# TECHNICAL BOOKLET

5139543A

# AUTOSUN® 2 SYSTEM

BY SIMU

## 1 INTRODUCTION



## 2 INSTALLATION



## ATTACHED

5136882A - T3.5 EHz DC MOTOR

5139459A - ADHESIVE SOLAR PANEL

5139467A - MOTOR CABLE

5136806A - NAKED BATTERY

5139158A - STICK BATTERY

5144624A - STICK BATTERY (Quarter round)

5148485A - ADHESIVE TAPE FOR « BATTERY STICK »

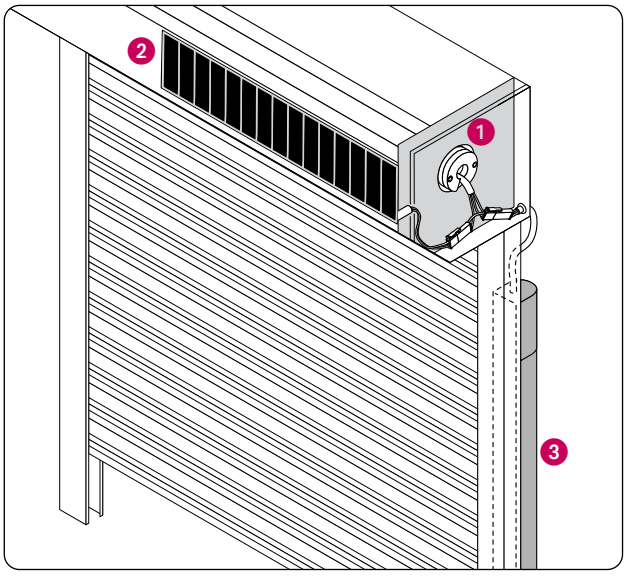
# 1 INTRODUCTION

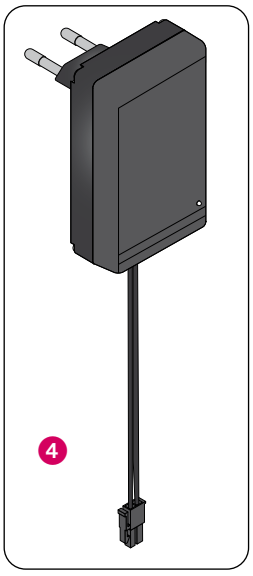
## 1 ■ AUTOSUN2 SYSTEM BENEFITS

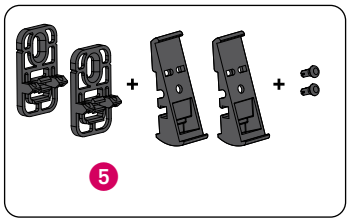
- Solution 100% autonomous
- Speed of installation
- Installation without important work
- Installation from outside
- Motor and battery in low voltage
- Radio solution compatible with the whole range of SIMU-Hz functional and sequential transmitters

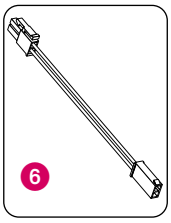
## 2 ■ AUTOSUN2 SYSTEM PRESENTATION

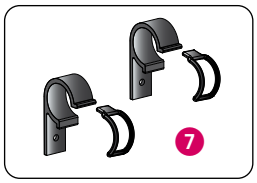
**AUTOSUN2 solution** is a complete solar motorization system for roof and facade roller shutters.
**It is composed of:**

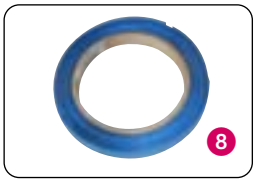


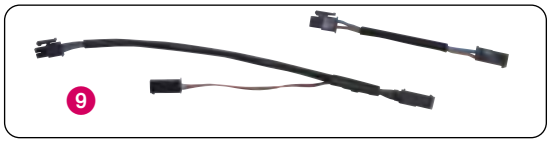



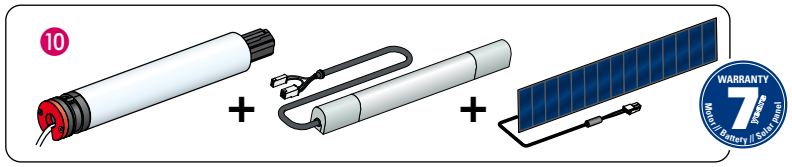



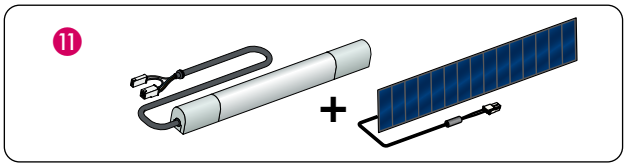




1 - MOTOR 12V T3.5 EHz DC (3, 6 or 10Nm)
- 4 adjustments of end-limits
- "Stop on obstacle" function
- "Frost detection" function
- Intermediary position

2 - SOLAR PANEL 12V: 3,2W / Uoc: 21V / Isc: 196 mA.
- Supplies the necessary energy to operate the AUTOSUN2 system

3 - BATTERY NiMh 12V: 2.2 Ah: stick battery or naked battery
- Stores the energy given by the solar panel
- Supplies the necessary energy to the motor

**Optional:**

4 - BATTERY CHARGER allows rapid recharging of the battery before installation on site and in case of prolonged low sunshine.

5 - BRACKETS to fix the solar panel with holes on the roller shutter box, or to deport it on the wall with the extension cable of 5m.

6 - EXTENSION CABLE 5m for solar panel to deport the solar panel if necessary.

7 - BRACKET WITH ELASTIC to fix naked battery

8 - ACCESSORIES to fix the alu stick battery:
- set of 2 wedges
- set of 20 adhesives

9 - AFTER-SALES CABLES FOR MOTOR AND BATTERY

10 - KIT: Motor / stick battery / solar panel

11 - KIT: Stick battery / solar panel

## 1 AUTOSUN 2 motors

| DESCRIPTION | TORQUE | SPEED | POWER | CURENT | La | Lb | Lc | WEIGHT | REFERENCE x1 | x10 | x100 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **T3.5 EHZ 3/23 12V** | 3 Nm | 23 rpm | 17 W | 1.4 A | 433 mm | 457 mm | 470 mm | 0.77 kg | **2009080** | **2009083** | **2009086** |
| **T3.5 EHZ 6/18 12V** | 6 Nm | 18 rpm | 26 W | 2.2 A | 433 mm | 457 mm | 470 mm | 0.8 kg | **2009081** | **2009084** | **2009087** |
| **T3.5 EHZ 10/12 12V** | 10 Nm | 12 rpm | 30 W | 2.4 A | 433 mm | 457 mm | 470 mm | 0.8 kg | **2009082** | **2009085** | **2009088** |

## 2 SOLAR PANEL

| DESCRIPTION | REFERENCE x 1 | x 10 | x 40 |
|---|---|---|---|
| SOLAR PANEL **with holes** | **9019032** | **9019031** | **9018382** |
| SOLAR PANEL **with adhesive** | **9020627** | **9020626** | - |

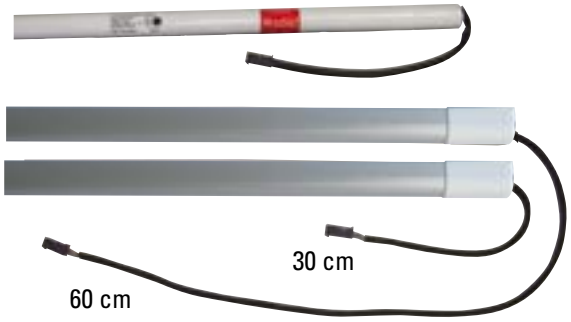
2 possible fixing for the solar panel with holes:
- Directly on the roller shutter box by pop rivets.
- On the inclined brackets: on the roller shutter box or on the wall to capture more sun.

## 3 BATTERY

- 1 stick battery with alu cover and its cable of 30cm.
- 1 stick battery with alu cover and its cable of 60cm.
- 1 naked battery without alu cover and its cable of 25cm

Fixing by pop rivets of the specific brackets and elastics
- New connectors: reduced sizes of the connectors to ease the integration inside of the side frame.

| DESCRIPTION | REFERENCE x 1 | x 10 | X20 |
|---|---|---|---|
| **Naked battery + cable 25cm** | **9020808** | - | **9020628** |
| **Battery in alu cover + cable 30cm** | **9020634** | **9021212** | - |
| **Battery in alu cover + cable 60cm** | **9020635** | **9021213** | - |




Quarter round

Battery with alu cover: possibility to connect and Disconnect the battery cable easily without opening Roller shutter box. Indeed, once the plastic cover is Removed you can unplug/plug the battery cable.

## 4 BATTERY CHARGER

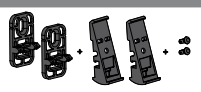
New battery chargers with 2 plugs one for EU and another one for the US power supply

| DESCRIPTION | REFERENCE x 1 |
|---|---|
| **Battery charger** | **9020638** |

*US*

*EU*

## 5 SOLAR PANEL BRACKETS

| PRODUCT | DESCRIPTION | REFERENCE |
|---|---|---|
|  | **Solar panel bracket** | **9019683** |

## 6 EXTENSION CABLE

| PRODUCT | DESCRIPTION | REFERENCE |
|---|---|---|
|  | **Extension cable for solar panel (5m)** | **9019722** |

## 7 BRACKETS TO FIX NAKED BATTERY

| PRODUCT | DESCRIPTION | REFERENCES |
|---|---|---|
|  | **BRACKET WITH ELASTIC to fix naked battery** | **9020630** (x40) **9020629** (x200) |

## 8 ACCESSORIES TO FIX STICK BATTERY

| DESCRIPTION | REFERENCES |
|---|---|
| **SET OF 20 ADHESIVES BATTERY STICK** (lenght x width = 550 x 15 mm) | **9021216** (x1) |
| **SET OF 2 BLOCKS** (dimension: 23 x 19 mm) **for battery stick** | **9020637** (x1) |

2 BLOCKS

To guarantee an alignment of the battery stick on masonry if necessary

*23 x 19 mm*

## 9 AFTER-SALES CABLES FOR BATTERY AND MOTOR

| PRODUCT | DESCRIPTION | REFERENCE x 1 |
|---|---|---|
|  | **Motor cable:** enable to keep the battery and the solar panel AUTOSUN 1 and associate an AUTOSUN 2 motor | **9020481** |
|  | **Battery cable:** enable to replace the AUTOSUN 1 battery with a battery AUTOSUN 2 but keeping the motor and the solar panel AUTOSUN 1 | **9020639** |

## 10 KIT: Motor / stick battery / solar panel

- The kit is composed of one motor, one solar panel with holes and a stick battery (cable 60cm), it is supplied in unit packaging, ideal for installer or for renovation.

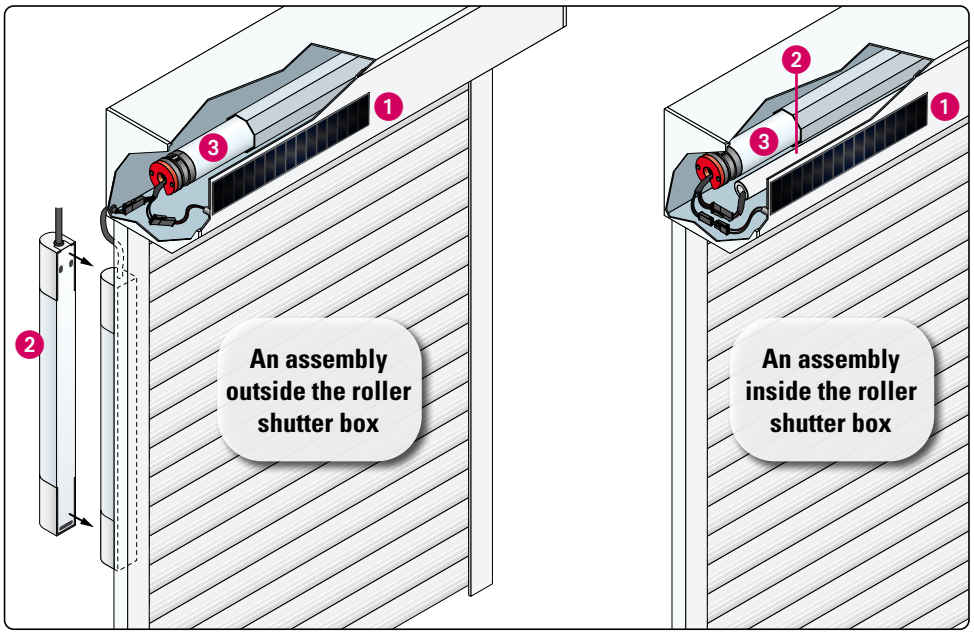
| PRODUCT | DESCRIPTION | REFERENCE x 1 |
|---|---|---|
| T3.5 EHZ DC 3/23 motor + battery in alu cover 60cm + solar panel | **T3.5 EHZ 3/23 12V + KIT SOL EXT** | **2009398** |
| T3.5 EHZ DC 6/18 motor + battery in alu cover 60cm + solar panel | **T3.5 EHZ 6/18 12V + KIT SOL EXT** | **2009399** |
| T3.5 EHZ DC 10/12 motor + battery in alu cover 60cm + solar panel | **T3.5 EHZ 10/12 12V + KIT SOL EXT** | **2009400** |

## 11 KIT: Stick battery / solar panel

- The kit is composed of one solar panel with holes and a stick battery, it is supplied in unit packaging, ideal for installer or for renovation.

| PRODUCT | DESCRIPTION | REFERENCE x 1 |
|---|---|---|
| Solar panel with holes **(9019032)** + battery with cable of 30cm **(9020634)** | **KIT SOLAIRE EXTERIEUR 0,3M** | **9021214** |
| Solar panel with holes **(9019032)** + battery with cable of 60cm **(9020635)** | **KIT SOLAIRE EXTERIEUR 0,6M** | **9021215** |

## 3 ■ OPERATING PRINCIPLE




1 **The solar panel** converts solar energy into electrical energy.

2 **The battery** stores the energy given by the solar panel.

3 **The motor** uses the energy of the battery to operate the roller shutter.

**It is controlled by a SIMU-Hz functional radio transmitter (mobile or wall mounted).**

## 4 ■ T3.5 EHz DC MOTOR FUNCTIONS

• **SOFT START / SOFT STOP Functions:**
- Motor will slow down when reaching Up and Down end-limit
- It will start at a lower speed after an "Up" command from the Down end-limit.
- Adjustment of the end-limit with reduced speed: in manual mode to ease settings.

• **INTERMEDIARY POSITION FUNCTION:** you have the choice to set your favorite position.

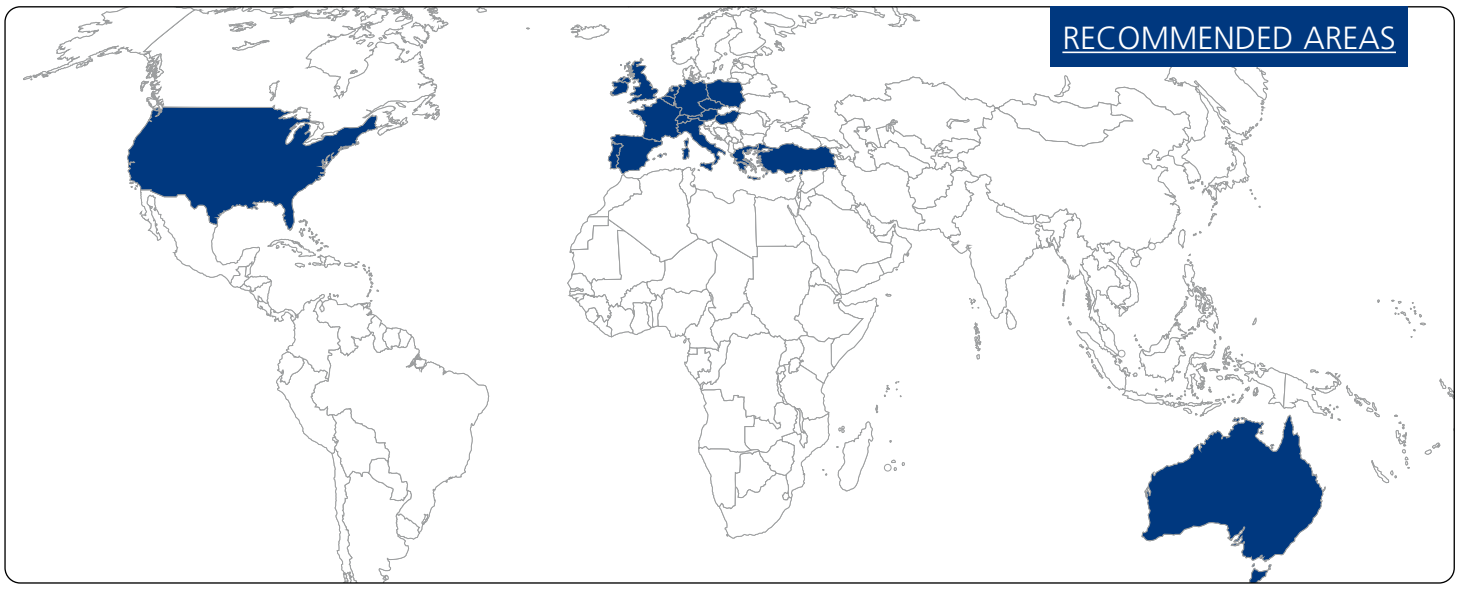
• **FROST DETECTION FUNCTION:** if the shutter curtain is stuck by frost during the opening the motor will stop.

• **STOP ON OBSTACLE FUNCTION:** the motor will stop during the closing if it meets an obstacle and it will reserve
its movement.

• **BATTERY PROTECTION FUNCTION AGAINST EXCESSIVE DISCHARGE:**
- With a battery in good state of charge, the possible commands are: "Up, Stop and Down"
- Before each "Up" or "Down" order, the motor checks the battery voltage:
  - If the voltage is less than 12V, it will no longer be possible to perform motor programming operations.
  - If the voltage is less than 11,5V, the motor will mark a stop time at the start of each "Up" order. "Down" order is only possible by pressing the down button several times.
  - If the voltage is less than 10V, the motor will not accept any order.

In any case, use the battery charger in order to quickly recharge the battery.
Motor operation will return to normal only if the battery voltage rises above 12V.
**CAUTION: Never leave the battery in a discharged condition (prolonged discharge may damage it).**

## 5 ■ SYSTEM AUTONOMY GUIDELINES




**This system is intended to work in the following countries:**
France, Germany, Great Britain, Belgium, the Netherlands, Czech Republic, Poland, Ireland, Spain, Portugal, Italy, Greece, Switzerland, Luxembourg, Denmark, Austria, Hungary, United States (excluding Alaska), Australia and Turkey.

**RECOMMENDATIONS:**

- The weight of the roller shutter must comply with the abacuses given for each of the motors.
- The maximum rollable heights are:
  1600mm for a 3Nm motor, 2400mm for a 6Nm and 2700mm for a 10Nm
- These recommendations are determined from annual average data and for a use of the roller shutter at the rate of 2 cycles per day (1 cycle = 1 up and 1 down order). Please note, 1 cycle maximum for 10Nm motor in the event of orientation North of the solar panel. For years with exceptional low sunshine, use the battery charger to recharge the AUTOSUN2 system battery. These recommendations are given for information only and vary according to characteristics of each installation, especially regional settings (locally frequent fog, snowy regions…), friction, installation conditions and type of curtain.
- The panel must always be positioned so as to be exposed as much as possible to the sun's rays. Ensure that there is no shade cast on the solar panel (roof overhang, lintel,…)
- Charge the battery before assembly or installation

### TEMPERATURE

Operation temperatures are:
- Motor: -20°C to +60°C
- Battery: -20°C to +70°C
- Solar panel: -20°C to +70°C

### AUTONOMY NEW BATTERY 100% CHARGED (for a roller shutter with the following dimensions):

- H 1.2m x L 1.2m (3 Nm) = **103 days / 469 consecutive cycles**
- H 2.2m x L 1.2m (6 Nm) = **65 days / 203 cconsecutive cycles**
- H 2.2m x L 2,2m (10 Nm) = **45 days / 120 consecutive cycles**

## CHARGING TIME TO DO 2 CYCLES / DAY (1 cycle = 1 up and 1 down movement)

| Maximum level sunshine per season | Torque | Charging Time |
|---|---|---|
| **SUMMER** Direct rays 1000W / m² | **3 Nm** | 15 min |
| | **6 Nm** | 20 min |
| | **10 Nm** | 30 min |
| **SPRING / AUTOMN** Scattered clouds 500W / m² | **3 Nm** | 45 min |
| | **6 Nm** | 1h |
| | **10 Nm** | 1h30 |
| **WINTER** Diffuse rays 200W / m² | **3 Nm** | 1h20 |
| | **6 Nm** | 1h40 |
| | **10 Nm** | 2h30 |

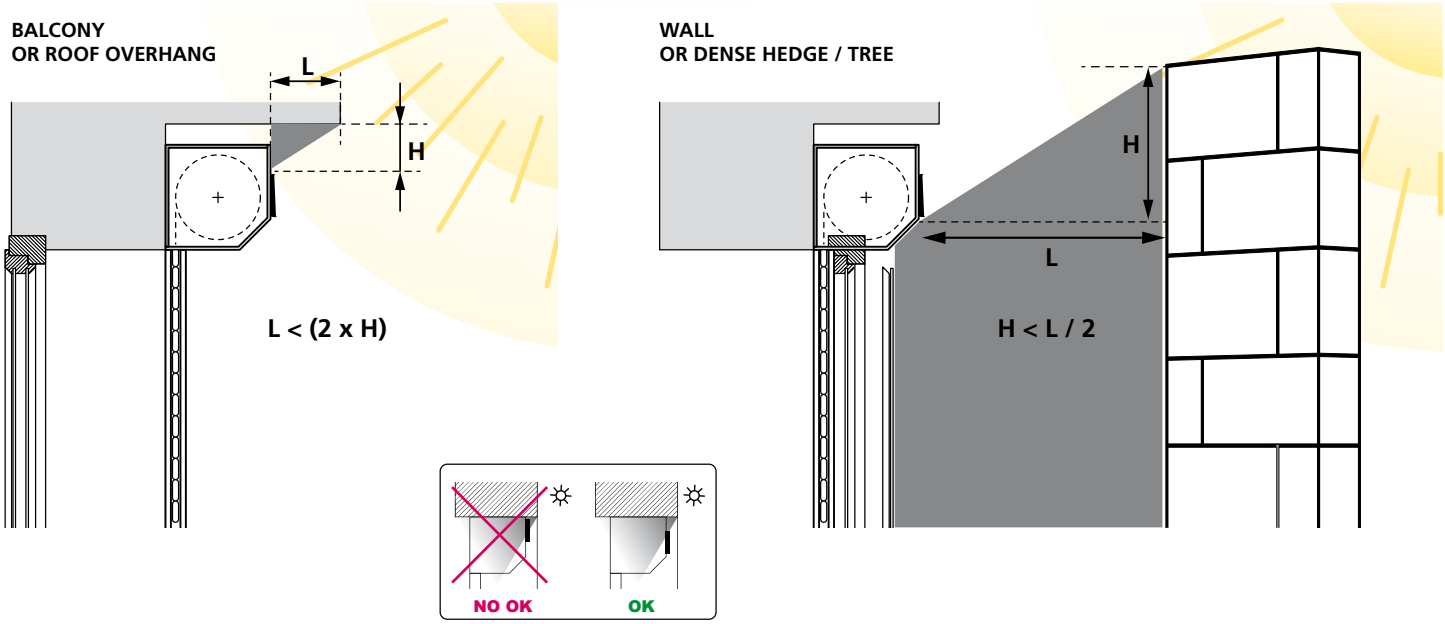
# 2 INSTALLATION

⚠ **Instructions which must be followed by the drive and home automation professional installing the drive:**

- Methods of wiring are given by national standards or IEC60364 standard.
- Cables which pass through a metal wall must be protected and isolated using a sheath or sleeve.

## 1 ■ RECOMMENDATIONS FOR INSTALLATION OF THE SOLAR PANEL AND THE BATTERY

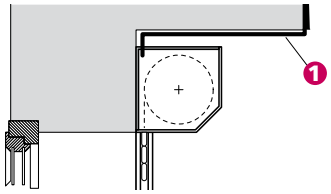
- Charge the battery before mounting or installation. The battery must be accessible in order to carry out possible recharging.
- The battery must be sheltered from the rain (IPX4) and from the sun rays (UV)*, (*naked battery only).
- SIMU recommends placing the connectors between the end piece and the flange and fixing the cables inside the roller shutter box. The cables and connectors must be protected from the roller shutter movement.
- Motor, panel and battery must be installed on the same side of the roller shutter (either left or right).
- The solar panel should always be placed so as to be exposed as possible to the sun's rays.

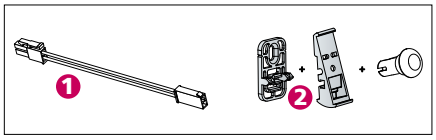


## ORIENTATION OF THE SOLAR PANEL

- The system is designed to work in all orientations with correct exposure to the sun.
- For a 10Nm motor, with orientation North, limit the use to 1 cycle per day or be sure to deport it with the kit (extension cable and bracket)

In order to optimize the exposure of the panel to the sun, remember to move the panel thanks to the kit (extension cable 1 and brackets 2) and to protect the connectors.

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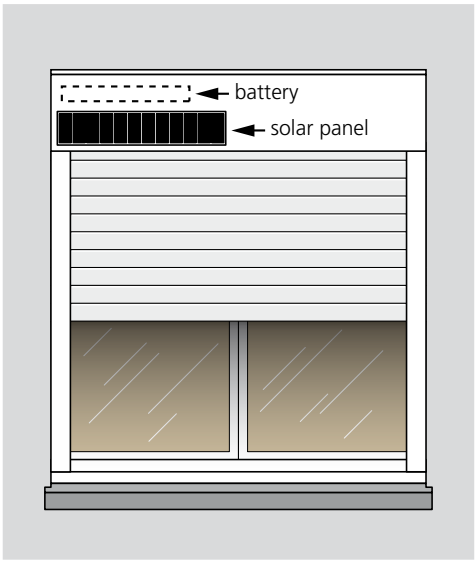
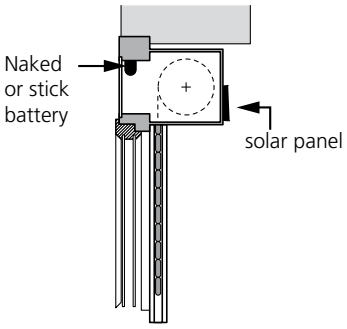
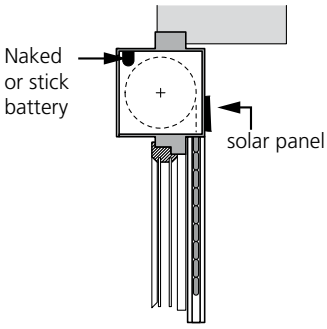



Roller shutter box **IN FRONT OF** the casing

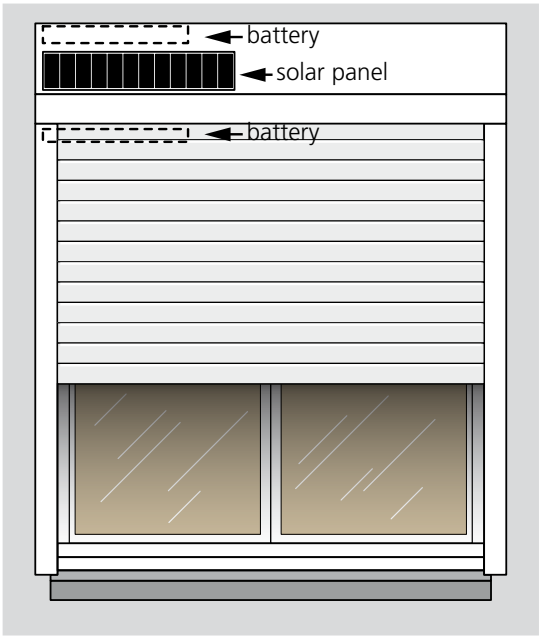


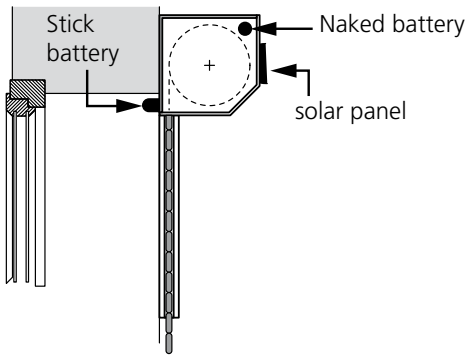

Roller shutter box **ON** the casing




Ensure that the installation provides access to the battery

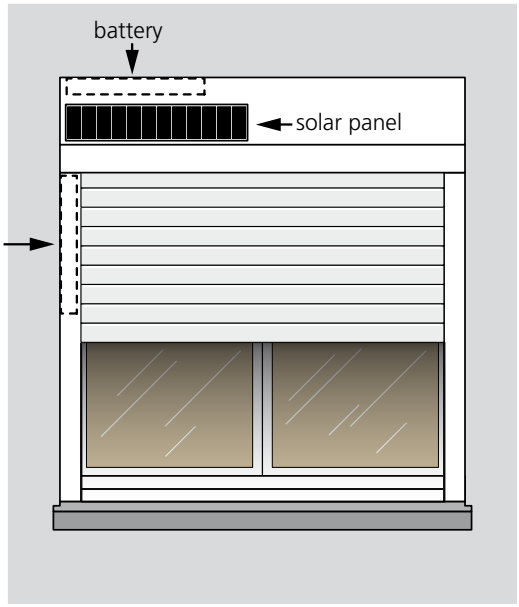
## RENOVATION ROLLER SHUTTER BOX - wall-mounted shutter housing and slide rails, exterior rolling

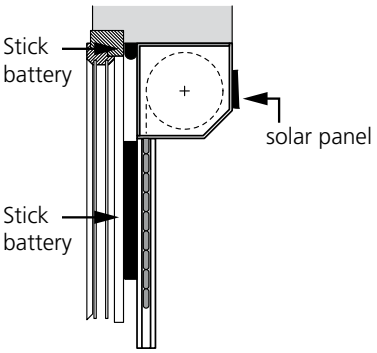


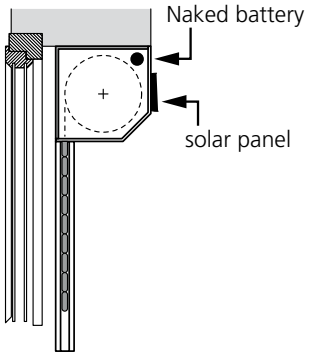




Ensure that the installation provides access to the battery

## RENOVATION ROLLER SHUTTER BOX - Shutter housing and slide rails in the bay, exterior rolling

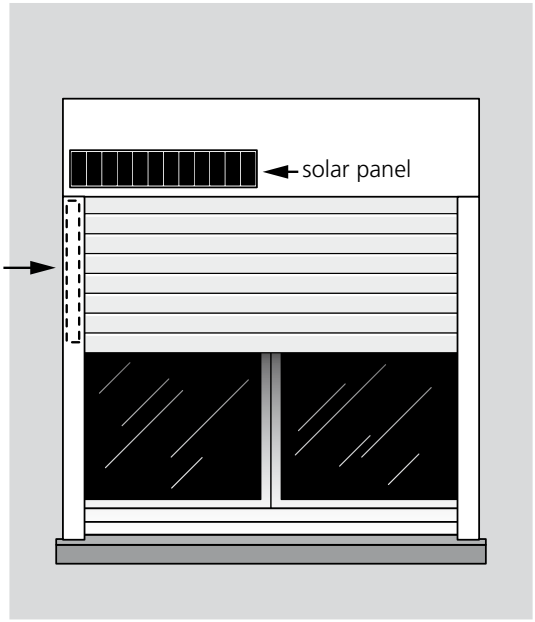


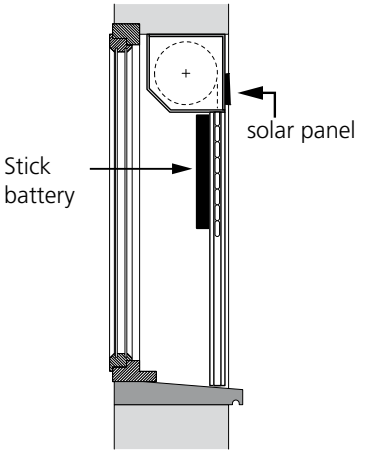



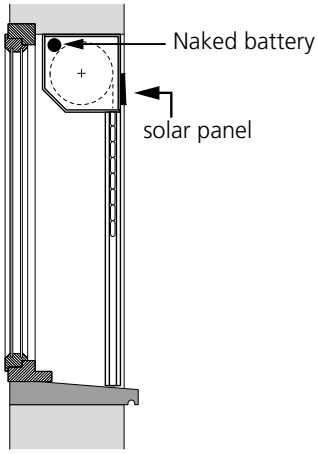




Ensure that the installation provides access to the battery

## RENOVATION ROLLER SHUTTER BOX - Shutter housing and slide rails in the bay, interior rolling

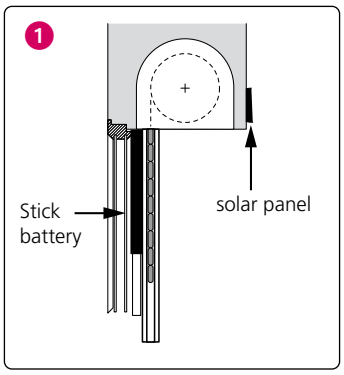


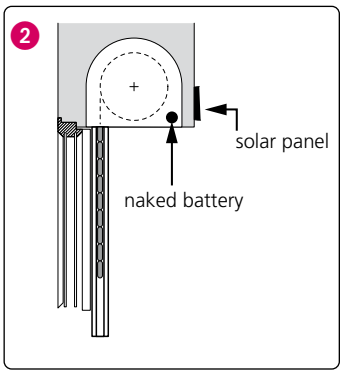




Ensure that the installation provides access to the battery

## TUNNEL BOX



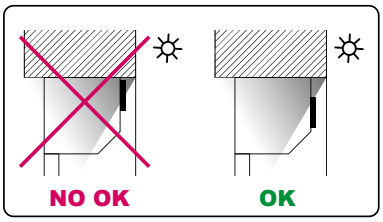




Battery along the slide 1,
or in the roller shutter box 2

Ensure that the installation provides access to the battery

## 2 ■ INSTALLATION OF THE SOLAR PANEL

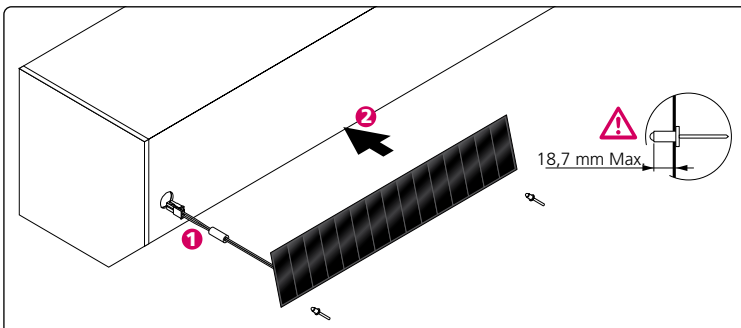
⚠ Ensure that the cables are not damaged during the installation. Smooth the edges of all the drilled holes.
Do not put anything, on the solar panel, that would filter the sun's ray (e.g.: paint,…)
Caution! The cables and connectors must be protected from the roller shutter movement.




- The solar panel should always be placed on the shutter housing so as to be as exposed as possible to the sun's rays.
- Keep the photovoltaic cells clean by cleaning them with clean water using a soft cloth to avoid scratching them (once a month).
- In Winter, do not allow snow to build up on the panel.

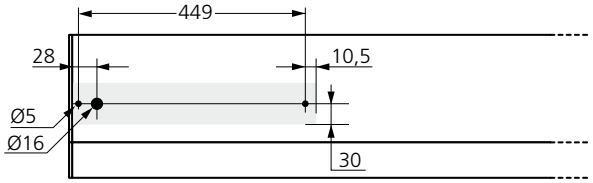
### PANEL FASTENING BY RIVETS

Holes in the box and console (WARNING: do not drill either the panel)

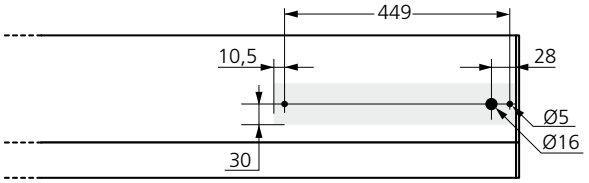



1. Pass the wires of the panel inside the box (Ø 16 hole) with the protective foam.
2. Fix the panel using aluminium pop rivets (Ø 4,8 inside holes Ø 5)

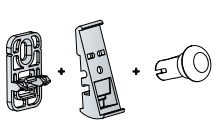
Drilling measurements (mm) for panel placed **to the left** of the box:




Drilling measurements (mm) for panel placed **to the right** of the box:

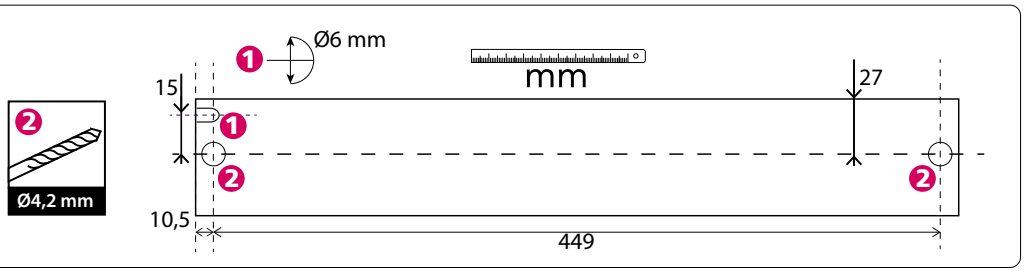


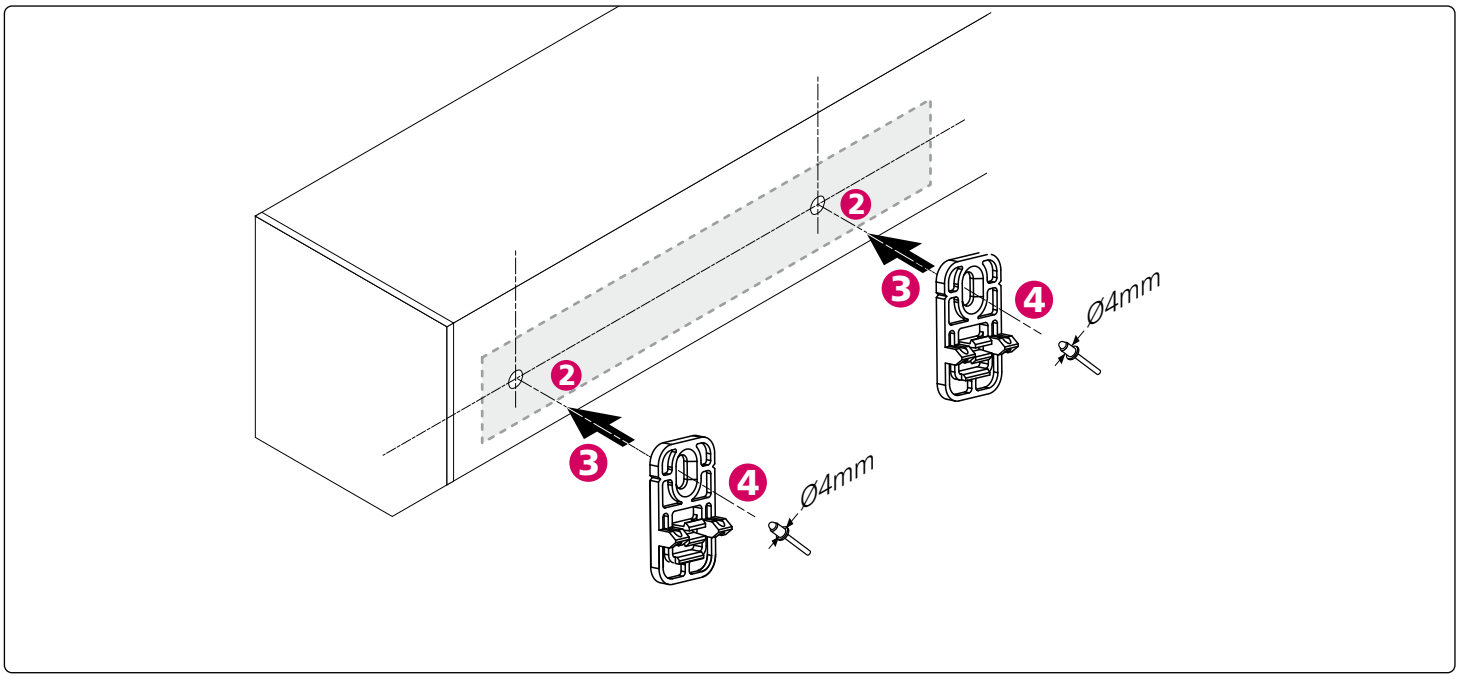

### SOLAR PANEL FASTENING WITH INCLINED BRACKETS ON THE BOX



- Possibility to fix the panel with the clip-on brackets
- Possibility of installing the panel vertically along the slide

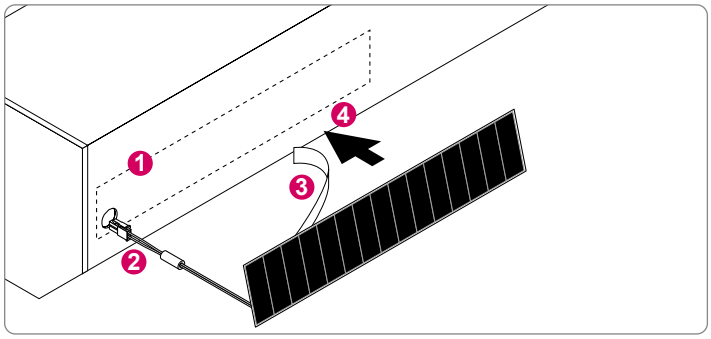
⚠ **Please protect the cable with a plastic sheath**

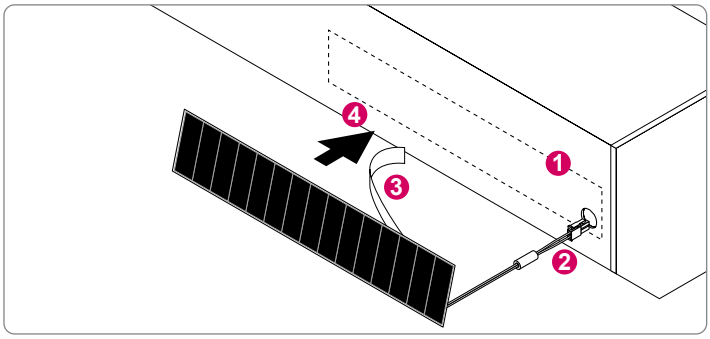





## FASTENING THE SOLAR PANEL BY GLUING

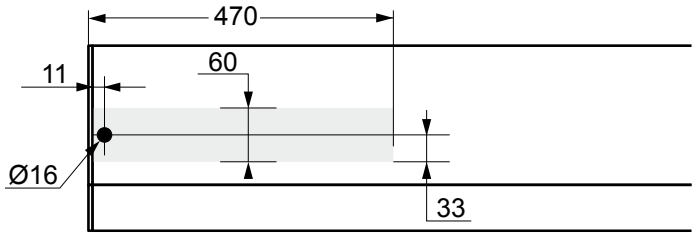
**Holes in the box and console (WARNING: do not drill either the panel)**



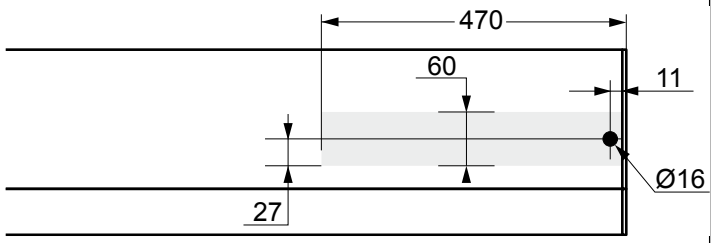




Use a solvent containing a mixture of isopropyl alcohol and water (50/50) or a heptane-based solvent.
The surfaces to be glued must be dry and clean.
- Clean the surfaces to be glued with solvent and wipe.
- Pass the wires of the panel inside the box (Ø 16 hole) with the protective foam.
- Remove the protective paper from the adhesive.
- Fix the panel to the box applying uniform amount of pressure.

Drilling measurements (mm) for panel placed **to the left** of the box:




Drilling measurements (mm) for panel placed **to the right** of the box:



## 3 ■ INSTALLATION OF THE BATTERY

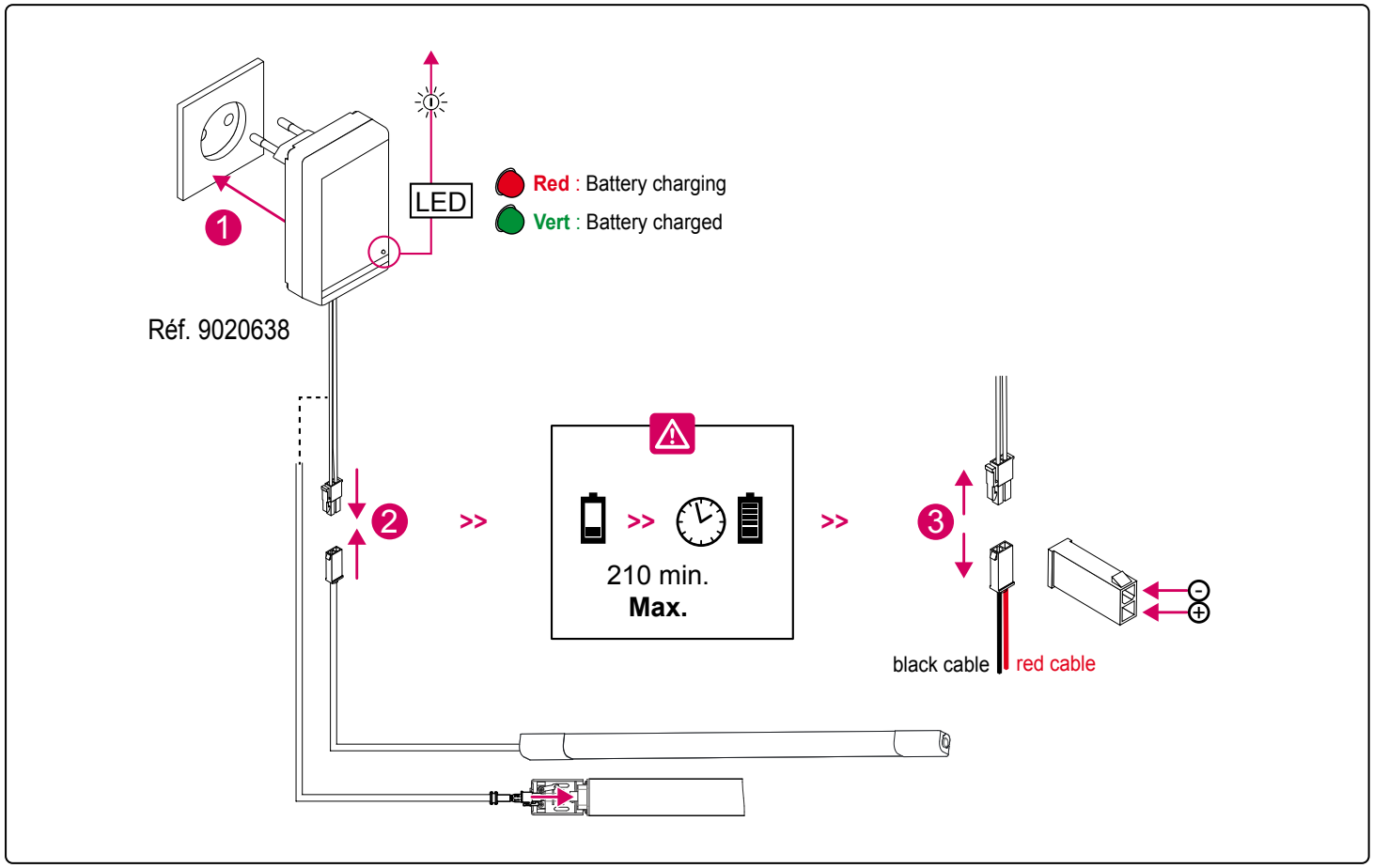
**RECOMMENDATIONS:**

⚠ **- Charge the battery before use**

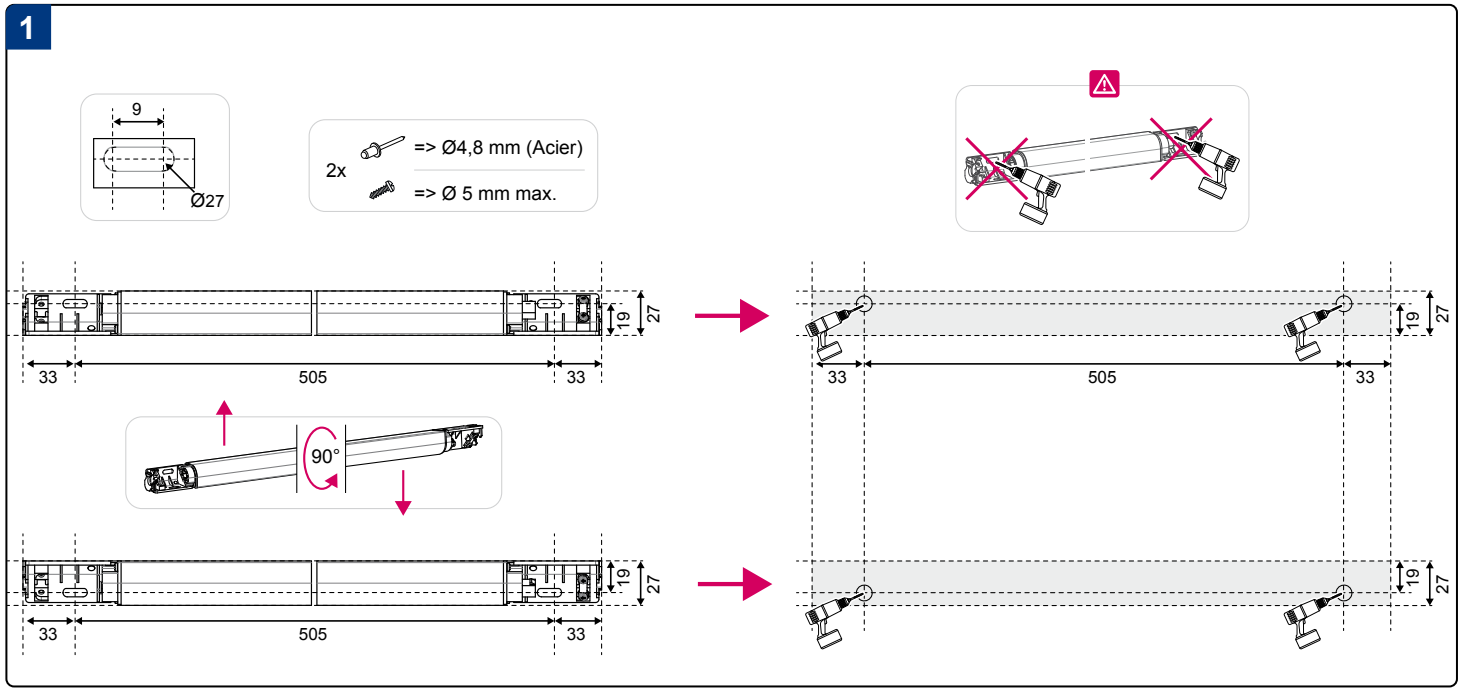
- Do not charge at a temperature above 70°C. Never leave a battery in a discharged condition. Do not use any charger other than that specifically for use with the equipment. Respect the plus (+) and minus (-) of the battery and the equipment. Do not cause short-circuit at the battery terminals, risks of burns or explosions. Do not leave a battery on prolonged charge when not in use after extended periods of storage.

- The battery must be accessible in order to carry out possible recharging.
- Install at least 1m from any flame source.
- Do not expose cells or batteries to heat or fire. Risks of explosions.
- Do not dismantle, open or shred secondary cells or batteries. Do not subject cells or batteries to mechanical shock. In the event of the cell leaking, do not allow the liquid to come in contact with skin or eyes. If contact has been made, wash the affected area with copious amount of water and seek medical advice.
- Keep away from children.
- Methods of wiring are given by national standards or IEC60364 standard.
- Battery must be sheltered from the rain (IP X4). Keep cells and batteries clean and dry.
- The battery must be replaced by a professional with the identical model.
- Do not dispose of this product with household waste. Please take it in a collection point or an approved centre to ensure it is recycled correctly.

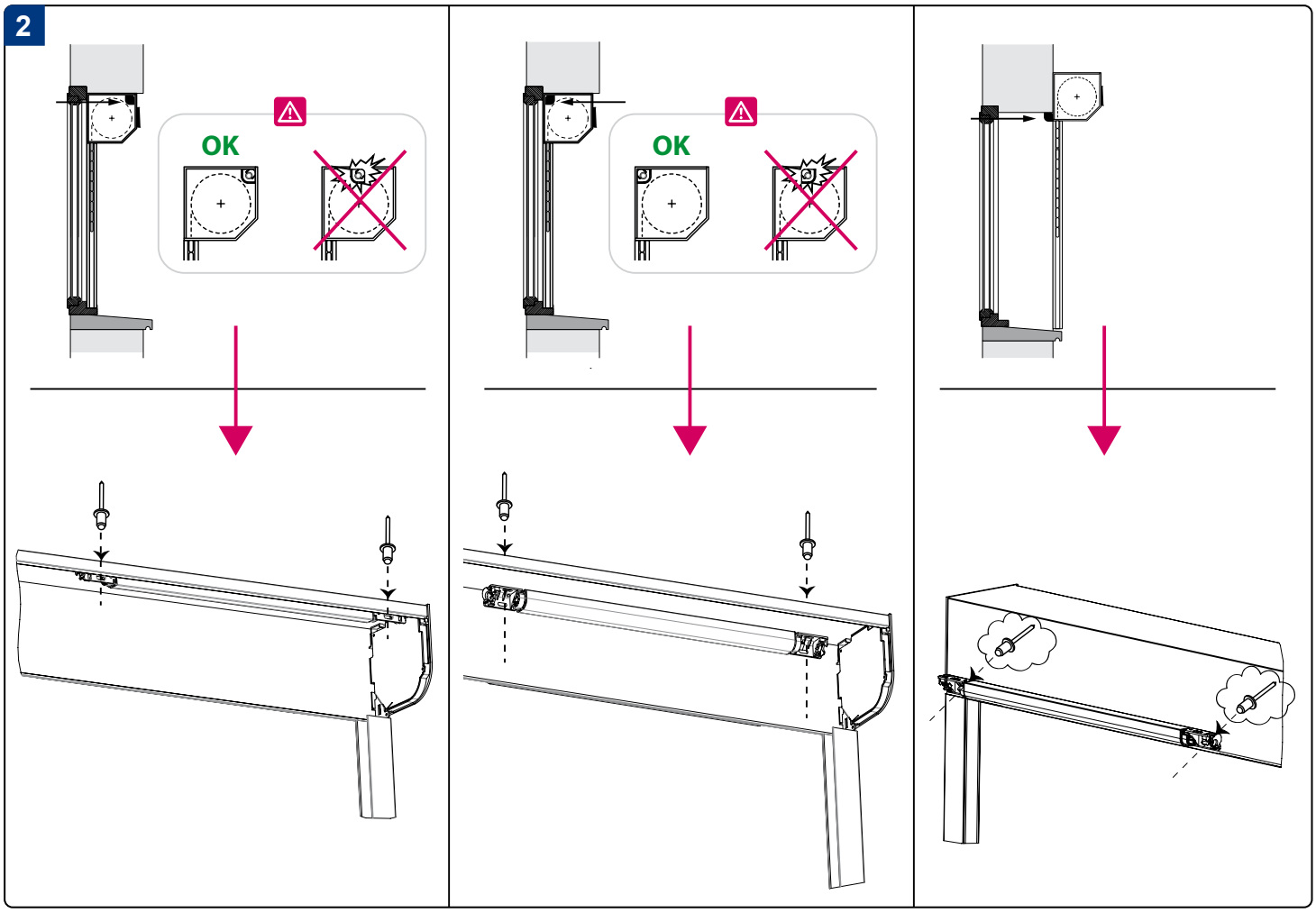
## CHARGING OF THE BATTERY (ALU STICK OR NAKED BATTERY)

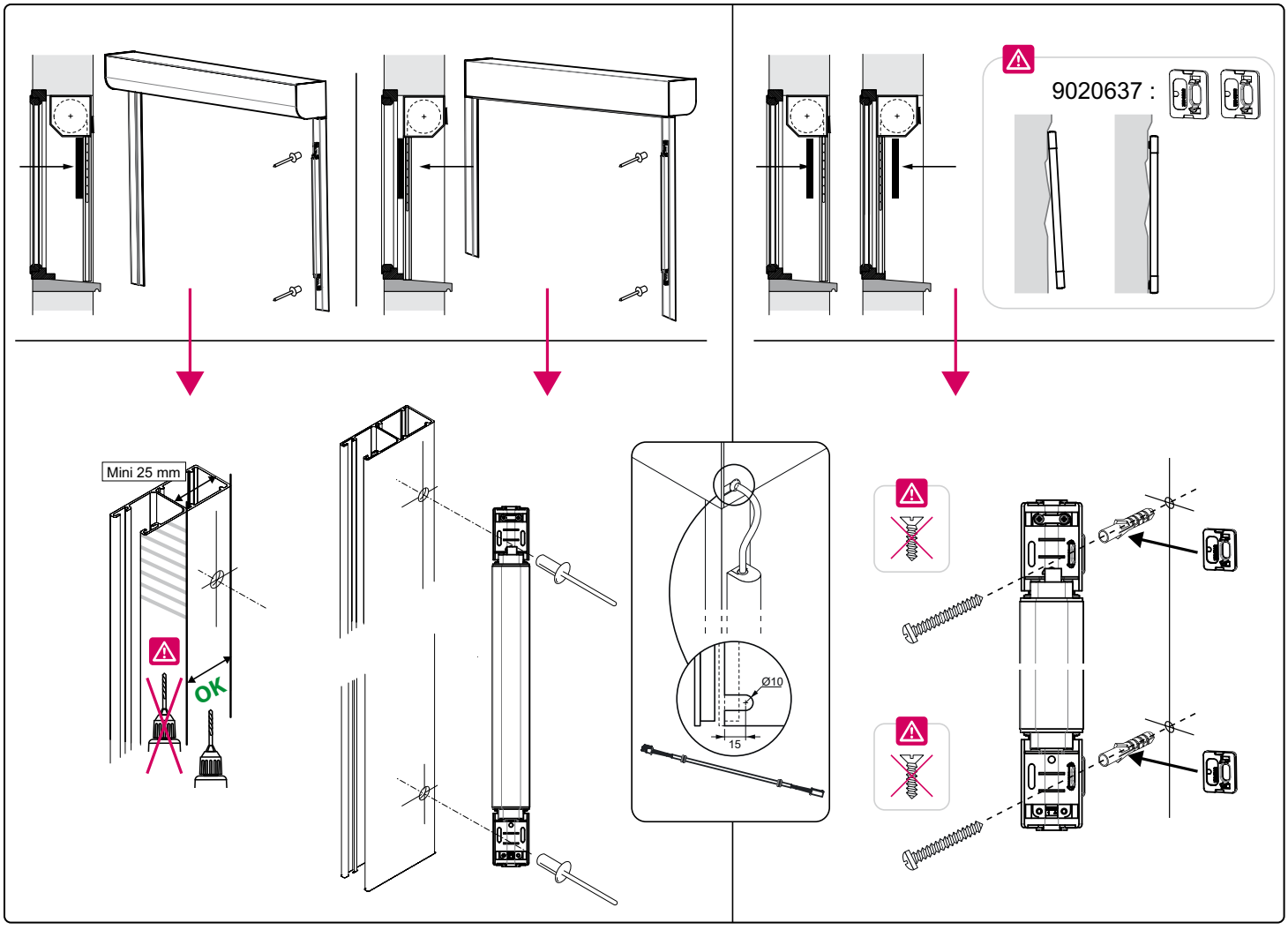



## FASTENING THE ALU STICK BATTERY BY SCREWING / RIVETING



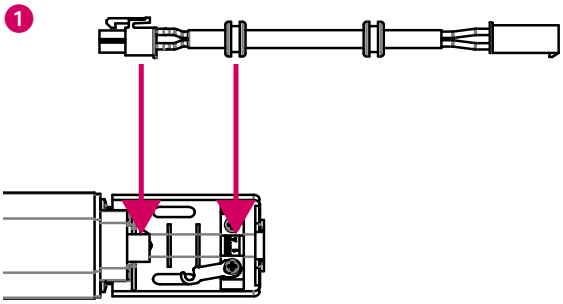
2



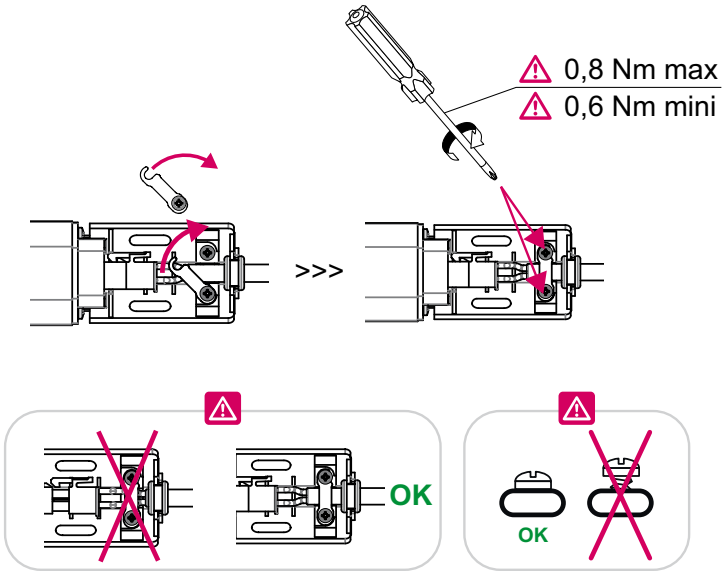



3

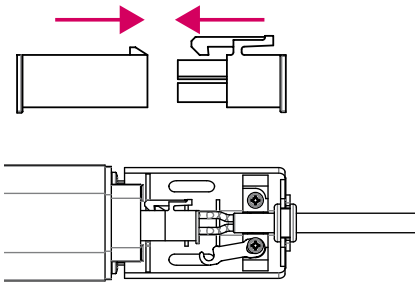
1



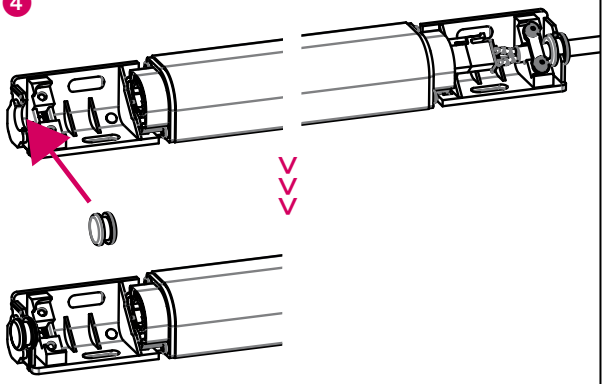
2




3



4



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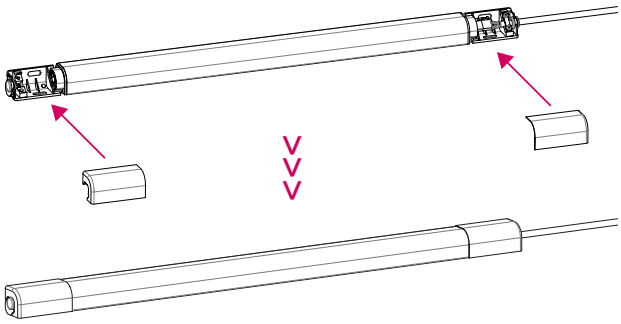
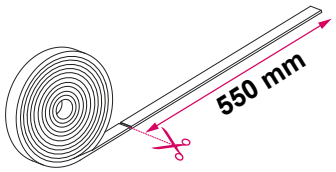


## FIXING THE ALU STICK BATTERY BY GLUING

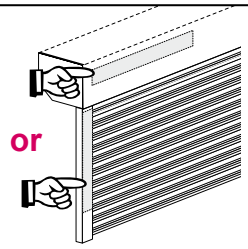
- The surfaces to be glued must be dry and clean.
- The ambient temperature during gluing must be between 20°C and 38°C.
- For gluing: we recommend that users carry out industrial tests under the exact conditions of the intended application and ensure that our product meets its constraints. In case of incertainty, prefer the solution by screwing/riveting.

**1**



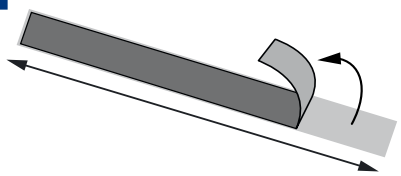

**20 x 550 mm**

**2**

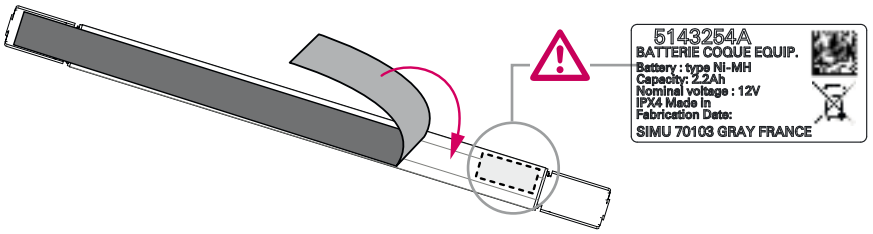



Clean with a degreasing product and wipe the gluing surface.

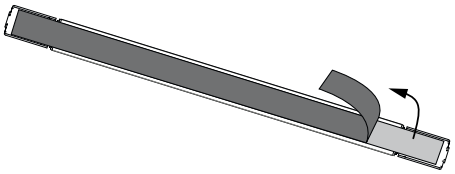
**3**



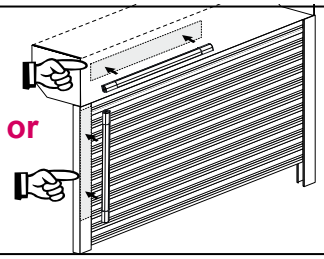
**4**



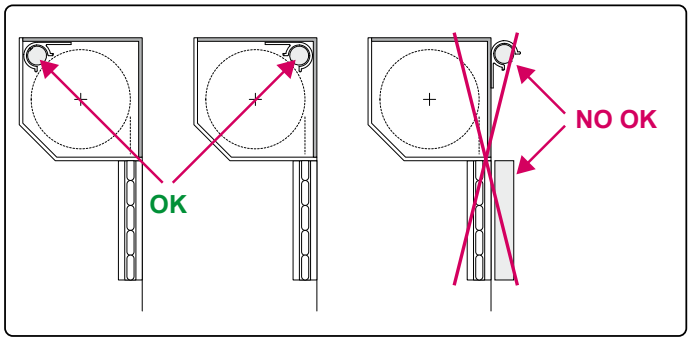

**5**

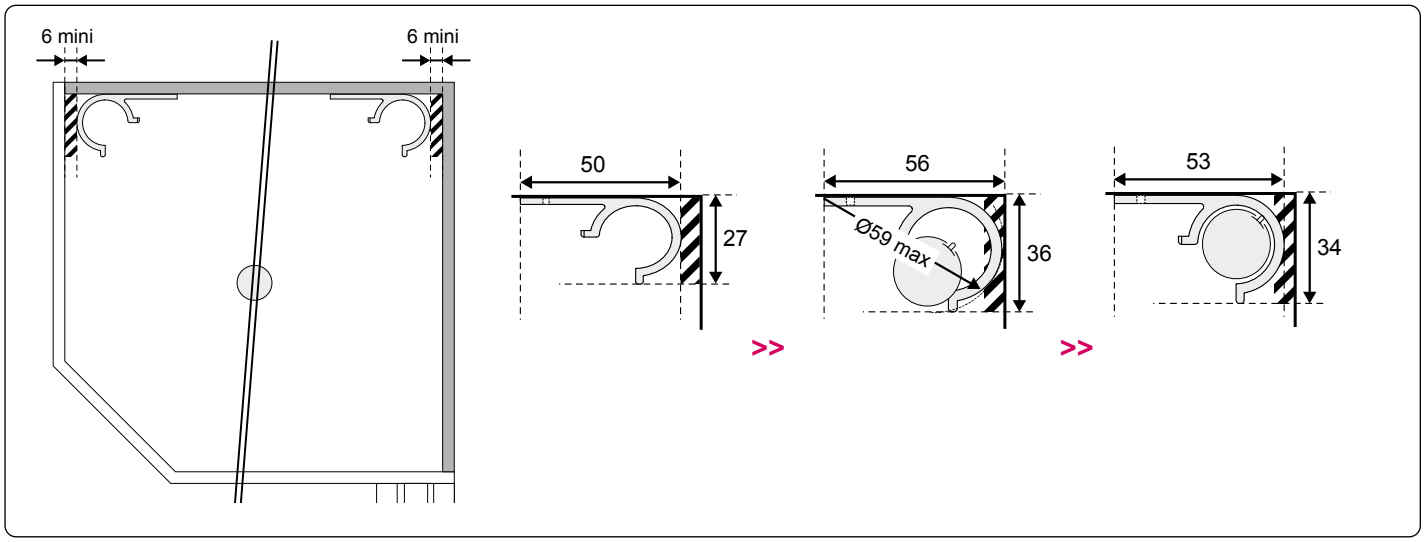


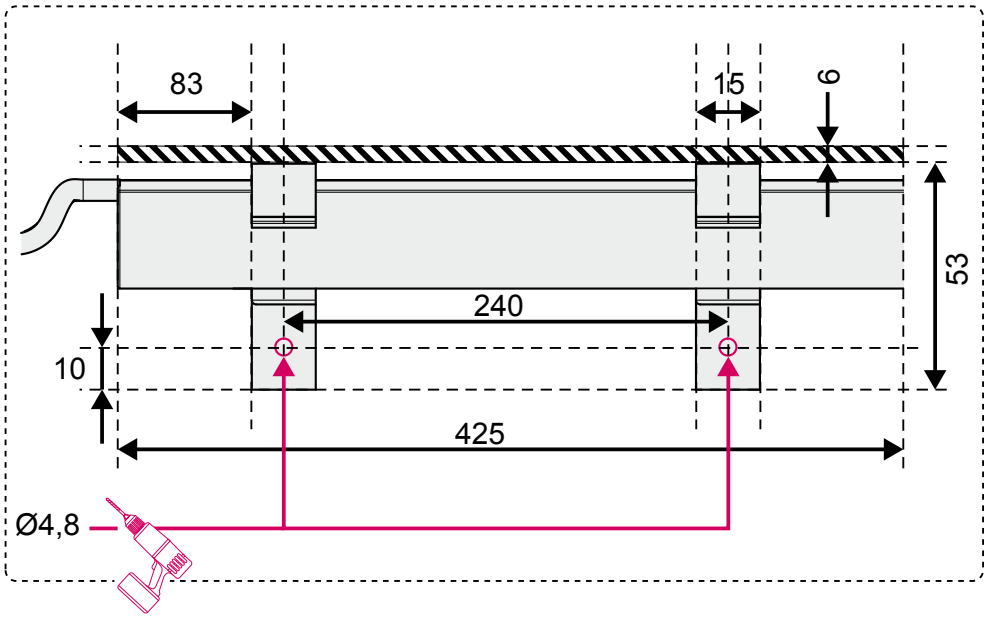
**6**

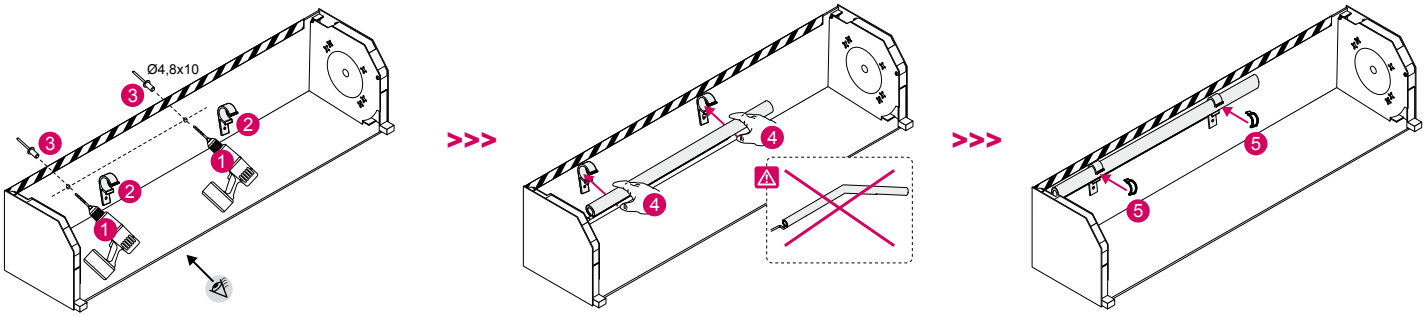



# FASTENING NAKED BATTERY



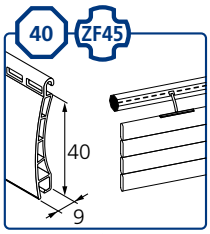
## 4 ■ INSTALLATION OF THE T3.5 EHz DC MOTOR

⚠ - The cable for the motor cannot be removed. If it is damaged, return the drive to the After-Sales Department.
- Keep a minimum distance of 20 cm between 2 motors T3.5 EHz DC.
- Keep a minimum distance of 30 cm between one motor T3.5 EHz DC and one Hz transmitter.

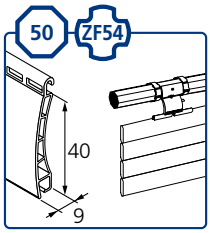
## MOTOR CHOICE

**Facade roller shutter application:**

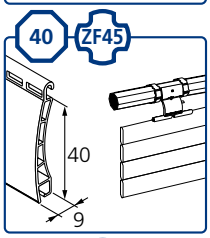
The maximum rollable heights are:
- 1600 mm for a 3 Nm motor
- 2400 mm for a 6 Nm motor
- 2700 mm for a 10 Nm motor



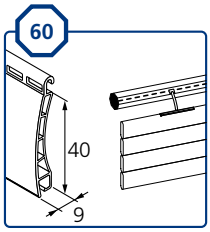

| SHUTTER HEIGHT (m) | SHUTTER WEIGHT (kg) motors : 3Nm | 6Nm | 10Nm |
|---|---|---|---|
| 1,60 | 8 | 17 | 28 |
| 2,40 | - | 15 | 25 |
| 2,70 | - | - | 23 |



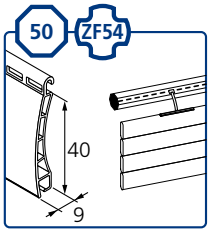

| SHUTTER HEIGHT (m) | SHUTTER WEIGHT (kg) motors : 3Nm | 6Nm | 10Nm |
|---|---|---|---|
| 1,60 | 7 | 13 | 22 |
| 2,40 | - | 12 | 20 |
| 2,70 | - | - | 18 |



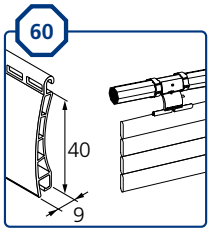

| SHUTTER HEIGHT (m) | SHUTTER WEIGHT (kg) motors : 3Nm | 6Nm | 10Nm |
|---|---|---|---|
| 1,60 | 8 | 16 | 28 |
| 2,40 | - | 15 | 26 |
| 2,70 | - | - | 23 |




| SHUTTER HEIGHT (m) | SHUTTER WEIGHT (kg) motors : 3Nm | 6Nm | 10Nm |
|---|---|---|---|
| 1,60 | 8 | 15 | 25 |
| 2,40 | - | 14 | 24 |
| 2,70 | - | - | 23 |




| SHUTTER HEIGHT (m) | SHUTTER WEIGHT (kg) motors : 3Nm | 6Nm | 10Nm |
|---|---|---|---|
| 1,60 | 8 | 16 | 27 |
| 2,40 | - | 15 | 25 |
| 2,70 | - | - | 24 |

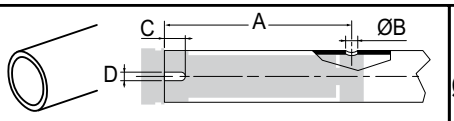



| SHUTTER HEIGHT (m) | SHUTTER WEIGHT (kg) motors : 3Nm | 6Nm | 10Nm |
|---|---|---|---|
| 1,60 | 6 | 13 | 22 |
| 2,40 | - | 12 | 20 |
| 2,70 | - | - | 18 |

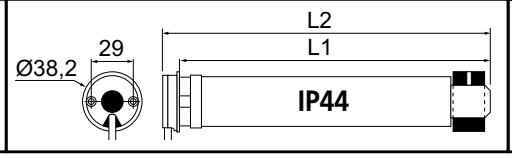
*The abacuses and limit of use are given for information only and vary according to characteristics of each installation (especially: type of curtain, friction, installation conditions, supply voltage variations, torque variations due to kinematics of each roller shutter...). Special attention must also be paid to the recommendations for using tubes (consult using abacuses of profilers). Each roller shutter manufacturer will therefore have to carry out tests to determine their own abacuses.*

**Roof roller shutter application** (3 and 6 Nm):
The necessary torque for the roof roller shutter motorization has to be determined by the roller shutter manufacturer by taking into account the following parameters: compensation torque, friction, dimensions and weight of the shutter, winding diameter, roller shutter tilt,...

## DRILLING OF THE TUBE

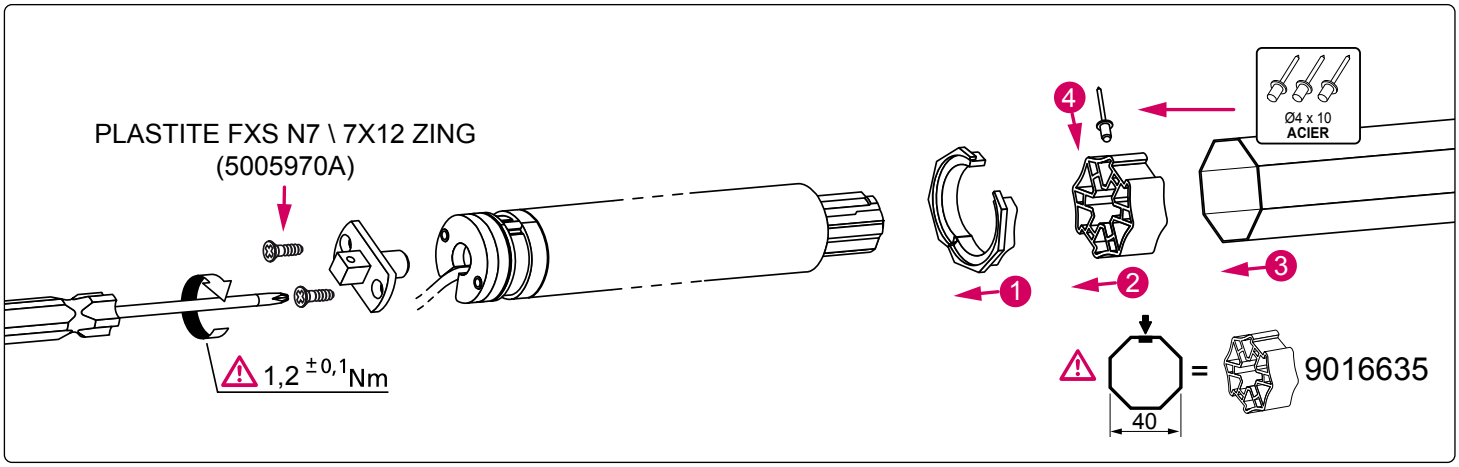




| | Ø min. (mm) | A (mm) | ØB (mm) | C (mm) | D (mm) | L1 (mm) | L2 (mm) |
|---|---|---|---|---|---|---|---|
| T3.5 EHz DC 12 VDC | 37 | 433 | 4,2 | 8 | 5,5 | 457 | 470 |



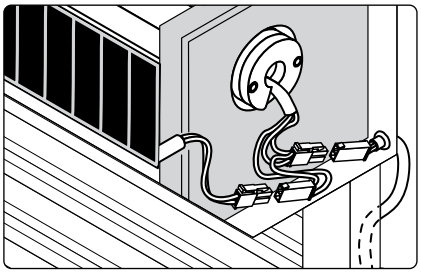

3Nm - 6Nm - 10Nm

## MOUNTING

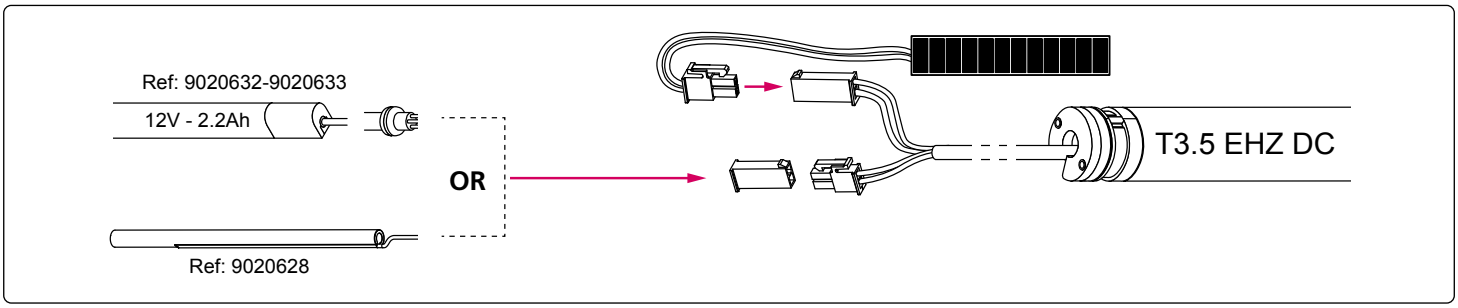



## AUTOSUN 2 SYSTEM CONNECTION

⚠ **Do not make the connections at this stage.**

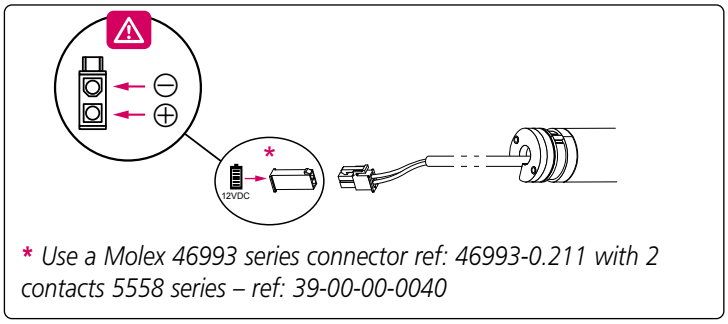


SIMU recommends to place the connectors between the console and the plate and fix the cables inside the roller shutter box. The cables and connectors must be protected from the roller shutter movements.

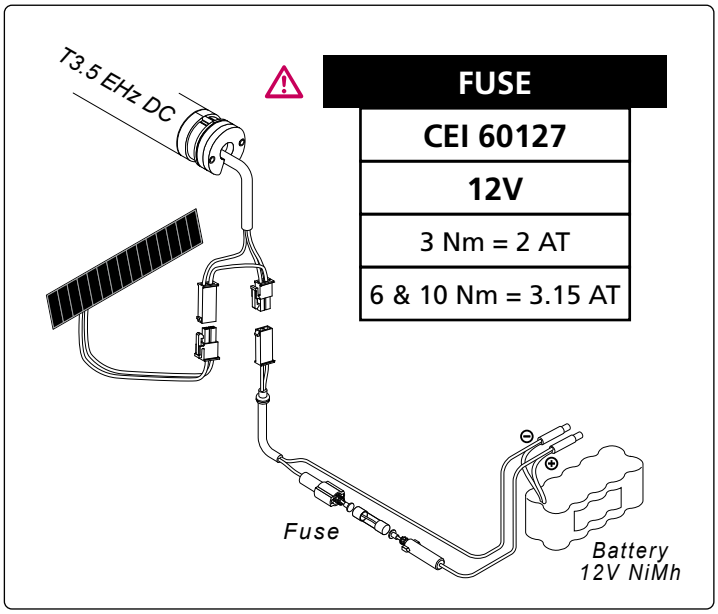



**Recommendations for use of a power supply (battery or power supply) other than SIMU battery:**

- Voltage at the terminals of the motor must be in the range 12.5V-14V (±0,5V), for normal using.
- Output current: 5A to 12V (starting current: 7A during 400ms with a voltage drop at 2V max.
- It must in no case exceed 15V, otherwise the motor may be irreparably damaged.
- The voltage at the terminals of the motor must never drop below 9V during the operation.
- The wire between the motor and the power supply must not exceed 1m with the section of at least 0,75mm².
- Regulated / Filtered power supply (in this case, do not connect the solar panel).
- Each roller shutter manufacturer will have to test the products.




** Use a Molex 46993 series connector ref: 46993-0.211 with 2 contacts 5558 series – ref: 39-00-00-0040*



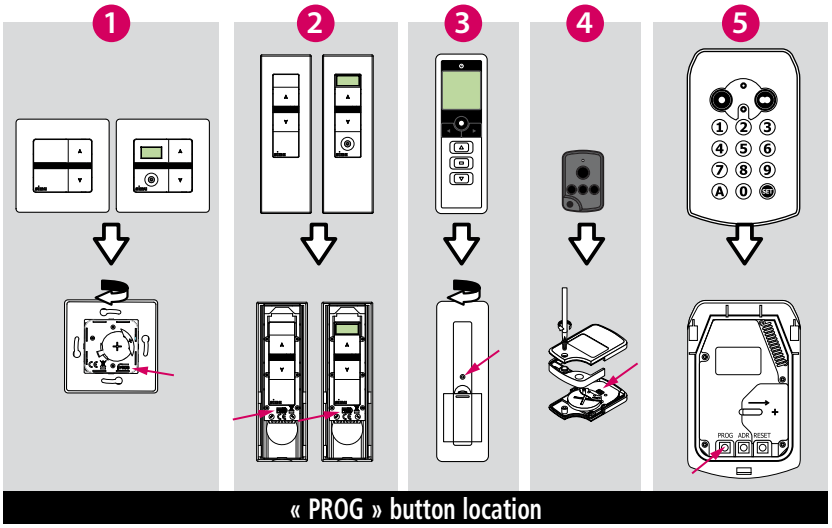
# 5 ■ AUTOSUN 2 SYSTEM PROGRAMMING

**COMPATIBLE TRANSMITTERS:**

1. Wall transmitter Hz: 1 & 5 channels / Memory Hz
2. Mobile transmitter Hz: 1 & 5 channels
3. Mobile transmitter Hz: COLOR Multi 16 channels / TIMER Multi / TIMER Easy
4. Remote control TSA+
5. SA Hz radio keypad

**TRANSMITTER RANGE:**

- **150m** in open field and **15m** through 2 reinforced concrete walls for the transmitters 1
- **200m** in open field and **20m** through 2 reinforced concrete walls for the transmitters 2, 3, 4 & 5

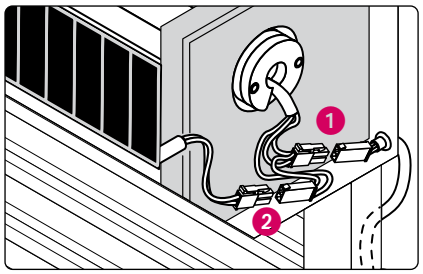



Namely: **12 transmitters max. per motor.**
Keep the transmitters away from any metal surfaces or structures that could affect their functioning (loss of range).

## 5.2 - END LIMIT ADJUSTMENT

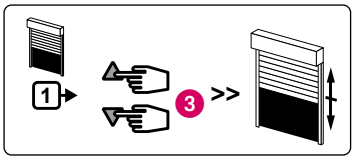
⚠ If the installation includes several motors, only one motor should to be powered during this programming procedure 5.2.1. It will eliminate interferences with the other motors during the procedure.

### 5.2.1 - Learning mode




1 Connect the 12V battery to the motor.

2 Then, connect the 12V solar panel to the motor. **Go to next step.**




3 Press simultaneously on the "UP" and "DOWN" buttons of the Hz transmitter.
The motor turns 0.5 second in one direction, then in the other.

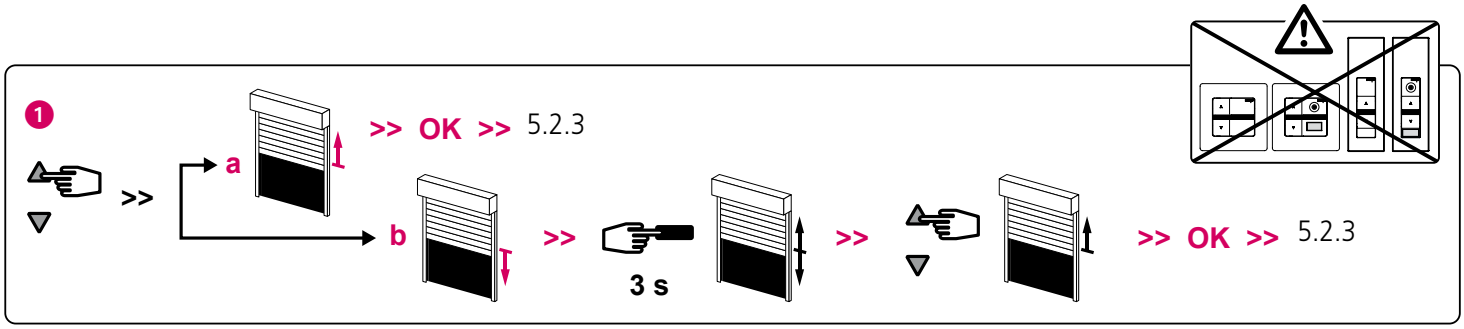
This transmitter now commands the motor in unstable mode. During the first three seconds of running during a Up or Down movement, the motor will operate with slower speed to ease the limit setting. **Go to next step.**

### 5.2.2 - Checking the rotation direction

1 Press the "UP" button of the transmitter:

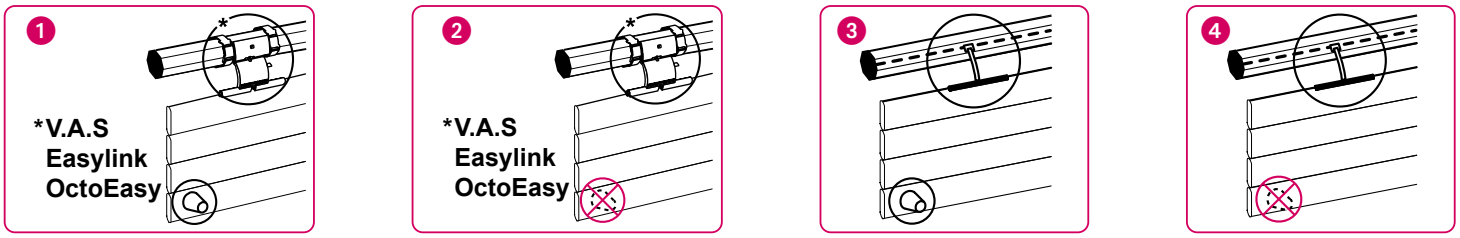
**a-** If the motorized tube runs in the Up direction, **move to next stage 5.2.3**

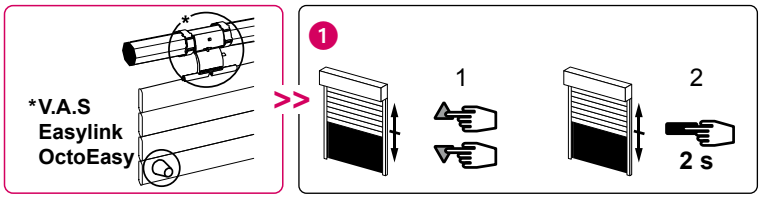
**b-** If the motorized tube runs in the Down direction, reverse the rotation direction by pressing the "STOP" button for at least 3 seconds. The motor will run for 0,5 second in one direction, then in the other direction, **move to the stage 5.2.3**



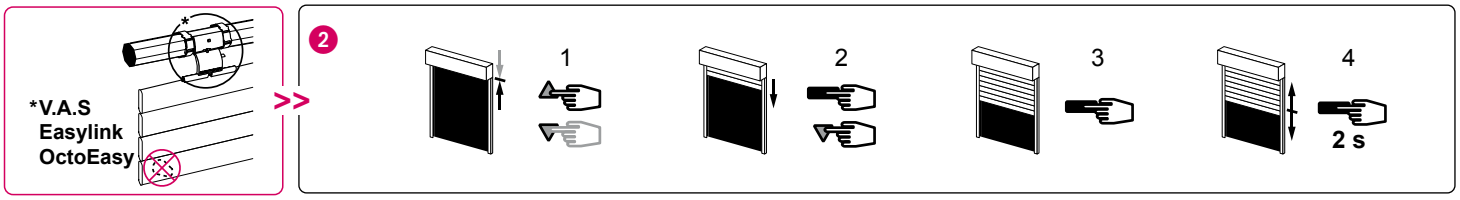
## 5.2.3 - End limit adjustment

The end limits of the T3.5 EHz DC are adjusted in 4 different ways (1, 2, 3 or 4) depending on the following conditions : Bottom slat stop or not, rigid* or flexible link between the rolling shaft and the shutter.

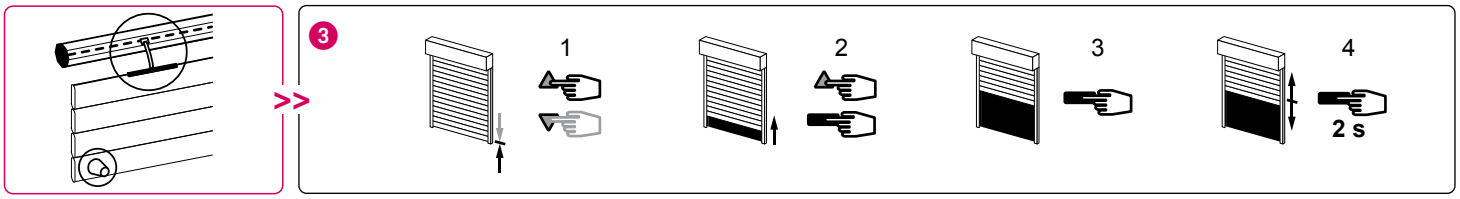


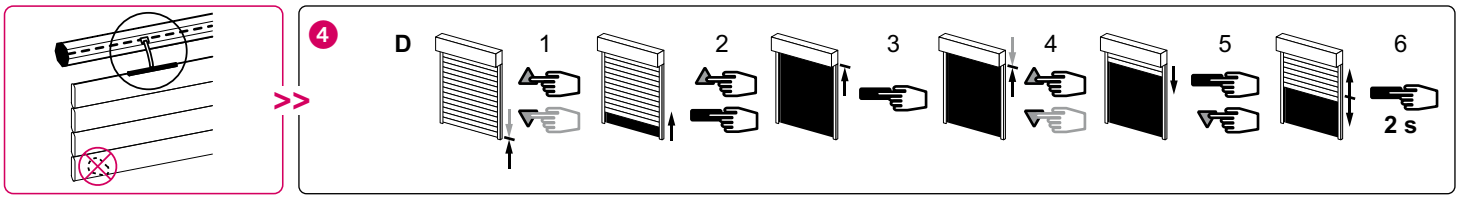

1- Simultaneously press the "UP" and "DOWN" buttons of a Hz transmitter. The motor will run for 0.5 second in one direction and then in the other.
2- Press the "STOP" button for 2 s. The motor will run for 0.5 second in one direction and then in the other. The operation is completed. **Go to step § 5.3**




1- Position the motor on the Up end limit by using the buttons "UP" or "DOWN".
2- To memorize the UP end limit position, press simultaneously the buttons "STOP" and "DOWN".
The motor will run automatically in the down direction.
3- Press the "STOP" button to immobilize the motor.
4- Press 2 seconds the "STOP" button to validate the setting. The motor will run for half a second in one direction, then in the other direction. The operation is completed. **Go to step § 5.3**




1- Position the motor on the Down end limit by using the buttons "UP" or "DOWN".
2- To memorize the Down end limit position, press simultaneously the buttons "STOP" and "UP".
The motor will run automatically in the UP direction.
3- Press the "STOP" button to immobilize the motor.
4- Press 2 seconds the "STOP" button to validate the setting. The motor will run for 0.5 second in one direction, then in the other.
The operation is completed. **Go to step § 5.3**

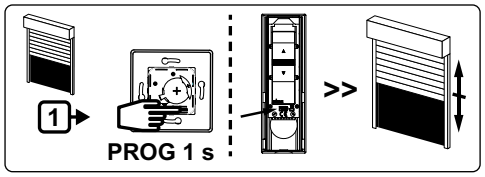



1- Position the motor on the Down end limit by using the buttons "DOWN" or "UP".
2- To memorize the Down end limit position, press simultaneously the buttons "STOP" and "UP".
The motor will run automatically in the Up direction.
3- When the motor arrives on the Up End limit, press the button "STOP".
4- If necessary adjust the position with the button "UP" or "DOWN".
5- To memorize the Up end limit position, press simultaneously the buttons "STOP" and "DOWN".
The motor will run automatically in the Down direction.
6- Press 2 seconds the "STOP" button to validate the setting. The motor will stop, and will run for 0.5 second in one direction, then in the other. The operation is completed. **Go to step § 5.3**

⚠ **If you do not want to use this transmitter as the individual control:**
- cut the power supply (2 seconds minimum).
- repeat the operation **5.2.1*** with a new transmitter and **then go to step §3**.

** In this case, the motor will run for 0,5 second in both directions, that means the limits setting is already done.*

## 5.3 - PROGRAMMING THE FIRST INDIVIDUAL CONTROL POINT




Press the transmitter "PROG" key for approximately one second.
The motor will run for 0.5 second in one direction and then in the other.
- Your transmitter is now programmed to control the motor in stable mode.
- After this operation it is possible for 10 minutes to put the motor in stand by mode **(see §5.4)**.

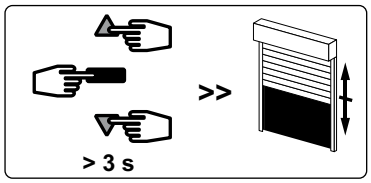
## 5.4 - MOTOR STAND BY / WAKE UP

It is possible to put the motor in stand by (radio de-activated) to:
- limit the battery discharge when the solar panel is unable to operate normally (packaging of the roller shutter, transport, storage,…)
- eliminate any risk of random use (packaging of the roller shutter, transport).

After installation of the roller shutter, normal operation will be restored by woken up the motor (radio re-activated).

### 5.4.1 - Motor's radio Stand-by:

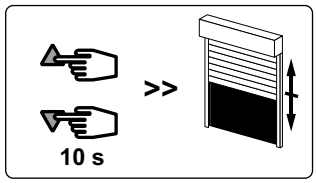
⚠ *It is only possible to put the motor in standby after programming the first control point in* **§ 5.3** *and before performing the programming of the* **§ 5.5** *(for 10 min max. or during the 10 min following a simultaneously power cut from the battery and from the solar panel).*




- Press simultaneously and for 3 seconds the "UP" / "STOP" and "DOWN" buttons from transmitter (programmed in **§ 5.3**), the motor will run for 0.5 second in one direction and then in the other direction. The motor's radio is de-activated.

### 5.4.2 - Motor's radio wake up:

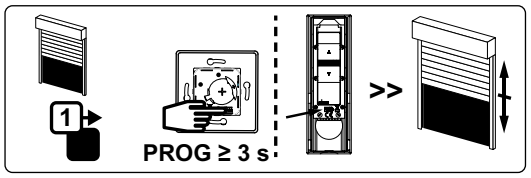
⚠ *Wake up is only possible if the solar panel is connected to the motor and illumated (diffuse sun light, flashlight,…at minimum).*




- Press simultaneously and for more than 10 seconds the "UP" and "DOWN" buttons of the programmed transmitter. The motor will run for 0.5 second in one direction and then in the other direction.

The motor's radio is waked up. The motor work now normally.

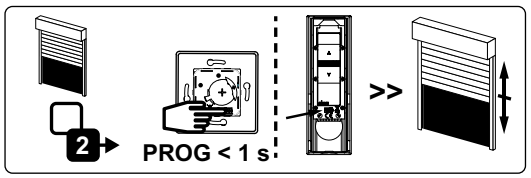
## 5.5 - PROGRAMMING A NEW (INDIVIDUAL, GROUP OR MAIN) CONTROL




### 5.5.1 - Open the memory of the receiver from the control transmitter:

- Press the "PROG" key of the transmitter for about 3 seconds.

The motor will run for 0,5 second in one direction and then in the other.




### 5.5.2 - Confirm the operation from the new transmitter you want to program:

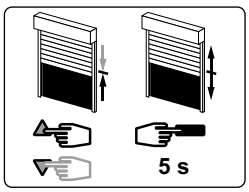
- Press the "PROG" key of the transmitter for 1 second.

The motor will run for 0,5 second in one direction and then in the other.

⚠ **- For group controls, repeat operations 5.5.1 and 5.5.2 for each motor in the group.**
**- For general controls, repeat operations 5.5.1 and 5.5.2 for each motor in the installation.**
**- To delete an transmitter from the memory of a motor, perform operations 5.5.1 with a programmed transmitter, then perform the operation 5.5.2 with the transmitter to be deleted.**

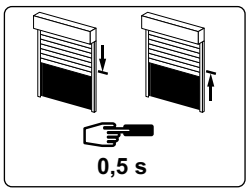
## 6 ■ RECORDING / CONTROLING / DELETING INTERMEDIATE POSITION

### 6.1 - Recording:




- Move the motor to the wanted position.
- Press 5 seconds on the « STOP » button.
The motor will run for 0,5 second in one direction and then in the other.

### 6.2 - Control:



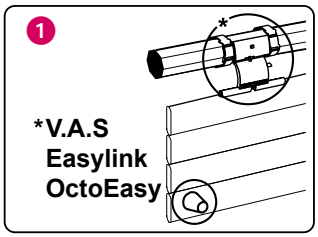

- Press the « STOP » button for 0,5 second.
The motor runs to the intermediate position.

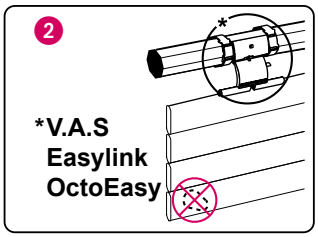
### 6.3 - Deleting:

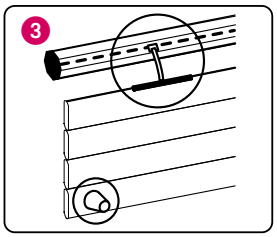
- Position the motor on the intermediate position.
- Press 5 seconds on the "Stop" button.
The intermediate position is deleted.

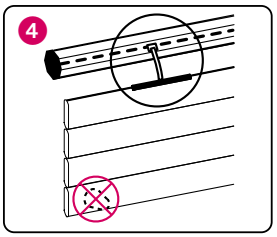
## 7 ■ RE-ADJUSTMENT OF END LIMITS AND MODIFICATION OF THE ROTATION DIRECTION

⚠ *The re-adjustment of end limits is automatic every 60 cycles (during 4 cycles) or after a battery disconnection for the following installation: UP end limit (mounting ❶ and ❸), DOWN end limit (mounting ❶ and ❷).*

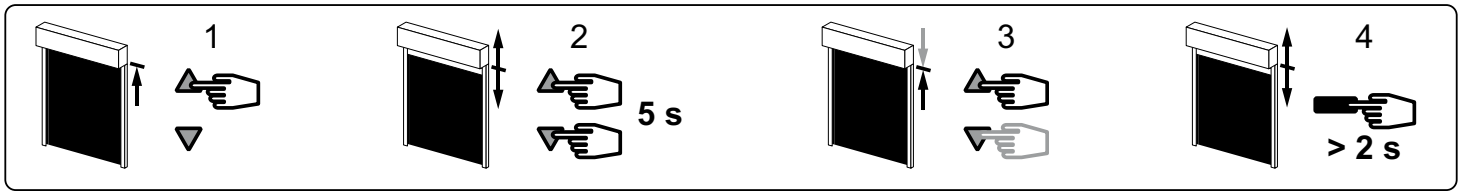


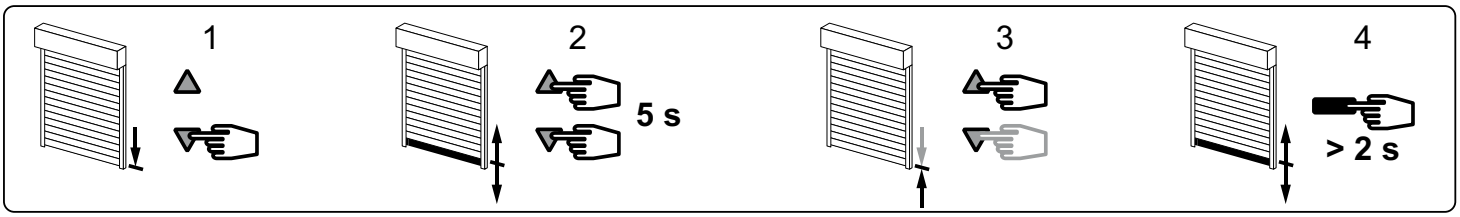




### 7.1 - Re-adjustment of Up end limit (mounting ❷ and ❹ only):




1- Move the motor to the Up end limit previously adjusted in **§5.2.3** with the "UP" button.
2- Press simultaneously for 5 seconds the "UP" and "DOWN" buttons. The motor will run for 0,5 second in one direction and then in the other direction.
3- Adjust the new position with the "UP" and "DOWN" buttons.
4- Confirm the new position by pressing 2 seconds the "STOP" button. The motor will run for 0,5 second in one direction and then in the other direction. The new end limit is memorized.

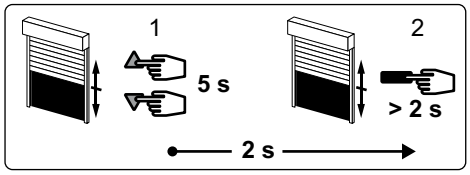
## 7.2 - Re-adjustment of Down end limit (mounting ❸ and ❹ only):




1- Move the motor to the Down end limit previously adjusted in **§5.2.3** with the "DOWN" button.
2- §Press simultaneously for 5 seconds the "UP" and "DOWN" buttons, The motor will run for 0,5 second in one direction and then in the other direction.
3- Adjust the new position with the "UP" and "DOWN" buttons.
4- Confirm the new position by pressing 2 seconds the "STOP" button. The motor will run for 0,5 second in one direction and then in the other direction. The new end limit is memorized.

## 7.3 - Modification of the rotation direction

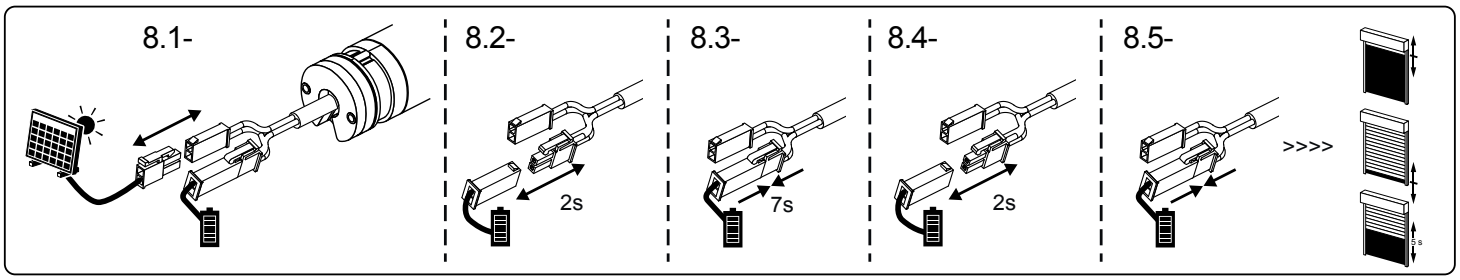
⚠ **Do not move the roller shutter to the up or down end limit position.**




1 - Press the "UP" and "DOWN" buttons simultaneously for 5 seconds.
The motor runs briefly in one direction, then in the other.
2 - Within 2 seconds, press the "STOP" button for 2 seconds.
The motor briefly runs in one direction, then in the other.
The rotation direction has been changed.

## 8 ■ CANCELLING PROGRAMMING

⚠ **During the operations in this section (§ 8), do not work on several motors at the same time.**

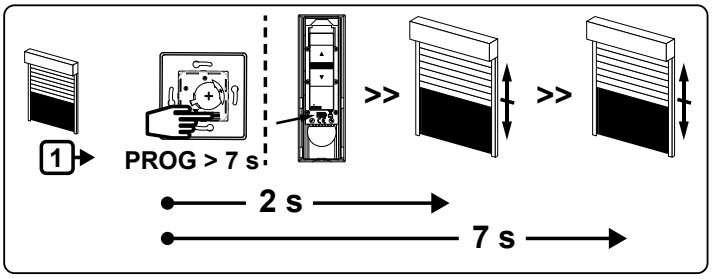



**8.1 -** Disconnect the solar panel from the T3.5 EHz DC motor
**8.2 -** Disconnect the battery from the T3.5 EHz DC motor for 2 seconds.
**8.3 -** Connect the battery to the motor for 7 seconds.
**8.4 -** Disconnect the battery from the motor for 2 seconds.
**8.5 -** Restore the power supply. *If the motor is on the end limit position (up or down), the motor will run briefly in one direction and then in the other, otherwise, the motor runs for 5 seconds in random direction.*

⚠ **It is possible to perform the double power-cut procedure directly from the solar panel's connector (without disconnecting the battery from the motor), if the following two conditions are met:**
-The motor radio must be in standby mode **(see § 5.4).**
-The solar panel must be illuminated by diffuse sunlight, flashlight, ...for less than 10 min. If it is illuminated for more than 10 minutes, disconnect the solar panel for 10 seconds.
-Then follow double power-cut procedure **8.2, 8.3, 8.4, 8.5**, from the solar panel connector (the connection between battery and the motor is kept), before carrying out operation **(8.6.1 and 8.6.2)**

Motor is now in «Cancelling / Re-programming» mode.
At this point, you can perform the operation **8.6.1** or **8.6.2**:

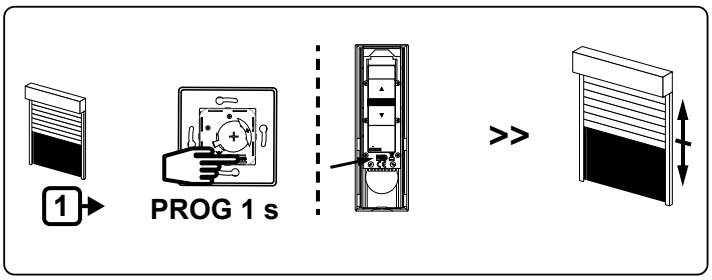
### 8.6.1 - **Programming cancellation and return to the original configuration** (from the individual control or from a new transmitter)




Press the «PROG» key of the transmitter more than 7 seconds. Maintain the pressure until the motor will first run for 0,5 second in one direction and then in the other, and a few second later, it will run again in both direction.

⚠ *The memory of the motor is now completely deleted. You can connect the solar panel onto the battery, and then proceed to the complete programming* **(resume chapter 5)**

### 8.6.2 - **Motor re-programming: delete all transmitters in memory, and new transmitter re-programming** (ex: in case of loss of a transmitter):




Press «PROG» key of the transmitter for 1 second. The motor runs for 0,5 second in one direction then in the other one.

⚠ *The transmitter used for this operation becomes the only control point of this motor.*
*Adjustments (rotation direction and end-limit adjustments) are kept. You can connect the solar panel.*

## ATTACHED


5136882A - T3.5 EHz DC MOTOR


5139459A - ADHESIVE SOLAR PANEL


5139467A - MOTOR CABLE


5136806A - NAKED BATTERY


5139158A - STICK BATTERY


5144624A - STICK BATTERY (Quarter round)


5148485A - ADHESIVE TAPE FOR « BATTERY STICK »

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