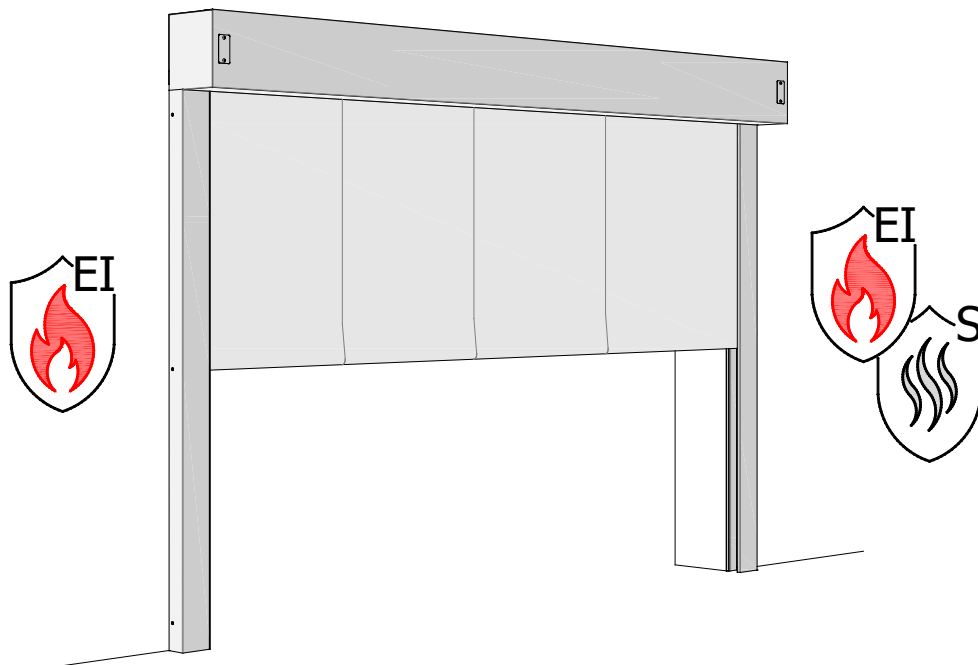


# INSTALLATION INSTRUCTION



*FIRE PROTECTION / FIRE AND SMOKE PROTECTION  
CURTAIN GATE type **Fire PROtec-EI60 / EI60-S**  
with internal (tubular) electric drive*

	<b>Fire PROtec-EI60 / EI60-S</b>	<i>No.</i> <b>IM_Ok-2</b>
	<i>INSTALLATION INSTRUCTION</i>	<i>edition</i> <b>12.2021</b>

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## **1. GENERAL INSTALLATION RECOMMENDATION**

*Dear Customers,*

*Professional installation and thoughtful service have essential impact on reliable operation of Fire PROtec type fire and smoke protection curtain gate as well as on safety of people and property.*

*The gate should be used according to its destination while the installation should be carried out by trained installation team having the appropriate competence. Installation site should be properly marked and protected.*

*You should strictly observe the applicable industrial safety regulations. Particular attention should be given to the safety issues related to electric devices operation as well as to the safe work at heights.*

*We ask you to read the contents of this manual carefully.*

### **1.1. APPLICABLE DOCUMENTS**

*The discussed topics are covered by the norms and legal regulations listed below:*

- use, operation and maintenance manual,*
- electric equipment installation manual,*
- additional documentation on optional building/equipment components – if any.*

### **1.2. APPLICABLE STANDARDS, REGULATIONS AND DIRECTIVES**

- a) Regulation (EU) No 305/2011 of the European Parliament and the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC (Official Journal of the European Union L88 on 4.04.2011 with later amendments),*
- b) Directive 2006/42/EC of the European Parliament and the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast),*
- c) Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits,*

- d) Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to electromagnetic compatibility (recast),
- e) Act on the Construction Law of 7 July 1994. (Journal of Laws of 2020 r., pos. 1333),
- f) Act of 24 August 1991 on Fire Protection (Journal of Laws of 2020 r., pos. 961, 1610),
- g) Regulation of the Minister of Infrastructure and Construction of 17 November 2016 on the method of declaring the performance of construction products and the method of marking them with the construction mark (Journal of Laws of 2016 r., pos. 1966),
- h) Regulation of the Minister for Internal Affairs and Administration of 7 June 2010 on fire protection of buildings, other building structures and areas (Journal of Laws of 2010 r., no. 109, pos. 719 with later amendments),
- i) Regulation of the Minister of Infrastructure of 12 Apr 2002 on technical conditions to which buildings and their location should conform (Journal of Laws of 2019 r., pos. 1065),
- j) Harmonized standard EN 16034:2014-11 Pedestrian doorsets, industrial, commercial, garage doors and openable windows – Product standard, performance characteristics – Fire resisting and/or smoke control characteristics,
- k) Harmonized standard EN 13241+A2:2016-10 Gates – Product standard, performance characteristics,
- l) Standard PN-EN 12635+A1:2010 Gates – installation and use,
- m) Standard PN-EN 12453:2017-10 Gates – Safety in use of power operated doors – Requirements and test methods.

## **2. PRAPARATION FOR INSTALLATION**

### **2.1. LIST OF ANCHORING / FIXING COMPONENTS**

Standard set of components delivered with the gate includes the components designed for installation on concrete walls (C20/25) and reinforced concrete walls. The type and size of anchoring elements from the kit is matched to the dimensions of the delivered gate. The use of components different than specified is possible provided they are placed on the market marked with CE or B sign and they have at least the same strength characteristics and the same use.





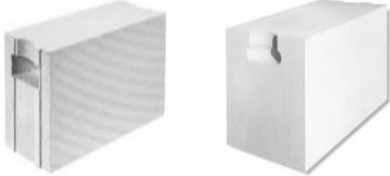
The anchoring technology should be approved by the site manager.

**WARNING!**

The use of improper anchoring or fixing components (regarding purpose, size, strength characteristics, etc.) causes the hazard of damage or collapse of the gate.

For gates installed on the outside of the building, only stainless-steel components should be used for fastening the shaft brackets and the guides.

**Tab. 1. List of anchoring / fixing components shaft brackets**

LP. No.	SUPPORTING CONSTRUCTION / ANCHORING ELEMENTS	NOTES
<b>A</b>	<b>CEILINGS MADE OF HOLLOW-CORE AND PRESTRESSED CONCRETE SLABS</b>	
<b>A.1</b>	Anchor for hollow core slabs e.g. Fischer FHY, Hilti HKH	– size and type of elements matched to the transferred loads
<b>A.2</b>	Sleeve anchor (hammer-in) e.g. Fischer EA II, Hilti HKD	
<b>B</b>	<b>CONCRETE WALLS, FLOORS AND BEAMS HOMOGENEOUS AND REINFORCED</b>	
<b>B.1</b>	Anchor bolt (ring) e.g. MKT BZ, Fischer FAZ II, Hilti HST3	– size and depth of anchorage matched to the loads
<b>B.2</b>	Sleeve anchor (hammer-in) e.g. Fischer EA II, Hilti HKD	
<b>B.3</b>	Screw anchor (screwed-in) e.g. Fischer FBS II, Hilti HUS HR / CR	
<b>B.4</b>	Chemical fastening with threaded rod, e.g. MKT VM Multi-plus, Fischer FIS SB	– rod min. M8 as per DIN 976, class min. 8.8
<b>C</b>	<b>MASONRY WALLS MADE OF CELLULAR CONCRETE</b> (e.g. ytong, solbet, termalica)	
<b>C.1</b>	Screw anchor e.g. Fischer FBS II, Hilti HUS HR / CR	– size and depth of anchorage matched to the load to be carried

<b>C.2</b>	<i>Anchor Fischer FPX M8-I / M10-I / M12</i>	
<b>C.3</b>	<i>Fischer FIS V, FIS P Chemical fastening with threaded rod, e.g. MKT VM Multi-plus, Fischer FIS V, FIS P</i>	– rod min. M8 as per to DIN 976, class min. 8.8
<b>C.4</b>	<i>Through the wall mounting with threaded rod</i>	– rod as per DIN 976, class: min. 8.8 – nut as per PN-EN ISO 4032, class: min. 8 – washer extended as per. PN-EN ISO 7093, 200 HV
<b>D</b>	<b>SOLID MASONRY WALLS</b> <i>(e.g. concrete blocks, silicate blocks, solid bricks)</i> <b>AND HOLLOW BRICKWORK</b> <i>(e.g. grid brick, hollow brick, porotherm)</i>	
<b>D.1</b>	<i>Chemical fastening with threaded rod, e.g. MKT VM Multi-plus, Fischer FIS V, FIS P</i>	– rod min. M8 as per DIN 976, class min. 8.8
<b>D.2</b>	<i>Screw anchor e.g. Fischer FBS II, Hilti HUS HR / CR</i>	– size and depth of anchorage matched to the load to be carried (tables / load charts are available at Małkowski-Martech S.A.)
<b>D.3</b>	<i>Through the wall mounting with threaded rod</i>	– as in point C.4 with replacement of the washers – washer as per PN-EN ISO 4079, 200 HV
<b>E</b>	<b>FIRE-PROTECTED STEEL STRUCTURES AND FIRE PROTECTION FRAME WALLS<sup>1)</sup></b>	
<b>E.1</b>	<i>Screws for steel constructions (sheet metal screws) e.g. Hilti S-MD, Stalco WS / FD / FM, Etanco GT</i>	– min. St 5,5 x 25 as per DIN 7504 – use <b>only for doors of limited dimensions</b> (tables / load charts are available at Małkowski-Martech S.A.)
<b>E.2</b>	<i>Screw connection</i>	– screw as per PN-EN ISO 4014, 4017, class min. 8.8 – washer as per wg PN-EN ISO 4079, 200 HV – nut as per PN-EN ISO 4032, class min. 8

1) The internal steel profiles must withstand the static and dynamic loads associated with door installation and operation.

**Tab. 2. List of anchoring / fixing components guides<sup>2)</sup>**

<b>F</b>	<b>REINFORCED CONCRETE WALLS, MASONRY WALLS MADE OF CELLULAR CONCRETE BLOCKS, SOLID AND HOLLOW BRICKWORK</b>	
<b>F.1</b>	<i>Steel expansion bolt (frame anchor)</i>	– M8, M10 – minimum length 72 mm
<b>F.2</b>	<i>Plastic anchor for frames Hilti HRD-CR</i>	– size 8, 10 – minimum length 60 mm

2) In addition to those listed in the table 2, all elements from points B, C, D and E in table 1 can be used.

## 2.2. MOUNTING TOOLS

Proper installation requires the right tools.



*impact drill*



*screwdriver*



*angle grinder*



*set of drill bits for steel  
and concrete*



*flat wrenches set*



*torque wrench*



*allen key set*



*screwdriver set*



*leveling device*



*rivet gun*



*pencil*



*tape measure*

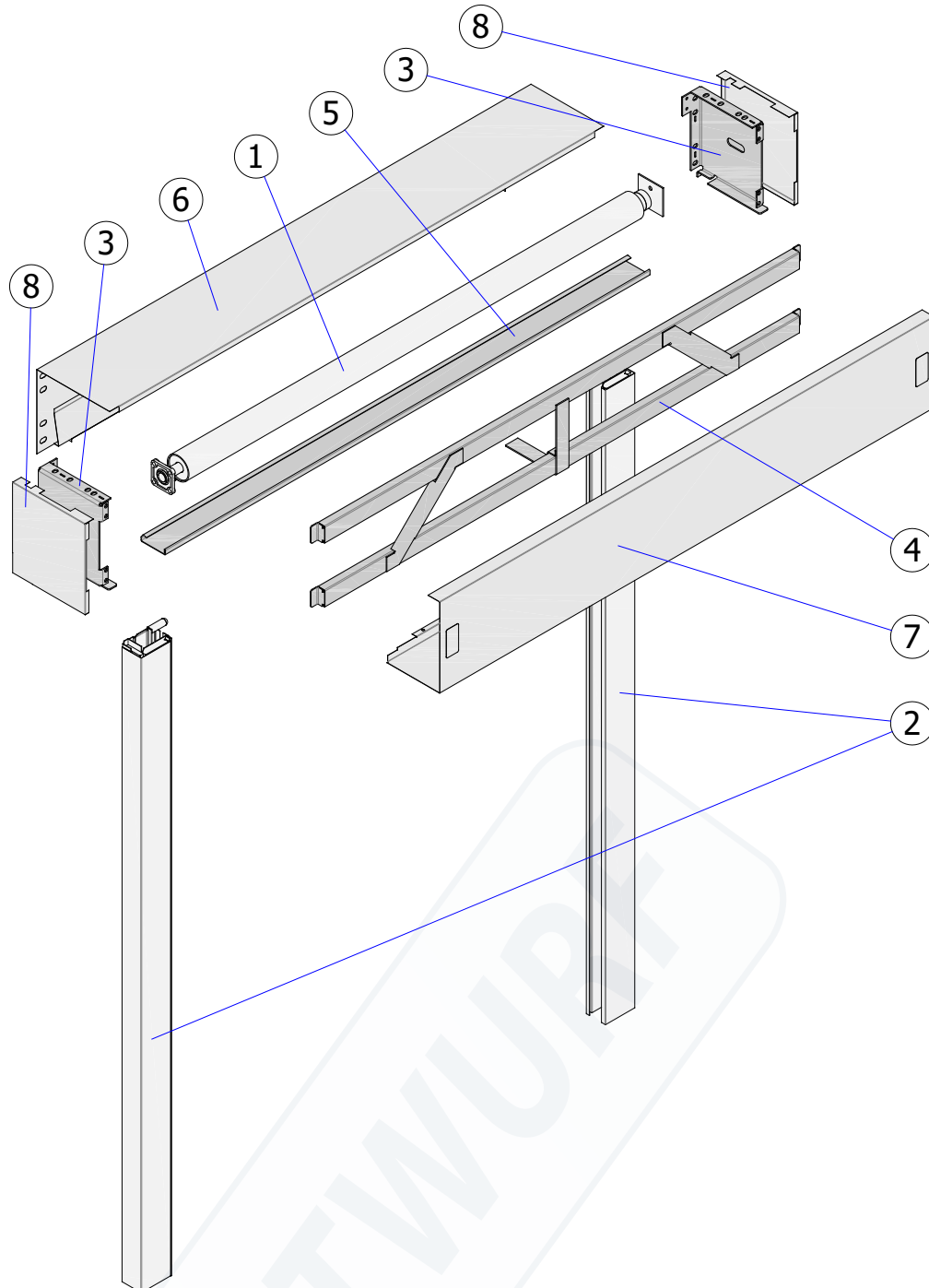


*safety glasses*



*protective gloves*

**2.1. CONSTRUCTION OF FIRE PROTECTION / FIRE AND SMOKE PROTECTION CURTAIN GATE  
Fire PROtec-EI60 / EI60-S**



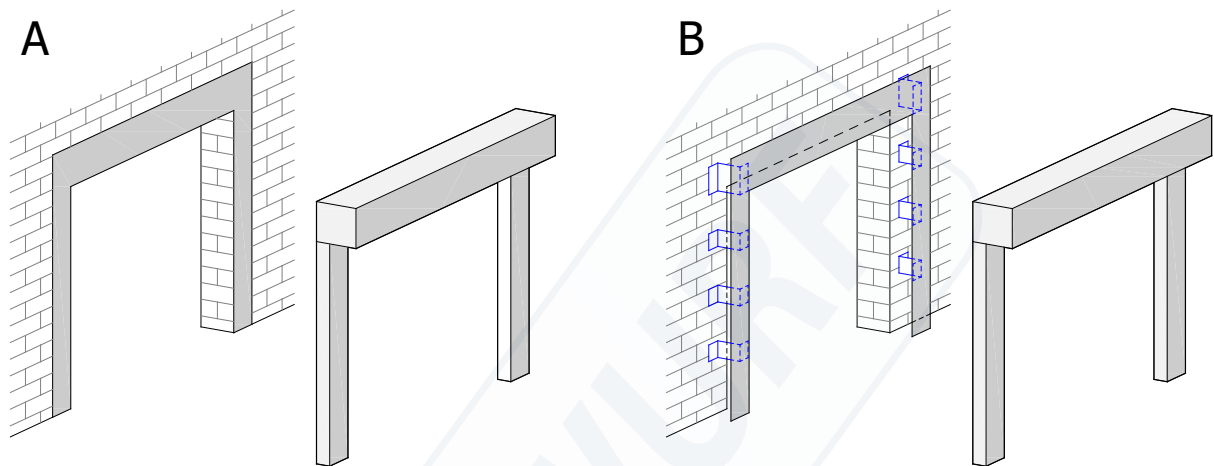
**Fig. 1 - Fire protection / fire and smoke protection curtain gate Fire PROtec-EI60 / EI60-S with internal drive (main assemblies / components)**

- 1 – door blanket with winding shaft and tubular drive,
- 2 – guide, 3 – shaft bracket, 4 – lattice construction,
- 5 – sliding bar, 6 – top cover, 7 – front cover,
- 8 – side cover

## 2.4. INSTALLATION VARIANTS FOR Fire PROtec-EI60 / EI60-S

The MARC-Ok plus curtain gate mounting/installation method is adapted to the existing conditions on site.

The variants for which installation is included in this instruction is shown below.



**Fig. 2 - Installation variants for curtain gate Fire PROtec**

A – Wall assembly (direct),

B – Wall assembly (indirect) with the use of spacers

## 3. MECHANICAL INSTALLATION

### 3.1. VERIFICATION

- Check the compliance and quality of the received items with the shipping specifications;
- Check the dimensions of the gate opening (So, Ho), compare them with the dimensions for which the gate was manufactured (these are specified in the shipping specification) and enter it in the confirmation of installation;

SPECYFIKACJA WYSYŁKOWA		Nr zlecenia		52484	
WYKONANIE PRZEGRODY					
Wykonanie przegrody	standard	Parametr odporności ogniowej	EI60	Ilość	1
Data emisji dokumentu	19.01.2021	Nr projektu	2128362	Nr ZS	ZS-52/21
Planowana data wysyłki	05.03.2021	Nr kontraktu	1128362/NEXT_D00	Nr KT	52484
Szerokość otworu w murze	3 480	Nr zamówienia / oferty	1128362/NEXT_D00		
Wysokość otworu w murze	4 500				

SPECYFIKACJA WYSYŁKOWA					
2128362/NEXT_D00/0015		Nr zlecenia		52484	
RAL skrzydła od zewnątrz		RAL skrzydła od muru		RAL elementów	
Wykonanie przegrody	standard	Parametr odporności ogniowej	EI60	Ilość	1
Data emisji dokumentu	19.01.2021	Nr projektu	2128362	Nr ZS	ZS-52/21
Planowana data wysyłki	05.03.2021	Nr kontraktu	1128362/NEXT_D00	Nr KT	52484
Szerokość otworu w murze	3 480	Nr zamówienia / oferty	1128362/NEXT_D00		
Wysokość otworu w murze	4 500				

**NOTE!**

If the dimensions of the opening are larger than the dimensions for which the door was manufactured, it is necessary to provide additional fire protection to the edges of the opening.

- Ensure that is not any components (e.g., plumbing, electrical) in the vicinity of the gate opening that prevent installation of the entire gate or its components;
- Check the match between the KT No. in the shipping specification and the KT No. written on the label (plate);

SPECYFIKACJA WYSYŁKOWA		Nr zlecenia		52484	
WYKONANIE PRZEGRODY					
Wykonanie przegrody	standard	Parametr odporności ogniowej	EI60	Ilość	1
Data emisji dokumentu	19.01.2021	Nr projektu	2128362	Nr ZS	ZS-52/21
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Szerokość otworu w murze	3 480	Nr zamówienia / oferty	1128362/NEXT_D00		
Wysokość otworu w murze	4 500				

SPECYFIKACJA WYSYŁKOWA					
2128362/NEXT_D00/0015		Nr zlecenia		52484	
RAL skrzydła od zewnątrz		RAL skrzydła od muru		RAL elementów	
Wykonanie przegrody	standard	Parametr odporności ogniowej	EI60	Ilość	1
Data emisji dokumentu	19.01.2021	Nr projektu	2128362	Nr ZS	ZS-52/21
Planowana data wysyłki	05.03.2021	Nr kontraktu	1128362/NEXT_D00	Nr KT	52484
Szerokość otworu w murze	3 480	Nr zamówienia / oferty	1128362/NEXT_D00		
Wysokość otworu w murze	4 500				






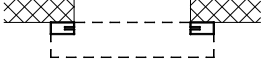

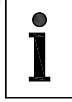
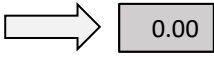
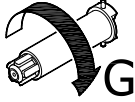


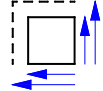

**3.2. BASIC INDEXES USED IN THE MANUAL**

So – width of building opening,  
Ho – height of building opening,  
S – width of passage light,  
H – height of passage light;

When mounting the wall variant, the width of the opening is equal to the width of the light. The same applies to the height.

However, depending on the execution and installation variant, the listed values may differ.  
All dimensions are in millimeters.

### 3.3. INFORMATION AND WARNING SIGNS AND SYMBOLS USED IN THE MANUAL

 <p><i>important notice, warning</i></p>	 <p><i>correct position, operation or part / element</i></p>	 <p><i>incorrect position, operation or part / element</i></p>
 <p><i>sequence of actions</i></p>	 <p><i>see descriptive section</i></p>	 <p><i>applies to direct wall mounting</i></p>
 <p><i>applies to indirect wall mounting (using spacers)</i></p>	 <p><i>additional info</i></p>	 <p><i>go to (point in manual)</i></p>
 <p><i>applies to drive with gravity closure</i></p>	 <p><i>applies to gates with an opening width greater than 3000 mm</i></p>	 <p><i>applies to doors with an opening width less than 3000 mm</i></p>
 <p><i>type of element / part depending on the dimensions of the opening</i></p>	 <p><i>optional elements</i></p>	



### 3.4. USE OF INSTALLATION INSTRUCTIONS/ DRAWING DOCUMENTATION

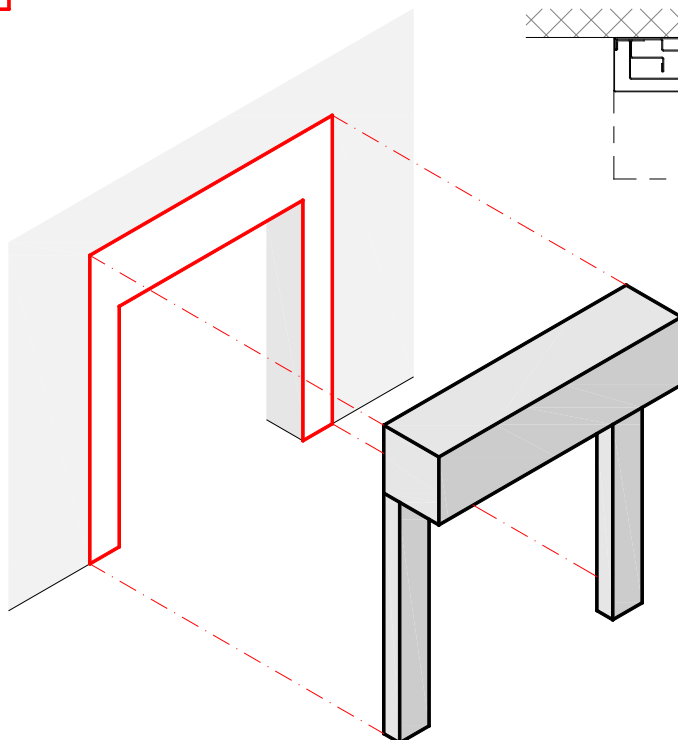
#### ATTENTION!

*Installation conditions, tubular drive power supply (24 VDC / 230 VAC) and method of assembly depend on the dimensions and design of the gate, thus we recommend that you read the current version of the conditions.*

*Fire PROtec curtain gate assembly should be performed on the basis of the drawing documentation below, paying special attention to the information and warning signs and symbols placed on the drawings.*

*The design of some of the elements differs depending on whether the gate has only fire resistance or, additionally smoke-tightness.*

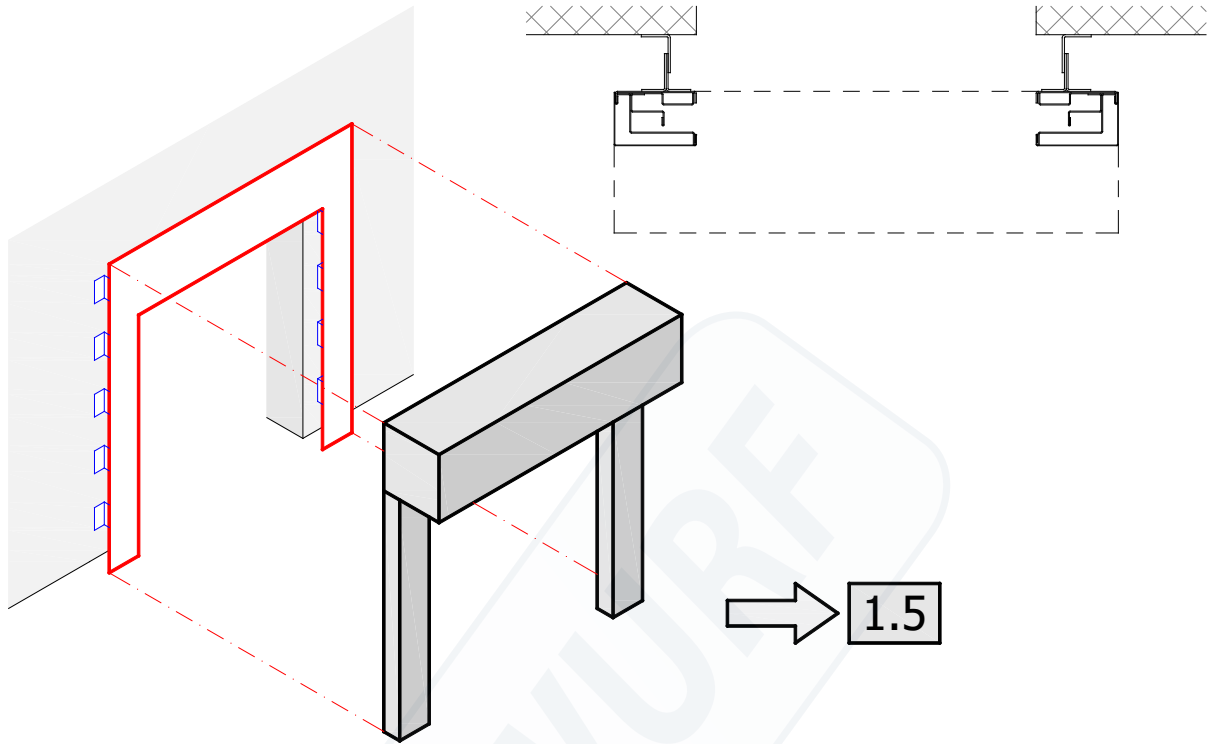
*Electrical installation should be performed according to separate instruction.*



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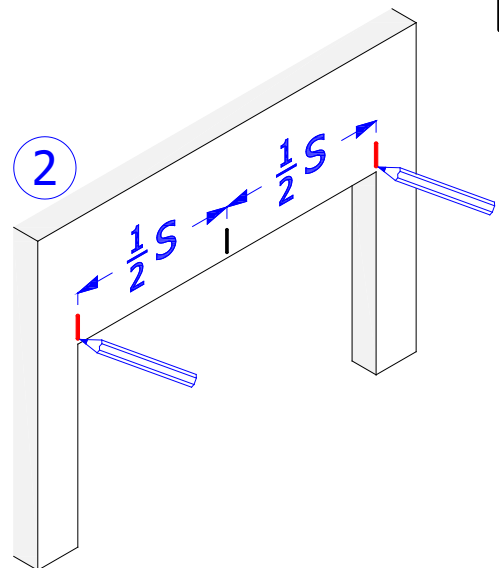
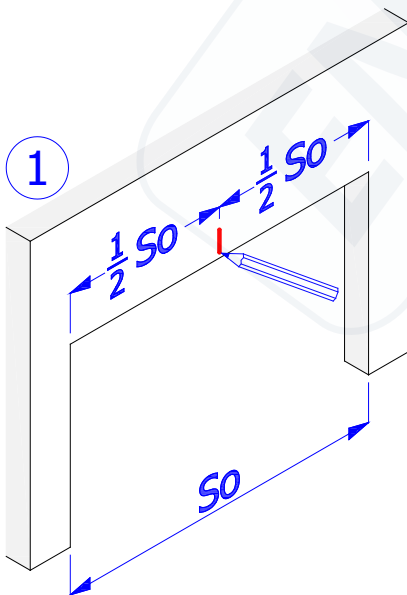




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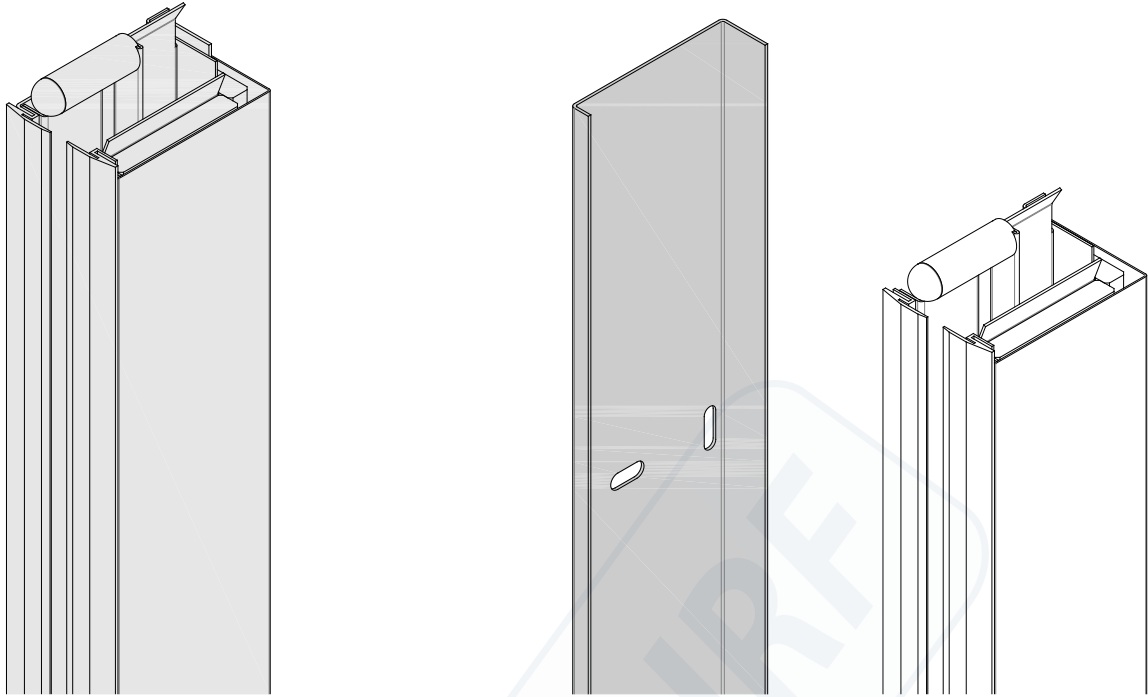
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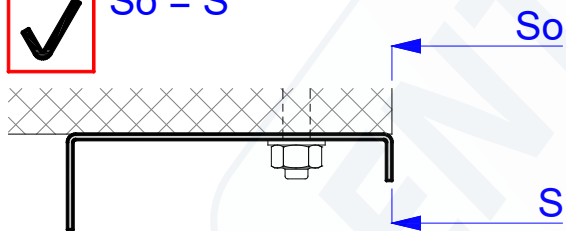




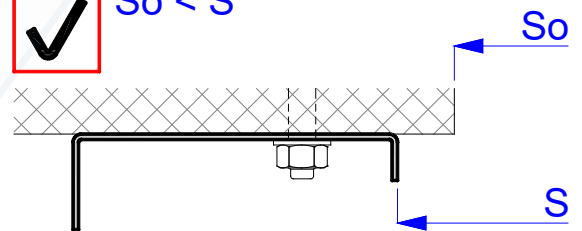
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**A**

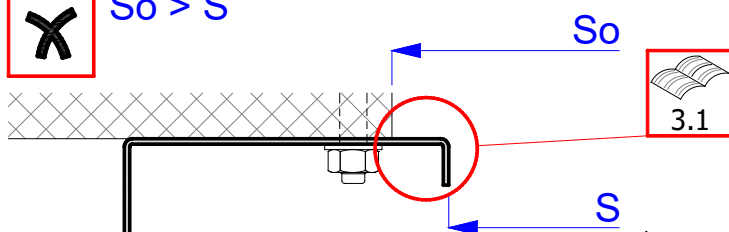


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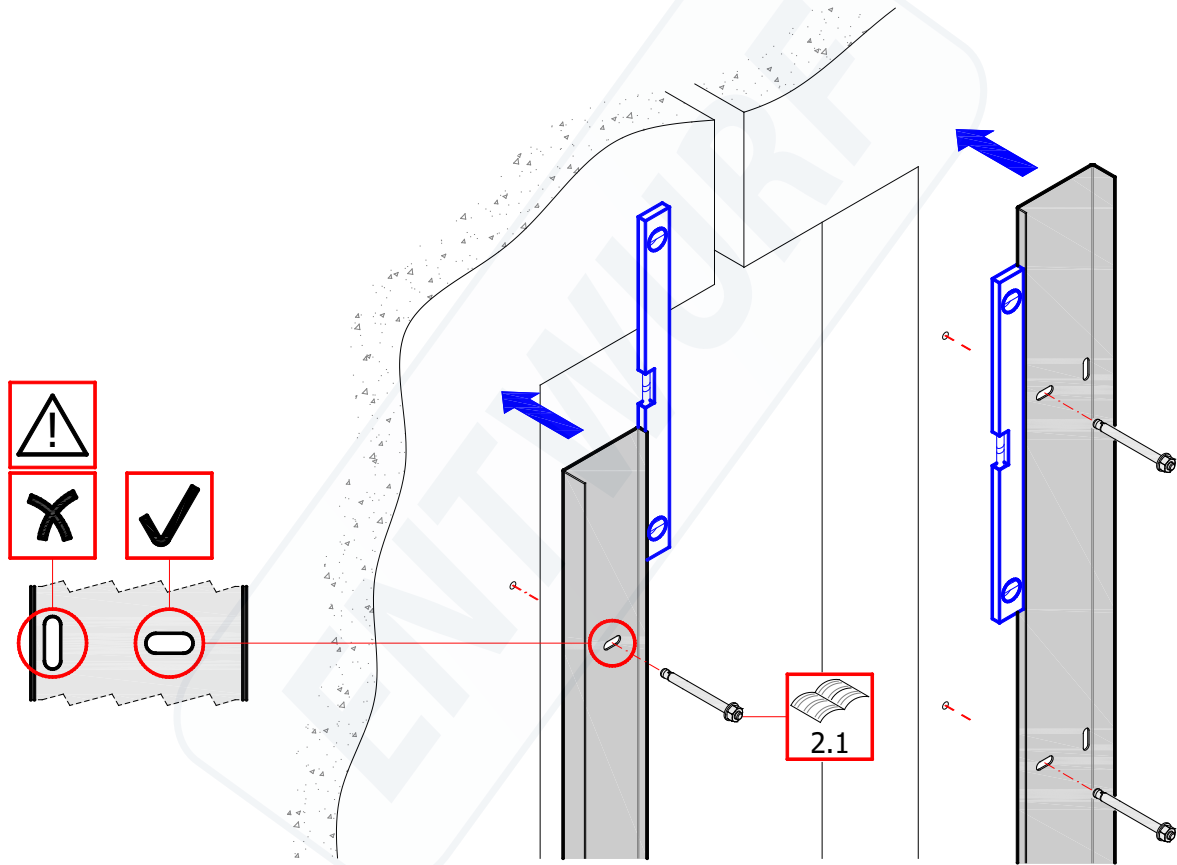


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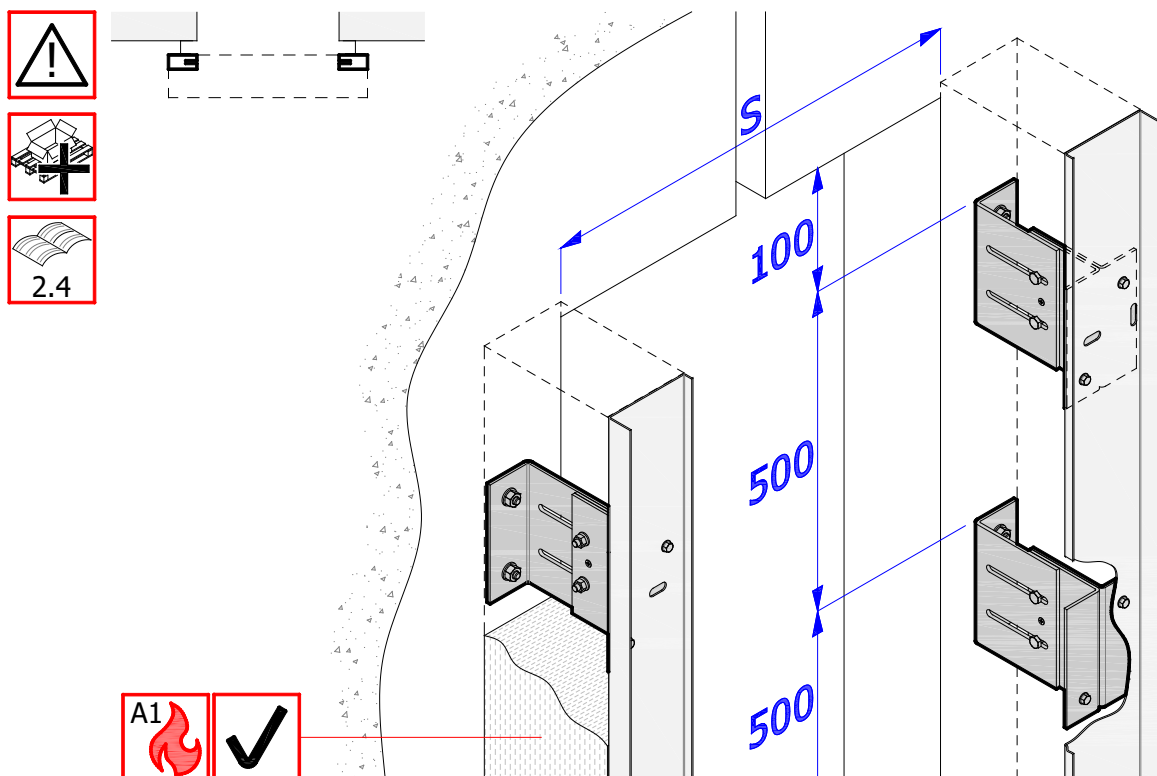
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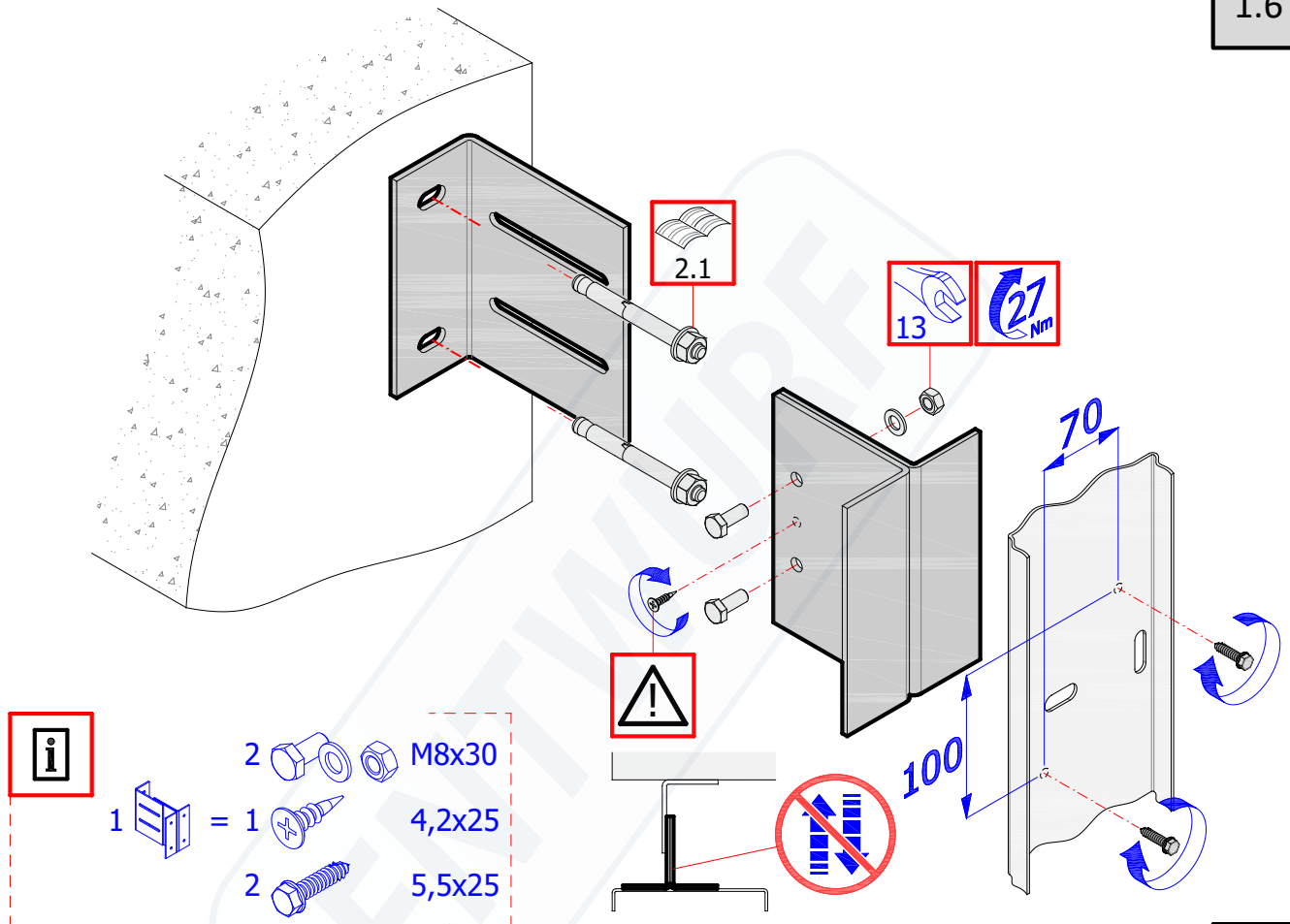
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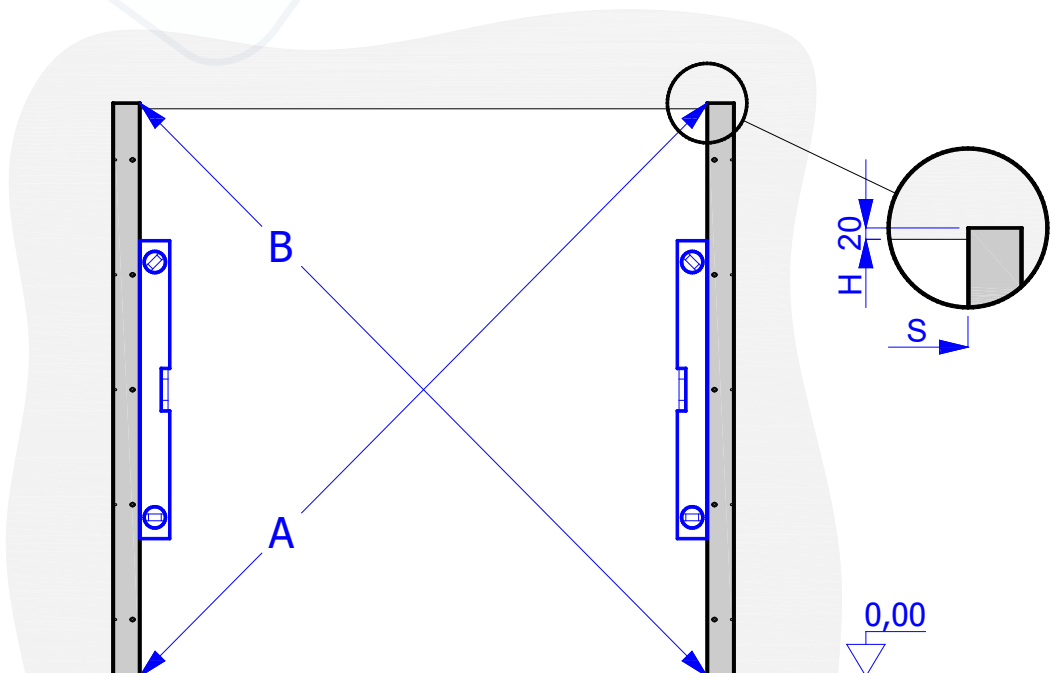
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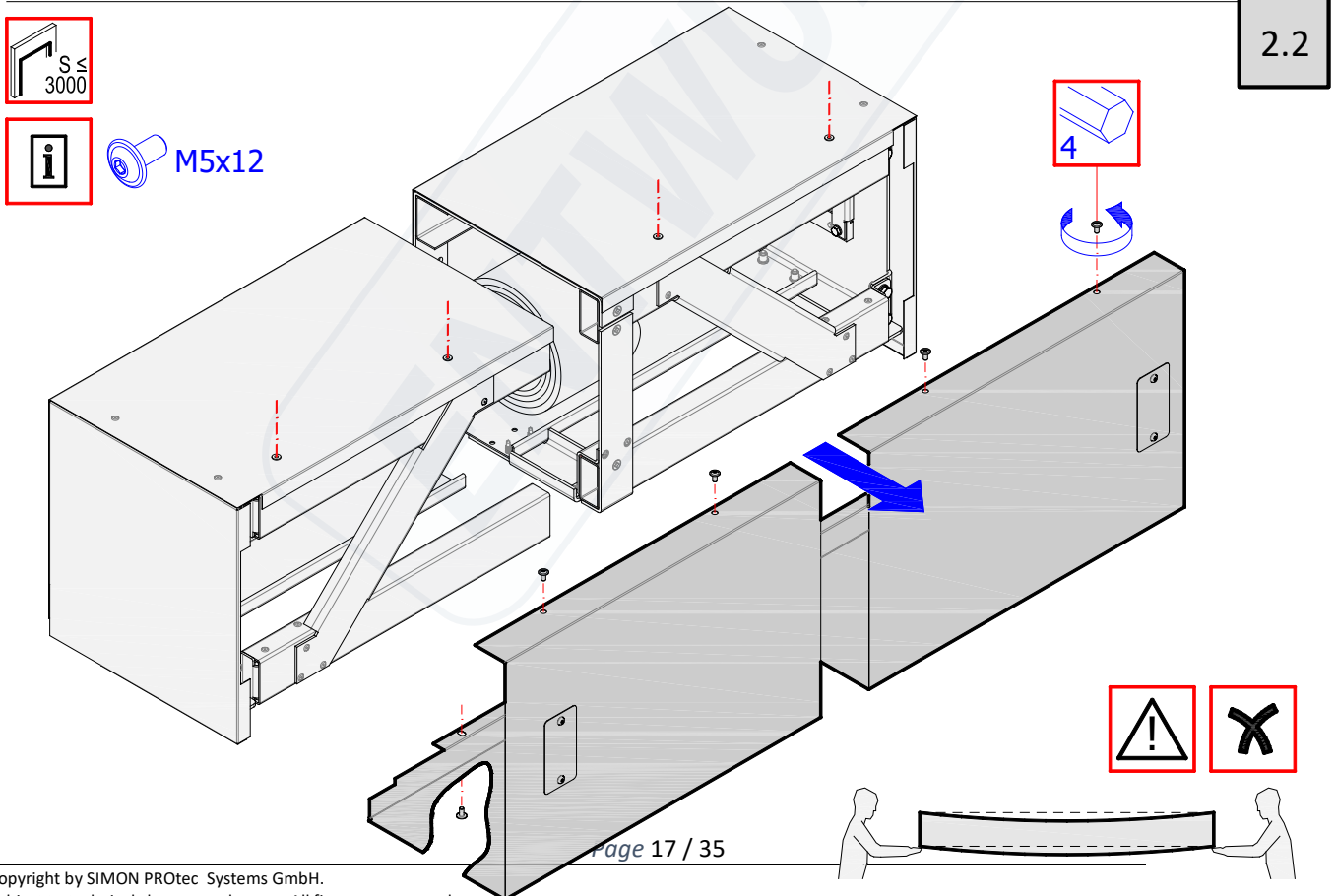
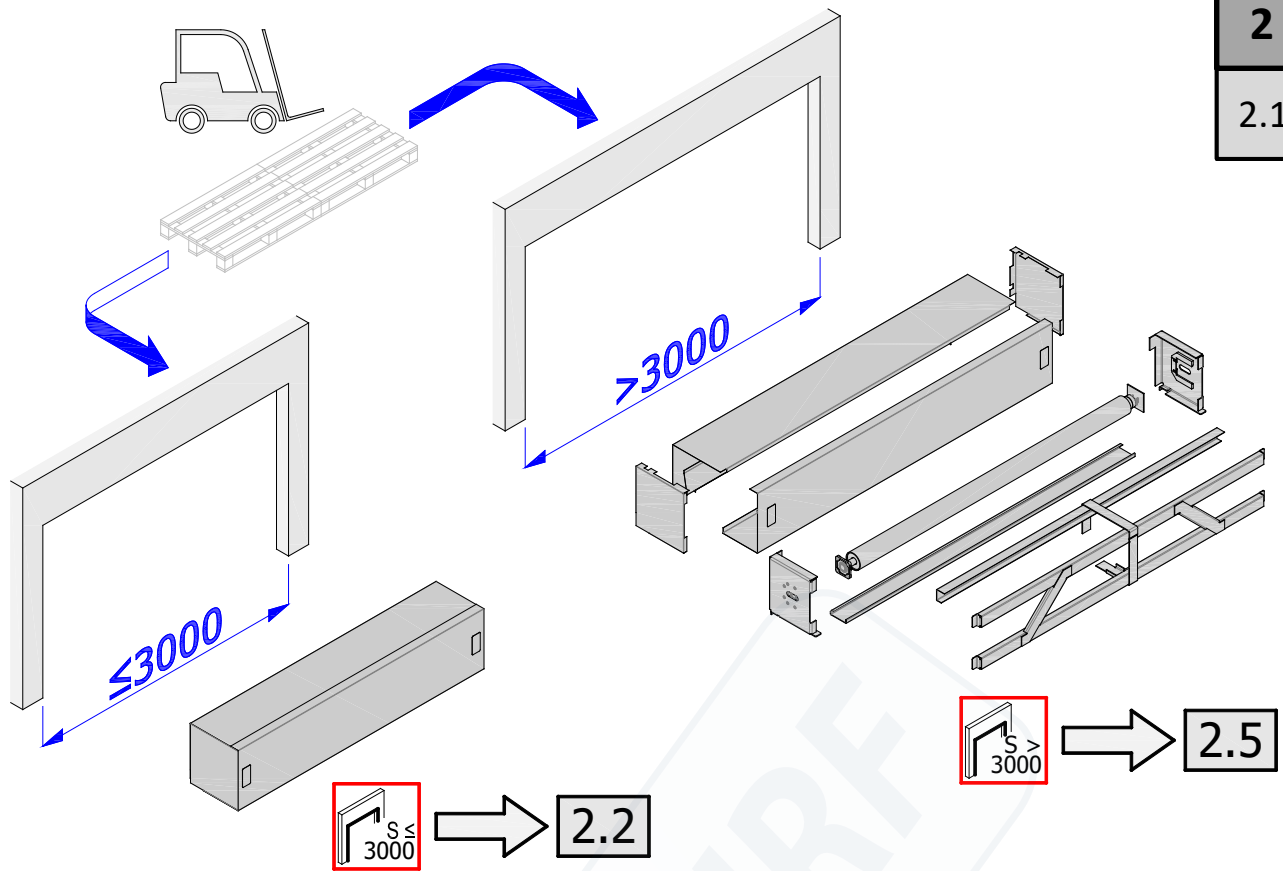


1.6



1.7



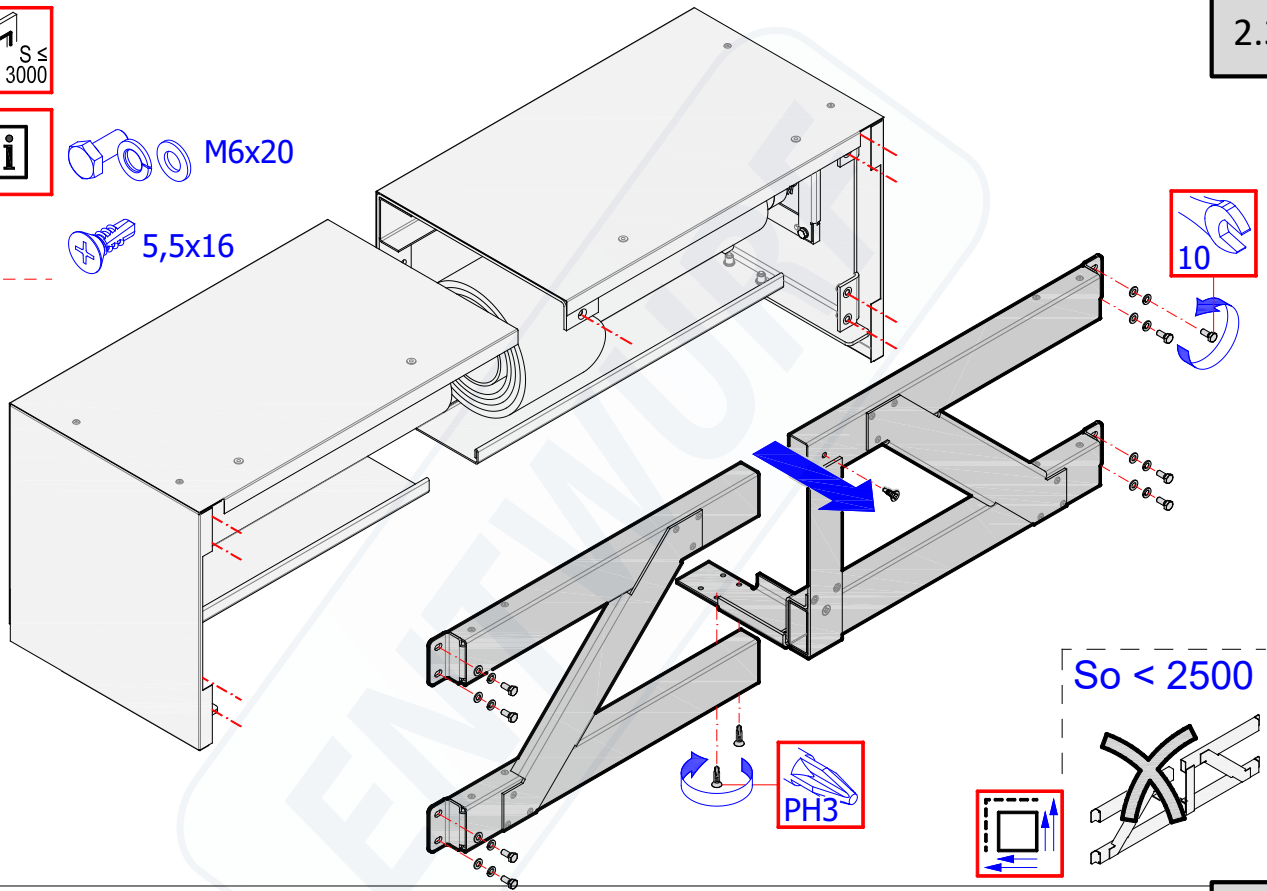


2.3



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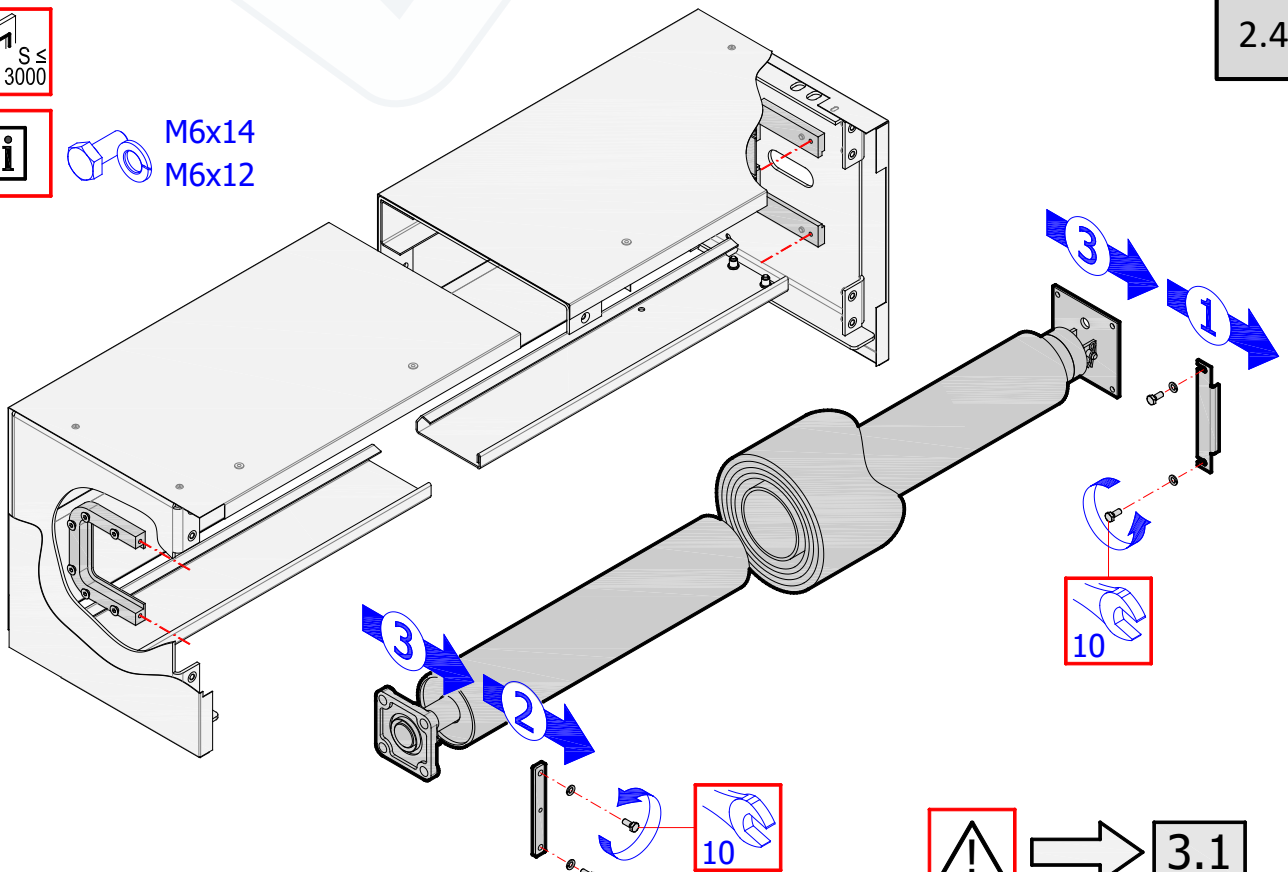
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2.4



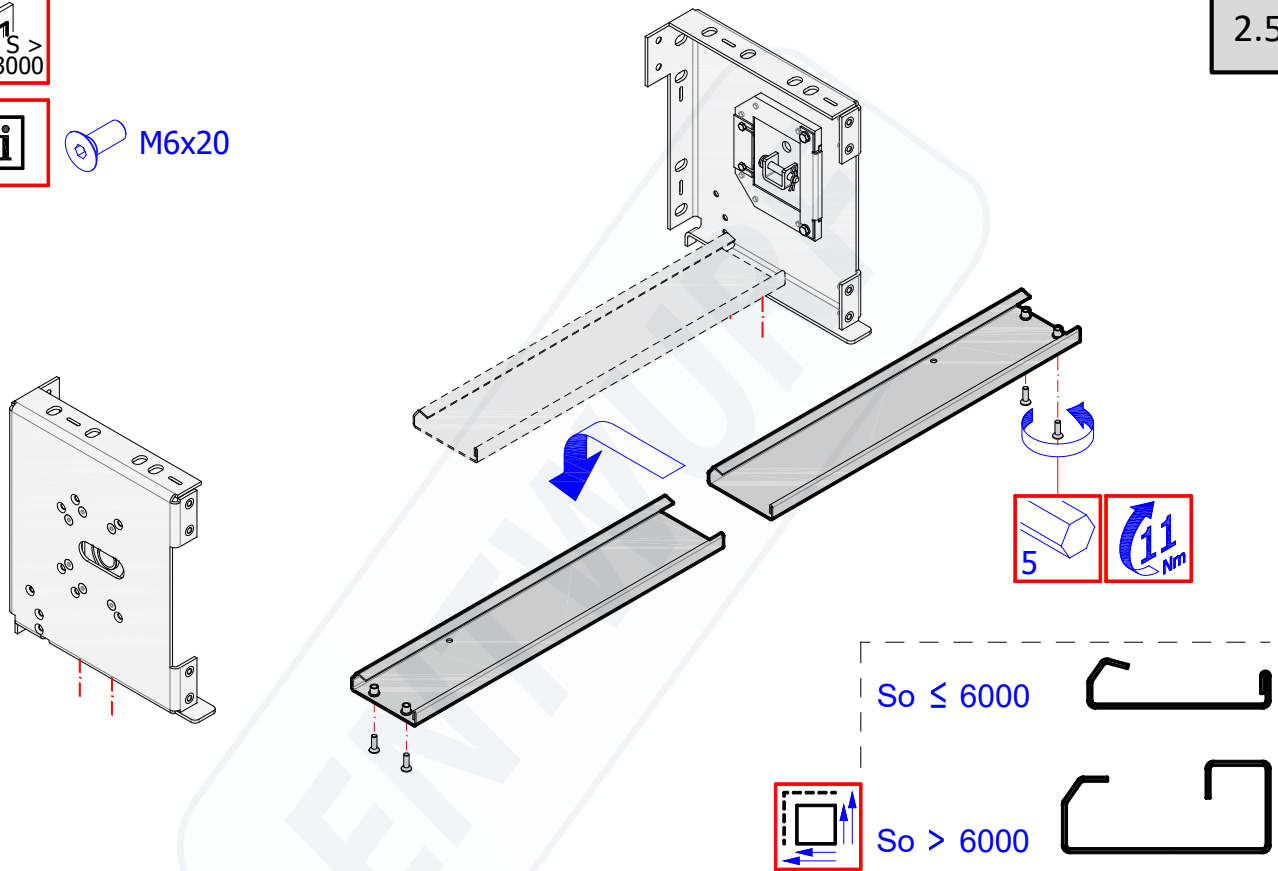
M6x14  
M6x12





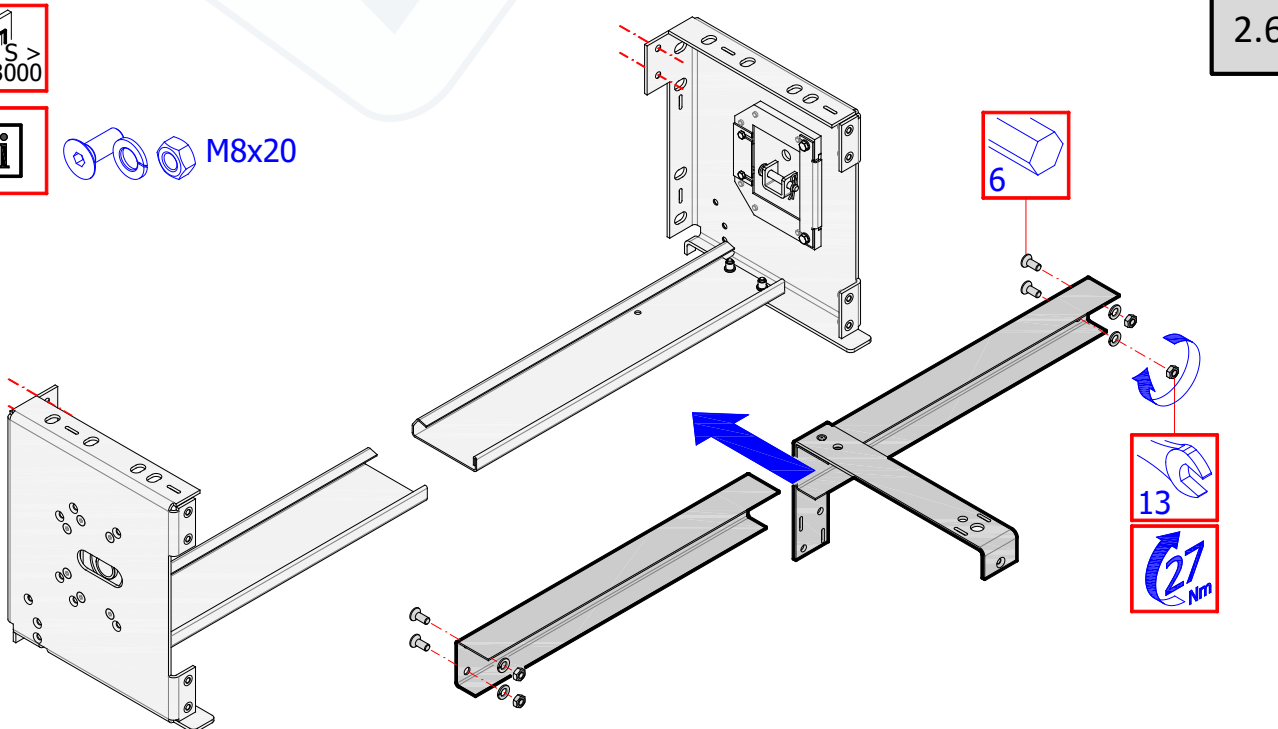
M6x20

2.5



M8x20

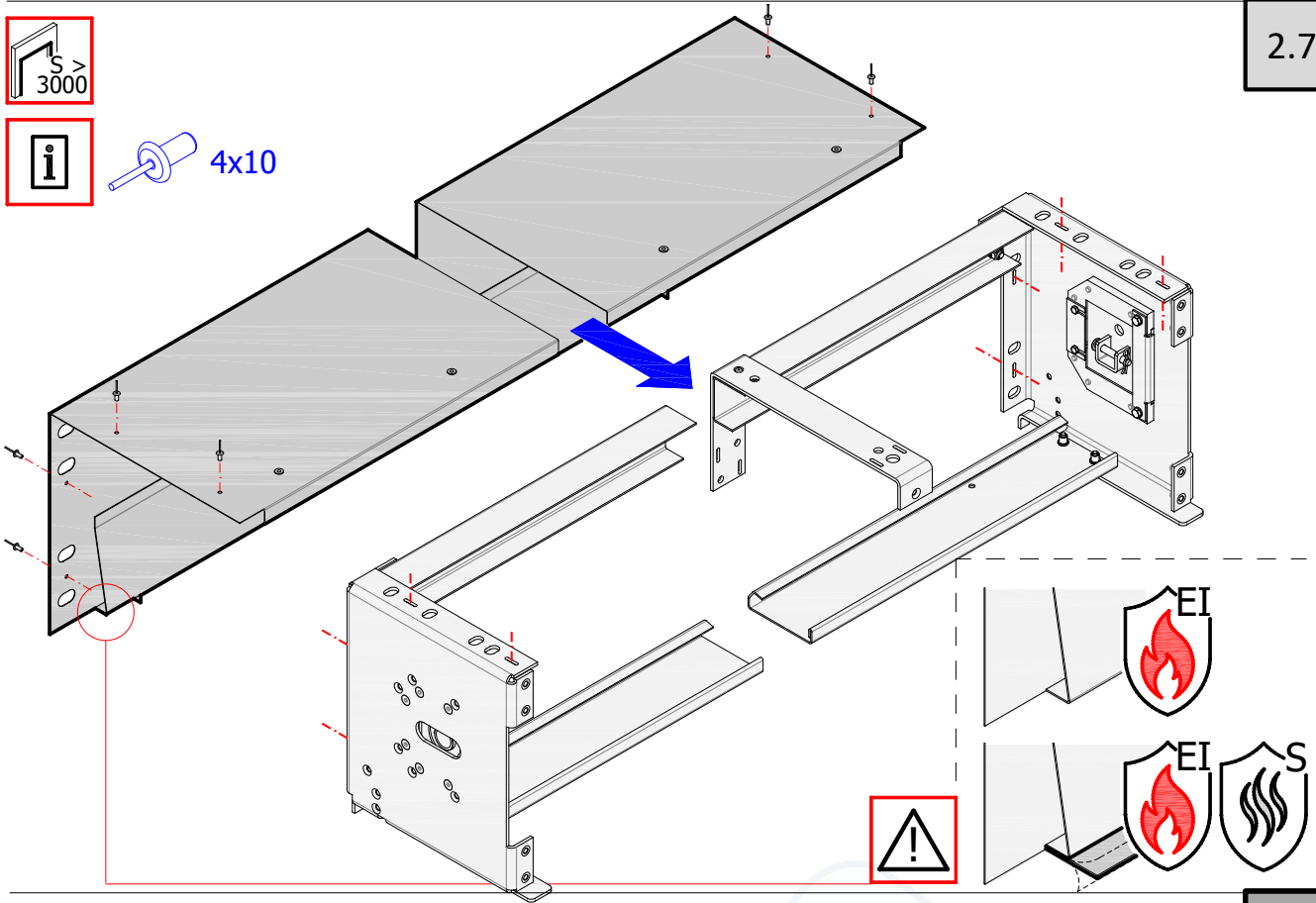
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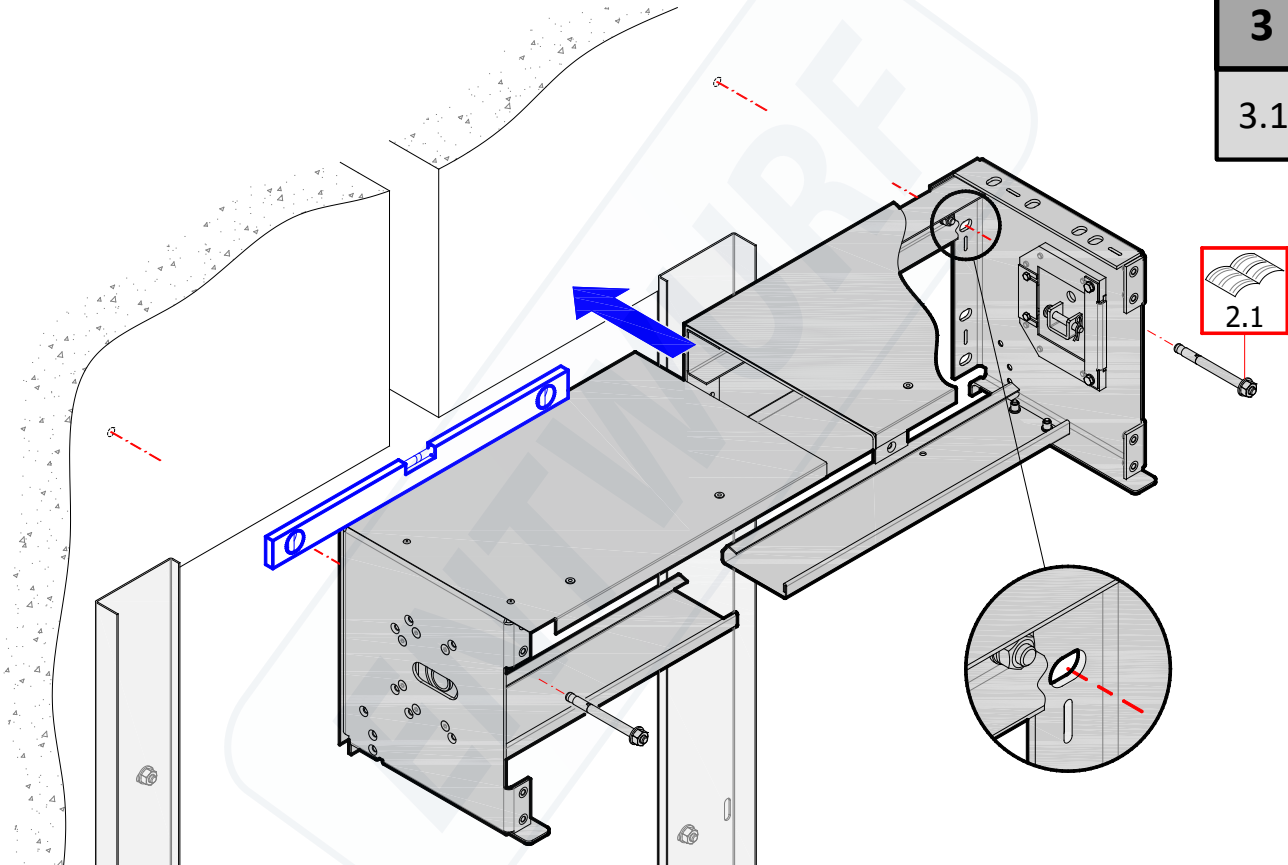
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2.7

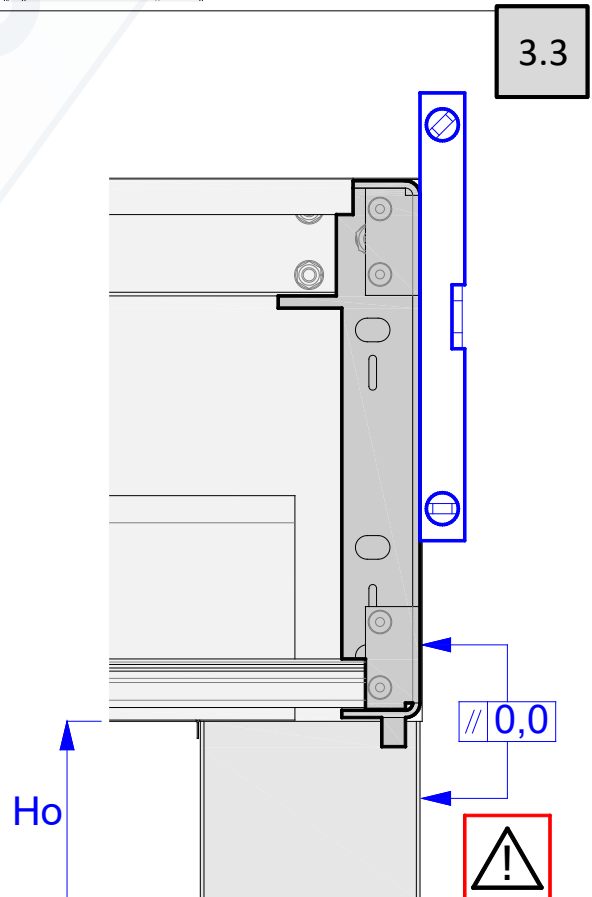
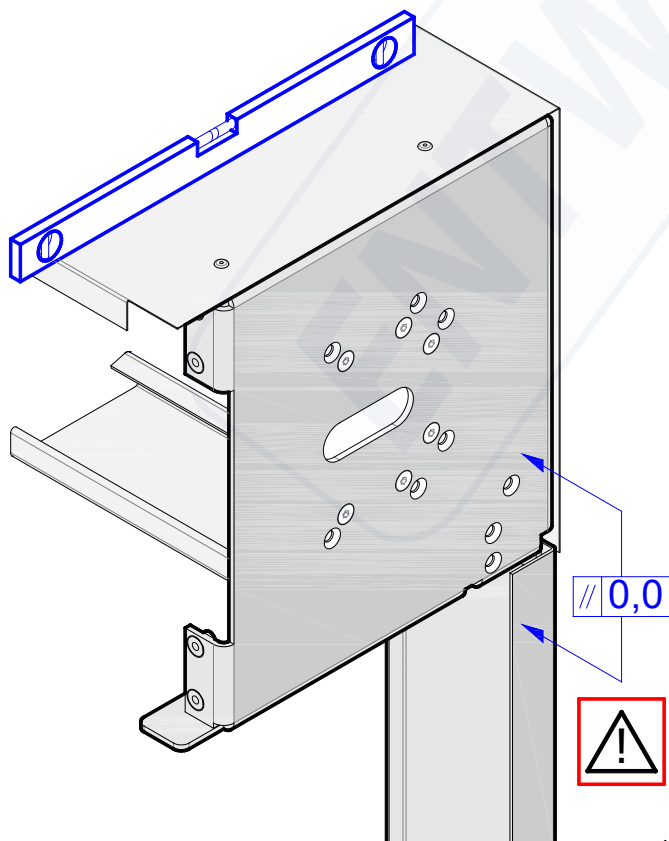
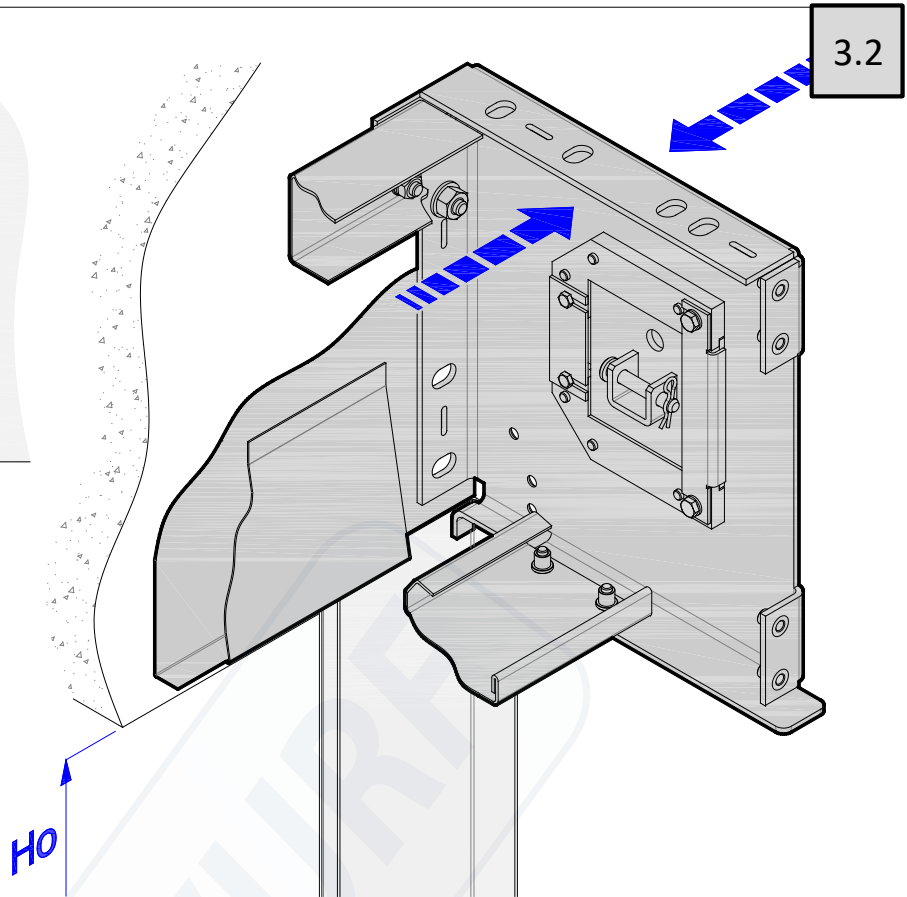
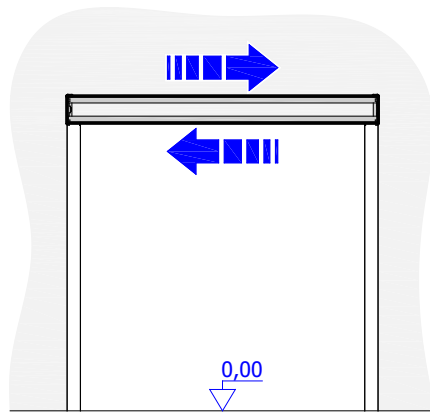


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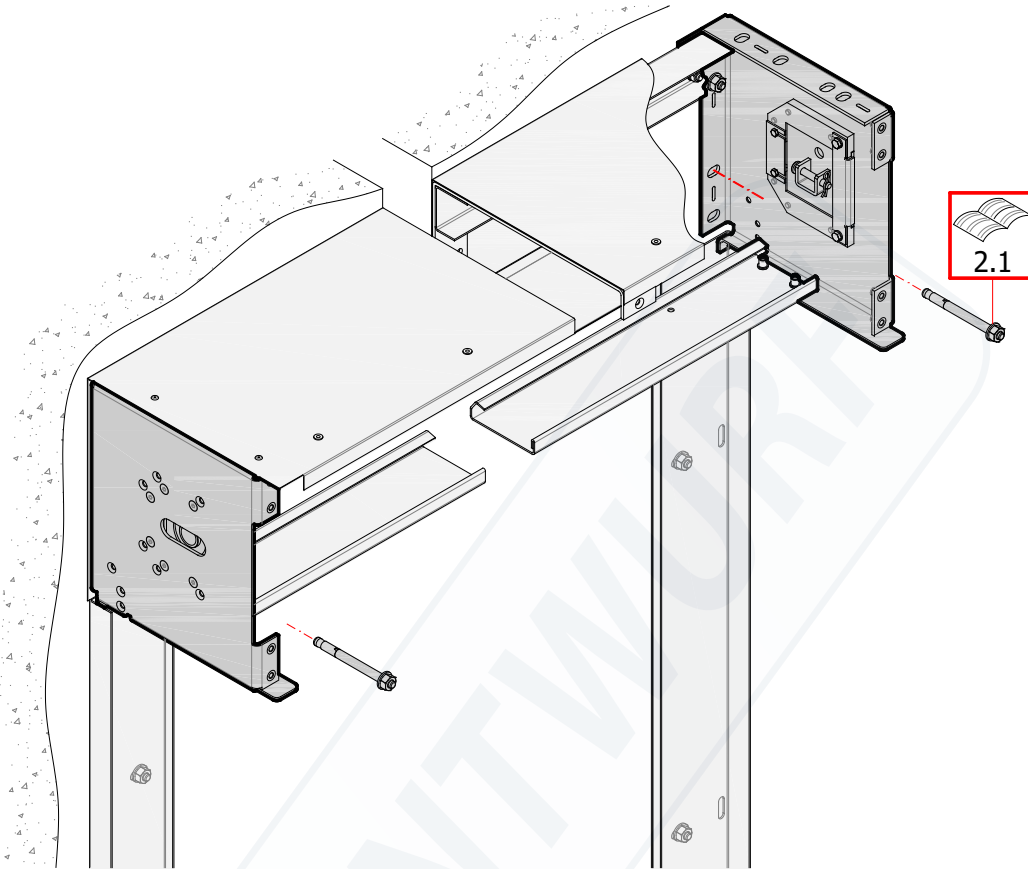
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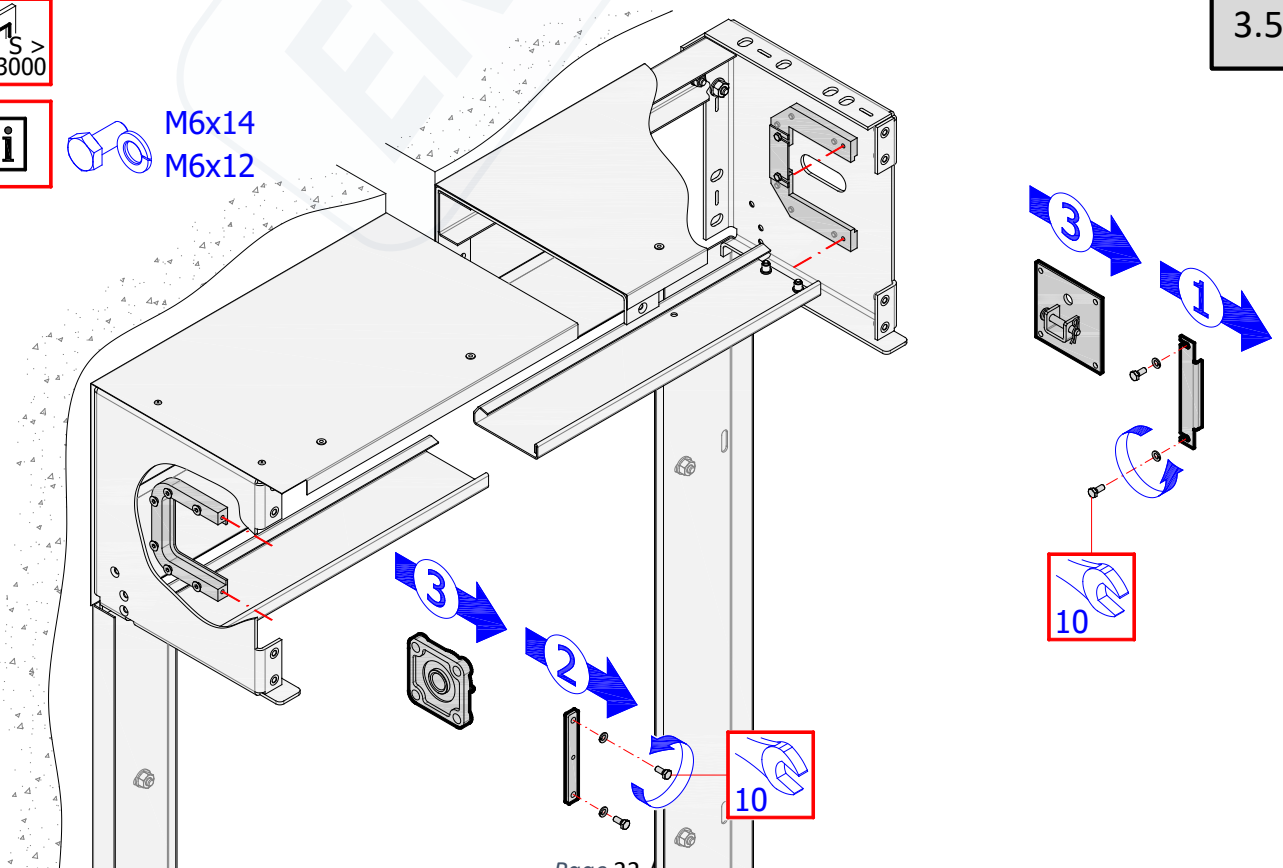
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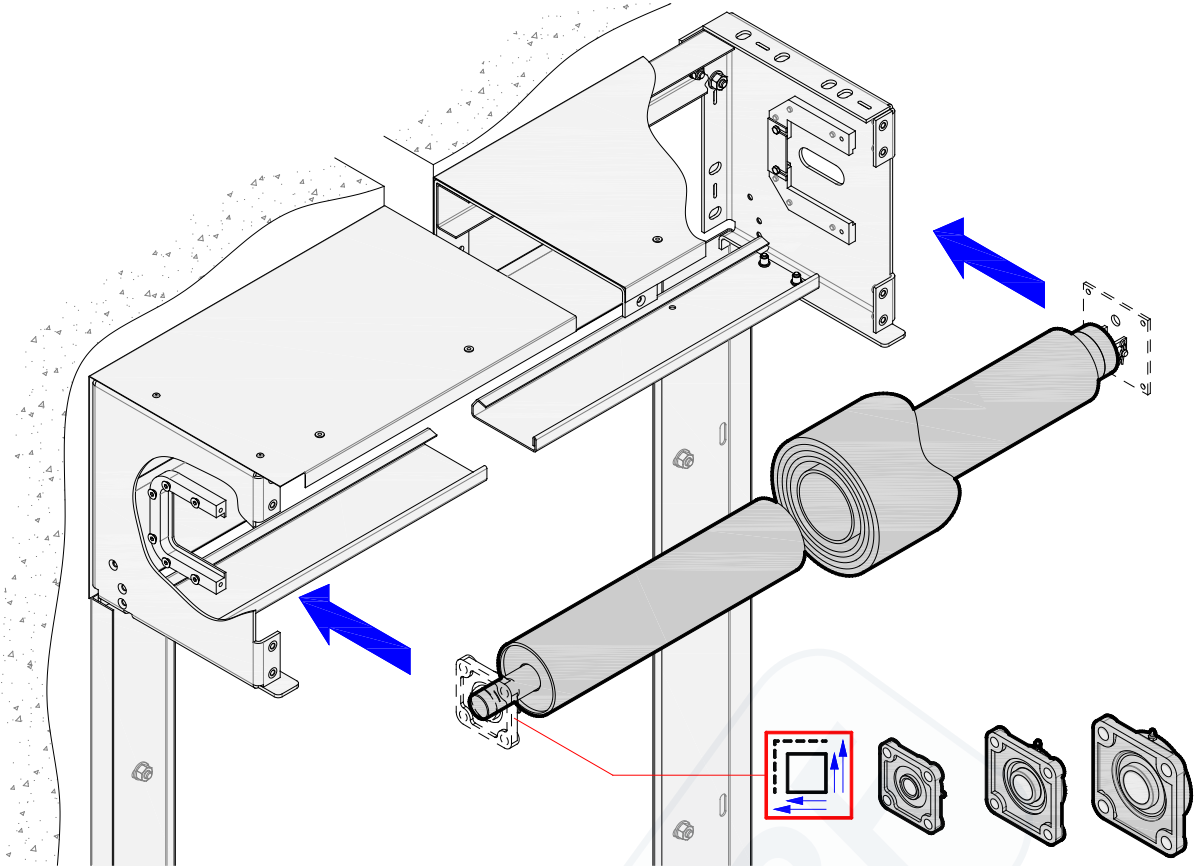
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M6x14  
M6x12



3.6



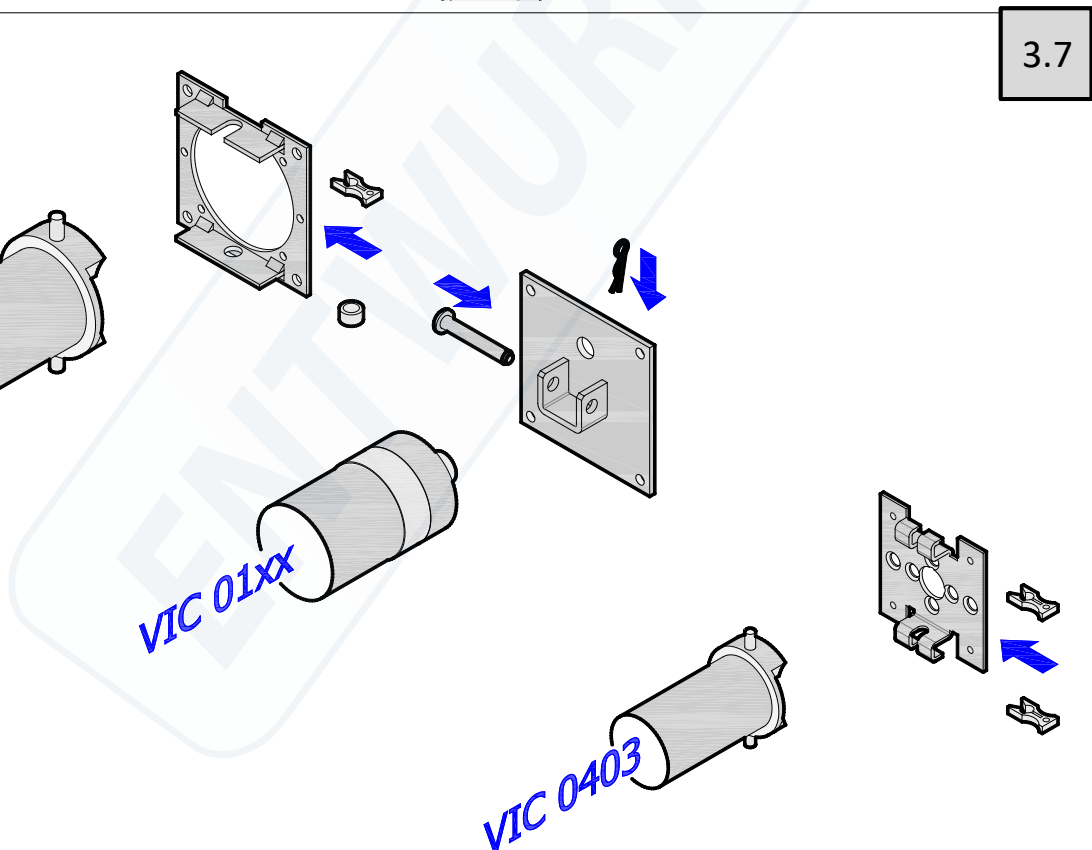
3.7



VIC 0426  
VIC 0423

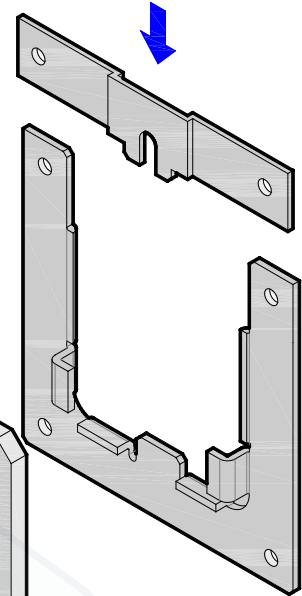
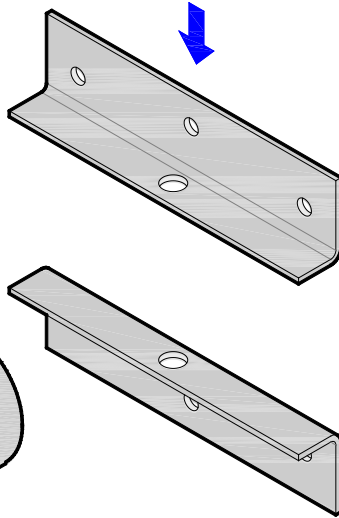
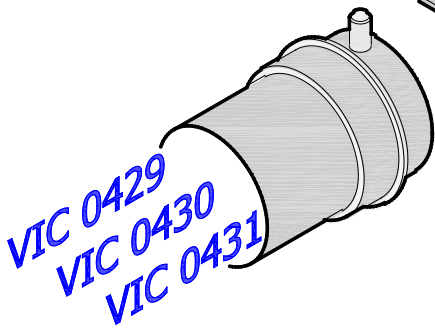
VIC 01xx

VIC 0403



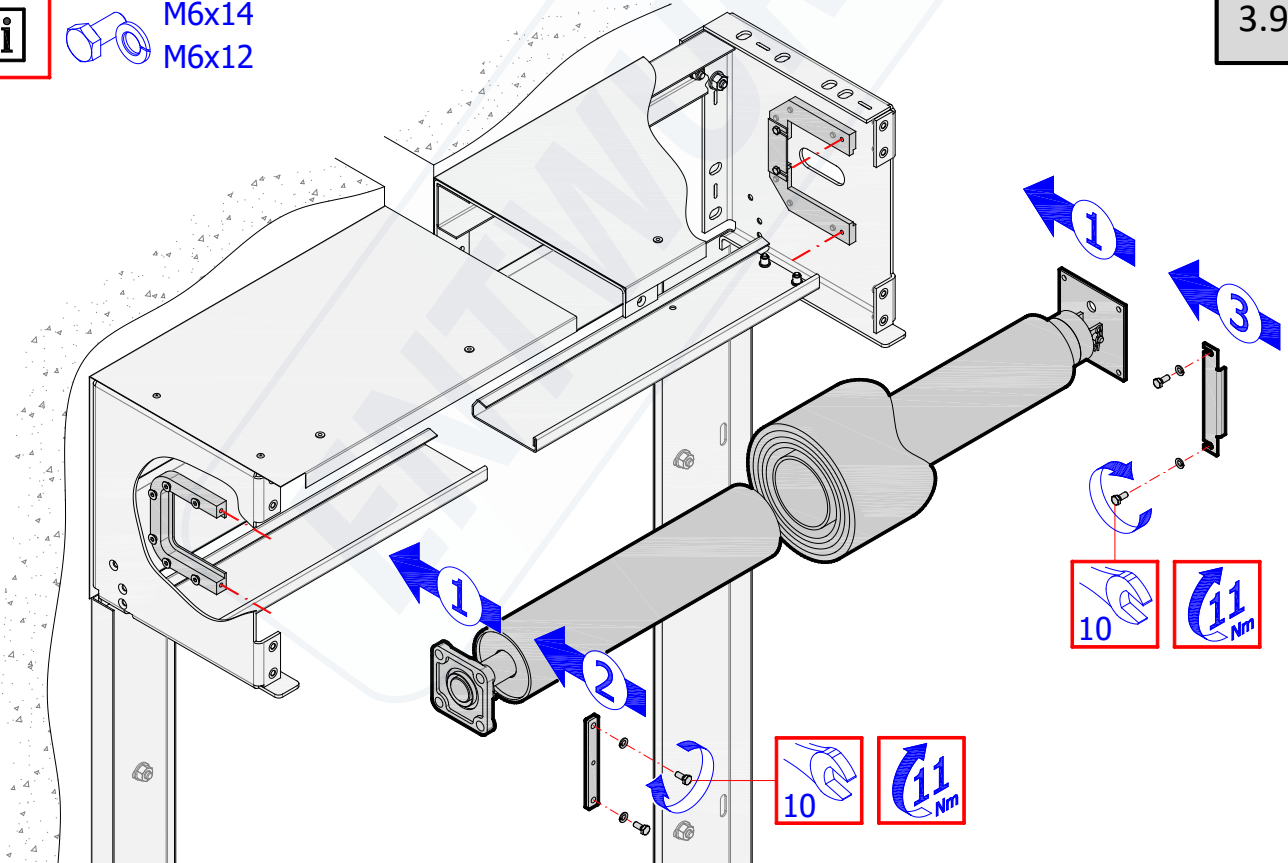


3.8



M6x14  
M6x12

3.9

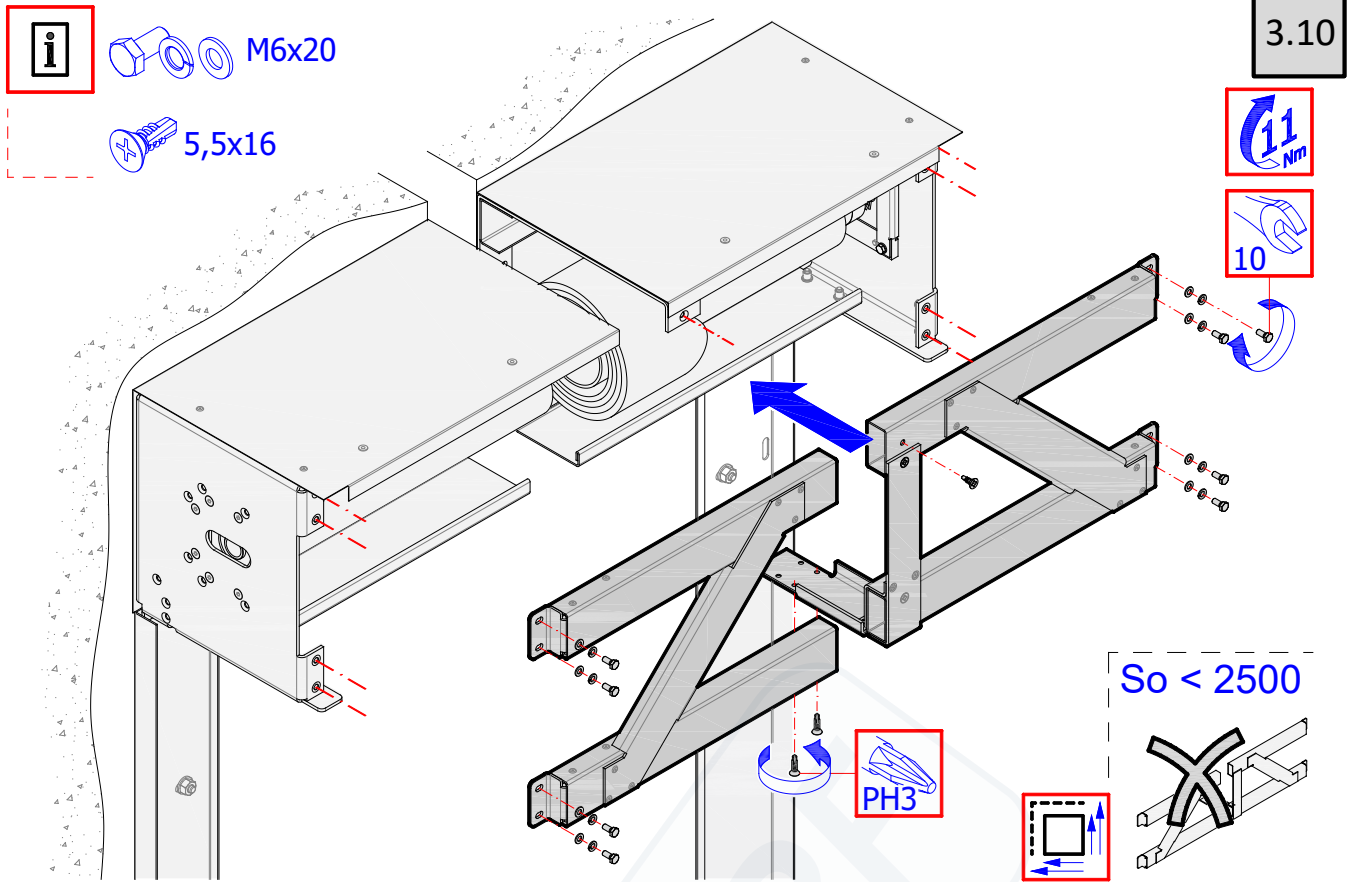




M6x20

5,5x16

3.10



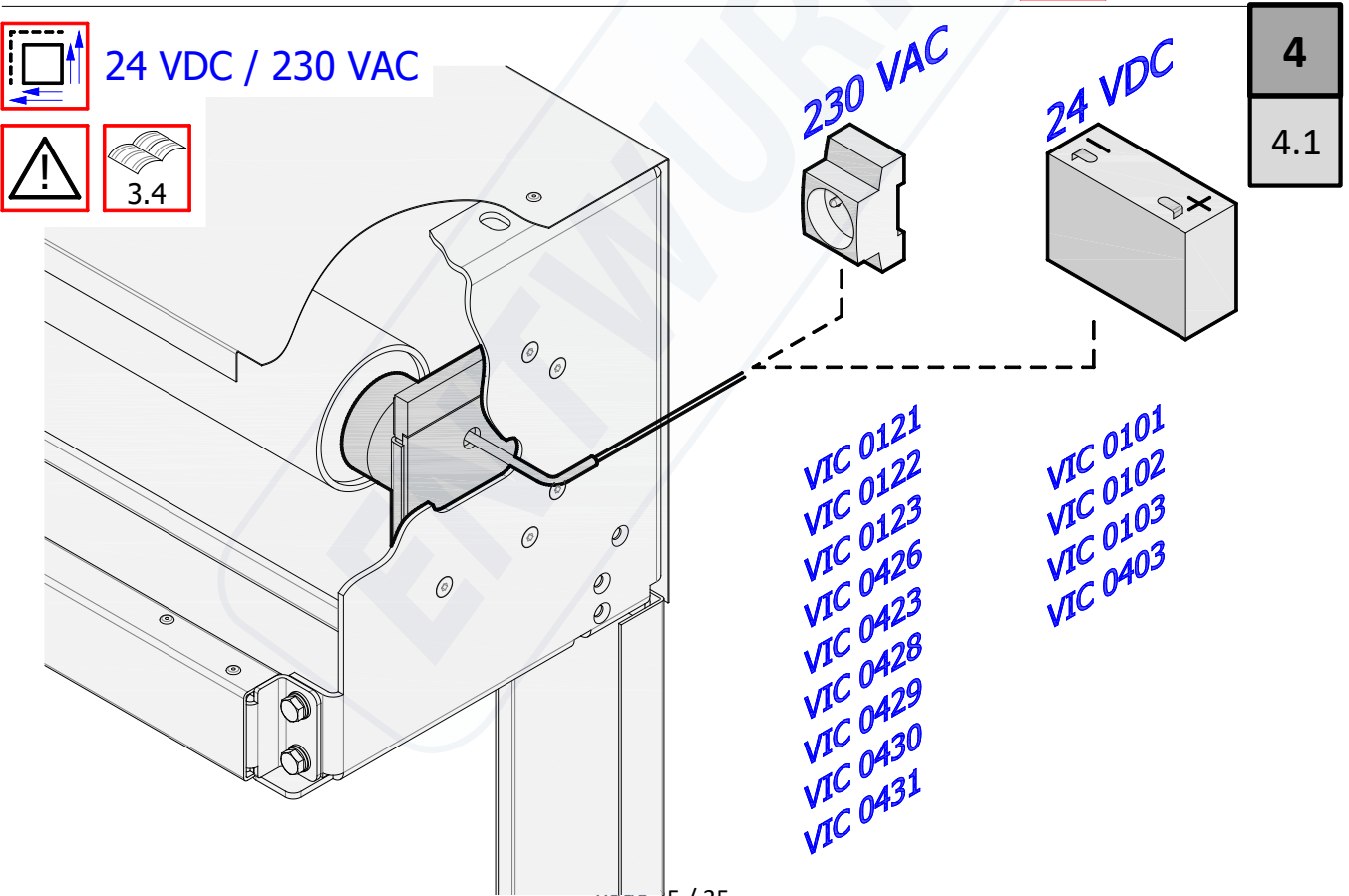
24 VDC / 230 VAC

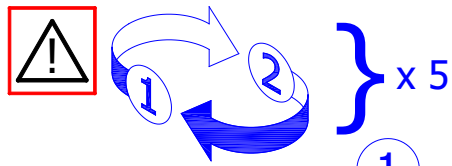


3.4

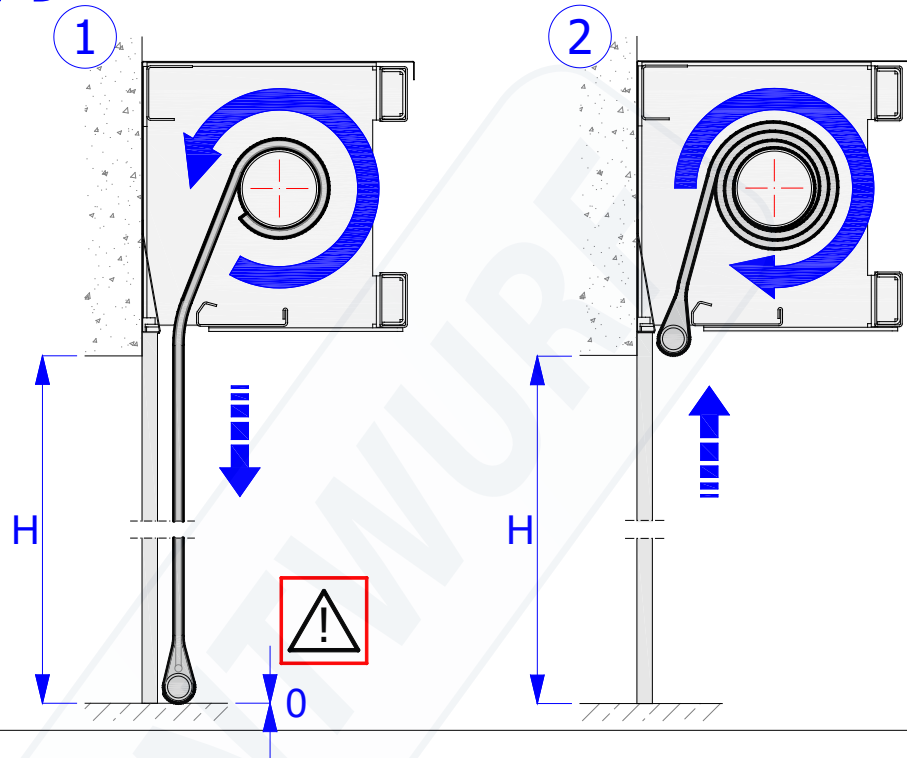
4

4.1

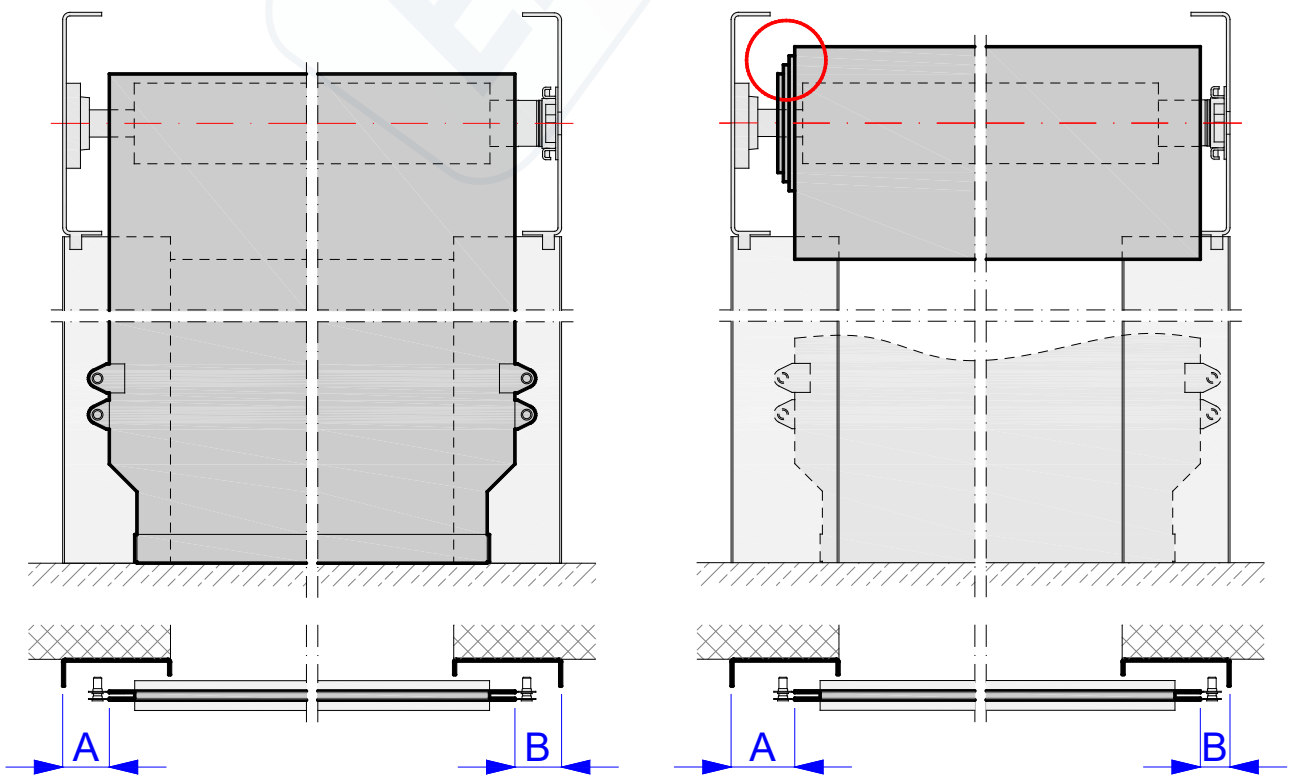




4.2

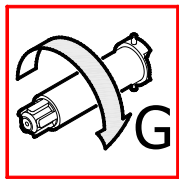


4.3

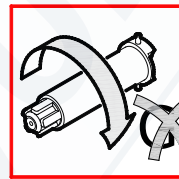




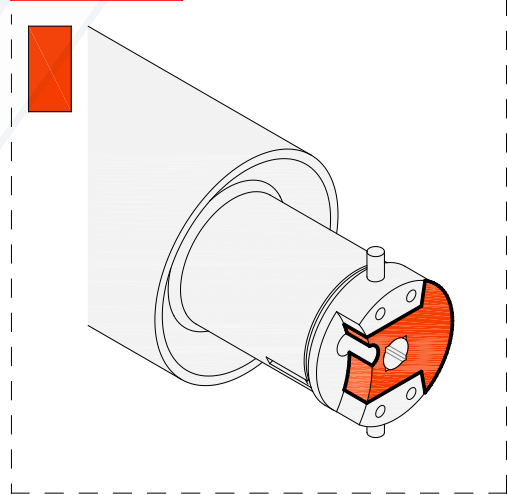
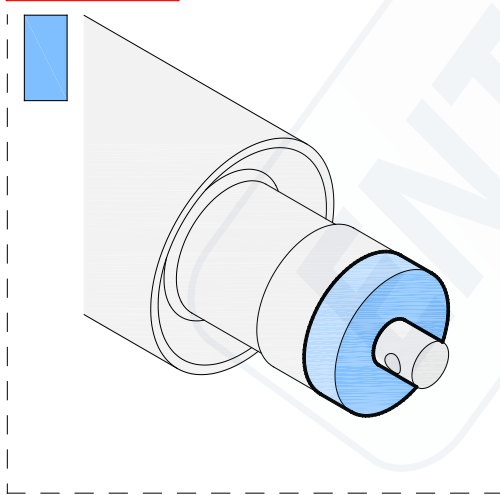
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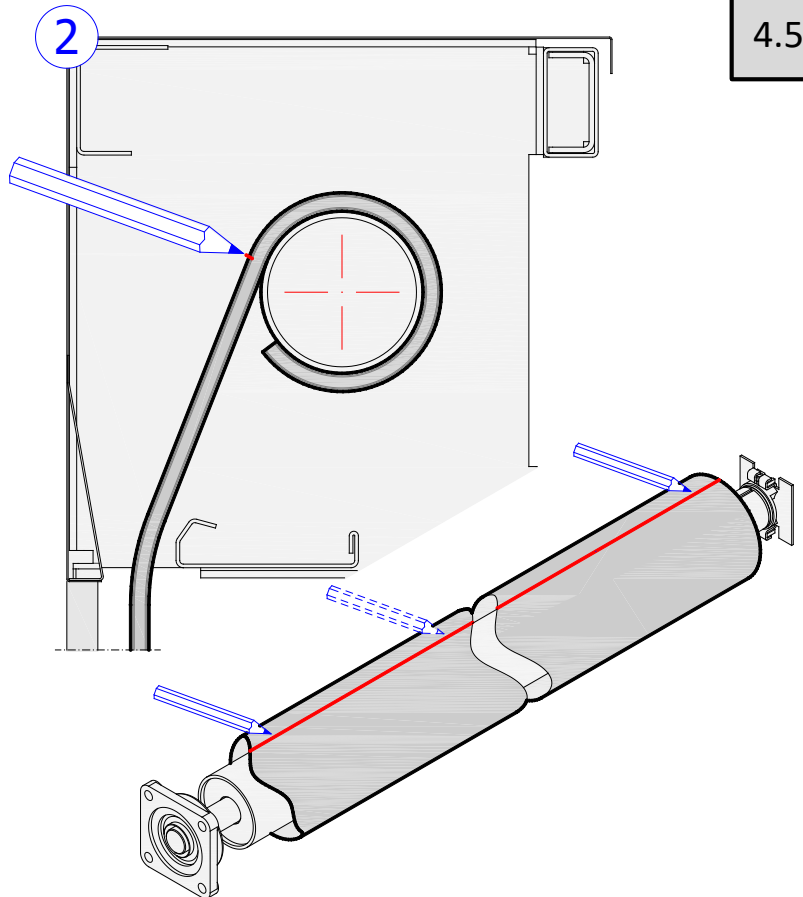
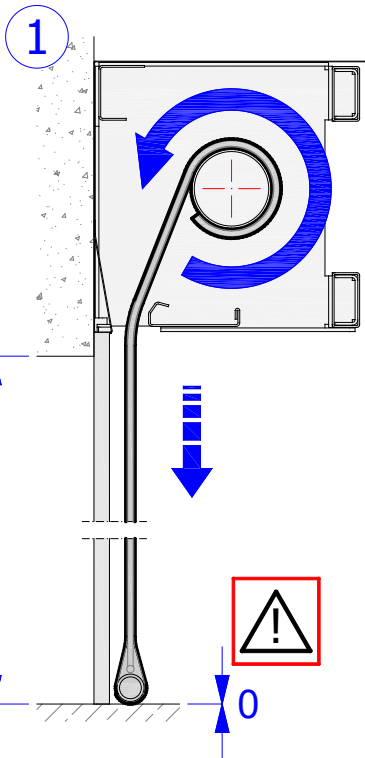
→ 4.5



→ 5.1



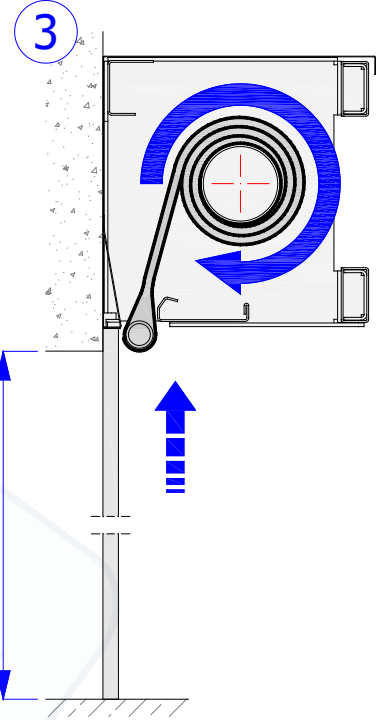
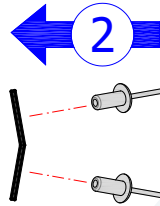
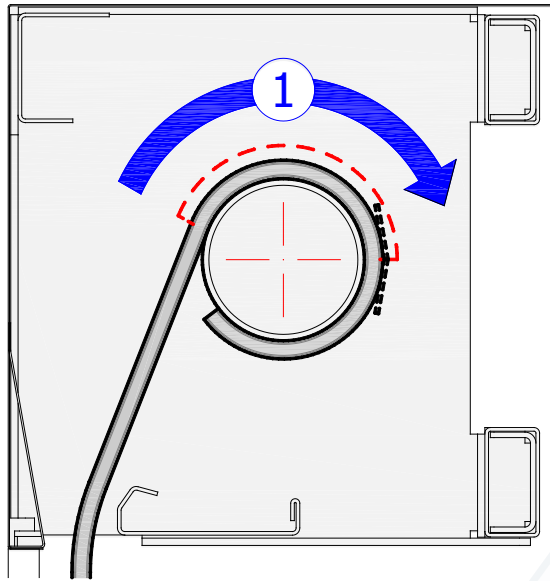
4.5





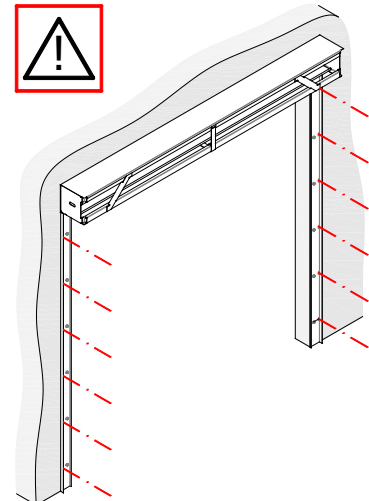
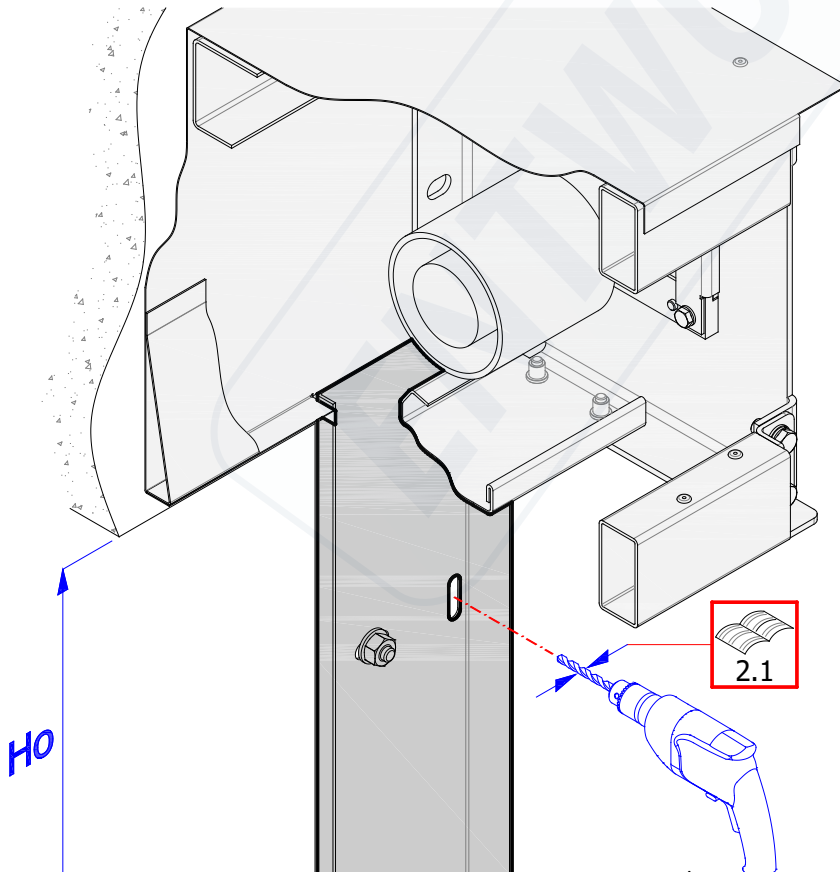
4,8(14)x16

4.6

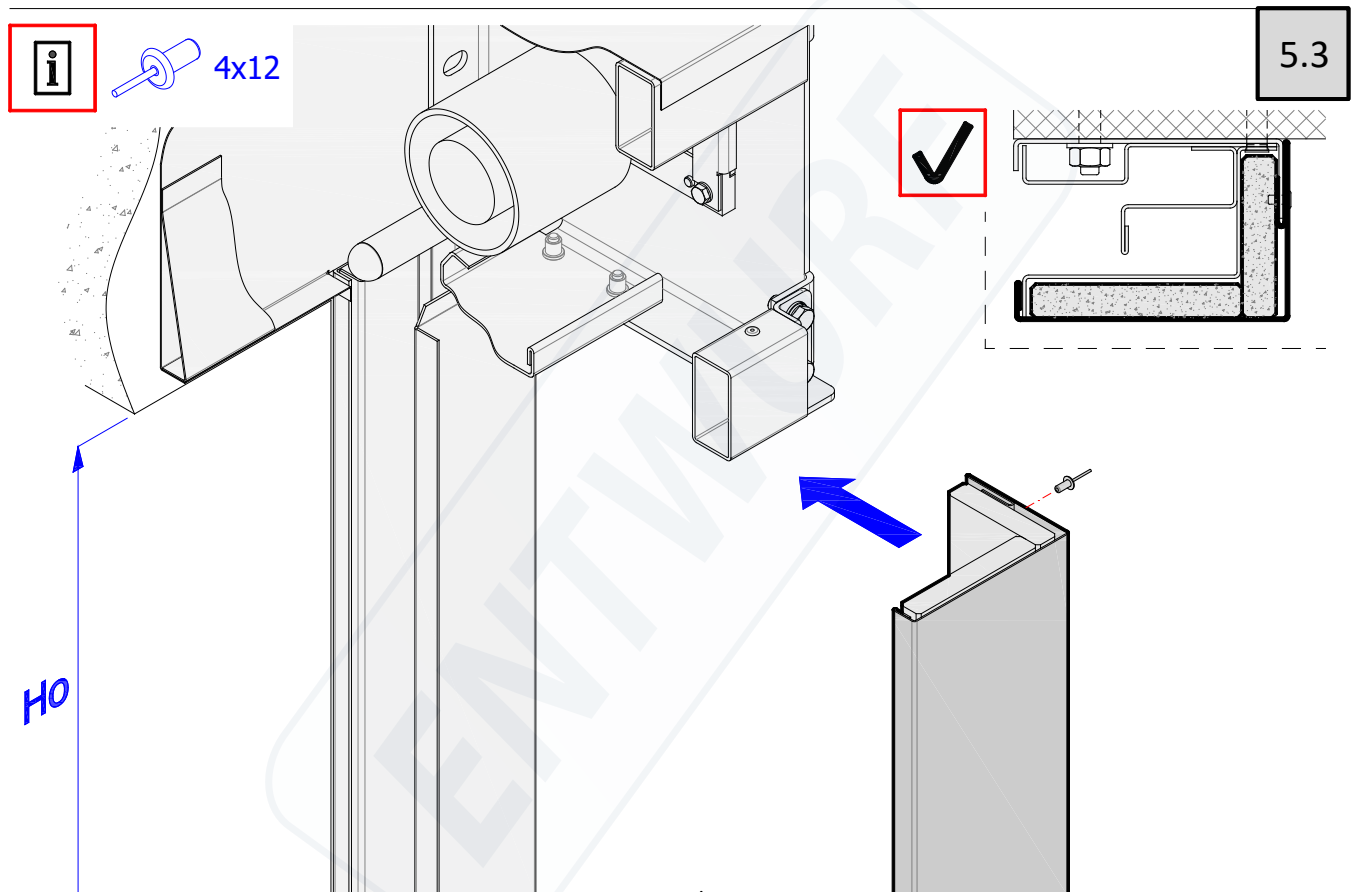
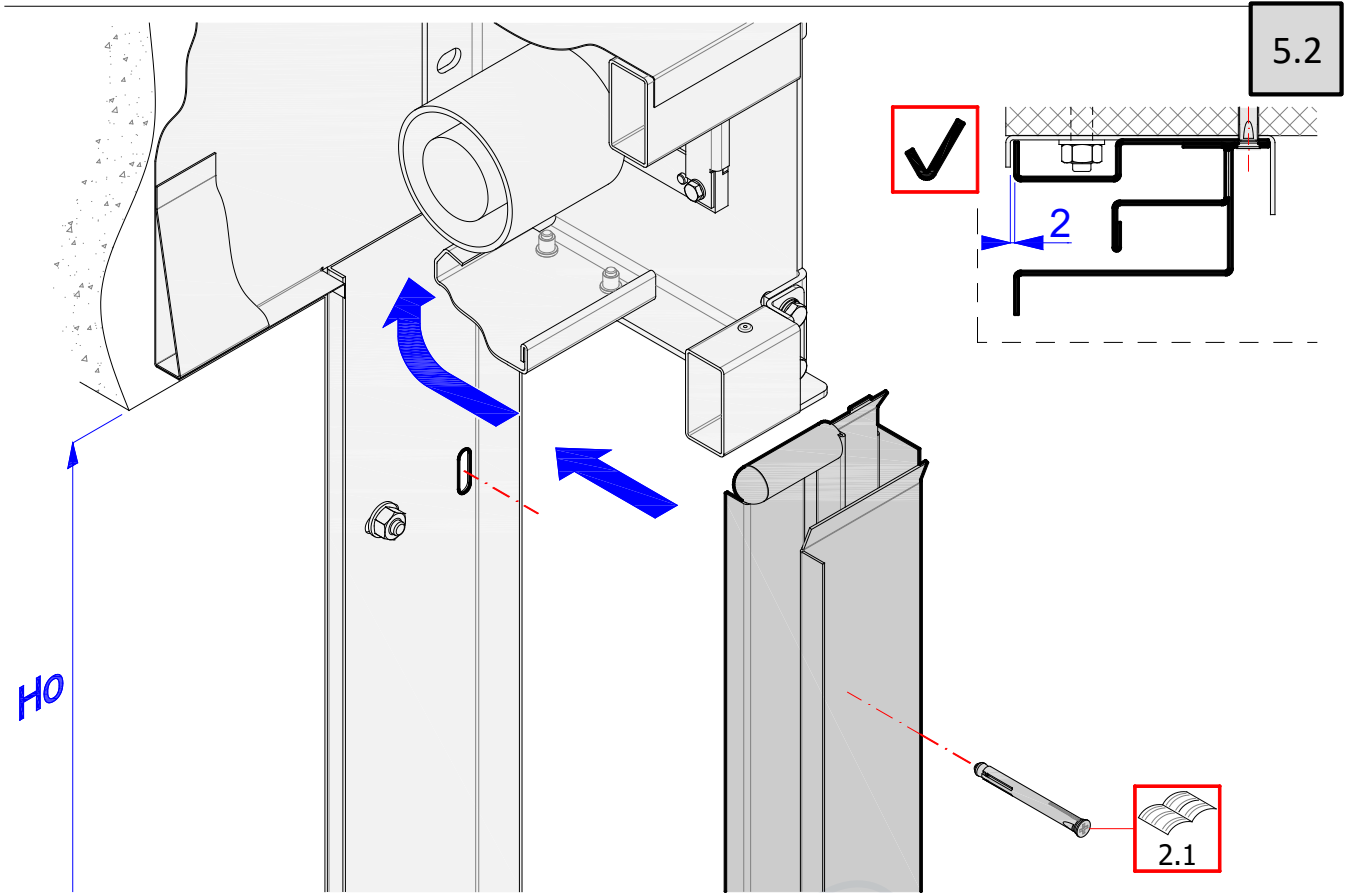


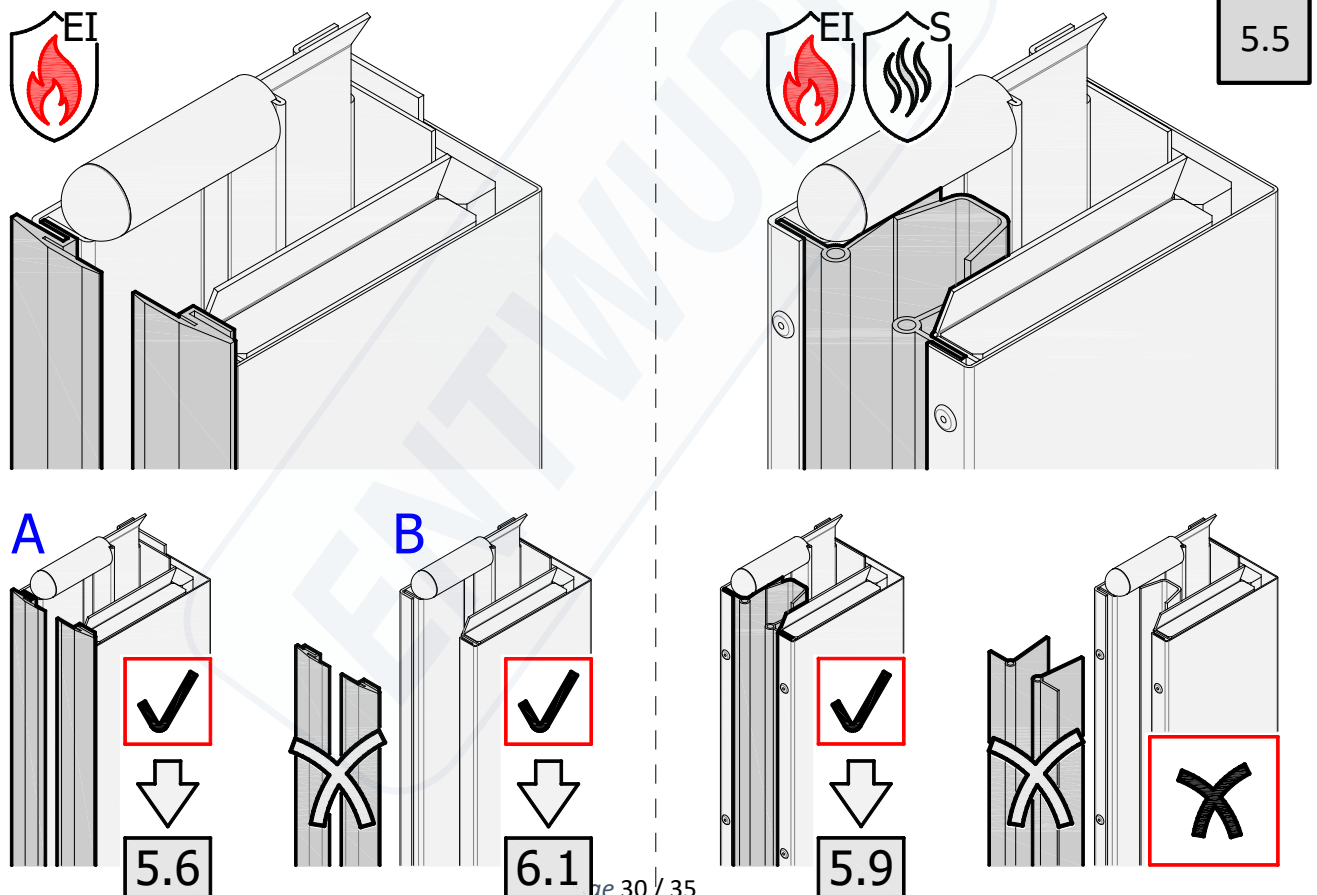
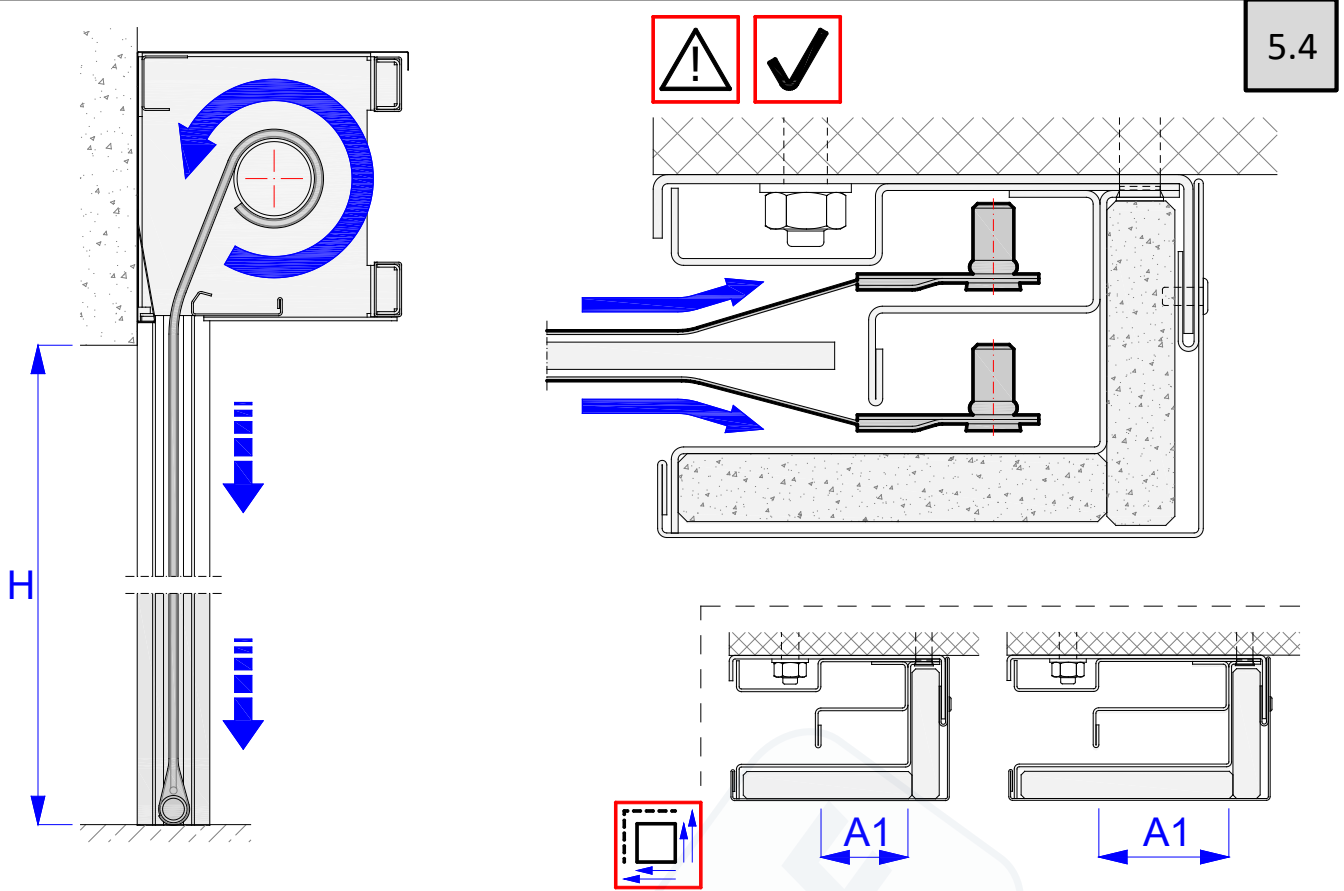
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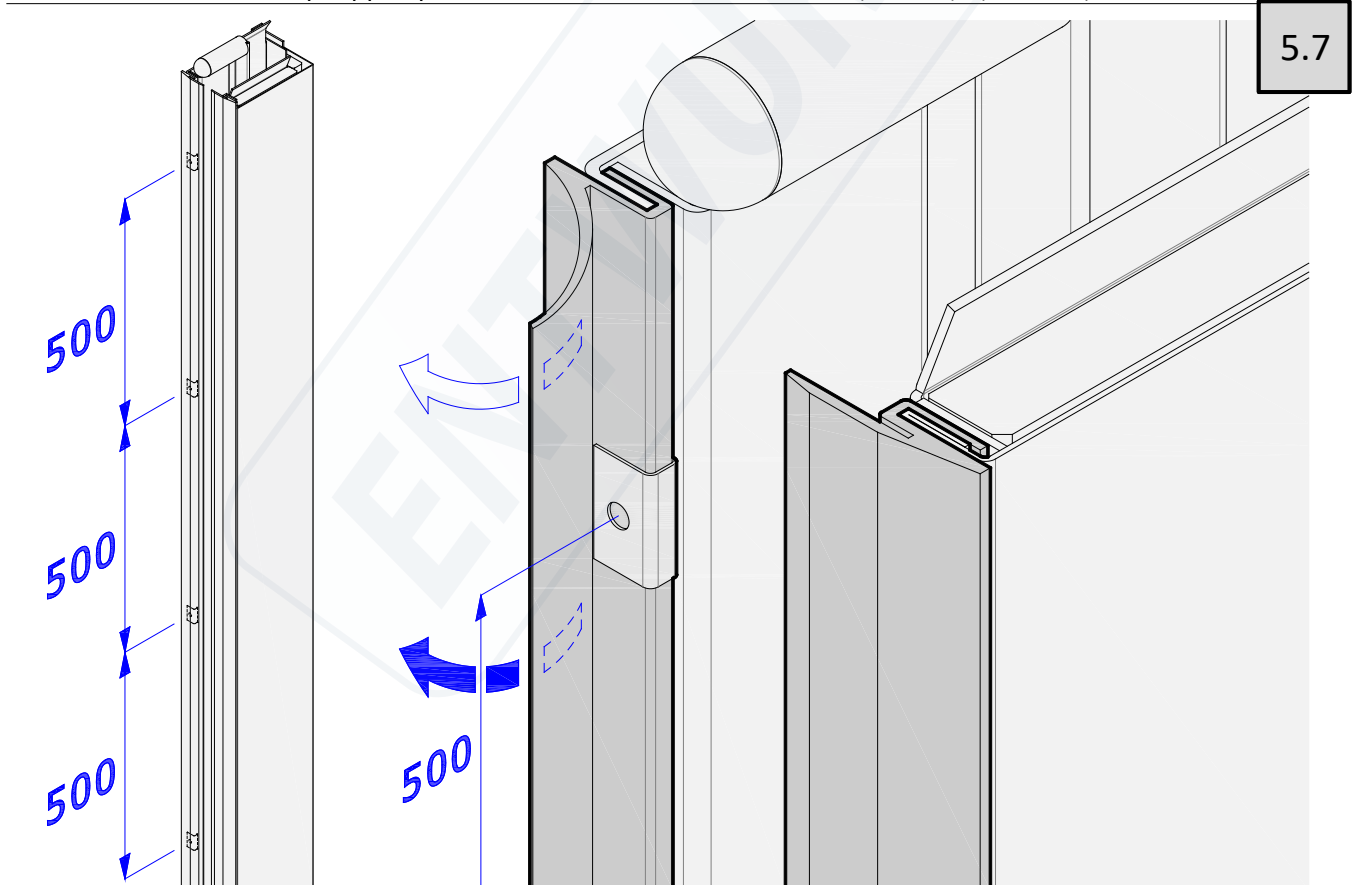
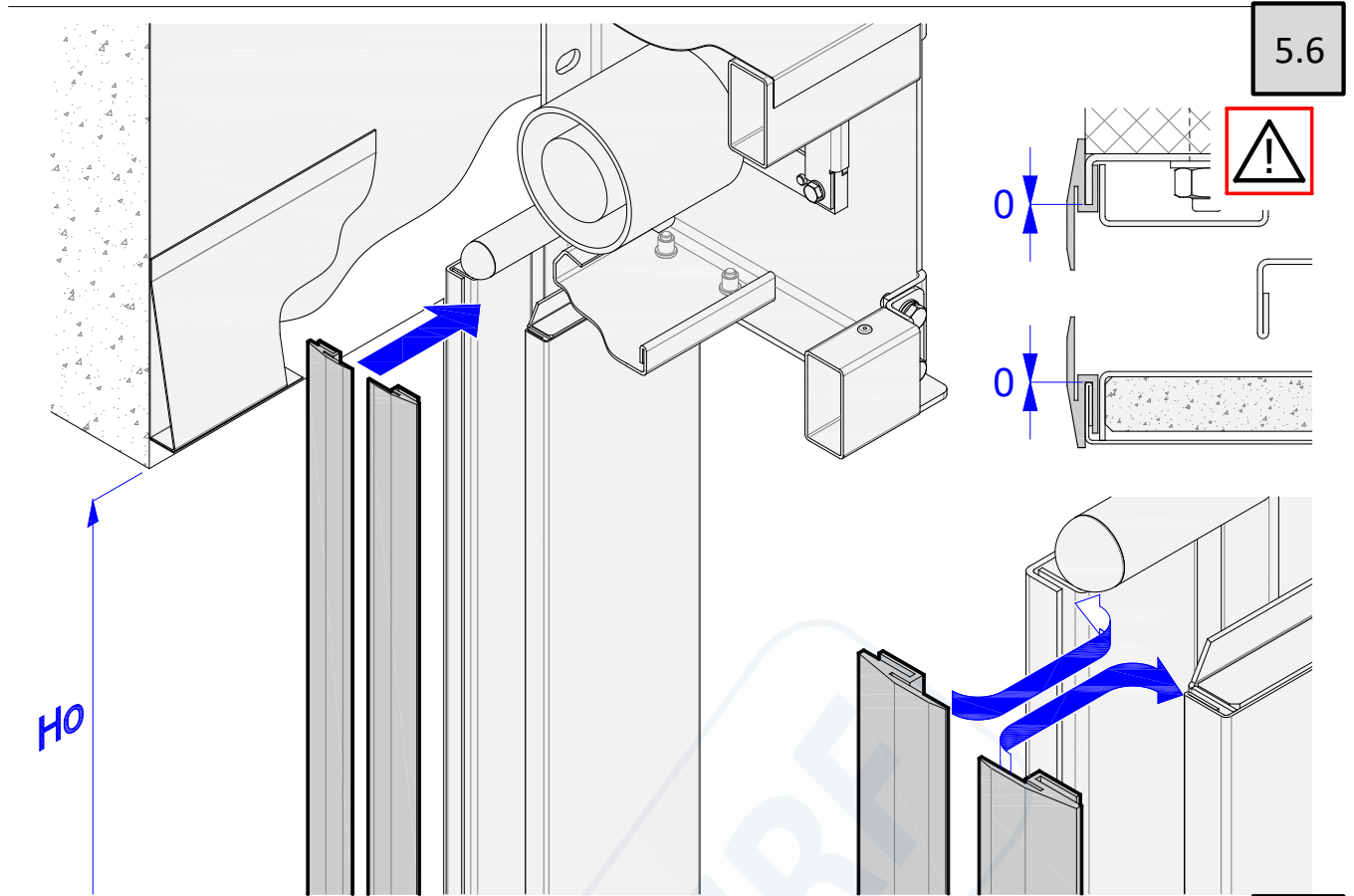
5.1





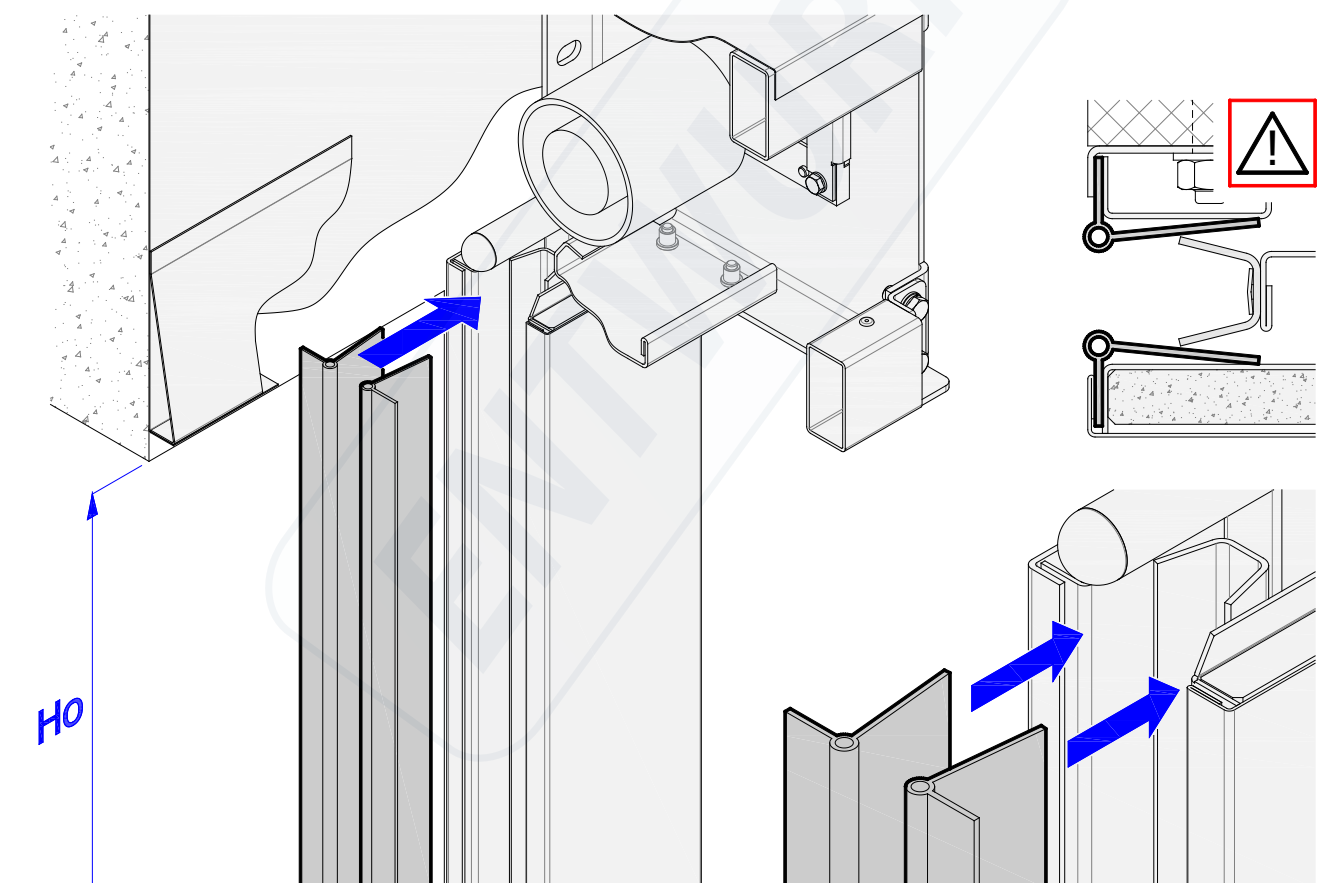
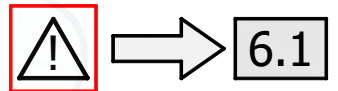
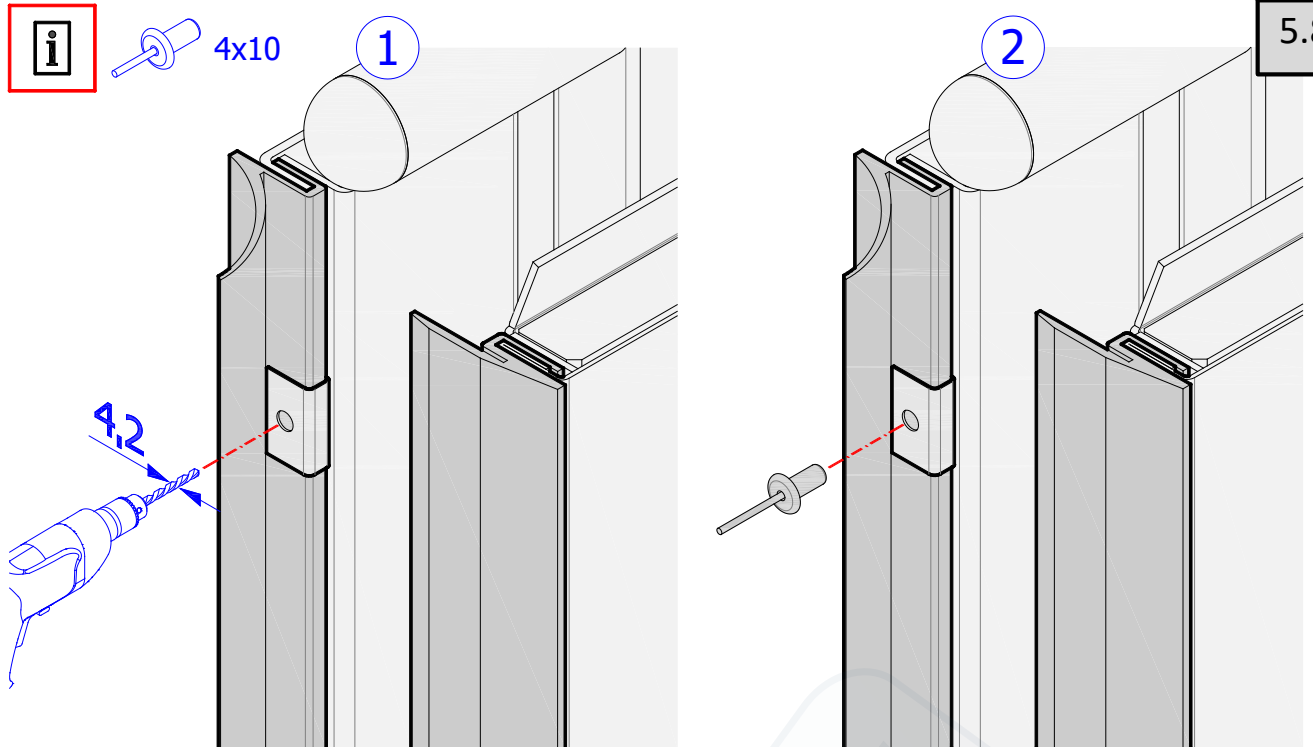


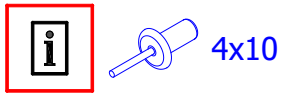




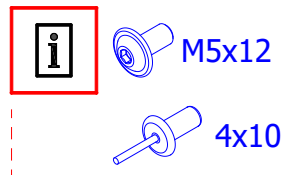
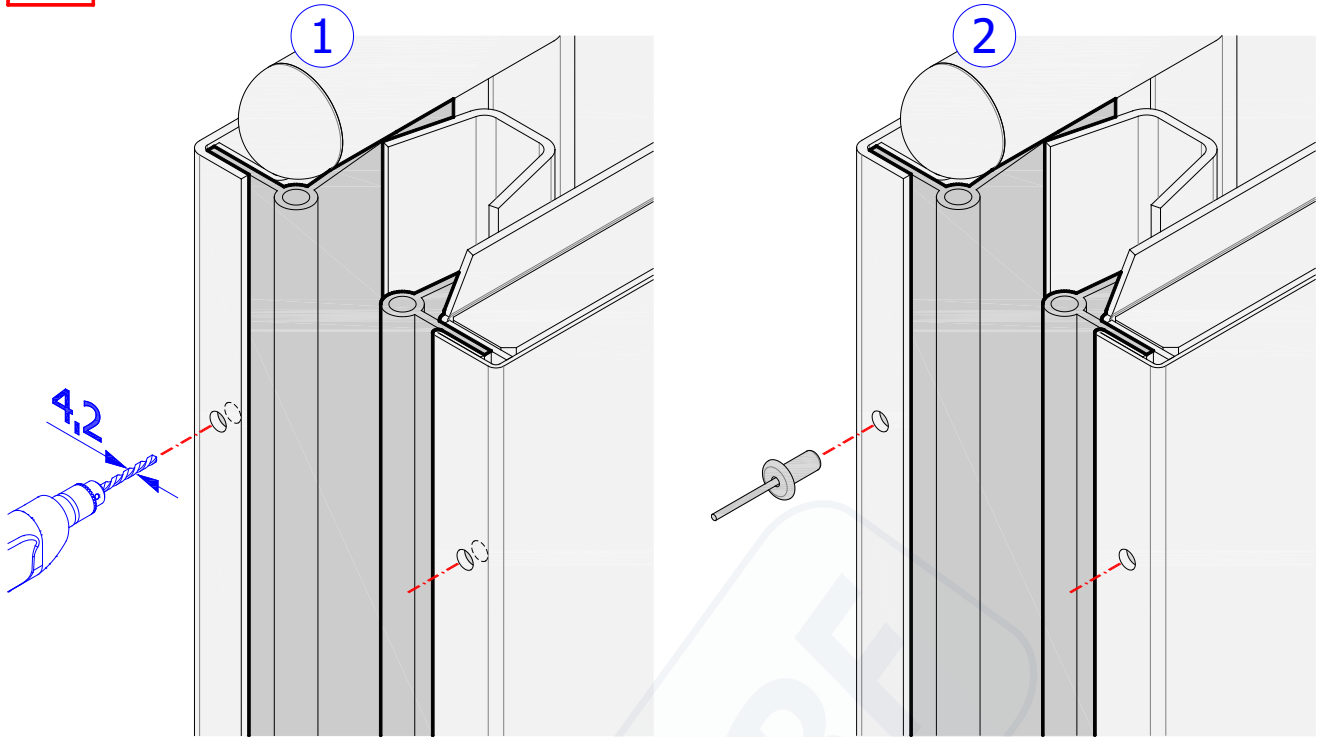
5.9

5.8



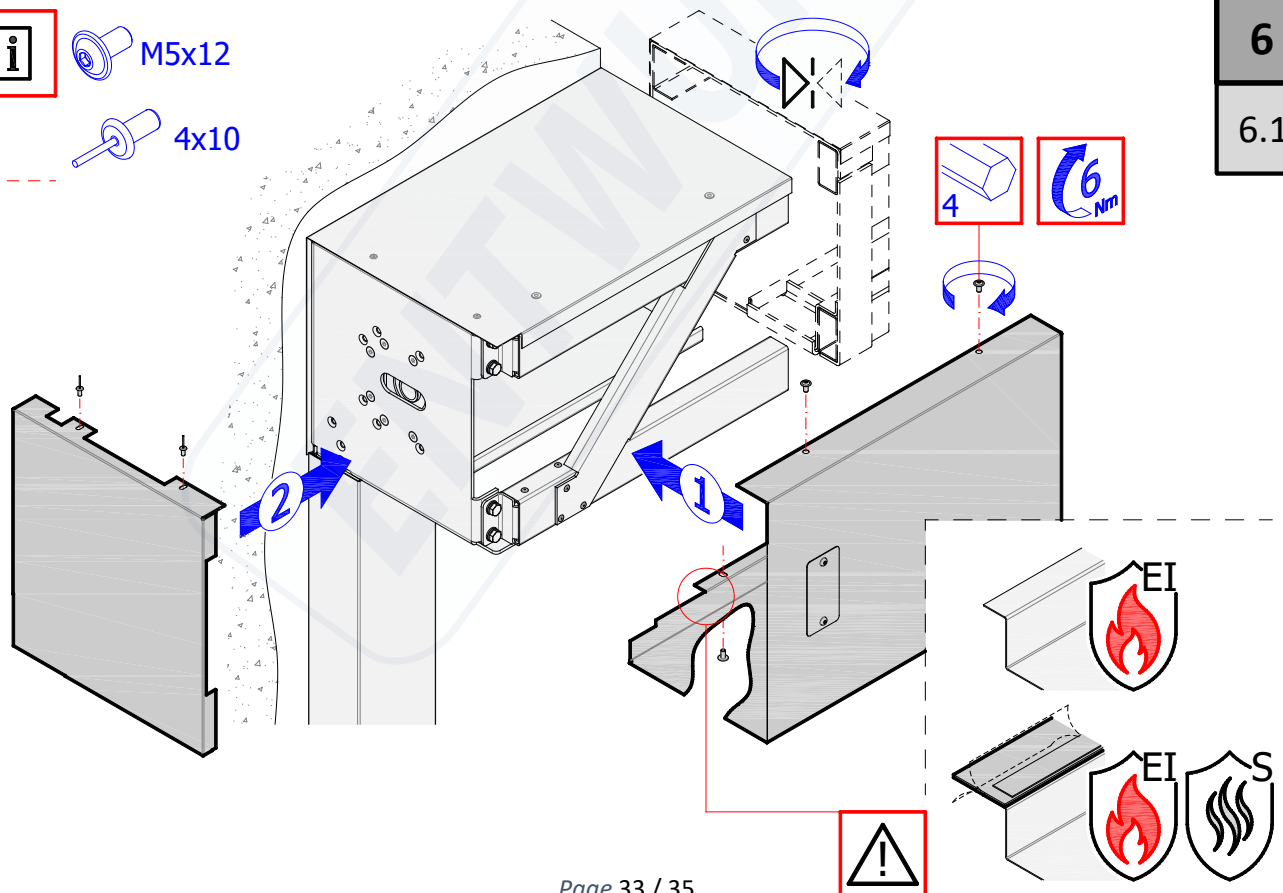


5.10

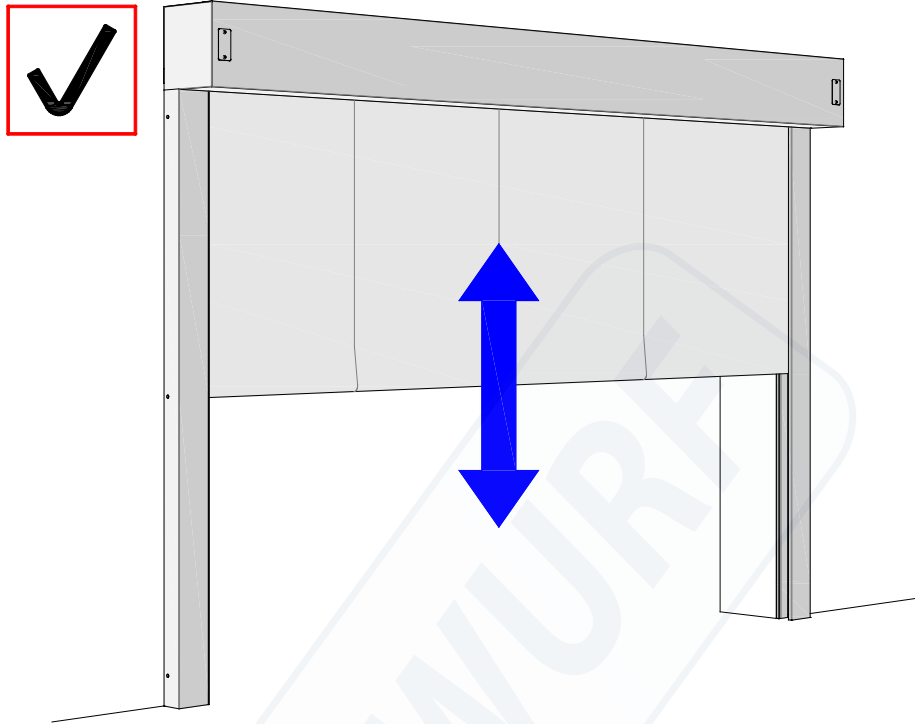


6

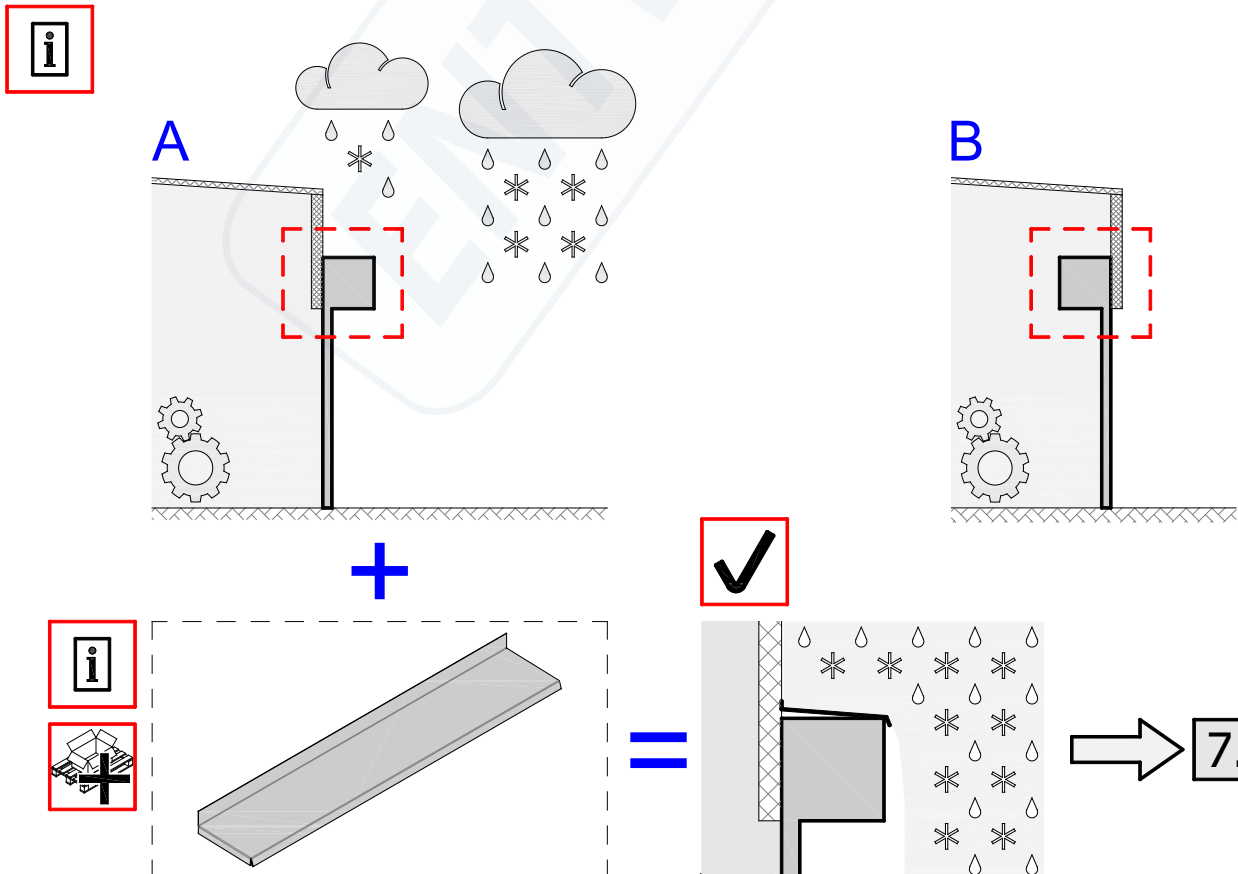
6.1



6.2



6.3





6.4

