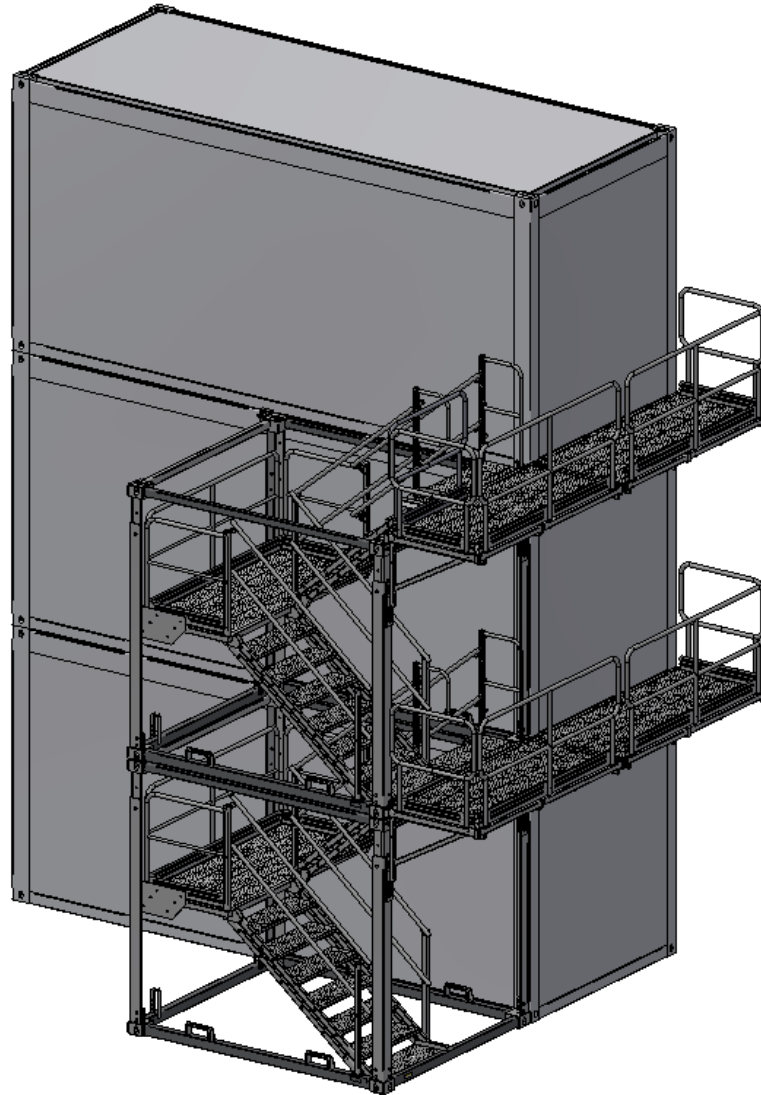


Annex no. 1

Assembly instruction
of Adjustable Container Staircase SK-KS2



Piotr Abram

Piotr Abram
.....
(Written by)

Robert Cieśla

Robert Cieśla
.....
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Miłosz Muzyka

Miłosz Muzyka
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(Approved by)

Issue 1.0, April 2024

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Table of amendments

Pos.	NAME AND SURNAME	DEPARTMENT	DATE OF CHANGE	SCOPE OF REVISION	NOTES
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

1. Introduction

The installation instructions are included as an appendix to TLC's technical and operating documentation for the container stair system.

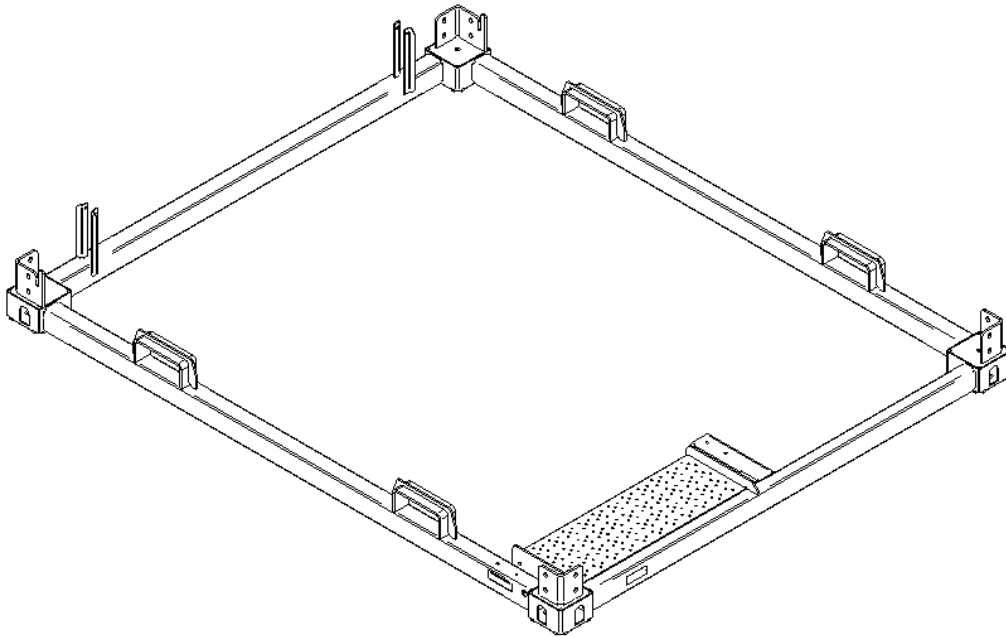
The adjustable container staircase consist of elements according to the specifications attached to the delivery. The system features bolted connections. The staircases are delivered to the construction site ready for use, although it is possible to transport them disassembled.

Adjustable container staircases can be adapted to the height of standard containers: 2591, 2800, 2960mm. The setting of individual configurations should be in accordance with the Operation and Maintenance Manual.

2. Components of a container staircase system SK-KS2

The list of elements in table below shows the components of the adjustable container staircase system and their quantities assembled depending on the configuration.

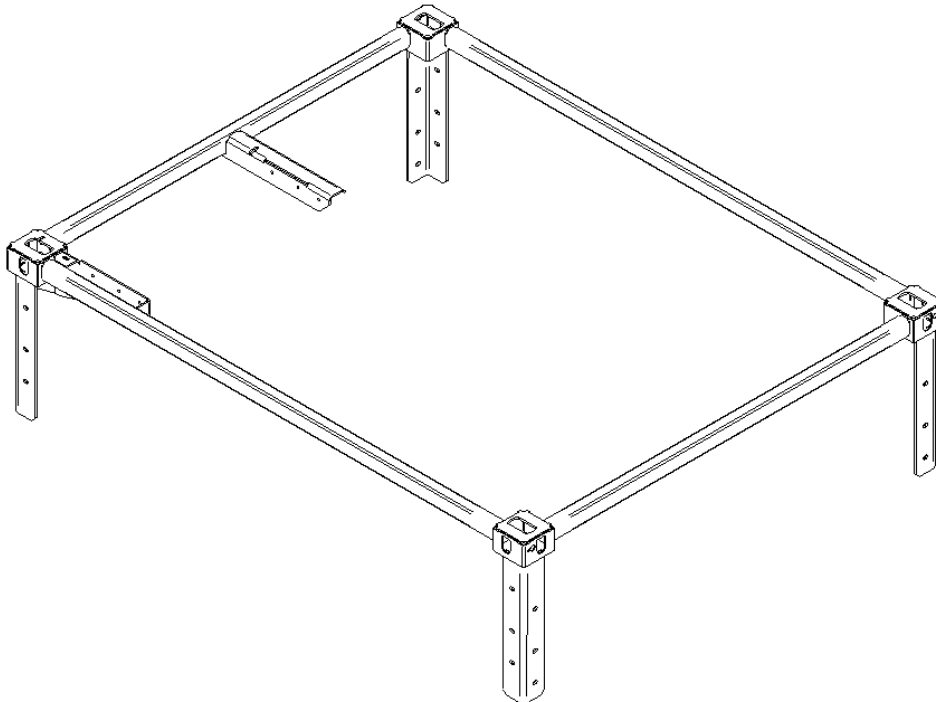
SK-KS2-RD



Dimensions: 3000x2443x364

Mass: 140,6 kg

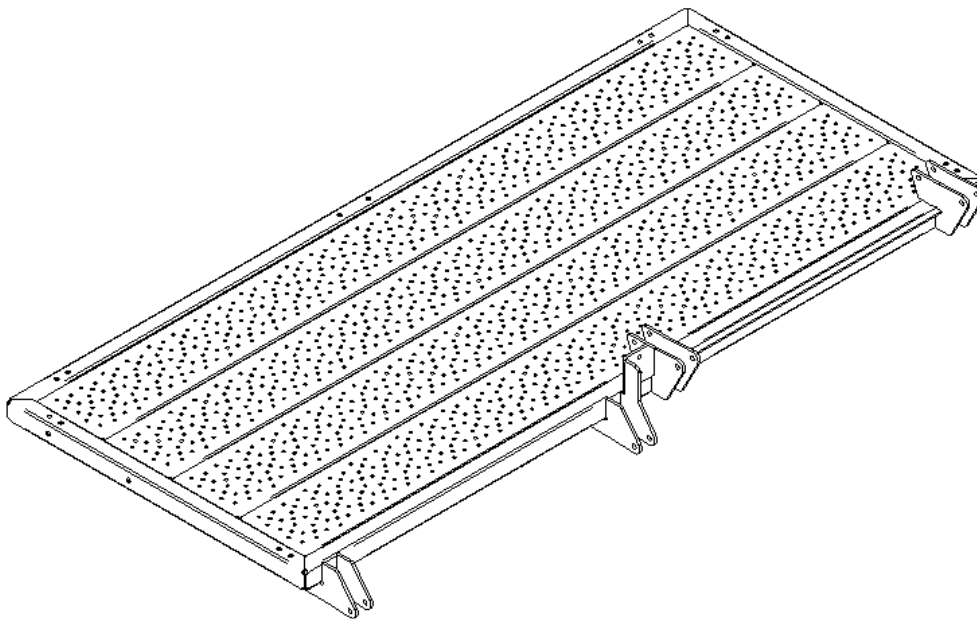
SK-KS2-RG



Dimensions: 3000x2443x830

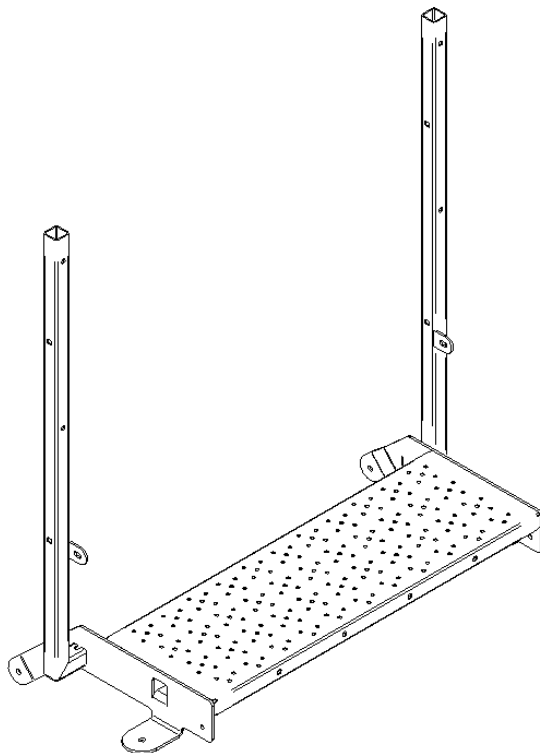
Mass: 164,4 kg

SK-KS2-M1



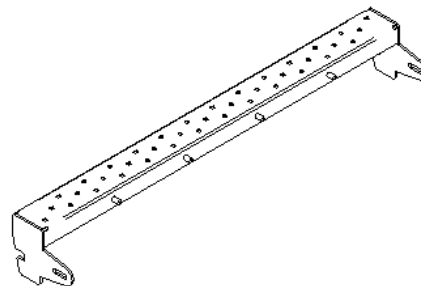
Dimensions: 2370x1160x110
Mass: 91,5 kg

SK-KS2-E2



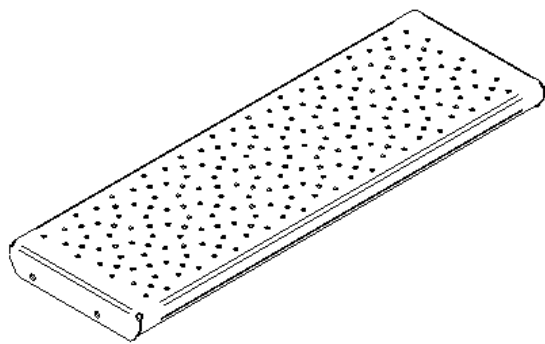
Dimensions: 1224,5 x1139x559,5
Mass: 19,9 kg

SK-KS2-E3



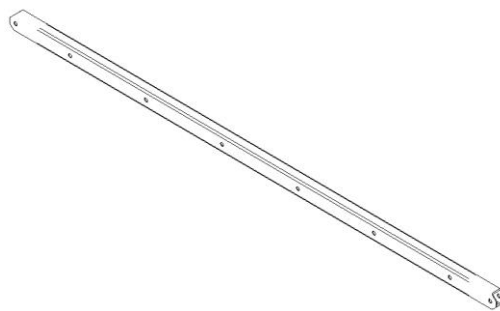
Dimensions: 946x159x128
Mass: 3,2 kg

SK-KS2-E1



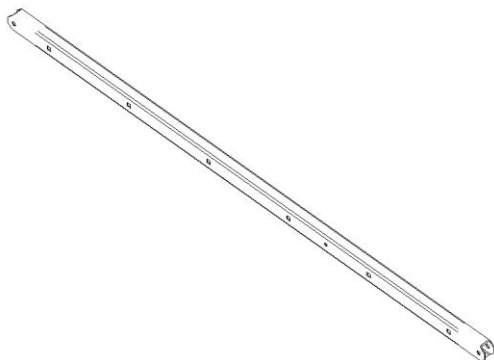
Dimensions: 950x305x60
Mass: 9 kg

SK-KS2-B1



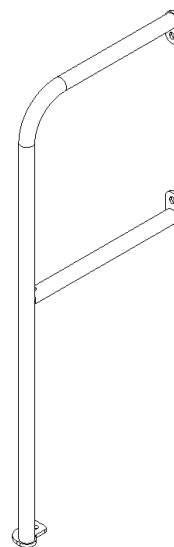
Dimensions: 2050x60x40
Mass: 8,6 kg

SK-KS2-B2



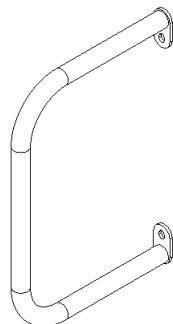
Dimensions: 2050x60x40
Mass: 8 kg

SK-KS2-R7



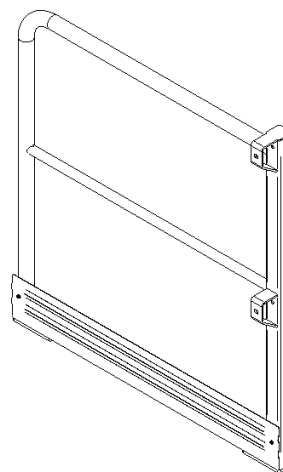
Dimensions: 1140x450x60
Mass: 3,8 kg

SK-KS2-R6



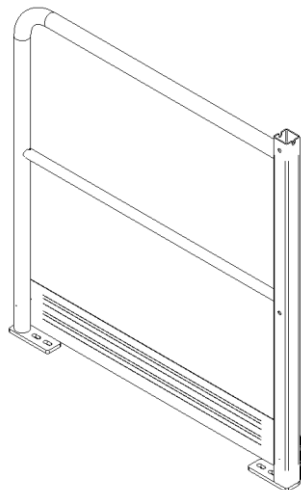
Dimensions: 540x369x40
Mass: 2,2 kg

SK-KS2-R5



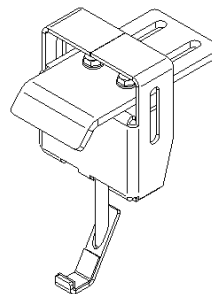
Dimensions: 990x1075x110
Mass: 13,6 kg

SK-KS2-R3



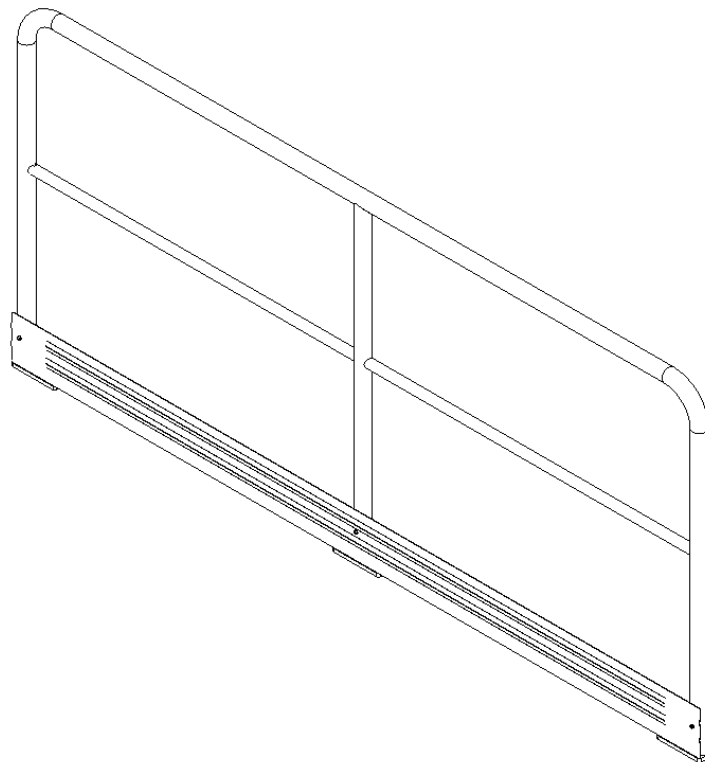
Dimensions: 990x1070x50
Mass: 12,9 kg

SK5-L16



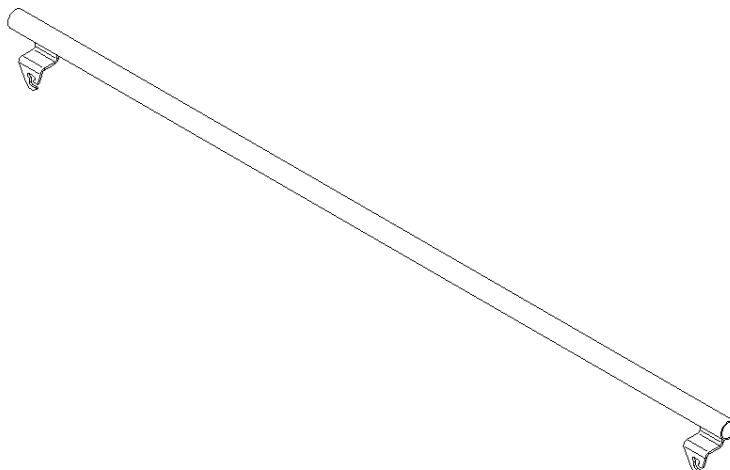
Dimensions: 192x141x128
Mass: 2,4 kg

SK-KS2-R4



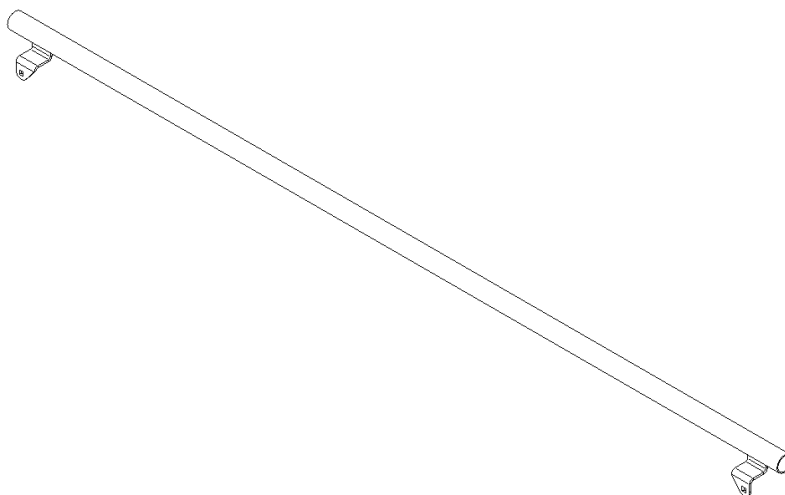
Dimensions: 2220x1027x50
Mass: 20,7 kg

SK-KS2-PGL



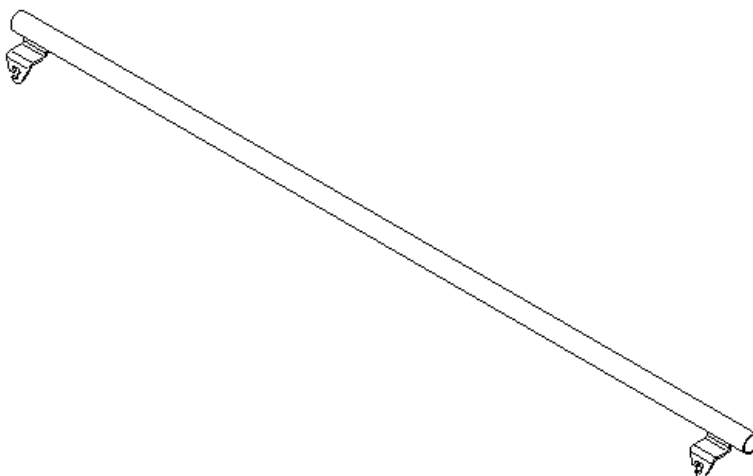
Dimensions: 1950x120x69
Mass: 5,4 kg

SK-KS2-PD



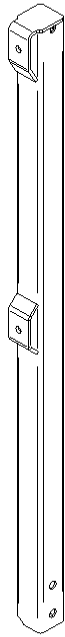
Dimensions: 1950x120x69
Mass: 5,1 kg

SK-KS2-PGP



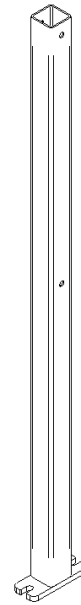
Dimensions: 1950x120x69
Mass: 5,4 kg

SK-KS2-R1



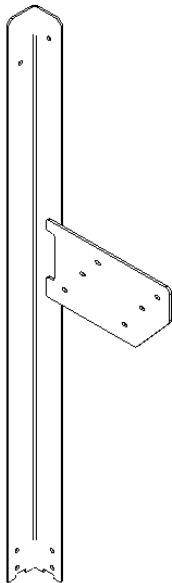
Dimensions: 1075x70x50
Mass: 4,9 kg

SK-KS2-R2



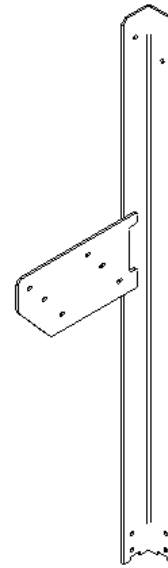
Dimensions: 1035x130x50
Mass: 5,2 kg

SK-KS2-S1



Dimensions: 2289x652x132
Mass: 48,3 kg

SK-KS2-S2



Dimensions: 2289x652x132
Mass: 48,3 kg

SK-KS2-S3





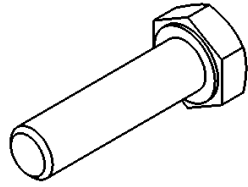
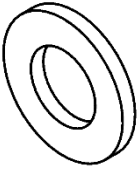

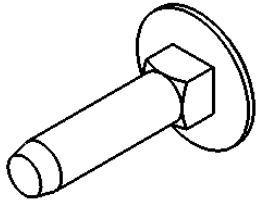
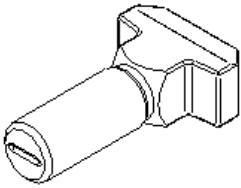
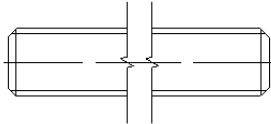
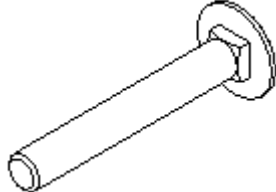
Dimensions: 2289x144x132
Mass: 39,4 kg

SK-KS2-S4



Dimensions: 2289x144x132
Mass: 39,4 kg

3. Graphical list of SK-KS2 system fasteners

 M16	 MS8 MS10 MS12 MS16	 M8x80 M12x40 M10x40 M12x80 M10x65 M12x100 M10x90 M16x50
 W8 W10 W12 W16	 WP10	 MZA10x30 MZA12x65
 SM12x35	 PG16x300	 MZB10x30 MZB10x70 MZB10x100

4. List of SK-KS2 system components

The list of elements in Table 1 shows the components of the container staircase system and their quantities.

Pos.	Marking	Description of component	Amount per module
1	SK-KS2-RD	Staircase KS2 bottom frame	1
2	SK-KS2-RG	Staircase KS2 top frame	1
3	SK-KS2-M1	Staircase KS2 platform	1
4	SK-KS2-E2	Staircase KS2 upper step	1
5	SK-KS2-E3	Staircase KS2 additional upper step	1
6	SK-KS2-E1	Staircase KS2 step	12
7	SK-KS2-B1	Staircase KS2 stringer 1	4
8	SK-KS2-B2	Staircase KS2 stringer 2	4
9	SK-KS2-R7	Staircase KS2 additional railing 2	1
10	SK-KS2-R6	Staircase KS2 additional railing 1	1
11	SK-KS2-R5	Staircase KS2 platform railing 3	1
12	SK-KS2-R3	Staircase KS2 platform railing 1	1
13	SK5-L16	Adjustable connector L16	1
14	SK-KS2-R4	Staircase KS2 platform railing 2	1
15	SK-KS2-PGL	Staircase KS2 left top handgrip	2
16	SK-KS2-PD	Staircase KS2 bottom handgrip	4
17	SK-KS2-PGP	Staircase KS2 right top handgrip	2
18	SK-KS2-R1	Staircase KS2 railpost 1	1
19	SK-KS2-R2	Staircase KS2 railpost 2	2
20	SK-KS2-S1	Staircase KS2 column 1	1
21	SK-KS2-S2	Staircase KS2 column 2	1
22	SK-KS2-S3	Staircase KS2 column 3	1
23	SK-KS2-S4	Staircase KS2 column 4	1

Table 1. List of adjustable container staircase system components

Marking	Amount per module
M8x80	2
M10x40	6
M10x65	4
M10x90	16
M12x40	2
M12x80	16
M12x100	4
M16x50	24
M16	8
MS8	2
MS10	42
MS12	71
MS16	24
W8	4
W10	62
W12	93
W16	56
WP10	8
MZA10x30	2
MZA12x65	48
MZB10x30	2
MZB10x70	10
MZB10x100	2
PG16x300	4
SM12x35	3

Table 2. List of adjustable container staircase system fasteners

5. List of tools needed for installation of adjustable container staircase SK-KS2



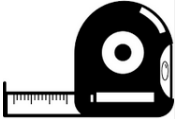

	<p>Wrenches: 24,19,17,13,10</p>
	<p>Level</p>
	<p>Measuring tape</p>
	<p>Lifting device with a lifting capacity of min. 1 t</p>

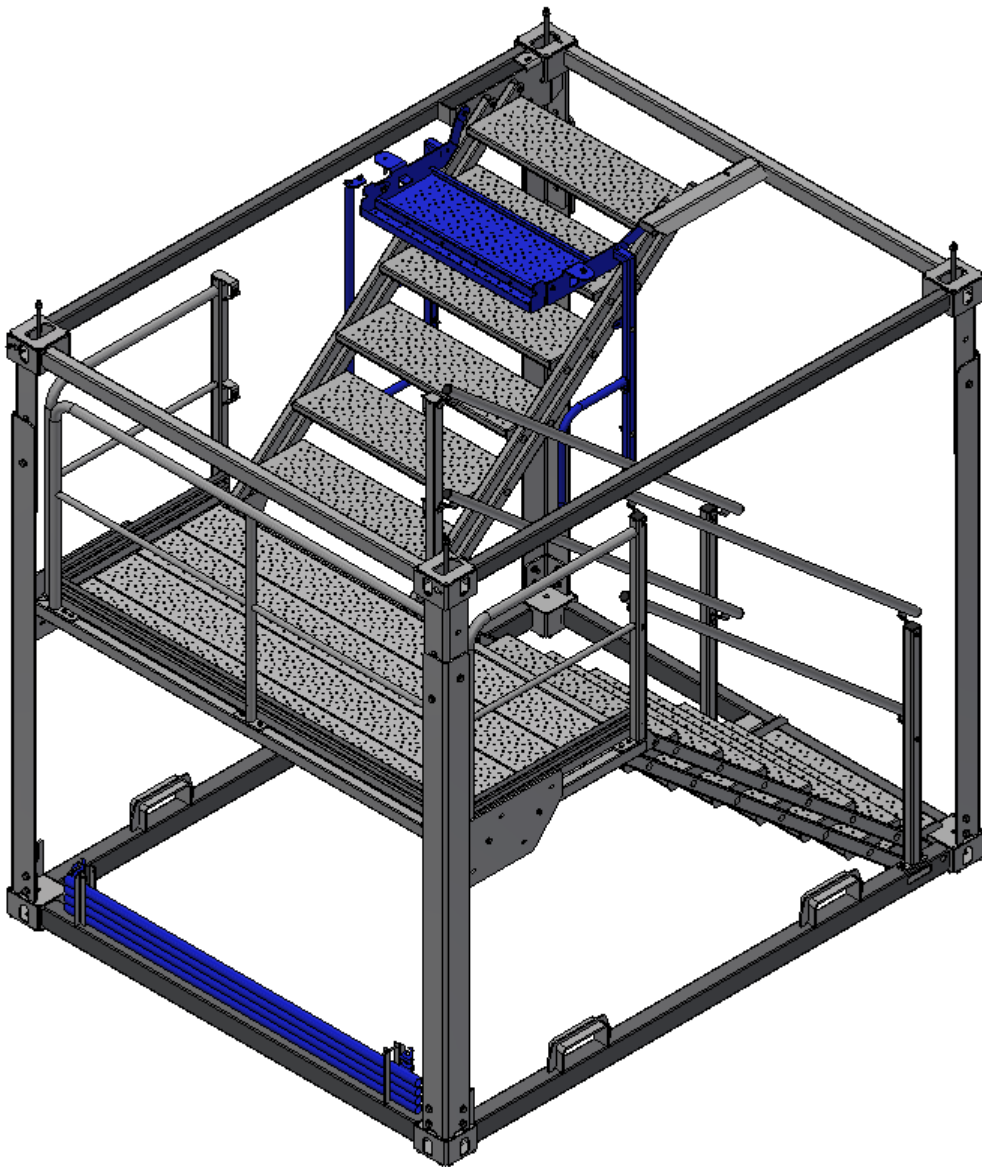
Table 3. List of tools

6. Assembly operations of individual elements of the container staircase system SK-KS2

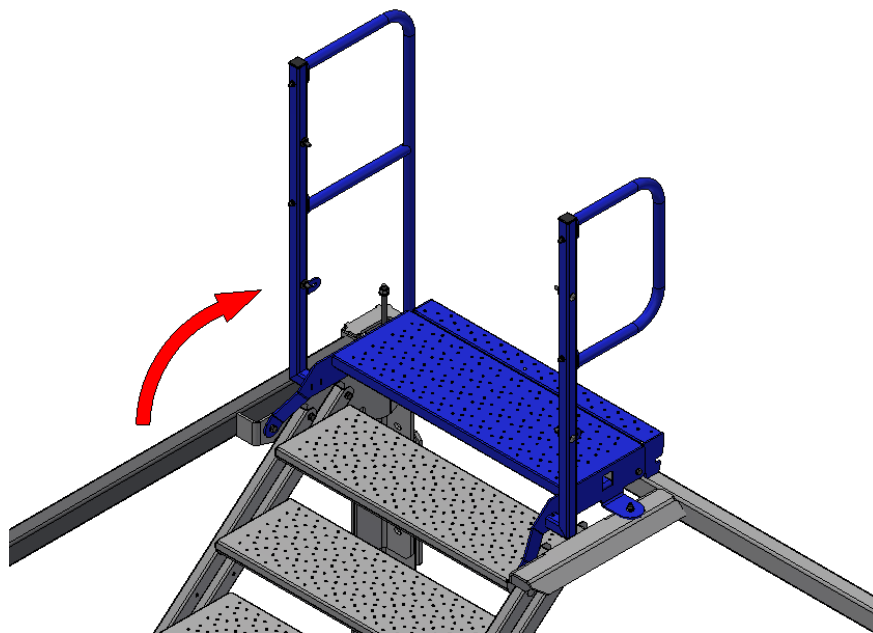
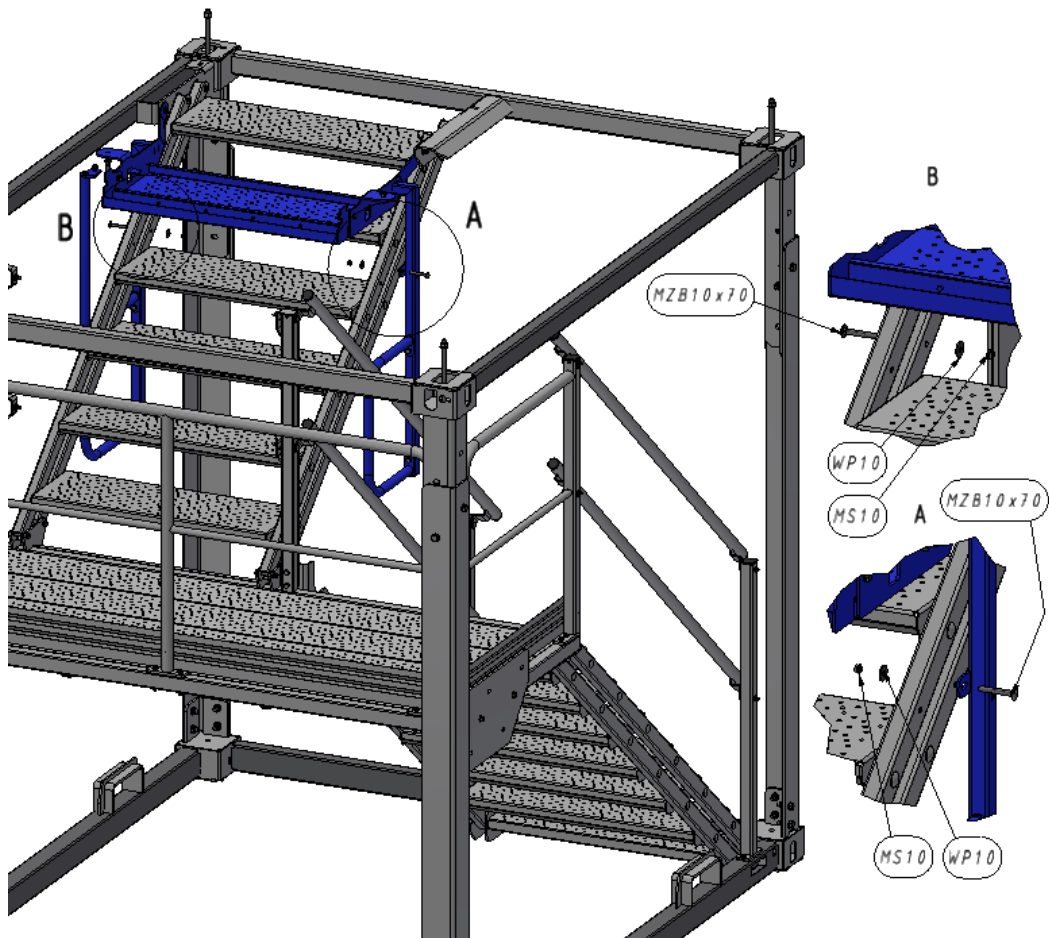
The assembly instructions present how to assemble the individual elements of the adjustable container staircase. The staircase should be fitted to the longer side of the container and flush with the shorter side. The design of the staircase takes into account the use of standard platforms of the container staircase system P-SK from TLC Sp. z o. o. The platforms should be mounted to the staircase and the container on standard triangle traces and connected to each other.

1. Setting up the staircase

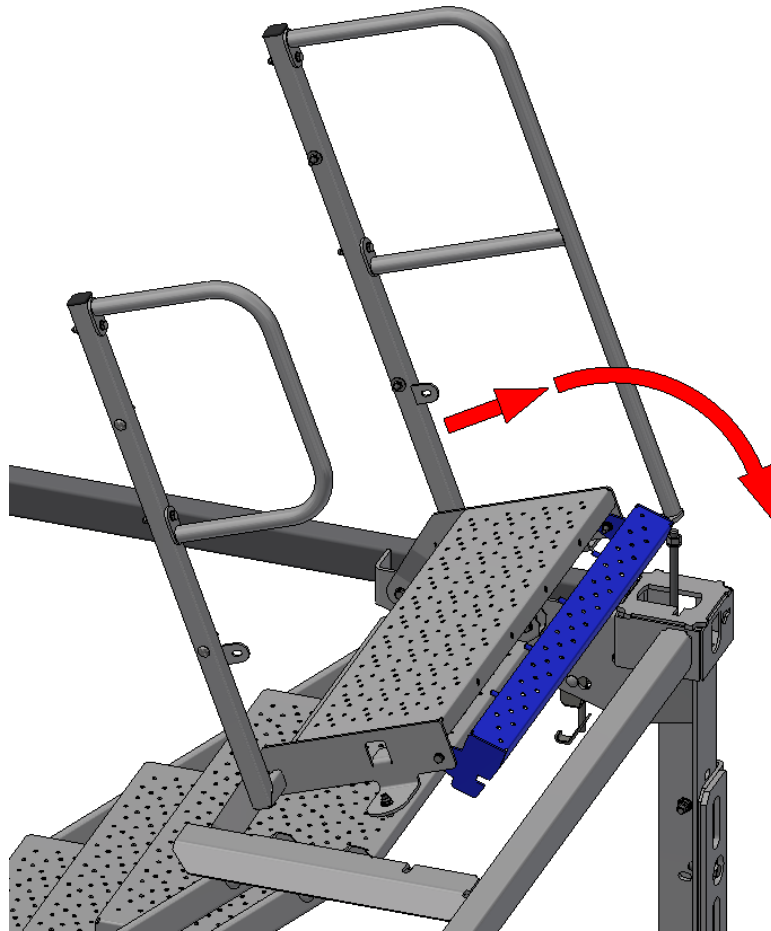
The SK-KS2 staircase can be delivered to the site in the form of bolted modules in transport configuration. To prepare the staircase for use it is necessary to unfold the top step and fit the handrails which are stored in the socket of the lower frame.



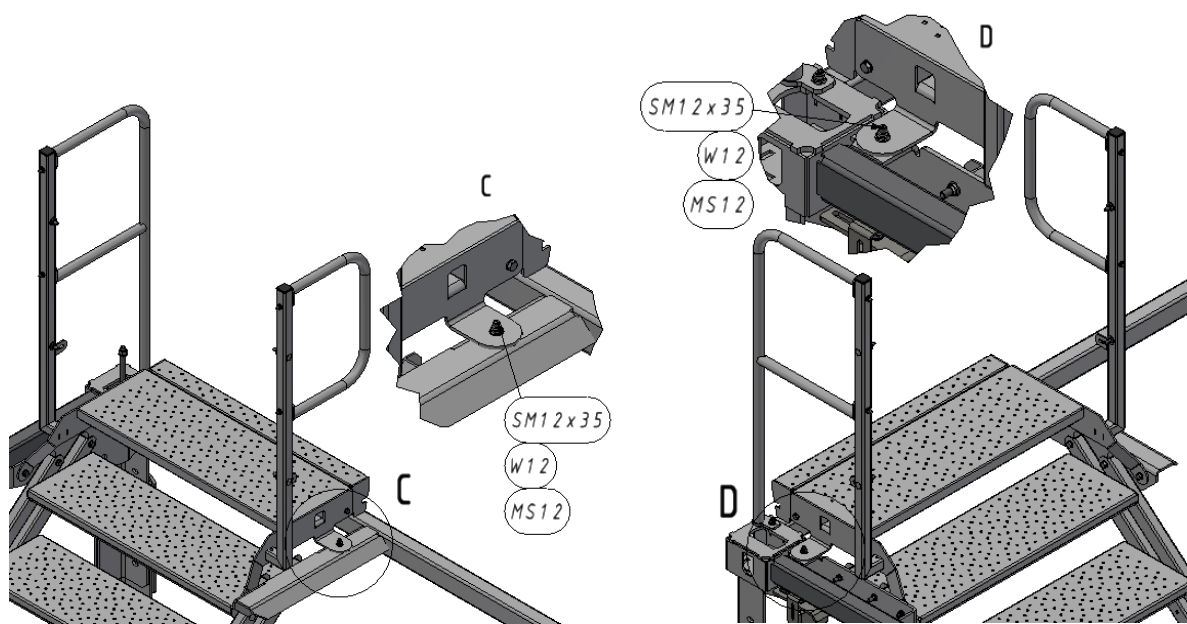
In order to unfold the step with railings, the screws securing the railing must be unscrewed. The unscrewed screws can be stored by screwing them into the holes in the railing.



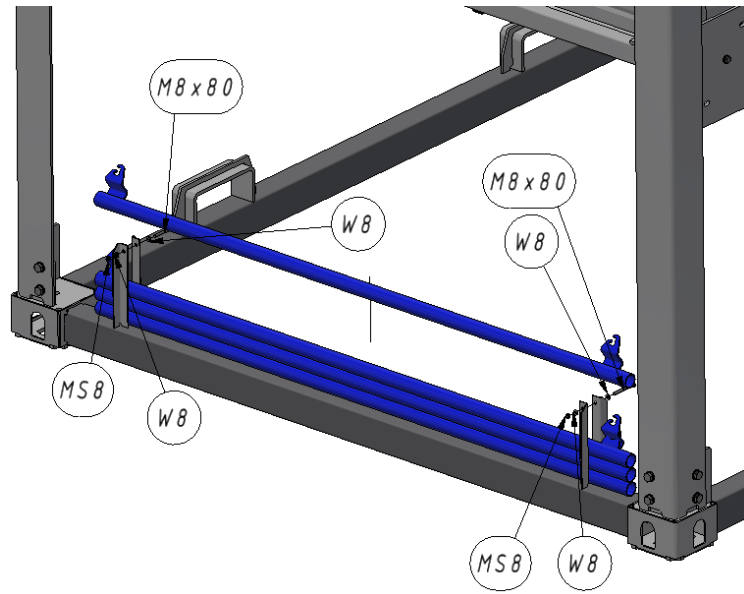
If the staircase is to be assembled for use as a base for another staircase, the extension of the last step must be folded down before it is fully rotated.



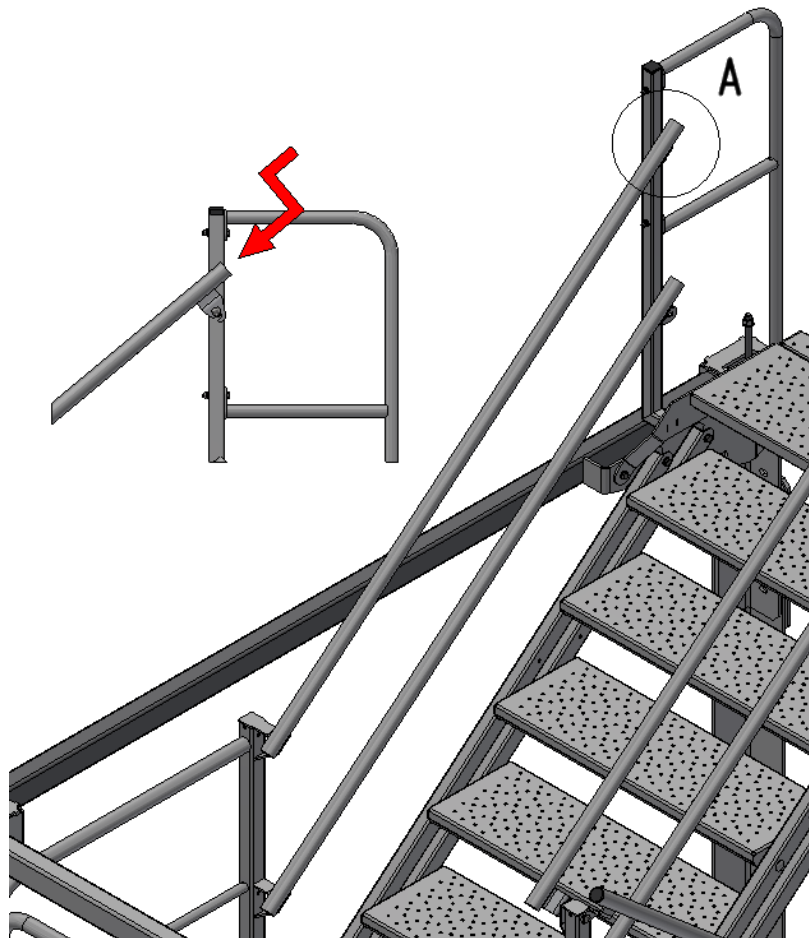
Once the step is unfolded, it should be bolted to the frame using hammer screws.



Handrails in the folded configuration are stored in the handles of the lower frame. The safety bolt must be removed to pull the handrails out.

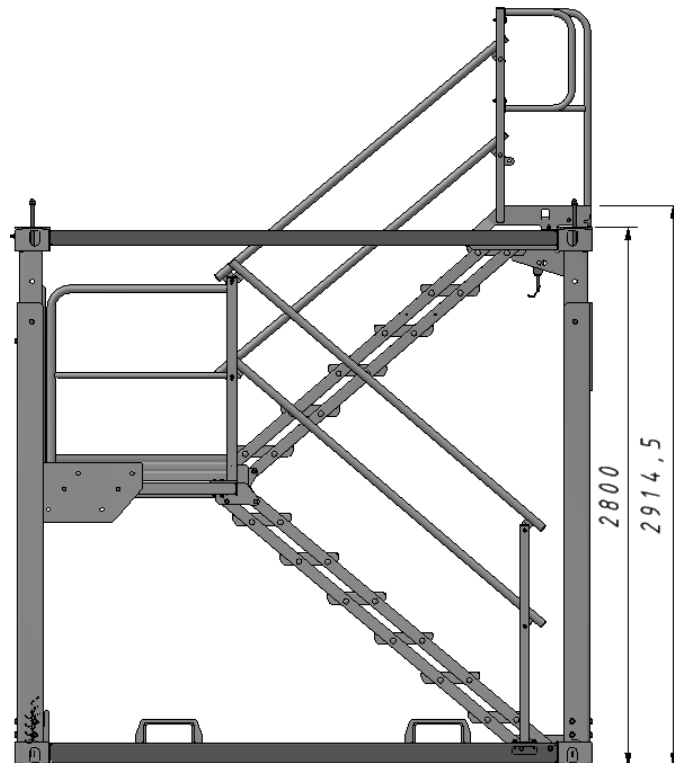
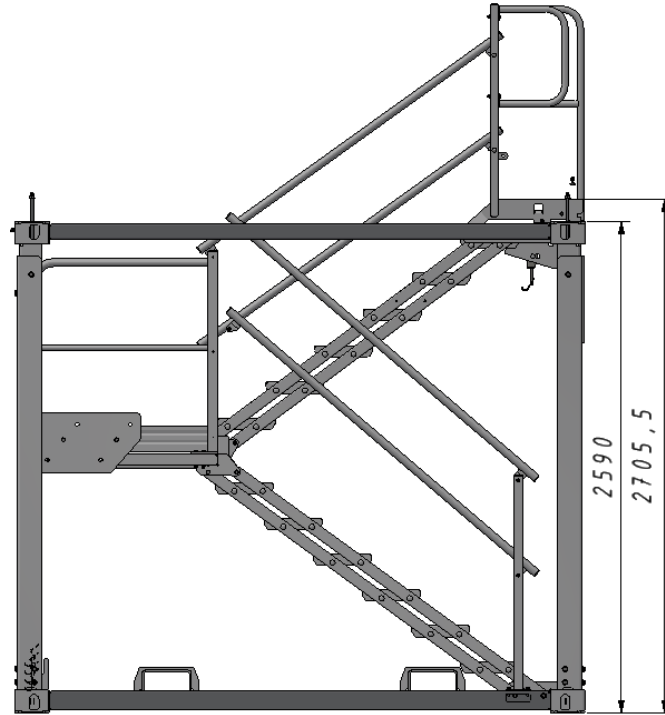


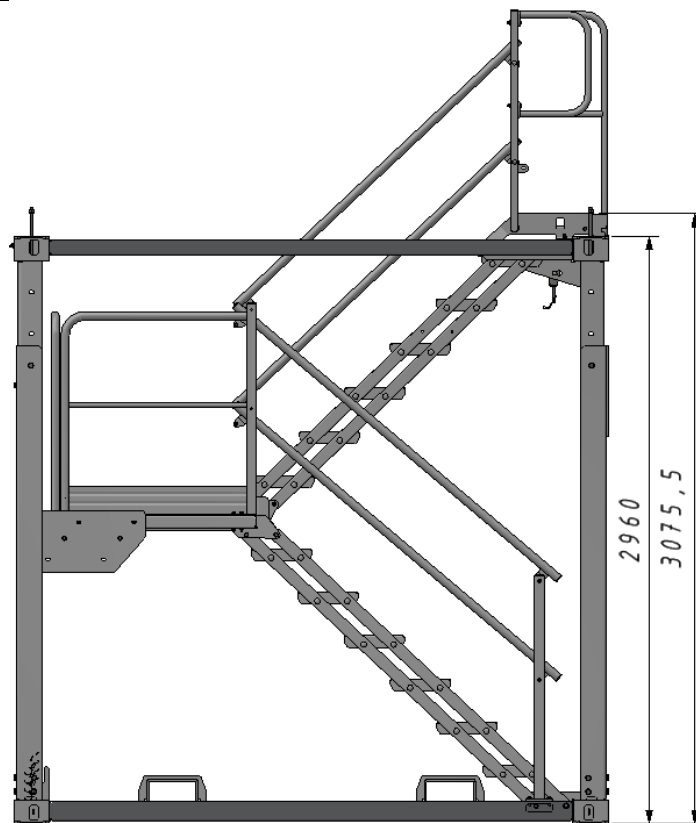
Fit the brackets onto the bolts in the posts. Tighten the bolt to 30% of the required torque for the given bolt size.



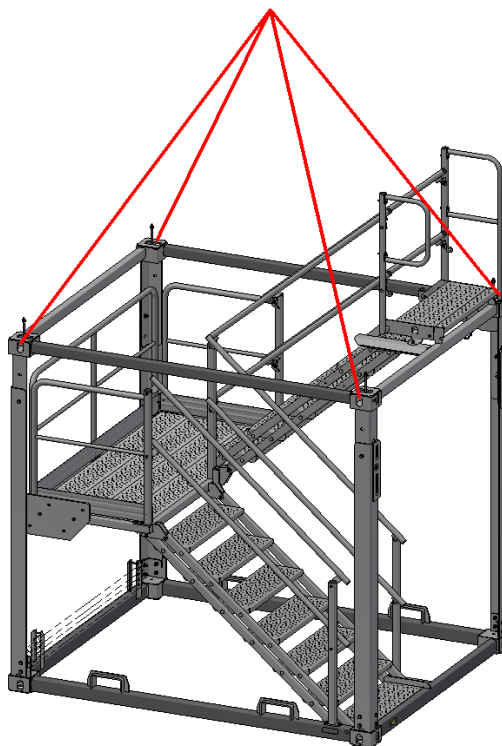
2. Staircase adjustment

The staircase provides height adjustment in the three most common dimensions to fit typical containers: 2591, 2800, 2960 mm in height.

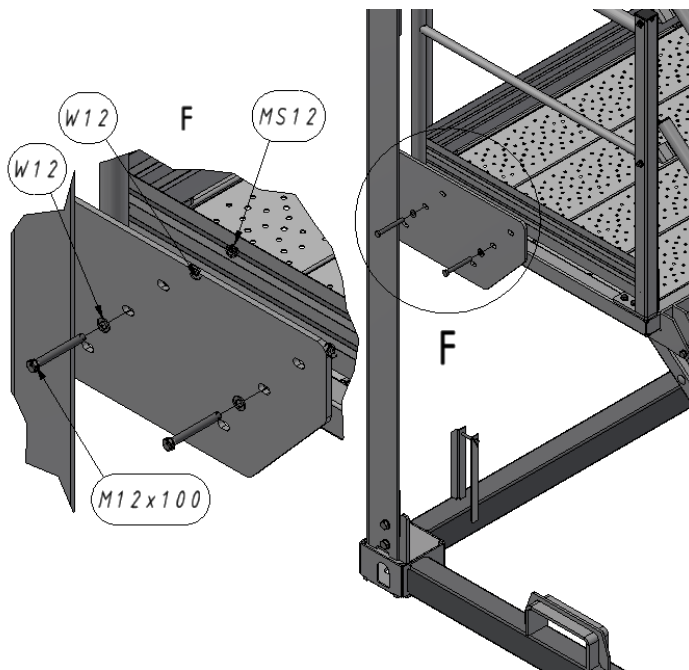




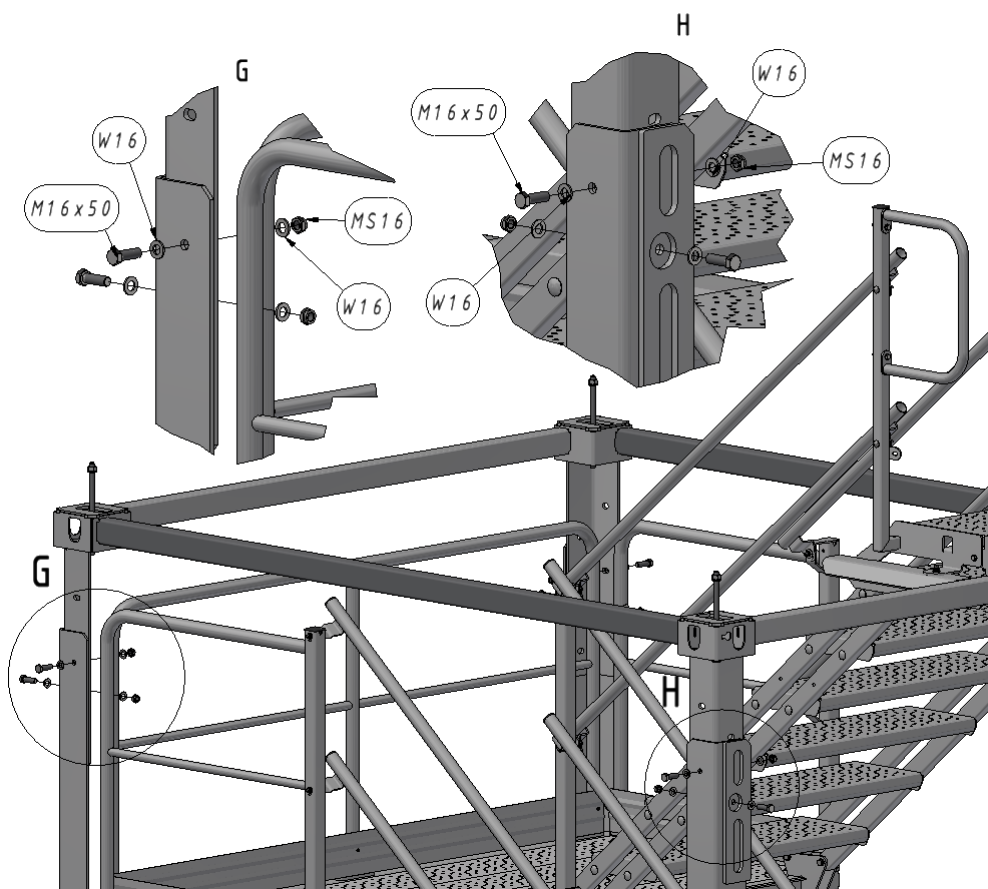
Before adjusting the height of the staircase, the top frame should be fitted to the slings at the four corners of the staircase. The sling hooks should be seated in the staircase sockets. Using the four-point sling should ensure that the top frame of the staircase module is level and lifts evenly.



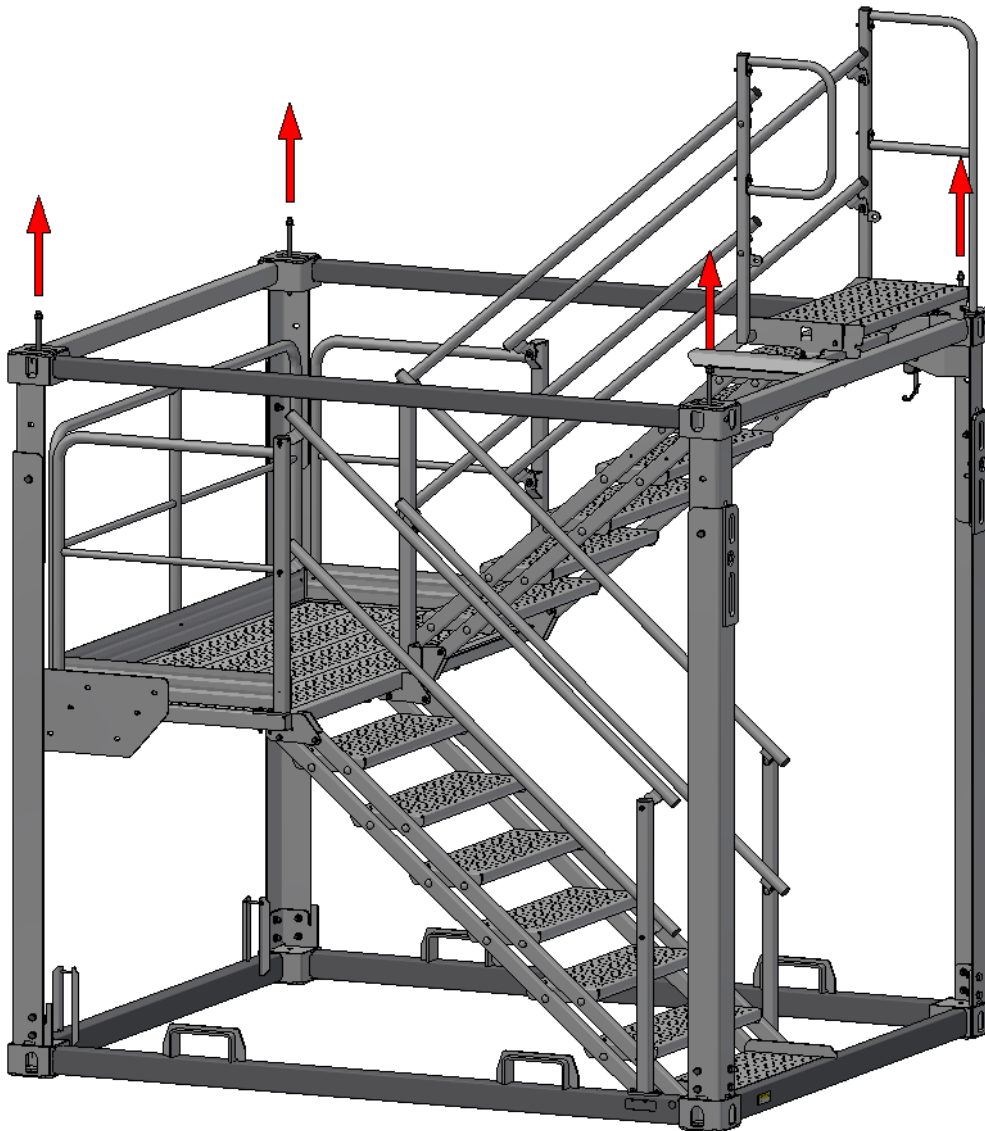
Before unscrewing the connectors, the upper frame of the staircase should be suspended on slings to prevent it from falling when the connectors are removed. To adjust the height of the staircase, tighten the four fasteners securing the platform in needed position.



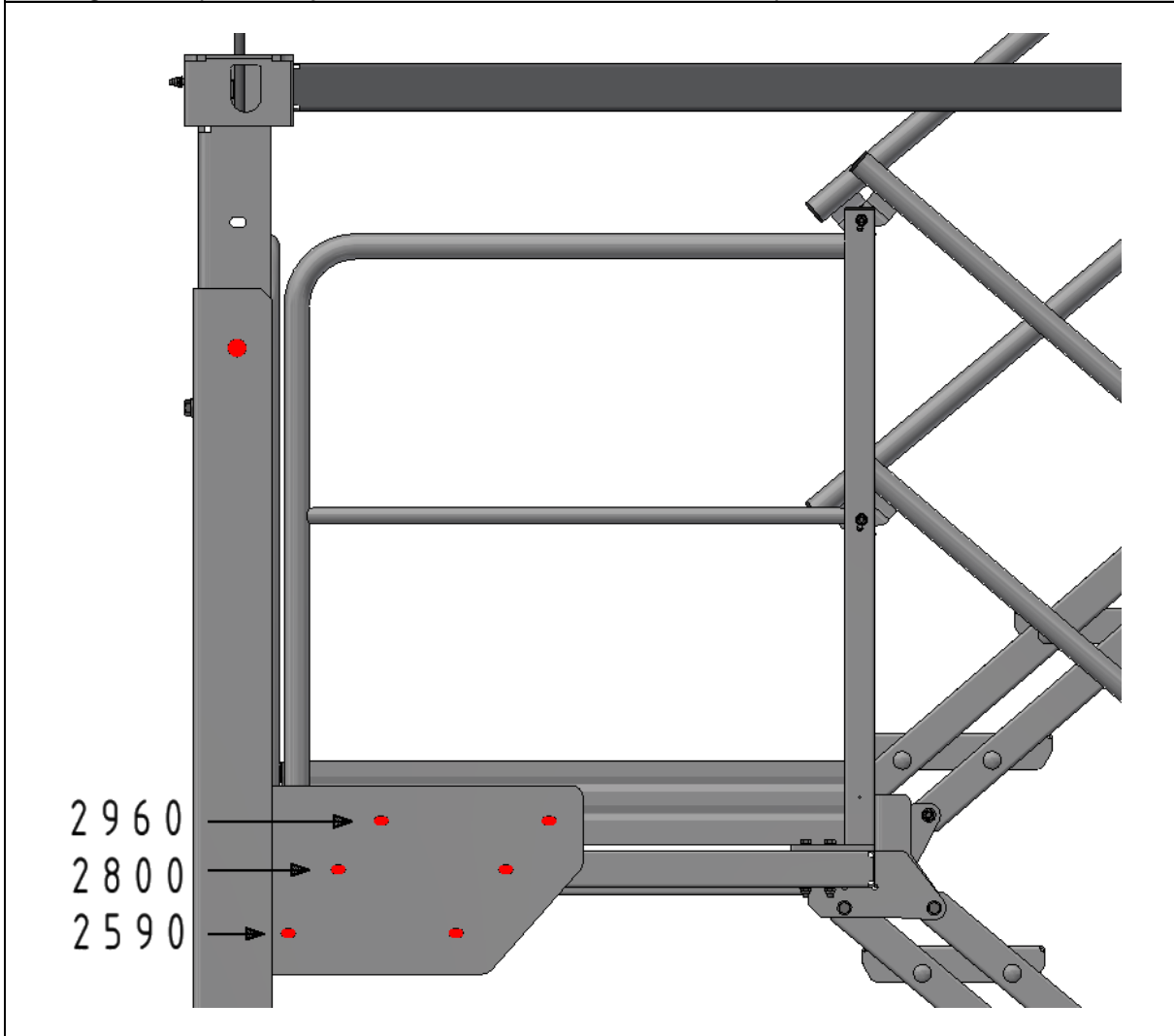
Unscrew the fasteners holding the columns.



Adjustment should be made by raising or lowering the upper frame of the staircase. When doing this, ensure that the upper frame is level and parallel to the lower frame.

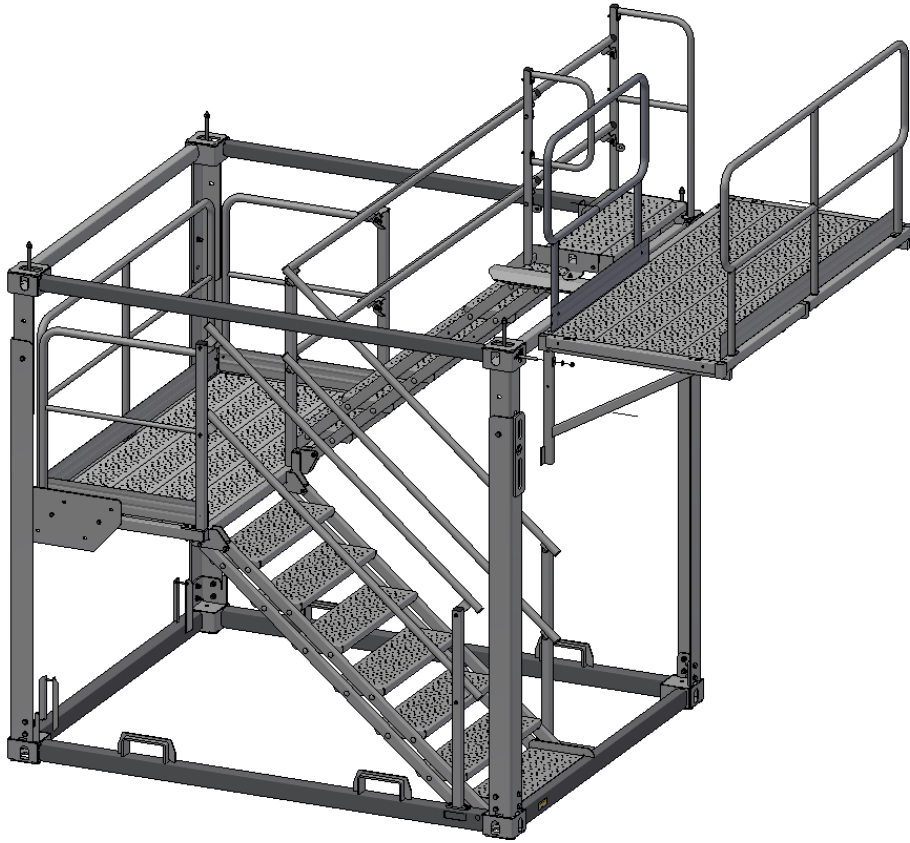


Perform adjustments until the holes in the side plates coincide with the holes in the platform and the holes in the column. When the holes are aligned, stop raising/lowering the top frame and tighten all previously removed bolted connections on the platform and the columns.

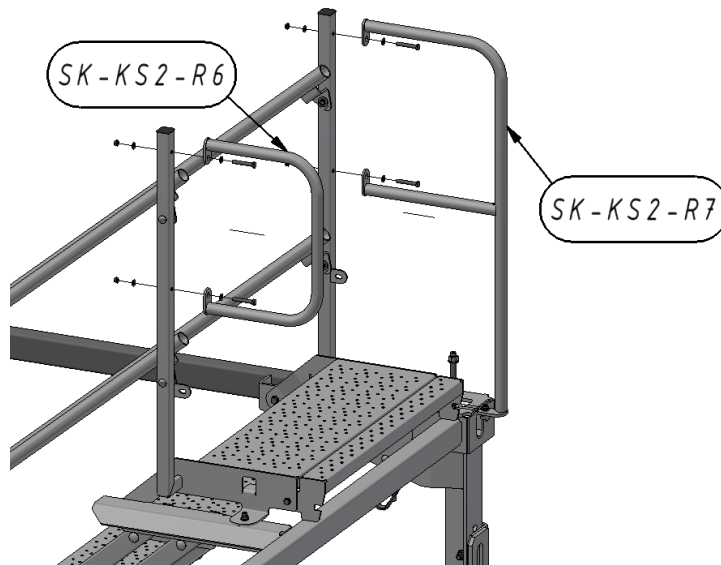


3. Stacking of staircase modules, installation of platforms.

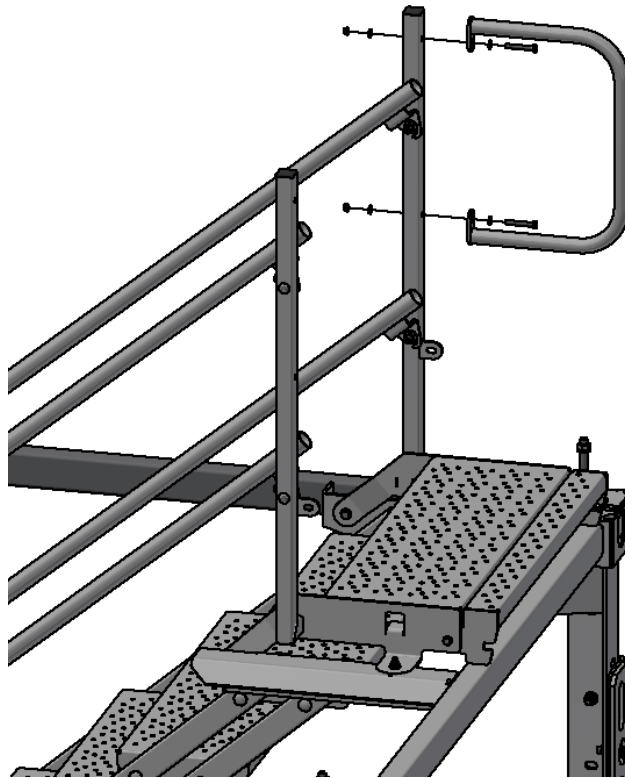
When assembling the platforms to the staircase, follow the installation instructions for container stairs P-SK from TLC Sp. z o.o. The platforms must be configured so that all edges are secured with railings. The staircase mimics the frame of the container which ensures compatibility of the container staircase system and standard assembly of the platforms using the bracket clamps.



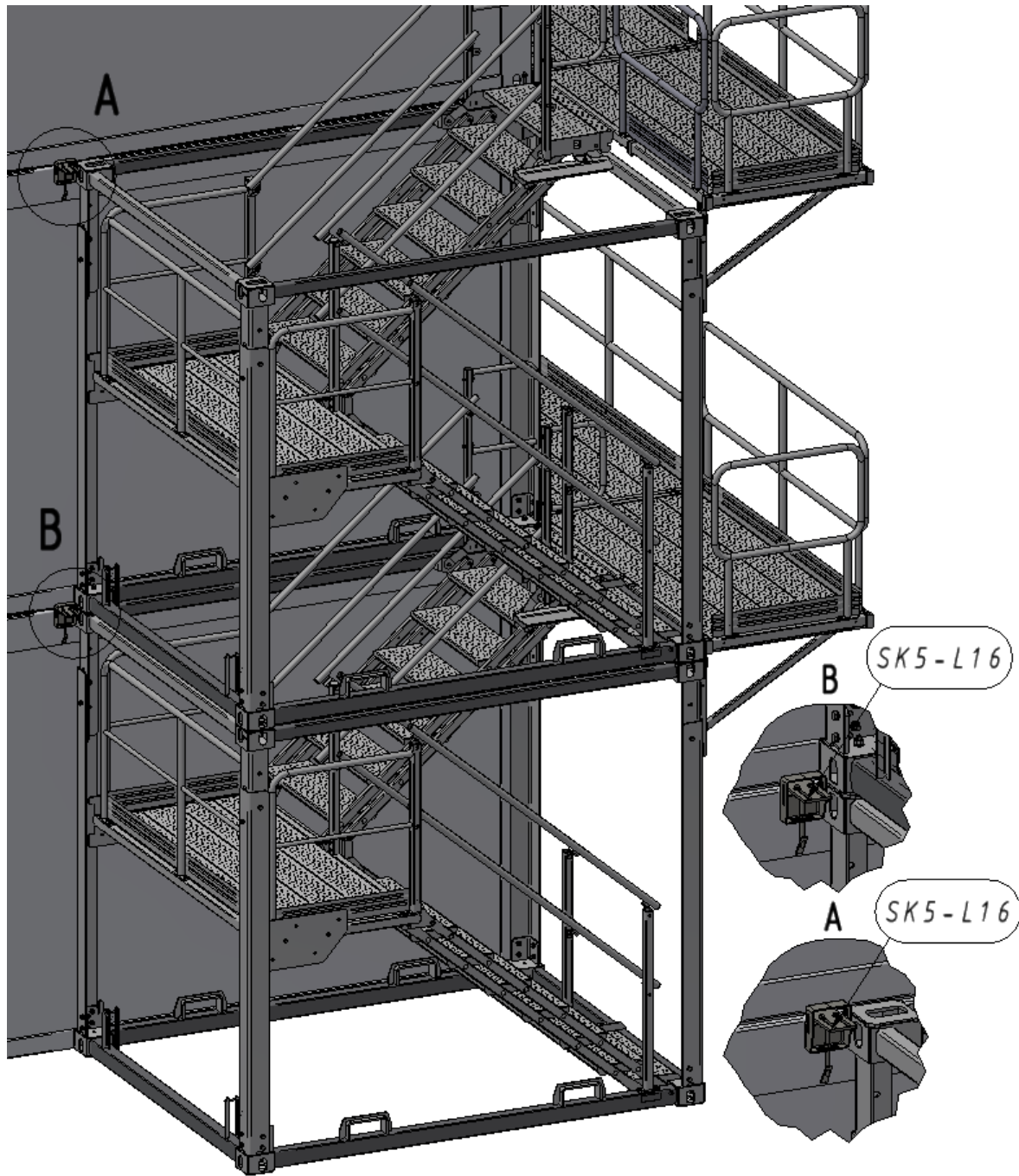
When staircases are stacked, to provide communication to the second floor, the SK-KS2-R6 and SK-KS2-R7 railing should be removed in advance (only in the lower staircase module).



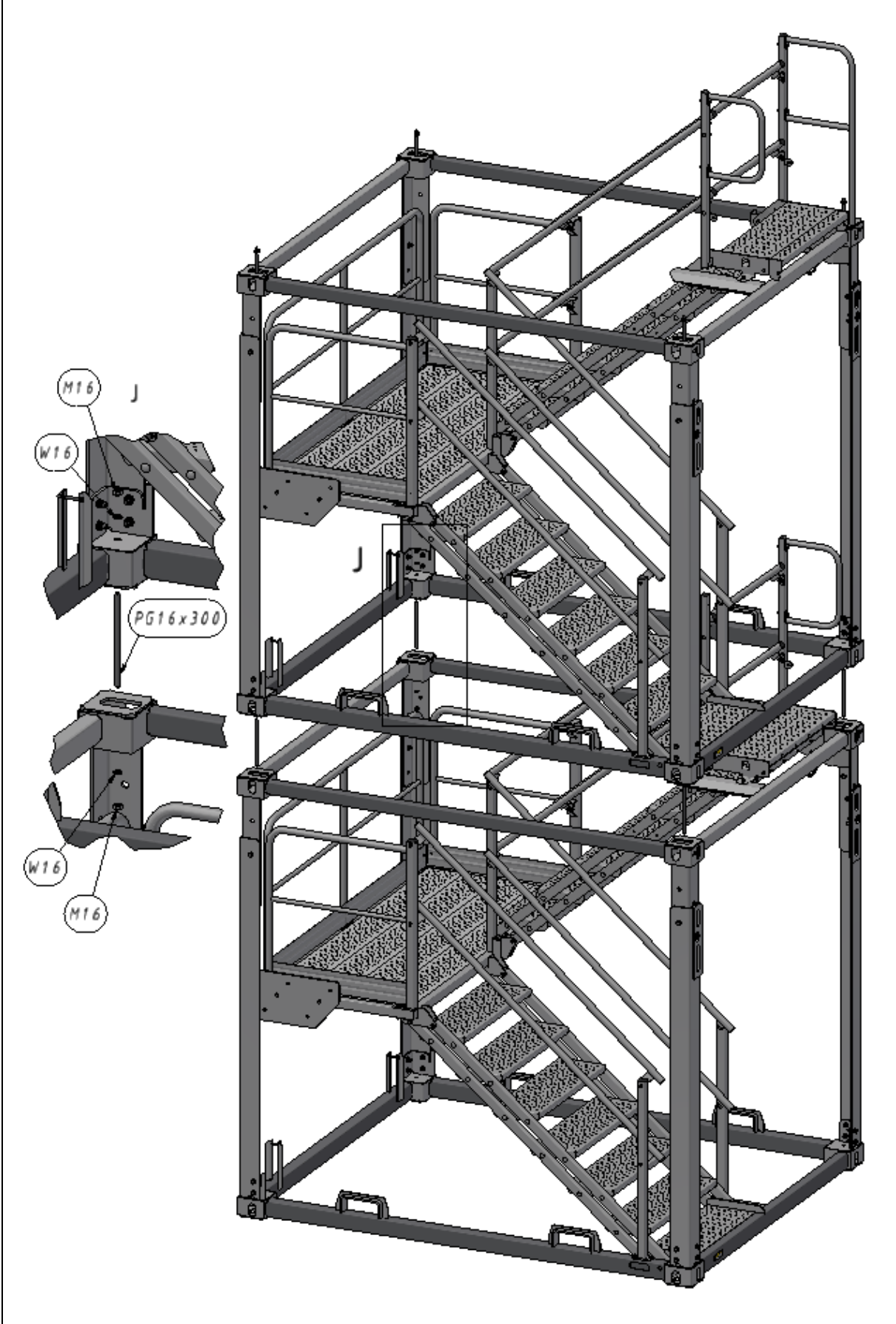
The removed railing SK-KS2-R6 must be screwed in place of the railing SK-KS2-R7.



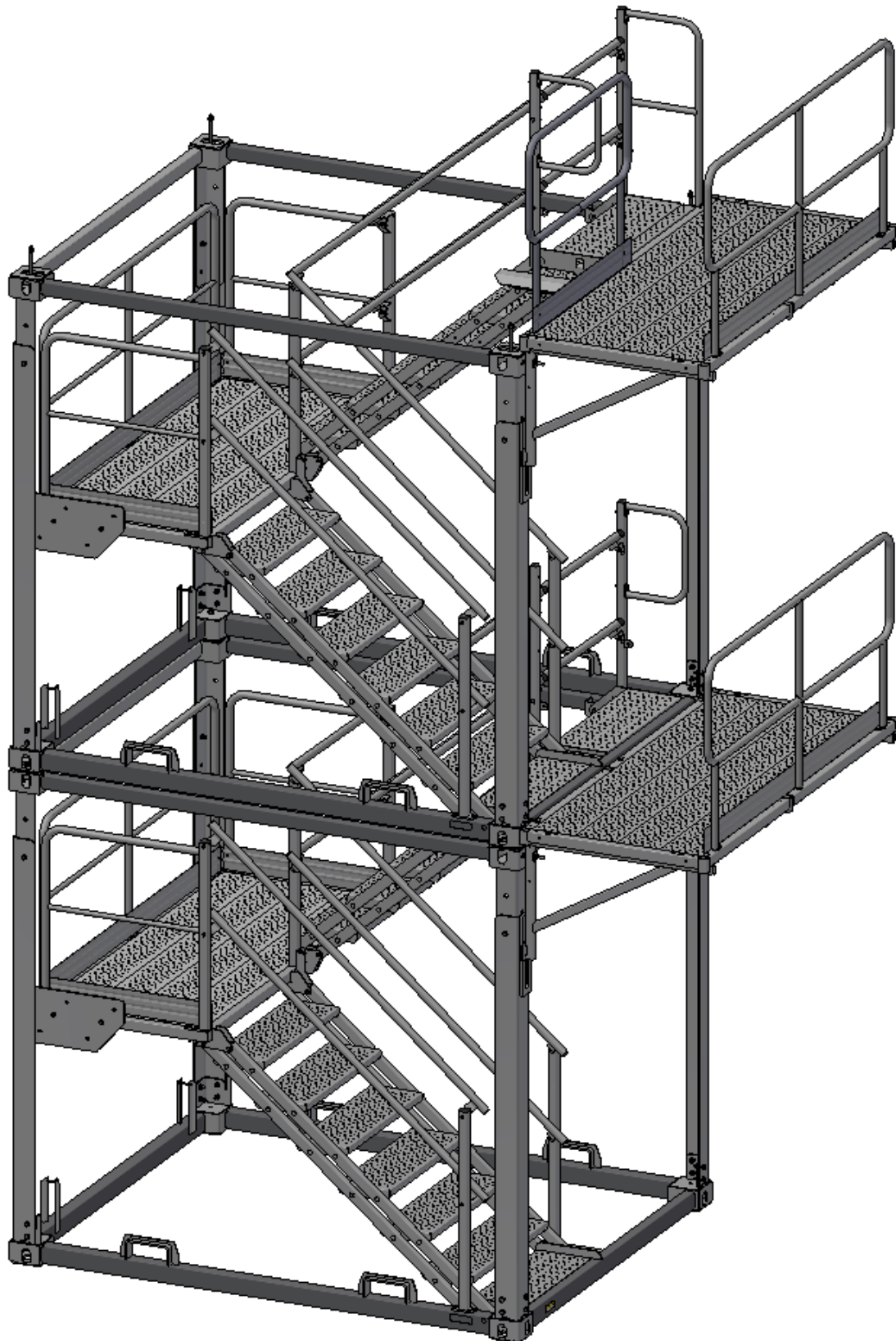
To stabilise the staircase, it must be fastened to the container frame using the SK5-L16 connector. The connector should be assembled according to the assembly instructions of the P-SK5 container stairs system. The platform of the staircase should be fastened to the container to ensure greater stability of the staircase.



Stack the staircases modules using a lifting device with a minimum capacity of 1 [t]. The modules must be bolted together using a set of connectors.



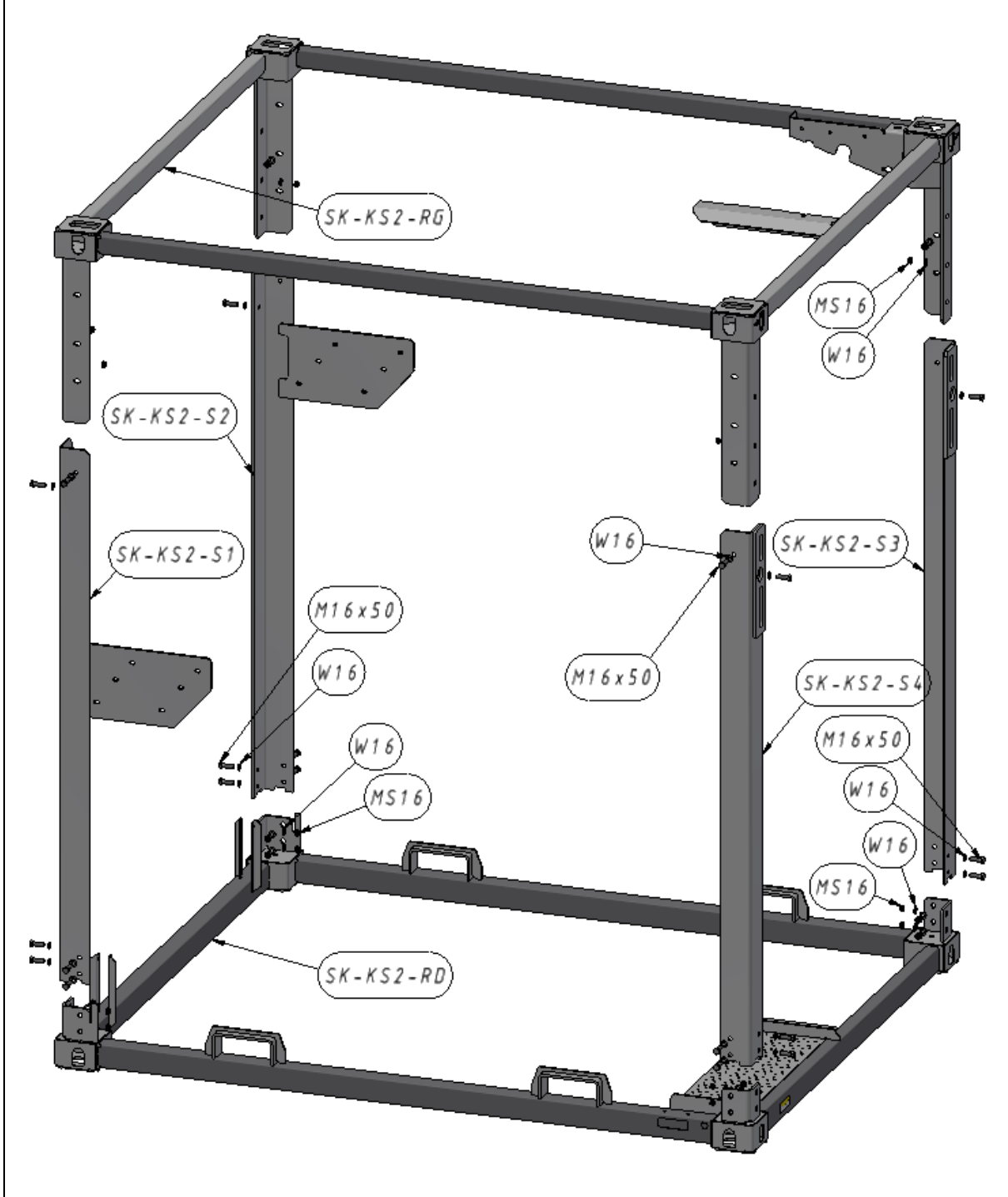
When assembling the platforms to the staircase, follow the installation instructions for container stairs system P-SK manufactured by TLC Sp z o.o. The platforms should be configured so that all edges are secured with railings.



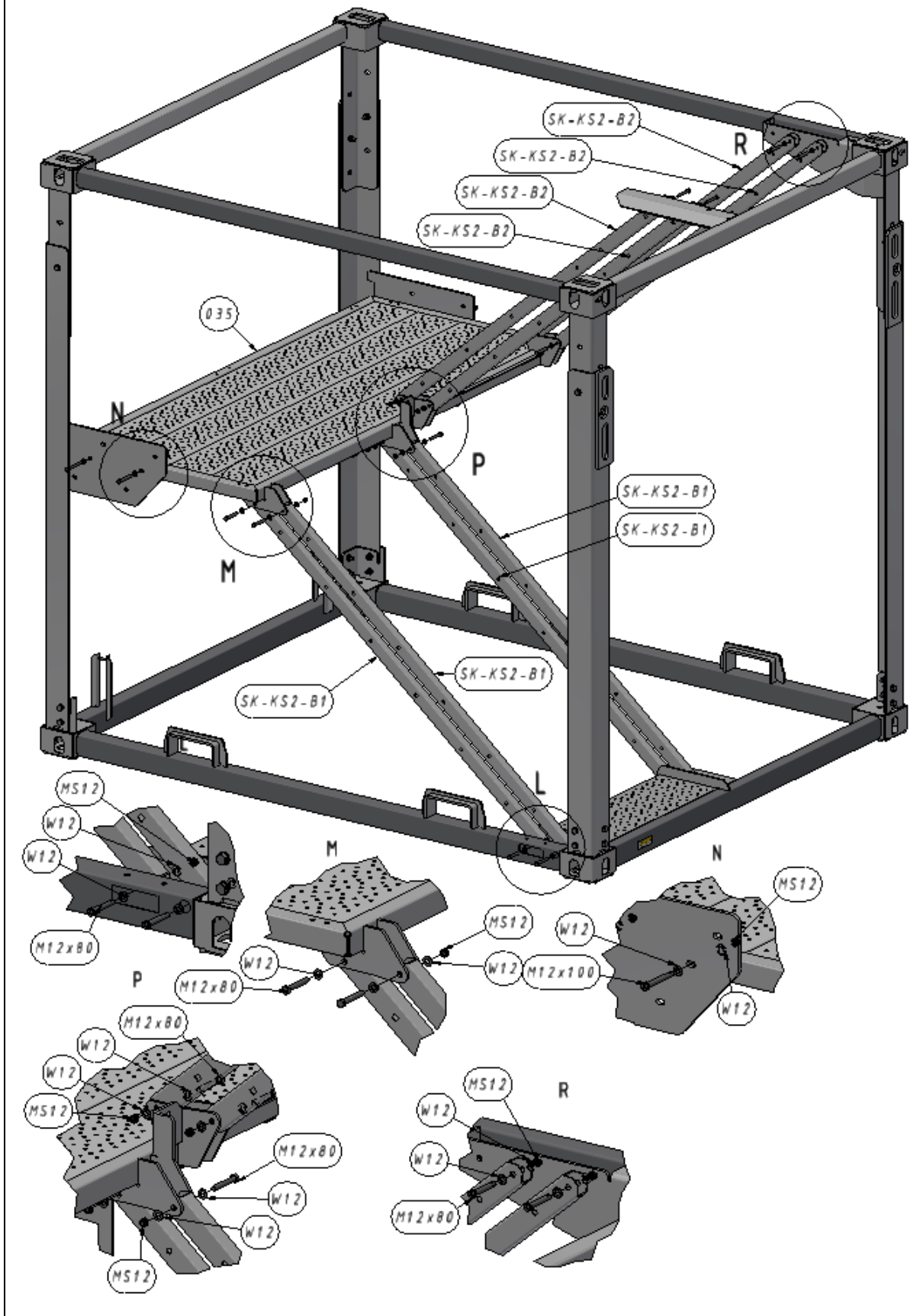
4. Assembling the staircase module from components

If the staircase is delivered in individual sub-assemblies, it should be assembled according to the instructions below.

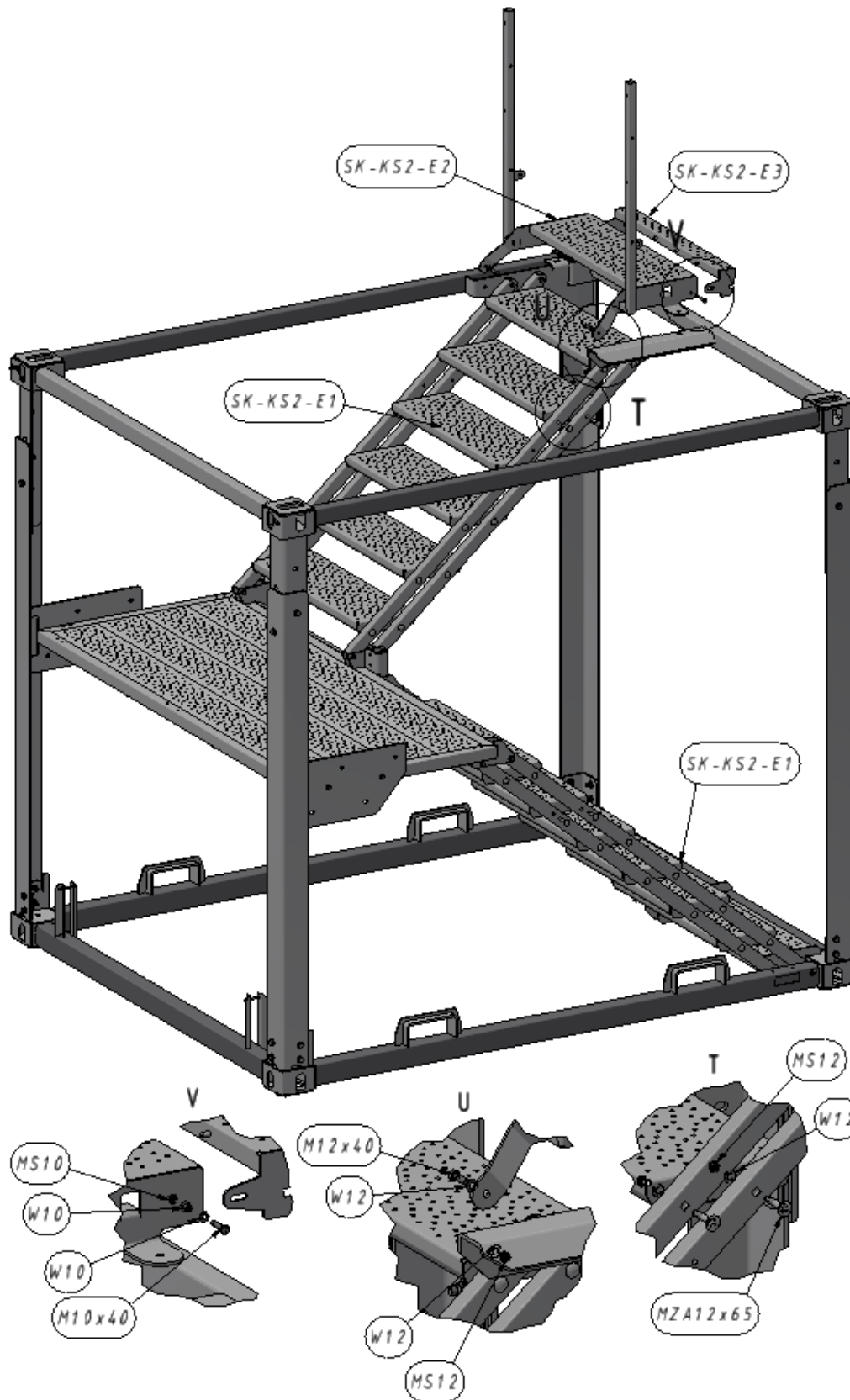
Assembly of the main frame components



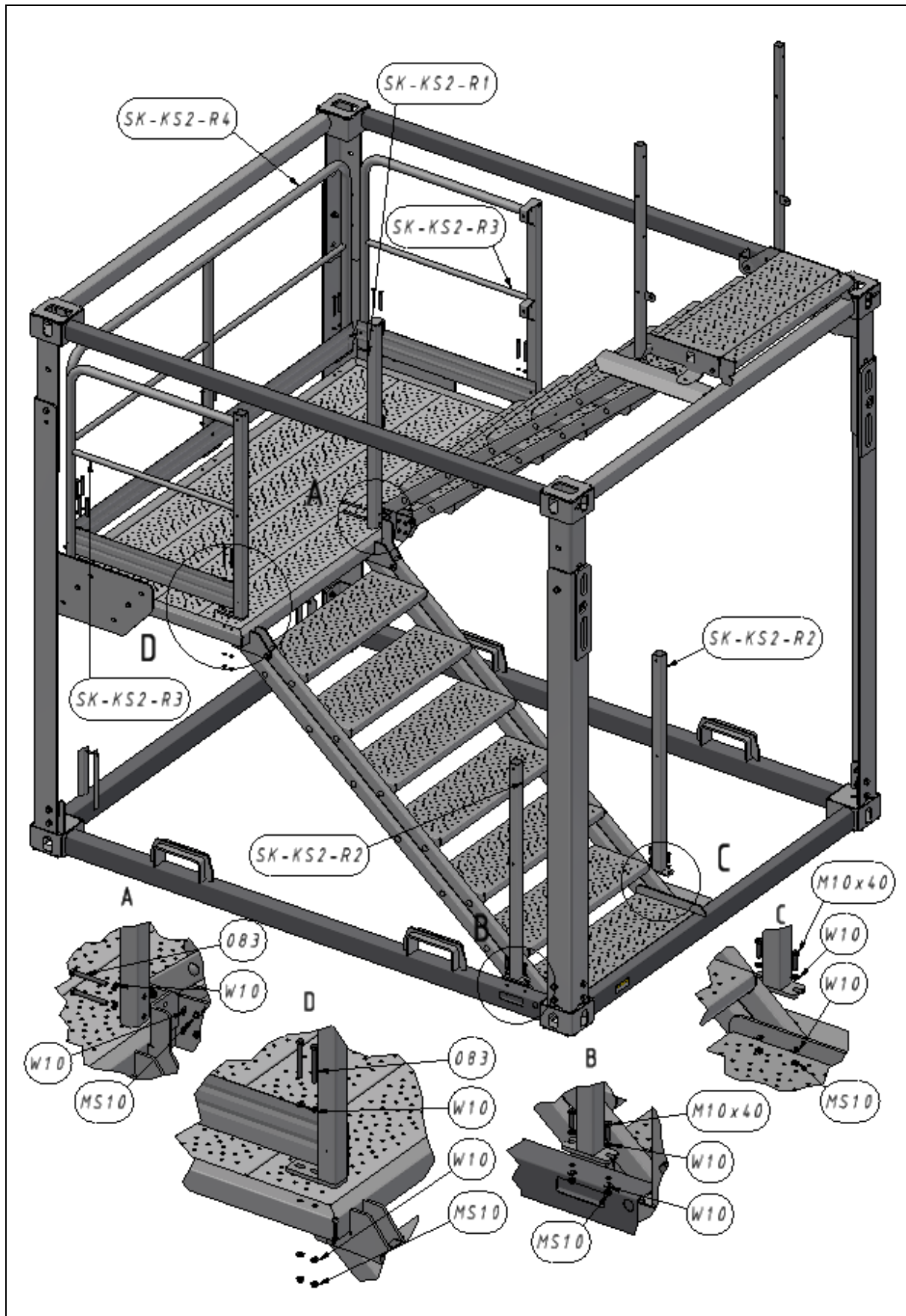
Installation of stringers and platform.



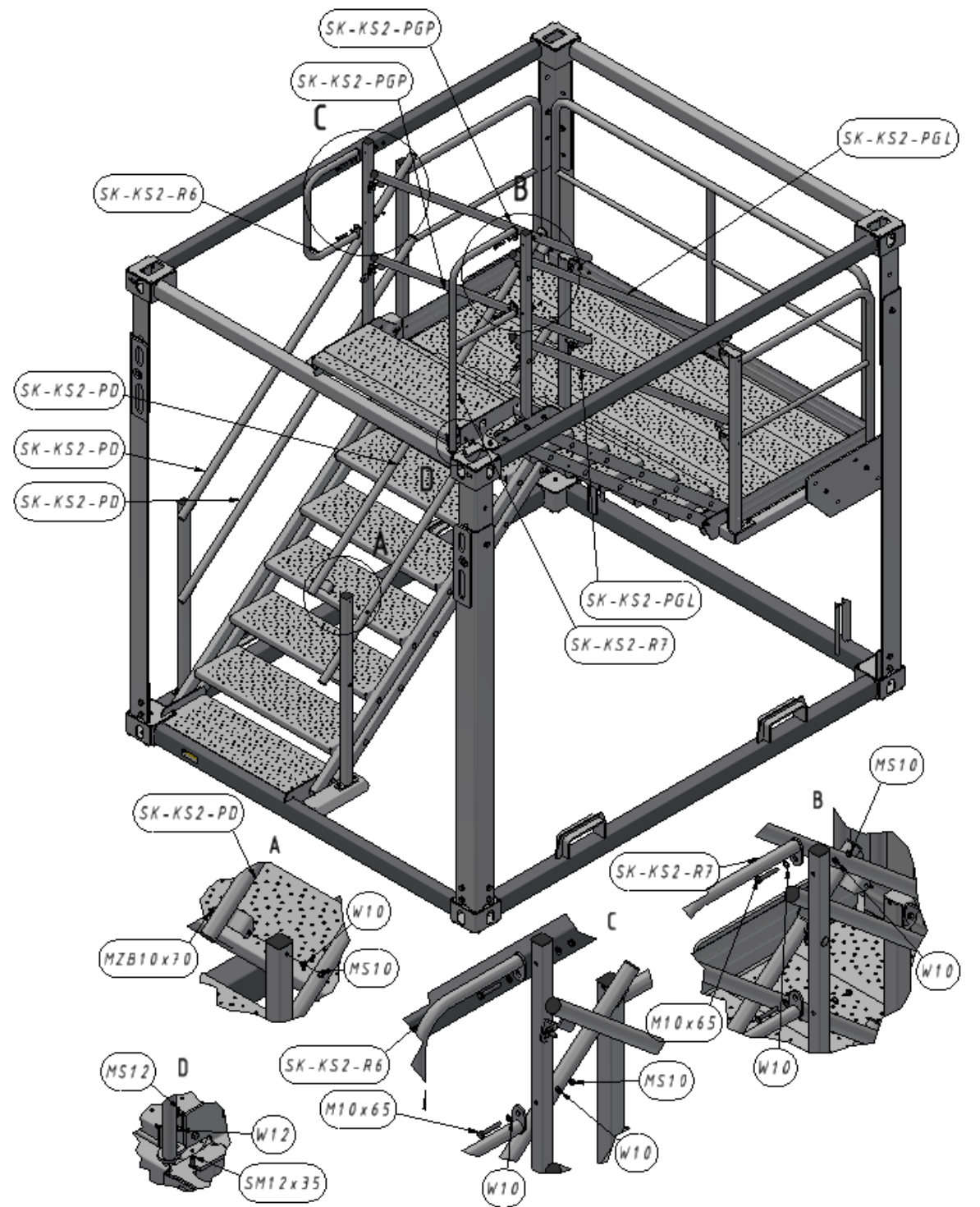
Installation of steps



Installation of railings



Installation of handgrips



Dismantling the staircase should be done in reverse order.