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AUTOMATIC
BI-FOLD ALUMINIUM GATE

INSTALLATION
MANUAL

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[A269] **Read this Installation Manual, as well as the "Residential folding gate" Operating and Maintenance Manual, and observe all the instructions.**

1. OVERVIEW

[A270] See: **"Residential folding gate" Operating and Maintenance Manual".**

- [A132] **The product may be installed and adjusted by a PROFESSIONAL INSTALLER only.**
- [C445] The electric drive unit or the controller can only be installed and adjusted by a **PROFESSIONAL INSTALLER** who is competent in automation and mechanical engineering equipment for residential use and must do the installation and adjustments in accordance with the current laws of the country of use.
- [A97] **The manual covers the installation of the products with standard equipment and optional equipment components. The scope of standard and optional equipment is defined in the commercial offer.**
- [A104] **Failure to comply with the safety regulations, legal requirements, and recommendations and suggestions contained in the Installation Manual and the Operating and Maintenance Manual will release the manufacturer from all liability and warranty obligations.**

[A179] The overview drawings provided in the manual can differ in terms of manufacturing details. These details are shown in separate drawings where necessary. During installation, make sure to observe the OHS regulations regarding: installation work, locksmithing work done with power tools depending on the installation technology used, and follow all the applicable standards and regulations, as well as the reference construction documentation. During the installation/refurbishment work, protect all the elements from plaster, cement, and gypsum splashes. They might leave stains. After completing the installation and making sure the product operates properly, give the Operating and Mainte- nance Manual to the owner. The manual should be protected from damage and kept safe.
[A115] Assemble and install the product in accordance with the requirements of EN 13241. Install the product using only original fastening elements (e.g. bolts, screws, nuts and washers) supplied with the product, compliant with the EN or ISO standards.

[A152] **Making any modifications or changes to the product accessories is strictly prohibited.**

[B129] The product shipping packaging is intended to protect the product during transport only. Protect the products in the packaging against unfavorable weather conditions. Keep the packed product on a hard and dry surface (which must be flat, level and resist variations in indoor conditions) located in sheltered rooms that are dry and well-ventilated; the storage location must be free from all external conditions which may damage the product components and its packaging.

Do not store in wet rooms and/or rooms with vapours which may damage paint coats and/or galvanic coats.

[B25] Airtight foil packaging must be unsealed when storing the doors to avoid adverse change of microclimate inside the packaging. Failure to do so may result in the damage to painted and zinc plated coating.

[A157] Waste and packaging materials (plastic, cardboard, polystyrene, etc.) comply with the applicable European standards. Nylon and polystyrene packaging should be kept out of reach of children.
[A153] Secure the product against toppling and protect it from any sort of damage during assembly and storage.
[C75] The wiring system and the electric shock protection installations are defined by current norms and regulations. Only a qualified installer is allowed to perform electrical works.

- The drive feed circuit should be equipped with a cut-off protection, a residual current circuit-breaker, and an overcurrent protection.
- The product's power supply should constitute a separate electrical circuit.
- Grounding of the drive unit is obligatory and should be done in the first place.
- Disconnect power supply prior to any works on the electrical system. Disconnect any backup batteries, if used.
- If fuses trip, identify the cause and eliminate the fault before restoring normal operation.
- In case a problem persists and information from this instruction fails to help, contact the manufacturer technical department.
- Any rework or repairs to the installation should be conducted only by a professional installer.
- Usage other than stated in this instruction is not allowed.
- Both children and adults should not be within the product's range of operation.

2. TERMS AND DEFINITIONS

[A270] See: **"Residential bi-fold gate" Operating and Maintenance Manual".**

3. DESCRIPTION OF SYMBOLS


[C493] this sign refers to a specific item in this Installation Manual


indoor side or the product inner side


outdoor side or the product outer side


correct position or action


incorrect position or action


manually operated product


power operated product


supervision


tighten


unscrew


do not tighten completely


use little force

4. REQUIRED INSTALLATION CONDITIONS

[A40] According to the current European regulations, a power-operated gate must be manufactured in accordance with Regulation (EU) 2023/1230. It must also meet the requirements of the standards EN 13241, EN 12453 and EN 12635.
Before proceeding with the installation, a risk analysis must be performed, including a list of the essential safety requirements set out in Annex III of Regulation (EU) 2023/1230, indicating the appropriate solutions to be applied at the installation site (installation conditions).
[B149] The installation should be performed at a temperature not lower than 5°C, the structure should be protected against the adverse effects of ambient conditions such as water, snow, construction site dust, all types of mortars.

- [C81] **The product cannot be installed in an explosive atmosphere. Safety hazard.**
- [C449] **Protect the gate drive unit from exposure to water.**

5. ENVIRONMENTAL PROTECTION

[A270] See: **"Residential folding gate" Operating and Mainte- nance Manual".**

6. INSTALLATION INSTRUCTIONS

Proper operation largely depends on correct installation of the product. Safe and intended operation of the product can only be ensured by correct installation and maintenance carried out according to the Manual.
[A164] Before you start the installation, check whether the product and all the components are fit for use. Make sure that all the materials and elements are in a perfect condition and are suitable for use.
[C415] The stability of the fence largely depends on correct installation of the posts. When installing the posts, the Manual guidelines must be followed at all times to prevent incorrect installation and the poten- tial loss of warranty rights.
[D146] Before attempting the installation process, verify that the product the drive unit will be installed on is properly mounted and adjusted and can be operated to open and close easily. Also dismantle the fixing parts and the drive components which do not require pow- er supply.

- **Do not use the drive unit to operate a product which is defective.**
- **Disconnect the drive from a power source before proceeding with the installation works. Also a battery power supply should be disconnected if it has been delivered.**
- [C451] **Do not connect the drive unit to a power source before completing the installation process.**

[B96] Install the drive unit in compliance with the guidelines from the manufacturer(s) of the product, the drive unit, and accessories. To con- nect the drive unit, only original subassemblies must be used.
[B215] Fitting works should be carried out in accordance with European directives, regulations and standards: 2014/30/EU; (EU) 2023/1230; 2014/35/EU; EN 13241 as amended. Follow the relevant standards to install safety devices (photocells, edge safety strips, etc.) which are required to protect the users who may enter the operating range of the product from hazards of damage, collision, and injury to people and an- imals/pets and property damage.

- [A165] **It is forbidden to use any additional end fittings or alter the existing ones without the Manufacturer's consent.**
- [A129] **Install the operator using the holders and adapter brackets provided by the Manufacturer.**
- [A26] **Keep the packaging (plastics, polystyrene, etc.) out of reach of children as these materials pose a serious safety risk.**
- [A28] **During the performance of installation/renovation work, remove all jewellery and use personal protective equipment (clothes, goggles, gloves etc.).**
- [A151] **Not following the above-mentioned basic recommendations may result in difficulties in the proper functioning of the product, its damage, or ultimately, the loss of warranty.**

6.1. PREPARATION ACTIVITIES

Preparation activities include preparing foundation and the wiring system. The product's opening direction is always as seen from the premises (the outside). Build the foundation for the product posts as shown in en- closed drawings. The structure of the posts on which the product will be installed must ensure stability and rigidity of the product in all direc- tions. Foundations for the whole fencing should go below the freezing depth, specific for the region where the installation takes place, but not less than 1200 [mm].

- [C408] **The foundation design must follow EN 1992 and EN 1997!**
- [D446] **Prior to construction of the fence, it must be checked if the materials used do not contain contraindications to the use with galvanized and painted coatings.**
- [C497] **Damage to the post or the fence is possible when the (minimum) depth of the post seating differs from the depth specified in the Installation Instructions.**
- [B91] Other foundation depths are permitted only after surveying the local ground and water conditions of the installation site, and should be in accordance with the construction practices and technical knowledge. **Make expansion joints in accordance with the enclosed foundation work drawings!**
- [C409] **The installation of the posts must guarantee stability. The posts must not deviate from the vertical or become deformed.**
- [A151] **Not following the above-mentioned basic recommendations may result in difficulties in the proper functioning of the product, its damage, or ultimately, the loss of warranty.**

6.2. INSTALLATION SEQUENCE

Fig. 7 Install the posts onto the prepared foundation. Using the installation kit (washer +nut), securely fasten them to the foundation. Adjust for vertical and horizontal alignment.
Fig. 8-16 Install the hinges according to the available type. The dimension 'X' is specified in the parts checklist.

E-AL

Fig. 8 Screw the fascia panel to the mounting C-channel.
Fig. 9/11 Drill the installation holes.
Fig. 10/12 Install the mounting C-channel. Fasten the hinges. Install the leaf.

For posts clad with stone, brick, or similar materials , fasten the connector directly to the core of the opost. Use a connector with specifications equivalent to an M10 bolt, strength class ≥ 8.8.

C-AL

Fig. 13 Drill the installation holes.
Fig. 14 Fasten the hinges. Install the leaf.

Install using sleeves set with chemical anchor.

H-AL

Fig 15/16 Drill the installation holes. Unscrew the mounting plate. Fasten the hinge. Install the leaf.
Fig. 17-20 Adjust the position of leaf.
Fig. 21 Install the reaction bar.

Fig. 22 Set the gate in the closed position. Adjust if necessary
Fig. 23 Set the gate in the open position. Adjust if necessary.
Fig. 24 Set the gate in the closed position. Adjust if necessary
Fig. 28 Install the roll- over plate.
Fig. 29 Verify that the product operates easily and smoothly.

[D210] **When the installation is complete, the gate should move freely along the whole gate leaf and be invariably balanced.**

6.3. DRIVE UNIT ADJUSTMENT

[A270] See: **"Residential folding gate" Operating and Maintenance Manual".**

6.4. OVERLOAD ADJUSTMENT

[A270] See: **"Residential folding gate" Operating and Maintenance Manual".**

6.5. MANUAL CONTROL BUTTONS

Manual control buttons should be installed:
- at a location where the user has unobstructed view of the product in motion and its surroundings,
- in a place where the device cannot be turned on unintentionally,
- away from moving parts,
- at a height of at least 1.5 m.

6.6. FINISHING TASKS

On completing the installation, check if the product has a nameplate, contact an authorised service company if it is not present.

On completing the installation, remove the plastic sheet from the product. Failure to do so will cause very strong bonding of the plastic sheet to the structure caused by heat and sunlight. This will make it almost impossible to remove the plastic sheet and may cause severe damage to the paint finish of the product.

[C481] Affix the warning labels permanently and in visible locations on the product or the control panel.
[D200] The installer is required to analyse the hazards present during operation of the product and to explain them to the user/owner. The following regular hazards occur during opening of the product: collision and crushing in the closing zone; collision and crushing in the opening zone; injury by pinching between the leaf and the receiver; snagging; and mechanical hazards related to the movement of the product. Before operating the product, make sure that all people are at a safe distance. Do not touch any moving part of the product while it is opening. Keep away at a safe distance from the product while opening: pass through the opening only when the product is fully opened and stationary.

[D201] **Check the following before the final handover of the product to the owner:**
- proper functioning of all safety devices (photocells, etc.)
- manual start and stop
- remote control start and stop
- function logic
- the safety devices operation in simulated emergency situations

- [B209] **Verify proper adjustment of the product and its compliance with EN 13241, EN 12453.** Perform the inspection activities outlined in Section 6.3, 6.4.
- [C459] **Verify proper adjustment and performance of the manual drive unlocking.**
- [C14] **Visually inspect the product and the installation to make sure there is no evidence of mechanical maladjustment, damage, wear, or damage of wiring and the installed drive unit components.**
- [B302] It is prohibited to keep using the door, if any faults in its operation, or damage of its components are found. **Do not operate.**
- [B216] **Check the emergency opening mechanism supplied with the operator.**
- [A144] **The Professional Installer must explain proper operation of the product to its user, including the emergency procedures, and train the user in proper use.**
  - [A11] All the actions should be carried out as instructed in this Installation and Operating Manual. Please send any remarks and recommendations you might have to the owner in writing, e.g. note them in the Report Book or in the Warranty Sheet. After completing the inspection, confirm that the inspection was performed by adding an entry in the Report Book or in the Warranty Sheet.
- [A180] **After making sure the product operates properly, give the Operating and Maintenance Manual to the owner.**
- [B183] **Keep the product pack list for future reference.**
- [A151] **Not following the above-mentioned basic recommendations may result in difficulties in the proper functioning of the product, its damage, or ultimately, the loss of warranty.**

6.7. DISASSEMBLY

To remove the product, proceed with the installation procedure in the re- verse order. Turn off the power supply before the disassembly procedure.

[A11] **All the actions should be carried out as instructed in this Installation and Operating Manual. Please send any remarks and recommendations you might have to the owner in writing, e.g. note them in the Report Book or in the Warranty Sheet. After completing the inspection, confirm that the inspection was performed by adding an entry in the Report Book or in the Warranty Sheet.**

[A79] **The manufacturer reserves the right to introduce design modifications due to technological progress that do not alter the product functionality, without prior notice.**

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[A48] **This document has been translated from Polish. In case of discrepancies, the Polish version prevails.**

7. FOUNDATION

Fig. 1 square foundation – post to be installed in the ground
Fig. 2 square foundation – post on a baseplate

[D246] **Legend**
So – Span between posts, order dimension

Footing to be done along with EN 1992 and EN 1997!

1. Cables leading
2. Hilti HVU M10x90 + HAS-E-F M10x90/21-8.8 or by other manufacturers. In this case anchor bolt endurance parameters should correspond to the parameters stated above.
3. Theoretical fencing post
4. Footing: gravel concrete C20/C25 concentrated

[B297] **The waterproofing of the foundation should be performed, the method and manner of the waterproofing depend on the soil-water conditions at the place of the product installation.**

5. It has to go below the freezing depth, specific for the region where the installation takes place, but not less than 1200 [mm]
6. Control cables 3x0.5mm^2 for the photocell in a steel or PVC pipe
7. Power supply 3x1.5 [mm^2] or 3x2.5 [mm^2] with distance from the supply source of over 30 [m] when 230 [V] is supplied, the installation should be carried out in accordance with PN-IEC 60364 „Electrical Installations of Buildings".
8. 3x0,5mm^2 button-controlled
9. Gate leaf axis
10. 5 x 0.5mm^2 (photocells)
11. Infrared barrier
12. Finished driveway level
13. Clear opening of a structural opening
14. Control unit
15. Signal light

- **The ends of anchor bolts to be set at one level.**
- **Maintain the true vertical when setting anchors in concrete.**
- **Power supply or control cables sections may not to be changed as it may hamper or prevent the installation.**
- **Use leaf gate axes lines when installing the gate; also check the measurements in line with the figure.**
- **The anchor bolt spacing is given in axes.**

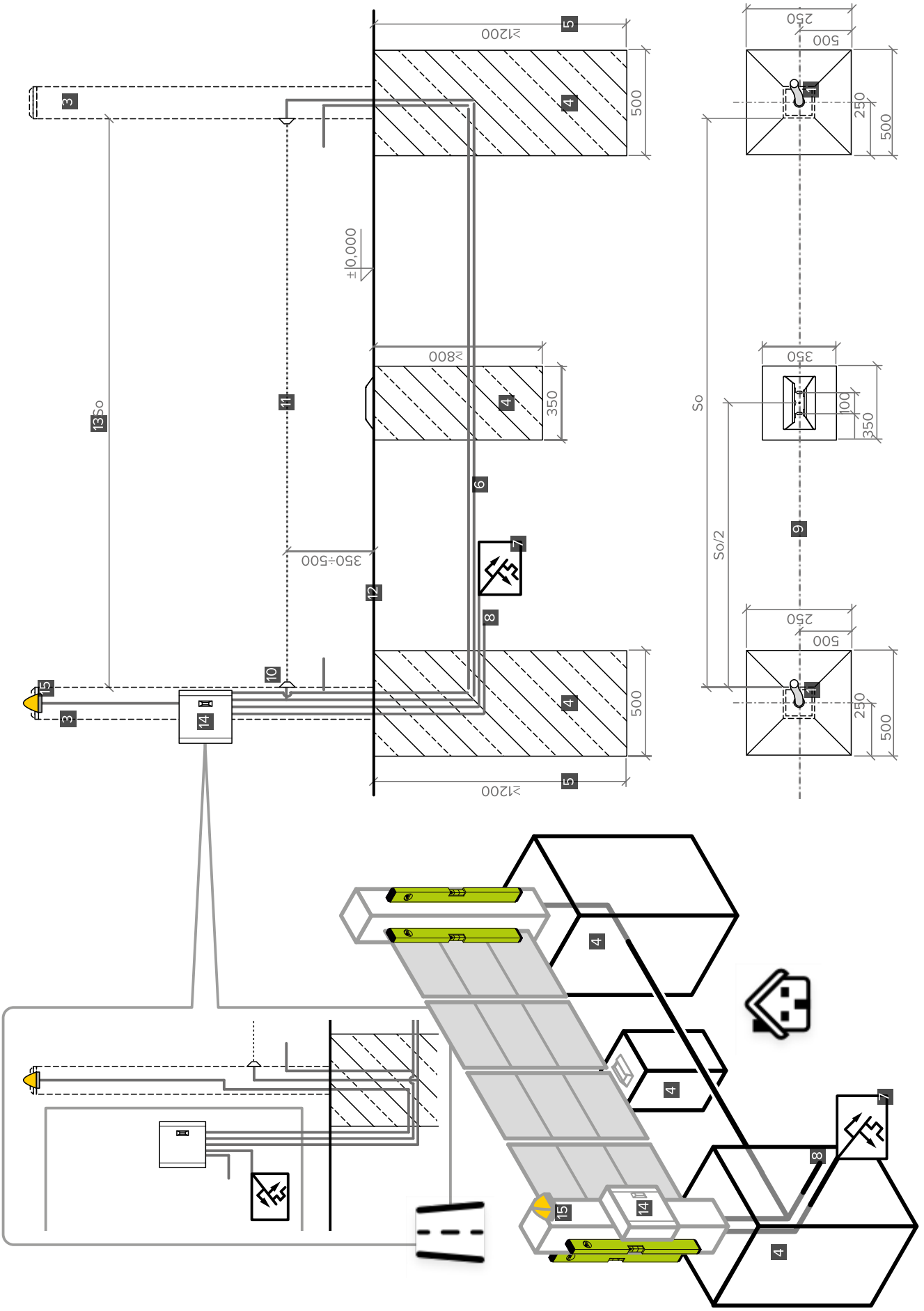
8. FOUNDATION REINFORCEMENT

Fig. 5 square foundation

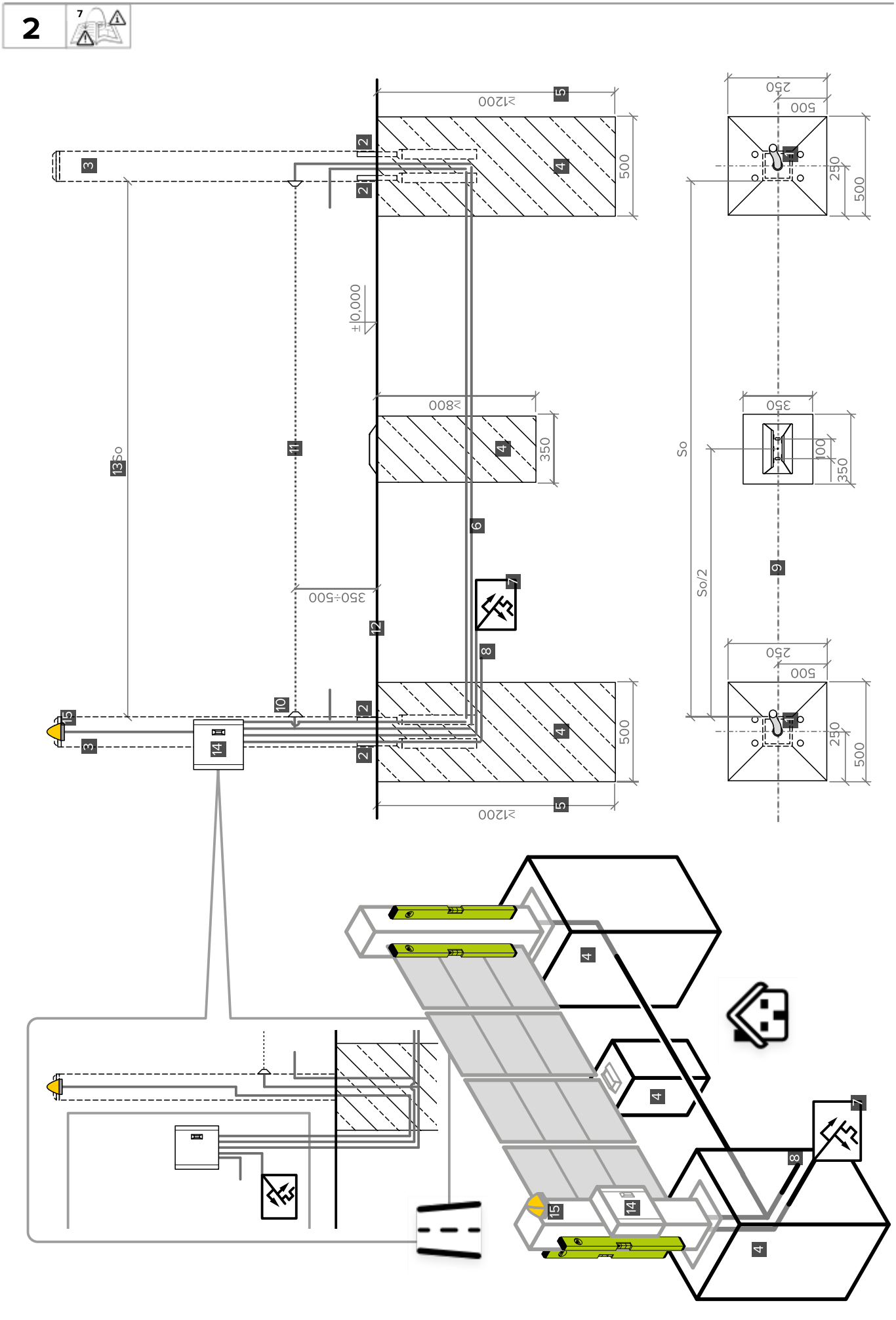
[D508] **Legend**
(*1) – The depth below the freezing depth for the region of installation, but not less than 1200 [mm].
(*2) – The surface of contact (with the ground or concrete)
(*3) – finishing level (e.g. pitcher)
(*4) – List of reinforcement steel
(*5) – Diameter ø [mm]
(*6) – Length L [mm]
(*7) – Quantity per 1 element of the item N
(*8) – Total length in [m] L_{tot}
(*9) – Bar no.
(*10) – Unit weight M_i [kg/m]
(*11) – Weight M [kg]
(*12) – Total weight M_{tot} [kg]
(*13) – Steel grade A-IIIN (RB500)
(*14) – Concrete C20/25
(*15) – Lagging C_{min}

The reinforcement in the figure is the minimum reinforcement system. Proper construction of foundations depends on ground and water conditions. Foundation works require special design in special circumstances.

1



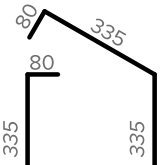
2


≥1200
500
±10,000
≥800
350
So
350÷500
250
500
350
100
So/2
250
500
≥1200

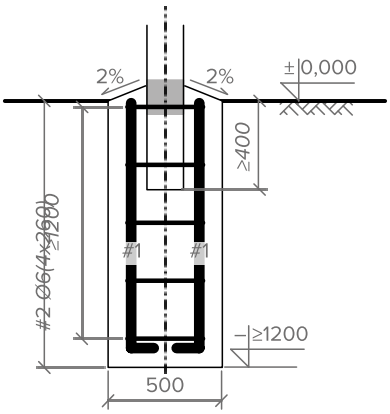
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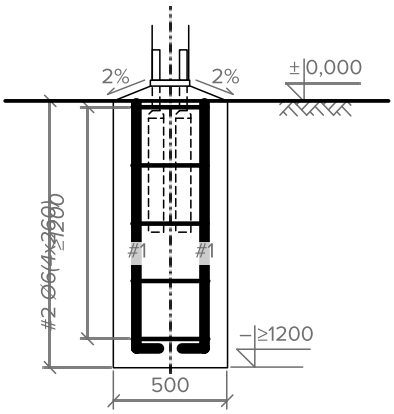


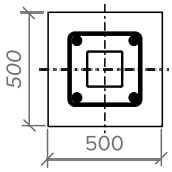
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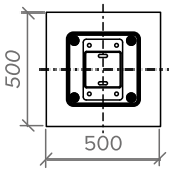


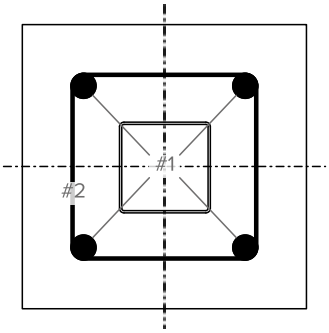
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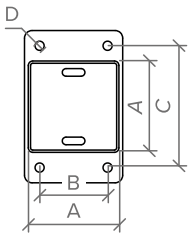




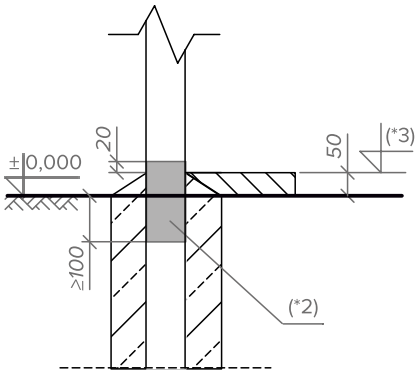






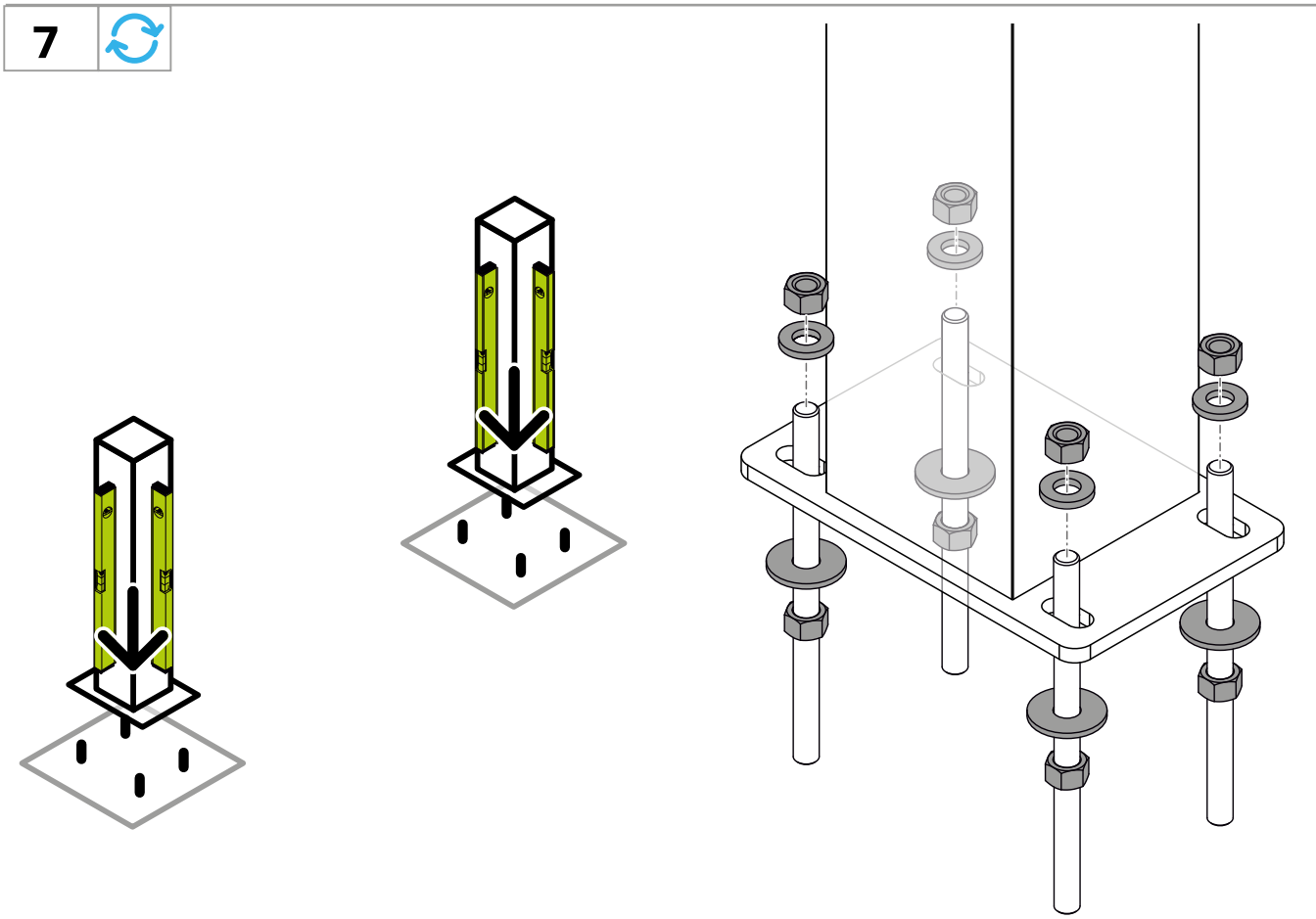


A	B	C	D
120	100	160	Ø12
150	130	190	Ø12

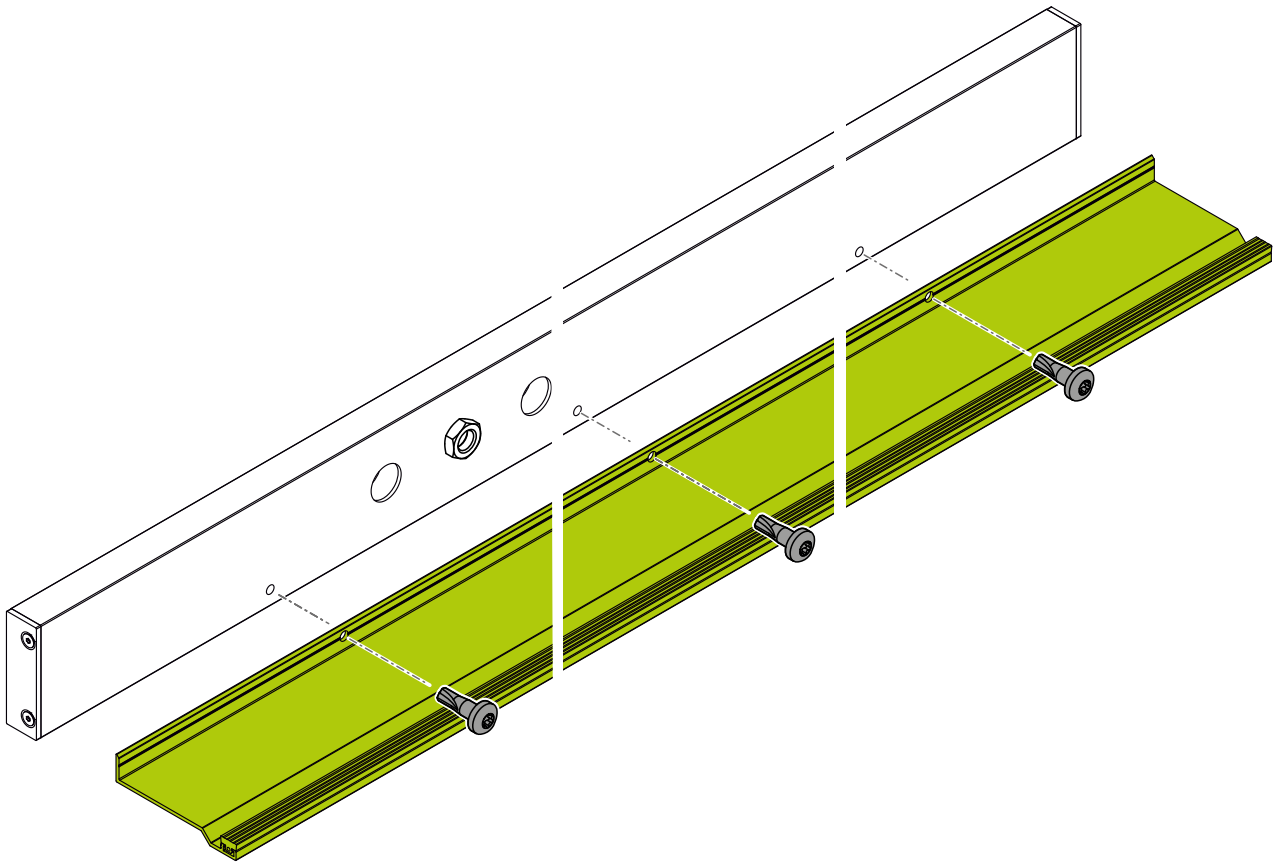


(*4) Steel Reinforcement Summaryj					
(*9) Rod No.	(*5) Diameter Ø [mm]	(*6) Length L [mm]	(*7) Quantity per Item	(*8) Total Length [m] Ltot	
	[mm]	[mm]	number	Ø6	Ø14
#1	14	1180	4		4,72
#2	6	1500	5	7,50	
(*10) Unit Mass Mi [kg/m]			kg/m	0,222	1,21
(*11) Mass M [kg]			kg	1,67	5,71
(*12) Total Mass Mtot [kg]			kg	7,38	
(*13) Steel A-IIIN (RB500)		(*14) Concrete C20/25		(*15) Casing Cmin	

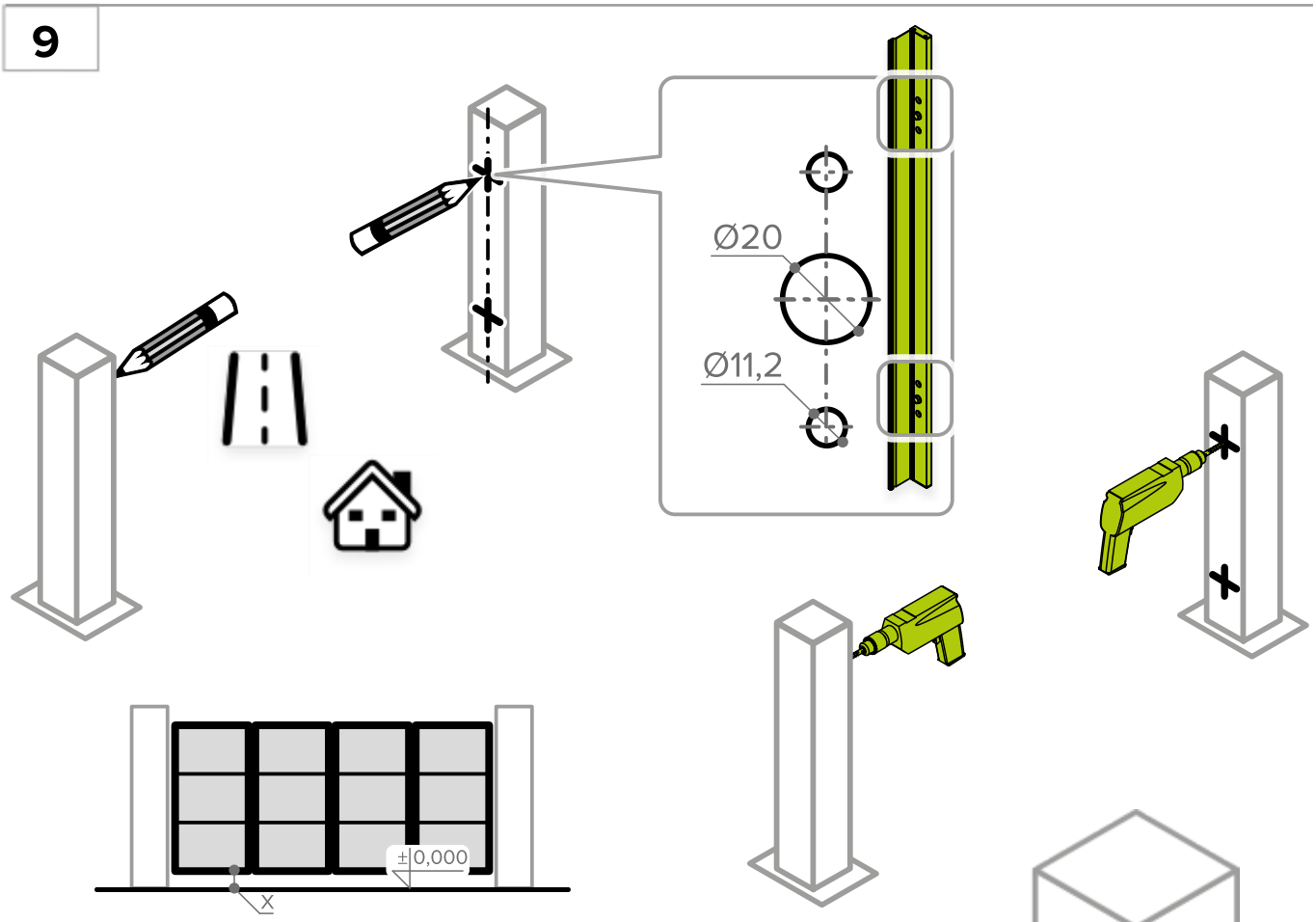
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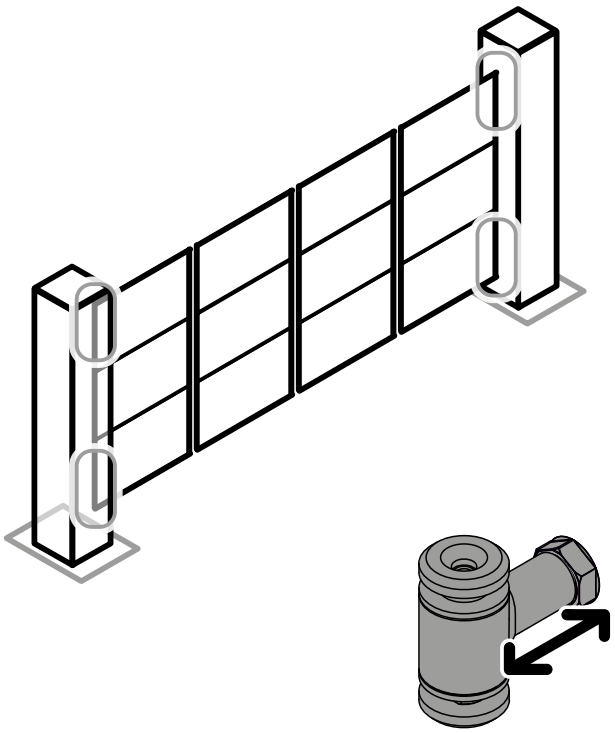
8 E-AL v1



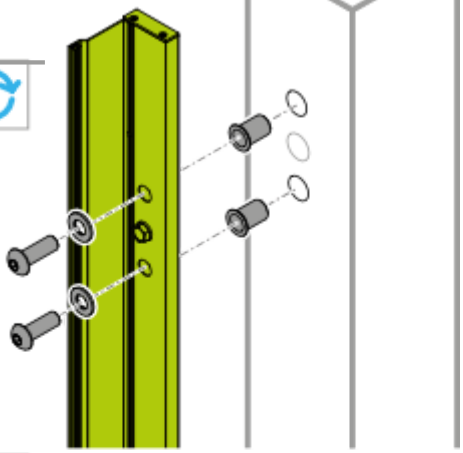
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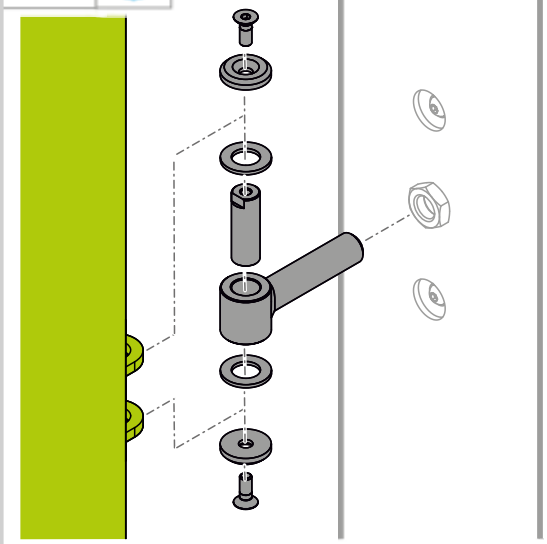
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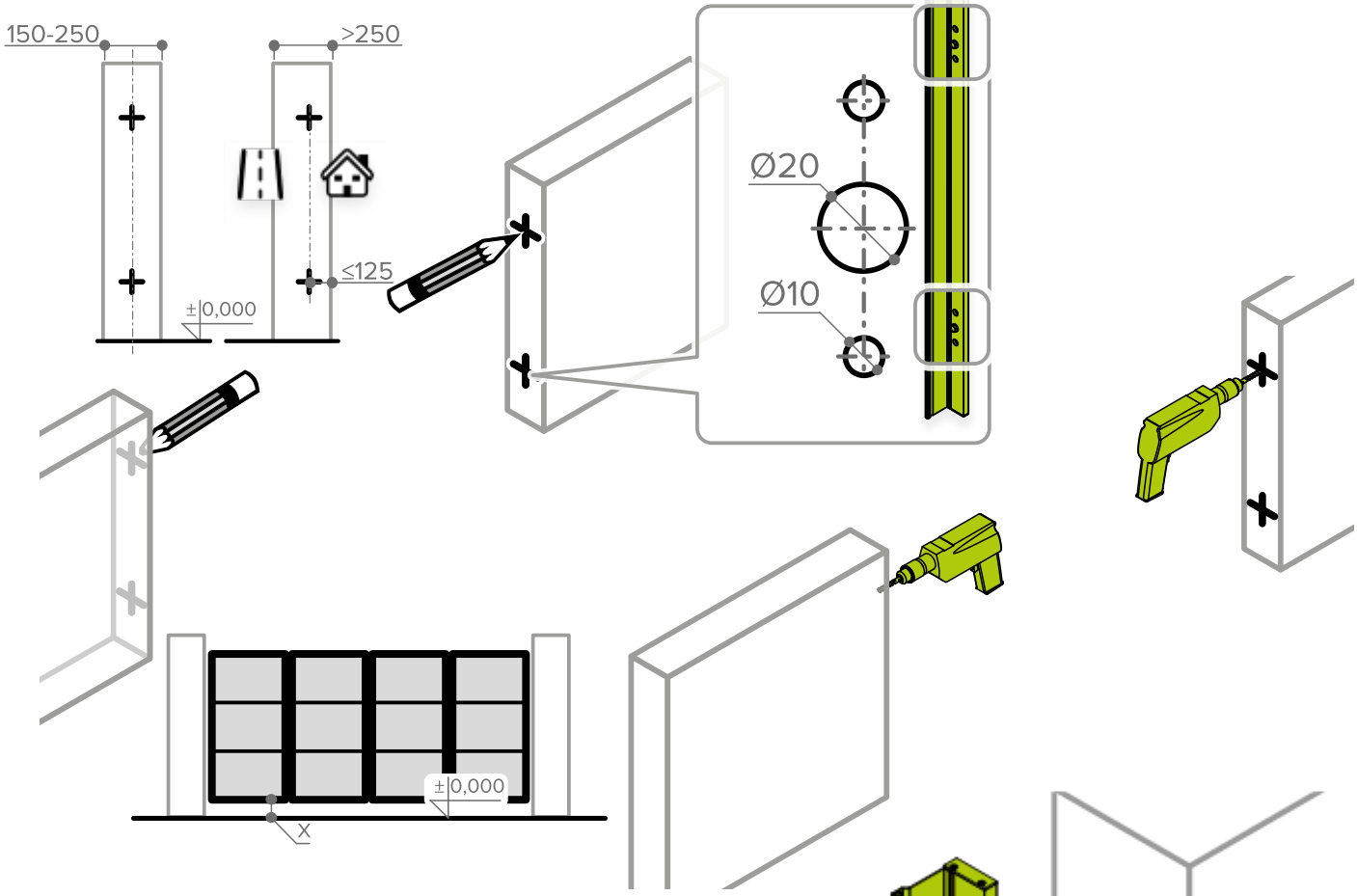
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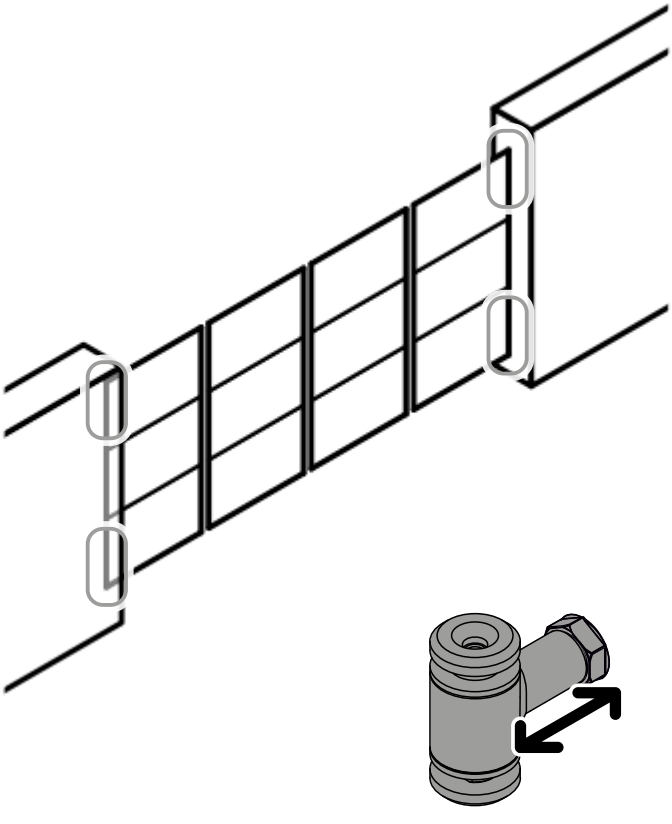
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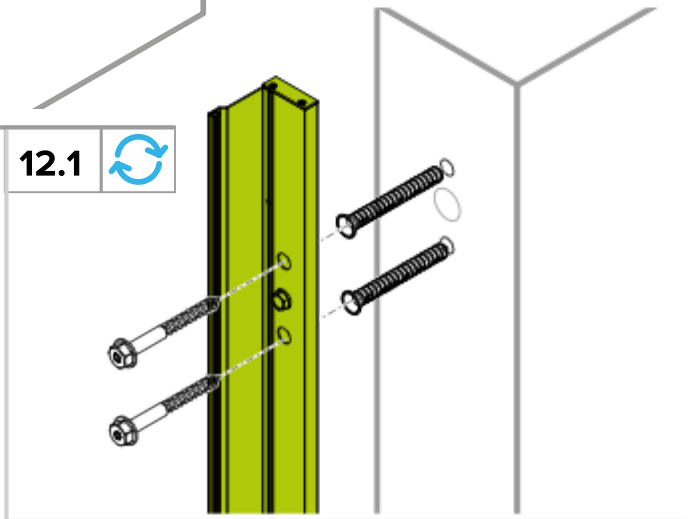
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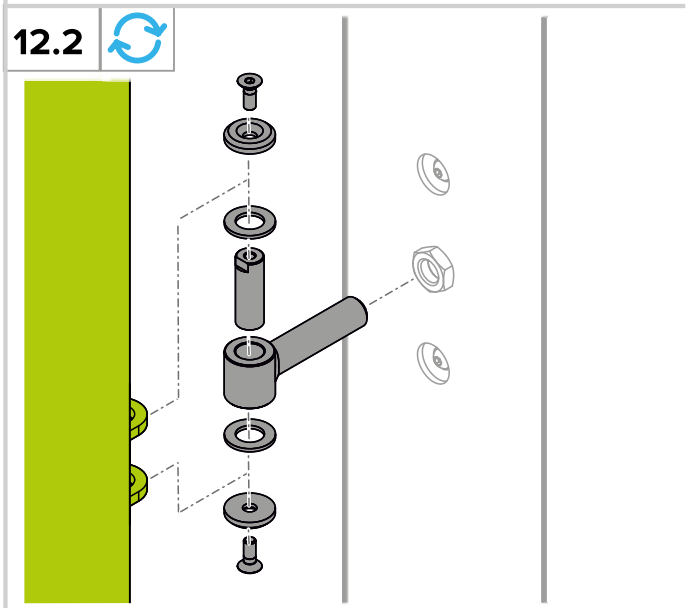
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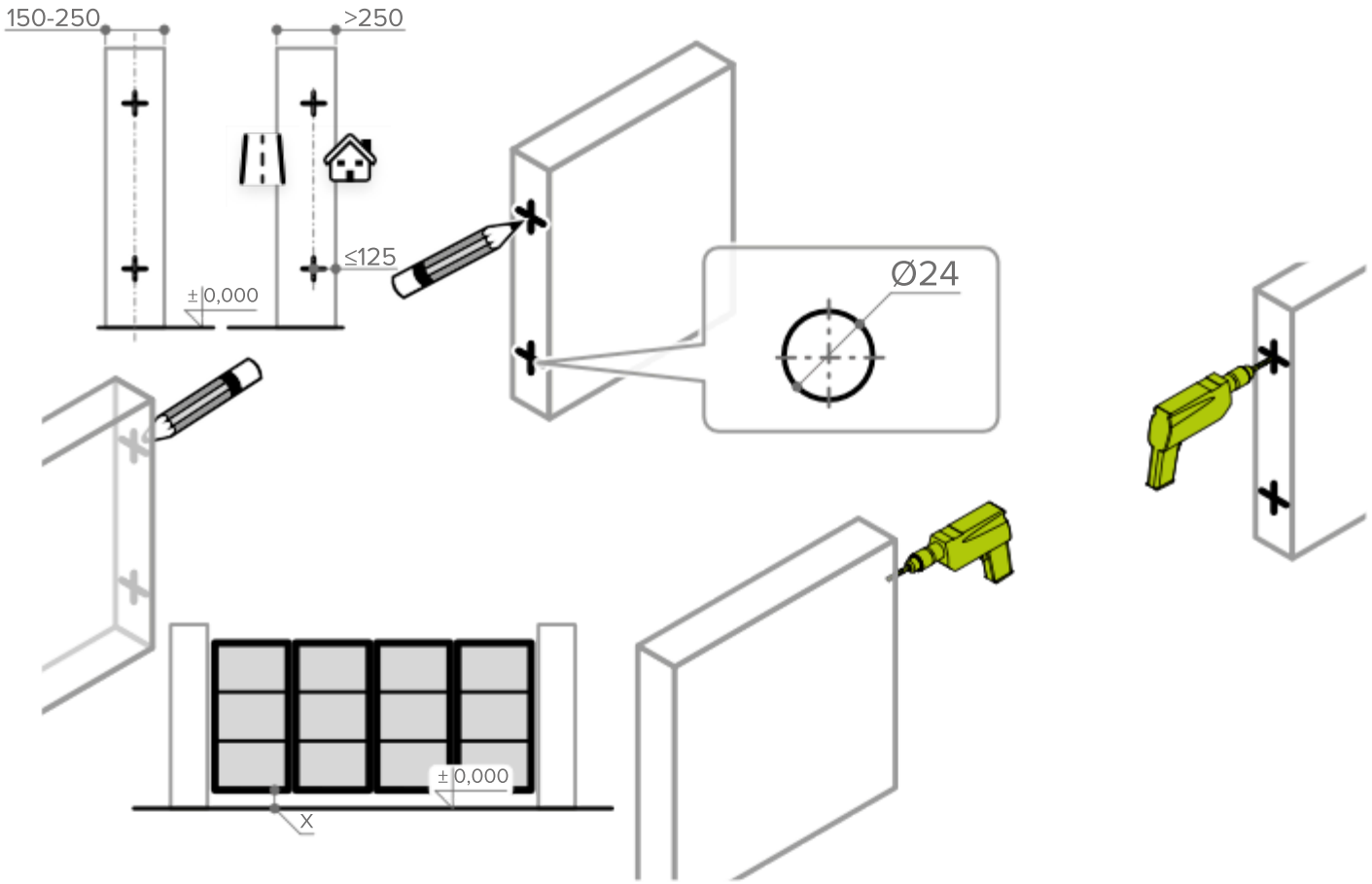
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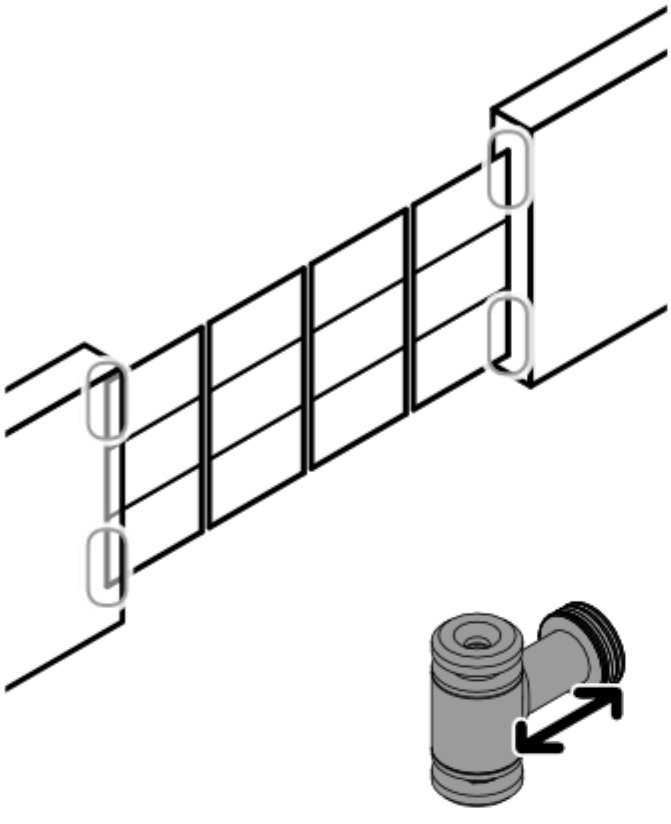
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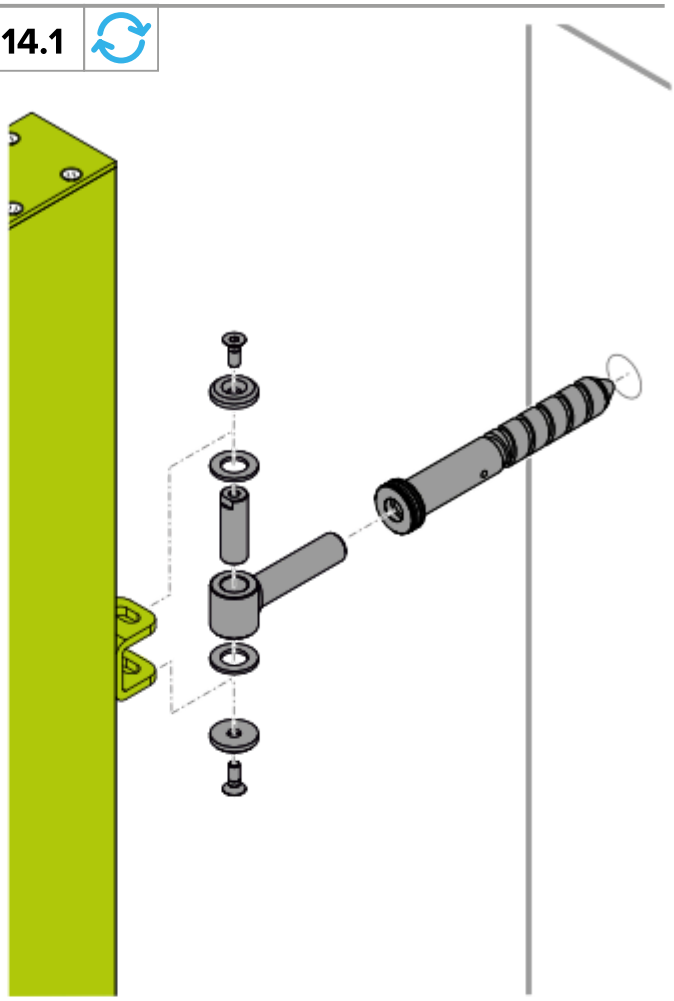
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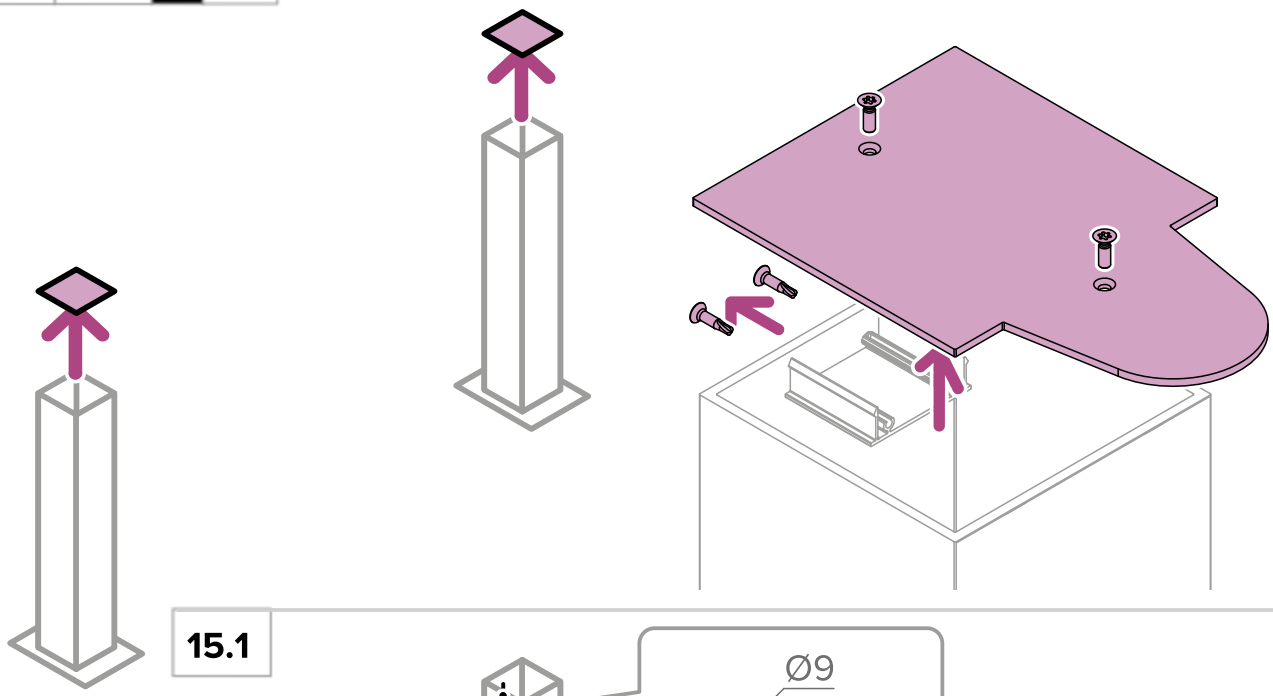


14

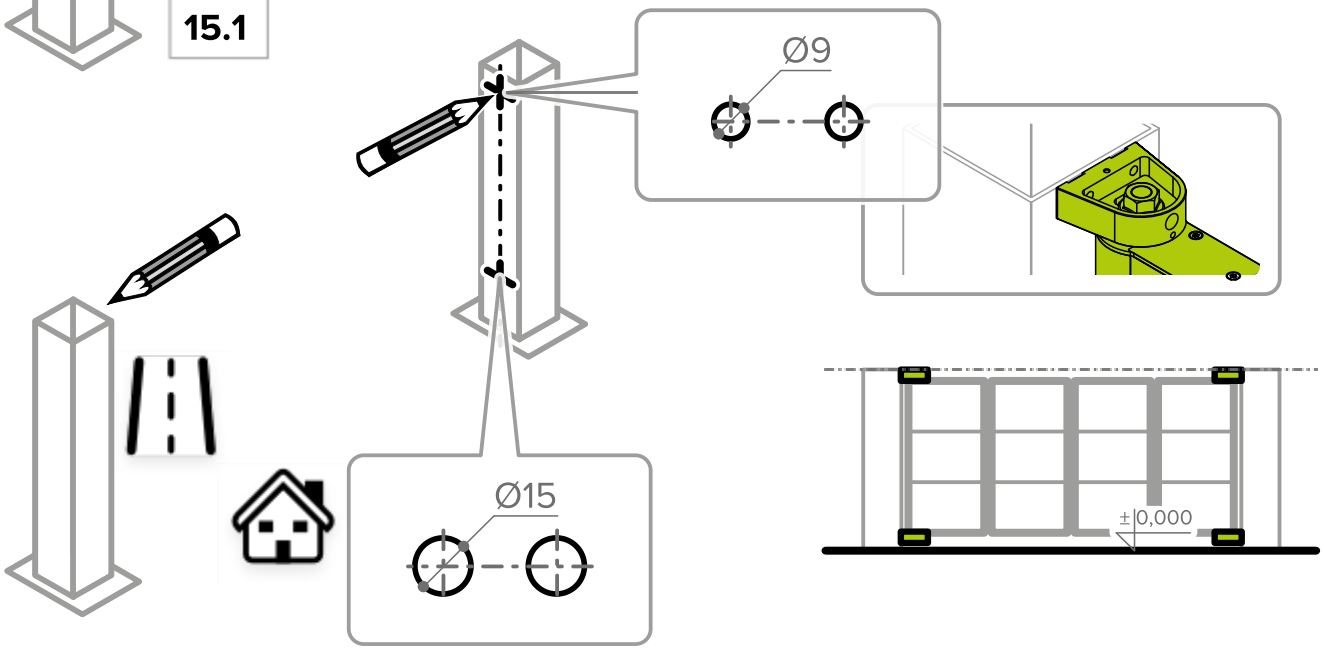


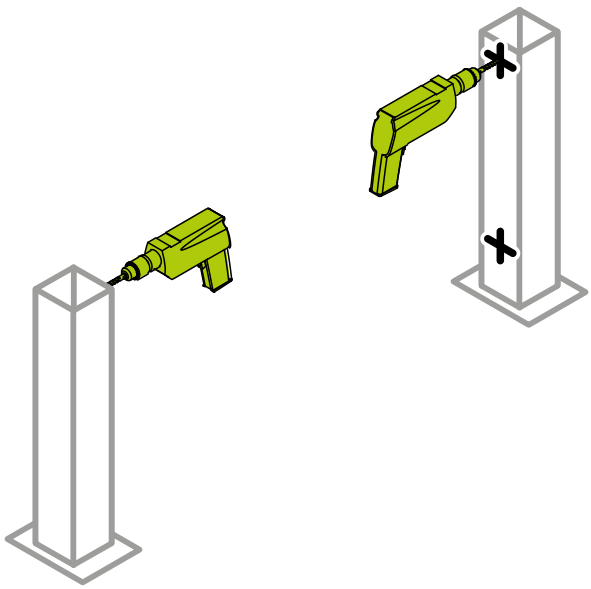
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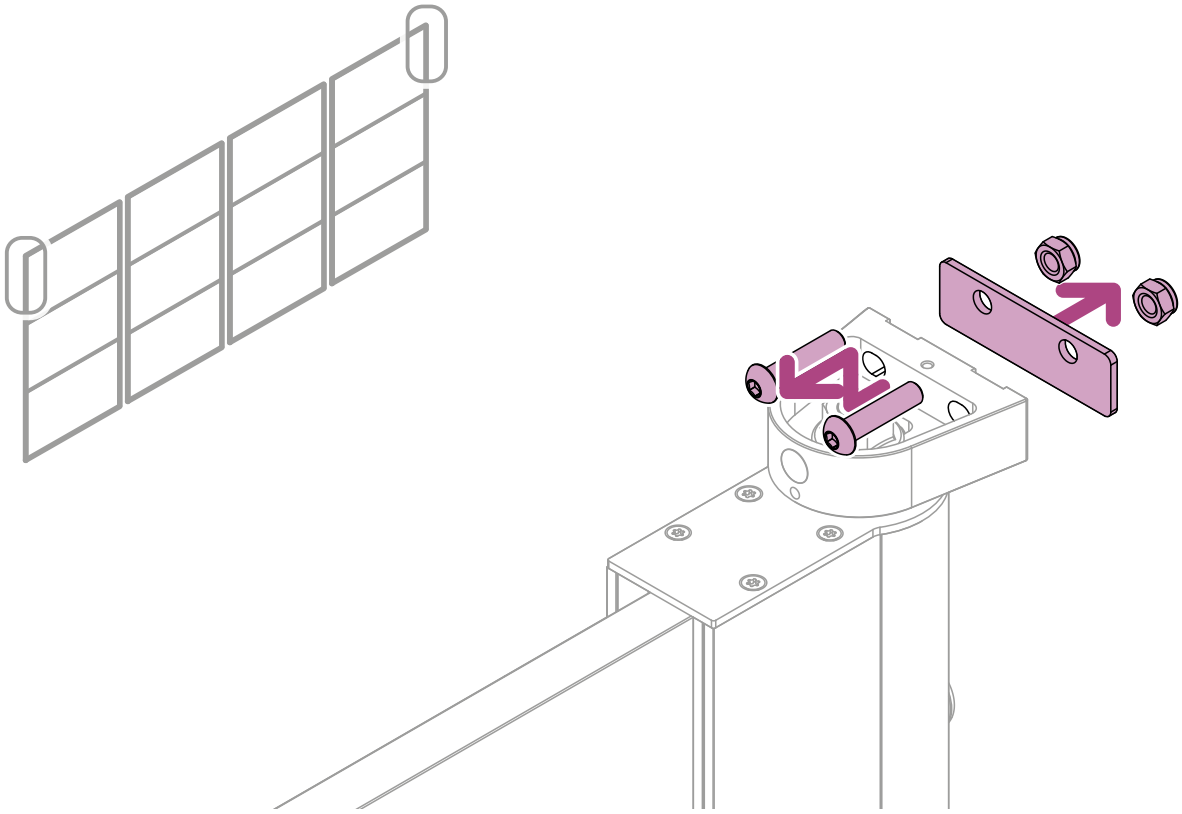


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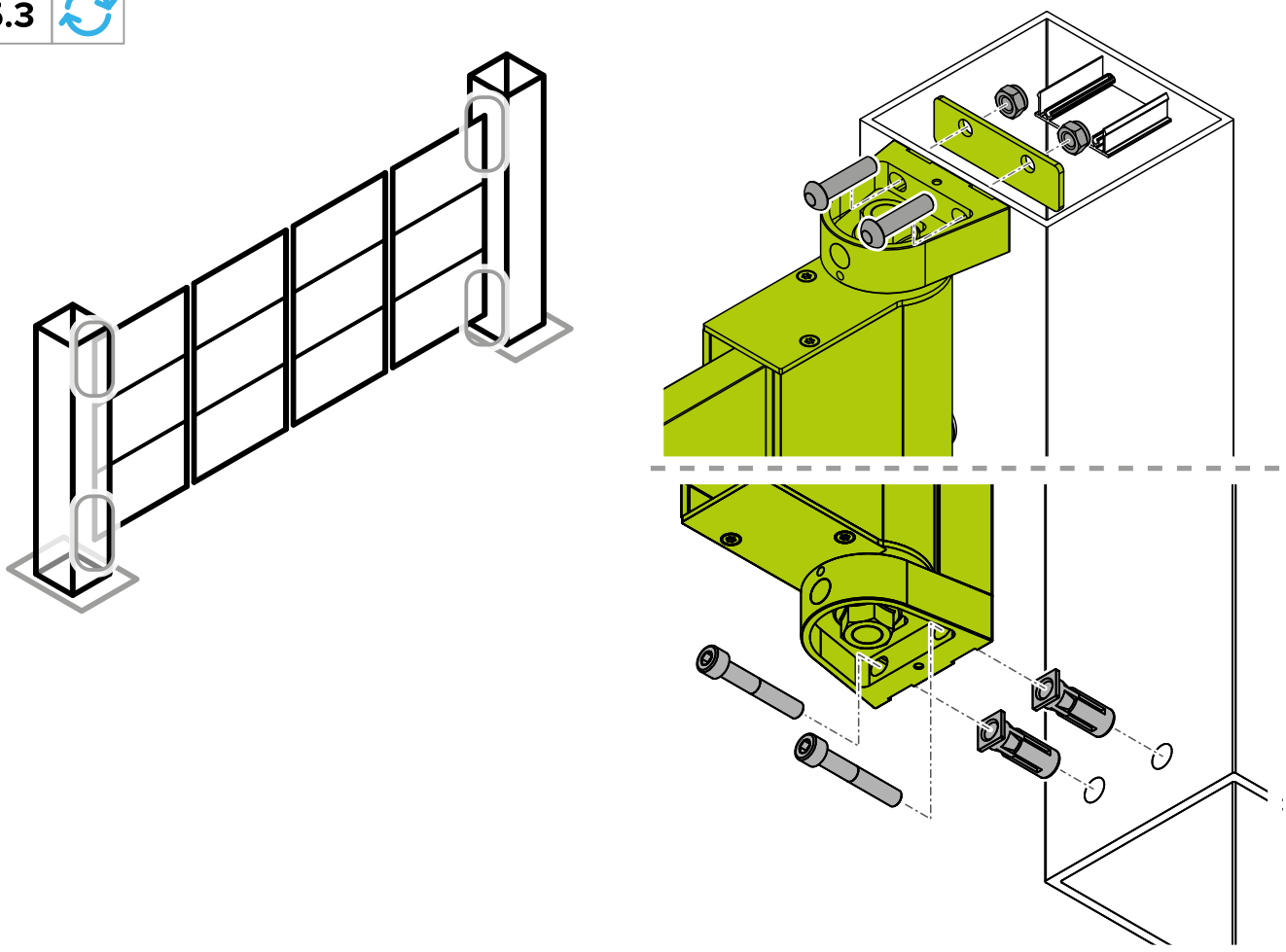




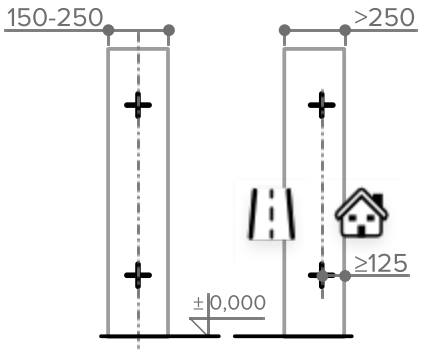
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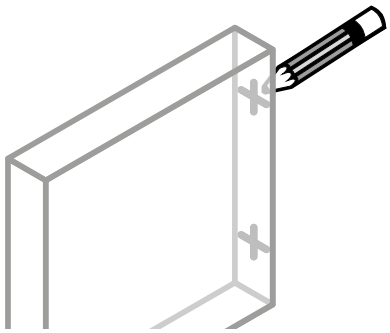


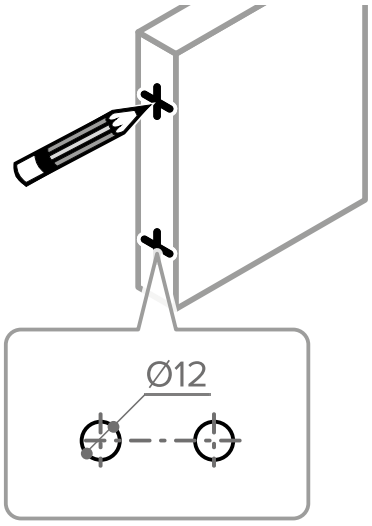
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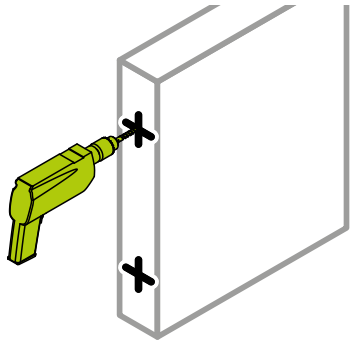
16 H-AL v2

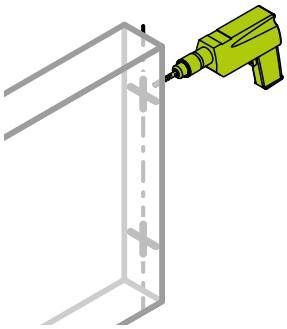


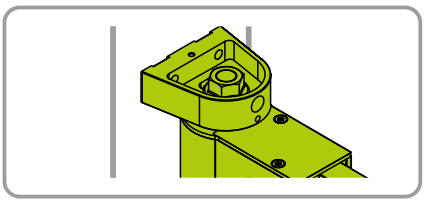


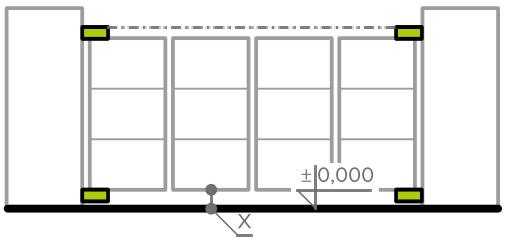


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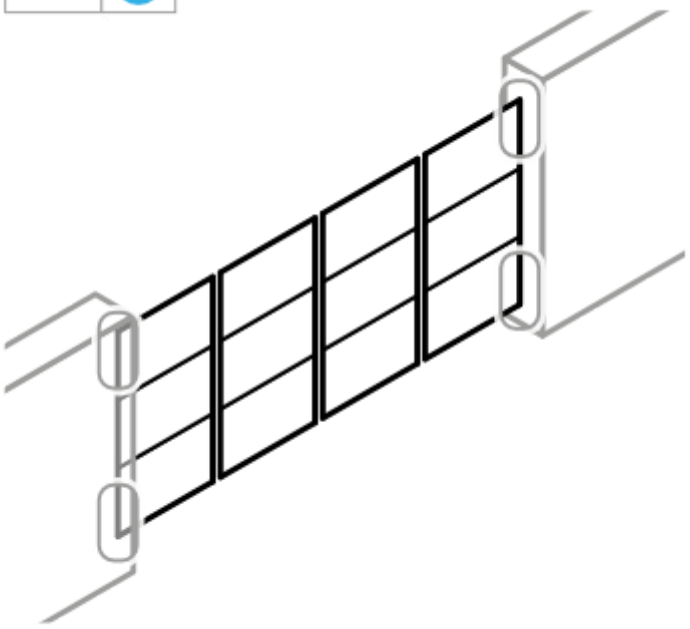


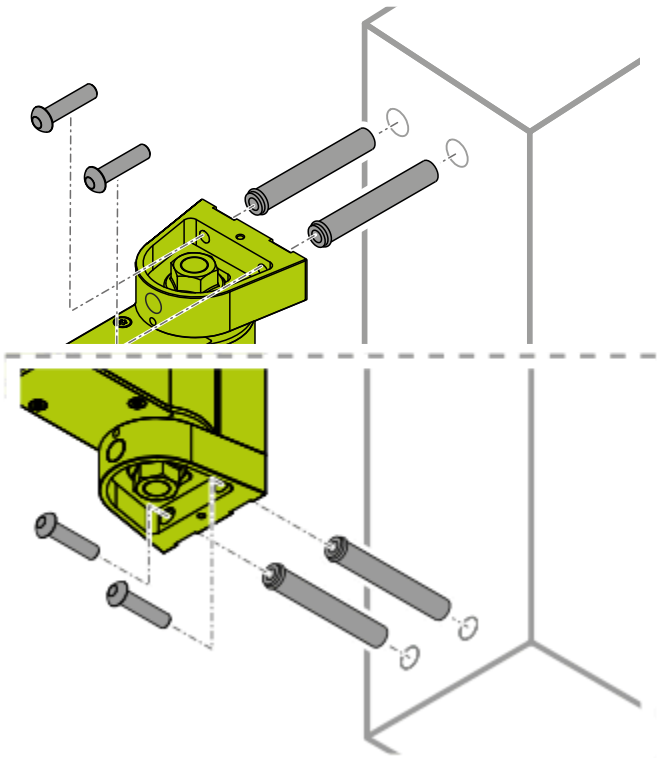




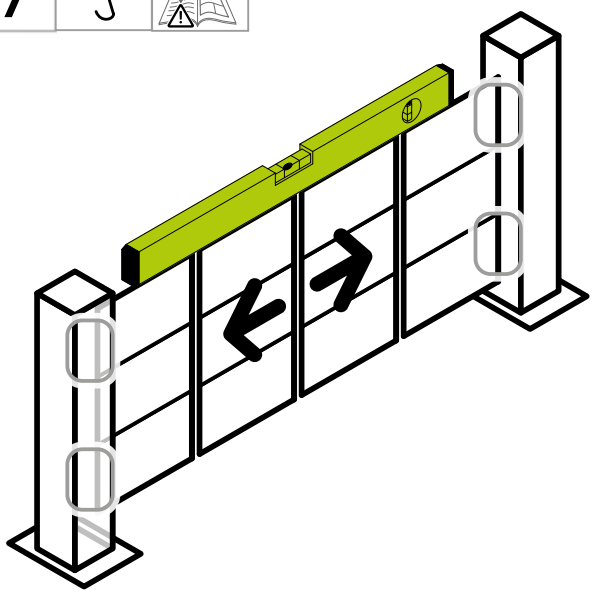


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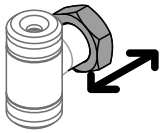




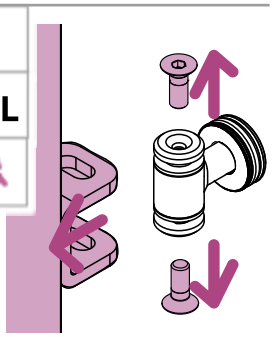
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18 E-AL



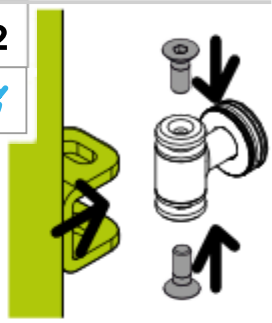
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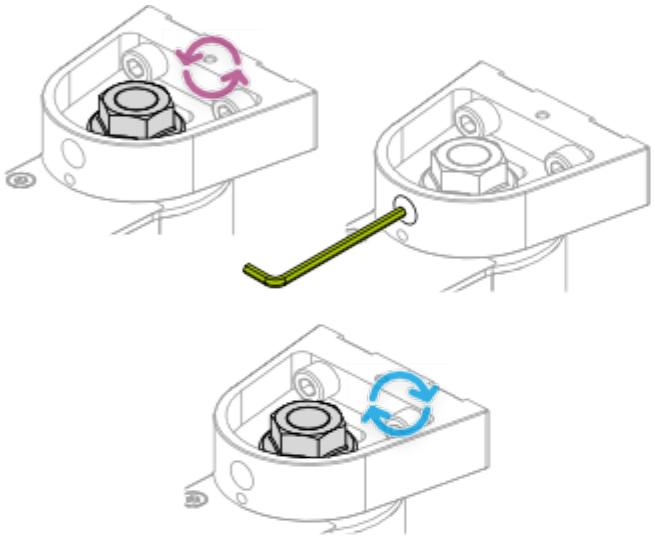
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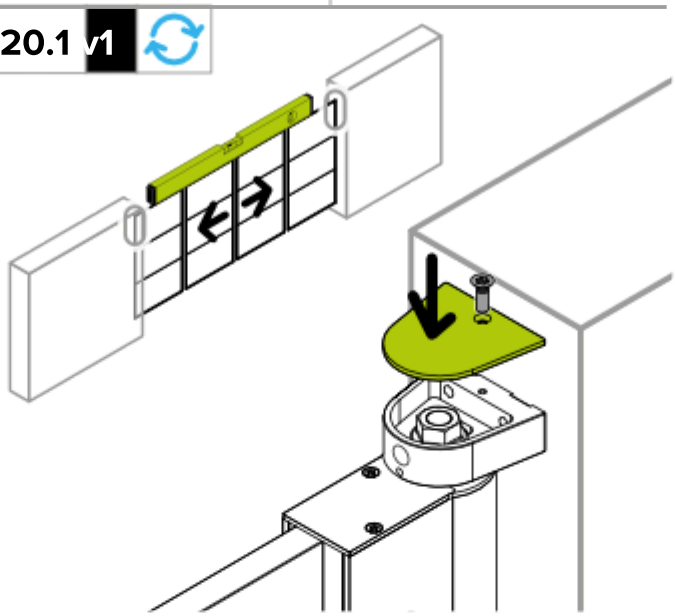
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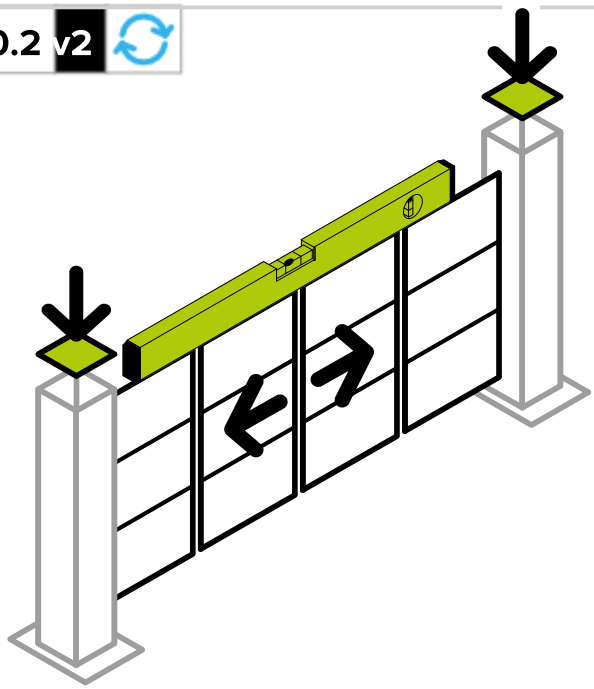
20 H-AL

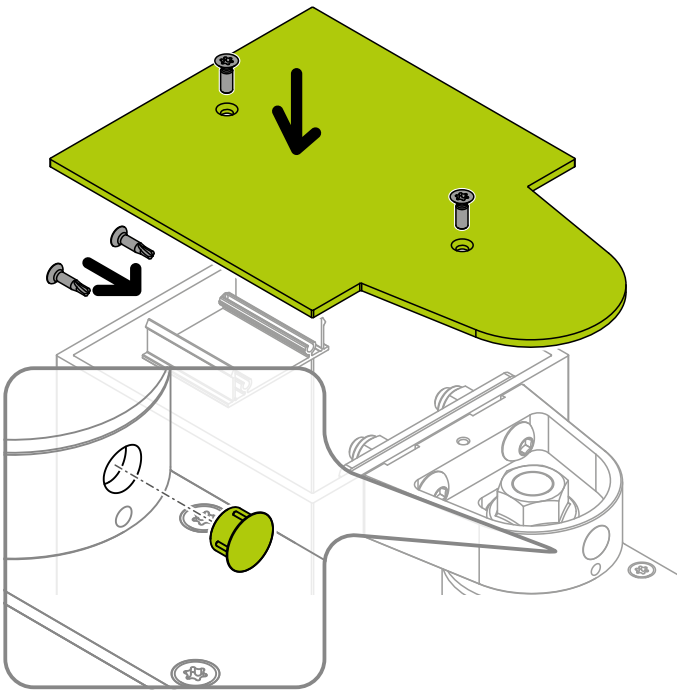


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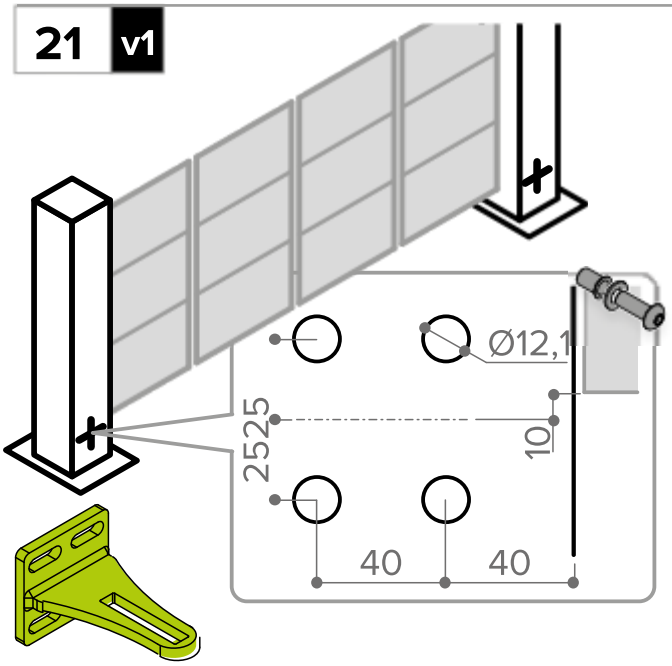


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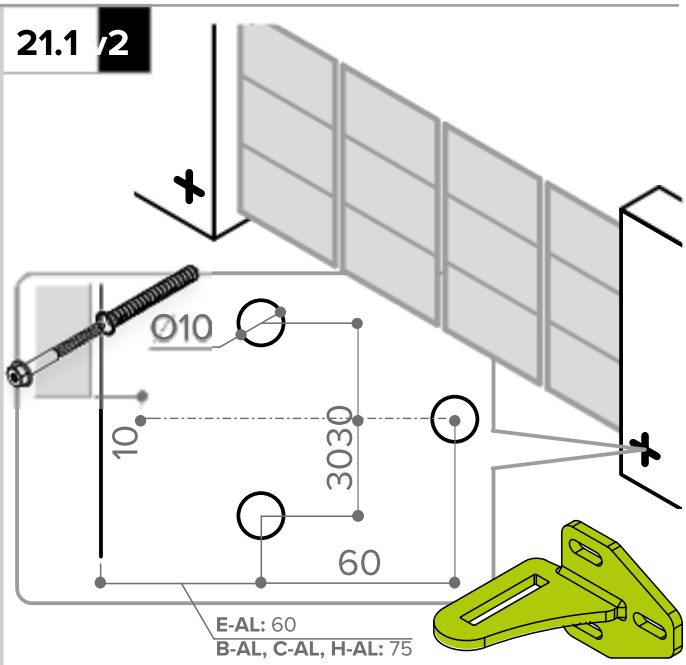




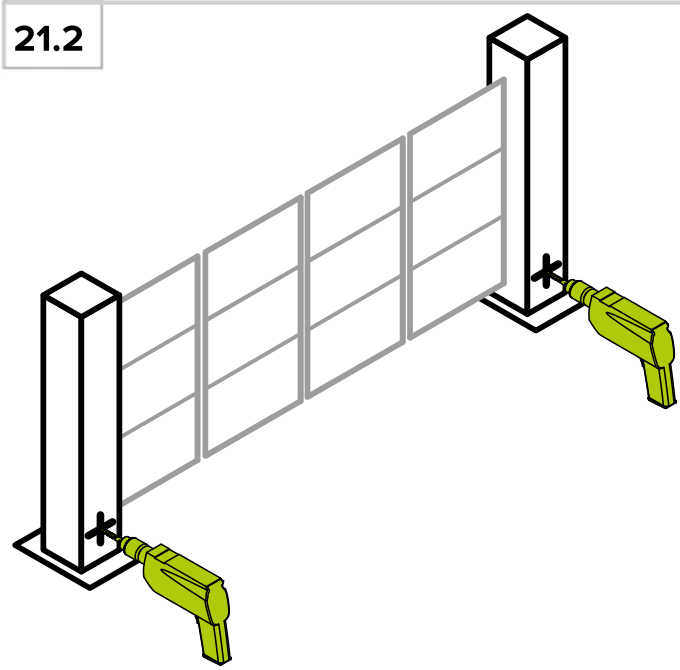
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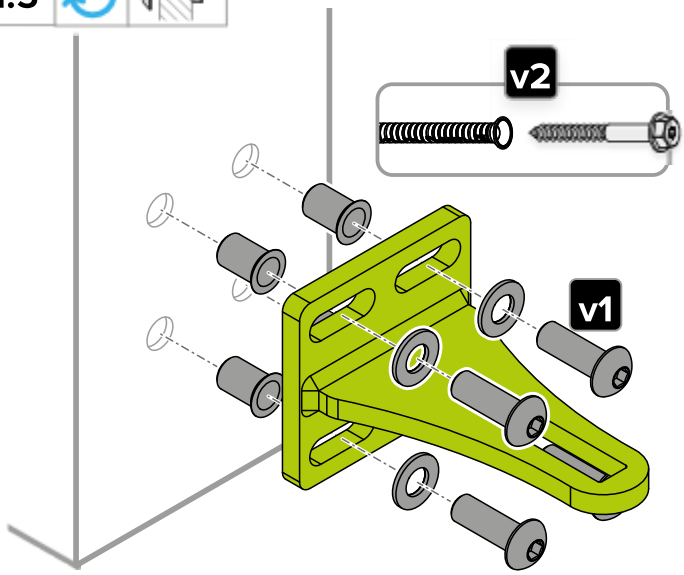
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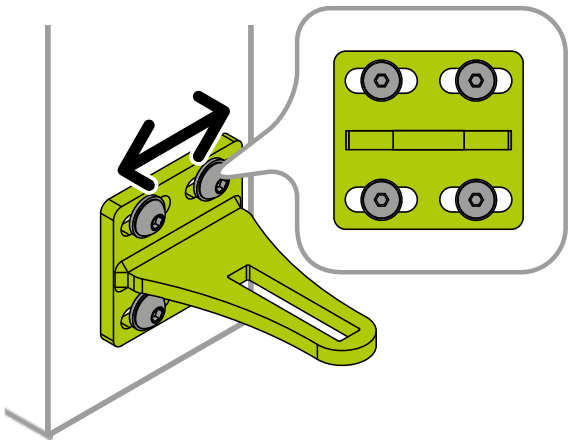
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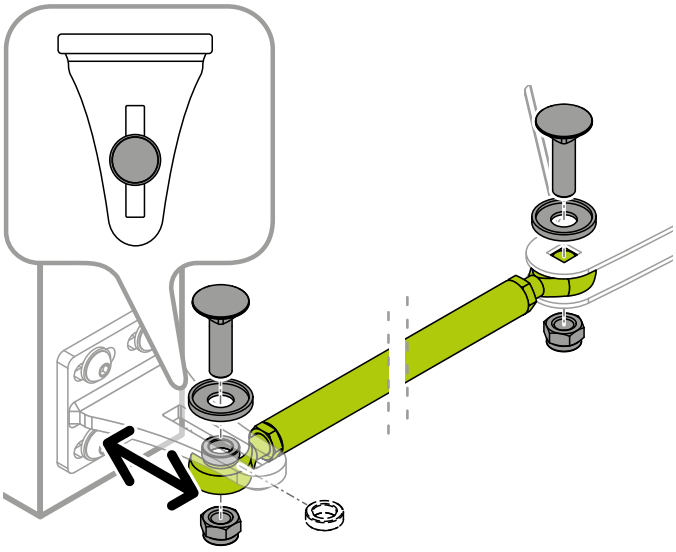
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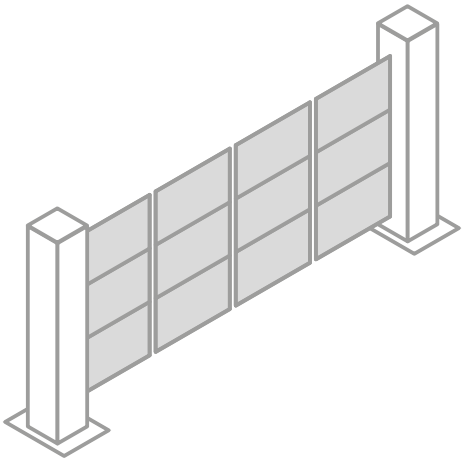
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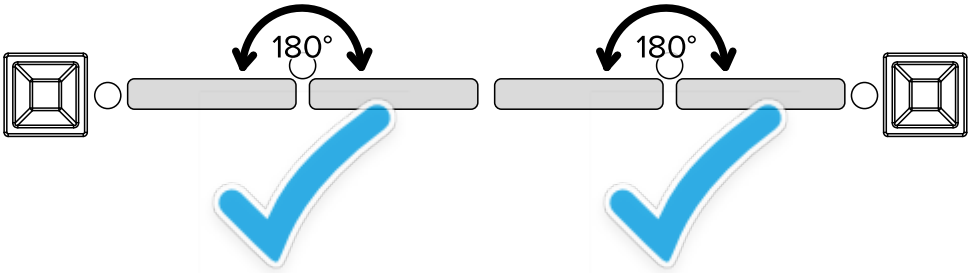


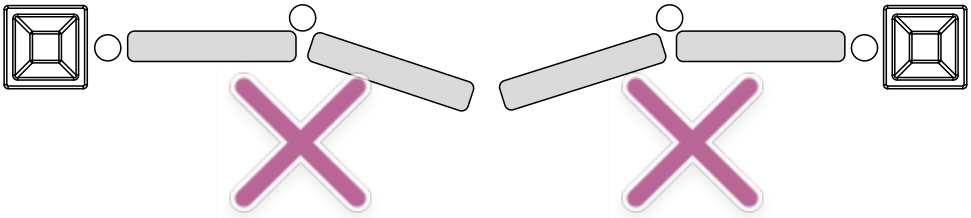
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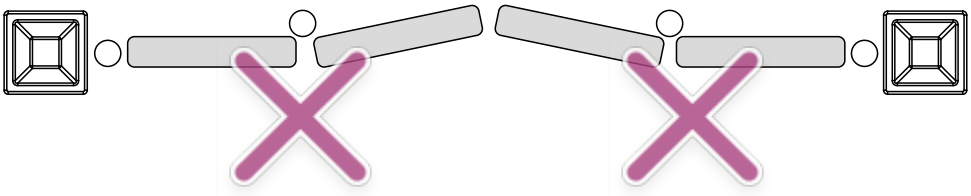


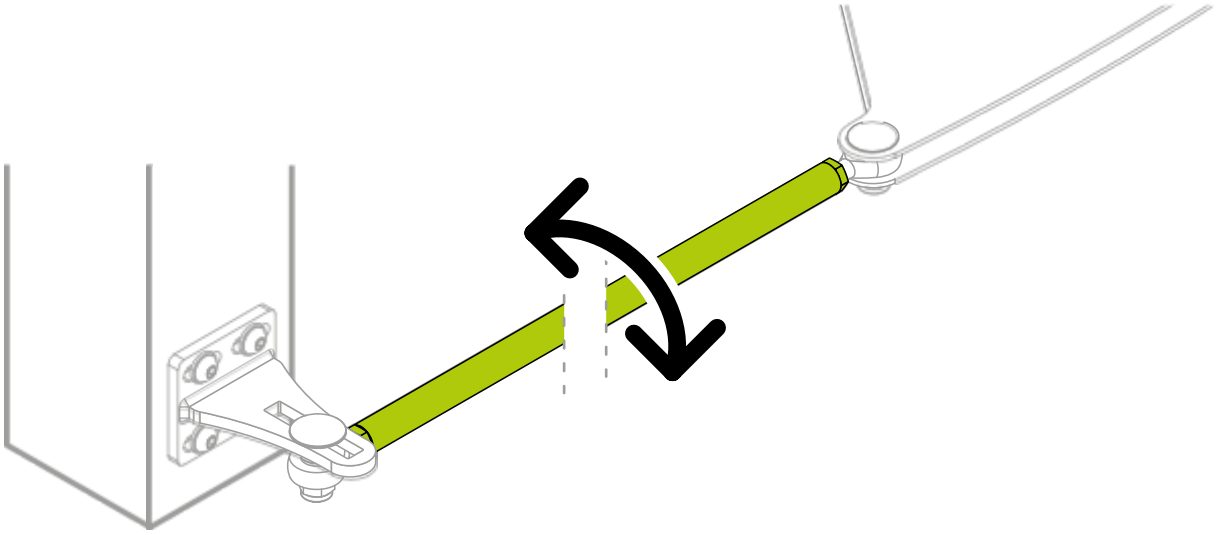
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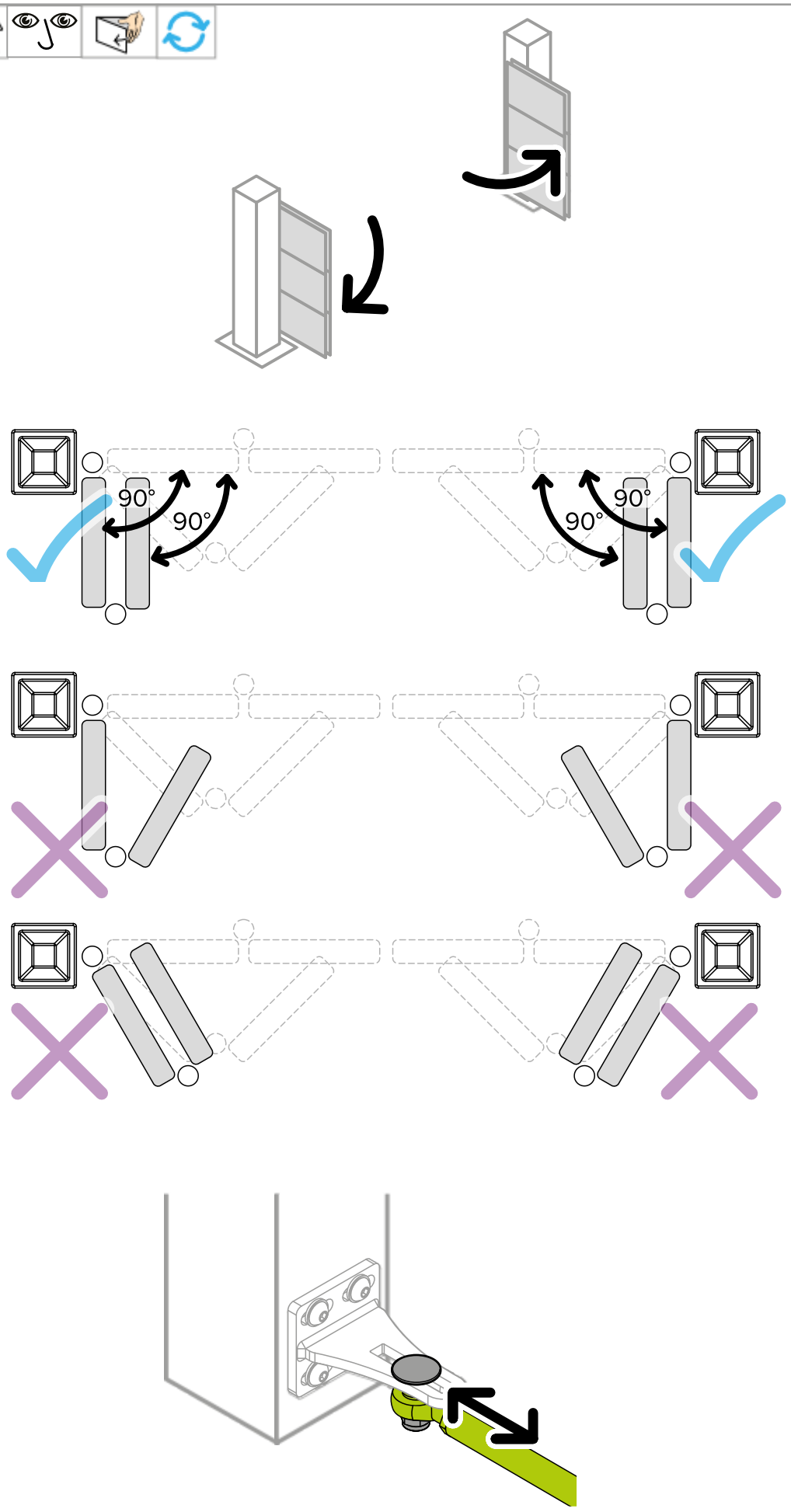


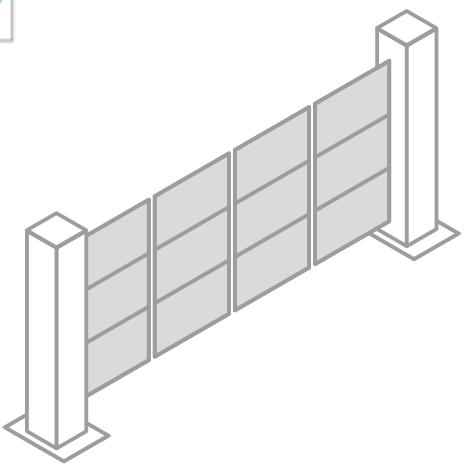


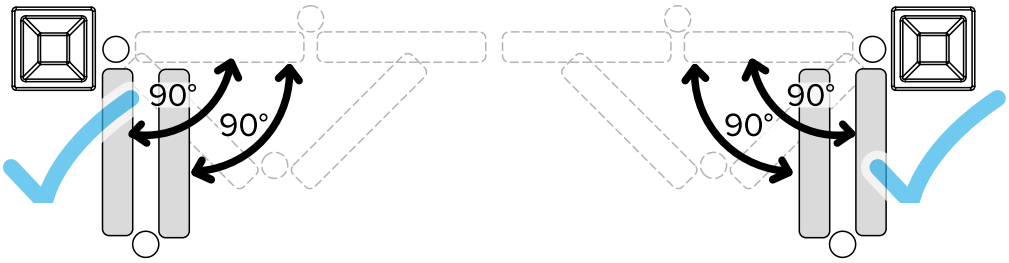


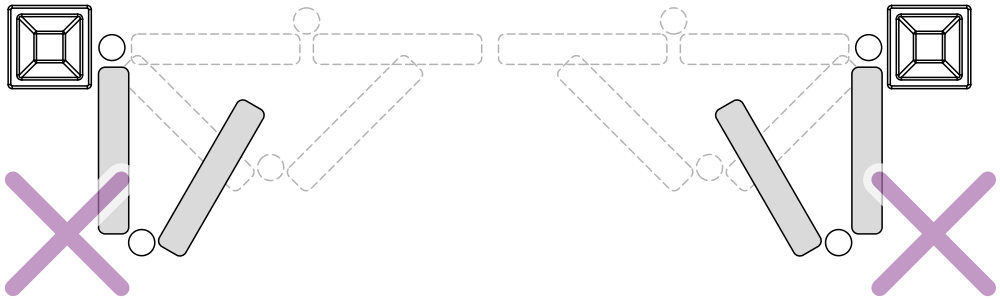


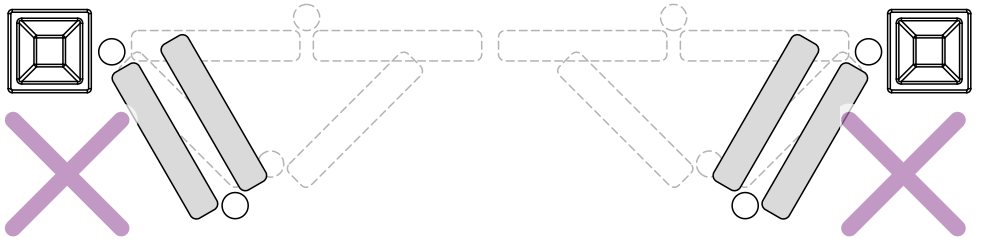


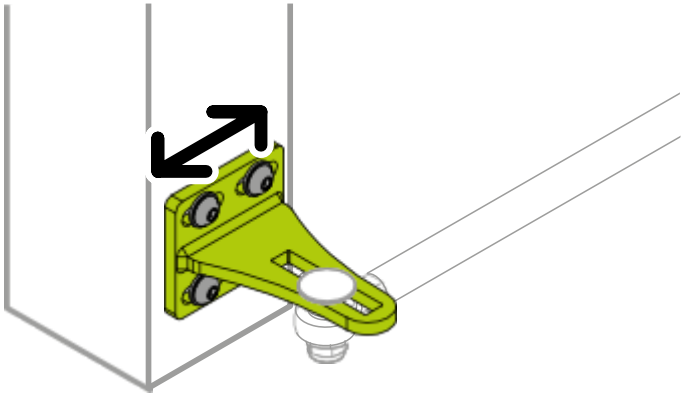

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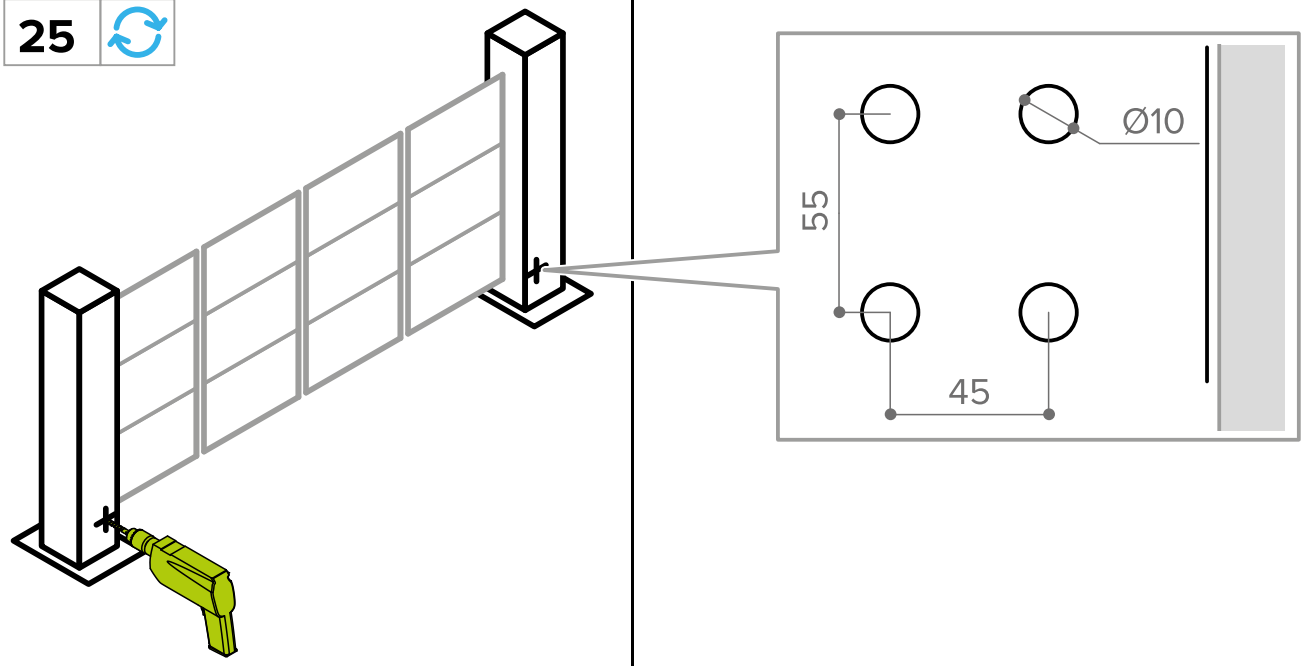

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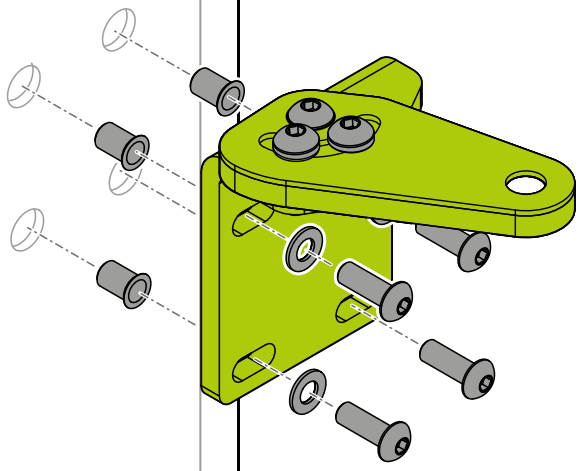




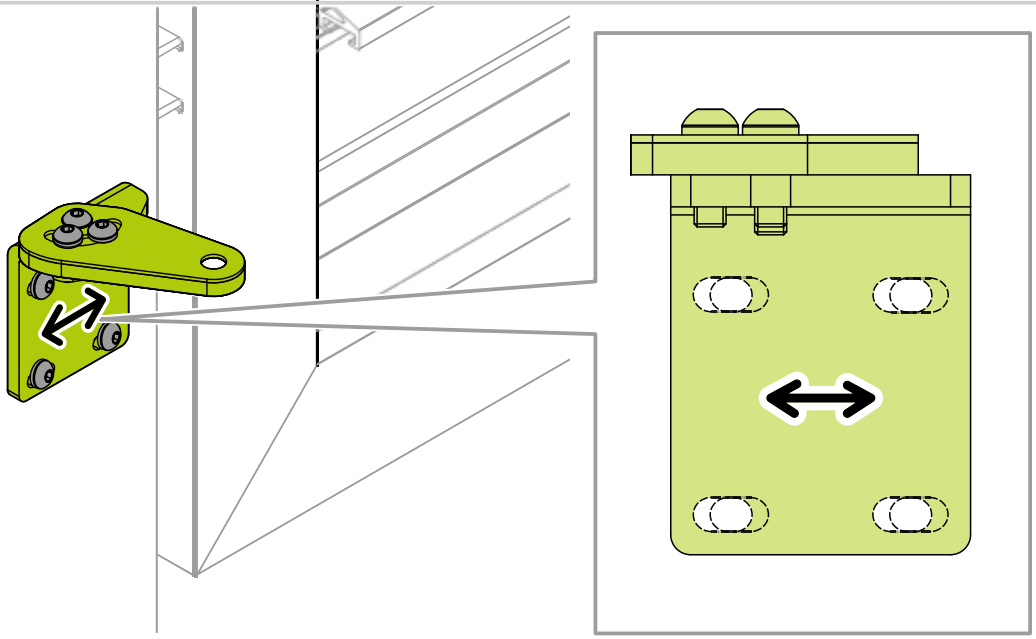


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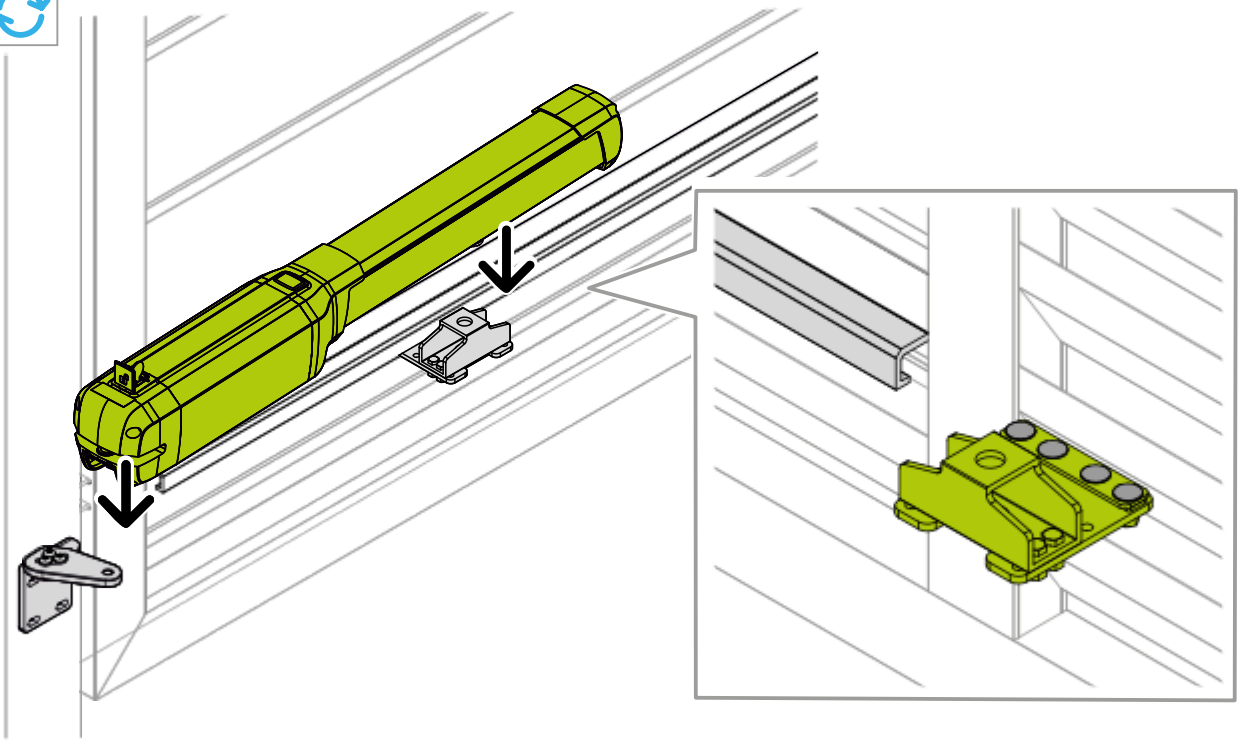




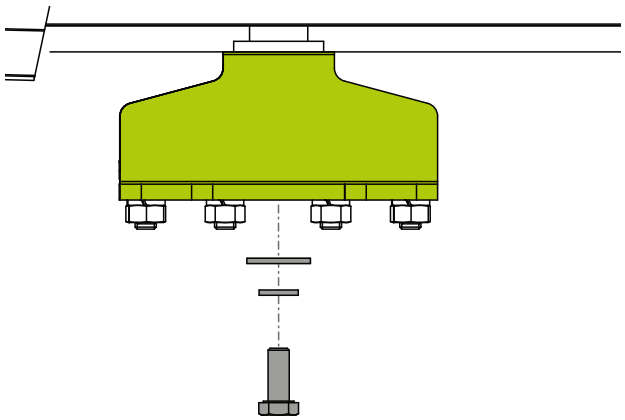
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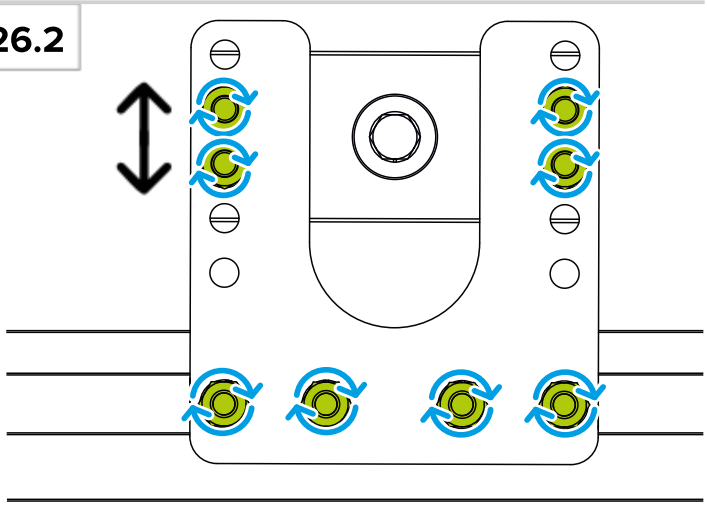
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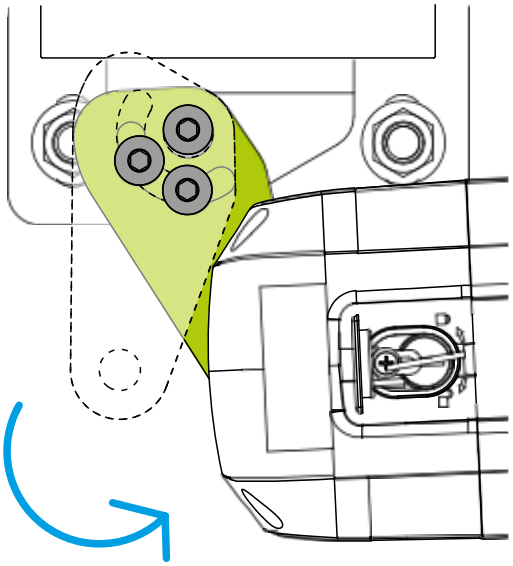
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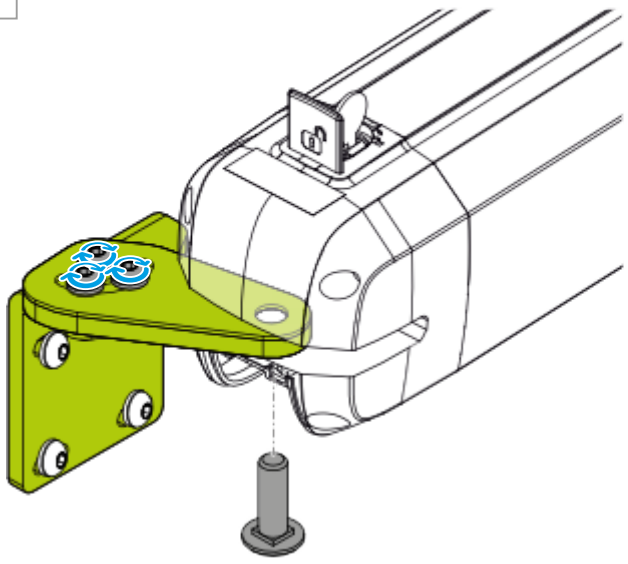
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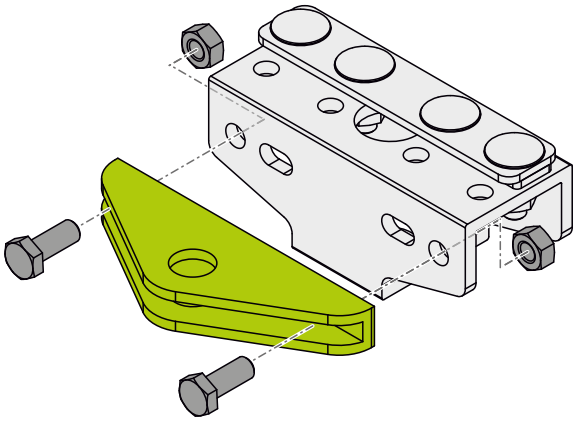
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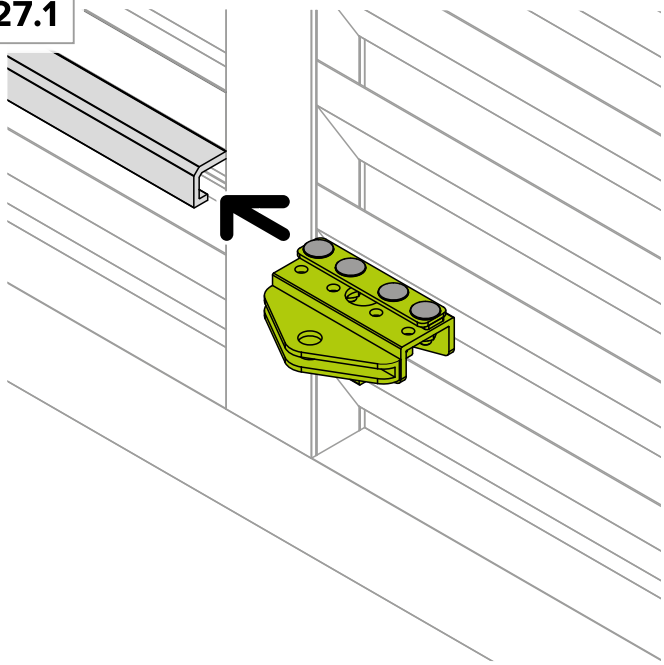
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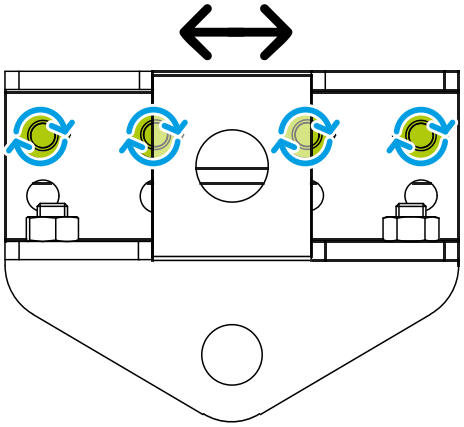
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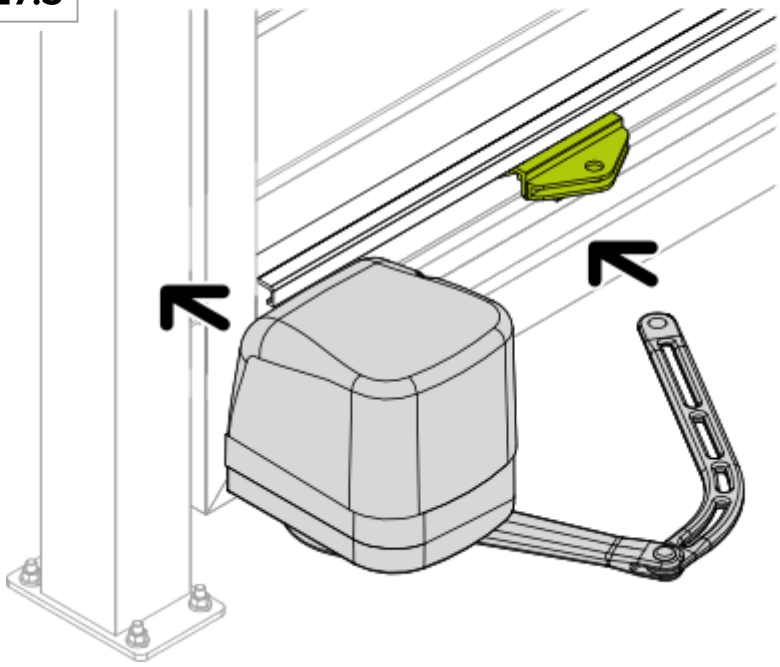
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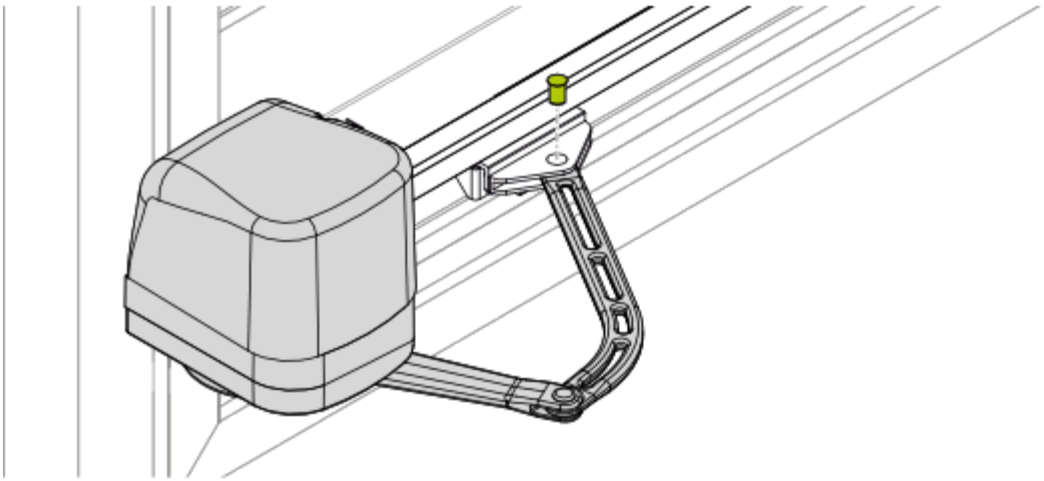
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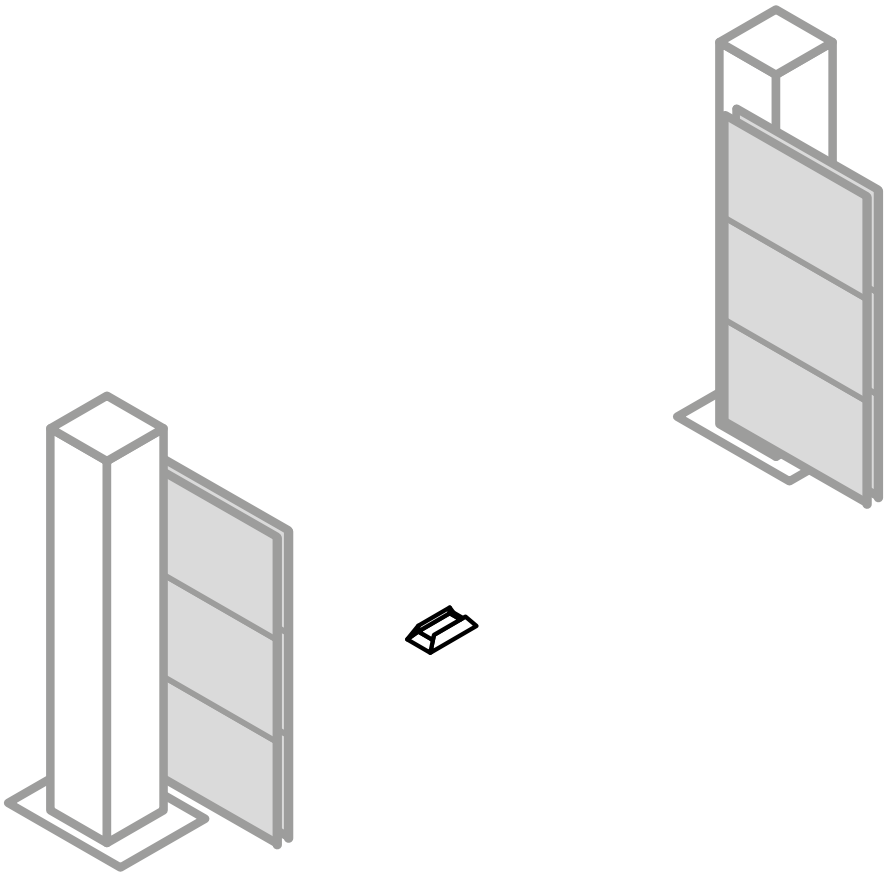


27.3



27.4




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