

# Installation, connection and programming manual

No. 1461

09/16

Murax P110 Shutters and Dentel  
Grille equipped with anti-fall guard

**S100 or S140 Operator  
with TS958 Box**



(Document reserved for installers)

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## EQUIPMENT REQUIRED FOR INSTALLATION

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>- Ladders</li> <li>- Tape measure (5M)</li> <li>- Hammer drill Ø20</li> <li>- Screw kit with end-pieces</li> <li>- Steel pins for screws TH Ø12 and suitable concrete drill bits</li> <li>- 6 Clamps</li> <li>- Spirit level (60 cm minimum)</li> <li>- Plumb bob</li> <li>- Universal clamp</li> <li>- Wooden shims</li> </ul> | <ul style="list-style-type: none"> <li>- Hammer</li> <li>- Flat wrenches: 8, 10, 13, 15, 17, 18, 22 and 24 mm</li> <li>- Socket wrenches: 8, 10, 13, 15, 17, 18, 22 and 24 mm</li> <li>- Hexagon keys: 3, 4 and 5 mm</li> <li>- Cross-head screwdriver and flat screwdriver</li> <li>- Grease and brush</li> <li>- Cutter</li> <li>- 2 Hoists for 500 Kg min.</li> <li>- Angle grinder</li> <li>- Hacksaw</li> </ul> |
|--|--|

# Installation instructions

## CAUTION !



To ensure that this product is assembled, used and maintained in complete safety, it is important to follow the instructions provided in this document.



For everyone's safety, please observe the precautionary measures below.

- \* Before beginning the assembly, read this manual carefully.
- \* This closure must be installed by a professional technician.
- \* All the parts delivered are specifically sized for this product.
- \* Adding and/or using other parts may be detrimental to safety and may affect the product's warranty.
- \* Any modification or improvement of this closure must be compliant with the standard EN 13241-1.
- \* In this case, a "modification/transformation" file must be created by the installer as per the standard EN 12635 annex C.
- \* Considerable force is exerted in the case of shutters or grilles. This work must therefore be carried out in accordance with the safety instructions.
- \* Use the appropriate tools to install these products. Ensure that the work is carried out on a stable floor.
- \* Ensure that the assembly area is adequately lit, clear, clean and clearly marked out.
- \* Ensure that no other people are present at the assembly site apart from the installers. Non-authorized persons (children for example!) who are present at the site risk injury during assembly.
- \* All the components of this closure must be installed in compliance with the installation instructions provided in this manual.
- \* All the requirements of the standards EN 13241-1 must be met and verified if necessary.

### Max. locking torque:

- Assembly screw: **10 Nm**
- Shutter clip screw: **12 Nm**

### Min. working load per attachment point:

- Plates: **300 daN**
- Guiding rails: **40 daN**

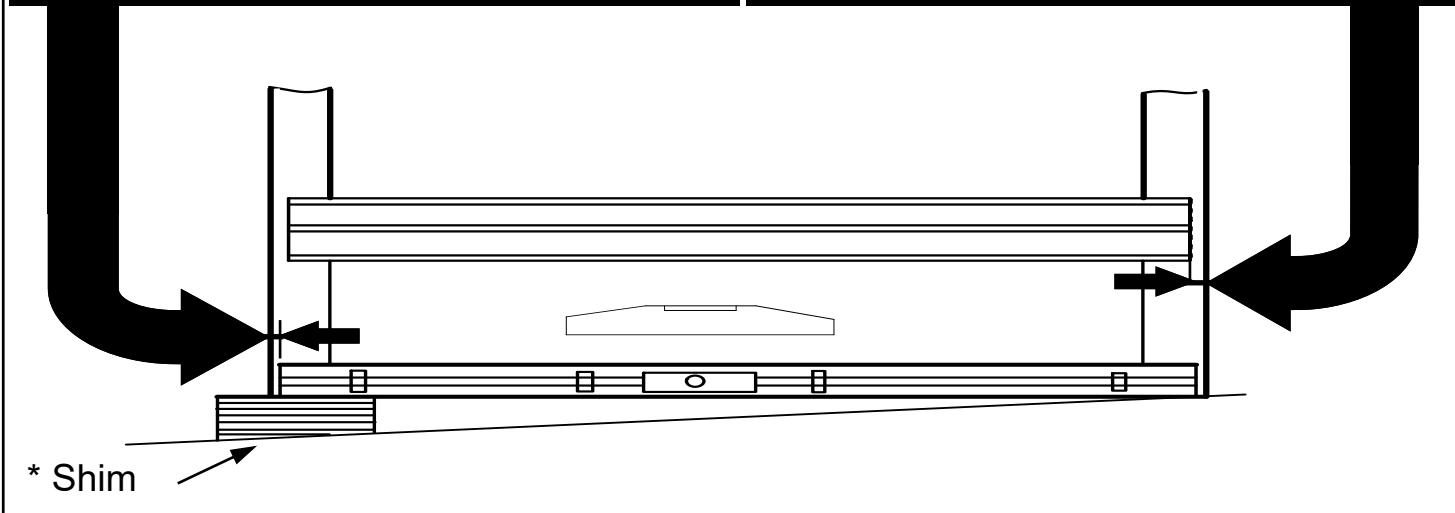
**Please note:** If installing on an iron structure, the guiding rails and plates can be welded to the building.

In this case, a cord of approximately 50 mm must be attached to each side, roughly 800 mm apart.

# Installing the guiding rails

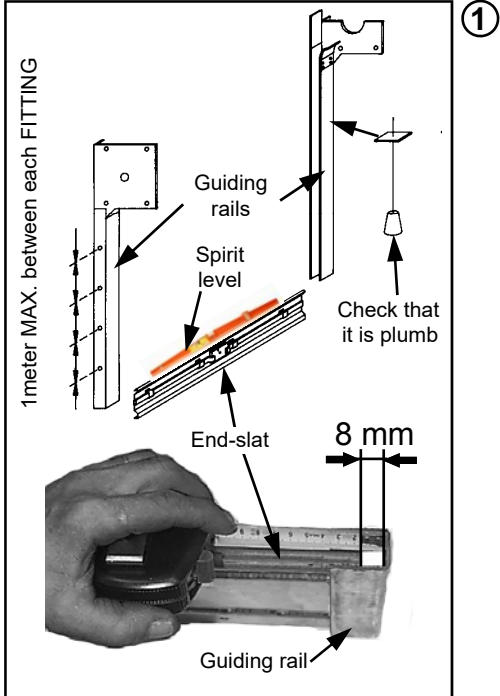
**For the hurricane slides and the noise reduction clips: Different clearances (refer to the corresponding enclosed manual).**

The <b>INNER CLEARANCE</b> on each side of the <b>END-SLAT</b> must be observed in accordance with the depth of the guiding rail		The <b>INNER CLEARANCE</b> on each side of the <b>INTERMEDIATE END PLATS</b> and the <b>CORRUGATED TUBES</b> must be observed in accordance with the depth of the guiding rail	
DEPTH OF GUIDING RAIL	BOTTOM CLEARANCE of GUIDING RAIL	DEPTH OF GUIDING RAIL	BOTTOM CLEARANCE of GUIDING RAIL
40 mm/50 mm/60 mm	8 mm	40 mm/50 mm/60 mm	8 mm
80 mm	8 mm	80 mm	12 mm



It is essential to leave a space of 315 mm at the back of the guiding rail to accommodate the operator and to operate the repair crank.

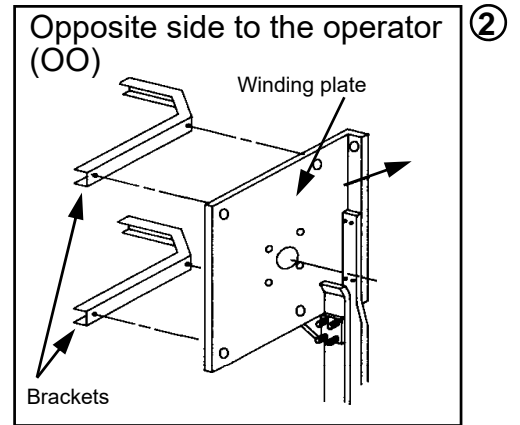
- 1- Provisionally attach the guiding rails to the building facade using the clamps.
- 2- Position the end-slat with the spirit level, maintaining the clearance between the end of the end-slat and the bottom of the guiding rails (potential need for a shim at the bottom of the guiding rail\*). ①
- 3- Check that the guiding rails are plumb and both at level zero. ①
- 4- Permanently attach the guiding rails.



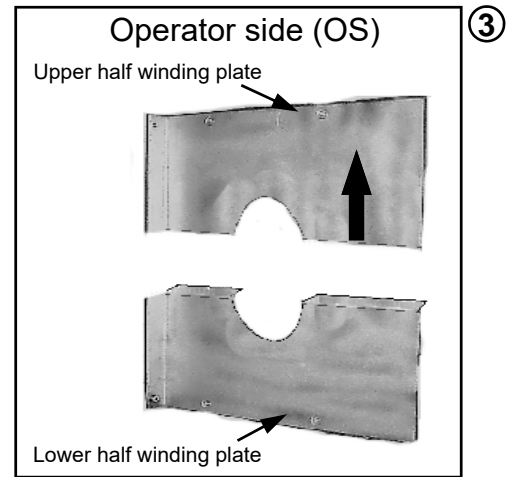
# Installing the axle and the operator

5 - Attach the winding plate to the wall on the opposite side of the operator using the two brackets provided. ②

**⚠ Use additional supports (not provided) if necessary. The weight of the shutter is carried by the winding plate on the opposite side of the operator; therefore the support must be attached to the wall very carefully.**



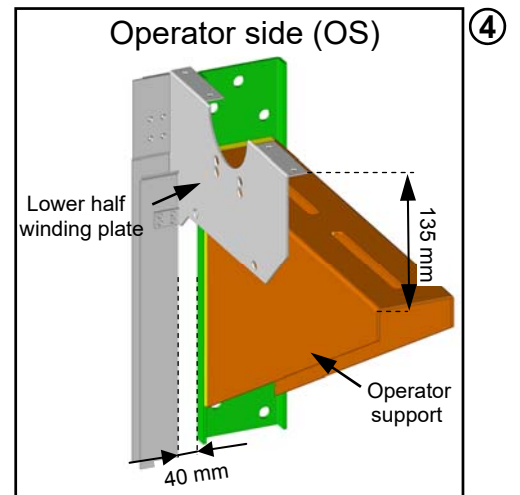
6 - Disassemble the upper half winding plate on the operator side. ③



7- Position the operator support in relation to the lower half-plate, taking into account the dimensions. ④

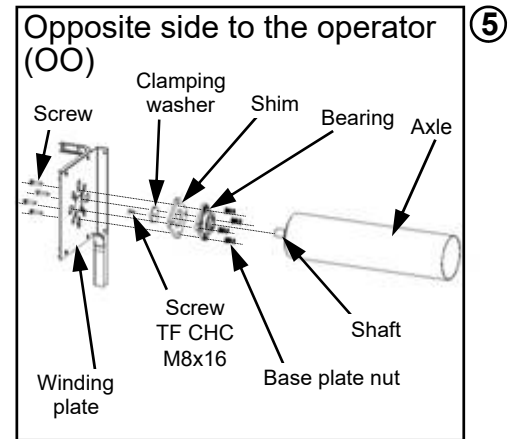
Attach the operator support to the wall with 6 screws TH Ø16 in steel pins (not provided)

**⚠ The weight of the shutter is carried by the operator support; therefore the support must be attached to the wall very carefully.**




8 - Fit the bearing onto the shaft.

- Position the clamping washer on the end of the shaft and screw it in place with the screws TF CHC M8x16.
- Install the axle.
- On the operator side (OS), position the keyed shaft on the lower half-plate.
- On the opposite side (OO), screw the bearing to the plate with the corresponding screws, inserting shims in between them. ⑤




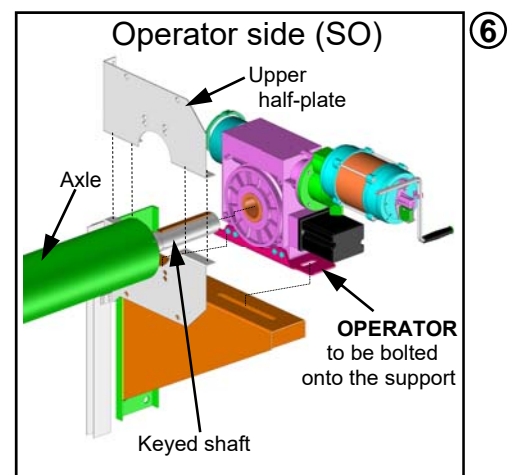
9 - Install the operator.

- Fit the operator onto the keyed shaft.

 The axle must be parallel with the header and the keyed shaft must be centered on the plate.

- Position the operator on its support and attach it using the bolts and washers M16x50.
- Assemble the upper half-plate on the lower half-plate and attach it to the wall using the hole provided for this purpose. ⑥

 The front plates must remain parallel throughout the entire operation, so use additional supports (not provided).



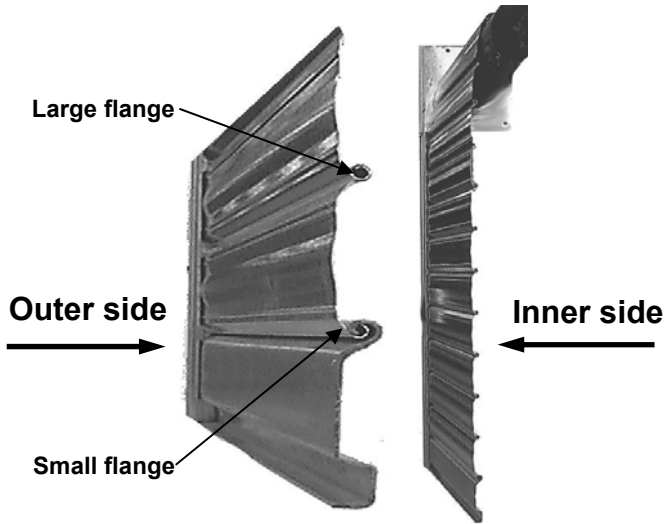
# Shutter installation principle

## Rolling direction

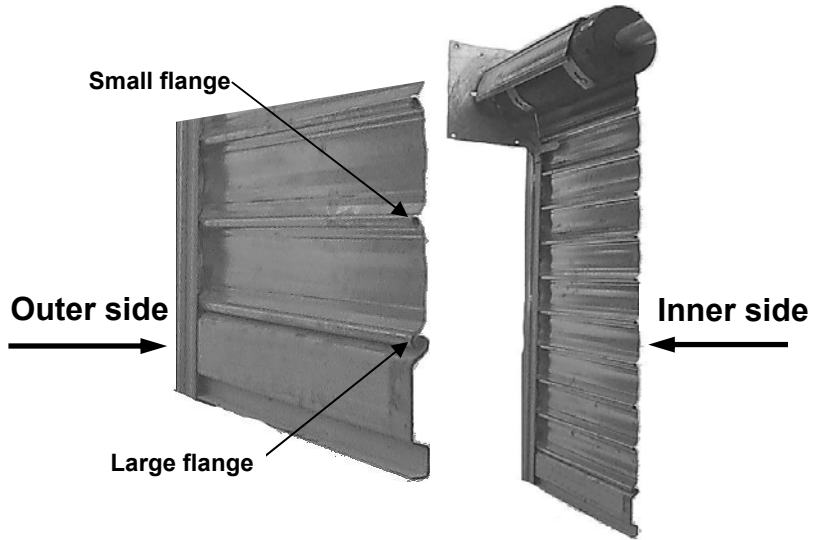
### SOLID OR MICROPERFORATED MURAX SHUTTER

A Microperforated shutter always requires 3 full roller slats in the upper section

#### Inner rolling



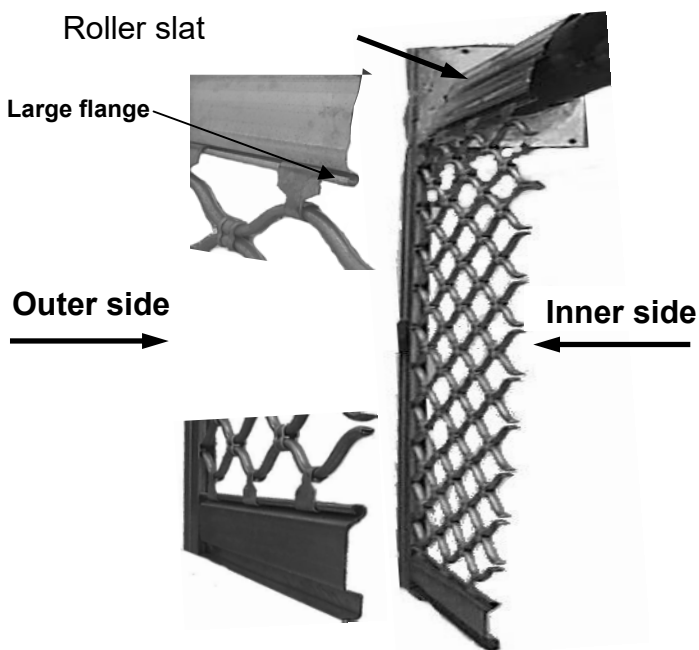
#### Outer rolling



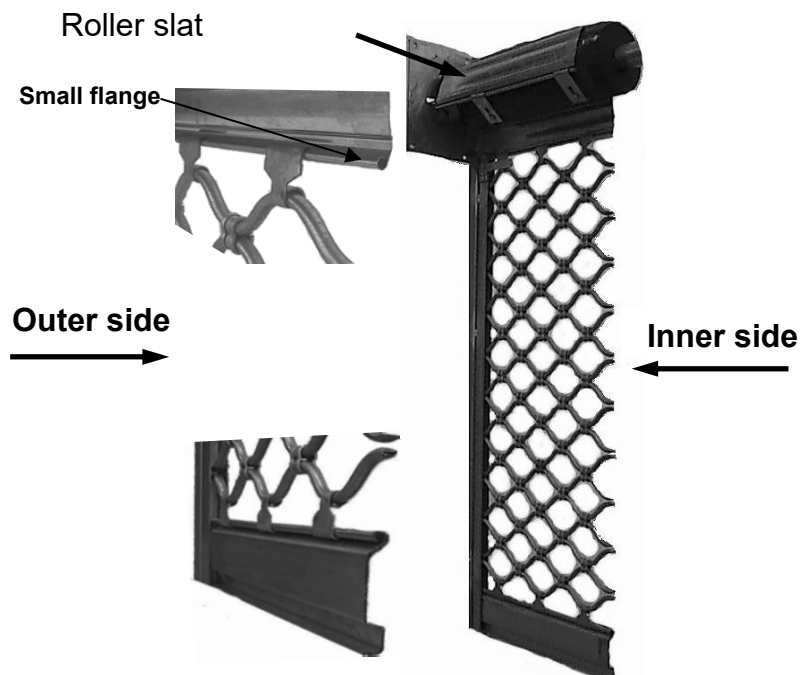
### DENTEL SHUTTER

A Dentel shutter always requires 3 full roller slats in the upper section

#### Inner rolling



#### Outer rolling



# Assembling the Murax shutter



The height and the rolling of the shutter are calculated with a precise number of slats. All the slats provided must be installed.

How the shutter is assembled depends on the space available on the assembly site at the back of the guiding rails.

## Case No.1: You have plenty of space

You have, on one side at least, a length longer than the length of the slats (for example: installation on the facade of a building)

1 - Assemble (roughly) a meter's length of the shutter on the floor using the shutter clips



The rolling direction

2 - Attach the shutter to the axle, letting the slats hang outside of the guiding rails ①



Before fully tightening the clamp screws, ensure that the screw heads are not touching the slat rod during rolling. If so, adjust all the clips so that they are at the same distance using the apertures.

3 - Then, insert each slat from the side until the end-slat ② ③

- Align the ends of the slats.

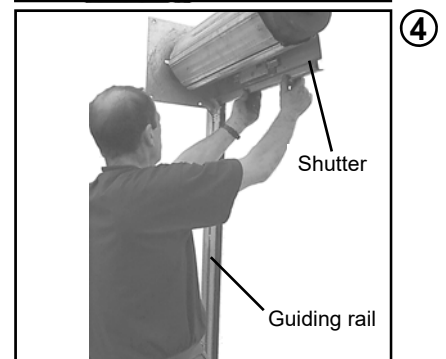
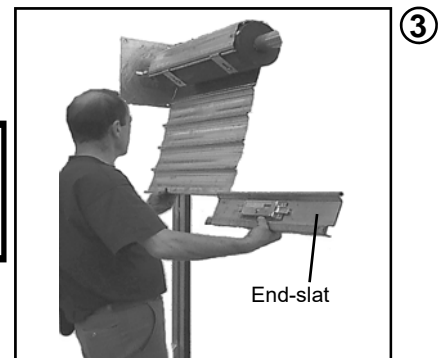
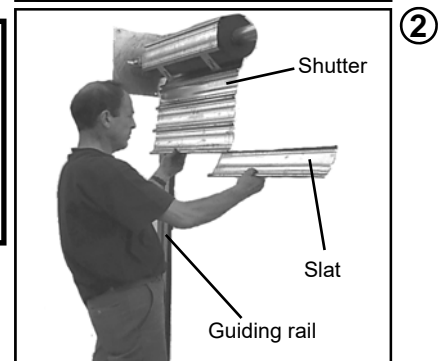
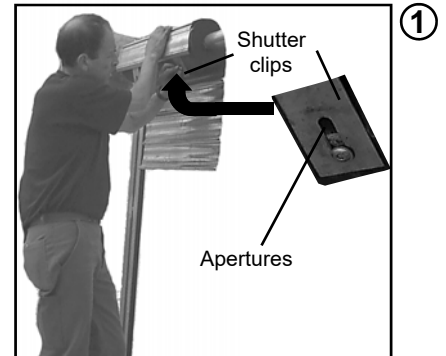


If using hurricane end-pieces refer to the corresponding manual for the sequence of slats with end-pieces.

4 - Roll the shutter above the start curves.  
- Unroll the shutter in the guiding rails. ④

5 - Lower the shutter again ensuring that the slats are aligned.

6 - Remember to adjust the start curves.





## Case No.2: You do not have any space

You do not have any space at the back of the guiding rails  
(for example, installation in a corridor)

- 1 - Create the shutter by threading the slats together, without forgetting the clips. ①



**The rolling direction**

- 2 - Roll the assembled shutter starting from the clips and moving towards the end-slat. ①

- 3 - Lift the shutter up to the tube using a hoist or an alternative lifting system.



**To avoid scratching the slats while unrolling them, ensure that the axle is protected (e.g. with a box, etc.).**

- Unroll the shutter in the guiding rails starting from the end-slat. ②

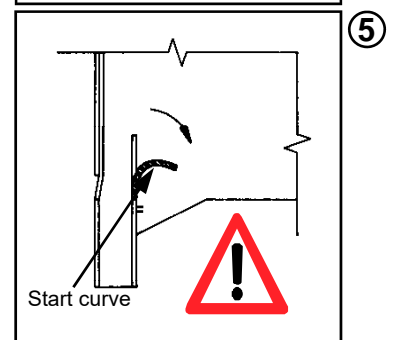
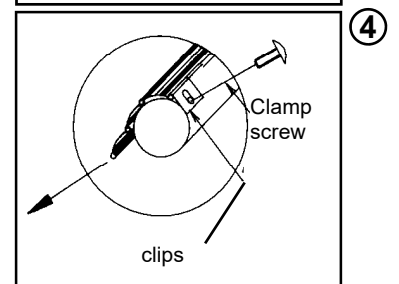
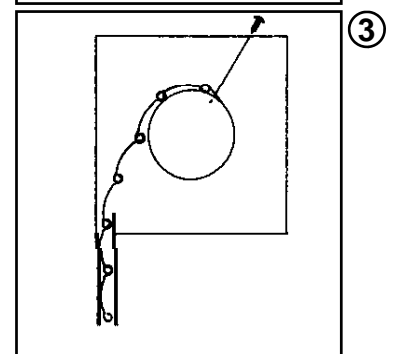
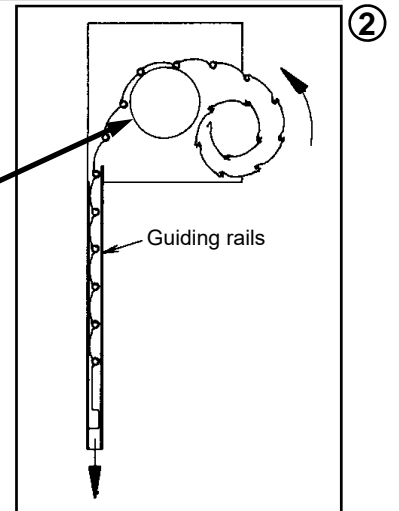
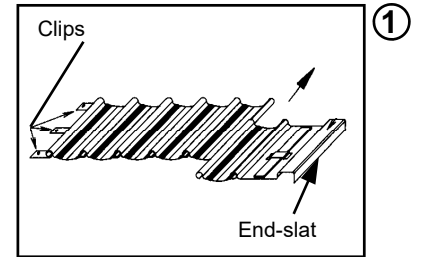
- 4 - Slide each clip into place until it is opposite its corresponding hole. ③

- 5 - Attach the shutter to the tube using the clips. ④



**Before fully tightening the clamp screws, ensure that the screw heads are not touching the slat flanges during rolling. If so, adjust all the clips so that they are at the same distance using the apertures.**

- 6 - Remember to adjust the start curves. ⑤



### **Case No.3: You do not have enough space**

You do not have enough space inside and the board is not very thick (for example: Installation inside a building with small reservations)

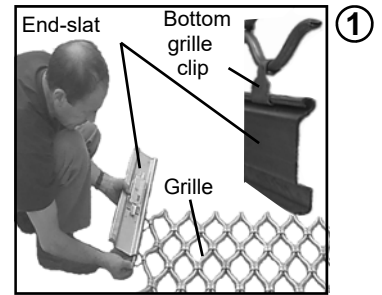


#### **The rolling direction**

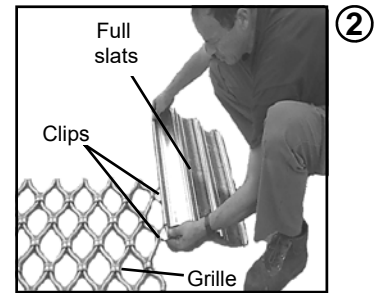
- 1 - Assemble 12 to 15 slats on the axle outside of the guiding rails.
- 2 - Position them to the side of the assembled part of the shutter.
- 3 - Insert the slats one by one from the outside until the end-slat.
- 4 - Reposition the shutter behind the guiding rails.
- 5 - Align the ends of the slats.
- 6 - Raise the shutter and insert the end-slat in the guiding rails.
- 7 - Lower the shutter again, checking that the slats pass through the guiding rails.
- 8 - Remember to adjust the start curves.

# Assembling the Dentel shutter

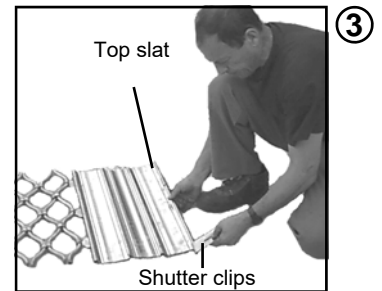
1 - Insert the end-slat into the bottom clips. ①



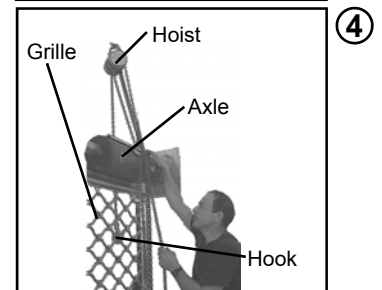
2 - Insert the 3 full slats into the top clips. ②



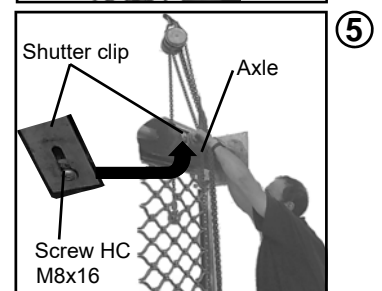
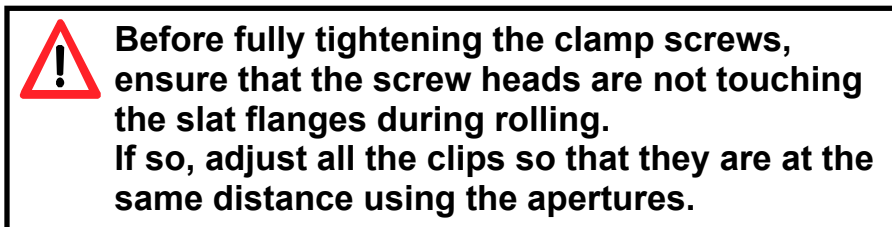
3 - Insert the shutter clips into the top slat. ③



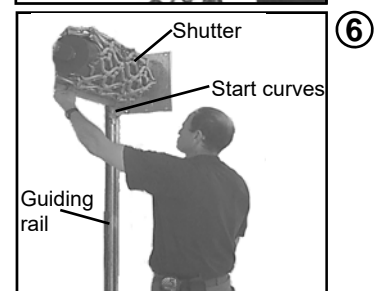
4 - Attach at least 2 hoists to the wall above the axle.  
 - Attach the hoists to the grille, 1 m above the shutter.  
 - Install the grille using the hoists and position the slats around the axle. ④



5 - Slide each clip into place until it is opposite its corresponding hole.  
 - Screw the clips to the shutter on the axle using the screws HC M8x16. ⑤










6 - Roll the shutter above the start curves. Unroll the shutter in the guiding rails. ⑥

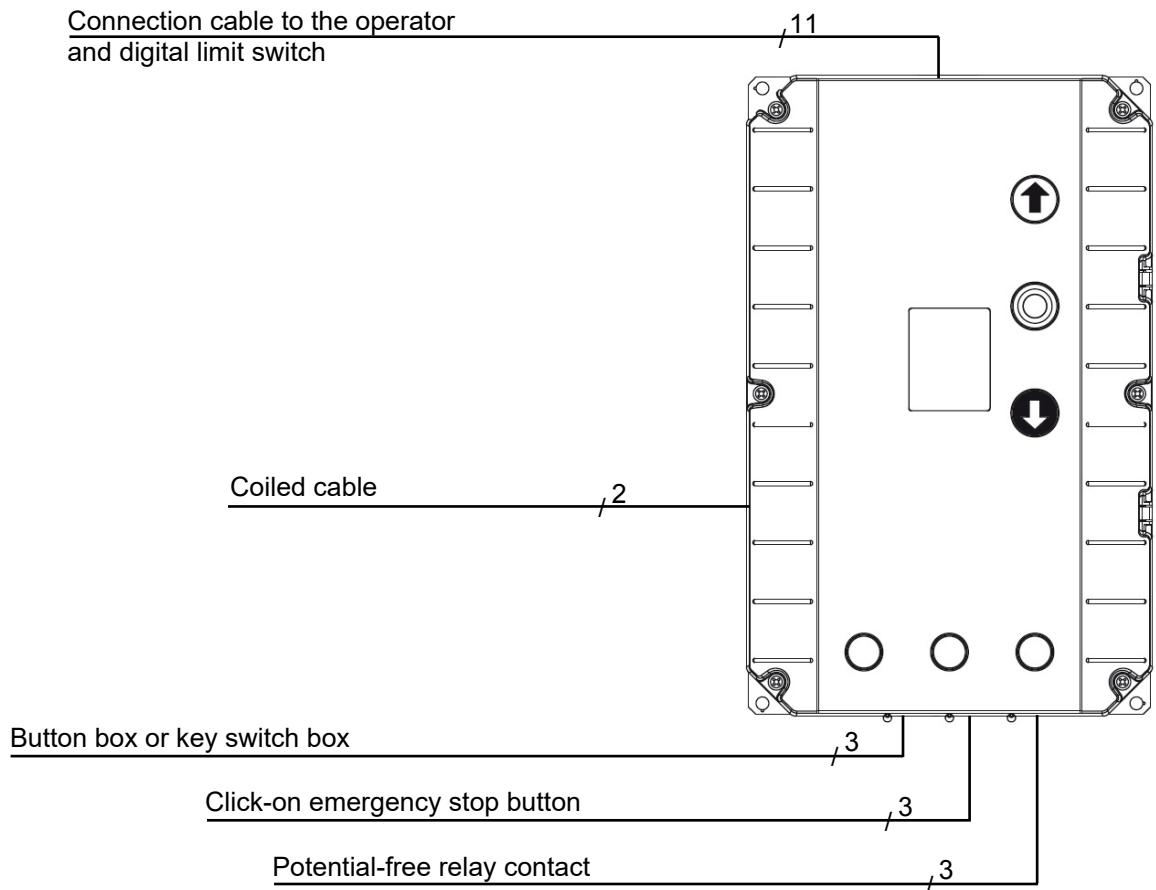


7 - Remember to adjust the start curves.

# Installing the TS 958 box

-  For a triple-phase current, a clockwise rotating field is required.
-  The power must be switched off when opening the guards or covers and during the electrical connection.
-  The box must be installed with its overlay protections and safety devices. Particular care must be taken to correctly position and screw in the joints.
-  A fixed network connection requires a main disconnect switch opening all the terminals with a cut-off device above.
-  Check that the specified voltage for the machines corresponds to the power supply at the site, before operating the box.
-  The **“Emergency stop”** devices must remain active in all of the operator’s operating modes. The unlocking of the **“Emergency stop”** device must not be activated for an uncontrolled or undefined restart.

 On no account should the connection cable be used for an installation outside.



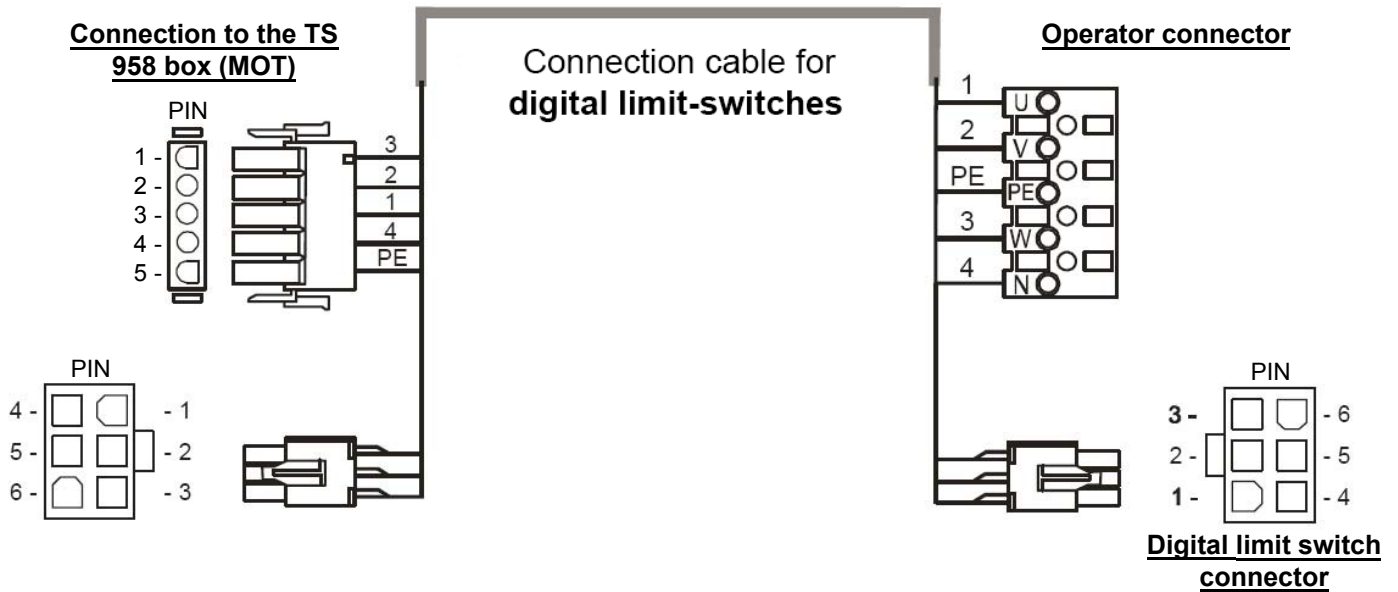
/\* = Number of wires

# Cabling for the operator with box



The box must be installed in a vertical position and must be attached to a level surface to avoid vibrations. Ensure that the door area can be seen from the assembly site.

- The S140 operator and the TS 958 automation box are connected using a connection cable. The two ends of the cable are equipped with plug-in connectors ensuring easy installation.



## Placement of the wires:

### Operator connector to the TS 958 box:

PIN	Wire no.	
1	→ 3	W Phase
2	→ 2	V Phase
3	→ 1	U Phase
4	→ 4	Neutral (N) (if present)
5	→ PE	Protective conductor

### Digital limit switch connector to the TS 958 box:

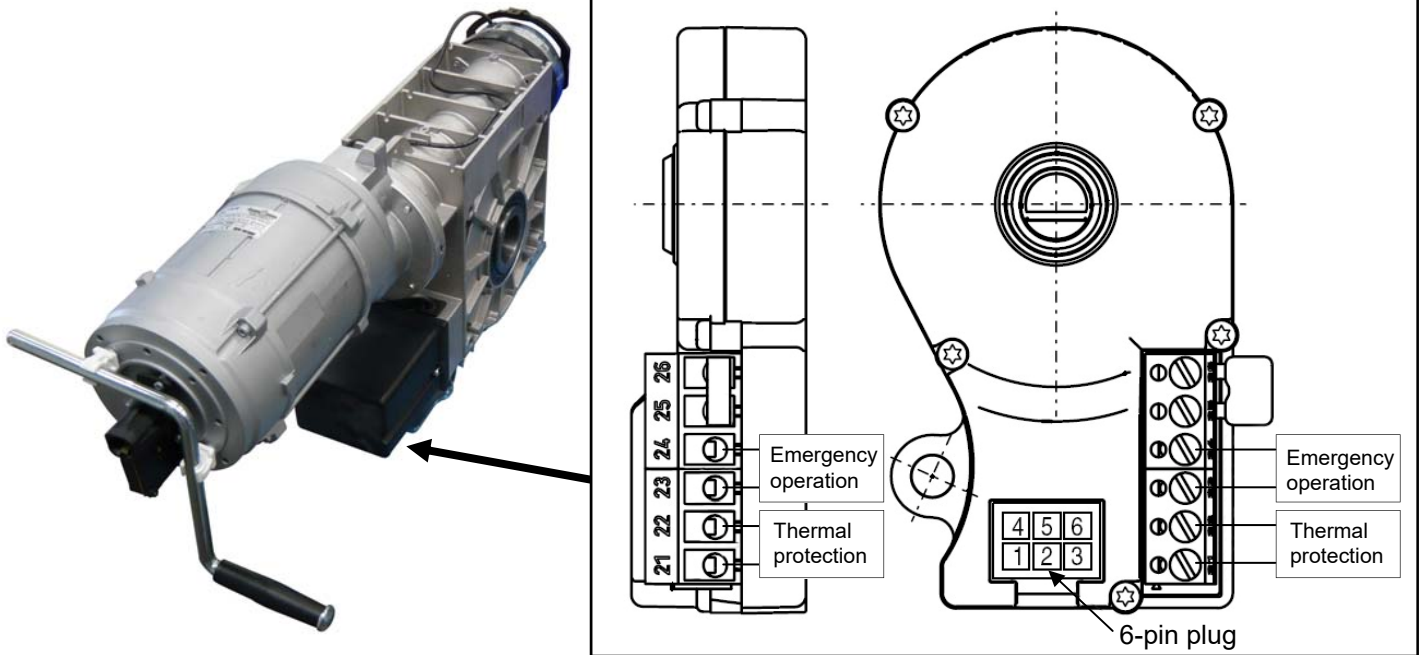
PIN	Wire no.	
1	→ 5	Safety circuit 24V DC
2	→ 6	RS 485 B
3	→ 7	GND
4	→ 8	RS 485 A
5	→ 9	Safety circuit
6	→ 10	8V DC

# Connecting the digital limit-switches



- The evaluation or the setting of the final positions are done using the automation boxes.

- During the connection, only insert the 6-pin plug connection cable on the side of the black connector which connects to the operator. No mechanical adjustment is necessary.



**Digital limit-switches**

# Connecting the power



**Danger! Electrocution risk!**

Before connecting the power, make sure to cut off the electric current and check that the power is off.

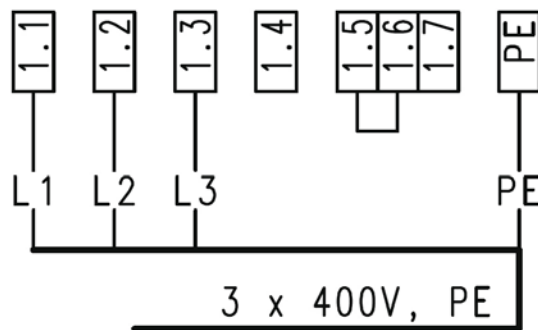


Incorrect installation of the bridge may damage the TS 958 automation box.



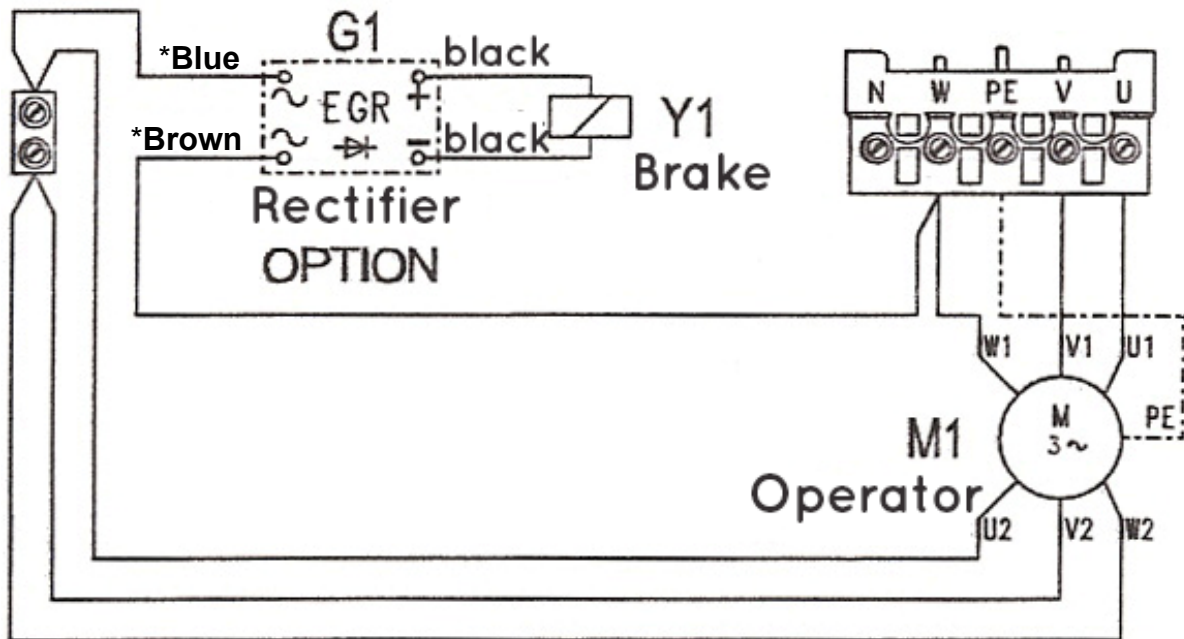
**400V Power supply:** - Bridge between 1.5/1.6

**Connecting the TS 958 box to the power without the neutral:**



# Connecting the operator (internal cabling)

**Triple-phase current 3 x 400V without the neutral:** Star connection




\*: Connection to the brake rectifier

# Quick setting of the limit switches

**Comments:**

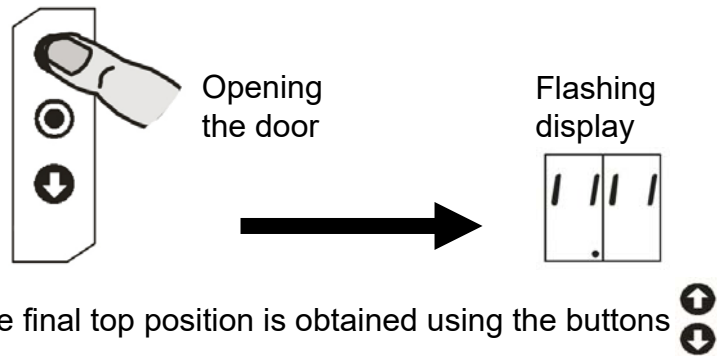
Once the TS 958 box is connected to the power (Refer to P.15), the door should open when the open button is pressed. If the door closes, switch the L1 and L2 phases.



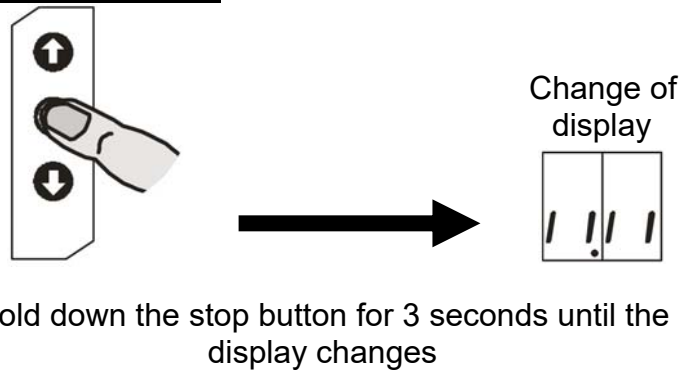
**Danger! Risk of electrocution!**  
The phase must only be changed when the power is switched off.

The checking of the phase sequence is followed by a quick setting of the limit switch interrupters, according to the four steps below. The final parameters are set afterward (Refer to P.21). The safety limit switches will adjust automatically.

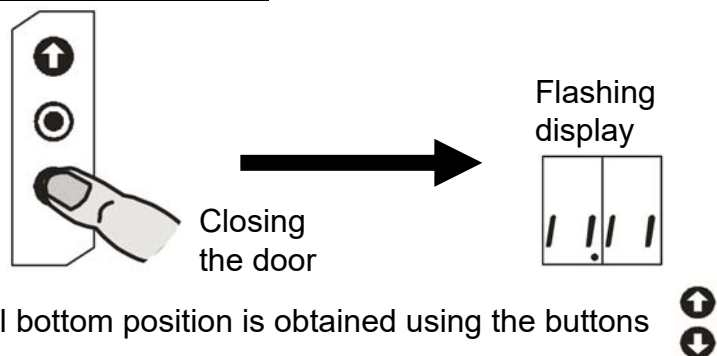
**1 - Setting of the top limit switch:**



**2 - Recording the top limit switch:**

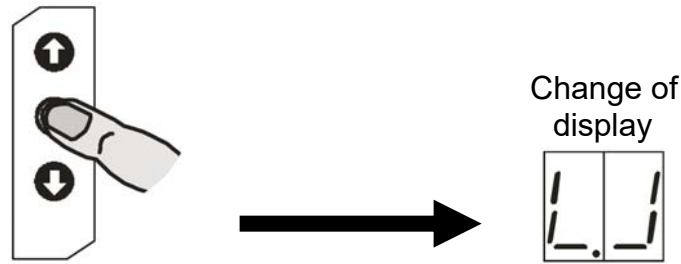


**3 - Setting of the bottom limit switch:**





#### 4 - Recording the bottom limit switch:

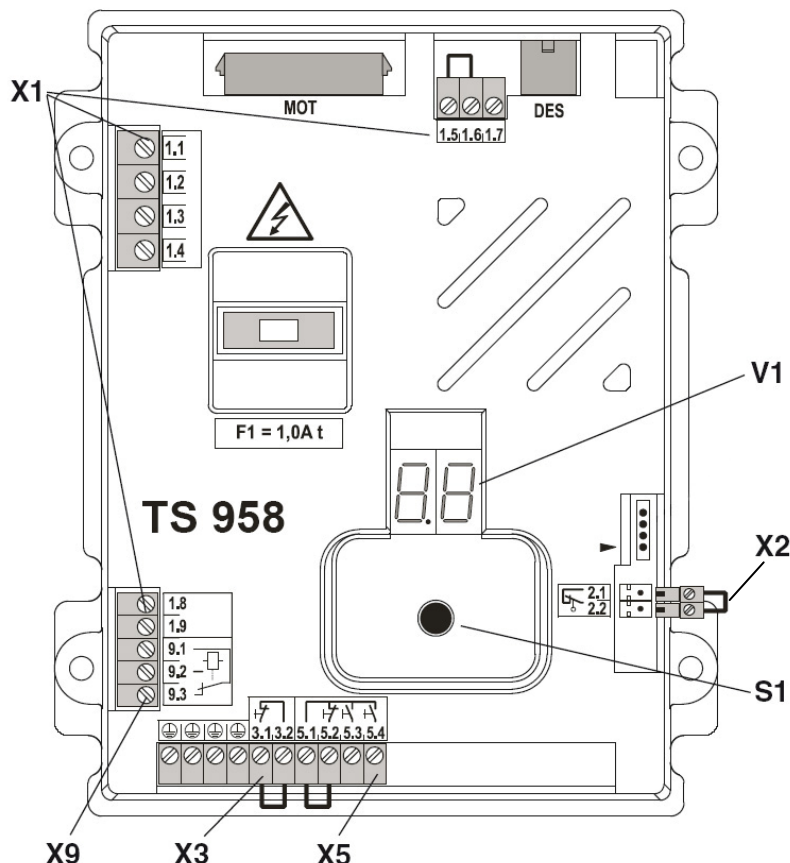


Hold down the stop button for 3 seconds until the display changes

- The quick setting of the limit switches is complete.
- The door will now function in "Sustained pressure" mode:
  - Hold down the open button to open the door.
  - Hold down the close button to close the door.
  - Let go of the open or close button to stop the door from moving.

For other settings refer to programming of the automation box (P.21)

## Layout of the components





**Name:**


- X1:** Connection to the power supply 3 x 400V
- X2:** Safety micro switch (latch or lock)
- X3:** "Emergency stop" device
- X5:** 3-button box or key switch box
- X9:** Potential-free relay contact


- V1:** Digital display
- S1:** Settings button
- MOT:** Connection to the operator
- DES:** Connection for the digital limit switch

# Connecting the accessories

- 

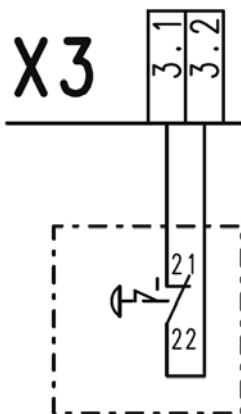
The fixed controls must be installed within sight of the door but away from any moving parts and at a height of at least 1,500 mm from the floor.
- 

In "sustained pressure" mode, only the control requiring sustained action should be installed and used.
- 

Only use one interrupter for a single operator. It is completely prohibited to order several operators with a single monopolar switch.
- 

Ensure the power line is protected using a differential circuit-breaker located upstream and suitable thermal protection.

## Emergency stop control device

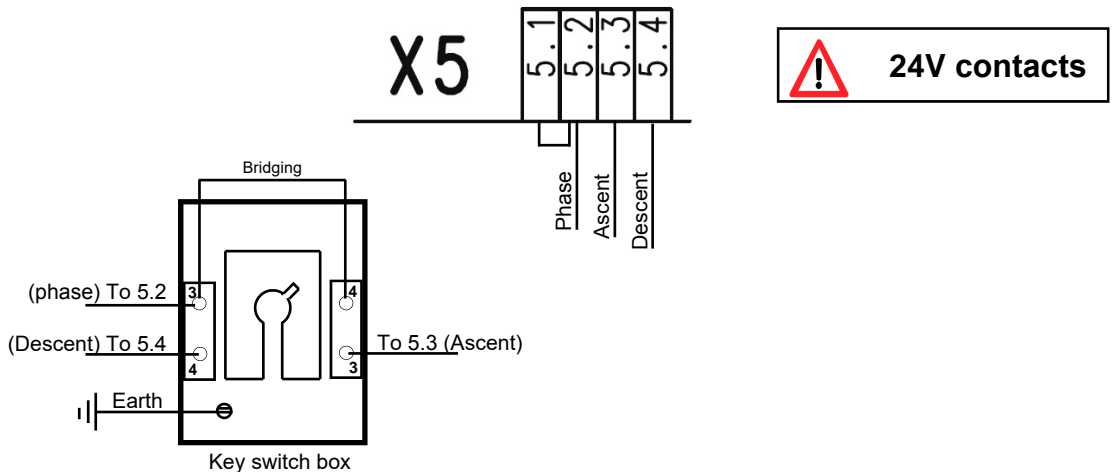


**X3: Refer to chapter P.17 layout of the components**

## Sustained pressure operation

### Key switch box (BCE2/BCA1)

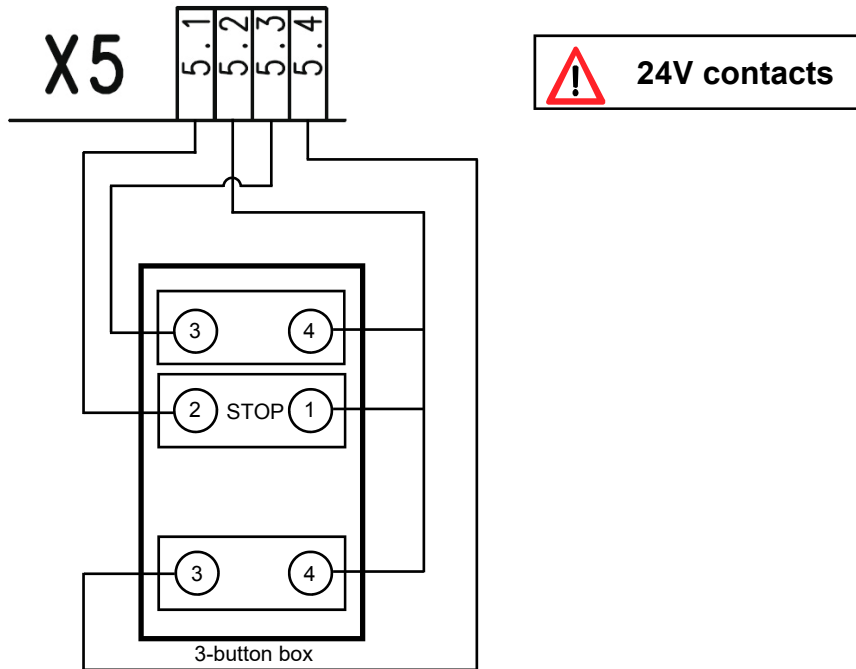
Mandatory for sustained pressure mode in public areas (EN 13241-1)



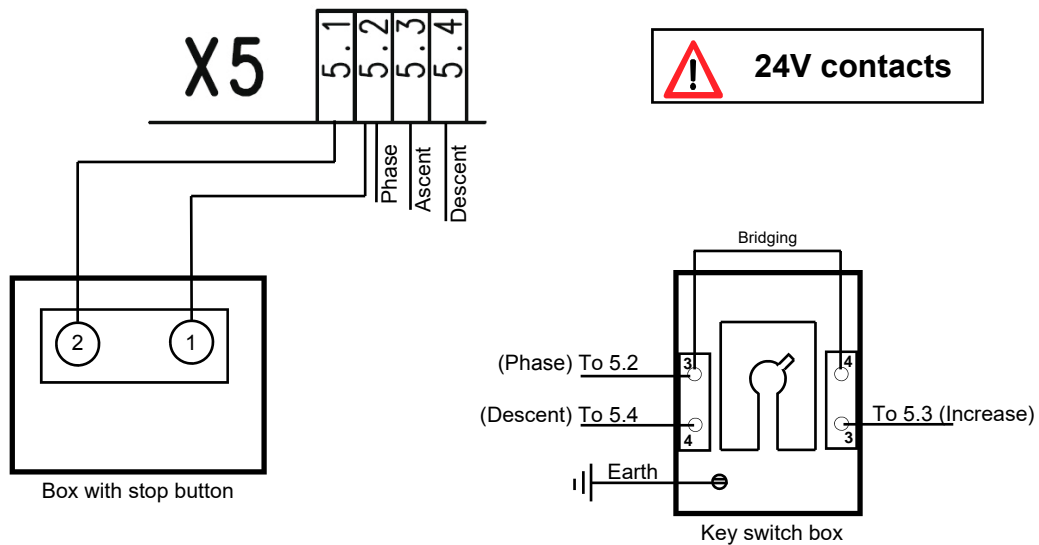
 **24V contacts**

# Pulse ascent - sustained descent operation

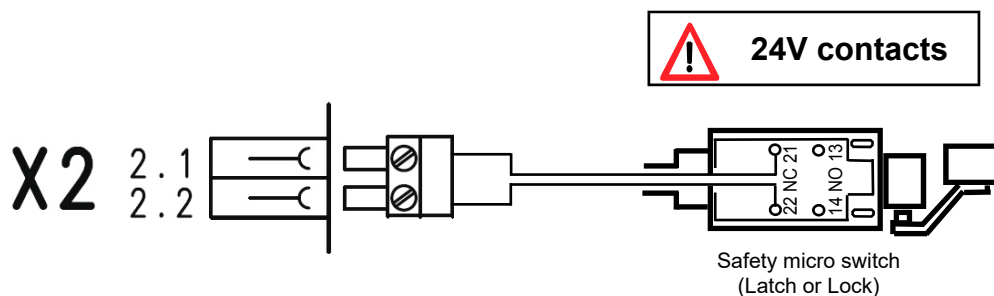
## 3-button box (BBA3)



## Key switch box (BCE2/BCA1) with box with stop button (BBAS)

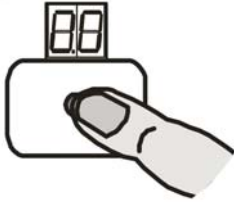


# Safety micro switch



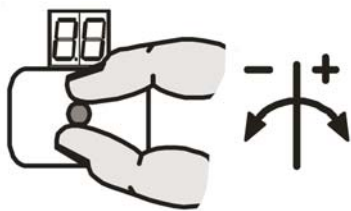
# Box programming method

## 1 - Connection of programming:



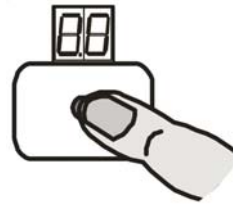
Hold down the settings button for 3 seconds until "00" appears on the display

## 2 - Selecting and confirming the programming point:



Turn the settings button

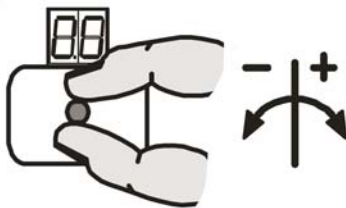
and



Press the settings button

## 3 - Setting:

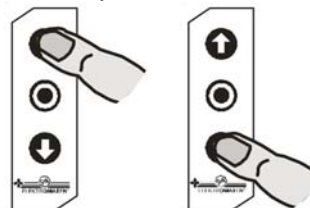
Functions



Turn the settings button

or

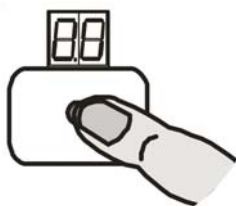
Door positions



Press the button

## 4 - Recording:

Functions



Press the settings button

or

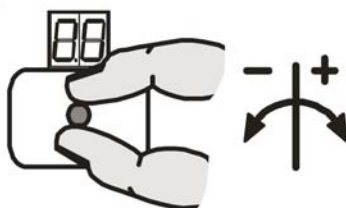
Door positions



Press the stop button

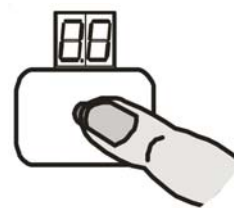
For other settings refer to **chapter 2**

## 1 - Disconnection of programming:



Turn the settings button until "00" appears on the display

and




Press the settings button

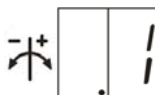
# Programming the box


## Operating modes

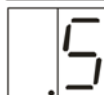
### 2 - Selecting and confirming the programming point:

 Operating mode for the door


### 3 - Settings:

 **Opening:** Sustained pressure  
**Closing:** Sustained pressure


or  **Opening:** By pulse  
**Closing:** Sustained pressure


or  Extended sustained pressure

### 4 - Recording:


 Press the settings button


## Door positions

 Approximate correction of the top limit switch

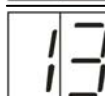
 Moving the door up and down

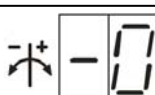
 Press the stop button


 Approximate correction of the bottom limit switch

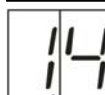
 Moving the door up and down

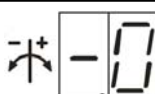
 Press the stop button


 Precise correction of the top limit switch


 Top limit switch will be offset by +/- value without moving the door


 Press the settings button

 Precise correction of the bottom limit switch

 Bottom limit switch will be offset by +/- value without moving the door

 Press the settings button


 Switching position of the relay

 Obtain the switch position of the relay


 Press the stop button


**Refer to page 16:** Quick setting of the limit switches.

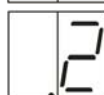
## Door functions

 Relay contact function

 No function

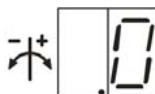
 Press the settings button


ou  Switch contact as a pulse signal

ou  Switch contact as a continuous signal

## Safety functions


 Force control


 Deconnected force control

 Press the settings button


## Maintenance cycle counter


### 2 - Selecting and confirming the programming points:


 Maintenance cycle  
Preselection

 Response to a zero value


### 3 - Settings:


 01-99 corresponds to 1,000 to  
99,000 cycles with reverse counting

 "CS" display with preset value

or  Operation by switching to sustained  
pressure during opening as with  
point 0.1 on the display


### 4 - Recording:


 Press the settings  
button

 Press the settings  
button

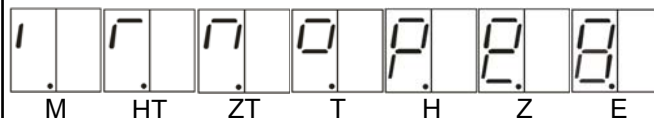
## Reading recorded data

### 2 - Selecting and confirming the programming points:

 Information on the counter  
in 7 digits


 Press the  
settings button


### Display:




The cycle counter is displayed successively in  
multiples of ten:


M = 1,000,000    ZT = 10,000    H = 100  
HT = 100,000    T = 1,000    Z = 10  
E = 1

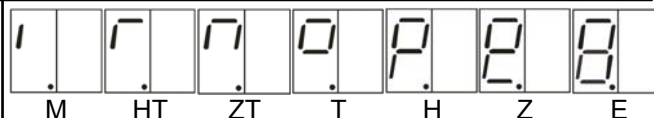
 Information on the two  
last faults

 Press the  
settings button

The two last detected faults are displayed  
alternately


 Information on the change of  
program in 7 digits


 Press the  
settings button



The program change counter is displayed  
successively in multiples of 10:

M = 1,000,000    ZT = 10,000    H = 100  
HT = 100,000    T = 1,000    Z = 10  
E = 1


 Information on the program  
version

 Press the  
settings button

The version of the program is displayed

## Cancelling the settings


### 2 - Selecting and confirming the programming point:

 Cancellation of all of the  
settings apart from the  
cycle counter and  
program change counter

### 3 - Setting:

 Cancellation

### 4 - Recording:

 Hold down the  
stop button for  
3 seconds.

## Safety devices

### Emergency stop X3 (Refer to p.17):

- If required, an emergency stop control device can be connected to the connection terminals or the input can be used as a high safety device.

## Description of functions

### Box with integrated keyboard, 3-button box, X5 Key switch box (Refer to p.17):

#### **Internal and external control devices**

- The keyboard integrated into the box and the external control device operate independently of one another. In case of simultaneous use, the integrated keyboard has priority over the external control device.



In "sustained pressure" mode, it is necessary to ensure that the door area can be seen.

### "Extended sustained pressure" function:

- The "Extended sustained pressure" function requires the "Close" button to be held down until the door is completely shut. If the "Close" button is released too early, the door will open automatically to its final "Opening" position.
- To activate the "extended sustained pressure" mode, you must select the programming point "0.1" and setting ".5", (Refer to operating modes P.21).

### Maintenance cycle counter:



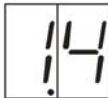
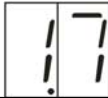





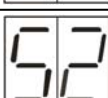



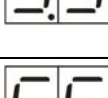

- The maintenance cycle counter can be adjusted to the programming point "8.5"; This enables a number of available door cycles to be preselected before having to carry out maintenance on the door.
- The number of cycles can vary between 1,000 and 99,000 with settings in multiples of a thousand.
- After reaching the preselected maintenance cycle, three different responses can be set at programming point "8.6".
- Each time the final opening position is reached, the number of maintenance cycles is reduced by one value until a zero value is obtained.
- Once the maintenance has been carried out, the maintenance cycle counter can be reset and the countdown is restarted.

### Short-circuit / overload display:





- The TS 958 automation box has two different voltages for external devices.  
230V AC electrical load 1A max.  
24V DC electrical load 150mA
- In the case of a short-circuit or an overload of the 24 DC power supply, the red dot between the two 7-digit displays will switch off.
- If the display is totally dark, check the F1 fuse.

# Displaying the box status

- The TS 958 box can display up to three different statuses successively.
- The status display is comprised of a letter and a number. The letter and the number flash alternately.
- In this regard, a distinction must be made between the error display **F** and the control display **E**.

<u>Displays:</u>	<u>Error descriptions:</u>	<u>Solution:</u>
	Safety lock contact is open	Check that the safety lock contact is closed or if there is a break in the connection line
	Manual safety repair is activated or the operator's temperature sensor has been triggered	Check the manual emergency repair device or check if the operator is overloaded or blocked
	Emergency stop activated	Check if the emergency stop control is activated or if there is a break in the connection line
	Safety lock contact circuit is faulty X 2.1 – X 2.2 or 24V voltage is too low	Check the safety lock contact. Measure the voltage on the 24V and GND terminals
	The automation box input for the safety lock contact X 2.1 – X 2.2 is faulty	Start the automation box by switching the power off: the automation box may need to be replaced
	Top end position overrun	Lower the door with the power off using the emergency operation control or reset the final top position
	Bottom end position overrun	Raise the door again with the power off using the emergency operation control or reset the final bottom position
	Force control triggered	Disconnect the force control
	ROM error	Reboot the box by switching the power off; replace the box if necessary
	CPU error	Reboot the box by switching the power off; replace the box if necessary
	RAM error	Reboot the box by switching the power off; replace the box if necessary
	Internal box fault	Reboot the box by switching the power off; replace the box if necessary
	DES digital limit switch fault	Check the connection to the digital limit switch. Reboot the box by switching the power off, replace the box or the digital limit-switch if necessary
	Fault related to door movement	Check the door mechanism. Check the limit switches
	Error in rotation direction	Check the input power supply: Switch the L1 and L2 phases

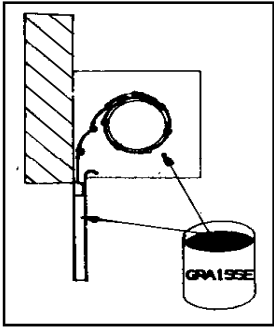


<b><u>Displays:</u></b>	<b><u>Control descriptions:</u></b>
	Permanent opening control activated
	Permanent stop control activated
	Permanent closing control activated
	The dot is flashing = Short-circuit or overload of the 24V power supply

# Finishes




**IMPORTANT!**  
Carefully grease the inside of the guiding rails and the winding plates



## In case of a problem

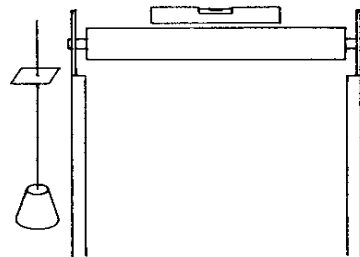
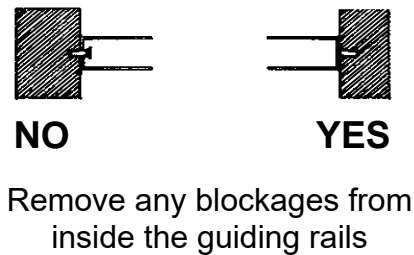
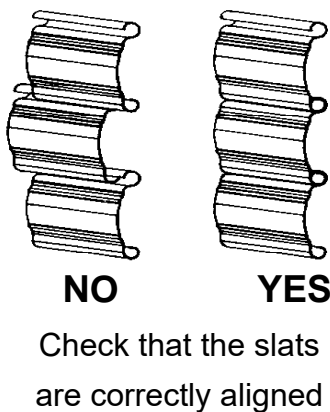
### Anti-fall guard integrated into reducer



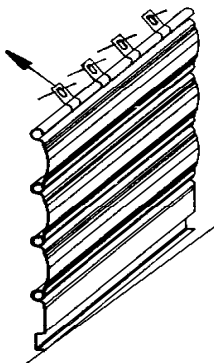
**In case of an exceptional malfunction of the reducer, the anti-fall guard will be automatically activated. It holds the load in any position without any jolting. You do not need to cut off the power supply. If the reducer breaks down, the operator and the output shaft are immediately deactivated. It is imperative that the reducer integrated into the anti-fall guard be replaced.**

### If the shutter is crooked when moving up and down

(Gap larger than 4 cm on the end-slat)



Check that the guiding rails are correctly aligned and that the axle is perfectly horizontal.

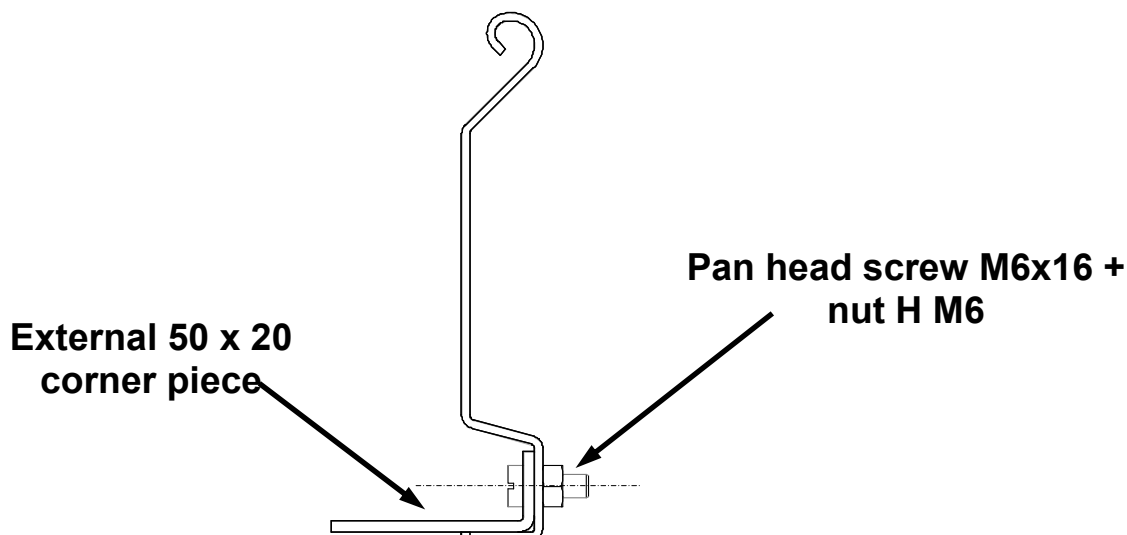


Roll up the shutter from the lowest side using the clip apertures provided for this purpose

# Assembling the end-slat supports

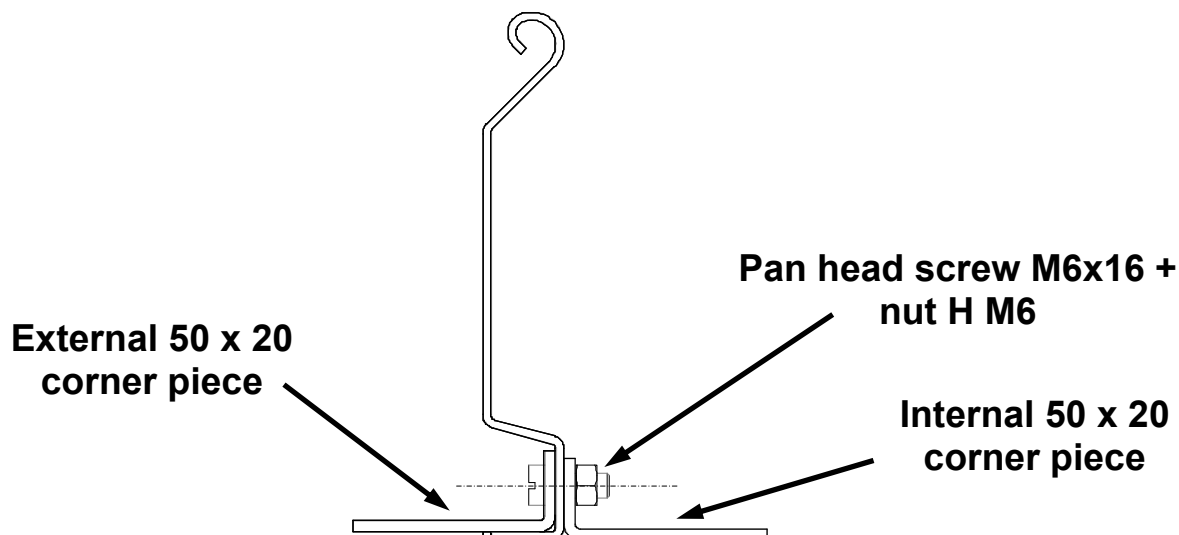
## 1 50 x 20 Corner piece for the end slats in the following cases:

- Galva Murex 110 if  $4,000 \leq \text{BAY WIDTH} < 5,000 \text{ mm}$
- Laquered Murex 110 if  $3,000 \leq \text{BAY WIDTH} < 5,000 \text{ mm}$



## 2 50 x 20 Corner pieces for the end slats in the following cases:

- Galva Murex 110 if  $\text{BAY WIDTH} < 5,000 \text{ mm}$
- Laquered Murex 110 if  $\text{BAY WIDTH} < 5,000 \text{ mm}$
- Dentel if  $\text{BAY WIDTH} \geq 5,000 \text{ mm}$





## TROUBLESHOOTING


➤ **The operator is not working**

- Check the power supply and the fuses.
- If the operator has been used extensively, wait for it to cool down, the temperature sensor will reactivate automatically.
- If the operator has been used in emergency operation, check that the crank has been returned to its support.
- Contact your installer.

➤ **The shutters stop while in operation**


- Check the power supply and the fuses.
- Check that there is nothing blocking the shutters and that there are no rough spots that are hindering the shutter’s movement.
- Contact your installer.

## EMERGENCY OPERATION



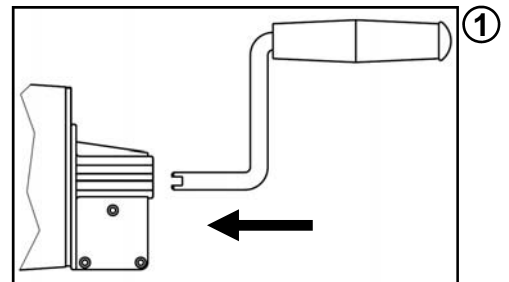
**Incorrect use may cause injury.**

- Before using the emergency operation device, the main disconnect switch must be shut off and the operator stopped.
- Adopt the correct position for operating your shutters.
- The door is opened and closed against the brake.
- For safety reasons, the brake release mechanism must not be used except during maintenance.



- The door must not be moved beyond its final positions using the emergency operation device, because this may activate the safety limit-switches to prevent overextension. It will no longer be possible to operate the door electronically.

- Unclip the repair crank from the operator housing.
- Insert the crank while applying pressure, turning it until it is activated; this interrupts the control voltage and it is no longer possible to operate the door electronically. ①
- Turn the crank to open or shut the door.
- Remove the crank. The control voltage will therefore be reconnected and the door can be operated electronically.
- After emergency operation, put the crank back in place.



## Technical help contact details

(Installer's stamp)