Keep the manual for the entire life of the product. In the event of a change of ownership, the manual must be provided to the new user as an integral part of the product.

| NOTICE | |
|---|---|
|  | **READ THIS MANUAL CAREFULLY** before installing and using the product. This product must be installed and put into operation according to the provisions and regulations in force. Improper installation or improper use of the product can cause damage to people and property, as well as cause the warranty to lapse. |
| | **FOLLOW THE SUGGESTIONS AND RECOMMENDATIONS TO OPERATE IN SAFETY.** Any unauthorized modification can compromise the safety of the system, as well as the correct operation and the life of the machine. If you have any doubts regarding the correct understanding of the information and contents contained in this manual, contact LIFTING ITALIA S.r.l. immediately. |
| | **QUALIFIED PERSONNEL:** The product covered by this documentation can only be installed by qualified personnel, in compliance with the attached technical documentation, above all in compliance with the safety warnings and the precautions contained therein. |
| | Keep the technical and safety documentation near the system. |

## PERSONAL SECURITY AND RISK RECOGNITION

This manual contains safety rules that must be observed to safeguard personal safety and to prevent damage to the property. The indications to be followed to guarantee personal safety are highlighted by a triangle symbol while those to avoid material damage are not preceded by the triangle. The hazard warnings are shown as follows and indicate the different levels of risk in descending order.

**RISK SYMBOLOGY AND PHRASES**

| RISK CLASSIFICATION AND RELATIVE GRAVITY OF DAMAGE | | |
|---|---|---|
| **DANGER** | The symbol indicates that the failure to comply with appropriate safety measures **causes** death or serious physical injury. | RISK LEVEL |
| **WARNING** | The symbol indicates that the failure to observe the corresponding safety measures **can cause** death or serious personal injury. | |
| **CAUTION** | The symbol indicates that failure to observe the relevant safety measures **can cause** minor or moderate personal injury or damage to the device. | |
| **NOTICE** | It is not a symbol of security. It indicates that the failure to comply with relevant safety measures **can result** in property damage. | |
| **INFORMATION** | It is not a symbol of security. It indicates important information. | |

If there are multiple levels of risk, the danger warning always indicates the highest one. If a warning is drawn with a triangle to warn to the risk of injury to persons, the risk of possible property damage may also be caused at the same time.

**NOTE:** During installation / maintenance of the platform, the safety functions are temporarily suspended. Therefore all necessary precautions must be taken to avoid personal injury and / or damage to the product.

## MANUAL READING GUIDE

| WARNING SIGN | | | | | |
|---|---|---|---|---|---|
|  | GENERAL DANGER |  | ELECTRICITY DANGER |  | DANGER FLAMMABLE MATERIAL |
|  | DANGER OF FALL BY A LEVEL |  | DANGER SUSPENDED LOADS |  | DANGER CORROSIVE SUBSTANCES |

| PROHIBITION SIGN | | | | | |
|---|---|---|---|---|---|
|  | GENERIC PROHIBITION |  | FORBIDDEN TO STEP ON |  | PROHIBITED TO WALK ON OR STOP IN THIS AREA |

| MANDATORY SIGN | | | | | |
|---|---|---|---|---|---|
|  | OBLIGATIORY TO WEAR THE PROTECTION HELMET |  | OBLIGATORY TO WEAR SAFETY SHOES |  | OBLIGATORY WEAR THE PROTECTIVE GLOVES |
|  | OBLIGATORY TO WEAR EYE PROTECTION |  | OBLIGATION TO WEAR THE AUDIO PROTECTION |  | OBLIGATORY TO WEAR THE MASK |
|  | OBLIGATORY TO WEAR PROTECTIVE CLOTHES |  | OBLIGATORY TO KEEP CLOSED |  | OBLIGATORY TO CHECK THE PROTECTIONS |

| EMERGENCY AND FIRST AID SIGNS | | INDICATION SYMBOLS | | | | | |
|---|---|---|---|---|---|---|---|
|  | FIRST AID |  | NOTA BENE |  | KEEP DRY |  | OBLIGATORY TO CHECK THE PROTECTIONS |

## LIABILITY AND WARRANTY CONDITIONS:

### RESPONSIBILITY OF THE INSTALLER

The elevator / platform is produced and intended to be installed as described in the attached project drawing and in this manual; any divergence from the prescribed procedure may affect the operation and safety of the system and cause the immediate cancellation of the warranty.

Any modification or variation made to the project and the to the assembly Instructions must be documented in detail and referred to LIFTING ITALIA S.r.l., in order to allow the company an adequate assessment. Under no circumstances can a modified system be activated without the express authorization of LIFTING ITALIA S.r.l.

Installers are responsible for ensuring compliance with safety procedures at work and any health and safety regulations in force in the country and on the site where the assembly is carried out.

The elevator / platform must only be used in the way envisaged by the system and illustrated in the relative manuals (transportation of people and / or things, maximum loads, cycles of use, etc.). LIFTING ITALIA S.r.l. assumes no responsibility for damage to persons and property caused by improper use of the system.

**NOTE:** Pictures and images on this manual are for illustration purposes only.

# 1. INSTALLATION SITE MANAGEMENT

## 1.1. GENERAL DISPOSITIONS

**IMPORTANT!**

For more information on safety, liability and warranty conditions, receipt and storage of material on site, packaging, waste disposal, cleaning and storage of the product; refer to the "**SAFETY INSTRUCTIONS AND SITE MANAGEMENT**" manual.

**NOTICE**

**PRELIMINARY CHECKS:** Once the packaging has been opened, check that the product is intact and has not been damaged during transport. Should any anomalies or damage be found, please dispatch them in writing on the transport document to the transport company, giving written notice to LIFTINGITALIA S.r.l.

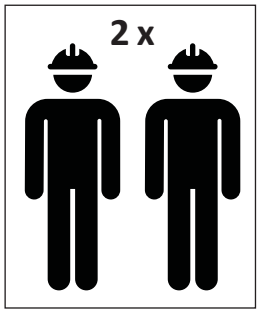
**NOTE:** In this manual, we will talk about "SHAFT" meaning for it the base slab, the slab of landing and the vertical wall that connects its slabs.

**⚠ CAUTION**

**SAFETY AND SITE MANAGEMENT - OVERALL DISPOSITIONS:**

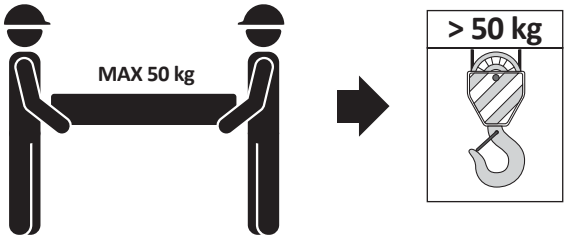
1. Always secure tools and any objects against falling;
2. Pay the utmost attention to all the steps described in this;
3. While assembling the parts making up the system or after installation, be careful of any sharp burrs (machining residues);

- Before proceeding with the installation, it is necessary to remove the rubble and the material deposited during the construction of the shaft.
- Only nuts and bolts included in the supply must be used.
- The bags containing the screws must be opened in correspondence with the respective operating phases indicated in this manual.
- The instructions described in this manual refer to a reinforced shaft, to a fastening with mechanical expansion plugs of the stud type. For the use of plugs in masonry other than the reinforced concrete see the attachment to this manual. For the shafts with metal framework, we proceed by replacing the plugs with normal screws.
- In these instructions and on the wiring diagram, the stops are indicated with 0, 1, 2, 3, meaning "0" the lowest stop: the numbers on the push-button panels may be different according to the user's needs (for example- 1, 0, etc.).




**The assembly must be performed by a MINIMUM 2 people;**

**If the load is greater than 50kg, use the hoist for handling.**



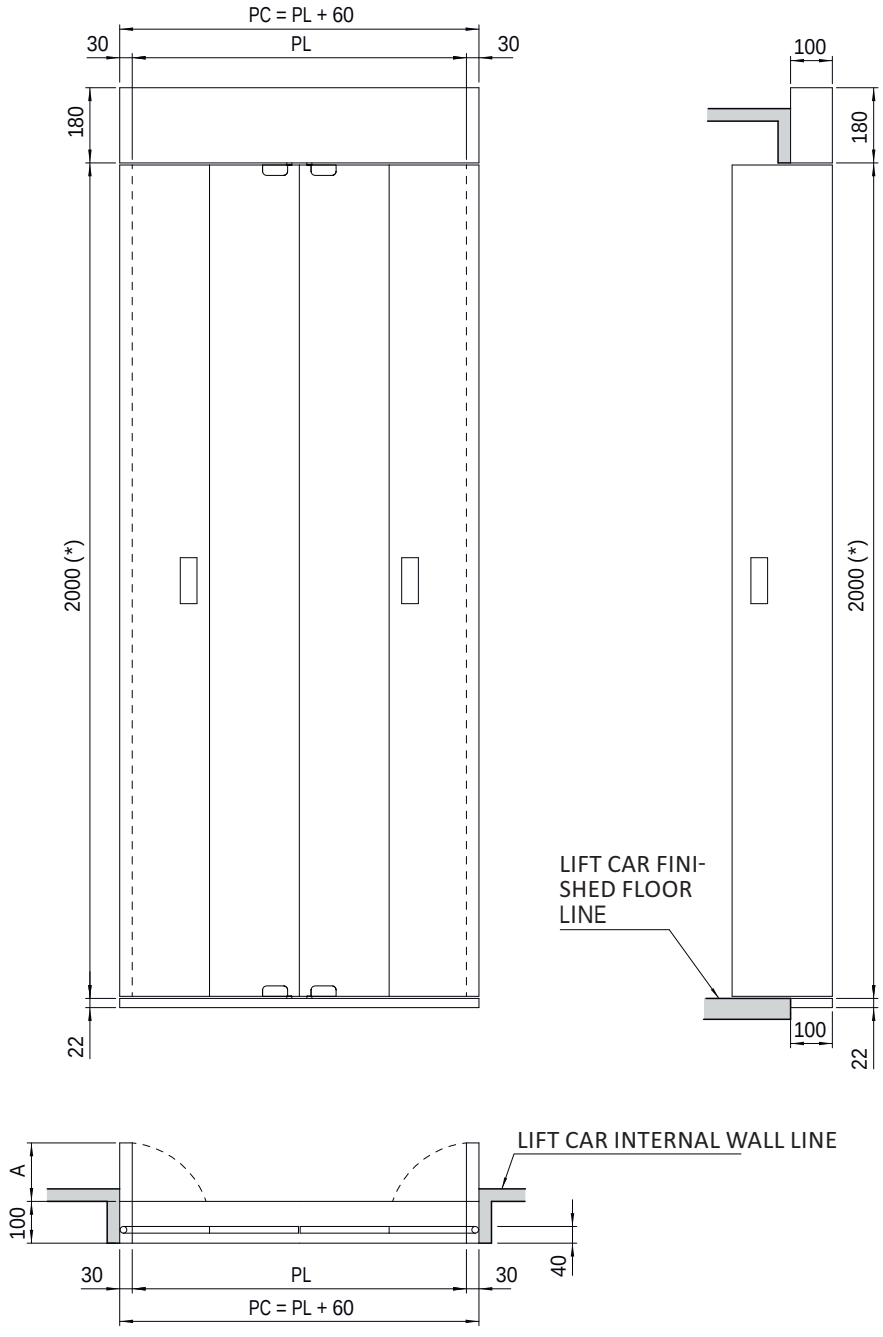
INFORMATION

# 2. PRODUCT DESCRIPTION

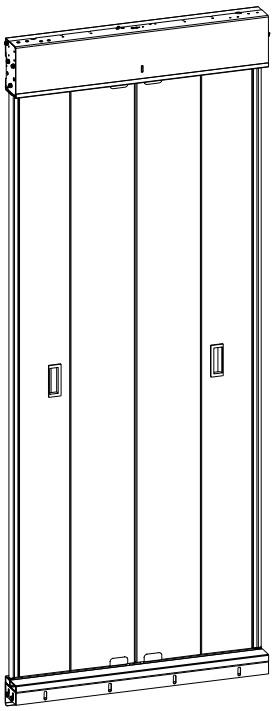
## 2.1. GENERAL DESCRIPTION AND TERMINOLOGY

AUTOMATIC FOLDING CAR DOOR

### Ty4A - TWIST DIMENSIONS



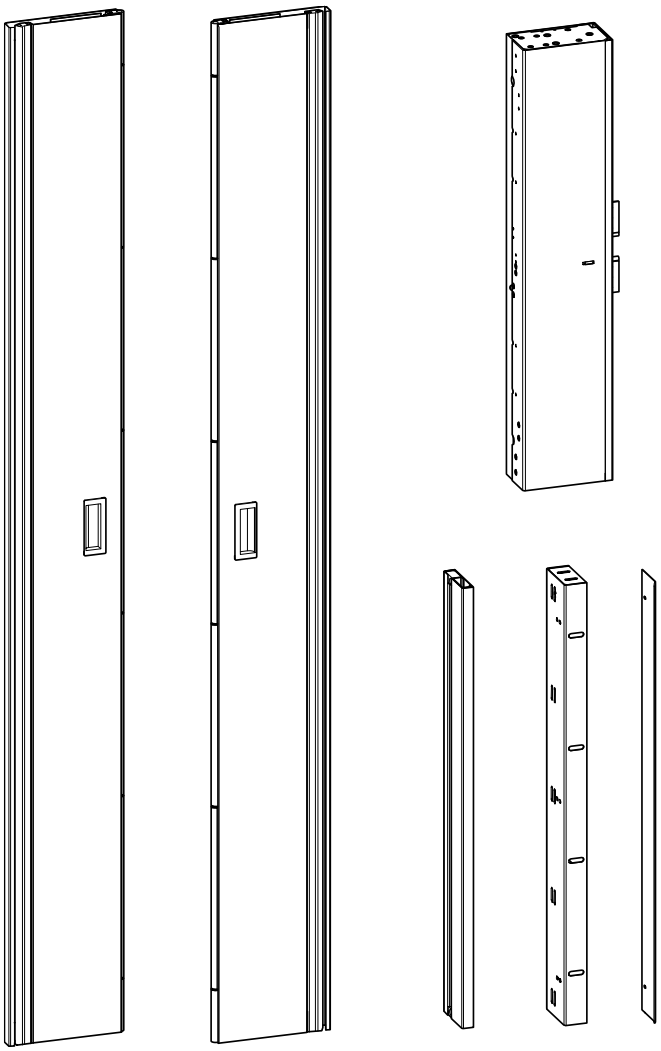

| PL (mm) | PC (mm) | A (mm) |
|---|---|---|
| 550 | 610 | 76 |
| 600 | 660 | 88 |
| 650 | 710 | 101 |
| 700 | 760 | 113 |
| 750 | 810 | 126 |
| 800 | 860 | 138 |
| 850 | 910 | 151 |
| 900 | 960 | 163 |
| 950 | 1010 | 176 |
| 1000 | 1060 | 188 |
| (*) LH: min 1800 mm; max 2100 mm | | |



LIFTING ITALIA S.r.l. goal is to promote the continuous improvement of its products and consequently their technical specifications may be subject to change without notice or commitment.

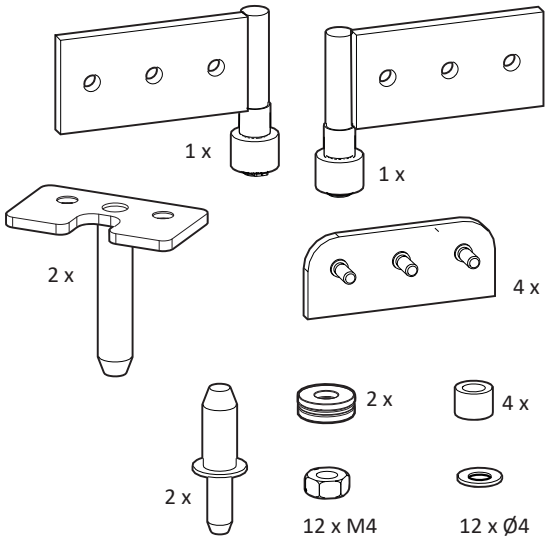
## INFORMATION 3. BOX CONTENT - SCREWS KIT

**NOTE:** Each "KIT" box with its identification code represents the packaging unit, i.e. how many pieces per type are contained in each package.



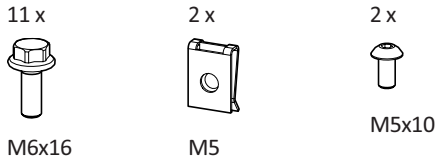
**KIT D401.23.0008**

**DOOR HINGES AND GUIDE BUSH FLAGS KIT**



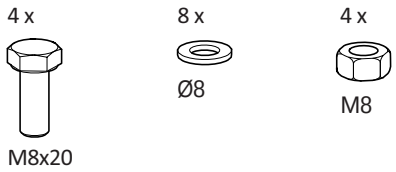

**KIT D401.23.0006**

**DOOR OPERATOR AND SILL KIT**

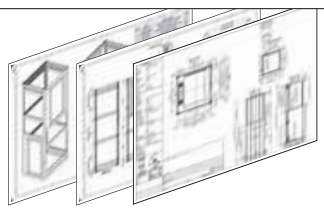



**KIT C002.23.0006**

**DOOR SILL SUPPORT KIT**



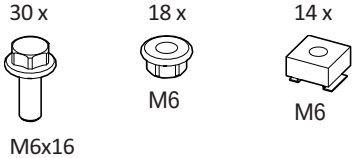

**LAYOUTS**



IN THE CABIN PACKAGING (covered in this manual)

**KIT C002.23.0010**

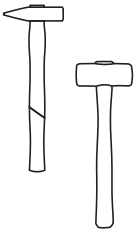
**CAR WALLS KIT**



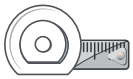
## INFORMATION 4. TOOLS AND MATERIALS REQUIRED FOR INSTALLATION

Hammer

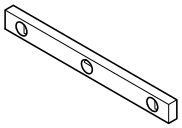
Rubber hammer



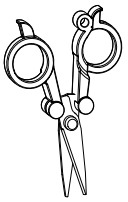
Deflectometer



Level

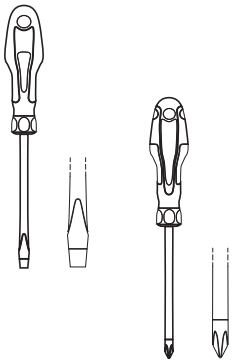


Scissors for electricians



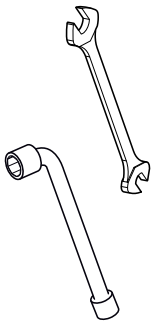
Screwdriver

Phillips screwdriver



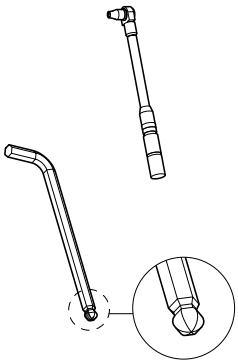
Monkey wrench
CH 8 ÷ 17 mm
2 pz x CH

Pipe wrench
CH 8 ÷ 17 mm



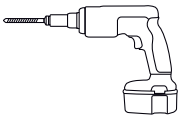
Ring spanner
S 13 ÷ 17 mm

Allen wrench with spherical head
CH 3 ÷ 6 mm



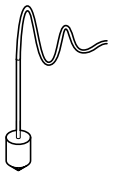
Drill
CH 6 ÷ 10 mm

for Brickwork
Metal



Hoist
150 kg

Perpendicular



# 5. PRELIMINARY OPERATIONS

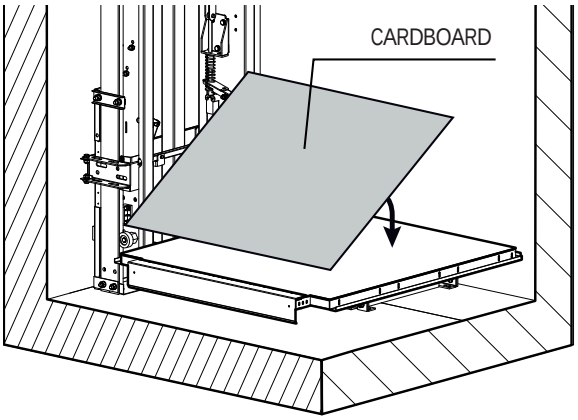
## 5.1. POSITIONING OF MATERIAL ON SITE

### NOTICE

**MATERIAL POSITIONING:**
It is important to position the material correctly on the installation site as once the scaffold has been assembled it may become difficult to handle certain components, with the risk of injury and damage to the materials.

### INFORMATION

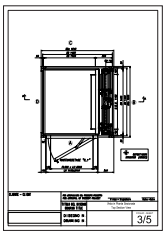
Protect the car floor during installation.




- Refer to the installation Layout Drawings for the correct positioning of doors in relation to the shaft dimensions, and to determine the correct handing of doors.

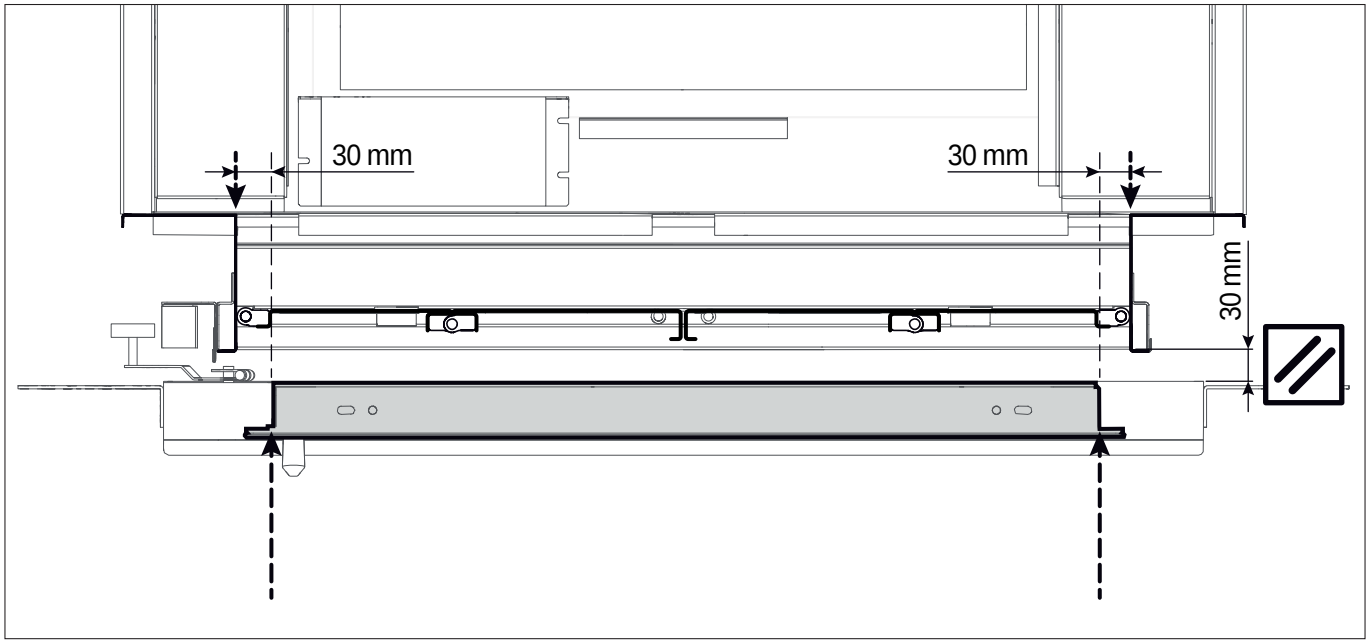
### INFORMATION

Refer to the installation Layout Drawings for the correct positioning of doors in relation to the shaft dimensions, and to determine the correct handing of doors.

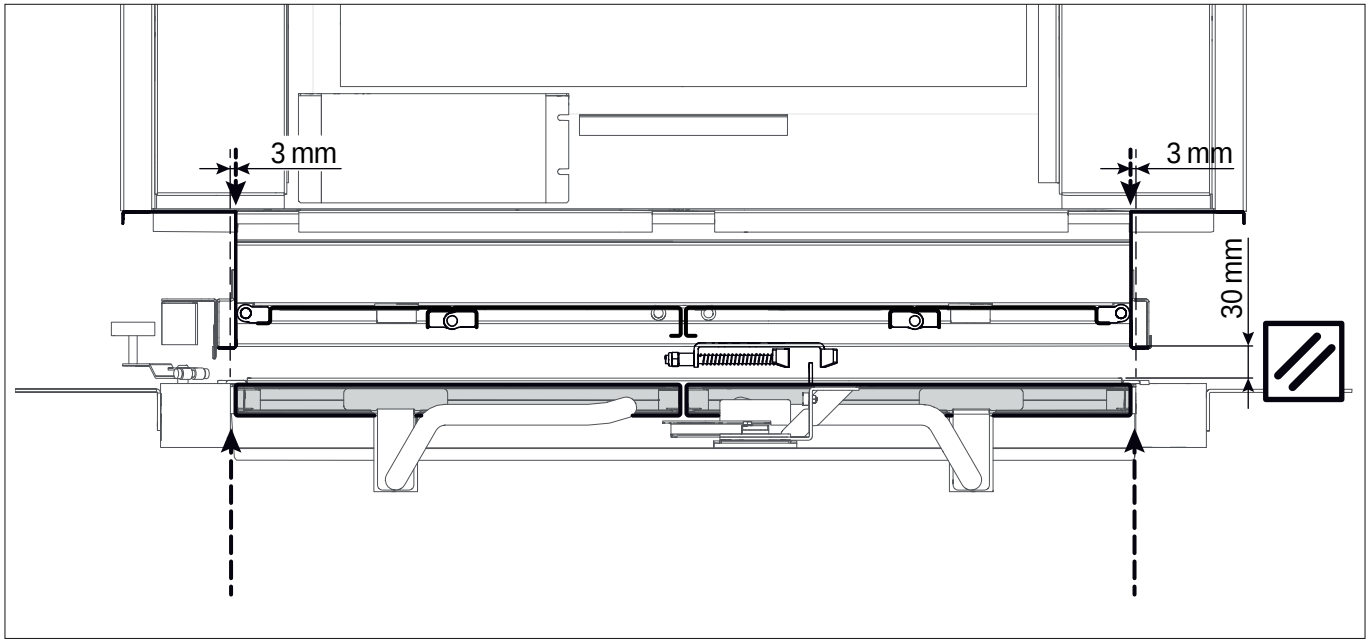


## 6. CAR DOOR POSITIONING

with swing landing door (e.g.: LUMIERE)




with MyDOMO 2 panel swing landing door (coupling)



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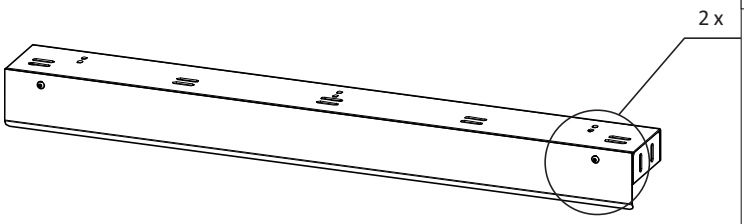
## 7. CAR DOOR ASSEMBLY

### INFORMATION

In order to start the installation of the door, the lift car must be completely assembled.

- Install the sill support

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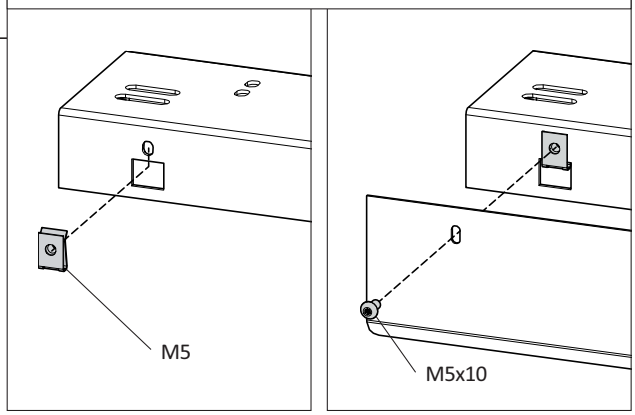
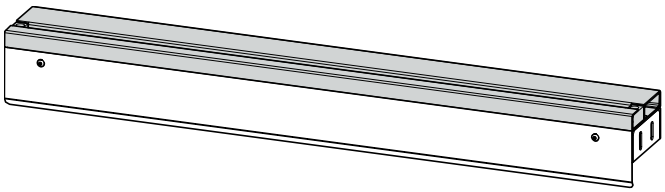



- Install the sill assembly



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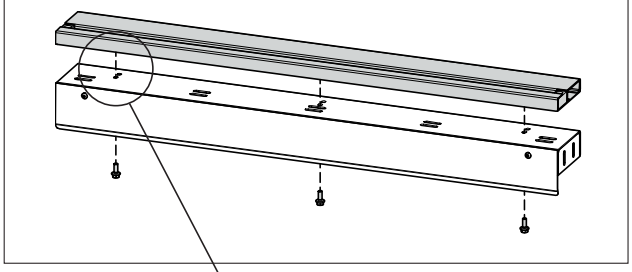
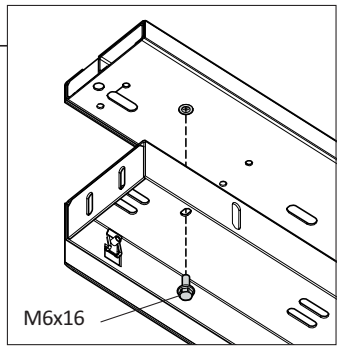
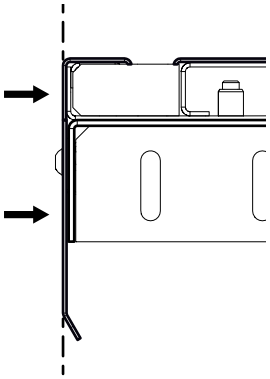


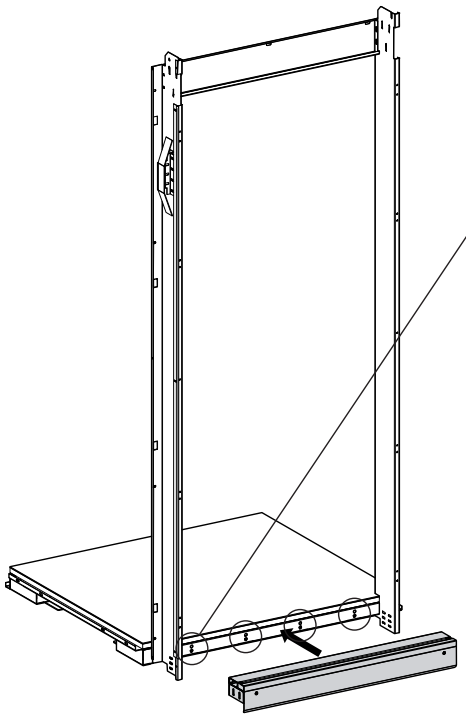



### INFORMATION

Check the complanarity of the highlighted surfaces: the sill must be aligned with the toe guard.

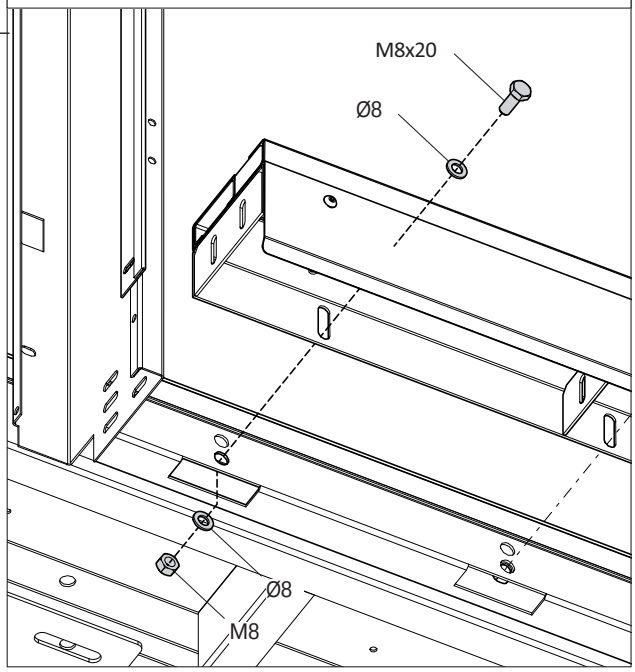


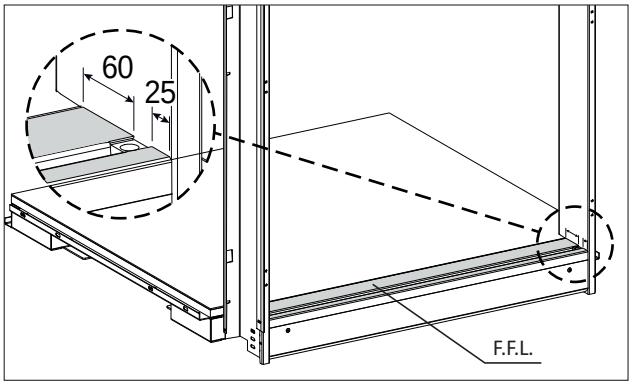
- Fasten the sill assembly to the car basement



4 x

**KIT C002.23.0006**



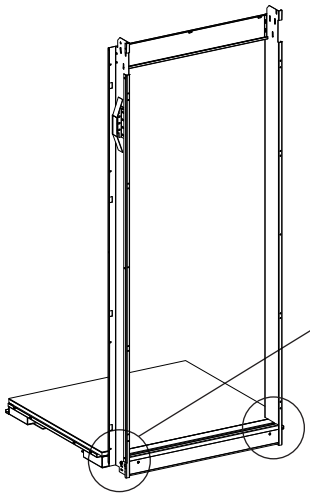




**INFORMATION**

Check the alignment between the sill and the finished floor line.

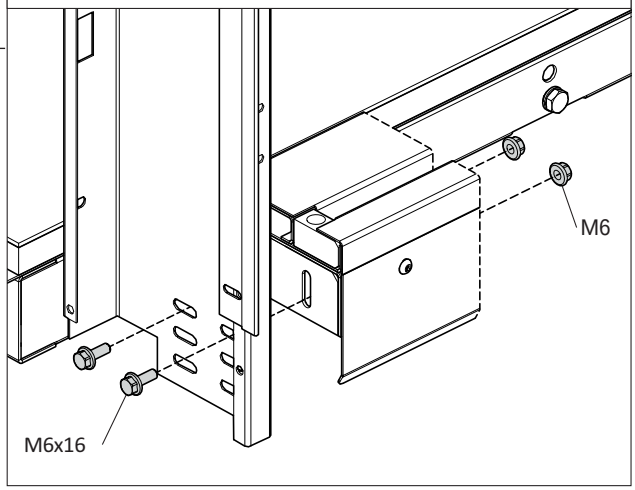
- The sill guide must be towards the landing door.

- Fasten the sill assembly to the car front uprights



2 x

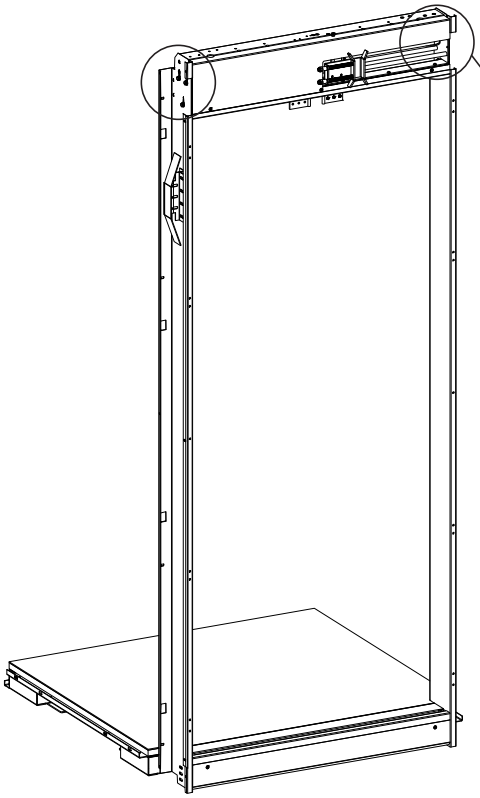
**KIT C002.23.0010**

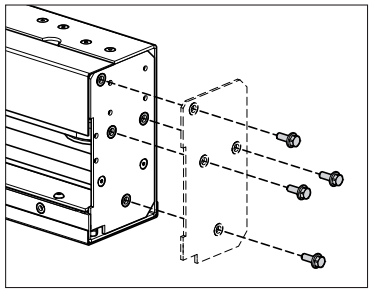



**INFORMATION**

Check the alignment between the sill and the landing door.

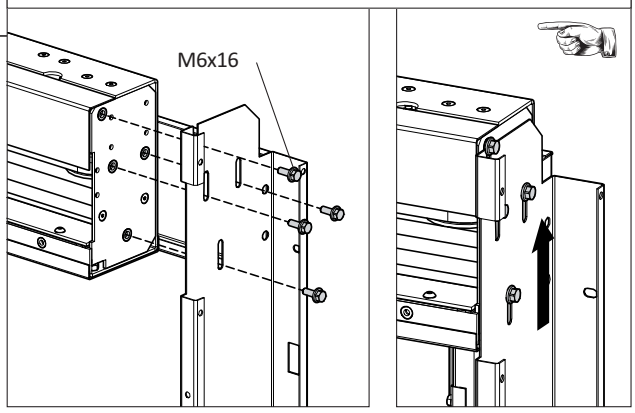
- Fasten the door operator





**KIT D401.23.0006**

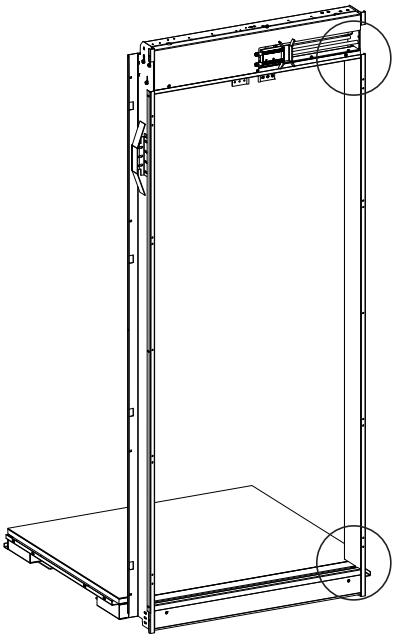
2 x



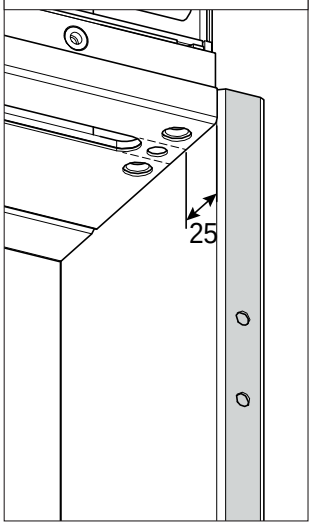

Fasten the door operator in the topmost position available of the slots.

## INFORMATION

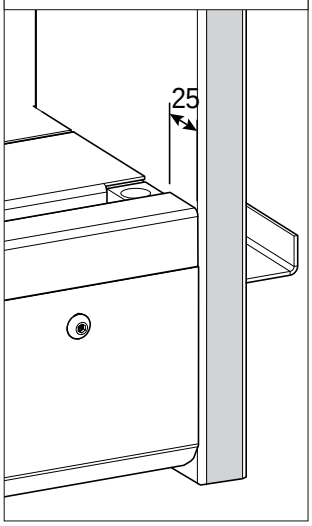
Check the alignment between the door operator and the sill: the upper slot guides of the operator and the sill guide must be aligned and towards the landing door



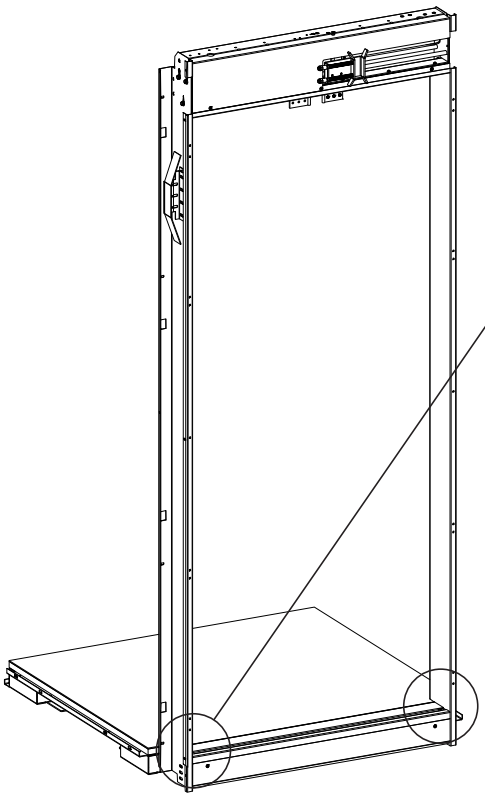

**DOOR OPERATOR**




**DOOR SILL**

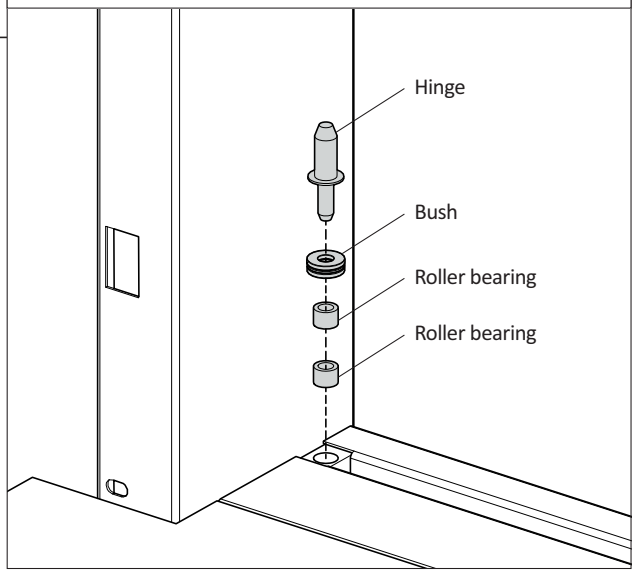


- Place the bottom panel hinge pin

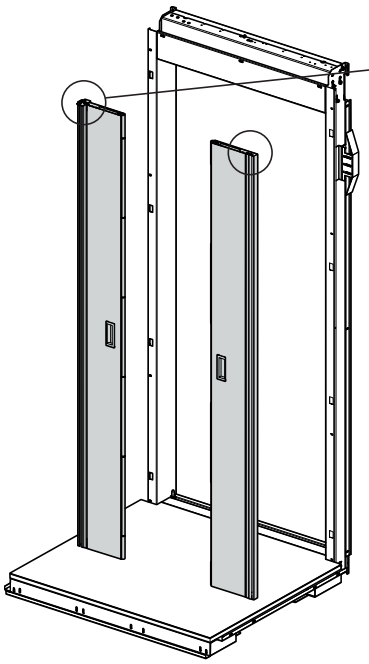


2 x

**KIT D401.23.0008**

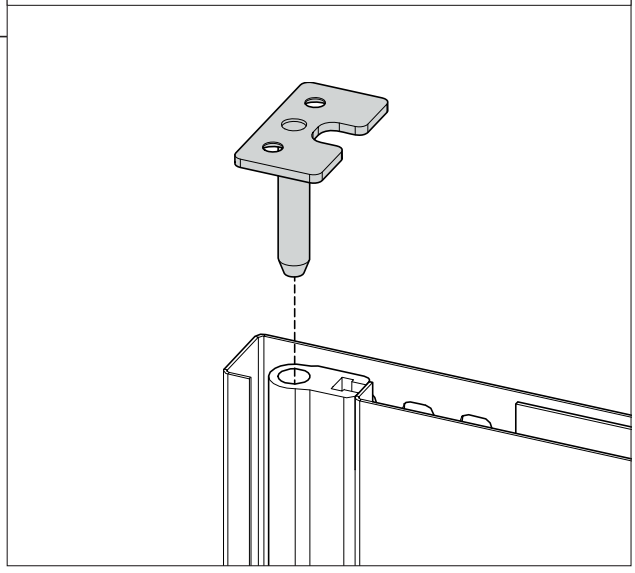



- Place the upper hinge in the panels



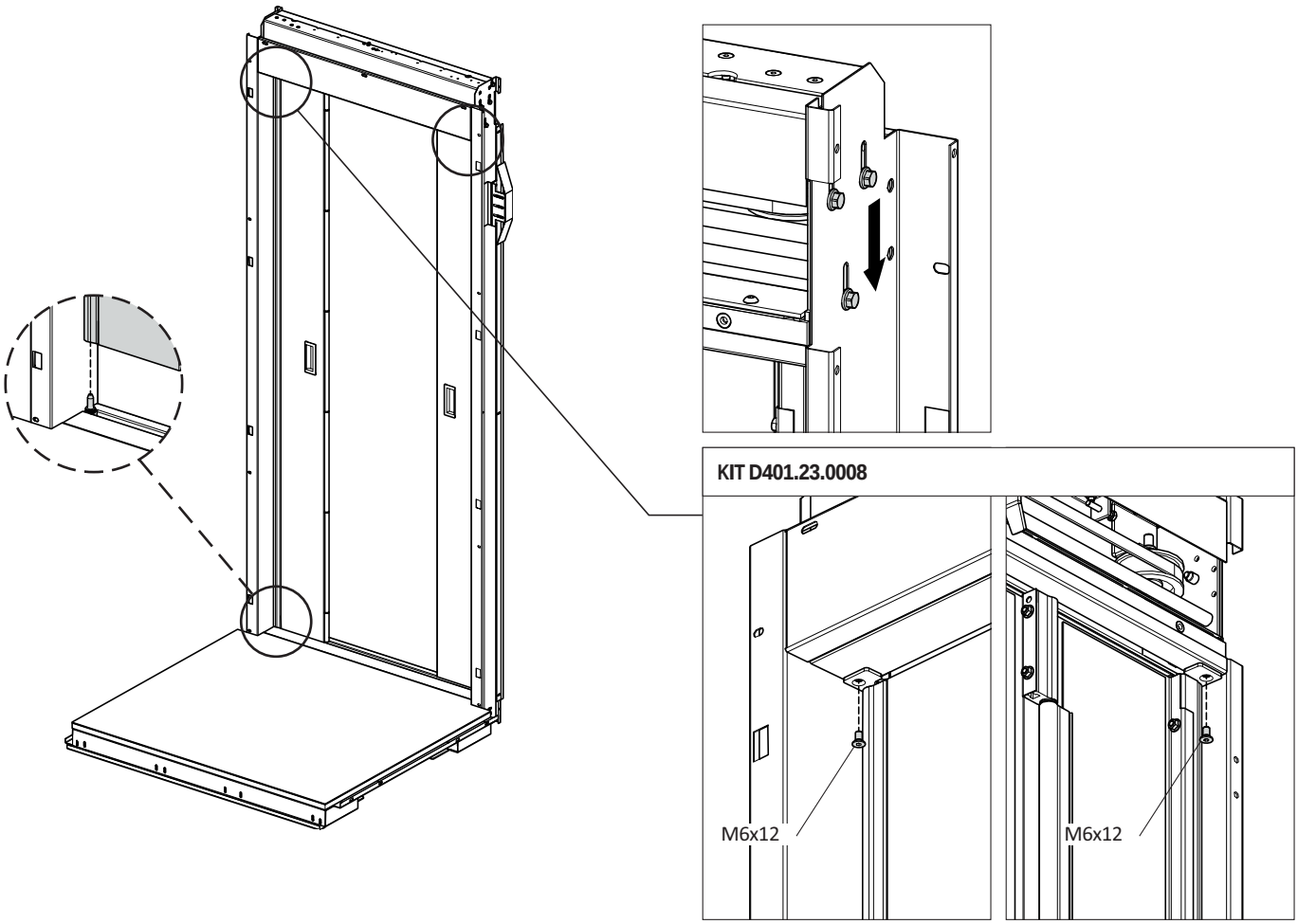
2 x

**KIT D401.23.0008**



| **INFORMATION** |
| --- |
| The panels are identical and symmetrical, you don't need to choose between right and left. |

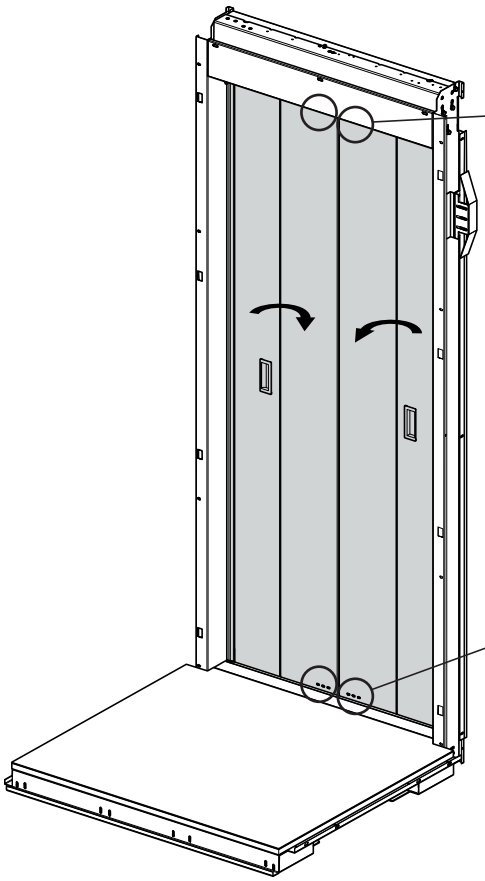
- Engage the panel in the bottom hinge pin, fasten the upper hinge pin and lower the operator fixing it in order to achieve LH = 2000 mm.




## INFORMATION

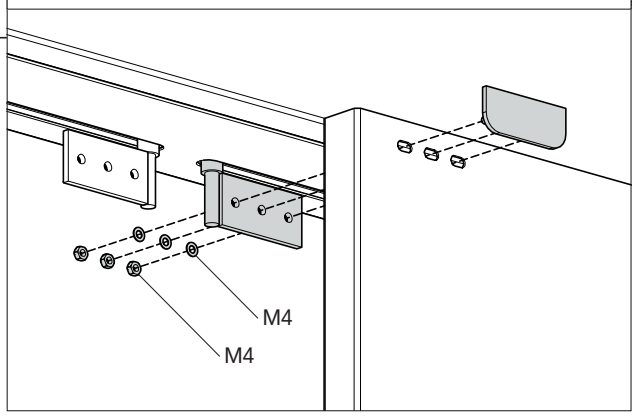
Check that the panel smove smoothly, with low frictions, during their whole run.

. With both panels CLOSED and ALIGNED, fasten the top traction inner pins and the bottom inner pins.

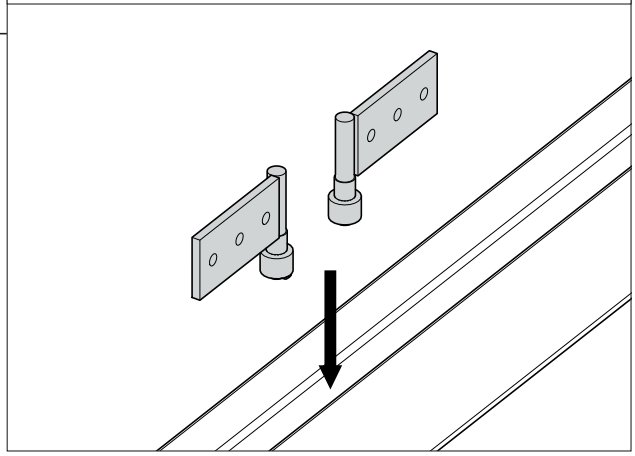


2 x

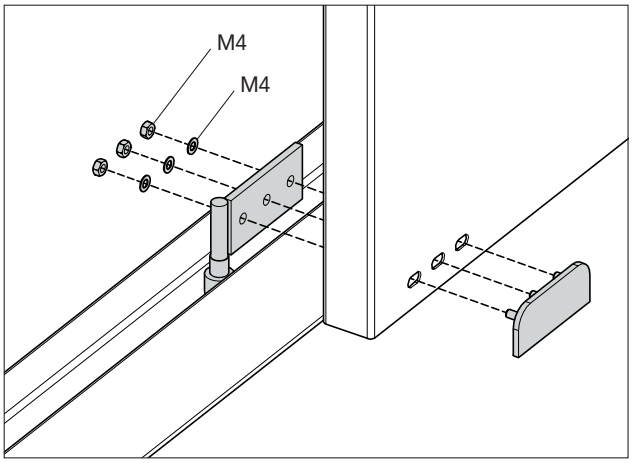
**KIT D401.23.0008**

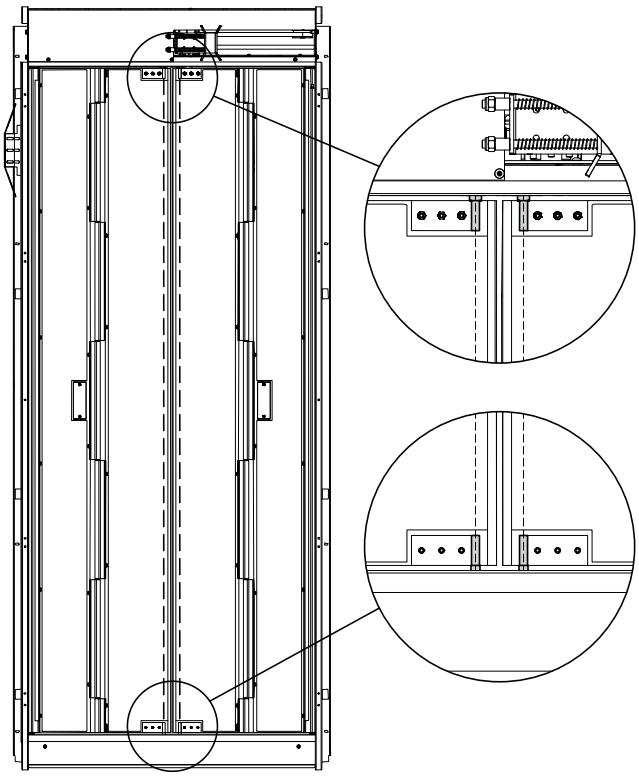



**KIT D401.23.0008**



2 x

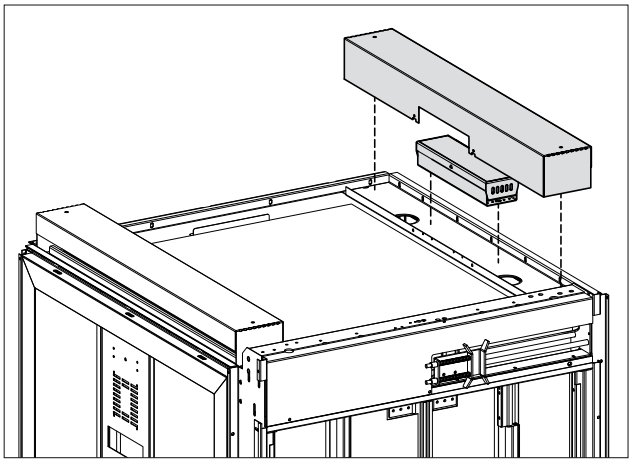


## INFORMATION

Check the right alignment between the top and bottom inner pins.
Check that the panel smove smoothly, with low frictions, during their whole run.

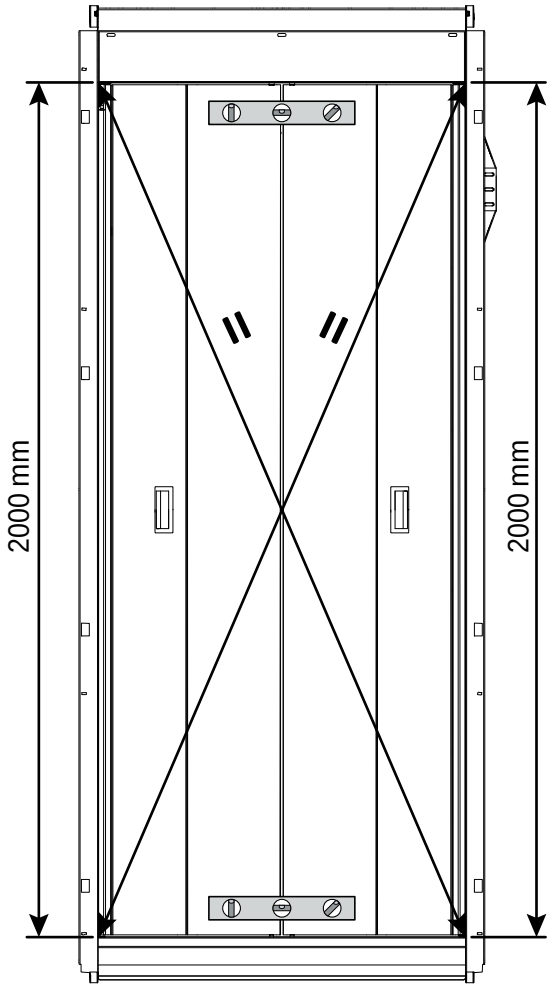
- Place and fix the MD55 controller on the lift car roof.



## 8. FINAL CHECKS

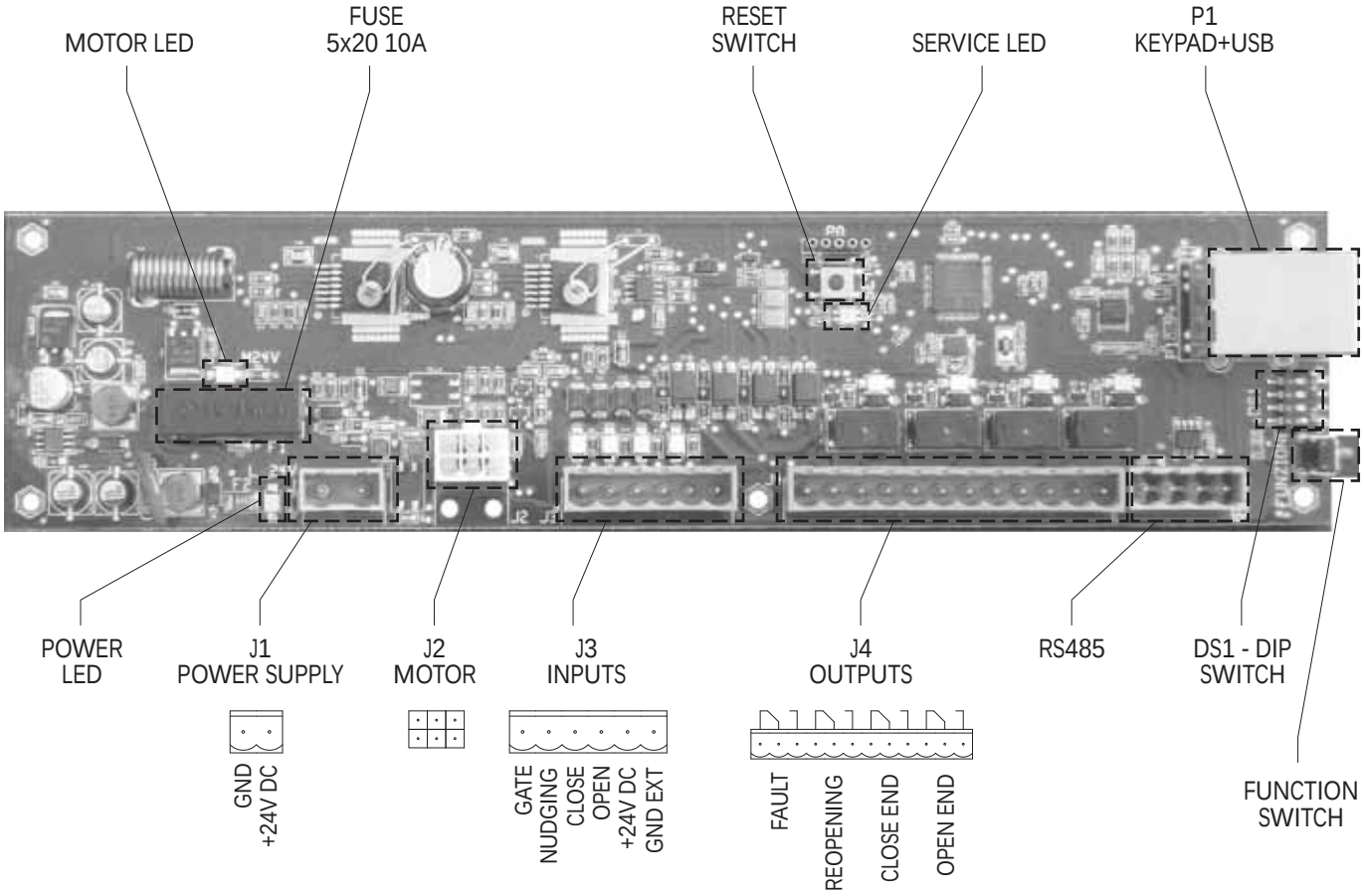
**INFORMATION**

Thoroughly perform the four dimesional and the two alignment checks.



## 9. MD55 CONTROL UNIT INSTRUCTIONS

### 9.1. MD55 CONTROLS OVERVIEW




| | | |
|---|---|---|
| **J1** | Power supply | **1**: GND<br>**2**: +24V |
| **J2** | Motor connection | |
| **J3** | Input signals connections | **1**: Consent<br>**2**: Nudging<br>**3**: Closing<br>**4**: Opening<br>**5**: Output +24V<br>**6**: GND_EXT (DS1.1 = OFF); GND (DS1.1 = ON). |
| **J4** | Output signals connections | **1-2-3**: Fault<br>**4-5-6**: Re-opening<br>**7-8-9**: Closing limit switch<br>**10-11-12**: Opening limit switch |
| **RS485** | RS4185 communication connections | |
| **DS1** | DIP-switch | |
| **P1** | Connection RJ45/USB | **RJ45 plug** → Hand terminal connection |

## 9.2. BUTTONS

**FUNCTION BUTTON**

The FUNCTION button combines the self-learning operation with the possibility to close and open the doors by means of the control unit.

By holding the button down for more than 5 sec the self-learning operation is activated.

Even if the self-learning process has not been completed, by pushing briefly the FUNCTION button the door moves:

- If the button is pressed while a control signal has been given and the corresponding operation is in progress, the latter will be stopped and the opposite operation will start (for instance: if the door is closing it will stop and start reopening). By pressing a second time the operation is interrupted and the control signals, if present, will have priority. The same happens when one of the limit switches is engaged;
- If the button is pressed when no operation is in progress then a control signal is given for a manoeuvre opposite to the last one. By pressing the button a second time the operation is interrupted and the control signals, if present, will have priority. The same happens when one of the limit switches is engaged.

**"RESET" BUTTON**

Pressing the Reset buttom means cutting off the power supply thus risking to lose the data you were storing. After a board reset a position detection must be done.

**INFORMATION**

If possible please switch off the board instead of making a rest using this button.

## 9.3. INDICATOR LIGHTS

**POWER SUPPLY LEDS**
Two leds show the state of the board's power supply:
- led **POWER LED**: ON when the power supply is connected;
- led **MOTOR LED**: ON when the motor's drivers are supplied.

If the POWER LED is on and the MOTOR LED is off then the F1 fuse is burnt out.

**OUTPUT LEDS**
4 leds show the status of the outputs on the J4 connector:
- RED led (**FAULT**): fault led. ON when the board needs a reboot due to an error;
- YELLOW led (**REOPENING**): safety edge led. ON when an obstacle is detected while the doors is closing or re-opening;
- BLUE led (**CLOSE END**): closed door led. ON when the door is closed;
- GREEN led (**OPEN END**): open door led. ON when the door is open.

**INPUT LEDS**
4 leds show the status of the imputs on the J3 connector:
- RED led (**GATE**): release led. ON when the signals release is on.;
- YELLOW led (**NUDGING**): nudging closing led. ON when the nudging closing signal is given;
- BLUE led (**CLOSE**): closing led. ON when the closing signal is given;
- GREEN led (**OPEN**): opening led. ON when the opening signal is given.

**SERVICE LED**
The service led is either green or red.
The difference depends on the given information (see ch. ERRORS AND PROTECTIONS for the error list and description):

| STATUS | MEANING |
|---|---|
| Green led on and red led off | Normal operation |
| Blinking green led | Position detection required |
| Green and red led blinking alternately | Selflearning required |
| Green led off and red led blinking (1Hz) | Selflearning operation |
| Green led off and red led blinking | No motor selected |
| Green led off and red led blinking with blinking code | Error alarm |

**P1 CONNECTOR LEDS (RJ45/USB)**
The **P1** connector **(RJ45/USB)** is equipped with two leds: green and yellow.
The green led is blinking if a serial communication with the control panel or hand terminal is active.

**DIP SWITCH**
The door operator is equipped with a 4-pin DIP switch which is used for some functions preset on the board.

## 9.4. FIRST START CONTROLLER MD55

This is a detailled description of the selflearing procedure which is concisely written on the controller sticker label.

1. Unplug the J1 power supply connector;
2. Close the door manually and make sure no obstacle is in its way;
3. Plug in the motor connector;
4. Plug the J1 power supply connector and make sure the board is powered;
5. The service led is now lit red. Wait until the service led starts blinking red and green alternately;
6. Press the FUNCTION button for more than 5s and then release it;
7. The red service led starts blinking while the green one is off. This is the start of the self-learning procedure;
8. Once the self-learning procedure is over the door is closed. The green service led is lit and the blue CLOSE END led is on: the door operator can now work regularly.

## 9.5. POSITION DETECTION

After a board reboot the service led is lit red and the door moves Some millimeters for a few seconds. Afterwards, if a self-learning cycle has been made, the door must recognize a travel limit. This happens also in case of a REBOOT due to a POWER FAILURE.
The position detection status is shown by the green service led blinking.
There are three options to make this operation:

1. Automatically by means of the opening and closing signals given by the control panel;
2. By means of repeated opening and closing signals given with the FUNCTION button. In this case the door must be opened and closed completely until a travel limit has been detected. Once the travel limited is reached you have to wait at least 3 sec before giving a new signal;
3. By means of the hand terminal. The door moves between the two travel limits at the preset speed and the position detection procedure ends when the whole clear door opening has been measured and recognized;

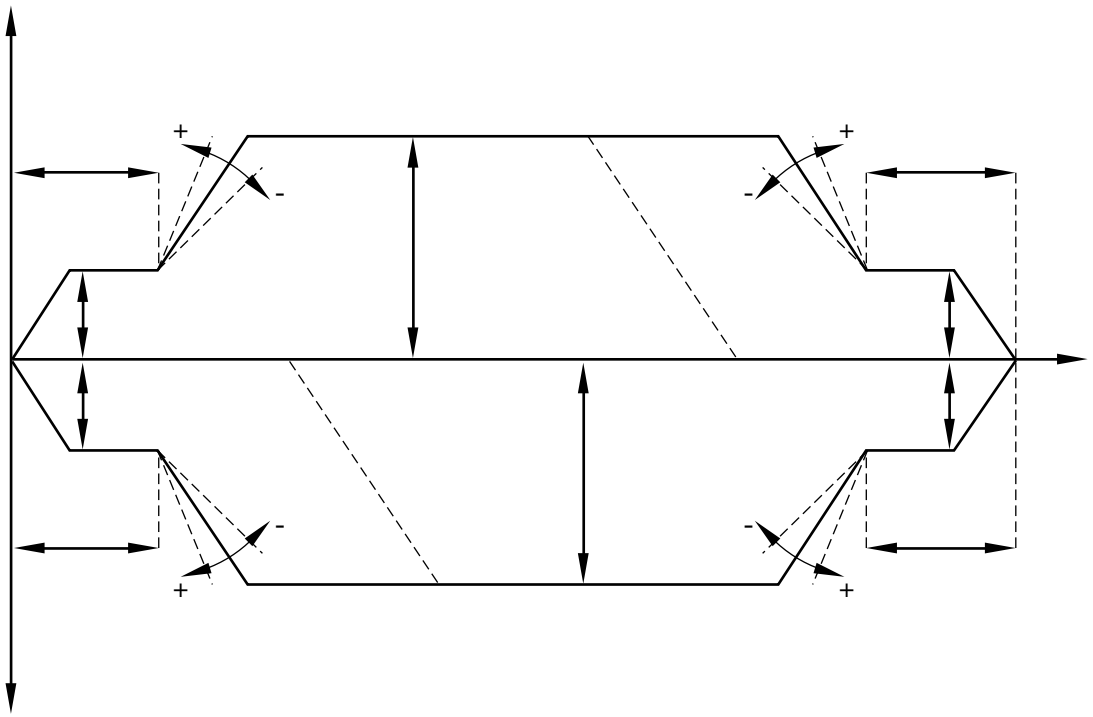
Once the procedure is over the green service led is lit.

The position detection procedure starts automatically once an encoder or absent motor alarm is over; in this case it can't be interrupted and no signal from the control panel is accepted; exclusively signals given by means of the button are accepted.

## 9.6. MECHANICAL INSTALLATION AND ADJUSTMENT

In order to have the door functioning correctly and safely, it has to be installed and adjusted by QUALIFIED STAFF, with due attention being paid to the warnings in these Instructions booklet. The control unit must be isolated from the power supply before any assembly, operation or adjustment is done on the door. Only in these conditions it is certain that the door will not move.

## 9.7. THE TRAVERSING CURVE



## 9.8. TECHNICAL DATA

### Direct current geared motor MD55

| | |
|---|---|
| Power supply | 24 Vdc |
| Max. velocity | 0,5 m/s |
| Degree of protection | IP 21 |
| Transmission ratio | 15:1 |
| Incremental encoder | 100 pulses per rotation |
| Rated current | 1,8 A |

### Control unit MD55

| | |
|---|---|
| Power supply | 24 Vdc |
| Tolerance | +/- 5% |
| Fusing, at the customer's side | 10 A |
| Max. power consumption | 0,75 A (the motor is not considered)<br>15 A (the motor consumption is considered) |
| Degree of protection | IP 20 |
| Control inputs | from 10 V to 35 V, max 40 mA |
| Switching capacity of output relay | 30 Vdc to 1 A |
| Max. permissible storage temperature | from -20°C to +85°C |
| Max. permissible operating temperature | from 0°C to +50°C |
| Humidity requirement | No condensation |
| 24 V output (J3.5) | Max 120 mA |

**NOTICE**

Do not feed in any external voltage!

### Regulations and standards

| | |
|---|---|
| EMC tests | in conformity with EN 12015 and EN 12016 |
| CE | Certified |
| Electrical safety standards according to EN60950 | Conforms to the standard |
| Elevator standard EN81 | Conforms to the standard |

## 9.9. USER TERMINAL MD55

### DIAGNOSIS AND PARAMETERIZATION


The user terminal can be used:

- for the input of movement commands;
- for changing the movement parameters;
- for the visualizing of the parameters calculated by the learn run;
- for the visualizing of the door conditions;
- for the visualizing of the service data.

The MD55 user terminal can only be used by qualified staff. The staff must be thoroughly familiar with all warnings and notices in these instructions before proceeding with the utilization by the end user.

4 buttons:

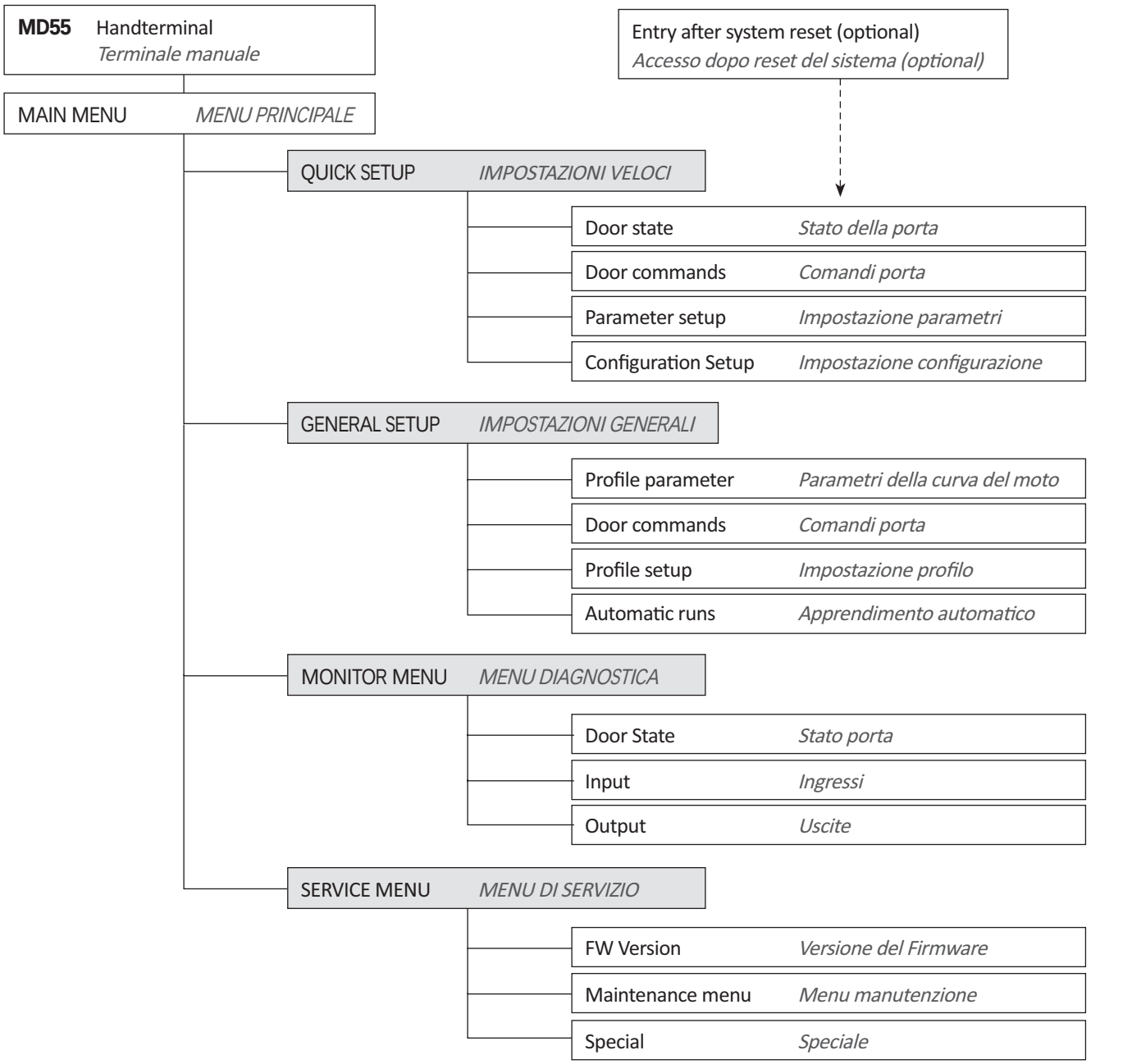
| | |
|---|---|
| ENT | Confirm / Enter menu item |
| BACK | Back to the previous level |
| ▲ | Back to the previous item / Increase parameter value / Scroll alternatives |
| ▼ | Go to next menu item / Decrease parameter value / Scroll alternatives |

Parameters changes can be made in the menus “QUICK SETUP → Parameter Setup” and in “GENERAL SETUP → Profile Parameters”.

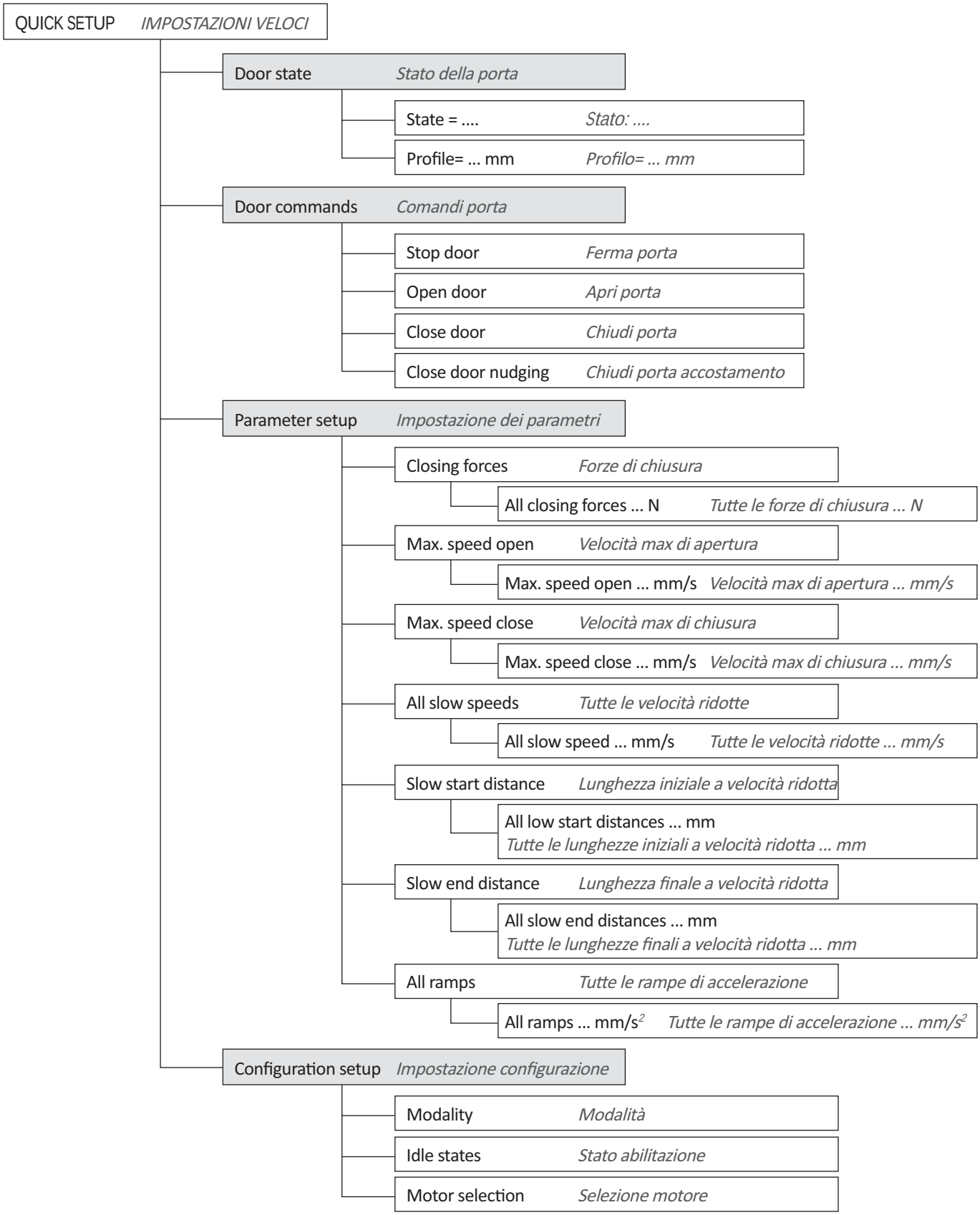
The desired parameter is selected with the ▲ and ▼ key and activated with the ENT key (hand-terminal red led brief blinking). With the help of the appropriate key (see above) the parameter value can be increased or decreased.
The setting of the parameter takes place by repeat pressing the ENT key.

Parameters are saved and immediately overwritten.
Speed values the parameters are updated immediately.
Forces and power parameters are updated after the next use
.

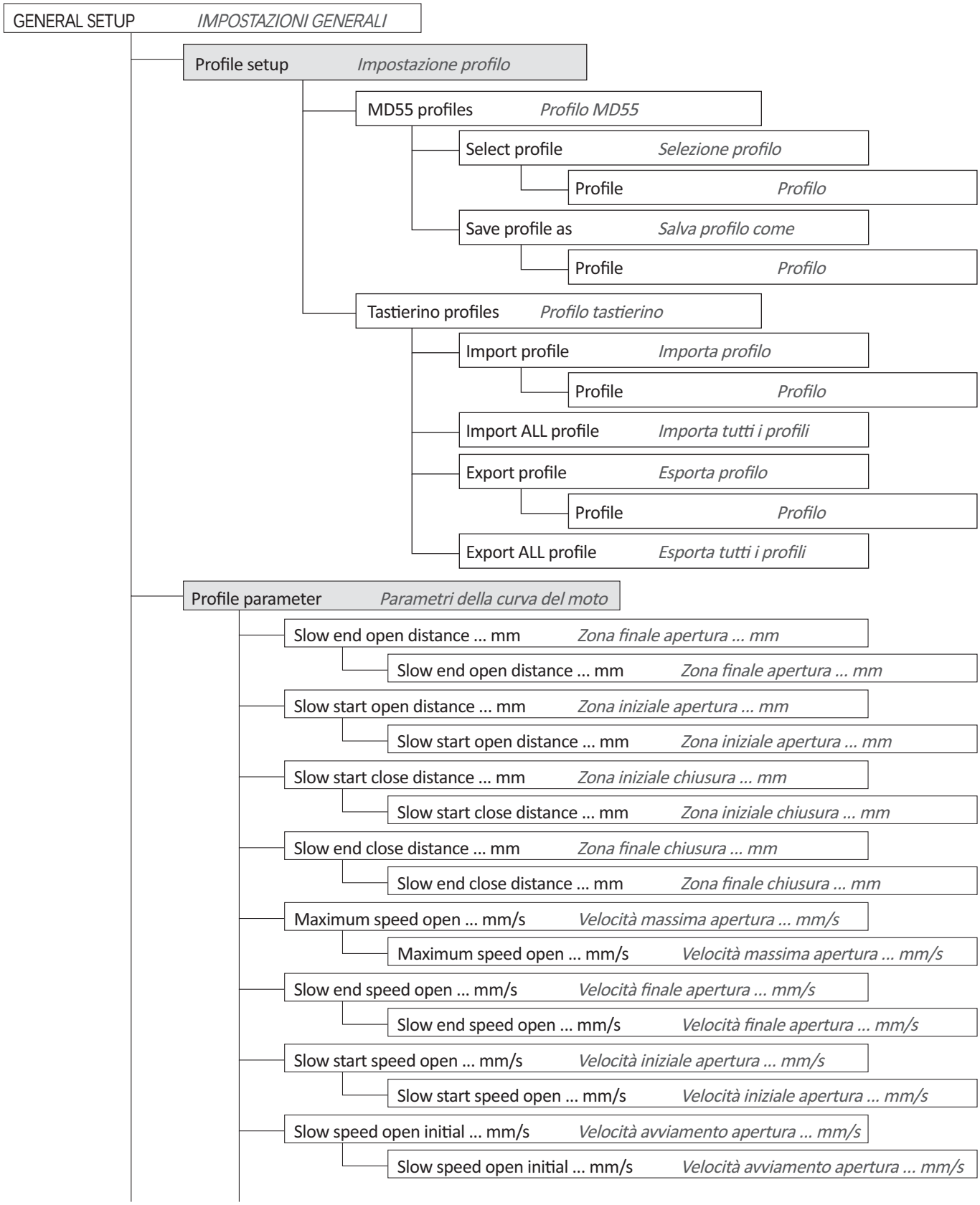
## 9.10. MENU STRUCTURE



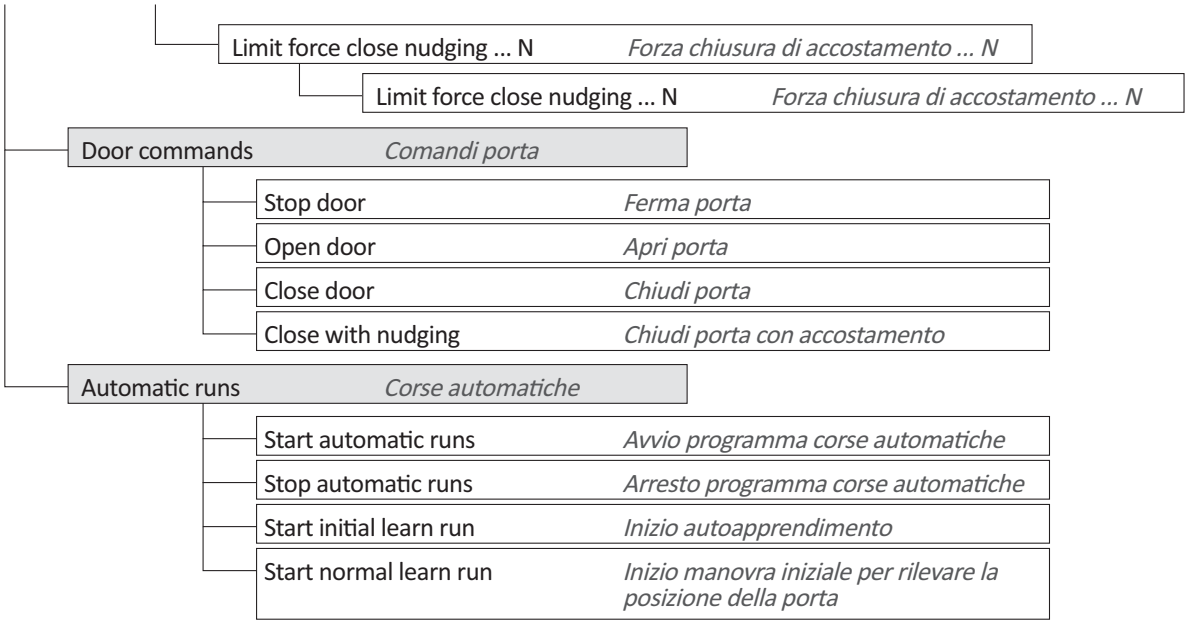
## Quick Setup Menu



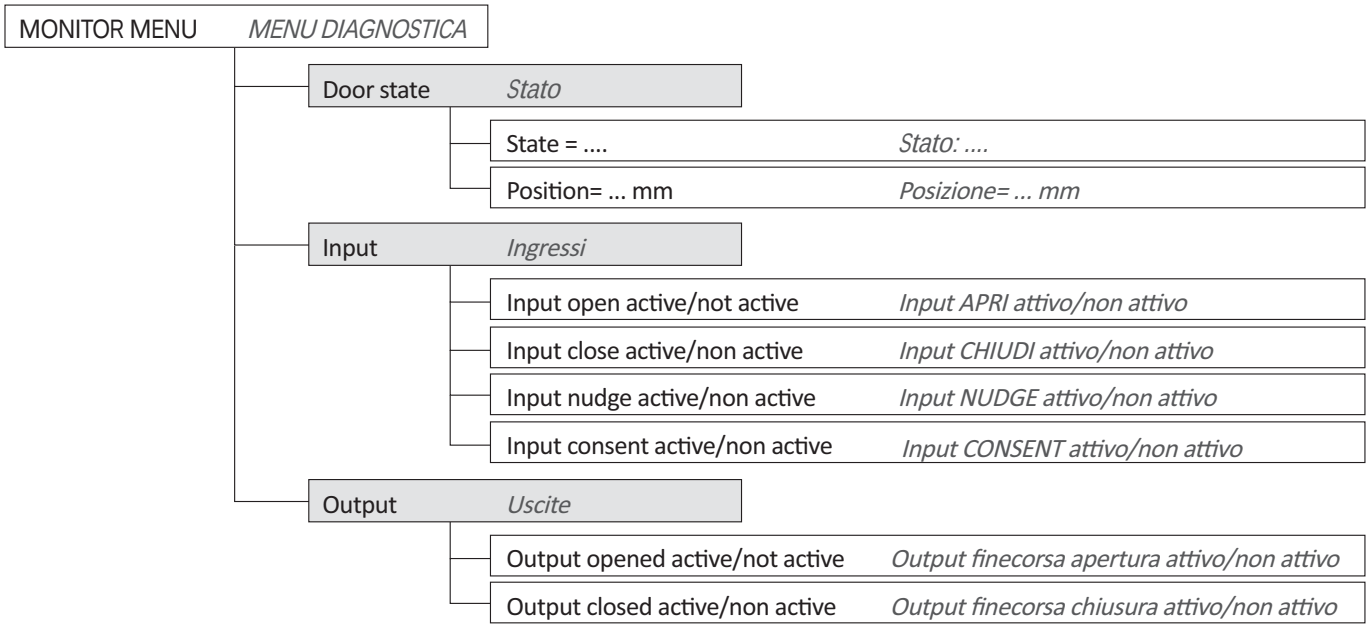
## General Setup Menu



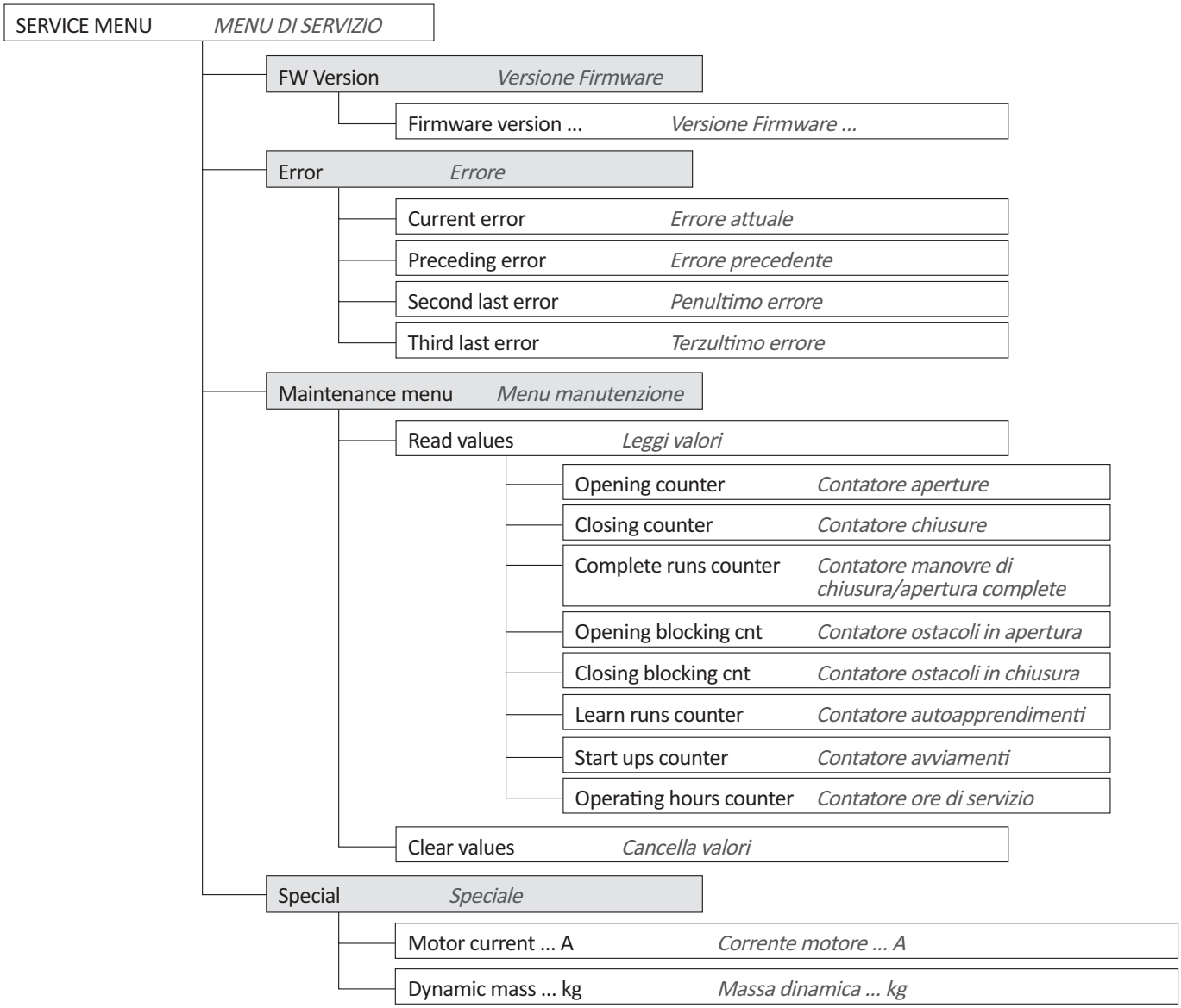
- Maximum speed close ... mm/s — *Velocità massima chiusura ... mm/s*
  - Maximum speed close ... mm/s — *Velocità massima chiusura ... mm/s*
- Slow start speed close ... mm/s — *Velocità iniziale chiusura ... mm/s*
  - Slow start speed close ... mm/s — *Velocità iniziale chiusura ... mm/s*
- Slow end speed close ... mm/s — *Velocità finale chiusura ... mm/s*
  - Slow end speed close ... mm/s — *Velocità finale chiusura ... mm/s*
- Slow speed close initial ... mm/s — *Velocità avviamento chiusura ... mm/s*
  - Slow speed close initial ... mm/s — *Velocità avviamento chiusura ... mm/s*
- Nudging speed ... mm/s — *Velocità accostamento (chiusura) ... mm/s*
  - Nudging speed ... mm/s — *Velocità accostamento (chiusura) ... mm/s*
- Acceleration ramp open ... mm/s$^2$ — *Accelerazione apertura ... mm/s$^2$*
  - Acceleration ramp open ... mm/s$^2$ — *Accelerazione apertura ... mm/s$^2$*
- Deceleration ramp open ... mm/s$^2$ — *Decelerazione apertura ... mm/s$^2$*
  - Deceleration ramp open ... mm/s$^2$ — *Decelerazione apertura ... mm/s$^2$*
- Reversal ramp open/close ... mm/s$^2$ — *Rampa di inversione apertura/chiusura e arresto apertura ... mm/s$^2$*
  - Reversal ramp open/close ... mm/s$^2$ — *Rampa di inversione apertura/chiusura e arresto apertura ... mm/s$^2$*
- Acceleration ramp close ... mm/s$^2$ — *Accelerazione chiusura ... mm/s$^2$*
  - Acceleration ramp close ... mm/s$^2$ — *Accelerazione chiusura ... mm/s$^2$*
- Deceleration ramp close ... mm/s$^2$ — *Decelerazione chiusura ... mm/s$^2$*
  - Deceleration ramp close ... mm/s$^2$ — *Decelerazione chiusura ... mm/s$^2$*
- Reversal ramp close/open ... mm/s$^2$ — *Rampa di inversione chiusra/apertura e arresto chiusura ... mm/s$^2$*
  - Reversal ramp close/open ... mm/s$^2$ — *Rampa di inversione chiusra/apertura e arresto chiusura ... mm/s$^2$*
- Idle torque open ... A — *Coppia statica finecorsa apertura ... A*
  - Idle torque open ... A — *Coppia statica finecorsa apertura ... A*
- Idle torque close ... A — *Coppia statica finecorsa chiusura ... A*
  - Idle torque close ... A — *Coppia statica finecorsa chiusura ... A*
- Limit force open ... N — *Forza massima di apertura ... N*
  - Limit force open ... N — *Forza massima di apertura ... N*
- Limit force close ... N — *Forza massima di chiusura ... N*
  - Limit force close ... N — *Forza massima di chiusura ... N*
- Limit force end close ... N — *Forza finale chiusura ... N*
  - Limit force end close ... N — *Forza finale chiusura ... N*


Limit force close nudging ... N
Forza chiusura di accostamento ... N
Limit force close nudging ... N
Forza chiusura di accostamento ... N
Door commands
Comandi porta
Stop door
Ferma porta
Open door
Apri porta
Close door
Chiudi porta
Close with nudging
Chiudi porta con accostamento
Automatic runs
Corse automatiche
Start automatic runs
Avvio programma corse automatiche
Stop automatic runs
Arresto programma corse automatiche
Start initial learn run
Inizio autoapprendimento
Start normal learn run
Inizio manovra iniziale per rilevare la posizione della porta

## Monitor Menu



## Service Menu



## 9.11. MODIFICATION OF PARAMETERS

1. Close the door completely using the "FUNCTION" key (the button must be pressed shortly);
2. Connect the keyboard to the P1 port of the controller, using the pre-arranged wire;
3. Using the below indicated scheme, reach the desired menu pages and assign the new parameters;
4. Upon the programming completed, push the BACK key until you return to the Starting page.

The desired parameter is selected with the ▲ and ▼ key and activated with the ENT key (hand-terminal red led brief blinking). With the help of the appropriate key (see above) the parameter value can be increased or decreased.
The setting of the parameter takes place by repeat pressing the ENT key.

Parameters are saved and immediately overwritten. Speed values the parameters are updated immediately.
Forces and power parameters are updated after the next use.

Use the "Assigned value" column to record the parameter values set during setup.

**MD55** Handterminal
*Terminale manuale*

MAIN MENU *MENU PRINCIPALE*

GENERAL SETUP *IMPOSTAZIONI GENERALI*

Profile parameter *Parametri profilo*

| | U.M. | Range | Default | Assigned value |
|---|---|---|---|---|
| Slow end open distance *Zona finale apertura* → | N | 0 - 100 | 20 | 40 |
| Slow end close distance *Zona finale chiusura* → | mm/s | 0 - 100 | 40 | 40 |
| Slow start open distance *Zona iniziale apertura* → | mm/s | 0 - 100 | 40 | 40 |
| Slow start close distance *Zona iniziale chiusura* → | mm/s | 0 - 100 | 20 | 40 |
| Maximum speed open *Velocità massima apertura* → | mm | 50 - 800 | 300 | 90 |
| Maximum speed close *Velocità massima chiusura* → | mm | 50 - 500 | 300 | 50 |
| Slow end speed open *Velocità finale apertura* → | $mm/s^2$ | 20 - 90 | 50 | 40 |
| Slow end speed close *Velocità finale chiusura* → | mm/s | 20 - 90 | 50 | 40 |
| Slow start speed open *Velocità iniziale apertura* → | mm/s | 20 - 90 | 50 | 40 |
| Slow start speed close *Velocità iniziale chiusura* → | mm/s | 20 - 90 | 50 | 40 |
| Slow speed open initial *Velocità avviamento apertura* → | mm/s | 20 - 90 | 50 | 90 |
| Slow speed close initial *Velocità avviamento chiusura* → | mm/s | 20 - 90 | 50 | 90 |
| Nudging speed *Velocità accostamento* → | mm/s | 20 - 250 | 50 | 50 |
| Acceleration ramp open *Accelerazione apertura* → | $mm/s^2$ | 300 - 1400 | 400 | 300 |

| | | | U.M. | Range | Default | Assigned value |
|---|---|---|---|---|---|---|
| Acceleration ramp close | *Accelerazione chiusura* | → | mm/s$^2$ | 300 - 1400 | 400 | 300 |
| Deceleration ramp open | *Decelerazione apertura* | → | mm/s$^2$ | 300 - 1400 | 400 | 300 |
| Deceleration ramp close | *Decelerazione chiusura* | → | mm/s$^2$ | 300 - 1400 | 400 | 300 |
| Reversal ramp open | *Rampa di inversione apertura e arresto apertura* | → | mm/s$^2$ | 300 - 1400 | 600 | 300 |
| Reversal remp close | *Rampa di inversione chiusura e arresto apertura* | → | mm/s$^2$ | 300 - 1400 | 600 | 300 |
| Idle torque open | *Coppia statica finecorsa apertura* | → | A | 0 - 3.5 | 1 | 1 |
| Idle torque close | *Coppia statica finecorsa chiusura* | → | A | 0 - 2.5 | 0.9 | 1 |
| Limit force open | *Forza massima di apertura* | → | N | 70 - 300 | 120 | 120 |
| Limit force close | *Forza massima di chiusura* | → | N | 70 - 230 | 70 | 70 |
| Limit force end close | *Forza finale chiusura* | → | N | 70 - 230 | 120 | 70 |
| Limit force nudging | *Forza di accostamento* | → | N | 70 - 230 | 120 | 70 |

## 9.12. ERRORS AND PROTECTIONS

The door operator detects some errors and protections.
All errores are shown based on an order of priority by means of the red service led coded blinking: 2 sec red led ON + no. of blinking for the corresponding error type.

Errors in order of priority:

| No. of blinkings | Error | Problem description | Solution |
|---|---|---|---|
| 1 | EEPROM | Script error in the micro-controller memory. The door is stopped in that moment's position, the door operator is blocked and the FAULT switch signals the error. | Make a reset by pressing the RESET button. |
| 2 | OVERCURRENT | Overcurrent in the motor. The door is stopped in that moment's position, the door operator is blocked and the FAULT switch signals the error and the led is lit red. | Make a reset by pressing the RESET button. |
| 3 | MOTOR IS NOT CONNECTED | The motor is not connected. The FAULT switch signals the error. The door operator cannot receive signals until the motor is properly connected. | Once the motor is connected the position detection procedure starts automatically. |
| 4 | ENCODER | Encoder signals problems. | Make a reset by pressing the RESET button. The self-learning procedure must be repeated. |
| 5 | I2T | Protection against motor overcurrent. After 3 failures of the automatic restart of the normal operation the door is stopped in that moment's position , the door operator is blocked and the FAULT switch signals the error and the led is lit red. | Make a reset by pressing the RESET button. |
| 6 | MOTOR DRIVER OVER TEMPERATURE | Motor driver over temperature. The FAULT switch signals the error. | Normal operation restarts automatically when the temperature decreases below threshold level and the FAULT switch is disengaged. |
| 7 | ECCESSIVE TRAVEL / TIME | Motor thermal protection. | Normal operation restarts after the motor has been stopped for a while in order to decrease its temperature. |
| 8 | UNDERCURRENT | If the supplied current is below 21.6V for more than 10 sec the door is stopped in that moment's position, the door operator is blocked and the FAULT switch signals the error. | The operation restarts automatically once the current level is back to normal. |

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| 9 | OVERCURRENT | If the supplied current is over 30V for more than 5 sec the door is stopped in that moment's position, the door operator is blocked and the FAULT switch signals the error. | The operation restarts automatically once the current level is back to normal. |

| **INFORMATION** |
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| During the error management no signal input is accepted. |