

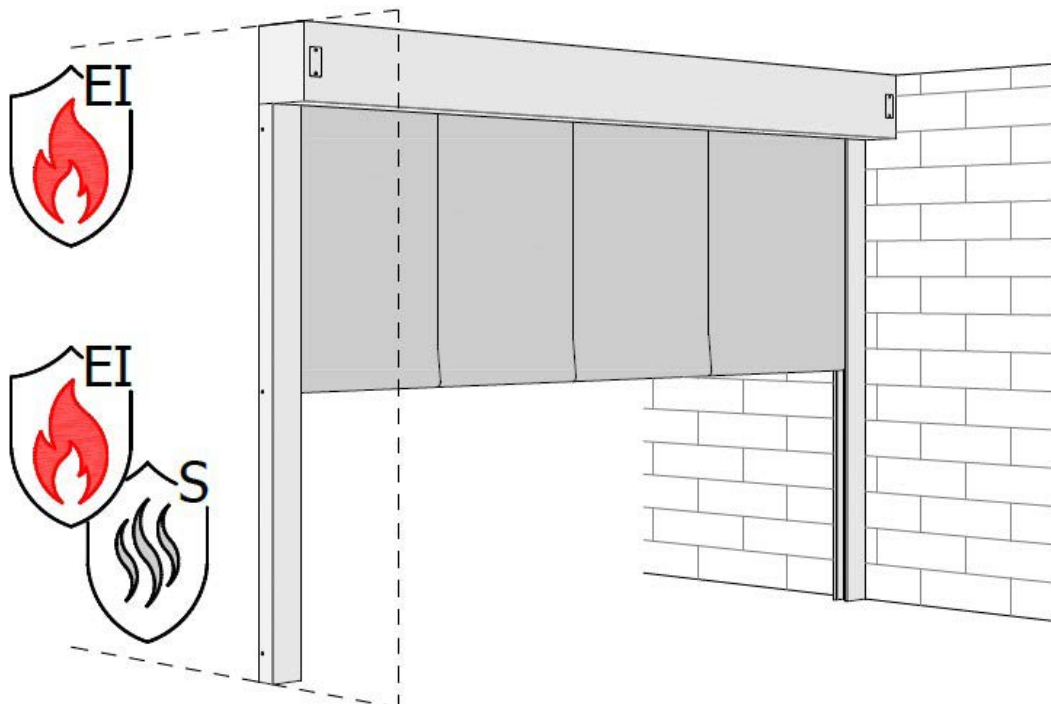


FIRE CURTAIN EI60

Mechanical Fitting Instruction / Corridor Assembly

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1. GENERAL INSTALLATION RECOMMENDATION

Dear Customers,

Professional installation and thoughtful service have essential impact on reliable operation of the EI60 fire and smoke protection curtain gate, as well as on safety of people and property.

The gate should be used according to its purpose, and installation must be performed by trained fitters, who have the appropriate skills.

The installation site must 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 safe work in 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
- Electrical equipment installation manual
- Additional documentation on optional building / equipment components - if any

1.2 APPLICABLE STANDARDS, REGULATIONS AND DIRECTIVES:

These issues concern the following standards and legal provisions:

- 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.



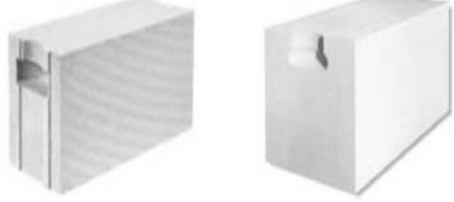
The anchoring technology should be approved by the site manager.



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.

Table 1: List of anchoring / fixing components shaft brackets:

No.	SUPPORTING CONSTRUCTION / ANCHORING ELEMENTS	NOTES
A	CEILINGS MADE OF HOLLOW-CORE AND PRESTRESSED CONCRETE SLABS	
A.1	Anchor for hollowcore slabs e.g. Fischer FHV, Hilti HKH	Size and type of elements matched to the transferred loads (tables / load charts are available from DAN-doors A/S)
A.2	Sleeve anchor (hammer-in) e.g. Fischer EA II, Hilti HKD	
B	CONCRETE WALLS, FLOORS AND BEAMS HOMOGENEOUS AND REINFORCED	
B.1	Anchor bolt (ring) e.g. MKT BZ, Fischer FAZ II, Hilti HST3	Size and depth of anchorage matched to the loads (tables / load charts are available from DAN-doors A/S)
B.2	Sleeve anchor (hammer-in) e.g. Fischer EA II, Hilti HKD	
B.3	Screw anchor (screwed-in) e.g. Fischer FBS II, Hilti HUS HR / CR	
B.4	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
C	MASONRY WALLS MADE OF CELLULAR CONCRETE (e.g. ytong, solbet, termalica)	
C.1	Screw anchor e.g. Fischer FBS II, Hilti HUS HR / CR	Size and depth of anchorage matched to the load to be carried (tables / load charts are available from DAN-doors A/S)
C.2	Anchor Fischer FPX M8-I / M10-I / M12	
C.3	Fischer FIS V, FIS P Chemical fastening with threaded rod, e.g. MKT VM Multi-plus, Fischer FIS V, FIS P	Rod min. M8 as per to DIN 976, class min. 8.8
C.4	Through the wall mounting with threaded rod	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

D	SOLID MASONRY WALLS (e.g. concrete blocks, silicate blocks, solid bricks) AND HOLLOW BRICKWORK (e.g. grid brick, hollow brick, porotherm)	
D.1	Chemical fastening with threaded rod, e.g. MKT VM Multi-plus, Fischer FIS V, FIS P	Rod min. M8 as per DIN 976, class min. 8.8
D.2	Screw anchor e.g. Fischer FBS II, Hilti HUS HR / CR	Size and depth of anchorage matched to the load to be carried (tables / load charts are available from DAN-doors A/S)
D.3	Through the wall mounting with threaded rod	As in point C.4 with replacement of the washers – washer as per PN-EN ISO 4079, 200 HV
E	FIRE-PROTECTED STEEL STRUCTURES AND FIRE PROTECTION FRAME WALLS 1)	
E.1	Screws for steel constructions (sheet metal screws) e.g. Hilti S-MD, Stalco WS / FD / FM, Etanco GT	Min. St 5,5 x 25 as per DIN 7504 Use only for doors of limited dimensions (tables / load charts are available from DAN-doors A/S)
E.2	Screw connection	Screw as per PN-EN ISO 4014, 4017, class min. 8.8 Washer as per 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 2)

F	REINFORCED CONCRETE WALLS, MASONRY WALLS MADE OF CELLULAR CONCRETE BLOCKS, SOLID AND HOLLOW BRICKWORK	
F.1	Steel expansion bolt (frame anchor)	M8, M10 minimum length 72mm
F.2	Plastic anchor for frames Hilti HRD-CR	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



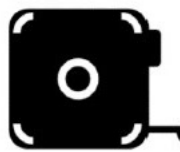
Leveling device



Rivet gun



Pencil



Tape measure



Safety glasses



Protective gloves

2.3 CONSTRUCTION OF FIRE PROTECTION / FIRE AND SMOKE PROTECTION CURTAIN GATE EI60 / EI60-S:

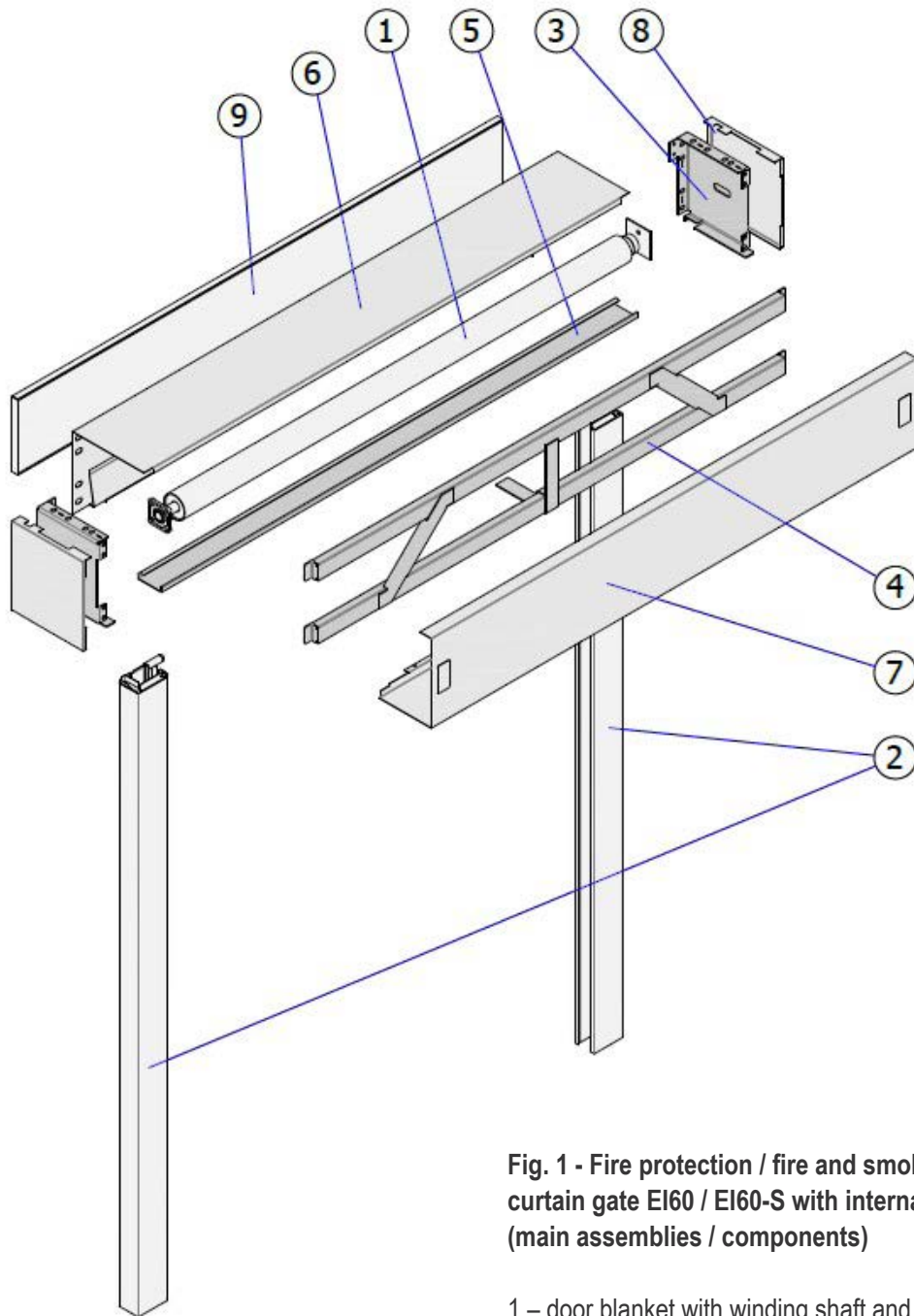




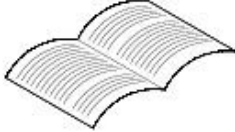
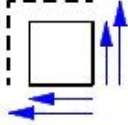










Fig. 1 - Fire protection / fire and smoke protection curtain gate EI60 / EI60-S with internal drive (main assemblies / components)

- 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
- 9 – rear case

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

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

3.4. USE OF INSTALLATION INSTRUCTIONS/ DRAWING DOCUMENTATION

ATTENTION!

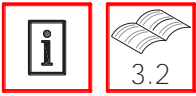
Installation conditions, tubular drive power supply (24 VDC / 230 VAC) and method of assembly depend on the dimensions and design of the gate, thus we recommend that you read the current version of the conditions. This can be obtained from DAN-doors A/S.

The 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.

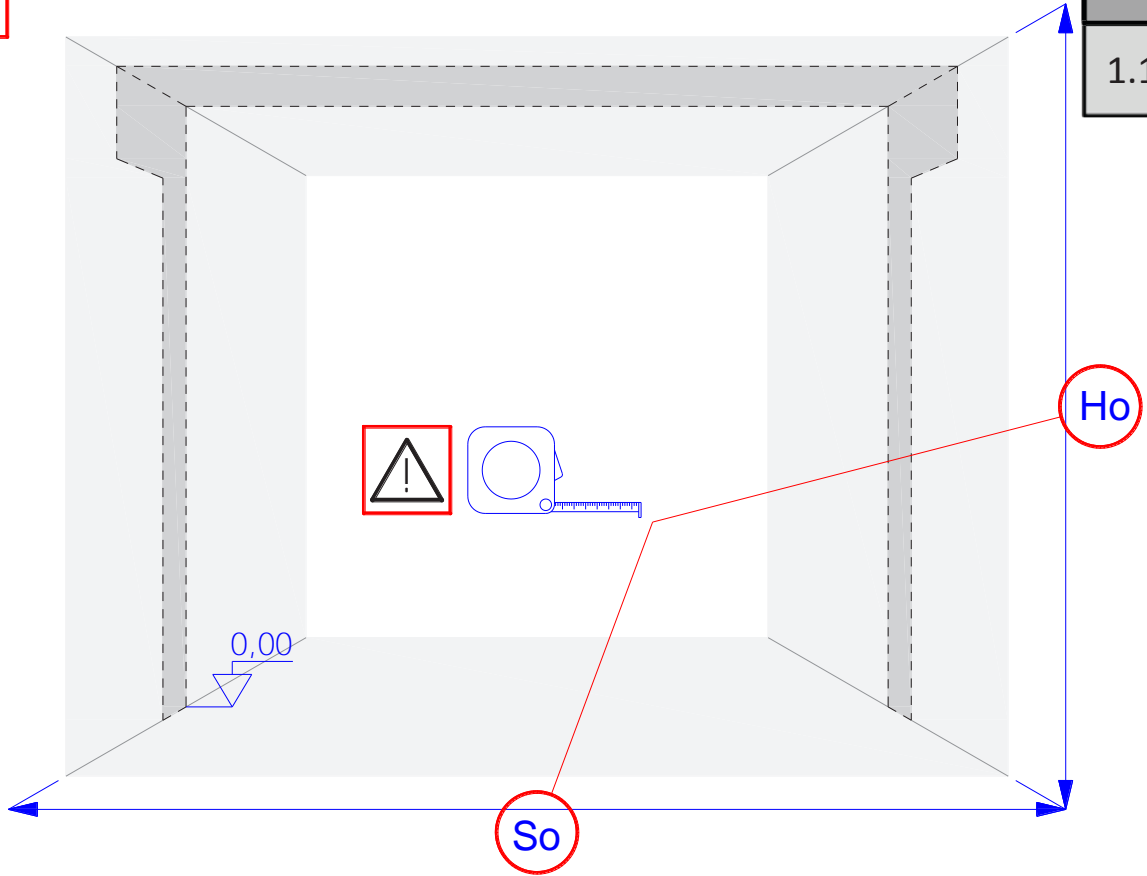
The design of some of the elements differs depending on whether the gate has only fire resistance or, additionally, smoke-tightness.

Electrical installation should be performed according to separate instruction.

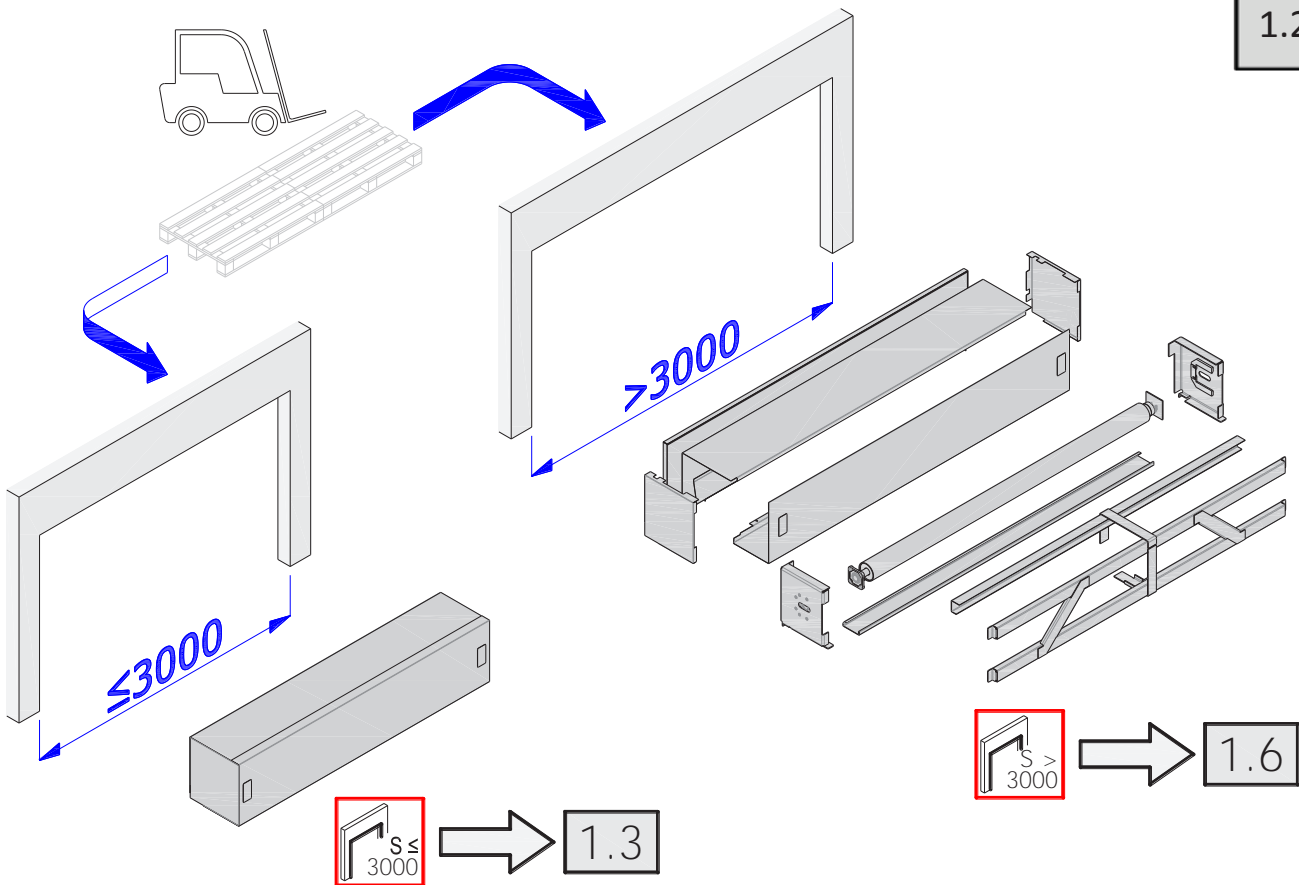
In case of any doubts please contact DAN-doors A/S (dd@dan-doors.dk, phone +45 87 93 87 00).



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1.1



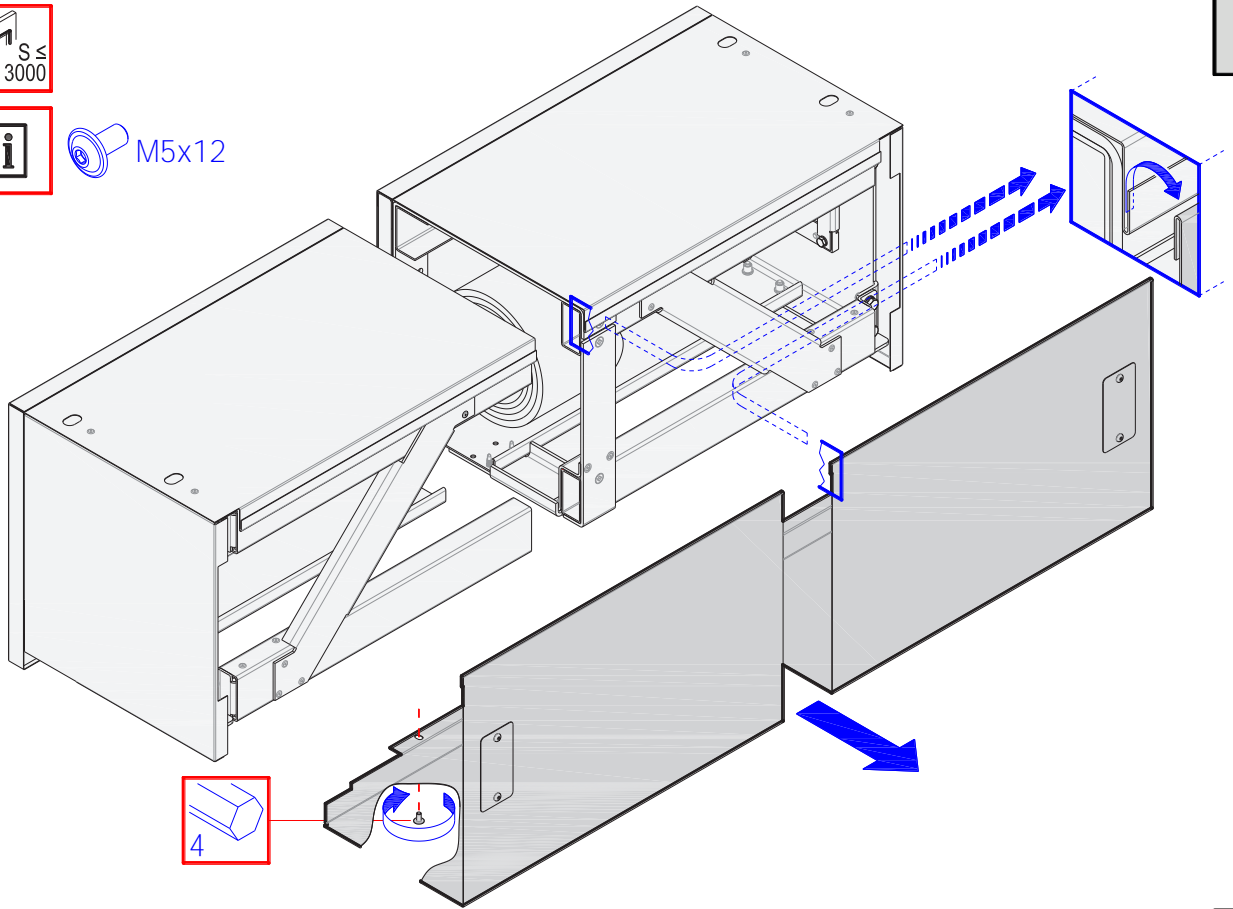
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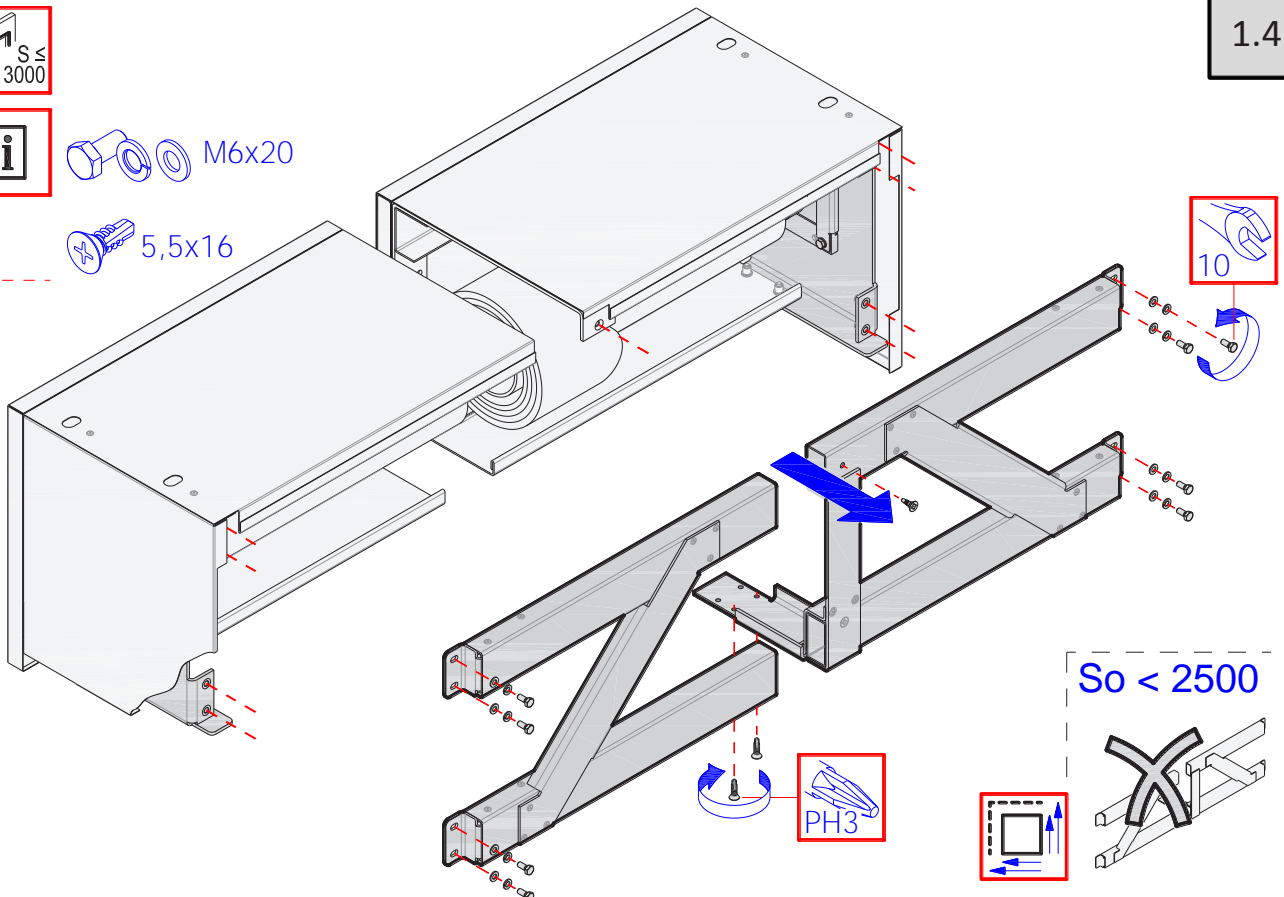
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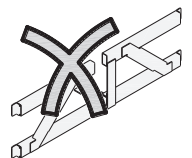
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5,5x16

1.4



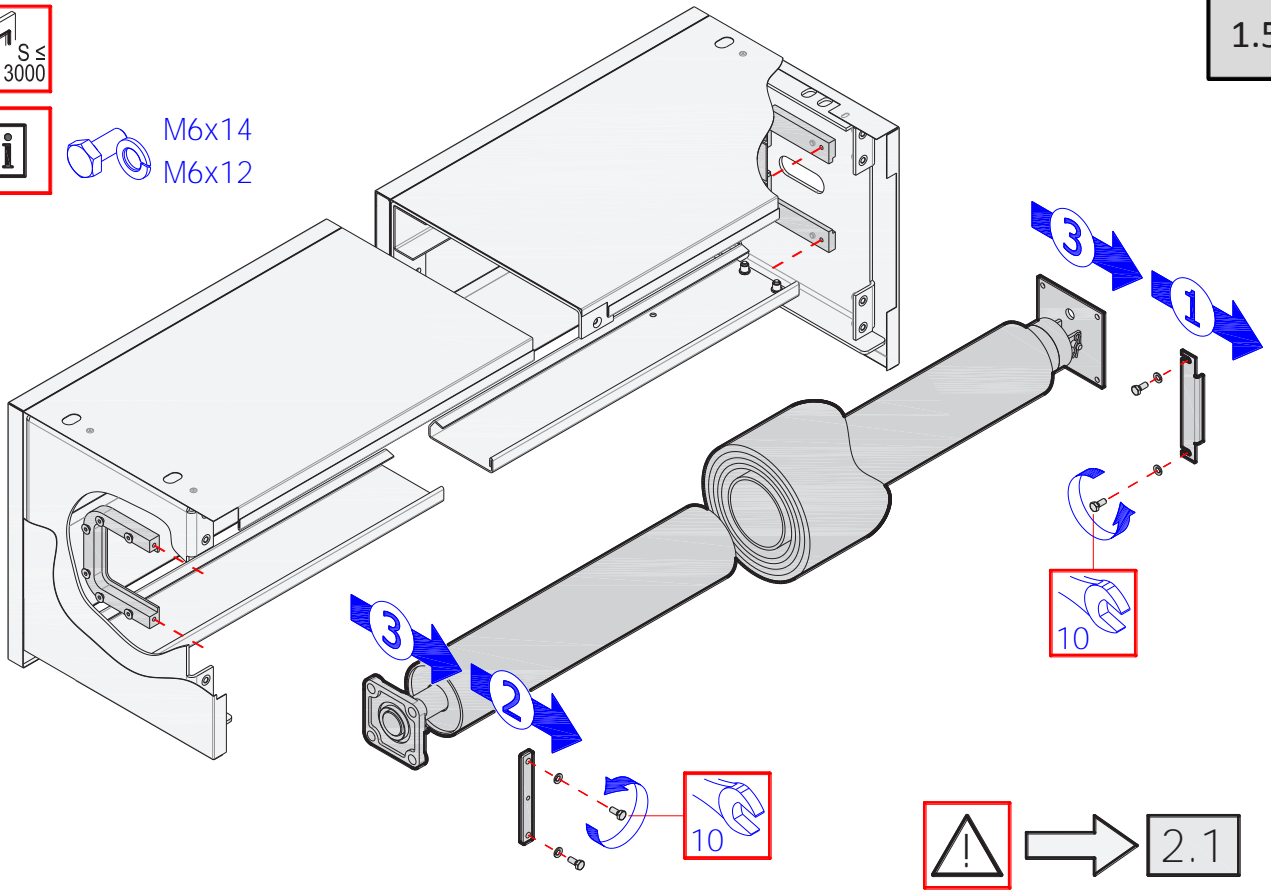
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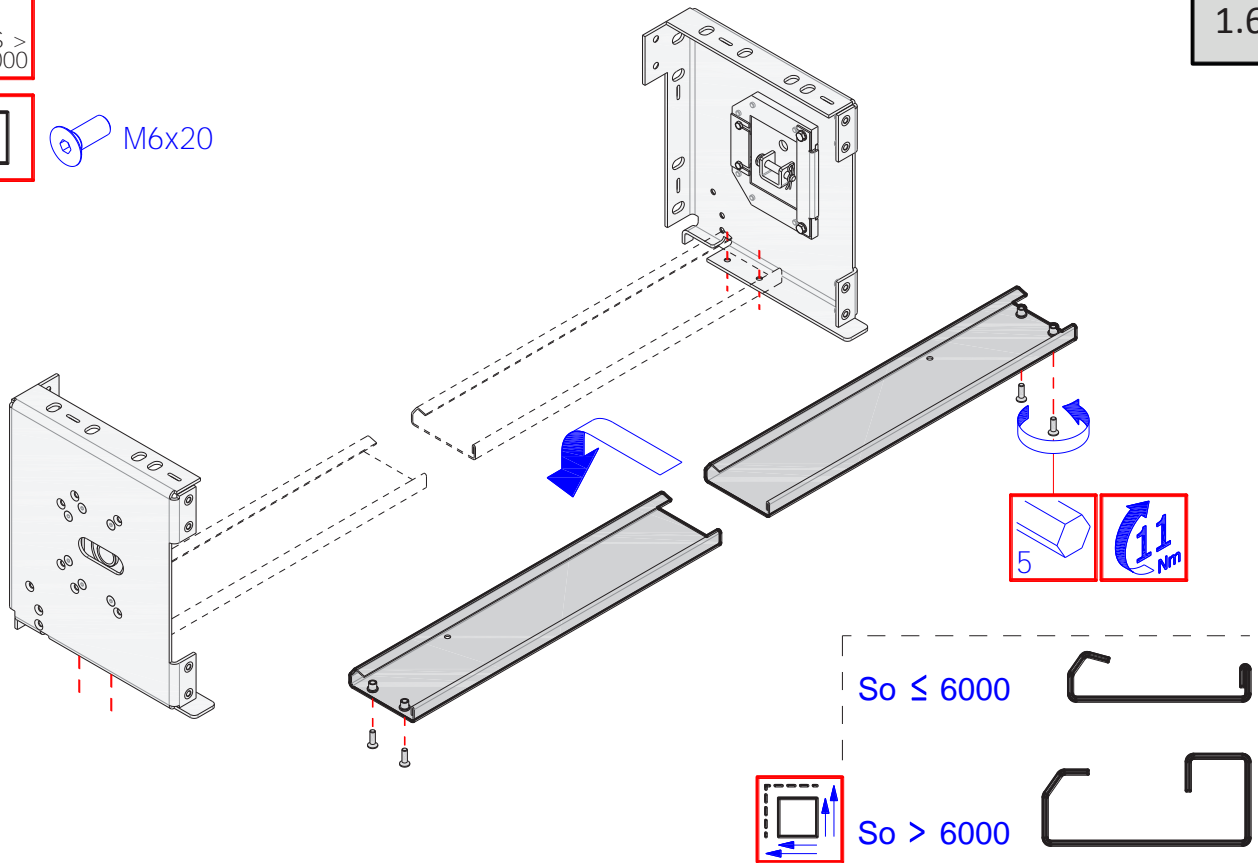
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M6x12

1.5



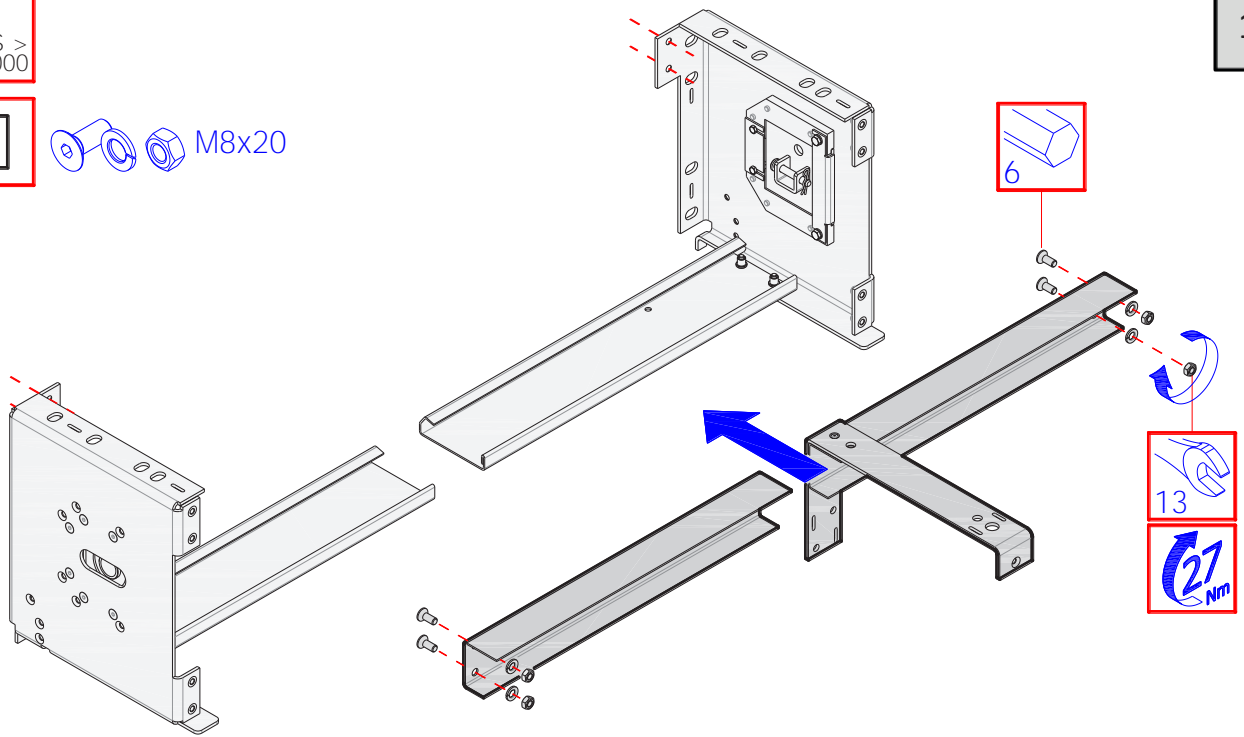
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1.6

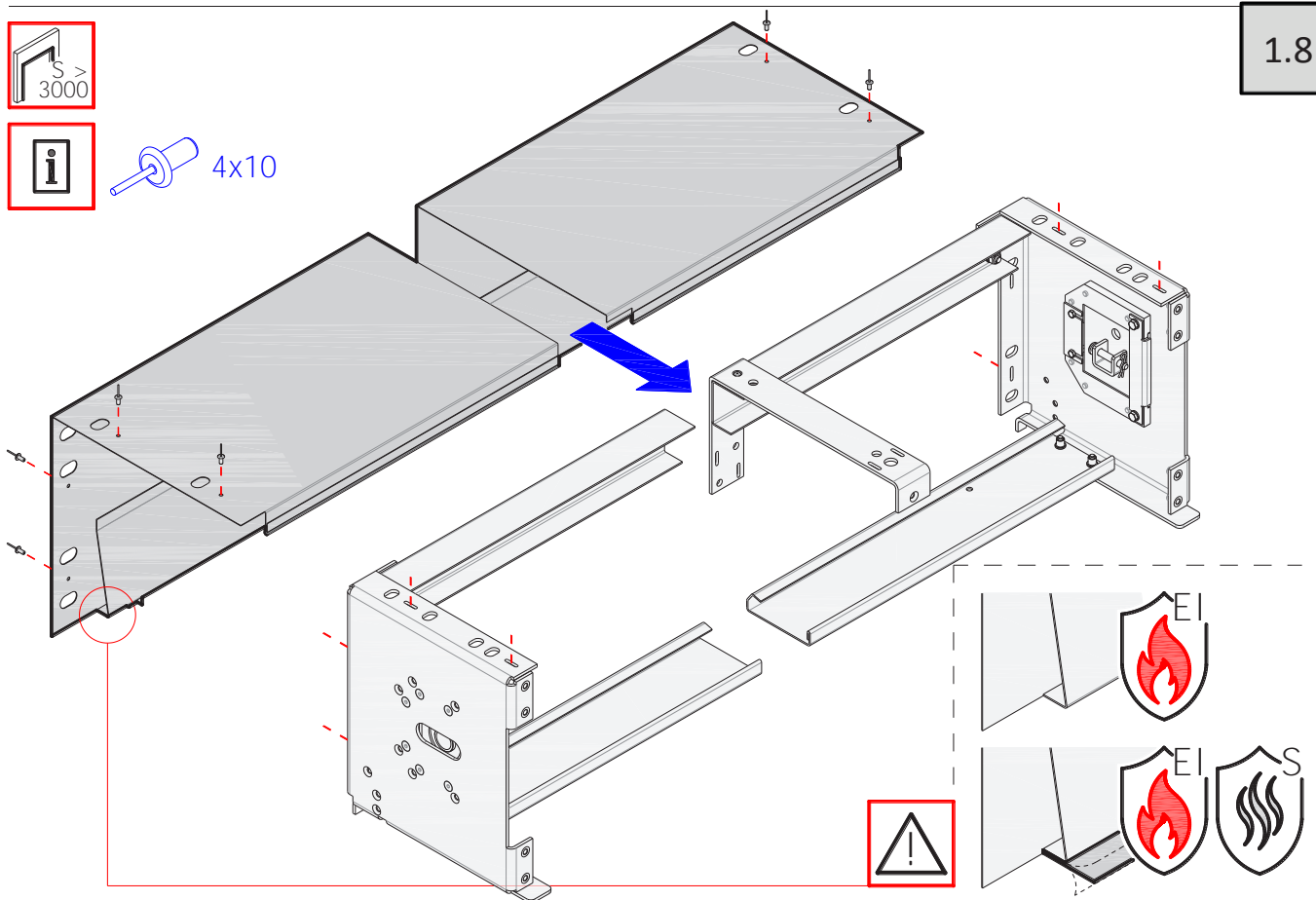




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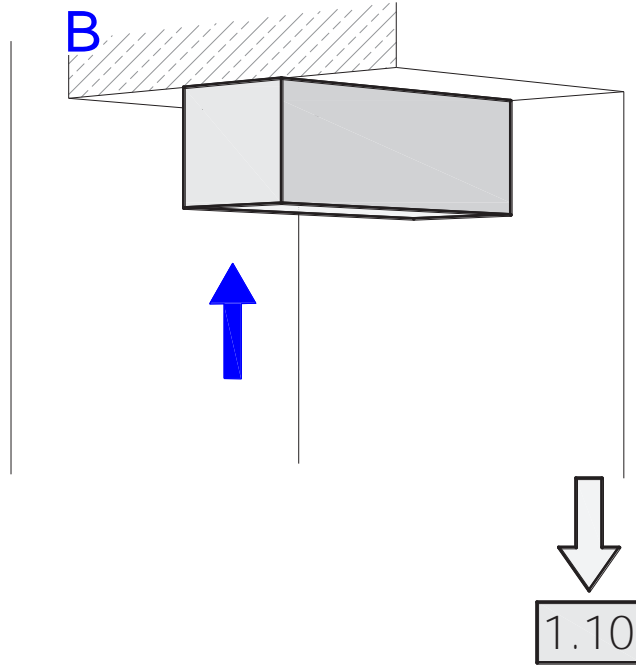
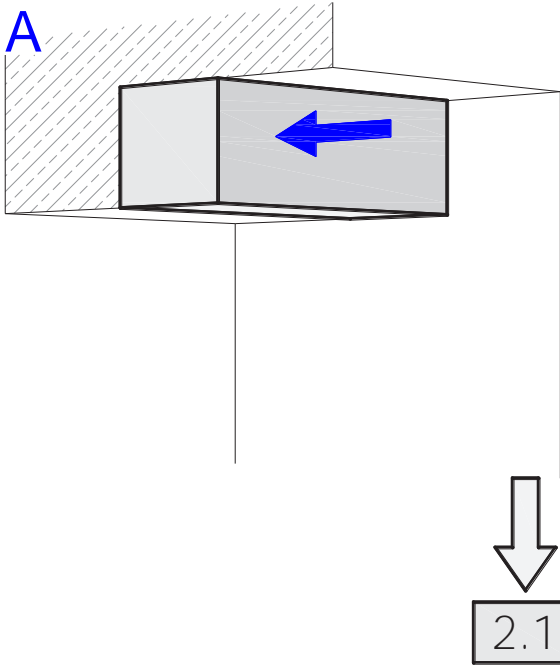


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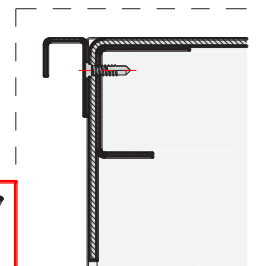
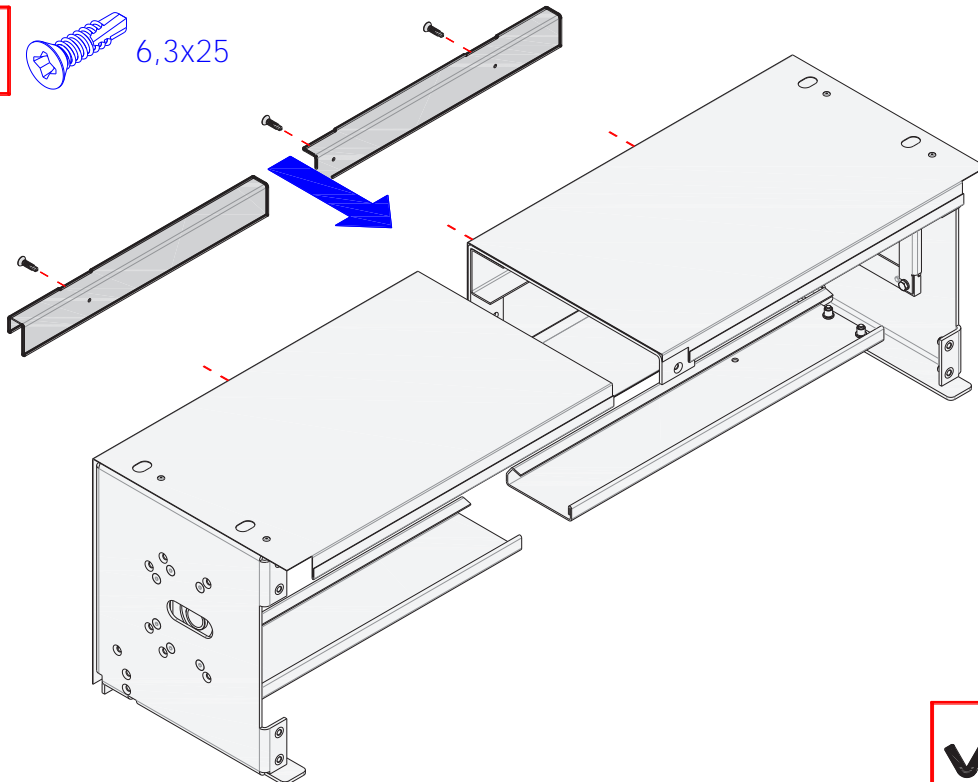
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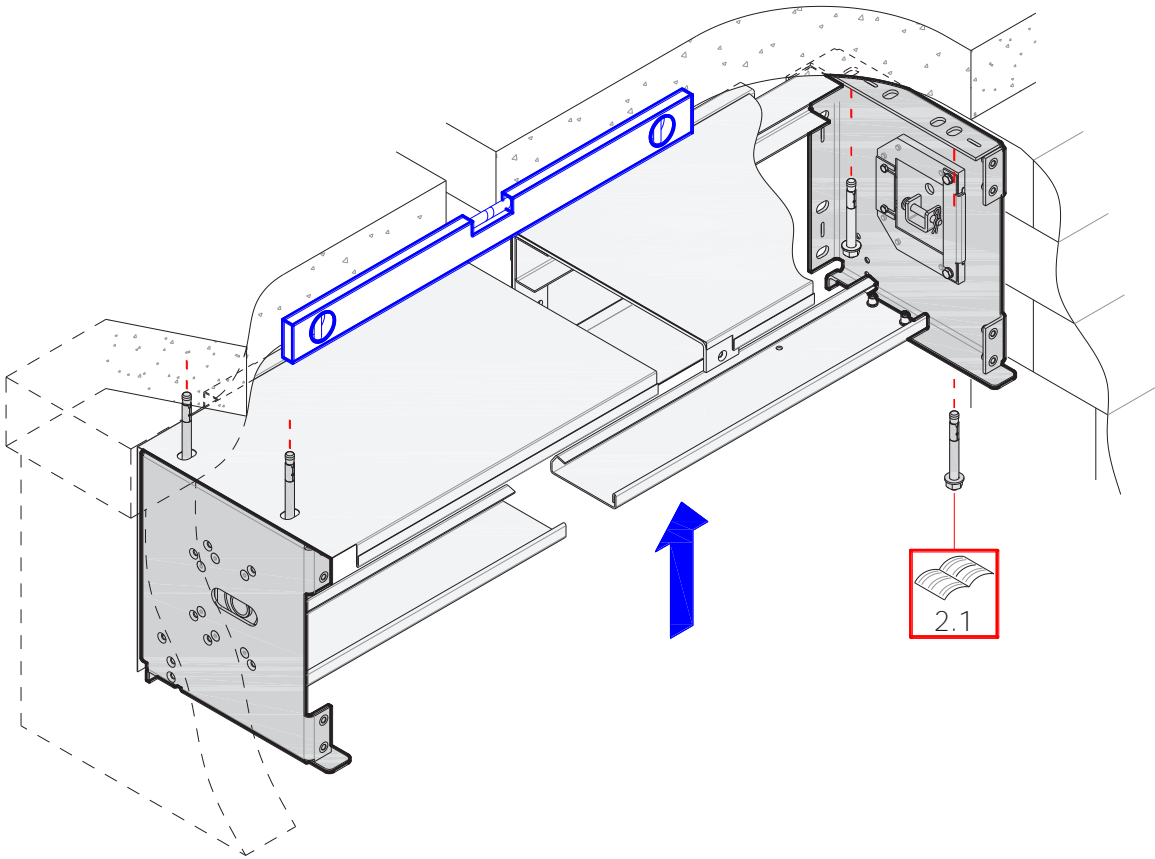
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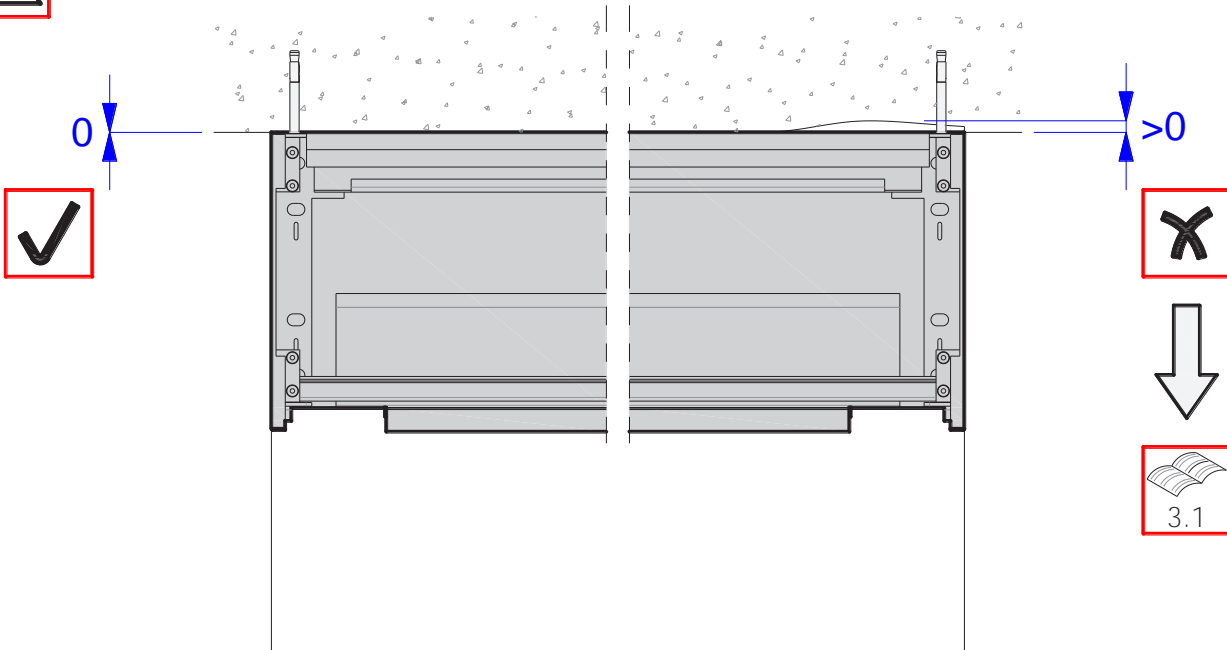
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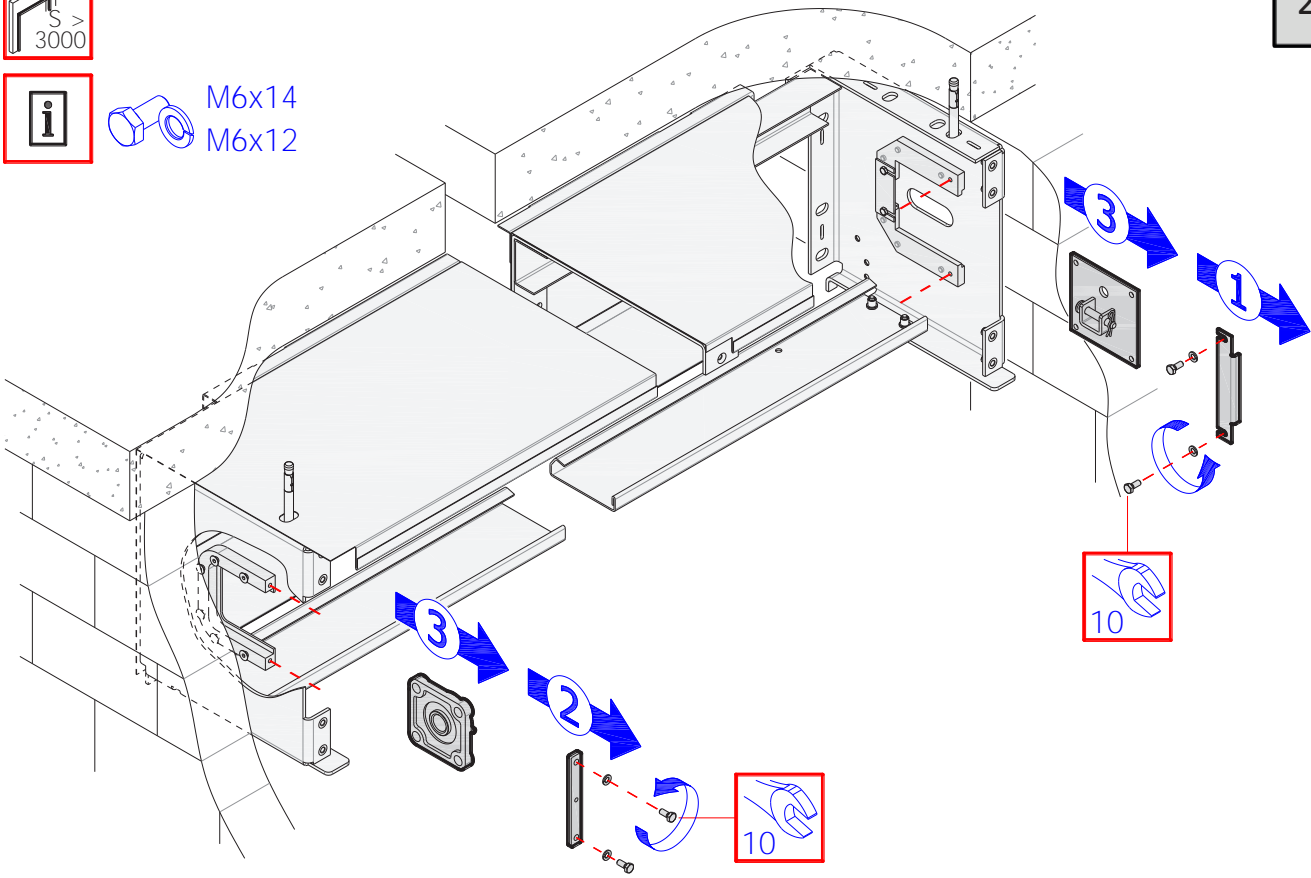
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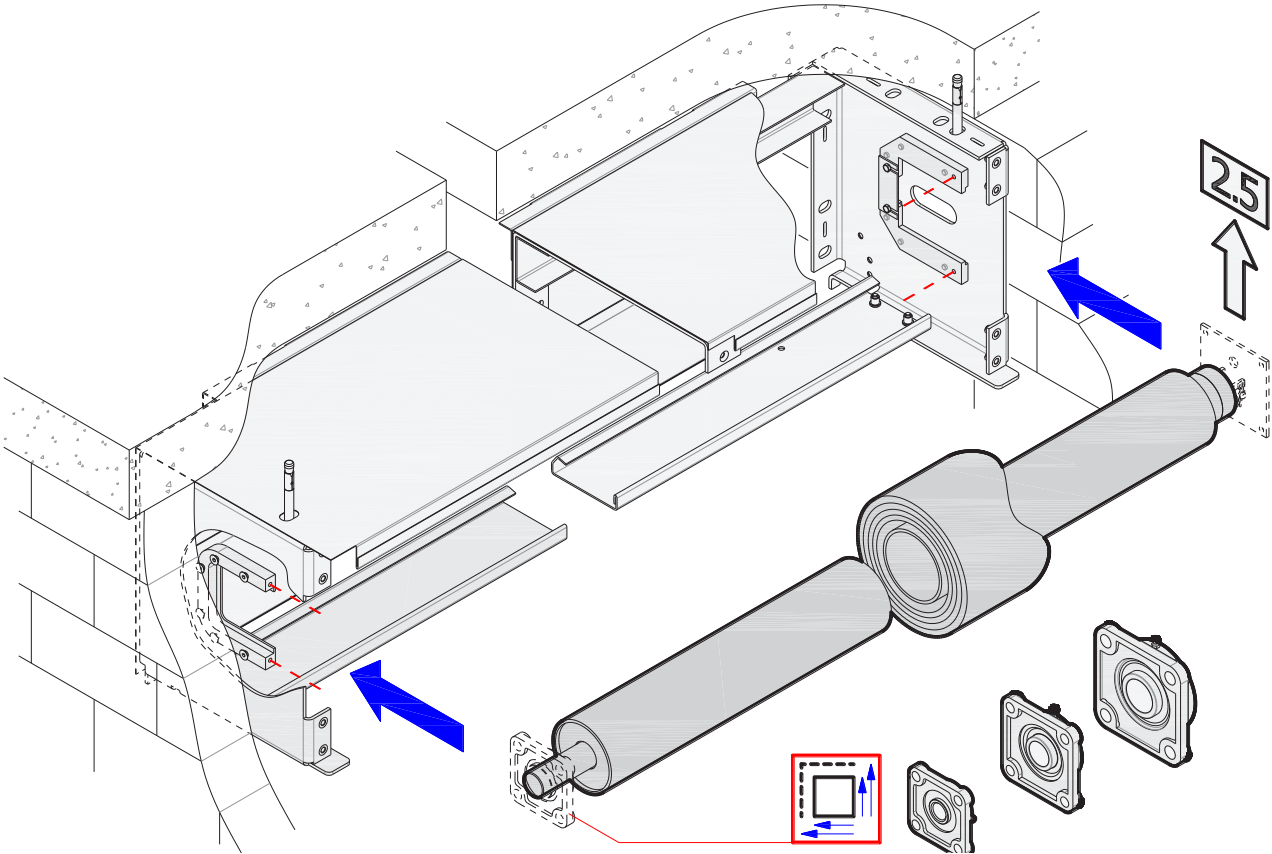
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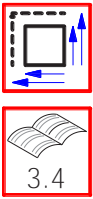
M6x14
M6x12



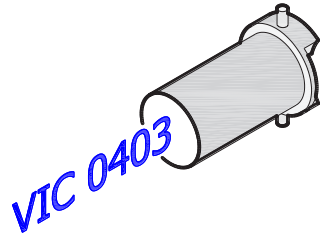
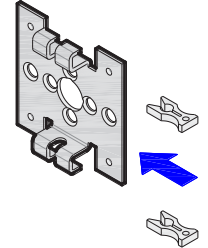
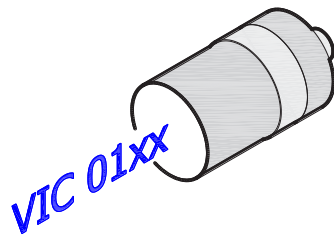
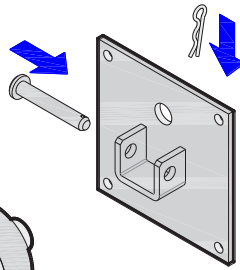
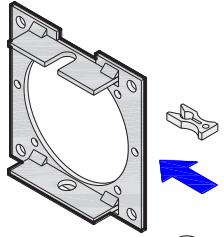
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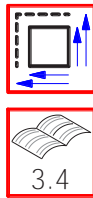
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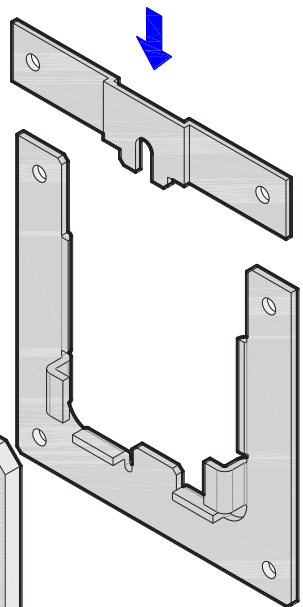
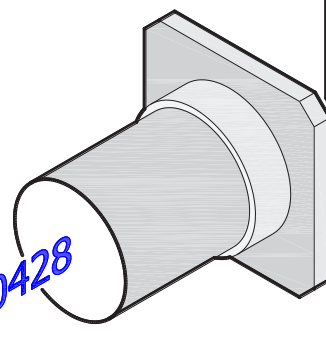
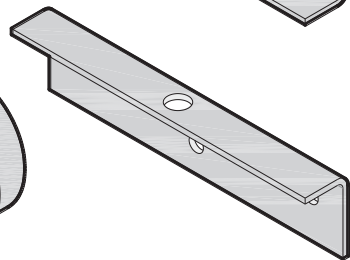
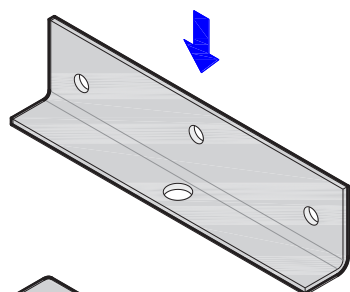
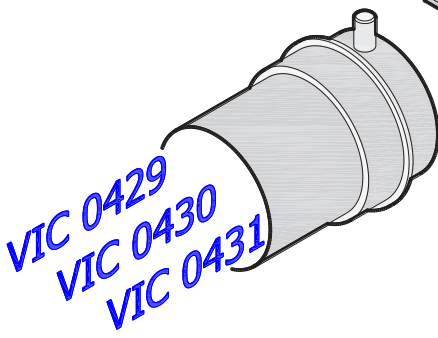
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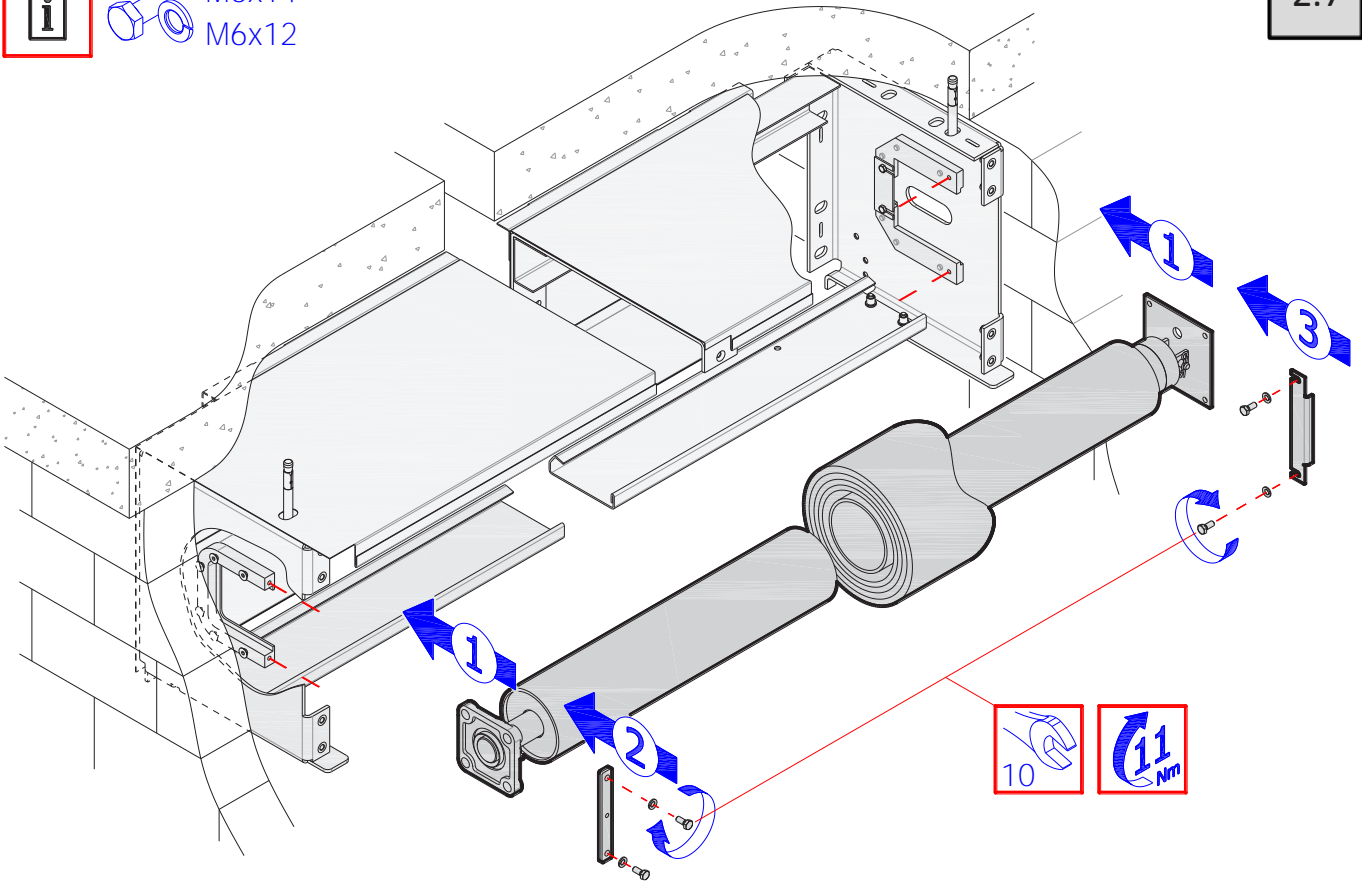


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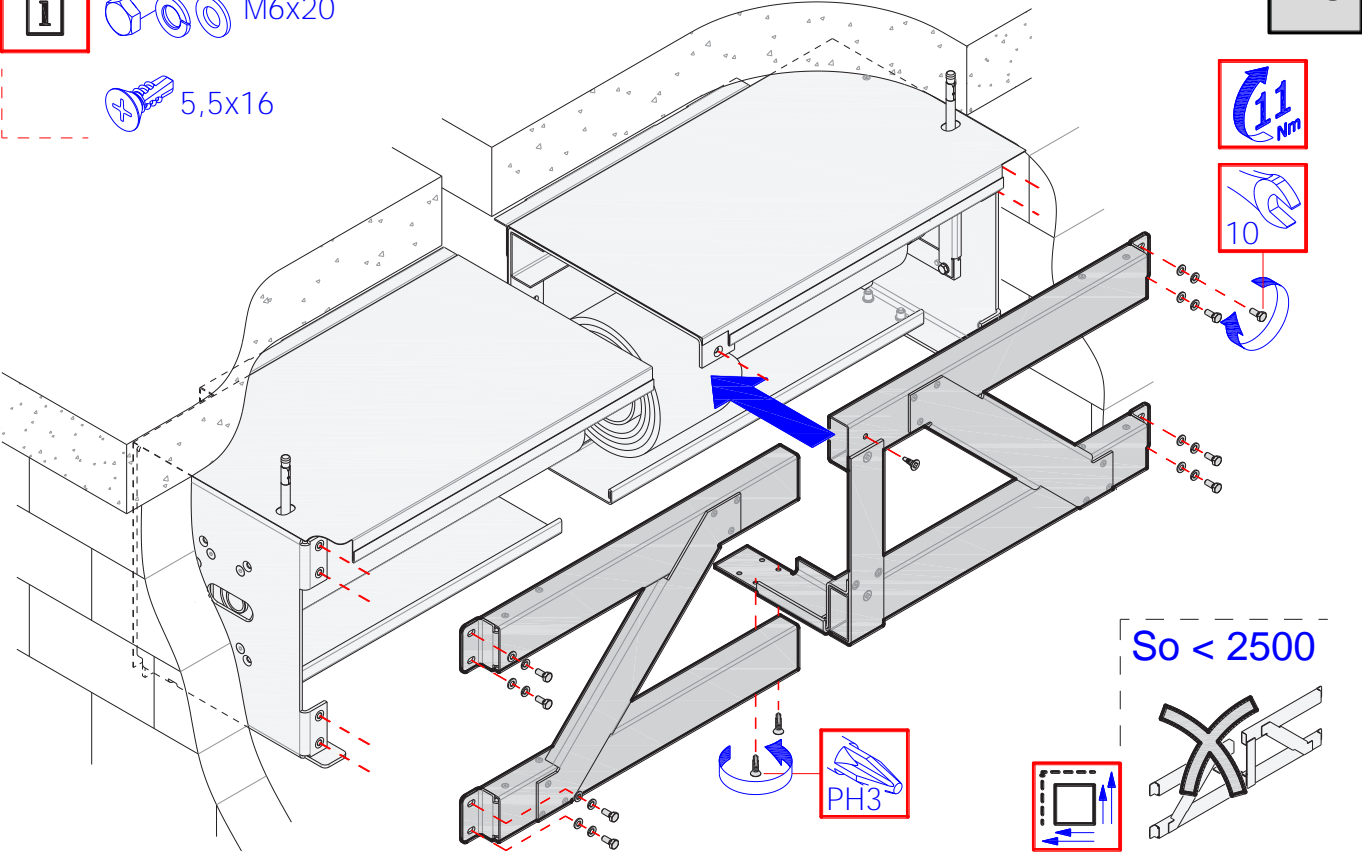
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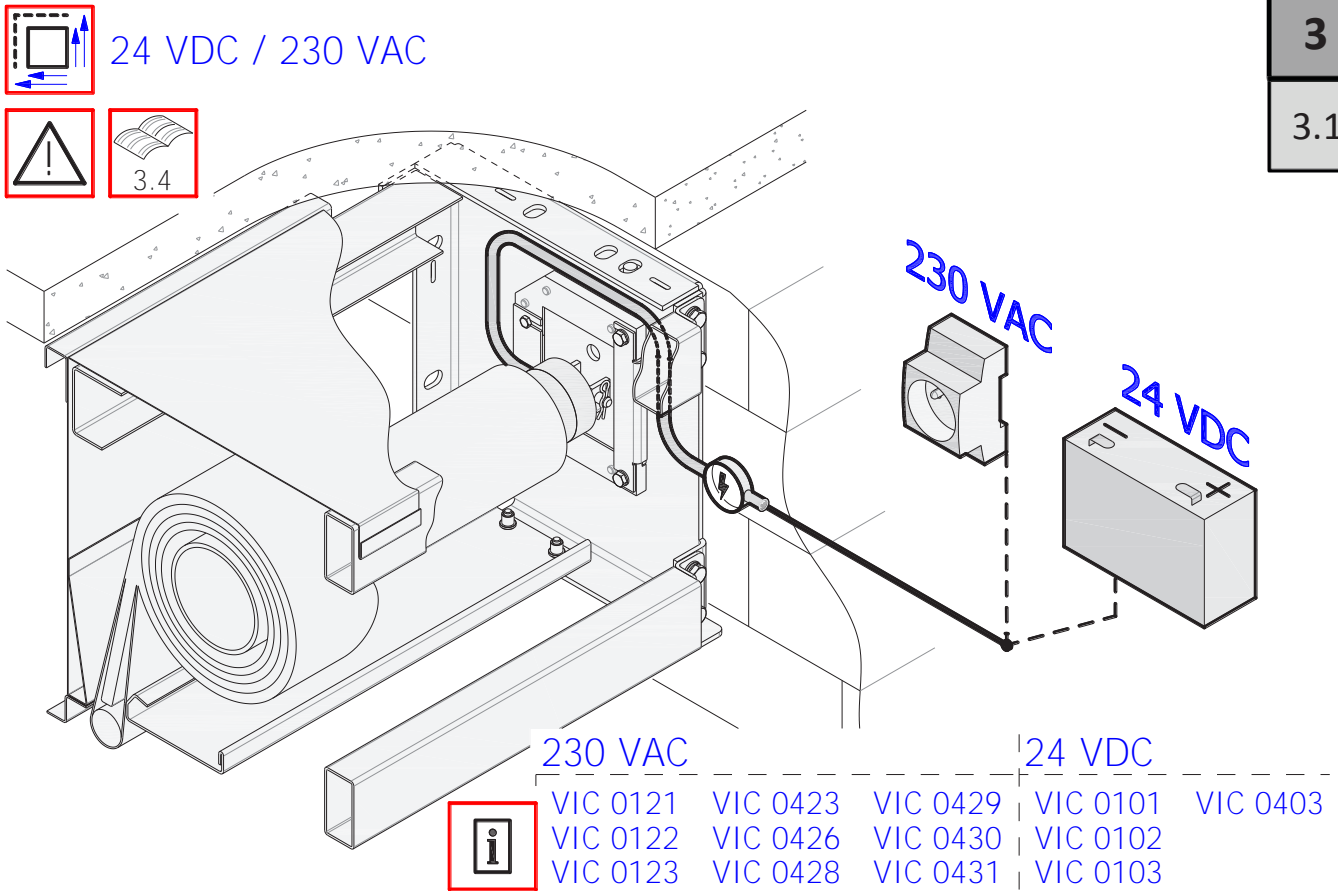


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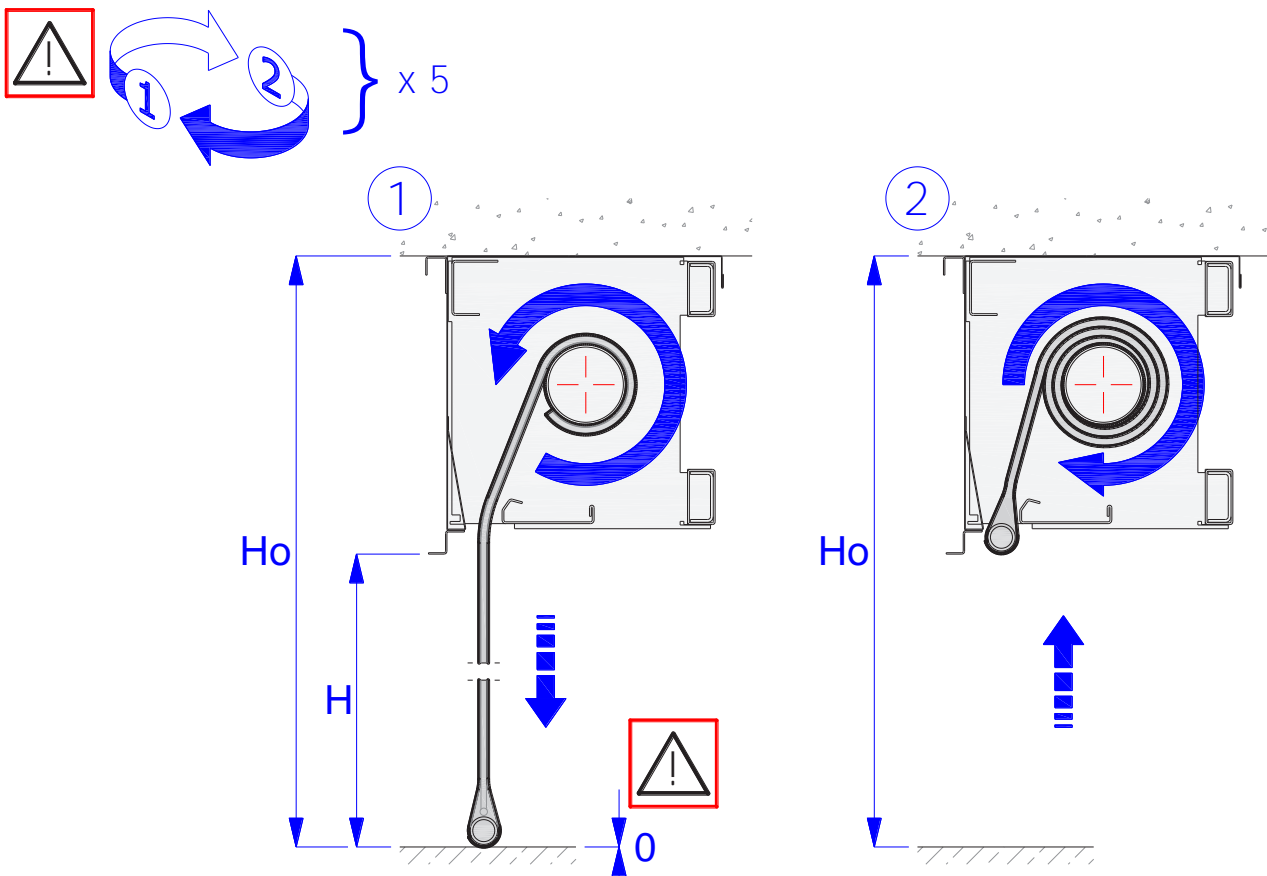
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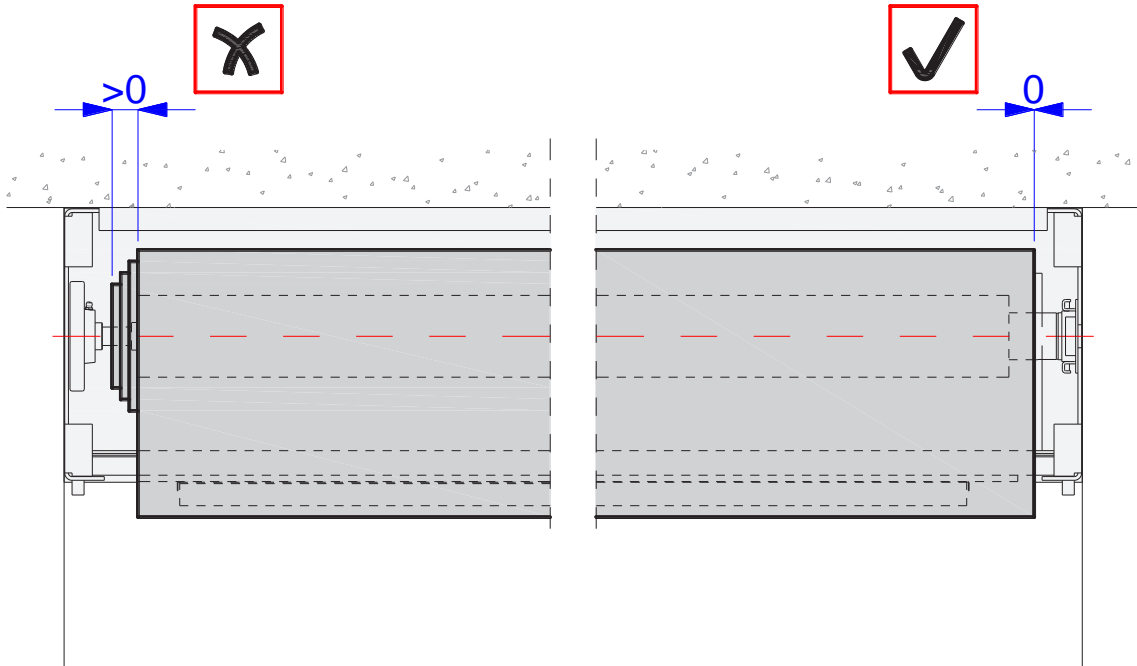
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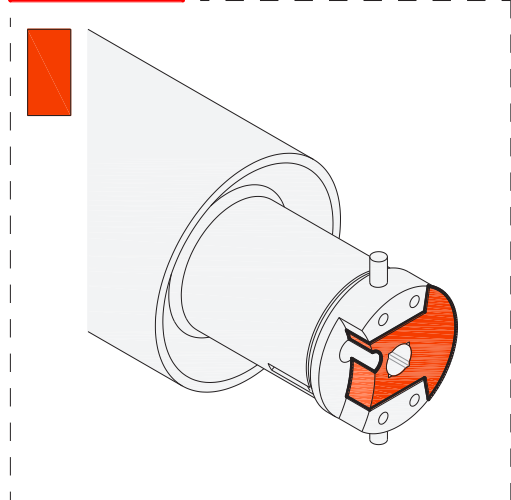
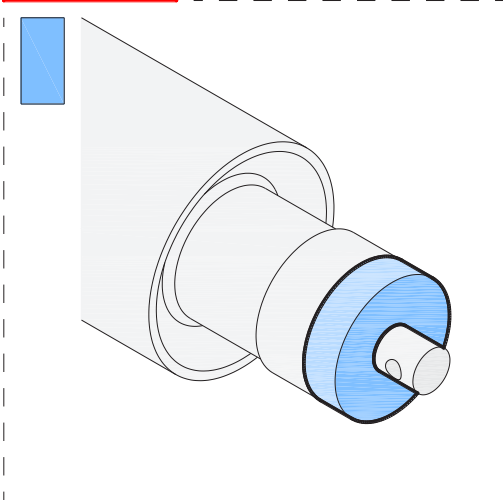
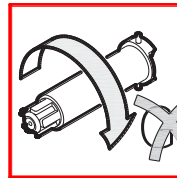
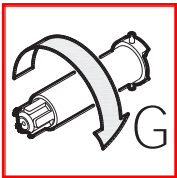
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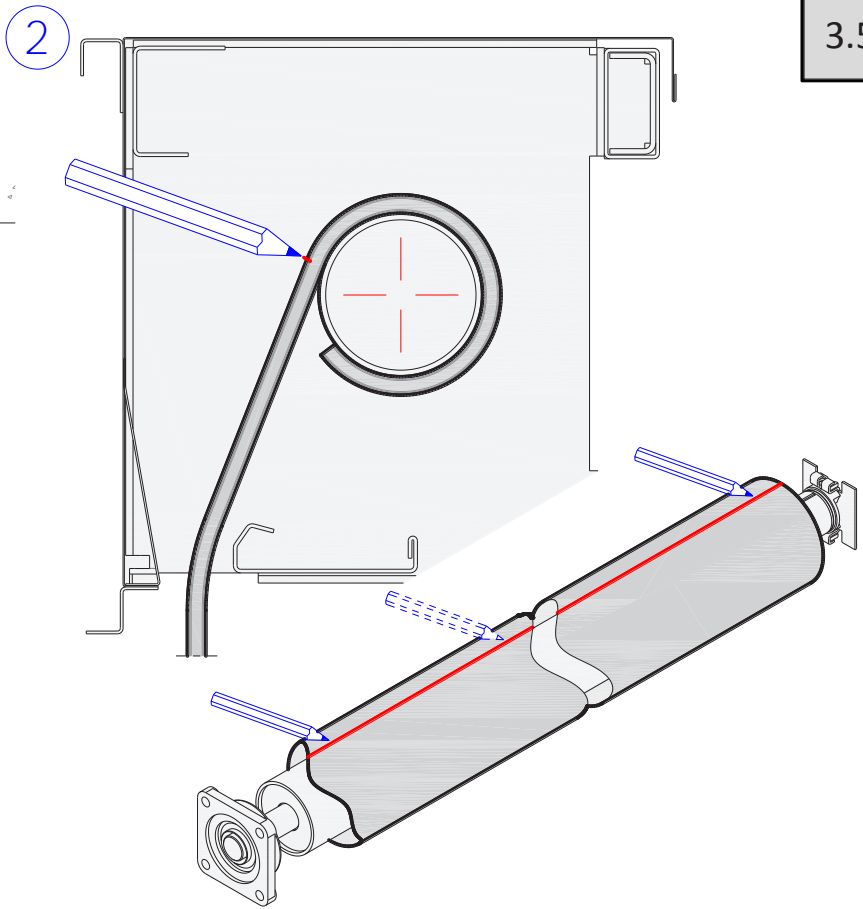
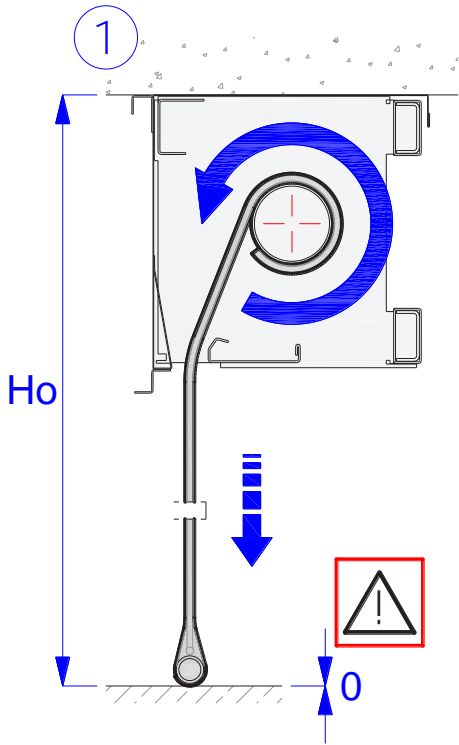
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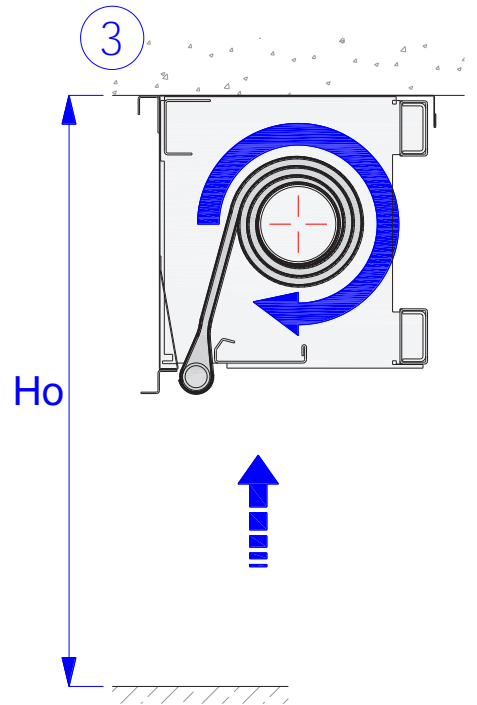
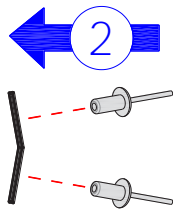
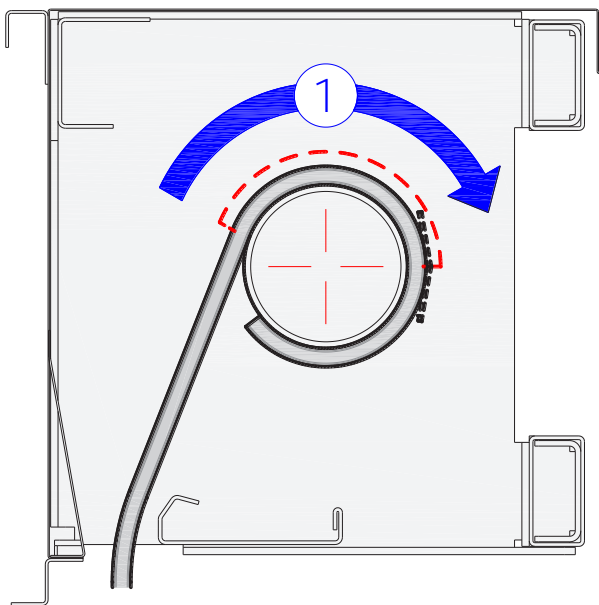
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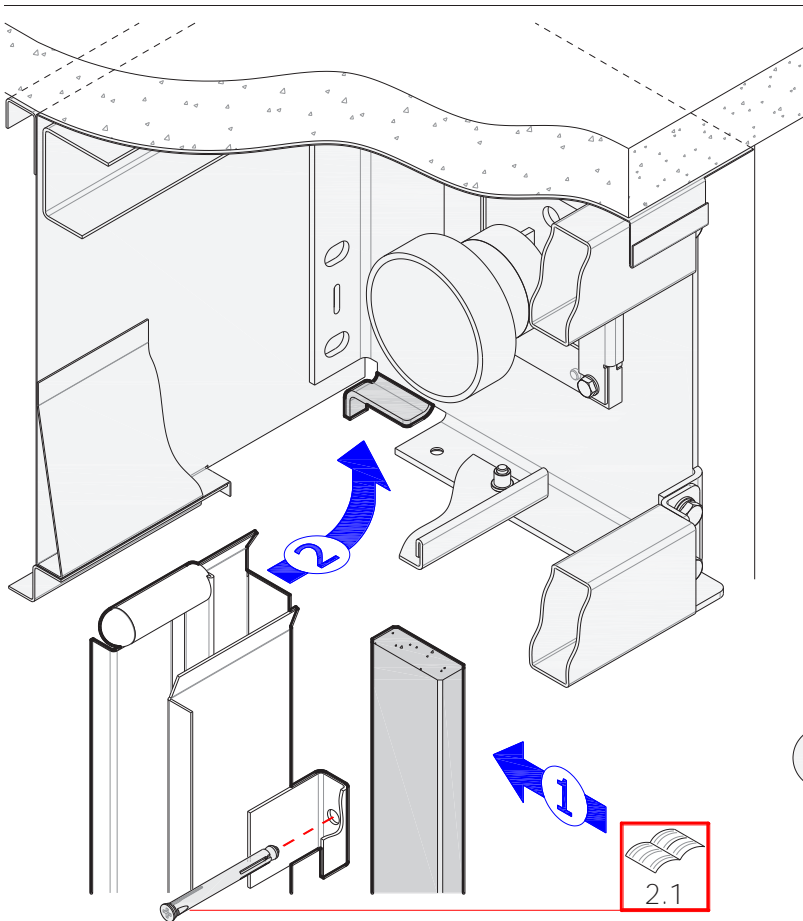
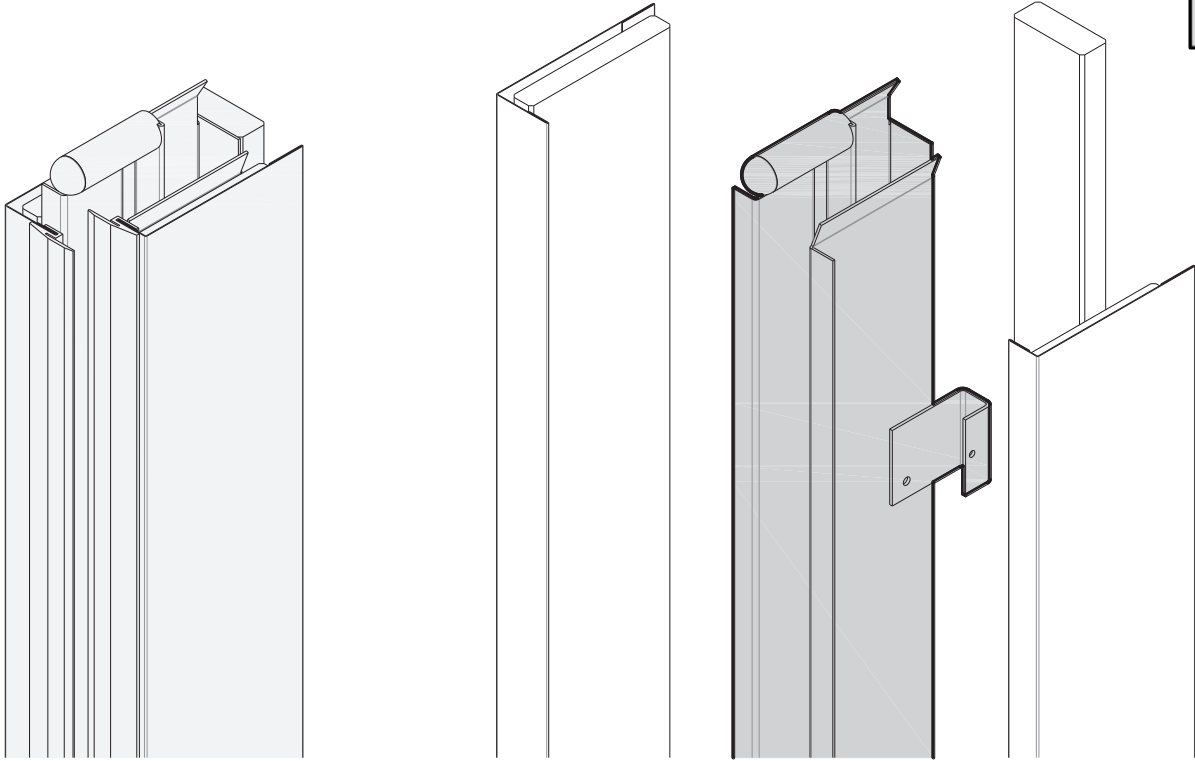


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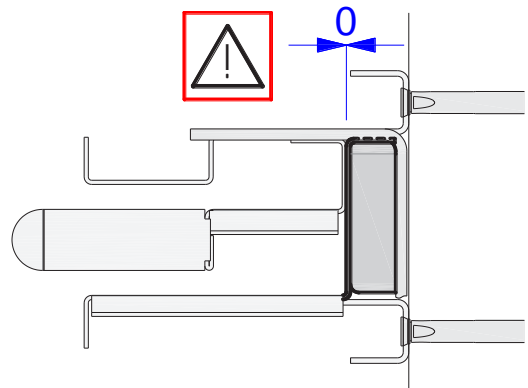
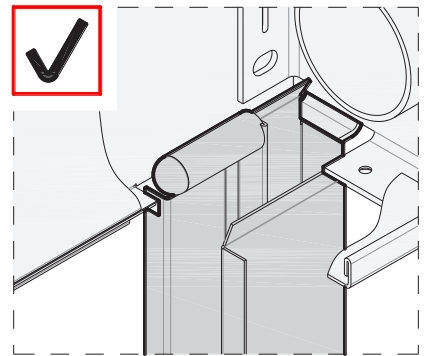




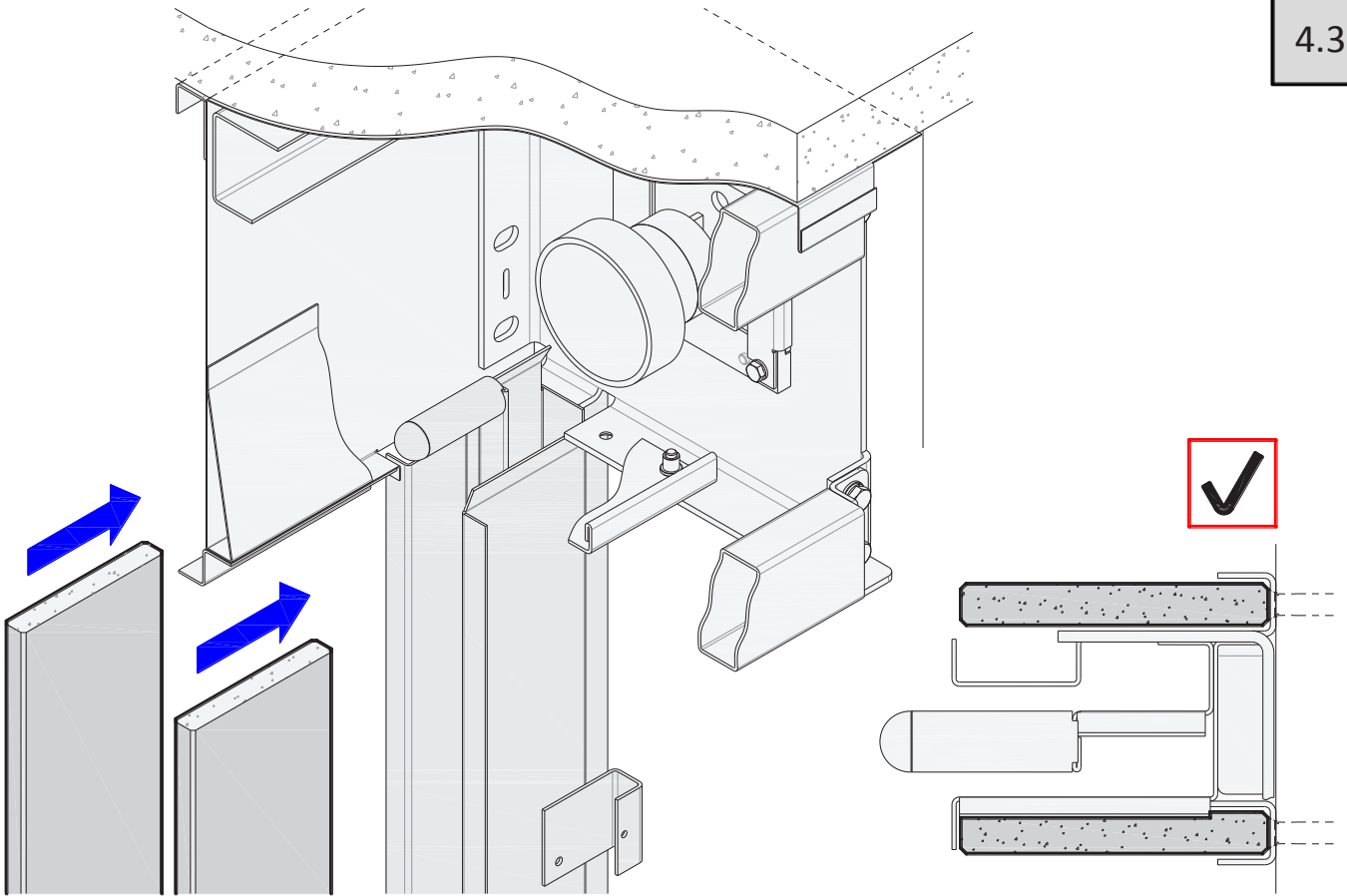
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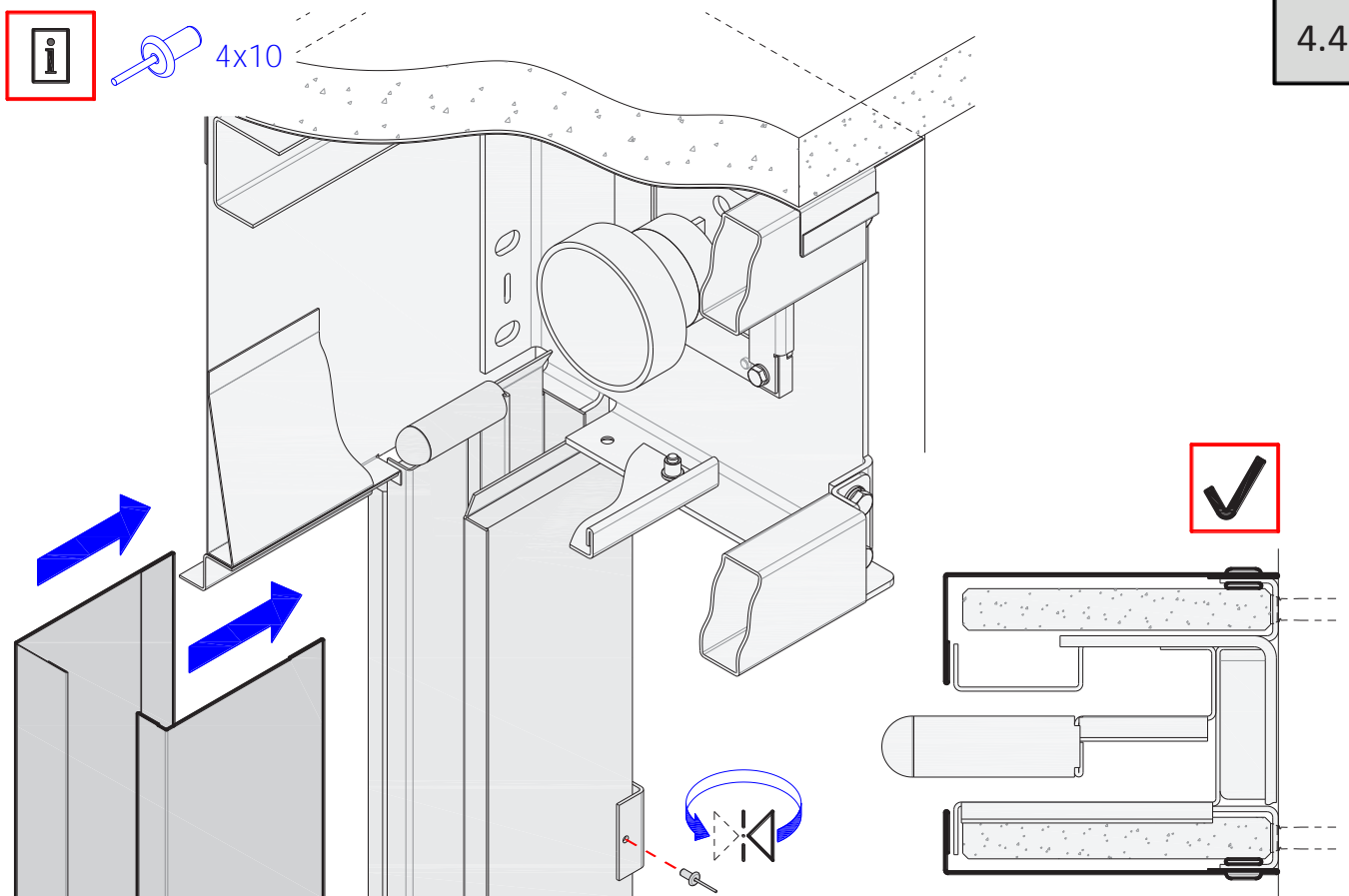
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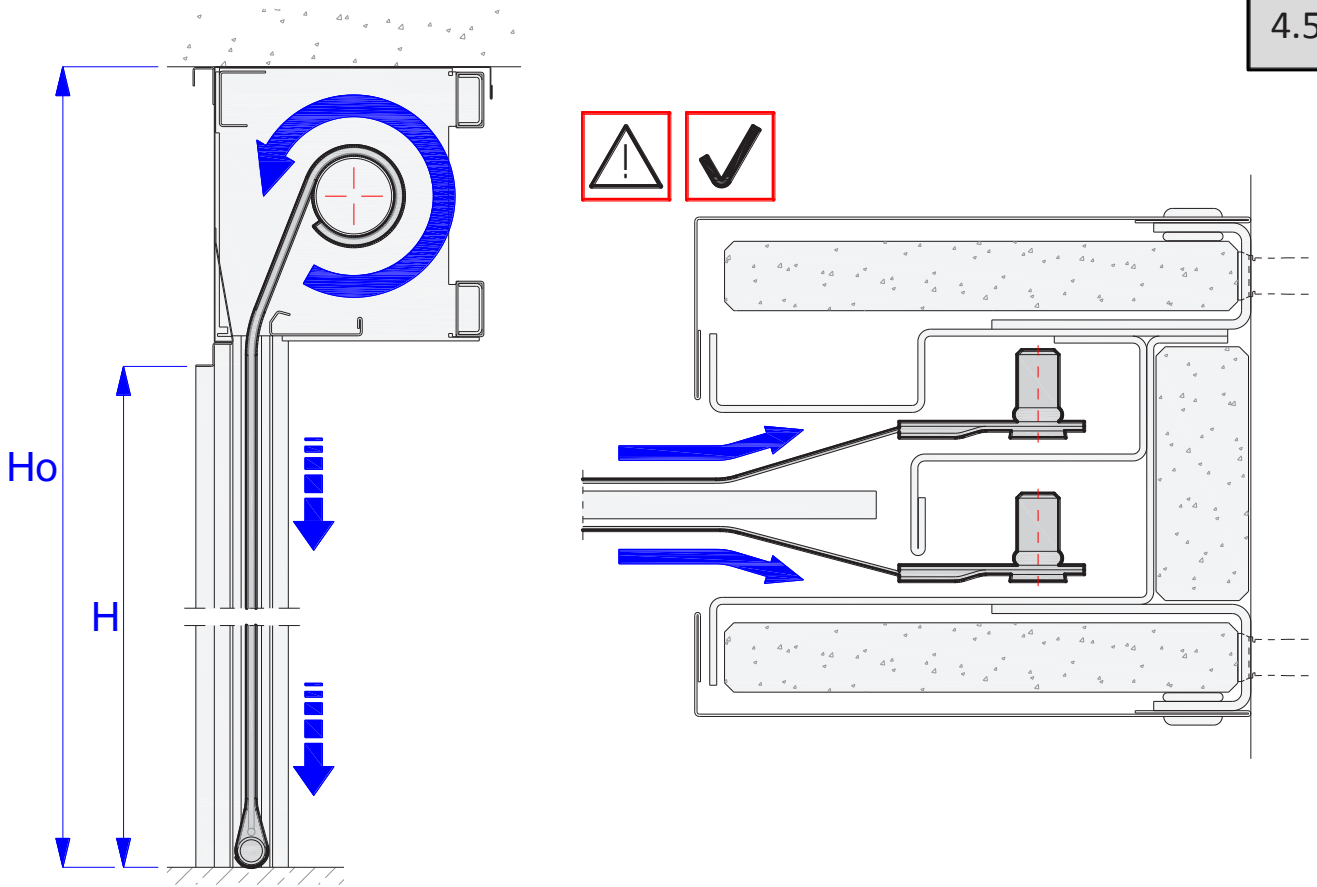
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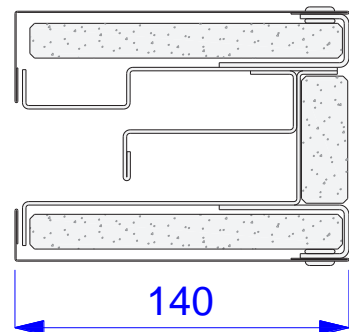
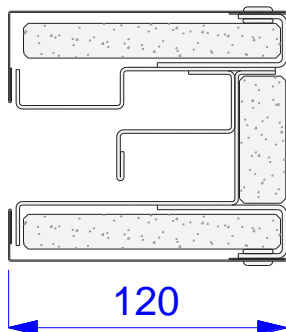
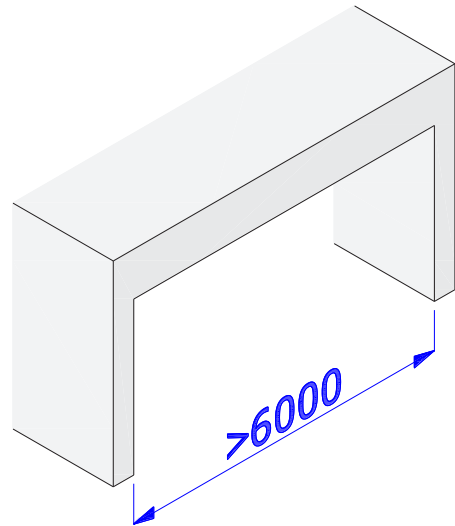
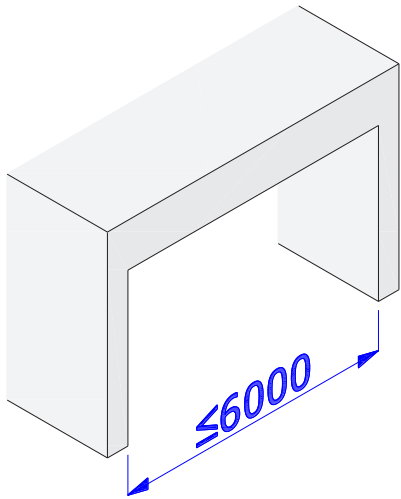
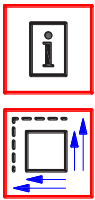
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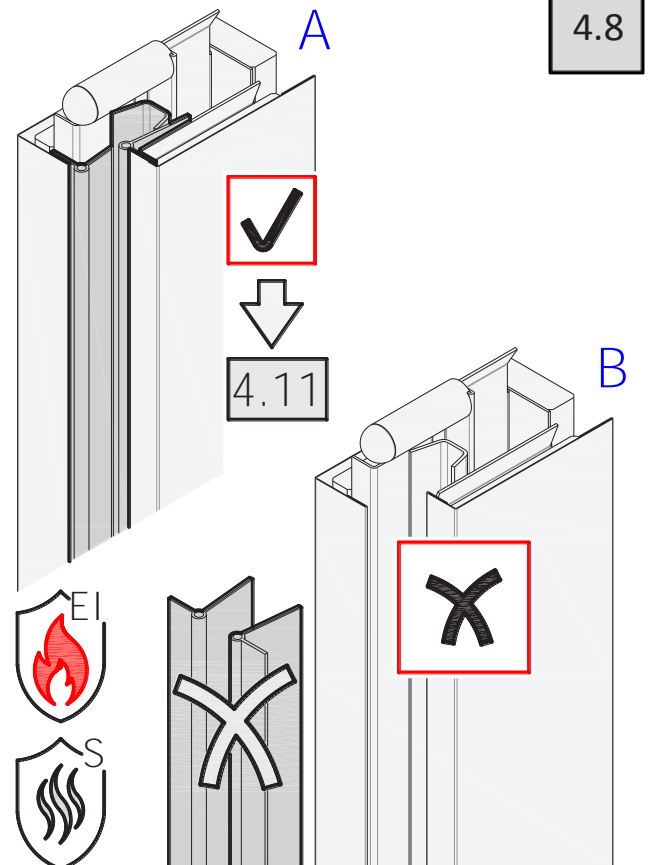
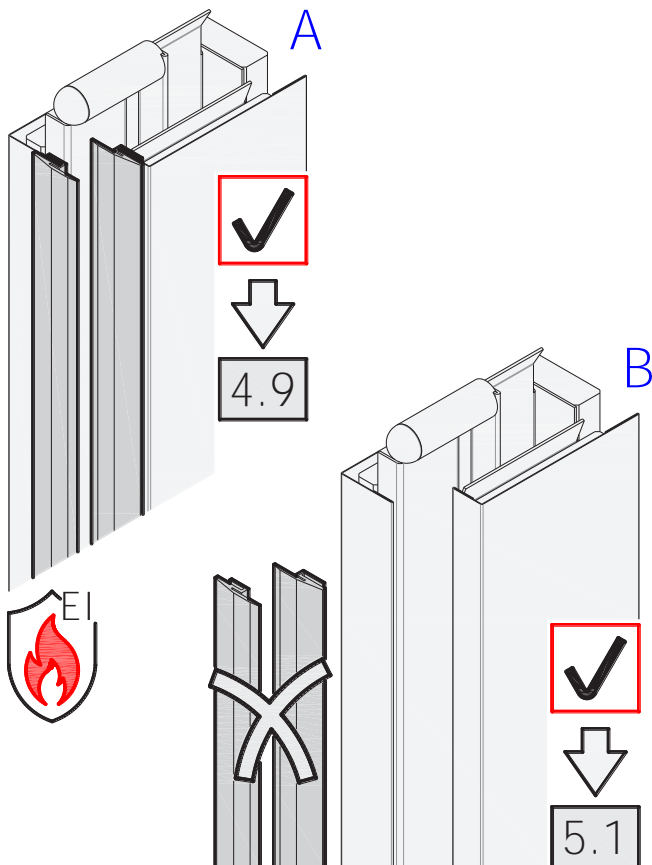
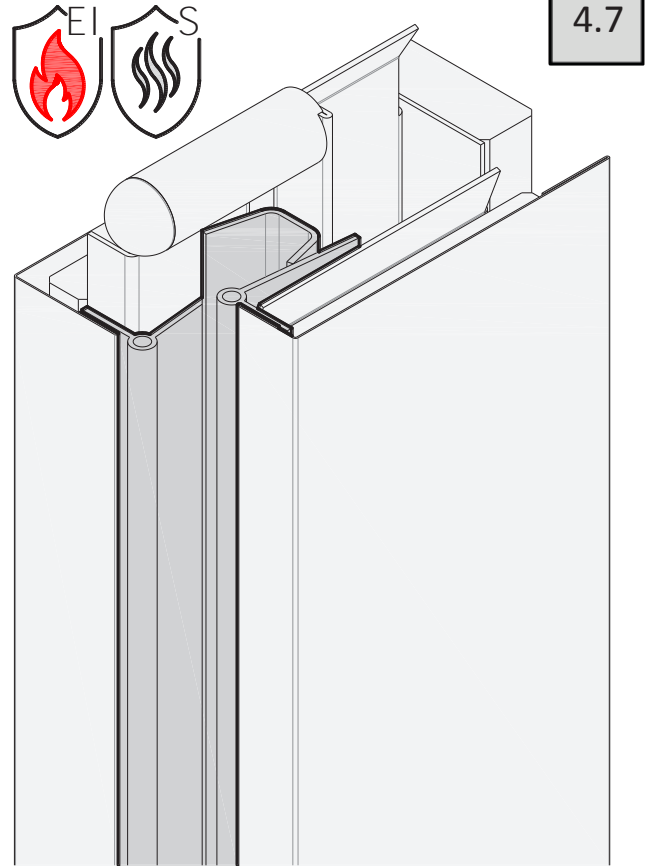
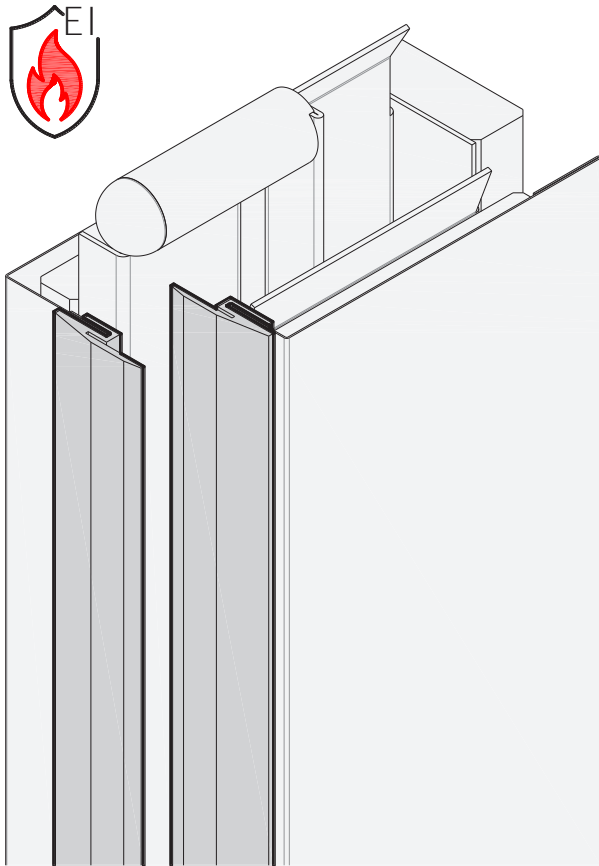


4.5

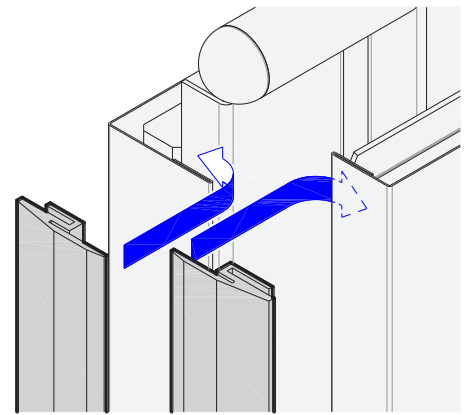
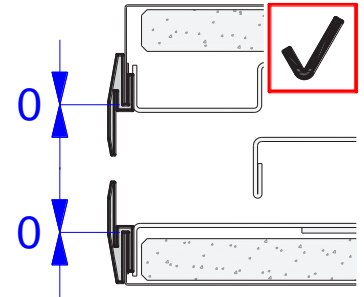
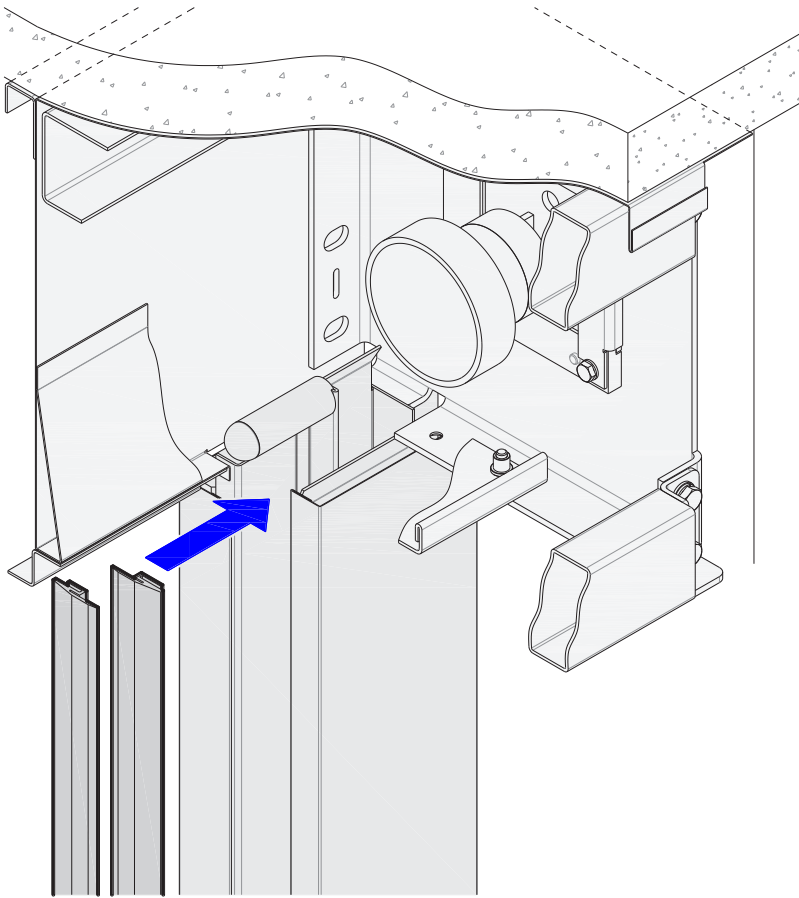


4.6



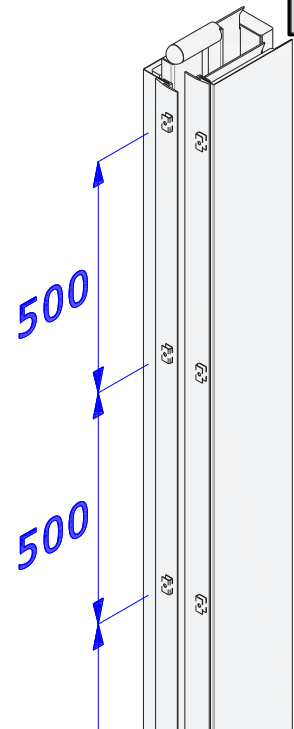
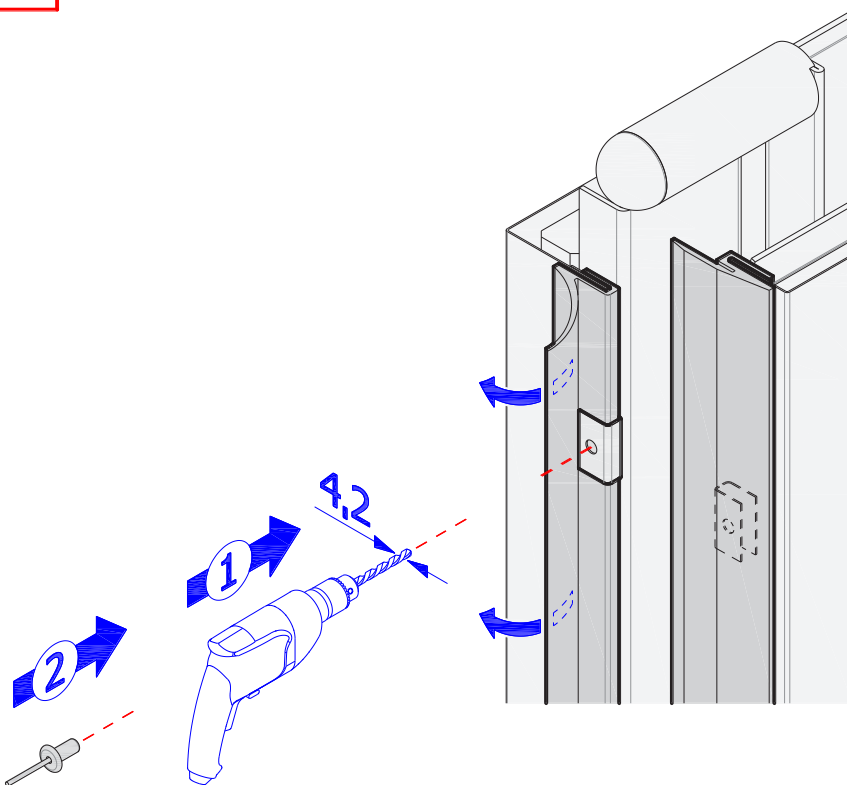


4.9



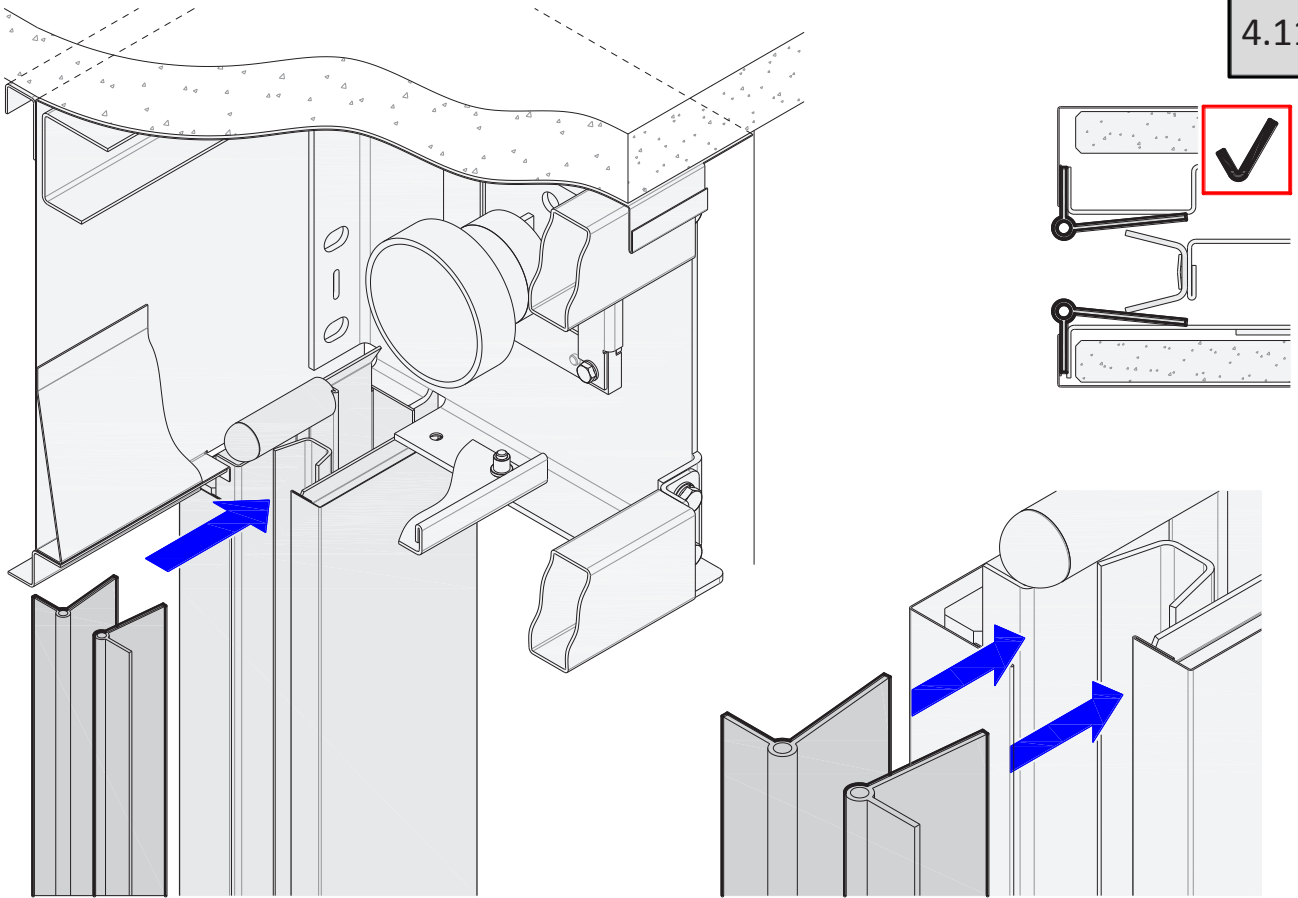
4x10

4.10



5.1

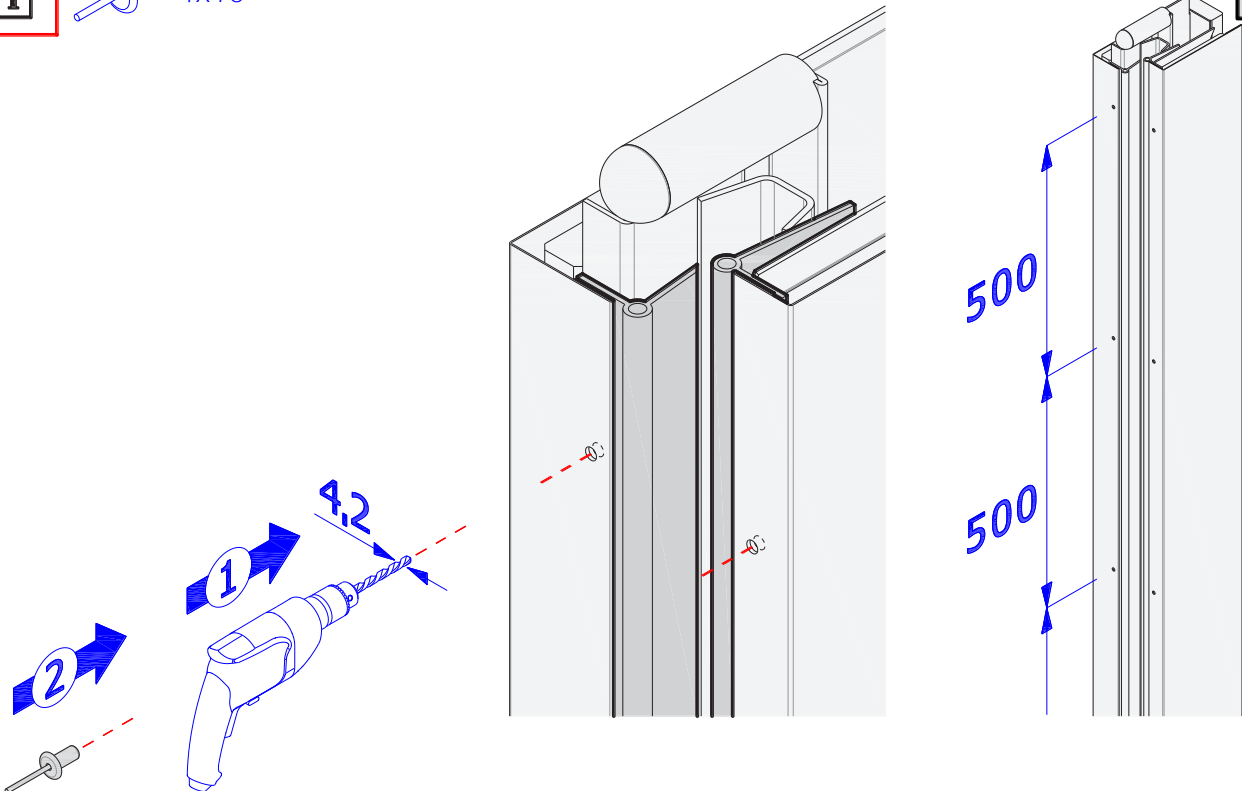
4.11



i

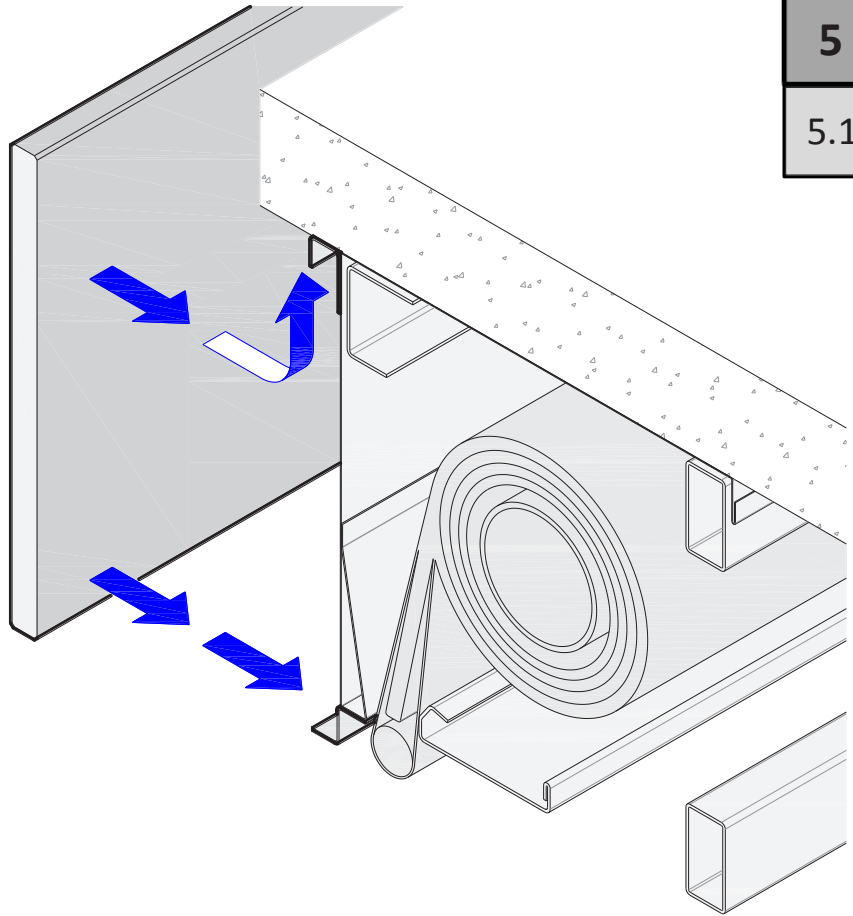
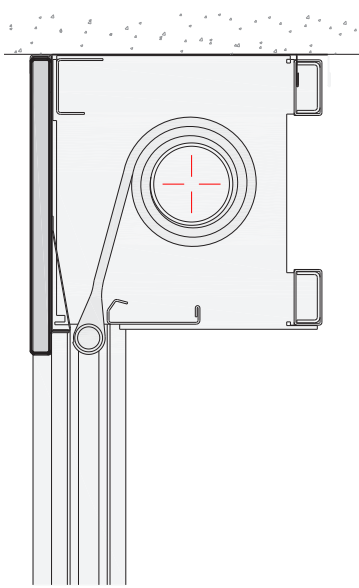
4x10

4.12



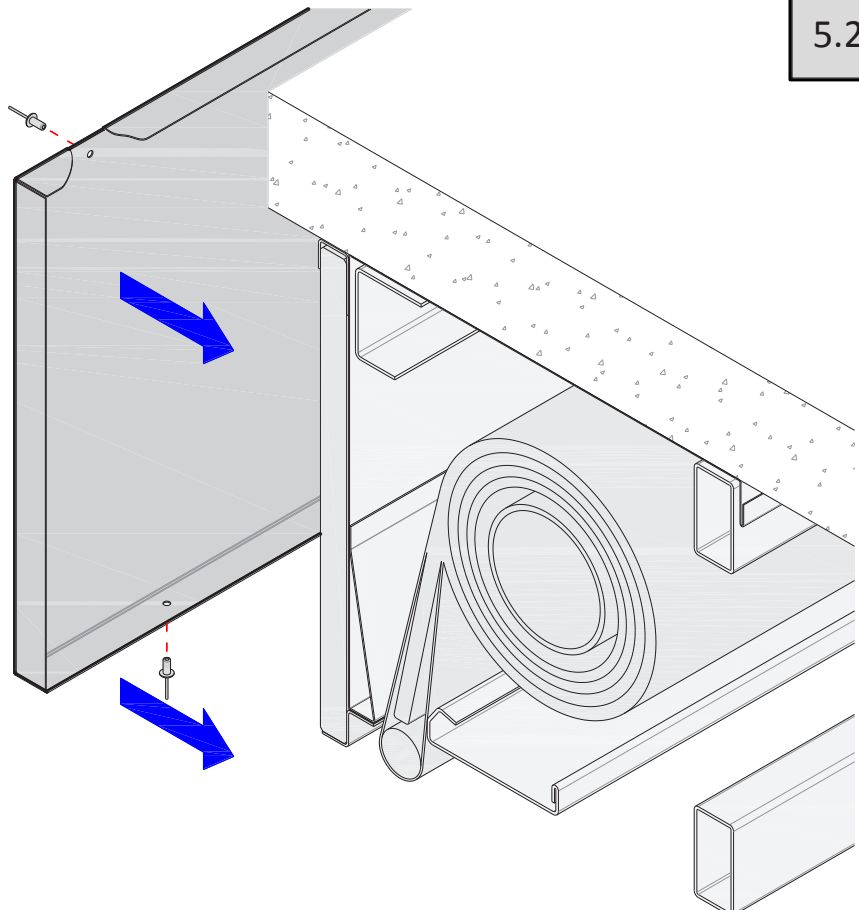
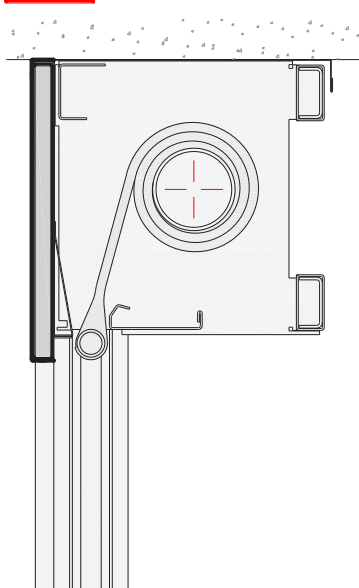
5

5.1



4x10

5.2





M5x12

