

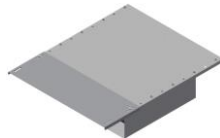
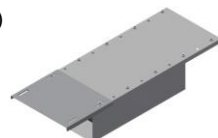







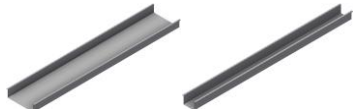

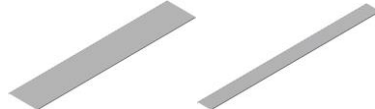

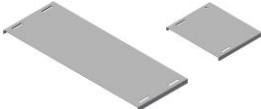













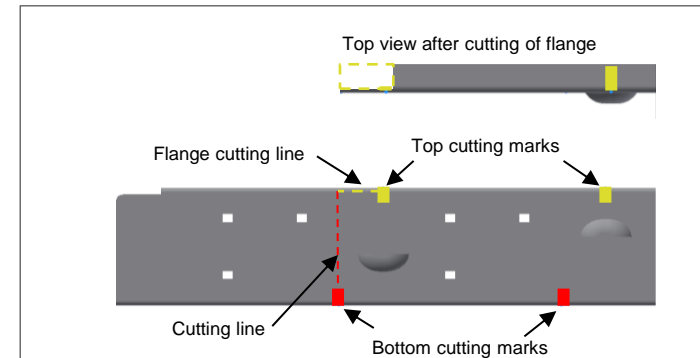
<p><b>INTENDED USE: STRAIGHT TRAY – OVERVIEW</b></p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p><b>[450]</b></p>  <p>Support distance <b>independent parts*</b> (Inner tray and top fire protection)</p> </div> <div style="text-align: center;"> <p><b>[150]</b></p>  </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;"> <p><b>[450]</b></p>  <p>Support distance <b>dependent parts*</b> (Outer covers and bottom fire protection)</p> </div> <div style="text-align: center;"> <p><b>[150]</b></p>  </div> </div> <p style="text-align: center; margin-top: 10px;">*Details see page 2 "Cutting guideline"</p>		<p><b>PARTS USED</b></p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Pan head screw 2x 90058 [Supplied with support brackets]* *See support or fixation on structural steel user guide</p> </div> <div style="text-align: center;">  <p>Locking bolt set 2x* 1371981 *every 120 mm</p> </div> </div> <p><b>ADDITIONAL PARTS USED FOR VERTICAL INSTALLATION</b></p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Pan head screw 2x* 125120 *every 750 mm</p> </div> <div style="text-align: center;">  <p>Angle bracket 1x* 125863 *per section / n.a.</p> </div> <div style="text-align: center;">  <p>Self-drill screw 8x 125626</p> </div> <div style="text-align: center;">  <p>Washer 8x 1372782</p> </div> </div>	
<p><b>PARTS USED</b></p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;">  <p>Inner cable tray 1x 125500 / 125540</p>  <p>Bottom outer cover 1x 125499 / 125542</p> </div> <div style="width: 45%;">  <p>Inner cover 1x 125501 / 125541</p>  <p>Top outer cover 1x 125498 / 125543</p> </div> </div>		<p><b>PARTS USED</b></p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 45%;">  <p>Fire protection 2x 125508 / 125615</p>  <p>Cover splice 1x 125613 / 125544</p> </div> <div style="width: 45%;"> <p><b>SITUATIONAL PARTS</b></p>  <p><b>[450 only] for support distance <math>\geq 2m</math></b> Cover clamp 1x 125620 + 1x 125621</p> </div> </div>	
<p><b>Splice connector KIT [450: 125933]</b></p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Splice connector (A+B) 1x 125596 + 1x 125597</p> </div> <div style="text-align: center;">  <p>Cover splice 1x 125614</p> </div> <div style="text-align: center;">  <p>High neck bolts 12x 90055</p> </div> <div style="text-align: center;">  <p>Locking nuts 6x1371971</p> </div> <div style="text-align: center;">  <p>Hexagon nut nylock 6x 77521</p> </div> </div>		<p><b>Splice connector KIT [150: 125934]</b></p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Splice connector (A+B) 1x 125598 + 1x 125599</p> </div> <div style="text-align: center;">  <p>Cover splice 1x 125545</p> </div> <div style="text-align: center;">  <p>High neck bolts 8x 90055</p> </div> <div style="text-align: center;">  <p>Locking nuts 4x1371971</p> </div> <div style="text-align: center;">  <p>Hexagon nut nylock 4x 77521</p> </div> </div>	

## CUTTING INNER TRAY

*Note: Cable tray system is qualified according to IEC 61537 load test type II*

Support distance independent. Cutting steps of inner tray are 150mm. Cutting marks are available on the inner tray bottom (marked in red).

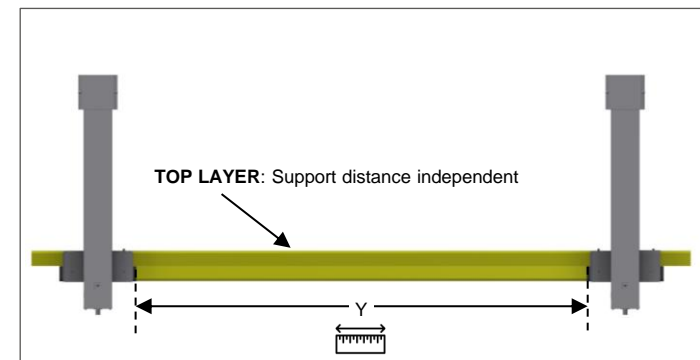
If the remaining inner tray is re-used, remove the top flange until the top flange cutting mark (marked in yellow).



## CUTTING FIRE PROTECTION

**TOP LAYER:** Support distance independent. It's allowed to use bottom layer cuts (>100mm) as the top layer. Ensure no gaps bigger than 4mm appear between adjacent fire protection material parts. For easier installation, the layer can be cut in pieces (not <1m).

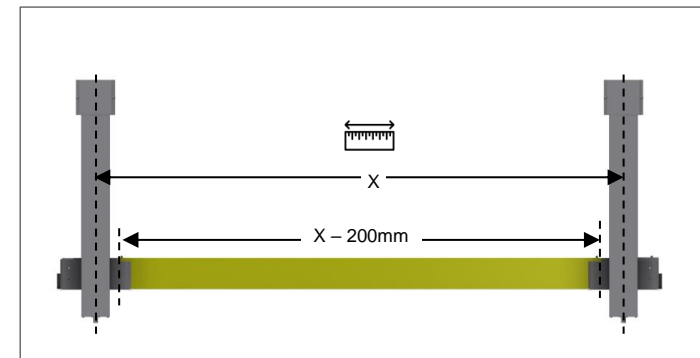
**BOTTOM LAYER:** Support distance dependent. Exact distance between fire protection layer (Y) of the installed support brackets. Ensure no gaps bigger than 4mm appear between adjacent fire protection material parts. For easier installation, the layer can be cut in pieces (not <1m).



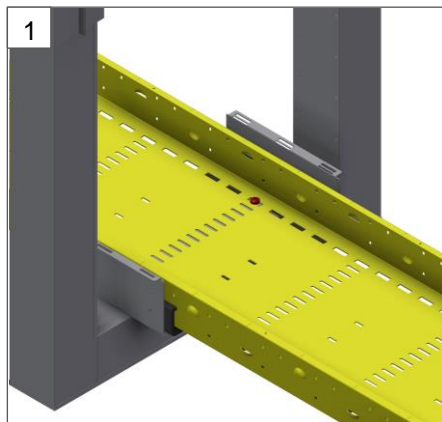
## CUTTING OUTER COVERS

**TOP OUTER COVER:** Support distance dependent. Equals to distance between supports (X on the picture)

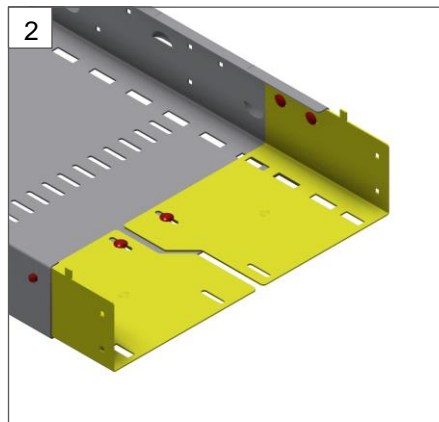
**BOTTOM OUTER COVER:** Support distance dependent. Distance between supports minus 200mm, for example if support distance is 2400mm then the bottom outer cover should be 2400-200=2200mm.



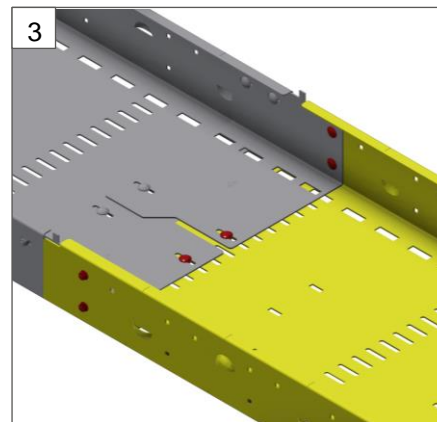
## INSTALLATION STEPS STRAIGHT RUN



1 Place cable tray [450: 125500; 150: 125540] in the support bracket tray and connect it to the interface bracket [450: 125519; 150: 125547] by using bolts 2x 90058 (Details see USER GUIDE Fixation on structural steel/support)



2 Connect splice connectors [450: 125596 and 125597] [150: 125598 and 125599] to one of the ends of the straight tray. Use high neck bolts [450: 6x 90055; 150: 4x 90055] and hexagon nut nylock [450: 6x 77521; 150: 4x 77521]. Assure the spikes of the splice connectors are displayed as shown in the picture.

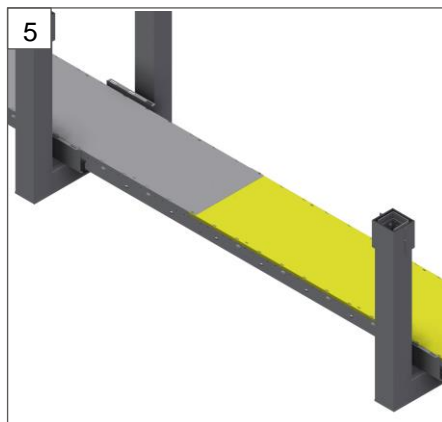


3 Connect the end of the next straight tray, that has no splice connectors to the tray's splice connectors. Use high neck bolts [450: 6x 90055; 150: 4x 90055] and lock nuts [450: 6x 1371971; 150: 4x 1371971] in the holes with nuts facing outwards.

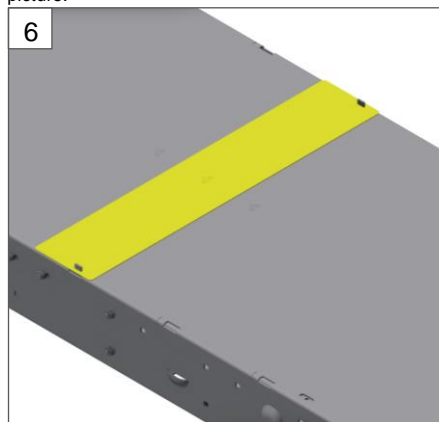


4 Proceed with the installation according to the GENERAL ASSEMBLY INFORMATION nb 2. and 3.

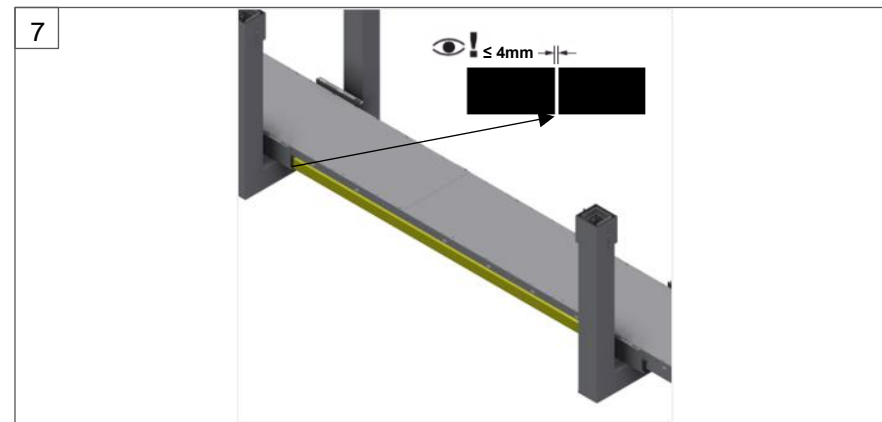
**RECOMMENDATION:** For [450 only]: Inner trays should not be spliced within the support bracket area.



5 Close the straight tray with an inner cover [450: 125501; 150: 125541]



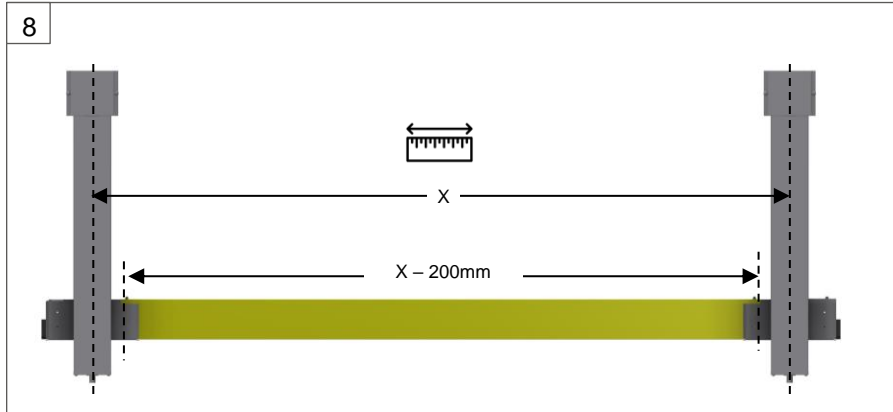
6 Place cover splice [450: 125614; 150: 125545] over the gap between the covers.



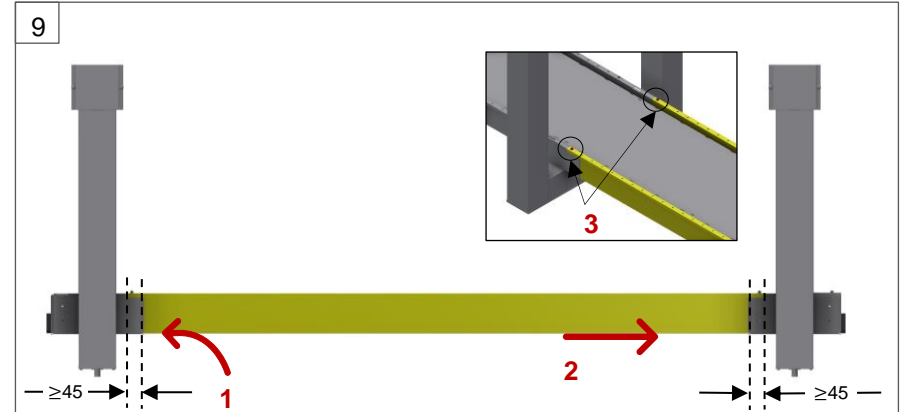
7 Measure distance between the bottom Fire Protection (FP) layers on the supports and cut bottom FP layer to measured length. For easier installation, the FP layer can be cut in pieces (not <1m). Hook the bottom FP material in place: [450: 125508; 150: 125615].

**ATTENTION:** It is safety-critical that no gaps bigger than 4mm appear between adjacent fire protection material parts in any installations.

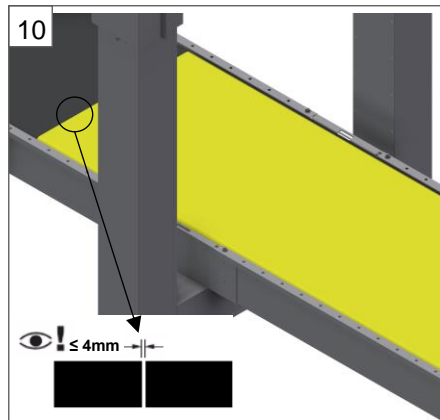
## INSTALLATION STEPS STRAIGHT RUN



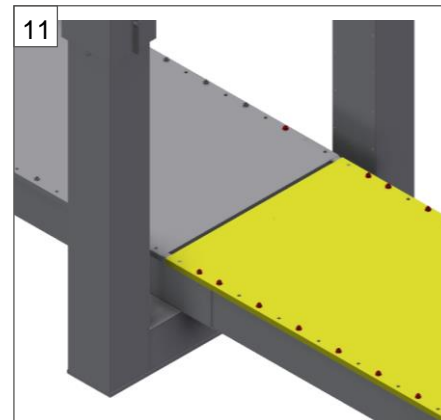
Measure distance from the middle of the support bracket to the middle of the next support bracket and cut bottom and top outer covers [450: 125499 + 125498; 150: 125542 + 125543] according to the provided cutting step list (page 1). Always choose the next bigger support span.



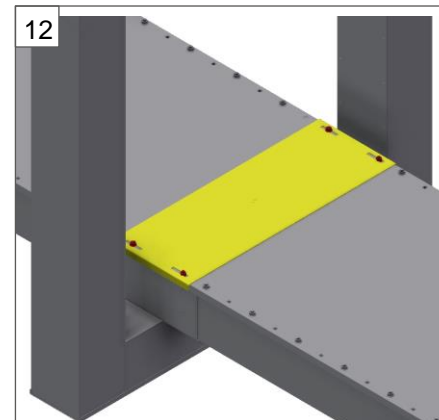
Install the bottom outer cover [450: 125499; 150: 125542] by sliding one end into a support bracket (step 1) and then sliding it slightly backwards to get into the second support bracket (step 2). Ensure minimum overlap of bottom outer cover with both support bracket ends is 45mm. For temporary fixation fasten the bottom outer cover to the support bracket by locking bolt set 1371981, 2 on each side (step 3).



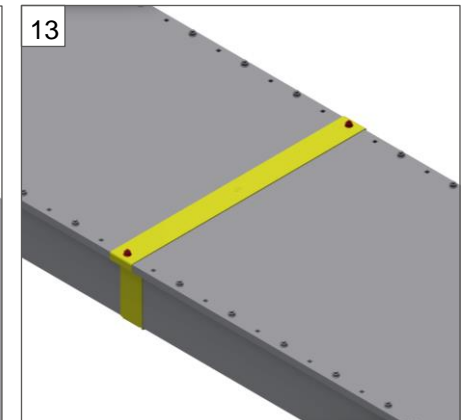
Hook the top fire protection material in place: [450: 125508; 150: 125615]. To have easier installation the fire protection layer can be also cut in pieces not smaller than 1m.  
**ATTENTION:** It is safety-critical that no gaps bigger than 4mm appear between adjacent fire protection material parts in any installations.



Unscrew temporary locking bolt set and install the top outer cover [450: 125498] [150: 125543] and secure with locking bolt set 1371981. Every 2<sup>nd</sup> hole needs to be secured with bolt set. Nuts facing on top.

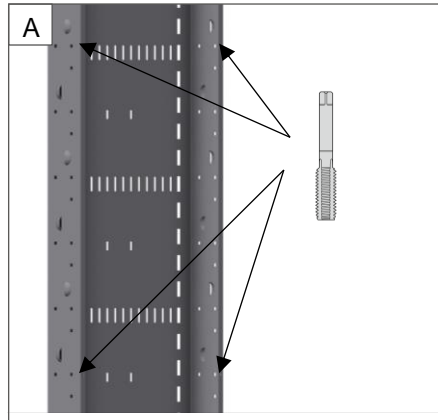


Place cover splice [450: 125613; 150: 125544] over the gap between the outer top covers.



For support distance bigger than 2m and for 450 tray only place cover clamp 125620 and 125621 around installed straight tray. Fasten it with locking bolt set in the middle of the total span. The additional clamp will protect outer cover to bend in case of fire.

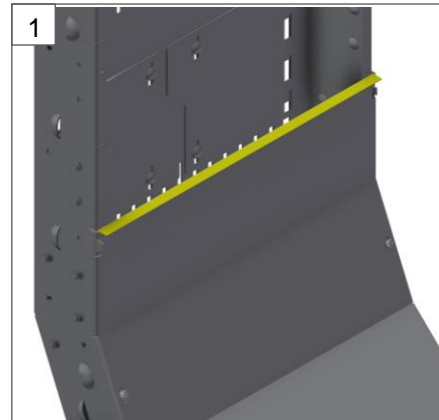
## EXTRA PRE-ASSEMBLY STEPS – VERTICAL RUNS



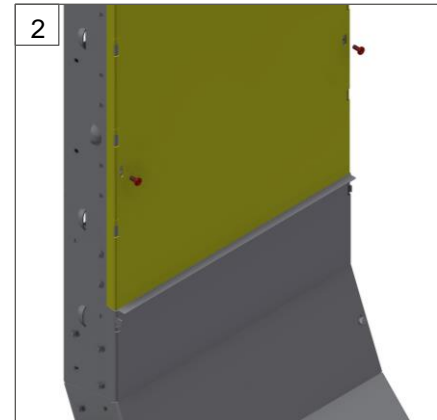
**General note:** There are additional steps required for vertical applications.

**Pre-assembly step:** Tap M6 threads into all 5mm holes on the flanges of inner cable tray [450: 125500; 150: 125540].

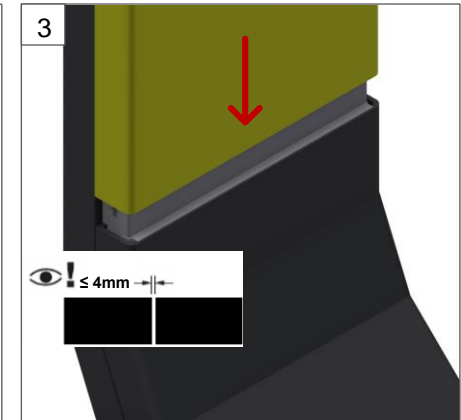
## EXTRA INSTALLATION STEPS - VERTICAL RUNS



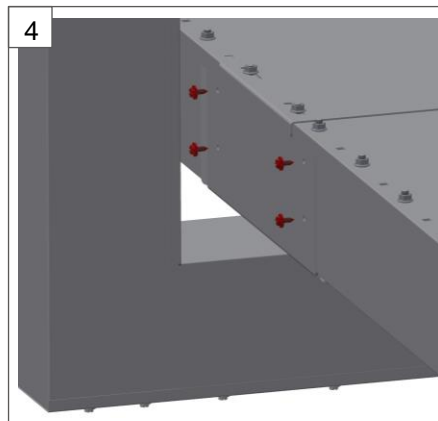
**For 450 only:** Slide angle bracket 125863 between cover of inner tray and inner tray until it rests on the cover. Always add angle bracket between every spliced area in vertical direction.



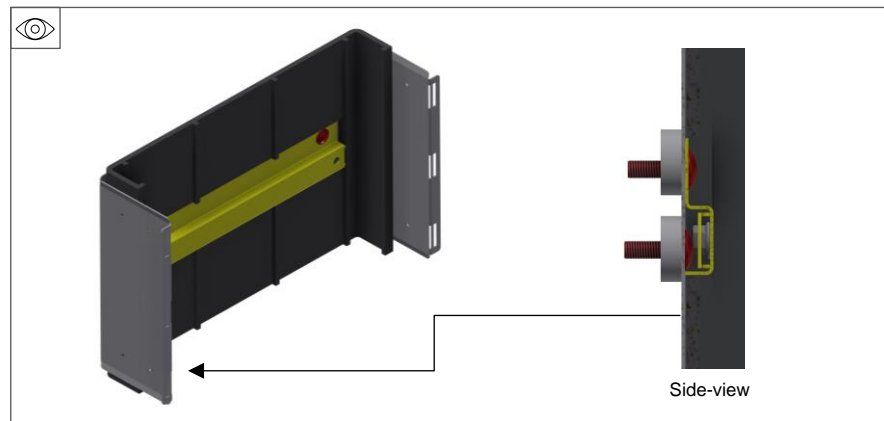
Close the straight tray with a cover [450: 125501; 150: 125541]. Secure the cover with pan head screws 125120 to all taped M6 holes from step A.



Hook the top fire protection material in place: [450: 125508; 150: 125615]. To have easier installation the fire protection layer can be also cut in pieces not smaller than 1m. The top fire protection layer shall rest on the angle bracket.



Drill Ø3.5mm holes through the 8 predrilled holes in the support bracket. Install 8x screws 125626 with washer 1372782 into the Ø3.5mm holes after the routing is completed.



**General rule of orientation of interface bracket for vertical installation:** Please ensure the right orientation of the interface bracket in vertical installation as shown in the picture above.

FIRESYS