



1 - PRINCIPAIS CARACTERÍSTICAS DA GRUA

1.1 Dimensões, pesos e contrapesos



1 - MAIN CHARACTERISTICS OF THE CRANE

1.1 Dimensions, weights and counterweights

Dimensões	Dimensions	
Altura livre	Free-standing height	3 ► 54 m
Alcance da lança (gancho)	Jib reach (hook)	70-65-60-55-50-48-43-38-36-31-26m

Dimensões dos pesos do lastro da base	Dimensions of counter jib weights
Peso unitário 5000kg aproximadamente Dimensões em metros	Unite weight 5000kg approximately Size in metres

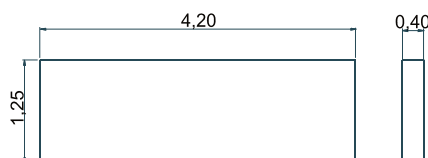


Fig.1

Contra pesos da contra-lança	Counter weights of counter jib	
Lança de 70 e 65 m	70 and 60 m jib	8x2000 + 2x1000 kg = 18000 kg
Lança de 60 e 55 m	60 and 55 m jib	8x2000 + 1x1000 kg = 17000 kg
Lança de 50 m	50 m jib	8x2000 kg = 16000 kg
Lança de 48 m	48 m jib	7x2000 kg = 14000 kg
Lança de 43 m	43 m jib	6x2000 kg = 12000 kg
Lança de 38 m	38 m jib	5x2000 + 1x1000 kg = 11000 kg
Lança de 36 m	36 m jib	4x2000 + 1x1000 kg = 9000 kg
Lança de 31 m	31 m jib	4x2000 = 8000 kg
Lança de 26 m	26 m jib	3x2000 + 1x1000 kg = 7000 kg

Dimensões dos pesos da contra lança	Dimensions of counter jib weights
Peso unitário Dimensões em metros 2000kg aproximadamente 1000kg aproximadamente	Unite weight Size in metres 2000kg approximately 1000kg approximately

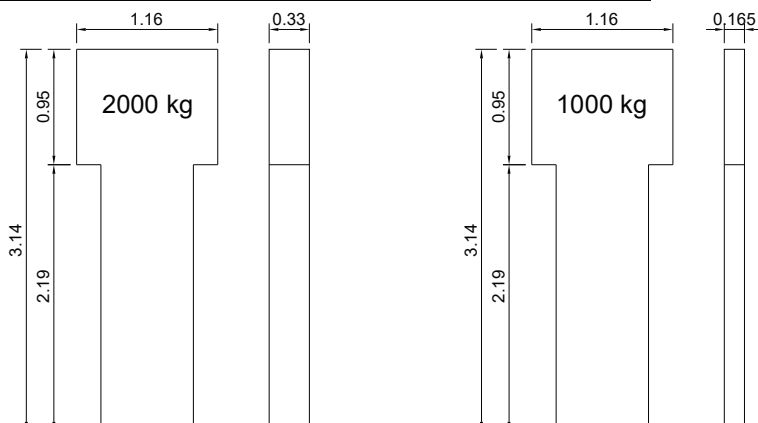


Fig.2

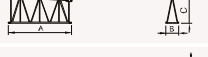
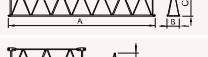
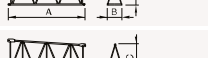
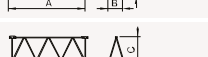
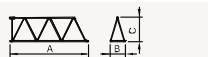
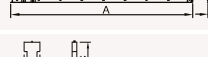
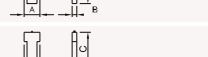
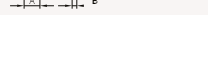




1 - PRINCIPAIS CARACTERÍSTICAS DA GRUA



1 - MAIN CHARACTERISTICS OF THE CRANE

		A (mm)	B (mm)	C (mm)	kg	Code
L71		11970	1900	2900	6500	530 70 18
L72		11970	1160	2260	2500	
L73		5230	1160	2260	750	
L74		11950	1160	1950	1400	
L75		5200	1160	1950	500	
L56		5200	1160	1930	590	
L76		5180	1160	1610	370	
L65		5110	1160	1610	330	
L66		5110	1160	1610	2x300 600	
L67		5110	1160	1610	290	
RS10 RI10		2620	2180	2150	8000	
P3		2430	1300	760	1270	
CL7		6475	1220	2300	2600	
CL5		10550	1500	500	3720	
CP3		1160	165	3140	2x1000 2000	704 10 00
CP2		1160	330	3140	8x2000 16000	704 20 00
TOTAL					47120	

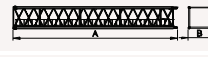
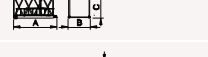
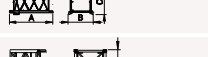
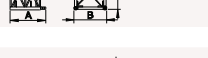
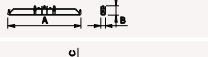
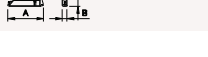
B1		12000	1620	1620	3450	508 12 00
B1		6130	1620	1620	1800	508 06 00
B1		3195	1620	1620	1070	508 06 01
B1		3195	1830	1830	1100	508 06 03
B1		1775	1600	1600	650	508 06 02
B1		6620	500	1040	2190	608 00 01
		3210	340	1040	2x980 1960	
TOTAL					4150	

Fig.4





1 - CARACTERÍSTICAS / ESPECIFICAÇÕES TÉCNICAS



1 - CHARACTERISTICS/TECHNICAL SPECIFICATIONS

Capacidade de carga	Load capacity	
Nominal (extremo da lança)	Nominal (extreme of jib)	
Lança de 26 m	26 m jib	6600 kg
Lança de 31 m	31 m jib	5600 kg
Lança de 36 m	36 m jib	5000 kg
Lança de 38 m	38 m jib	5000 kg
Lança de 43 m	43 m jib	4500 kg
Lança de 48 m	48 m jib	4200 kg
Lança de 50 m	50 m jib	4000 kg
Lança de 55 m	55 m jib	3500 kg
Lança de 60 m	60 m jib	2000 kg
Lança de 65 m	65 m jib	2500 kg
Lança de 70 m	70 m jib	1800 kg
Máxima (Ver figura 7) Em função da lança	Maximum (See figure 7) In jib function	10000 kg

DIAGRAMA DE CARGAS

LOAD DIAGRAM

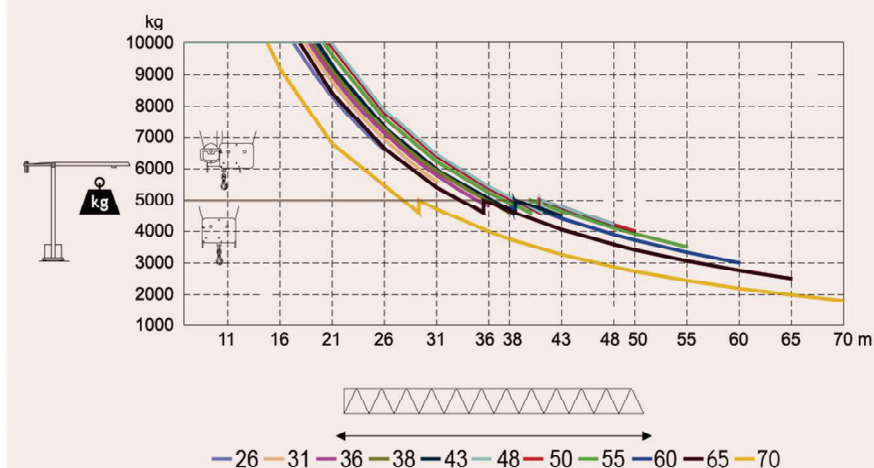
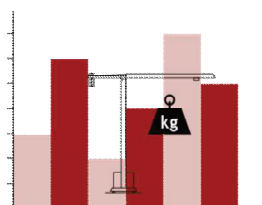


Fig.5

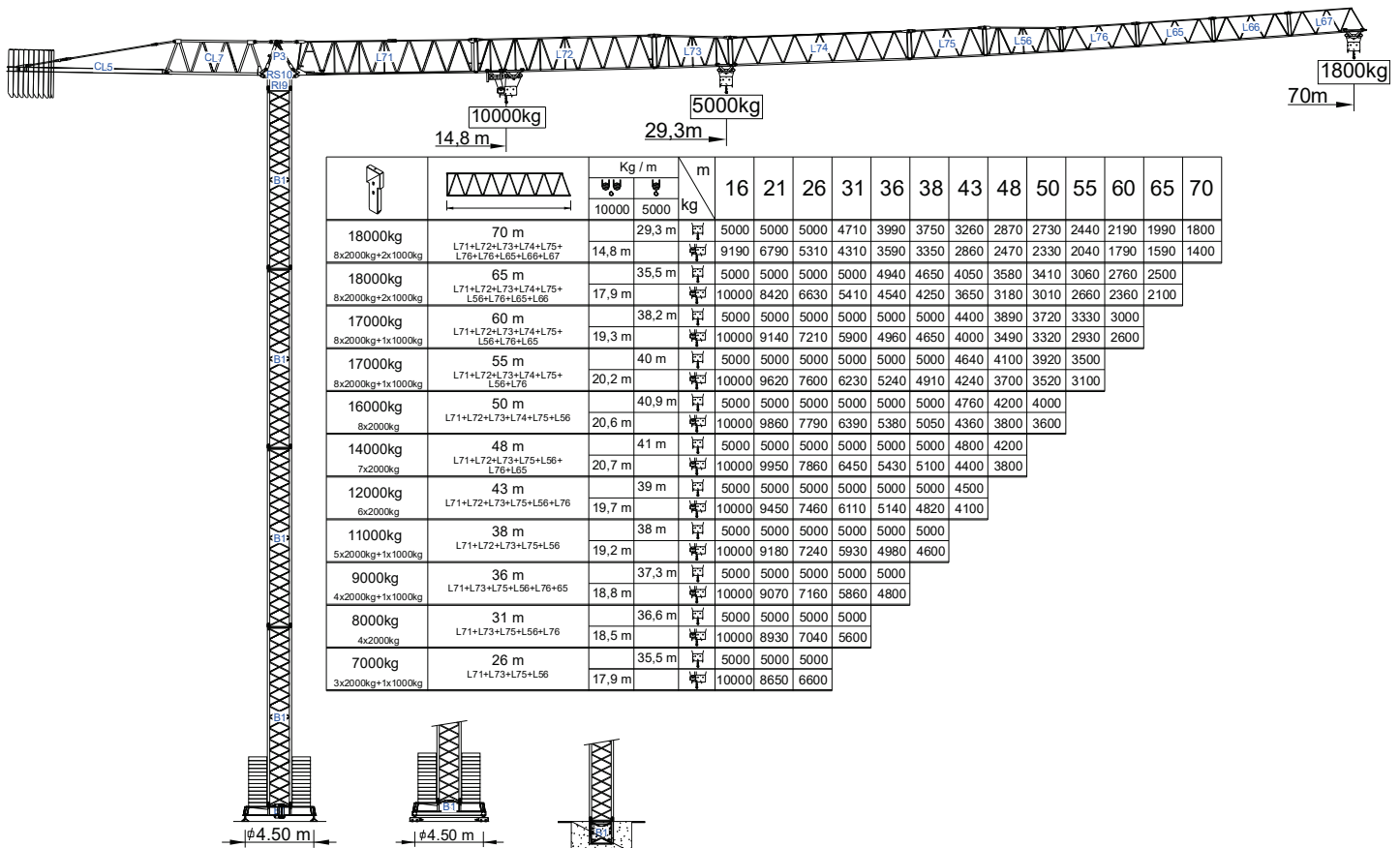


Fig.7

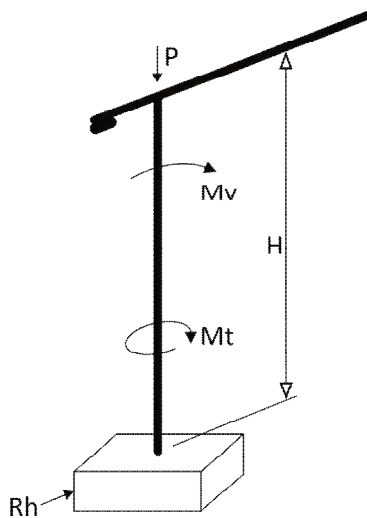
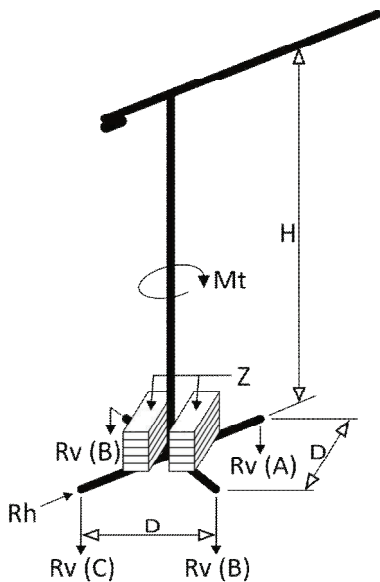
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TABELA DE REAÇÕES

EN

REACTION FORCES TABLE

D - Base dimension (m):	
A1S-A5S	2,8 x 2,8
A1-A5	3,8 x 3,8
B1S	3,8 x 3,8
B1	4,5 x 4,5
B2	4,5 x 4,5
C1S	4,5 x 4,5
C1	6 x 6
D1	6 x 6
D1L	8 X 8
D2	10 X 10



H (m)	Win Speed		D	Z (kN)	Rv			M v (kN/m)	P (kN)	Rh (kN)	M t (kN/m)
<24	In Service	72km/h	B1	600	524	278	31	1570	507	16	237
	Out Service	150km/h	B1	600	220	270	315	-303	489	64	-
	Out of Service F.E.M. 1005 (EN 14439)	C25	B1	600	208	270	327	-379	489	58	-
		C50	B1	600	220	270	315	-303	489	64	-
		D25	B1	600	241	270	294	-171	489	75	-
		D50	B1	600	258	270	277	-62	489	77	-
		E25	B1	600	282	270	252	97	489	97	-
E50	B1	600	303	270	231	230	489	108	-		
24	In Service	72km/h	B1	700	559	305	50	1619	516	18	237
	Out Service	150km/h	B1	700	279	297	311	-100	498	72	-
	Out of Service F.E.M. 1005 (EN 14439)	C25	B1	700	269	297	321	-163	498	67	-
		C50	B1	700	286	297	304	-57	498	75	-
		D25	B1	700	310	297	279	100	498	86	-
		D50	B1	700	334	297	255	252	498	97	-
		E25	B1	700	368	297	221	465	498	113	-
E50	B1	700	394	297	195	633	498	125	-		
27	In Service	72km/h	B1	700	570	307	44	1675	525	19	237
	Out Service	150km/h	B1	700	317	299	277	127	507	79	-
	Out of Service F.E.M. 1005 (EN 14439)	C25	B1	700	311	299	283	89	507	77	-
		C50	B1	700	334	299	260	238	507	87	-
		D25	B1	700	364	299	230	429	507	99	-
		D50	B1	700	394	299	200	616	507	112	-
		E25	B1	700	435	299	159	879	507	129	-
E50	B1	700	467	299	126	1088	507	143	-		
30	In Service	72km/h	B1	700	582	309	36	1736	534	21	237
	Out Service	150km/h	B1	700	359	302	240	377	516	87	-
	Out of Service F.E.M. 1005 (EN 14439)	C25	B1	700	359	302	240	377	516	87	-
		C50	B1	700	384	302	215	536	516	97	-
		D25	B1	700	423	302	176	786	516	112	-
		D50	B1	700	462	302	136	1036	516	127	-
		E25	B1	700	508	302	90	1333	516	144	-
E50	B1	800	576	327	71	1606	516	161	-		
33	In Service	72km/h	B1	800	619	336	53	1804	543	23	237
	Out Service	150km/h	B1	800	427	328	226	641	525	95	-
	Out Service F.E.M. 1005 (EN 14439)	C25	B1	800	437	328	216	703	525	98	-
		C50	B1	800	467	328	186	893	525	108	-
		D25	B1	800	513	328	139	1189	525	125	-
		D50	B1	800	564	328	89	1512	525	142	-
		E25	B1	900	640	354	62	1839	525	160	-
E50	B2	1000	719	379	31	2189	525	180	-		
36	In Service	72km/h	B1	800	631	336	41	1877	552	25	237
	Out Service	150km/h	B1	800	475	328	178	947	534	103	-
	Out of Service F.E.M. 1005 (EN 14439)	C25	B1	800	495	328	158	1070	534	109	-
		C50	B1	800	530	328	123	1294	534	120	-
		D25	B1	800	585	328	68	1644	534	138	-
		D50	B1	900	664	354	38	1992	534	156	-
		E25	B2	1100	784	405	20	2432	534	178	-
E50	B2	1400	918	480	34	2815	534	198	-		
39	In Service	72km/h	B1	900	671	364	56	1956	561	27	237
	Out Service	150km/h	B1	900	553	356	155	1267	543	111	-
	Out Service F.E.M. 1005 (EN 14439)	C25	B1	900	576	356	132	1415	543	118	-
		C50	B1	900	622	356	86	1704	543	86	-
		D25	B2	1000	715	381	42	2143	543	152	-
		D50	B2	1200	835	432	23	2584	543	172	-
		E25	B2	1500	978	506	28	3025	543	193	-
E50	-	-	-	-	-	-	-	-	-		
42	In Service	72km/h	B1	900	686	366	45	2040	570	29	237
	Out Service	150km/h	B1	900	610	358	103	1611	552	118	-
	Out Service F.E.M. 1005 (EN 14439)	C25	B1	900	648	358	64	1859	552	129	-
		C50	B2	1000	720	383	42	2155	552	142	-
		D25	B2	1300	881	459	32	2702	552	166	-
D50	-	-	-	-	-	-	-	-	-		
45	In Service	72km/h	B2	1000	728	394	58	2131	579	31	237
	Out Service	150km/h	B2	1000	695	386	73	1978	561	126	-
	Out Service	C25	B2	1000	739	386	28	2263	561	138	-
Out Service	C50	B2	1200	842	436	25	2600	561	152	-	
48	In Service	72km/h	-	-	-	-	-	-	-	-	-
	Out Service	150km/h	-	-	-	-	-	-	-	-	-

PT

2. MONTAGEM

2.3. MONTAGEM DO CABEÇOTE E CONTRALANÇA

2.3.1. Colocar o cabeçote no chão de modo a poder receber a pirâmide conforme indicado na fig. 22 A.

Fixar a pirâmide ao cabeçote através das cavi-lhas nº 307. Com a auto grua elevar o conjunto pelos 4 pontos de elevação fig. 22 B, fixando-o no topo da torre nos 4 apoios usando as cavi-lhas nº 263 fig. 22 C.

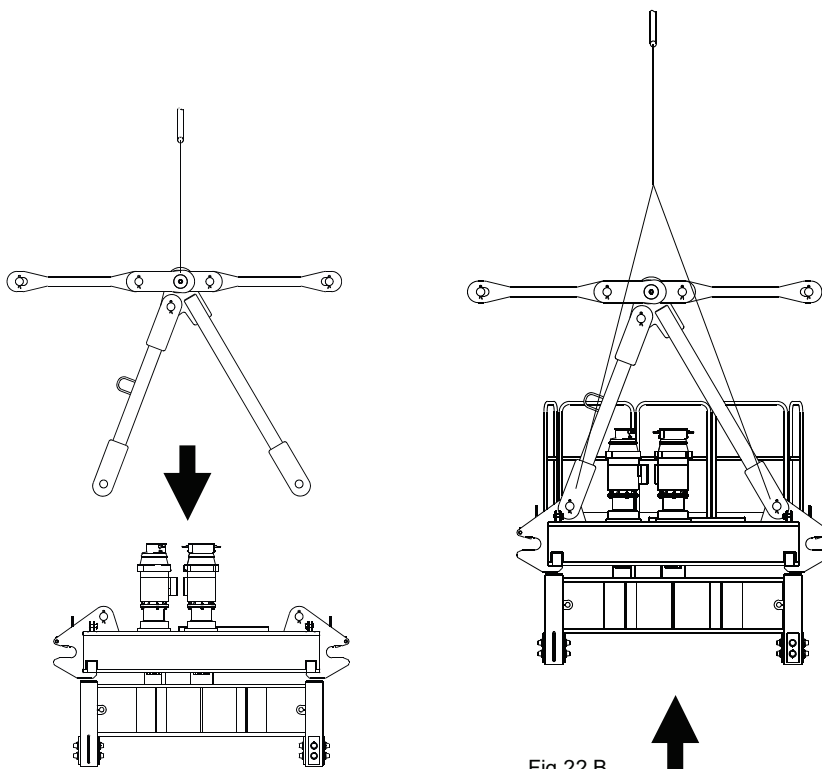


Fig.22 A

Fig.22 B

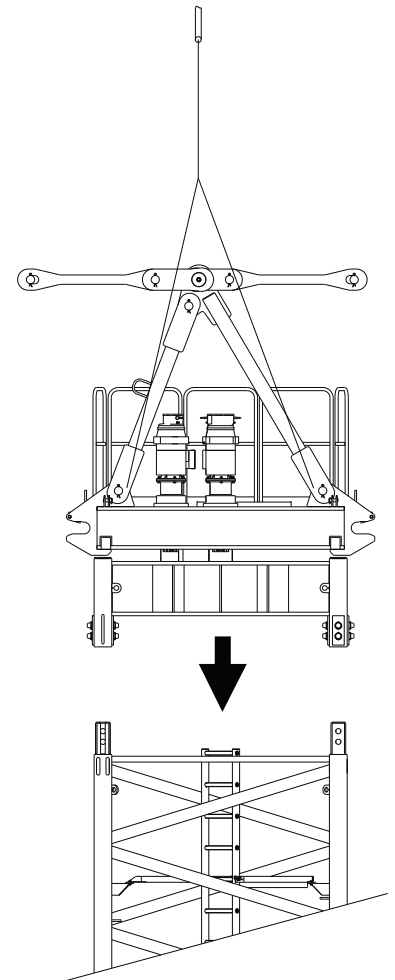


Fig.22 C

EN

2. ASSEMBLY

2.3. ASSEMBLY OF THE HEAD AND COUNTERJIB

2.3.1 Place the head on the floor so that it can receive the pyramid as indicated in fig. 22A.

Attach pyramid to the head with bolts nº 307. Using the auto-crane lift the construction up to the 4 elevation points in fig. 22 B and fix it to the 4 supports on the top of the tower using bolts nº 263 fig. 22 C.

PT

2. MONTAGEM

2.3.2. Com o módulo em perfil H da contralança no chão, (fig.23 A) levantar separadamente os tirantes A de modo a poder rodar 90° os suportes de apoio B, fixar estes apoios com a cavilha própria. Apoiar os tirantes nestes suportes. Colocar o estrado de aperto dos contrapesos na posição mais recuada.

Unir o módulo reticulado da Contralança com o módulo em perfil H, utilizando as cavilhas 270 na parte inferior e as 142 nos tirantes (fig.23 B).

Com a auto grua elevar a contralança completa, apoiá-la nas cavilhas nº 309 e verificar a fixação com o dispositivo de bloqueio (fig.24 A). Incliná-la ligeiramente para poder ligar os tirantes com as cavilhas nº 307 (fig.24 B).

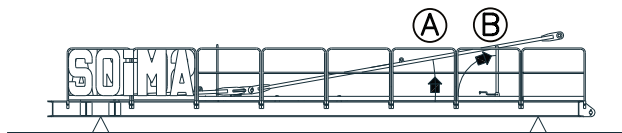


Fig.23 A

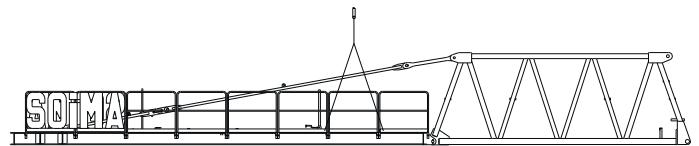


Fig.23 B

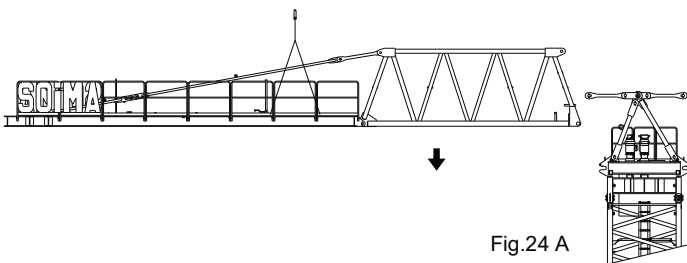


Fig.24 A

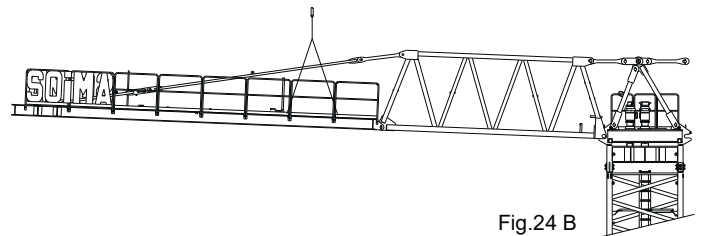


Fig.24 B

2.3.3. Colocar 2 contrapesos de 2000kg na contralança.

2.3.3. Place 2 2000kg counterweights on the counter jib.

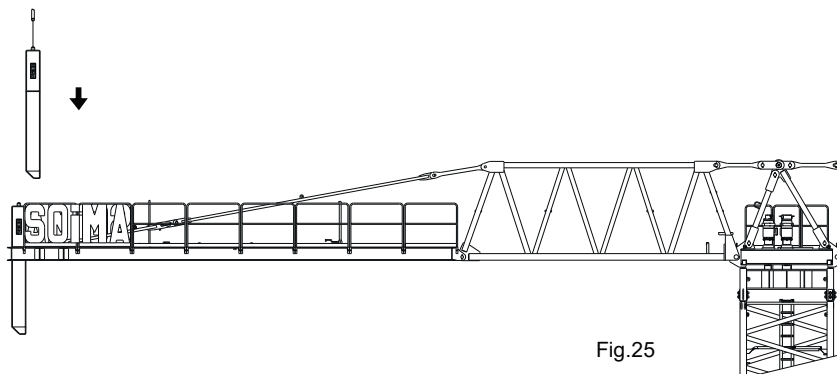


Fig.25

PT

2. MONTAGEM

2.4. MONTAGEM DA LANÇA

2.4.1. Unir os troços da lança utilizando as cavi-lhas nº 260, nº 270, nº 308, nº 310 ou nº 311 nos olhais do perfil superior e cavi-lhas nº 139 , nº 281 e nº 305 nos olhais dos tubos inferiores. Colocar no final da lança a ponteira.

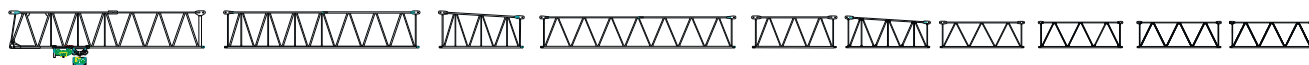


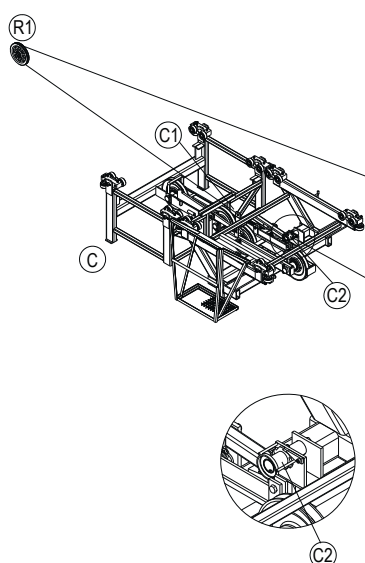
Fig.26

2.4.2. Depois de todos estes elementos unidos entre si, ligar a alimentação eléctrica ao quadro e, utilizar, quando necessário comando da grua nos movimentos de carro e elevação para as operações seguintes.

Fixar uma ponta do cabo do carrinho no tam-bor C3, passar a outra ponta pelas roldanas de guiagem R2 e R3 colocadas na lança, indo fixá-la no esticador C2 colocado no carrinho C. Esticar o cabo.

O outro cabo do carrinho encontra-se montado de fábrica.(ver Fig.27).

Esquema de montagem dos cabos do carrinho



2. ASSEMBLY

2.4. ASSEMBLING THE JIB

2.4.1. Connect the jib sections using bolts nº 260, 270, 308, 310 and 311 in the holes on the upper surface and bolts nº 139, 281 and 305 on the lower tubes.

Place the tip at the end of the jib.

2.4.2 After all these elements have been connected to each other, connect the electric cable to the circuit board and using as necessary the crane command in the trolley and hoist movements for the following operations.

Fix a cable end of the head in Drum C3 and pass the other cable end through the guiding sheaves R2 and R3 on the jib, and fixing it to the stretcher C2 located on crab C. Stretch the cable.

The other crab cable is assembled in the factory.(See Fig. 27).

Scheme for assembling the crab cables

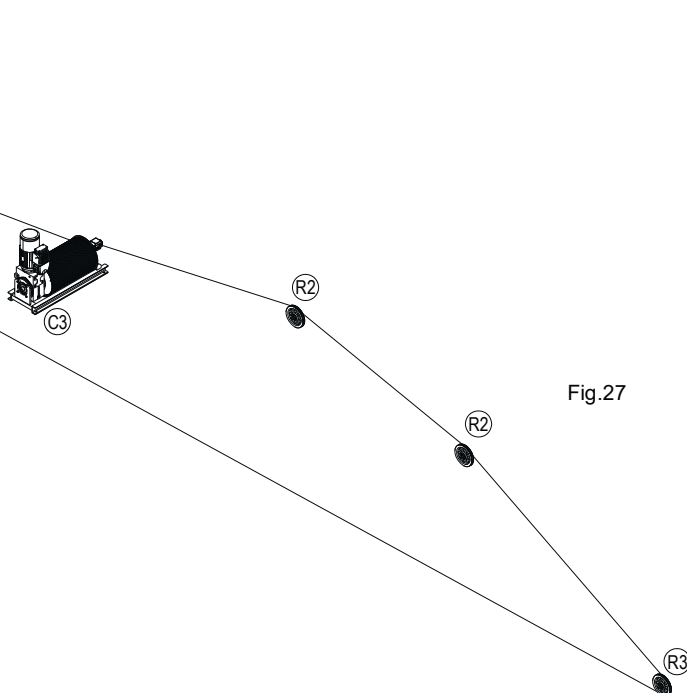


Fig.27

PT

2. MONTAGEM

2.4.3. Levar a ponta do cabo de elevação até ao extremo da lança e fixá-la ao destorcedor D.

EN

2. ASSEMBLY

2.4.3. Take the hoist cable end to the end of the jib and fix it to the swivel D.

Esquema de montagem do cabo de elevação

Scheme for assembling the hoist cable

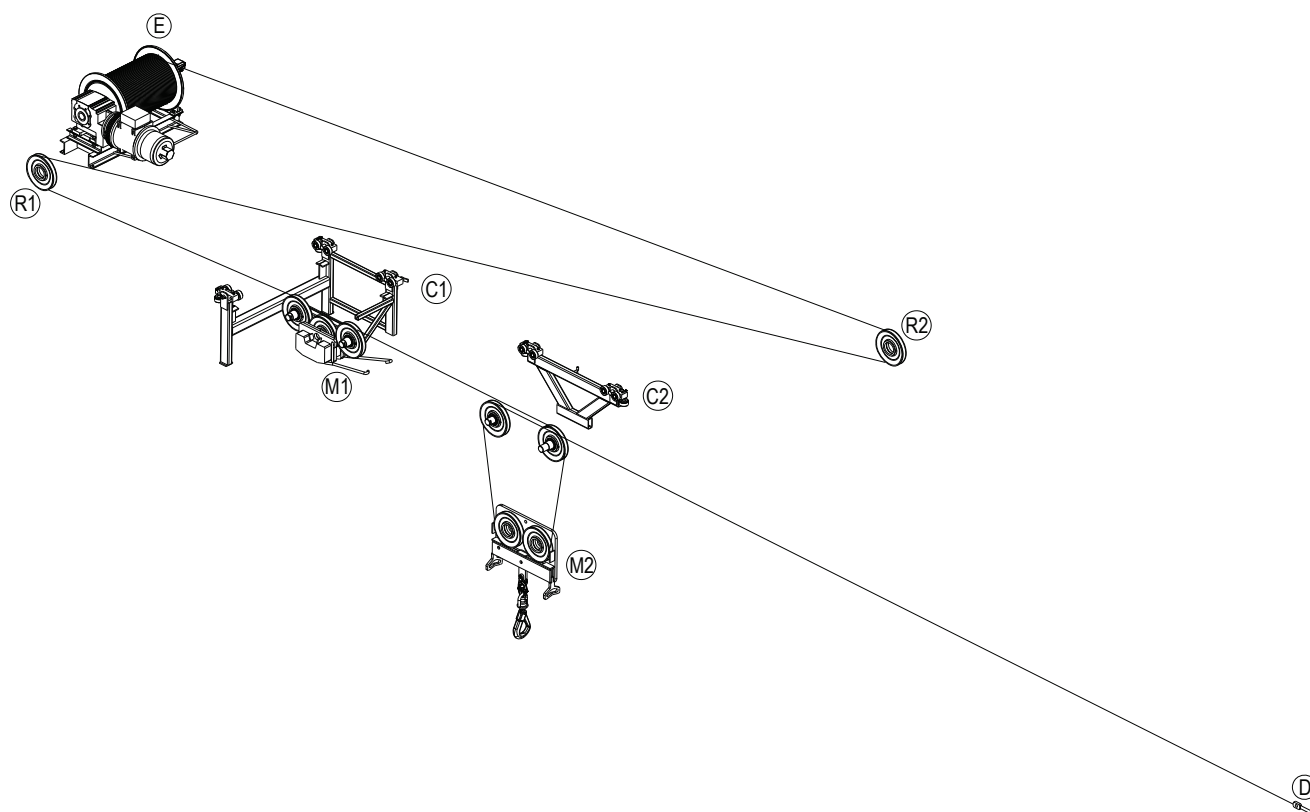


Fig.28

PT

2. MONTAGEM

**Centro de gravidade da Lança
(versões standard)**

EN

2. ASSEMBLY

**Center of gravity of the Jib
(standard versions)**

