

DANCOVER[®]



Manual
for
Steel Warehouse

Assembly Instructions

QUICK-BUILD WAREHOUSE



FROM THE MARKET LEADER!

Safety instructions, care and maintenance

Please read the assembly and safety instructions carefully! For your personal safety and to avoid damage to property, always observe these safety instructions whilst working.

We guarantee a perfect processing of materials used. Nevertheless, please check that all parts are present and that no transport or paint damage has occurred before assembly. Should you discover a fault, please contact your distributor immediately.

Individual elements such as trapezoidal sheets, frame profiles or doors are sometimes manufactured from different batches of steel. This can lead to colour differences and does not constitute grounds for complaint.

Please keep the documents in a safe place, they are an important part of the product and can be used for reference.

The warehouse is intended exclusively for the storage of goods. The storage of corrosive, hazardous and temperature sensitive goods is not permitted.

Any unauthorized usage or modification to the construction or damage resulting from such leads to the loss of any liability claim.

The assembly must be carried out by qualified personnel in order to ensure that it is correctly constructed.

Always wear personal protective clothing and equipment, such as cut-resistant gloves, helmet and safety shoes, to avoid accidents.

Please familiarize yourself with all parts and how they are to be handled before starting.

Mind your fingers, as there is a constant danger of squashing or cutting during the assembly.

In order not to damage wall and roof elements, they should not be trodden on, even for assembly purposes.

Always ensure that the walls are stable and support them, for example with wooden slats, to prevent them from tipping over.

The ground on which the warehouse is to be mounted must be level. It is essential that this is checked before starting assembly, as corrections in height are not possible during assembly.

No components may be omitted or modified to ensure that the static calculation remains valid.

A forklift truck or truck-mounted crane and mobile scaffolding are required for assembly, due to the warehouse height of up to 3.2m.

Should assembly be interrupted, the roof elements already in place must be screwed down and the ground anchors positioned.

Perform a regular visual inspection for structural changes, in particular for connecting elements such as pressure points; rivet, screw and plug connections. Rectify defects immediately.

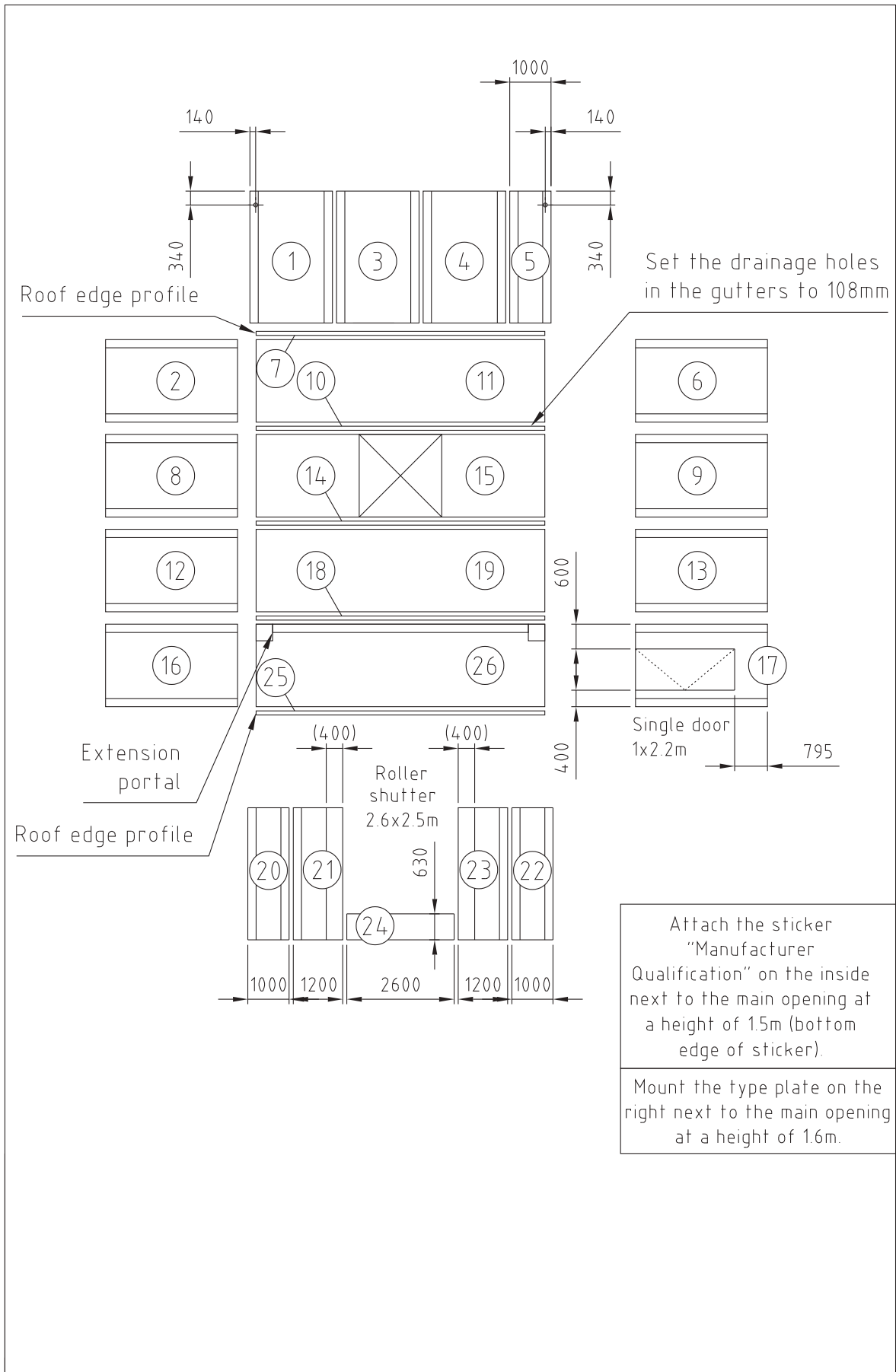
Clear the roof regularly of leaves, so that the zinc protective layer is not damaged and the drainage system does not get blocked.

Only original spare parts from the manufacturer should be used.

The roller shutter must be serviced and maintained according to the manufacturer's instructions.

We reserve the right to change the safety instructions and the assembly instructions.

Placement plan example



On the left is an example of a placement plan.

Details of your building project can be found in the title block. If you have any questions about the structure, please quote the six digit number in the title block given after the warehouse description.

The position numbers in the placement plan represent the sequence of the elements to be assembled. These numbers can be found as stickers on the individual elements. The Quick-build Warehouse is assembled from the back to the front. Please do not change the sequence of numbers, as not all elements are interchangeable.

The number and position of the extension portals are to be found in the placement plan. Note the assembly position of the extension portal and do not change it.

The position numbers between the roof elements (Pos. 10, 14 and 18) represent the rain gutters and at the same time the static elements,

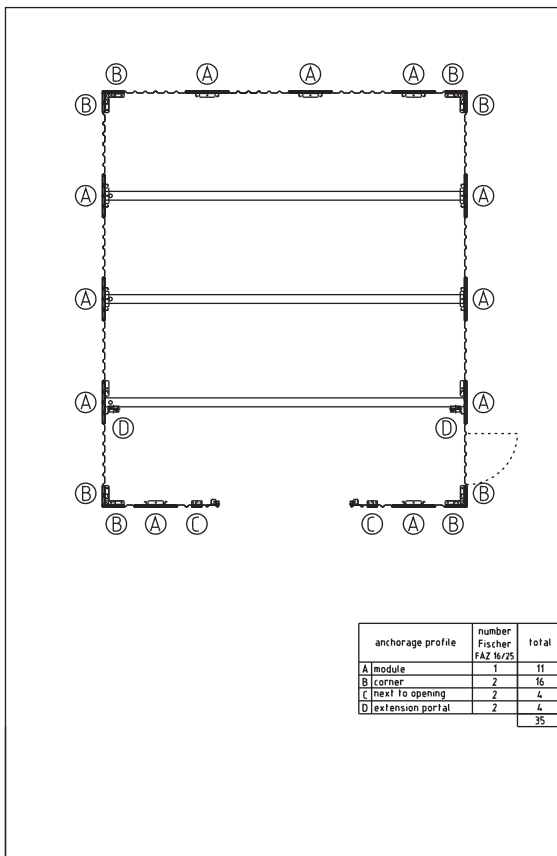
which absorb the loads from the roof elements and transfer them over the walls into the ground.

The drainage of all gutters is led through the back wall on one side. Therefore, make sure during assembly that the drainage outlets of the rain gutters are always on the same side. If the roof area >100 m², additional lateral drainage is necessary, which can be seen in your placement plan.

A roof edge profile must be mounted on the front and back wall. This profile is already pre-assembled, so that it simply has to be hung over the front or back wall and fastened. Please follow the given assembly sequence in this case as well.

Inside on the left of the main opening (Pos. 23) is a manufacture qualification sticker. This contains all necessary information needed should there be any questions at a later date or for example, an extension be planned, such as the address of the distributor, the size and order number of the Quick-build warehouse etc.

An example of an anchorage plan



Here is an example of an anchorage plan for dowel fastening.

The letters in the plan indicate where the anchorage plates have to be located. The table at the bottom right gives the number of dowels or ground bolts to be placed.

Mounting the back left corner

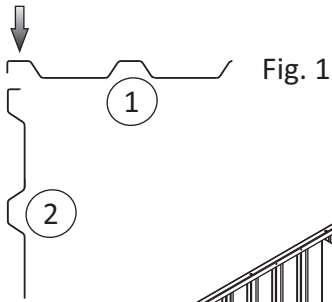
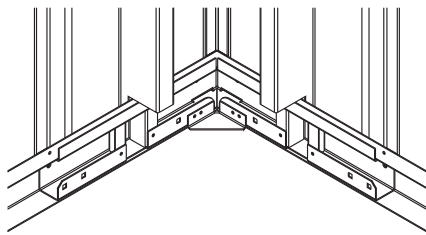
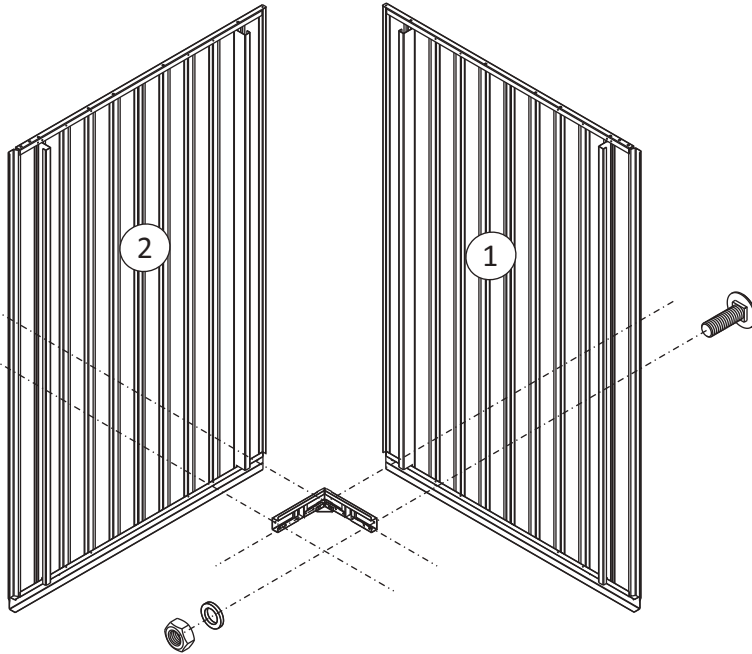


Fig. 1



Place the back wall (Pos.1) and the side wall (Pos.2) in an upright position. Then push the back wall over the side wall (Fig.1). Make sure that the slot-in profile of the back wall lies over that of the side wall (Fig.2). Screw both walls together in the upper corner using an $\varnothing 8 \times 19$ sheet screw (Fig.3). Insert the coupling profile corner at the bottom and fasten to the base frame using 4 M8x25 countersunk head screws, $\varnothing 8.4$ washers and M8 nuts.

The installation of the anchorage plates including fastening is only carried out once the complete warehouse is assembled.

The walls must be secured, as they are not yet fastened and may fall over.

The coupling profiles sit very tightly in the base frame due to the sealing material and are difficult to insert. Therefore, spray the profile with a little soapy water.

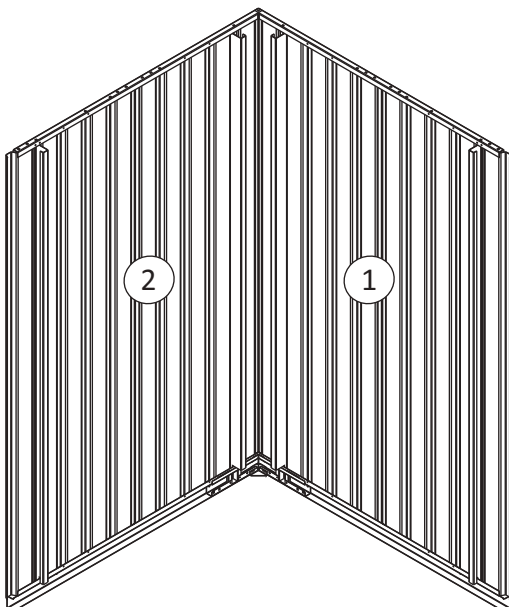


Fig. 2

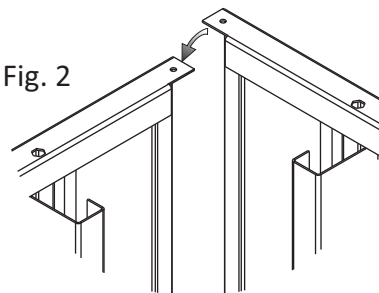
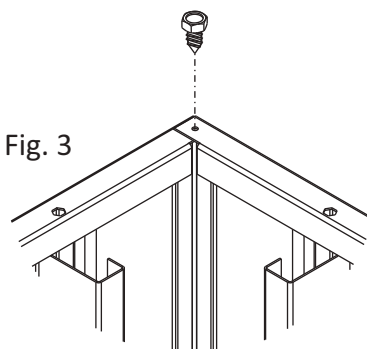


Fig. 3



Mounting a back wall module

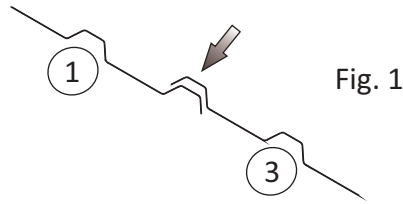


Fig. 1

Place the back wall (Pos.3) in an upright position and lay it over the wall element (Pos. 1) (Fig.1). Make sure that the base frames are tightly aligned (Fig.2).

Place the slot-in coupling profile on top and mount it to the wall from the inside using 4 $\varnothing 8 \times 19$ sheet screws (Fig.3 and 4).

Position the coupling profile of the module at the bottom and fasten to the base frame using 4 M8x25 countersunk bolts, $\varnothing 8.4$ washers and M8 nuts.

The coupling profiles sit very tightly in the base frame due to the sealing material and are difficult to insert. Therefore, spray the profile with a little soapy water.

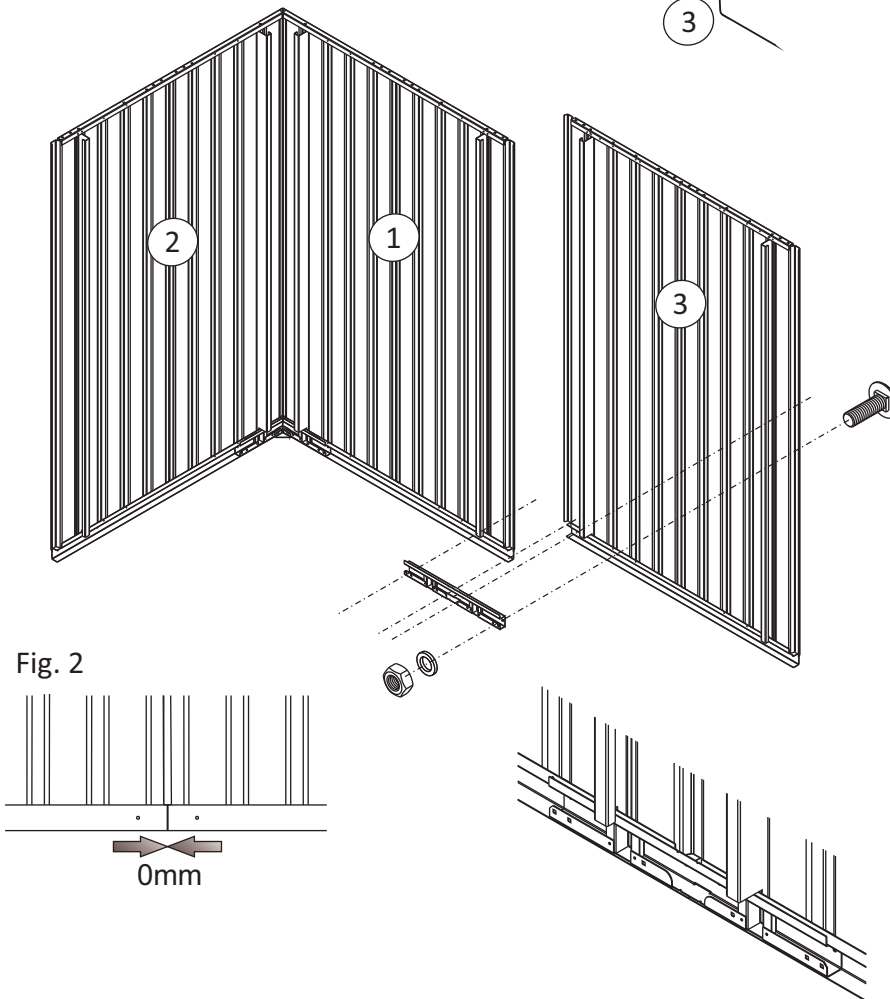


Fig. 2

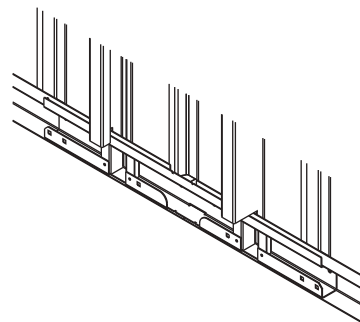


Fig. 3

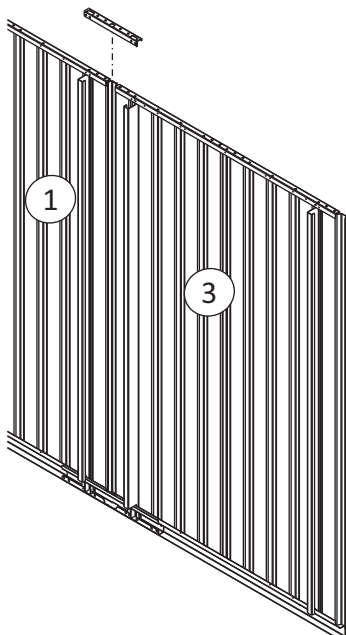
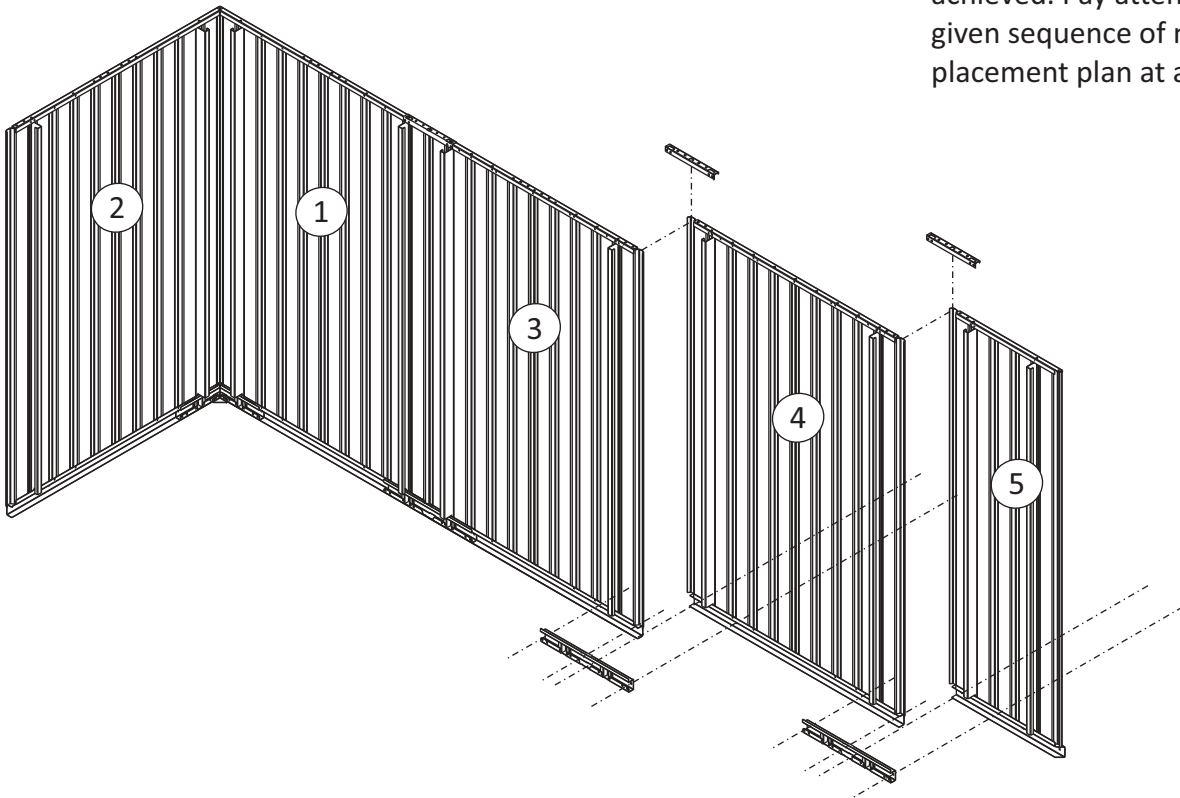


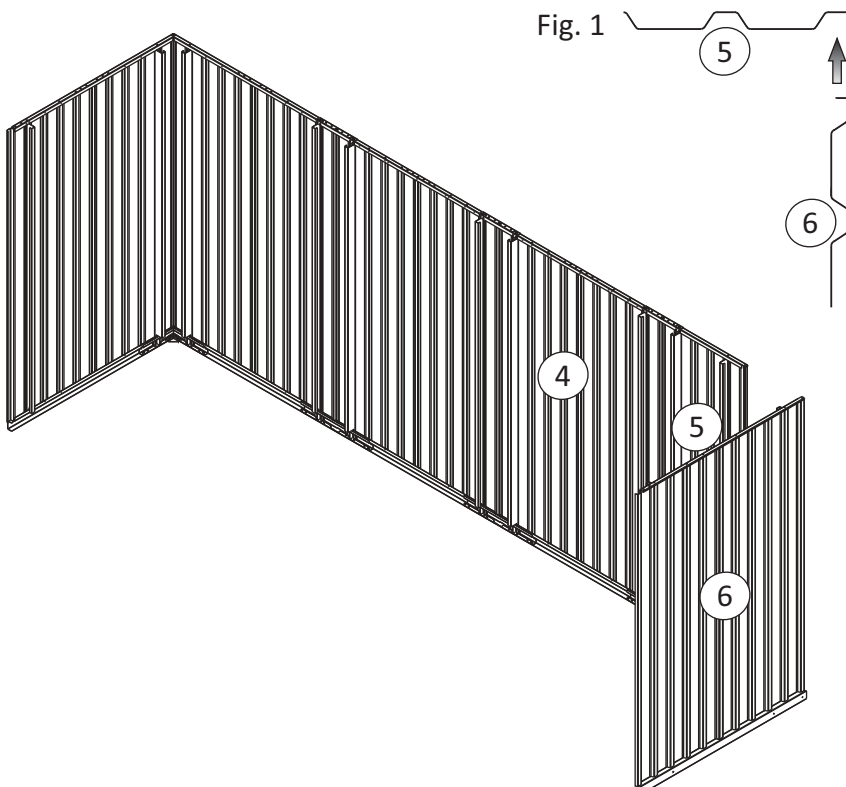
Fig. 4

Mounting the back wall

This step should be repeated until the required warehouse width is achieved. Pay attention to the given sequence of numbers in the placement plan at all times.



Mounting the back right corner



Place the side wall (Pos.6) in an upright position and push it into the back wall (Fig.1). Make sure that the trapezoidal sheet of the back wall lies over that of the side wall and that the slot-in coupling profile of the back wall lies over that of the side wall (Fig.2). Fasten both walls together with a $\varnothing 8 \times 19$ sheet screw in the top corner (Fig.3).

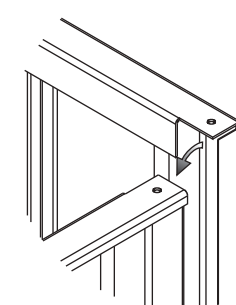


Fig. 2

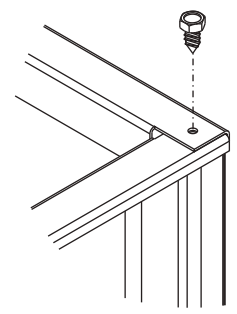
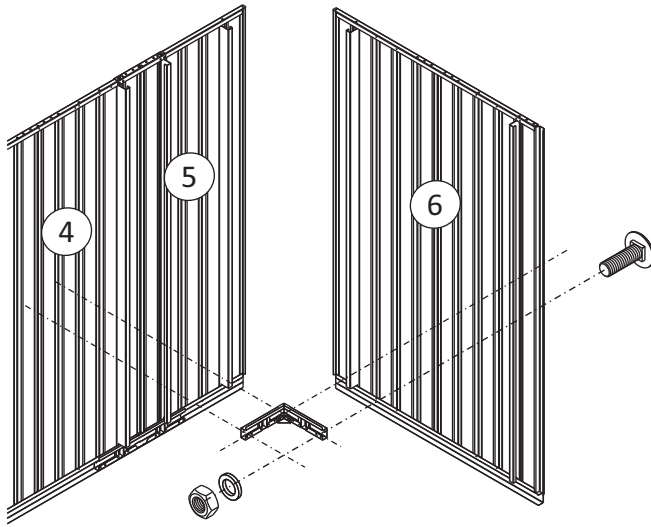


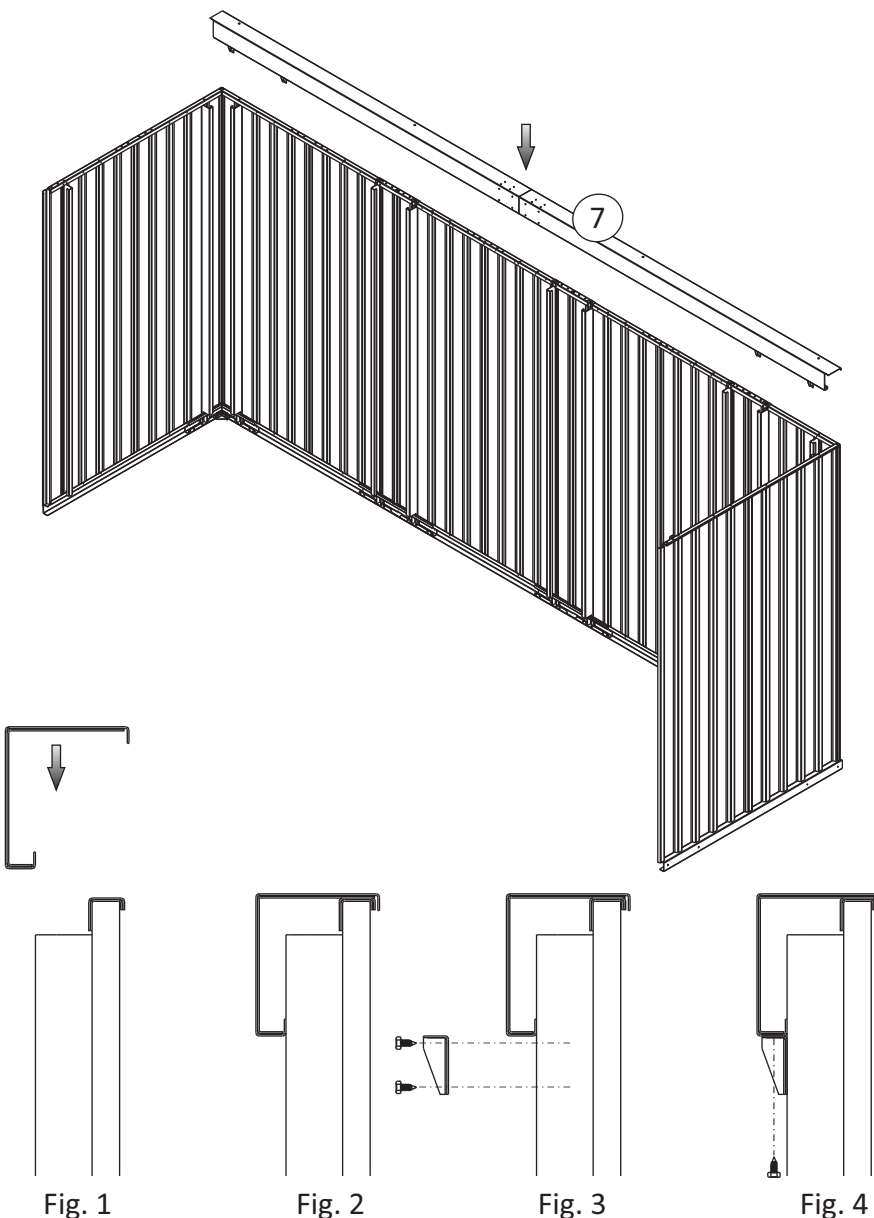
Fig. 3

Mounting the corner coupling profile



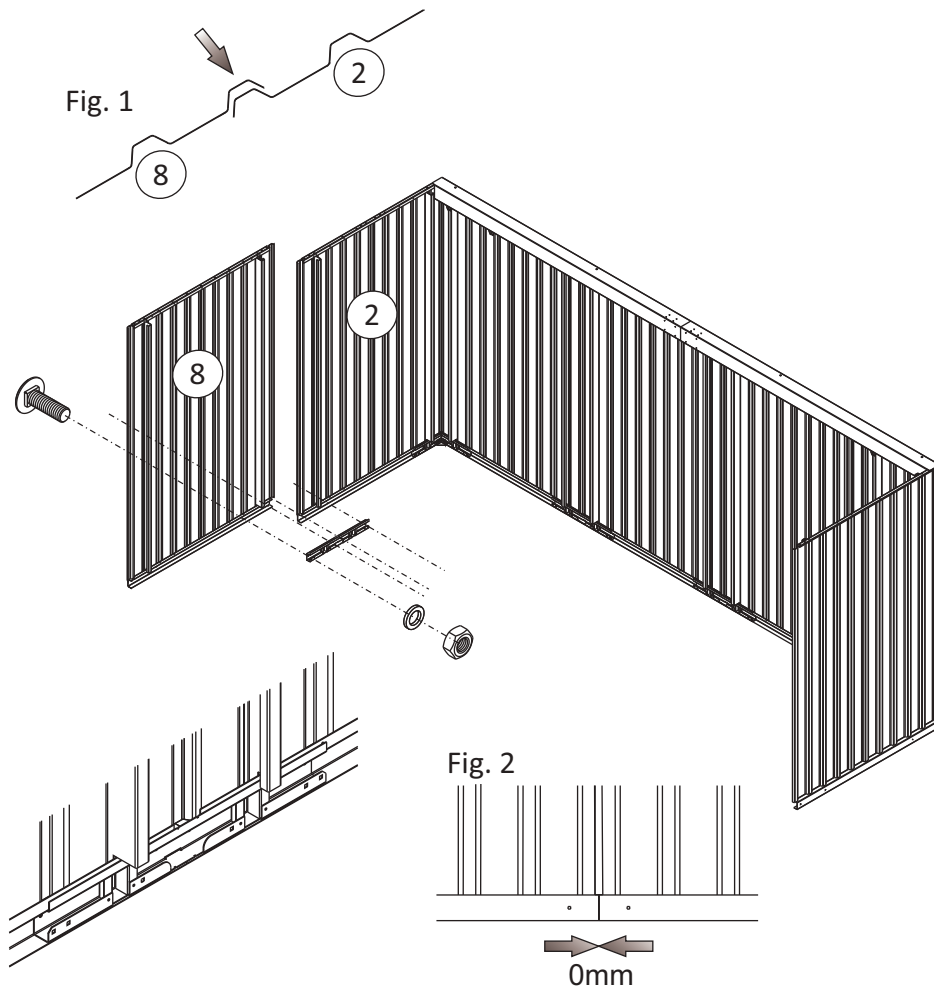
Position the corner coupling profile at the bottom and fasten to the base frame using 4 M8x25 countersunk bolts, $\varnothing 8.4$ washers and M8 nuts.

Mounting the roof edge profile




Place the roof edge profile (Pos.7) over the wall (Fig.1 and 2). Screw the four angled brackets at even distances to the wall supports (Fig.3) from the front using 2 $\varnothing 4.2 \times 16$ sheet screws per bracket. Then mount the angled brackets from underneath to the roof edge profile using one $\varnothing 4.8 \times 16$ drilling screw per bracket (Fig.4).

Mounting a left side wall module

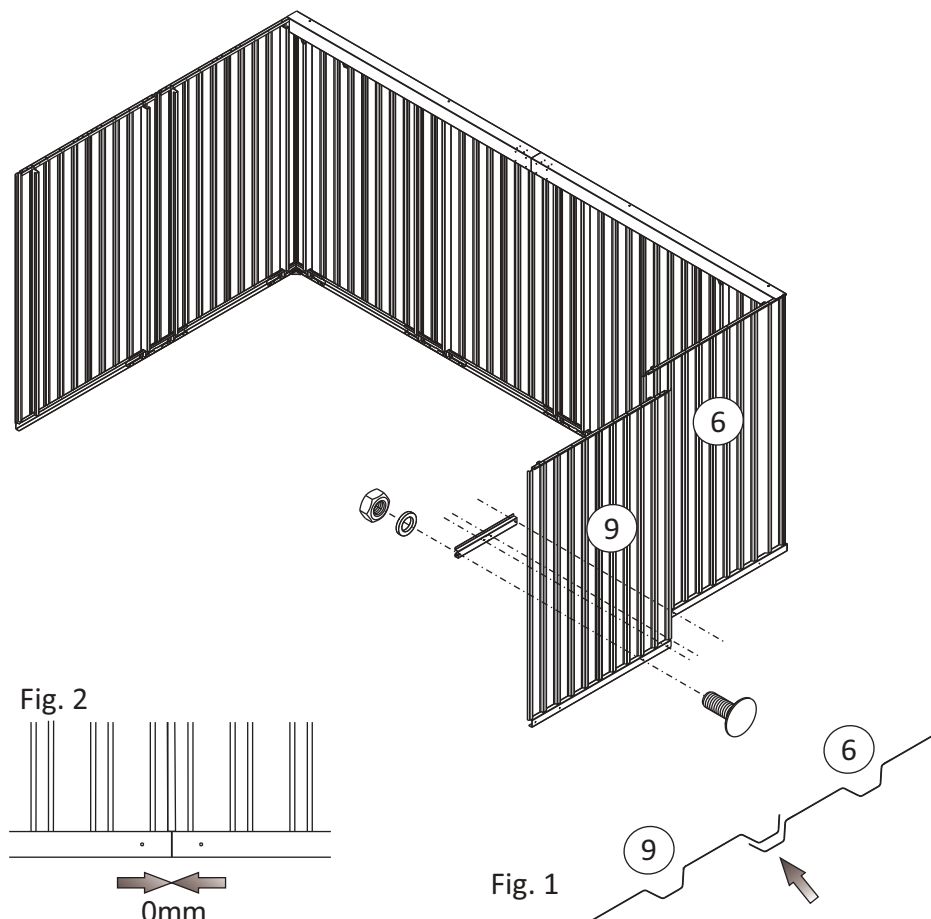


Place the side wall (Pos.8) in an upright position and lay it over the wall element (Pos. 2) (Fig.1). Make sure that the base frames are tightly aligned (Fig.2).


Position the coupling profile of the module at the bottom and fasten to the base frame using 4 M8x25 countersunk bolts, \varnothing 8.4 washers and M8 nuts.

 **The side wall must be secured, as it is not yet fastened and may fall over.**

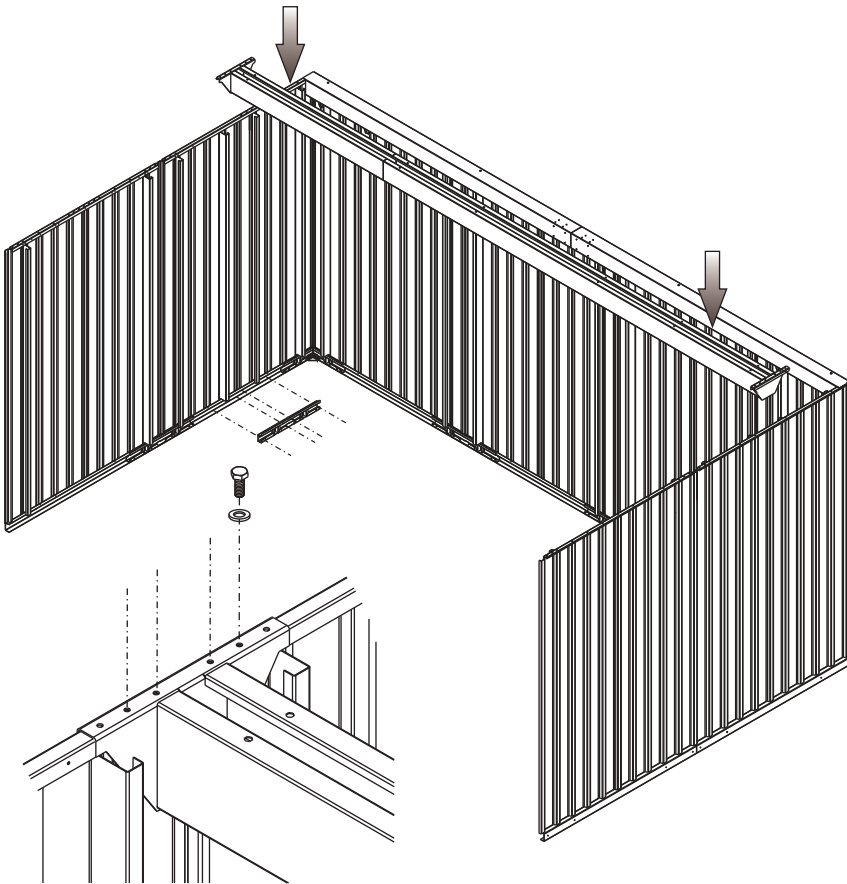
Mounting a right side wall module



Proceed in the same way with the side wall on the right. Place the side wall (Pos.9) in an upright position and lay it over the wall element (Pos. 6) (Fig.1). Here too, ensure that the base frames are tightly aligned (Fig.2). Position the coupling profile of the module at the bottom and fasten to the base frame using 4 M8x25 countersunk bolts, \varnothing 8.4 washers and M8 nuts.

 **The side wall must be secured, as it is not yet fastened and may fall over.**

Mounting the gutter for increased snow load (optional)

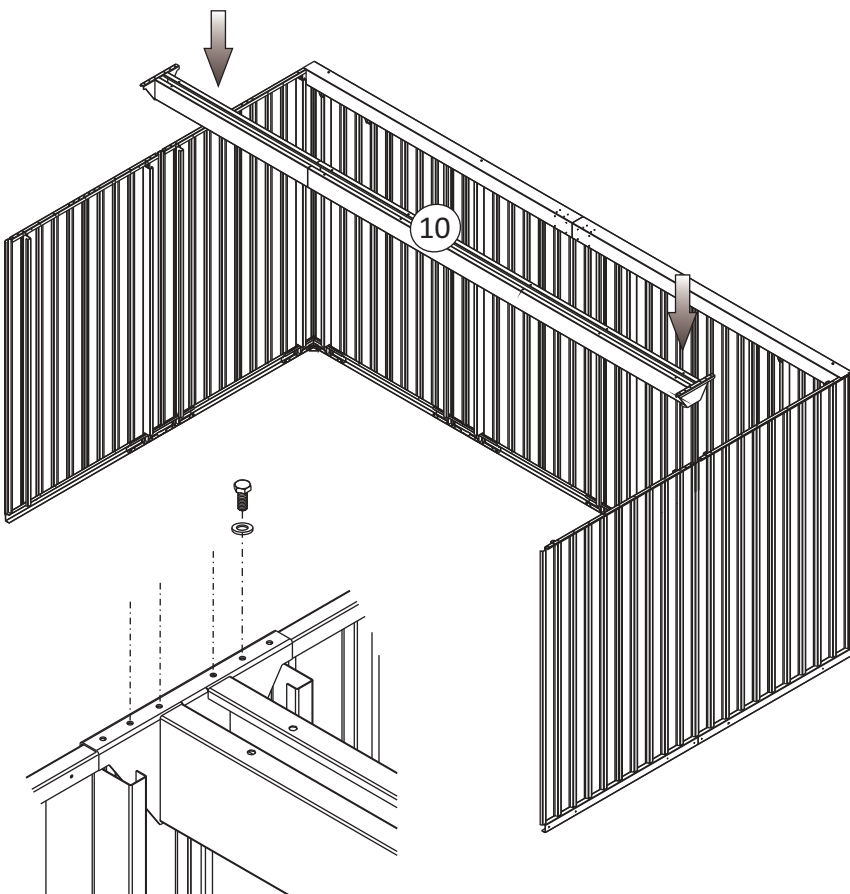


Position the rain gutters for increased snow load centrally on each of the 2m elements and fasten them to the side walls from above on each side using 4 M10x25 hexagonal bolts and ø10.5 washers.

The gutters for increased snow load are not connected to the drainage and therefore have no drainage outlets.

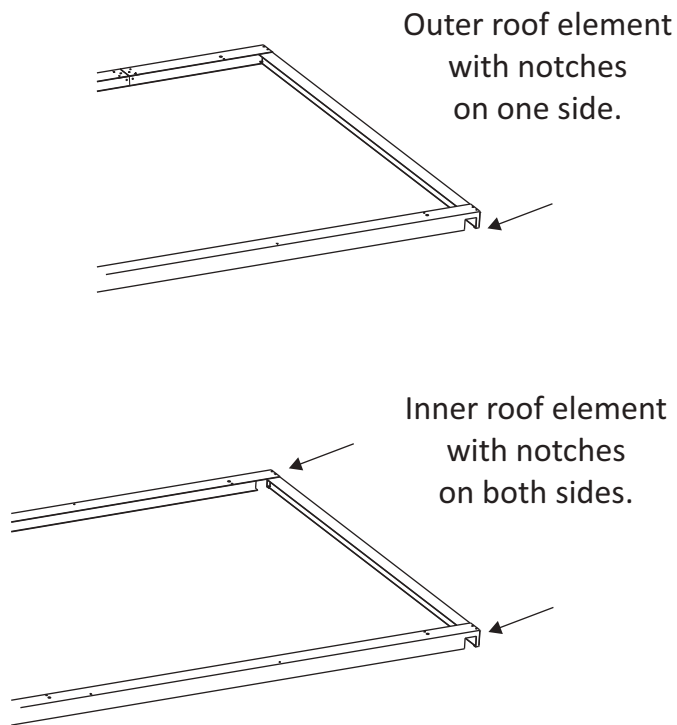
At the bottom, insert the coupling profile of the module in the middle of both 2m side walls and fasten using 4 M8x25 countersunk bolts, ø8.4 washers and nuts per profile.

Positioning the rain gutters



The drainage can be directed either to the right or left side of the back wall with pipes. Position the rain gutters (Pos.10) from above so that the drainage outlets lie on the side of the warehouse where the drainage should be led. Then, on each side, fasten the gutter from above using 4 M10x25 hexagonal bolts and ø10.5 washers to the side walls.

Outer and inner roof elements

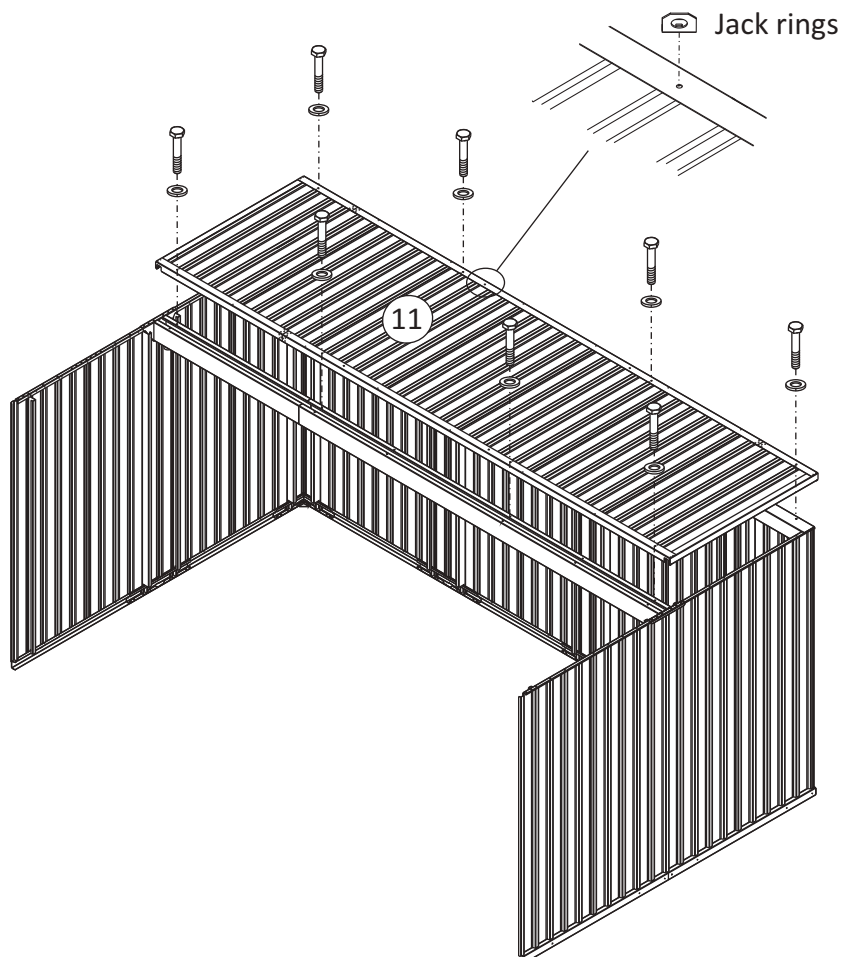


The difference between the outer and inner roof elements is shown on the left. For a better view of the notches, the trapezoidal sheet is not shown.

Outer roof elements are 2050mm wide and only have notches on one side of the roof frame. The notched side of the roof frame is laid towards the inside of warehouse, the closed side towards the outside.

Inner roof elements have notches on both sides and are 2000mm wide. As they are symmetrical, they can be placed in either direction.

Mounting the outer roof



Mount the outer roof element (Pos.11) and fasten loosely to the back wall and the gutter using 8 M10x60 hexagonal bolts and $\varnothing 25 \times 11 \times 1$ sealing washers. The bolts are first tightened once all roof parts are in place.

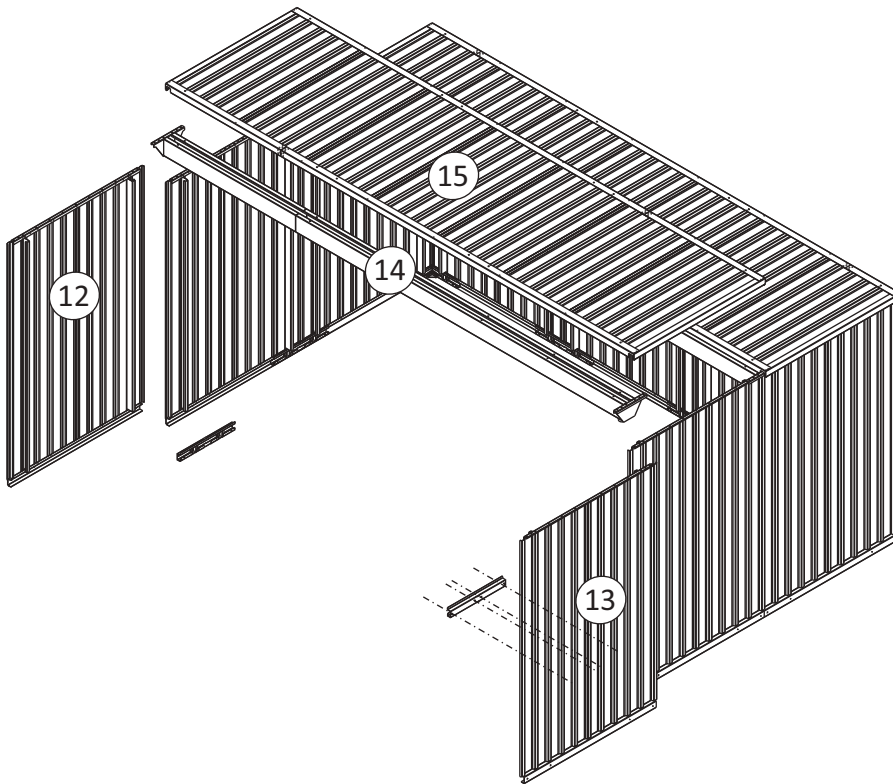
To mount the roof using a crane, fasten 4 jack rings using M10x25 hexagonal bolts and M10 nuts directly next to the roof fastenings.




Once the roof element is in position, remove the jack rings and repeat the procedure with the next roof element.


Jack rings are included in the scope of delivery.

Mounting the complete side wall

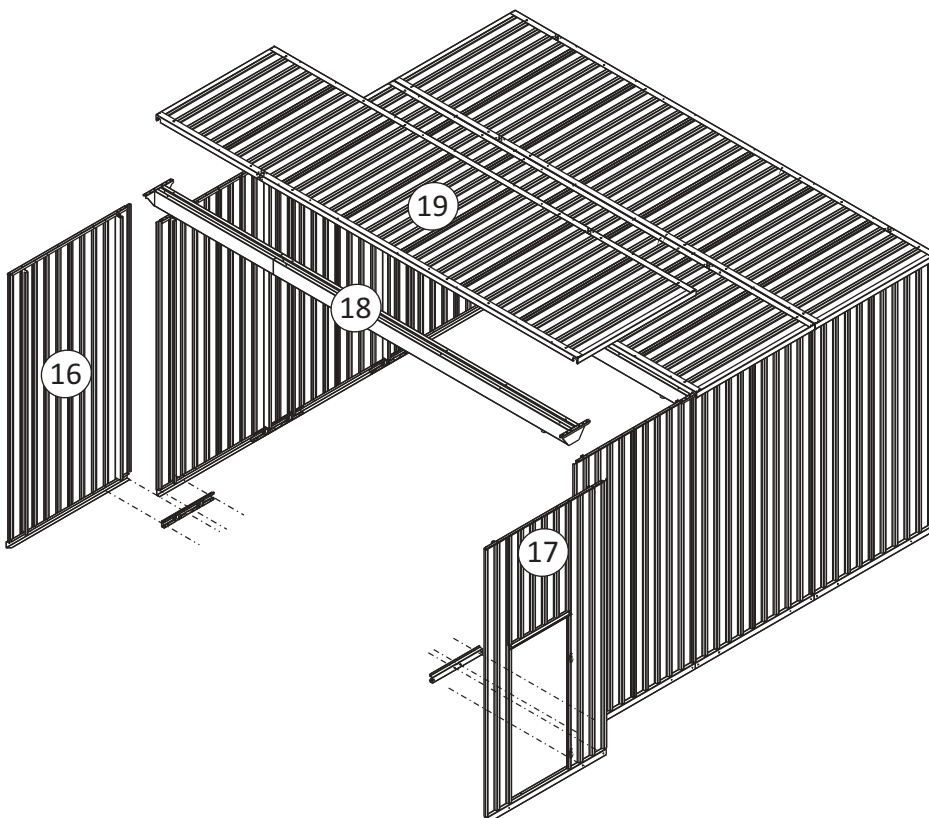


Continue to build the Quick-build warehouse by repeating the steps described according to the sequence given in the placement plan.


 Note that an extension portal may have to be installed. See page 24.

 Make sure that the drainage outlets of all gutters are on the same side.

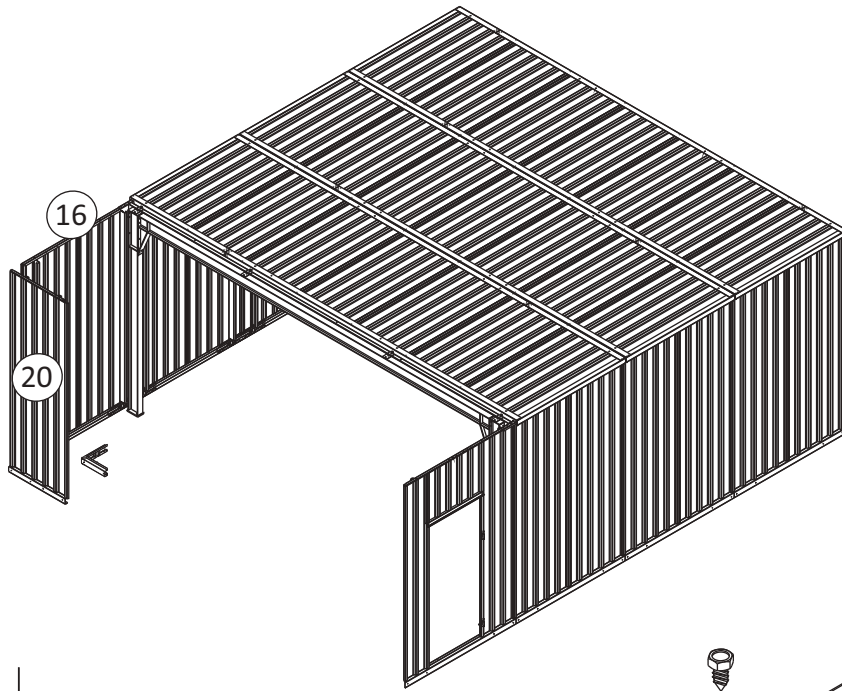
Mounting a corner element



Repeat the previous steps until the whole side wall and corner elements (here Pos. 16 and 17) are mounted.

 Please note that in the standard system an extension portal must be installed in the first gutter from the front. See page 24.

Mounting the front left corner



Place the front wall (Pos.20) in an upright position and push it over the side wall (Pos. 16) (Fig.1). Make sure that the slot-in coupling profile of the front wall lies over that of the side wall (Fig.2). Fasten both walls together with a $\varnothing 8 \times 19$ sheet screw in the top corner (Fig.3).

Insert the coupling profile corner at the bottom and fasten to the base frame using 4 M8x25 countersunk head screws, $\varnothing 8.4$ washers and M8 nuts.

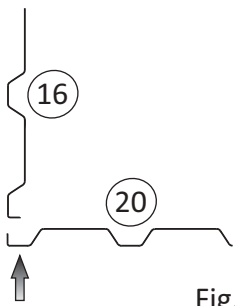


Fig. 1

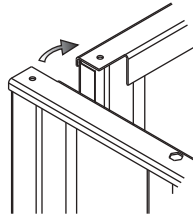


Fig. 2

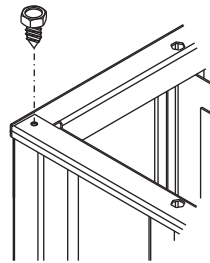
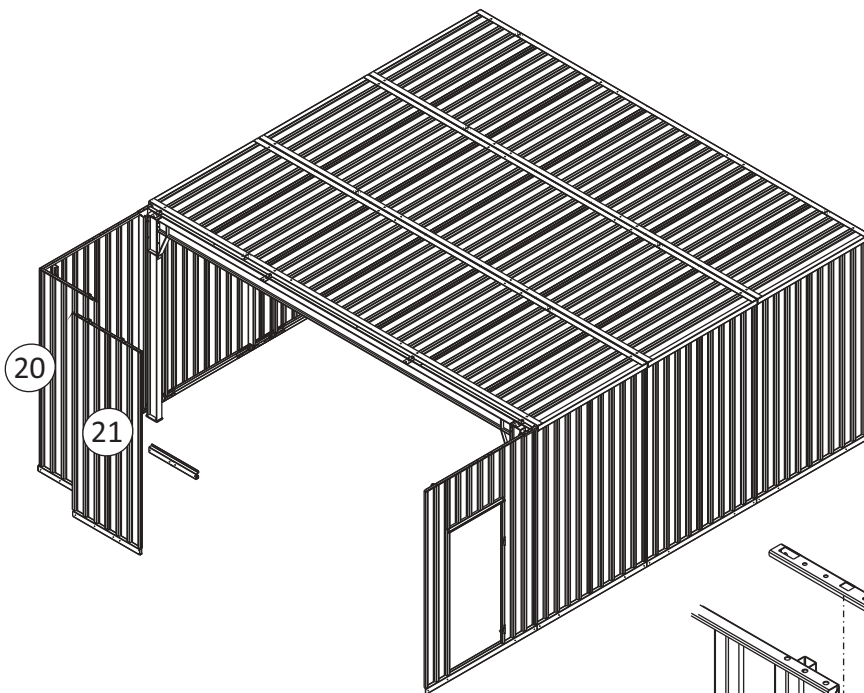


Fig. 3



Place the front wall (Pos.21) in an upright position and lay it over the wall element (Pos.20) (Fig.4). Place the slot-in coupling profile on top and mount it to the walls from the inside using 4 $\varnothing 8 \times 19$ sheet screws (Fig.5 and 6).

Position the coupling profile of the module at the bottom and fasten to the base frame using 4 M8x25 countersunk bolts, $\varnothing 8.4$ washers and M8 nuts.

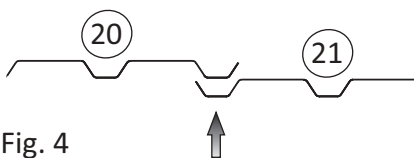


Fig. 4

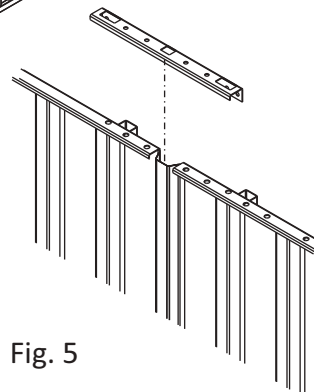


Fig. 5

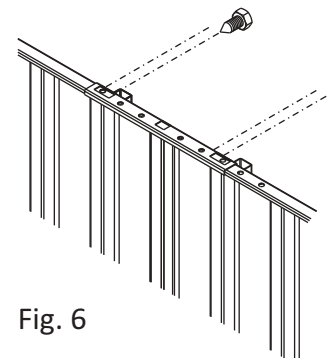
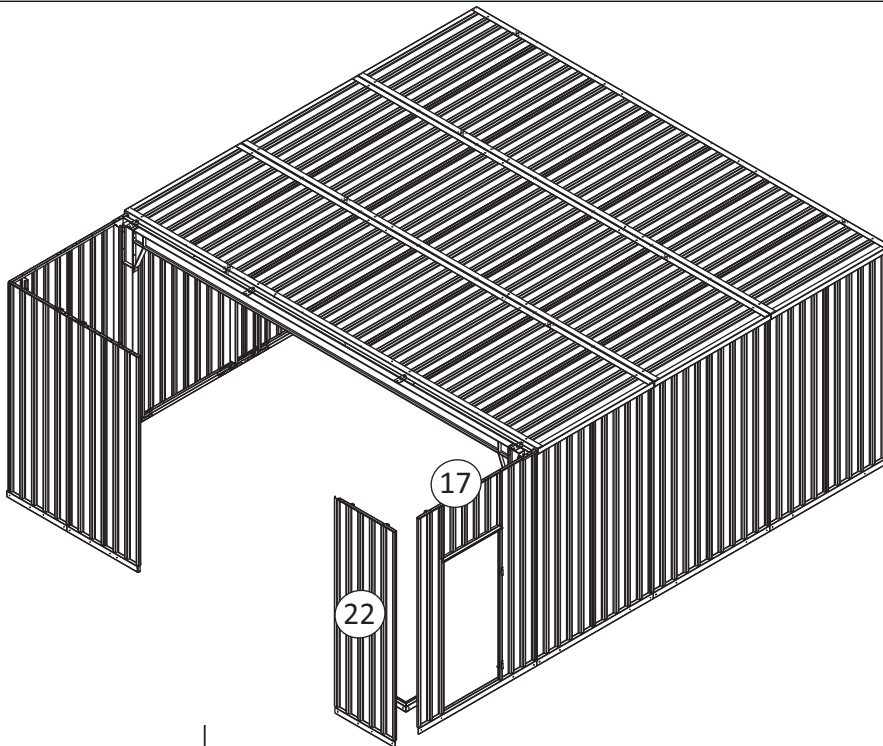


Fig. 6

Mounting the front right corner



Place the front wall (Pos.22) in an upright position and push it over the side wall (Pos. 17) (Fig.1). Make sure that the slot-in coupling profile of the front wall lies over that of the side wall (Fig.2). Fasten both walls together with a $\varnothing 8 \times 19$ sheet screw in the top corner (Fig.3).

Insert the coupling profile corner at the bottom and fasten to the base frame using 4 M8x25 countersunk head screws, $\varnothing 8.4$ washers and M8 nuts.

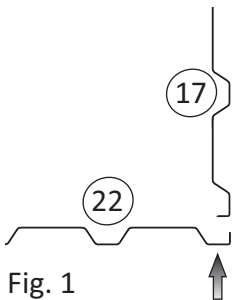


Fig. 1

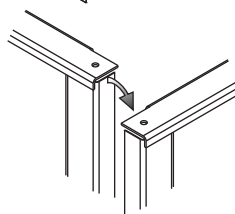


Fig. 2

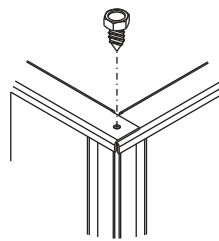
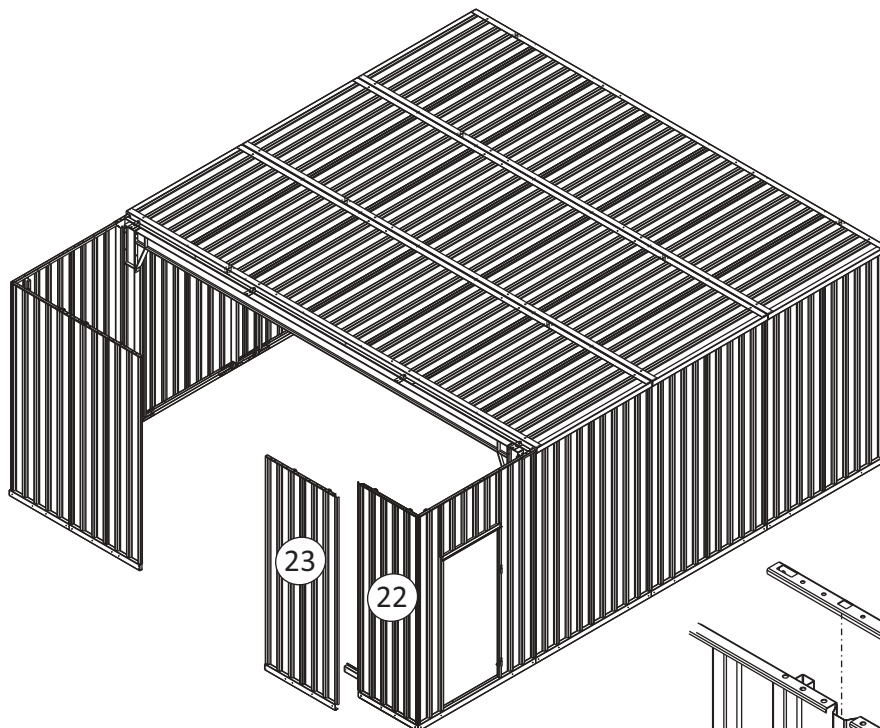


Fig. 3



Place the front wall (Pos.23) in an upright position and lay it over the wall element (Pos.22) (Fig.4). Place the slot-in coupling profile on top and mount it to the walls from the inside using 4 $\varnothing 8 \times 19$ sheet screws (Fig.5 and 6).

Position the coupling profile of the module at the bottom and fasten to the base frame using 4 M8x25 countersunk bolts, $\varnothing 8.4$ washers and M8 nuts.

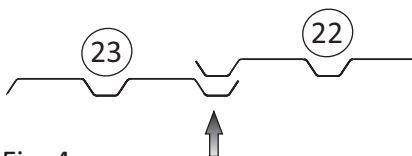


Fig. 4

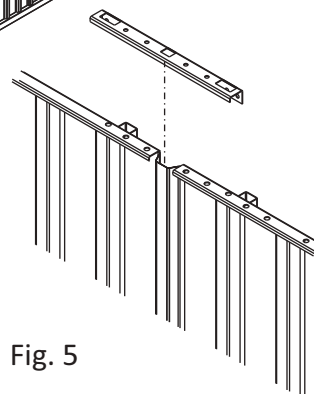


Fig. 5

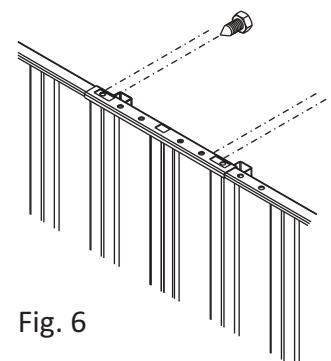
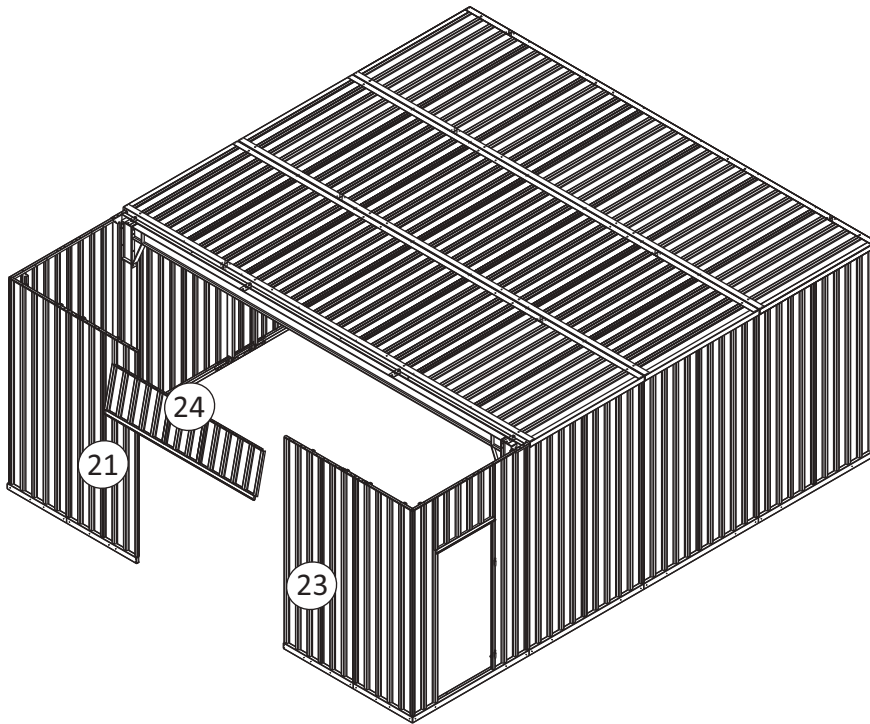


Fig. 6

Mounting the transom



Mount the transom (Pos.24) from below and then push it against the walls (Pos.21 and 23) (Fig.2).



Fig. 1



Fig. 2

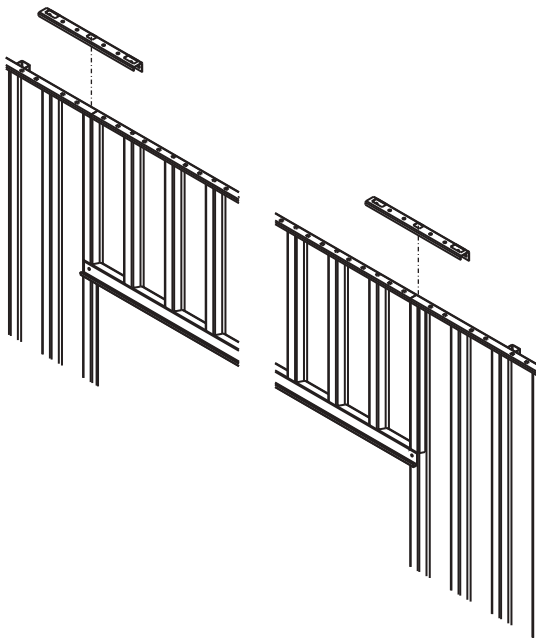


Fig. 3

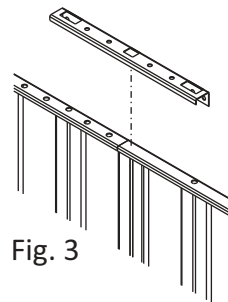


Fig. 4

Place two slot-in coupling profiles on top and mount them to the wall from the inside using 4 $\varnothing 8 \times 19$ sheet screws (Fig.3 and 4).

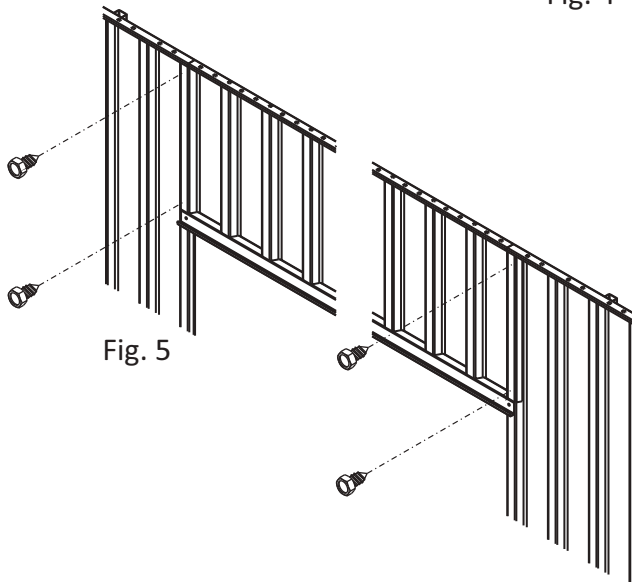
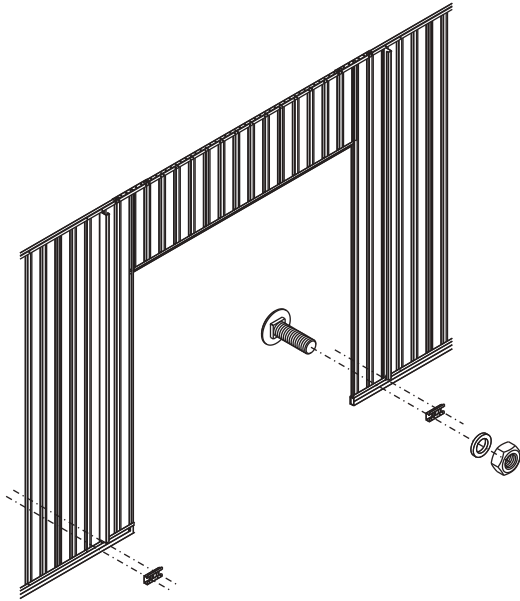


Fig. 5

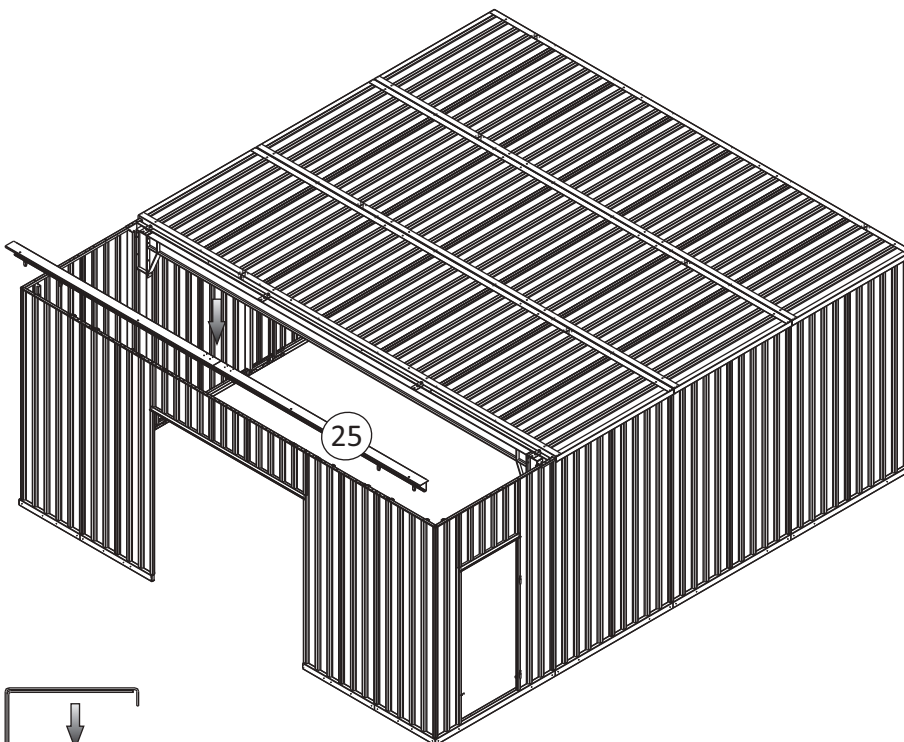
Fasten the transom to the side walls from the front using 2 $\varnothing 8 \times 19$ sheet screws on each side (Fig.5).

Mounting the door coupling profiles



Position the door coupling profile at the bottom to the left and right of the opening and fasten to the base frame using 2 M8x25 countersunk bolts, $\varnothing 8.4$ washers and M8 nuts on each side.

Mounting the roof edge profile



Place the roof edge profile (Pos.25) over the front wall (Fig.1 and 2). Screw the four angled brackets at even distances to the wall supports (Fig.3) from the front using 2 $\varnothing 4.2 \times 16$ sheet screws per bracket. Then mount the angled brackets from underneath to the roof edge profile using one $\varnothing 4.8 \times 16$ drilling screw per bracket (Fig.4).

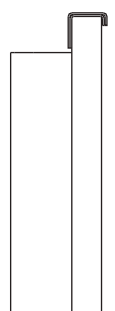
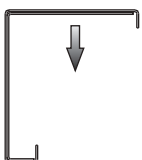


Fig. 1

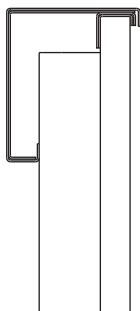


Fig. 2

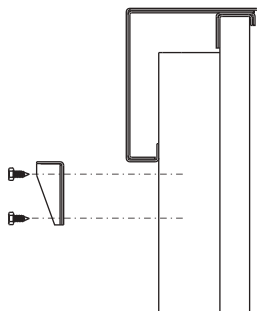


Fig. 3

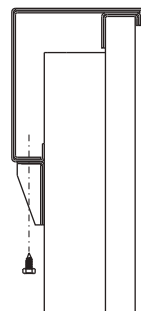
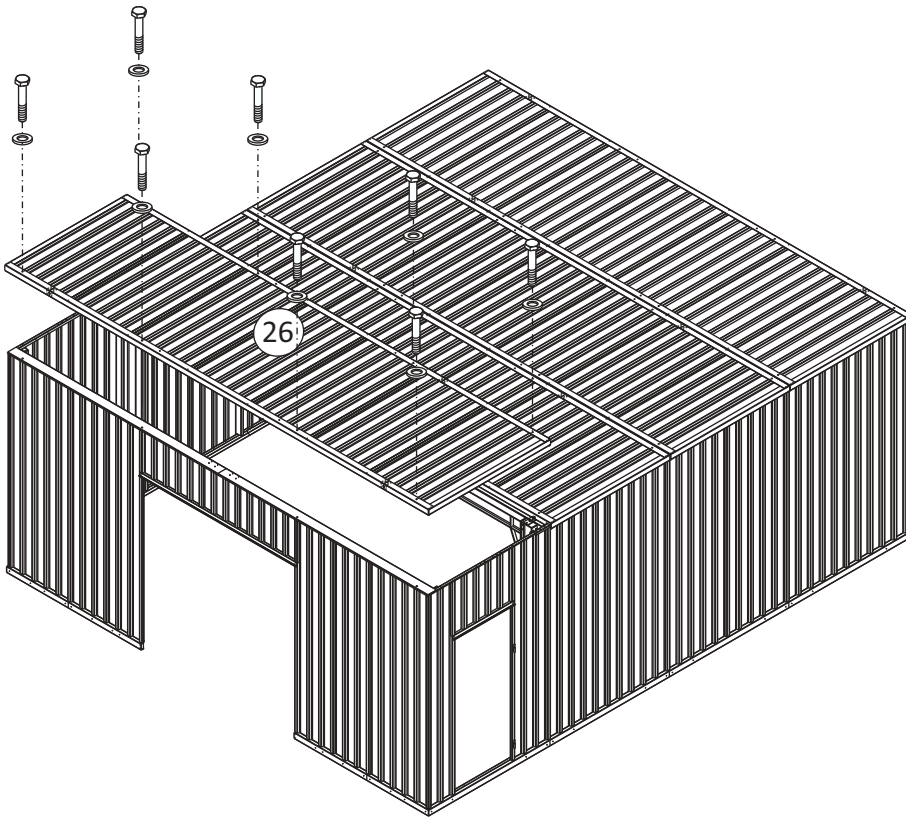


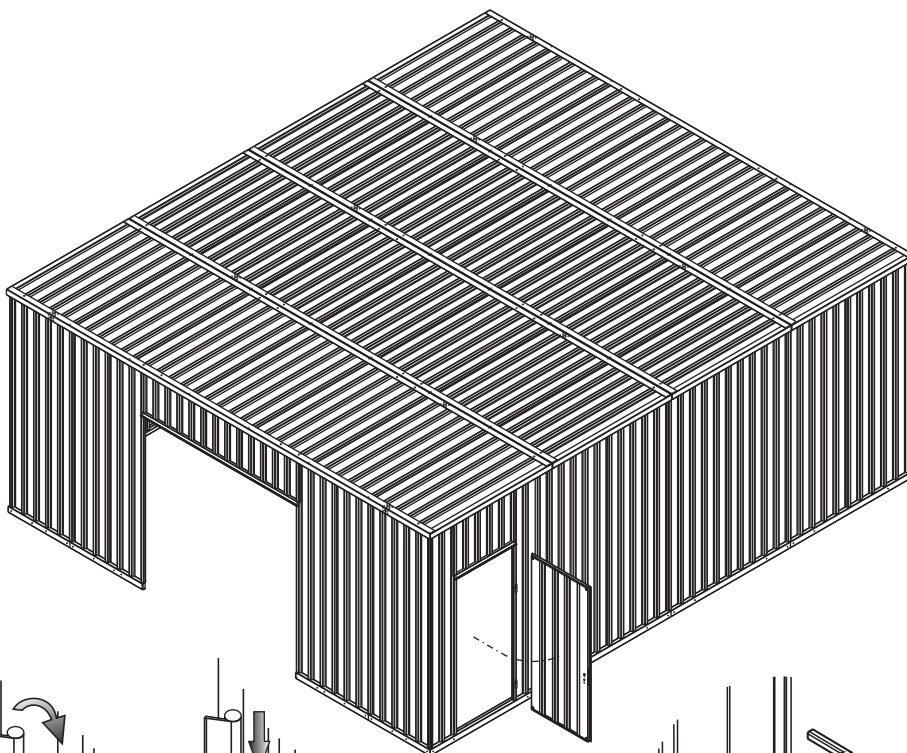
Fig. 4

Mounting the **outer roof**



Mount the outer roof (Pos.26) and fasten hand tight to the front wall and the gutter using 8 M10x60 hexagonal bolts and ø25x11x1 sealing washers. Then tighten the fastenings of all roof elements securely.

Hanging the **door** - OBS: optional product with additional price



Hang the door (Fig.1 and 2) and mount the door handle fittings (Fig.3 to 5). Check the door, handle and lock for proper function.

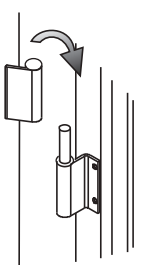


Fig. 1

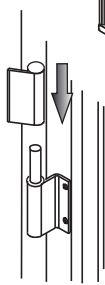


Fig. 2

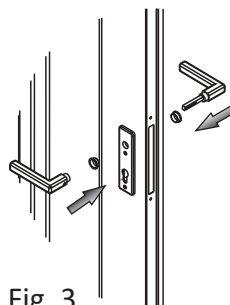


Fig. 3

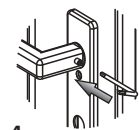


Fig. 4

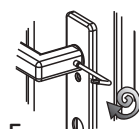
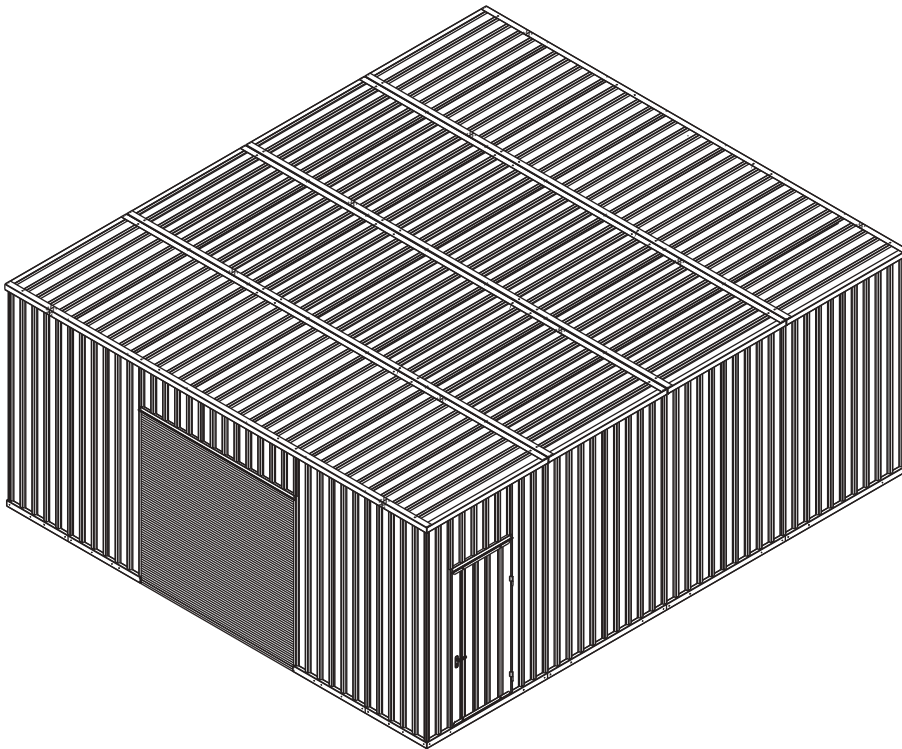



Fig. 5

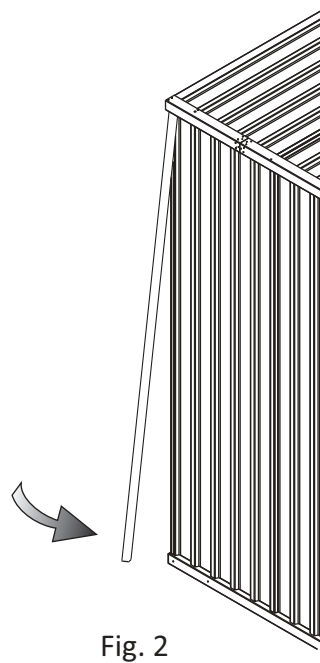
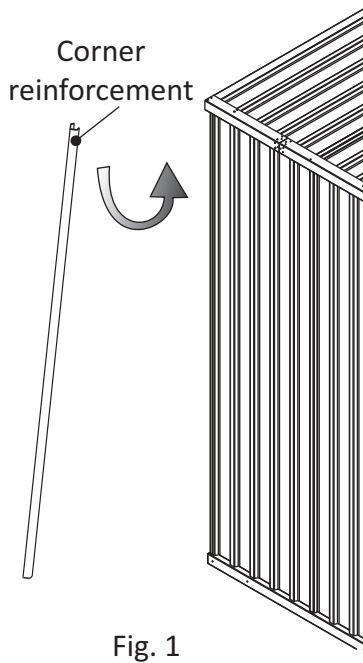
Installing the roller shutter door - OBS: optional product with additional price



The roller shutter door should be installed according to the manufacturer's instructions.

 **The electrical connections must be carried out by an electrician!**

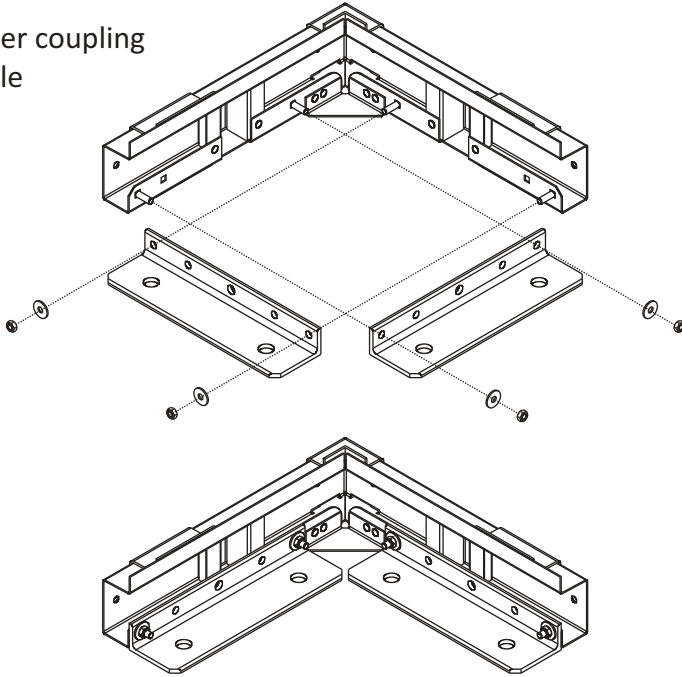
Attaching the corner reinforcements



Push the corner reinforcements into the roof frame from below (Fig.1) and then press them against the corner (Fig.2). If necessary use a plastic hammer.

Fastening the anchorage plate dowels

Corner coupling profile




Now screw the anchorage plates to the coupling profiles.

Corner coupling profile

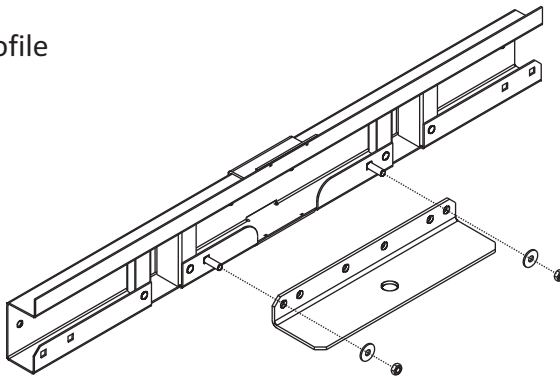
Mount 2 anchorage plates to the coupling profile using 2 M8x25 countersunk bolts, $\varnothing 8.4$ washers and M8 nuts per plate.

Coupling profile module

Mount one anchorage plate to the coupling profile using 2 M8x25 countersunk bolts, $\varnothing 8.4$ washers and M8 nuts.

 The anchorage plate should be screwed to the coupling profile in an offset position where the extension portal is located.

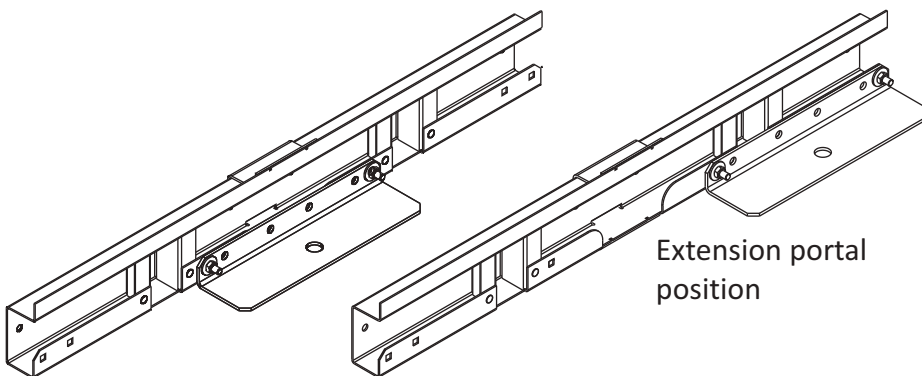
Coupling profile for module



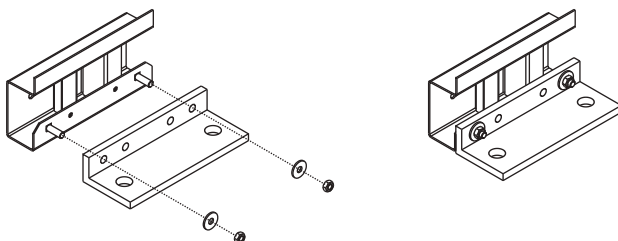
Coupling profile door

Mount one anchorage plate to the coupling profile using 2 M8x25 countersunk bolts, $\varnothing 8.4$ washers and M8 nuts.

Now place the dowels in the anchorage and base plates of the extension portals. Please refer to the anchorage plan supplied for the number of dowels.

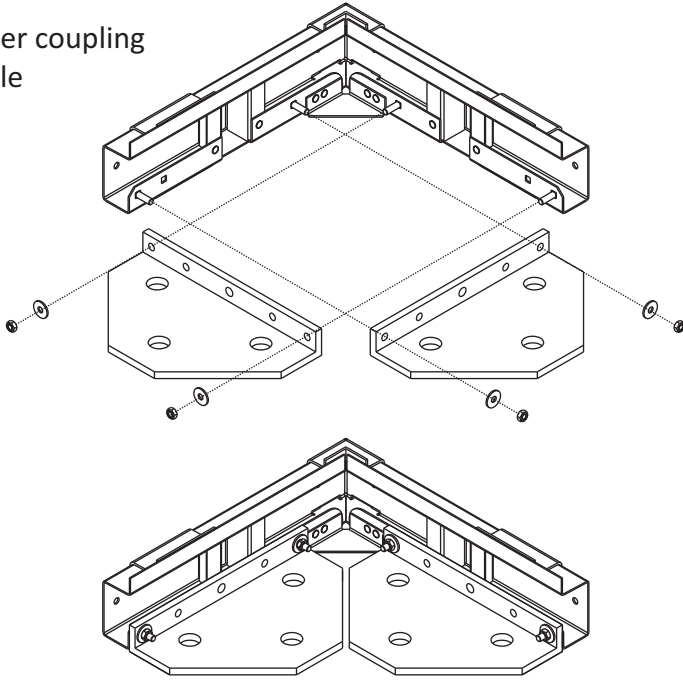


Coupling profile door



Fastening the ground nails of the anchorage plate

Corner coupling profile




Now screw the anchorage plates to the coupling profiles.

Corner coupling profile

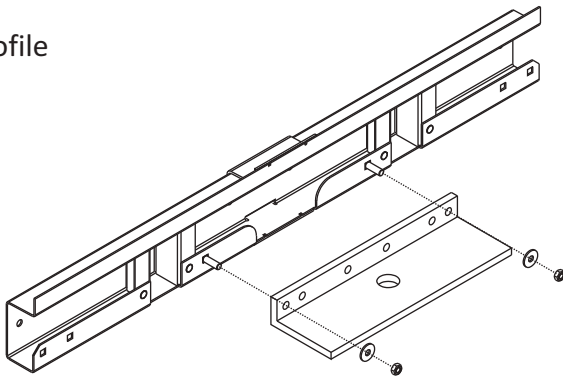
Mount 2 anchorage plates to the coupling profile using 2 M8x25 countersunk bolts, $\varnothing 8.4$ washers and M8 nuts per plate.

Coupling profile module

Mount one anchorage plate to the coupling profile using 2 M8x25 countersunk bolts, $\varnothing 8.4$ washers and M8 nuts.

 The anchorage plate should be screwed to the coupling profile in an offset position where the extension portal is located.

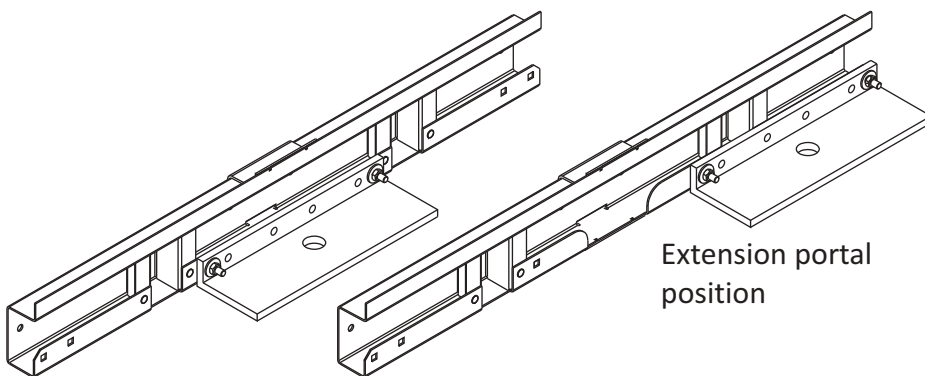
Coupling profile for module



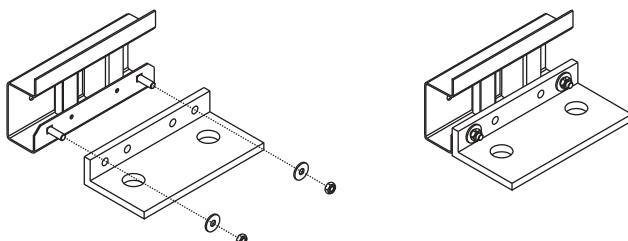
Coupling profile door

Mount one anchorage plate to the coupling profile using 2 M8x25 countersunk bolts, $\varnothing 8.4$ washers and M8 nuts.

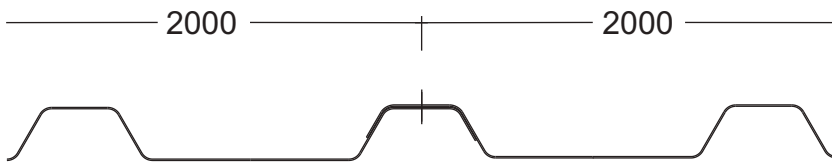
Now position the ground nails in the anchorage and base plates of the extension portal. Please refer to the anchorage plan supplied for the number of ground bolts.



Coupling profile door

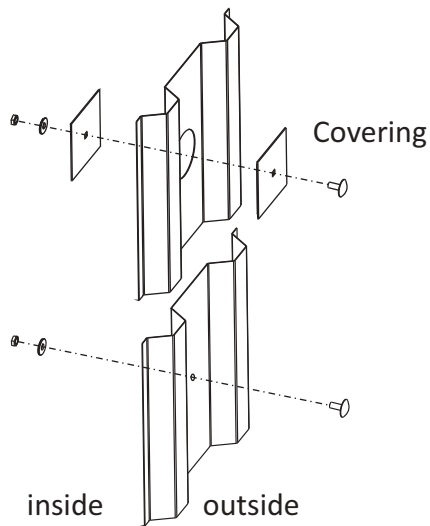


Fastening the wall transitions



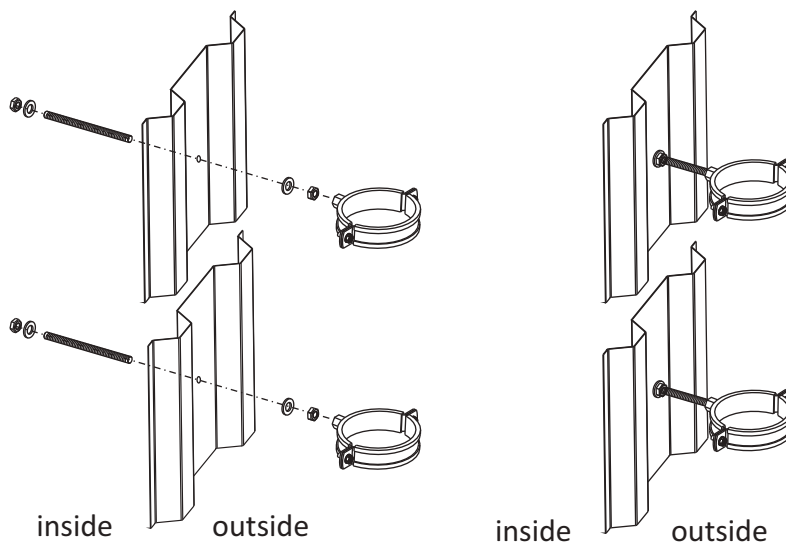
Screw the wall transitions vertically at a distance of 400mm using $\varnothing 4.8 \times 16$ drilling screws.

Modify the coverings if necessary



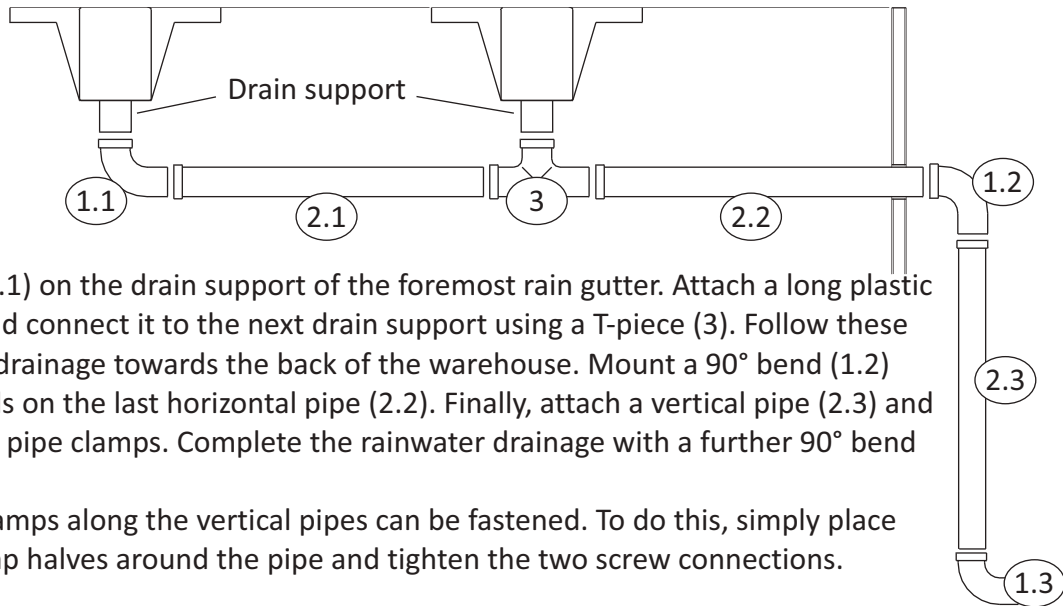
In order to lead the drainpipes from the inside of the warehouse to the outside, there are cut-outs at the rear of the warehouse in the left and right wall elements. A cover is already mounted over one of the cut-outs, the other is open. If the drainage is to be led through the wall element where the cut-out is closed, the cover should be removed and remounted on the other, open side.

Fitting the pipe clips



The holes below the cut-outs are intended for the pipe clips of the vertical drainpipes. To fasten the pipe clips, insert the threaded end of a M10 x 120 from the inside to the outside and screw on a $\varnothing 10.5$ washer and M10 bolt from both sides. Finally, screw the pipe clip onto the thread end from the outside. Open the pipe clip by loosening the screw connection.

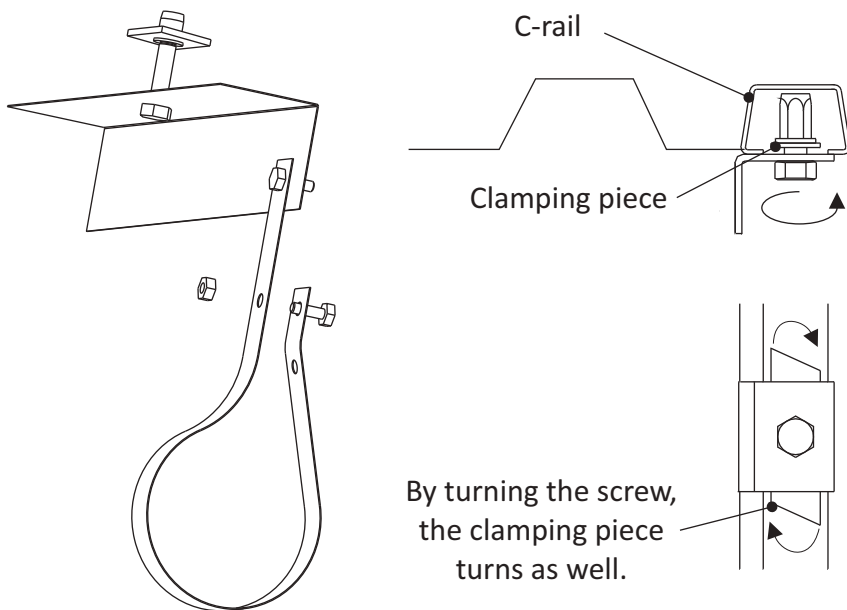
Attaching the drainage pipes



Place a 90° bend (1.1) on the drain support of the foremost rain gutter. Attach a long plastic pipe (2.1) to this and connect it to the next drain support using a T-piece (3). Follow these steps and lead the drainage towards the back of the warehouse. Mount a 90° bend (1.2) pointing downwards on the last horizontal pipe (2.2). Finally, attach a vertical pipe (2.3) and place it in the open pipe clamps. Complete the rainwater drainage with a further 90° bend (1.3).

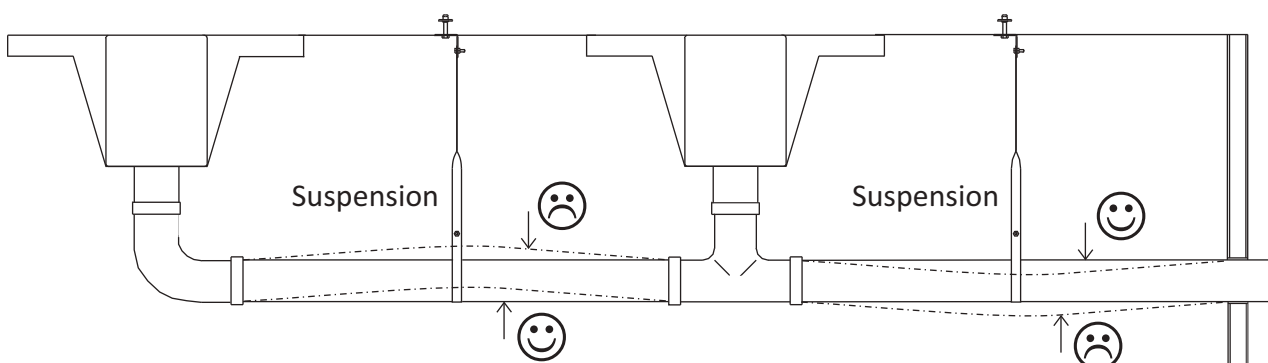
Now all the pipe clamps along the vertical pipes can be fastened. To do this, simply place the loose pipe clamp halves around the pipe and tighten the two screw connections.

Mounting the suspensions

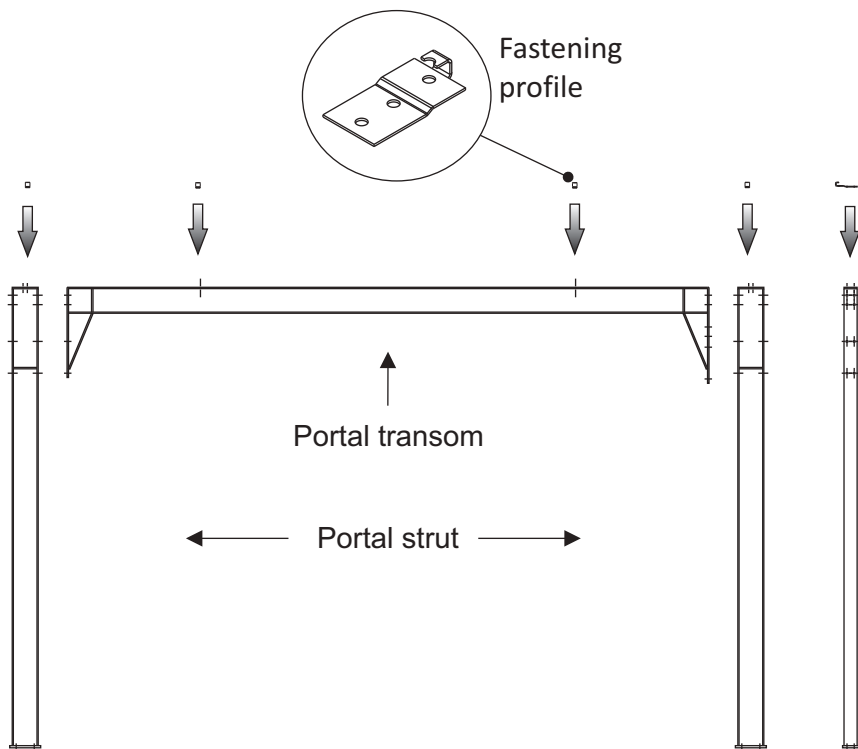


The drainage pipes in the warehouse are stabilized via the (pre-mounted) suspensions. For this purpose, the clamping piece is inserted in the C-rail, which is already mounted in the roof. By tightening the hexagon bolt, the mounting plate in the C-rail is turned as well and the suspension is secured.

Now place the perforated tape around the horizontally running plastic pipe and fasten above the pipe with the (pre-mounted) fastening material.



Mounting the extension portal

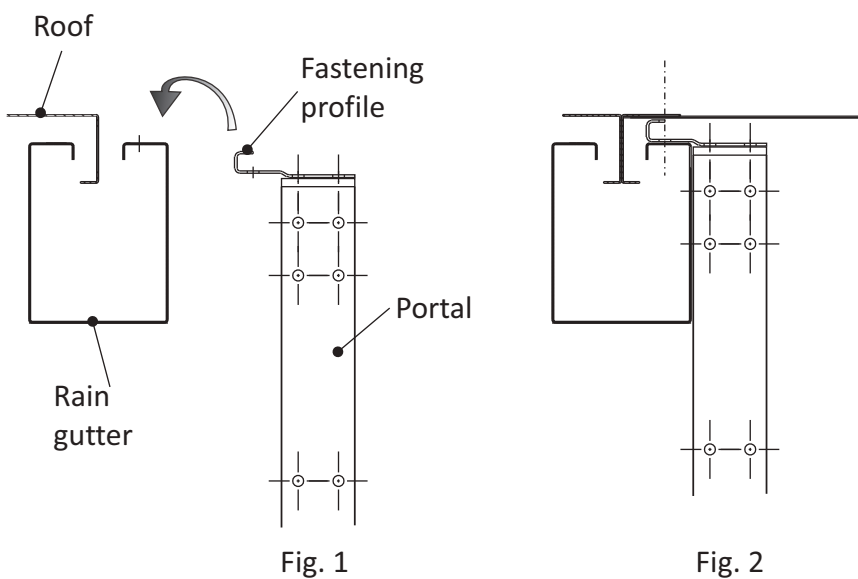


The installation position of the extension portal is shown in the placement plan.

Fasten the portal transom to the portal struts using 8 HV M12x45 hexagon bolts, 16 HV \varnothing 13 washers and 8 HV M12 nuts on each side. Then screw the 4 fastening profiles to the portal transom. The fastening takes place from above through the portal transom with 2 M12x35 hexagon bolts, 2 \varnothing 13 washers and 2 M12 nuts on each side.

Please refer to the procedure description “Making high-strength bolted joints” on page 27.

Installing the extension portal

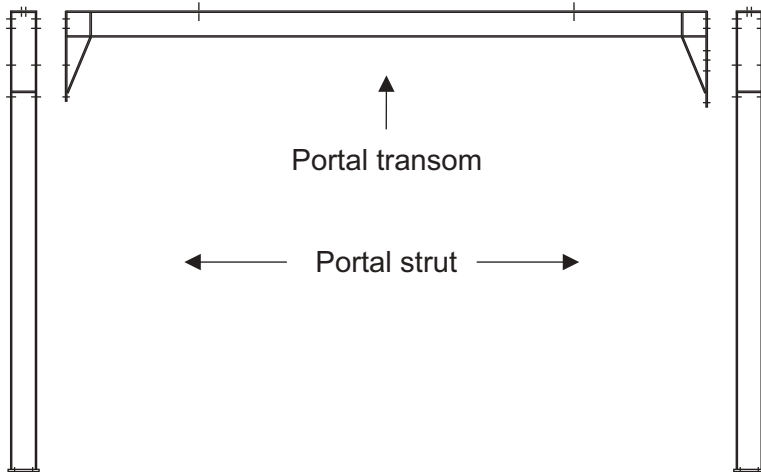


Stand the extension portal upright, lift it slightly and lay the fastening profile on the rain gutter. The portal must stand tightly against the rain gutter.

Secure the extension portal, as it is not yet attached and may fall over.


Continue with the assembly according to the placement plan. As soon as the roof is in place in the area of the extension portal, it can be fastened hand tight using M10x60 hexagon bolts and \varnothing 25x11x1 sealing washers (Fig.2). As the roof screw connections run through the fastening profile, the portal is secured against tipping over.

Assembling the door portal for side walls

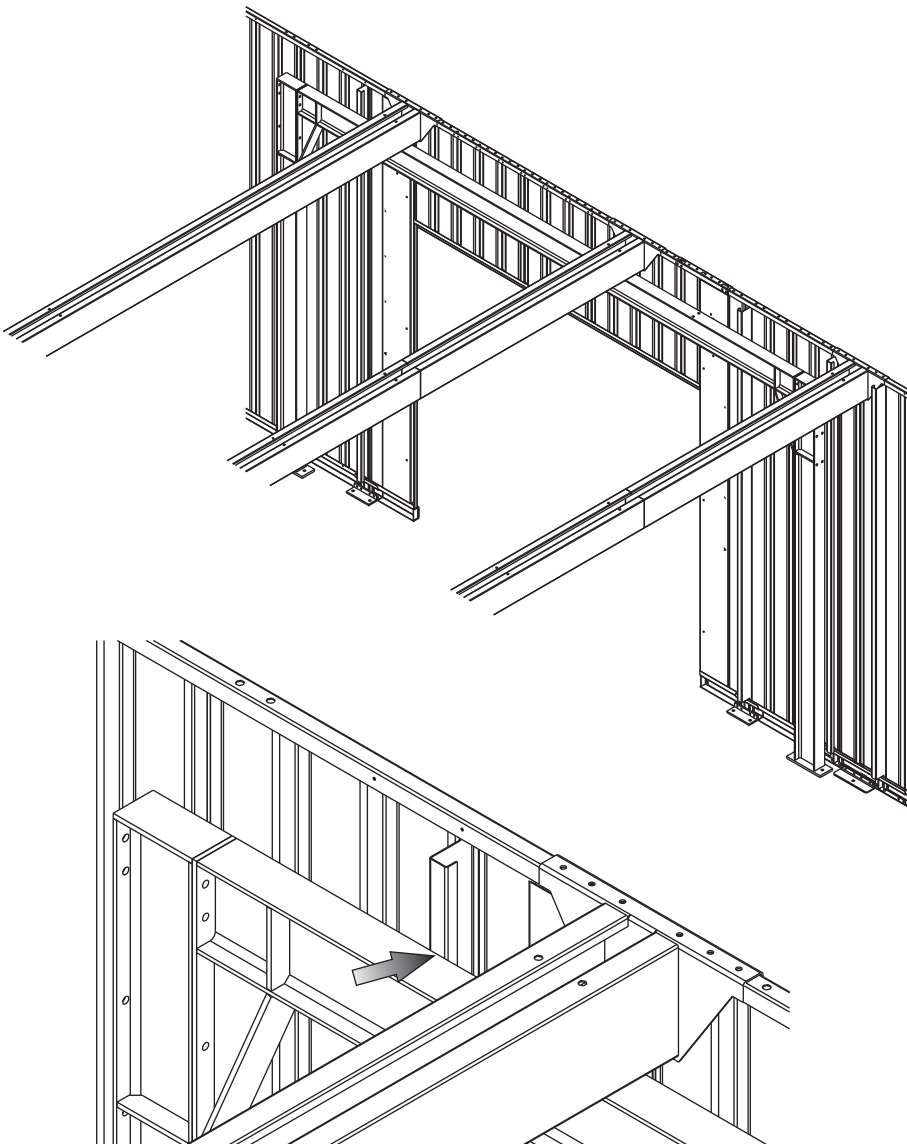


The installation position of the door portal is shown in the placement plan.


Fasten the portal transom to the portal struts with 8 HV M12x45 hexagon bolts, 16 HV \varnothing 13 washers and 8 HV M12 nuts on each side.

 Please refer to the procedure description “Making high-strength bolted joints” on page 27.

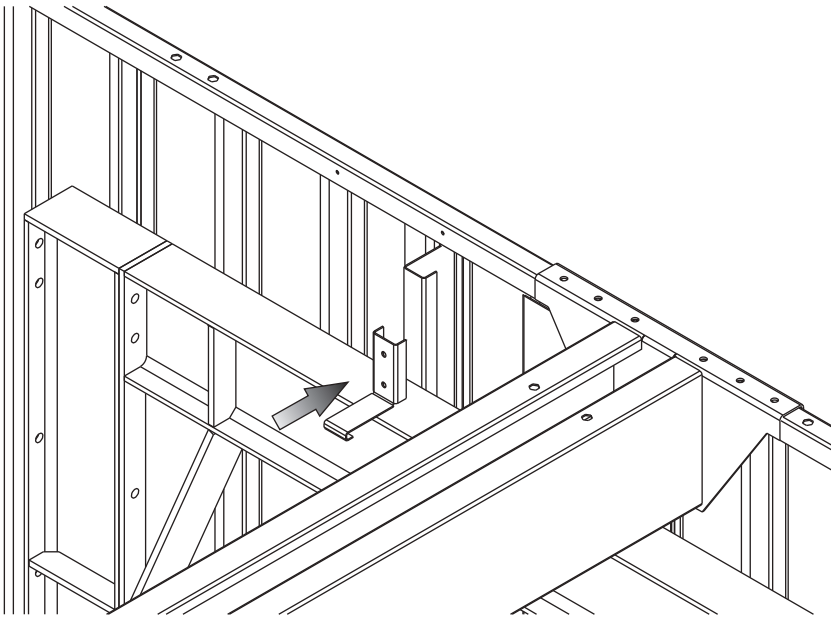
Mounting the door portal in the side wall



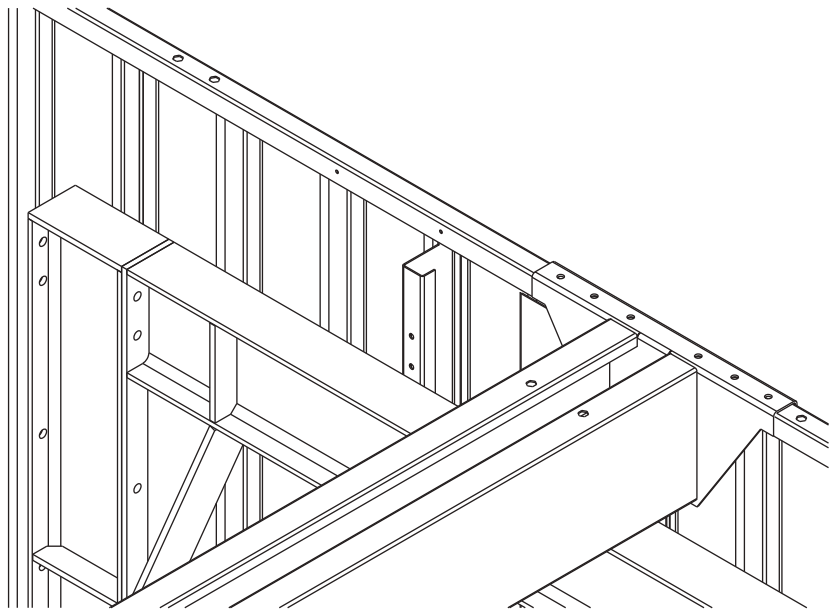
Stand the door portal upright and place it tightly in front of the wall supports.

 Secure the door portal, as it is not yet attached and may fall over.

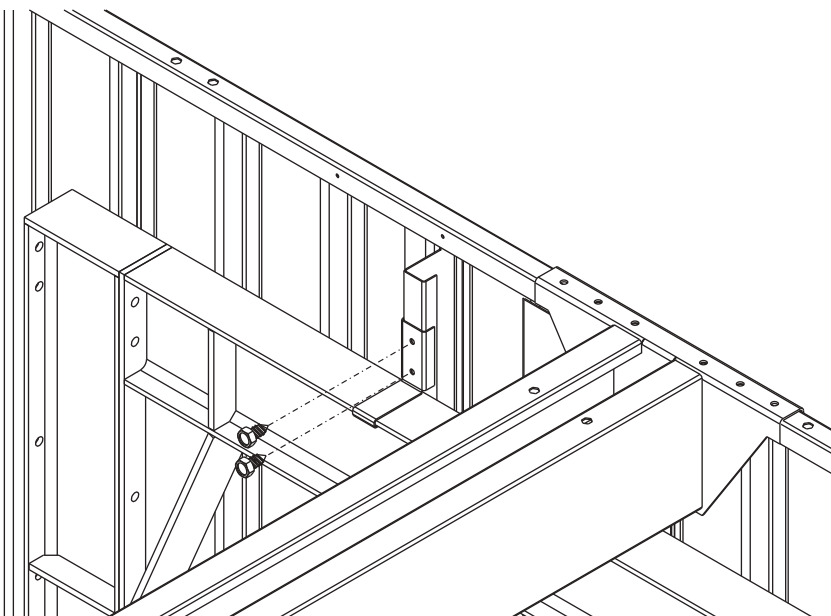
Fastening the door portal



The door portal is fixed on the left and the right to the wall supports of the side wall with a mounting bracket for each side. To do this, clamp the bracket profile from the front onto the IPE carrier and attach it to the wall support.



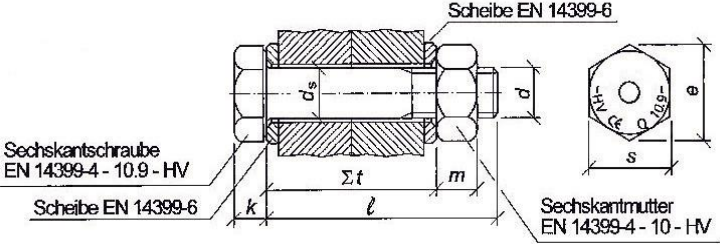
Mark the position of the two holes in the fastening profile on the wall support and drill using a $\varnothing 6.5$ bit.



Fastening takes place using 2 $\varnothing 8 \times 19$ sheet screws per profile. Now the dowels or ground bolts can be placed in the base plates.

Making high-strength bolted joints

Fasten the door or extension portal as shown in the following table:

Standards:	<p>DIN 18800-7 DIN EN 1090-2 DIN EN 14399</p> 																																			
Contents:	<p>This procedure description is for the making of high-strength (HV) bolted joints in general. It serves as a basis for the assembly of components.</p>																																			
External influences:	<p>When installing HV fittings, general cleanliness should be ensured. Avoid excessive soilage during assembly.</p>																																			
Staff:	<p>Staff entrusted with the installation of HV fittings must have appropriate knowledge, i.e either certified training or a qualification in the field of metal construction.</p>																																			
Assembly instructions:	<p>The assembly of high-strength bolted joints is always carried out as a set, i.e. the bolt, nut and washer from one manufacturer and one delivery belong together. Mixing components from different manufacturers is not permitted. Tightening of the bolt fitting is carried out using a torque wrench according to the table. Greasing the screw or nut is not permitted. Paint and coating materials should be removed from between the steel components, as well as between the washer and the surface of the steel components, unless they are specifically designed and planned for the HV connection. Mount washers with the bevel towards the bolt head or nut. 10% of HV connections should be checked within 12 to 72 hours after installation by applying 1.1 times the torque. The angle of rotation must not exceed 15°. If the angle of rotation is greater than 15°, all HV connections are not in accordance with the standard.</p>																																			
Preload force:	<p>Table 19 – Values of $F_{p,C}$ in KN</p> <table border="1" data-bbox="312 1458 1426 1659"> <thead> <tr> <th rowspan="2">Strength class</th> <th colspan="8">Screw diameter (in mm)</th> </tr> <tr> <th>12</th> <th>16</th> <th>20</th> <th>22</th> <th>24</th> <th>27</th> <th>30</th> <th>36</th> </tr> </thead> <tbody> <tr> <td>8.8</td> <td>47</td> <td>88</td> <td>137</td> <td>170</td> <td>198</td> <td>257</td> <td>314</td> <td>458</td> </tr> <tr> <td>10.9</td> <td>59</td> <td>110</td> <td>172</td> <td>212</td> <td>247</td> <td>321</td> <td>393</td> <td>572</td> </tr> </tbody> </table>	Strength class	Screw diameter (in mm)								12	16	20	22	24	27	30	36	8.8	47	88	137	170	198	257	314	458	10.9	59	110	172	212	247	321	393	572
Strength class	Screw diameter (in mm)																																			
	12	16	20	22	24	27	30	36																												
8.8	47	88	137	170	198	257	314	458																												
10.9	59	110	172	212	247	321	393	572																												

Contact information

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