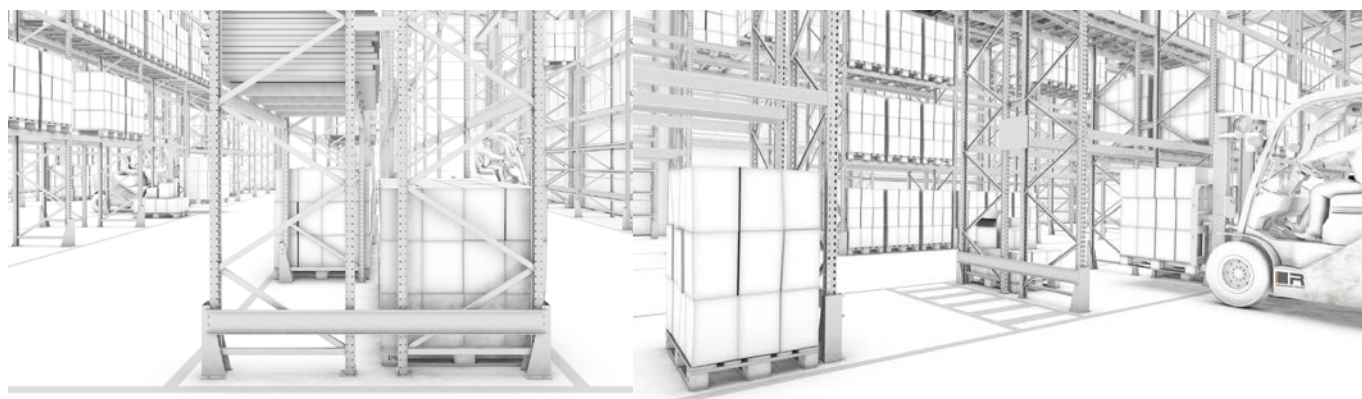




Assembly instructions



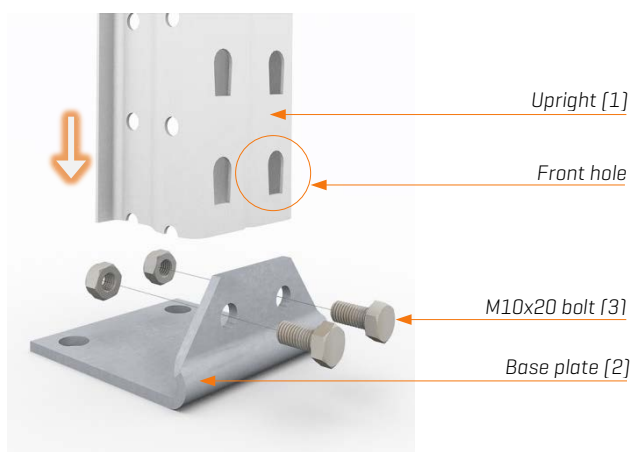
1 Positioning the uprights



Place the two uprights [1] in parallel and with their open sides facing each other, either on some supports or directly on the floor.

From now on the assembly will be depicted in a vertical position so it is easier to understand.

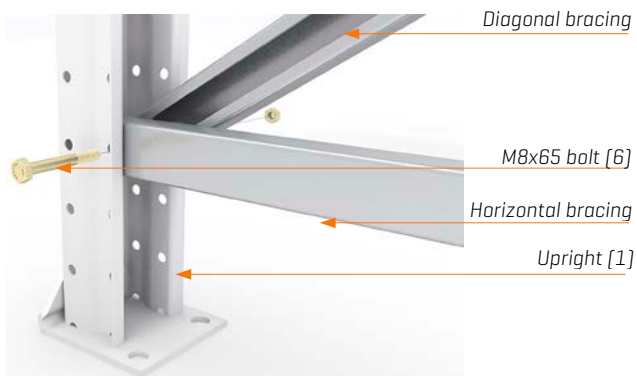
2 Attaching the base plate



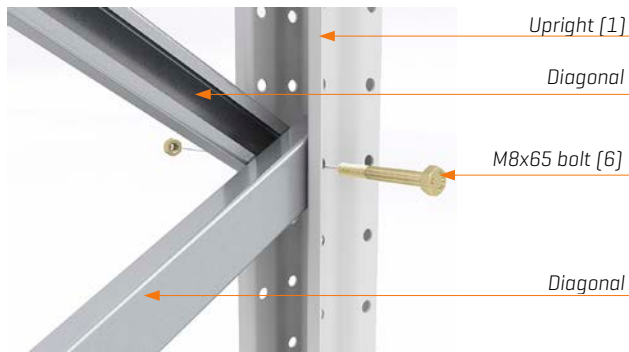
Attach the base plate [2] to each upright [1] using two M10x20 bolts [3] with their respective nuts.

The upright must be positioned so that the flat edges of the holes are facing downwards.

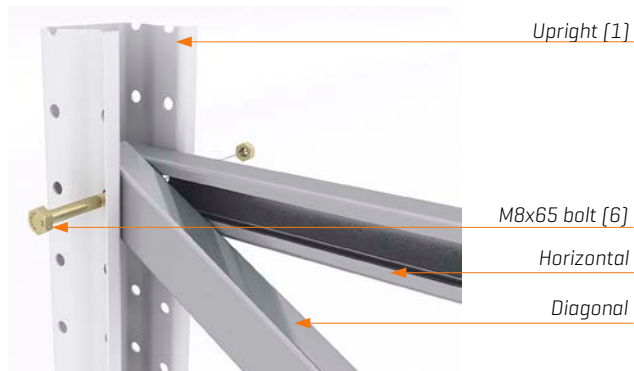
3 Attaching the bracing. Frame 80 63 and 100 100



Position the first horizontal [4] and diagonal bracings [5] with their open sides facing each other, then secure them to the upright with a M8x65 bolt [6].



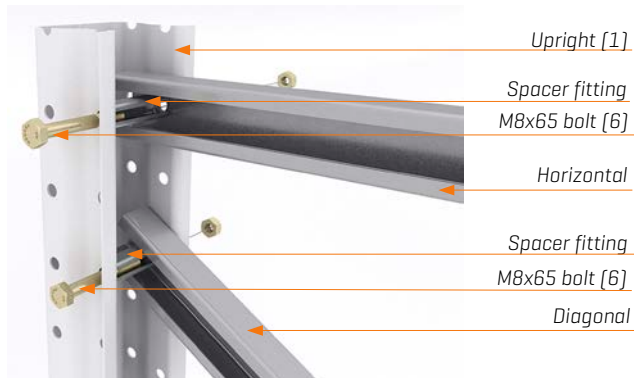
Next, place the remaining diagonal bracings [5] with their open sides facing towards each other and again secure them M8x65 bolts [6].



There are two possibilities for completing the assembly of the bracing system at the top of the frame depending on its height:

Frames with a height of 2,500 to 4,000 mm and 7,000 to 9,500 mm: The ends of the last diagonal [5] and horizontal bracings [4] coincide in the same hole of the upright so they may be secured with a single M8x65 bolt [6].

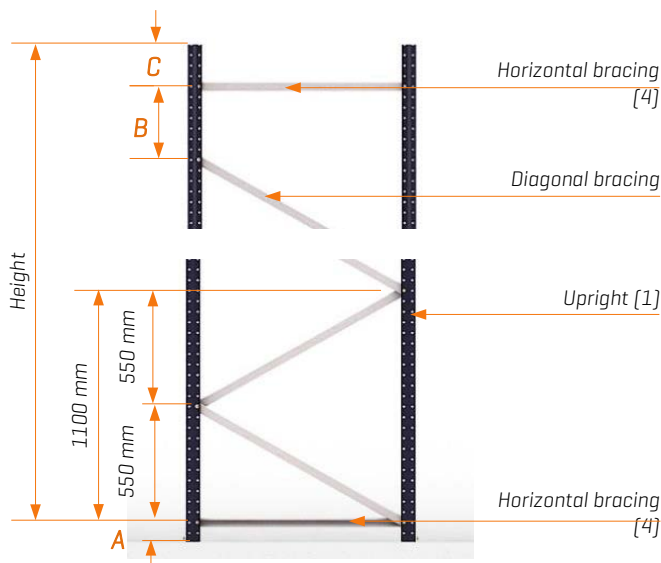
The other end of the horizontal bracing [4] is secured to the opposite upright by inserting a spacer fitting to fill the gap and prevent any free movement.



Frames with any other height: The ends of the last diagonal [5] and horizontal bracings [4] do not coincide in the same hole of the upright. In this case, both are bolted to the upright separately using a spacer fitting to ensure a tight connection; the separation between these points is defined by the height of the frame [dimension "B" in the table on page 4].



Finally, the assembled frame should appear like the example in the diagram.



The separations to be employed for this assembly are specified in the following table along with the corresponding number of parts for each frame according to its height.

The diagram shows the correct positions of the diagonal [5] and horizontal bracings [4] on the frame. The dimensions "A", "B" and "C" vary according to the height of the frame.

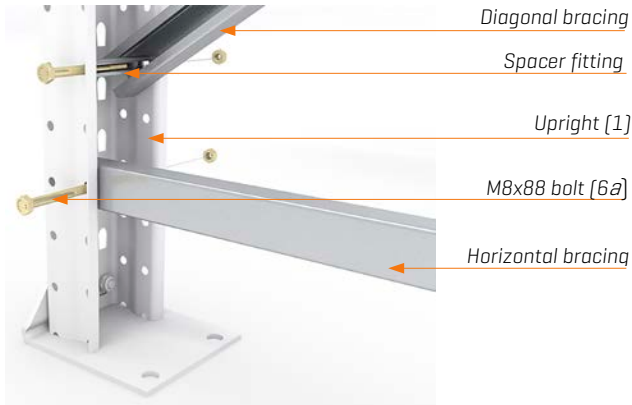
The distance between diagonal bracings [5] is fixed at 550 mm.

The angles between diagonal bracings generally range from 20° to 70°.

Height (mm)	"A" (mm)	"B" (mm)	"C" (mm)	Uprights Units	Base plates Units	M8x65 bolts Units	Spacer fittings Units	Horizontal bracings Units	Diagonal bracings Units	M8x65 bolt Units
2,000	150	150	50	2	2	4	4	2	3	7
2,500	150	0*	150	2	2	4	2	2	4	7
3,000	150	0*	100	2	2	4	2	2	5	8
3,500	150	0*	50	2	2	4	2	2	6	9
4,000	100	0*	50	2	2	4	2	2	7	10
4,500	150	350	150	2	2	4	4	2	7	11
5,000	150	300	150	2	2	4	4	2	8	12
5,500	150	300	100	2	2	4	4	2	9	13
6,000	150	200	150	2	2	4	4	2	10	14
6,500	150	200	100	2	2	4	4	2	11	15
7,000	150	0*	250	2	2	4	2	2	12	15
7,500	150	0*	200	2	2	4	2	2	13	16
8,000	150	0*	150	2	2	4	2	2	14	17
8,500	150	0*	100	2	2	4	2	2	15	18
9,000	100	0*	100	2	2	4	2	2	16	19
9,500	100	0*	50	2	2	4	2	2	17	20
10,000	150	400	100	2	2	4	4	2	17	21
10,500	150	350	100	2	2	4	4	2	18	22
11,000	150	300	100	2	2	4	4	2	19	23
11,500	150	250	100	2	2	4	4	2	20	24
12,000	150	200	100	2	2	4	4	2	21	25

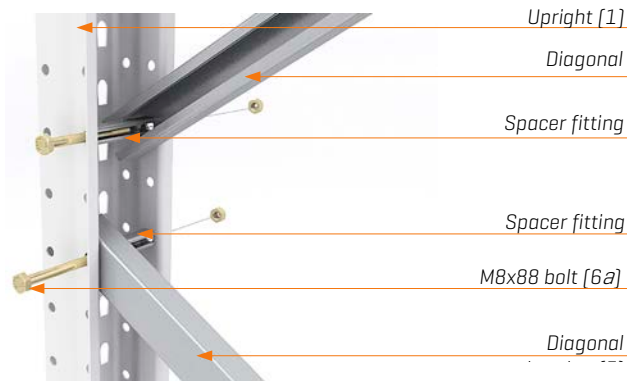
* A value of 0 mm for dimension "B" indicates that the last diagonal and horizontal bracings coincide in the same hole where they attach to the upright.

4 Attaching the bracing. Frame 100 63

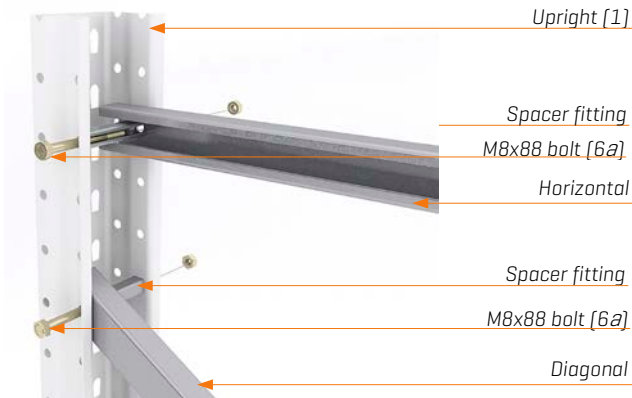


All of the bracing elements are attached to the frame with their open faces towards the inside of the upright [1] and their ends are secured with spacer fittings to prevent any free movement.

Place the first horizontal bracing [4] at a distance of 200 mm from the bottom of the upright [1], securing it with a M8x88 bolt [6a] and a spacer fitting. Then fit the first diagonal bracing [5] while leaving one free hole above the previous connection.

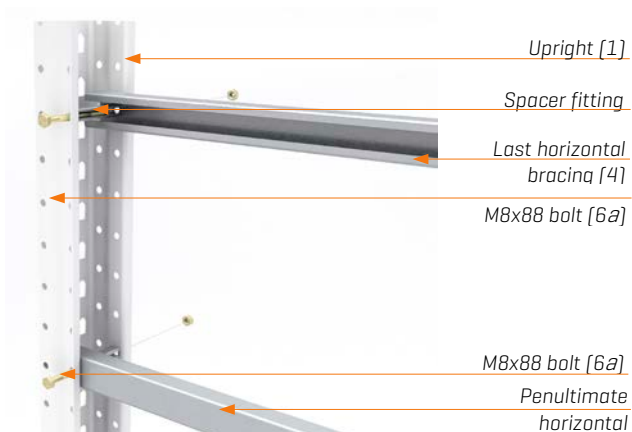


Next place the remaining diagonals [5] following the same attachment and separation pattern.



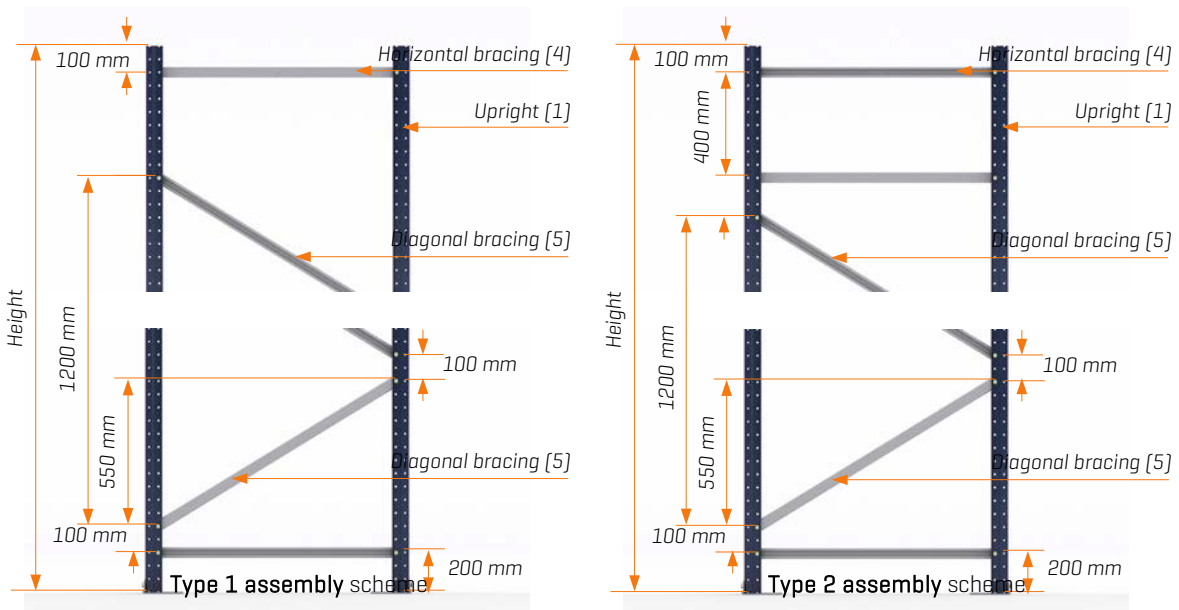
There are two possibilities for completing the assembly of the bracing system at the top of the frame depending on its height *[see the diagram on page 6]*.

Completion with just one horizontal bracing [frames with type 1 assembly scheme]: the last horizontal bracing [4] is connected to the uprights [1] 100 mm below their top ends.



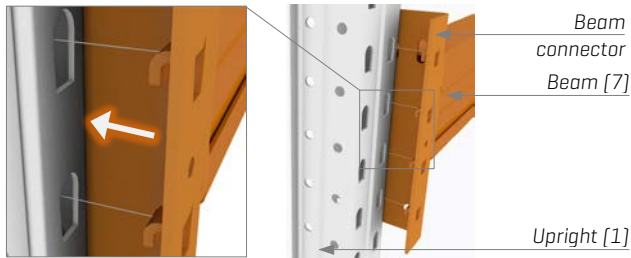
Completion with two horizontal bracing [frames with type 2 assembly scheme]:

The last horizontal bracing [4] is connected to the uprights [1] 100 mm below their top ends. The penultimate horizontal bracing [4] is connected to the uprights [1] 400 mm below the last horizontal bracing [4].



Height (mm)	Assembly scheme	Uprights Units	Base plates Units	M8x65 bolts Units	Spacer fittings Units	Horizontal bracings Units	Diagonal bracings Units	M8x88 bolt Units
2,000	1	2	2	4	4	2	2	
2,500	1	2	2	4	2	2	3	10
3,000	1	2	2	4	2	2	4	12
3,500	1	2	2	4	2	2	4	12
4,000	1	2	2	4	2	2	5	14
4,500	1	2	2	4	4	2	6	16
5,000	1	2	2	4	4	2	7	18
5,500	2	2	2	4	4	4	7	22
6,000	2	2	2	4	4	4	8	24
6,500	1	2	2	4	4	2	9	22
7,000	1	2	2	4	2	2	10	24
7,500	2	2	2	4	2	4	10	28
8,000	2	2	2	4	2	4	11	30
8,500	1	2	2	4	2	2	12	28
9,000	1	2	2	4	2	2	13	30
9,500	1	2	2	4	2	2	14	32
10,000	2	2	2	4	4	4	14	36
10,500	1	2	2	4	4	2	15	34
11,000	1	2	2	4	4	2	16	36
11,500	1	2	2	4	4	2	17	38
12,000	2	2	2	4	4	4	17	42

5 Attaching the beams

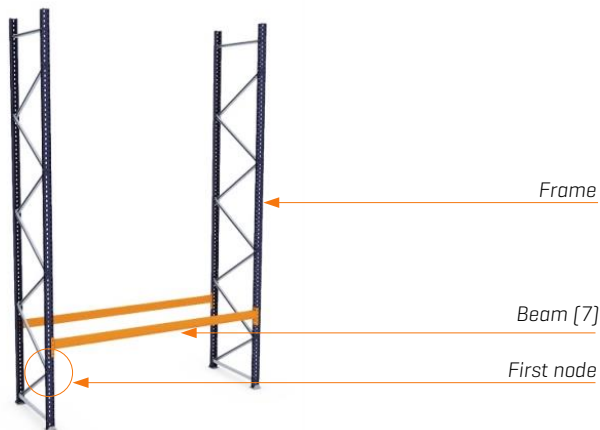


The basic structure is produced by attaching the beams [7] to the frames.

There are four hooks projecting from each beam connector which fit perfectly into the front holes on the uprights [1].



Once fitted correctly, beam connectors are secured using safety pins [8]. These are fully inserted into their correct position with a few light blows from a hammer.



Place the structure in an upright position and attach the first two beams [7] at the height of the first loading level.

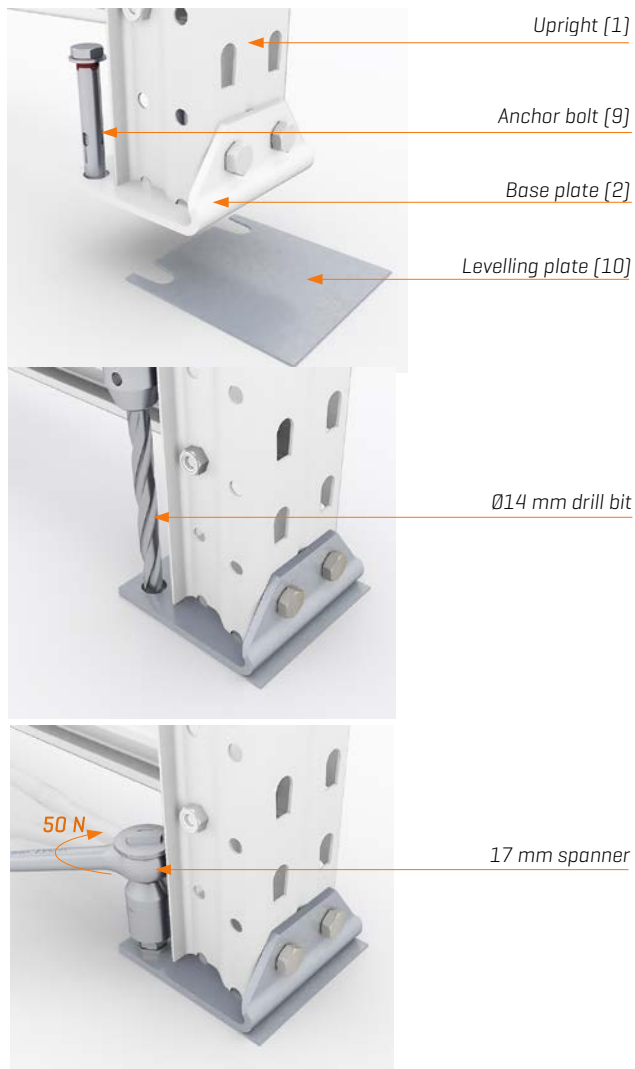
The first node created by two diagonal bracings must be on the aisle side of the frame.



Then attach the rest of the beams [7] until all the levels are in place, thus completing the assembly of the initial module.

Follow the same assembly process for all the modules that make up each row.

6 Securing the frames to the floor



The uprights [1] have to be fixed to the floor to increase the structure's safety. If the foundation surface is uneven, then levelling plates [10] must be introduced below the base plates [2] to ensure the structure is levelled and plumbed correctly.

The frame is secured to the floor using one or two anchor bolts [9], according to the specifications for the given storage system.

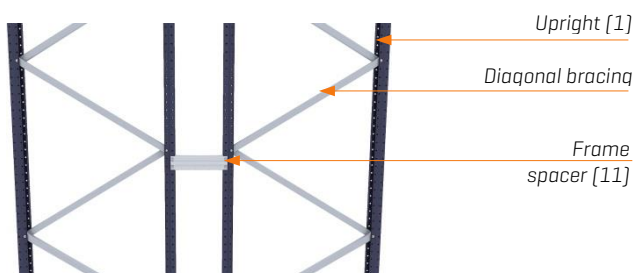
Drill a hole in the floor to a depth of at least 100 mm using a Ø14 mm bit.

Remove any debris after drilling to ensure the anchor bolt enters correctly.

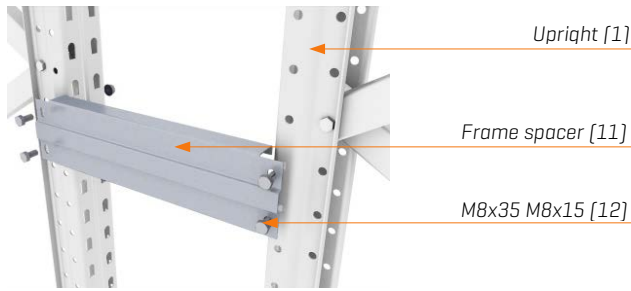
Strike the bolt with care until it is fully inserted.

Finally, screw the bolt down until it is secured firmly in position. Apply a recommended tightening torque of 50 Nm.

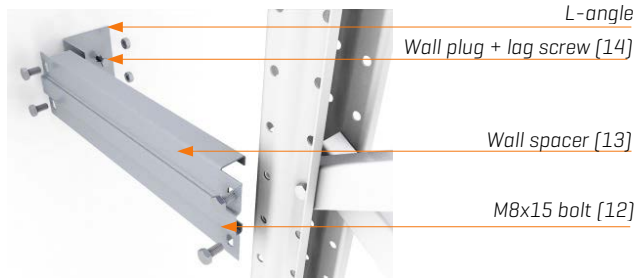
7 Spacers (optional)



When installing double rows, they must be joined together using frame spacers [11].

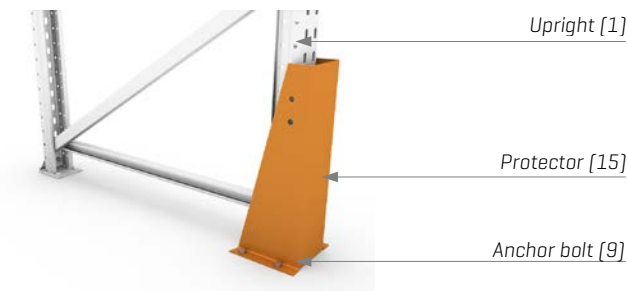


Attach the spacers [11] to the sides of the uprights [1] using four M8x15 bolts [12] placed as close as possible to the nodes connecting two diagonal bracings.



When specified in the storage system's design plans, wall spacers [13] should also be installed. These consist of an L-angle and frame spacer [11] that are connected together using four M8x15 bolts [12] and subsequently secured to the wall using a wall plug and lag screw [14].

8 Upright protectors [optional]



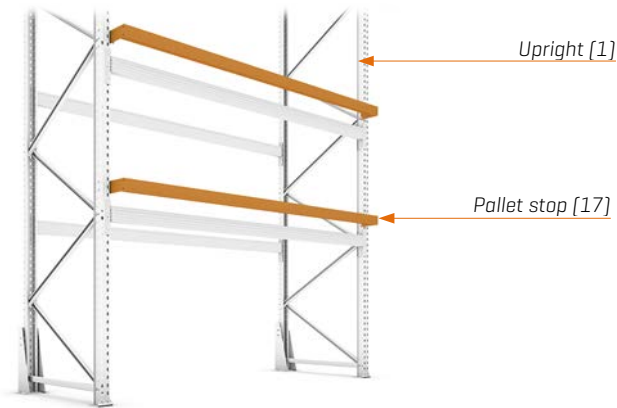
If the storage system's safety needs to be increased, then it shall be equipped with upright/frame protectors.

Upright protectors [15] are positioned in front of the uprights and attached to the floor using four anchor bolts [9].

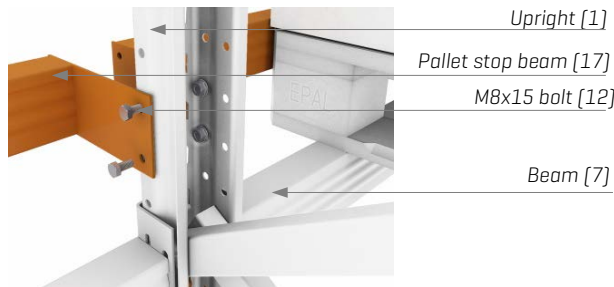


For full frame protection, a U-section bar [16] should be connected to the lateral faces of the upright protectors [15] using four M10x20 bolts [3].

9 Pallet stop beams



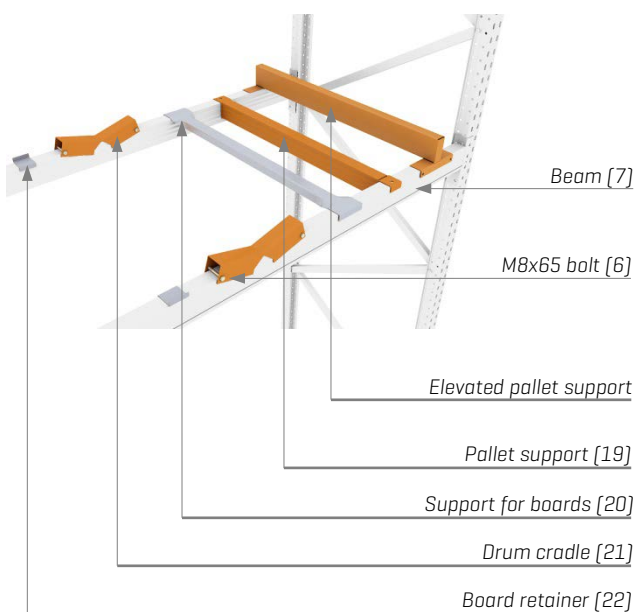
Pallet stop beams [17] shall be installed if and when they are included within the project. These serve as a positional reference when loading pallets.



They are positioned just above the beams [7] for each loading level.

And they are attached to the sides of the uprights [1] using four M8x15 bolts [12].

10 Accessories for levels [optional]

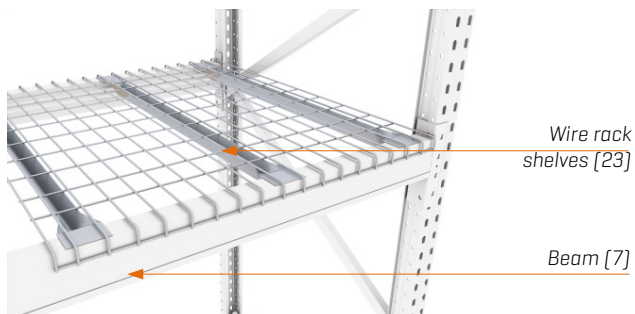


Depending on the particular use of each storage system, different components can be fitted to the beams thereby adapting the loading levels to receive specific types of goods and operate with a given handling system.

These accessories are assembled by placing them directly on beams [7].

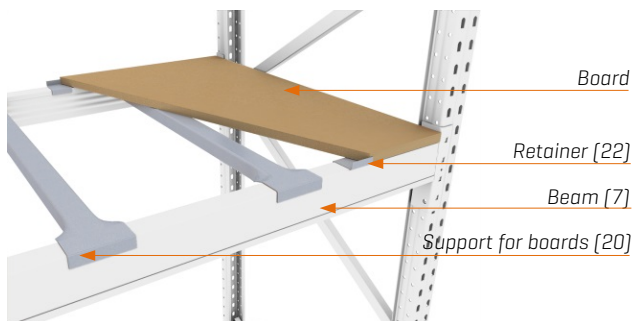
Drum cradles [21] are secured using two M8x65 bolts [6].

11 Loading level materials [optional]



Different materials can be fitted over the structural support elements to create a storage surface on each loading level.

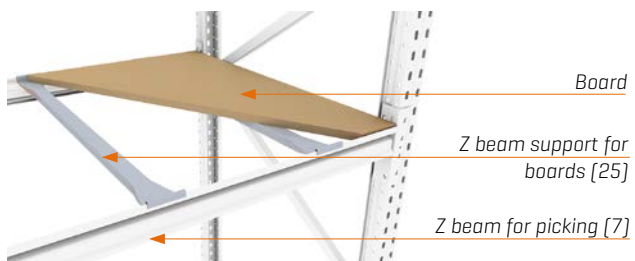
In the case of conventional beams [7], wire rack shelves [23]



or boards can be fitted with the aid of the supports [20] specified in the project design, plus four retainers [22] per level.



When the storage system features Z beams for picking [7], metal panels [24]



or boards can be fitted with the aid of Z beam supports [25], as specified in the project design.



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