



SUSPENSION BEAM BRAKOO



Suspension Beam Brakoo

TECHNICAL INFORMATION

Brakoo suspension beam is a modular davit with counterweights to suspend all type of suspended platforms, cradles and suspended seats as well as electric devices for load lifting LM and Motrix®.

The *Brakoo* suspension beam is very versatile and due to its modularity it adapts to ny situation in terraces, roofs, decks, etc.

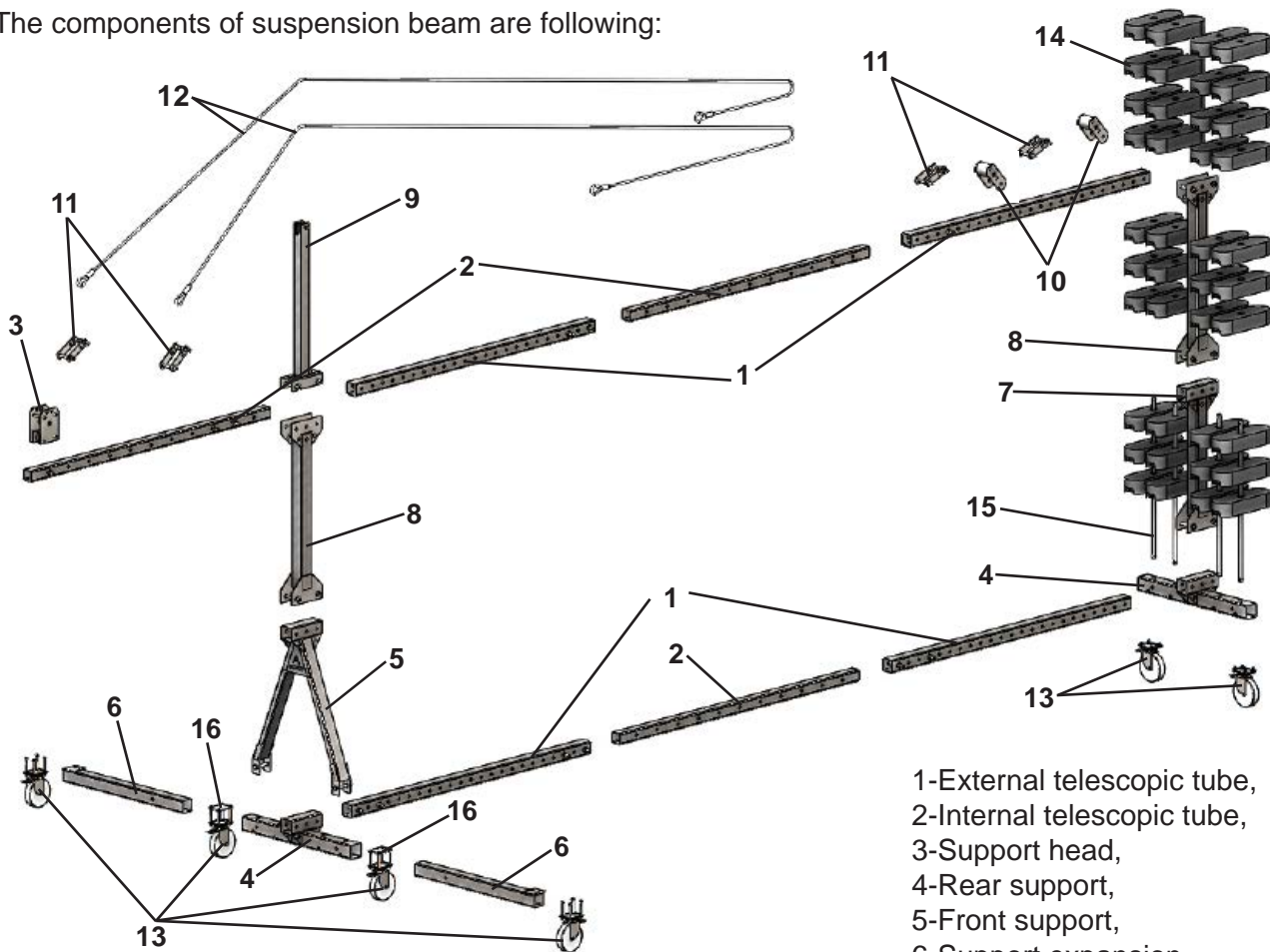
The *Brakoo* suspension beam is approved to hang suspended platforms with elevators with working load limit of 300, 400, 500, 600, 800 or 1000 kg.

Detachable and modular. The installation, by means of screws, of the *Brakoo* is very quickly. The fixing is done by means of counterweights of 25 kg each, these are secured in the housings of the structure by means of pins.

The *Brakoo* suspension beam has twelve configurations, with adjustments on the cantilever, height, suspended load and available space on the deck.

The *Brakoo* suspension beam is made of galvanized steel and offers great resistance on outdoors.

The components of suspension beam are following:



- 1-External telescopic tube,
- 2-Internal telescopic tube,
- 3-Support head,
- 4-Rear support,
- 5-Front support,
- 6-Support expansion,
- 7-Low expansion,
- 8-High expansion,
- 9-Cable expansion,
- 10-Cable derivation tool,

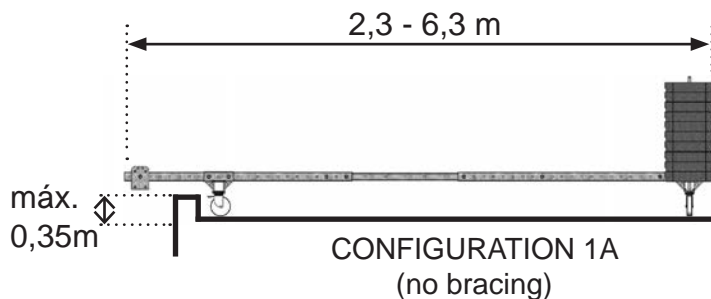
- 14-Accessus counterweight 25kg,
- 15-Conterweight fixing bar +pin,
- 16-Wheels anchor plate,

- 11-Cable fixing tool,
- 12-Cable with tensioner,
- 13-Wheels,

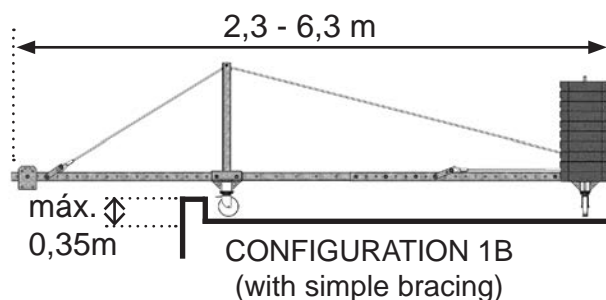
TECHNICAL SPECIFICATIONS AS PER CONFIGURATION

The BRAKOO suspension beam is composed by elements which allow the following configurations:

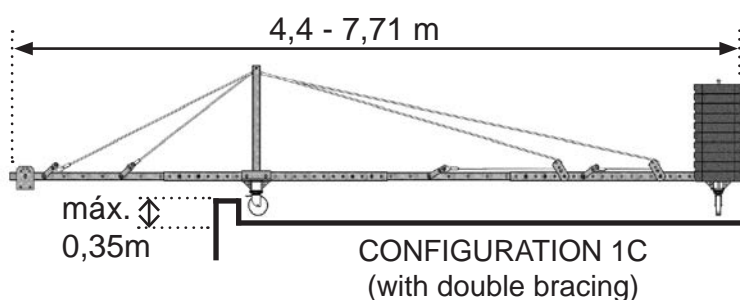
CONFIGURATION 1A		
Dead weight	100 kg (no c.weights)	
Under beam height	350 mm	
Max. Cantilever	W.L.L. 300kg	1 m
	W.L.L. 400kg	0,8 m
	W.L.L. 500kg	0,8 m
	W.L.L. 600kg	0,6 m
	W.L.L. 800kg	0,3 m
	W.L.L. 1000kg	-



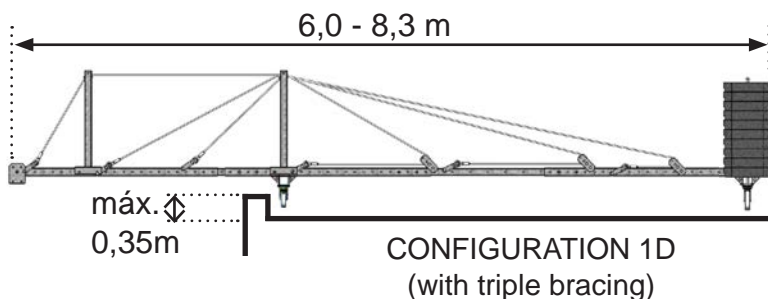
CONFIGURATION 1B		
Dead weight	125 kg (no c.weights)	
Under beam height	350 mm	
Max. Cantilever	W.L.L. 300kg	2 m
	W.L.L. 400kg	2 m
	W.L.L. 500kg	2 m
	W.L.L. 600kg	1,8 m
	W.L.L. 800kg	1,2 m
	W.L.L. 1000kg	0,6 m



CONFIGURATION 1C		
Dead weight	160 kg (no c.weights)	
Under beam height	350 mm	
Max. Cantilever	W.L.L. 300kg	2,5 m
	W.L.L. 400kg	2,5 m
	W.L.L. 500kg	2,5 m
	W.L.L. 600kg	2,2 m
	W.L.L. 800kg	1,6 m
	W.L.L. 1000kg	1,2 m

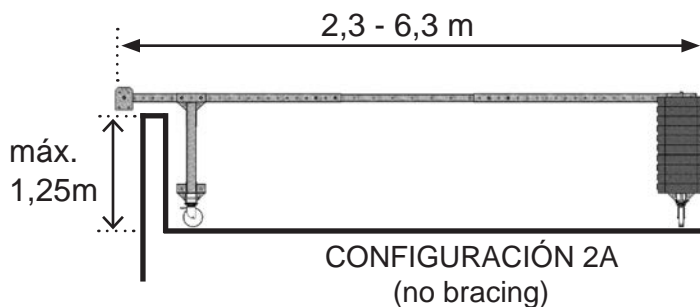


CONFIGURATION 1D		
Dead weight	200 kg (no c.weights)	
Under beam height	350 mm	
Max. Cantilever	W.L.L. 300kg	3,0 m
	W.L.L. 400kg	3,0 m
	W.L.L. 500kg	3,0 m
	W.L.L. 600kg	-
	W.L.L. 800kg	-
	W.L.L. 1000kg	-

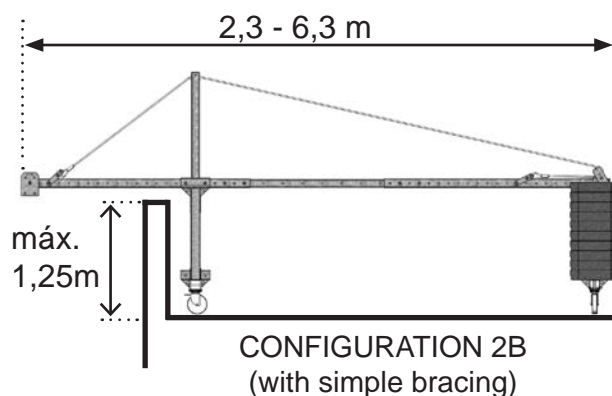


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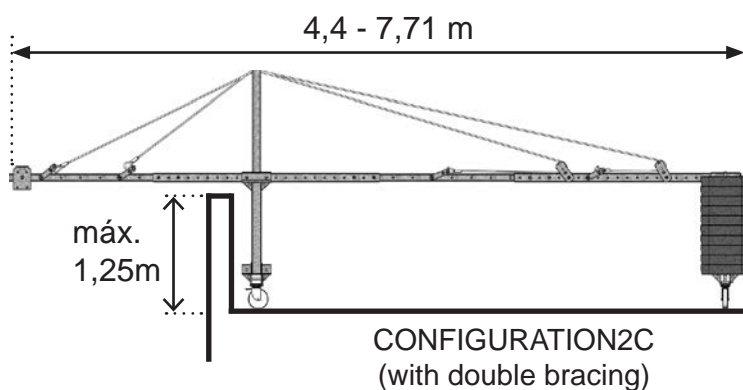
CONFIGURATION 2A		
Dead weight	140 kg (no c.weights)	
Under beam height	1250 mm	
Max. Cantilever	W.L.L. 300kg	1 m
	W.L.L. 400kg	0,8 m
	W.L.L. 500kg	0,8 m
	W.L.L. 600kg	0,6 m
	W.L.L. 800kg	0,3 m
	W.L.L. 1000kg	-



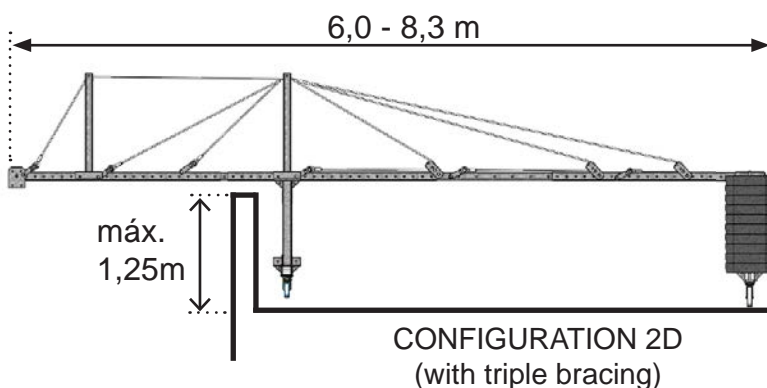
CONFIGURATION 2B		
Dead weight	160 kg (no c.weights)	
Under beam height	1250 mm	
Max. Cantilever	W.L.L. 300kg	2 m
	W.L.L. 400kg	2 m
	W.L.L. 500kg	2 m
	W.L.L. 600kg	1,8 m
	W.L.L. 800kg	1,2 m
	W.L.L. 1000kg	0,6 m



CONFIGURATION 2C		
Dead weight	195 kg (no c.weights)	
Under beam height	1250 mm	
Max. Cantilever	W.L.L. 300kg	2,5 m
	W.L.L. 400kg	2,5 m
	W.L.L. 500kg	2,5 m
	W.L.L. 600kg	2,2 m
	W.L.L. 800kg	1,6 m
	W.L.L. 1000kg	1,2 m

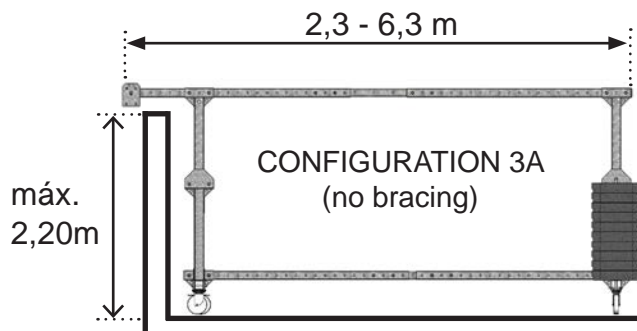


CONFIGURATION 2D		
Dead weight	235 kg (no c.weights)	
Under beam height	1250 mm	
Max. Cantilever	W.L.L. 300kg	3,0 m
	W.L.L. 400kg	3,0 m
	W.L.L. 500kg	3,0 m
	W.L.L. 600kg	-
	W.L.L. 800kg	-
	W.L.L. 1000kg	-

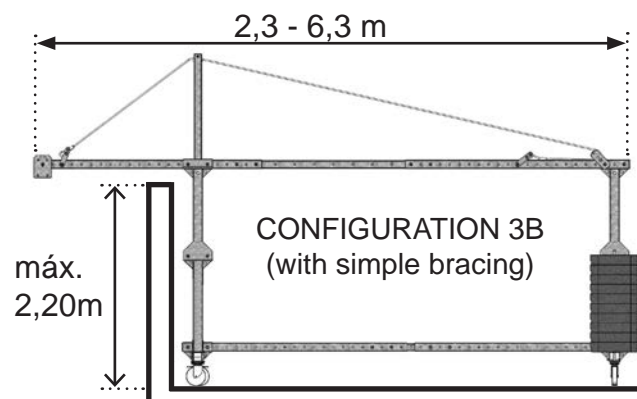


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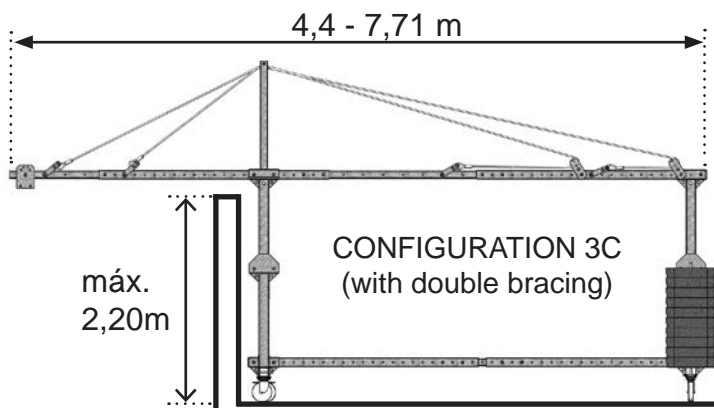
CONFIGURATION 3A		
Dead weight	250 kg (no c.weights)	
Under beam height	2200 mm	
Max. Cantilever	W.L.L. 300kg	1 m
	W.L.L. 400kg	0,8 m
	W.L.L. 500kg	0,8 m
	W.L.L. 600kg	0,6 m
	W.L.L. 800kg	0,3 m
	W.L.L. 1000kg	-



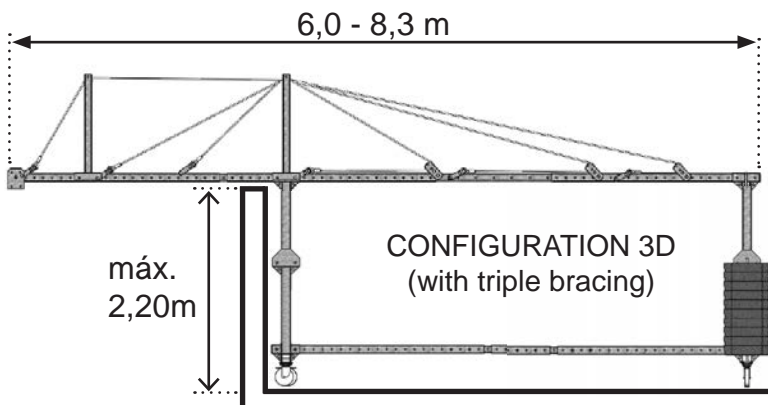
CONFIGURATION 3B		
Dead weight	275 kg (no c.weights)	
Under beam height	2200 mm	
Max. Cantilever	W.L.L. 300kg	2 m
	W.L.L. 400kg	2 m
	W.L.L. 500kg	2 m
	W.L.L. 600kg	1,8 m
	W.L.L. 800kg	1,2 m
	W.L.L. 1000kg	-



CONFIGURATION 3C		
Dead weight	310 kg (no c.weights)	
Under beam height	2200 mm	
Max. Cantilever	W.L.L. 300kg	2,5 m
	W.L.L. 400kg	2,5 m
	W.L.L. 500kg	2,5 m
	W.L.L. 600kg	2,2 m
	W.L.L. 800kg	1,6 m
	W.L.L. 1000kg	-

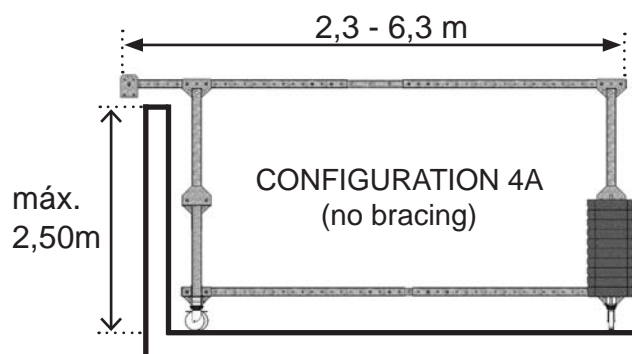


CONFIGURATION 3D		
Dead weight	350 kg (no c.weights)	
Under beam height	2200 mm	
Max. Cantilever	W.L.L. 300kg	3,0 m
	W.L.L. 400kg	3,0 m
	W.L.L. 500kg	3,0 m
	W.L.L. 600kg	-
	W.L.L. 800kg	-
	W.L.L. 1000kg	-

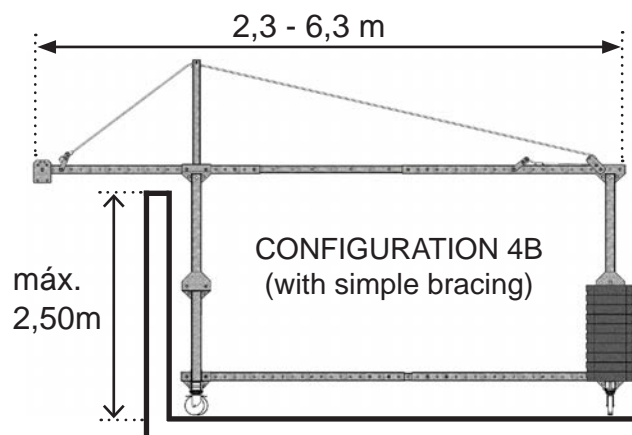


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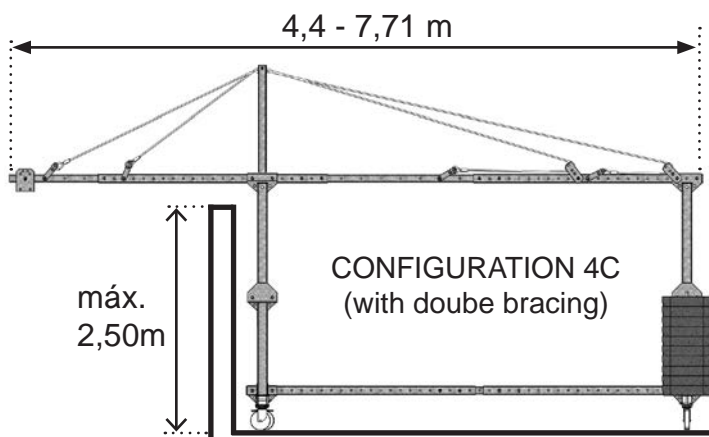
CONFIGURATION 4A		
Dead weight	255 kg (no c.weights)	
Under beam height	2500 mm	
Max. Cantilever	W.L.L. 300kg	1 m
	W.L.L. 400kg	0,8 m
	W.L.L. 500kg	0,8 m
	W.L.L. 600kg	0,6 m
	W.L.L. 800kg	0,3 m
	W.L.L. 1000kg	-



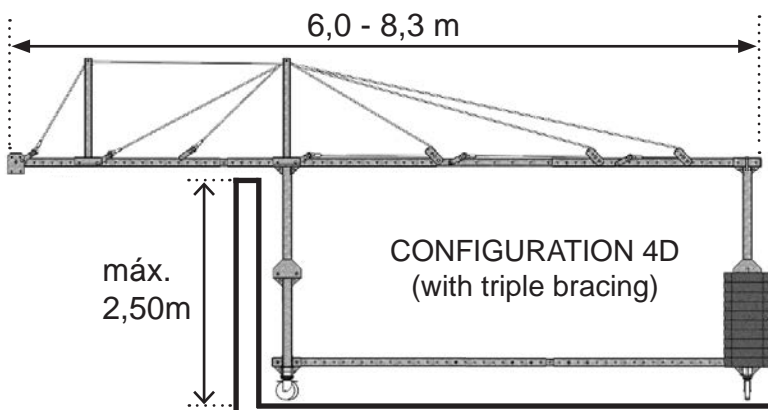
CONFIGURATION 4B		
Dead weight	280 kg (no c.weights)	
Under beam height	2500 mm	
Max. Cantilever	W.L.L. 300kg	2 m
	W.L.L. 400kg	2 m
	W.L.L. 500kg	2 m
	W.L.L. 600kg	1,8 m
	W.L.L. 800kg	1,2 m
	W.L.L. 1000kg	-



CONFIGURATION 4C		
Dead weight	315 kg (no c.weights)	
Under beam height	2500 mm	
Max. Cantilever	W.L.L. 300kg	2,5 m
	W.L.L. 400kg	2,5 m
	W.L.L. 500kg	2,5 m
	W.L.L. 600kg	2,2 m
	W.L.L. 800kg	1,6 m
	W.L.L. 1000kg	-



CONFIGURATION 4D		
Dead weight	355 kg (no c.weights)	
Under beam height	2500 mm	
Max. Cantilever	W.L.L. 300kg	3,0 m
	W.L.L. 400kg	3,0 m
	W.L.L. 500kg	3,0 m
	W.L.L. 600kg	-
	W.L.L. 800kg	-
	W.L.L. 1000kg	-



REACTIONS

-The loads transmitted by the suspension beam depend on:

- a) The extension.
- b) Distance between front and rear supports.
- c) Working load limit of elevator.

-The Working Load Limit (CMU or WLL) is 1000kg.

-The stability coefficient is 3.

-The following tables describe the loads transmitted by the suspension beam. The loads described are the total and magnification loads.

- $2R_a$ and $2R_b$ are the reactions in the front and rear supports. To obtain the reaction in each wheel is directly R_a or R_b . The results are in kg.

-A qualified person must perform the verification or load test calculation and be responsible for the support surface having sufficient capacity to withstand the stresses due to suspended loads.

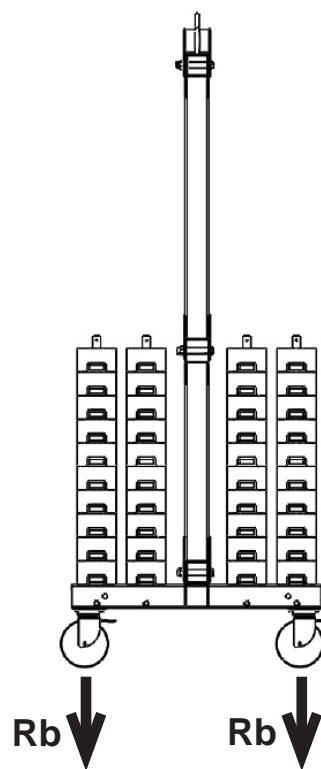
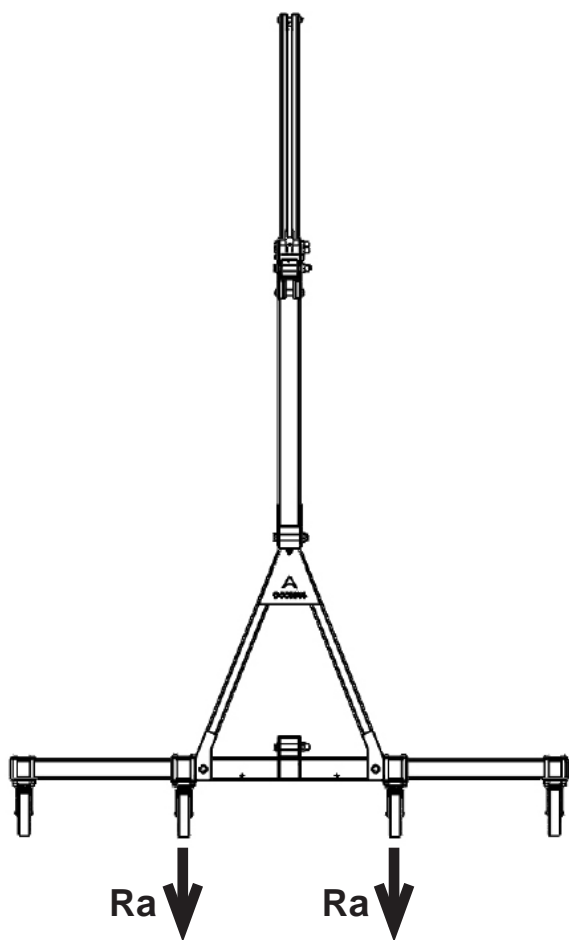
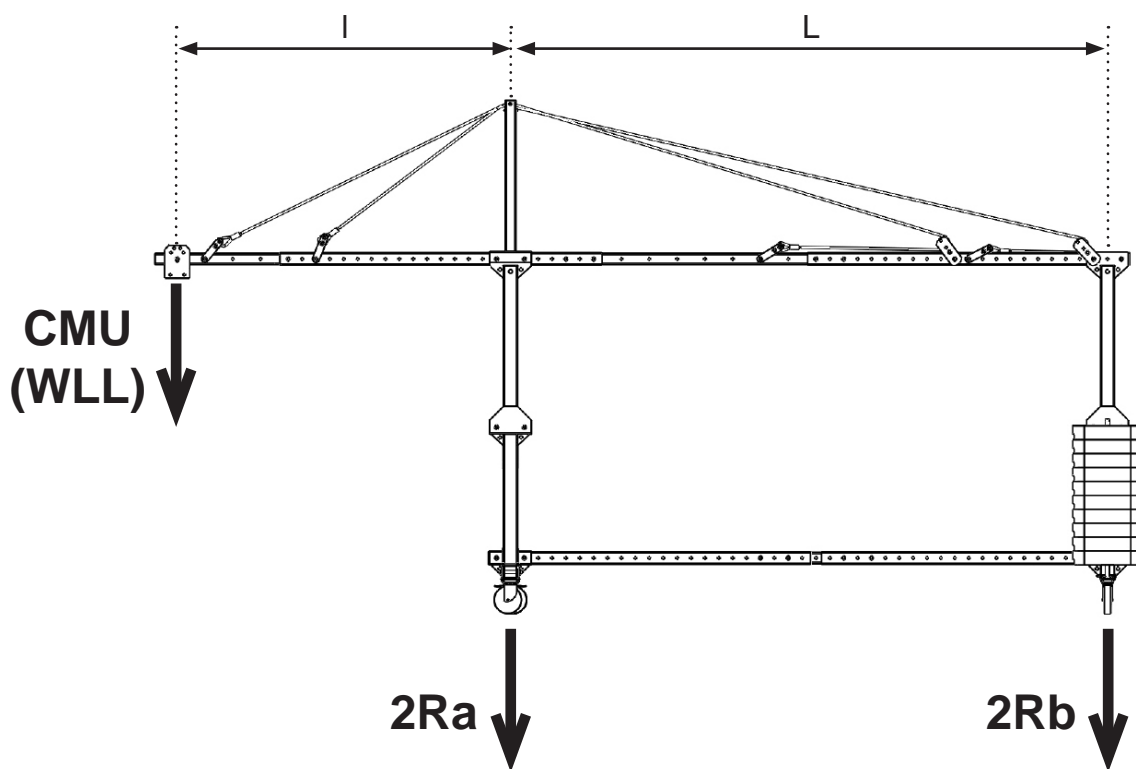
-If the desired configuration does not appear in the tables, use the following formulas to calculate the counterweights.

Formula:

$$2R_a = (CMU \times (L + l)) / L \times 3$$

$$2R_b = (CMU \times l / L) \times 3$$

$$N^{\circ} \text{ counterweights} = 2R_b / 25$$





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WORKING LOAD LIMIT PER LIFT, WLL = 300 KG																								
Cantilever l (m)		Distance between supports L (m)																				Ra max. wheel (kg)	Rb max. wheel (kg)	
		1,4	1,6	1,8	2	2,2	2,4	2,6	2,8	3	3,2	3,4	3,6	3,8	4	4,2	4,4	4,6	4,8	5	5,2			
NO bracing	0,3	8	7	6	6	5	5	5	4	4	4	4	3	3	3	3	3	3	3	3	3	630	180	
	0,4	11	9	8	8	7	6	6	6	5	5	5	4	4	4	4	4	4	3	3	3	660	210	
	0,6	16	14	12	11	10	9	9	8	8	7	7	6	6	6	5	5	5	5	5	5	730	280	
	0,8	21	18	16	15	14	12	12	11	10	9	9	8	8	8	7	7	7	6	6	6	790	340	
WITH <u>simple</u> bracing	1	26	23	20	18	17	15	14	13	12	12	11	10	9	9	9	8	8				860	410	
	1,2	31	27	24	22	20	18	17	16	15	14	13	12	12	11	11	10	10				920	470	
	1,4	36	32	28	26	23	21	20	18	17	16	15	14	14	13	12	12					980	530	
	1,6		36	32	29	27	24	23	21	20	18	17	16	16	15	14							980	600
	1,8			36	33	30	27	25	24	22	21	20	18	18	17									980
WITH <u>double</u> bracing	2				40	36	33	31	29	27	25	24	22	21	20	19	18	18	17				1030	790
	2,4					40	36	34	31	29	27	26	24	23	22	21	20	19	18				1020	860
	2,5						38	35	33	30	29	27	25	24	23	22	21	20	19				1000	890
WITH <u>triple</u> bracing	2,7							38	35	33	31	29	27	26	25	24	23	22	21	20	19		1000	950
	3								39	36	34	32	30	29	27	26	25	24	23	22	21		1020	1050
Number of counterweights per suspension beam																								

WORKING LOAD LIMIT PER LIFT, WLL = 400 KG																											
Cantilever l (m)		Distance between supports L (m)																				Ra max. wheel (kg)	Rb max. wheel (kg)				
		1,4	1,6	1,8	2	2,2	2,4	2,6	2,8	3	3,2	3,4	3,6	3,8	4	4,2	4,4	4,6	4,8	5	5,2						
NO bracing	0,3	11	9	8	8	7	6	6	6	5	5	5	4	4	4	4	4	4	3	3	3	810	210				
	0,4	14	12	11	10	9	8	8	7	7	6	6	6	5	5	5	5	4	4	4	4	860	260				
	0,6	21	18	16	15	14	12	12	11	10	9	9	8	8	8	7	7	7	6	6	6	940	340				
	0,8	28	24	22	20	18	16	15	14	13	12	12	11	11	10	10	9	9	8	8			1030	430			
WITH <u>simple</u> bracing	1	35	30	27	24	22	20	19	18	16	15	15	14	13	12	12	11	11	10				1110	510			
	1,2		36	32	29	27	24	23	21	20	18	17	16	16	15	14	14	13					1130	530			
	1,4			38	34	31	28	26	24	23	21	20	19	18	17	16	16							1150	550		
	1,6				39	35	32	30	28	26	24	23	22	21	20	19									1160	560	
	1,8					40	36	34	31	29	27	26	24	23	22											1170	570
WITH <u>double</u> bracing	2					40	37	35	32	30	29	27	26												1180	580	
	2,2						38	36	33	32	30	28	27	26	24	23	22									1160	560
	2,4							39	36	34	32	31	29	28	27	26	24									1160	560
WITH <u>triple</u> bracing	2,5							40	38	36	34	32	30	29	28	27	25									1180	580
	2,7								39	36	35	33	31	30	29	27	26	25								1160	560
3									40	38	36	35	33	32	30	29	28									1180	580
Number of counterweights per suspension beam																											

WORKING LOAD LIMIT PER LIFT, WLL = 500 KG																													
Cantilever l (m)		Distance between supports L (m)																				Ra max. wheel (kg)	Rb max. wheel (kg)						
		1,4	1,6	1,8	2	2,2	2,4	2,6	2,8	3	3,2	3,4	3,6	3,8	4	4,2	4,4	4,6	4,8	5	5,2								
NO bracing	0,3	13	12	10	9	9	8	7	7	6	6	6	5	5	5	5	4	4	4	4	4	990	240						
	0,4	18	15	14	12	11	10	10	9	8	8	7	7	6	6	6	5	5	5	5	5	1050	300						
	0,6	26	23	20	18	17	15	14	13	12	12	11	10	10	9	9	8	8	8	7					1160	410			
	0,8	35	30	27	24	22	20	19	18	16	15	15	14	13	12	12	11	11	10	10						1260	510		
WITH <u>simple</u> bracing	1		38	34	30	28	25	24	22	20	19	18	17	16	15	15	14	14	13							1300	550		
	1,2			40	36	33	30	28	26	24	23	22	20	19	18	18	17	16									1330	580	
	1,4				39	35	33	30	28	27	25	24	23	21	20	20											1310	560	
	1,6					40	37	35	32	30	29	27	26	24	23													1330	580
	1,8						39	36	34	32	30	29	27																1320
WITH <u>double</u> bracing	2						40	38	36	34	32																	1330	580
	2,2							39	37	35	33	32	30	29	28													1320	570
	2,4								40	38	36	35	33	32	30													1330	580
WITH <u>triple</u> bracing	2,5								40	38	36	35	33	32														1330	580
	2,7									39	37	36	34	33	32													1320	570
3											40	38	36	35														1320	570
Number of counterweights per suspension beam																													



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WORKING LOAD LIMIT PER LIFT, WLL = 600 KG																								
Cantilever l (m)	Distance between supports L (m)																				Ra max. wheel (kg)	Rb max. wheel (kg)		
	1,4	1,6	1,8	2	2,2	2,4	2,6	2,8	3	3,2	3,4	3,6	3,8	4	4,2	4,4	4,6	4,8	5	5,2				
NO bracing	0,3	16	14	12	11	10	9	9	8	8	7	7	6	6	6	5	5	5	5	5	5	1180	280	
	0,4	21	18	16	15	14	12	12	11	10	9	9	8	8	8	7	7	7	6	6	6	1240	340	
	0,6	31	27	24	22	20	18	17	16	15	14	13	12	12	11	11	10	10	9	9	9	1370	470	
WITH <u>simple</u> bracing	0,8		36	32	29	27	24	23	21	20	18	17	16	16	15	14	14	13	12	12		1430	530	
	1			40	36	33	30	28	26	24	23	22	20	19	18	18	17	16	15			1480	580	
	1,2				40	36	34	31	29	27	26	24	23	22	21	20	19					1470	570	
	1,4					39	36	34	32	30	28	27	26	24	23								1470	570
	1,6						39	36	34	32	31	29	28										1460	560
WITH <u>double</u> bracing	1,8							39	36	35	33											1460	560	
	2									40	38	36	35	33	32	30						1480	580	
2,2												40	38	36	35	33						1480	580	
Number of counterweights per suspension beam																								

Table not available for configurations 1D, 2D, 3D and 4D.

WORKING LOAD LIMIT PER LIFT, WLL = 800 KG																							
Cantilever l (m)	Distance between supports L (m)																				Ra max. wheel (kg)	Rb max. wheel (kg)	
	1,4	1,6	1,8	2	2,2	2,4	2,6	2,8	3	3,2	3,4	3,6	3,8	4	4,2	4,4	4,6	4,8	5	5,2			
NO bracing	0,3	21	18	16	15	14	12	12	11	10	9	9	8	8	8	7	7	7	6	6	6	1540	340
	0,4	28	24	22	20	18	16	15	14	13	12	12	11	11	10	10	9	9	8	8	8	1630	430
WITH <u>simple</u> bracing	0,6		36	32	29	27	24	23	21	20	18	17	16	16	15	14	14	13	12	12	12	1730	530
	0,8			39	35	32	30	28	26	24	23	22	21	20	19	18	17	16	16			1760	560
	1				40	37	35	32	30	29	27	26	24	23	22	21	20					1780	580
WITH <u>double</u> bracing	1,2					39	36	34	32	31	29	28	27	26								1760	560
	1,4						40	38	36	34	32	31	30	28								1780	580
	1,6								39	37	35	34	32									1760	560
Number of counterweights per suspension beam																							

Table not available for configurations 1D, 2D, 3D and 4D.

WORKING LOAD LIMIT PER LIFT, WLL = 1000 KG																							
Cantilever l (m)	Distance between supports L (m)																				Ra max. wheel (kg)	Rb max. wheel (kg)	
	1,4	1,6	1,8	2	2,2	2,4	2,6	2,8	3	3,2	3,4	3,6	3,8	4	4,2	4,4	4,6	4,8	5	5,2			
WITH <u>simple</u> bracing	0,3	26	23	20	18	17	15	14	13	12	12	11	10	10	9	9	9	8	8	8	7	1910	410
	0,4	35	30	27	24	22	20	19	18	16	15	15	14	13	12	12	11	11	10	10	10	2010	510
	0,6			40	36	33	30	28	26	24	23	22	20	19	18	18	17	16	15	15	14	2080	580
WITH <u>double</u> bracing	0,8				40	37	35	32	30	29	27	26	24	23	22	21	20					2080	580
	1						40	38	36	34	32	30	29	28	27	25						2080	580
1,2									40	38	36	35	33	32	30							2080	580
Number of counterweights per suspension beam																							

Table not available for configurations 1D, 2D, 3A, 3B, 3C, 3D, 4A, 4B, 4C and 4D.

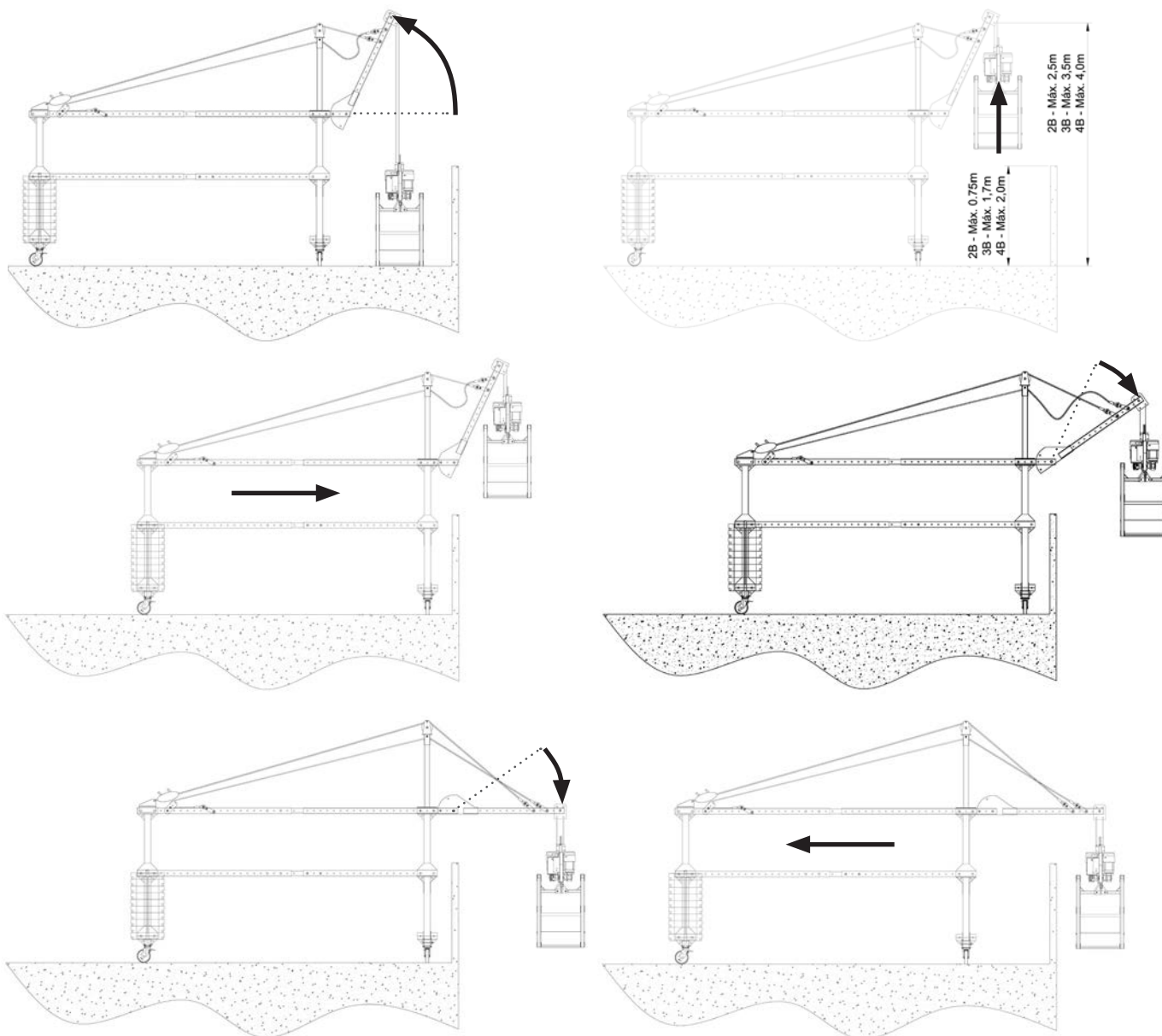


Configuration for suspension beam BRAKOO model 4B with 2,5m height and maximum cantilever 2m.

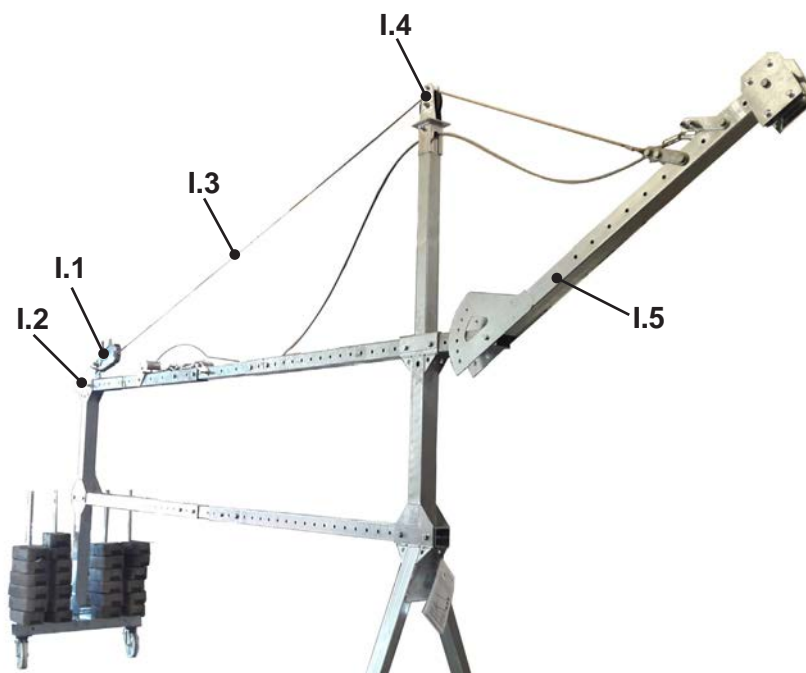
CONFIGURATION WITH SWINGING ARM

The components and maneuvers of the SWINGING ARM device are intended to facilitate the installation of a suspended platform from the upper terrace. This device are only valid with configurations 2B, 3B and 4B of the BRAKOO suspension beam.

The installation process of a suspended platform from the upper terrace by means the BRAKOO SWINGING ARM is the following:



BRAKOO SWINGING ARM



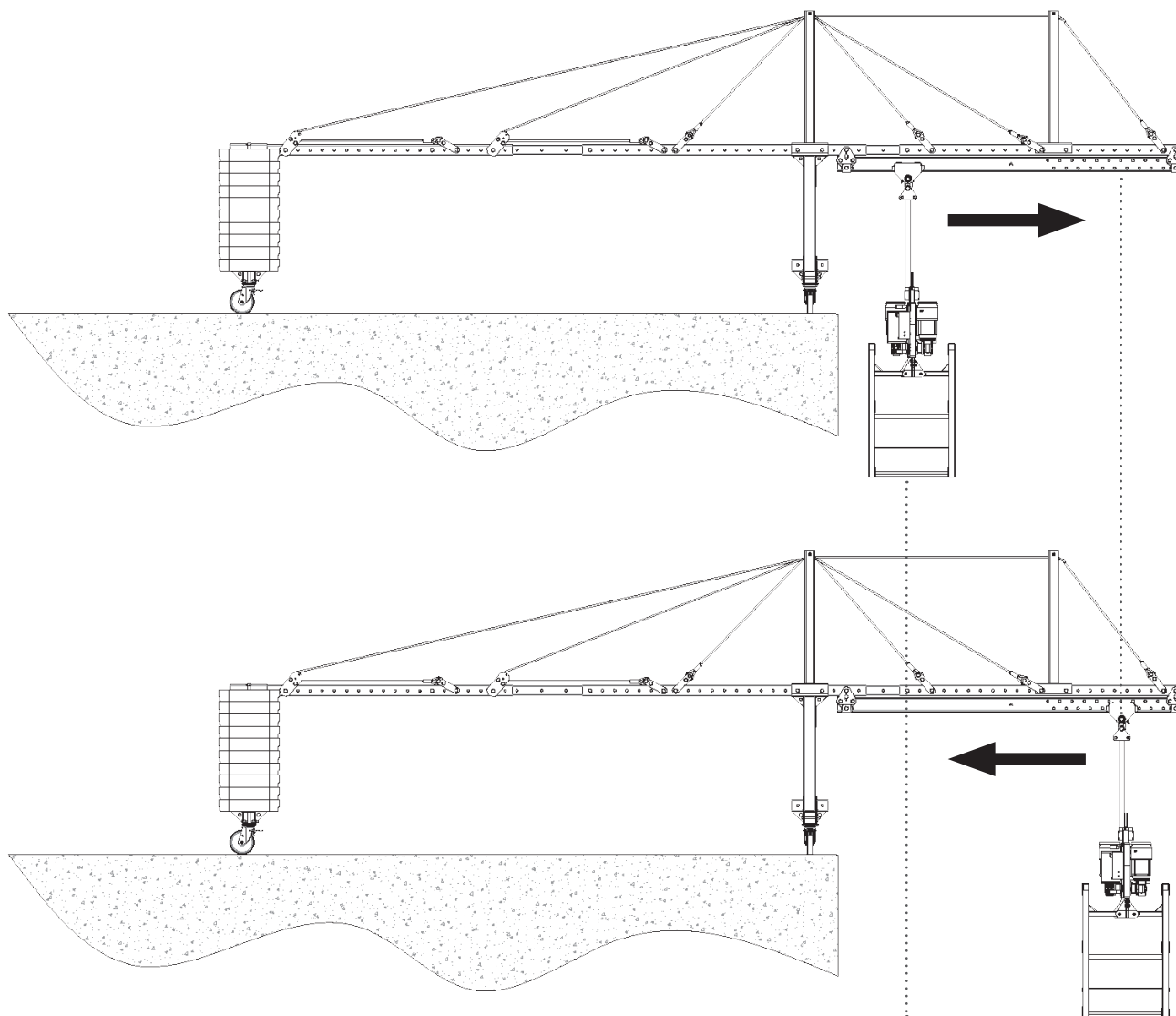
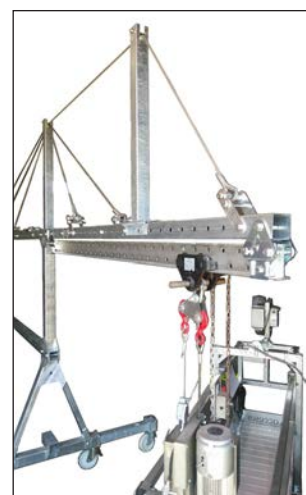
Main component of SWINGING ARM configuration

Nº	Code	Description	Quantity
I.1	078.4	Cable traction device	1
I.2.1	200033-671	Half-support 1, traction device anchorage	1
I.2.2	200033-672	Half-support 2, traction device anchorage	1
I.2.3	DIN931M18X140	Bolt DIN931 M18X140 8.8 zn	2
I.2.4	DIN985M18ZN	Nut DIN985 M18 zn	2
I.3.1	780044/10	10m length cable	1
I.3.2	200033-710	Half-cable derivation tool	2
I.3.3	DIN931M18X140	Bolt DIN931 M18X140 8.8 zn	3
I.3.4	DIN985M18ZN	Nut DIN985 M18 zn	2
I.3.5	DIN934M18ZN	Nut DIN934 M18 zn	1
I.4	200033-665	Pulley support	1
I.4.1	DIN931M12x120	Bolt DIN931 M12x120 8.8 zn	1
I.4.2	DIN985M12	Nut DIN985 M12 zn	1
I.5	200033-650	Swinging arm	1
I.5.1	DIN931M18X140	Bolt DIN931 M18X140 8.8 zn	2
I.5.2	DIN934M18ZN	Nut DIN934 M18 zn	2

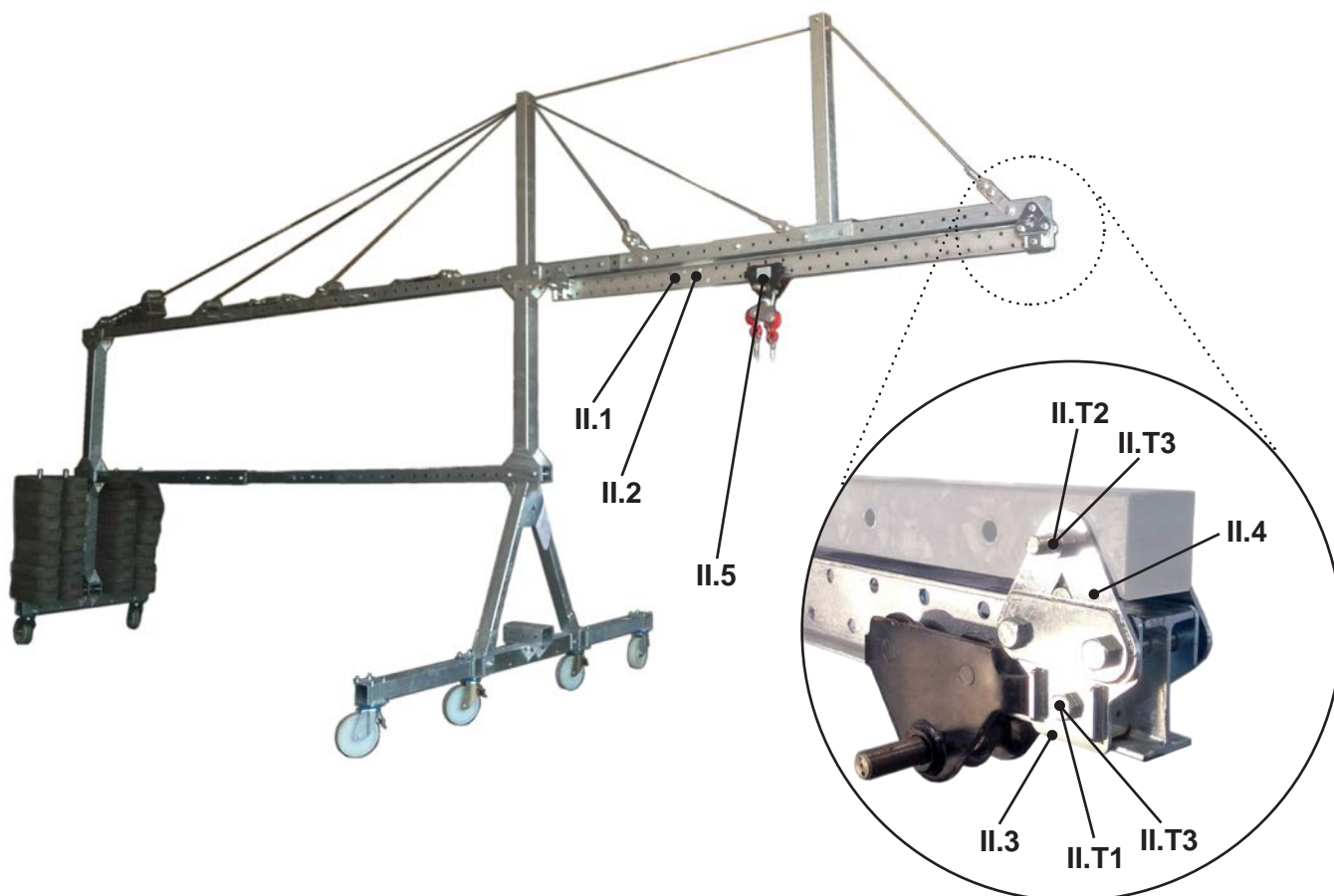
CONFIGURATION WITH BEAM RAIL

The components and maneuvers of the BEAM RAIL device are intended to facilitate the installation, access and displacement of a suspended platform from a upper terrace. All configurations of the BRAKOO suspension beam are available except for la 1A, 2A, 3A y 4A.

In the following sketch you can see the displacement of a platform due to the BRAKOO BEAM RAIL:



BRAKOO BEAM RAIL components



Main components of BEAM RAIL configuration			
Nº	Code	Description	Quantity
II.1	200033-690	Guide beam 3m	1
II.2	200033-691	Guide beam 2m	1
II.3	200033-685	Fixation	4
II.4	200033-675	Supports	4
II.5	200011-000	Geared-type trolley EN1808 with hand chain fall	1
II.T1	DIN931M18X100	Bolt DIN931 M18X100 8.8 zn	2
II.T2	DIN931M18X140	Bolt DIN931 M18X140 8.8 zn	6
II.T3	DIN934M18ZN	Nut DIN934 M18 zn	8

BRAKOO Suspension Beam examples

Configuration for BRAKOO suspension beam model 2B with 1,25m height and 2m cantilever.



Configuration for BRAKOO suspension beam model 3B with 2,2m height and 2m cantilever with a *Komplet* manual platform.

BRAKOO Suspension Beam examples

Configuration for BRAKOO suspension beam model 2D with 1,25m height and 3m cantilever.



Configuration for BRAKOO suspension beam model 3B with 2,2m height and 2m cantilever with a *Basic* cradle.

BRAKOO Suspension Beam examples



Sequence of packaging a BRAKOO suspension beam in the Accessus workshop