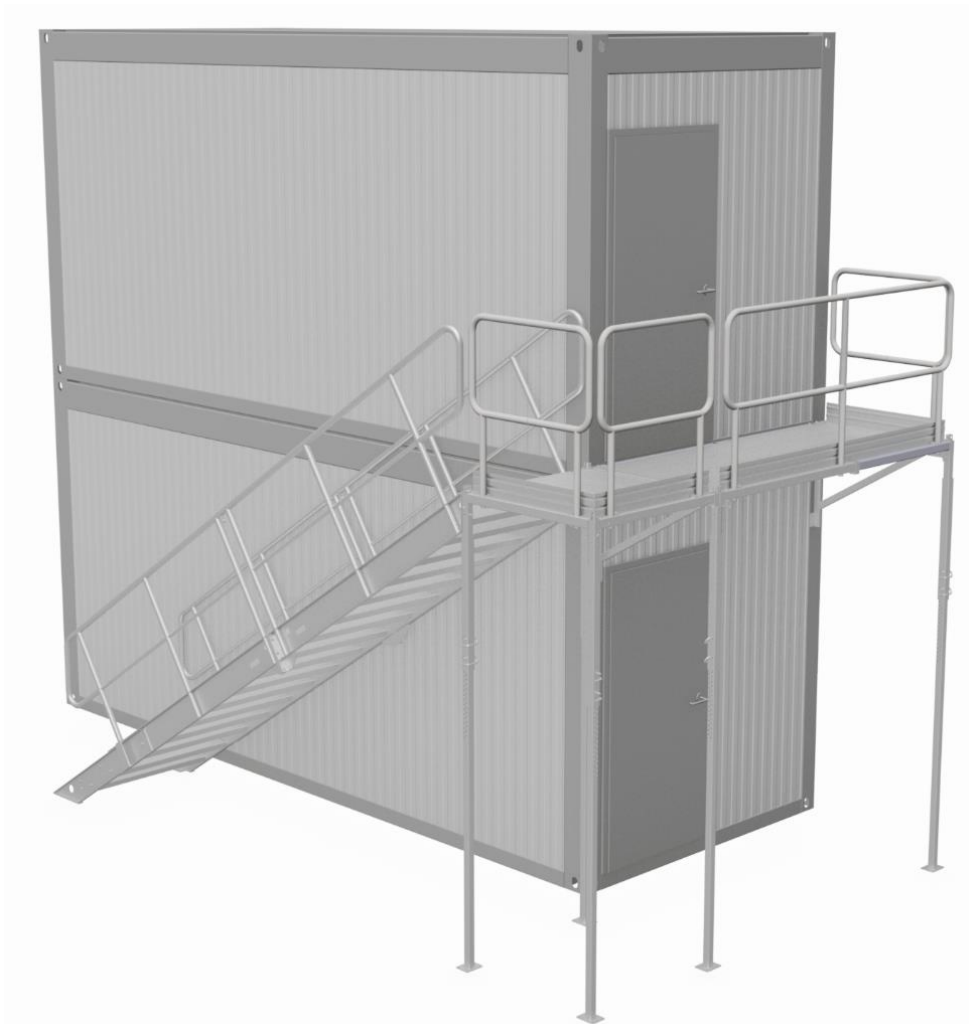

Appendix No. 1

Assembly Manual

3kN Container Stairs



Gorlice 28.11.2017.

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(Prepared)

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(Checked)

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(Approved)

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(Signature)

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(Signature)

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(Signature)

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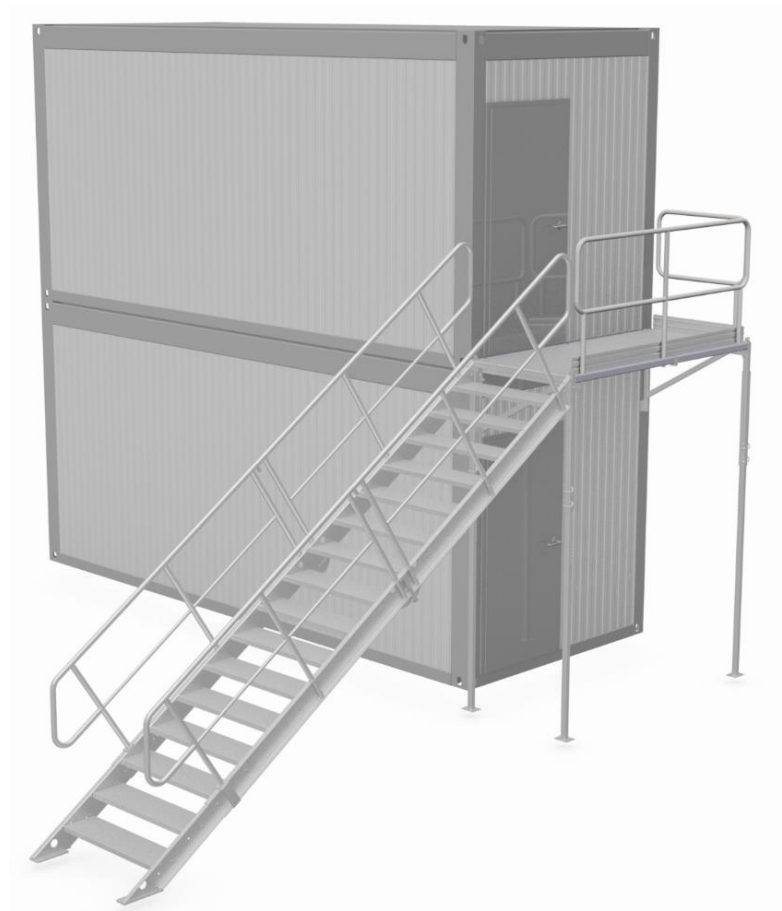
No.	FULL NAME	SECTION	DATE OF REVISION	SCOPE OF REVISION	NOTES
1					
2					
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1. Assembly Manual

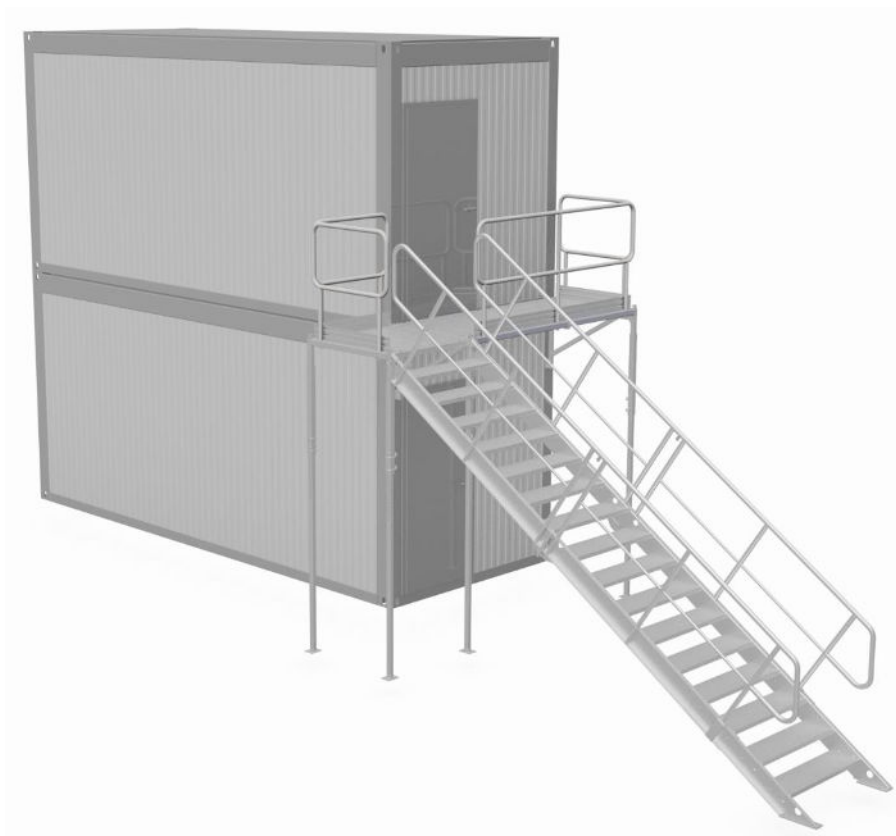
The Assembly Manual is the appendix to the Operation and Maintenance Manual of the system of container stairs by the company TLC.

Container stairs consist of individual elements acc. to the specification attached to the delivery. The system has screw-tightened connections and pins. The system is supplied in the form of separate elements such as platforms, railings, steps, connectors, stairs, posts. The elements are assembled in a specific order.

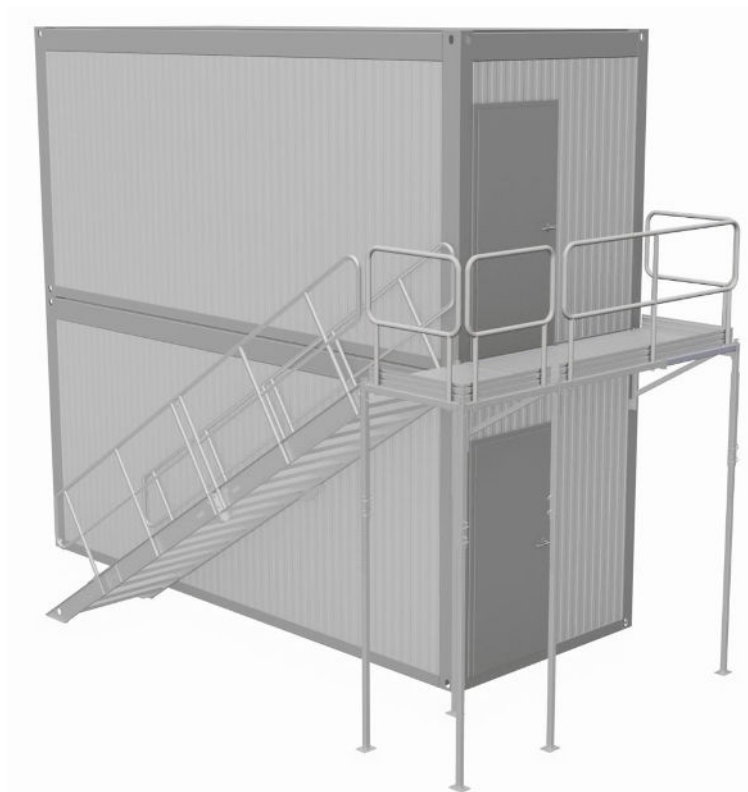
Container stairs as a modular construction can be freely configured according to needs. The arrangement of individual configurations shall comply with the OMM. 9 basic configurations of container stairs are shown below.



Rysunek 1. Configuration 1



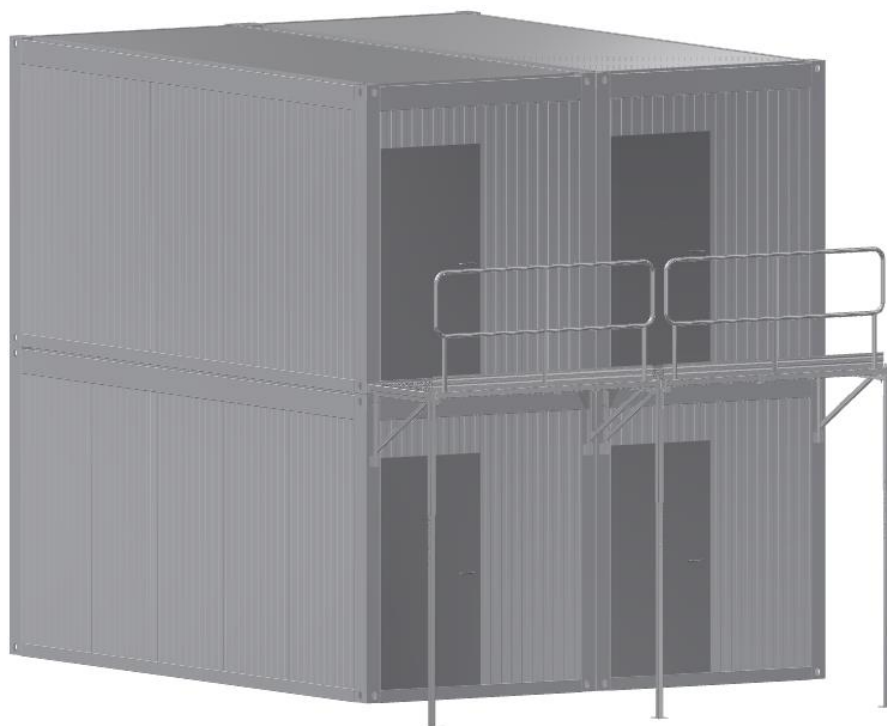
Rysunek 2. Configuration 2



Rysunek 3. Configuration 3



Rysunek 4. Configuration 4



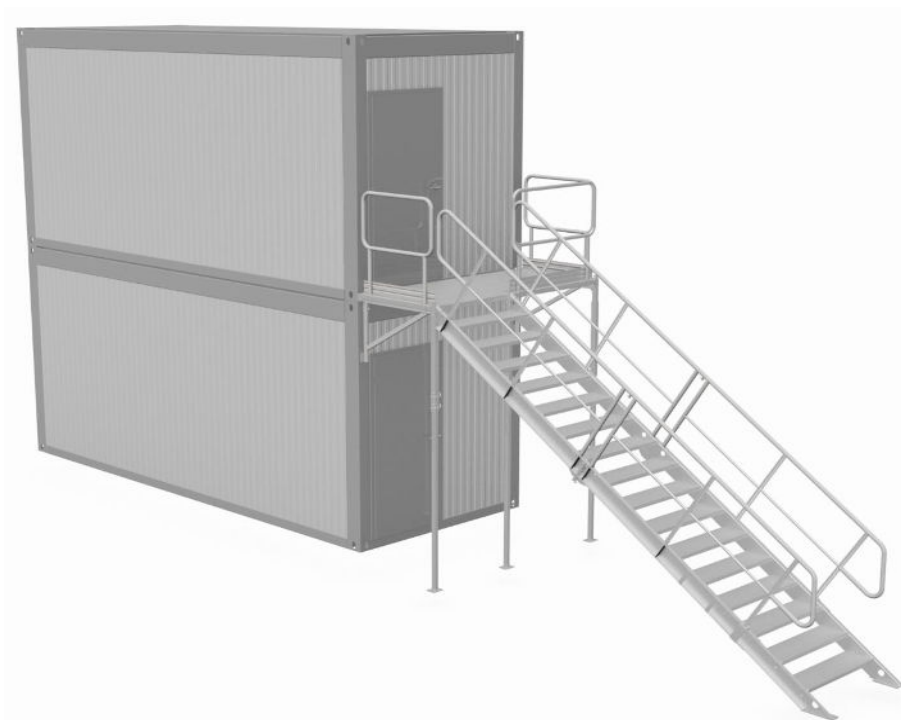
Rysunek 5. Configuration 5



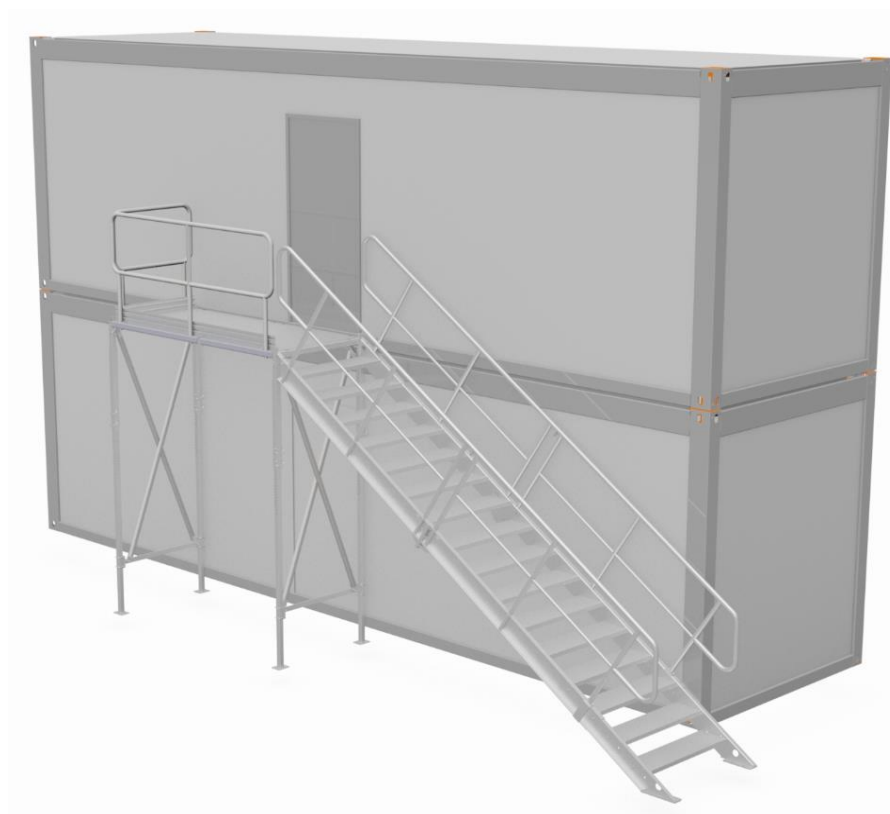
Rysunek 6. Configuration 6



Rysunek 7. Configuration 7



Rysunek 8. Configuration 8



Rysunek 9. Configuration 10

2. Components of the system of container stairs.

List of elements included in Table 1 shows the components of the system of container stairs and their quantities assembled depending on configuration and type of system ordered by a customer (to select from the columns Designation and Item description). In configurations 5 and 7, n = number of platforms.

Tabela 1. List of parts

No.	Designation	Item description	Configurations									
			1	2	3	4	5	6	7	8	10	
Elements of the system of container stairs												
1.	P-SK6-SB-FG1.1	Stairs Module 1100 upper	1	1	1	1	0	1	0	1	1	
	P-SK6-SB-FG1.25	Stairs Module 1200 upper										
2.	P-SK6-SB-FD1.1	Stairs Module 1100 lower	1	1	1	1	0	1	0	1	1	
	P-SK-SB-FD1.25	Stairs Module 1200 lower										
3.	P-SK6-SB-FR1.1/A	Footing of stairs, left	1	1	1	1	0	1	0	1	1	
4.	P-SK6-SB-FR1.1/B	Footing of stairs, right	1	1	1	1	0	1	0	1	1	
5.	P-SK6-PD1.1	Platform 1100x1100	0	1	1	0	0	1	0	0	0	
	P-SK6-PD1.25	Platform 1200x1200										
6.	P-SK6-PD2.4	Platform 2440x1100	1	1	1	1	n	0	$2x n$	1	1	
	P-SK6-PD2.4-1.25	Platform 2440x1200										
7.	P-SK6-PD1.69	Platform 1690x1100	0	0	0	0	0	1	0	0	0	
	P-SK6-PD1.69x1.25	Platform 1690x1200										
8.	P-SK5-WT1.1	Platform Bracket 1100	2	2	2	1	$2x n$	1	$4x n$	2	2	
	P-SK5-WT-1100-ML P-SK5-WT-1100-MP	Set of Platform Brackets 1100 left + right for ship containers	1	1	1	1	n	1	$2x n$	1	1	
	P-SK5-WT1.2	Platform Bracket 1200	2	2	2	1	$2x n$	1	$4x n$	2	2	
	P-SK5-WT-1200-ML P-SK5-WT-1200-MP	Set of Platform Brackets 1200 left + right for ship containers	1	1	1	1	n	1	$2x n$	1	1	
9.	P-SK6-PR1	Post 01	3	4	5	3	$1+n$	3	$1+n$	3	4	
10.	P-SK6-PR2	Post 02	0	0	0	0	0	0	$1+n$	0	0	
11.	P-SK5-BS-1	Stairs Railing 01 industrial	2	2	2	2	0	2	0	2	2	
	P-SK5-BS-B-1	Stairs Railing 01 safe										
12.	P-SK5-BS-2	Stairs Railing 02 industrial	2	2	2	2	0	2	0	2	2	
	P-SK5-BS-B-2	Stairs Railing 02 safe										
13.	P-SK5-BP1.1	Platform Railing 1100x1100 industrial	1	3	3	1	0	1	0	2	2	
	P-SK6-BP1.1-B	Platform Railing 1100x1100 safe										
	P-SK5-BP1.2	Platform Railing 1200x1200 industrial										
	P-SK6-BP1.25-B	Platform Railing 1200x1200 safe										
14.	P-SK5-BP2.4	Platform Railing 2440 industrial	1	1	1	1	n	0	$2x n$	0	1	
	P-SK6-BP2.4-B	Platform Railing 2440 safe										
15.	P-SK5-BP1.69	Platform Railing 1690 industrial	0	0	0	0	0	1	0	0	0	
	P-SK6-BP1.69-B	Platform Railing 1690 safe										
16.	P-SK6-LP	Connector LP1S1	1	2	1	1	n	1	$2x n$	1	0	
17.	P-SK5-LP2/ P-SK5-LP3	Connector LP2/LP3	0	0	0	1	0	1	0	0	2	
18.	P-SK6-LP5	Connector LP5	0	0	0	0	0	0	0	0	4	
19.	ZW	Bracket Clamp	2	2	2	1	$2x n$	1	$4x n$	2	0	

20.	M-Z-P-K-14-ZN	Washer PK	2	9	6	2	2x n	2	4x n	2	0
21.	P-SK5-BP1.28	Platform Railing 1280 industrial	0	0	0	0	0	0	0	1	0
	P-SK6-BP1.28-B	Platform Railing 1280 safe									
	P-SK5-BP1.04	Platform Railing 1040 industrial									
	P-SK6-BP1.04-B	Platform Railing 1040 safe									
22.	P-SK6-X1	Concentration	0	0	0	0	0	0	0	0	4
23.	P-SK6-O1	Bar	0	0	0	0	0	0	0	0	2
	P-SK6-O2	Bar	0	0	0	0	0	0	0	0	2

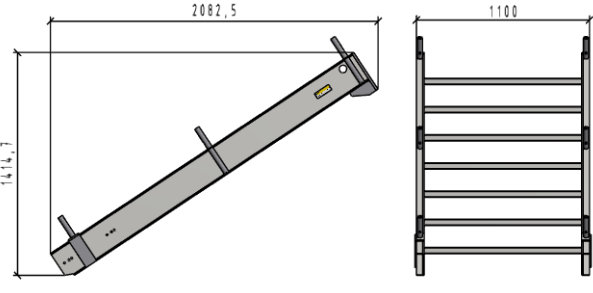
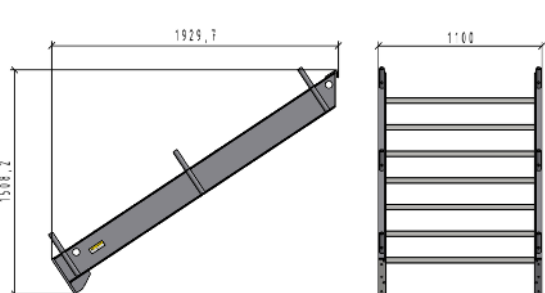
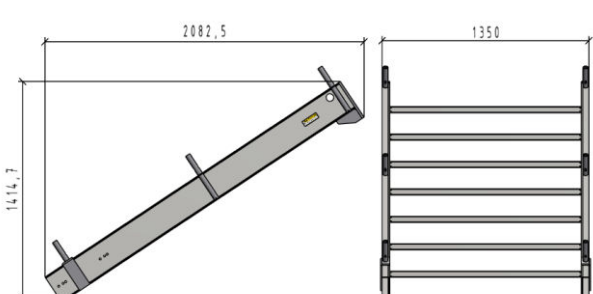
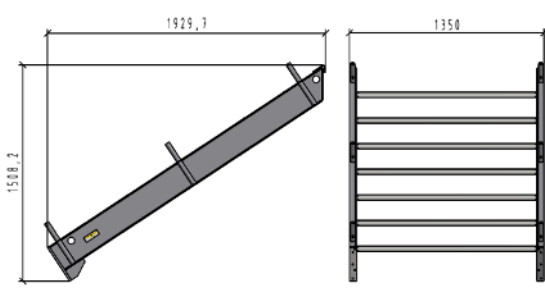
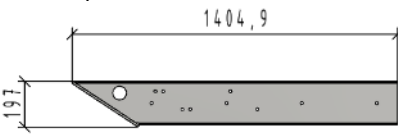
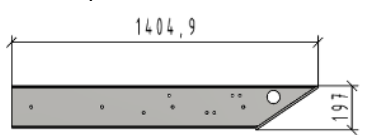
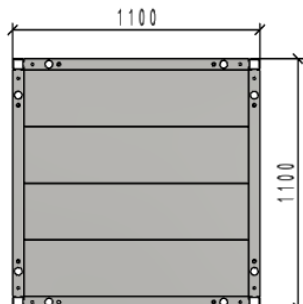
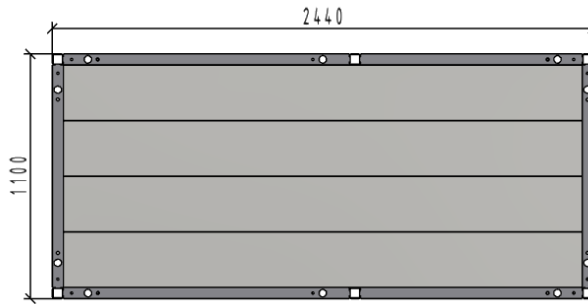
Tabela 2. List of fasteners

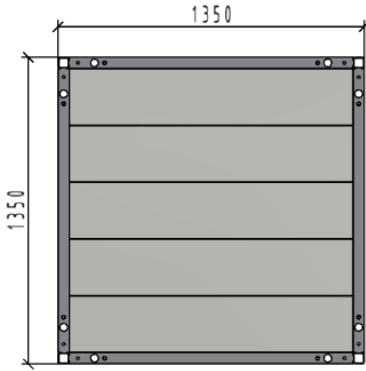
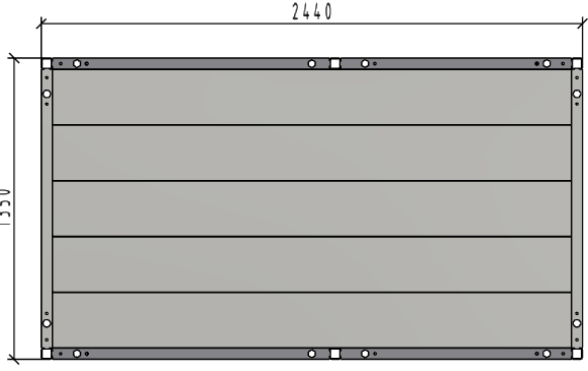

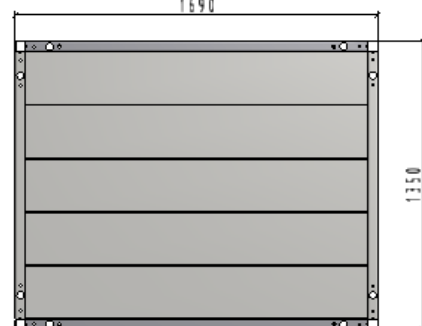
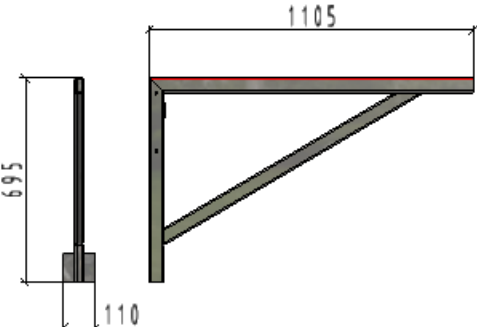
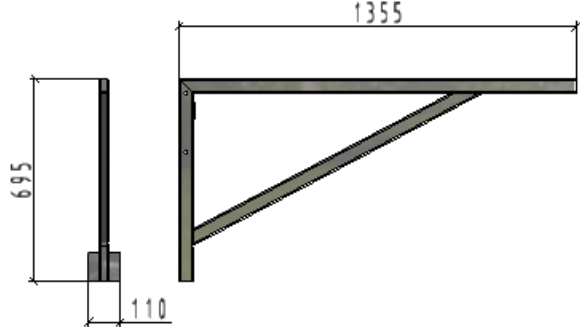
No..	Designation	Item description	Configuration								
			1	2	3	4	5	6	7	8	10
Fasteners											
A.	ISO 4014 M6x60	Bolt M6x60 8.8	4	4	4	4	0	4	0	4	4
B.	ISO 4017 M10x30	Bolt M10x30 8.8	10	10	10	10	0	10	0	10	10
C.	ISO 4014 M10x70	Bolt M10x70 8.8	2	4	2	2	2	2	10	2	2
D.	ISO 4014 M10x80	Bolt M10x80 8.8	6	6	10	6	2	6	4	8	12
E.	ISO 4014 M10x90	Bolt M10x90 8.8	1	1	1	1	1	1	4	1	1
F.	ISO 4014 M10x140	Bolt M10x140 8.8	2	4	4	1	2	1	8	2	1
G.	ISO 4014 M12x50	Bolt M12x50 8.8	6	6	6	6	0	6	0	7	14
H.	ISO 4017 M12x30	Bolt M12x30 8.8	4	4	4	10	0	10	0	4	10
I.	ISO 4032 M6	Nut M6	4	4	4	4	0	4	0	4	4
J.	ISO 4032 M10	Nut M10	21	30	27	20	7	20	26	23	32
K.	ISO 4032 M12	Nut M12	10	10	10	10	0	10	0	11	18
L.	ISO 7089 M10	Washer 10	42	60	54	40	14	40	52	46	64
M.	ISO 7089 M12	Washer 12	20	20	20	20	0	20	0	22	36

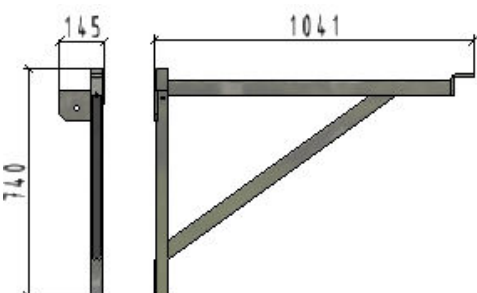
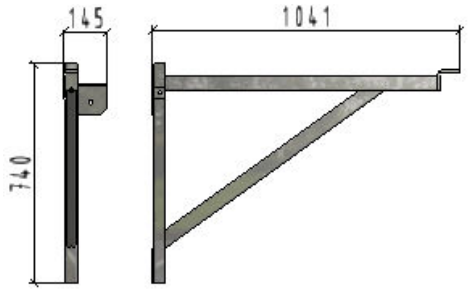
Tabela 3. List of elements required to adjust the height of the stairs depending on dimensions of containers.

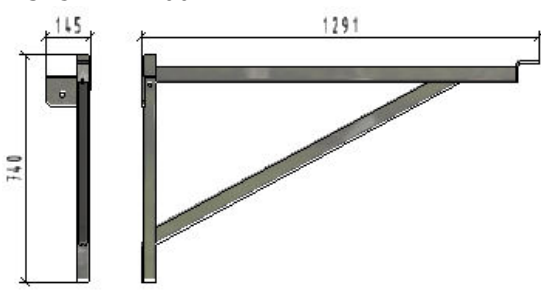
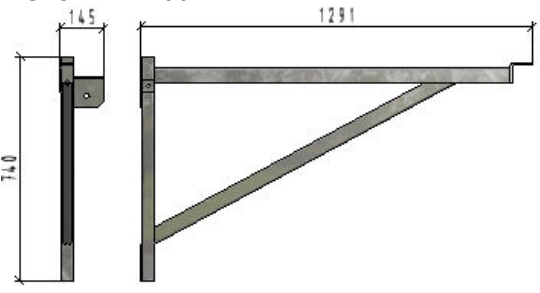
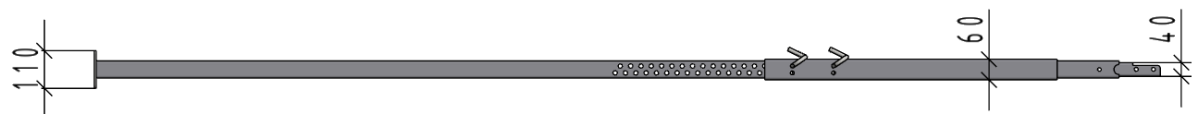

No.	Designation	Name	Container H=2591	Container H=2800	Container H=2900
S1	P-SK6-SB-E1.1	Step	0	1	2
	P-SK6-SB-E1.25				
A	ISO 4017 M10x30	Bolt M10x30 8.8	0	4	8
H	ISO 4032 M10	Nut M10	0	4	8
K	ISO 7089 M10	Washer 10	0	8	16

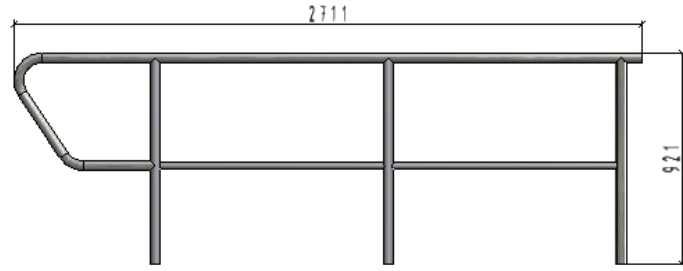
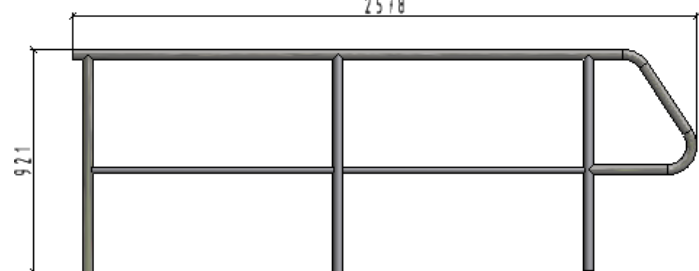
Tabela 4. Components of the system of container stairs.

<p>P-SK6-SB-FD1.1</p>  <p>Weight: 128.42kg</p>	<p>P-SK6-SB-FG1.1</p>  <p>Weight: 128.4kg</p>
<p>P-SK6-SB-FD1.2</p>  <p>Weight: 143.778kg</p>	<p>P-SK6-SB-FG1.2</p>  <p>Weight: 142.287kg</p>
<p>P-SK6-SB-FR1.1/A</p>  <p>Weight: 14,85kg</p>	<p>P-SK6-SB-FR1.1/B</p>  <p>Weight: 14,85kg</p>
<p>P-SK6-PD1.1</p>  <p>Weight: 52.21kg</p>	<p>P-SK6-PD2.4</p>  <p>Weight: 112.687kg</p>

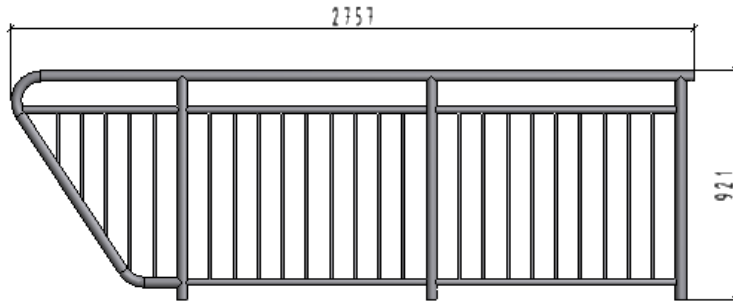
<p>P-SK6-PD1.2</p>  <p>Weight: 74.662kg</p>	<p>P-SK6-PD2.4-1.2</p>  <p>Weight: 135.566kg</p>
<p>P-SK6-PD1.69</p>  <p>Weight: 78.591kg</p>	<p>P-SK6-PD1.69x1.2</p>  <p>Weight: 94.317kg</p>
<p>P-SK5-WT1.1</p>  <p>Weight: 9.163kg</p>	<p>P-SK5-WT1.2</p>  <p>Weight: 10.249kg</p>

<p>P-SK6-WT-1000-ML</p>  <p>Weight: 9.875kg</p>	<p>P-SK5-WT-1000-MP</p>  <p>Weight: 9.875kg</p>
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<p>P-SK5-WT-1200-ML</p>  <p>Weight: 11.063kg</p>	<p>P-SK5-WT-1200-P</p>  <p>Weight: 11.063kg</p>
<p>P-SK6-PR1</p>  <p>Weight: 22.779kg</p>	
<p>P-SK6-PR2</p>  <p>Weight: 20.15kg</p>	

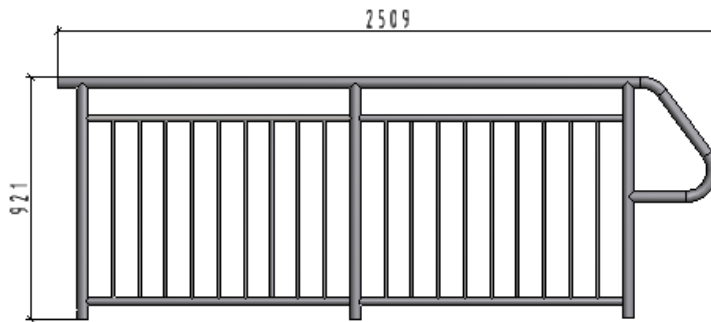
<p>P-SK5-BS-1</p>  <p>Weight: 17.978kg</p>
<p>P-SK5-BS-2</p>  <p>Weight: 16.964kg</p>

P-SK5-BS-B-1



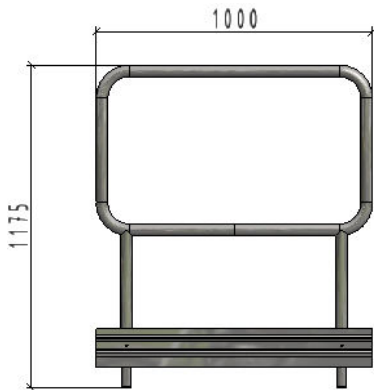
Weight: 33.801kg

P-SK5-BS-B-2



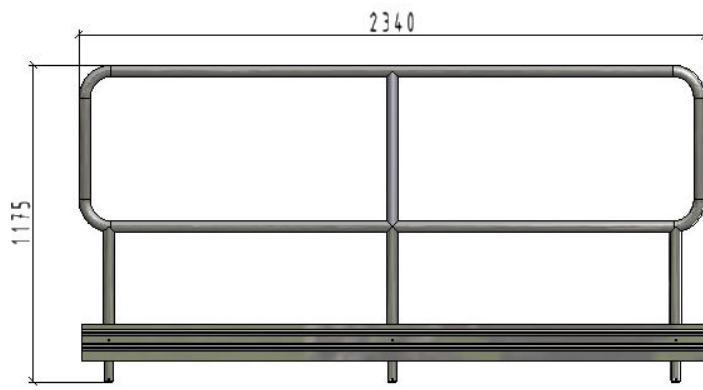
Weight: 30.703kg

P-SK5-BP1.1



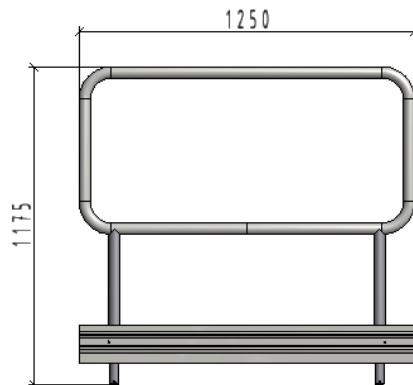
Weight: 12.006kg

P-SK5-BP2.4



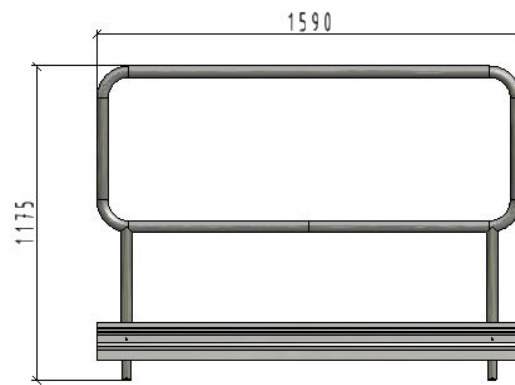
Weight: 24.345kg

P-SK5-BP1.2

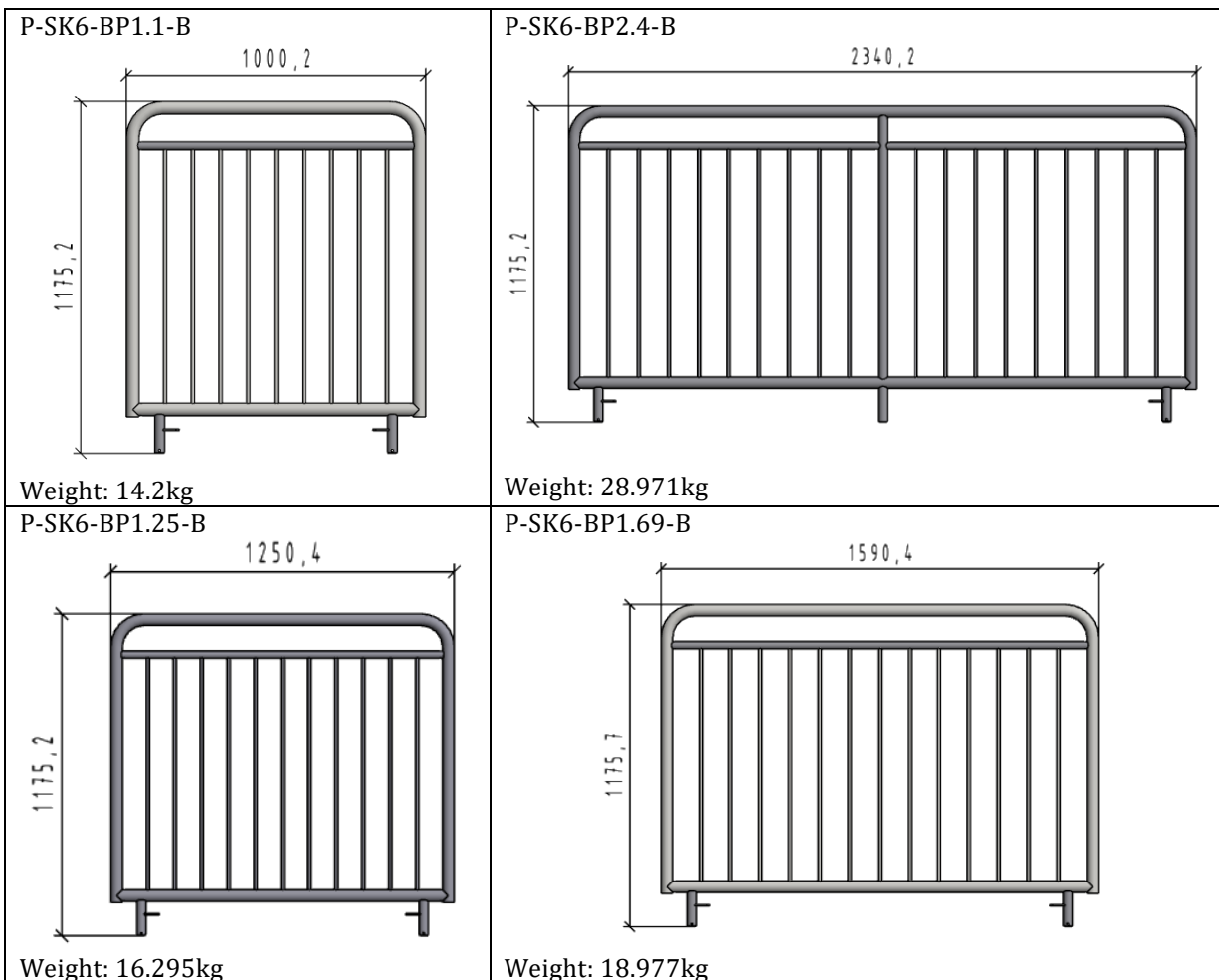
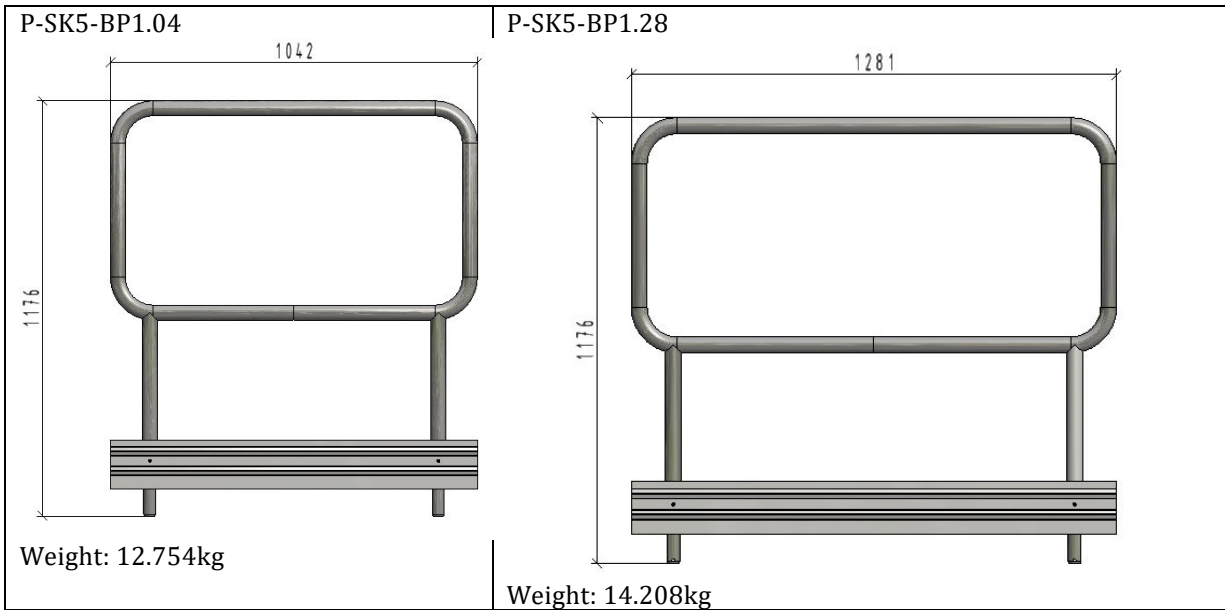


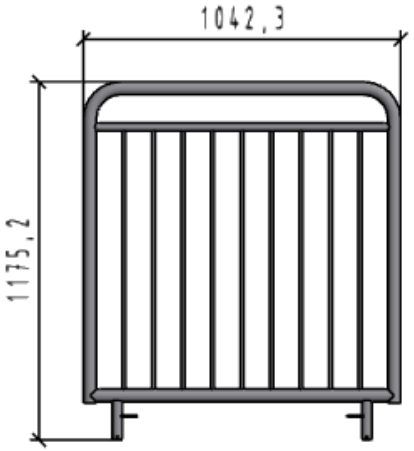
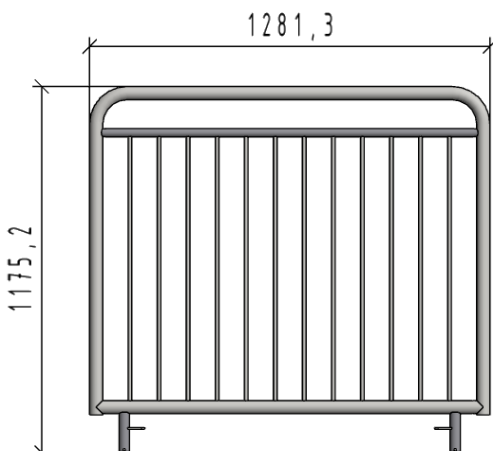
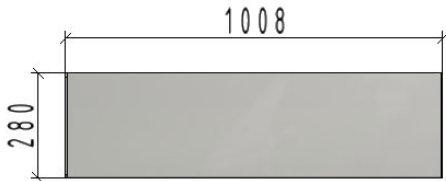
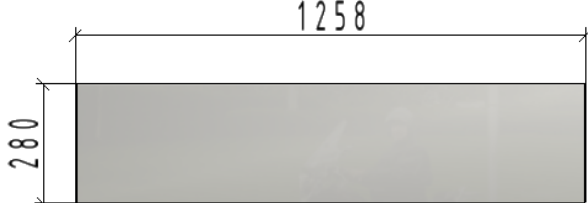
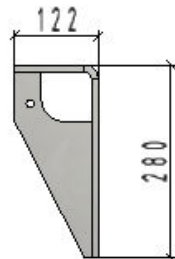
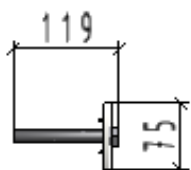
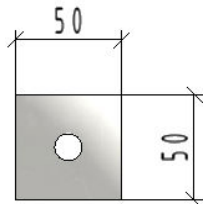
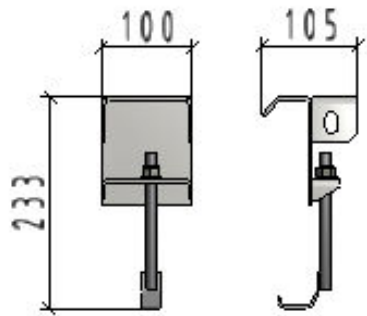
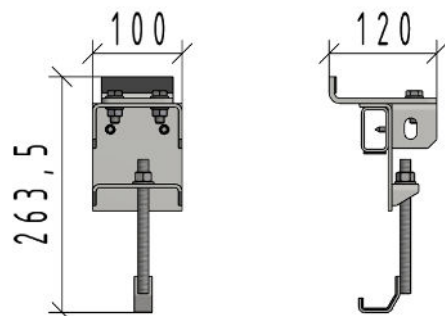
Weight: 13.892kg

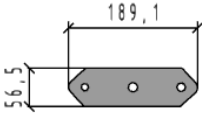
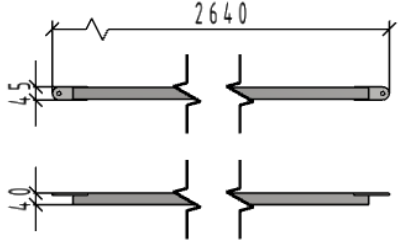
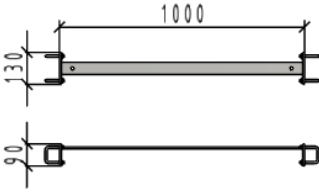
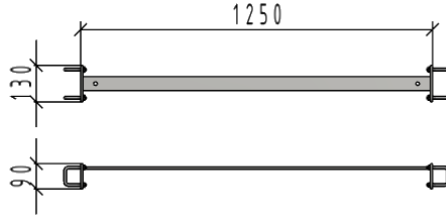
P-SK5-BP1.69



Weight: 16.030kg



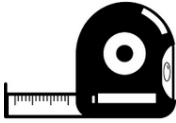



<p>P-SK6-BP1.04-B</p>  <p>Weight: 14.474kg</p>	<p>P-SK6-BP1.28-B</p>  <p>Weight: 16.73kg</p>	
<p>P-SK6-SB-E1.1</p>  <p>Weight: 9.704kg</p>	<p>P-SK6-SB-E1.25</p>  <p>Weight: 11.915kg</p>	
<p>P-SK5-LP</p>  <p>Weight: 2.875kg</p>	<p>ZW</p>  <p>Weight: 0.391kg</p>	<p>M-Z-P-K-14-ZN</p>  <p>Weight: 0.149kg</p>
<p>P-SK5-LP2</p>  <p>Weight: 1.107kg</p>	<p>P-SK5-LP3</p>  <p>Weight: 1.982kg</p>	

<p>P-SK6-LP5</p>  <p>Weight: 0.073kg</p>	<p>P-SK6-X1</p>  <p>Weight: 8.782kg</p>
<p>P-SK6-O1</p>  <p>Weight: 4.607kg</p>	<p>P-SK6-O2</p>  <p>Weight: 5.392kg</p>

3. List of tools required to assembly container stairs.

Tabela 5. List of tools

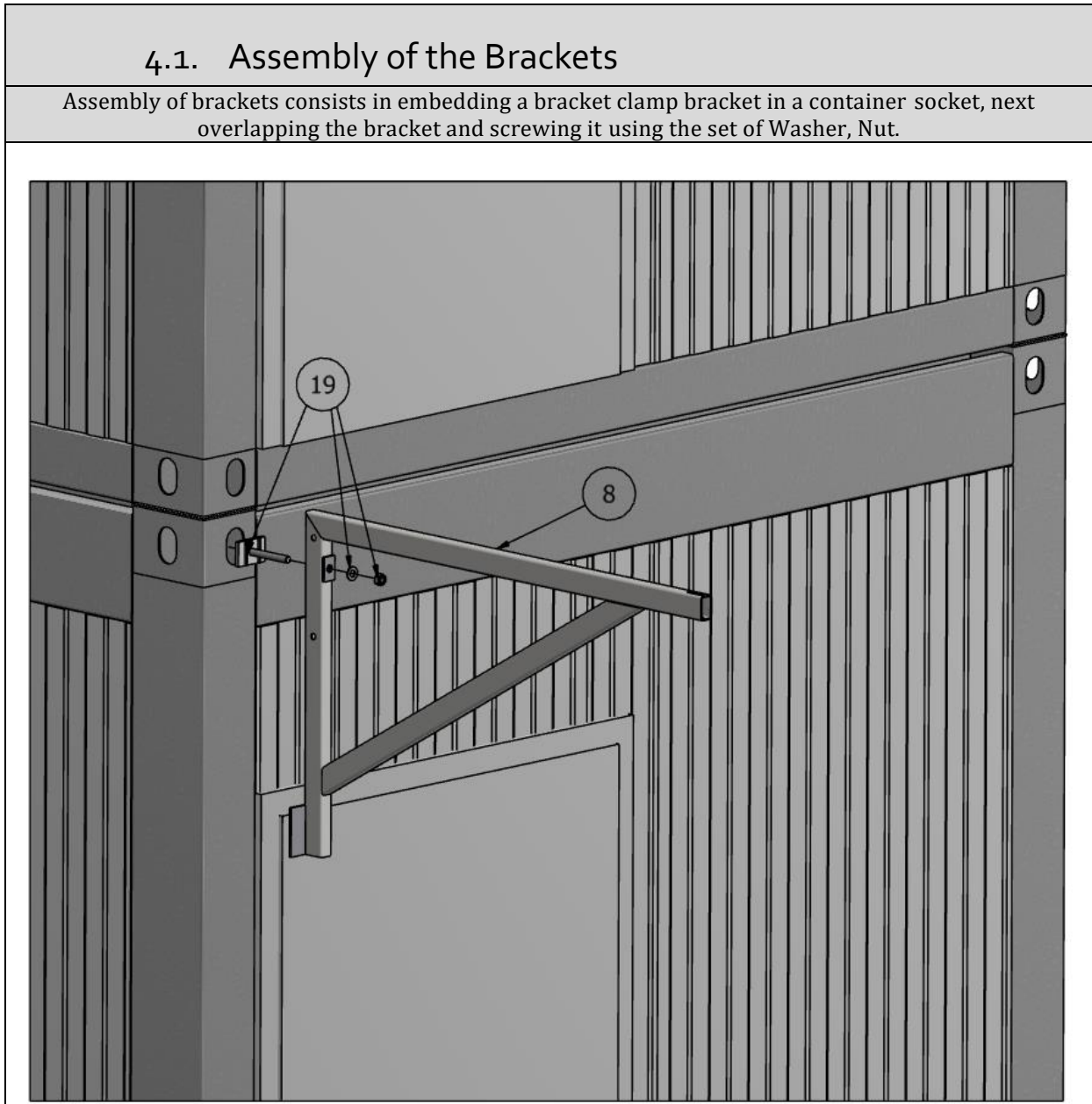
	<p>Wrenches: 21,19,17,13,10</p>
	<p>Level</p>
	<p>Measuring tape</p>
	<p>A lifting device with a lifting capacity of min. 1t</p>

4. Assembly operations for individual components of the system of container stairs.

The Assembly Manual was prepared in a way that shows how to assemble individual components of the system of container stairs.

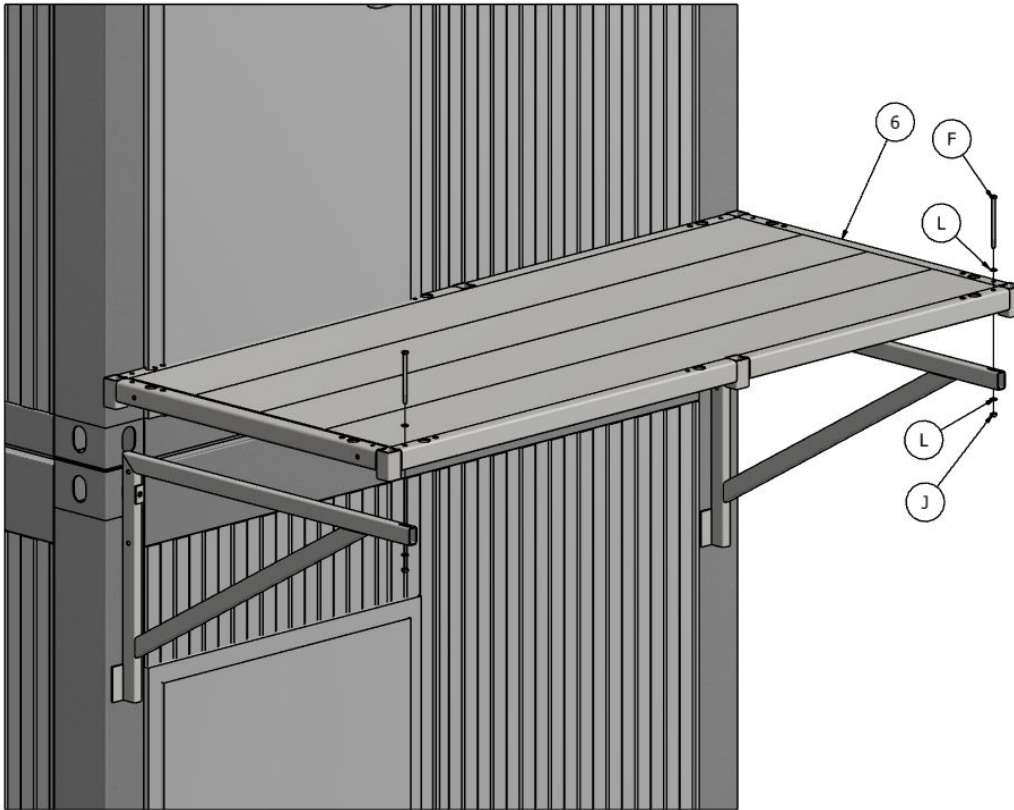
4.1. Assembly of the Brackets

Assembly of brackets consists in embedding a bracket clamp bracket in a container socket, next overlapping the bracket and screwing it using the set of Washer, Nut.

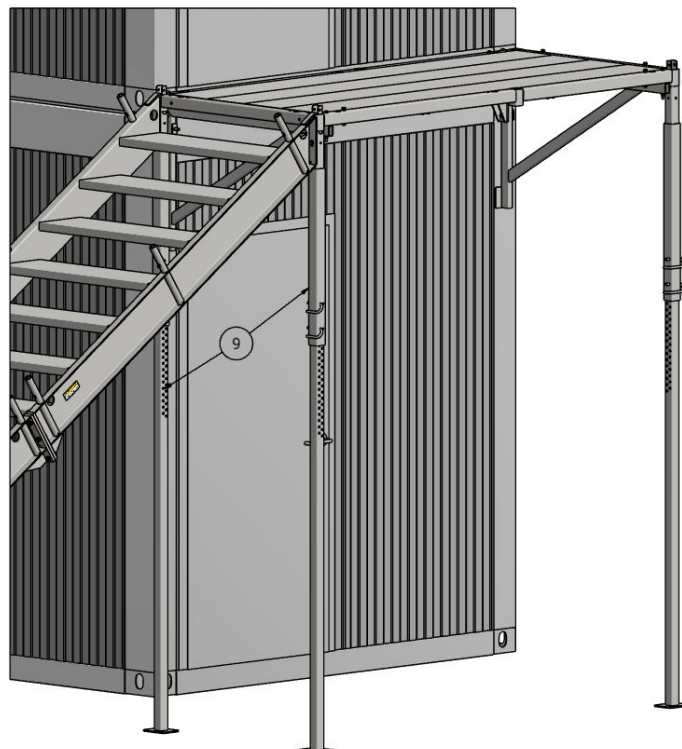


4.2. Assembly of the Platforms

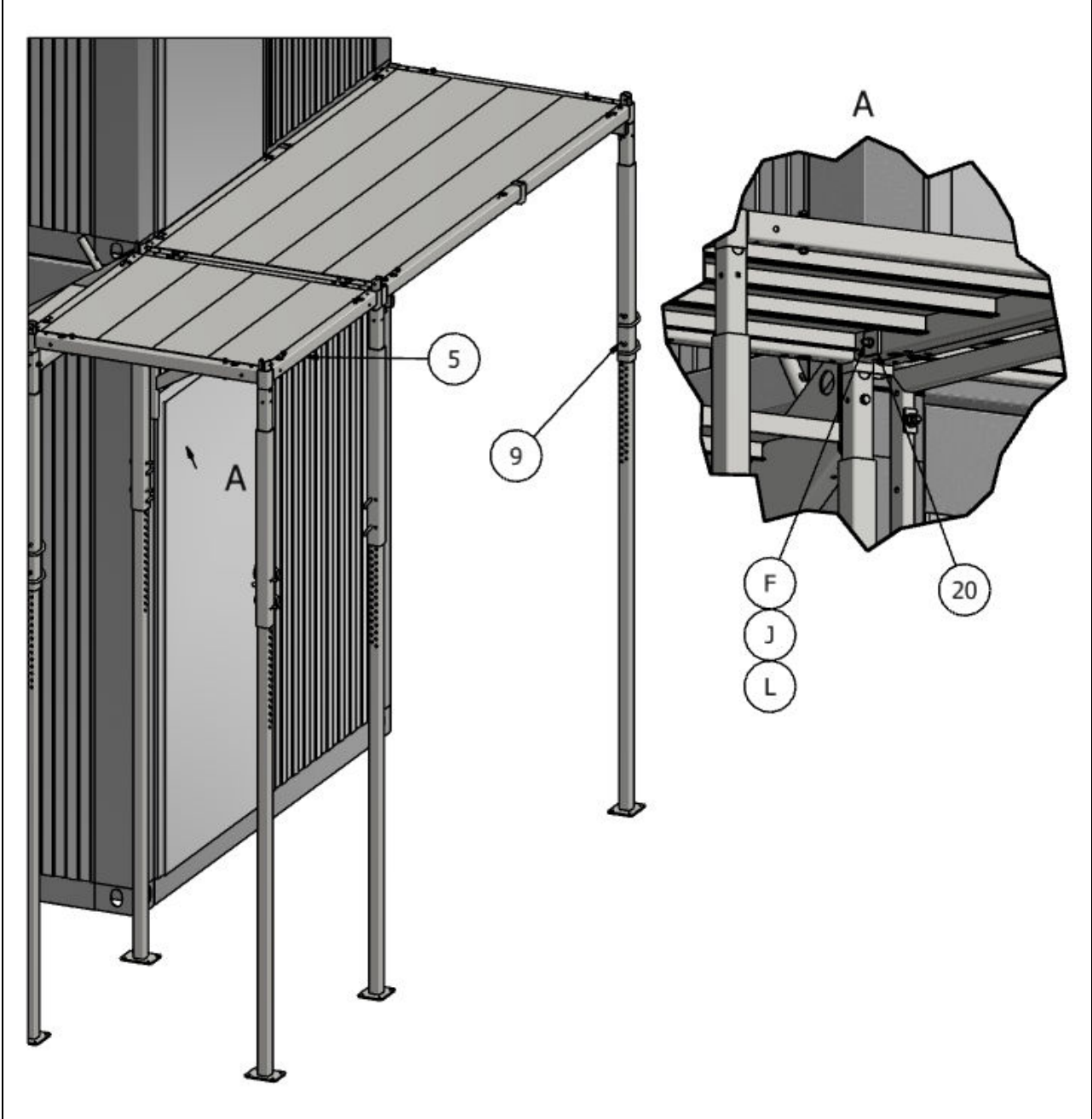
Platforms are assembled on brackets and then bolted using the set of Bolt, Washer, Nut.



In the case of mounting stairs to the platform, at that side the platform should be supported by two posts or a bracket and posts.

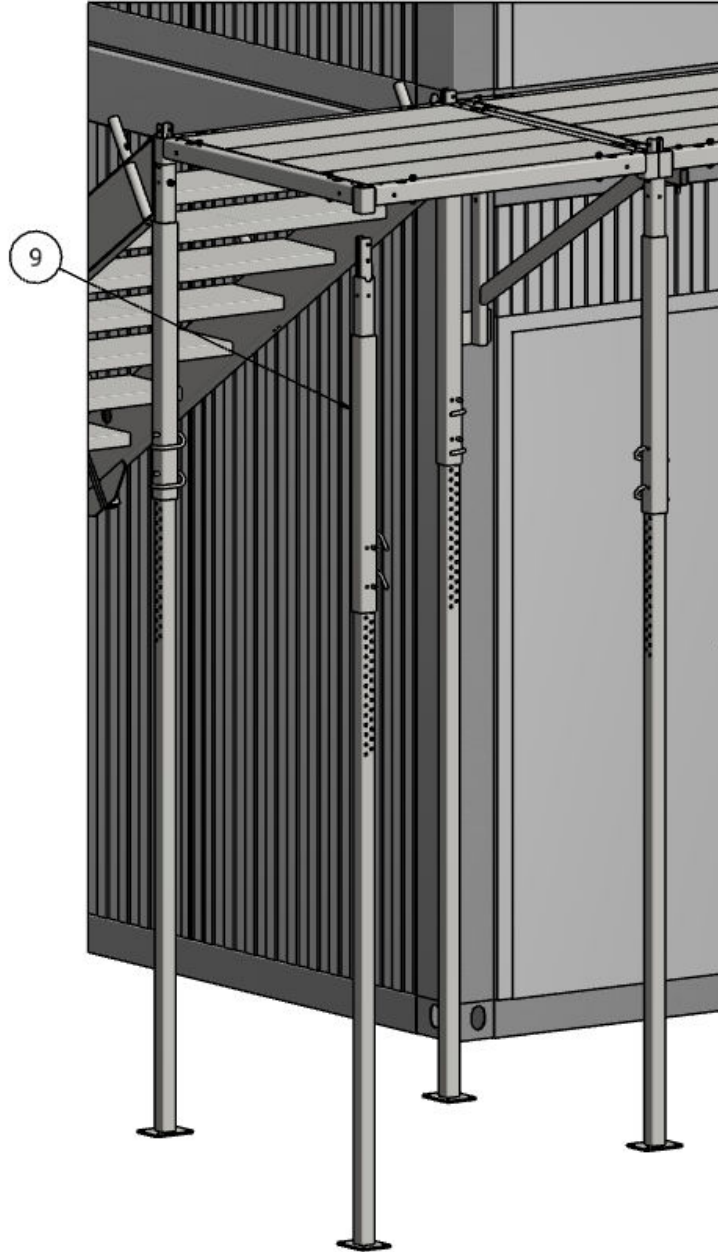


In the case when assembly of the platform on brackets is not possible, it should be supported in four sockets with posts and bolted to adjacent platform that is assembled on brackets. Adjacent platforms should be bolted with each other using the set of Washer PK, Bolt, Washer, Nut.

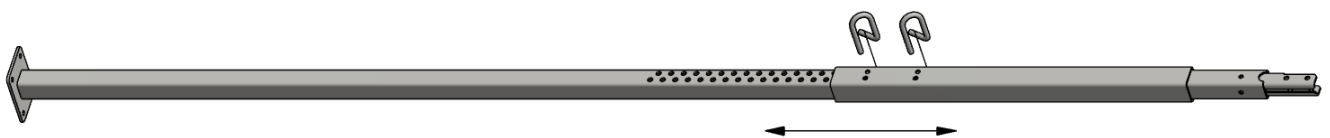


4.3. Assembly of the Posts

The posts should be embedded in sockets of platforms.

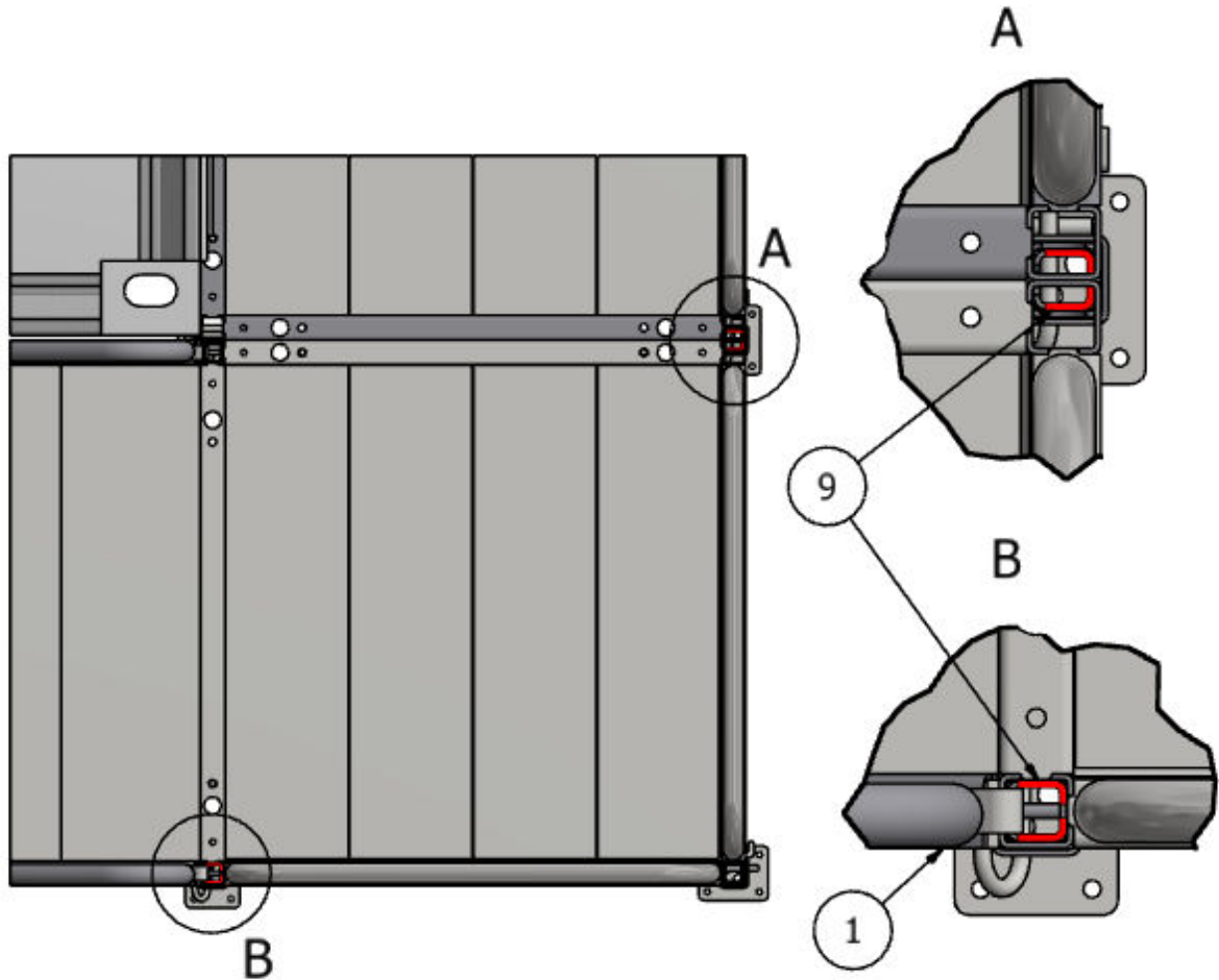


The height of the post should be adjusted to the height of the container to which the stairs are mounted. To do so, disassemble cotter pins, adjust the height, embed the cotter pins in appropriate openings.

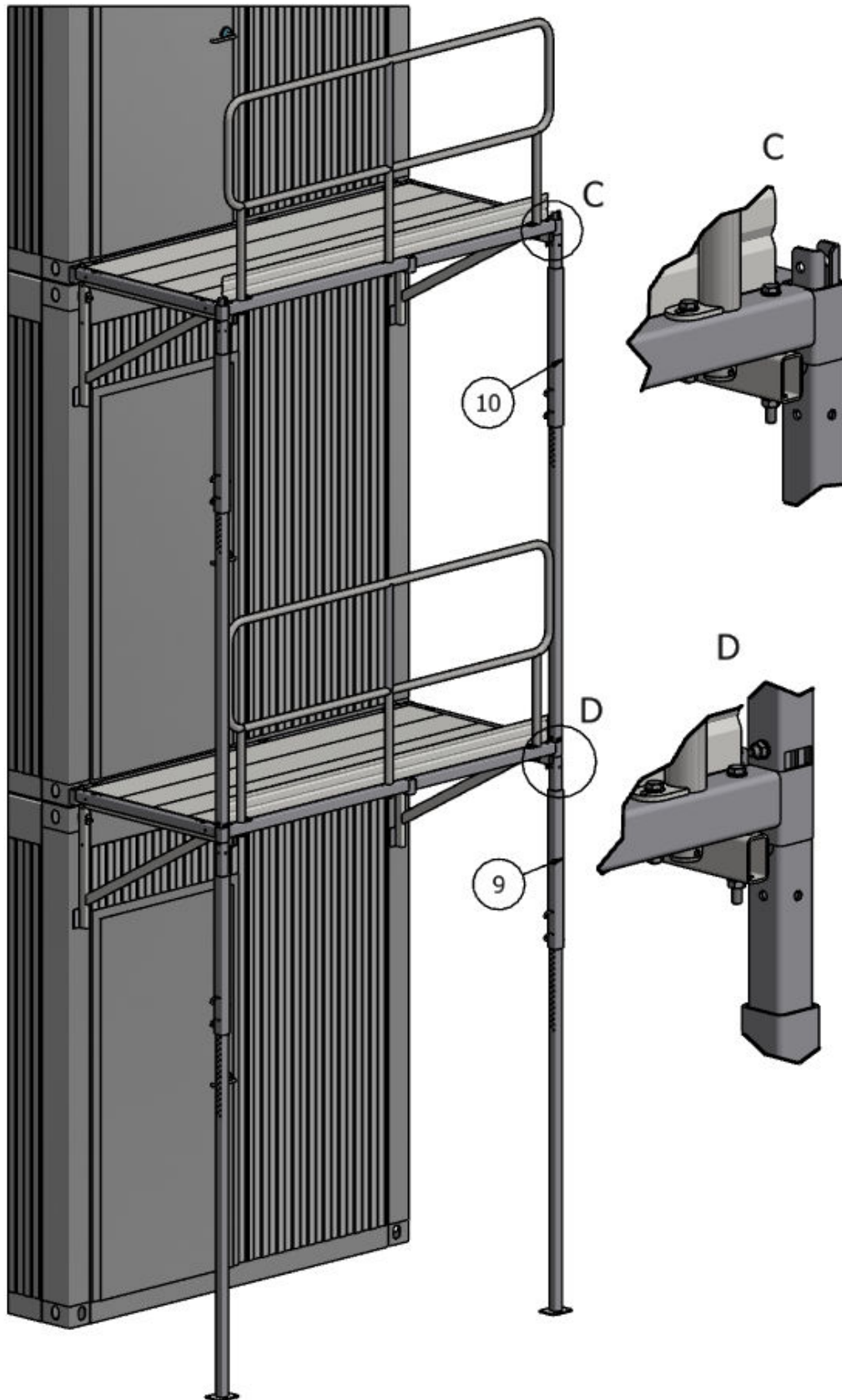


The posts that are installed next to the stairs should be assembled so that the notch in the pin of the post is facing the hook of the stairs.

Two adjacent platforms should be supported by one post, the pin of which covers two sockets.

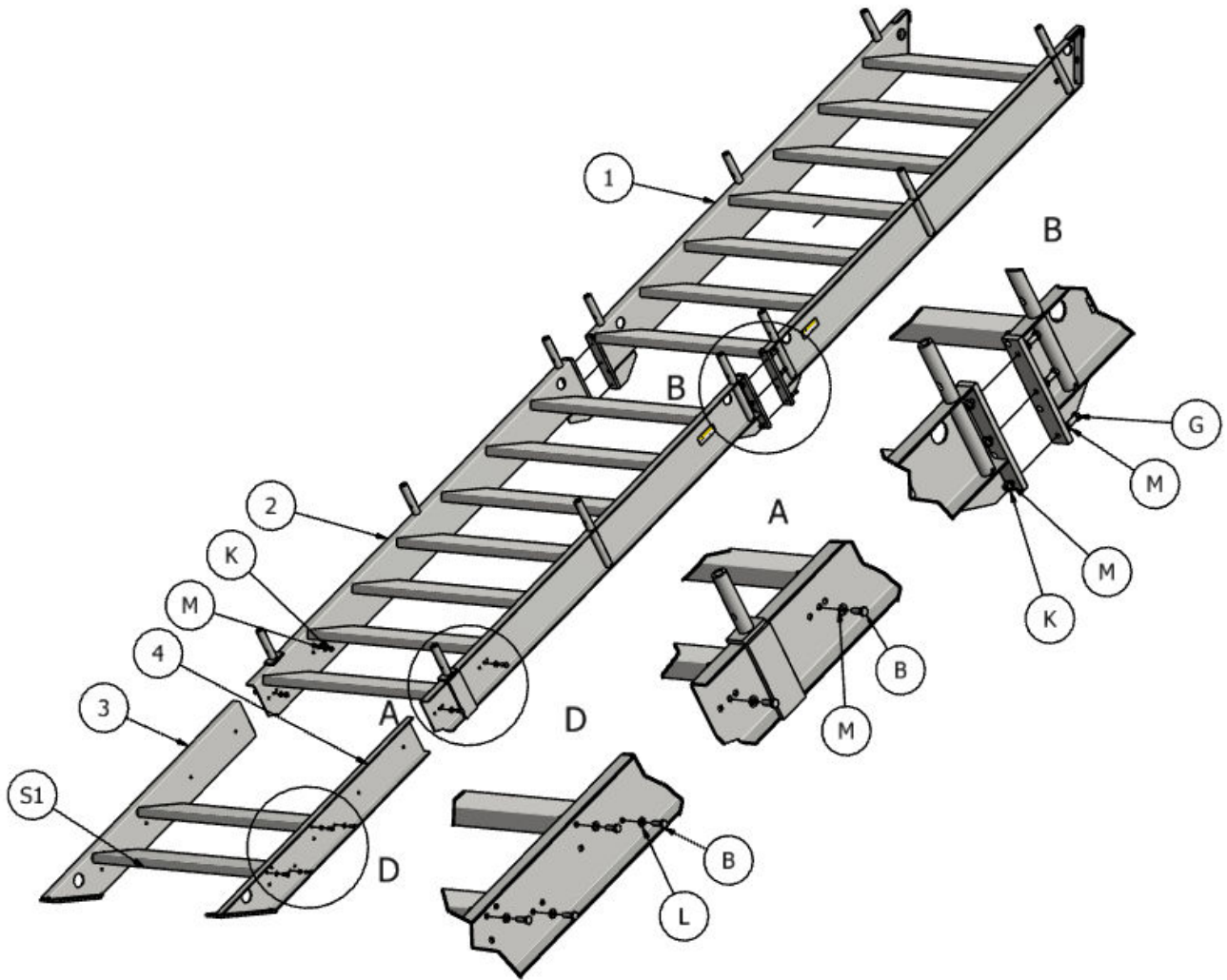


In the case of multi-floor arrangement of the container stairs, the platforms should be supported by posts from the ground level to the last platform.

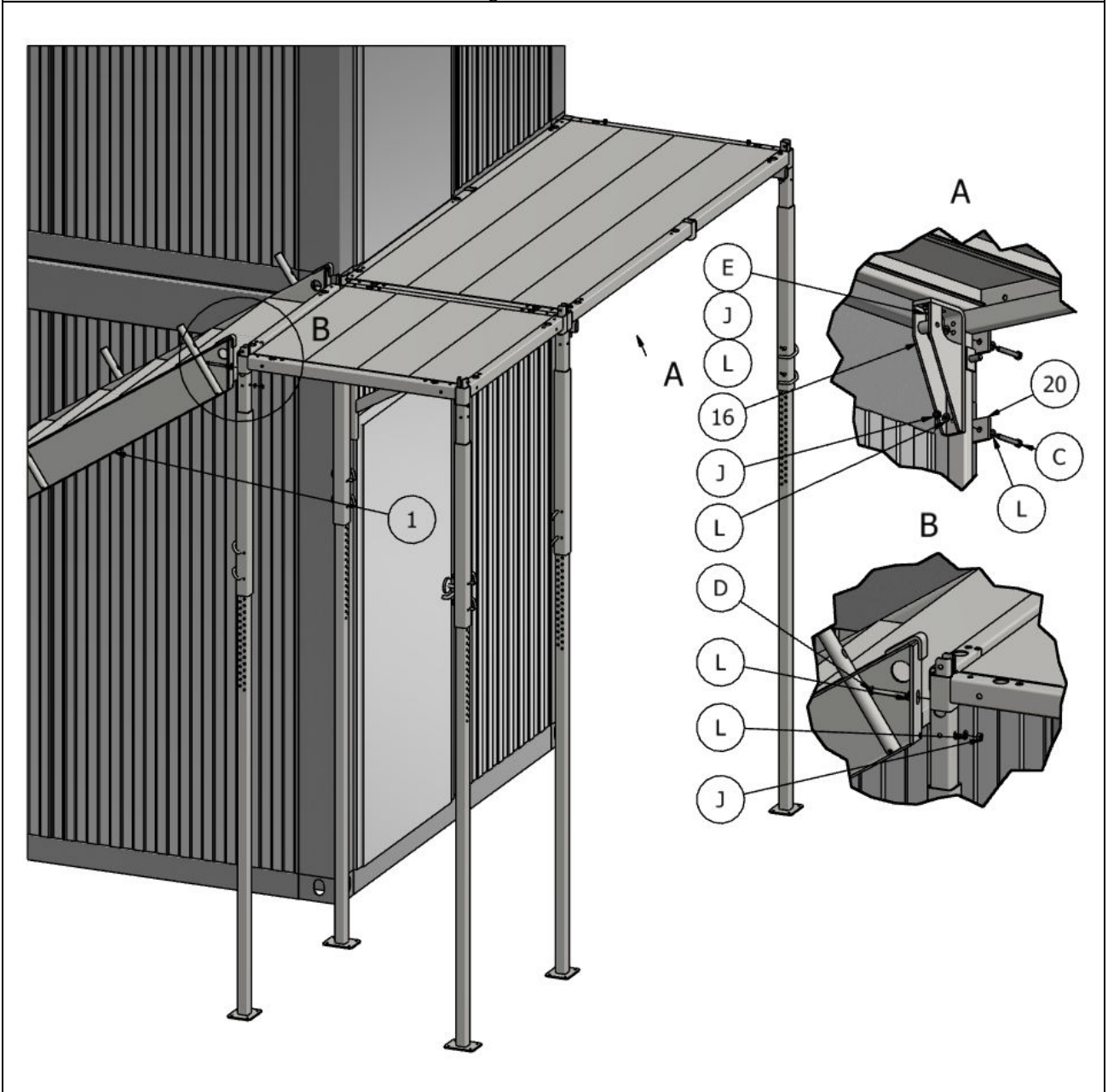


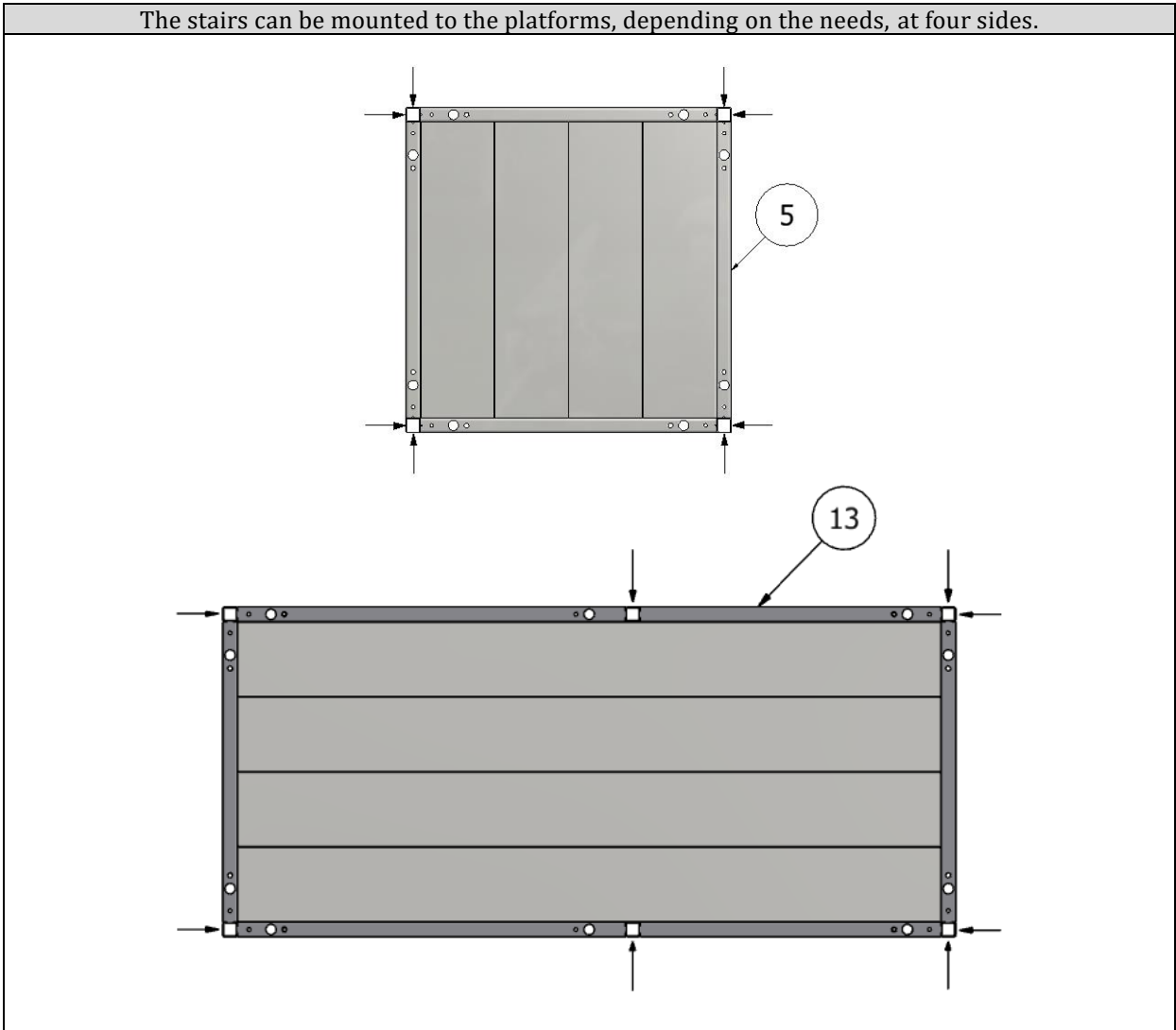
4.4. Assembly of the Stairs

Assembly diagram for stairs
 Assembly of the step S1 is dependent on the height of the containers.



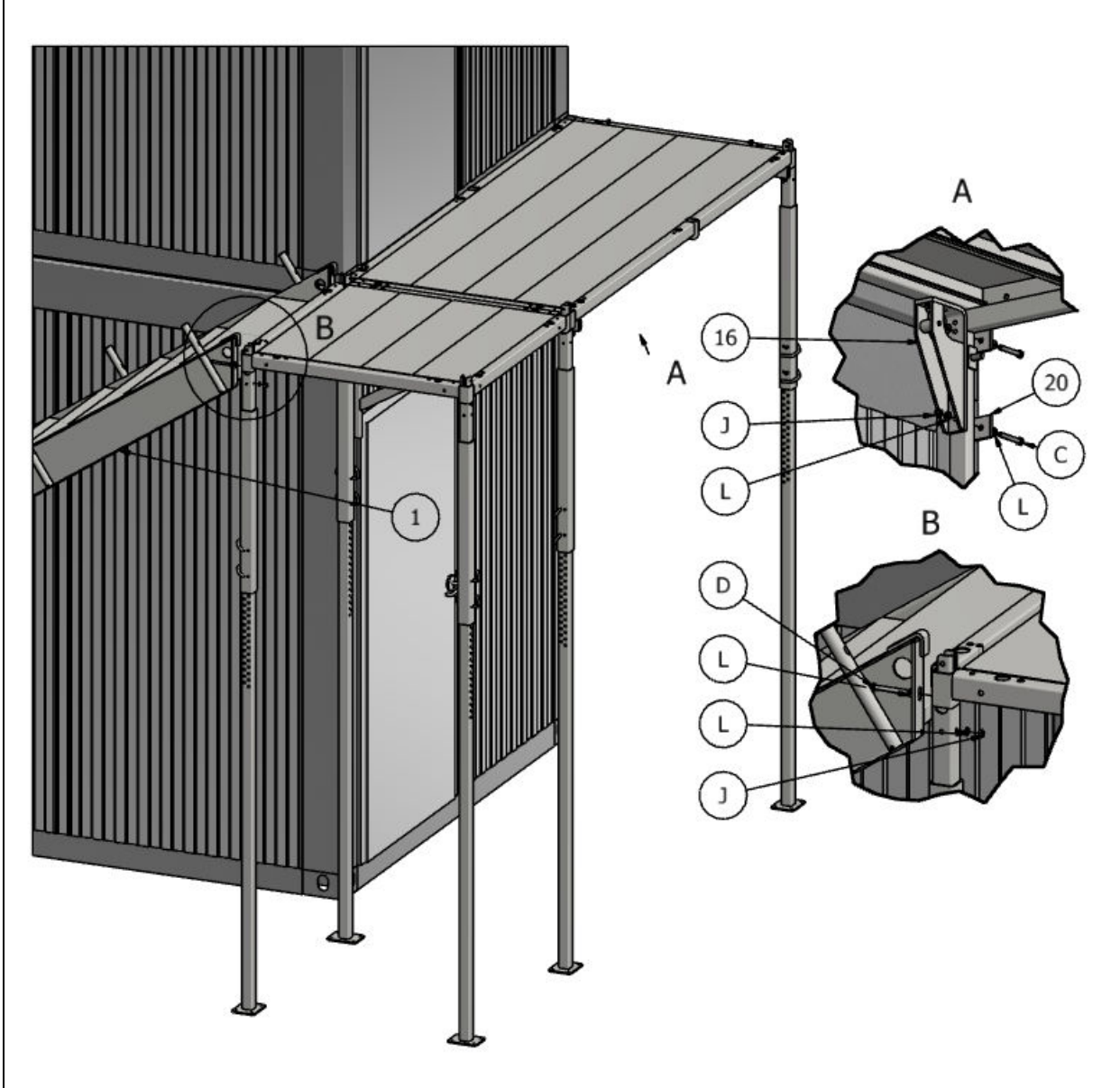
The stairs have hooks that facilitate the assembly, they should be hung on the sockets of the platform and then bolted using the set of Bolt, Washer, Nut.





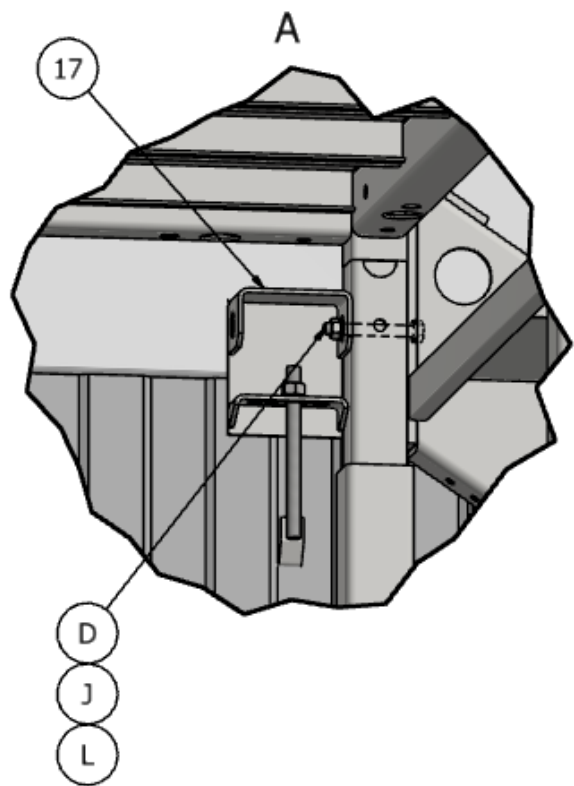
4.5. Assembly of the Connector LP

The Connector LP should be bolted to the bracket using the set of Bolt, Washer PK, Washer, Nut. In the case of assembly of the connector in a series of platforms, it should be bolted to the bracket and to the platform.



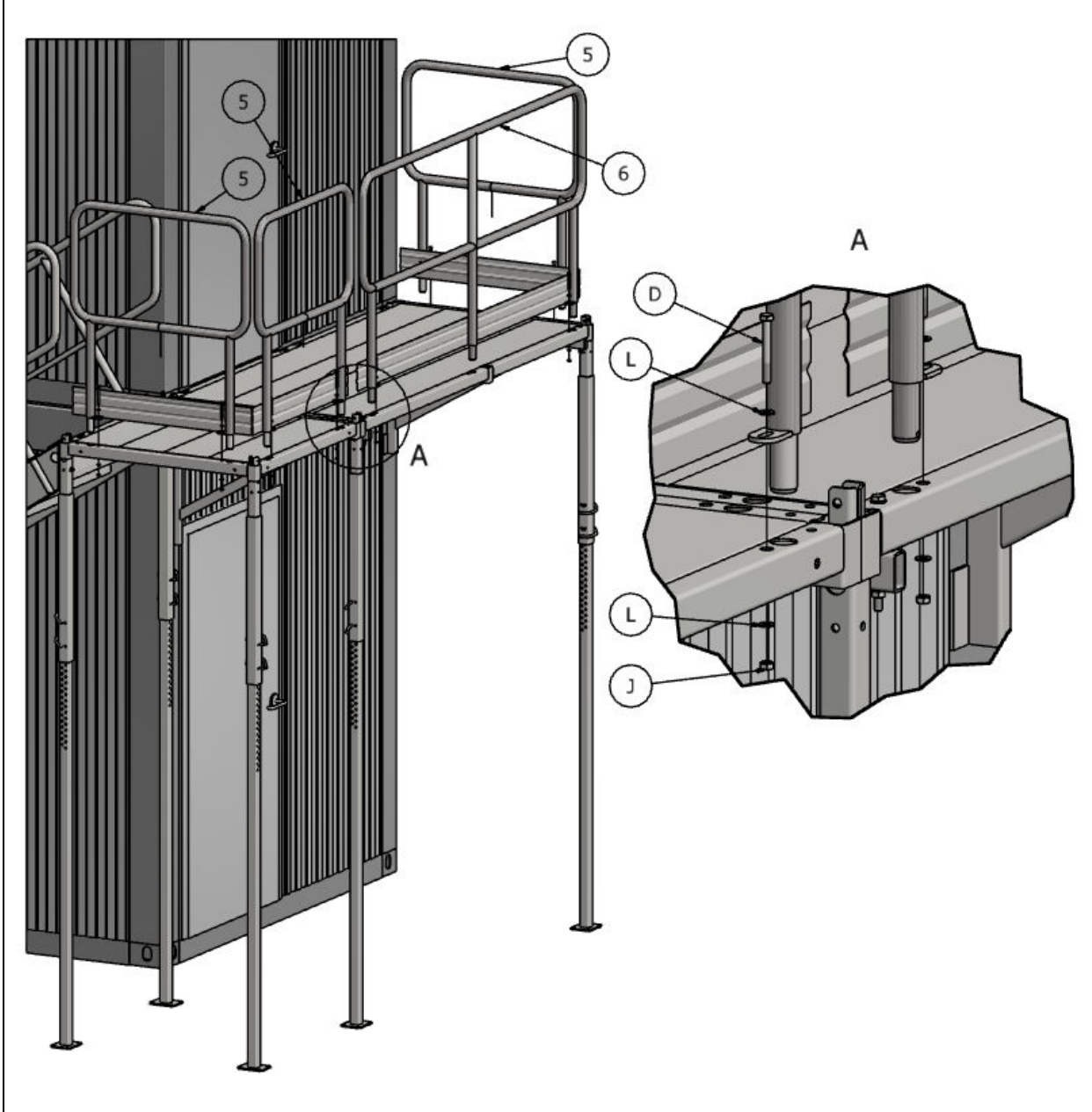
4.6. Assembly of the Connector LP2/LP3

The Connector LP2/LP3 is mounted on the parapet of the container and bolted to the structure of the container stairs, it prevents the platform to move away from the container in the case when the platform is assembled on one bracket and the two posts along the container.

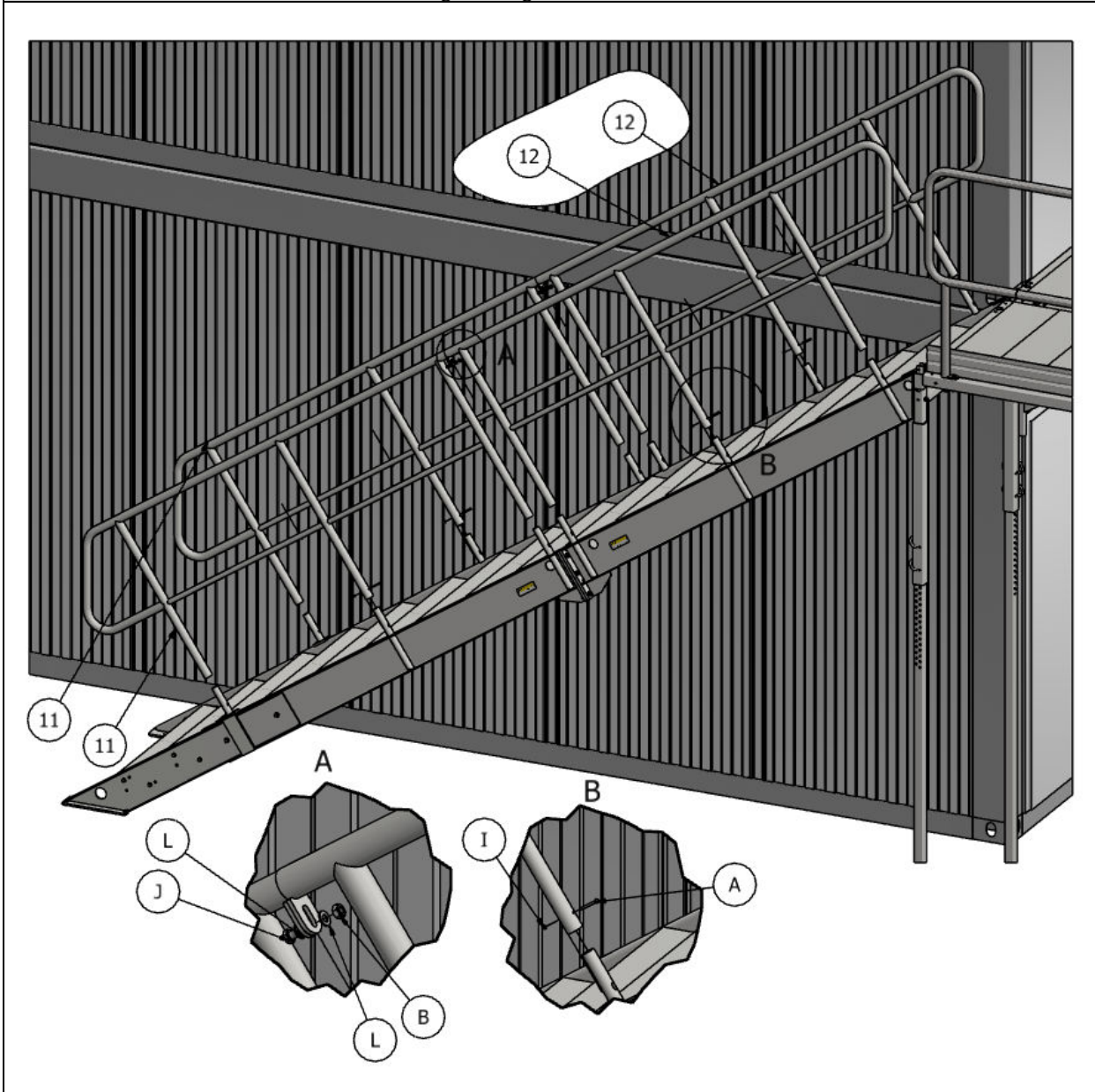


4.7. Assembly of the Railings

Assembly of the railings consists in embedding the railing in the sockets of the platform and then bolting the railing to the platform using the set of Bolt, Washer, Nut. Optionally, the railings have openings which serve to secure the railing with a cotter pin.



Assembly of the stairs railing is carried out by embedding the railing on the pins of the stairs and the securing it using the set of Bolt, Nut.



4.8. Assembly of the Concentrations

In the case of assembly of the platforms only on the posts, it is necessary to mount the concentrations and bolt them to the frame of the container with the Connectors LP2 or LP3

