

# **CTT 231-10 TS23**

## **Technical Specifications**

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## **Section 2**

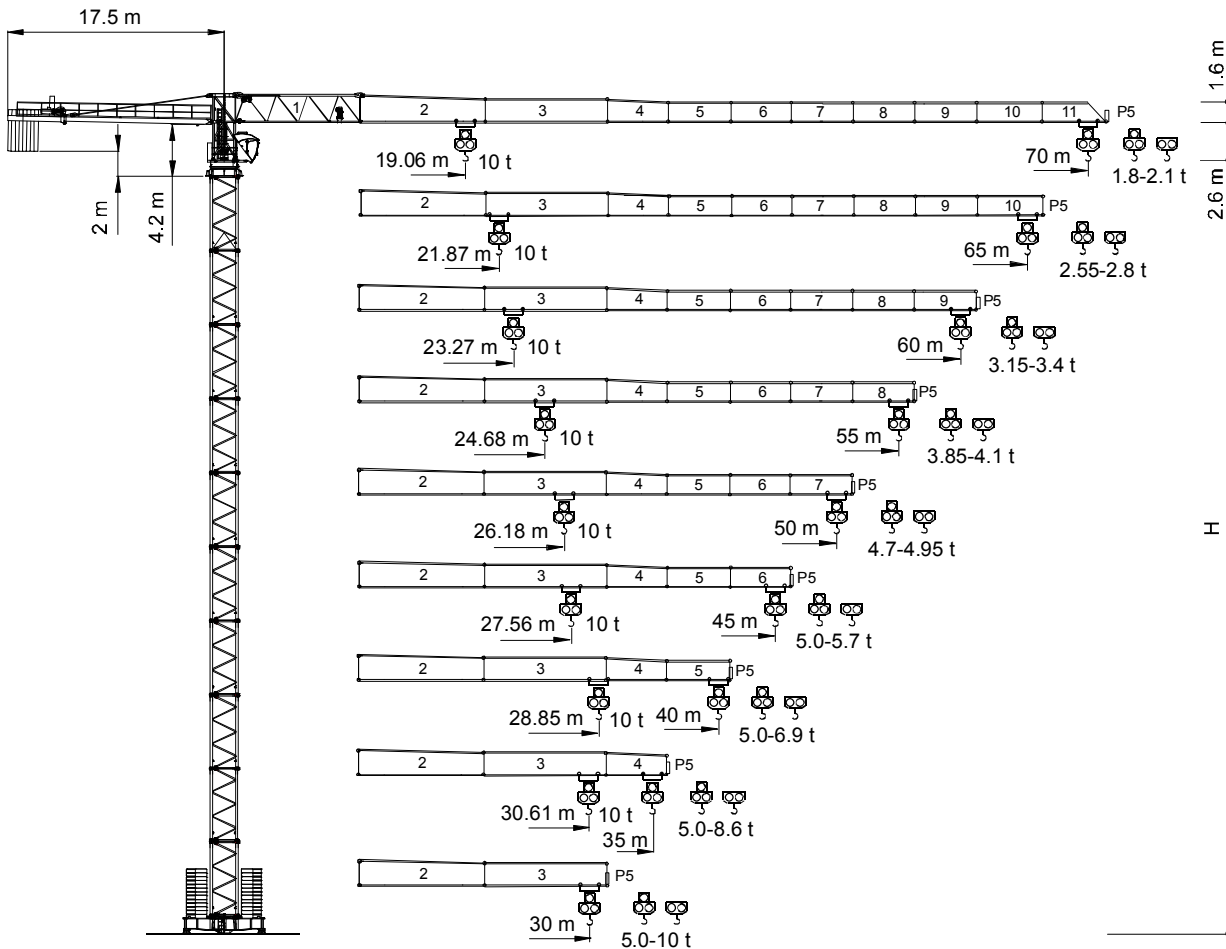




## Gru a torre "Flat Top"

"Flat Top" Tower Crane • Grue à tour "Flat Top"

"Flat Top" Turmdrehkran • Grúa torre "Flat Top"



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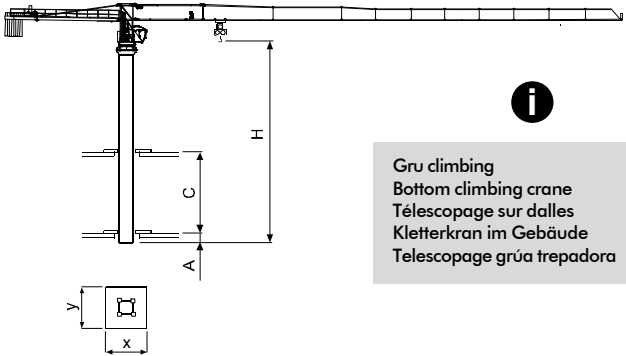
UTEDOC. REV.001

**CTT 231-10 TS23**

**Diagramma di portata** (I)      **Courbes de charges** (F)      **Curvas de cargas** (E)  
**Load Diagram** (GB)      **Lastkurven** (D)

<b>CTT 231-10</b>		20	25	30	35	40	45	50	55	60	65	70
5 t - 35,58 m	t	5,0	5,0	5,0	5,0	4,34	3,76	3,29	2,91	2,59	2,33	2,10
5 t - 33,88 m	t	5,0	5,0	5,0	4,80	4,04	3,46	2,99	2,61	2,29	2,03	1,80
10 t - 19,06 m	t	9,45	7,26	5,82	4,80	4,04	3,46	2,99	2,61	2,29	2,03	1,80
5 t - 40,67 m	t	5,0	5,0	5,0	5,0	5,0	4,43	3,90	3,46	3,10	2,80	
5 t - 39,13 m	t	5,0	5,0	5,0	5,0	4,87	4,19	3,66	3,22	2,86	2,55	
10 t - 21,87 m	t	10,0	8,56	6,91	5,74	4,87	4,19	3,66	3,22	2,86	2,55	
5 t - 43,62 m	t	5,0	5,0	5,0	5,0	5,0	4,82	4,25	3,79	3,40		
5 t - 41,84 m	t	5,0	5,0	5,0	5,0	5,0	4,57	4,0	3,54	3,15		
10 t - 23,27 m	t	10,0	9,21	7,45	6,21	5,28	4,57	4,0	3,54	3,15		
5 t - 46,53 m	t	5,0	5,0	5,0	5,0	5,0	5,0	4,59	4,10			
5 t - 44,58 m	t	5,0	5,0	5,0	5,0	5,0	4,94	4,34	3,85			
10 t - 24,68 m	t	10,0	9,85	7,99	6,68	5,70	4,94	4,34	3,85			
5 t - 49,57 m	t	5,0	5,0	5,0	5,0	5,0	5,0	4,95				
5 t - 47,51 m	t	5,0	5,0	5,0	5,0	5,0	5,0	4,70				
10 t - 26,18 m	t	10,0	10,0	8,56	7,17	6,14	5,34	4,70				
5 t - 45,00 m	t	5,0	5,0	5,0	5,0	5,0	5,00					
5 t - 45,00 m	t	5,0	5,0	5,0	5,0	5,0	5,00					
10 t - 27,56 m	t	10,0	10,0	9,09	7,63	6,54	5,70					
5 t - 40,00 m	t	5,0	5,0	5,0	5,0	5,0						
5 t - 40,00 m	t	5,0	5,0	5,0	5,0	5,0						
10 t - 28,85 m	t	10,0	10,0	9,57	8,04	6,90						
5 t - 35,00 m	t	5,0	5,0	5,0	5,00							
5 t - 35,00 m	t	5,0	5,0	5,0	5,00							
10 t - 30,61 m	t	10,0	10,0	10,0	8,60							
5 t - 30,00 m	t	5,0	5,0	5,0								
5 t - 30,00 m	t	5,0	5,0	5,0								
10 t - 30,00 m	t	10,0	10,0	10,0								

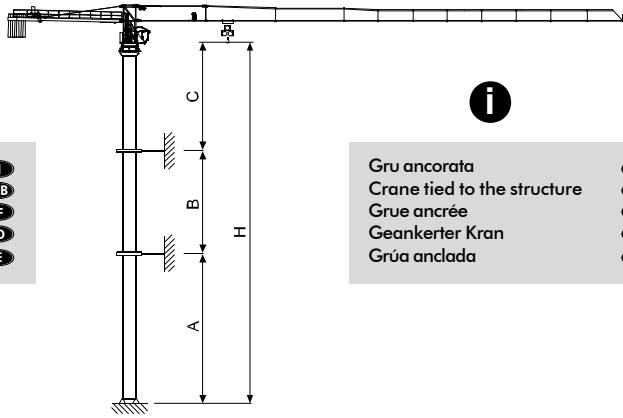
**Altre installazioni** (I)      **Autres implantations** (F)      **Otras implantaciones** (E)  
**Other configurations** (GB)      **Aufstellmöglichkeiten** (D)



**i**

Gru climbing  
 Bottom climbing crane  
 Telescopage sur dalles  
 Kletterkran im Gebäude  
 Telescopage grúa trepadora

(I) (GB) (F) (D) (E)



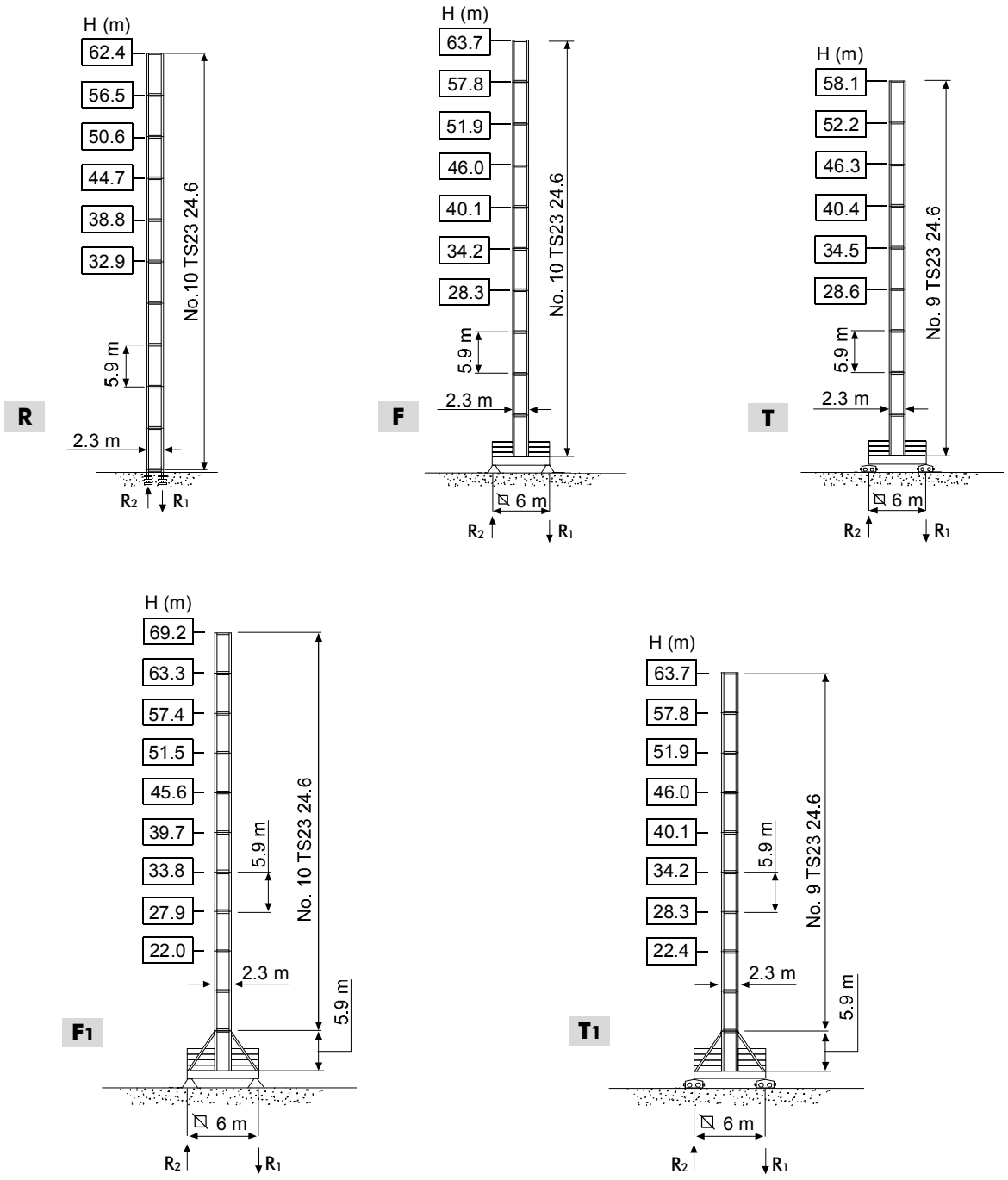
**i**

Gru ancorata  
 Crane tied to the structure  
 Grue ancrée  
 Geankerter Kran  
 Grúa anclada

(I) (GB) (F) (D) (E)

Torre	<b>I</b>	Tour	<b>F</b>	Torre	<b>E</b>
Tower	<b>GB</b>	Turm	<b>D</b>		

**TS23**



	Altezza massima sotto gancho	<b>I</b>
	Max. under hook height	<b>GB</b>
H	Hauteur maxi. sous crochet	<b>F</b>
	Höchste Hackenhöhe	<b>D</b>
	Maxima altura bajo gancho	<b>E</b>

**Meccanismi I Mechanisms GB Mécanismes F Antriebe D Mecanismos E**

37 AFC 50	86 * kVA	400 V - 50 Hz / 460 V - 60 Hz	2000/14/C modificata

\* Gru senza traslazione / Crane without travelling equipment / Grue sans translation / Krane ohne Schienenfahren / Grúa sin traslación

		m/min	↑	kW		
	<b>37 AFC 50 (VECTOR)</b>		0 ⇒ 2	5	37	527 m
			2 ⇒ 8	5		
			8 ⇒ 33	5		
			33 ⇒ 66	2.2		
			66 ⇒ 92	0.9		
			0 ⇒ 1	10		
			1 ⇒ 4	10		
			4 ⇒ 16	10		
			16 ⇒ 33	4.4		
			33 ⇒ 46	1.8		

	<b>DVF 3 6</b>	0 ⇒ 37 ⇒ 74 m/min	5.5 kW
	<b>SCC 2 2 112 L</b>	0.88 r.p.m.	2 x 15 kW
	<b>TSR 2RG 4M8</b>	12 ⇒ 24 m/min (50 Hz) 14 ⇒ 28 m/min (60 Hz)	4 x 80 Nm
	<b>I</b>		

	<b>I</b> Sollevamento	<b>GB</b> Hoisting	<b>F</b> Heben	<b>D</b> Elevación	<b>E</b>
	Traslazione carrello	Trolleying	Distribution	Distribución	
	Rotazione	Slewing	Orientation	Orientación	
	Traslazione	Travelling	Translation	Schwenken	Traslación
	Direttiva sul livello acustico	Directive on noise level	Directive sur le niveau acoustique	Schienenfahren	Directiva sobre el nivel acustico
	Consultateci	Consult us	Nous consulter	Richtlinie für den Schall-Leistungspegel	Consultarnos
	Potenza totale richiesta	Power requirements	Puissance totale nécessaire	Auf Anfrage	Potencia necesaria
	Alimentazione	Power supply	Alimentation	Geforderte Stromstärke	Alimentación
				Stromversorgung	

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2

## CRANE CLASSIFICATION

*Standards for structural calculations of the crane:*

FEM 1.001

*Machine grade:*

A3 (A2 for jibs)

*Standards for the electrical components:*

CEI - EN 60204 - 32

3

## LOAD HANDLING DEVICES

10 t (22050 lbs) - Hook UNI EN 1677-1/6:2002 / DIN 15401 1/2

4



**WORK ENVIRONMENT**

- Working temperature: **0 °C ➔ 40 °C** (upon the customer’s request, cranes withstanding temperatures up to -20 °C can be supplied)
- Maximum relative humidity: **90%**
- Maximum wind speed:
 

<u>during assembly</u>	<b>14</b>	<b>m/s</b>	<b>(~50 km/h)</b>
<u>in service</u>	<b>20</b>	<b>m/s</b>	<b>(~72 km/h)</b>
<u>out of service</u>	<b>42</b>	<b>m/s</b>	<b>(~150 km/h)</b>



**U.S. Customery units**

- Working temperature: **32 °F ➔ 104 °F** (upon the customer’s request, cranes withstanding temperatures up to -4 °F can be supplied)
- Maximum relative humidity: **90%**
- Maximum wind speed:
 

<u>during assembly</u>	<b>46</b>	<b>ft/s</b>	<b>(~31 mph)</b>
<u>in service</u>	<b>66</b>	<b>ft/s</b>	<b>(~45 mph)</b>
<u>out of service</u>	<b>138</b>	<b>ft/s</b>	<b>(~93 mph)</b>

- Maximum front surface:

the maximum admitted surface exposed to the wind in correspondence of the full load allowed at a certain jib length during hoisting is obtained by the ratio:

$$A = \frac{0.03 \times P}{q \times 1.2} \quad \text{where}$$

**A** = Front surface exposed to the wind [m<sup>2</sup>]  
**P** = Weight of the load hanging from the hook [daN]  
**q** = Pressure factor =  $\frac{v^2}{16}$  [daN/m<sup>2</sup>]  
**v** = Wind speed [m/s]



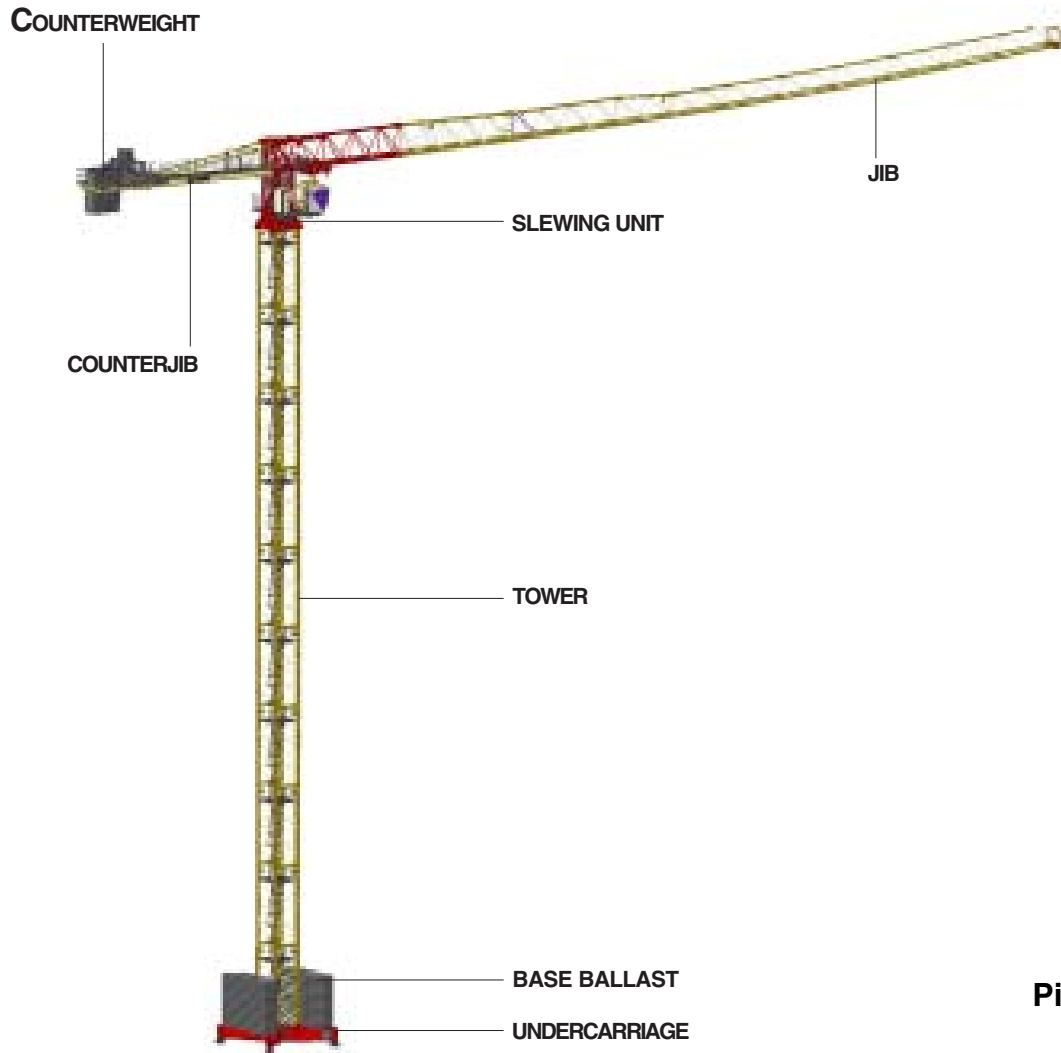
**WARNING**

The crane cannot be used in an explosive work environment or a work environment subject to fire risks. Also it cannot be operated in a work environment where flameproof devices are required.



5

## MAIN CRANE COMPONENTS



Picture 5.1

### Undercarriage

Available with the following installations:

**“F”** fixed base on undercarriage and 4 base plates with base ballast placed on the undercarriage;

**“T”** ballasted travelling platform mounted on trucks that ride along rails.

### Base ballast

It consists of self-supporting blocks made of reinforced concrete that uniformly distribute their weight on the structure of the undercarriage and therefore on the base supports.

## TS23 Tower

All tower sections are made of HEM-sectioned stanchions while the diagonals are made of round-hollow bars; lugs, specifically designed for the tower raising by top climbing unit, are welded externally on one side. All elements are equipped with platforms and aluminium ladders.

The tower denominations must be interpreted as follows:

### **example:**

**TS 23 24.6** : *TS type tower element > width 23 dm (8 ft) > stanchion thickness = 24 mm (1 in.) > height 6 m (20 ft) approx.*

## Counterjib and counterweight

Made of 2 platforms joined together with pins:

Platform 1A, where the counterjib tie-bars are connected;

Platform 2A, a structure bearing the hoisting winch and the counterweights.

It is equipped with side catwalks protected by handrails for the operators' safety.

There are two types of counterweights (all made of self-supporting reinforced concrete blocks or, on request, contained by a steel frame).

The quantity and composition vary according to the length of the jib as specified in **section 3B "Counterweights"** of the crane operation manual.

## Slewing unit

It consists of a lower slewing ring support (connected to the tower) and a motorized upper slewing ring support (which rotates together with the upper part of the crane) with the slewing ring placed in the middle.

The cab section is placed above the upper slewing ring support, where the jib and counterjib are connected.

## Jib

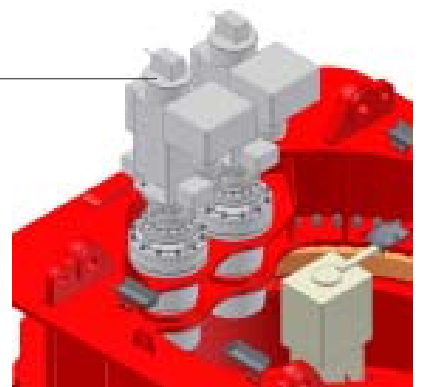
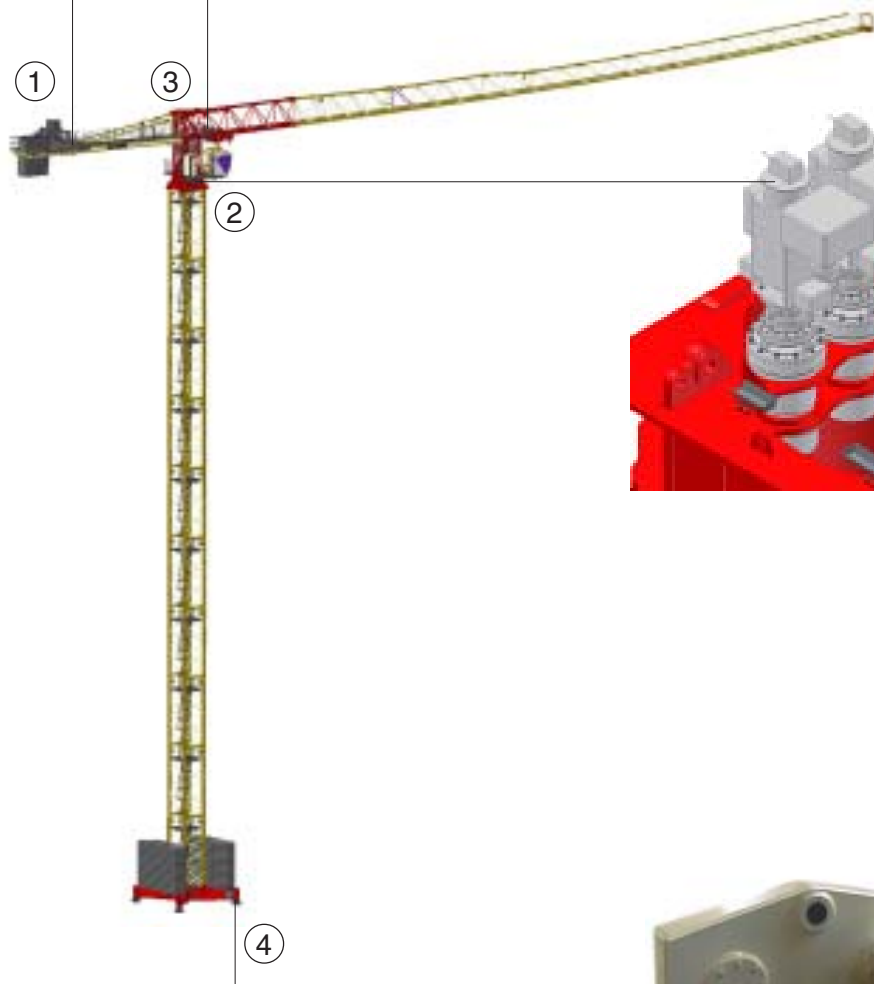
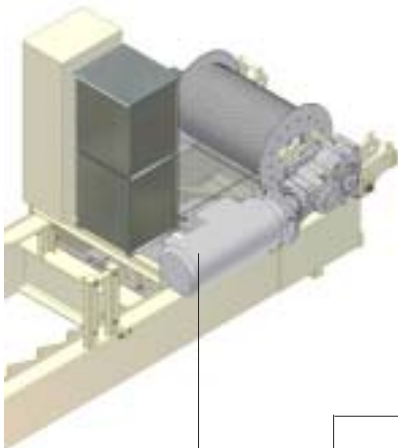
Self-supporting type, it does not need tie-bars and it is made of 11 triangular-section elements and a jib tip (for maximum jib extension 70 m / 230 ft).

The diagonals are made of round-hollow bars; the upper and lower longitudinal spars are made of square-hollow bars or of square-hollow sections.

It is equipped with a safety cable (for the whole length of the jib) thus allowing the crane operators and maintenance engineers to fasten themselves with the special safety belt when walking along it.



5.1 DRIVE ASSEMBLIES (GENERAL INFORMATION)



- 1) HOIST WINCH
- 2) SLEWING UNIT
- 3) TROLLEY TRAVERSING WINCH
- 4) TRAVELLING UNIT

- ➔ See **section 9** for technical specifications.
- ➔ See **section 13** for technical specifications.
- ➔ See **section 10** for technical specifications.
- ➔ See **section 12** for technical specifications.