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# CTT 331-16 TS23

# Technical Specifications



# Section 2

# SPECIFICATIONS SHEET

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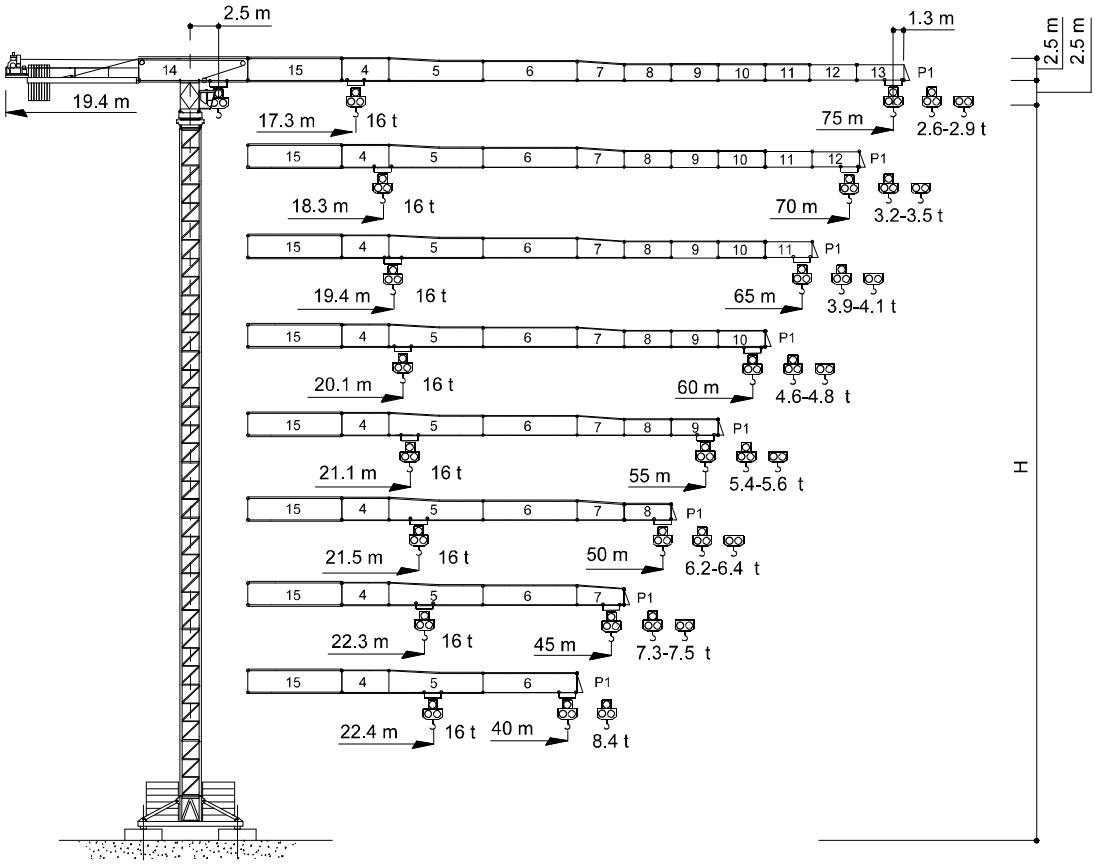
CTT 331-16 TS23

## Gru a torre “Flat Top”
## “Flat Top” Tower Crane • Grue à tour “Flat Top”
## “Flat Top” Turmdrehkran • Grúa torre “Flat Top”




CE **FEM 1.001 A3**



UTE.DOC. REV.000 04_2007

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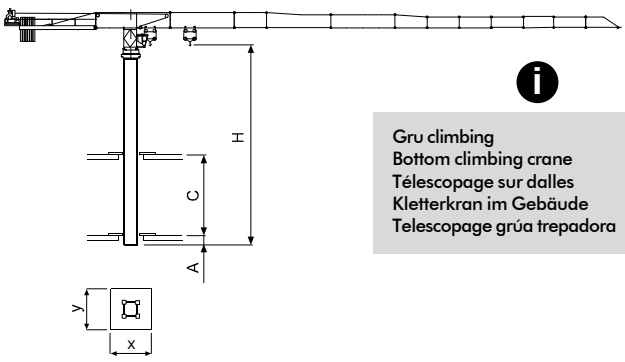
# CTT 331-16

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

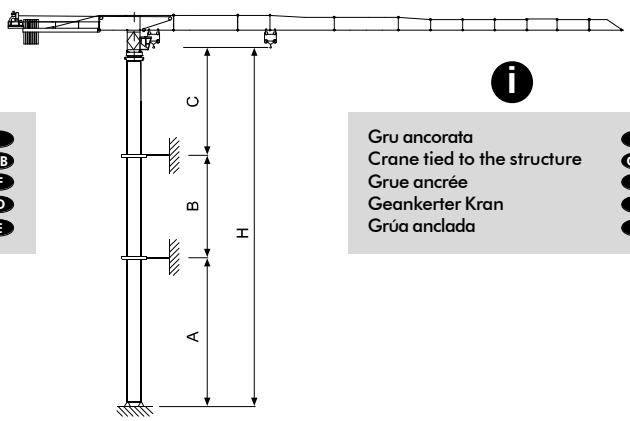
## CTT 331-16

| | m | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 52 | 55 | 57 | 60 | 62 | 65 | 67 | 70 | 72 | 75 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 t - 32,1 m | t | 8 | 8 | 8 | 8 | 8 | 7,24 | 6,21 | 5,42 | 4,78 | 4,57 | 4,27 | 4,09 | 3,84 | 3,69 | 3,48 | 3,35 | 3,17 | 3,06 | 2,90 |
| 8 t - 31,5 m | t | 8 | 8 | 8 | 8 | 8 | 7,06 | 6 | 5,19 | 4,53 | 4,31 | 4,00 | 3,82 | 3,56 | 3,41 | 3,19 | 3,06 | 2,87 | 2,76 | 2,60 |
| 16 t - 17,3 m | t | 16 | 16 | 13,54 | 10,48 | 8,48 | 7,06 | 6 | 5,19 | 4,53 | 4,31 | 4,00 | 3,82 | 3,56 | 3,41 | 3,19 | 3,06 | 2,87 | 2,76 | 2,60 |
| 8 t - 34,5 m | t | 8 | 8 | 8 | 8 | 8 | 7,86 | 6,76 | 5,91 | 5,23 | 5,00 | 4,68 | 4,48 | 4,22 | 4,06 | 3,83 | 3,69 | 3,50 | | |
| 8 t - 33,6 m | t | 8 | 8 | 8 | 8 | 8 | 7,61 | 6,50 | 5,64 | 4,95 | 4,71 | 4,39 | 4,20 | 3,93 | 3,76 | 3,54 | 3,40 | 3,20 | | |
| 16 t - 18,3 m | t | 16 | 16 | 14,46 | 11,23 | 9,11 | 7,61 | 6,50 | 5,64 | 4,95 | 4,71 | 4,39 | 4,20 | 3,93 | 3,76 | 3,54 | 3,40 | 3,20 | | |
| 8 t - 36,3 m | t | 8 | 8 | 8 | 8 | 8 | 8 | 7,17 | 6,28 | 5,57 | 5,32 | 4,99 | 4,78 | 4,51 | 4,34 | 4,10 | | | | |
| 8 t - 35,8 m | t | 8 | 8 | 8 | 8 | 8 | 8 | 7,03 | 6,12 | 5,40 | 5,15 | 4,81 | 4,60 | 4,31 | 4,14 | 3,90 | | | | |
| 16 t - 19,4 m | t | 16 | 16 | 15,44 | 12,03 | 9,79 | 8,21 | 7,03 | 6,12 | 5,40 | 5,15 | 4,81 | 4,60 | 4,31 | 4,14 | 3,90 | | | | |
| 8 t - 38,1 m | t | 8 | 8 | 8 | 8 | 8 | 8 | 7,59 | 6,65 | 5,91 | 5,65 | 5,30 | 5,09 | 4,80 | | | | | | |
| 8 t - 37,4 m | t | 8 | 8 | 8 | 8 | 8 | 8 | 7,41 | 6,47 | 5,72 | 5,46 | 5,11 | 4,89 | 4,60 | | | | | | |
| 16 t - 20,1 m | t | 16 | 16 | 16 | 12,59 | 10,27 | 8,63 | 7,41 | 6,47 | 5,72 | 5,46 | 5,11 | 4,89 | 4,60 | | | | | | |
| 8 t - 40 m | t | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 7,02 | 6,24 | 5,97 | 5,60 | | | | | | | | |
| 8 t - 39,2 m | t | 8 | 8 | 8 | 8 | 8 | 8 | 7,82 | 6,83 | 6,04 | 5,77 | 5,40 | | | | | | | | |
| 16 t - 21,1 m | t | 16 | 16 | 16 | 13,24 | 10,81 | 9,10 | 7,82 | 6,83 | 6,04 | 5,77 | 5,40 | | | | | | | | |
| 8 t - 40,9 m | t | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 7,20 | 6,40 | | | | | | | | | | |
| 8 t - 40,1 m | t | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 7 | 6,20 | | | | | | | | | | |
| 16 t - 21,5 m | t | 16 | 16 | 16 | 13,57 | 11,08 | 9,32 | 8,02 | 7 | 6,20 | | | | | | | | | | |
| 8 t - 42,5 m | t | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 7,50 | | | | | | | | | | | |
| 8 t - 41,5 m | t | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 7,30 | | | | | | | | | | | |
| 16 t - 22,3 m | t | 16 | 16 | 16 | 14,10 | 11,53 | 9,70 | 8,35 | 7,30 | | | | | | | | | | | |
| 8 t - 40 m | t | 8 | 8 | 8 | 8 | 8 | 8 | 8 | | | | | | | | | | | | |
| 8 t - 40 m | t | 8 | 8 | 8 | 8 | 8 | 8 | 8 | | | | | | | | | | | | |
| 16 t - 22,4 m | t | 16 | 16 | 16 | 14,19 | 11,60 | 9,76 | 8,40 | | | | | | | | | | | | |

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




Gru climbing (I)
Bottom climbing crane (GB)
Télescopage sur dalles (F)
Kletterkran im Gebäude (D)
Telescopage grúa trepadora (E)




Gru ancorata (I)
Crane tied to the structure (GB)
Grue ancrée (F)
Geankerter Kran (D)
Grúa anclada (E)

Consultateci (I) Consult us (GB) Nous consulter (F) Auf Anfrage (D) Consultarnos (E)

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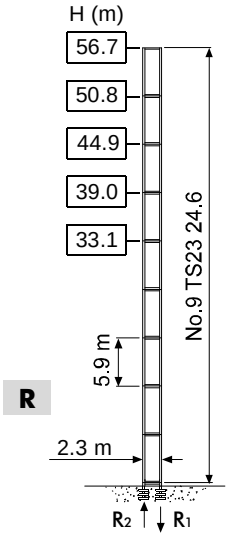
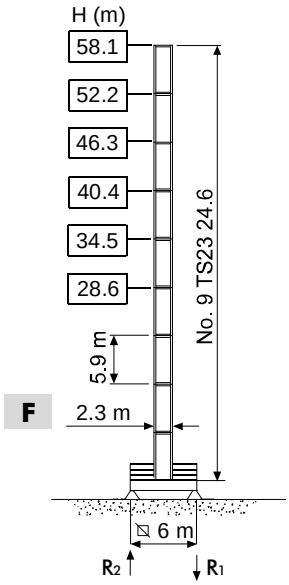
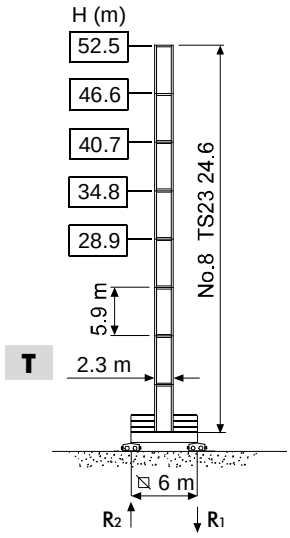
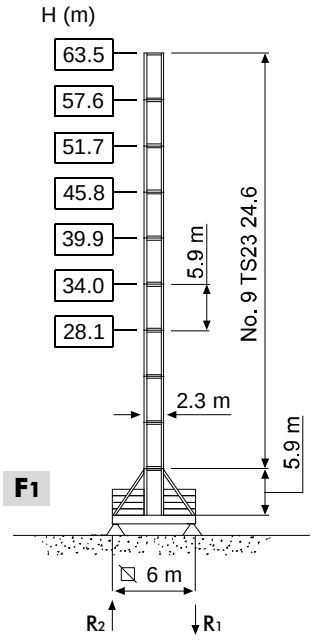
Torre (I) Tour (F) Torre (E)
Tower (GB) Turm (D)

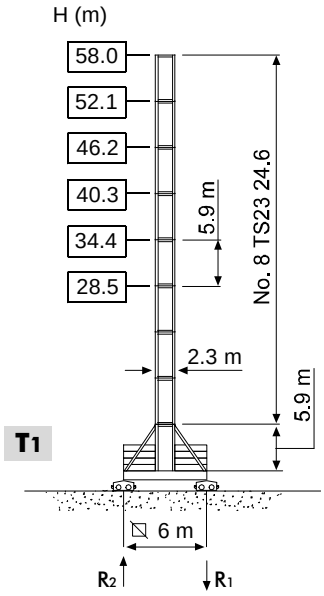
## TS23




| | | |
|---|---|---|
| H | Altezza massima sotto gancio | I |
| ● | In servizio | |
| ⇕ | Fuori servizio | |
| | A vuoto, senza zavorra, braccio max., altezza max. | |
| H | Max. under hook height | GB |
| ● | In service | |
| ⇕ | Out of service | |
| | Without load, without ballast, max. jib and max. height | |
| H | Hauteur maxi. sous crochet | F |
| ● | En service | |
| ⇕ | Hors service | |
| | A vide, sans lest, avec flèche et hauteur maximum | |
| H | Höchste Hackenhöhe | D |
| ● | In Betrieb | |
| ⇕ | Außer Betrieb | |
| | Ohne Last und Ballast, mit Maximalausleger und Maximalhöhe | |
| H | Maxima altura bajo gancho | E |
| ● | En servicio | |
| ⇕ | Fuera de servicio | |
| | Sin carga, sin lastre, con pluma y altura máxima | |

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# CTT 331-16

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

| | | | | |
|---|---|---|---|---|
| | 45 AFC 80 | 114 * kVA | 400 V - 50 Hz / 460 V - 60 Hz | 2000/14/CE modificata |
| | 67 AFC 80 | 138 * kVA | | |

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

| | | | m/min | t | kW | |
|---|---|---|---|---|---|---|
| | **45 AFC 80**<br>**45 AFC 80 D2**<br>**(VECTOR)** | | 0 ⇨ 30 | 8 | 45 | 560 m<br>850 m (D2) |
| | | | 0 ⇨ 39 | 6 | | |
| | | | 0 ⇨ 56 | 4 | | |
| | | | 0 ⇨ 97 | 2 | | |
| | | | 0 ⇨ 110 | 1.7 | | |
| | | | 0 ⇨ 15 | 16 | | |
| | | | 0 ⇨ 19.5 | 12 | | |
| | | | 0 ⇨ 28 | 8 | | |
| | | | 0 ⇨ 48.5 | 4 | | |
| | | | 0 ⇨ 55 | 3.4 | | |
| | **67 AFC 80**<br>**67 AFC 80 D1**<br>**(VECTOR)** | | 0 ⇨ 41 | 8 | 67 | 560 m<br>850 m (D1) |
| | | | 0 ⇨ 53 | 6 | | |
| | | | 0 ⇨ 76 | 4 | | |
| | | | 0 ⇨ 135 | 2 | | |
| | | | 0 ⇨ 145 | 1.85 | | |
| | | | 0 ⇨ 20.5 | 16 | | |
| | | | 0 ⇨ 26.5 | 12 | | |
| | | | 0 ⇨ 38 | 8 | | |
| | | | 0 ⇨ 67.5 | 4 | | |
| | | | 0 ⇨ 72.5 | 3.7 | | |

| | | | |
|---|---|---|---|
| | **DSR 3 70 D2** | 12 ⇨ 36 ⇨ 72 m/min | 70/50 Nm |
| | **DCC 5 112 D2** | 0 ⇨ 95 m/min | 11 kW |
| | **SSR 4 4 65** | 0.73 r.p.m. | 4 × 65 Nm |
| | ■ **TVF 2RG 4M9** | 0 ⇨ 50 m/min | 4 × 9 kW |
| | ▲ **TSR 2RG 4M8** | 12 ⇨ 24 m/min (50 Hz)<br>14 ⇨ 28 m/min (60 Hz) | 4 × 80 Nm |
| | ● **TSR 4RG 4M8** | | |
| | | (i) | |

| | ■ | ▲ | ● |
|---|---|---|---|
| | **Max. H [m]** | | |
| $T_1$ | 54.3 | 60.3 | > 60.3 |
| $T_3$ | 54.3 | 66.3 | > 66.3 |

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


**Gru Comedil s.r.l.**

A **Terex** Company

SISTEMA QUALITA' AZIENDALE certificato in accordo alla norma iso 9001:2000 SGS

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## 2 CRANE CLASSIFICATION

| | |
|---|---|
| *Standards for structural calculations of the crane:* | FEM 1.001 |
| *Machine grade:* | A3 (A2 for the jib ranges) |
| *Standards for the electrical components:* | CEI - EN 60204 - 32 |

## 3 LOAD HANDLING DEVICES

16 t *(35280 lbs)* - hooks UNI 946 S / DIN 15401 .

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:*

| | | | |
|---|---|---|---|
| ***during assembly*** | ***14*** | ***m/s*** | ***(~50 km/h)*** |
| ***in service*** | ***20*** | ***m/s*** | ***(~72 km/h)*** |
| ***out of service*** | ***42*** | ***m/s*** | ***(~150 km/h)*** |

### 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:*

| | | | |
|---|---|---|---|
| ***during assembly*** | ***46*** | ***ft/s*** | ***(~31 mph)*** |
| ***in service*** | ***66*** | ***ft/s*** | ***(~45 mph)*** |
| ***out of service*** | ***138*** | ***ft/s*** | ***(~93 mph)*** |

- *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:

$$\mathbf{A} = \frac{0.03 \times P}{q \times 1.2}$$

where

**A** = Front surface exposed to the wind [$m^2$]

**P** = Weight of the load hanging from the hook [daN]

**q** = Pressure factor = $\frac{v^2}{16}$ [$daN/m^2$]

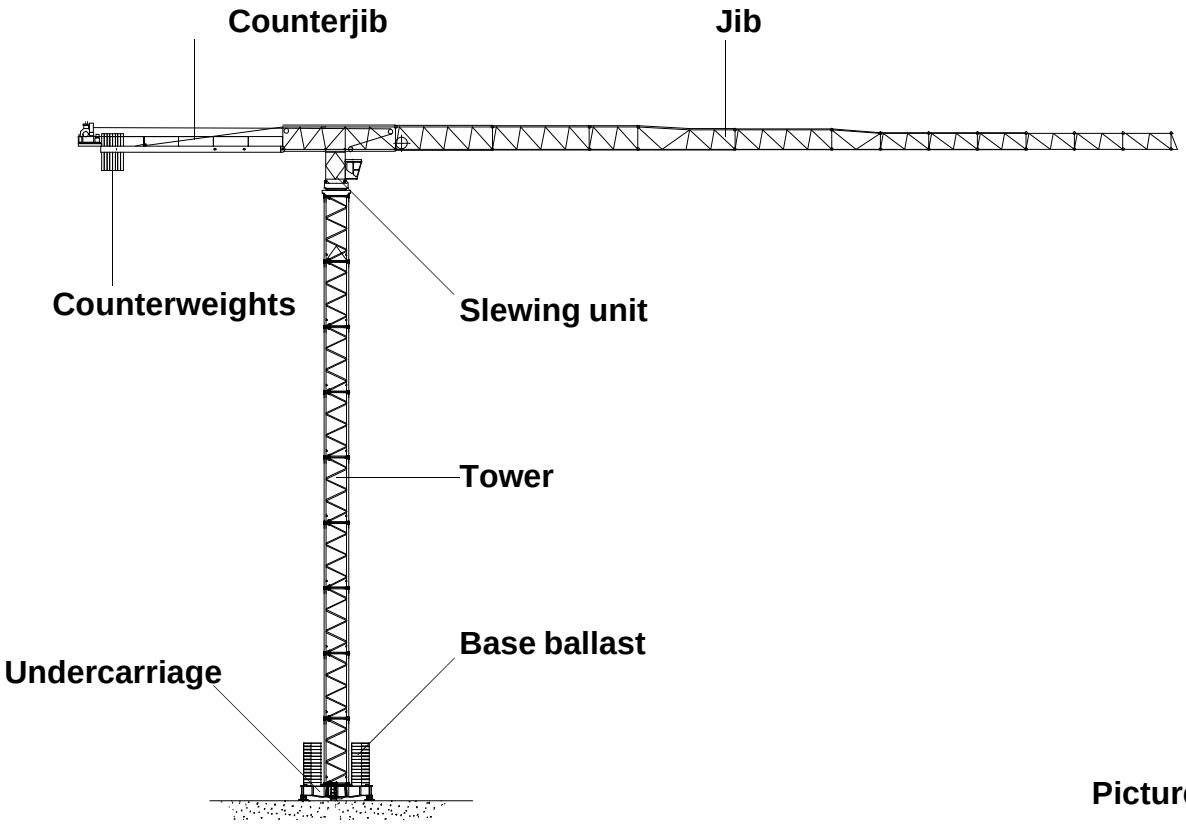
**v** = Wind speed [m/s]

**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 (1in.) > height 6 m (20 ft) approx.*

## Counterjib and counterweights

A structure bearing the hoisting winch and the counterweight.

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

There are two types of counterweights (these are always made of reinforced concrete or, on request, bordered with a steel frame). The quantity and composition vary according to the length of the jib and to the winch mounted as specified in **Section 3B "Counterweights"** of the crane operating 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.

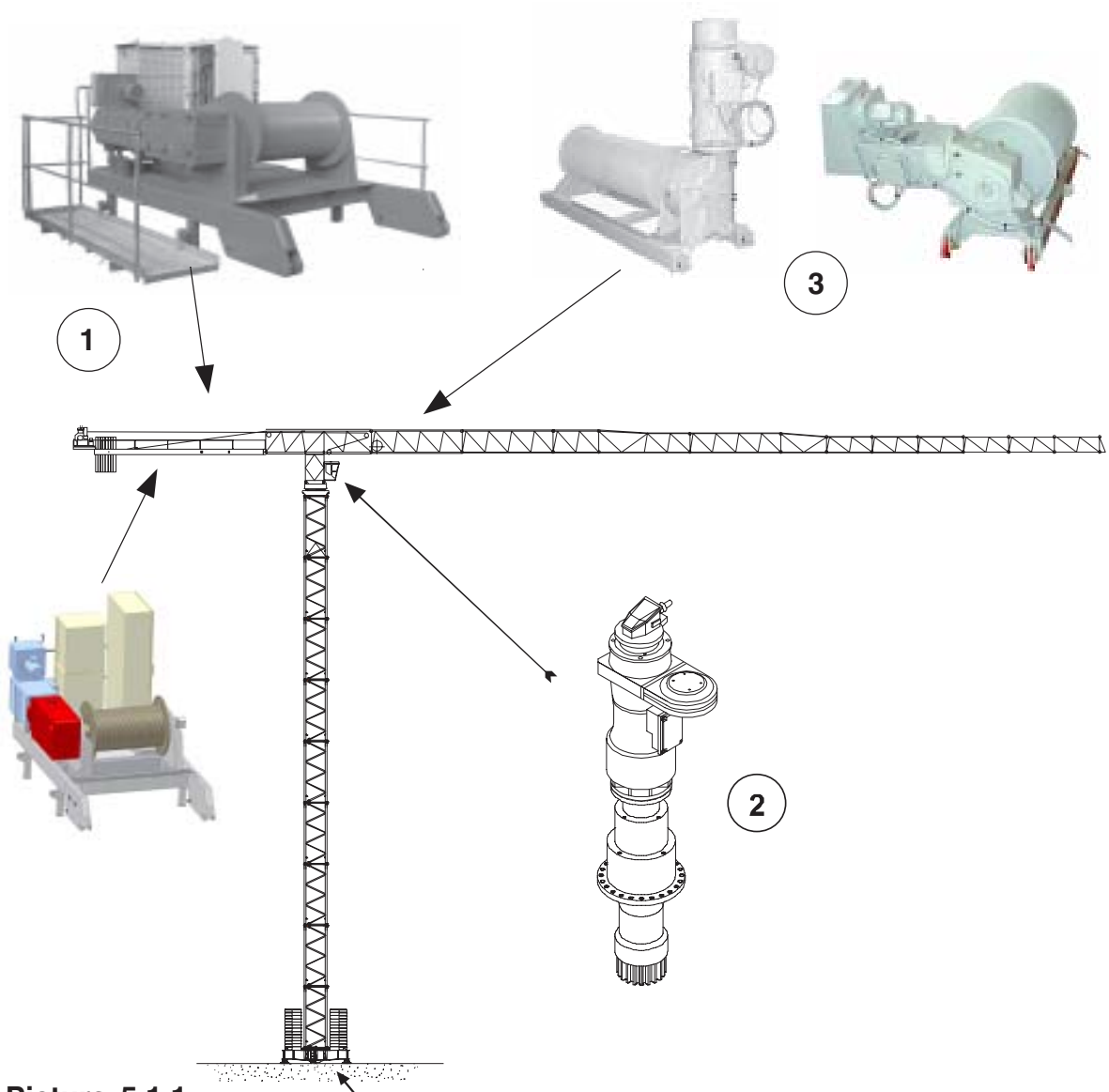
## Jib

Self-supporting type, it does not need tie-bars and it is made of 12 triangular- section elements and a jib tip (for maximum jib extension 75 m / *246 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 section

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)




**Picture 5.1.1**

1) HOIST WINCH ➨ See **Section 9** for technical specifications
2) SLEWING UNIT ➨ See **Section 13** for technical specifications
3) TROLLEY TRAVERSING WINCH ➨ See **Section 10** for technical specifications
4) TRAVELLING UNIT ➨ See **Section 12** for technical specifications