# FOLDING DOORS / SLIDING DOORS

LOGISTIC SOLUTIONS

KOPRON

# ASSEMBLY, USE AND MAINTENANCE MANUAL

| FOLDING DOORS WITH SLIDING PANELS | page |
|---|---|
| INDEX | 3 |
| INTRODUCTION | 4 |
| IDENTIFICATION OF DIFFERENT TYPES OF DOORS | 8 |
| **FOLDING DOORS WITHOUT TRACKS KPL SG** | 9 |
| COMPONENTS SCHEME | 9 |
| EXAMPLES OF IDENTIFICATION OF DIFFERENT TYPES OF DOORS | 10 |
| DOOR JAMB POSITIONING | 11 |
| DOOR RAIL POSITIONING | 13 |
| GENERAL ASSEMBLY CONDITIONS AND CONTROLS | 15 |
| FRAME ASSEMBLY | 16 |
| PANELS ASSEMBLY | 20 |
| HINGES ASSEMBLY | 21 |
| PANELS/DOORSTOP ASSEMBLY | 22 |
| OVERHEAD GUIDE ADJUSTMENT | 23 |
| STRIKE PLATES FOR UPPER AND LOWER LOCK | 24 |
| LOWER PLATE ASSEMBLY | 25 |
| LOWER PROFILE ADJUSTMENT | 26 |
| CUT PANEL ASSEMBLY | 27 |
| MOTORIZATION | 28 |
| **FOLDING DOORS WITH TRACKS KPL CG** | 29 |
| VERTICAL SECTION | 30 |
| CONTROL AND POSITIONING OF GROUND TRACKS | 31 |
| POSITIONING OF OVERHEAD TRACKS | 33 |
| PANEL IDENTIFICATION | 35 |
| HINGES ASSEMBLY | 36 |
| DIVIDER RAILS ADJUSTMENT | 37 |
| DOORSTOP JAMB | 38 |
| LOCK STRIKE PLATE | 39 |
| **FOLDING DOORS KPA** | 40 |
| VERTICAL SECTION MODEL KPA SGS | 41 |
| VERTICAL SECTION MODEL KPA SGST | 42 |
| VERTICAL SECTION MODEL KPA SGI | 43 |
| VERTICAL SECTION MODEL KPA SGII | 44 |
| OVERHEAD TRACK ASSEMBLY | 45 |
| ASSEMBLY OF GROUND BRACKETS | 47 |
| TRACKS ASSEMBLY | 48 |
| PANEL PREPARATION | 51 |
| SLIDING TROLLEY ASSEMBLY | 52 |
| LIMIT SWITCH ASSEMBLY | 53 |
| CASING ASSEMBLY | 54 |
| RACK DRIVE ASSEMBLY | 55 |
| OTHER MOTORIZATIONS ASSEMBLY | 57 |
| APPENDIX - MAINTENANCE INSTRUCTIONS | 58 |
| APPENDIX - INFORMATION ON SAFETY | 59 |
| APPENDIX - RISK ANALYSIS | 60 |


**NOTE:** No re-production of drawings of this manual is allowed unless duly authorized.
Legal actions may be taken against infringement

# INTRODUCTION

## NOTE

The scope of this manual is to:

- supply information for shipping, storage and disposal of the material
- to show the components of a folding door either manually handled or motorized.
- to give the installer instructions for correct assembly
- to inform about the risks during installation and during use of the doors

## IMPORTANT NOTICE

Specifications and diagrams of the panels (enclosed in the accessory box) are a fundamental part of this manual.

They must be available to both installer and Customer as a guide to correct assembly and use of the door in order to avoid accidents.

After installation the form regarding maintenance must be duly filled in.

## PLEASE NOTE

Only highly specialized personnel can carry out the assembly of the doors. Kopron will not take any responsibility for changes from manual to motorized versions done by Customer.

You can send your request for a copy of the manual to the following the address:

Kopron Spa, Via I Maggio - 20064 Gorgonzola (MI) Italy
Telefono: +39 02 921521 - Fax: +39 02 92152920

Our technical offices can be reached for any further information.

Kopron can modify this manual whenever he product goes through updating.

Each shipment consists of:

**1**

**TRACKS + ACCESSORY BOXES**

Consisting in side jambs and overhead rails with tracks.

**2**

**PANELS**

Panels are packed with thermoshrinking polythene and polystyrene.

Except for the motors and accessories which are packed into boxes easy to handle manually, all the other groups of material must be moved by means of machines (i.e. forklifts etc.) in good condition.

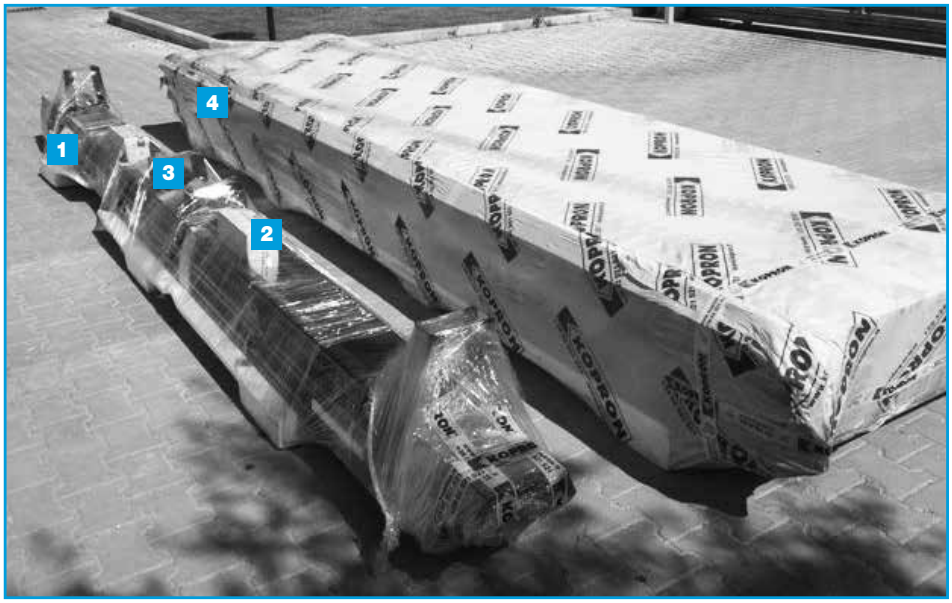
## Moving of the packages

The material must be stocked in dry and covered areas.

## Storage

The disposal of the waste must be assigned to specialized companies with authorized access to dumps according to regulations in force.

**FIG 1**




## LABELS

**1**

**2**

**3**

**4**

## TOOLS AND EQUIPMENT SUGGESTED

### LIST OF TOOLS AND EQUIPMENT SUGGESTED FOR ASSEMBLY AND INSTALLATION OF THE SECTIONAL DOORS

- Plumb line, coloured wire for tracing, marking pen, pencils, level and wooden ruller for levelling cement plaster.
- Drill complete with steel inserts.
- Churn drill with inserts ø 6, 8, 10, 12, 14.
- Screwdriver.
- Big disk grinder and small disk grinder.
- Manual or electric winch.
- Tool box including: hammer, screwdrivers, set of hexagonal keys, pliers, tongs , wrench siz. 6, 8, 10, 12, 13, 14, 17, 24, scissors to cut steel sheets, file, 5 m tape, gauge.
- Riveting machine with rivets ø 4.
- Hacksaw.
- Clamps.
- Qty 1 l=50 m + qty 2 l=10m extension cords 230 v. according to EEC regulations.
- Qty 1 l=20 m extension cord 380 v.
- 230 v adaptors for sockets for either industrial or civil use.
- Movable control panels with plugs, thermalmagnetic switches and a differential which connects electric supply with the various functions carried out by installer.
- Wheeled scaffold for workmen.
- Fixed ladder (min. 2 M) and stretching ladder (6 m).
- Set of steel dowels.
- Tapping screws and taptite screws.
- Safety tools: goggles, earphones, helmet, gloves, safety belts, safety shoes, first aid box plus anything useful to prevent accidents.

### NOTICE

The following Safety Regulations and relevant updating established for work carried out on-site must be applied strictly:

D.p.r. n° 547 del 27-04-1955; D.p.r. n° 303 del 19-03-1956: D.l.vo n° 626 del 19-09-1994: D.l.vo n° 494 del 14-08-1996; legge n° 46 del 05-03-1990, etc. with updatings.

Preamble:

Before assembly, materials must be checked if complete and in good conditions, and if the carrying structure is able to bear the weight and movements of the door and allow firm anchoring. Specialized technicians should carry out these controls.

Doors must not be installed in highly corrosive environments.

The electric plant must be according to regulations in force.

Motor must be connected to electric plant only after having verified the following:

- Compatibility between motor and electric system.
- If there is a connection to grounding.
- If there is a differential switch on the motor control panel.

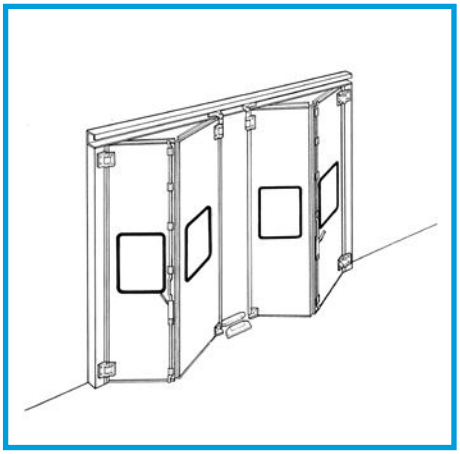
In case Customer needs to change door from manual to motorized he must apply to our technicians to verify the feasibility.

Our Company will not take any responsibility for damages occured to things and people due to:

- modifications carried out without producer authorization.
- Wrong installation.
- No connection between product and grounding or no differential switch installed.

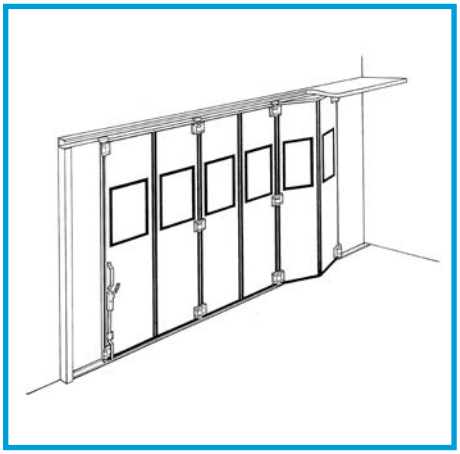
## BEFORE BEGINNING ASSEMBLY

## KPL SG
### folding door without tracks



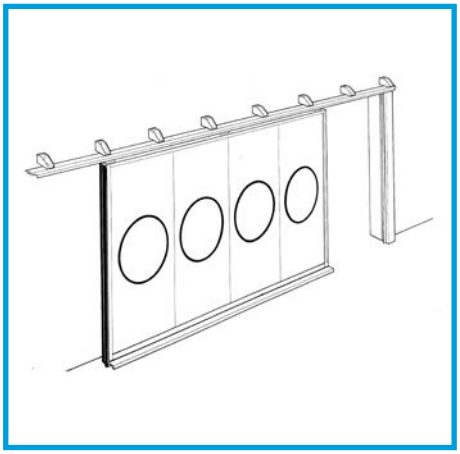
Single or double wing folding door hinged to the side jambs without ground tracks.

## KPL CG
### folding door with tracks



Single or double panel lateral folding door with overhead track and ground track.

## KPA
### sliding door



Single or double panel straight sliding door.

**MODELS**

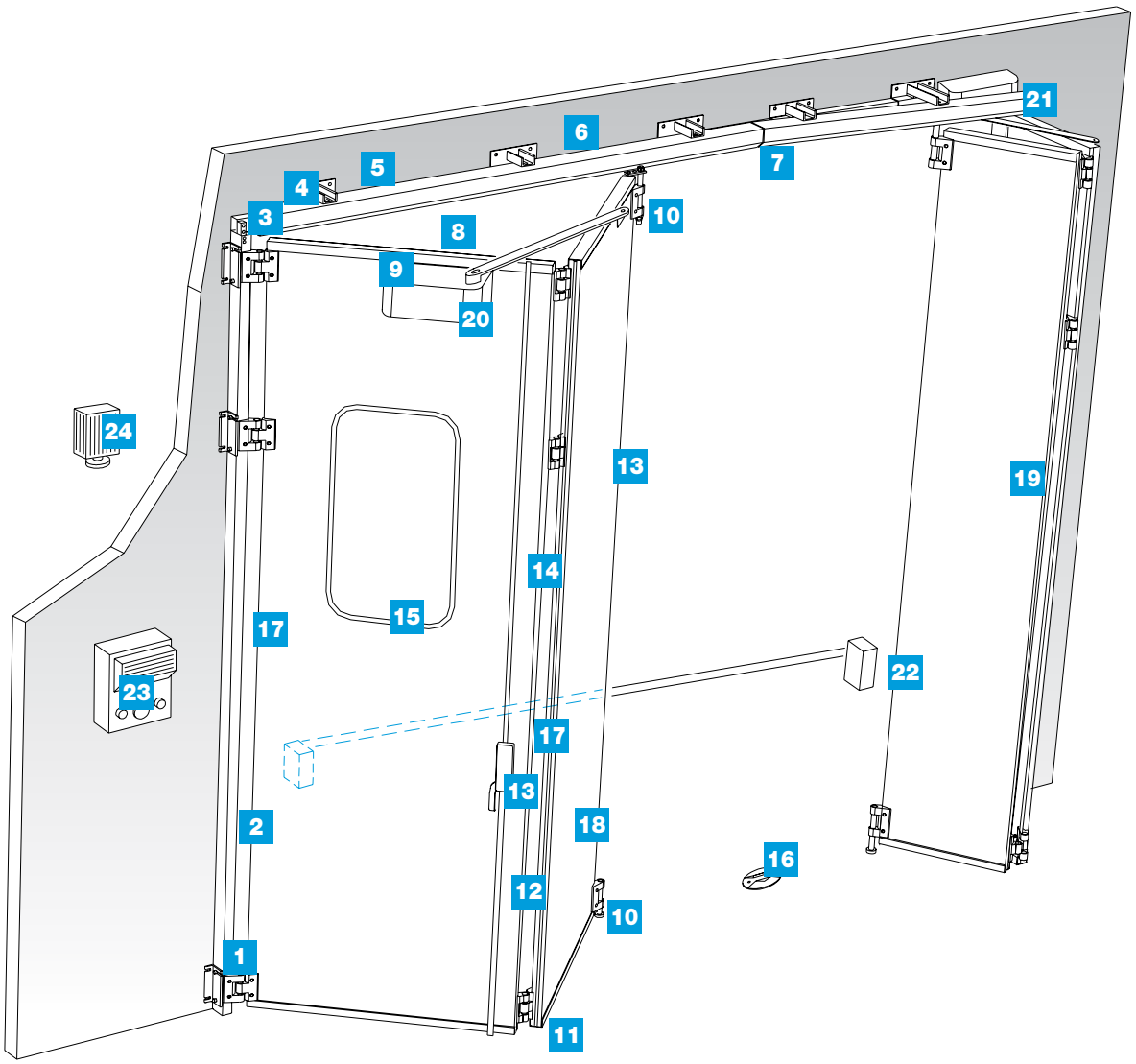
**KPA SGS**
**Sliding door with carrying overhead track**

**KPA SGST**
**Sliding door with carrying overhead track and ground track**

**KPA SGI**
**Sliding door with a carrying ground track**

**KPA SGII**
**Sliding door with a built-in carrying ground track**

FIG 2




## LEGEND

1 BRACKET FOR FIXING JAMBS
2 JAMB
3 COUPLING RAIL/JAMB
4 RAIL
5 LONG ANCHORING BRACKET
6 SHORT ANCHORING BRACKET
7 OVERHEAD TRACK
8 BRUSH
9 BRUSH HOLDER PROFILE
10 HINGE NOT IN LINE
11 HINGE (MALE +FEMALE)
12 LOWER BAR
13 LOCK
14 UPPER BAR
15 VISION PANEL
16 GROUND PLATE
17 SIDE GASKET
18 SIDE GASKET
19 PANEL
20 MOTOR REDUCER (OPENING POSITION 90°)
21 MOTOR REDUCER (OPENING POSTION 180°)
22 PHOTOCELLS
23 CONTROL PANEL
24 FLASHING LIGHT

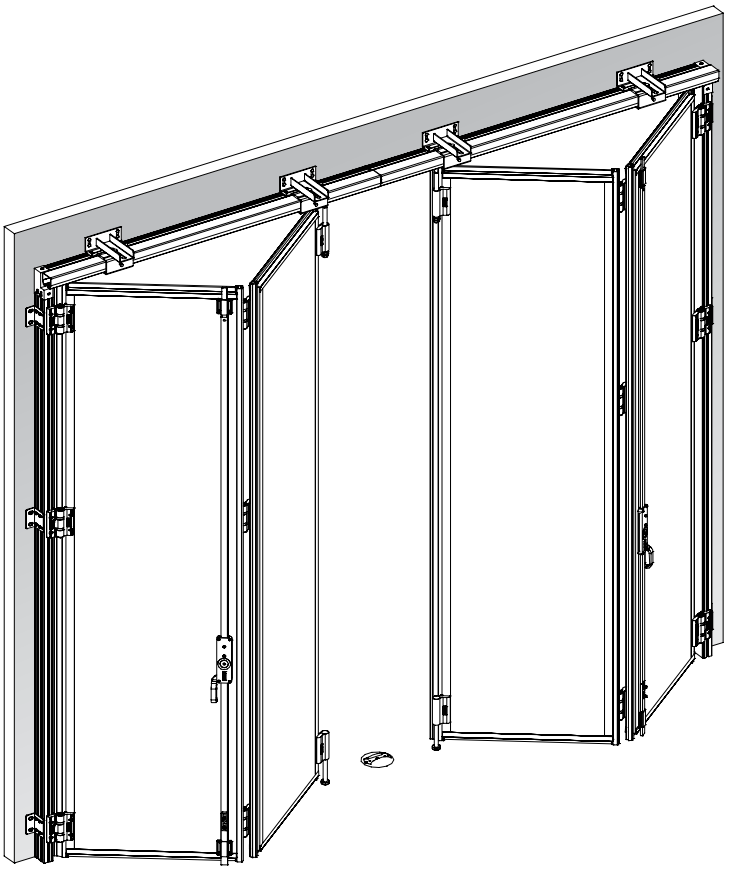
# FOLDING DOOR KPL SG

## Folding door without ground tracks

**Axonometric view of a 2 + 2 panel type**



FIG 3



**Axonometric view of a 2 + 2 panel type with a cut panel**

FIG 4

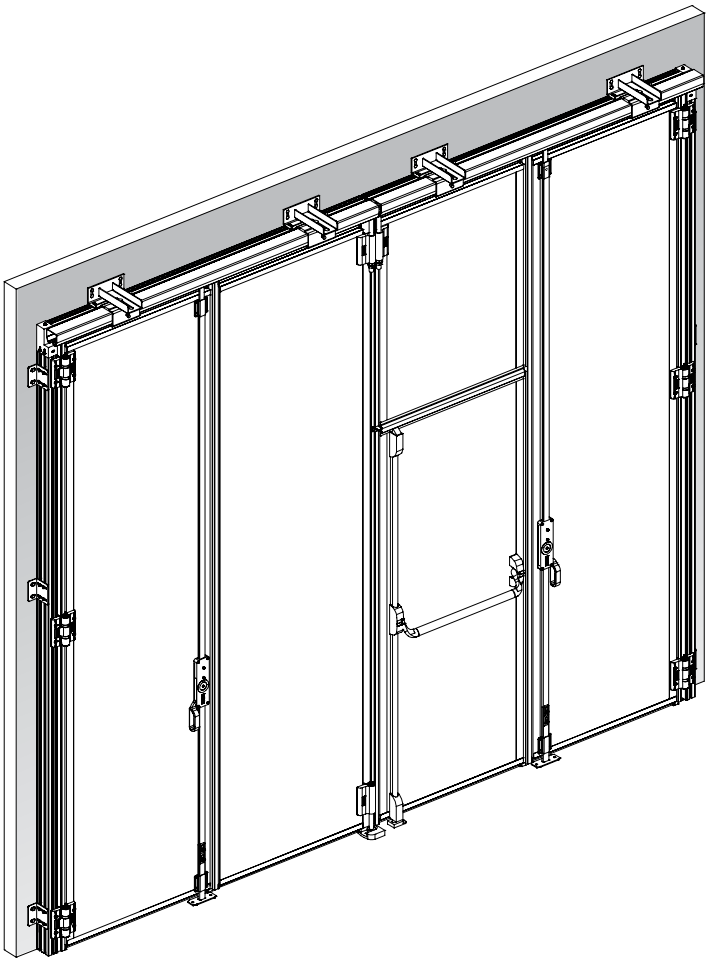
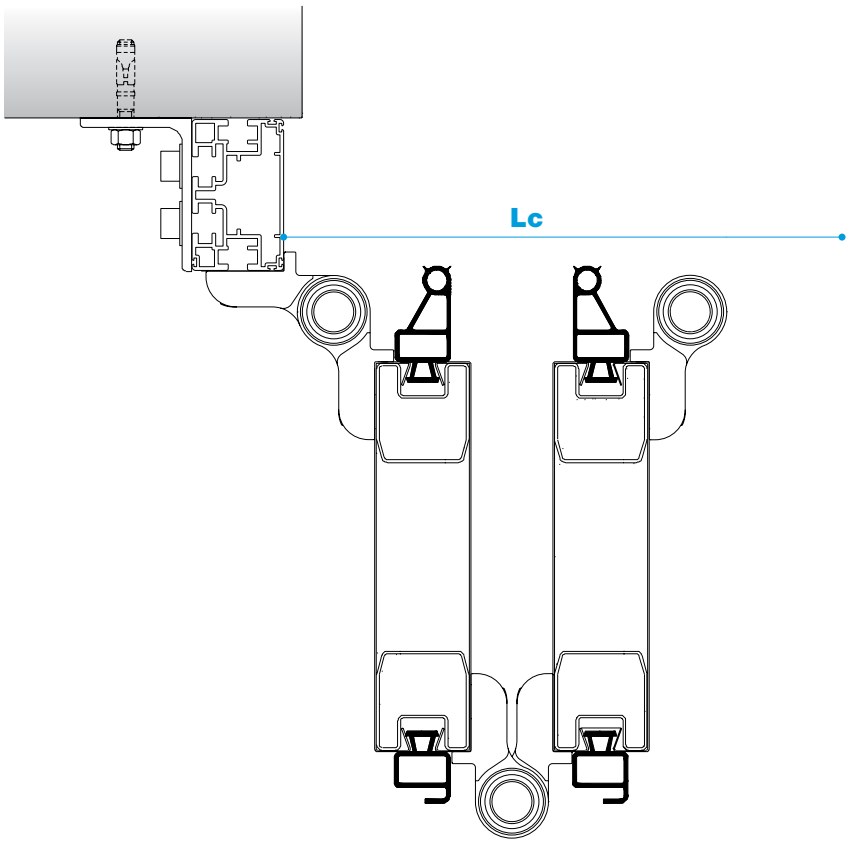


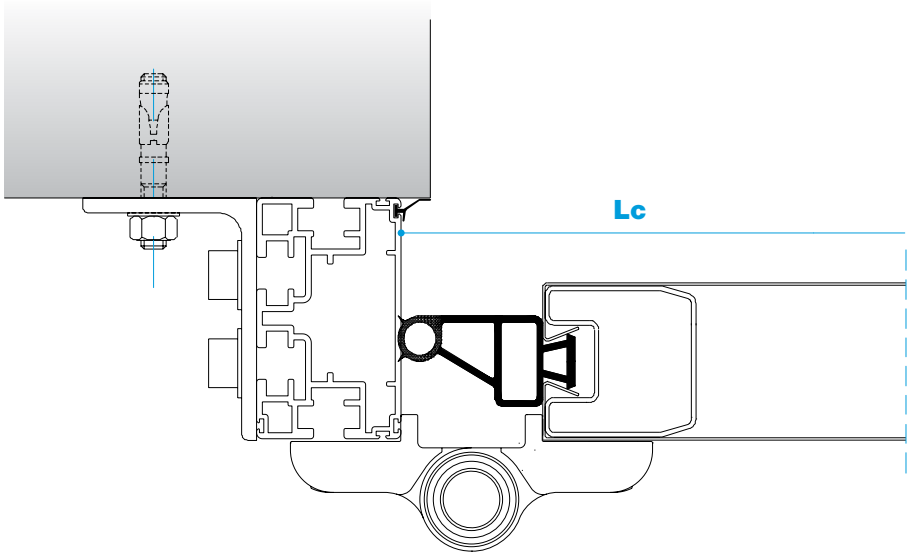
FIG 5




**INSIDE ASSEMBLY**

- Wall faced jamb
- Panel folding within wall opening

FIG 6



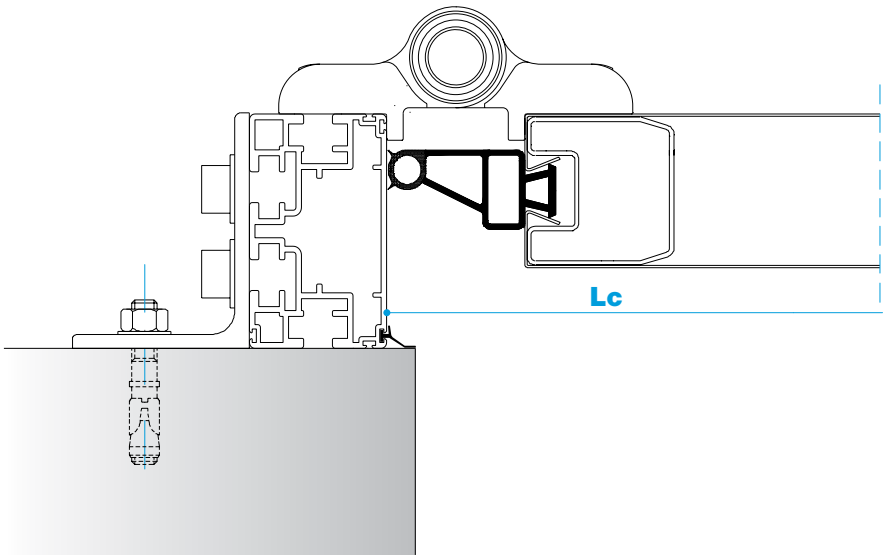

**JAMB**

- Wall faced
- Internal assembly

# DOOR JAMB POSITIONING

**JAMB**
- Wall faced
- External assembly

FIG 7




**JAMB**
- Positioning within wall opening
- Internal assembly

FIG 8

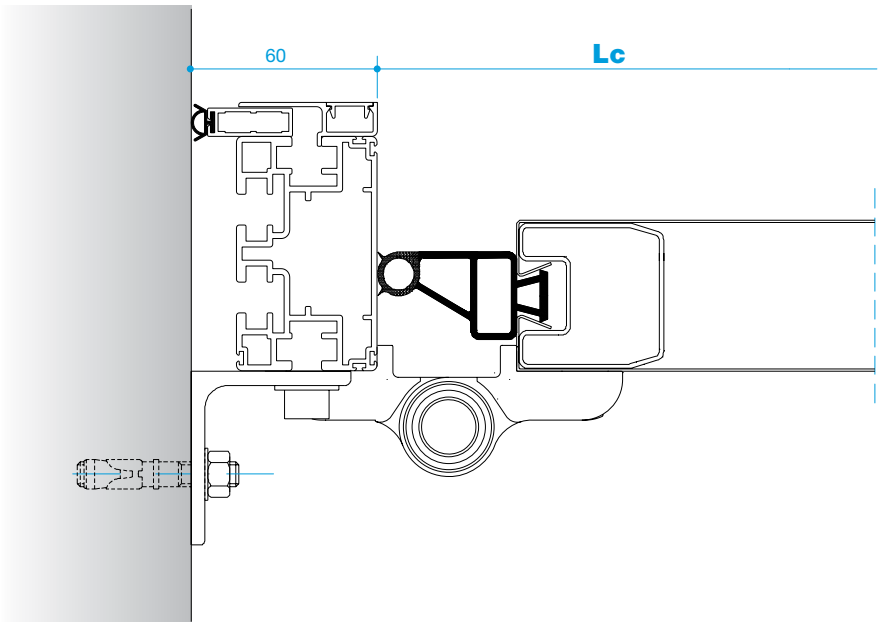
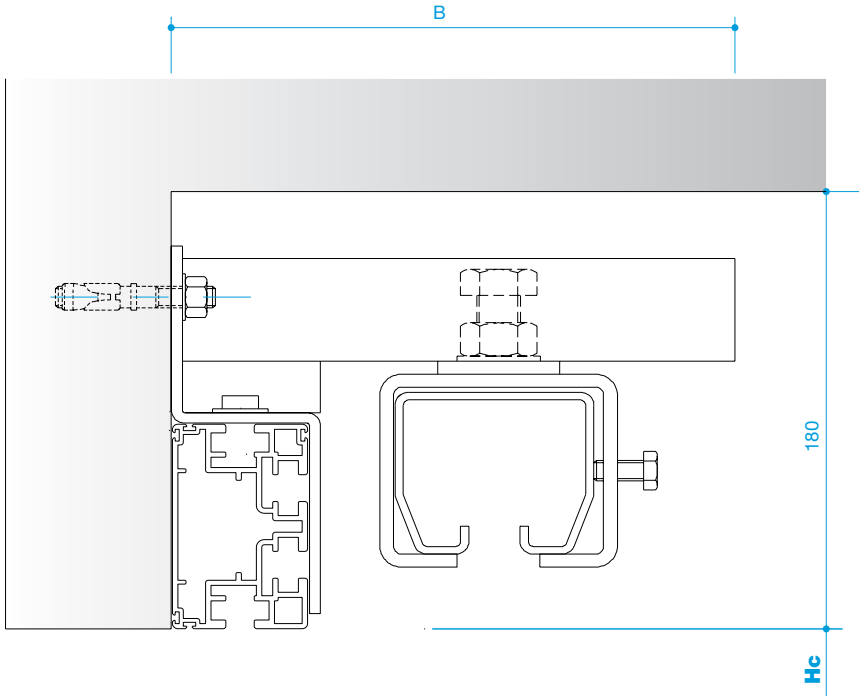


FIG 9

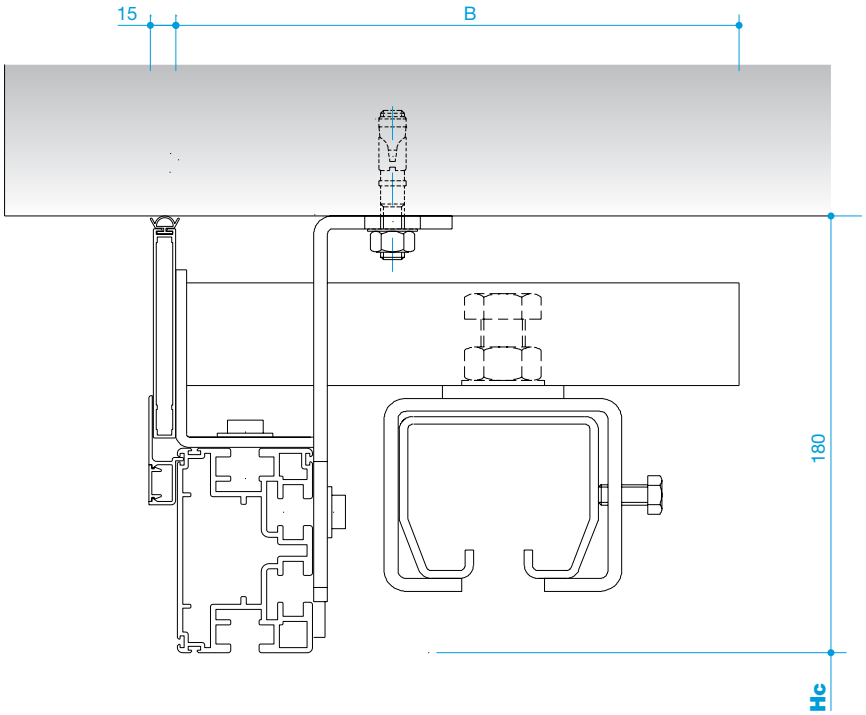



## OVERHEAD RAIL WALL FACED ASSEMBLY

With assembly at 90°:
B = 210 mm

With assembly at 180°:
B = 330 mm

FIG 10




## OVERHEAD RAIL ASSEMBLY WITHIN WALL OPENING

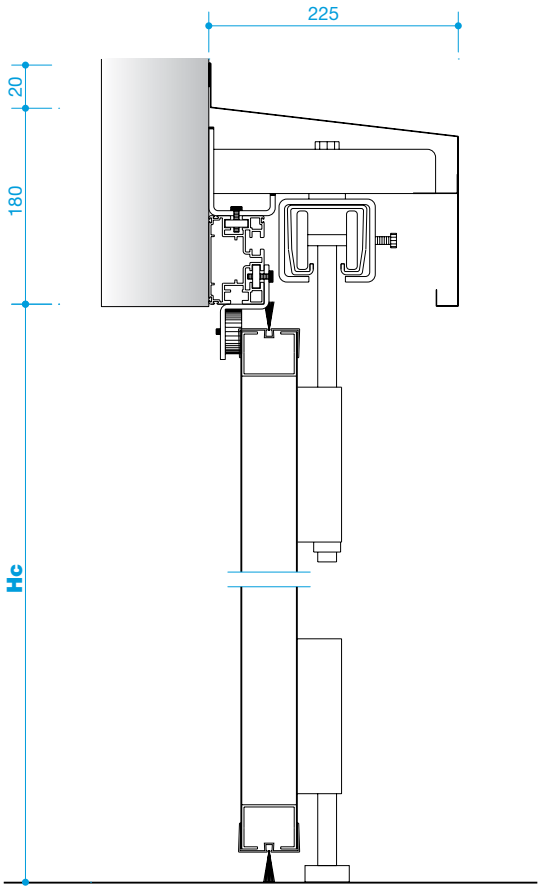
With assembly at 90°:
B = 210 mm

With assembly at 180°:
B = 330 mm

# DOOR RAIL POSITIONING WITH CASING

**OVERHEAD RAIL WALL FACED ASSEMBLY WITH CASING (OPTIONAL) PANEL FOLDING AT 90°**

FIG 11




**OVERHEAD RAIL WALL FACED ASSEMBLY WITH CASING (OPTIONAL) PANEL FOLDING AT 180°**

FIG 12

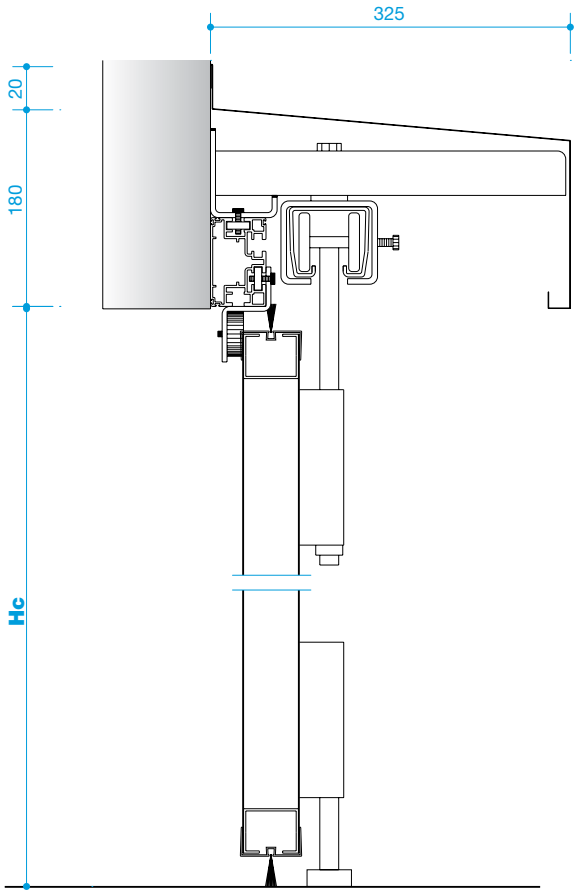
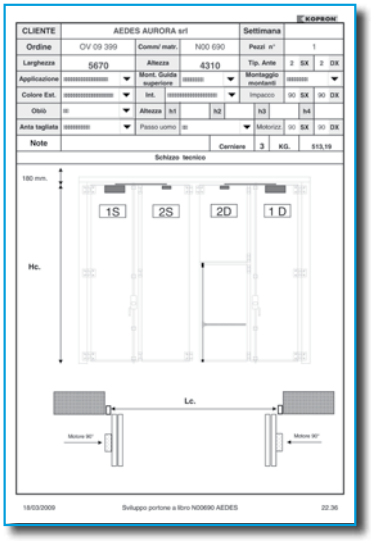


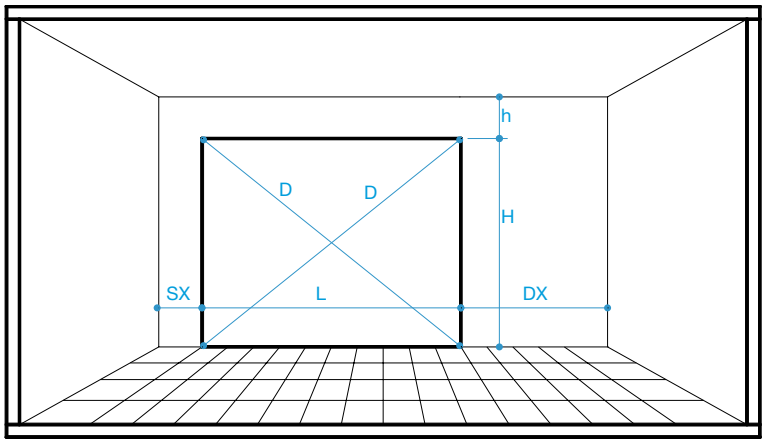
**FIG 13**




## GENERAL INDICATIONS AND CONTROLS

In the accessory box you will find a sheet with data relevant to the door to assemble.

**FIG 14**

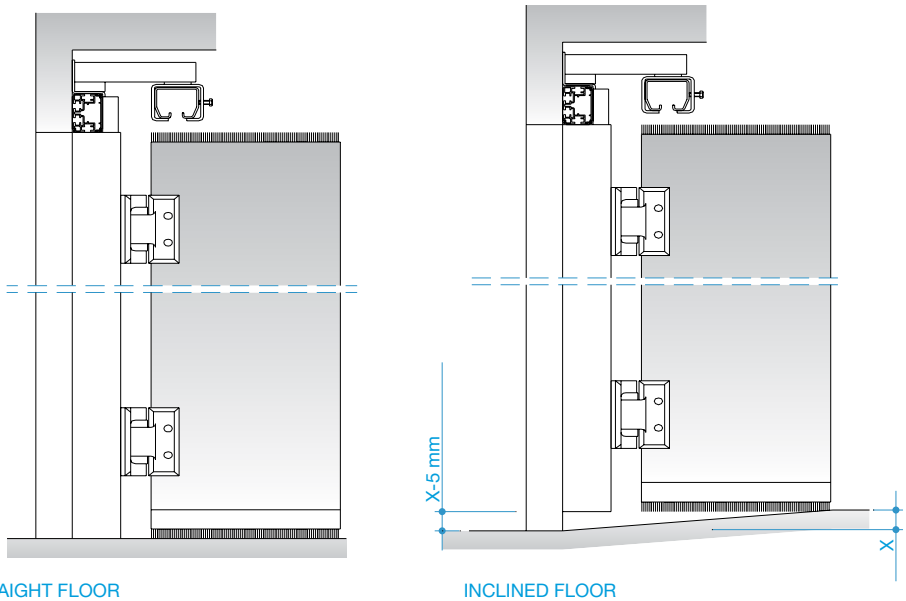



Carry out the controls hereunder mentioned:

- the size of the hole, height and diagonals must be precise according to the door to be installed.
- No obstacles must be present.
- Floor and structure must be able to bear the weight of the product.

**L = wall opening width**
**H = wall opening height**
**h = lintel height**
**DX = right side space**
**SX = left side space**
**D = diagonals**

**FIG 15**




STRAIGHT FLOOR

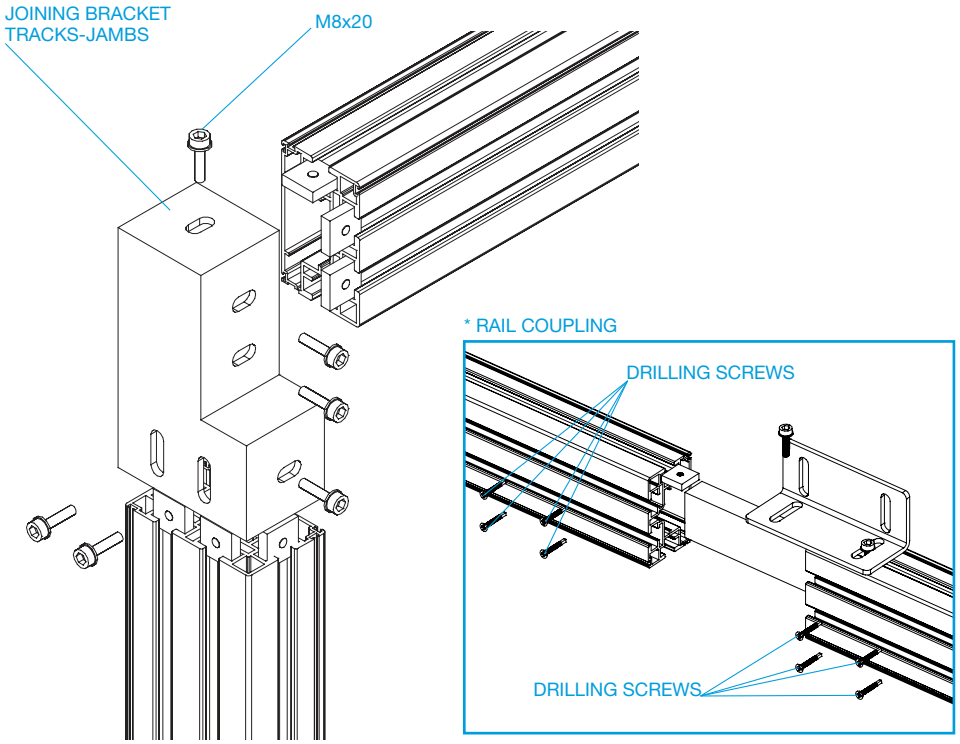
INCLINED FLOOR

- The floor must be perfectly straight in order to properly install the vertical jambs; otherwise provide levelling the floor before installation as indicated in fig. 15.

### DOOR RAIL / JAMB JOINING

Position on the floor the two side jambs and assemble the track on top as shown in figure 16.

FIG 16




### * DOOR track COUPLING

The door track can be made of two or more pieces which must be coupled according to figure 16

We recommend to use drilling screws and to carry out the fixing of the L-Shaped brackets to the wall by means of metal dowels.

Lift the frame with a forklift or any other adequate machinery

Verify the length of the track/guide and divide the distance in two equal parts from each side of the wall (unless differently indicated in enclosure at fig.13)

Position the frame.

Once the wall and jambs have been plumbed:

- verify that the two jambs are levelled to the upper part and the diagonals are equal.

FIG 17

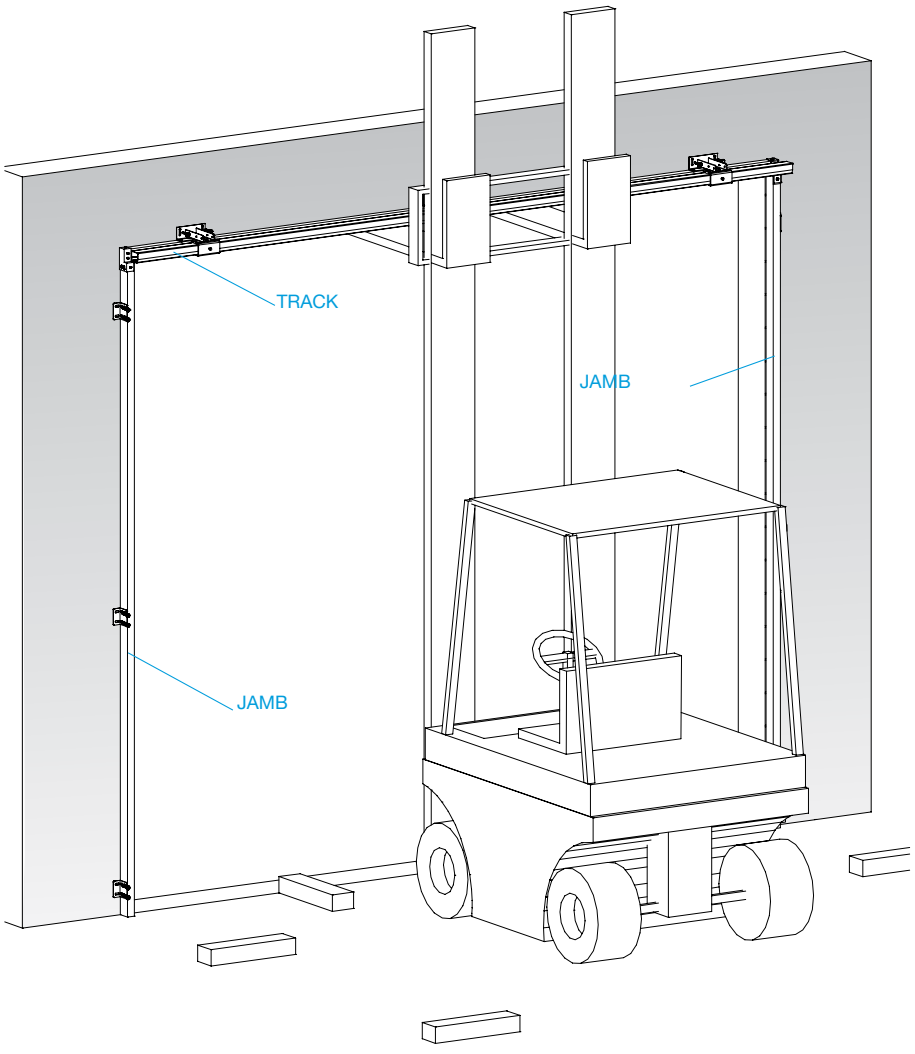
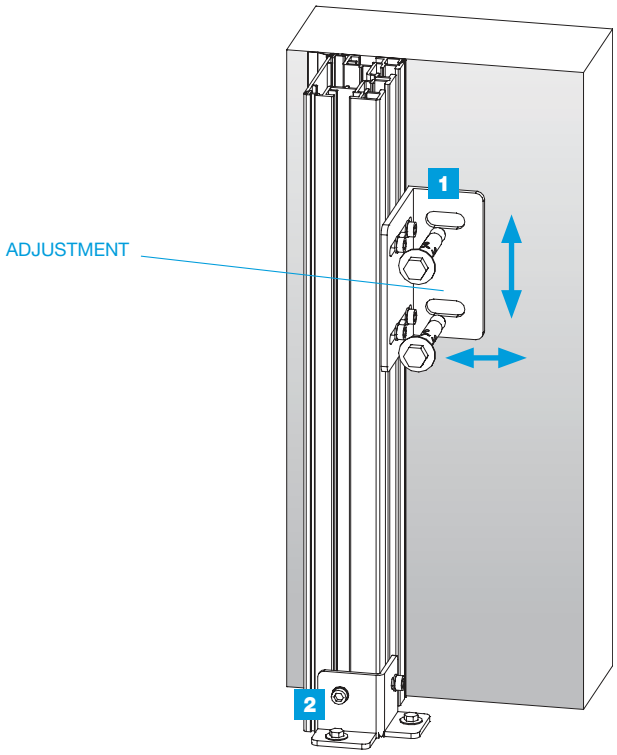


FIG 18




## JAMB ASSEMBLY IN DETAIL

Fix the brackets to the wall with metal dowels.

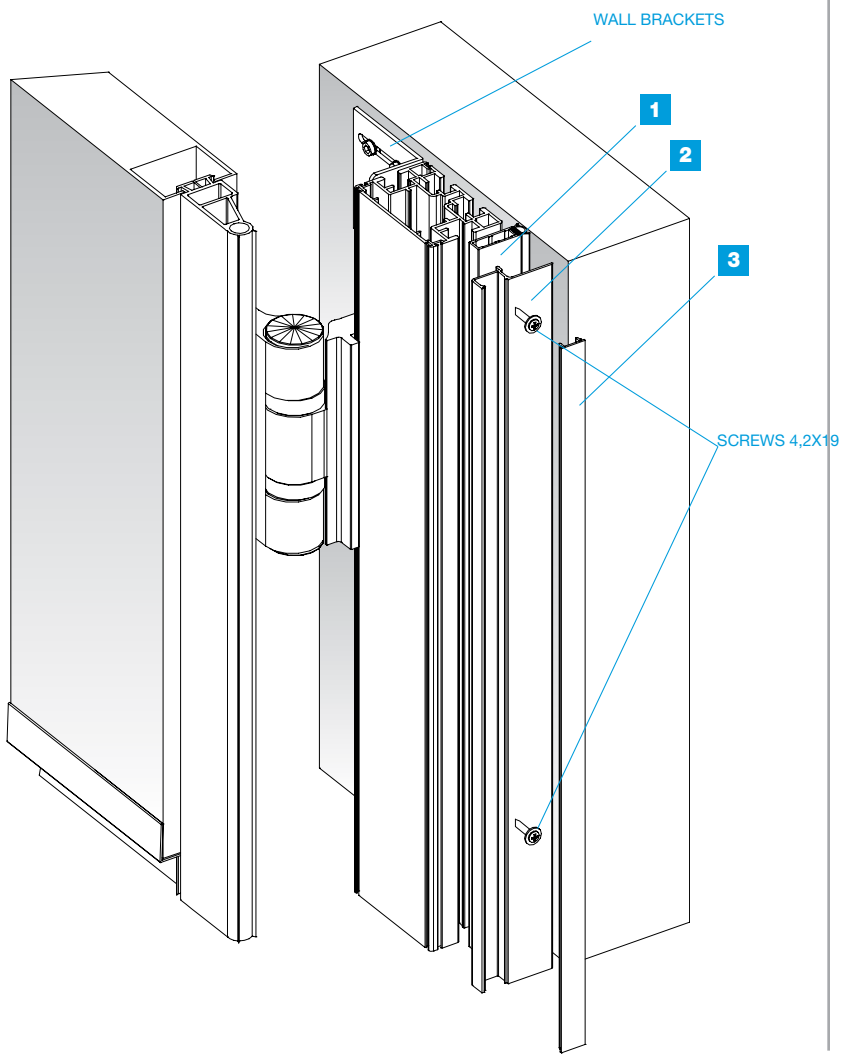
1

Wall brackets must be assembled near the hinges

2

Ground brackets

FIG 19




## DOOR CASING ASSEMBLY

Once the jamb above mentioned has been assembled pass on to assembling the door casing as follows:

1

Fix the basic profile to the wall

2

Fix the angled profile with screws

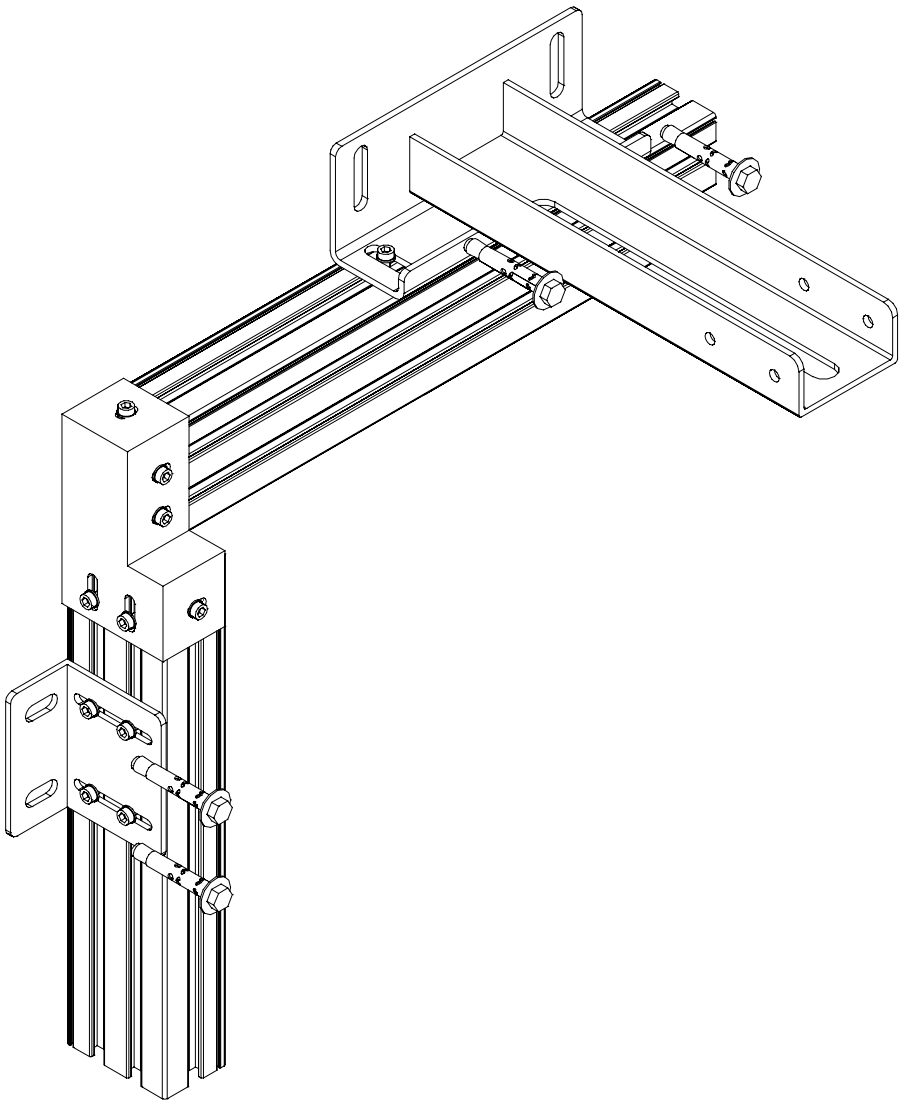
3

“Click in” the covering profile

### RAIL ASSEMBLY WALL FACED

Clamps assembled on the rail must be fixed to the carrying structure with metal dowels.
Fix the brackets assembled on the rail to the carrying structure by means of metal dowels.

FIG 20



### RAIL ASSEMBLY WITHIN WALL OPENING

Fix the rail to the ceiling, by means of special brackets pre-assembled on the rail and assembled the track casing on the outside. (see figure 24 e 25)

FIG 21

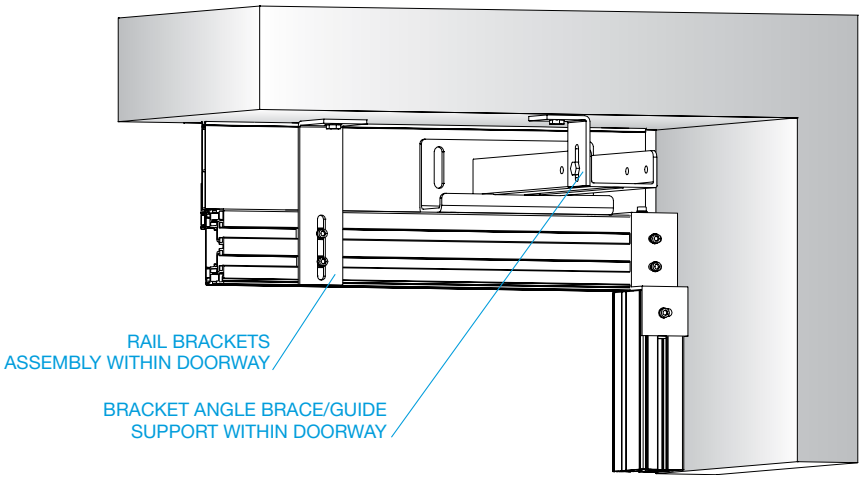
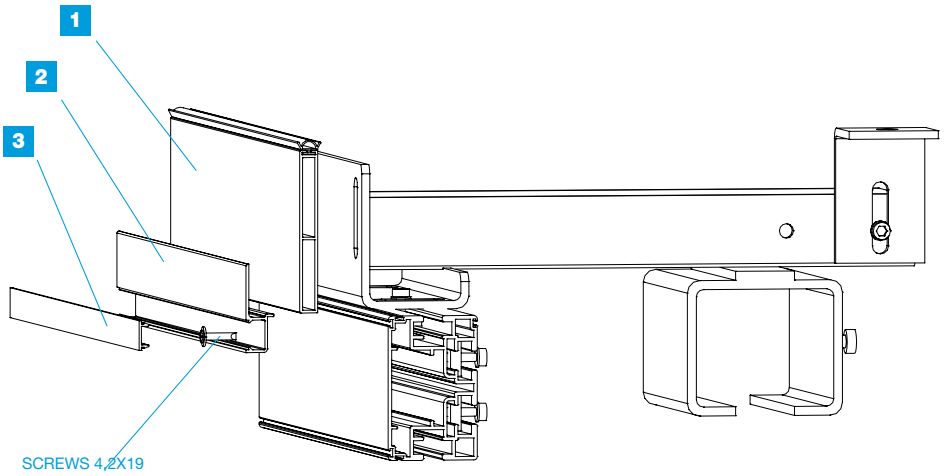


FIG 22




## RAIL ASSEMBLY WITHIN WALL OPENING - DETAILS

**1**

Fix the basic profile in order to adhere to the celling

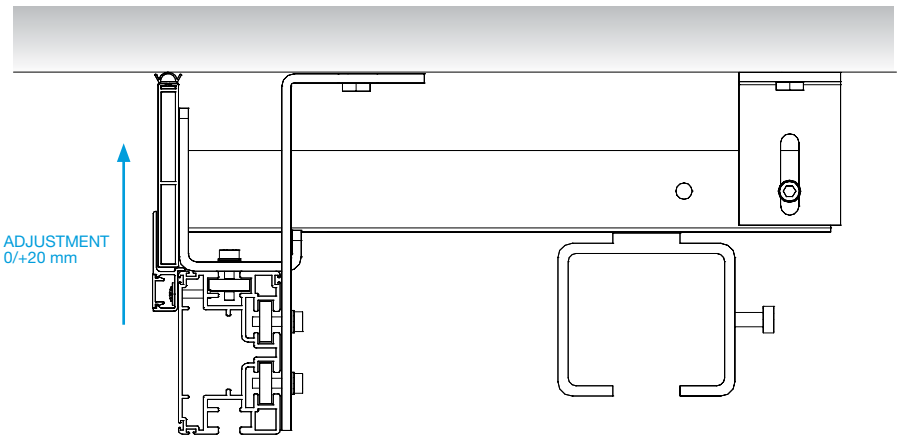
**2**

Fix the angled profile with screws

**3**

“Click in” the last bit

FIG 23




## RAIL ASSEMBLY WITHIN WALL OPENING -DETAILS

FIG 24

## PANEL IDENTIFICATION

In figure 15 you may notice the position of the panels which are identified by means of labels.

### IDENTIFICATION DIAGRAM FOR PANELS 2SX+ 2DX + CUT PANEL

(N.B. the considerable weight of the panels -60-170kgs –requires the aid of proper machines to be lifted and moved)

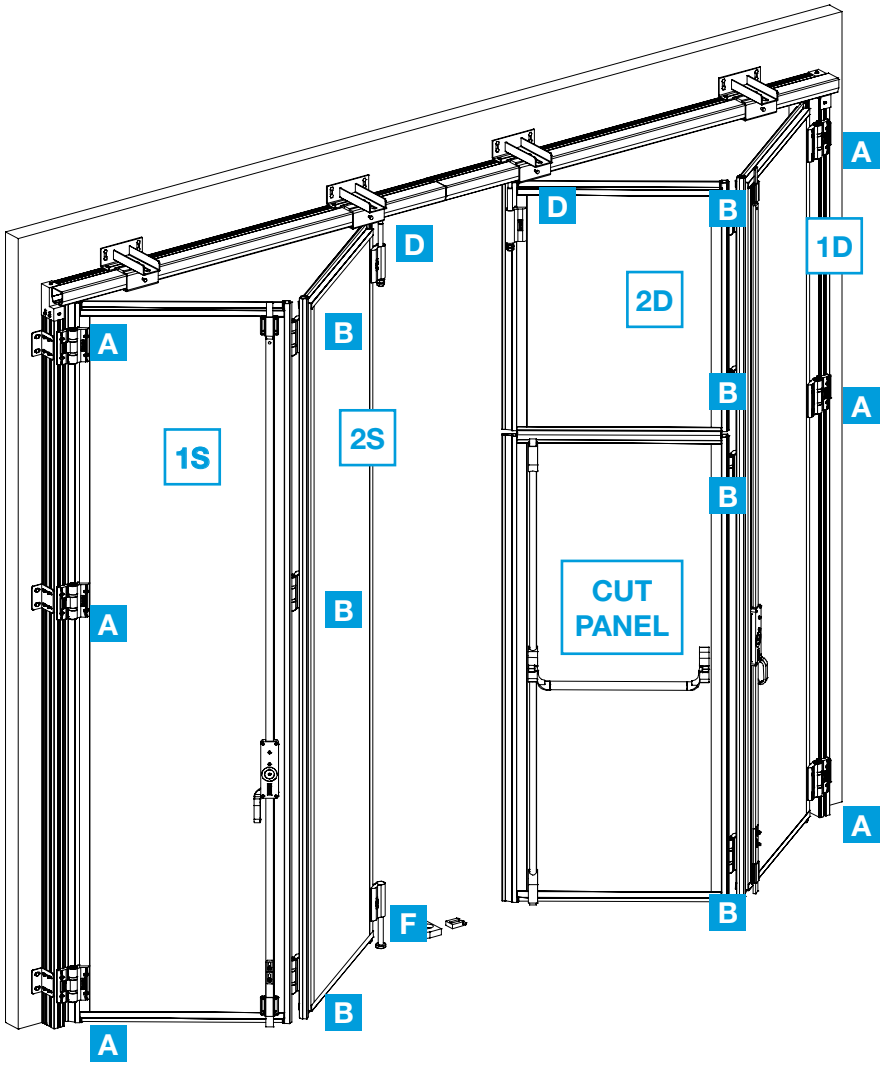
### FIRST PANEL (1S - 1D)

- position it near the vertical jamb
- insert the pivots and start assembling

### SECOND PANEL (2S - 2D)

- Position it near the first panel
- Align and insert the male hinges already assembled to the pre-assembled female hinges (fig. 28)
- Insert the pivots with all the accessories
- Tighten the dowel
- assemble the dowel screw for the 20x320 roller track inside the four-wheeled trolley and insert it into the track.
- Tighten the nuts (see fig. 29 – D type)

FIG 25




### IDENTIFICATION DIAGRAM FOR PANELS S3SX + 2DX

For panels 1S, 1D, 2S and 2D carry out same operations as above described.
Complete the assembly with panel 3S by assembling the upper hinge (fig. 29 – C type), the intermediate hinge (fig. 28- B type) and lower hinge (fig. 30- E type).

FIG 26

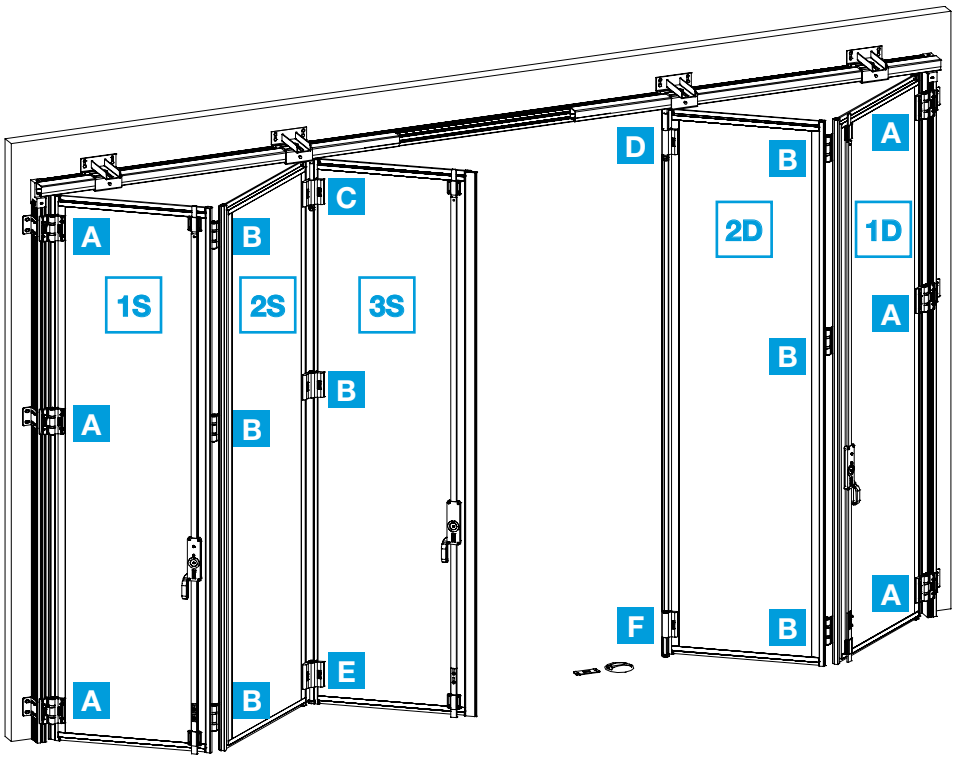
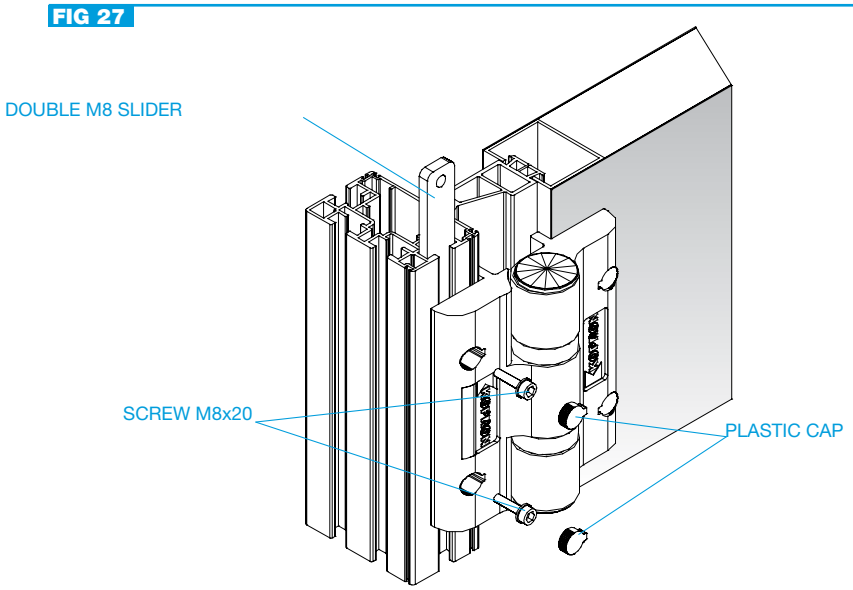
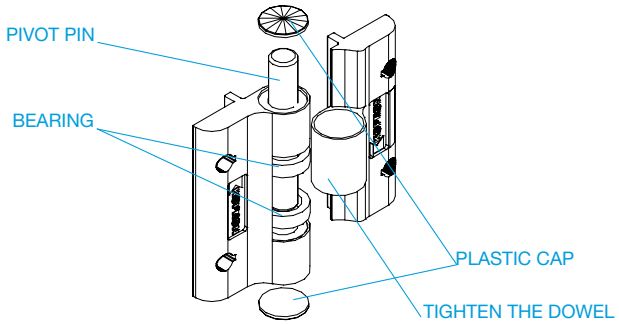


FIG 27



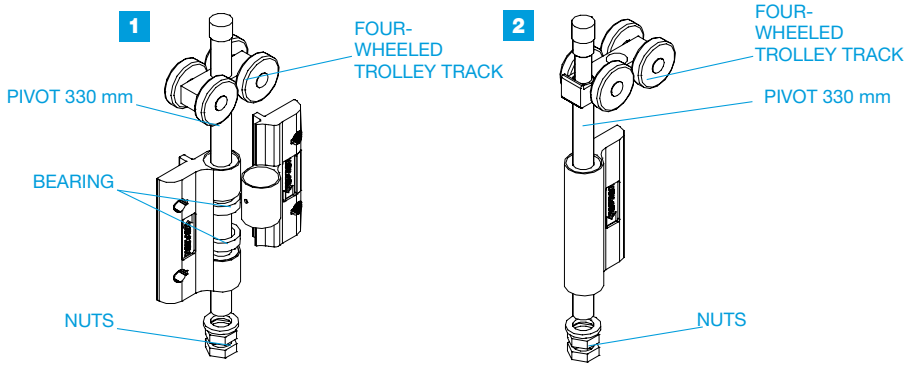

## HINGES COMPOSITION
## INTERMEDIATE HINGE A TYPE

FIG 28




## INTERMEDIATE HINGE B TYPE

FIG 29

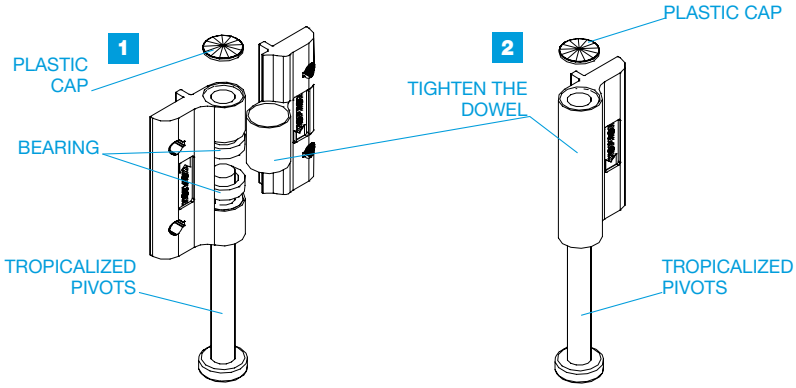



## UPPER HINGES

**1**
**C TYPE**

**2**
**D TYPE**

FIG 30




## LOWER HINGES

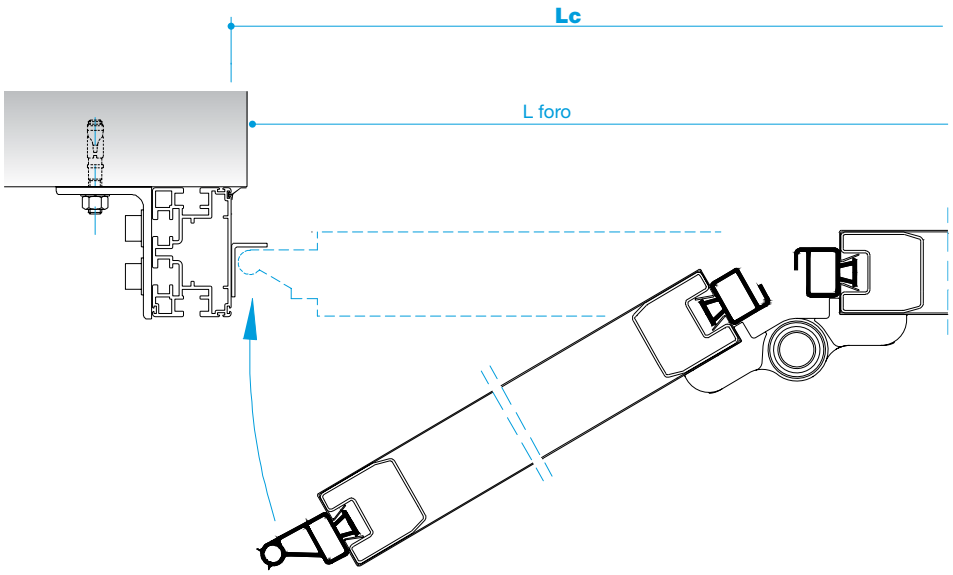
**1**
**E TYPE**

**2**
**F TYPE**

### PANEL DOORSTOP WITH INTERNAL OPENING FROM THE INSIDE- DETAILS

Fix the “L” shaped profile with screws positioning it as shown in figure 31.

FIG 31




### CUT PANEL DOORSTOP WITH EXTERNAL OPENING FROM THE OUTSIDE

Assemble the “L” shaped profile with screws according to position indicated in figure 32.

### NOTE

It is important to note the max dimension from the position of the jamb is 10 mm.

FIG 32

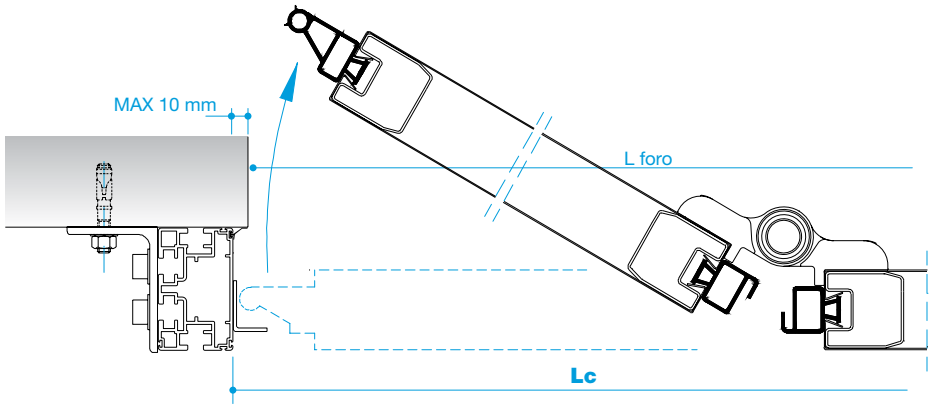
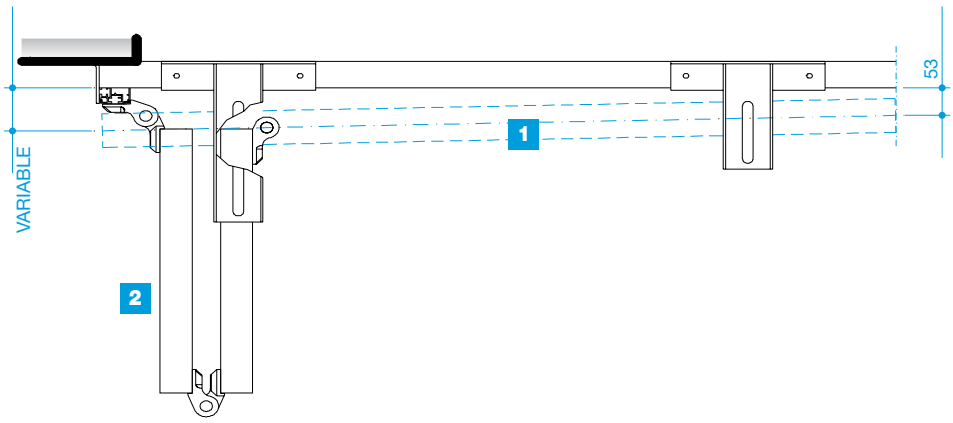


FIG 33




### 90° TWO-PANEL TYPE

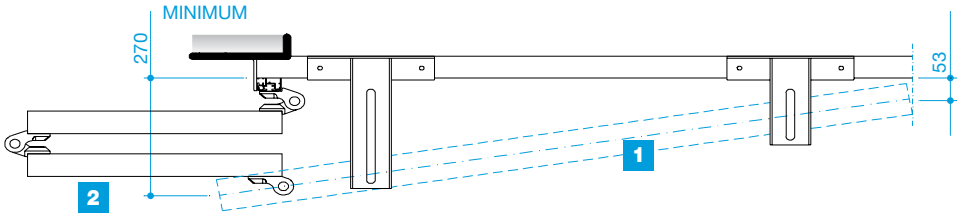
**1**

Position temporarily the overhead track as shown in the drawing.

**2**

Carefully open the door to obtain the required opening then tighten all the screws as indicated in fig. 36.

FIG 34




### 180° TWO-PANELLED TYPE

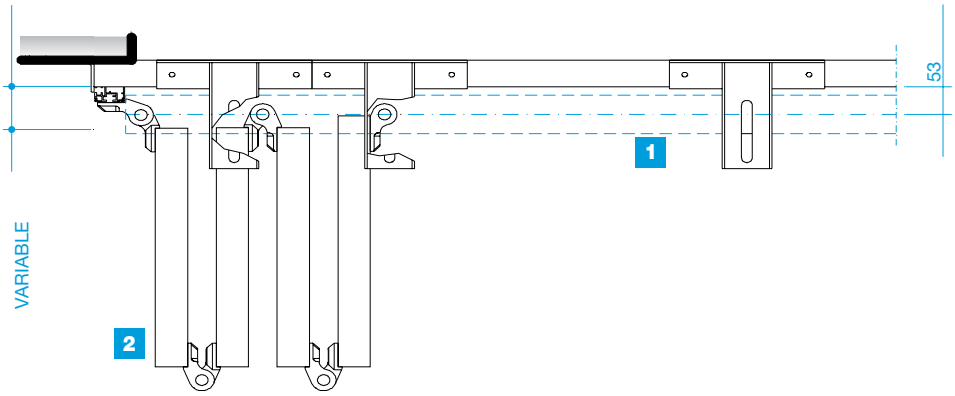
**1**

Position temporarily the overhead track as shown in the drawing.

**2**

Carefully open the door to obtain the required opening then tighten all the screws as indicated in fig. 36.

FIG 35




### 90° FOUR-PANELLED TYPE

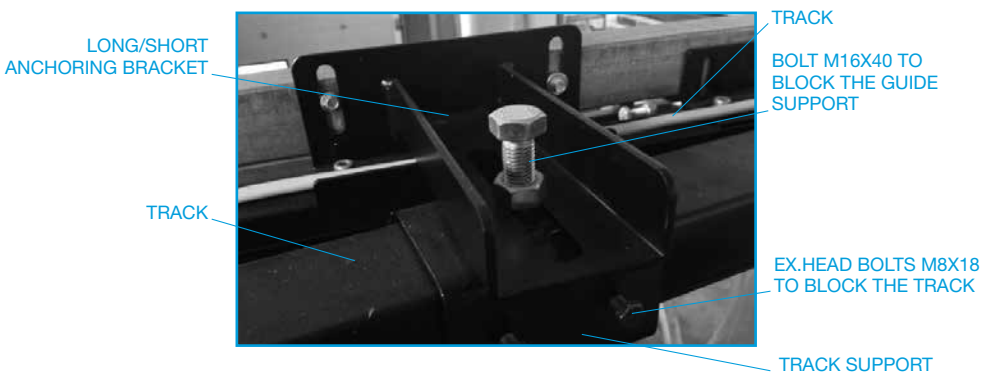
**1**

Position temporarily the overhead track as shown in the drawing.

**2**

Carefully open the door to obtain the required opening then tighten all the screws as indicated in fig. 36.

FIG 36




### SCREW TIGHTENING

Once the track has been well adjusted tighten bolt 16 x 40 in order to block the track support.

Complete the assembly of the track by also tightening bolts 8x18.

# STRIKE PLATES FOR UPPER AND LOWER LOCKS

**1**

## STRIKE PLATES FOR UPPER LOCK BOLT

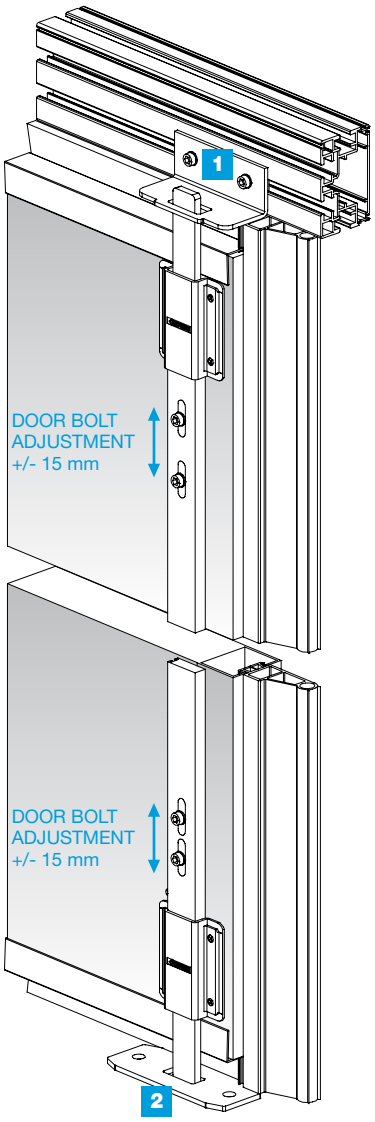
Strike plates for upper locks are pre-assembled on the overhead rail and can be adjusted according to requirements.

**2**

## STRIKE PLATES FOR BOTTOM LOCK BOLT

Strike plates for bottom locks are in the accessory box and must be fixed when the door is shut near the lower bar. Once the correct position has been found you must drill and fix the plates with proper dowels. For panel fixing the holes must be drilled within the slotted hole of the bottom strike plate.

FIG 37




## GROUND STRIKE PLATES POSITIONING

## HORIZONTAL SECTION OF FOLDING DOOR

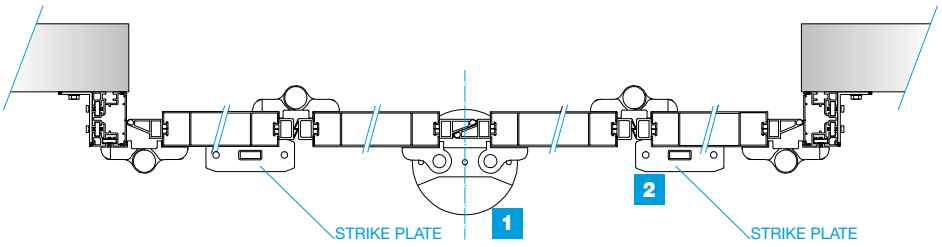
**1**

Ground fixing (see fig. 40)

**2**

Lock strike plate (see fig. 37)

FIG 38




## GROUND STRIKE PLATES POSITIONING HORIZONTAL SECTION OF FOLDING DOOR WITH A CUT PANEL

**1**

Ground fixing (see fig. 41)

**2**

Lock strike plate (see fig. 37)

FIG 39

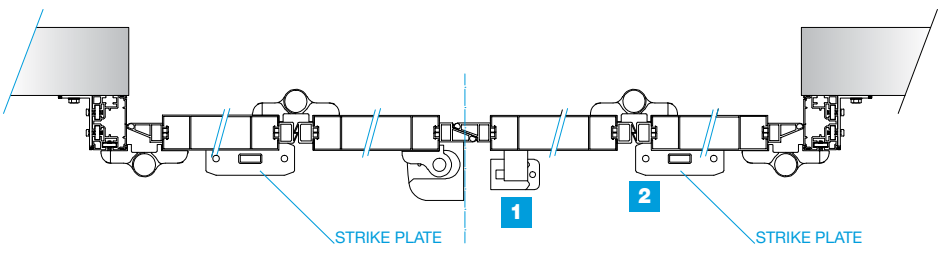
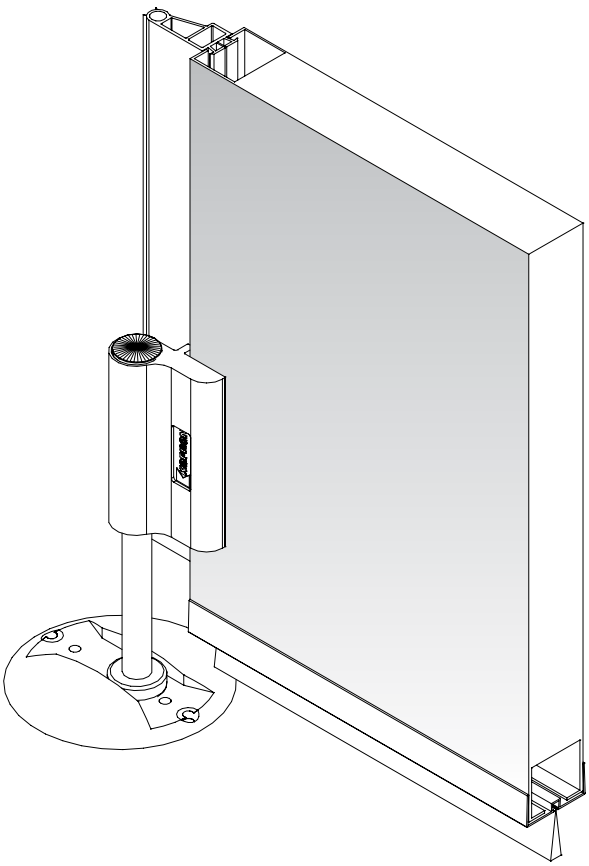


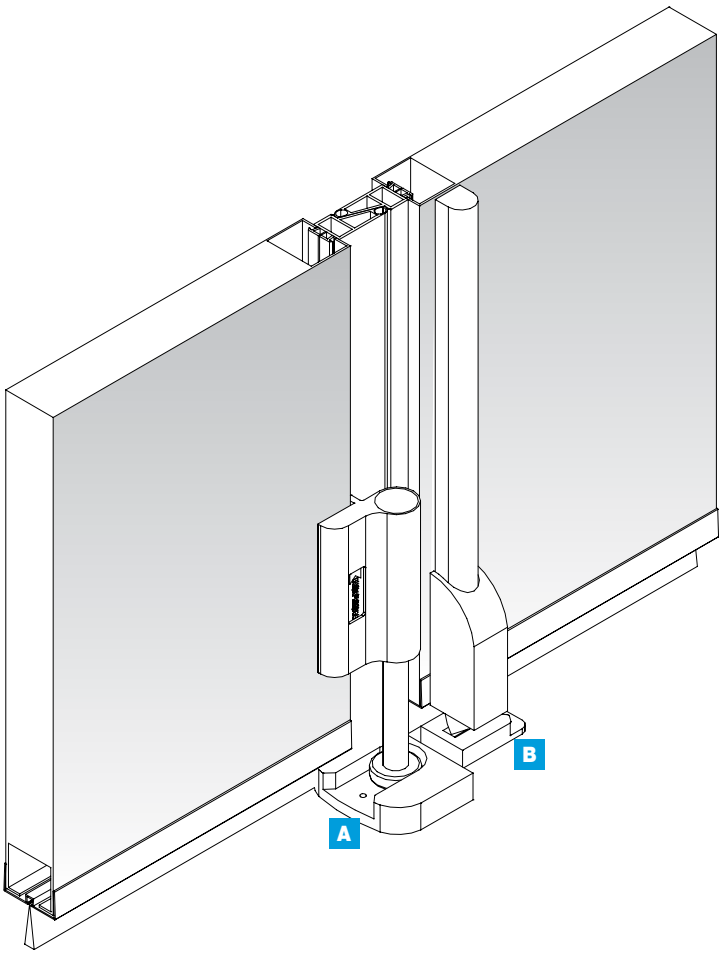
FIG 40



### GROUND FIXING OF A 2 + 2 PANEL FOLDING DOOR

The positioning of the plate must be done when the door is shut, and fixing must be carried out with proper head chipboard screws.

FIG 41




### GROUND FIXING OF PANEL AND EMERGENCY HANDLE

The positioning of the plate must be done when the door is shut.

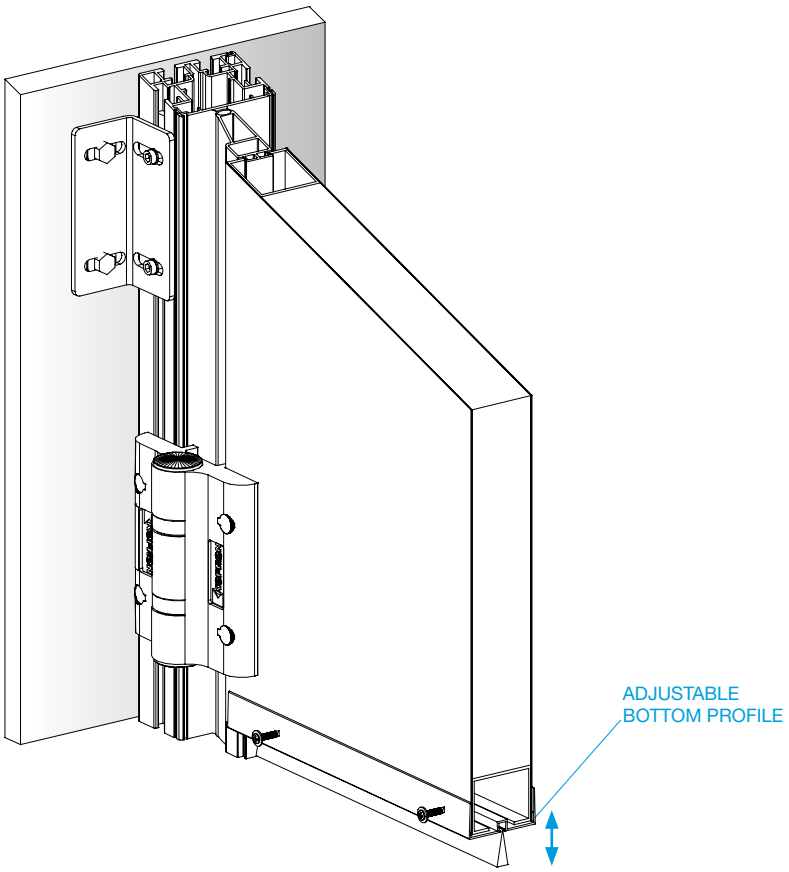
Position plate ‘A’, drill and fix it with head chipboard screws.

Same procedure must be followed for plate“B” taking care to position the opened side towards the folding area.

### ADJUSTMENT OF THE BRUSH HOLDER BOTTOM PROFILE

Adjust the bottom profile and insert screws

FIG 42




### CASING ASSEMBLY (ON THE OUTSIDE)

For the assembly of both casing support brackets and track casing follow the drawing.

- Brackets to be fixed with screws M6 (“A”)
- Fix the casing to the wall with dowels (“B”)
- Fasten bolts M6
- Fix the casing with adjustable brackets with screws
- Apply silicone sealing on the casing (“B”)

FIG 43

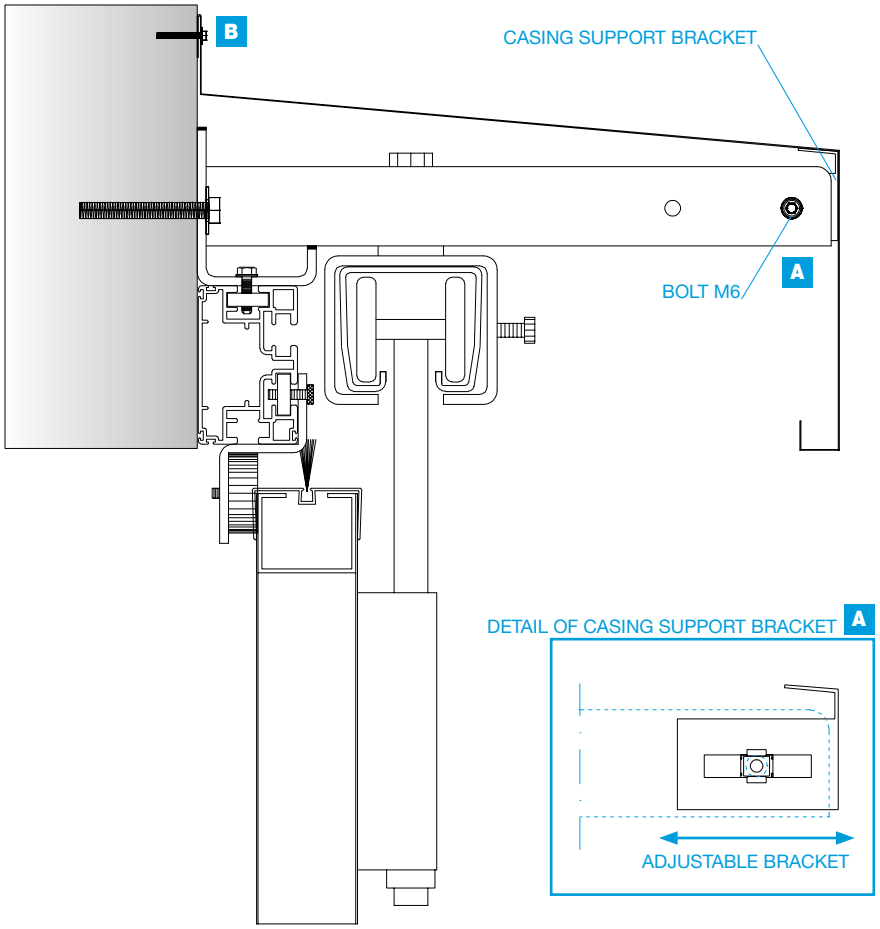


FIG 44

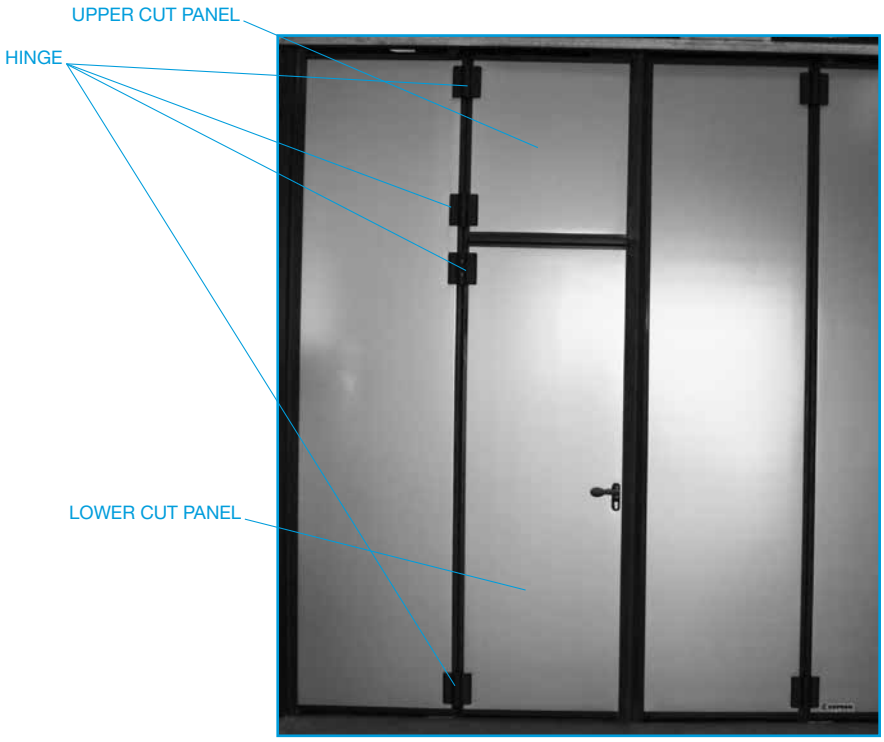



FIG 45

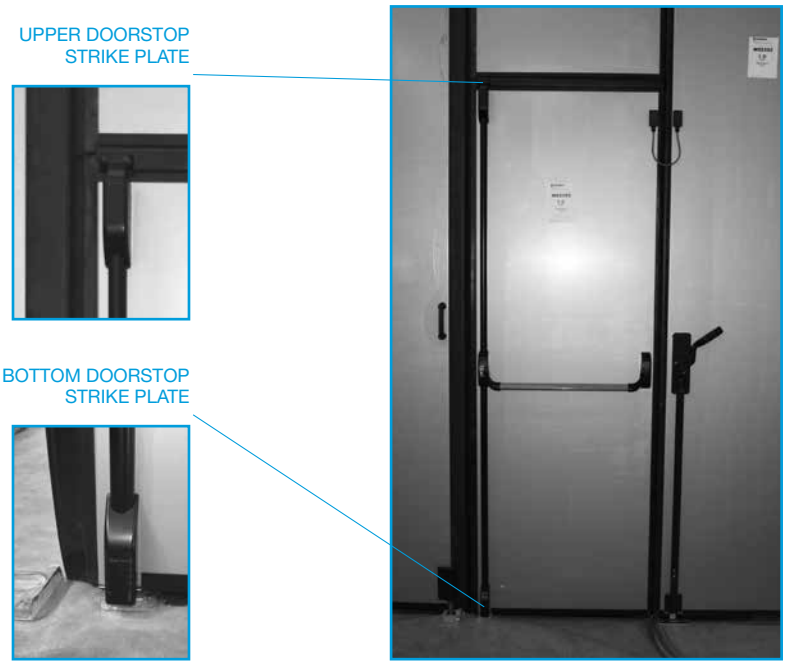
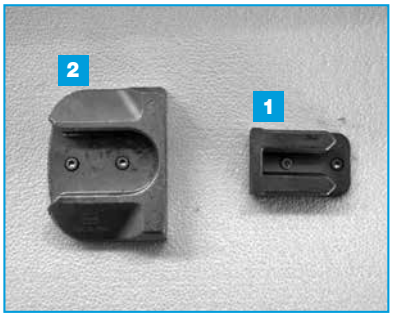



FIG 46




## CUT PANEL ASSEMBLY

- Procede according to figure 25.
- The upper doorstop strike plate must be fixed when door is shut to determine the correct alignment. Drill two holes.
- The bottom doorstop strike plate must be fixed when door is shut to determine the correct alignment. Drill two holes on the floor.

**NOTE:**
For correct sliding of the panel the fixing to ground of both the bottom doorstop and strike plate must be done with chiphead metal dowels.

## BOTTOM DOORSTOP STRIKE PLATE AND FIXING PLATE

1 Bottom doorstop

2 Ground fixing plate

## MOTORIZATION

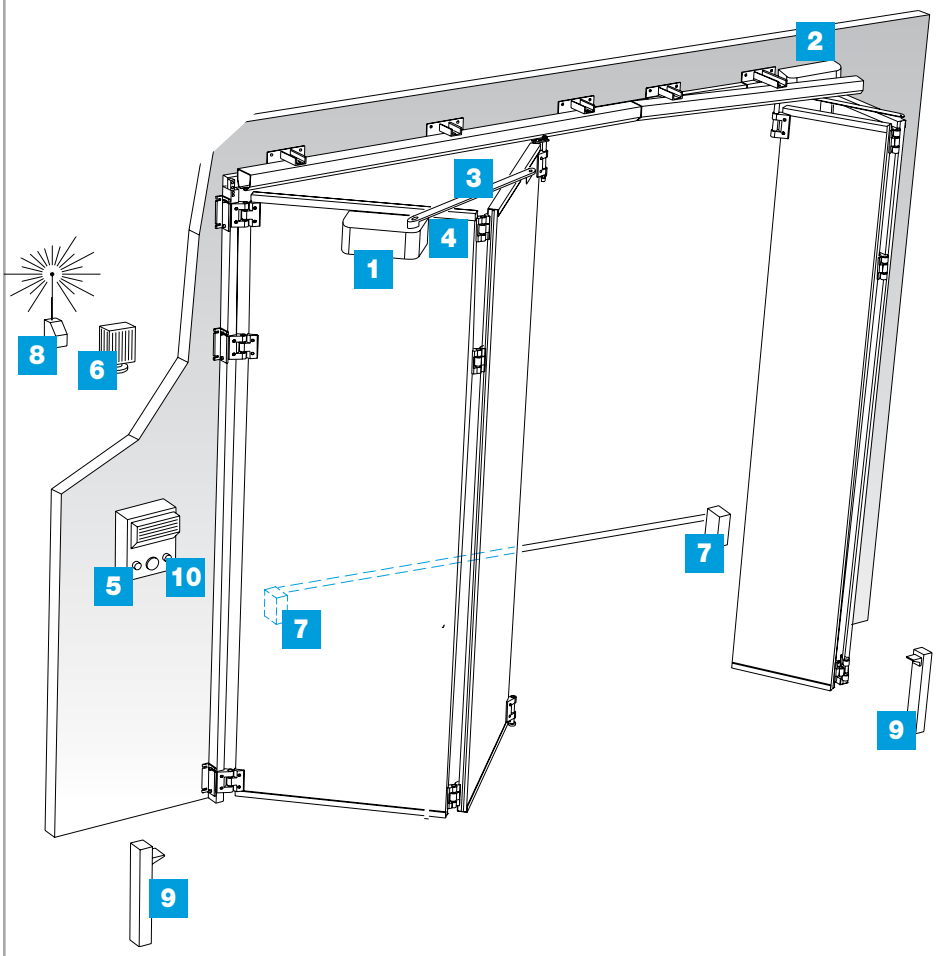
For motorized doors:

- For assembly please apply to instructions supplied by producer
- Assembly must be carried out only by specialized personnel with proven experience, operating in compliance with safety norms.
- The electric plant must be installed by specialized technicians.
- Kopron will not take any responsibility for damages caused by Customer in case they decide to modify the door from manual to motorized version.

## NOTE

Always connect and control the functioning of the safety micro of locks/cut panels and eventual pedestrian doors..

FIG 47



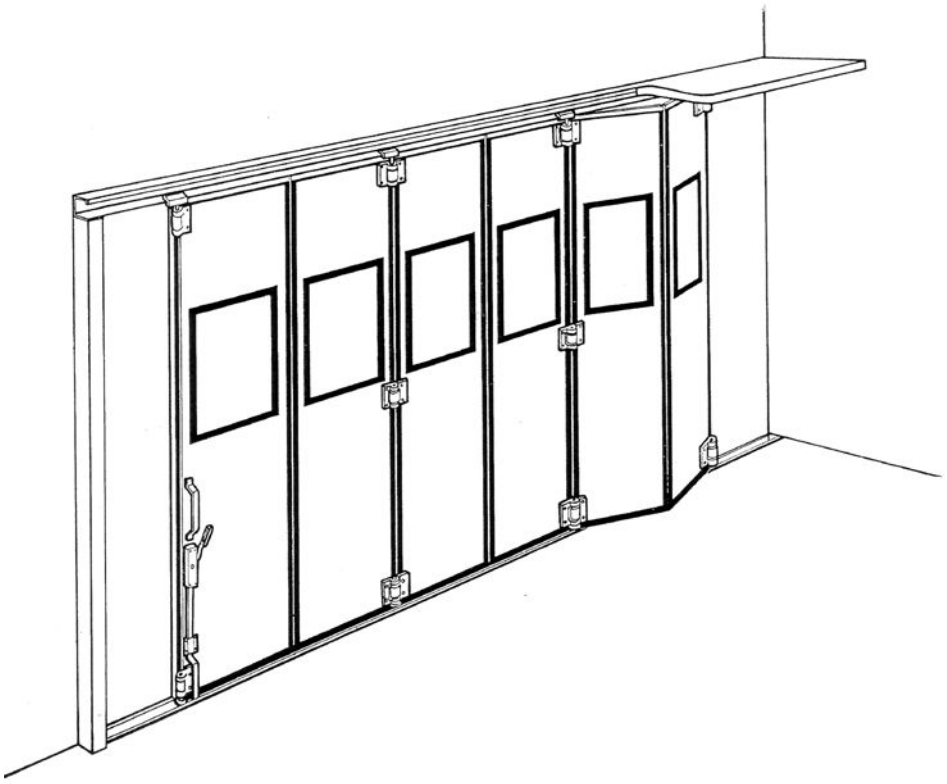

| | | | |
|---|---|---|---|
| 1 | MOTOR REDUCER FOR FOLDING AT 90° | 7 | COUPLE OF PHOTOCELLS |
| 2 | MOTOR REDUCER FOR FOLDING AT 180° | 8 | RADIO CONTROL |
| 3 | TELESCOPIC ARMS KIT | 9 | PHOTOCELL TOWERS |
| 4 | MOTOR RELEASE KIT | 10 | KEY SELECTOR |
| 5 | ELECTRONIC EQUIPMENT | | |
| 6 | FLASHING INDICATOR | | |

## MOTOR REDUCER TECHNICAL CHARACTERISTICS

FIG 48

| FAAC390 MOTOR REDUCER - TECHNICAL CHARACTERISTICS | |
|---|---|
| Power supply | 230V (+6% -10%) 50Hz (60Hz) |
| Absorbed power (W) | 280 |
| Absorbed current (A) | 1,2 |
| Torque max (Nm) | 250 |
| Capacitor (µF) | 8 |
| Thermoprotection (°C) | 140 |
| Reduction ratio | 1:700 |
| Angular speed (°/sec.) | 8 |
| Environment temperature (°C) | -20 / +55 |
| Frequency of use (cycle/hour) | 15 |
| Number r.p.m. | 960 |
| Motor reducer weight | 11,5 |
| Protection level | IP 44 |
| Dimensions | See Fig. 35 |
| Max wing length | 1500 mm |

FIG 49

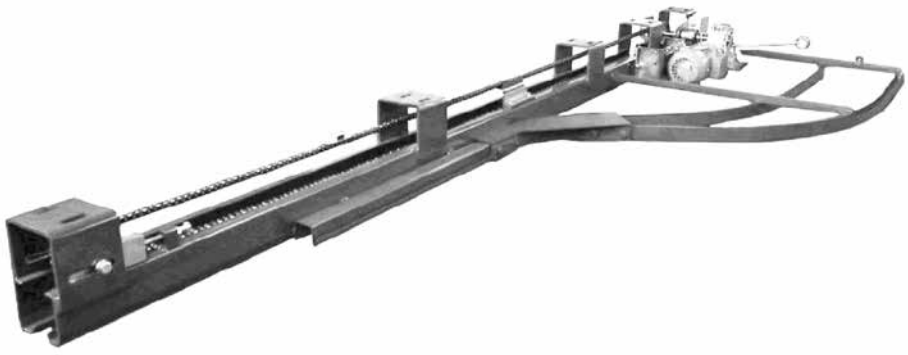


# FOLDING DOOR KPL CG

**Folding door with ground tracks.**

**Axonometric view of a 6 wing type**

FIG 50



**OVERHEAD TRACK WITH MOTOR**

FIG 51

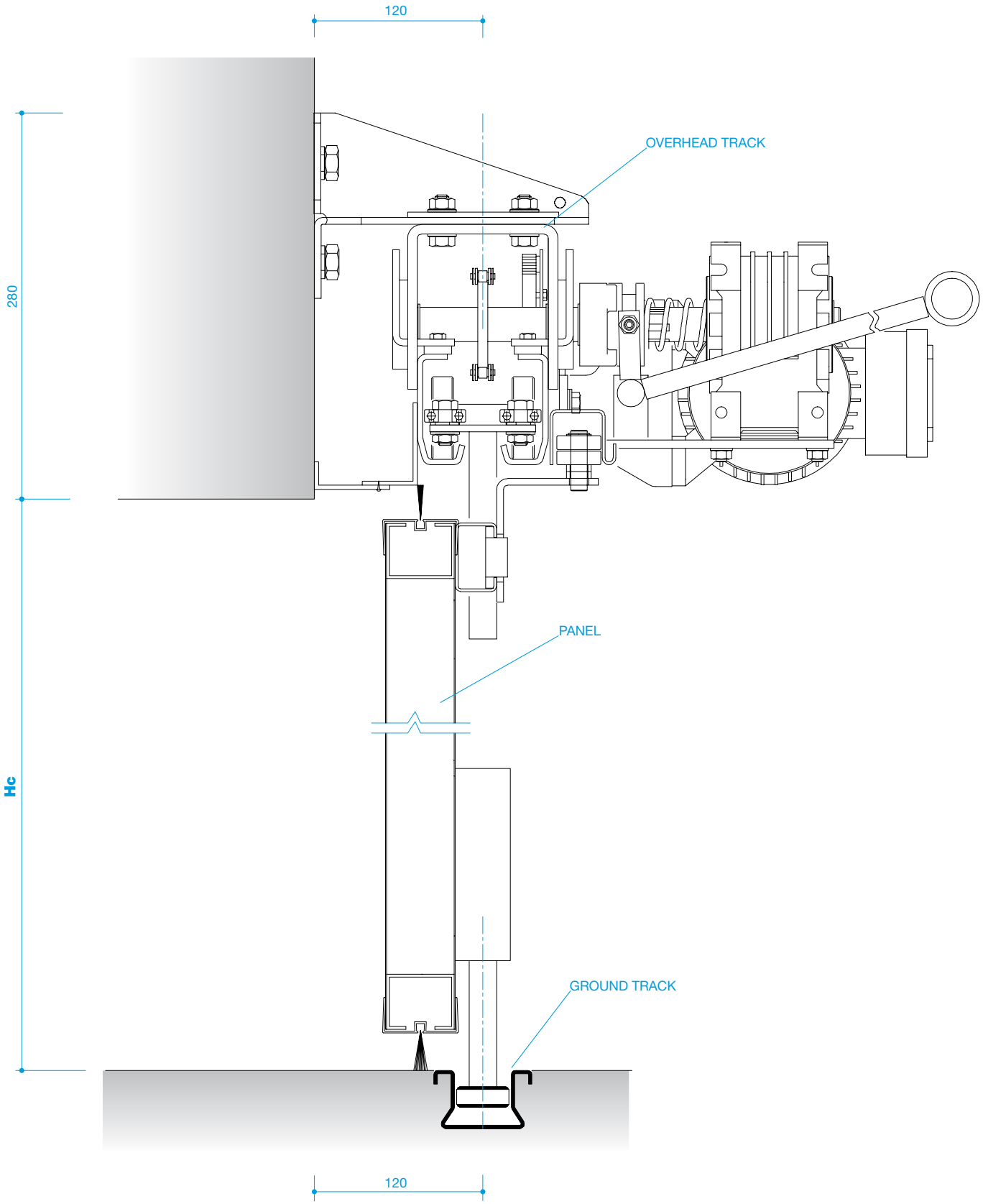
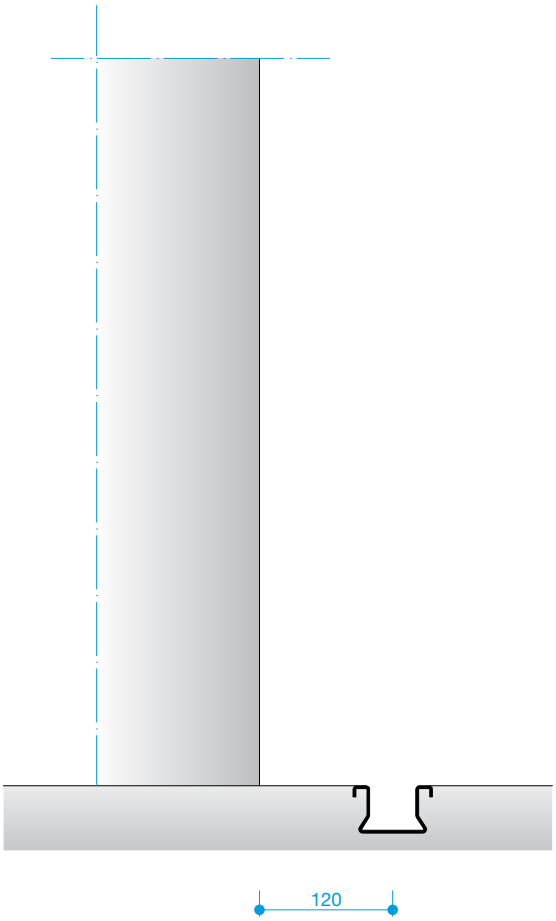


FIG 52



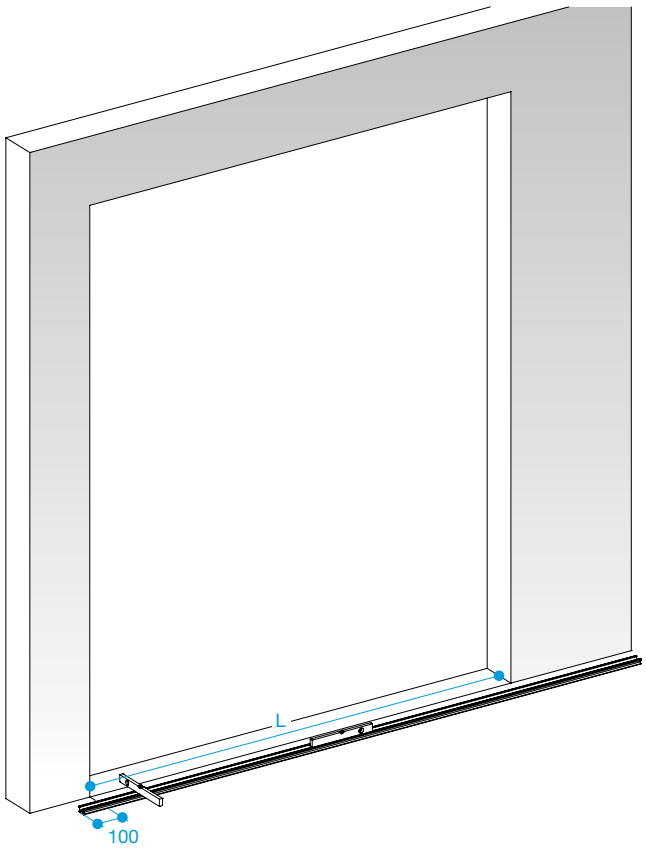

## MEASURE CONTROL

The KPL-CG door type has an in-built ground track which must be made before laying the floor.

Carry out controls as shown in figure 13/14/15 at page 15.

**NOTE:**
Before positioning the track check the data on sheet as indicated in figure 13.

FIG 53




## GROUND TRACK POSITIONING SINGLE OPENING DOOR

Position the guide as indicated in fig. 53 or according to instructions sheet accompanying the guide, keep to the distance shown in fig. 52 or to what otherwise indicated in the note.

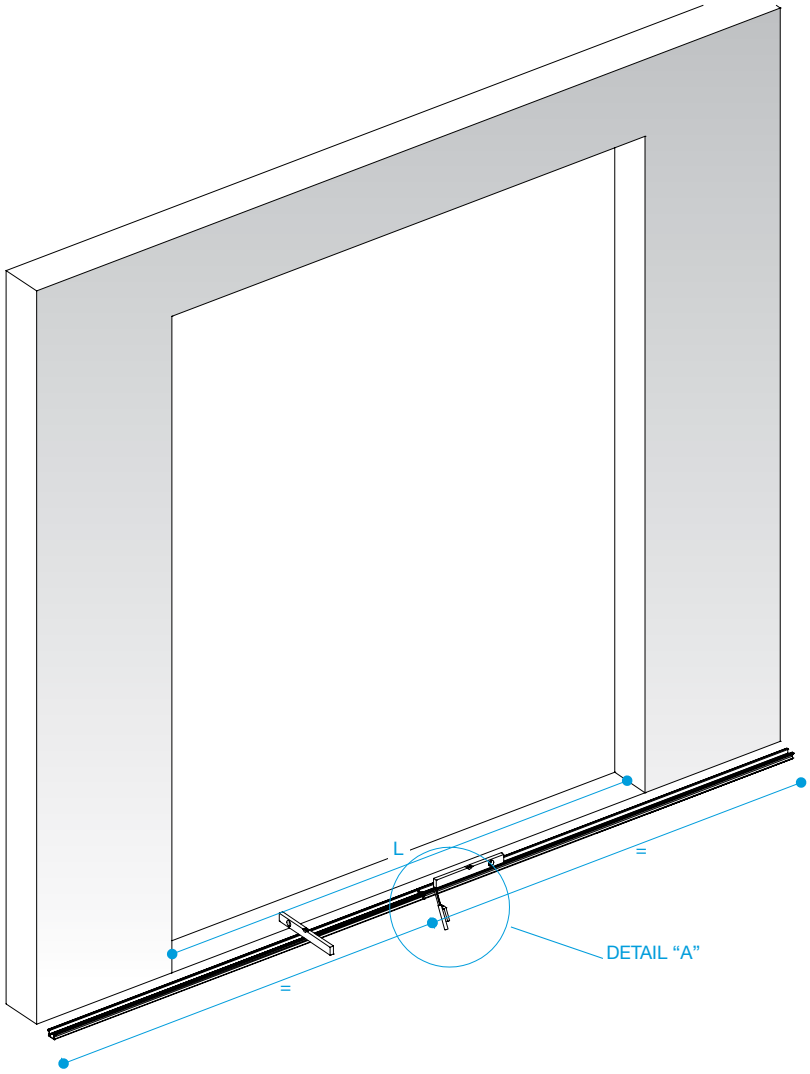
After having layed the floor assemble the door.

# GROUND TRACK POSITIONING

### FOR MOTORIZED DOORS: WITH CENTRAL PARTING LINE

Position the track as indicated in fig. 54 or according to instructions accompanying the tracks. Keep to the distance shown in fig. 52 or to what otherwise indicated in the note.

FIG 54




### TRACK WELDING

Tracks with a length exceeding 6000 mm are supplied in different pieces, to join them together carry out welding as indicated in figure 55..

Complete the operation applying a galvanized coating.

FIG 55

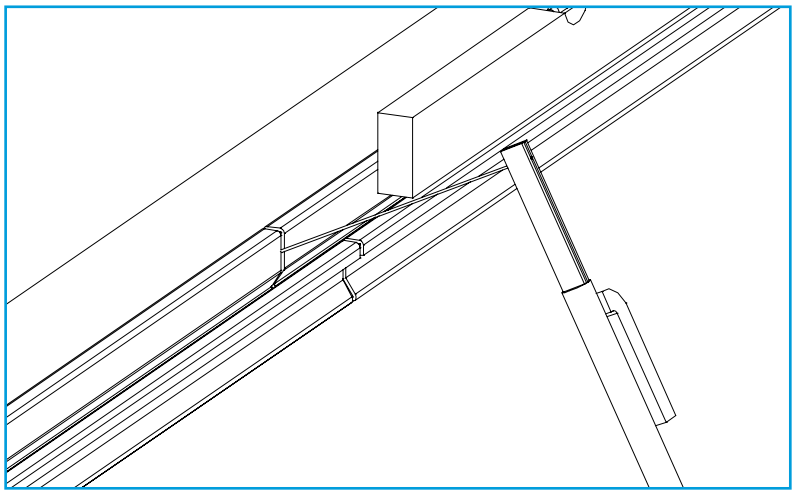
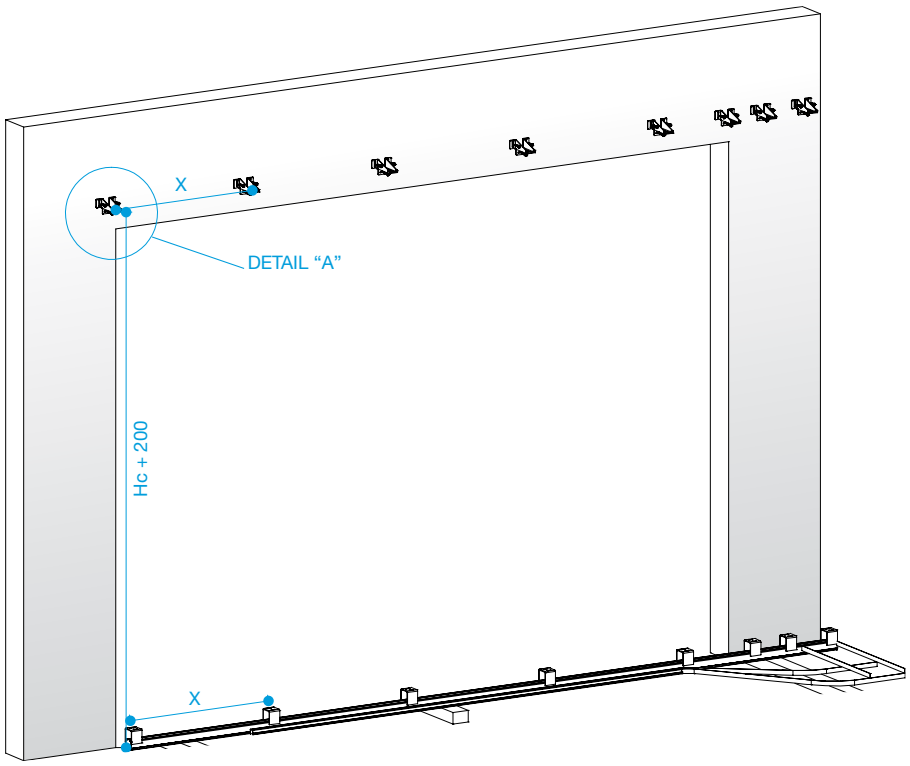


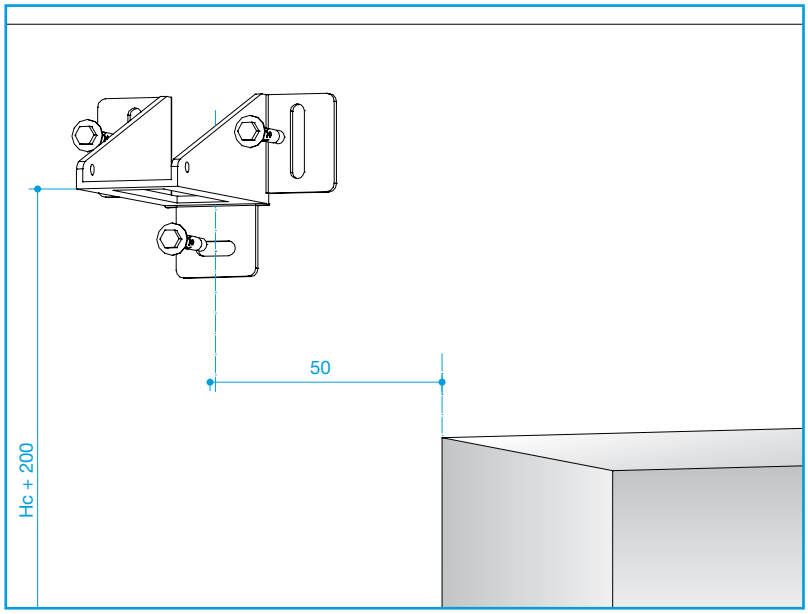
FIG 56




## BRACKETS FIXING INTO THE WALL

Fix the brackets into the wall with metal dowels according to dimensions in figure 57.
You can calculate “x” center directly on the track.

FIG 57



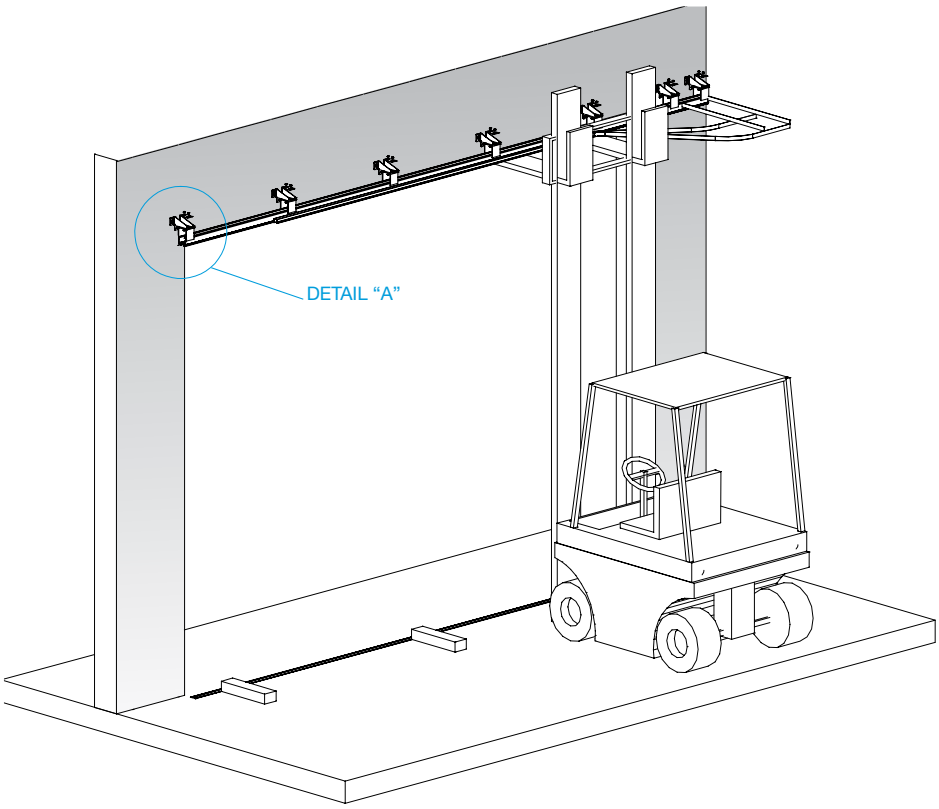

## DETAIL "A"

Details in figure 57 refer to doors with side parting line. For central parting line doors the guide must be centered within the frame or as otherwise indicated in the enclosed instructions (fig. 13).

### OVERHEAD TRACK POSITIONING

Fix the brackets then lift and position the track with a forklift.

FIG 58




### TRACK FIXING: DETAIL "A"

Fix the track to the brackets by means of pivots and nuts. Before fastening, verify measures by either checking distances (fig. 59), or doing as indicated in enclosed sheet (fig. 13)

FIG 59

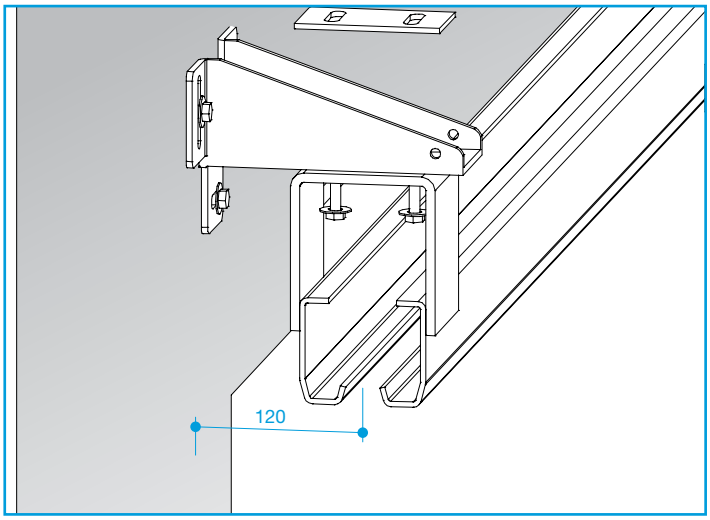
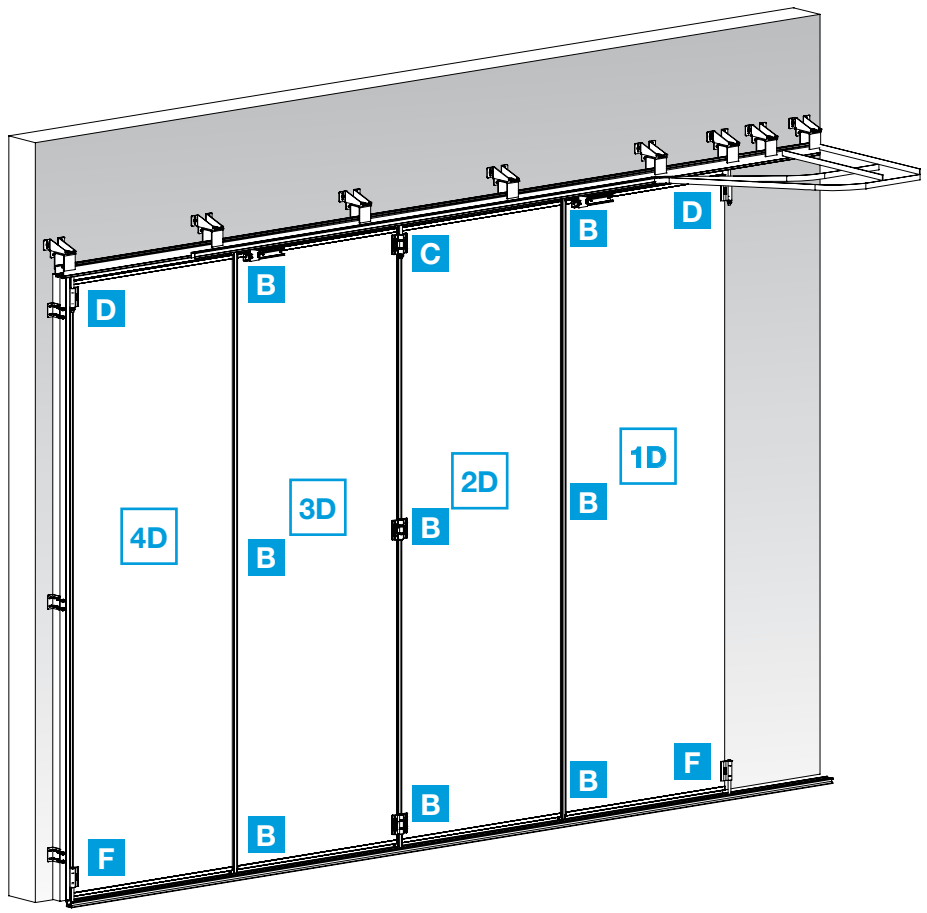


FIG 60

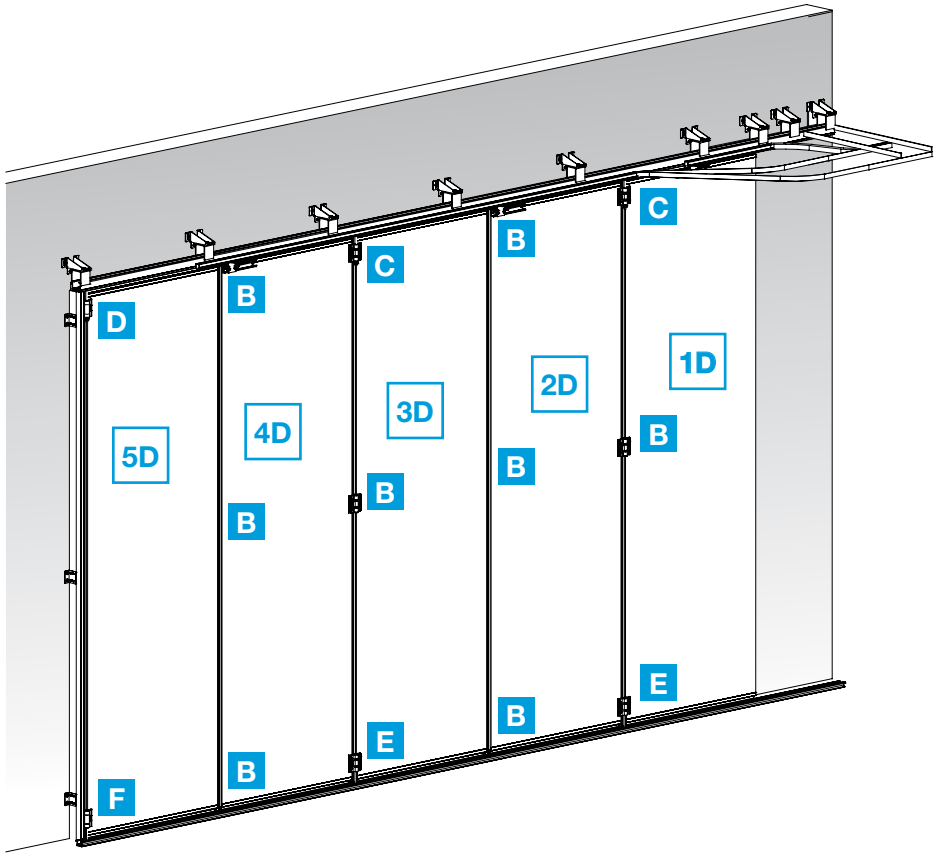



## IDENTIFICATION OF PANELS AND HINGES OF THE MODEL 4 WING KPL CG MODEL

Identify the panels with a tag (figure 24).

Assemble the panels by starting with panel marked 1, assemble the hinges as indicated in figure 62-63-64.

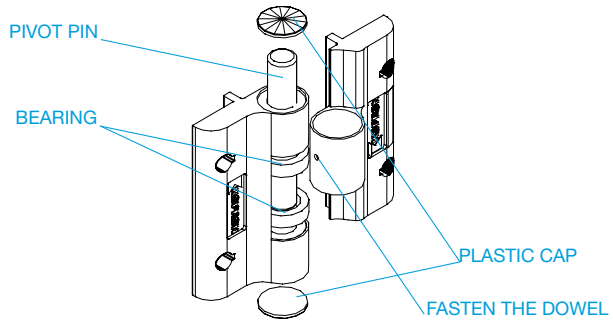
FIG 61




## IDENTIFICATION OF PANEL AND HINGES OF THE MODEL 5 PANEL KPL CG MODEL

### INTERMEDIATE HINGE TYPE B

FIG 62

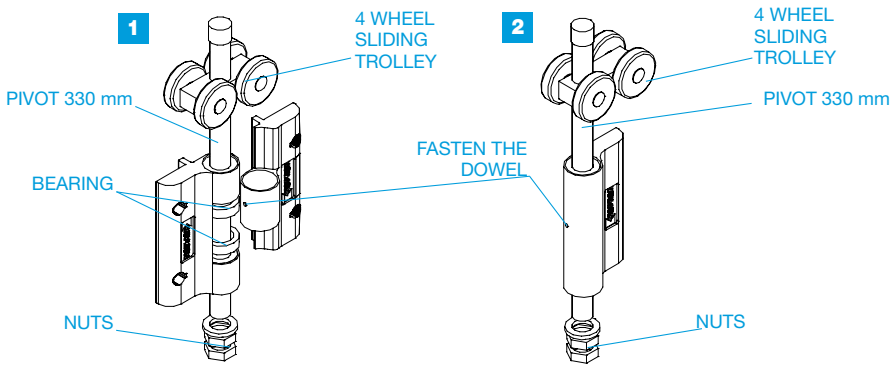



### UPPER HINGES

1
TYPE C

2
TYPE D

FIG 63

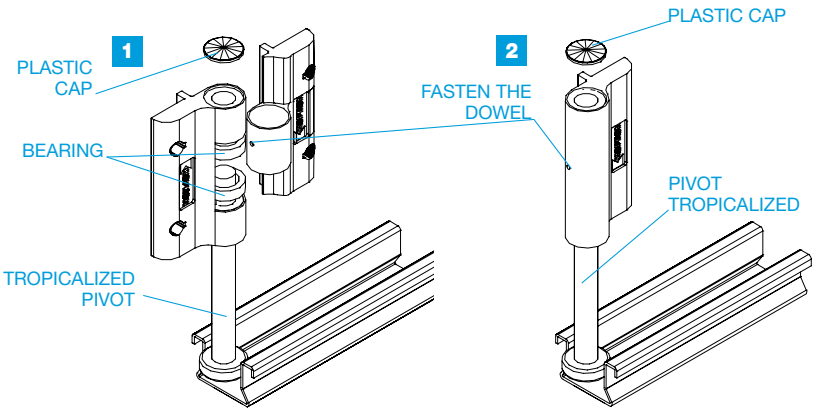



### LOWER HNGES

1
TYPE E

2
TYPE F

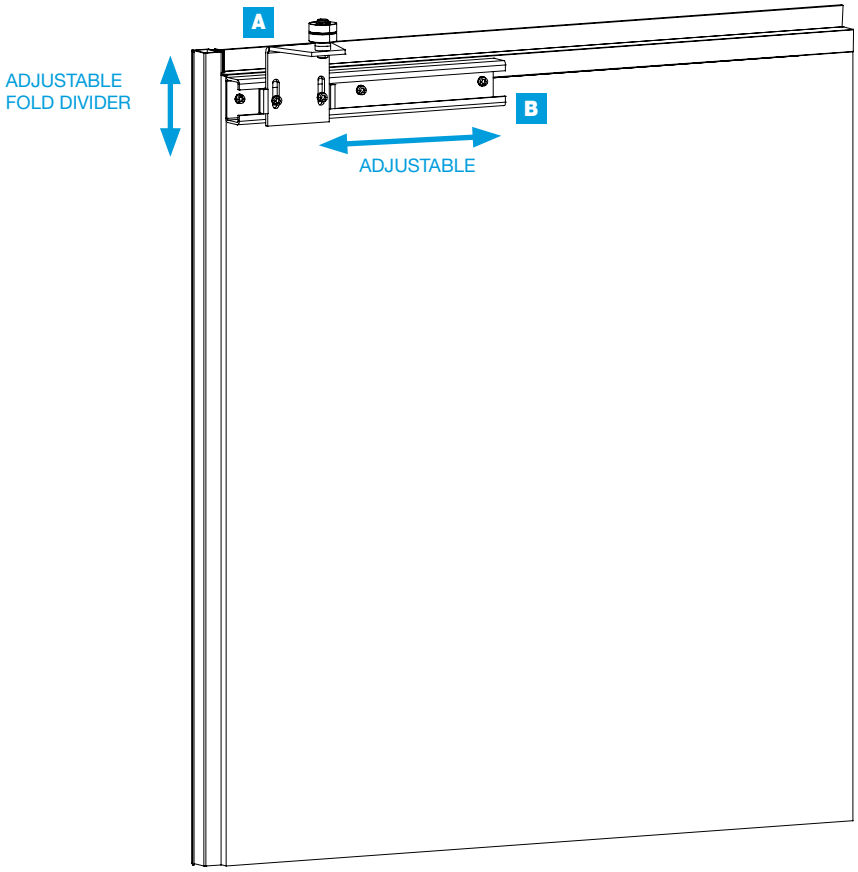
FIG 64




**NOTE:**

The head track sliding trolley with motor is already assembled and connected to the dragging chain.

FIG 65

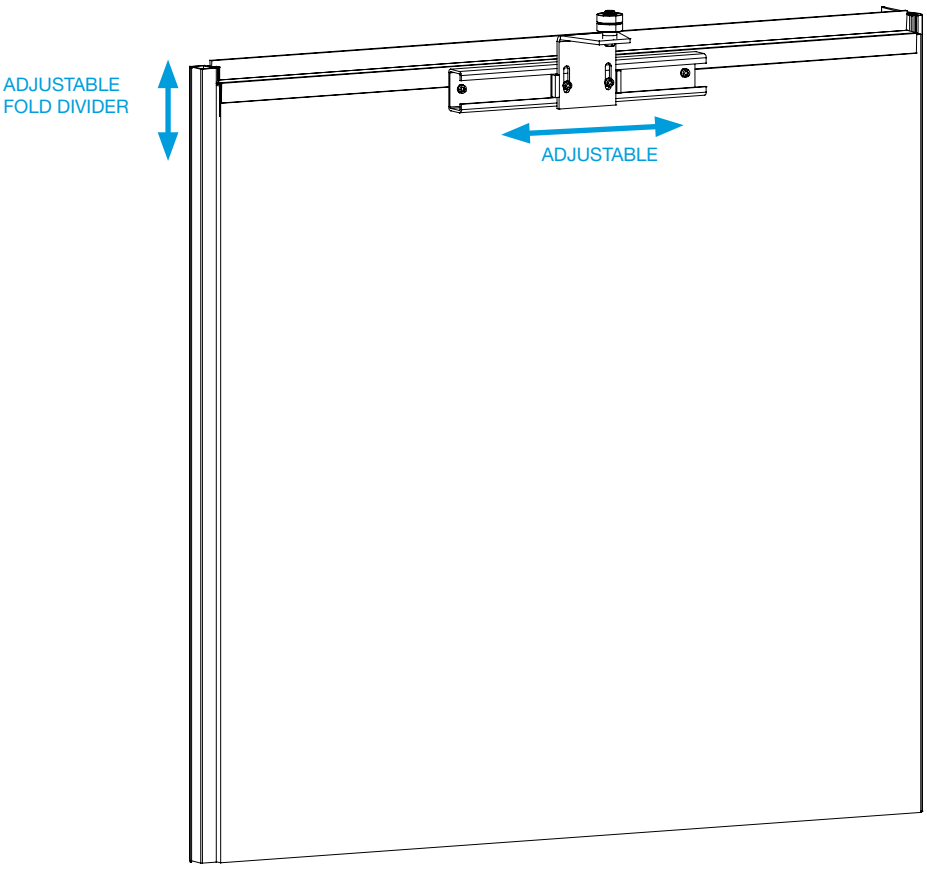



**FOLD DIVIDER: DETAIL**

Even Wings.

After having assembled the door, fix bracket “A” on support “B” already applied on the panel, positioning it in the track.
Then make due adjustments for a correct folding.

FIG 66




**FOLD DIVIDER: DETAIL**

Odd Wings

Follow instructions above.

This fold divider shall slide in the supplementary track positioned in the space for gathering the folded panels.

### ASSEMBLY DOORSTOP JAMB

For single folding doors you need to have a doorstop jamb.

Close the door and lean the jamb against the gasket. Fix brackets with metal dowels.

FIG 67

### DOORSTOP PROFILE: DETAIL

Where required assemble the profile for the lip seal.

FIG 68

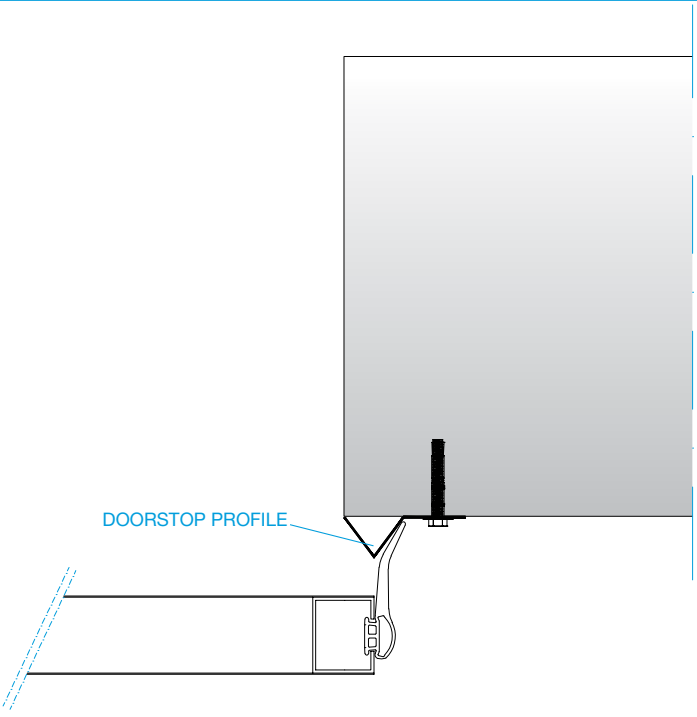
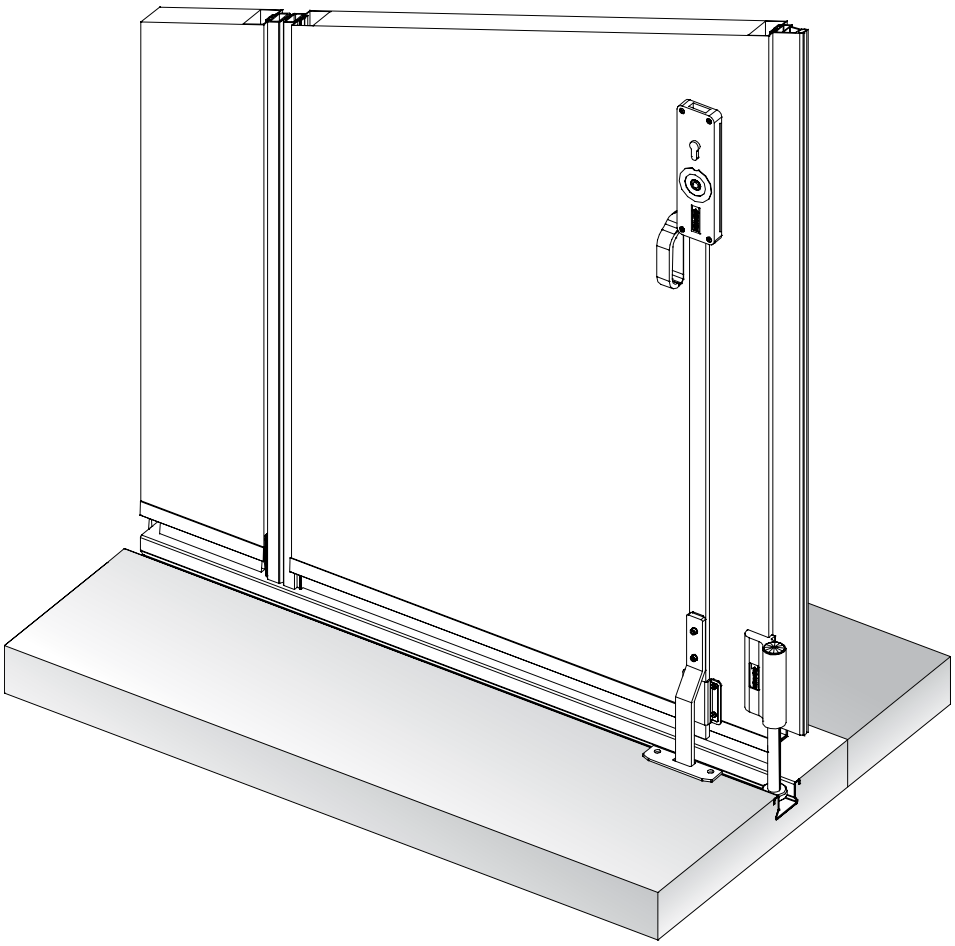


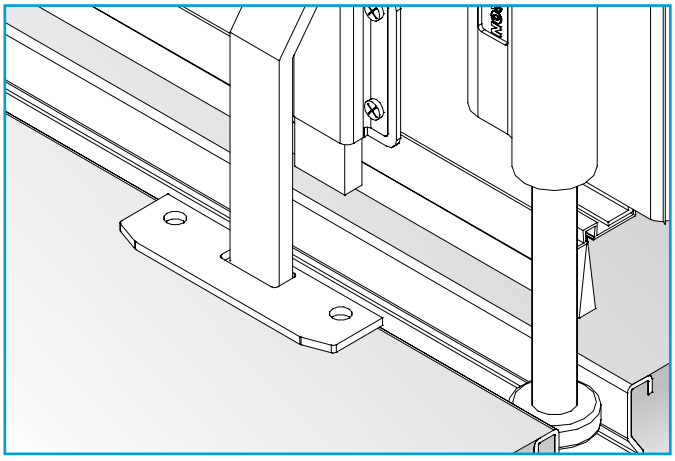
FIG 69



### LOCK STRIKE PLATE ASSEMBLY

Assemble the lock strike plate as shown in figure 69.

FIG 70



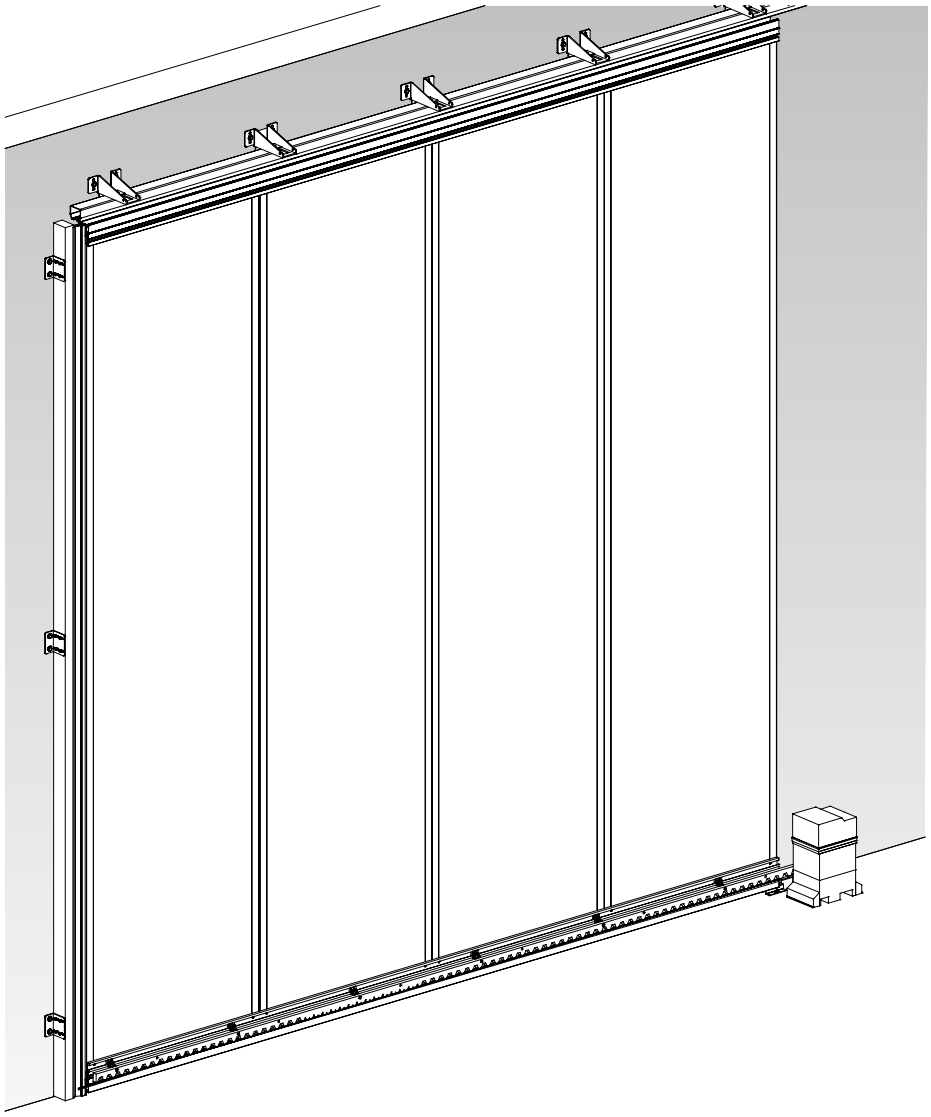
### LOCK STRIKE PLATE - DETAIL

# SLIDING DOOR KPA

Sliding door.

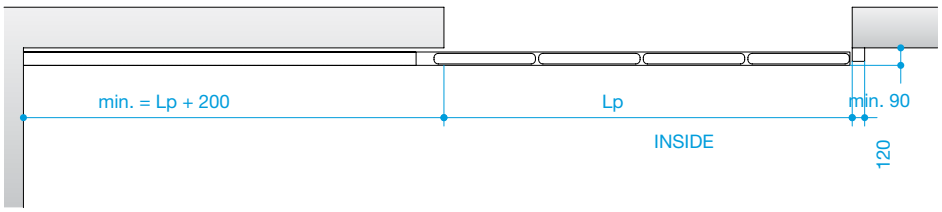
### Axonometric view

FIG 71



### JAMB FIXING WALL FACED

FIG 72




### APPLICATION WITH A DOORSTOP JAMB WITHIN WALL OPENING

FIG 73

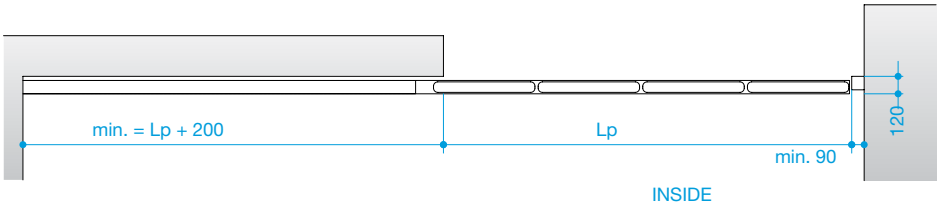
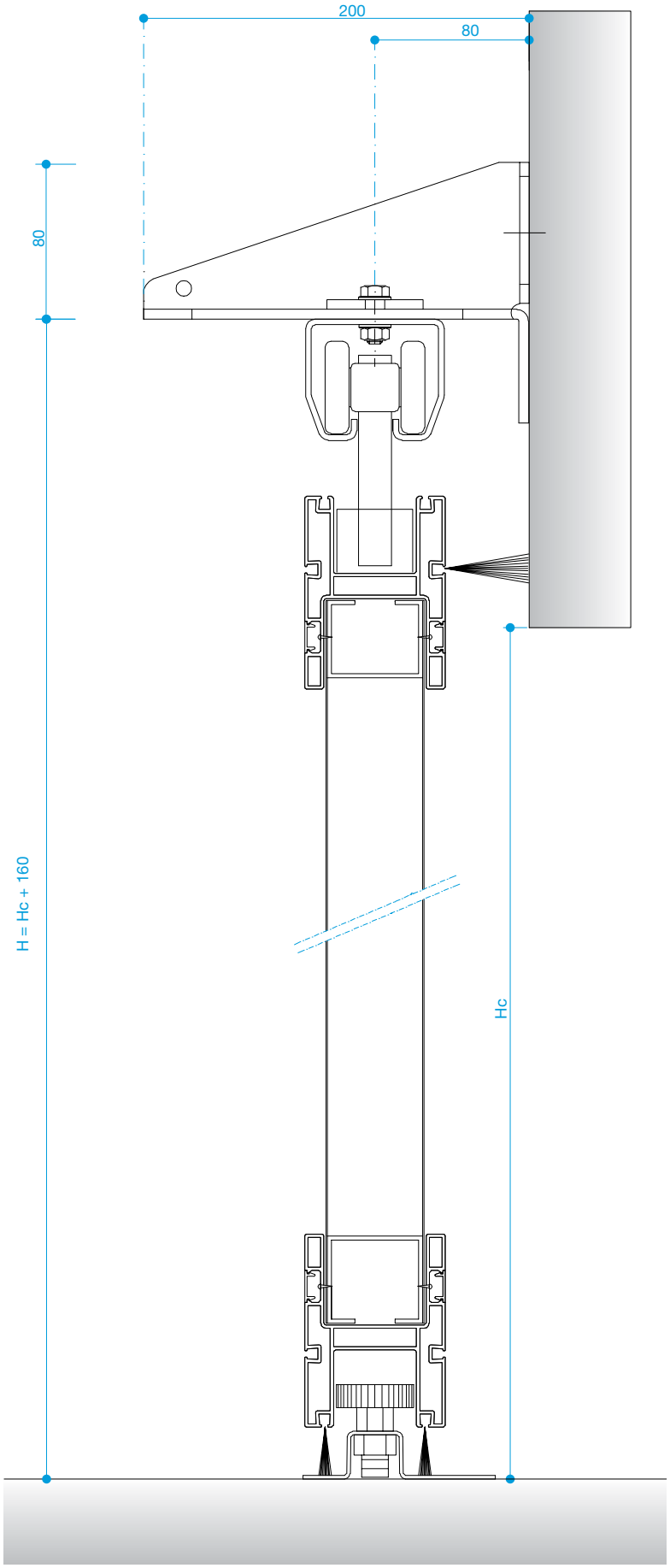


FIG 74




**VERTICAL SECTION OF SLIDING DOOR MODEL KPASGS**

Sliding door with carrying overhead track and lower brackets

## VERTICAL SECTION SLIDING DOOR MODEL KPASGST

Sliding door with overhead track and in-built ground track.

FIG 75

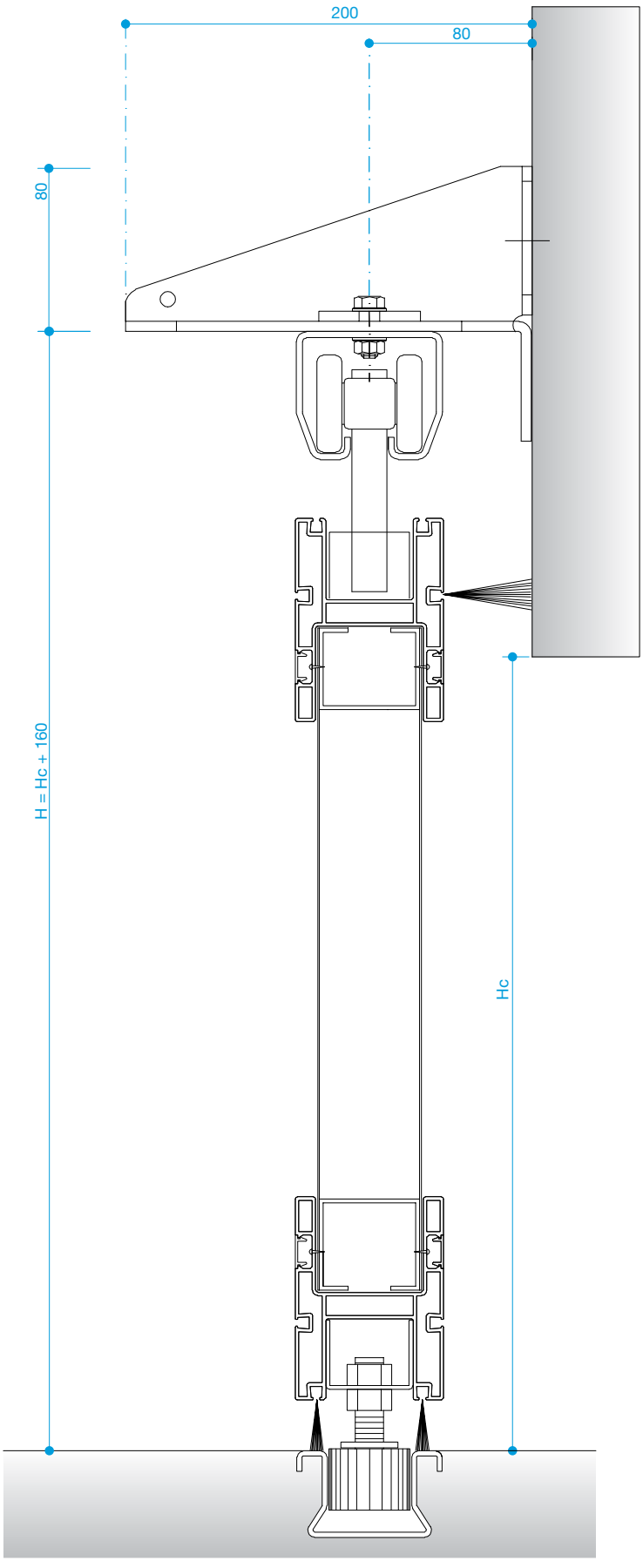
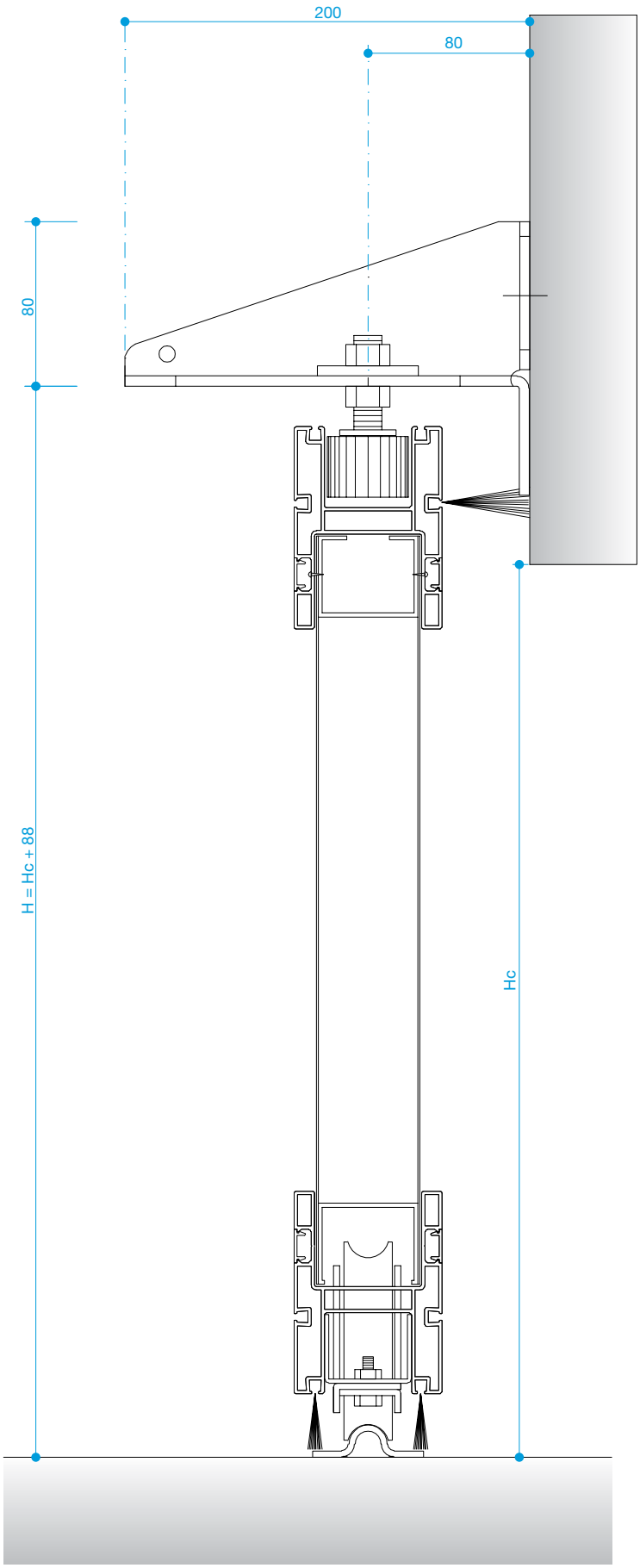


FIG 76




**VERTICAL SECTION OF SLIDING DOOR MODEL KPASGI**

Sliding door with track fixed to the ground with metal dowels.

## VERTICAL SECTION SLIDING DOOR MODEL KPASGII

Sliding door with ground track built into the floor.

FIG 77

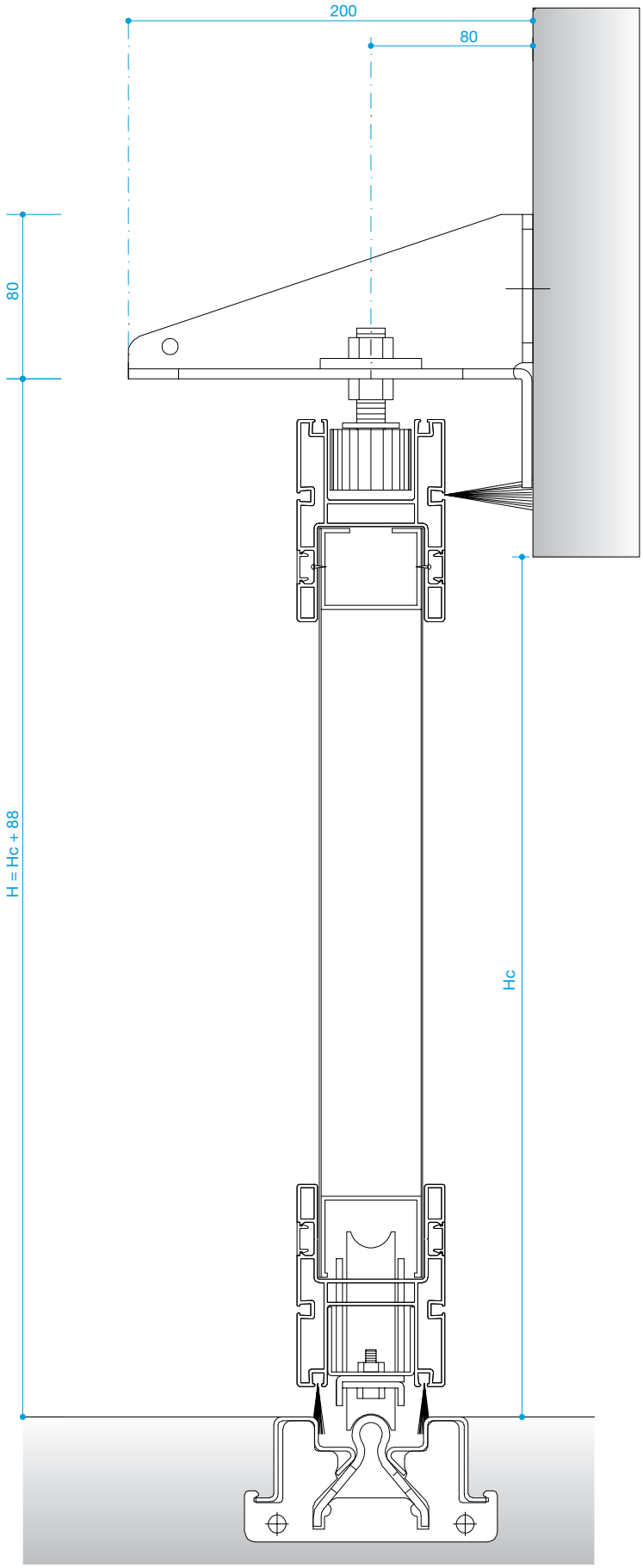
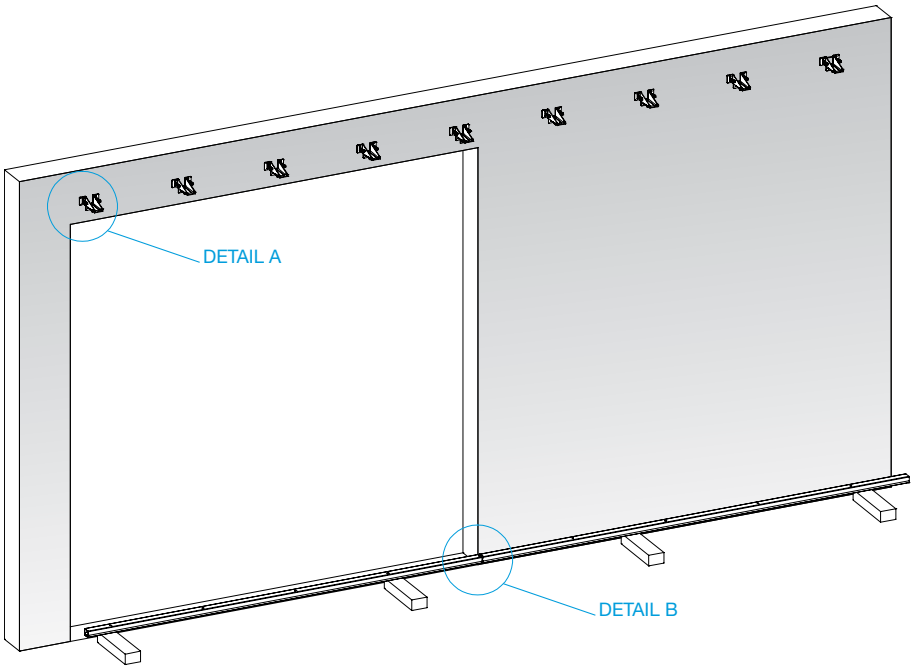


FIG 78

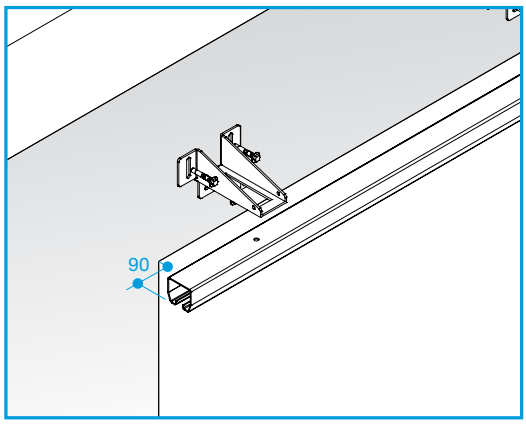



## POSITIONING OF THE BRACKETS FOR MODELS KPASGS AND KPASGST

Position the brackets, either according to dimensions shown in the vertical section at fig. 74-75 or to instructions in enclosed sheet (fig. 13).
For the side parting line doors start from the first bracket as per figure 78 and 79.

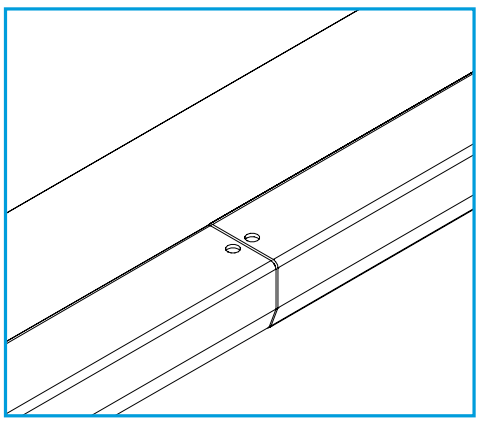
Then position the other brackets in the holes alone the track.

FIG 79




## FIXING OF BRACKET TO THE WALL

FIG 80



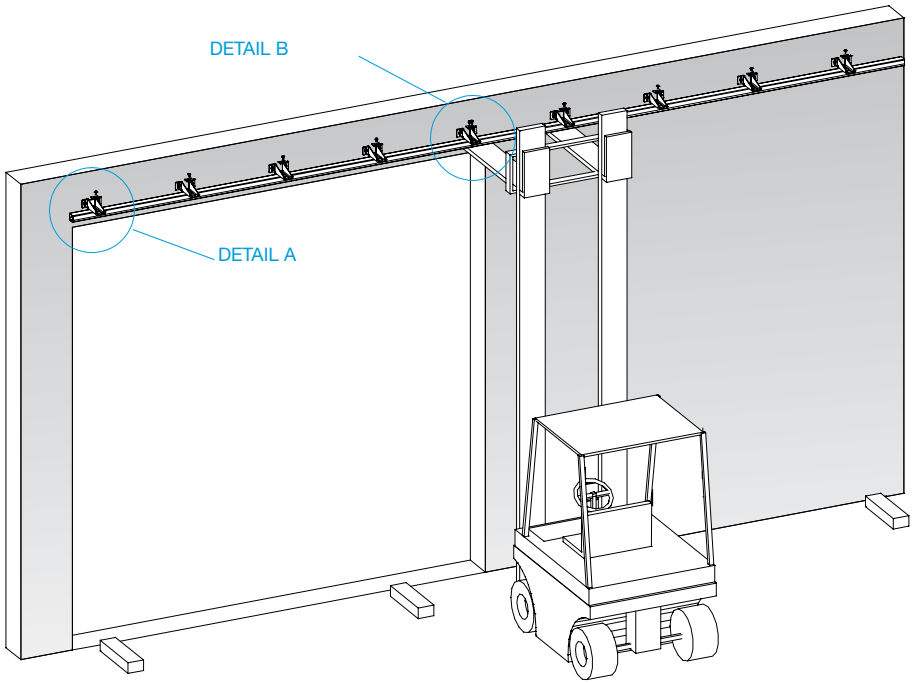
## TRACK JOINTS

Guides over 6000 mm consist in different pieces to be joined together. Position the track (fig.80) and the bracket (fig. 83) near the holes.

## POSITIONING OF TRACKS FOR MODELS KPASGS AND KPASGST

Lift the track with a forklift

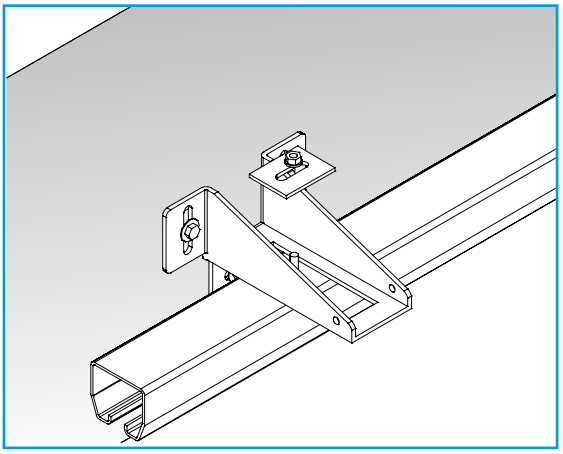
FIG 81




## FIXING OF THE TRACK

Join bolt + plate with a nut.
Before fastening the bolts adjust the distance from the wall (fig. 74-75) or follow instructions in enclosed sheet (fig. 13).

FIG 82



## TRACK JUNCTION

Insert two bolts and the plate, complete the operation as in fig. 82

FIG 83

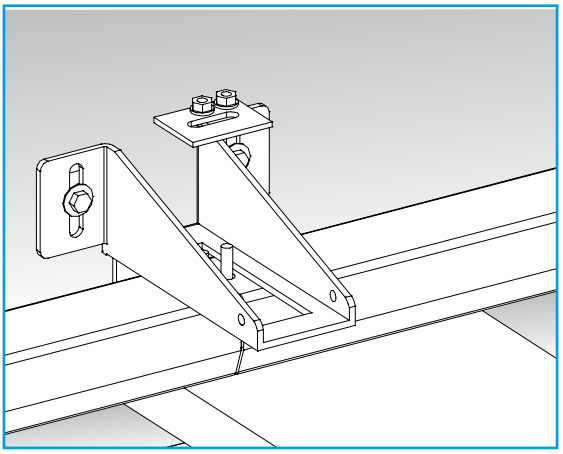
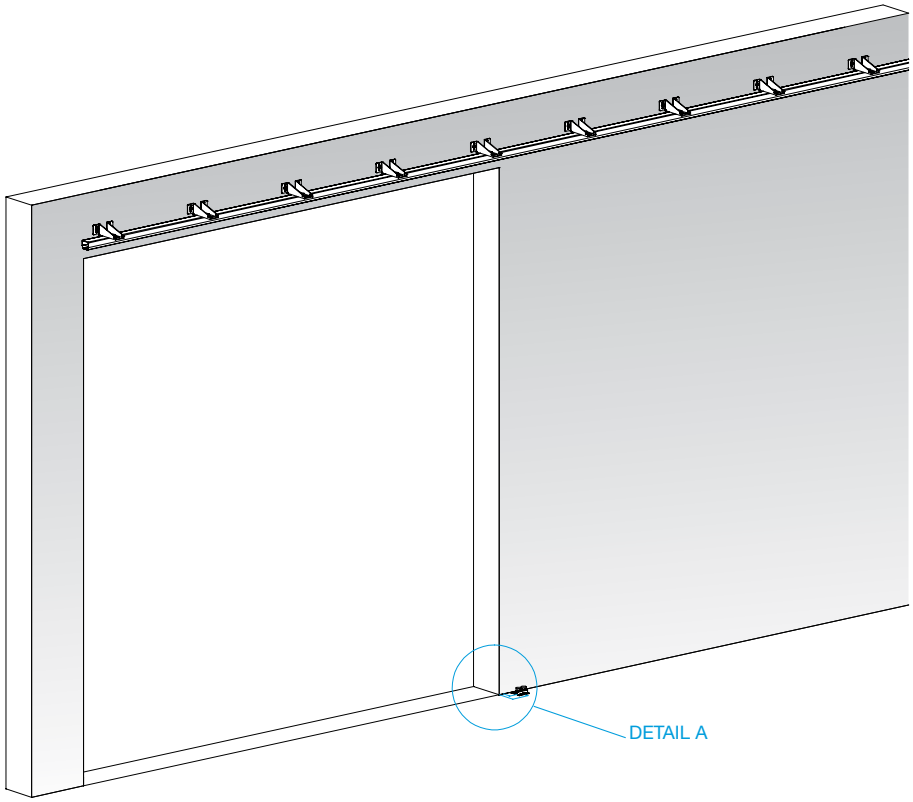
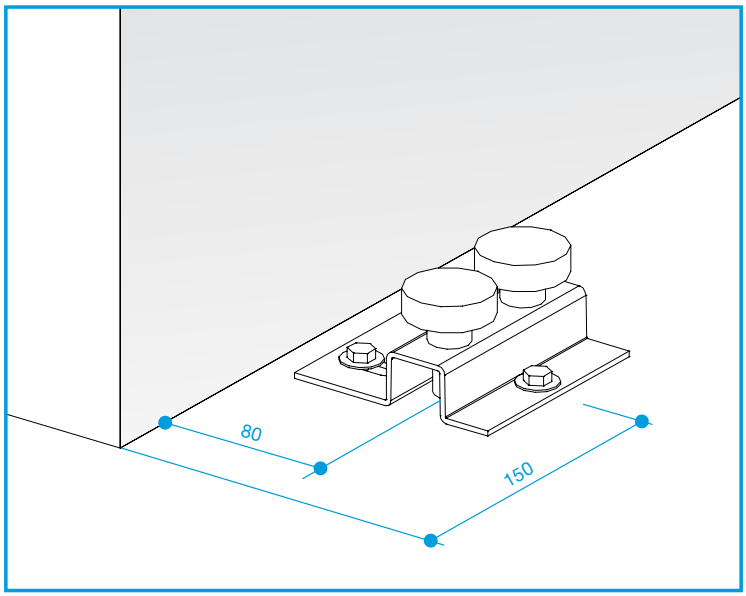


FIG 84




## TRACK POSITIONING FOR MODEL KPASGS

FIG 85



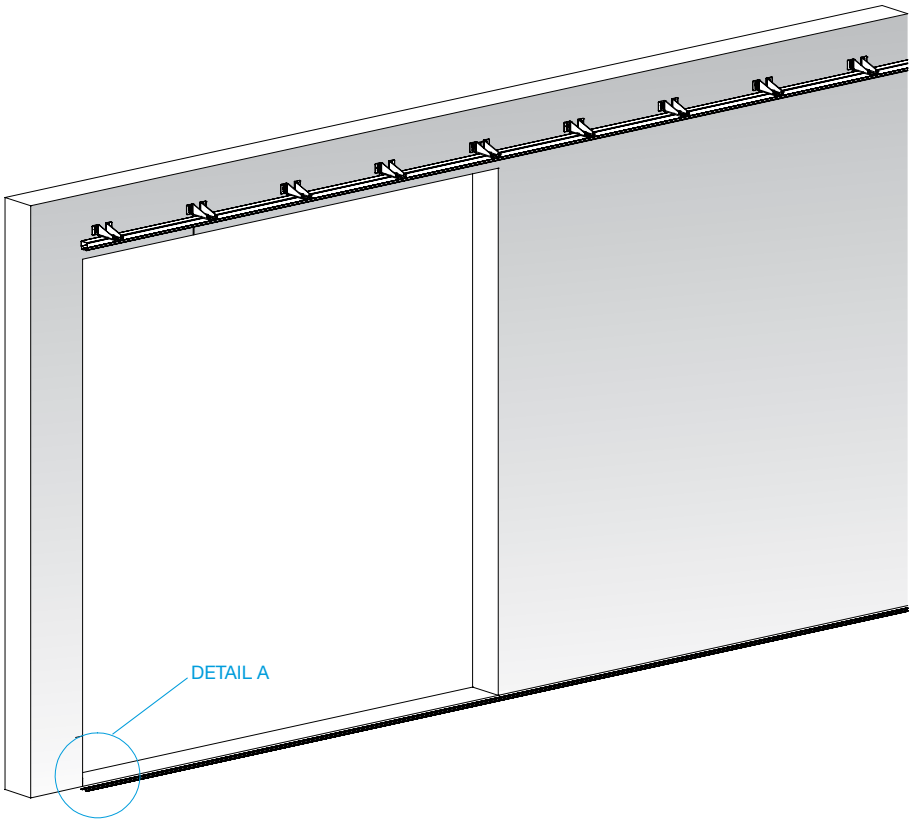

## GROUND ROLLER

The ground plate with double bearing must be fixed with dowels according to measurements at fig. 85 or as indicated in enclosed instructions sheet (fig. 13).

### TRACK FOR MODEL KPASGST

For assembly follow same instructions as per KPA-SGS at pages 45 e 46.

FIG 86




### GROUND TRACK

For assembly follow instructions at page 31 and 32 according to either measurements in fig. 87 or instructions in the enclosed sheet (fig. 13).

FIG 87

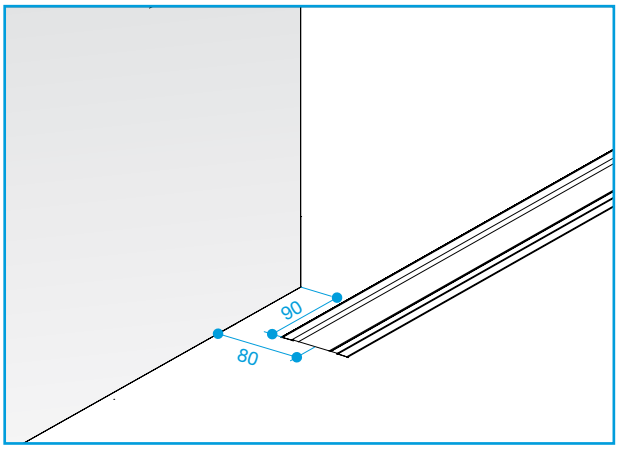
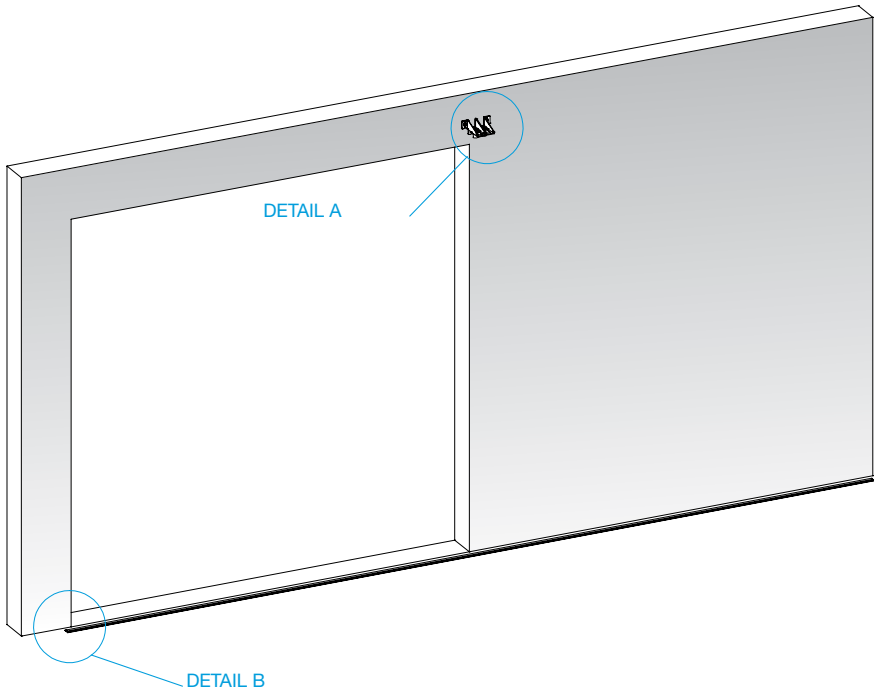


FIG 88

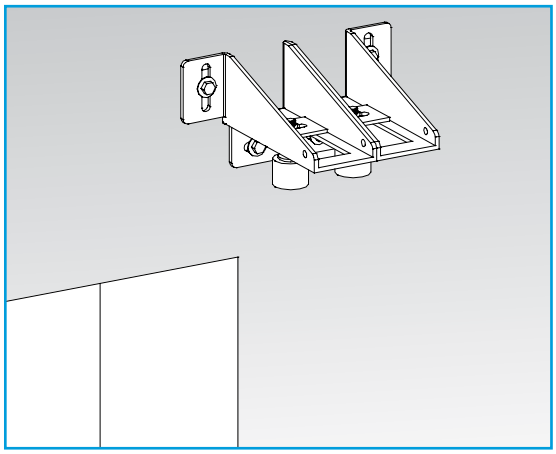



## MODEL KPASGSI
## TRACK DETAIL

Assemble the ground track and upper brackets with dowels..

For a good functioning of the door the floor must be flat.

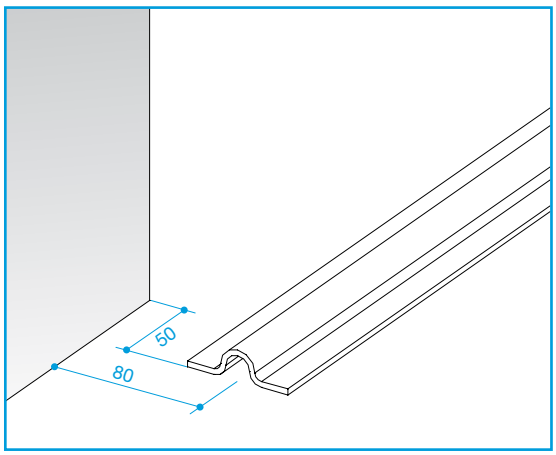
FIG 89



### DETAIL A: UPPER BRACKETS

Position the upper anti-tilting bracket as per figure 90 and fix it with metal dowels.

FIG 90



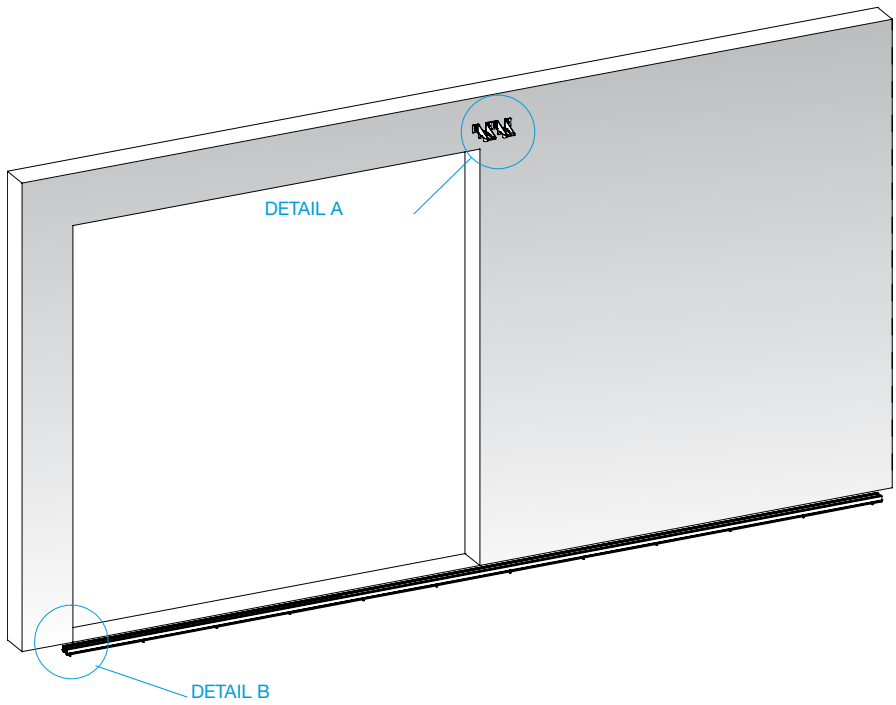

### DETAIL B: GROUND TRACKS

Assemble the ground track with metal dowels either according to parameters in fig. 90, or as indicated in instruction sheet at fig. 13.

## MODEL KPASGSII TRACK DETAIL

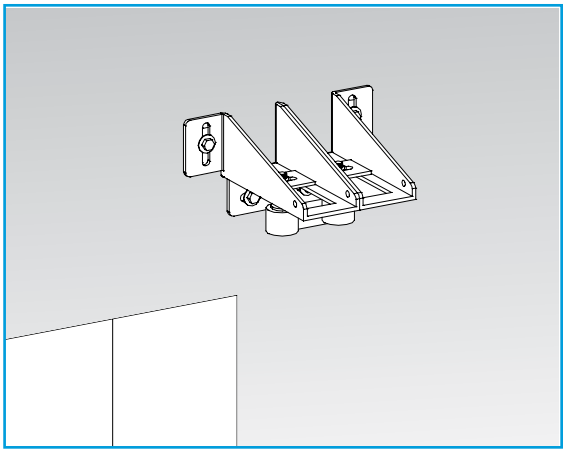
Carry out same operations as described at page 49.

FIG 91




## DETAIL A: UPPER BRACKETS

FIG 92



## DETAIL B: GROUND TRACKS

Ground tracks must be installed before laying the floor according to measurements at fig. 93 or to instructions at (fig. 13).

FIG 93

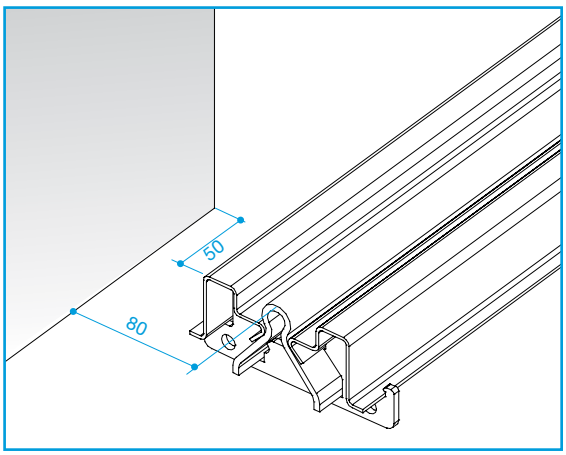
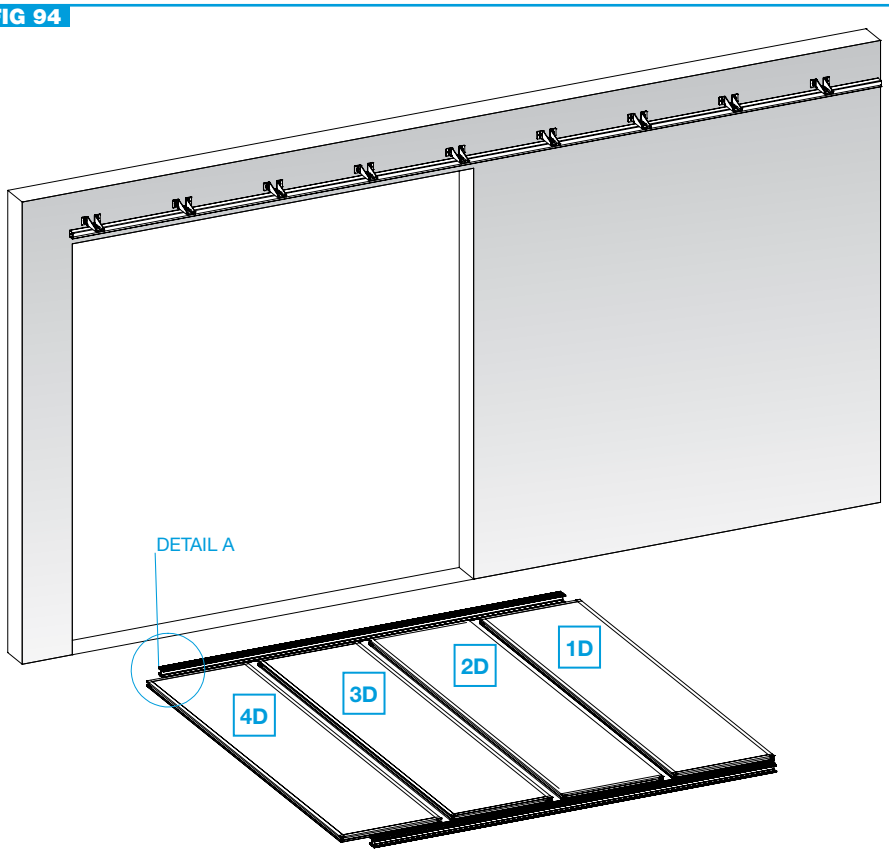


FIG 94

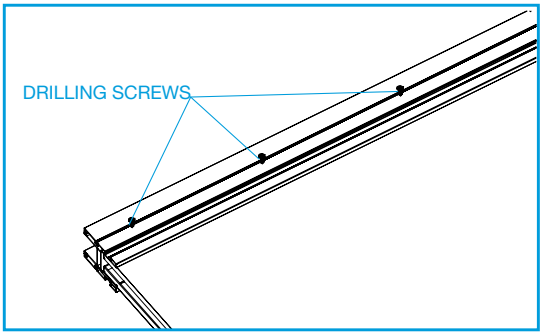



## PANEL ASSEMBLY

Lay the panels on the floor one against the other according to their number (fig. 24) following the drawing at fig. 13. Space between one panel and the other must be of about 6 mm.

Between the panels there is already positioned a “T” shaped gasket.

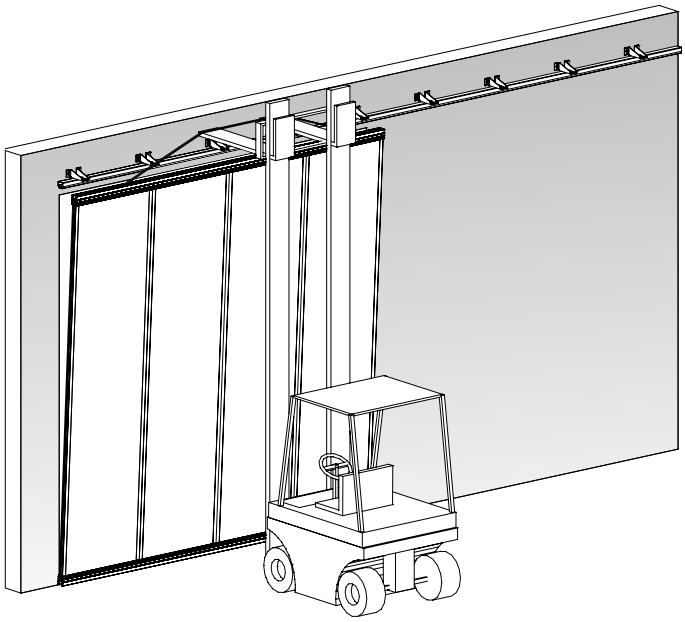
FIG 95




## DETAIL A: PROFILE FIXING

Position the overhead and ground profile and screw them with drilling screws in the holes. Click on the covering profile.

FIG 96



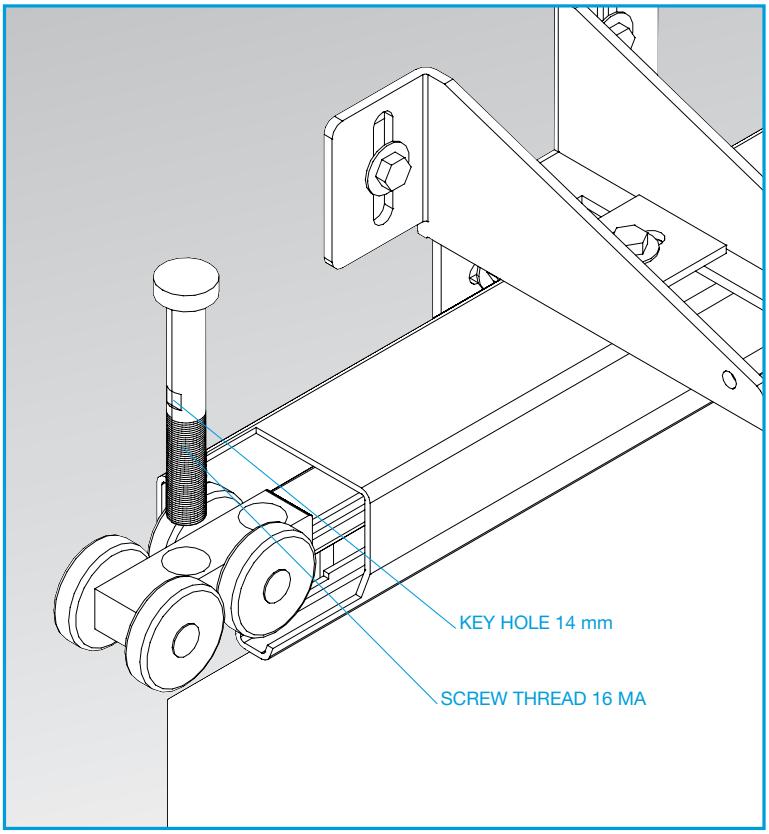
## DOOR POSITIONING

Lift the panel with a forklift.

## SLIDING TROLLEY ASSEMBLY

Insert the trolley in the track as shown in fig. 97 provided with a pivot to screw in the screw thread 16 MA.

FIG 97




## LIMIT SWITCH ASSEMBLY

Insert the limit switch into the track and screw it on (fig. 98).

FIG 98

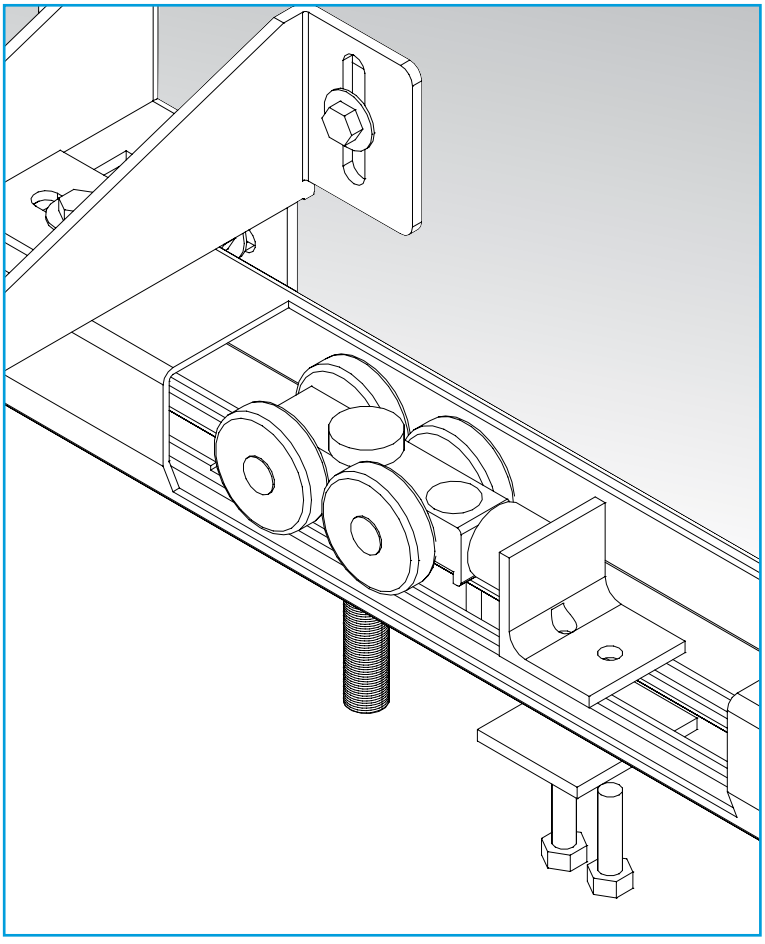
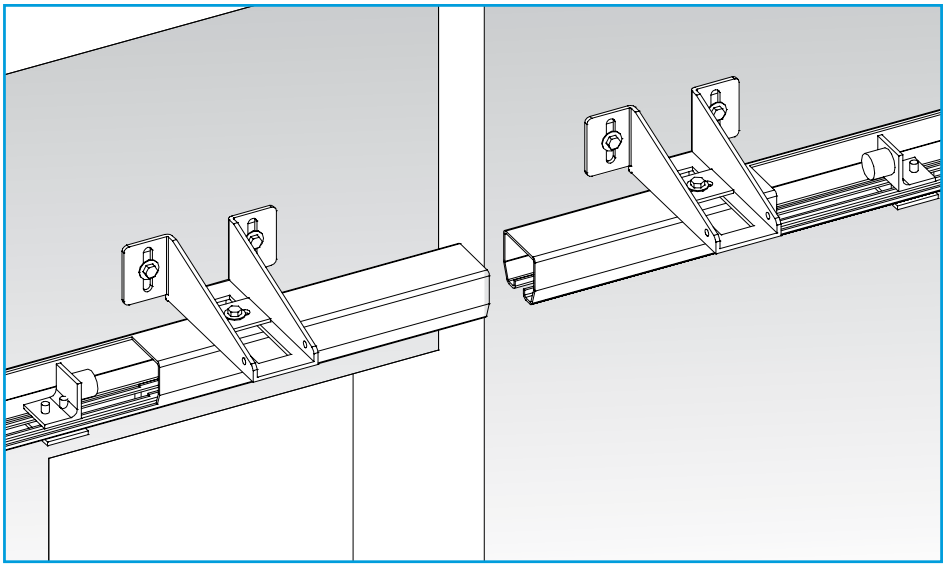


FIG 99



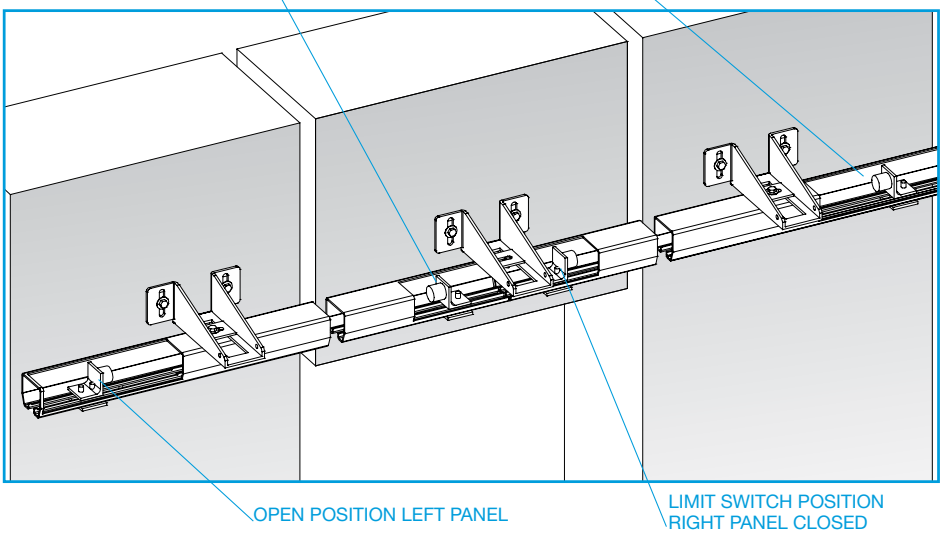
LIMIT SWITCH CLOSED POSITION

LIMIT SWITCH OPEN POSITION

## ASSEMBLY LIMIT SWITCH FOR SIDE PARTING LINE DOORS

Position the panel in closed position, screw the travel stop to the trolley. Repeat same operation in opening position..

FIG 100

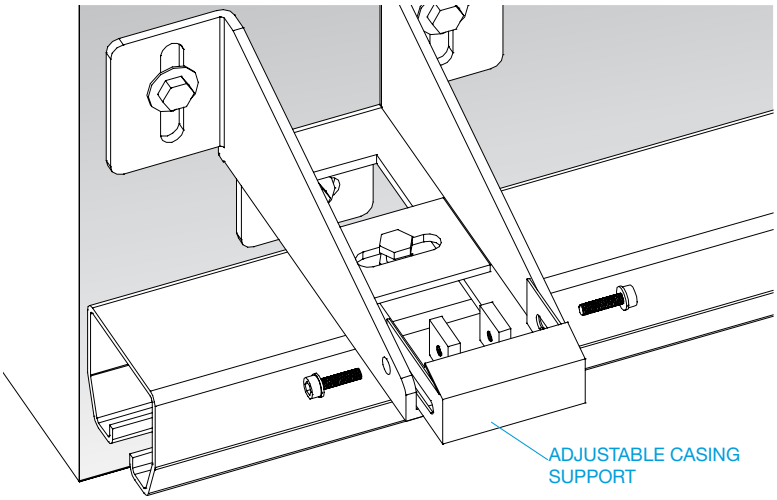



## ASSEMBLY LIMIT SWITCH FOR CENTRAL PARTING LINE DOORS

Follow same procedure as described in fig. 99.

## BRACKET ASSEMBLY OF CASING SUPPORT

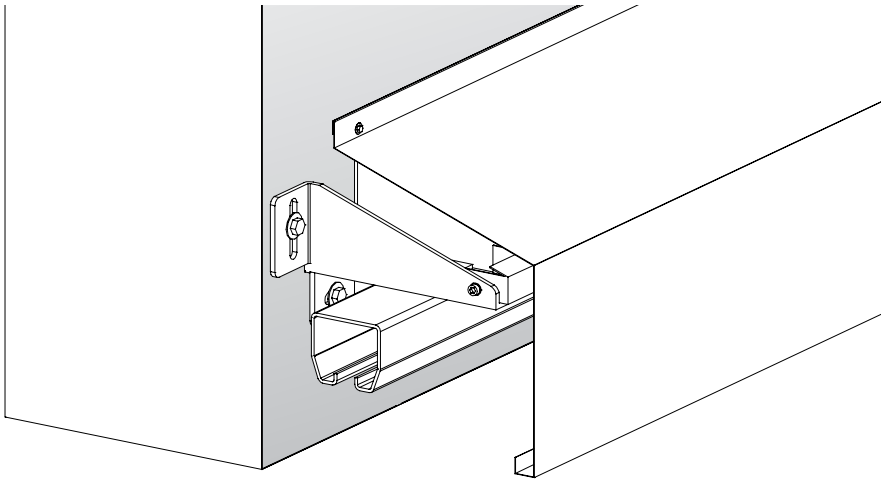
FIG 101




## CASING ASSEMBLY

For the assembly of the casing, fix the brackets according to instruction at page 26, fig. 43.

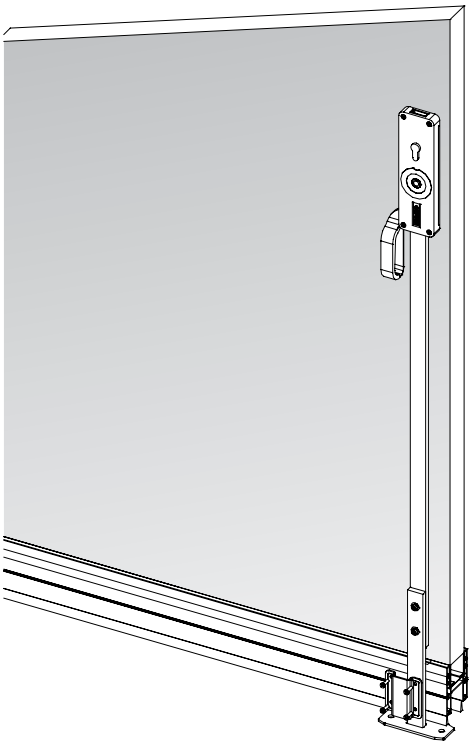
FIG 102



## ASSEMBLY LOCK BAR

Assembly the sliding bar as per fig. 103 (“A”), and then the strike plate to the ground (“B”).

FIG 103



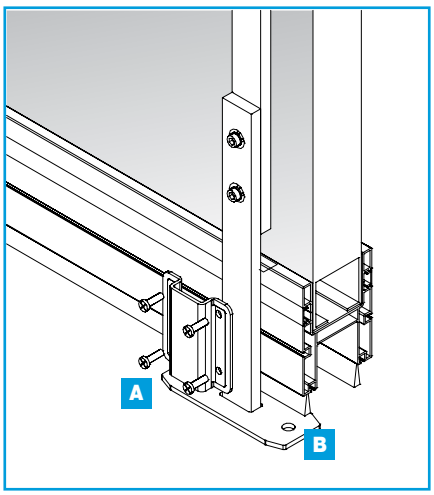
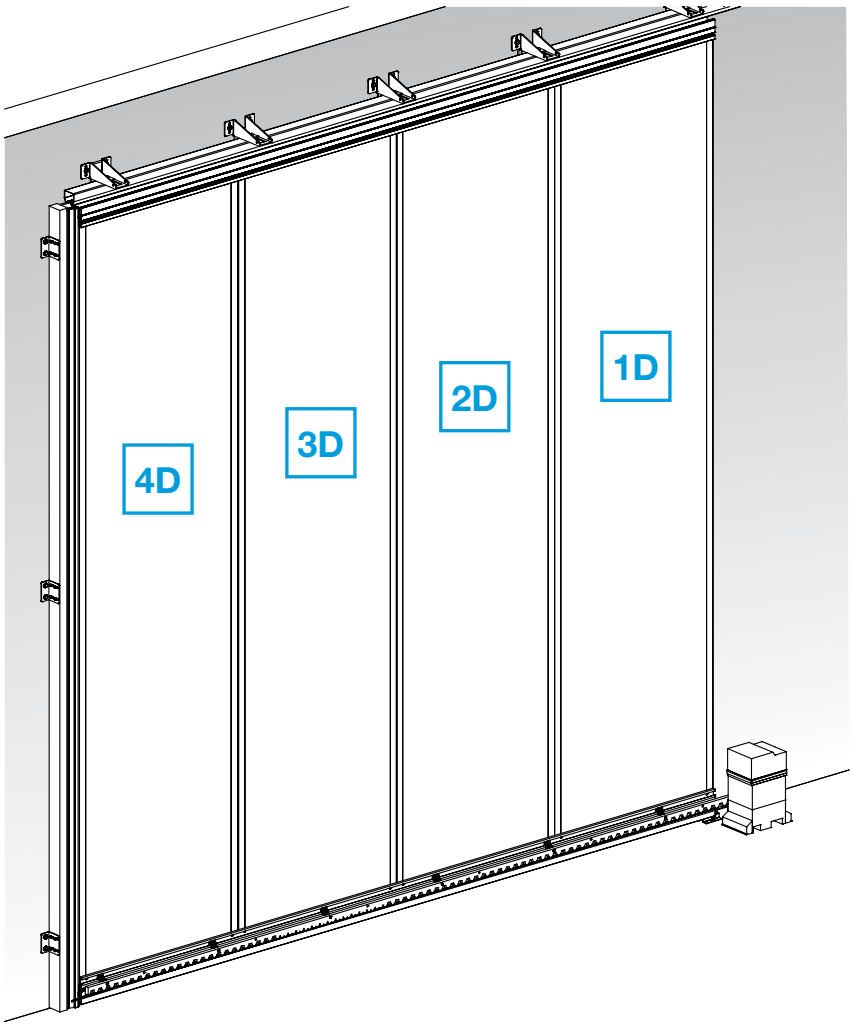


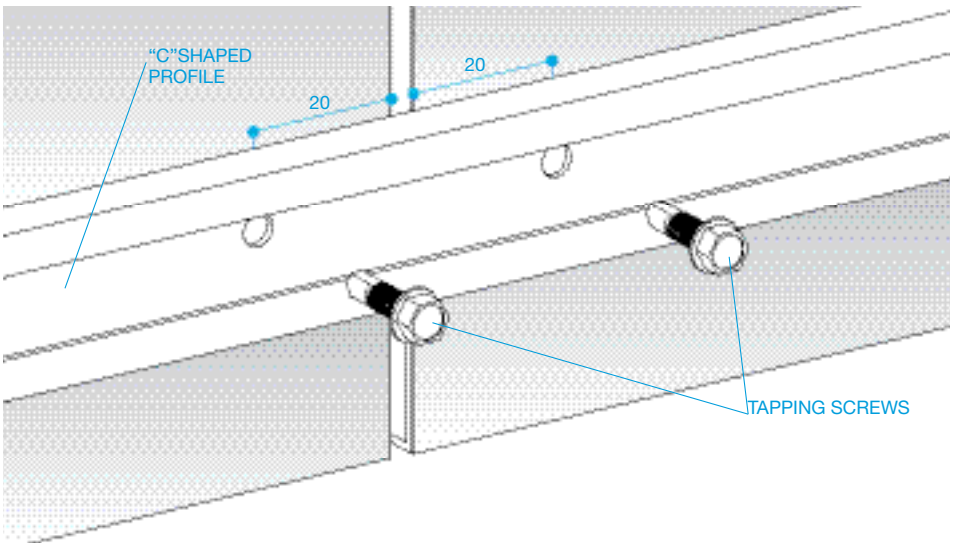
FIG 104




## MECHANICAL RACK MOTOR ASSEMBLY

Position the motor to the ground according to instructions of the manufacturer of the motor.

FIG 105



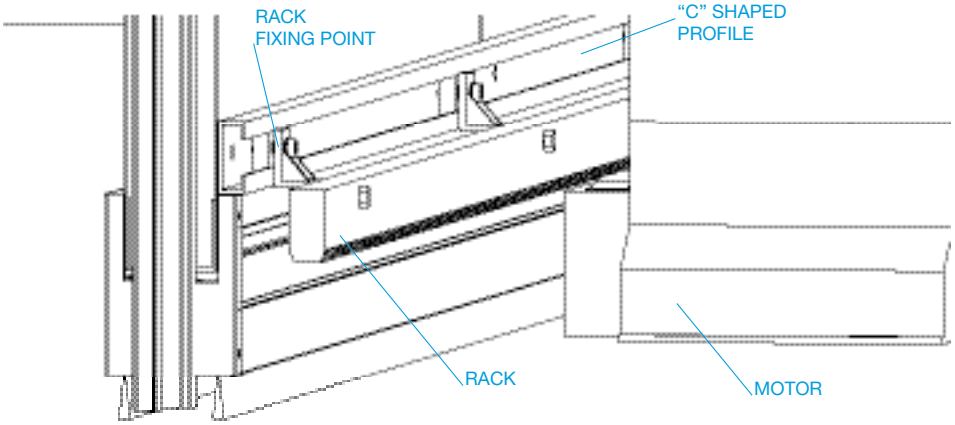

## FIXING OF THE "C" SHAPED PROFILE ON THE PANELS

Position and screw the "C" profile on panels as in fig. 105. The tapping screws must be fixed within 20 mm of each panel (area where there is the reinforcing metal profile).

## FIXING POINT FOR THE RACK MOTOR

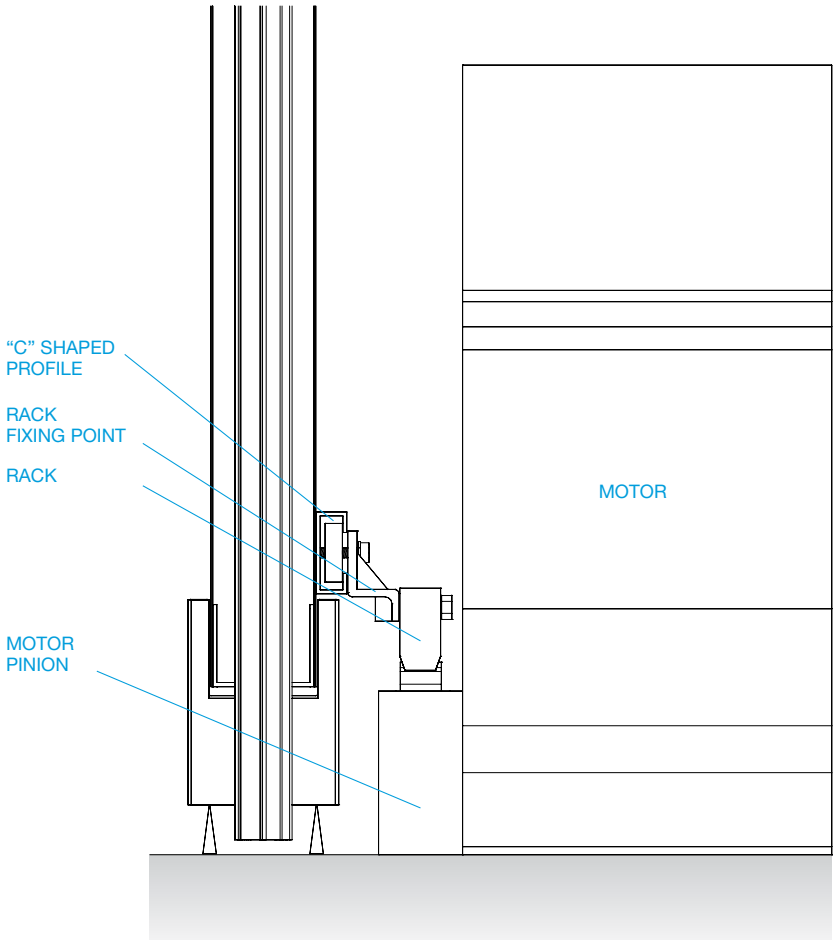
Postion the rack motor fixing it on the supports and bolts (fig. 106).

FIG 106




## SECTION

FIG 107



**FOR ALL OTHER TYPES OF MOTORIZATIONS FOLLOW INSTRUCTIONS PROVIDED BY MANUFACTURER.**

**WARNING**

**ALWAYS CONNECT AND CONTROL THE SAFETY MICRO FUNCTION OF THE LOCK/CUT PANELS AND PEDESTRIAN DOORS, IF PRESENT.**

# ISTRUCTIONS FOR MAINTENANCE

## MAINTENANCE

Maintenance can be carried out only by qualified personnel which will provide for the doors with motor to open the differential switch placed on top of the control panel and position general switch on “0”.

Maintenance on doors must be carried out every six months controlling that:

- The structure is perfectly anchored to the masonry work
- The panels slide with no difficulty
- Screws and dowels are well fastened
- Hinges and pivots are clean
- The drive unit and safety devices connected work properly
- The serial number label is on the internal part of panel

Once the controls have been carried out the maintenance form (which you can find at the last page of this manual) must be filled in.

## SPARE PARTS

The serial number label carries all the data of door to give to our offices in case of request of spare parts:

- Name of the product
- Serial number
- Year of costruction

## DISPOSAL

Disposal of material must be in accordance to law.

This manual has been made for:
designers specialized in working places and environments;
buyers;
employers who need to know the correct use of the product;
installers for a correct and safe assembly;
dealers taking care of the delivery to final customer.

In the following pages you may find a summary LIST OF RISKS.

**NOTE**

Our company now and then organizes courses for updating on assembly and use of the doors.

**GUARANTEE**

Guarantee is valid for 24 months from delivery of the doors. It includes the replacement of faulty parts, which must be first sent back to producer's premises at Gorgonzola (MI), in Via I° Maggio at the buyer's expense. A correct and constant maintenance must be carried out as a condition to keep the guarantee valid.

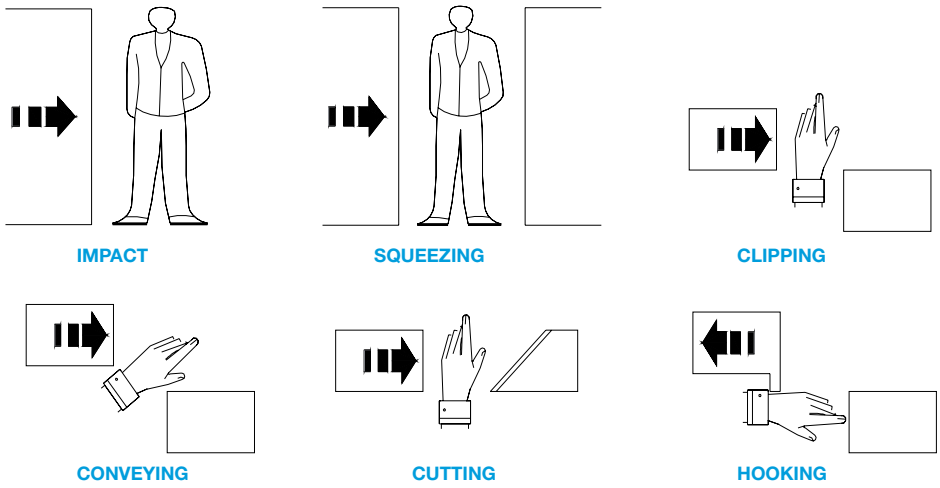
Guarantee does not cover components subject to wear and tear (wheels, cables, gaskets...) and maintenance interventions to adjust sliding trolleys, torsion springs, limit switches and lifting cables For doors assembled outside Italy, interventions shall be totally charged to customer.

Any arising dispute has to be held from Milano law-court.

## POSSIBLE RISKS WHEN MOVING THE DOOR

According to law, you can call “Risk zone” any zone near a machine which exposes a person to risk.
You can call “exposed person” any person who works totally or partially in a “risk zone”.

FIG 108




## MINIMUM LEVEL PROTECTION ON MAIN BORDER

## RISK ANALYSIS OF FOLDING DOORS AND SOLUTIONS IN COMPLIANCE WITH THE EC SAFETY DIRECTIVE 98/37/CE AND EN 12453 - EN 12445 REGULATIONS

The sequence of risks follows the sequence of installation of the doors. The listed risks are what normally could happen when installing folding doors. Further risks which could occur in other circumstances must be prevented. Solutions to undertake must be in compliance with Regulations EN 12453.

FIG 109

| TYPES OF CONTROLS | TYPE OF USE<br>USERS INFORMED (private area)) | <br>USERS INFORMED (public area) | <br>USERS NOT INFORMED |
|---|---|---|---|
| Dead man operating control. | Push button control. | Push button control with key. | Dead man operating not applicable. |
| Pulse operating control door at sight. | Force limitation, or multisensor | Force limitation, or multisensor | Force limitation and photocells, or multisensor. |
| Pulse operating control door not at sight. | Force limitation, or multisensor. | Force limitation, or multisensor. | Force limitation and photocells, or multisensor. |
| Automatic control. | Force limitation and photocells, or multisensor. | Force limitation and photocells, or multisensor. | Force limitation and photocells, or multisensor. |

## STRUCTURAL RISKS AND DUE TO WEAR AND TEAR

FIG 110

| DM All.1 | TYPE OF RISKS | VALUATION METHODS AND SOLUTIONS TO UNDERTAKE |
|---|---|---|
| 1.3.1<br>1.3.2 | (1) Loss of stability and fall of pieces | Verify the stability of the carrying structure considering both the body of the door and motor force (if any). The track is provided with stops to prevent the door to derail. |
| 1.5.15 | (2) Tripping | On ground there usually are strike plates to block the panels which can also be coloured to be more visible. |

## RISKS DUE TO DOOR MOVEMENT

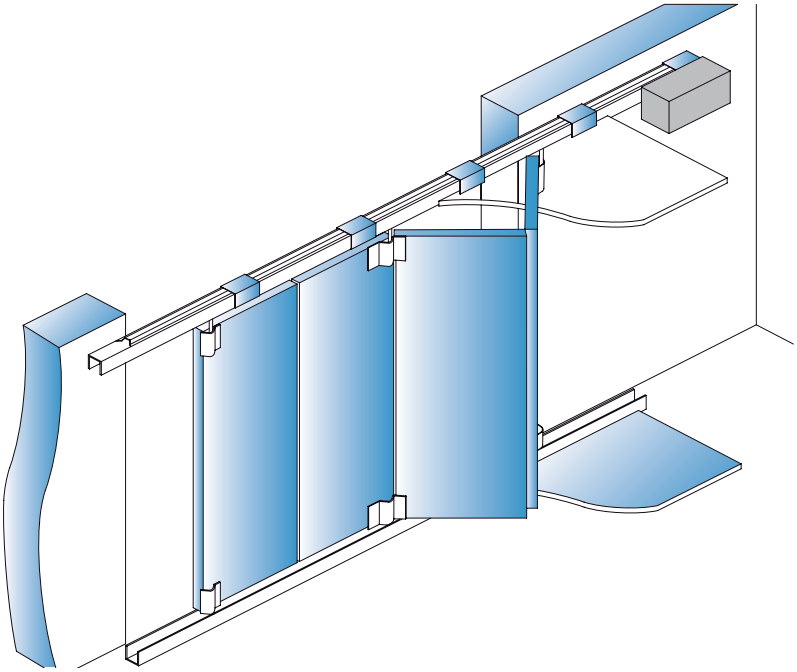
FIG 111

| DM All.1 | TYPE OF RISKS | VALUATION METHODS AND SOLUTIONS TO UNDERTAKE |
|---|---|---|
| | (6) Hand squeezing on the hinges border (C). | Doors have been designed with a 50 mm space between panels. |
| | (7) Body squeezing between panels during door movements (D) | The Kopron automations have electric sensors which in case of impact stop the door movement. Eventually movements can be reversed. |
| | (8) Foot trapping in the lower part of the door (E) | The space between door and floor of 30 mm avoids foot trapping under the door. |

**IMPORTANT NOTE**
If the gate is operated only manually (conforming to EN 12453 - § 5.1.1.4), it isn’t necessary to protect the dangerous points listed herein.

**IMPORTANT NOTE**
In case safety devices are installed (conforming to EN 12978) there will be no need to equip the workers.

FIG 112



## RISK DURING DOOR MOVEMENT

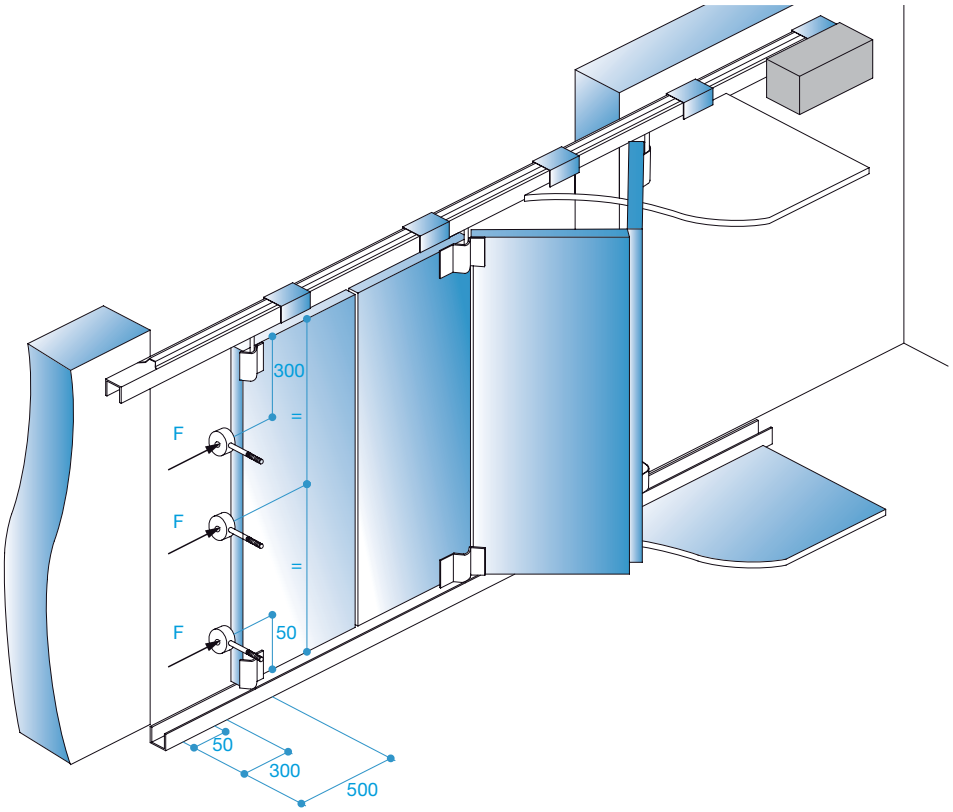
### IMPORTANT NOTE

If the gate is operated only manually (conforming to EN 12453 - § 5.1.1.4), it isn't necessary to protect the dangerous points listed herein.

### IMPORTANT NOTE

In case safety devices are installed (conforming to EN 12978) there will be no need to measure operational forces.

FIG 113




## IMPACT AND SQUEEZING ON MAIN SHUTTING BORDER (A)

Measure the closing forces (with proper means according to EN 12445) as indicated in the drawing.

Measure the following:

L = 50, 300 and 500 mm;

H = 50 mm,

at half a panel and at the height of the panel minus 300 mm (max 2500).

### NOTE

Measuring must be repeated three times at each point.

Verify that the values measured are lower than the ones shown in the diagram.

The diagram shows the maximum values of the operative forces either dynamic or static of the different positions of the door.

**NOTE**
If the values exceed the ones shown in the diagram install a safety device according to EN 12978 and repeat the measuring

**NOTE**
The sensor used consists of a parallelepiped sample with 3 faces with a light reflecting surface and 3 faces with a dark non trasparent surface.

To reduce risk of impact between sliding panel and person (or vehicle), a couple of photocells must be installed (on the outside) as indicated in the figure (suggested height is 500 mm).

If risk of impact is high (for example in case of children around) another couple of photocells (in the inside part) should be installed (suggested height 500 mm)

Keep to the safety distances indicated in the figure.

**OR**

Measure the opening (with proper means according to EN 12445) as indicated in the figure.

Carry out measuring from a height of 1000 mm (or from a protruding point of the panel).

**NOTE**
Measuring must be repeated three times.

Verify that the values measured are lower than the ones shown in the diagram.

**NOTE**
If the values exceed the ones shown in the diagram install a safety device according to EN 12978 and repeat the measuring.

FIG 114

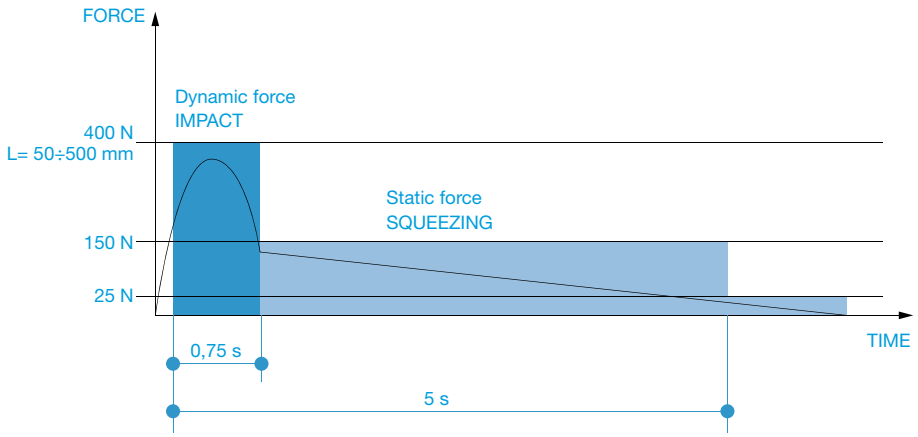
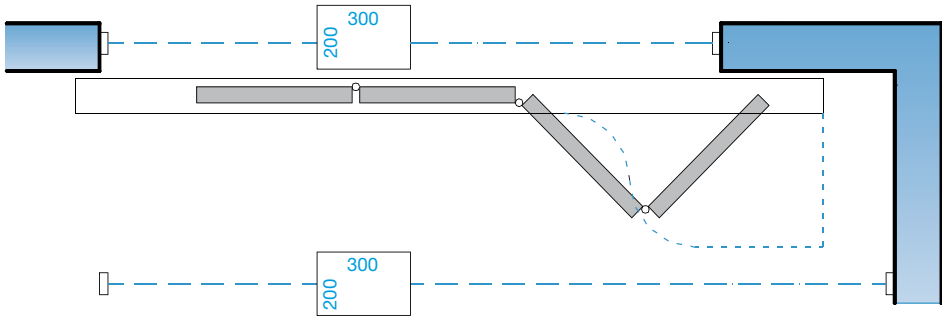



FIG 115

**(4) IMPACT ON THE MAIN CLOSING BORDER (A)**




**(5) IMPACT AND SQUEEZING IN THE DOOR MOVING AREA (B)**

FIG 116

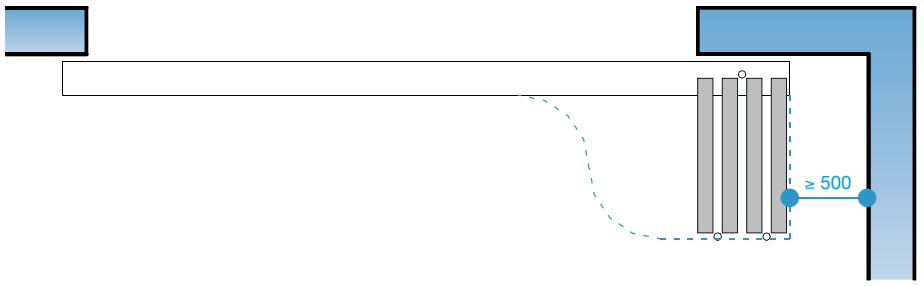
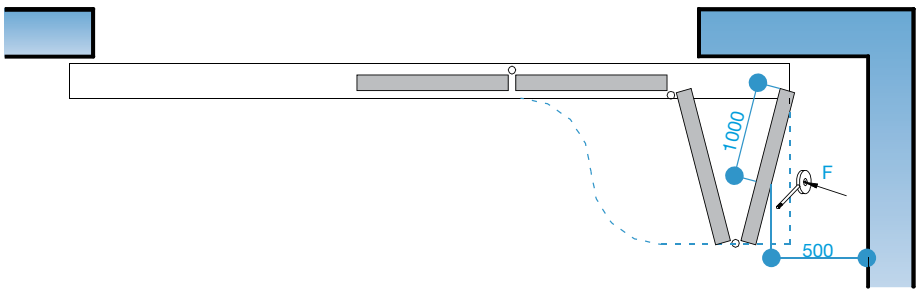



FIG 117



## ELECTRIC RISKS OF ELECTROMAGNETIC COMPATIBILITY

FIG 118

| DM All.1 | TYPE OF RISKS | VALUATION METHODS AND SOLUTIONS TO UNDERTAKE |
|---|---|---|
| 1.5.1<br>1.5.2 | (9) Direct or indirect contacts. Electric supply dispersion | Components and materials used are EC marked according to Low Tension Directives (73/23/CEE). Carry out connections to electric system, to ground and relevant verifications according to law. |
| 1.5.10<br>1.5.11 | (10) Risk from electromagnetic compatibility | Components used are EC marked according to directives EMC (89/336/EEC). |

## RISKS AND RELIABILITY OF THE DRIVING GROUP AND OF THE CONTROL AND SAFETY DEVICES

FIG 119

| DM All.1 | TYPE OF RISKS | VALUATION METHODS AND SOLUTIONS TO UNDERTAKE |
|---|---|---|
| 1.2 | (11) Safety conditions in case of failure and interruption of power supply. | Operating functions are according to EN 12453 and safety devices are according to EN 12978. |
| 1.2.3<br>1.2.4 | (13) Switching on and off of the operating functions | Verify that after a failure or power supply interruption, the functions start again under safety conditions. |
| | (14) Power supply switch | Install a switch (phase to phase and phase to ground) for insulating the door. This switch must be positioned and protected from involontary and unauthorized activation. |
| 1.2.5 | (15) Clearness of the controls | Install the controls where there is no danger for the operator and assure that the meaning of the controls is clear to the user. |
| | | Use radio controls according to EC R&TTE directives (1999/5/EC) and in conformance to the frequencies admitted by local laws. |
| 1.5.14 | (16) Risk of trapping | Install and supply the user with instructions to unblock the commands and pass on to manual control with a force not exceeding 390 N. Make sure the user knows the functioning of the unblocking device or other alternative solutions. |
| 1.2.4 | (17) Emergency stop | Should it be necessary, install a safety stop command according to EN 418. Make sure that emergency stop doesn't create additional risks. |

## SAFETY PRINCIPLES AND INFORMATION

FIG 120

| DM All.1 | TYPE OF RISK | VALUATION METHODS AND SOLUTIONS TO UNDERTAKE |
|---|---|---|
| 1.7.1 | (18) Signalling | The flasher indicating the opening of the door must be installed in visible position. It is also possible to fix some reflectors on the door. |
| 1.7.2 | (19) Signs | Apply on the door the sign indicating danger, and eventually any other sign indicating risks. |
| 1.7.4 | (21) Istructions for use | Give the user instructions for use and safety, plus an EC certificate of conformity. |
| 1.6.1 | (22) Maintenance | A maintenance plan must be studied out. Every six months safety devices must be checked. Interventions are to be recorded in a maintenance file according to EN 12635 enclosed in the assembly manual. |
| 1.1.2 | (23) Unprotected risks | The user must be informed in the "instructions for use" about risks which are unprotected or due to wrong use of the doors. |

# LOOKING AHEAD

Quality Management System
UNI EN ISO 9001:2008 Certified
Factory Production Control
UNI EN ISO 1090
Applicable standard
UNI EN 13241-1
UNI EN 16005
UNI EN 1398
UNI EN 3834-2

## CERTIFICAZIONI
*CERTIFICATIONS*

Kopron attraverso le certificazioni di qualità offre un'ulteriore garanzia sull'efficacia e l'efficienza dei propri prodotti.

*Through certifications Kopron offer a further guarantee on efficiency and quality of their products.*

KOPRON

LOGISTIC SOLUTIONS

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