Architectural Metalwork

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Attachment no. 1

Assembly Manual for

Container Stairs



page 1 / 56

Issue 6.0, August 2023

Table of content

1.	Assembly manual	4
2.	Components of the container stair system	. 12
3.	Graphical list of sk5 system fasteners	. 28
4.	List of sk5 system components	. 29
5.	List of tools required for the container stair assembly	. 33
6.	Assembly operations of individual components of the container stair system	. 34

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Table of changes

Lp	FULL NAME	DZIAŁ	DEPT	SCOPE OF CHANGE	NOTES
1	Piotr Abram	BR	21.08.2018	Graphics, point 4.8	
2	Piotr Abram	BR	21.08.2018	Table 1, Figure 5 and 7	
3	Paweł Oleszkowicz	B+R	06.10.2021	General document update. New variants have been added.	
4	Paweł Oleszkowicz	B+R	03.08.2023	Update of the statement of components and variants	
5					
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15					

1. Assembly manual

The assembly manual is an attachment to the operation and maintenance documentation of the TLC container stair system.

Container stairs consist of individual elements according to specification attached with the delivery. The system includes fasteners. The system is delivered in the form of separate elements, such as platforms, railings, steps, fasteners, stairs, posts. The elements are assembled in a specific order.

Container stairs as a modular structure can be freely configured (within the scope specified by the manufacturer) depending on the needs. The setting of individual configurations should be in accordance with the operation and maintenance documentation. Basic configurations of container stairs are presented below.



Figure 1 Configuration 1 (variant S3.1)



Figure 3 Configuration 3 (variant S3.3)





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page 7 / 56



page 8 / 56

YLC



_{page} 9 / 56

YLC



Figure 13 Configuration 13 (variant S3.13)











56

page 🗕



2. Components of the container stair system

The list of components in table 1 presents the components of the container stair system, their quantity depending on the configuration, and the type of the system ordered by the customer (to be selected from the ID, component description columns).



Table 1 Components of the container stair system

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56 19 page

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page 20 / 56





56 page 22













/ 56 page 26 /







3. Graphical list of SK5 system fasteners

M12 M10 M8	M10x140 M12x50 M10x120 M8x60 M10x90 M8x40 M10x60 M10x30	W12 W10 W8
EW 12	WS12 WS8	SW 14



4. List of SK5 system components

The list of components in table 1 presents the components of the container stair system, their quantity depending on the configuration, and the type of the system ordered by the customer (to be selected from the ID, component description columns).

		F 15			Configurations													
	ID	Former ID	Component description	1	2	3	4	4a	5	5b	6	7	8	10	12	13	14	15
	SK5-S1	P-SK5-SB-FG1.1	Upper stair module 1100								_							
	SK5-S3	P-SK5-SB-FG1.2	Upper stair module 1200	1	1	1	1	1	0	0	1	0	1	1	1	Ţ	Ţ	2
	SK5-S2	P-SK5-SB-FD1.1	Lower stair module 1100															
	SK5-S4	P-SK5-SB-FD1.2	Lower stair module 1200	1	1	1	1	1	0	0	1	0	1	1	1	1	1	2
	SK5-Z1	P-SK5-SB-FR1.1/B	Right stair foot	1	1	1	1	1	0	0	1	0	1	1	1	1	1	2
	SK5-Z2	P-SK5-SB-FR1.1/A	Left stair foot	1	1	1	1	1	0	0	1	0	1	1	1	1	1	2
	SK5-P1	P-SK5-PD1.1	Platform 1100x1100															
	SK5-P4	P-SK5-PD1.2	Platform 1200x1200	0	1	1	0	1	0	0	0	0	0	0	1	1	0	2
	SK5-P3	P-SK5-PD2.4	Platform 2440x1100) 1									
	SK5-P6	P-SK5-PD2.4-1.2	Platform 2440x1200	1	1	1	1	0		0	0	1	1	1	0	1	0	6
	SK5-P2	P-SK5-PD1.69	Platform 1690x1100															
	SK5-P5	P-SK5-PD1.69x1.2	Platform 1690x1200	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	SK5-P7	-	Platform 3000x1200							1	0	0	0	0				
	SK5-P8	_	Platform 3000x1100	0	0	0	0	0	0						1	0	0	0
			Platform 2440x1200 with	0	0	0	0	_	0	0	0	0	_	0	0	0	1	0
	565-29	-	offset railing	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	SK6-P12	-	Platform filling 1100 Platform filling 1200	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
	SK6-P14	-	Platform filling 2P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5	SK6-P13	-	Platform 2P 1100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
S	SK6-P15	-	Platform 2P 1200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	SK6-P17	-	Platform 1100x1961 Platform 1350x1711	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
,	SK5-W1	P-SK5-WT1.1	Platform support 1100	2	2	2	1	1	2	2	1	4	2	0	2	2	1	12
	SK5-L1	P-SK5-LP	LP1 Connector	1	1	1	1	1	1	1	1	2	1	0	2	1	1	6
	SK5-W3	P-SK5-WT-1.1-ML	Left Platform Support 1100 for sea containers	1	1	1	1	1	1	1	1	2	1	0	1	1	1	6
	SK5-W4	P-SK5-WT-1.1-MP	Right Platform Support 1100 for sea containers	1	1	1	1	1	1	1	1	2	1	0	1	1	1	6
·	SK5-W2	P-SK5-WT1.2	Platform support 1200	2	2	2	1	1	2	2	1	4	2	0	2	2	1	12
port	SK5-L1	P-SK5-LP	LP1 Connector	1	1	1	1	1	1	1	1	2	1	0	2	1	1	6
Sup	SK5-W5	P-SK5-WT-1.2-ML	Left Platform Support 1200 for sea containers	1	1	1	1	1	1	1	1	2	1	0	1	1	1	6
	SK5-W6	P-SK5-WT-1.2-MP	Right Platform Support 1200 for sea containers	1	1	1	1	1	1	1	1	2	1	0	1	1	1	6
	SK5-L5	-	Shipping container console L	1	1	1	0	0	1	1	0	2	1	0	1	1	1	6
	SK5-L6	-	Shipping container console P	1	1	1	0	0	1	1	0	2	1	0	1	1	1	6
	SK5-PR1 SK5-PR2	P-SK5-PR	Post 01 Post 02	1	2	2	0	0	2	0	0	0	1	0	2	2	1	0

15	Forms ID	Component description	Configurations														
IJ	Former ID	Component description	1	2	3	4	4a	5	5b	6	7	8	10	12	13	14	15
SK5-BS1	P-SK5-BS-1	Industrial stair railing 01	2	2	2	· ·	2	0	0	2	0	2	2	2	2	2	4
SK5-BS3	P-SK5-BS-B-1	Safety stair railing 01	2	2	2	2	2	0	0	2	0	2	2	2	2	2	4
SK5-B2	P-SK5-BS-2	Industrial stair railing 02	2	2	2	2	2	0	0 0	0	0	2	2	2	2	2	4
SK6-B1	P-SK5-BS-B-2	Safety stair railing 02	2	2	2	2	2	0	0	2	0	2	2	2	2	2	4
SK5-B3	P-SK5-BP1.1	Industrial platform railing 1100x1100															
SK6-B3	P-SK6-BP1.1-B	Safety platform railing 1100x1100					2	2 0					1			1	_
SK5-B4	P-SK5-BP1.2	Industrial platform railing 1200x1200		3	3	Ţ			0	Ţ	0	2		2	4	Ţ	1
SK6-B4	P-SK6-BP1.25-B	Safety platform railing 1200x1200															
SK5-B1	P-SK5-BP1.28	Industrial platform railing 1280															
SK6-B2	P-SK6-BP1.28-B	Safety platform railing 1280	0	0	0	_	_	0	0	0	0	1	0	0	1	0	2
SK5-B6	P-SK5-BP1.04	Industrial platform railing 1040	0	0	0	0	0	0	0	0	0		0	0	Ţ	0	2
SK6-B6	P-SK5-BP1.04-B	Safety platform railing 1040															
SK5-B5	P-SK5-BP2.4	Industrial platform railing 2440	1	1	1	1	0	1	0	0	1	0	1	0	0	1	3
SK6-B5	P-SK6-BP2.4-B	Safety platform railing 2440							-					-	-		
SK5-B15	P-SK5-BP1.69	Industrial platform railing 1690	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
SK6-B8	P-SK6-BP1.69-B	Safety platform railing 1690						-	-		-			-	-		
SK5-B14	P-SK5-BP3.0	Industrial platform railing 3000	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0
SK6-B10	-	Safety platform railing 3000															
SK6-B11	P-SK5-BP-0.25	Railing 250															
SK6-B13	SK6-BB4	Safety railing 250	0	0	0	0	0	0	0	0	0	0	0	0	2	Ţ	6
SK6-B12	-	Industrial platform railing P13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
SK6-B14	-	Safety platform railing P13	Ű	Ű	Ű	Ű	Ŭ	Ű	Ű	Ű	Ű	Ű	Ű	Ű	Ű	Ű	-
SK5-B16	-	Industrial platform railing P15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
SK6-B15	-	Safety platform railing P15															
SK5-B17	-	Industrial platform railing 1100x1961								0	0	0			0		
SK6-B16	-	Safety platform railing 1100x1961	0	0	0	0	0	0	0				0	1		0	0
SK5-B2	-	Industrial platform railing 1350x1711			5	U		U					0	-			U
SK6-B1	-	Safety platform railing 1350x1711															

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ID	Former ID	Component description							С	onfigu	uratior	าร					
U	Former ID	component description	1	2	3	4	4a	5	5b	6	7	8	10	12	13	14	15
SK6-01	P-SK6-01	Lock 1	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0
SK6-02	P-SK6-02	Lock 2	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0
SK6-X1	P-SK6-X1	Bracing	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0
SK6-L1	P-SK6-LP5	Connector SK6-L1	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0
SK6-L3	-	Platform filling connector 2P	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
SK5-L17	-	Platform connector P9	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
SK6-K01	-	Toe board 2P 1100															
SK6-K02 SK6-K03	-	Left toe board 2P 1200 Right toe board 2P 1200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
SK5-L1	P-SK5-LP	Connector LP1	1	2	1	1	1	1	1	1	2	1	0	2	1	1	6
SK5-L16/ SK5- L3	P-SK5-LP2/ P- SK5-LP3	Adjustable connector L16/LP3	0	0	0	1	1	0	0	1	0	0	2	2	0	1	0
P-SK-ZW	P-SK-ZW	Support clamp															
SK5-KWL + SK5-KW	-	Cuencrt especies	2	2	2	1	1	2	2	1	4	2	0	2	2	1	12
SK5-KWP + SK5-KW	-	Support consoles															
SK5-D1	M-Z-P-K-14-ZN-Z	Square Washer PK	0	1	1	0	0	0	0	0	0	0	0	0	3	0	2
SK6-PR1	P-SK6-PR1	Post 01	3	4	5	3	3	n+1 *	n+1 *	3	n+1 **	3	4	5	6	2	12
SK6-PR2	-	Post 02	0	0	0	0	0	0	0	0	n+1 **	0	0	0	0	0	8
SK5-ST1	P-SK5-SB-E01	Constants	*	*	*	*	*	0	0	*	0	*	*	*	*	*	2*
SK5-ST2	P-SK5-SB-E01-1.2	Supplementary step	Х	Х	X	х	X	U	U	Х	U	X	X	X	X	Х	ΖX

* For container height: H = 2,6m - x = 0 H = 2,8m - x = 1 H = 2,9m - x = 2

**n – number of joined containers



ID	Former ID							Com	ponent	descri	ption						
U	Former ID	1	2	3	4	4a	5	5b	6	7	8	10	11	12	13	14	15
M-Z-S-SZ-12x50-8-ZO	Hexagon bolt M12x50-8.8 hot- dip galvanized (DIN933)	6	6	6	6	6	0	0	6	0	6	14	0	10	6	14	16
M-Z-S-SZ-10x140-8- ZO	Hexagon bolt M10x140-8.8 ISO 4014 hot-dip galvanized	2	2	2	1	1	2	2	1	4	2	0	2	2	2	0	12
M-Z-S-SZ-10x120-8- ZO	Hexagon bolt M10x120-8.8 ISO 4014 hot-dip galvanized	0	3	2	0	0	2	2	0	4	0	0	2	4	2	0	10
M-Z-S-SZ-10x90-8-ZO	Hexagon bolt M10x90-8.8 hot- dip galvanized, ISO4017	8	12	12	7	7	4	4	7	8	10	30	4	14	17	30	64
M-Z-S-SZ-10x60-8-ZO	Hexagon bolt M10x60-8 hot- dip galvanized, ISO4017	2	4	4	2	2	2	2	2	4	2	0	2	8	2	0	12
M-Z-S-SZ-10x30-8-ZO	Hexagon bolt M10x30-8.8 hot- dip galvanized ISO 4017	14	14	14	14	14	0	0	14	0	14	14	0	10	10	14	28
M-Z-S-SZ-8x60-8-ZO	Hexagon bolt M8x60-8.8 hot- dip galvanized, ISO 4017	4	4	4	4	4	0	0	4	0	4	4	0	4	4	4	9
M-Z-P-Z-12-ZO	Washer M12 hot-dip galvanized ISO7089	12	12	12	12	12	0	0	12	0	12	28	0	28	20	28	32
M-Z-P-Z-10-ZO	Washer M10 hot-dip galvanized ISO7089	52	70	64	48	48	20	20	48	40	56	88	20	96	64	88	252
M-Z-P-Z-8-ZO	Washer M8 hot-dip galvanized ISO7089	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
M-Z-P-P-12-ZO	Extended washer M12 hot-dip galvanized ISO7093	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
M-Z-N-SZ-12-8-ZO	Nut M12-8 hot-dip galvanized, ISO 4032	6	6	6	6	6	0	0	6	0	6	14	0	14	10	14	16
M-Z-N-SZ-10-8-ZO	Nut M10-8 hot-dip galvanized, ISO 4032	26	35	32	24	24	10	10	24	20	28	44	10	48	32	44	126
M-Z-N-SZ-8-8-ZO	Nut M8-8 hot-dip galvanized, ISO 4032	4	4	4	4	4	0	0	4	0	4	4	0	4	4	4	9
M-Z-P-K-14-ZN-Z	Square Washer M14 8 hot-dip galvanized (50x50x8)	0	1	1	0	0	0	0	0	0	0	0	0	0	3	0	2

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5. List of tools required for the container stair assembly

Table 1	List of tools	
	ڵ ٳڵٳ	Wrenches:: 22,19,18,17,16,13,10
		Level
		Tape measure
		Lifter with a lifting capacity of min. 1 t

6. Assembly operations of individual components of the container stair system

The assembly manual has been prepared in a way that shows how to assemble the individual elements of the container stair system.



6.2. PLATFORM ASSEMBLY

The platforms are assembled on supports and posts, and then screwed together with a set of a bolt, washer and nut..



56

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page





6.3. POST ASSEMBLY

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The posts should be placed in the platform sockets.



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The posts that are assembled on the stairs should be placed so that the cut in the spindle of the post points towards the hook of the stairs.





page 40 / 56





6.4. STAIR ASSEMBLY

Scheme of the assembly of the stairs. The assembly of SK6-Z1 and SK6-Z2 elements depends on the height of the containers.







page 43 / 56



The stairs have hooks that facilitate assembly, they should be hung on the platform sockets and then screwed with a set of bolts, washers, nuts.



For the 1100x1100 and 1200x1200 platforms, the stairs can be assembled on four sides, depending on the needs. For platforms with a length of 2440 and 1690, the stairs should be assembled on the short edge or in the sockets on the long edges.





6.5. L1 CONNECTOR ASSEMBLY M10x60 Α W10 M10 00 SK5-L1 M10x90 W10 M10



4.5. L1 CONNECTOR ASSEMBLY



6.6. L2/L3 CONNECTOR ASSEMBLY

The L2/L3 connector is assembled on the container cornice and screwed to the structure of the container stairs, it prevents the platform from moving away from the container when the platform is assembled on one support and two posts along the container.

6.7. RAILING ASSEMBLY

The railings are assembled by placing the railing in the platform socket, then screwing the railing to the platform with a set of screws, washers, nuts.

The stair railing is assembled by placing railing in the stair spindles, and then securing it with a bolt and nut set.

W10 M10

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SK5-L3/SK5-L2

page 52 / 56

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56 page 53

page 56 / 56