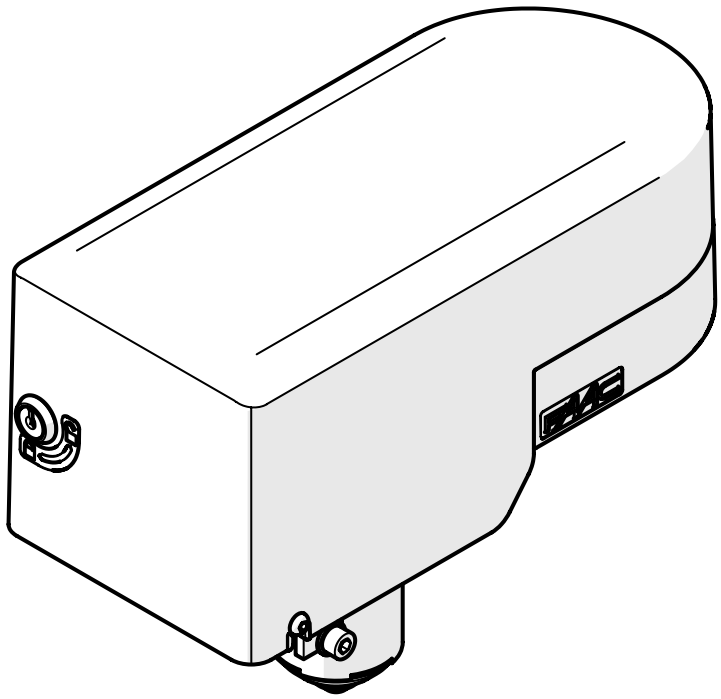
S2500I



Translation of the original instructions

ENGLISH

Translation of the original instructions

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ENGLISH

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CONTENTS

1. INTRODUCTION TO THE INSTRUCTION MANUAL ... 2
   - Meaning of the symbols used ... 3
2. SAFETY RECOMMENDATIONS ... 4
   - Installer safety ... 4
   - Transport and storage ... 4
   - Unpacking and handling ... 4
   - Disposal of the product ... 4
3. S2500I ... 5
   - Intended use ... 5
   - Limitations of use ... 5
   - Unauthorised use ... 5
   - Emergency use ... 5
   - Product identification ... 6
   - Markings on the product ... 6
   - Technical characteristics ... 6
   - Component identification ... 7
   - Dimensions ... 7
4. INSTALLATION REQUIREMENTS ... 8
   - Mechanical requirements ... 8
   - Dimensional requirements and Installation measurements ... 8
   - Electrical system ... 9
   - Example system ... 9
5. INSTALLATION ... 10
   - Hazards and personal protective equipment ... 10
   - 5.1 Welding the bush to the leaf ... 10
   - AlternativE: Leaf guide bracket kit (OPTIONAL) ... 10
   - 5.2 Installing the hinge ... 11
   - Preparing the hinge plate ... 11
   - Drilling the holes in the pillar ... 12
   - Fastening the hinge ... 13
   - 5.3 Installing the leaf and the hinge gear ... 14
   - 5.4 Installing the flashing lights ... 15
   - 5.5 Installing the actuator ... 15
6. ELECTRONIC INSTALLATION OF THE ACTUATOR ... 17
7. INSTALLING THE COVER ... 18
   - 7.1 Installing the lock ... 18
   - 7.2 Installing the cover ... 18
8. ACCESSORIES ... 19
   - 8.1 Integrated mechanical stops kit ... 19
   - Installation ... 19
   - 8.2 Leaf guide bracket kit S2500I ... 20
   - Installation ... 20
   - 8.3 External release kit for the S2500I ... 21
   - Installation ... 21
   - Operation ... 21
   - 8.4 Pillar adapter ... 22
   - Installation ... 22
9. SET-UP ... 23
   - Start-up procedure ... 23
10. PUTTING INTO SERVICE ... 23
   - Final checks ... 23
11. MAINTENANCE ... 23
   - Scheduled maintenance ... 24
12. INSTRUCTIONS FOR USE ... 25
   - Safety recommendations ... 25
   - Emergency use ... 25
   - Manual operation ... 25
   - Releasing the actuator ... 26
   - Restoring operation ... 26

TABLES

- 1 Technical data ... 6
- 2 Leaf weight / width limits ... 6
- 3 Scheduled maintenance ... 24
- 4 Limits of use in relation to wind ... 27

ADDENDUM

- 1 Alternative installation ... 27
- 2 Limits of use of the S2500I in relation to wind ... 27
- 3 Foundation for leaves of max weight and width ... 28

1. INTRODUCTION TO THE INSTRUCTION MANUAL

This manual provides the correct procedures and requirements for installing S2500I and maintaining it in a safe condition.

When drafting the manual, the results of the risk assessment conducted by FAAC S.p.A. on the entire product life cycle have been taken into account in order to implement effective risk reduction measures.

The following stages of the life cycle of the product have been considered:

- Delivery/handling
- Assembly and installation
- Set-up and commissioning
- Operation
- Maintenance/troubleshooting
- Disposal at the end of the product's life cycle

Risks arising from installation and using the product have been taken into consideration; these include:

- Risks for the installation/maintenance technician (technical personnel)
- Risks for the user of the automation system
- Risks to product integrity (damage)

In Europe, the automation of a gate falls under the Machinery Directive 2006/42/EC and the corresponding harmonised standards. Anyone automating a gate (new or existing) is classified as the Manufacturer of the Machine. They are therefore required by law, among other things, to carry out a risk analysis of the machine (automatic gate in its entirety) and take protective measures to fulfil the essential safety requirements specified in Annex I of the Machinery Directive.

FAAC S.p.A. recommends that you always comply with the EN 12453 standard and in particular that you adopt the safety criteria and devices indicated, without exception, including the dead-man function.

This manual also contains general information and guidelines, which are purely illustrative and not exhaustive, in order to facilitate the activities carried out by the Manufacturer of the Machine in all respects with regard to carrying out the risk analysis and drafting the instructions for use and maintenance of the machine. It should be clearly understood that FAAC S.p.A. accepts no liability for the reliability and/ or completeness of the above instructions. As such, the manufacturer of the machine must carry out all the activities required by the Machinery Directive and the corresponding harmonised standards on the basis of the actual condition of the locations and structures where the product S2500I will be installed, prior to commissioning the machine. These activities include the analysis of all the risks associated with the machine and subsequent implementation of all safety measures intended to fulfil the essential safety requirements.

This manual contains references to European standards. The automation of a gate must fully comply with any laws, standards and regulations applicable in the country where installation will take place.

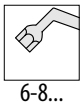
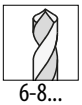
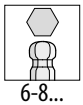
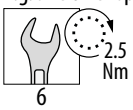
Unless otherwise specified, the measurements provided in the instructions are in mm.

MEANING OF THE SYMBOLS USED

NOTES AND WARNINGS IN THE INSTRUCTIONS

WARNING ELECTRIC SHOCK HAZARD - The operation or step described must be carried out following the instructions provided and according to the safety regulations.	For manual lifting, there should be 1 person for every 20 кг to be lifted.	TABLE E.g. **1** see Table 1.
WARNING, personal injury hazard or risk of damage to components - The operation or stage described must be performed following the supplied instructions and applicable safety regulations	PAGE E.g. **6** see Page 6.	§ CHAPTER/SECTION E.g. §1.1 see section 1.1.
WARNING - Details and specifications which must be respected in order to ensure that the system operates correctly.	FIGURE E.g. **1**-3 Figure 1 - item 3.	APPENDIX E.g. **1** see Appendix 1.
RECYCLING AND DISPOSAL - The materials used in manufacturing, the batteries and any electronic components must not be sent to landfill. They must be taken to authorised recycling and disposal centres.		

TOOLS (type and size)

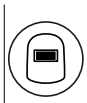
 6-8... HEX WRENCH of the specified size (6, 8...)	 6-8... BOX SPANNER of the specified size (6, 8...)	 6-8... METAL DRILL BITS of the specified size (6, 8...)	 ANGLE GRINDER
 6-8... ALLEN KEY with ROUND HEAD of the specified size (6, 8...)	 LEVEL	 SQUARE	 WELDER
TOOL with TORQUE ADJUSTMENT Where necessary for safety, a torque wrench with the specified tightening torque will be shown. The torque wrench and the fastening torque in Nm is shown in the figures.	E.g. size 6 hex spanner set at 2.5 Nm  2.5 Nm 6	 ELECTRICIAN'S SCISSORS	 FORKLIFT TRUCK

SAFETY SIGNS AND SYMBOLS (EN ISO 7010)

 GENERIC HAZARD Personal injury hazard or risk of damage to components.	 CRUSHING HAZARD Risk of crushing to the hands/feet due to the presence of heavy parts.	 FINGER/HAND CRUSHING HAZARD Risk of crushing fingers/hands due to moving parts. Gear entanglement hazard.
 ELECTROCUTION HAZARD Risk of electric shock from live parts.		
 FIRE HAZARD Risk of fire due to the use of the welder.	 RISK OF OBJECTS FALLING FROM ABOVE Risk of impact due to objects falling from above.	 SHEARING HAZARD Risk of shearing from moving parts.
 CRUSHING HAZARD, DANGER TO THE MUSCULOSKELETAL SYSTEM Risk of musculoskeletal crushing - Personal injury hazard when manually lifting heavy loads.	 CUTTING/AMPUTATION/PUNCTURE HAZARD Cutting hazard due to the presence of sharp components or the use of pointed/sharp tools (drill).	 BURNING OR SCALDING HAZARD Risk of burns due to the presence of high-temperature parts.  FORKLIFT TRUCK IMPACT HAZARD Risk of collision/impact with forklift trucks.

PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment must be worn to protect against hazards (e.g. crushing, cutting, shearing etc.):

 Obligation to wear head protection helmet.	 Obligation to wear mask/goggles to protect the eyes from the risk of fragments due to the use of drill or welder.	 Obligation to wear ear protectors.
 Obligation to wear safety footwear.	 Obligation to wear work gloves.	 Obligatory use of work clothes without parts that could become caught in moving parts.

2. SAFETY RECOMMENDATIONS

This product is placed onto the market as "partly completed machinery", therefore it cannot be commissioned until the machine in which it has been incorporated has been identified and declared to conform to the Machinery Directive 2006/42/EC by the actual Manufacturer.

Incorrect installation and/or incorrect use of the product might cause serious harm to people. Read and comply with all the instructions before starting any activity on the product. Keep these instructions for future reference.

Perform installation and other activities adhering to the sequences provided in the instructions manual.

Always comply with all the requirements contained in the instructions and warning tables at the beginning of the paragraphs. Always comply with the safety recommendations.

Only the installer and/or maintenance technician is authorised to work on the automation components. Do not modify the original components in any way.

Close off the work site (even temporarily) and prevent access/transit. EC countries must comply with the legislation that transposes the European Construction Site Directive 92/57/EEC.

The installer is responsible for the installation/testing of the automation and for completing the Register of the system.

The installer must prove or declare to possess technical and professional proficiency to perform installation, testing and maintenance activities according to the requirements in these instructions.

INSTALLER SAFETY

Installation activities require special work conditions to reduce to the minimum the risks of accidents and serious damage. Furthermore, the suitable precautions must be taken to prevent risks of injury to persons or damage.

The installer must be in good physical and mental condition, aware of and responsible for the hazards that may be generated when using the product.

The work area must be kept tidy and must not be left unattended.

Do not wear clothes or accessories (scarves, bracelets, etc.) that may get caught in moving parts.

Always wear the personal protective equipment recommended for the type of activity to be carried out.

The required level of workplace lighting must be equal to at least 200 lux.

Operate CE marked machinery and equipment in compliance with the manufacturer's instructions. Use work instruments in good conditions.

Use the transport and lifting equipment recommended in the instructions manual.

Use safety-compliant portable ladders of adequate size, fitted with anti-slip devices at the top and bottom, equipped with retainer hooks.

TRANSPORT AND STORAGE

MARKINGS ON PACKAGING

Read the instructions.	Wear work gloves.
Handle with care. Presence of fragile parts.	Wear safety footwear.
This way up: DO NOT turn over.	Percent storage humidity.
Store away from water and humidity.	Storage temperature.
DO NOT stack pallets.	CE marking.
Maximum number of stackable packages.	Recycle and dispose of at authorised waste collection centres.

UNPACKING AND HANDLING

RISKS



PERSONAL PROTECTIVE EQUIPMENT



1. Open the package.
2. Take out the components and make sure that they are all present and intact.
3. Dispose of the packaging materials.

The packaging materials (plastic, polystyrene etc.) must not be left within reach of children as they are potential sources of danger.

When you have finished with them, dispose of the packaging in the appropriate containers, as per applicable waste disposal regulations.

DISPOSAL OF THE PRODUCT

After having dismantled the product, dispose of it in compliance with the current waste disposal regulations.

Components and structural materials, batteries and electronic components must not be disposed of together with household waste. They must be taken to authorised disposal and recycling centres.

3. S2500I

INTENDED USE

The S2500I automation has been designed for use on horizontal movement swing gates intended for installation in areas that are accessible to people, the main purpose of which is to provide safe access for goods, vehicles and people to industrial, commercial or residential buildings.

The S2500I actuator has to be integrated in the load-bearing pillar of the gate using the special upper hinge (hinge S2500I, supplied separately). One actuator must be installed on each leaf.

A FAAC electronic board (supplied separately): E124S, or E124 updated with FW version 4.0 or later is required to control the automation.

⚠ Any other use that is not expressly specified in these instructions is prohibited and could affect the integrity of the product and/or represent a source of danger.

Follow the manual operation instructions if the gate has to be moved manually after the actuator has been installed.

LIMITATIONS OF USE

The pillar and leaf must be made of steel or aluminium and must comply with the requisites specified in section § *Dimensional requirements and Installation measurements*.

In order for the leaf to move safely, the FAAC S2500I hinge must be used in combination with suitable lower hinge (NOT supplied by FAAC) that is the correct size for supporting the leaf. Intermediate hinges should not be installed.

The leaf must fall within the dimensional and frequency of use limits indicated in the technical data.

The presence of weather conditions such as snow, ice and strong wind, even occasional, could affect the correct operation of the automation, the integrity of the components and be a potential source of danger (see § Emergency use). The limitations of use of the S2500I in wind is equivalent to grade 6 on the Beaufort Scale (max. speed: 43 км/ч). The limitations of use of the S2500I in wind are detailed in table ⊞ Limits of use in relation to wind.

S2500I is not designed to be a security (break-in protection) system.

If there is a pedestrian access gate integrated in the leaf of the gate, the motorised movement must be disabled when the pedestrian gate is not in a safe position.

The installation must be visible during the day and at night. If it is not, appropriate solutions must be provided to make the fixed and moving parts visible.

Implementing the automation requires the installation of the necessary safety devices, identified by the installer through an appropriate risk assessment of the installation site.

UNAUTHORISED USE

- Uses other than the intended use are prohibited.
- It is prohibited to install the automation system outside of the limits specified in the Technical Data and in the Mechanical and Electrical Installation Requirements.
- It is forbidden to use S2500I in a constructional configuration other than the one provided by the manufacturer.
- No component part of the product may be modified.
- It is prohibited to install the automation system on escape routes.
- It is prohibited to install the automation system to create fire doors.
- It is prohibited to install the automation system in environments in which there is a risk of explosion and/or fire: the presence of flammable gases or fumes is a serious safety hazard (the product is not ATEX certified).
- It is prohibited to power the system with energy sources other than those specified.
- It is prohibited to integrate commercial systems and/or equipment other than those specified, or use them for purposes not intended and authorised by their respective manufacturers.
- Do not allow water jets of any type or size to come into direct contact with the actuator.
- Do not expose the actuator to corrosive chemicals or atmospheric agents.
- It is prohibited to use and/or install accessories which have not been specifically approved by FAAC S.p.A.
- It is prohibited to use the automation system before performing commissioning.
- It is prohibited to use the automation system in the presence of faults which could compromise safety.
- It is prohibited to use the automation system with the fixed and/or mobile guards removed or altered.
- Do not use the automation system unless the area of operation is free of persons, animals or objects.
- Do not enter/remain in the area of operation of the automation system while it is moving.
- Do not try to prevent the movement of the automation system.
- Do not climb on, hold onto or let yourself be pulled by the leaf. Do not climb onto the actuator.
- Do not allow children to approach or play in the area of operation of the automation system.
- Do not allow the control devices to be used by anyone who is not specifically authorised and trained to do so.
- Do not allow the control devices to be used by children or persons with mental and physical deficiencies unless they are supervised by an adult who is responsible for their safety.
- During manual operation, gently guide the leaf the whole way, do not push it and let it slide freely.

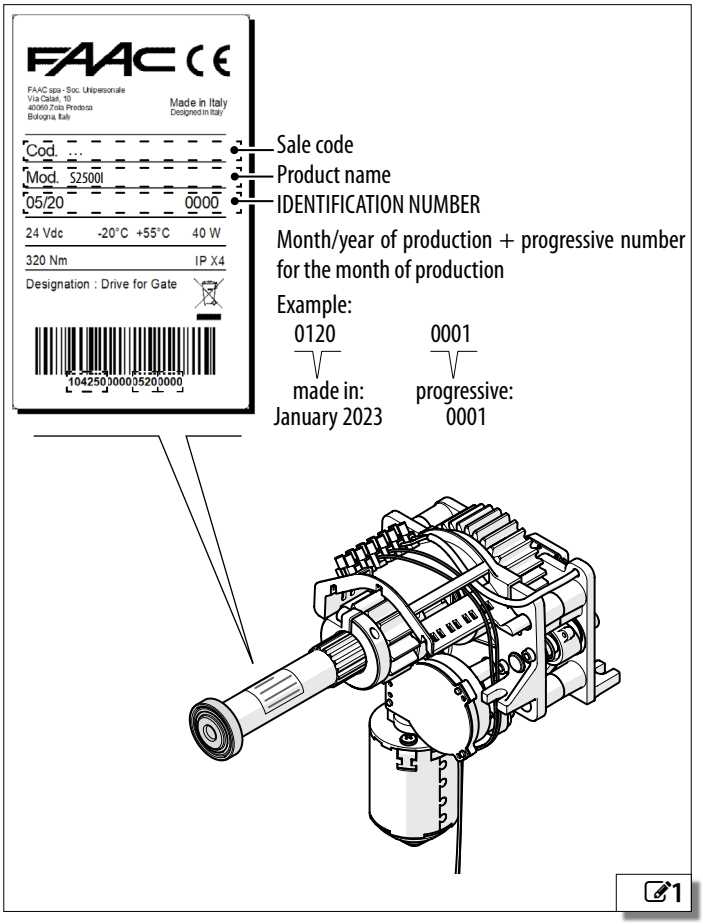
EMERGENCY USE

In emergencies or if there is a fault, turn off the power supply to the automation and disconnect the buffer batteries if there are any. If the leaf can be moved safely by hand, use the MANUAL OPERATION mode; otherwise place the automation out of service until it has been reset/repaired.

In the case of a breakdown, the automation must be reset/repaired exclusively by the installer/maintenance technician.

PRODUCT IDENTIFICATION

The S2500I actuator can be identified by the nameplate shown in the figure.



1

MARKINGS ON THE PRODUCT

The warning sign indicating that there is a finger/hands crushing, cutting or shearing hazard between the actuator gears must be applied before the equipment is put into service.

TECHNICAL CHARACTERISTICS

ACTUATOR S2500I

The S2500I electromechanical actuator is mounted at the top of the load-bearing pillar of the gate using the special upper hinge (Hinge S2500I). The motor is housed inside the pillar and the gear reduction system is connected to the S2500I hinge.

Standard equipment

- Absolute magnetic encoder BUS 2easy for detecting the position of the leaf and for recognising obstacles (anti-crushing function).
- Integrated flashing light (supplied with the S2500I hinge).
- Manual release, accessible from inside and outside the property.

Components required for installation

- FAAC S2500I hinge for fastening the upper part of the leaf

In order for the leaf to move safely, the FAAC S2500I hinge must be used in combination with suitable lower hinge (NOT supplied by FAAC) that is the correct size for supporting the leaf. Since the gate is to be automated, consider a leaf weight of at least 300 kg when dimensioning the lower hinge.

A suitable anti-falling device must be used for the leaf.

- Cover FAAC S2500I
- **Control system** The actuator has to be connected to a FAAC E124S electronic board (supplied separately) with FW version 4.0 or later.
- External mechanical stops for the leaf are required.

Accessories

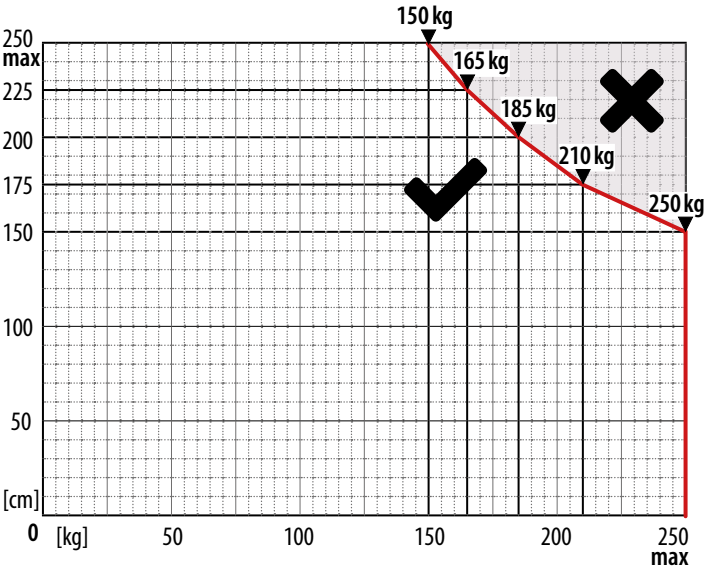
- Integrated mechanical stops kit.
- External release kit for the S2500I.
- Leaf guide bracket kit.
- Adapters for 100 or 120 mm square section pillars.

1 Technical data

Motor Power Supply	24 V ⎓ from electronic board
Electric motor	brush type
Nominal absorbed power	40 W
Max torque	320 Nm
Square section pillar dimensions	100x100, 120x120, 150x150 mm
Max leaf length	2 m (2.5 m with electric lock)
Max leaf weight	250 kg*
* see Leaf weight / width limits	
Angular speed max.	10 °/s
Leaf opening angle max.	165 °
Ambient operating temperature	-20 °C to +55 °C
Type of use	Residential buildings/Apartment complexes*
* for apartment complex use, do not enable the Closing thrust and reverse stroke in opening on the E124S board	
Continuous use time (ROT)	continuous at 55 °C
Protection rating	IP X4
Weight of actuator	7.9 kg
Weight of upper hinge	3.3 kg
Weight of cover	1.8 kg

2 Leaf weight / width limits

✔ = PERMITTED ✖ = NOT PERMITTED

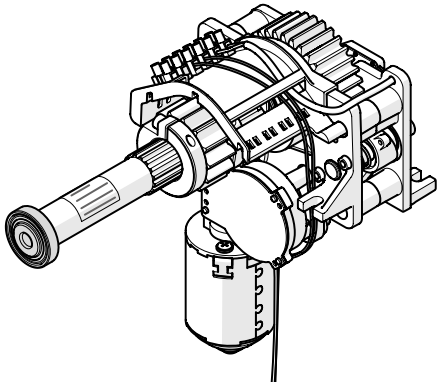


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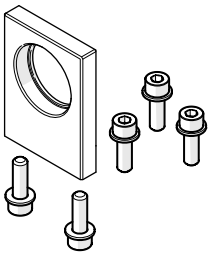
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COMPONENT IDENTIFICATION

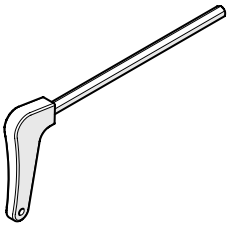
ACTUATOR S2500I



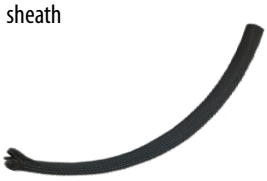
Actuator-hinge fastenings



Release key



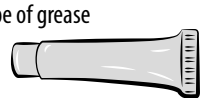
Motor cable protection sheath



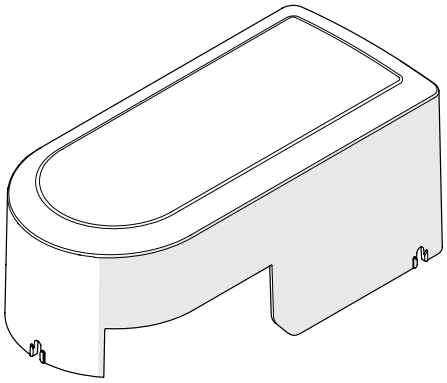
Indication



Tube of grease

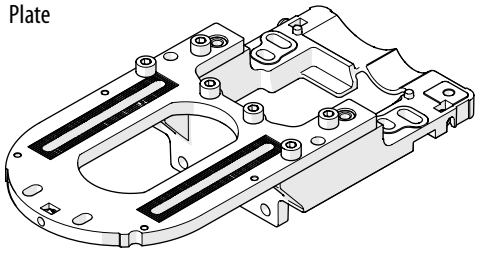


COVER S2500I (supplied separately)

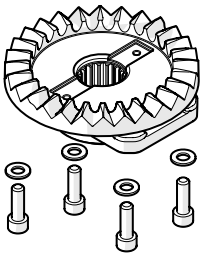


HINGE S2500I (supplied separately)

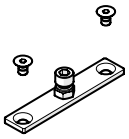
Plate



Gear



Axial stop on leaf joint



Flashing light

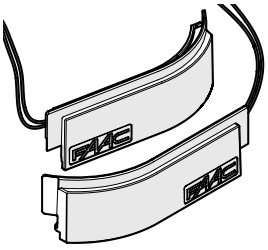
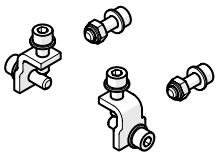
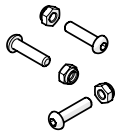


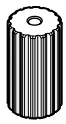
Plate-pillar fastenings



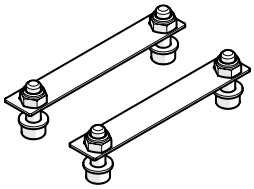
Cover fastenings



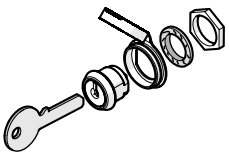
Leaf connection joint



Finger guard infill plates



Release lock



Anti-vibration plugs

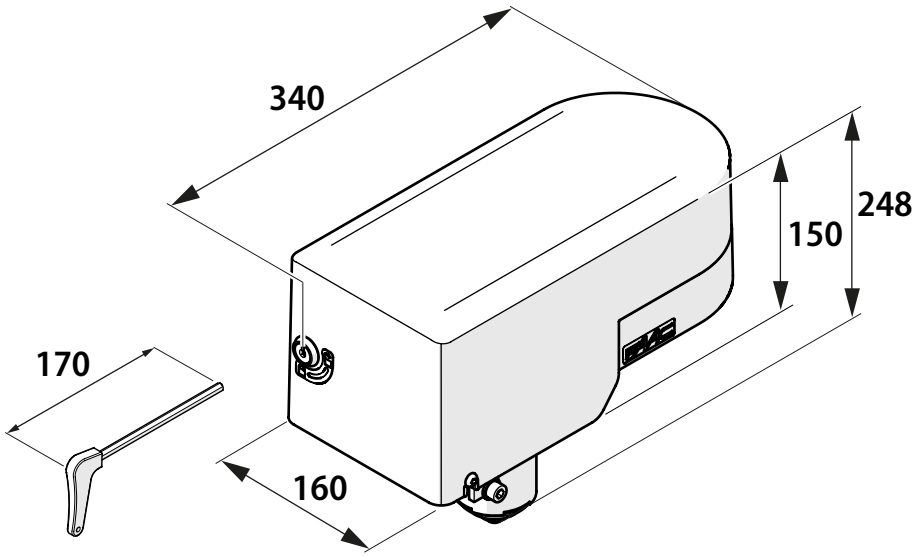


Bush to weld onto the leaf



2

DIMENSIONS



3

4. INSTALLATION REQUIREMENTS

MECHANICAL REQUIREMENTS

The mechanical structural components must comply with the requirements of EN 12604. Before installing the automation, the suitability of the mechanical requirements must be established and any work that is necessary in order to meet them carried out.

The essential mechanical requirements are as follows:

Flat, horizontal paving in the area of movement of the leaf.

The structure (columns, hinges and leaves) must be solid and there must be no risk of detachment or collapse, (considering the weight of the leaf and the forces applied by the door actuator and wind action). Perform structural calculations where necessary.

The structure must show no signs of corrosion or cracking.

The hinges must be in good condition, lubricated and with no play or friction.

The leaf must remain vertical throughout the entire length of travel, with a regular, smooth and uniform movement.

Appropriate devices must be installed to prevent the leaf from falling.

Presence of external mechanical limit stops to limit the travel of the leaf when opening and closing. The stops must be suitably sized and solidly fastened so that they resist any impact of the leaf in the event of improper use (leaf pushed and left to slide freely). The thresholds and protrusions of the paving must be appropriately shaped in order to prevent the risk of sliding or slipping.

Presence of a safety area between the wall (or other fixed element) and the furthest protruding part of the open leaf, to protect against the risk of persons becoming trapped/crushed. Alternatively, check that the opening force required falls within the maximum permissible limits according to applicable standards and legislation.

Presence of safety areas between the fixed and moving parts, to protect against the risk of hands being trapped. Alternatively, apply protective elements that prevent fingers from being introduced.

Presence of a safety area between the floor and lower edge of the leaf, along its entire stroke, to protect feet from becoming caught and crushed. Alternatively, apply protective elements preventing the introduction of feet.

No sharp edges or protruding parts should be present to ensure there are no cutting, hooking or perforation hazards. Alternatively, eliminate or protect any sharp edges and protruding parts.

For the minimum dimensions to prevent crushing/shearing of body parts, refer to EN 349. For the safety distances required to prevent danger zones being reached, refer to ISO 13857.

DIMENSIONAL REQUIREMENTS AND INSTALLATION MEASUREMENTS

Since the gate is to be automated, consider a leaf weight of at least 300 kg when dimensioning the lower hinge.

Refer to ✎**4** and check the dimensional requirements and installation measurements.

(**H**) **maximum installation height from the ground** - Pillar and leaf must be aligned at the same height. If necessary, cut the pillar horizontally and evenly to make it the same height as the leaf.

(**L**) **side of square section pillar**

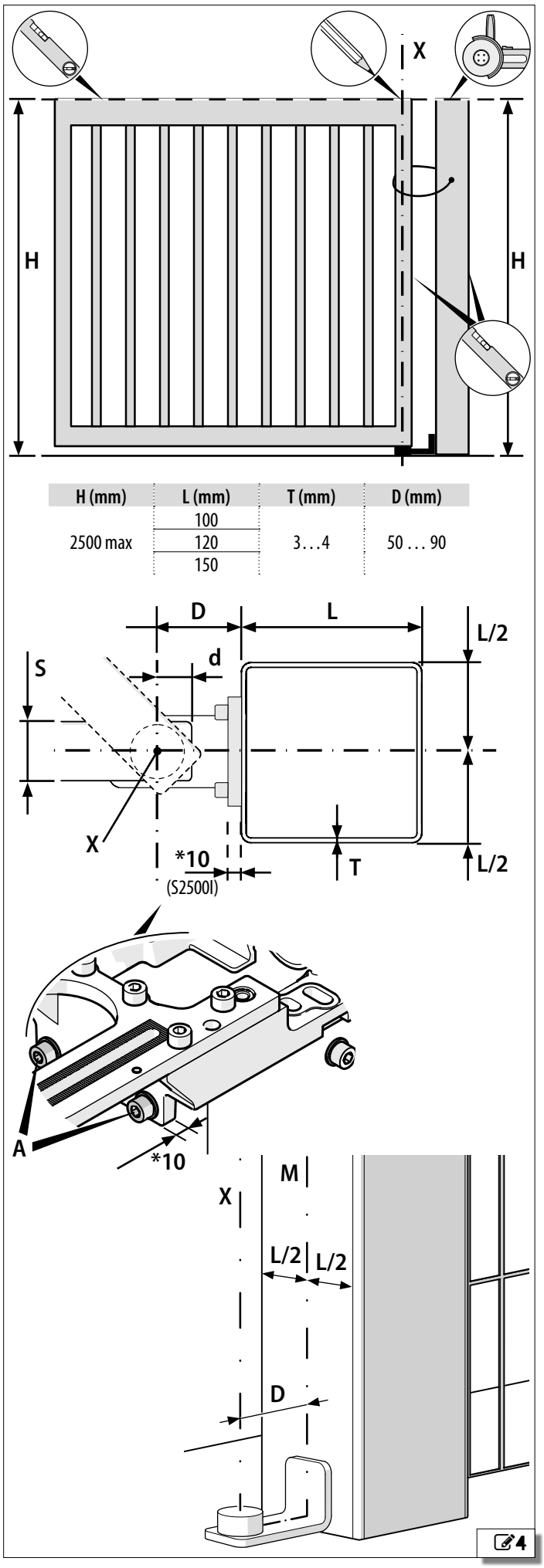
(**T**) **thickness of pillar profile**

(**M**) **centre line of pillar**: the lower hinge must be in line

(**X**) **centre of rotation of the leaf** in line with the lower hinge

(**D**) distance of (**X**) axis from the pillar

(**d**) distance of (**X**) axis from the edge of the leaf: considering the thickness of the leaf (**S**), it must allow the leaf to rotate freely and allow access to the screws (**A**). **WARNING** The thickness of the S2500I hinge, 10 mm, should be added to the pillar.



ELECTRICAL SYSTEM

Always shut off the power supply before performing any work. If the disconnect switch is not in view, apply a warning sign stating "WARNING - Maintenance in Progress".

The electrical system must comply with applicable legislation in the country of installation.

Use components and materials with CE marking which are compliant with the Low Voltage Directive 2014/35/EU and EMC Directive 2014/30/EU.

The power supply line for the automation must be fitted with a multi-pole circuit breaker, with a suitable tripping threshold, a contact opening distance of at least 3 mm and a breaking capacity that complies with current regulations.

The power supply for the automation must be fitted with a 30 mA differential switch.

The metal parts of the structure must be earthed.

Check that the protective earthing system complies with applicable regulations in the country of installation.

The electrical cables of the automation system must be of a size and insulation class that is compliant with current legislation and laid in appropriate rigid or flexible conduits, either above or below ground.

Use separate conduits for the power supply and the 12-24 V control devices / accessories cables.

Check buried cable plans to ensure that there are no other electrical cables in proximity to the planned digging/drilling locations to prevent the risk of electrocution.

Check that there are no pipes in the vicinity as well.

The external electronic board must be housed in an enclosure that has a minimum IP 44 protection rating and fitted with a lock or another type of device to prevent access by unauthorised persons. The enclosure must be located in an accessible and non-hazardous area and at least 30 cm from the ground. The cable outlets must face downwards.

The conduit fittings and the cable glands must prevent the entry of moisture, insects and small animals.

Protect extension connections using junction boxes with an IP 67 protection rating or higher.

The overall length of the BUS cables must not exceed 100 m.

It is recommended to install a flashing light in a visible position to indicate when it is moving.

The control accessories must be positioned in areas that are always accessible and not dangerous for the user. It is recommended to position the control accessories within the field of view of the automation. This is mandatory in the case of hold-to-run controls.

The hold-to-run controls in the dead-man mode of operation, must comply with standard EN 60947-5-1.

If an emergency stop button has been installed, it must be EN13850 compliant.

Comply with the following heights from the ground:

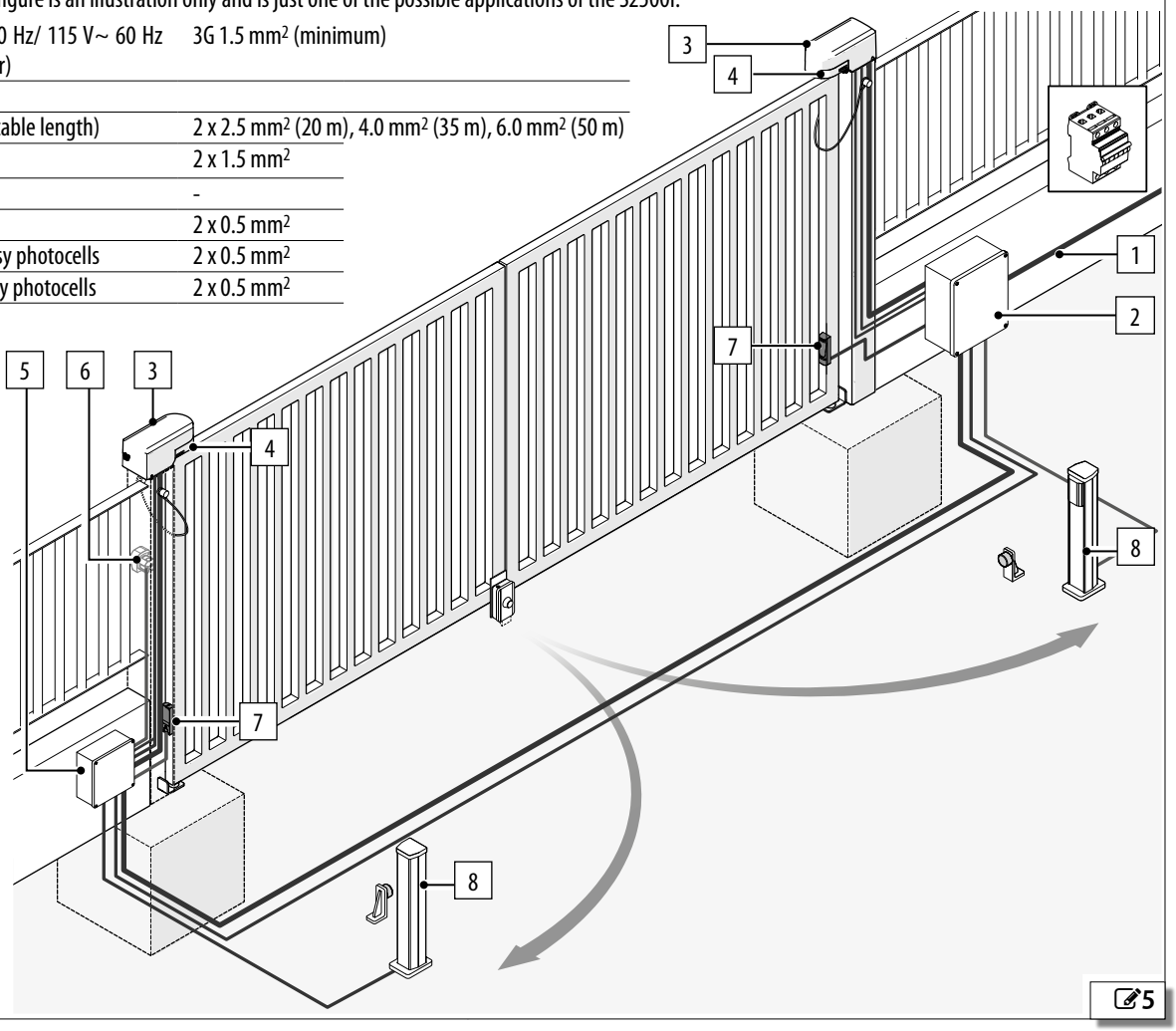
- control accessories = minimum 150 cm
- emergency buttons = maximum 120 cm

If the manual controls are intended to be used by disabled or infirm persons, highlight them with suitable pictograms and make sure that these users are able to access them.

EXAMPLE SYSTEM

The example shown in the figure is an illustration only and is just one of the possible applications of the S2500I.

1	Power supply 230 V~ 50 Hz/ 115 V~ 60 Hz (upstream circuit breaker)	3G 1.5 mm² (minimum)
2	Electronic equipment	
3	S2500I actuators (max. cable length)	2 x 2.5 mm² (20 m), 4.0 mm² (35 m), 6.0 mm² (50 m)
4	Integrated flashing light	2 x 1.5 mm²
5	Junction box	-
6	Key button	2 x 0.5 mm²
7	Pair of external BUS 2easy photocells	2 x 0.5 mm²
8	Pair of internal BUS 2easy photocells	2 x 0.5 mm²



5

5. INSTALLATION

HAZARDS AND PERSONAL PROTECTIVE EQUIPMENT

RISKS



PERSONAL PROTECTIVE EQUIPMENT



The installation must comply with Standards EN 12453.

Mark off the work site and prohibit access/transit.

The gate should be handled safely:

- 2 operators should be involved and suitable lifting equipment should be used
- the leaf should be secured to the lifting equipment using suitable devices
- when the leaf has been removed, it should be placed on the ground or secured with suitable devices to prevent it from tipping over

When the leaf is installed on the gate, the anti-falling device must be present.

5.1 WELDING THE BUSH TO THE LEAF

1. Mark the centre of rotation (**X**), in line with the lower hinge and at a distance (**d**) from the edge of the leaf.

IMPORTANT Follow what is written in the section § Dimensional requirements and installation measurements and ✎**4**.

2. Position the bush on the leaf, aligned with the X-axis, and then weld its entire circumference.

If mechanical stops are provided, weld on the special bush included in the kit and insert the fixed pin (see specific section in the Chapter § Accessories).

Welding is required, to a thickness of at least 5 mm.

Earth the welder (-) on the leaf, NOT on the pillar.

3. Remove the leaf after having released the anti-falling device.

If the hinge is to be installed on an existing gate:

- remove the existing upper hinge from the pillar (eliminate any protrusions and sharp burrs)
- make sure that the lower hinge is suitable and the correct size for supporting the leaf

ALTERNATIVE: LEAF GUIDE BRACKET KIT (OPTIONAL)

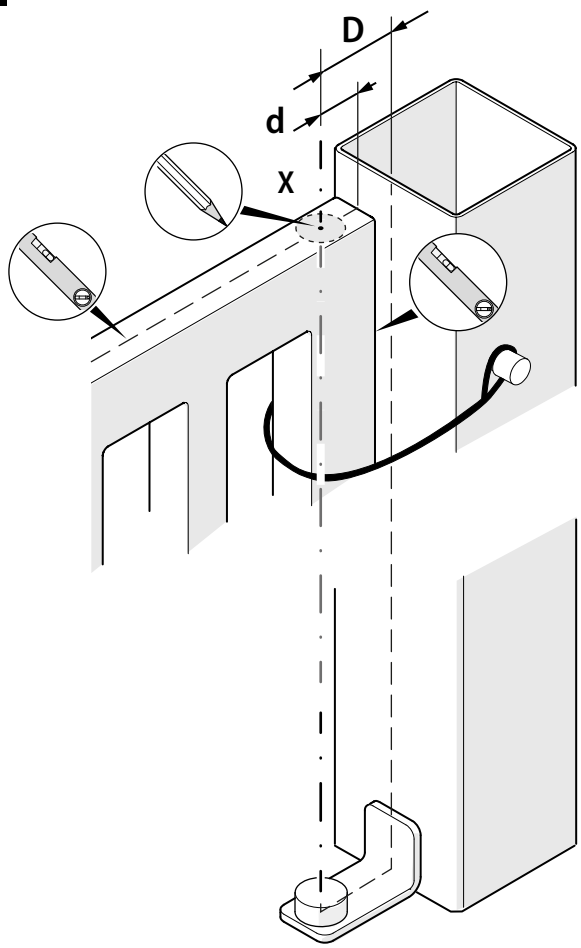
The off-the-shelf FAAC kit consists of a special bushing already welded on a bracket to be screwed to the leaf (see the specific section in Chapter § Accessories).

The screw-on bracket, when required, is an important safety component of the installation, which ensures the stability and control of the moving leaf.

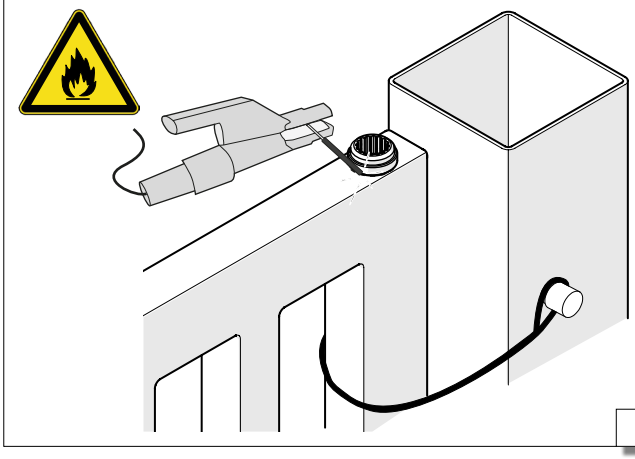
If the supplied FAAC KIT is not used, it is the responsibility of the installer to provide a bracket suitable for the loads applied and to choose the material, thickness, dimensions, anti-corrosion surface treatments and fastenings (carry out structural calculations).

The clearance between the leaf and the bracket must be a maximum of 2 mm.

1 Marking the centre of rotation X.



2 Welding the bush to the leaf.



✎6

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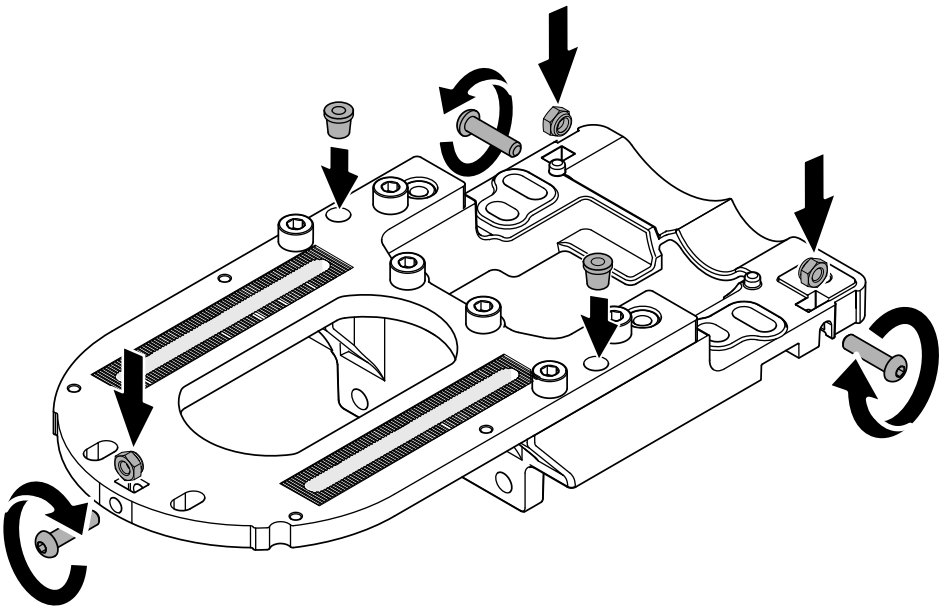
Translation of the original instructions

5.2 INSTALLING THE HINGE

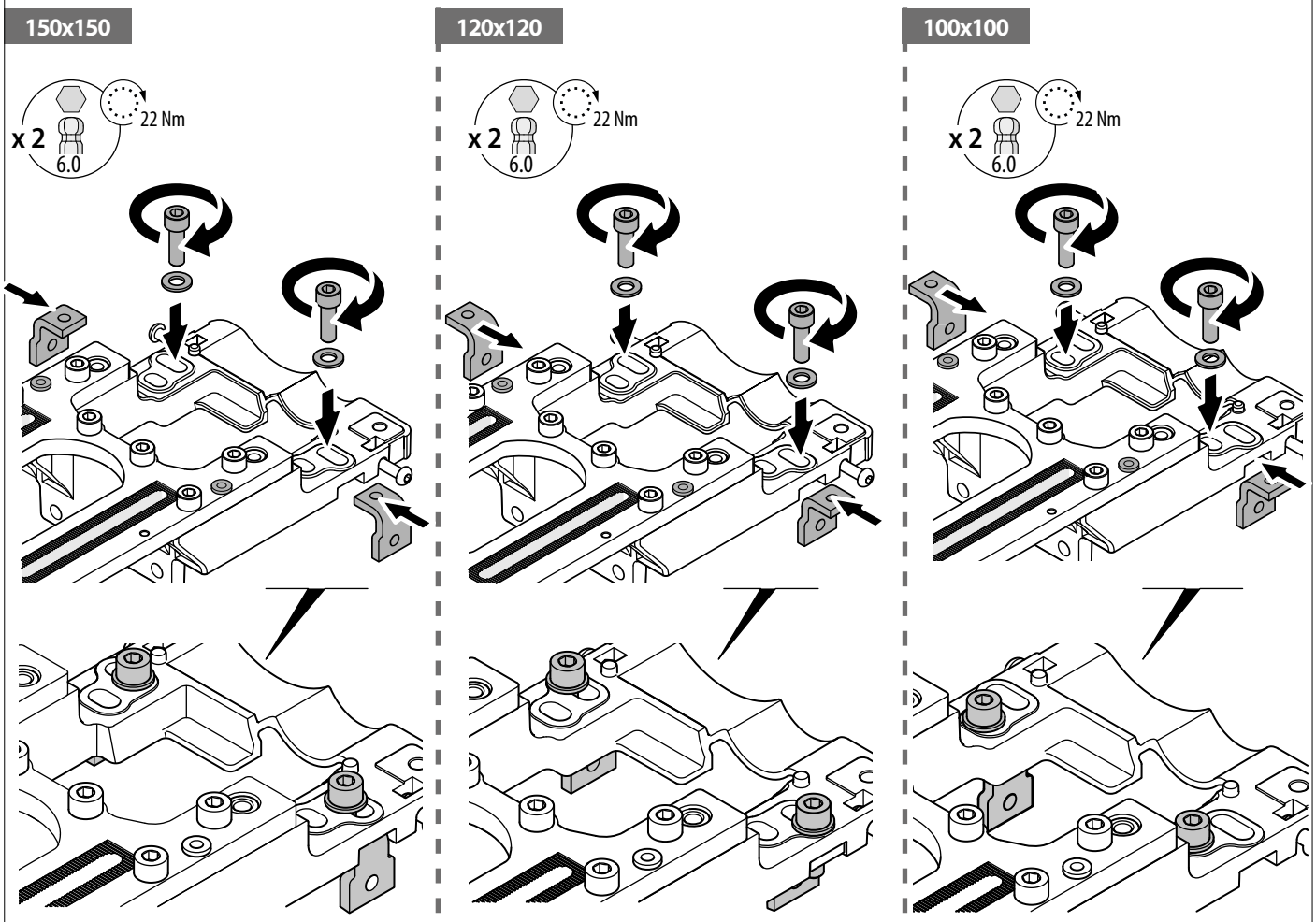
PREPARING THE HINGE PLATE

1. Insert the anti-vibration plugs and cover fastenings (partially tighten the nuts and screws).
2. Screw on the side plates at the positions shown in the figure, according to the size of the pillar (150x150, 120x120, 100x100).

1



2

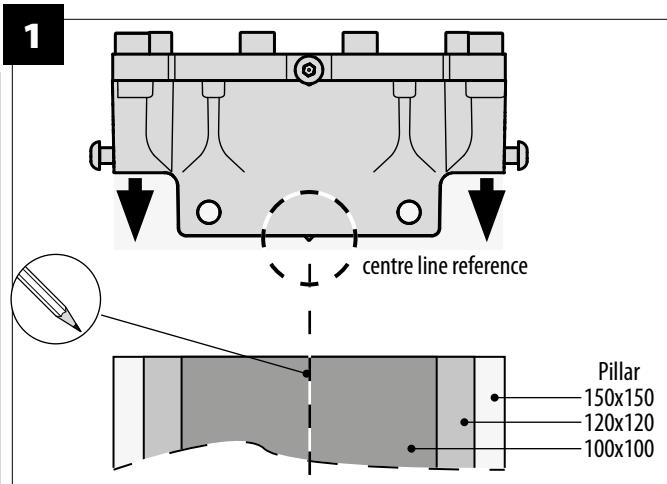


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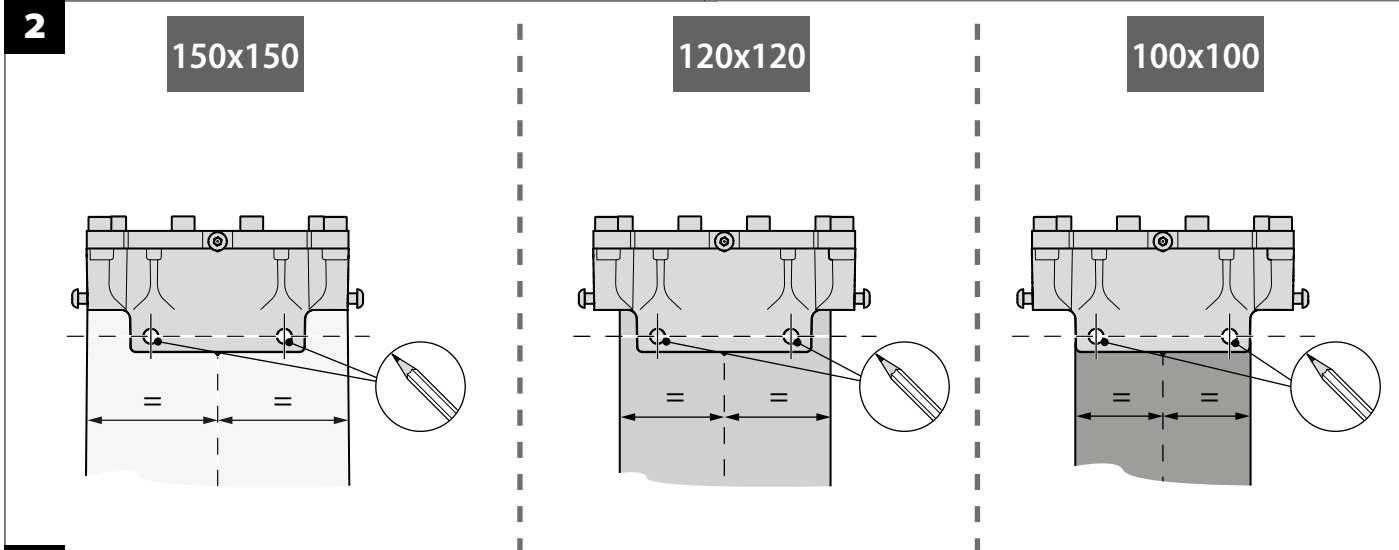
DRILLING THE HOLES IN THE PILLAR

1. Position the plate with the reference mark aligned with the centre line of the pillar.
2. Mark the 2 drilling points on the pillar.
3. Remove the plate, mark a horizontal line between the 2 points and continue around the sides. Mark the holes on the sides at the position indicated in the figure, according to the size of the pillar.
4. Drill holes at the marked points.

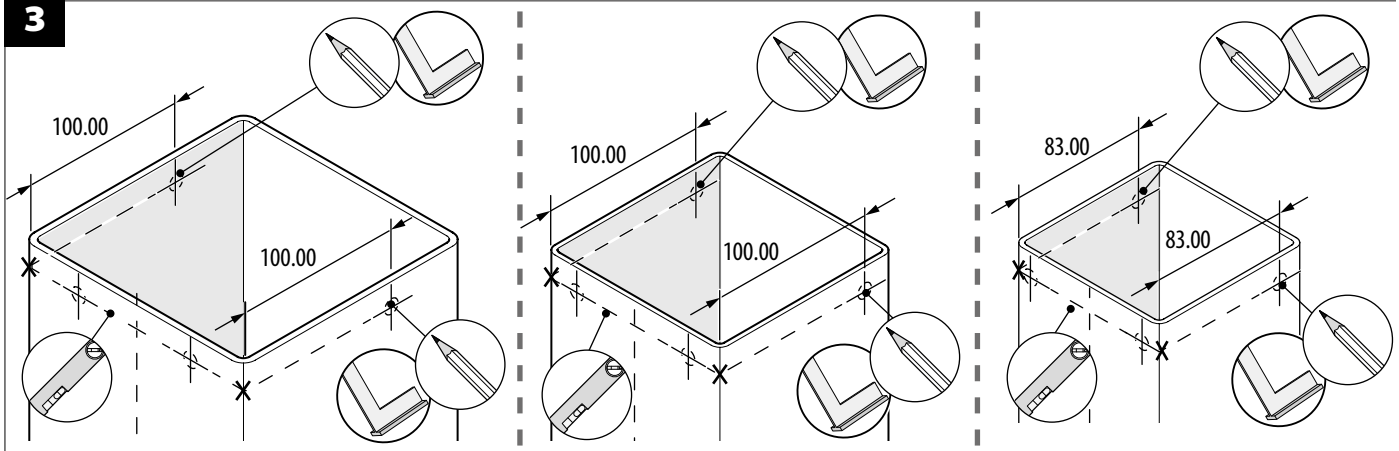
1



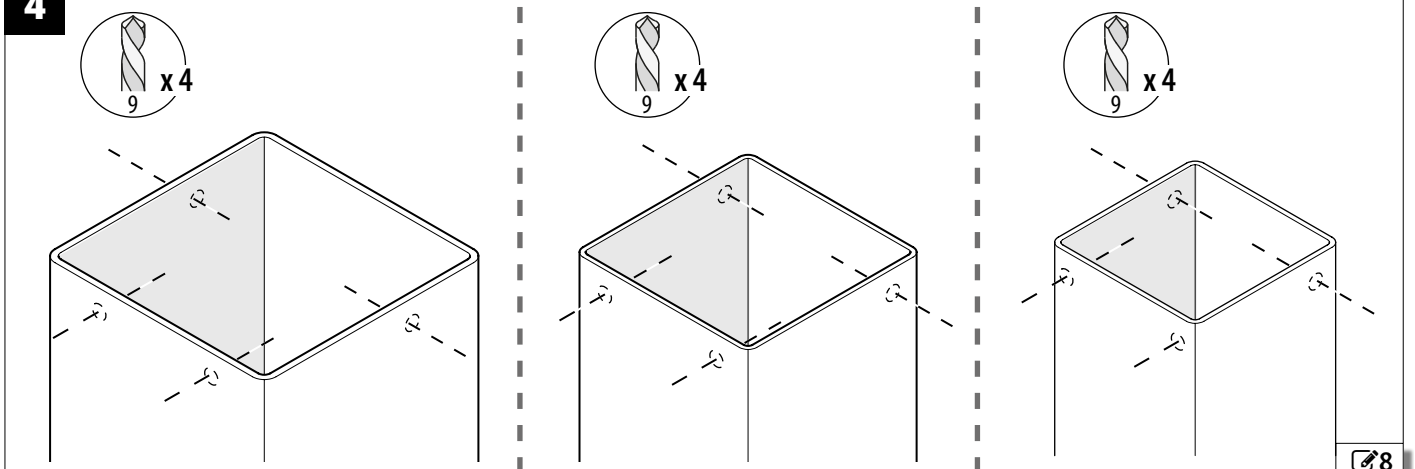
2



3



4

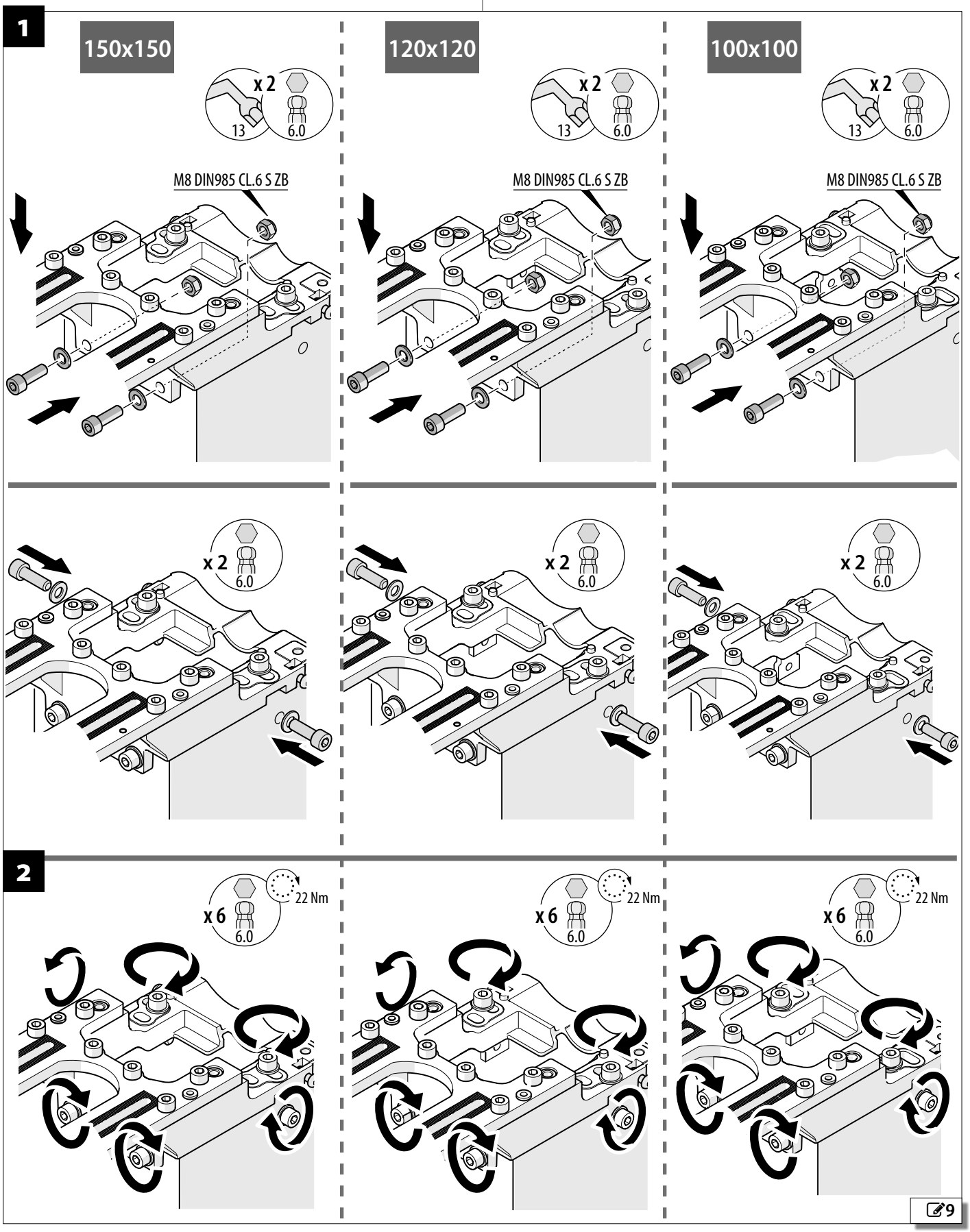


8

FASTENING THE HINGE

If a pillar adapter is provided (see the specific section in the Chapter § Accessories), install it before starting this phase.

1. Rest the plate on the pillar and screw on the front and side fastenings temporarily.
2. After making sure that has been installed correctly, tighten all the parts using the fastening torques indicated in the figure.



9

5.3 INSTALLING THE LEAF AND THE HINGE GEAR

1. Install the leaf vertically and aligned on the lower hinge.

Secure the leaf using a suitable anti-falling device.

2. Apply grease inside the welded-on bush, then install the gear.
3. Insert the gear joint into the welded-on bush until it reaches the leaf.
4. Adjust the position so that the leaf is vertical.
5. Fasten it in place with the screws and washers provided, using the fastening torques indicated in the figure.

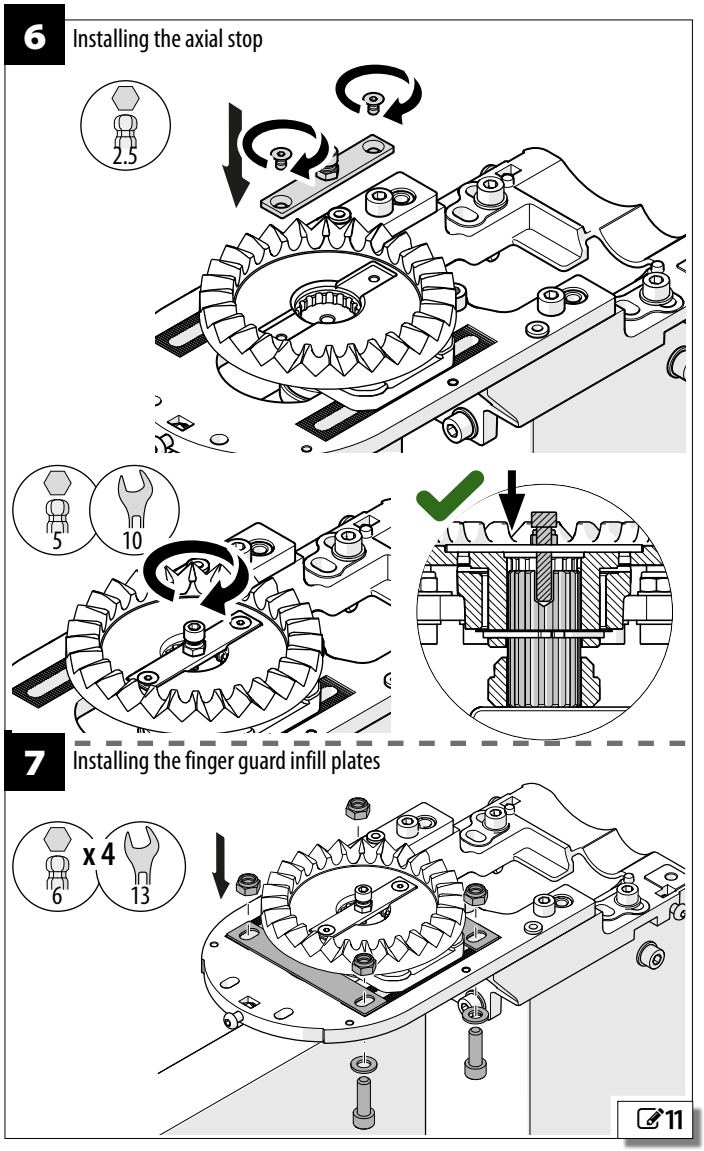
If integrated mechanical stops are provided, install them at this stage (see the specific section in Chapter § Accessories).

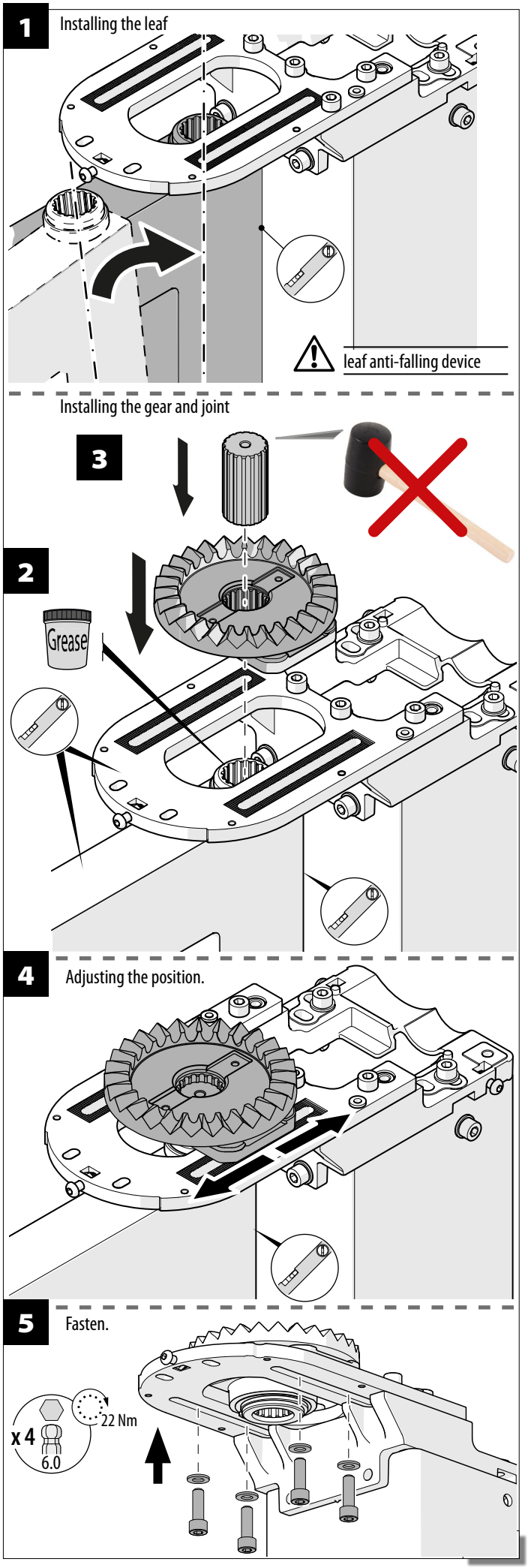
6. Install the axial stop and fasten it. Screw in the central screw, then tighten the nut.
7. Install the finger guards and fasten them.

The guards are required when the width of the slots allows fingers to be inserted between the actuator gears.

Move the leaf manually to make sure it is working correctly.

During manual operation, gently guide the leaf the whole way, do not push it and let it slide freely.





ENGLISH

Translation of the original instructions

5.4 INSTALLING THE FLASHING LIGHTS

Insert the flashing light and secure it using the screws provided.

⚠ Do not exceed the maximum torque shown in the figure in order not to damage the component.

Install the second flashing light in the same manner.

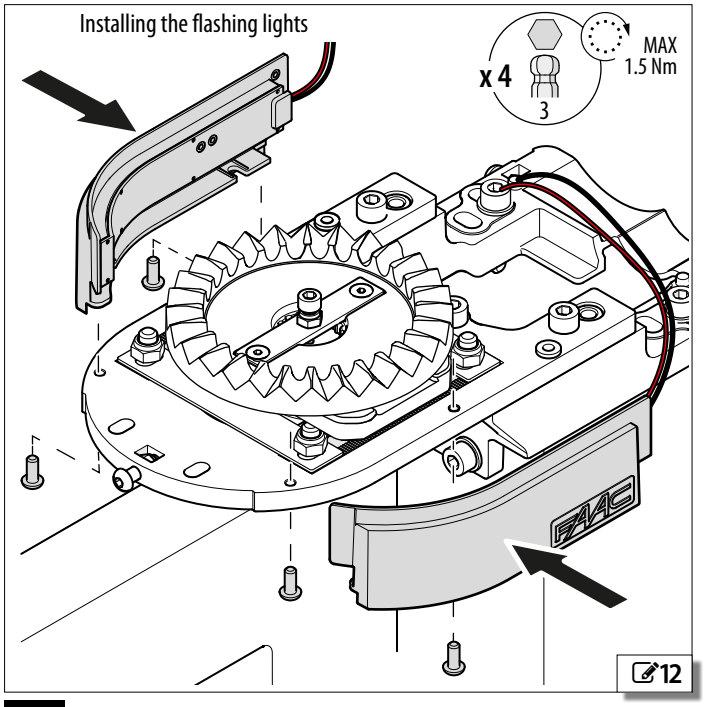
⚠ It should be connected after the actuator has been installed. In the meantime, secure the cables away from the gear in order to avoid damage. Protect the terminals from oxidation if you do not envisage connecting the automation for some time.

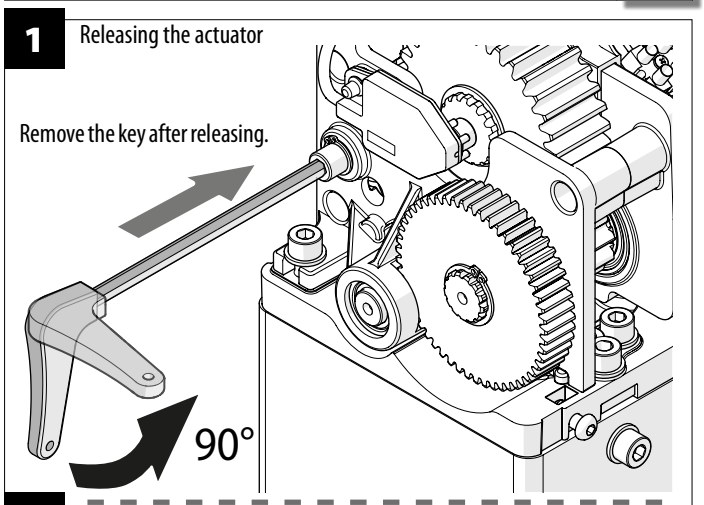
5.5 INSTALLING THE ACTUATOR

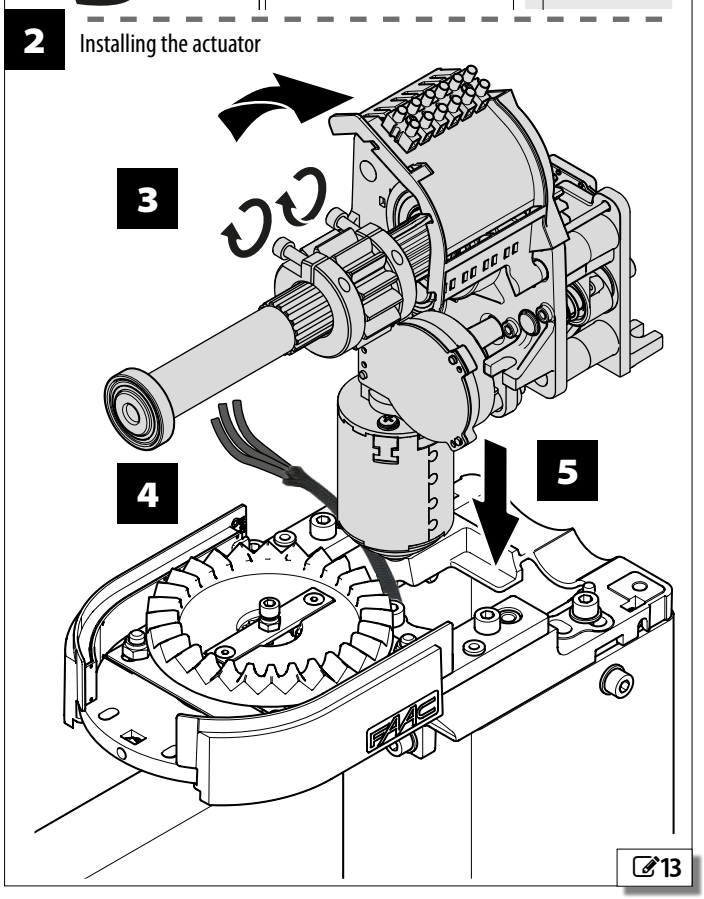
1. Release the actuator using the key provided.
2. Lift the terminal board support.
3. Loosen the screws of the collars.
4. Pass the wires out of the pillar through the S2500I hinge.

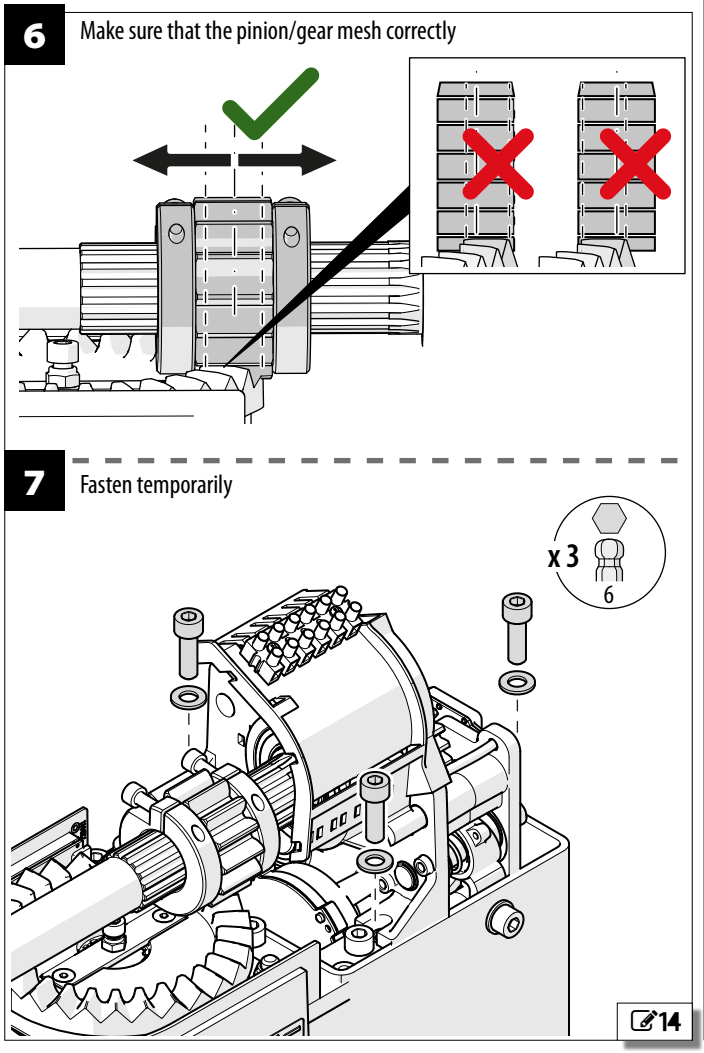
⚠ Place a heat-resistant sheath on the section of cable from the point at which it enters the hinge up to about 10 cm from the terminal board.

5. Insert the actuator into the pillar.
   - Be careful not to damage the electrical cables.
6. Make sure that the pinion/gear mesh correctly (move the pinion if necessary).
7. Temporarily fasten using the 3 screws and washers.









8. Place the collars in contact with the pinion and tighten the screws temporarily.
9. Lower the terminal board support.
10. Insert the front plate onto the shaft and fasten it temporarily in place.

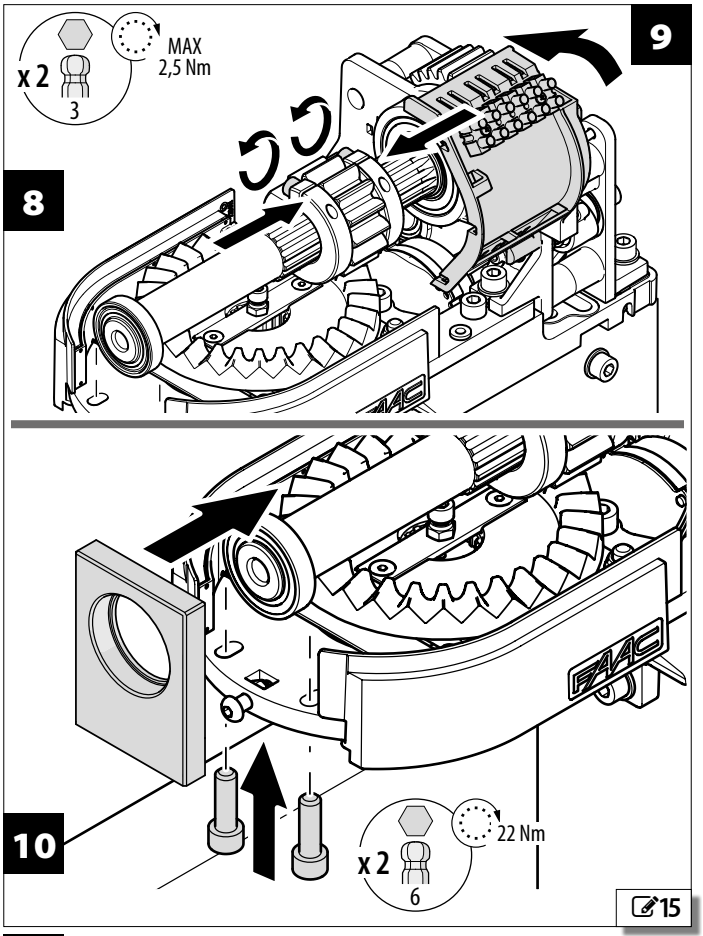
Move the leaf manually to make sure that it is working correctly.

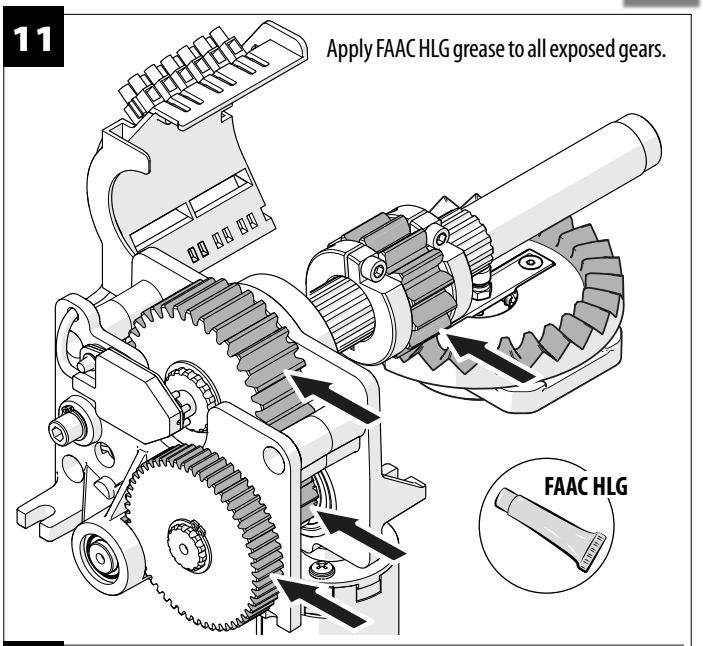
> During manual operation, gently guide the leaf the whole way, do not push it and let it slide freely.

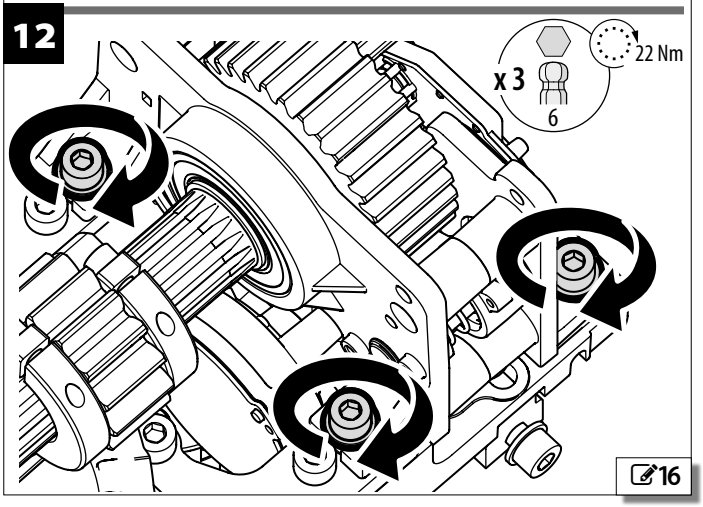
11. Apply FAAC HLG grease to all exposed gears.

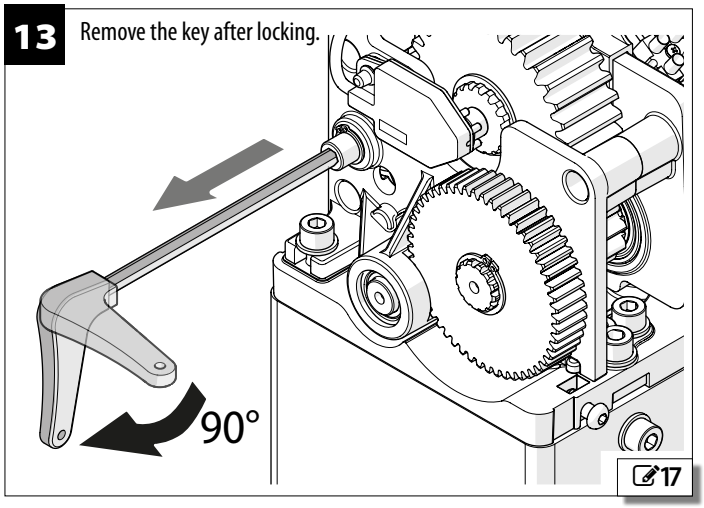
> Use the FAAC HLG grease provided.

12. Tighten the screws using the fastening torques indicated in the figure at points 8, 10 and 12.
13. Re-lock the actuator and remove the key.









6. ELECTRONIC INSTALLATION OF THE ACTUATOR

RISKS



PERSONAL PROTECTIVE EQUIPMENT



Before carrying out work on the electronic board, disconnect the mains power supply and disconnect the emergency battery (if present). Turn power back on only after having made all the electrical connections and carried out the preliminary start-up checks.

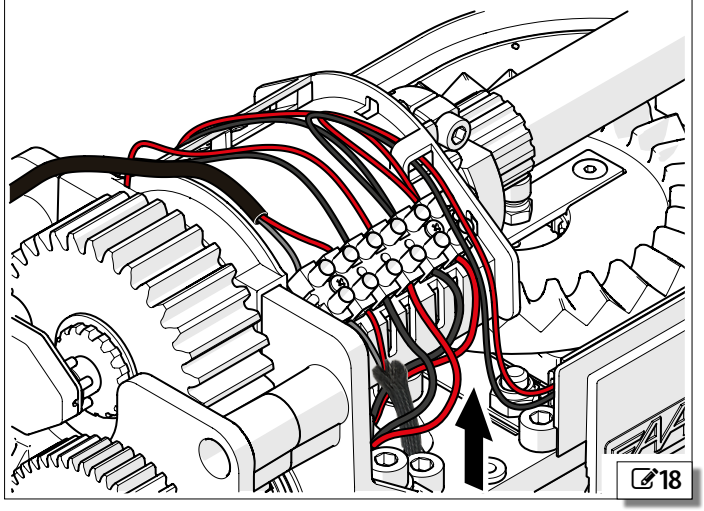
1. Wire both flashing lights to the dedicated terminals on the junction connector.

The motor and the encoder are factory pre-wired to the junction connector on the actuator.

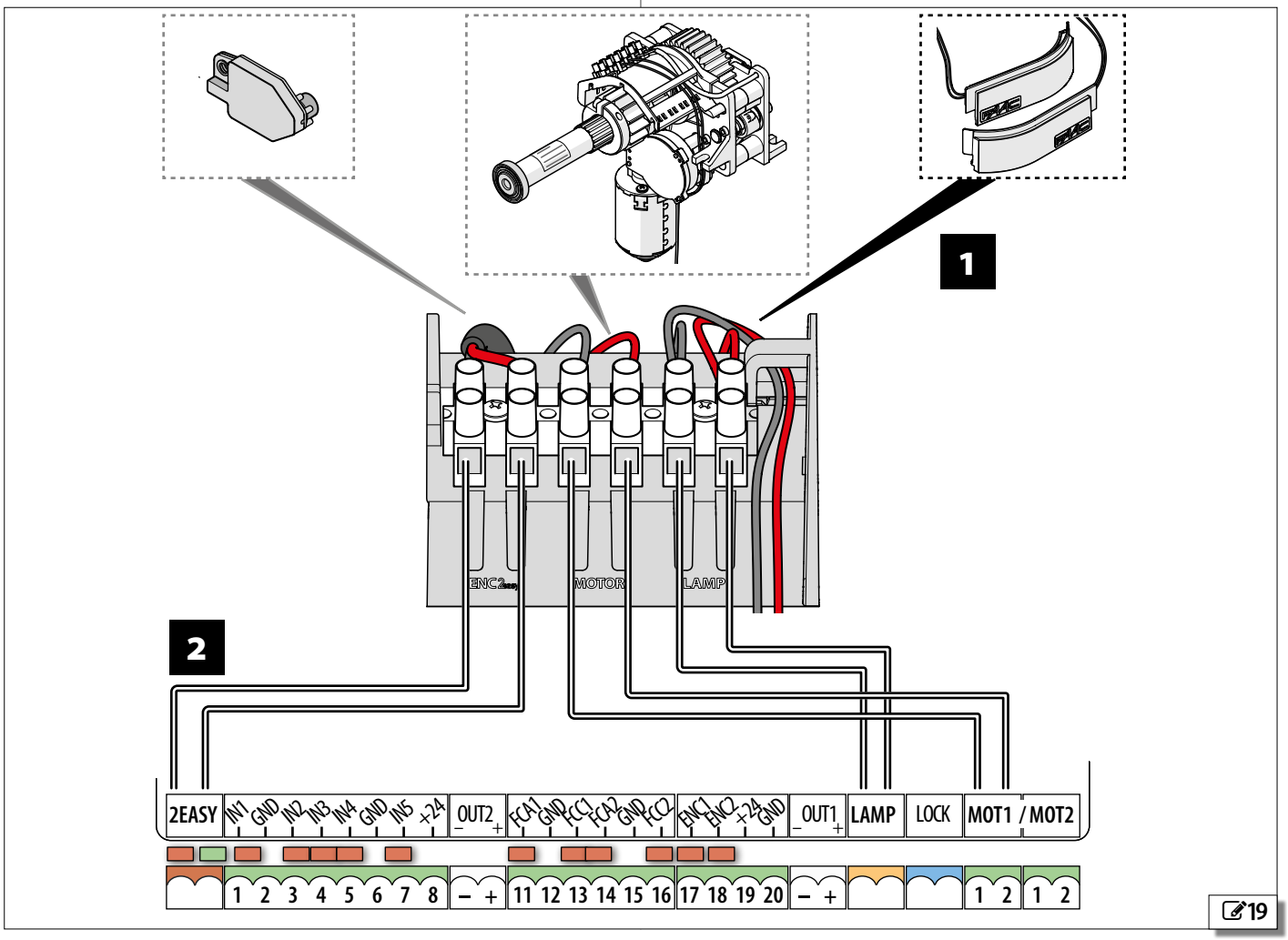
2. Connect the motor, encoder and flashing lights to the electronic board.
   - Use terminal board MOT1 or MOT2 for the motor according to the configuration of leaf (see the electronic board instructions).

Program the electronic board to operate the S2500I and make sure that it works correctly (see the electronic board instructions).

Junction connector (wiring complete)



18



19

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Translation of the original instructions

7. INSTALLING THE COVER

7.1 INSTALLING THE LOCK

The lock should be installed even if the actuator is not installed.

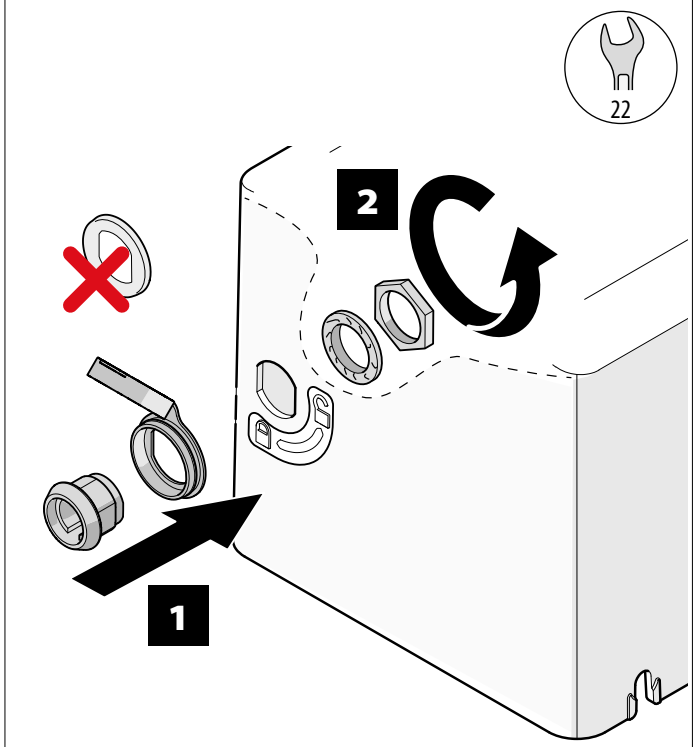
1. Install the cylinder and cap on the cover.
2. Fasten the washer and ring-nut from the inside.
3. Insert the lock with the key.
4. Turn by 180° to secure the lock in its seat.
5. Remove the key.
6. Close the cap.

7.2 INSTALLING THE COVER

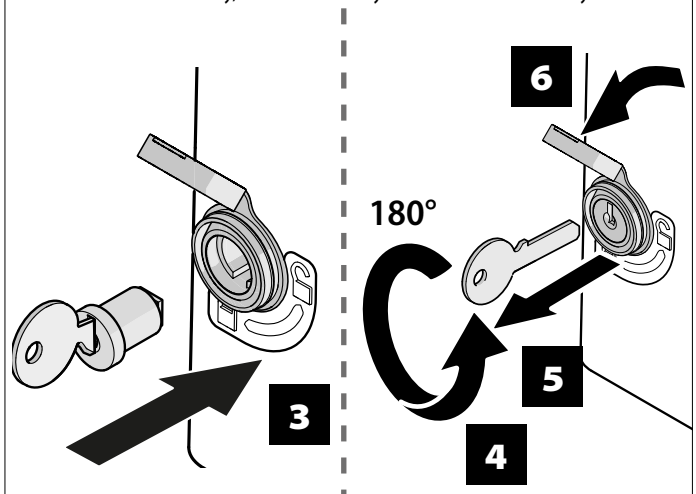
The cover should be installed even if the actuator is not installed.
Do not put the automation into service without having installed the cover.
Do not make holes in the cover, so as not to affect the IP seal.

1. Loosen the 3 screws on the hinge (do not remove them).
2. Install the cover.
3. Tighten the 3 screws on the hinge. Make sure that the cover is fastened securely.

Installing the lock

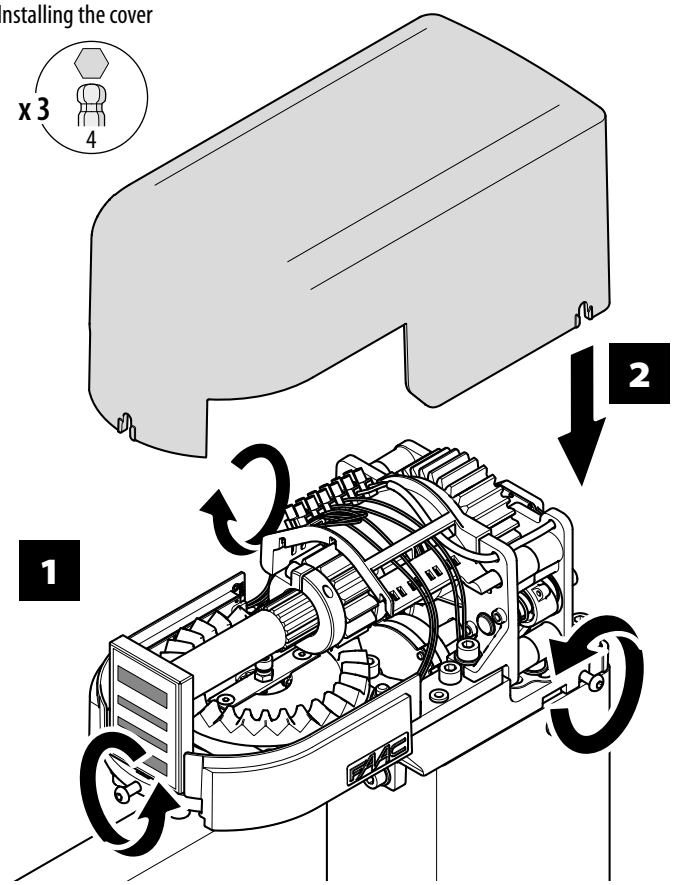


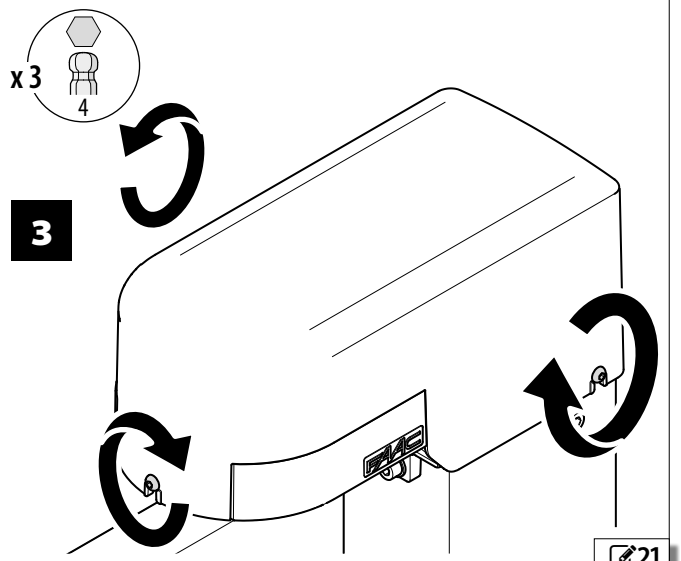
Insert the lock with the key, turn clockwise by 180° and remove the key.



20

Installing the cover





21

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Translation of the original instructions

8. ACCESSORIES

8.1 INTEGRATED MECHANICAL STOPS KIT

The kit includes: (**1**) one bush to weld onto the leaf with a fixed pin (replaces the one supplied with the hinge), (**2**) two stops with adjustable stop screws, (**3**) four screws (to replace those supplied with the hinge) and four long grub screws to secure the stops, (**4**) two short grub screws to lock the adjustable stops screws.

INSTALLATION

Follow what is written in the section § Dimensional requirements and installation measurements and ✎**4** and the safety instructions provided in the standard installation sections.

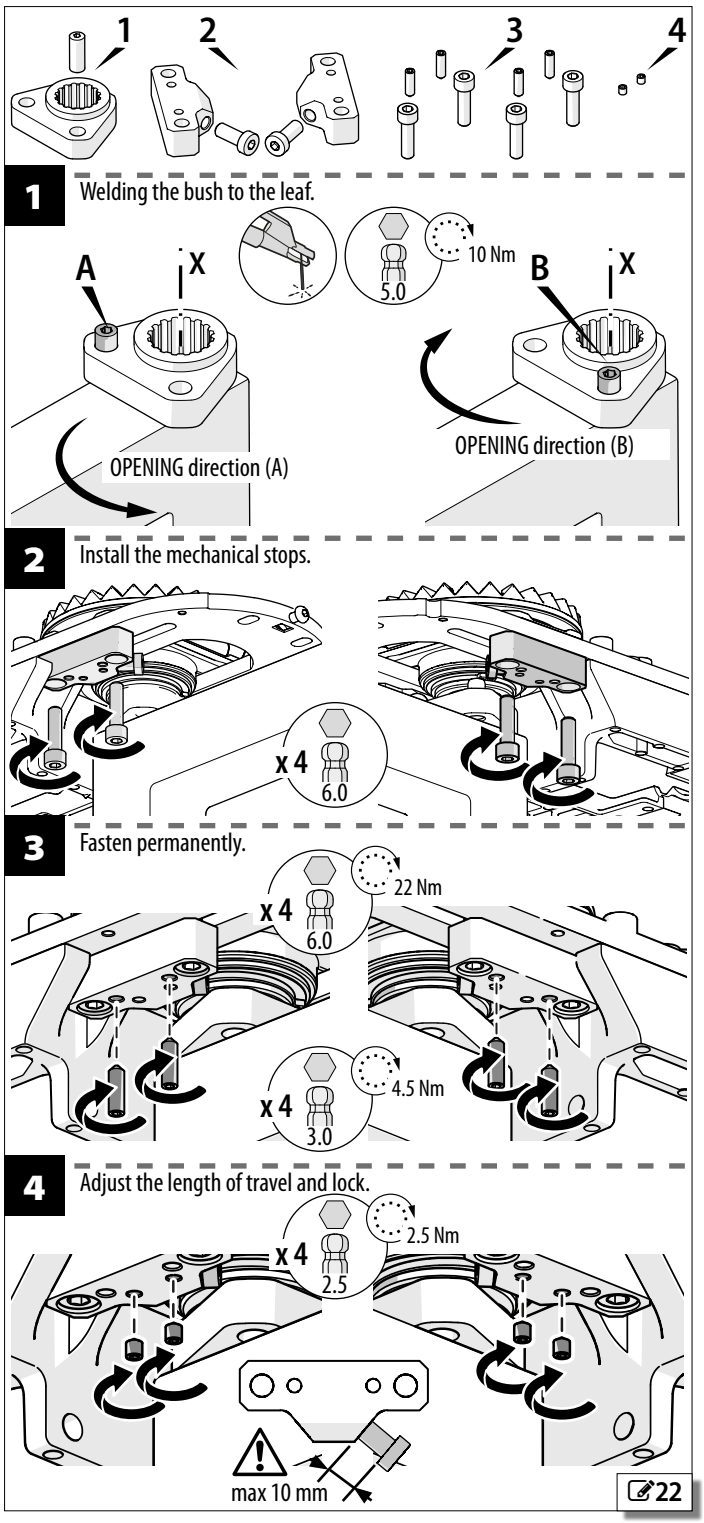
1. Position the bush, at the centre of the axis of rotation (**X**). See INSTALLATION EXAMPLES.
   - If both stops are installed (opening and closing), a movement of up to 100° is obtained. If only the opening stop is installed, a movement of up to 100° is obtained.
   - If only the closing stop is installed, a movement of up to the maximum permitted limit of 165° can be obtained.
   - To obtain a movement of more than 100° with only the opening stop, the bush has to be rotated (a 20° rotation corresponds to an opening of 165°).

Weld the entire contact surface of the bush with the leaf and then screw the fixed pin into the hole (**A** or **B**) according to the opening direction of the leaf. Tighten to the fastening torque indicated in the figure.

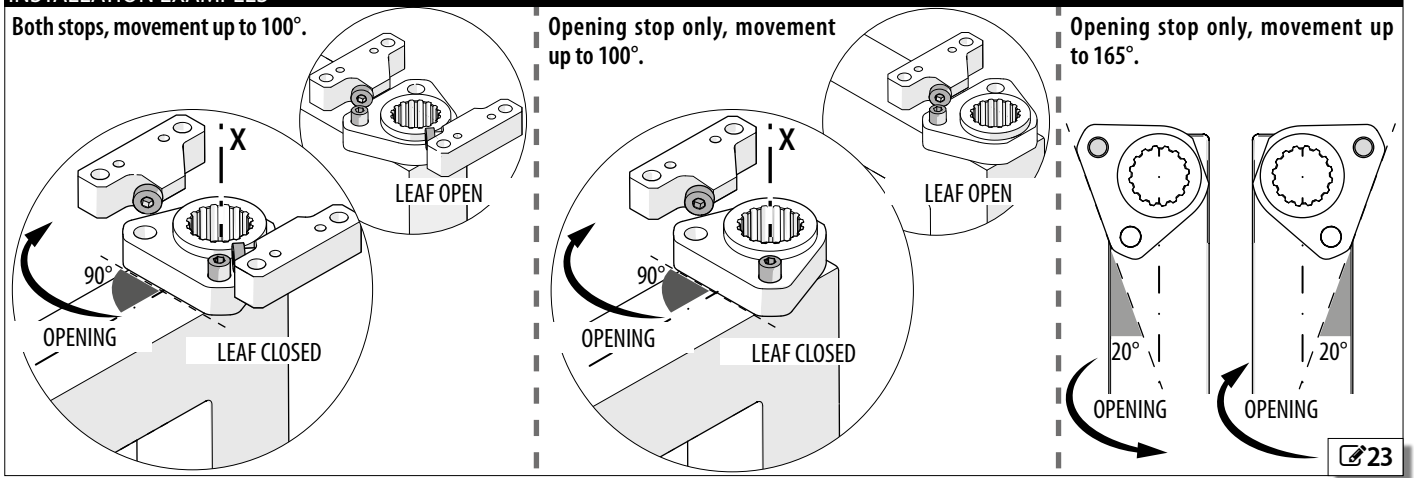
Refer to the relative sections, install the hinge on the pillar and install the leaf.

2. Install the mechanical stops, complete with adjustable stop screws. **DO NOT fully tighten the screws at this stage.**
3. After having made sure that the gear is centred on the axis of rotation, fully tighten the screws of the mechanical stops and then tighten the long grub screws. Tighten to the fastening torques indicated in the figure.
4. Adjust the length of travel, if necessary, using the opening / closing stop screws. After adjustment, lock the stop screw using the short grub screws. Tighten to the fastening torque indicated in the figure.

Do not exceed the maximum amount by which the screw is allowed to protrude.



INSTALLATION EXAMPLES



8.2 LEAF GUIDE BRACKET KIT S2500I

The kit is required to install the S2500I if it is not possible to weld the bush onto the leaf and/or if the axis of rotation (X) is external to the leaf.

⚠ The kit can be used only if all the holes in the bracket overlap the leaf.

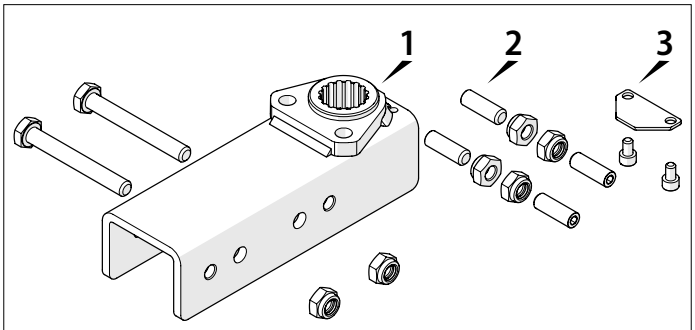
ⓘ The maximum thickness of the leaf is 50 mm.

The kit includes: (1) one leaf guide bracket with two fixing screws and nuts, (2) four alignment grub screws and fastening nuts, (3) one plate with fixing screws (required if the axis of rotation is external to the leaf).

The special bush welded to the bracket is compatible with the installation of the integrated mechanical stops, to create an opening angle of up to 100°.

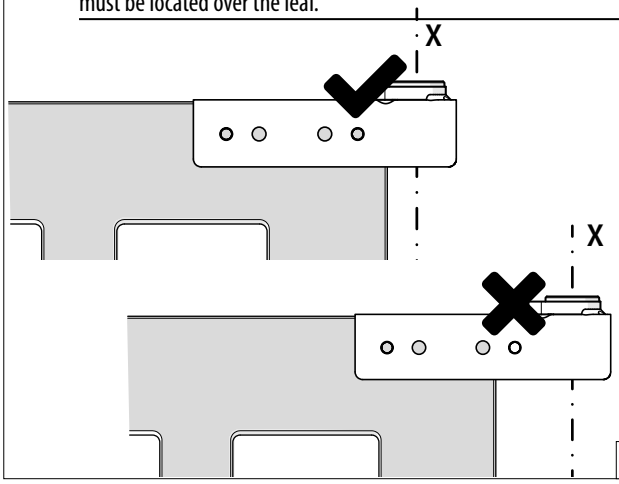
INSTALLATION

1. If the axis of rotation (X) is external to the leaf, install the fall prevention plate for the S2500I hinge joint.
2. Position the bracket on the leaf, centred on the axis of rotation (X) and mark the drilling points on both sides of the leaf. Remove the bracket and drill 2 holes on both sides of the leaf.
3. Place the bracket on the leaf and fix in place using the through screws, without tightening them.
4. Use the 4 grub screws and nuts to align the bracket with the centre line of the leaf.
5. Fully tighten the through screws.



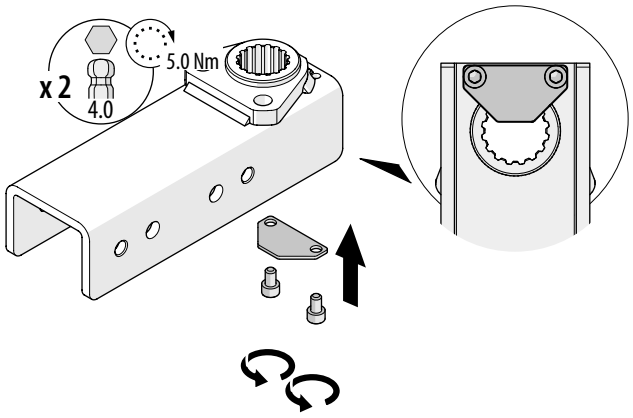
Axis of rotation external to the leaf.

⚠ To allow the aligning grub screws to grip properly, all the holes in the bracket must be located over the leaf.

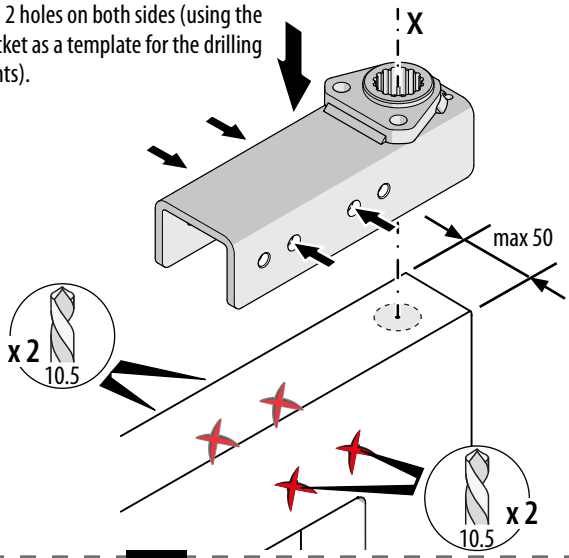


24

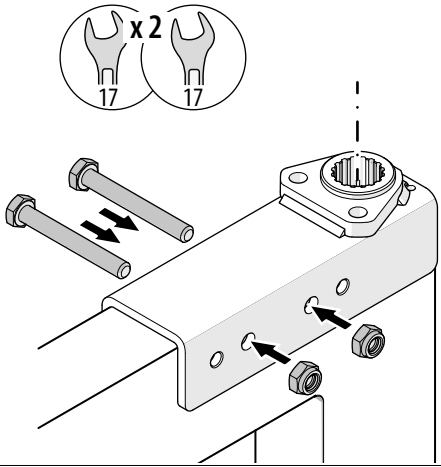
1 Install the fall-prevention plate if the axis of rotation is external to the leaf.



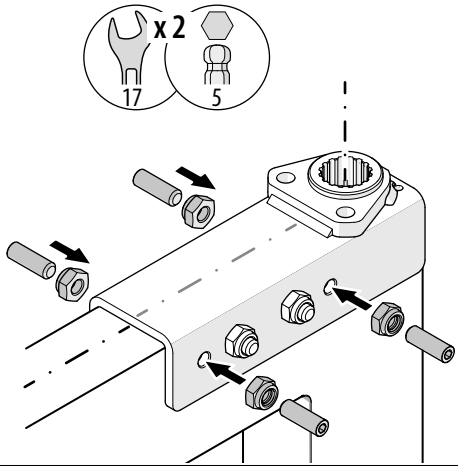
2 Drill 2 holes on both sides (using the bracket as a template for the drilling points).



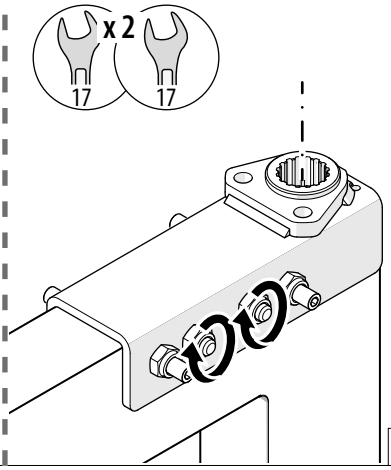
3 Fasten using the through screws.



4 Align the bracket with the centre line of the leaf.



5 Fully tighten the through screws.



25

8.3 EXTERNAL RELEASE KIT FOR THE S2500I

INSTALLATION

The S2500I actuator must be locked.

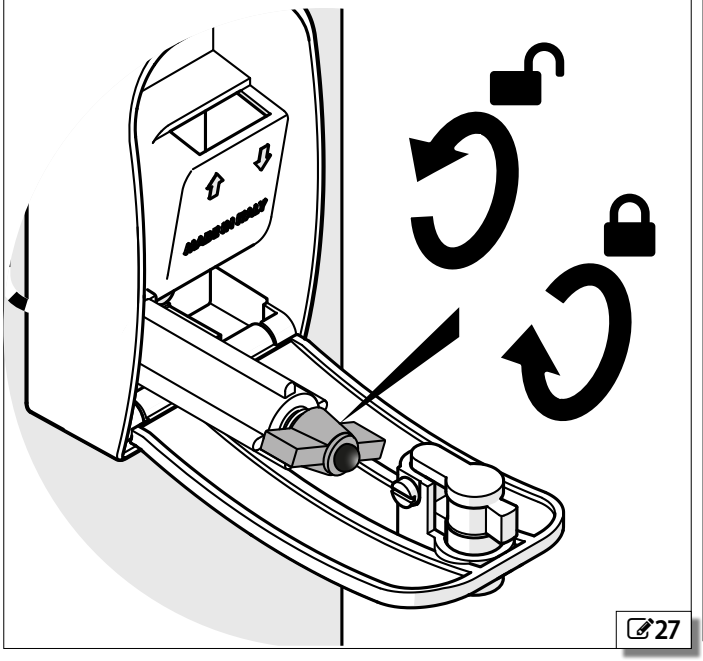
1. Install the XK30 following the instructions provided and prepare the cable with sheath.
2. Screw the tensioner (**A**).
3. Route the cable coming from the XK30 through the tensioner (**A**), the hole (**B**) and the clamp (**C**).
4. Tension the cable and secure it by tightening clamping screw.
5. Check that it works by turning the release knob. If you need to increase the tension of the cable, unscrew the tensioner.

OPERATION

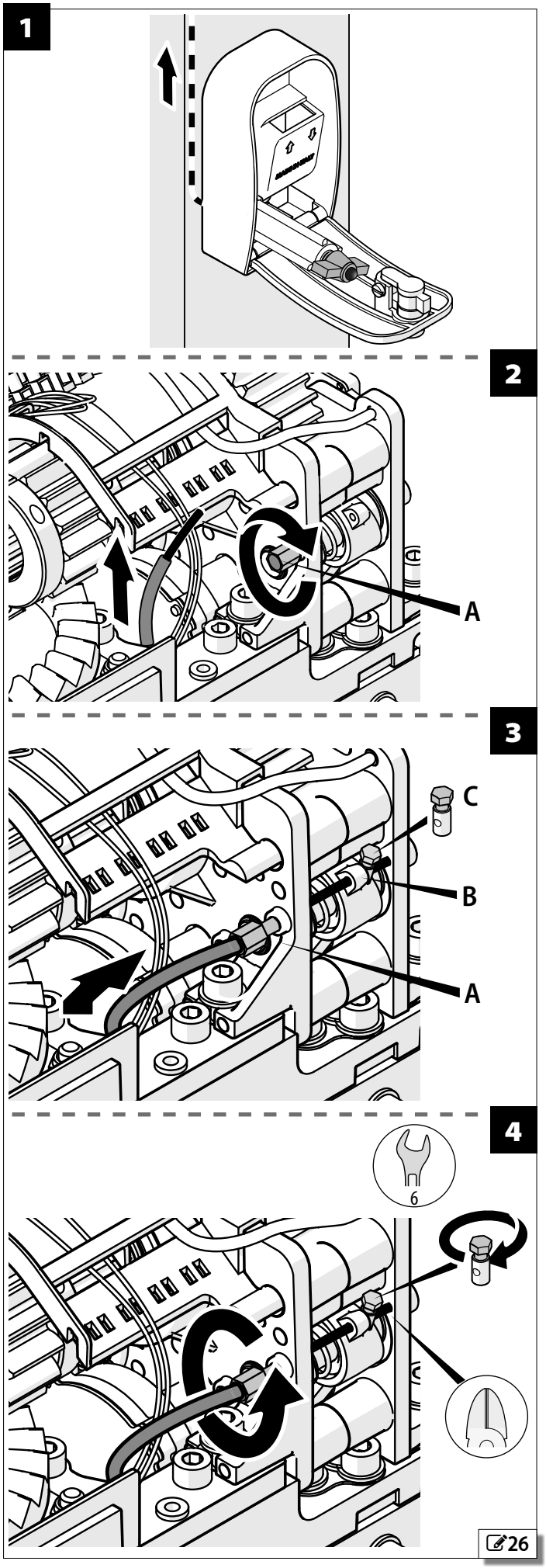
⚠ Comply with the safety instructions (Chapter § *Instructions for use*).

Open with the key provided and turn the knob anticlockwise to release the S2500I, and clockwise to lock it again.

External release operation



27



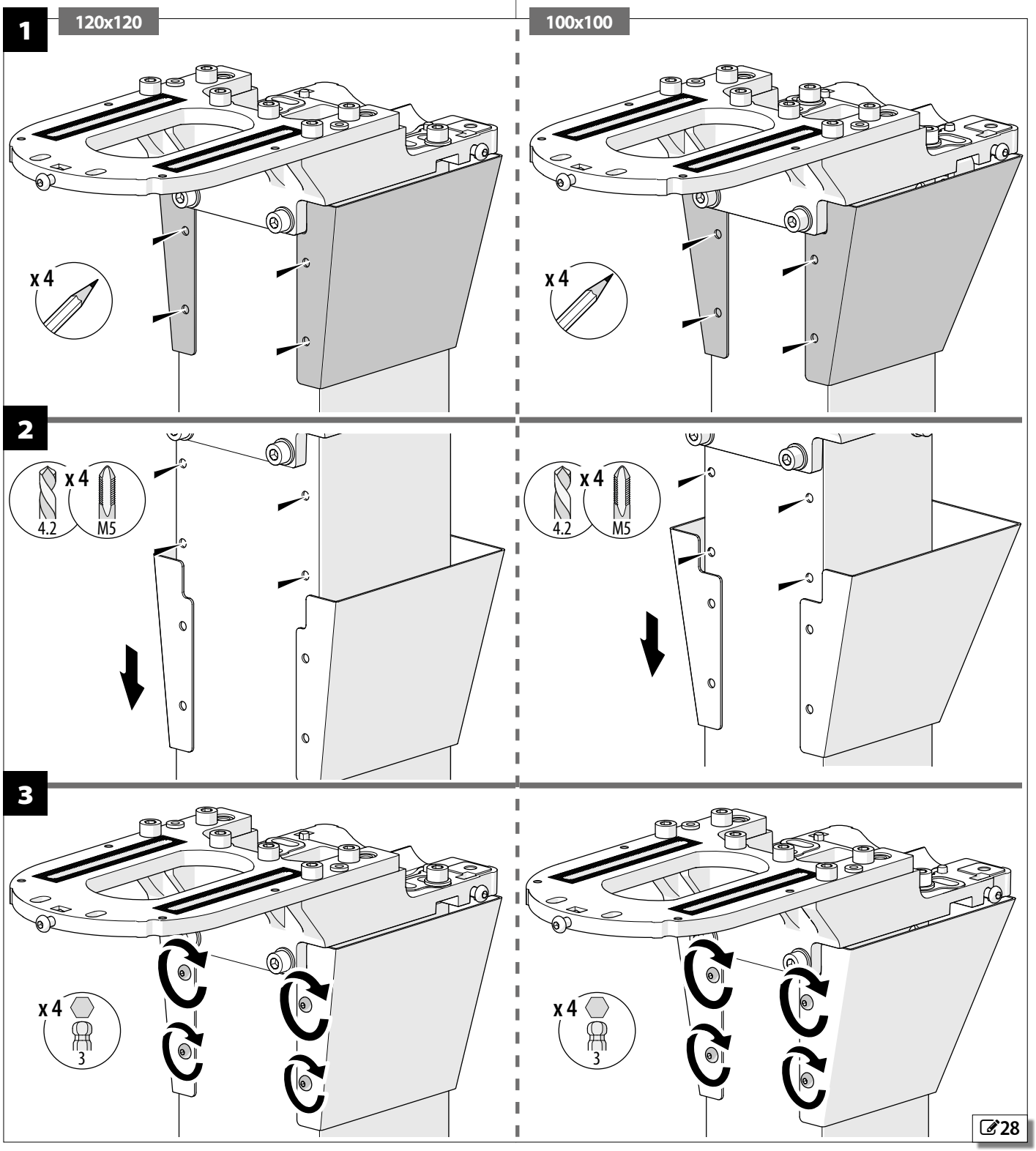
26

8.4 PILLAR ADAPTER

FAAC aesthetic adapters are available for 100 or 120 mm square section pillars.

INSTALLATION

1. Place the adapter on the pillar, resting on the hinge and mark the drill holes.
2. Lower the adapter and drill the holes at the marked points. Thread the holes.
3. Replace the adapter and fasten.



9. SET-UP

RISKS



PERSONAL PROTECTIVE EQUIPMENT



During operation, there is a risk of fingers being trapped between the actuator gears.

Under certain conditions, as a result of prolonged continuous operation, the body of the gearmotor can reach high temperatures. Wait for it to cool down.

START-UP PROCEDURE

After having completed the mechanical installation and the electrical connections, following all the instructions provided in this manual and that of the electronic board, carry out the start-up procedure indicated in the electronic board instructions manual.

10. PUTTING INTO SERVICE

FINAL CHECKS

1. Make sure that the forces generated by the leaf are within the limits permitted by the current regulations. Use an impact force tester in accordance with standard EN 12453. For non-EU countries, if there are no specific local regulations, the static force must be less than 150 N. If necessary, adjust the anti-crushing system and the sensitivity of the obstacle detection system.
2. Make sure that the maximum force required to move the leaf manually is less than 225 N in residential areas and 260 N in industrial or commercial areas.
3. Make sure that a suitable anti-falling device for the leaf is present.
4. Highlight all areas with adequate warning signs in which there are still residual risks, even if all possible safety measures having been adopted. Apply the sign supplied close to the zone in which there is a risk of finger entrapment between the actuator gears.
5. Place a "DANGER, AUTOMATIC MOVEMENT" sign (not supplied) in a prominent position on the gate.
6. Attach the CE marking to the gate.
7. Fill out the EC declaration of conformity and the system register.
8. Give the EC Declaration, the system register with the maintenance plan and the instructions for use of the automation to the system owner/operator.

11. MAINTENANCE

RISKS



PERSONAL PROTECTIVE EQUIPMENT



Before performing any maintenance, disconnect the mains power supply. If the disconnecting switch is not visible, apply a "ATTENTION - Maintenance in progress" sign. Restore the power supply once maintenance is complete and after tidying up the area.

Maintenance must be performed by the installer/maintenance technician.

Comply with all the safety instructions and recommendations provided in this manual.

Close off the work site and prevent access/transit. Do not leave the work site unattended.

The work area must be kept tidy and clear upon completing maintenance.

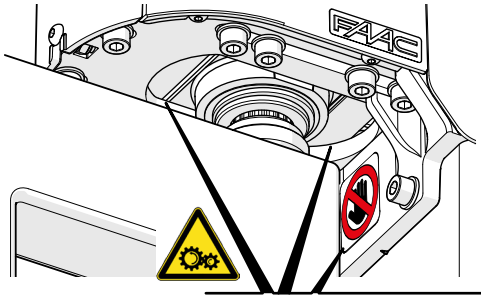
Before starting activities, wait for the components subject to heating to cool down.

Do not modify the original components in any way.

FAAC S.p.A. disclaims any liability for damage caused by components that are modified or tampered with.

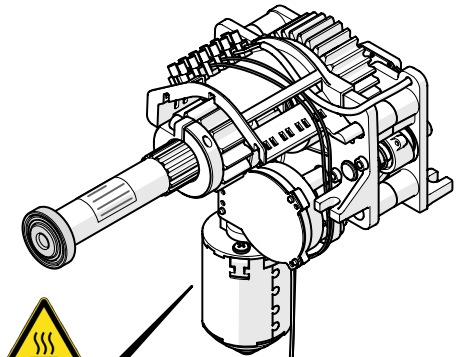
The warranty shall be forfeited in the event of tampering with components.

For replacements, use only original spare parts FAAC.



During operation, there is a risk of fingers/hands being trapped between the actuator gears.

The finger guards and/or the sign must be installed close to the hazard area.



Under certain conditions, as a result of prolonged continuous operation, the body of the gearmotor can reach high temperatures. Wait for it to cool down.

29

SCHEDULED MAINTENANCE

The Scheduled Maintenance table ⊞ lists the operations that must be performed on a regular basis in order to keep the automation system working reliably and safely; these are given purely as a guideline and should not be considered exhaustive. The installer/machine manufacturer is responsible for drawing up the maintenance plan for the automation, supplementing this list or modifying the maintenance intervals according to the machine characteristics.

⊞ **3** Scheduled maintenance

Operations	Frequency (months)
Structures	
Check the plinth, the structures and components of the building/fence adjacent to the automation, ensuring there is no damage, cracking or subsidence.	12
Check the gate's area of movement, ensuring it is free from obstacles, objects or deposits which would reduce the effectiveness of the safety measures.	12
Ensure that there are no sharp protrusions which could represent a perforation or hooking hazard.	12
Gate	
Check the gate, ensuring it is intact and free of deformations, rust etc.	12
Check that the screws and bolts are correctly tightened, including the hinge S2500I.	12
Check that the bearings are in good condition and there is no friction.	12
Check that the mechanical stops are fastened solidly and in good condition. This check must be performed on both sides, simulating any knocks which could occur during use.	12
Make sure that a suitable anti-falling device for the leaf is present.	6
Perform a general clean of the area of movement of the gate.	12
Actuator S2500I	
Apply the specific FAAC grease to all exposed gears (spare parts).	6
Check that it is intact and correctly fastened.	12
Check that the screws and bolts of the S2500I are correctly seated and tightened.	12
Check that the finger guard is present and intact.	12
Check that it is irreversible.	12
Check that the manual release is working correctly.	12
Integrated mechanical stops kit	
Check are they are fastened solidly and in good condition. This check must be performed simulating any knocks which could occur during use.	6
Leaf guide bracket kit S2500I	
Check condition, fastening and correct operation.	6
External release kit for the S2500I	
Check condition, fastening and correct operation.	12
Electronic equipment	
Check the condition of the power cables and connections, cable glands and junction boxes.	12
Check that the connectors and wiring are intact.	12
Check that there are no signs of overheating, burning etc. of electronic components.	12
Check that the earth connections are intact.	12
Check the operation of the circuit breaker and differential switch.	12
Control devices	
Check that the installed devices and radio controls are in good condition and that they operate correctly.	12
Sensitive edges	
Check condition, fastening and correct operation.	6
Deformable edges	
Check that they are intact and correctly fastened.	12
Photocells	
Check condition, fastening and correct operation.	6
Check the columns, making sure that they are intact, correctly fastened and that they are not deformed etc.	6
Flashing light	
Check condition, fastening and correct operation.	12
Electric locks	
Check condition, fastening and correct operation.	12
Clean the seats.	12
Access control	
Check that the gate opens only when an authorised user is recognised.	12
Complete automation system	
Check that the automation operates correctly, following the set logic, when using the various control devices.	12
Check that the gate moves correctly - smooth, regular and without abnormal noise.	12
Check that both the opening and closing speed are correct and that the stop positions and slow-downs provided for are respected.	12
Check that the manual release operates correctly: when the release mechanism is activated, it must only be possible to move the gate manually and not electrically.	6
Check that the caps on the locks are present.	
Make sure that the maximum force required to move the leaf manually is less than 225 N in residential areas and 260 N in industrial or commercial areas.	6
Check that the sensitive edges operate correctly when an obstacle is detected.	6
Check that the encoder operates correctly when an obstacle is detected.	6
Check that each pair of photocells is working correctly.	6
Check that there is no optical/light interference between the pairs of photocells.	6
Check the force limitation curve (standard EN 12453).	6
Check that all necessary signage and warnings are present, intact and legible: residual risks, exclusive use etc.	12
Check that the gate's CE marking and the DANGER, AUTOMATIC MOVEMENT warning sign is present, intact and legible.	12

12. INSTRUCTIONS FOR USE

It is the responsibility of the machine installer/manufacturer to draft the user instructions of the automation in accordance with the Machinery Directive, including all the required information and instructions based on the characteristics of the automation.

The guidelines below, which are purely indicative and in no way exhaustive, help the installer draft the user instructions.

The installer must provide the owner/operator of the automation with the EC Declaration, the system Logbook with the maintenance schedule and the user instructions of the automation.

The installer must inform the owner/operator of any residual risks and the intended use and ways in which the machine should not be used.

The owner is responsible for operating the automation and must:

- comply with all User instructions provided by the installer/maintenance technician and the Safety recommendations
- keep the user instructions
- have the maintenance schedule implemented
- keep the system Logbook, which must be completed by the maintenance technician at the end of all servicing

SAFETY RECOMMENDATIONS

Systems that use FAAC series S2500I gearmotors are designed for use with vehicular and/or pedestrian traffic.

The user must be in good physical and mental health and be aware of and responsible for the dangers which use of the product can lead to.

- Do not remain in or walk/drive through the area of operation of the automation while it is moving.
- To safeguard people and property, the automation must be supervised and there must be not be any unauthorised persons present for the entire duration of operations carried out remotely (activations, SETUP and/or modifications to programs).
- Do not use the automation when the area of operation is not free of persons, animals or objects.
- Do not allow children to approach or play in the area of operation of the automation.
- Do not try to prevent the movement of the automation.
- Do not climb on, hold onto or let yourself be pulled by the leaf.
- Do not allow the control devices to be used by anyone who is not specifically authorised and trained to do so.
- Do not allow the control devices to be used by children or persons with mental and physical deficiencies unless they are supervised by an adult who is responsible for their safety.
- Do not use the automation with the fixed and/or mobile guards removed or altered.
- Do not use the automation in the presence of faults which could compromise safety.
- Do not expose the automation to corrosive chemicals or atmospheric agents. Do not allow water jets of any type or size to come into direct contact with the actuator.
- Do not expose the automation to flammable gases or fumes.
- Do not perform any work on the components of the automation.

EMERGENCY USE

Environmental phenomena, even occasional, such as ice, snow and strong wind may hinder correct operation of the automation and affect component integrity and may become a potential source of danger.

In emergencies or if there is a fault, turn off the power supply to the automation and disconnect the buffer batteries if there are any. If the leaf can be moved safely by hand, use the MANUAL OPERATION mode; otherwise place the automation out of service until it has been reset/repaired.

In the case of a breakdown, the automation must be reset/repaired exclusively by the installer/maintenance technician.

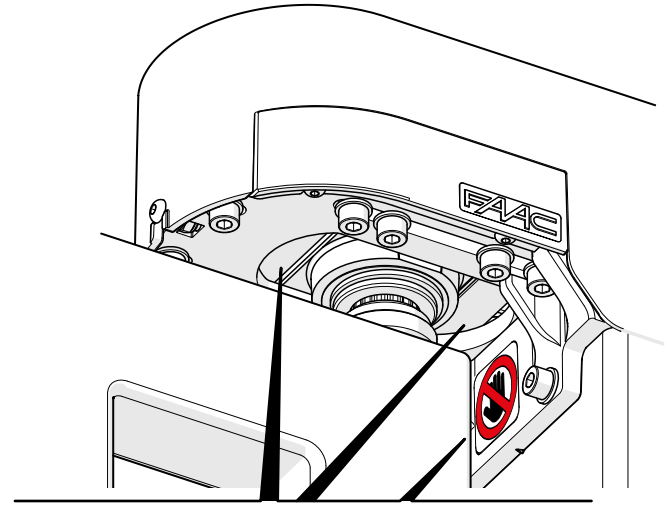
MANUAL OPERATION

In order to operate the leaf manually, the actuator has to be released using the key provided.

Disconnect the power supply from the automation before releasing the actuator.

During manual operation, gently guide the leaf the whole way. Do not push it and let it slide freely.

Do not leave the gearmotor in the released mode: restore automatic operation after moving it manually.



During operation, there is a risk of fingers/hands being trapped between the actuator gears.

The finger guards and/or the sign must be installed close to the hazard area.

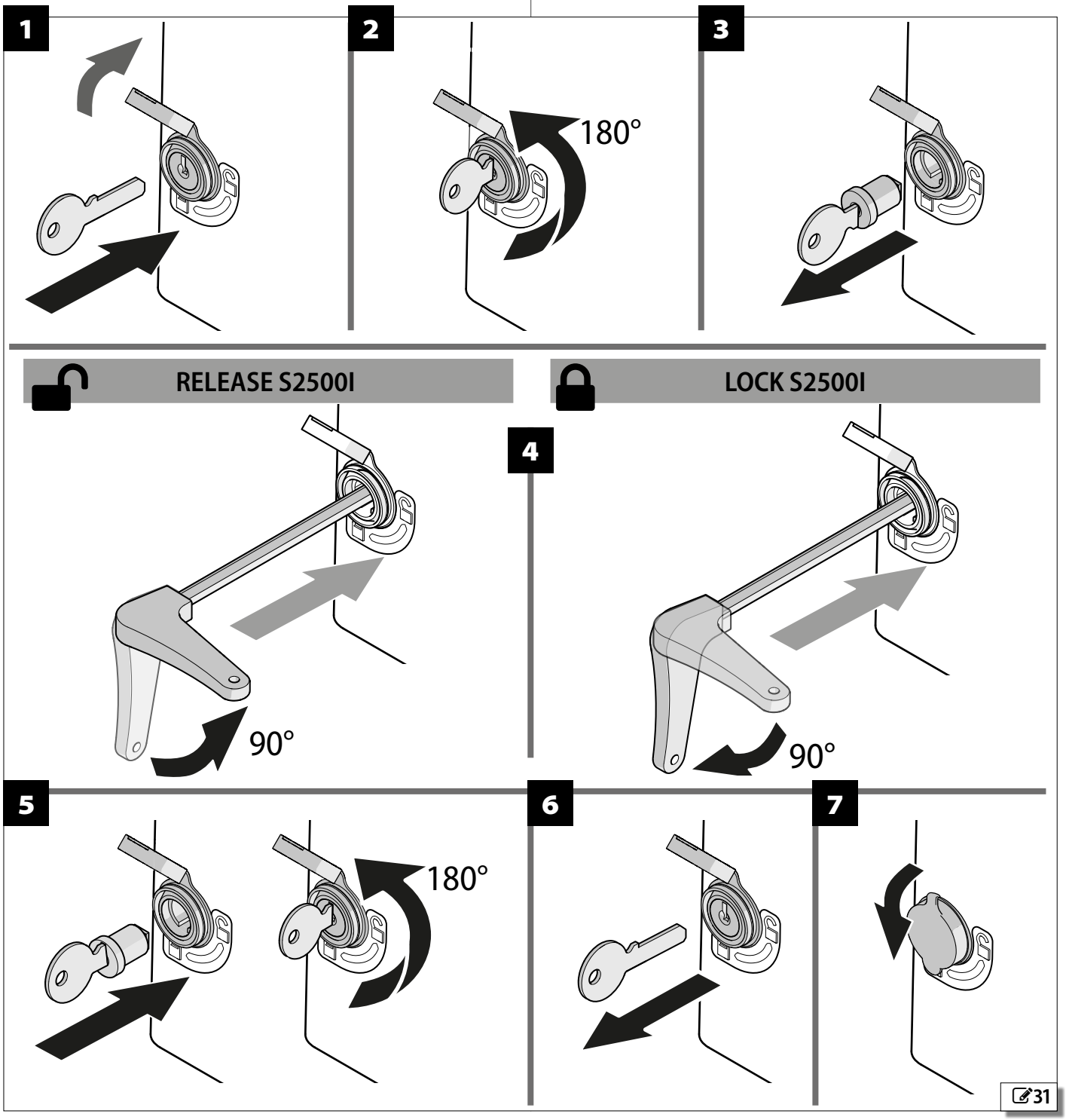
30

RELEASING THE ACTUATOR

1. Open the cap and insert the key.
2. Turn the key 180°.
3. Remove the lock.
4. Insert the hex key, turn it anticlockwise by 90° and then remove it.
5. Insert the lock with the key. Turn by 180° to secure the lock in its seat.
6. Remove the key.
7. Close the cap.

RESTORING OPERATION

1. Open the cap and insert the key.
2. Turn the key 180°.
3. Remove the lock.
4. Insert the hex key, turn it clockwise by 90° and then remove it.
   - Move the leaf manually so that the mechanical system meshes.
5. Insert the lock with the key. Turn by 180° to secure the lock in its seat.
6. Remove the key.
7. Close the cap.

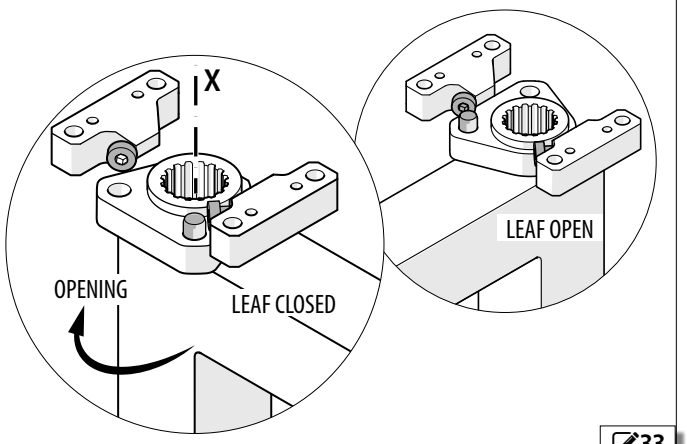


1 Alternative installation

The alternative installation (see figure) consists of installing the S2500I rotated by 90° to obtain the maximum passage width to the top of the pillar.

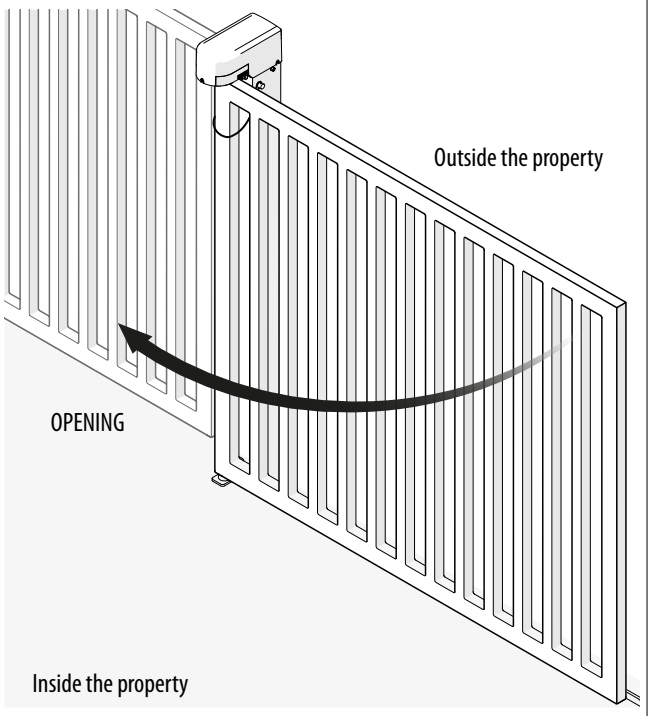
Opening inwards towards the property. See the section § Dimensional requirements and installation measurements. Make sure that it is possible to install the accessories in the required configuration.

Installation example for the integrated mechanical stops KIT (see specific section in Chapter § Accessories): both stops, movement up to 100°.



33

Alternative Installation.



32

2 Limits of use of the S2500I in relation to wind

4 Limits of use in relation to wind

The following table indicates the maximum permitted wind force for the S2500I according to the surface and length of the leaf exposed to the wind. Winds stronger than those permitted could affect the integrity of the of the mechanical transmission components of the S2500I. It is the responsibility of the installer to assess the impact of the wind on all components of the structure (columns, lower hinges, leaves) in order to calculate the maximum permitted wind force for the automation.

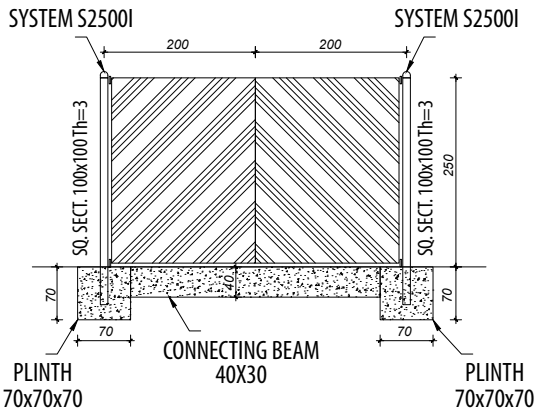
Integrity limits for the S2500I							
	Leaf length [m]						
Exposed surface [m²]	1.00	1.25	1.50	1.75	2.00	2.25	2.50
1.0	**12**						
1.5							
2.0							
2.5						**11**	
3.0							
3.5							
4.0							**10**
4.5							
5.0							**9**
5.5							
6.0							

Beaufort number and description (Beaufort scale)		**Wind speed (km/h)**
0	Calm	≤ 1
1	Light air	> 1…6
2	Light breeze	> 6…11
3	Gentle breeze	> 11…19
4	Moderate breeze	> 19…29
5	Fresh breeze	> 29…39
6	Strong breeze	> 39…50
7	High wind	> 50…62
8	Gale	> 62…75
9	Severe gale	> 75…87
10	Storm	> 87…102
11	Violent storm	> 102…117
12	Hurricane force	> 117

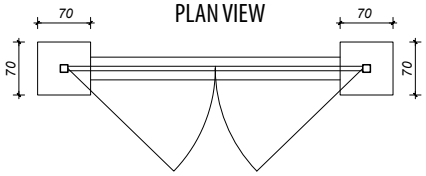
3 Foundation for leaves of max weight and width

TYPE 1 BASE DIAGRAM

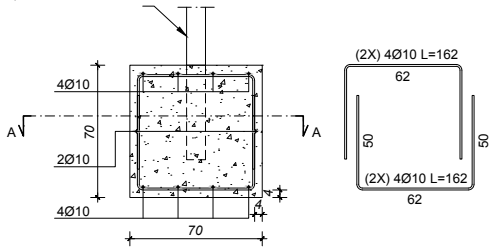
FRONT VIEW



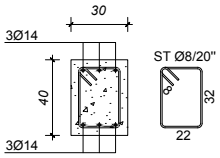
PLAN VIEW



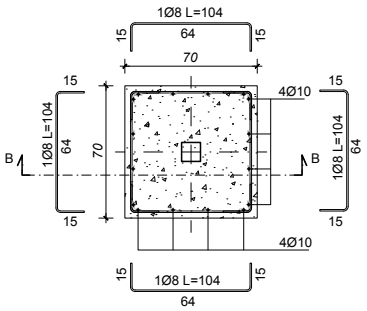
PLINTH ARMATURES
Scale 1:20
SECTION A-A



CONNECTING BEAM SECTION
Scale 1:20



SECTION B-B

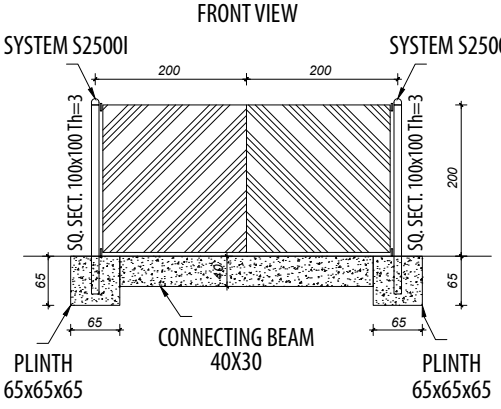


MATERIALS:
CONCRETE
Resistance Class C25/30
Exposure Class XC2

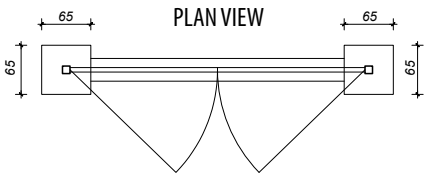
REINFORCING STEEL B 450 C

TYPE 2 BASE DIAGRAM

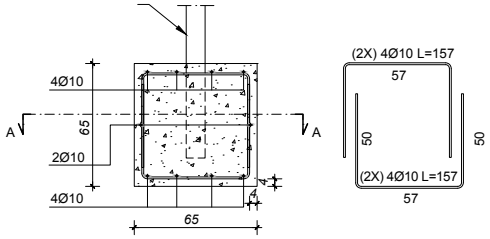
FRONT VIEW



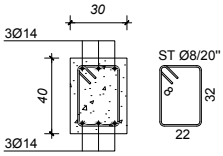
PLAN VIEW



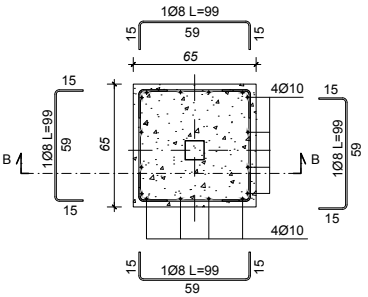
PLINTH ARMATURES
Scale 1:20
SECTION A-A



CONNECTING BEAM SECTION
Scale 1:20



SECTION B-B



MATERIALS:
CONCRETE
Resistance Class C25/30
Exposure Class XC2

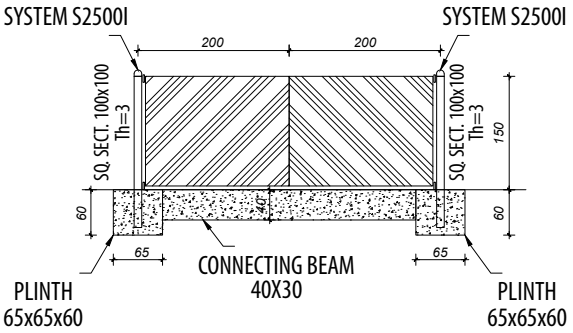
REINFORCING STEEL B 450 C

ENGLISH

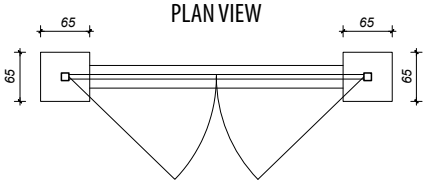
Translation of the original instructions

TYPE 3 BASE DIAGRAM

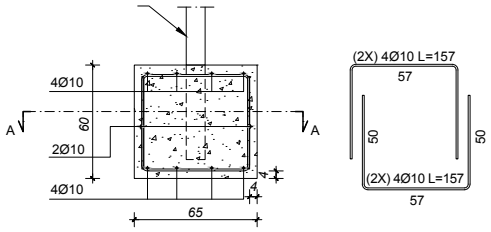
FRONT VIEW



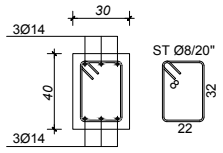
PLAN VIEW



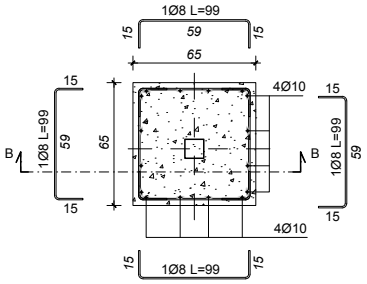
PLINTH ARMATURES
Scale 1:20
SECTION A-A



CONNECTING BEAM SECTION
Scale 1:20



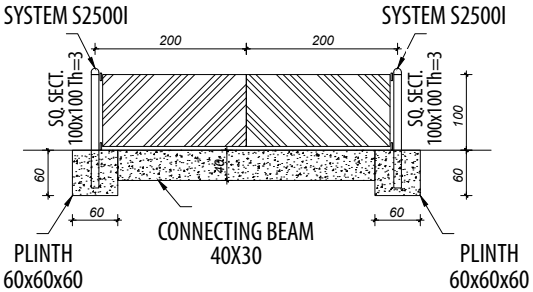
SECTION B-B



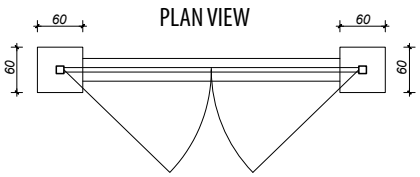
MATERIALS :	
CONCRETE	
Resistance Class	C25/30
Exposure Class	XC2
REINFORCING STEEL	B 450 C

TYPE 4 BASE DIAGRAM

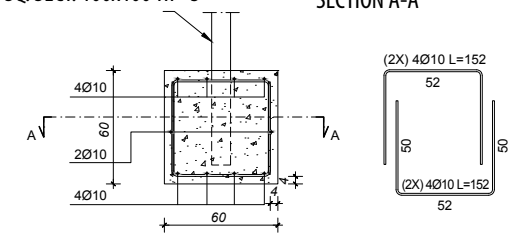
FRONT VIEW



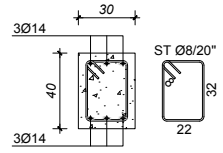
PLAN VIEW



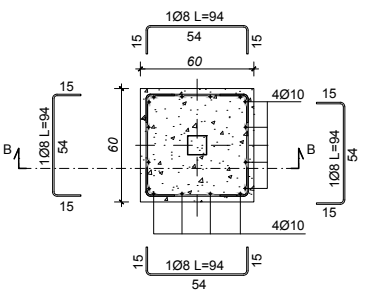
PLINTH ARMATURES
Scale 1:20
SECTION A-A



CONNECTING BEAM SECTION
Scale 1:20



SECTION B-B



MATERIALS :	
CONCRETE	
Resistance Class	C25/30
Exposure Class	XC2
REINFORCING STEEL	B 450 C

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