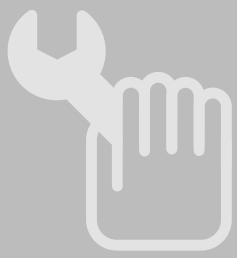
Installation Manual

EN

Self-Repairing High-Speed Door - NovoZip



V03 - 09-2020

Installation Manual

NovoZip

English

REVISIONS TABLE

Nr.	Date	Prepared by	Checked by	Approved by	Comments
00	06-11-2018	P.H.M.	H.A.L.	I.L.T.	
01	20-12-2018	P.H.M.	H.A.L.	I.L.T.	
02	14-01-2019	P.H.M.	H.A.L.	I.L.T.	
03	05-08-2019	H.A.L.	H.A.L.	I.L.T.	
04	22-01-2020	H.A.L.	H.A.L.	I.L.T.	

Contents

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1. PURPOSE / SCOPE

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This instruction manual details the components and steps to follow during the installation when carried out by the manufacturer or when carried out under its responsibility, as well as the installation of the door in cases in which it is supplied by Novoferm as a complete kit, and when this installation is carried out by an installer chosen by the user. The risks related to the installation are also set out. Installations in which components not supplied by NOVOFERM are used do not fall within the scope of this document.

Only the correct installation and maintenance, carried out by a competent organisation or person, in accordance with the instructions given in this manual, can ensure the safe installation, operation and use (including maintenance and repair) of an industrial door used for the transport of vehicles and persons.

Please read these operating instructions carefully and comply with all contents and safety instructions.

The instructions in this manual cannot, by themselves, make the work safe and do not preclude the operator from observing the safety code or local or national law, rules or regulations.

The images and diagrams are generic and therefore this information may vary due to constant research and development by NFA.

2. REGULATIONS

During the installation of the door, the following regulations must be observed:

- European Construction Products Regulation (EU) No. 305/2011.
- Machinery Directive (2006/42/EC).
- Low Voltage Directive (2014/35/EU)
- Electromagnetic Compatibility Directive (2014/30/EC)
- Radio Equipment Directive (2014/53/EU)
- EN 13241:2016. Industrial, commercial garage doors and gates. Product standard. Part 1: Products without fire resistance or smoke control characteristics.
- EN ISO 12100:2012. Machinery safety General design principles. Risk assessment and risk reduction.
- EN 614-1:2006+A1:2009. Machinery safety Ergonomic design principles. Part 1: Terminology and general principles.
- EN 12433-1:2000. Industrial, commercial garage doors and gates. Terminology. Part 1: Types of doors.
- EN 12433-2:2000. Industrial, commercial garage doors and gates. Terminology. Part 2: Door components.
- EN 12453:2001. Industrial, commercial garage doors and gates. Safety in the use of motorized doors. Requirements.
- EN 12604:2000. Industrial, commercial garage doors and gates. Mechanical aspects. Requirements

3. INSTALLERS

This manual is intended for professional installers only, meaning those persons or organisations that provide door installation and improvement services to third parties.

Professional installers must have at their disposal competent persons, adequately trained, qualified in their knowledge and practical experience, and must be in possession of this instruction manual in order to enable them to carry out the installation correctly and safely. Partially trained personnel will only be used as assistants under the supervision of the installer.

These competent persons must update their skills and knowledge in line with the emergence of new techniques and product developments, and the professional installer shall keep training records. They shall also have the ability to verify conformity with European standards EN 12604 and EN 12453.

4. INSTALLATION

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4.A. Important warnings

The contents of this manual must be read completely before assembly. For the safe assembly and use of the door, we recommend that you follow the instructions in this manual carefully. After completing the assembly and checking the installed product, the user will be informed about the methods of use and the risks associated with the use of the door.

Assembly, electrical connections and regulations must be carried out by qualified personnel in compliance with the standards in force and according to the instructions given.

Work on the industrial door should only be carried out when the door is not in operation.

The components are made of high quality, sustainable and durable materials. However, during installation all necessary precautions must be taken to avoid damage.

Defective parts must always be replaced with original parts, otherwise the safe and proper functioning of the door cannot be guaranteed and there is a risk that the warranty will be invalidated.

The software of the programmable control panel must not be modified. Only the supplier will be able to modify or add anything to the product.

The motor must be used exclusively for the purpose for which it was designed. Any other use should be considered inappropriate and therefore dangerous.

The safety devices (photocells, light curtain, etc.) must be installed in compliance with the standards in force, as well as the installation environment, the operation of the system, and the force exerted by the door. Safety devices must protect the entire area of the door's trajectory in order to prevent entrapment or shearing.

The electrical installation establishes the execution and commissioning of the electrical installations, which must only be carried out by authorised installers, in accordance with local and/or national regulations, and the appropriate technical documentation must be provided.

ATTENTION:

- During installation there is a risk that components will fall, which may cause injury to persons or damage to objects.
- There is a risk of electrocution if there is contact with the mains voltage. Make sure that the electrical installation on the client's premises meets the applicable safety requirements.
- During all work on the doors, make sure that the power is not connected and protect it against unauthorised use.
- Only carry out welding and grinding work when this is expressly permitted. Be careful, since there may be a risk of fire or explosion. Ensure that there is sufficient ventilation for welding or grinding, as dust and other flammable substances may pose a risk of explosion.

If in doubt, request assistance from qualified personnel.

After the installation is completed, the correct operation of the door will be verified by filling in the corresponding register that certifies such verifications.

For any information or interpretation regarding that set out in this manual, do not hesitate to contact the technical support service:

Novoferm Nederland BV

088-8888112

www.novoferm.nl

4.B. Elements that make up the kit

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The door assembly kit consists of the elements detailed below:

- Metal side frames.
- Flags.
- Plastic side guides.
- Zipper guides.
- Bearings.
- Motor supports.
- Pulley.
- Protective covers.
- Canvas: Made of PVC coated polyester with side zippers.
- Upper spacer.
- Brush.
- Motor.
- Control panel.
- Photocell. / reflector
- Light curtain.
- Hardware bag.
- Documentation: Use and maintenance manuals

4.C. List of tools and equipment required for assembly

The following is a list of tools required for the assembly and commissioning of the door, NOVOFERM assembly equipment:

- Truck-Mounted Crane. Reach truck or forklift
- Lead wire, coloured tracing wire, markers, pencils, level and crossbar.
- Manual electrode welding machine.
- Drilling machine with drill bits for steel ø 6, 8, 10, 12, 14, 15
- Percussion drill with bits ø 6, 8, 10, 12, 14, 15.
- Screwdriver.
- Grinder.
- Tool box composed of: hammer, set of screwdrivers with star or flat head, set of hexagonal wrenches, locking pliers (at least two), normal pliers, pincers, 6, 8, 10, 12, 13, 14, 17, 24 fixed spanners, sheet shears, flat and round file, 5 m metre, gauge.
- Construction clamps.
- Grip wrenches
- Extensions with socket and plug according to EEC standards, for 230 v.
- Extension with socket and plug according to EEC standards, for 380 v.
- 230v mobile adapters for industrial power outlet and personal power outlet.
- Rolling scaffolding according to the standard adapted to the dimensions of the door to be installed.
- Ladder (2 - 6 m).
- Set of adapted plugs with dimensions suitable for the type of structure.
- Self-tapping and self-drilling screws.
- Mechanical fixing bolts.
- Metal slings and straps.
- Safety equipment: Work clothes, safety boots, ear protection, thick canvas gloves, high visibility vest, goggles, helmet and everything needed to prevent and signal hazards in the workplace.

ATTENTION: Installers must strictly comply with the rules on safety in the workplace, on the work site and the safety of the installations.

4.D. Pre-assembly steps

ATTENTION: All terms set out here with regard to safety are general terms. Along with this manual, you should always have available the manual for the prevention of occupational hazards, which provides more detailed information on safety measures.

4.D.1. Arrival at the work site

 Mandatory head protection	 Mandatory foot protection

The safety helmet will be worn at all times on the work site to protect against possible falling objects. Boots should also be worn with the sole protected against sharp elements and the upper area of the toes protected with metal reinforcements to avoid damage caused by blows and crushing from falling heavy material.

When arriving at the work site, contact the client or representative, verify that the space where the door will be placed is tidy and free of obstacles, and supervise the site indicated for the unloading of the material. The site intended for the storage of material shall be as close to the opening as possible.

Ensure that a three-phase and/or single-phase power supply is available.

4.D.2. Unloading of materials

When unloading material, weight less than or equal to 50 kg will be unloaded manually by two operators, while a boom or crane will be used for unloading weights over 50 kg.

 Mandatory head protection	 Mandatory foot protection	 Mandatory hand protection	 Mandatory body protection

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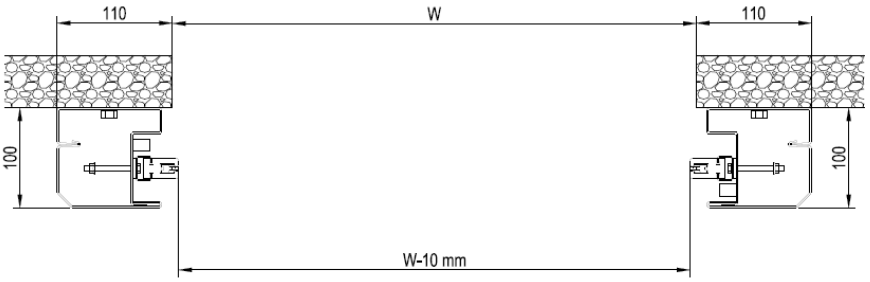
- The top covers, pulley, spacer, and side frames can be easily handled and transported by forklift or pallet truck, or by hand by several people depending on the weight (variable depending on the model and size of the door).
- The canvas shall be handled with care so as not to damage its surface or profiles. Methods according to weight shall be used for their displacement.
- The rest of the elements that compose the kit are easily handled manually.

For the distribution and storage of material the following will be taken into account:

- Place the materials as close as possible to the opening, in a safe location where there is no risk that they will fall or become deformed.
- Place the materials in areas protected from the weather and away from dust-generating machines.
- Keep the transit areas free.

4.E. Door assembly



4.E.1. Component diagram

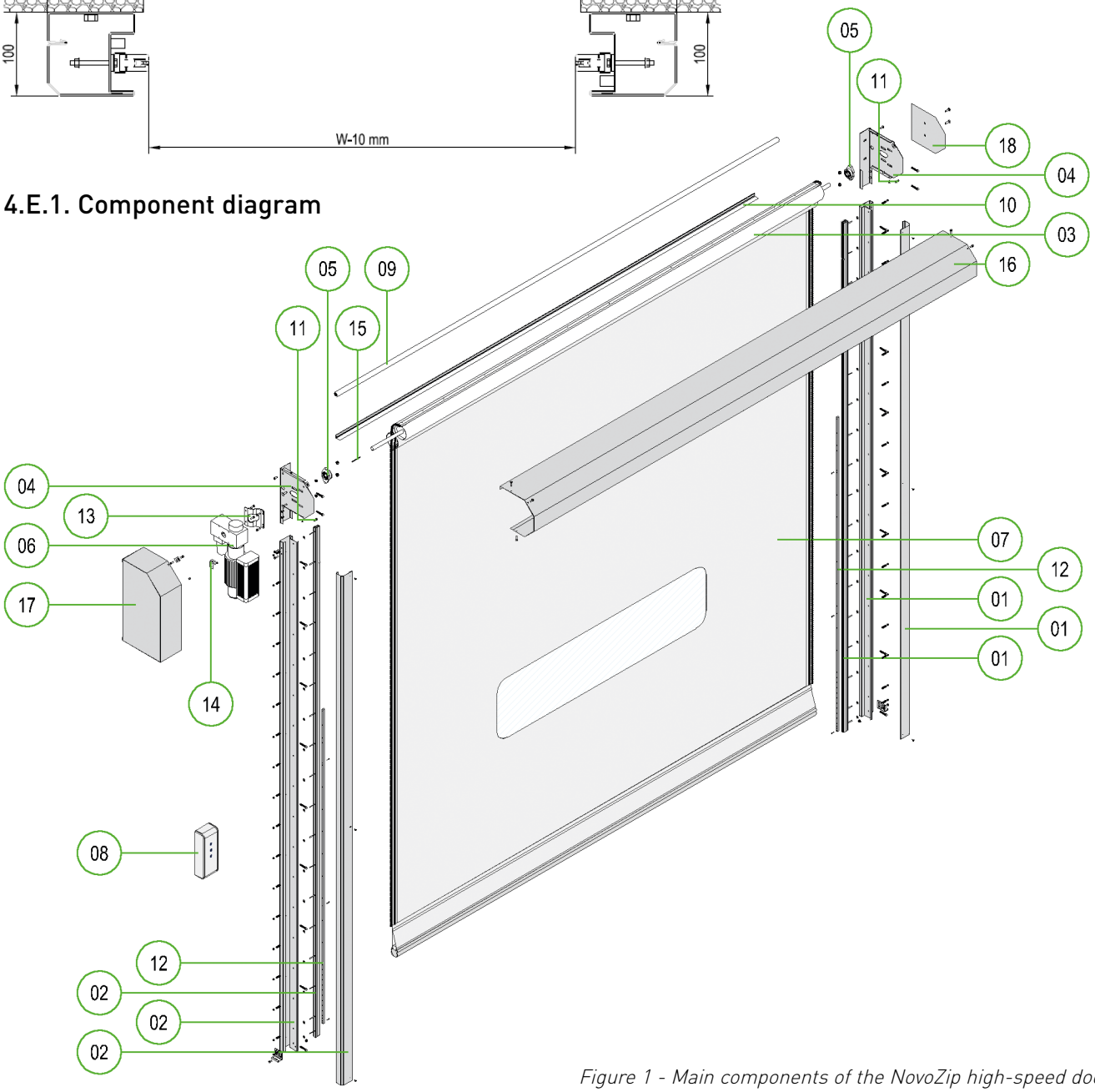


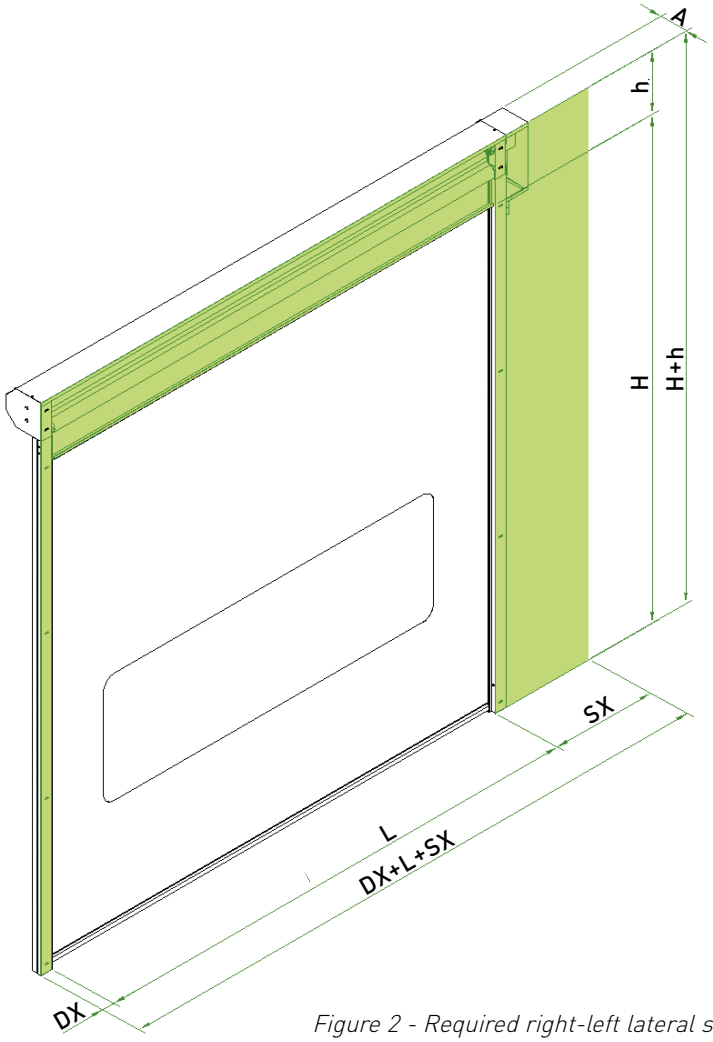
Figure 1 - Main components of the NovoZip high-speed door

No.	Item	No.	Item	No.	Item
01	Right lateral frame with plastic guide	07	Canvas with side zippers	13	Motor support
02	Left lateral frame with plastic guide	08	Control panel	14	Mounting bracket
03	Pulley	09	Upper spacer	15	Key
04	Flag	10	Brush	16	Roll cover
05	Bearings	11	Photocell	17	Motor cover
06	Motor	12	Light curtain	18	Right side cover

4.E.2. Initial checks

The following aspects should be checked before assembly:

- Check that the door has not been damaged in any way that could compromise its installation or operational safety. The aim is to check that all the packaging material is intact.
- Verify that the material received matches that detailed in section 4.B of this document, counting and checking it item by item.
- Check that the information given in the assembly order is correct, primarily:
- Check that the dimensions of the opening, width and diagonal measurements, are exact and conform to the dimensions of the door.



L=	**width of the opening**	
H =	**height of the opening**	
h =	**lintel height =**	**500 mm**
D =	**diagonal**	
SX =	**left side clearance (standard motor side) =**	**310 mm**
DX =	**right lateral space =**	**110 mm**
A =	**Lintel width =**	**320 mm**

Figure 2 - Required right-left lateral space and lintel of the opening

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- Make sure that the floor on which the pre-assembly is to be carried out is smooth and has the right dimensions for the door to be placed horizontally. Check that the floor where the door is to be assembled is level and clean.
- Check whether the building materials of the opening in which the door is to be installed are concrete/brick or metal. This information will determine the system for fixing the door to the opening. In both cases the mooring points will be defined by the mooring holes previously drilled in the guides.
- Avoid installing the door in places where its use and duration are incompatible with the materials used to manufacture it. (e.g. Strongly corrosive environment). If in doubt, please contact Novoferm.
- The installation of the door while children are present, or in any case while in the presence of persons not related to the assembly work, is forbidden. We recommend that the assembly be carried out by qualified installers.

Before connecting the motor, check that:

- The data on the motor plate is compatible with the mains data.
- The product is connected to an efficient earthing system.
- A differential switch has been installed on the panel that controls the motor.
- Apply the signs provided for by current regulations to identify hazardous areas.
- Before connecting the power supply, check that the installed power is greater than that required by the automated system.
- Carry out the earthing according to the safety regulations in force.
- The installer must inform the user about the automatic and manual emergency operation of the door and give him/her the instructions for use.
- The manufacturer cannot be held responsible for any damage caused as a result of failure to comply with these rules.

ATTENTION: The company is not responsible for the installation not being earthed or the lack of differential switch.

4.E.3. Door placement

 Mandatory head protection	 Mandatory foot protection	 Mandatory hand protection
 Mandatory eye protection	 Mandatory hearing protection	 Mandatory body protection

- Proceed to screw between the flag and its respective side frame.

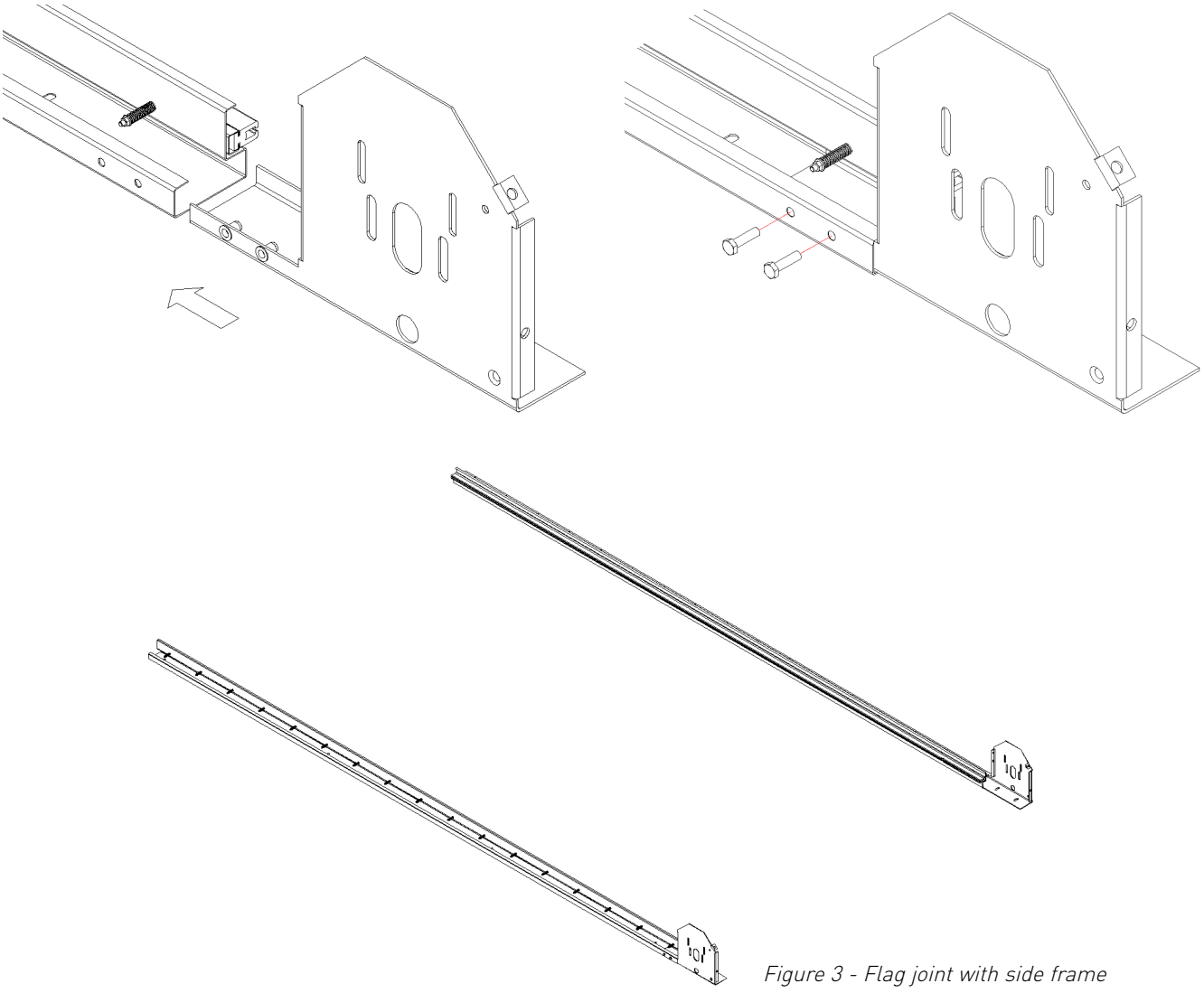

Figure 3 - Flag joint with side frame

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The pulley assembly (pulley, bearings, motor support, motor and retracted canvas) is then attached to each of the flags.

ATTENTION: This operation involves the upper spacer, whose function is to ensure the required design distance between the two sets formed by the frame and flag.

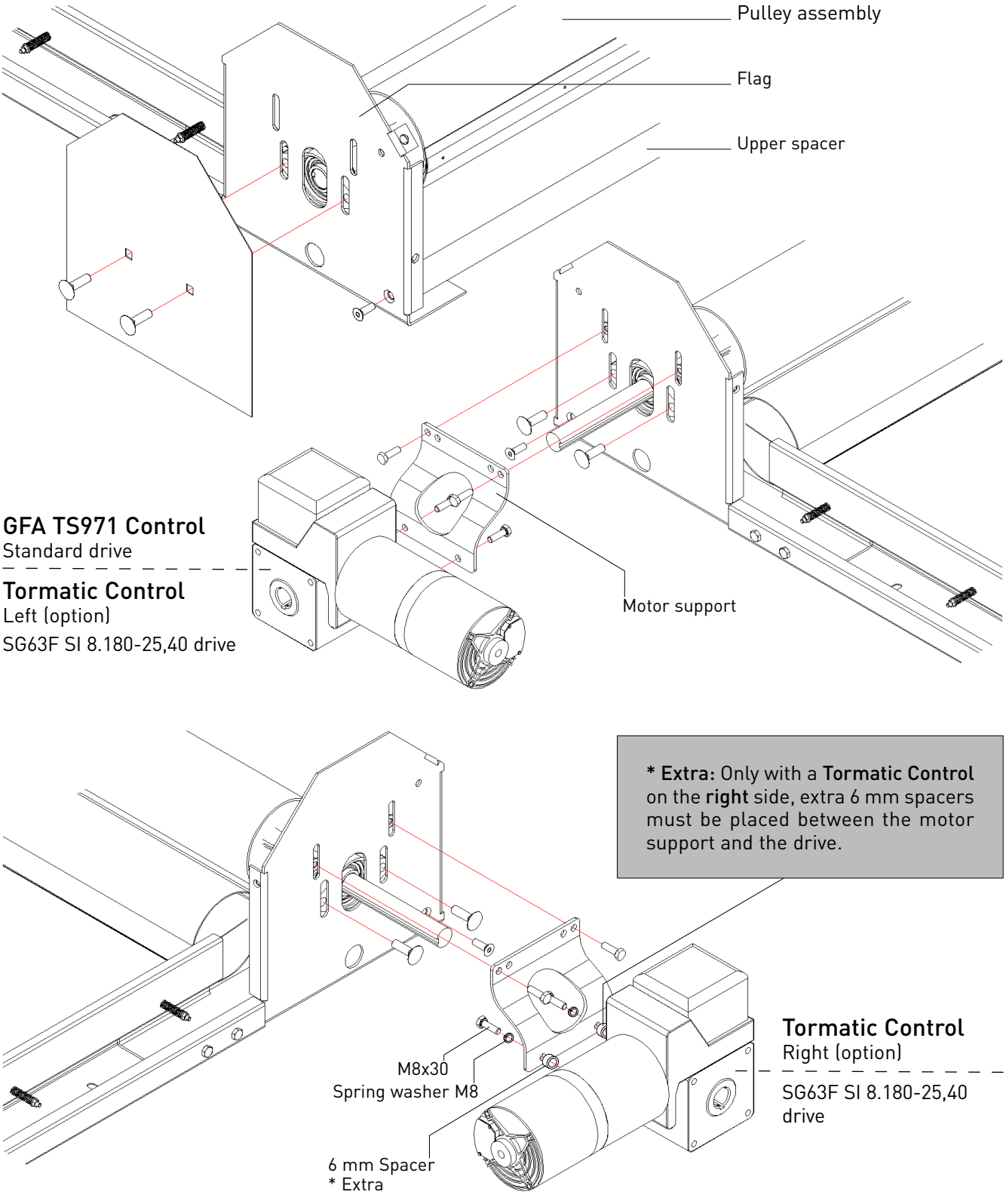

Figure 4 - Screwing of the pulley assembly.

- The side frames are lifted with the pulley assembly and presented in the hole where they are to be mounted.

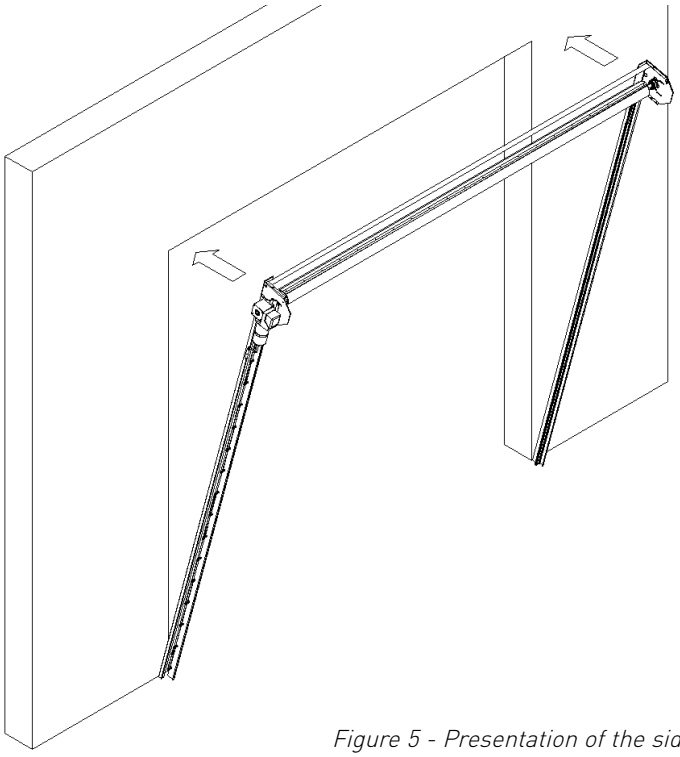

Figure 5 - Presentation of the side frames with the pulley assembly.

- The frames and pulley assembly are levelled and flattened to ensure that the frames with the flags are at the same height and that they are in position.

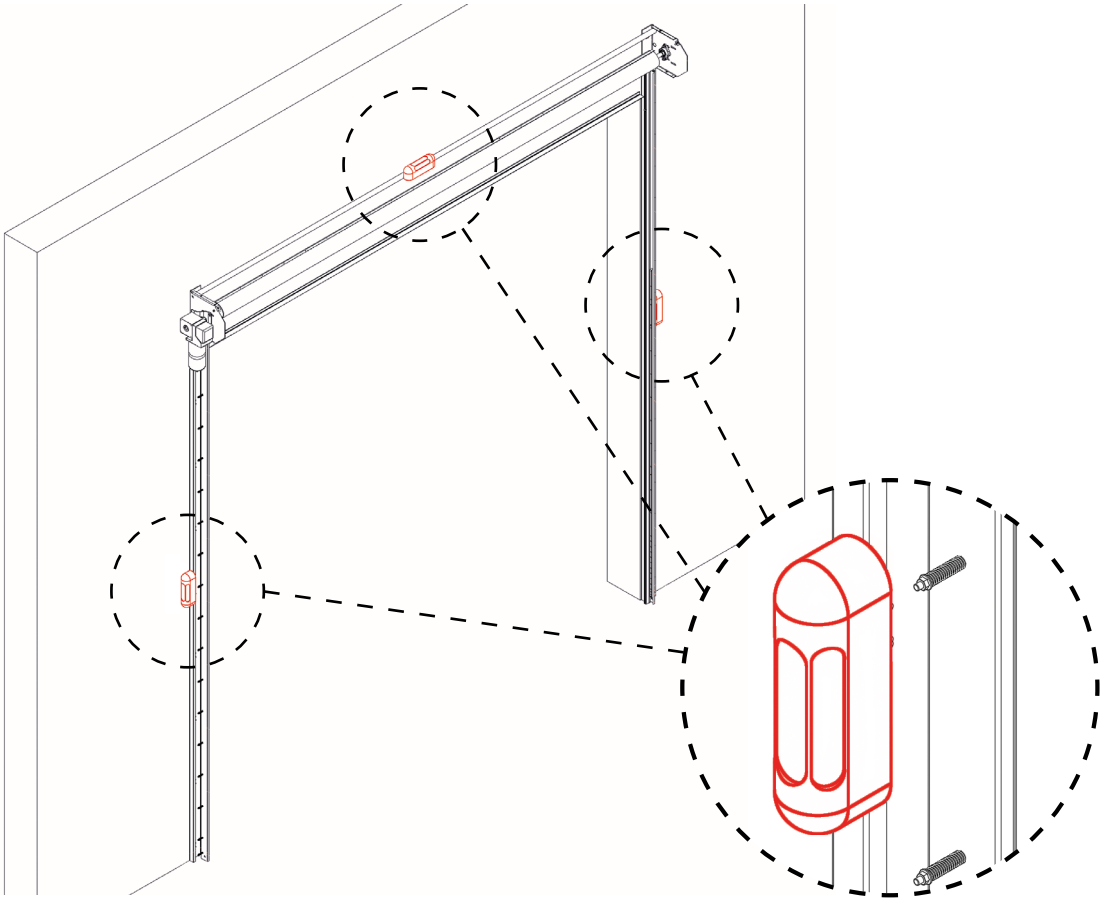

Figure 6 - Levelling and plumbing of the side frames with the flags.

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- Mounting:
  If the opening is made of concrete/brick, the fastening will be achieved using a plastic plug and a coach screw, or a 10x60 mm metal plug.
  If the opening has a metal pre-frame, the fastening will be carried out with M8 screws of variable length depending on the dimensions of the metal pre-frame.
  In both cases the mooring points will be defined by the mooring holes previously drilled in the side frames.
  There are also two brackets that must be screwed to the frames to fix them to the floor.

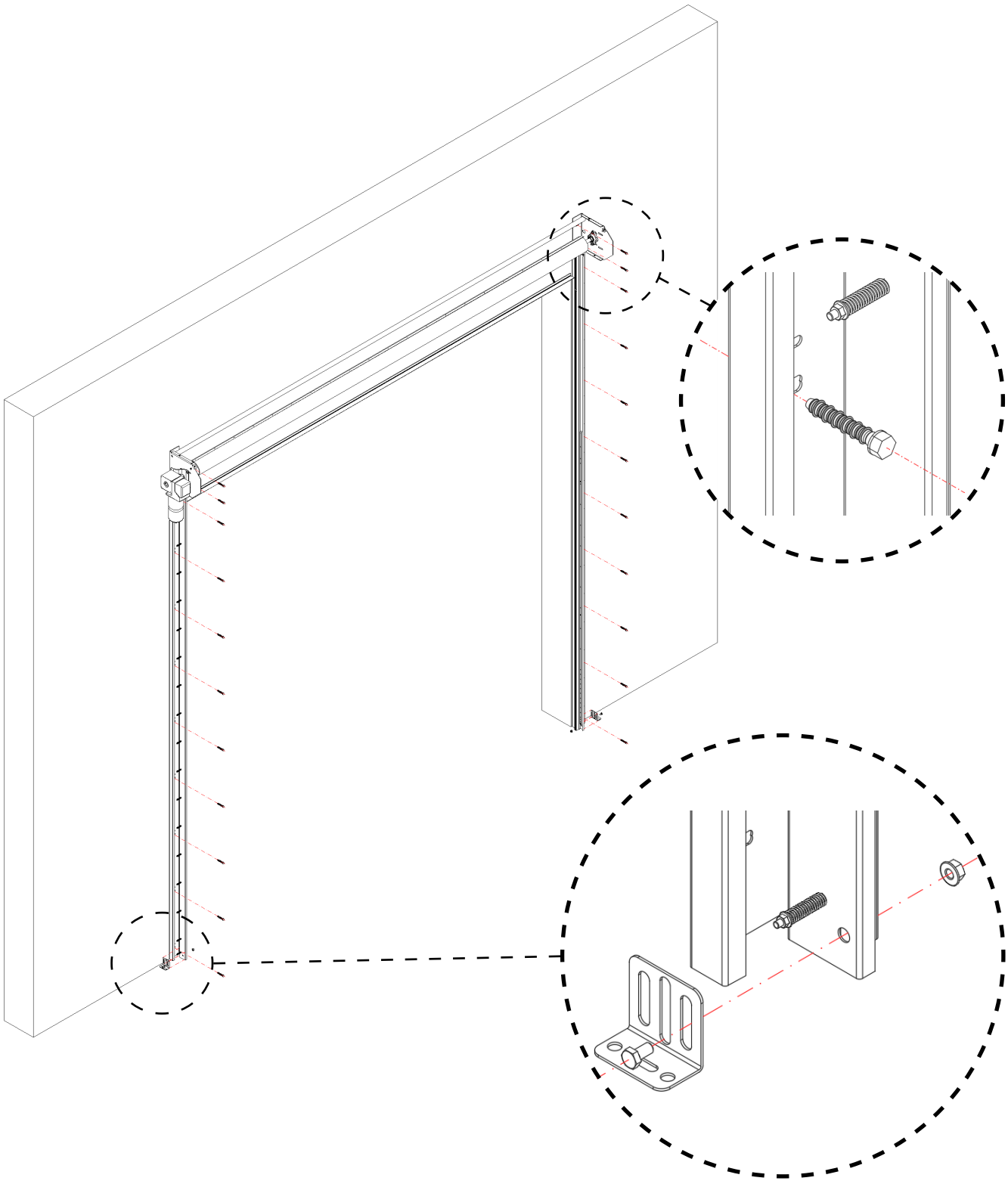

Figure 7 - Fixing the assembly to the wall and floor

- Once we have screwed the assembly to the wall, we are ready to screw the outside of the side frame, as shown in the picture.

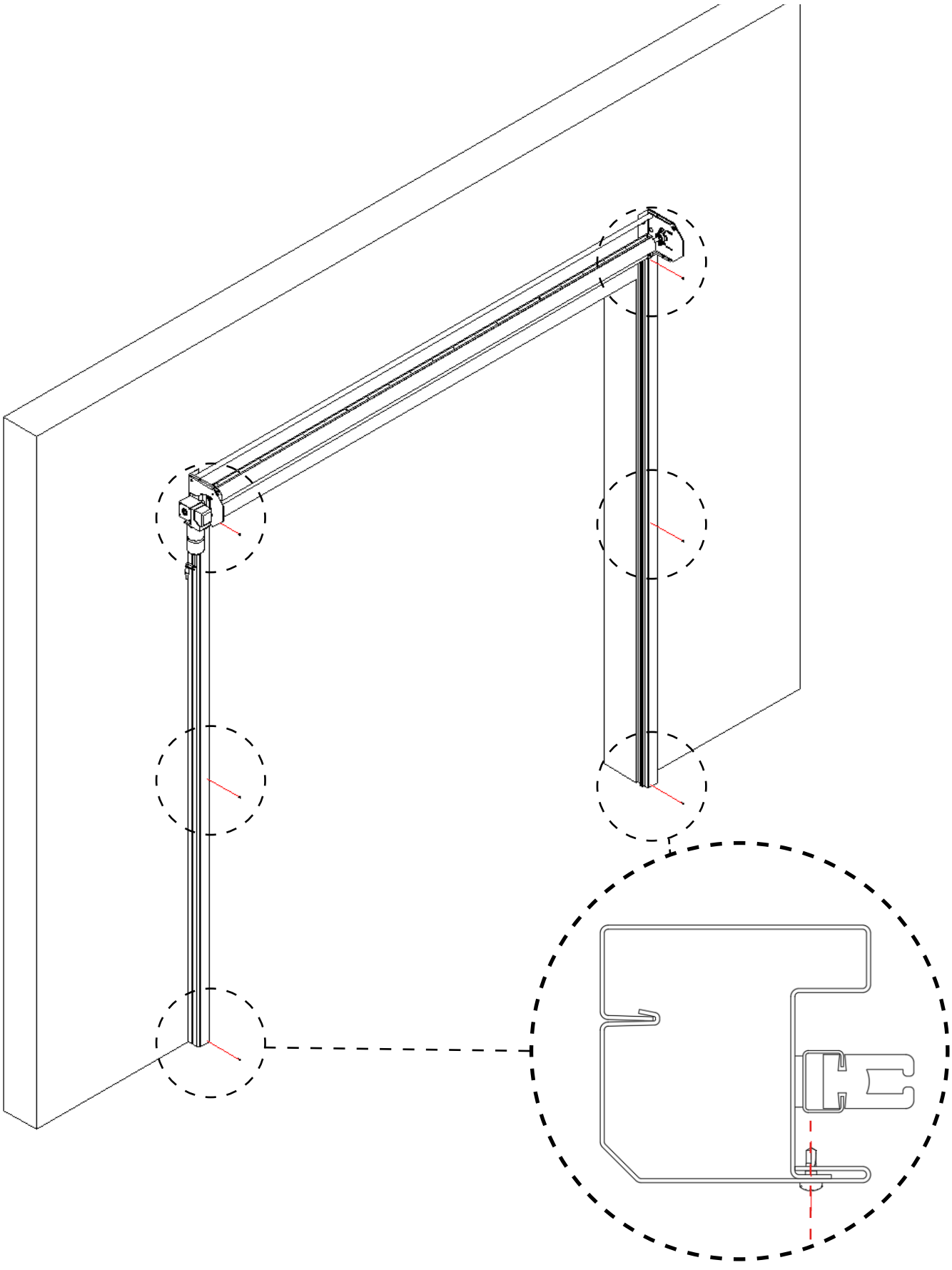

Figure 8 - Fastening of the outside of the side frames

- The roll cover is screwed onto the flags and then the motor cover.

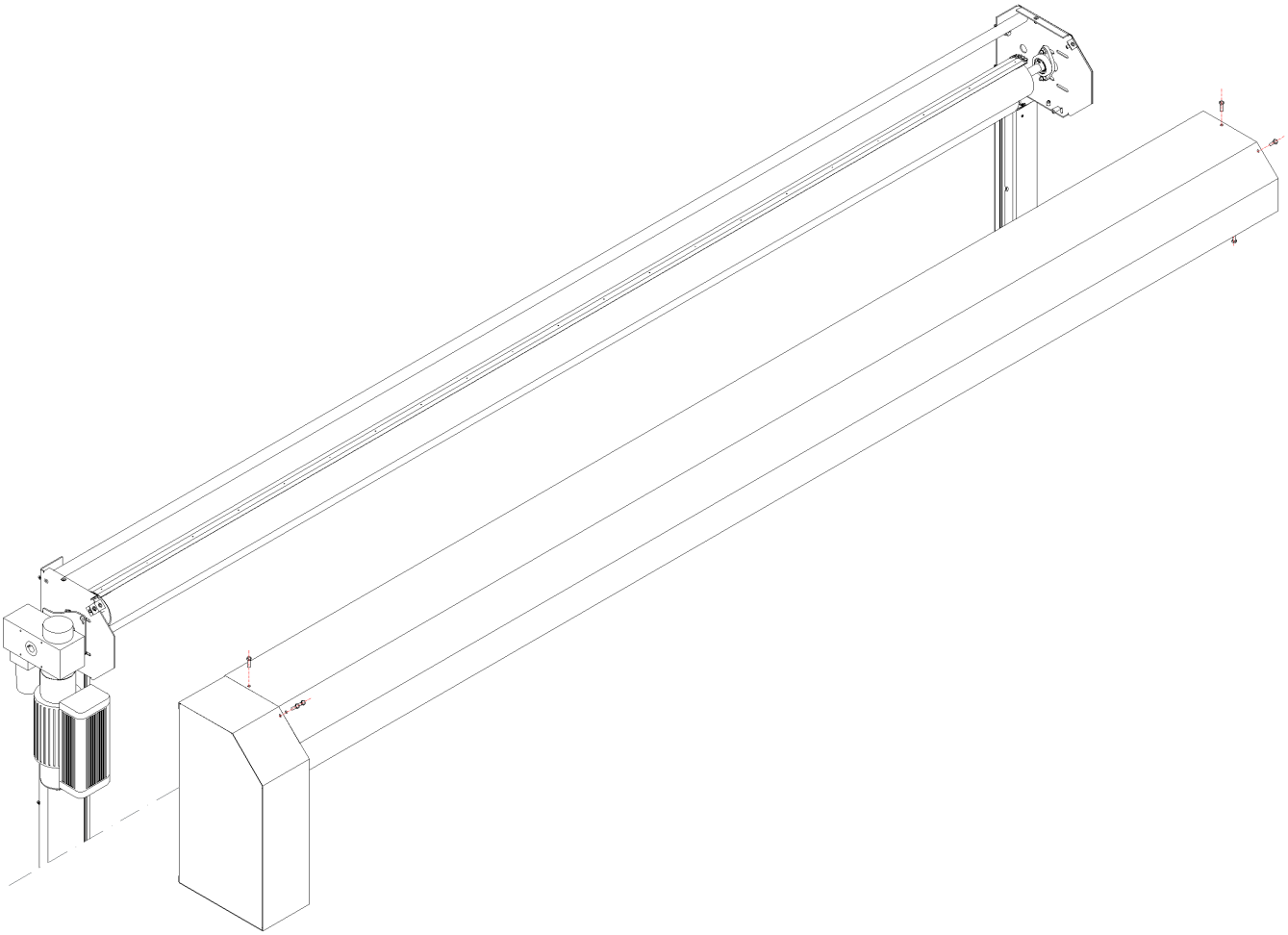

Figure 9 - Mounting of the roll cover and motor cover

- The first section of the zipper canvas (between 2 and 4 teeth) must be stiffened by applying the special glue to help it descend.

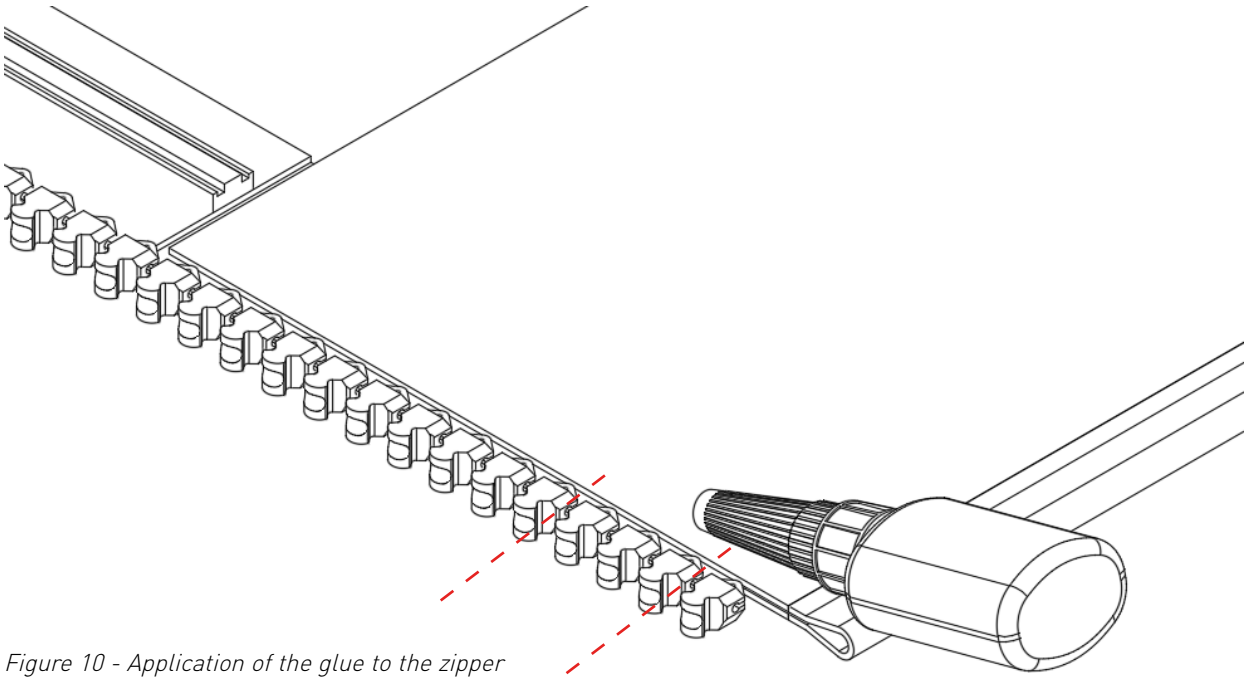

Figure 10 - Application of the glue to the zipper

ATTENTION: the motor, the control panel, and the safety devices are supplied with their corresponding installation, user and maintenance manuals. Please read the relevant manual carefully before installation.

- Connect the motor to the control panel. See section 4.E.5
- Connect the control panel to the main power supply.
- Check the direction of rotation of the motor using the open and close buttons. If it is not correct, change two of the phases in the absence of current.
- Programme the control panel according to the instructions. See section 4.E.6
- Limit switch setting OPEN.
- Limit switch setting CLOSE.
- Connect the various accessories (photocell, light curtain, signals, etc.), following the instructions in the accessory's manual.
- Check the perfect operation of the drive and the effective efficiency of the control panel, safety devices, etc.

4.E.4 Release operation

Depending on the characteristics of the door, there are two possibilities for manual operation if necessary:

4.E.4.a Crank drive

Once it has been checked that the door cannot be operated, the following steps must be taken:

- Remove the crank from its holder and insert it into the designated housing, turning it as far as it will go (1). When performing this operation, the control phase is interrupted and the electric drive of the door is also non-operational.
- Apply the shaft brake lever to release the shaft and make the door easier to open
- Open the door manually by turning the handle (2). The shaft brake must be kept free during this manoeuvre.

ATTENTION: Reconnect the shaft brake before releasing the crank. If this is not done, the door will close abruptly.

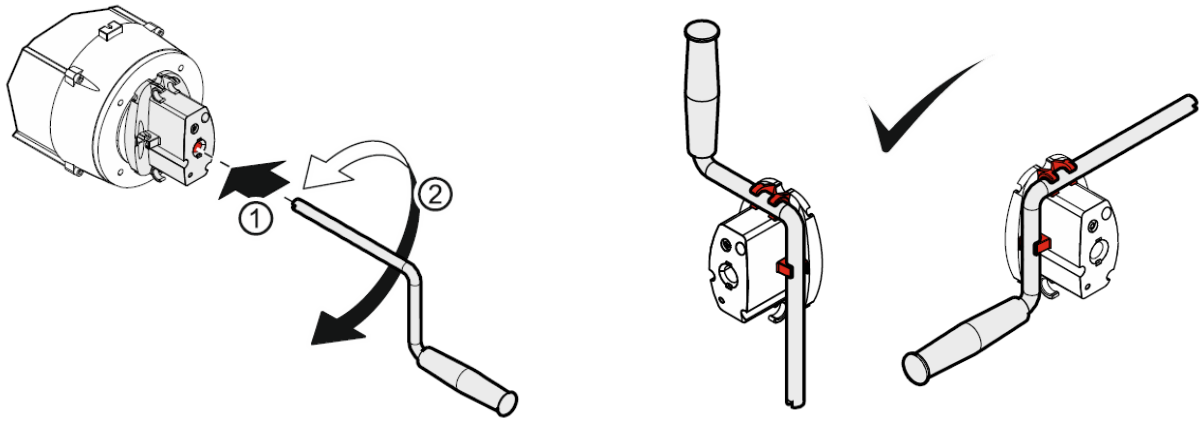

Figure 11 - Detail of the crank release system

- After finishing the manual operation, the crank is removed and returned to its original position. This also puts the electrical system of the motor back into operation.

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4.E.4.b Chain drive (option)

Once it has been checked that the door cannot be operated, the following steps must be taken:

- Pull the red handle to activate the release system. When performing this operation the electric door drive is switched off.
- Pull the chain to open or close the door manually.
- Pull the green handle to deactivate the release system. This causes the electrical system of the motor to start up again.

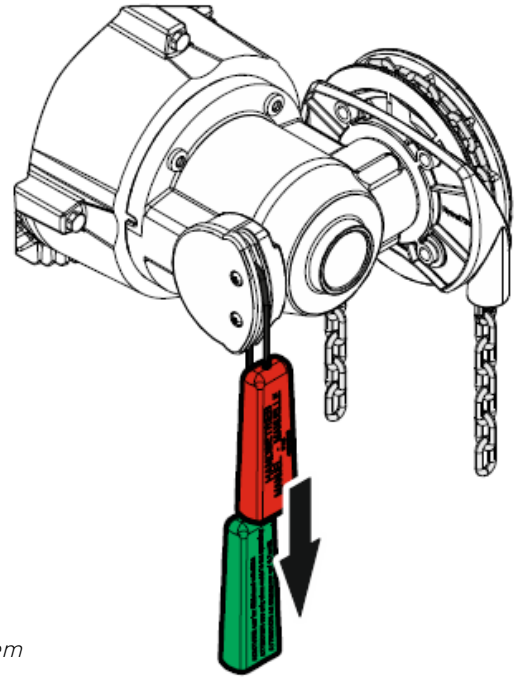

Figure 12 - Detail of the chain release system

ATTENTION: Under no circumstances should the door be unlocked without first disconnecting the power supply.

4.E.5 Technical characteristics of the motor.

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The door in standard configuration will be equipped with one of the two following motorization options:

SI 3.5 350 FU		
Output torque	35	Nm
Number of output revolutions OPENING	30 - 350	rpm
Number of output revolutions CLOSING	30 - 100	rpm
Number of output revolutions CLOSING > 2.5 m	30 - 150	rpm
Drive shaft / hollow shaft	25	mm
Fall time	510	Nm
Parachute system (test point/certificate number)	14-003612-PR02	
Maximum stop time	90	Nm
Operating voltage	1~ 230	V
Working current	6,60	A
Operating frequency	50	Hz
Power factor cos φ	0,47	
Maximum connections per hour	66	h-1
Manual force emergency operation	140	N
Type of protection	IP 65	
Limit switch area (maximum speed of the drive shaft / hollow shaft)	20	
Braking torque of the brake	9	Nm
Braking voltage	103	VCC
Type of rectifier	FU	
Temperature range	+5 / +40	°C

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SI 5 250 FU		
Output torque	50	Nm
Number of output revolutions OPENING	30 - 250	rpm
Number of output revolutions CLOSING	30 - 100	rpm
Number of output revolutions CLOSING > 2.5 m	30 - 150	rpm
Drive shaft / hollow shaft	25,40	mm
Fall time	510	Nm
Parachute system (test point/certificate number)	14-003612-PR02	
Maximum stop time	90	Nm
Operating voltage	1N~ 230	V
Working current	6,60	A
Operating frequency	50	Hz
Power factor cos φ	0,47	
Maximum connections per hour	66	h-1
Manual force emergency operation	199	N
Type of protection	IP 65	
Limit switch area (maximum speed of the drive shaft / hollow shaft)	20	
Braking torque of the brake	9	Nm
Braking voltage	103	VCC
Type of rectifier	FU	
Temperature range	+5 / +40	°C
Continuous sound pressure level	< 70	dB(A)

4.E.6 Technical characteristics of the control panel

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The standard control panel will be the TS971 control panel.

Before installing the panel, read the enclosed manual carefully and perform the connections as indicated.

			
Mandatory head protection	**Mandatory foot protection**	**Mandatory hand protection**	**Mandatory body protection**

A diagram is included to facilitate the panel connections.

- Any connection that is not properly made can cause personal injury and/or irreparable damage to the product.
- The installation to which the panel is connected must comply with the low voltage regulations in force.
- Before connecting or handling the panel, it must be disconnected from the mains.
- When installing the motors and peripheral circuits, the voltage must be disconnected from the panel.

In compliance with the European Low Voltage Directive, we inform you of the following requirements:

- For permanently connected equipment, an easily accessible disconnection device must be incorporated into the wiring.
- It is mandatory to install this equipment in an upright position and firmly attached it to the building structure.
- This equipment must always be located inside the building and in a place where it cannot be affected by water.
- The output relay contacts of this equipment should be switched to a voltage lower than 42 Vac or 60 Vdc, depending on the type of relay used.
- This equipment may only be handled by a specialized installer, their maintenance staff or a properly trained operator.
- The instructions for use of this equipment must always remain in the possession of the user.

The CE mark affixed to this device means that it complies with the provisions of the 2014/30/EC directives on electromagnetic compatibility 2014/35/EU.

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4.E.7 Installation of accessories

- All accessories delivered with the door will be accompanied by its installation and instruction manual.
- Read these manuals carefully and install the product accordingly.

4.E.8 Final checks

Check the perfect fixing of the door structure to the opening. Ensure the correct tightening of the screws and plugs for fixing to the brick/concrete door space or to the metal pre-frame.

Attach the marking label, which proves that the machine has been manufactured and installed in full compliance with the safety regulations identified by the serial number on the plate.

Explain the operation to the owner and provide the corresponding documentation:

- User manual
- Maintenance manual.

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