



TEREX | COMEDIL

CTT 181/A

Slewing Upper Part Erection

1	ERECTION AND DISMANTLING PROCESS	2.5	OVERHEAD ASSEMBLY OF THE JIB
1.1	GENERAL	2.6	COUNTERWEIGHTS ASSEMBLY
1.2	SAFETY PRECAUTIONS	2.7	FINAL ROPES REEVING
1.3	JOB SITE PREPARATION AND REQUIREMENTS	2.7.1	Trolley rope path
2	ERECTION	2.7.2	Hoisting rope path
2.1	ERECTION OF THE SLEWING UNIT	2.8	CONNECTION OF THE ELECTRICAL CABLES
2.1.1	Ground assembly of the slewing unit	2.9	CHECKING THE ANCHOR BOLTS TIGHTENING
2.1.2	Assembling the cab	2.10	FINAL CHECKS
2.1.2.1	<i>Assembling the standard cab</i>	3	DISMANTLING
2.1.2.2	<i>Assembling "LX" cab</i>	3.1	REQUIREMENTS FOR DISMANTLING
2.1.2.3	<i>Assembly without cab</i>	3.2	DISMANTLING THE SLEWING UPPER PART
2.1.3	Assembling the slewing unit on the tower	3.3	GROUND DISASSEMBLY OF THE JIB
2.2	ASSEMBLING JIB SECTION- 22	3.4	GROUND DISASSEMBLY OF THE COUNTERJIB
2.2.1	Ground assembly of jib section- 22	3.5	SLEWING UPPER PART STORAGE
2.2.1.1	<i>Unloading jib section-22 from the truck</i>		
2.2.1.2	<i>Assembling A-tie-bar B</i>		
2.2.1.3	<i>Turning over the platforms and railings</i>		
2.2.1.4	<i>Positioning the hoist blocks</i>		
2.2.1.5	<i>Assembling the jib inspection platform</i>		
2.2.1.6	<i>Rope path on jib section-22</i>		
2.2.2	Overhead assembly of jib section- 22		
2.3	COUNTERJIB ASSEMBLY		
2.3.1	Assembling the counterjib and the ballast basket		
2.3.2	Slinging the counterjib and the ballast basket		
2.3.3	Overhead assembly of the counterjib		
2.3.4	Positioning counterweight- A		
2.4	GROUND ASSEMBLY OF THE JIB		
2.4.1	General		
2.4.2	Jib configurations		
2.4.3	Assembling the jib		
2.4.4	Jib weights and centers of gravity		
2.4.5	Assembling the trolley rope		
2.4.6	Assembling the load rating charts		
2.4.6.1	<i>Load rating charts configurations</i>		

1

ERECTION AND DISMANTLING PROCESS

1.1 GENERAL

The erection and dismantling of the crane shall be done by skilled technicians, who have attended a specific training course.



Crane users are advised to contact Comedil after-sales Service or Comedil agents for qualified erectors.

Should the user employ other erectors, their ability shall be verified before handling the crane.

In this case, Comedil declines any criminal and public liability.



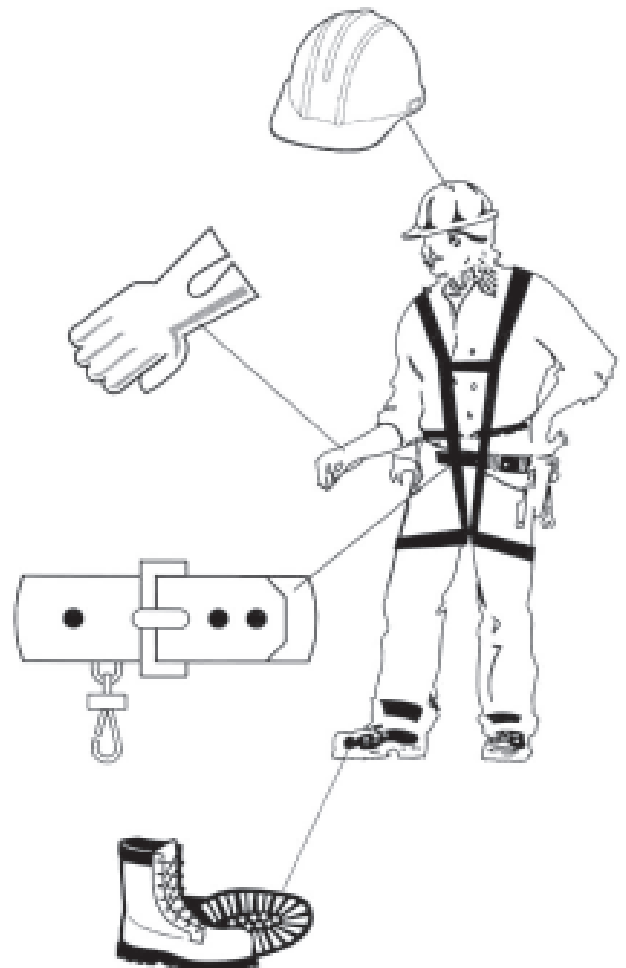
For the crane erection and dismantling at least three skilled technicians are needed: two responsible for the assembly by mobile crane, one for the co-ordination of the operations on the ground.

1.2 SAFETY PRECAUTIONS



The erector shall observe the following safety precautions before starting the erection or dismantling of the crane:

- A) he shall not work in inclement weather conditions;
- B) he shall work in perfect psychophysical conditions and check that the individual and personal accident prevention devices are available and serviceable;
- C) he shall wear a type approved safety helmet which is integral;
- D) he shall wear a type-approved safety belt which is integral;
- E) he shall wear accident-prevention shoes;
- F) he shall use tools equipped with electric insulation;
- G) should the components pre-assembled on the ground be wet or damp, he shall be careful when carrying out the erection of the crane by mobile crane;
- H) for the safety of people and equipment, the erector shall check that barriers are placed around the assembly and disassembly area and that there are no unauthorized people inside the working area.



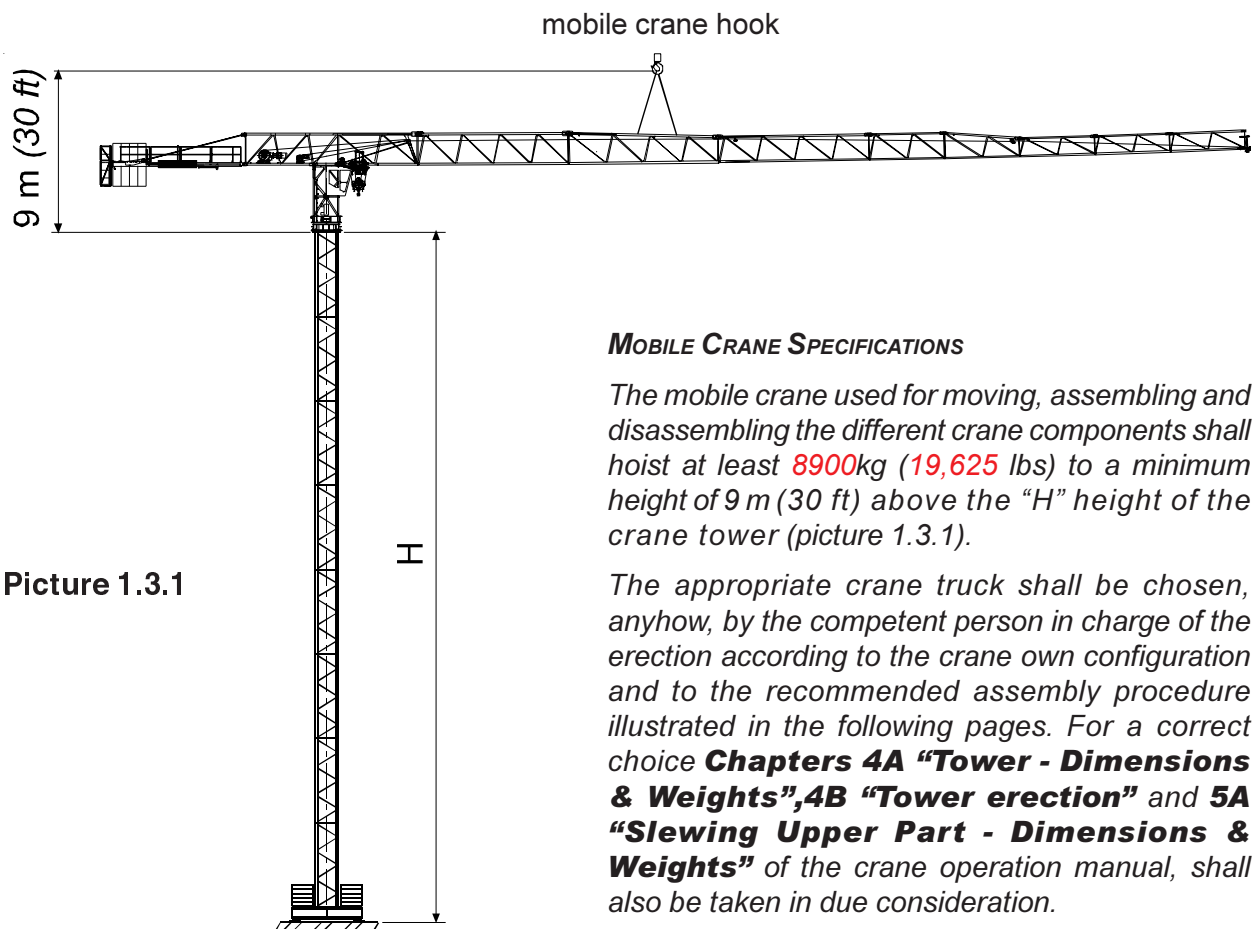
1.3 JOB SITE PREPARATION AND REQUIREMENTS



Before starting work, the crane erector shall inspect the job site for proper arrangement. The people in charge of the job site preparation shall be advised about any default found, thus allowing them to remedy it.

Erection of the crane shall start after the erector has checked that:

- A) the maneuvering area of the crane is free from obstacles (trees, buildings, electric lines, telephonic lines, etc.);
- B) the curing time of the counterweights is adequate;
- C) the counterweights satisfy the manufacturer's specifications;
- D) the electric connections are adequate;
- E) the hoisting equipment available at the job site is suitable for the work to be carried out;
- F) proper slings or other lifting attachments are being used.



Picture 1.3.1

MOBILE CRANE SPECIFICATIONS

The mobile crane used for moving, assembling and disassembling the different crane components shall hoist at least **8900kg (19,625 lbs)** to a minimum height of 9 m (30 ft) above the "H" height of the crane tower (picture 1.3.1).

The appropriate crane truck shall be chosen, anyhow, by the competent person in charge of the erection according to the crane own configuration and to the recommended assembly procedure illustrated in the following pages. For a correct choice **Chapters 4A "Tower - Dimensions & Weights", 4B "Tower erection" and 5A "Slewing Upper Part - Dimensions & Weights"** of the crane operation manual, shall also be taken in due consideration.



The erector shall inform the mobile crane operator of the exact weight of the parts to be lifted.

The mobile crane operator shall see that the load is well secured and balanced in the sling before it is lifted.

2

ERECTION

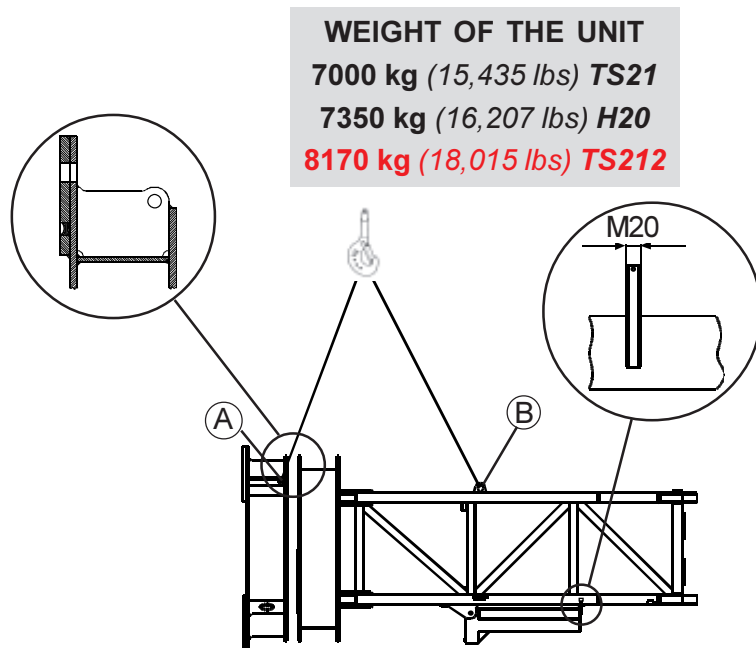
2.1 ERECTION OF THE SLEWING UNIT

2.1.1 Ground assembly of the slewing unit



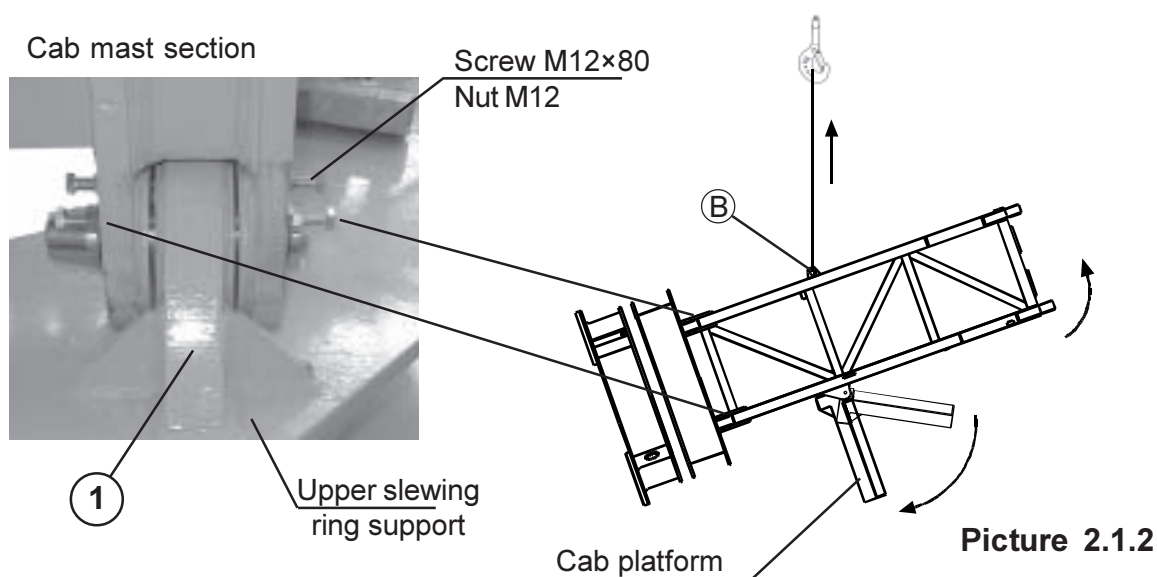
The slewing unit is normally delivered to the job site with the cab mast section already joined to the upper slewing ring support.

Sling it through the special eyebolts (A) and (B) and lower it to the ground (picture 2.1.1).



Picture 2.1.1

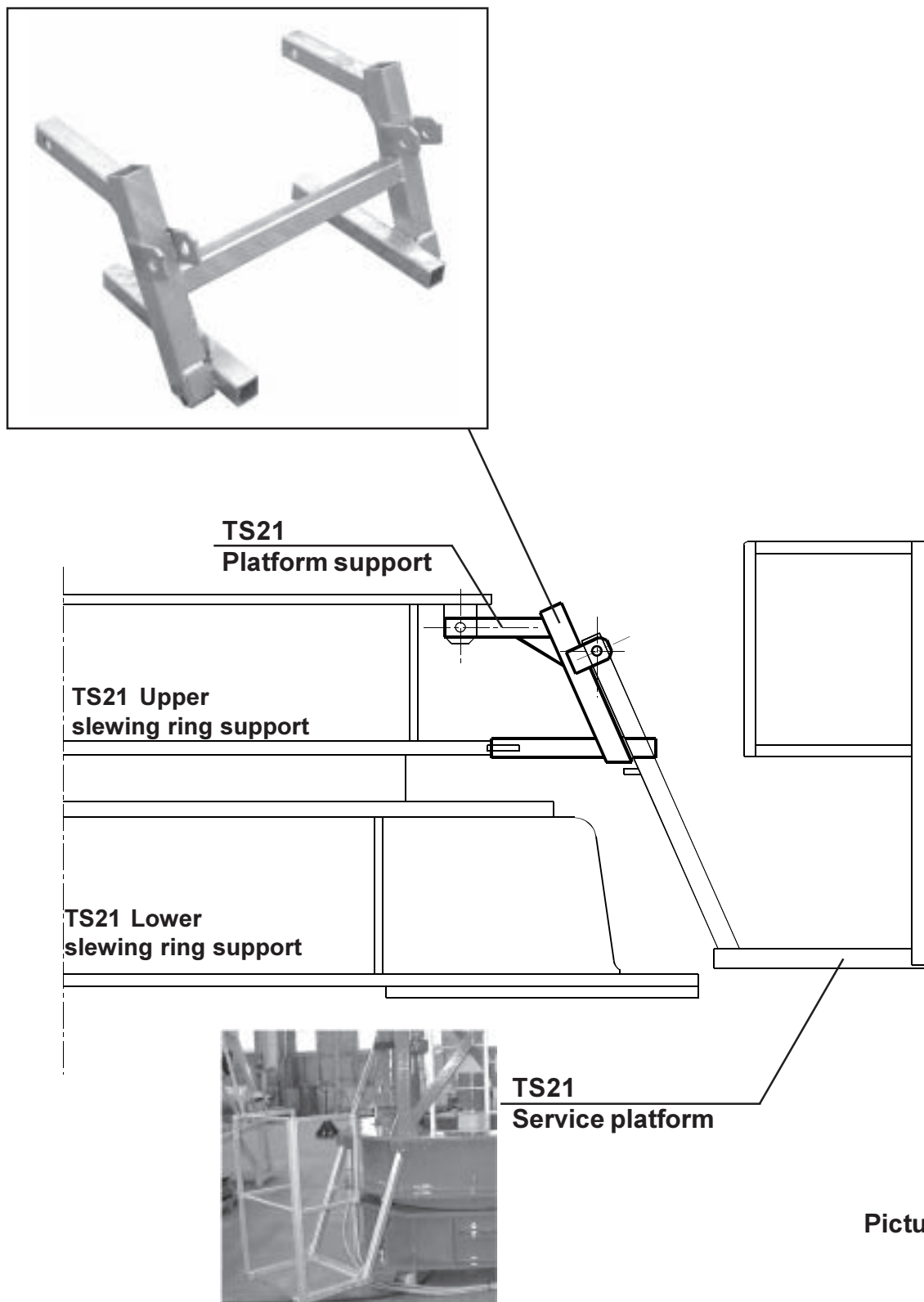
Remove the nut from M20 × 160 threaded bar (picture 2.1.1), which secures the cab platform to the cab mast section. Sling the unit through eyebolt (B) and lift it up to vertical position, thus allowing the cab platform to turn at right angle about the cab mast section (picture 2.1.2).



Picture 2.1.2

Screw M12×80 bolts of the cab section down to the hinge of the upper slewing ring support (1), then tighten them with M12 nuts, so as to prevent the cab mast section from moving along the axis of the pins (picture 2.1.2).

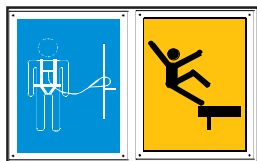
For cranes equipped with TS21 tower assemble the work platform on the upper slewing ring support (picture 2.1.3) interposing the proper support so as to avoid the platform from interfering with the slewing ring support during slewing.



Picture 2.1.3



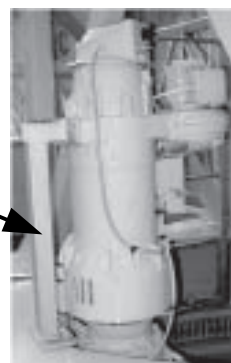
Make sure that the two product hazard and safety signs near the service platform access are in place (picture 2.1.4).



Picture 2.1.4

Release the lock devices used to protect the gearmotors against possible damages during transport (picture 2.1.5).

Visually inspect the “TS” connection on the lower slewing ring support for impurity and possible paint traces. Remove them, as necessary.



Picture 2.1.5

2.1.2 Assembling the cab

2.1.2.1 Assembling the standard cab

Sling the panoramic cab through the special eyebolts on the top and connect it to the cab mast section platform with M18×60 bolts (picture 2.1.6).

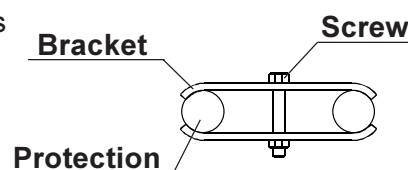


WEIGHT OF THE UNIT
400 kg (881 lbs)



Picture 2.1.6

Position the handrails on the platform securing them with the special 6×60 split pins. Now join the handrails together with the proper brackets and M10×65 bolts (picture 2.1.7)



Picture 2.1.7

Place the ladder and secure it to the platform and to the cab mast section with M14×50 bolts.

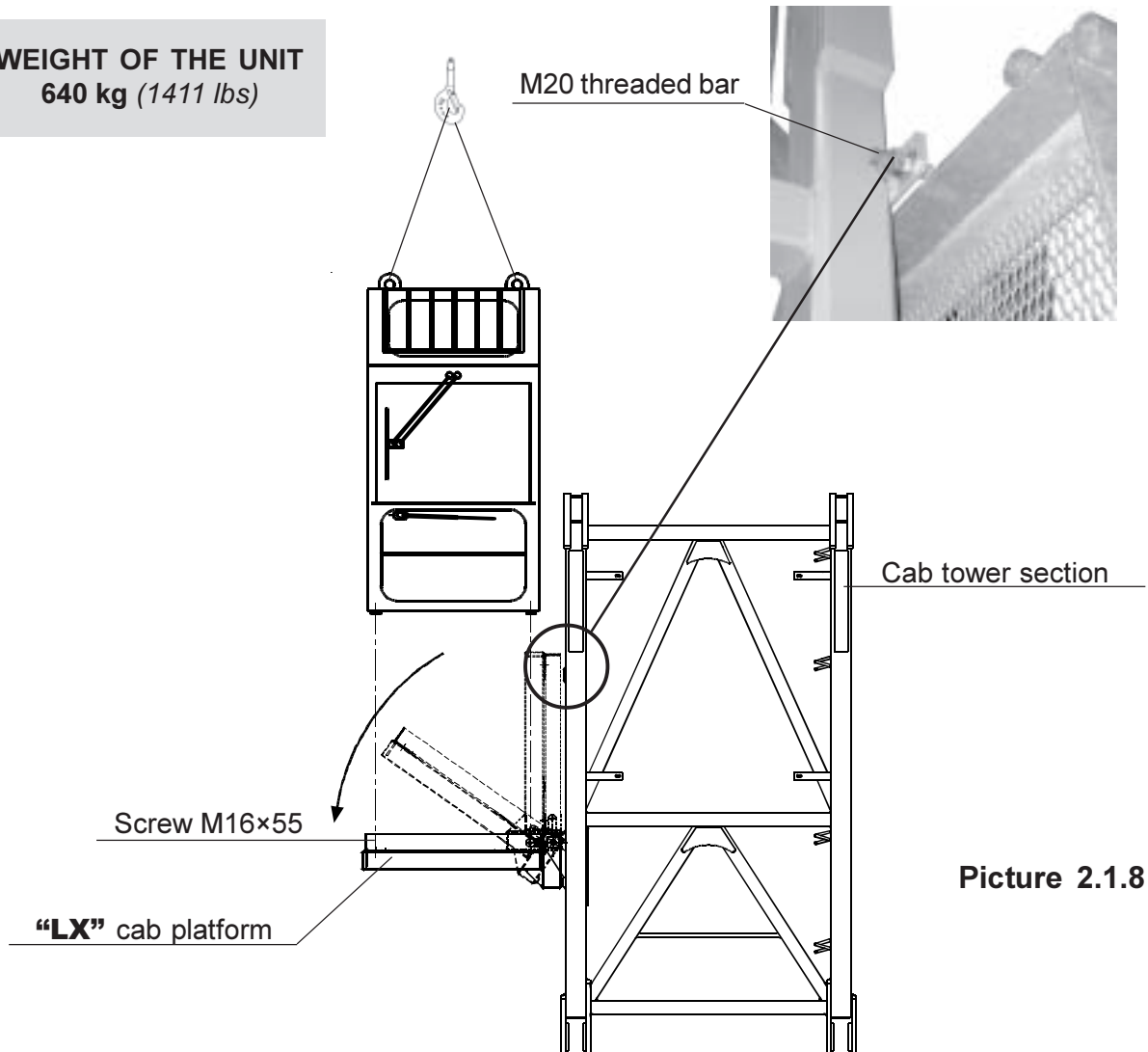
Carry out the electrical connections required to place the cab in service (see **Chapter 5C - “Slewing upper part - Electrical equipment location”** of the crane operation manual).

2.1.2.2 Assembling “LX” cab

Remove nuts of M20 threaded bar which secures cab platform to cab section during transport (picture 2.1.8); rotate the platform so that it becomes perpendicular to the cab section (picture 2.1.8).

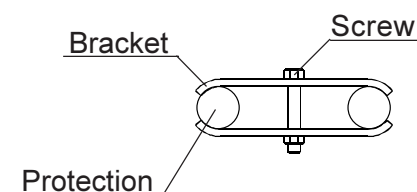
Assemble the cab on the cab section with M16×55 screws and the proper washers and nuts (picture 2.1.8).

WEIGHT OF THE UNIT
640 kg (1411 lbs)



Picture 2.1.8

Assemble the protections on the platform securing them with the proper split pins 6×60. Fix them together with the proper brackets M10×65 (picture 2.1.9).



Picture 2.1.9

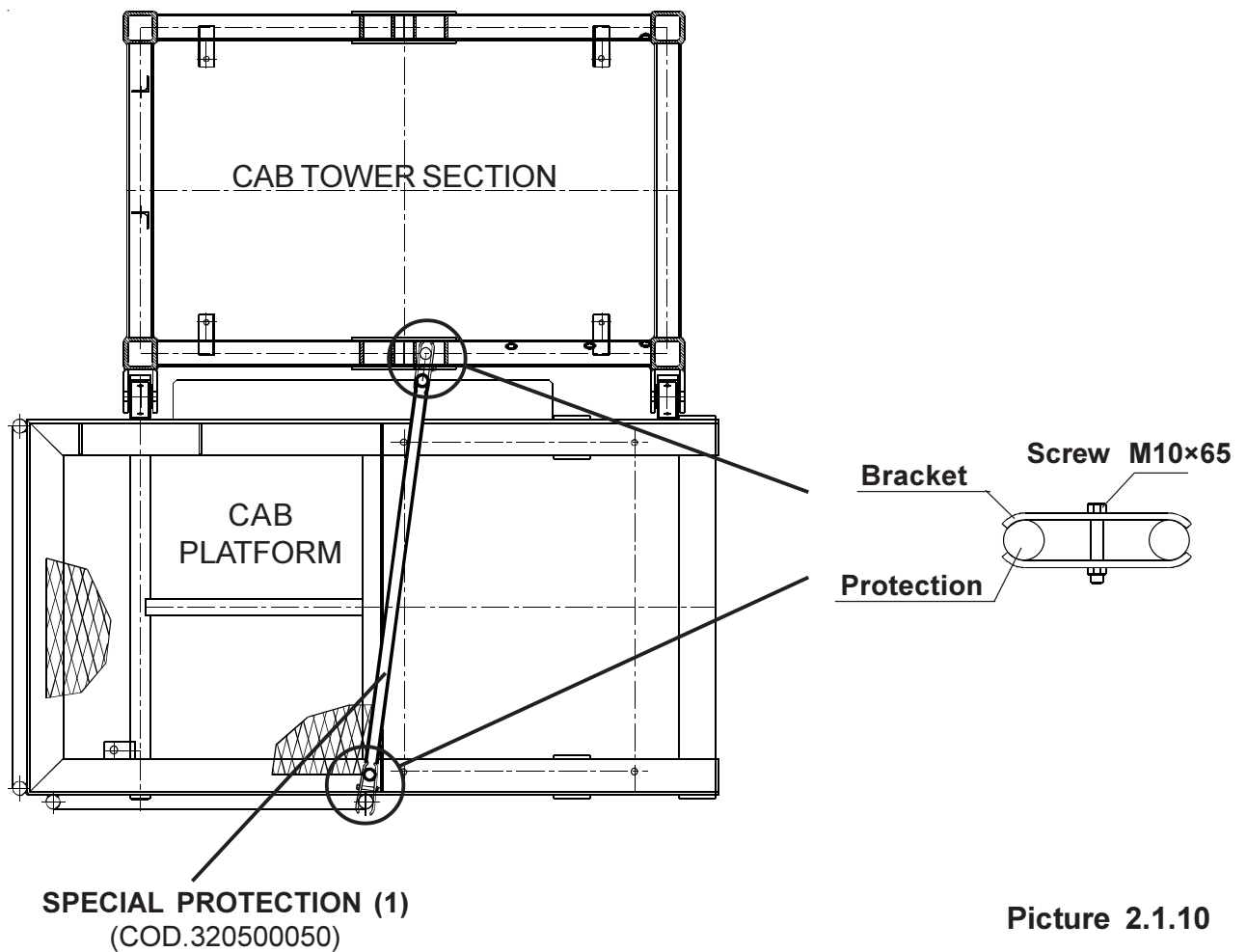


Carry out the necessary electrical connections to enable the control cab operation (see **Chapter 5C- “Slewing upper part - Electrical equipment location”** of the crane operation manual).

2.1.2.3 Assembly without cab



For crane not equipped with control cab, place the special protection (1) to prevent inadvertent access to the cab platform. Secure it with the proper lock brackets and screws **M10×65** (picture 2.1.10).



2.1.3 Assembling the slewing unit on the tower

Sling the slewing unit with a shackle through the eyebolts on the sleepers of the cab mast section (picture 2.1.11) and place it on the top "TS" or "HA20" mast section (attention to the position of the special access opening in the lower slewing ring support, which shall fit the ladder of the top mast section) (picture 2.1.12).



Carry out the electrical connections required to place the crane in service (see **Chapter 5C- "Slewing upper part - Electrical equipment location"** of the crane operation manual).



For TS21 tower, standing on the auxilliary TS21 work platform (picture 2.1.13), tighten the eight M48 bolts observing the recommendations given in **Chapter 4B "Tower Erection"** of the crane operation manual. Proceed as follows:

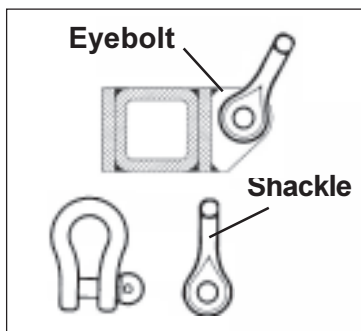
- Tighten two bolts on the first corner of the slewing ring support facing the work platform;
- Operate "slewing" and move with the service platform to the next corner;
- Tighten further two bolts;
- Go on as previously indicated until you complete tightening of the remaining four bolts.



For detailed information on how to connect the slewing unit to the H20 top mast section refer to **Chapter 4B - "Tower Erection"** of the crane operation manual.



For TS212 tower tighten the eight M72 bolts.



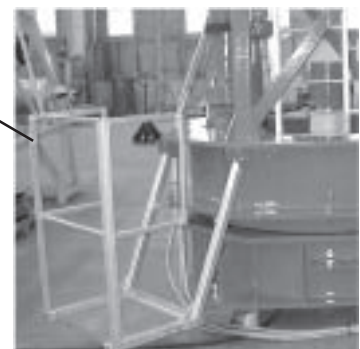
Picture 2.1.11

WEIGHT OF THE UNIT

7000 kg (15,435 lbs) - TS21 without cab
 7350 kg (16,207 lbs) - HA20 without cab
8170 kg (18,015 lbs) - TS212 without cab
 7400 kg (16,317 lbs) - TS21 with standard cab
 7750 kg (17,089 lbs) - HA20 with standard cab
8570 kg (18,897 lbs) - TS212 with standard cab
 7640 kg (16,846 lbs) - TS21 with "LX" cab
 7990 kg (17,618 lbs) - HA20 with "LX" cab
8810kg (19,426 lbs) - TS212 with "LX" cab

Picture 2.1.12

Picture 2.1.13



2.2 ASSEMBLING JIB SECTION-22

2.2.1 Ground assembly of jib section-22

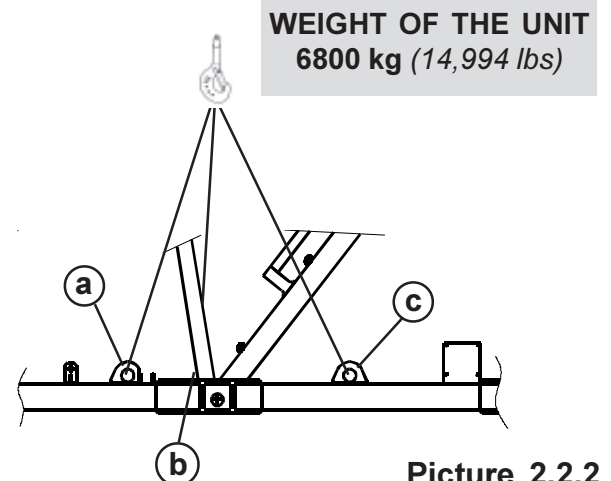
2.2.1.1 Unloading jib section-22 from the truck

Prior to unloading jib section-22 down to the ground, pay attention to the truck used for transport.

- a) **standard low-sided truck** (picture 2.2.1): sling the unit through the special eyebolts (a), (b) and (c) (picture 2.2.2), lift it off the truck and lower it to the ground.

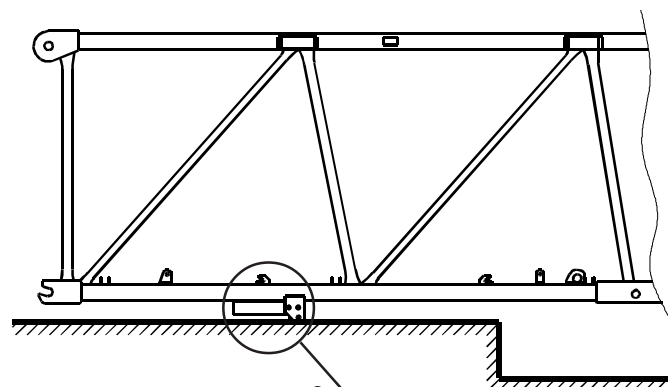


Picture 2.2.1



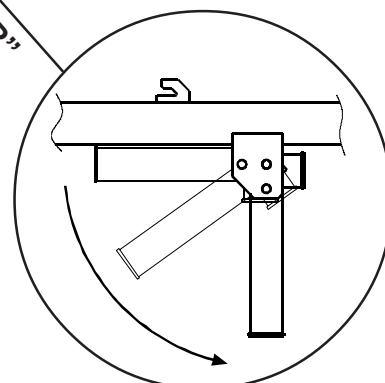
Picture 2.2.2

- b) **Depressed flatbed truck** (picture 2.2.3): prior to lowering the unit to the ground, move support (R) to vertical position and secure it with pins C25×165.



Picture 2.2.3

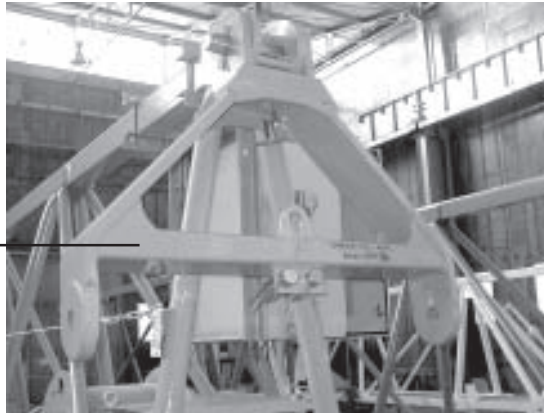
Support "R"



2.2.1.2 Assembling A-tie-bar **B**

During transport, A-tie-bar **B** rests in the position shown in picture 2.2.4 with S30×205 pin in position **(2)** (picture 2.2.6).

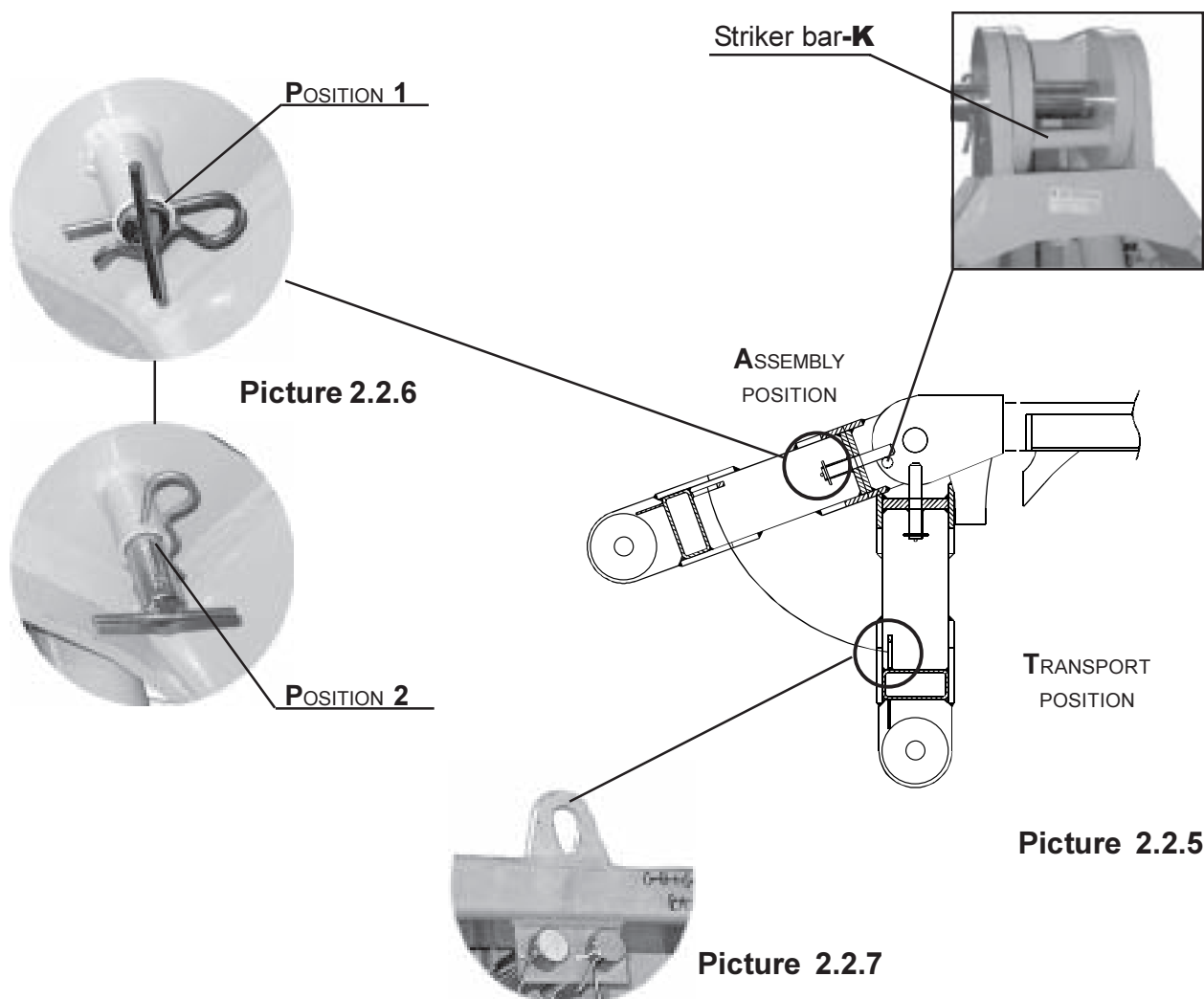
A-Tie-bar B



Picture 2.2.4

With jib section-**22** on the ground, move A-tie-bar **B** to the position shown in picture 2.2.5.

Sling A-tie-bar **B** through the special eyebolt (picture 2.2.7) and turn it upwards until the pin, once moved to position **(1)** and properly secured with the spring split pin, rests on striker bar-**K** on the jib section (picture 2.2.5).

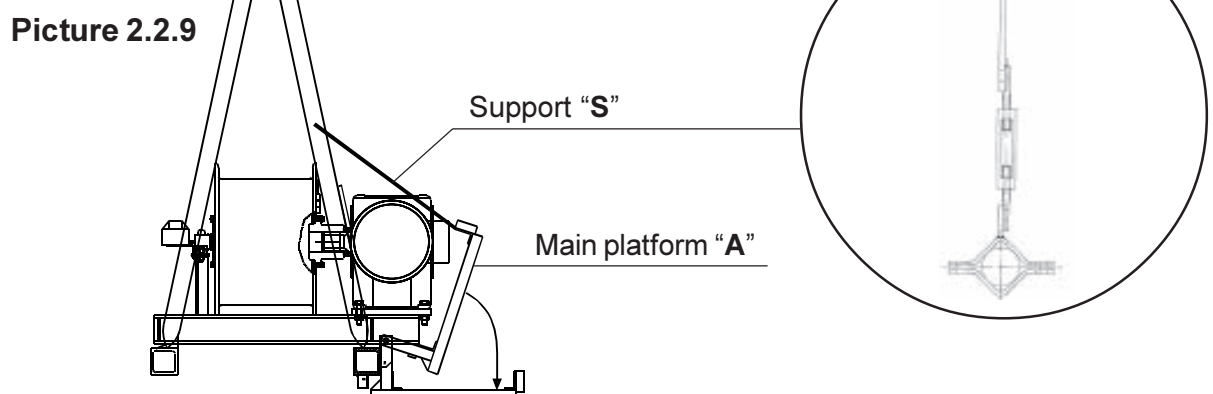
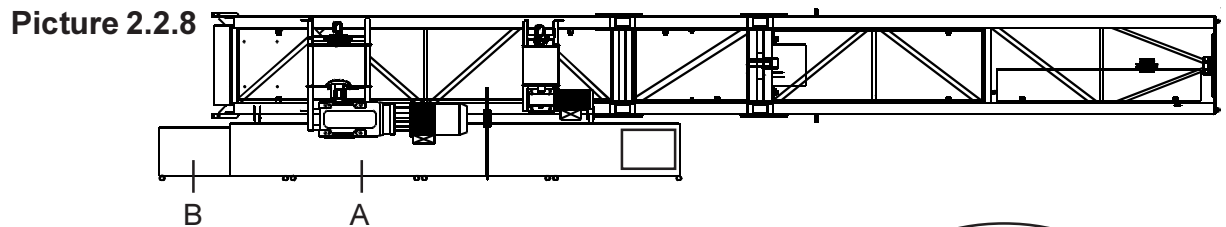


Picture 2.2.5

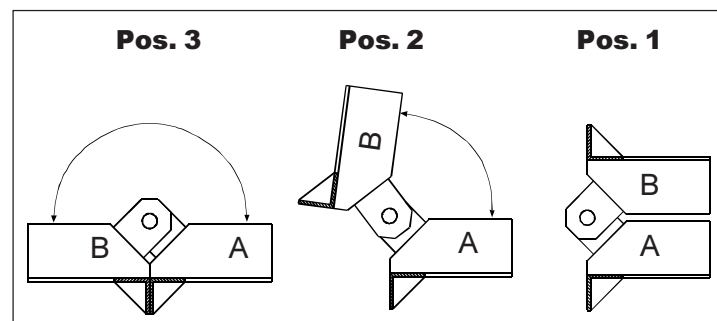
Picture 2.2.7

2.2.1.3 Turning over the platforms and railings

With jib section **-22** on the ground (picture 2.2.8), remove support **"S"** (picture 2.2.9) and turn over the main platform **"A"** until it is parallel to the ground.



Operating the proper hinges (picture 2.2.10), turn over the small platform **"B"** until it forms a single footwalk with the platform **"A"** previously turned over (pos. 3).

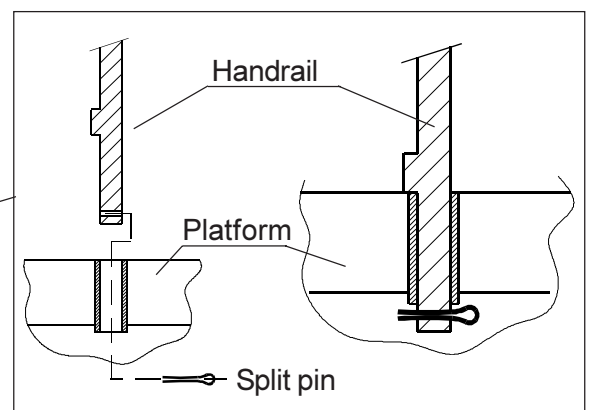


Picture 2.2.10

Now place the handrails securing them to the platform with 6×60 split pins (picture 2.2.11). Now join the handrails together with the proper brackets and M10×65 bolts.

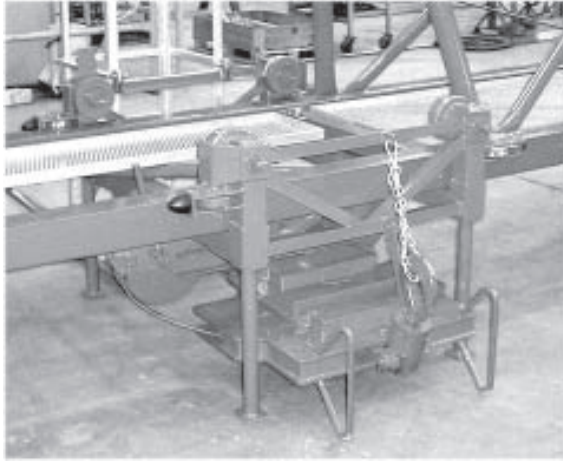


Picture 2.2.11



2.2.14 Positioning the hoist blocks

With jib section-**22** on the ground, move the trolley hoist blocks from transport (picture 2.2.12) to work position (picture 2.2.13) as indicated below:

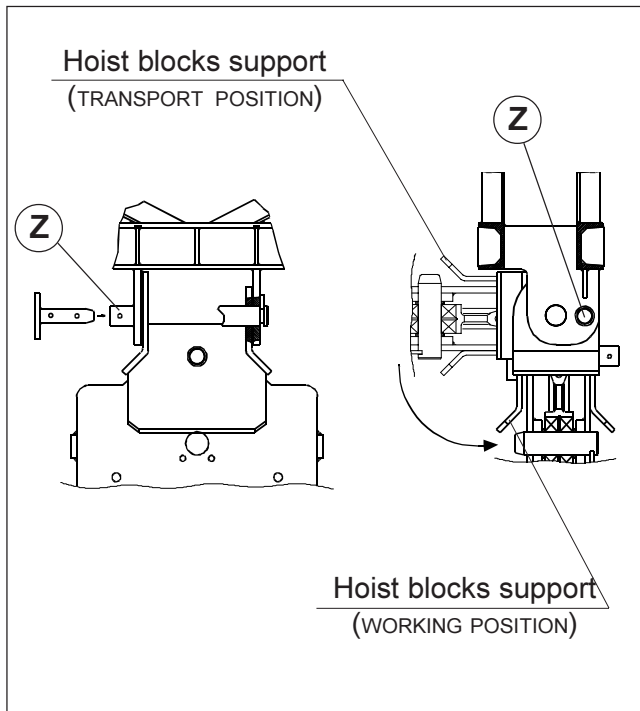


Picture 2.2.12



Picture 2.2.13

- remove the split pin and S25×95 pin from housing (Z) (picture 2.2.14);
- lift the hoist blocks a little bit by the hook and then lower them to the ground, releasing the chain by the special spring catch (picture 2.2.15);
- during the overhead assembly of jib section-**22** (para. 2.2.2) remember to place again S25×95 pin in housing (Z) securing it with the proper split pin, thus locking the hoist block support in the working position (picture 2.2.14).



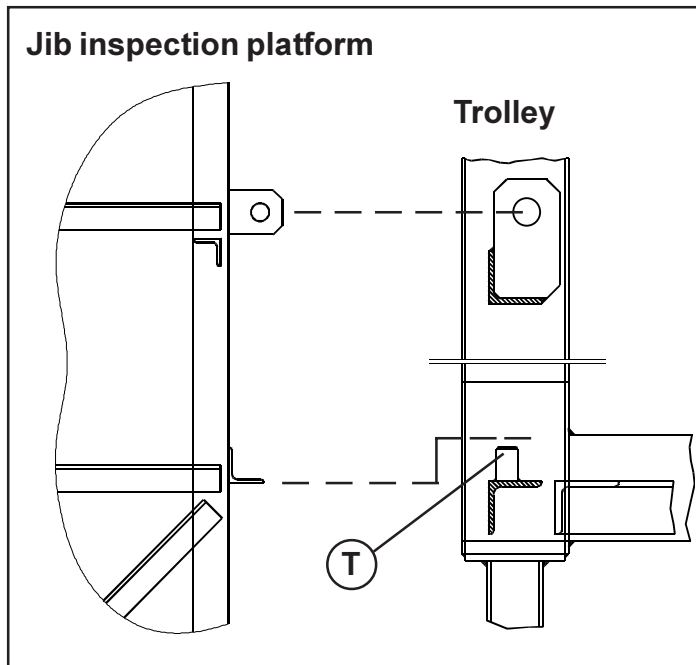
Picture 2.2.14



Picture 2.2.15

2.2.15 Assembling the jib inspection platform

Prior to lifting and assembling jib section-**22** on the slewing unit, secure the jib inspection platform (picture 2.2.16) to the jib trolley with "C" Ø20×40 pins and 6×60 split pins paying attention that it properly matches pin "T" on the lower part of the trolley.



Picture 2.2.16



Make sure the jib inspection platform is bearing the plate specifying the weight for which it is rated (**120 kg / 265 lbs**).

2.2.16 Rope path on jib section-**22**

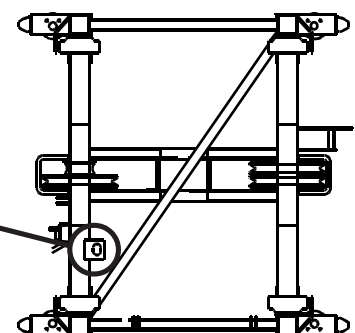
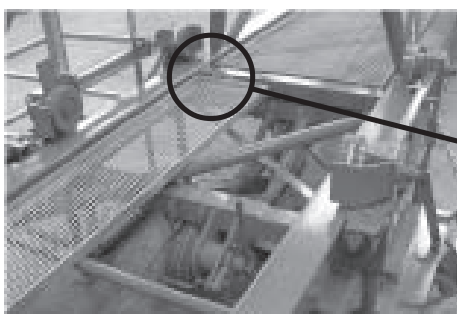


Usually jib section-**22** is delivered to the job site with the jib trolley and the hoist blocks already in place and with the hoist and trolley ropes already reeved for the erection.

However, due to transport specific criteria (containers), jib trolley and hoist blocks may be shipped under separate package with the ropes completely spooled on the respective drums.

In this case, attain to the following directions:

- a) Place the jib trolley on jib section-**22** and lock it with the special pin S30×185 (picture 2.2.17).

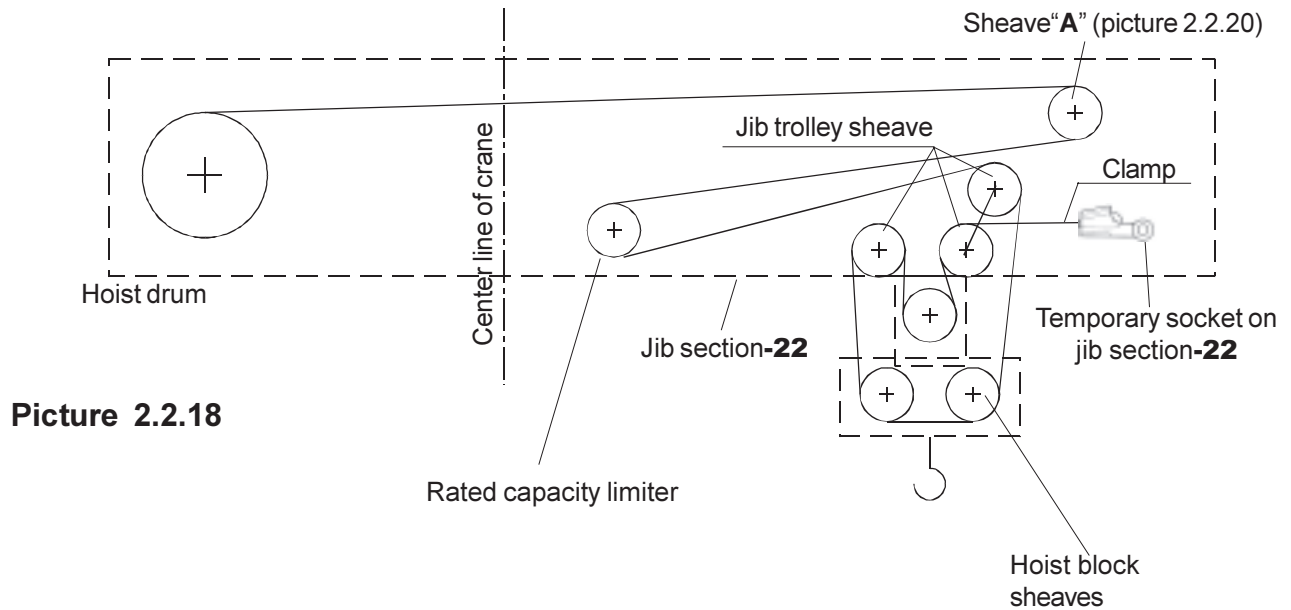


Picture 2.2.17

b) Carry out the hoist rope path as shown in picture 2.2.18 or picture 2.2.19.

Standard Rope Path (II/IV) (auxiliary hoist block in place)

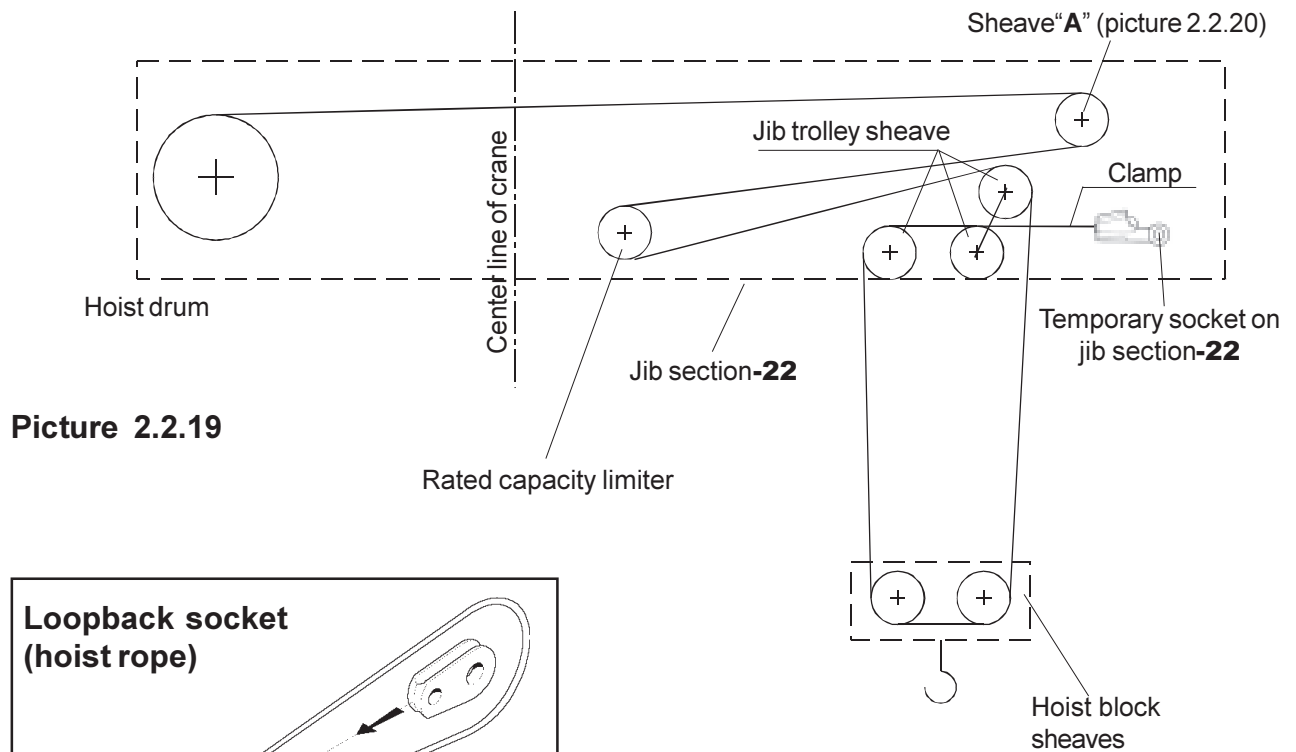
Scheme for 30 AFC 40 F12 hoist winch



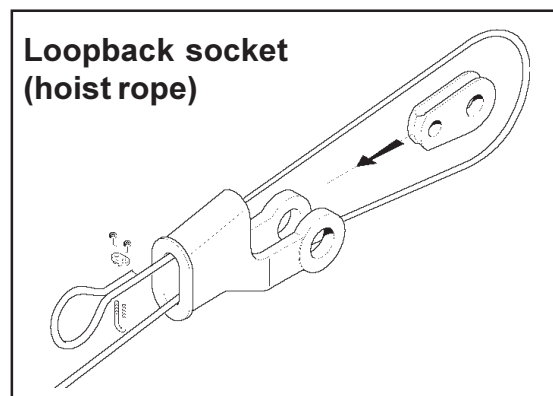
Picture 2.2.18

Special Rope Path (II) (auxilliary hoist block on the ground)

Scheme for 30 AFC 40 F12 hoist winch



Picture 2.2.19





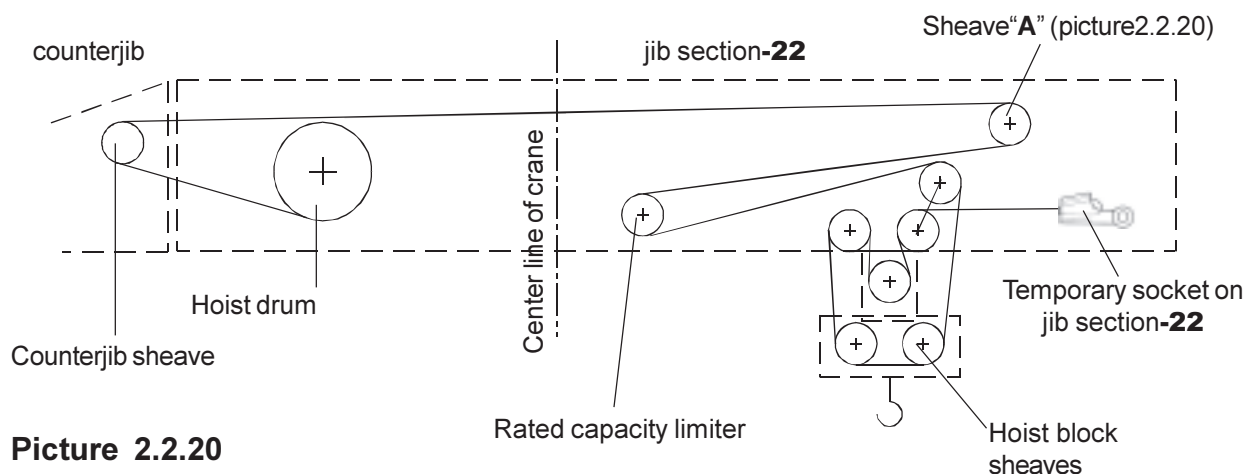
If the crane is equipped with 30 AFC 40 F11 hoist winch, jib section-**22** is delivered to the site with the rope coiled completely on its respective drum.

On mounting the proper counterjib to jib section-**22** (picture 2.2.22) carry out the trolley rope path as shown in pictures 2.2.20 or 2.2.21.

For the counterjib assembly refer to para. 2.3.

Standard Rope Path (II/IV) (auxiliary hoist block in place)

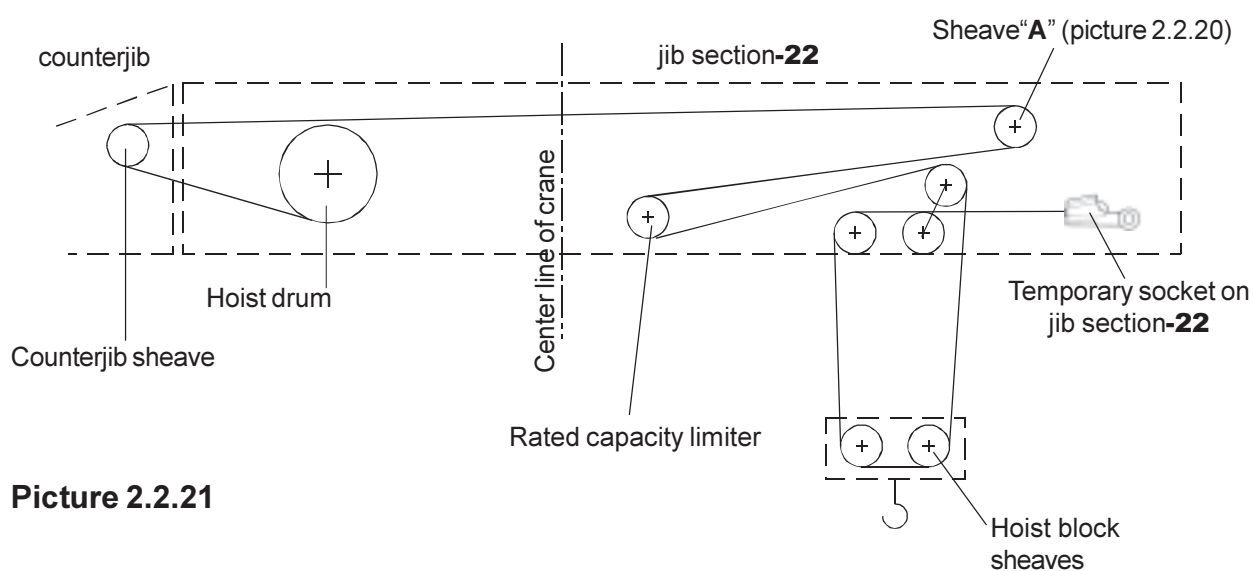
Scheme for 30 AFC 40 F11 hoist winch



Picture 2.2.20

Special Rope Path (II) (auxilliary hoist block on the ground)

Scheme for 30 AFC 40 F11 hoist winch



Picture 2.2.21



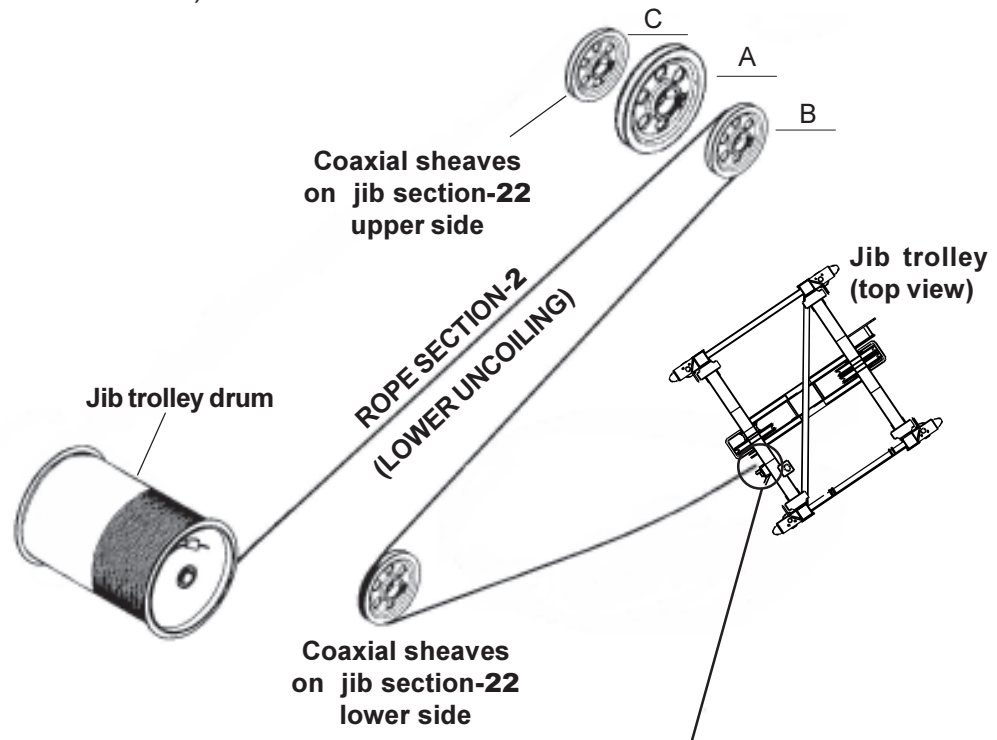
Picture 2.2.22

c) Carry out the trolley rope path as shown in picture 2.2.20 below:

The trolley winch is equipped with two rope sections (see table 2.2.1).

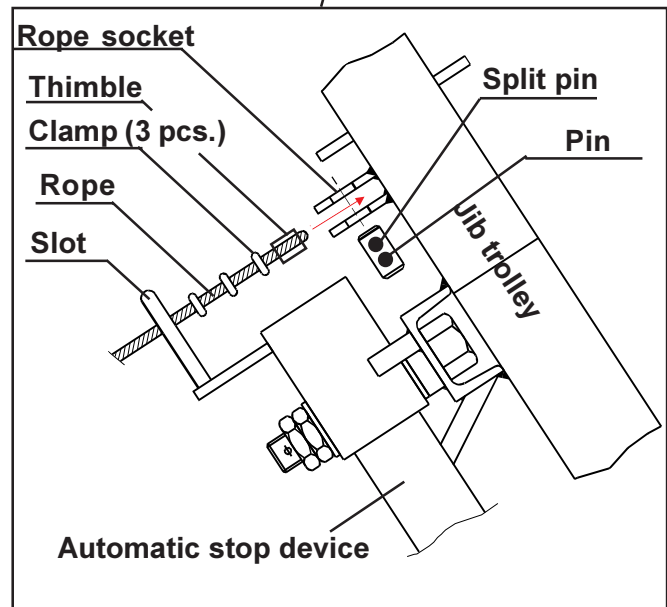
The longer rope section (section-1) shall be preassembled on the rest of the jib (see para. 2.4.5); the shorter rope section (section-2 measuring 74 m / 243 ft) shall be preassembled on jib section-22 (picture 2.2.23) and secured to the socket fitting on the trolley (picture 2.2.24).

Picture 2.2.23



Trolley Rope Length					
CTT 181/A					
Jib		Section-1		Section-2	
[m]	[feet]	[m]	[feet]	[m]	[feet]
35	115	80	262	79	259
40	131	90	295	79	259
45	148	100	328	79	259
50	164	110	361	79	259
55	180	120	394	79	259
60	197	130	427	79	259
65	213	140	459	79	259

Table 2.2.1



Picture 2.2.24

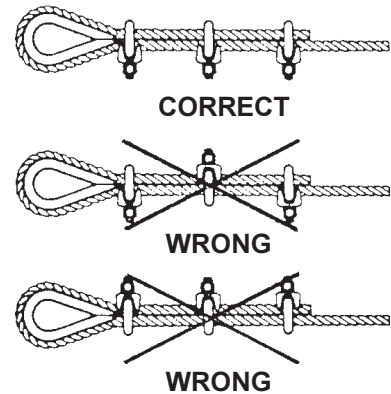


Guide the rope through the slot of the automatic stop device placing three clamps between the slot and the socket fitting (picture 2.2.24) .

Automatic stop device

The trolley is equipped with an automatic stop device capable of stopping it against the lower diagonals of the jib in the event of the trolley drive rope breakage (picture 2.2.24).

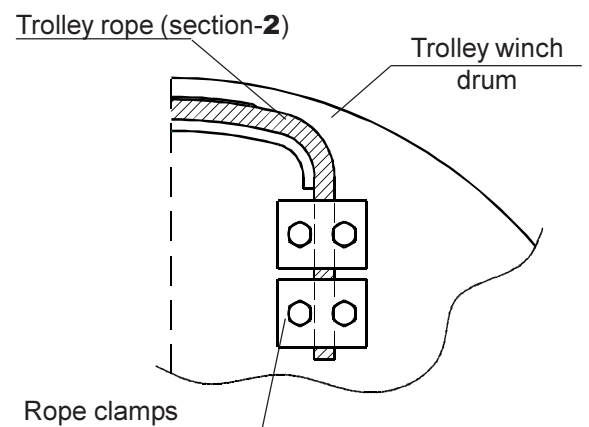
For the correct tightening of the clamps on the rope, refer to picture 2.2.25.



Picture 2.2.25

Securing rope section-2 on the trolley winch drum

Secure dead ending section-2 (trolley rope) to the socket fitting on the trolley winch drum (picture 2.2.26) and tighten the 2 + 2 bolts M6 (88 grade) with 15 Nm (11 lbs.ft) torque.



Picture 2.2.26

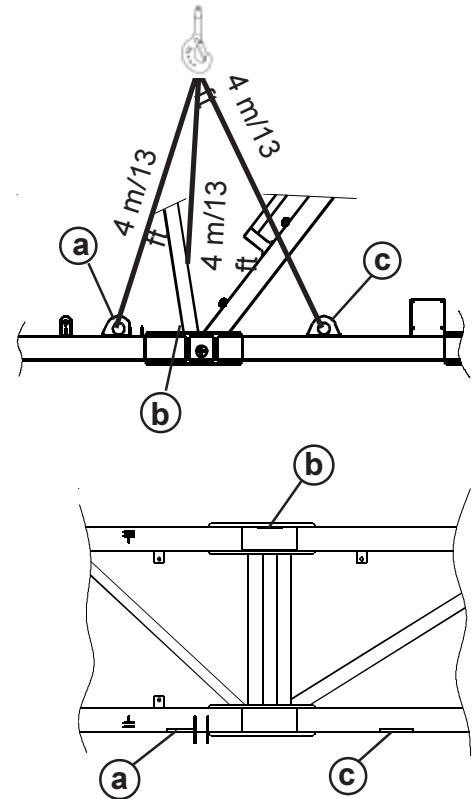
2.2.2 Overhead assembly of jib section-22

- 1) Lift jib section-**22** (picture 2.2.27) by three 4 m (13 ft)-straps through the special eyebolts (a), (b) and (c) (picture 2.2.28), thus allowing the hoist blocks to move to the vertical position.
- 2) Place again S25×95 pin in housing (Z) securing it with the proper split pin, thus locking the hoist block support in the working position (picture 2.2.14).
- 3) Move supports "R" (picture 2.2.3) in horizontal position and secure them with C 25×165 pins .

WEIGHT OF THE UNIT
6800 kg (max.)
 (14,994 lbs)

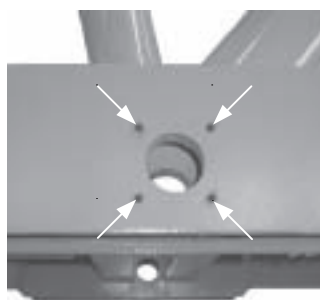


Picture 2.2.27



Picture 2.2.28

- 4) Place jib section-**22** on the cab mast section and secure it with "PS" 70×270 pins , 40×10 pin lock plates and TEIF M12×25 bolts .
- 5) Screw TEIF M12×60 bolts (picture 2.2.29) down to the four connections of the cab mast section, thus preventing it from moving along "PS" 70×270 pins ; then secure them with nuts.

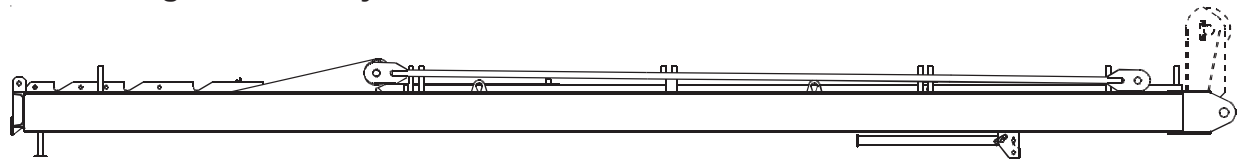


Picture 2.2.29

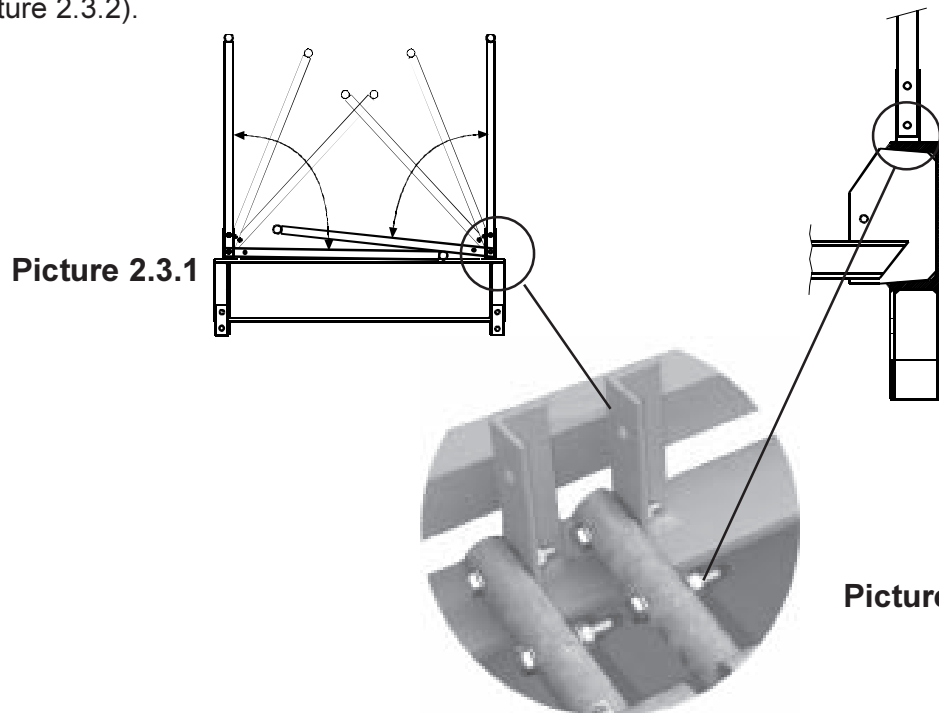
- 6) Place the cab platform ladder extension.
- 7) On connecting the trolley traversing winch, visually inspect the rotation of the cooling fan for proper direction referring to that indicated by the arrow on the motor.

2.3 COUNTERJIB ASSEMBLY

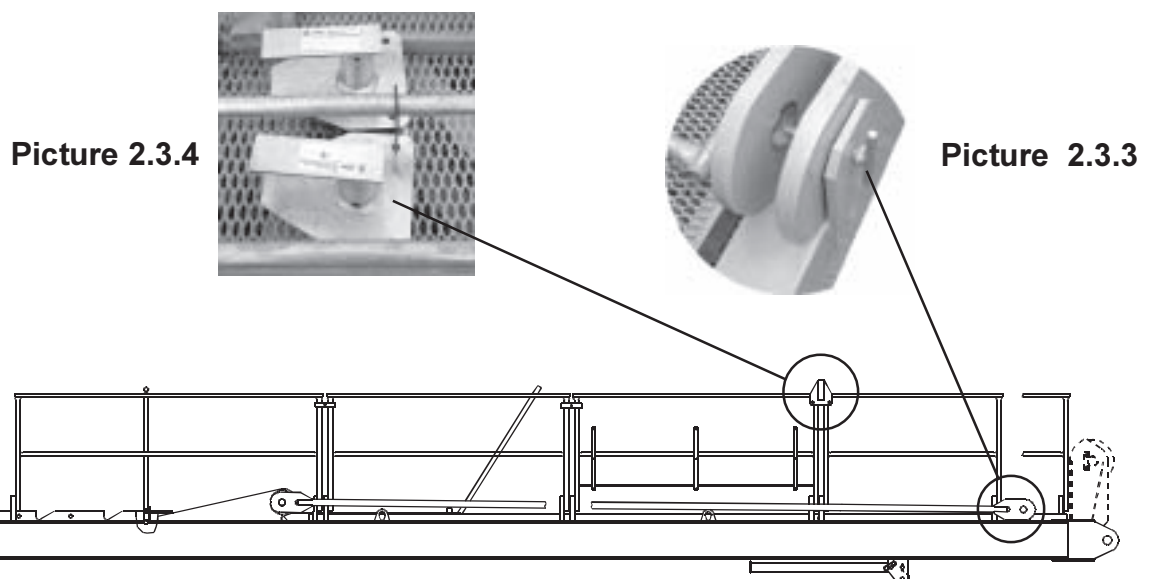
2.3.1 Assembling the counterjib and the ballast basket



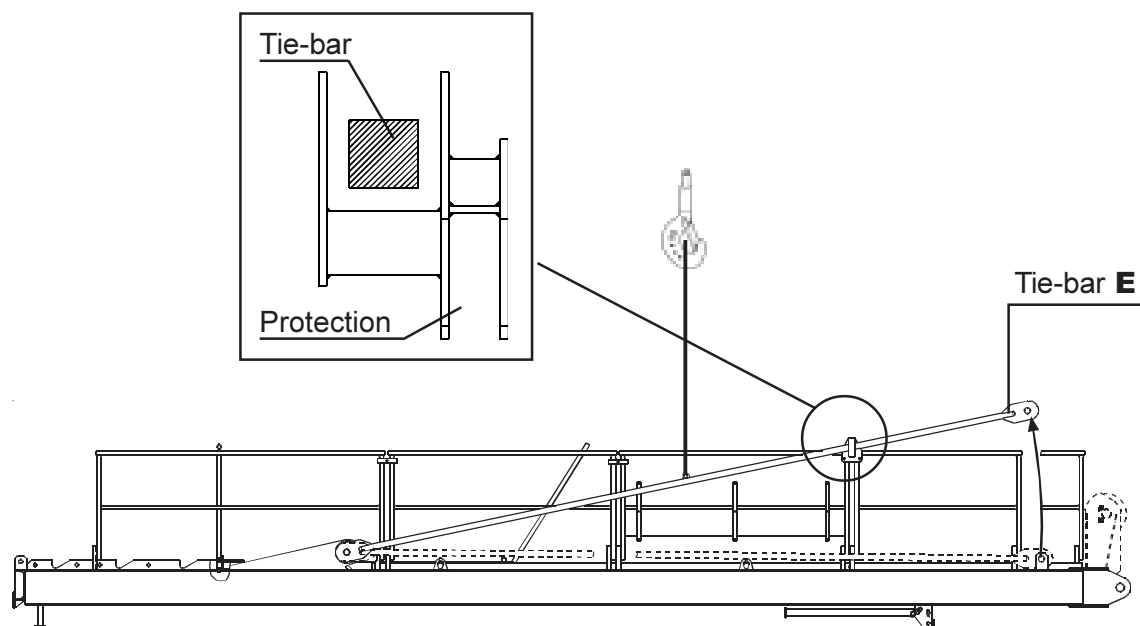
- 1) Turn the counterjib railings (picture 2.3.1) to vertical position and secure them with M10×60 bolts (picture 2.3.2).



- 2) Remove the bolts holding the tie-bars in position during transport (picture 2.3.3).
- 3) Place the tie-bar supports (picture 2.3.4) on the handrails and secure them with M10×65 bolts .

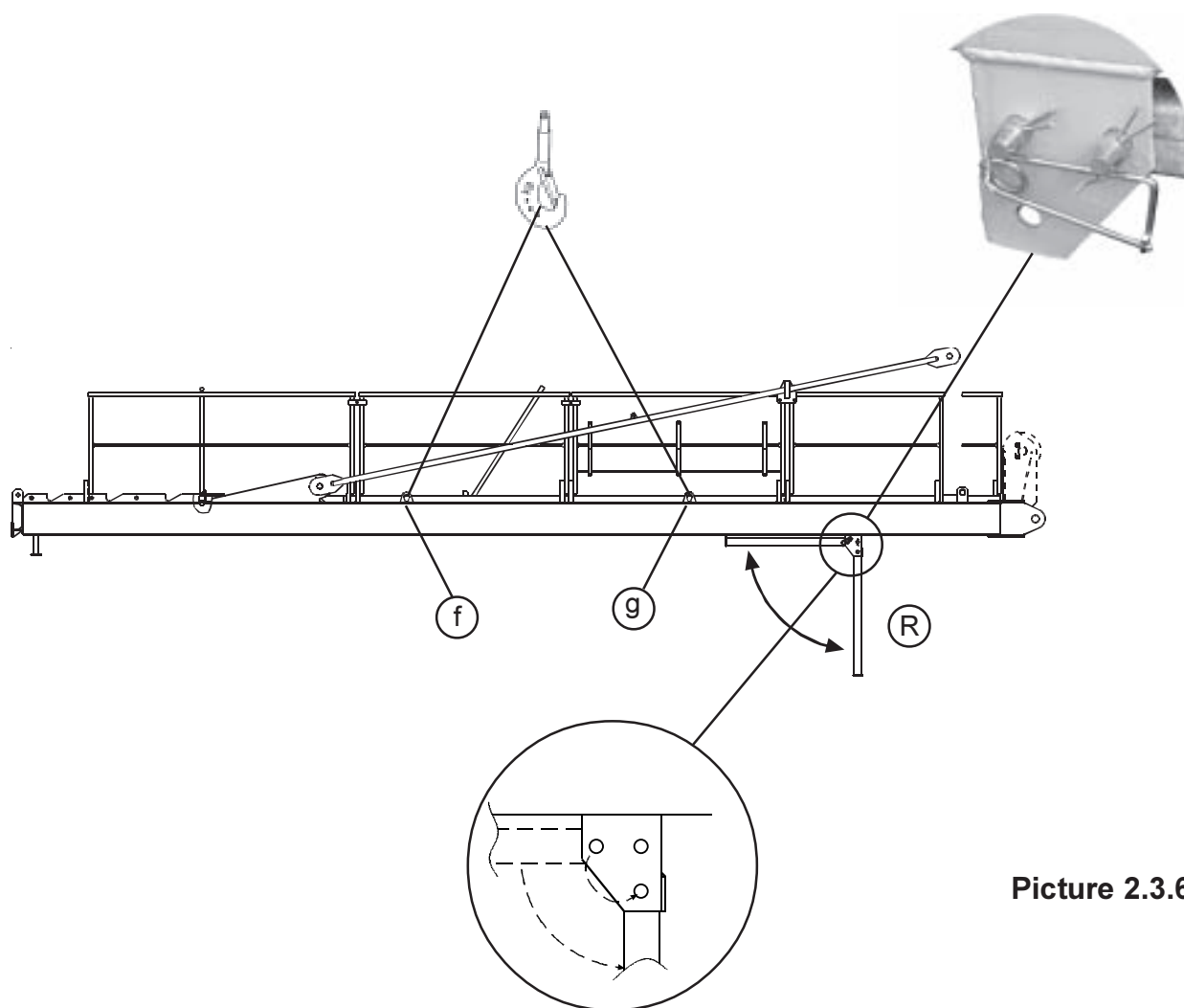


4) Sling tie-bars **E** and lift them until they engage their supports (picture 2.3.5)



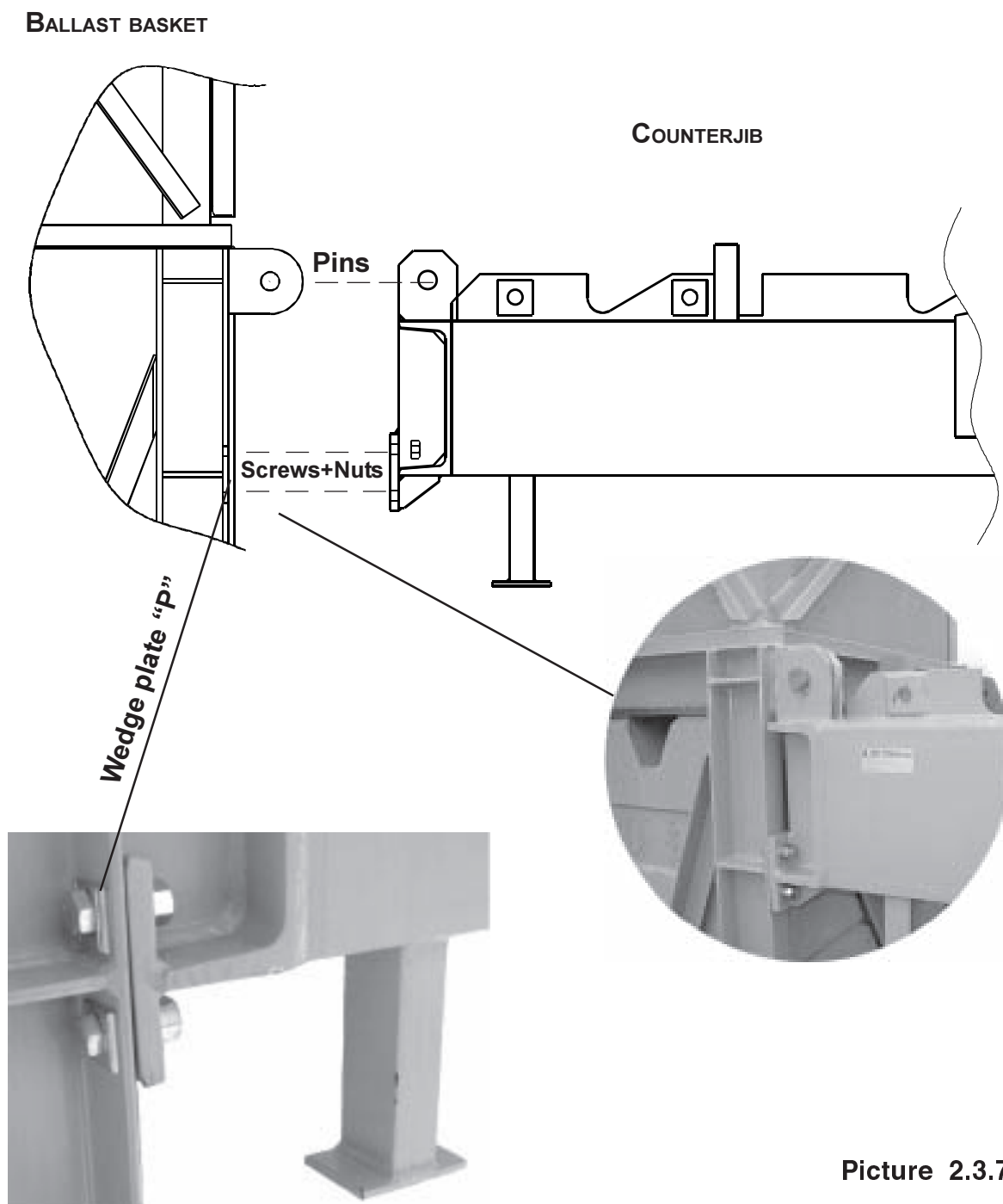
Picture 2.3.5

5) Sling the counterjib through the special eyebolts (f) and (g) (picture 2.3.6) and lift it, thus allowing supports "R" to move to the vertical position; secure them with C25×110 pin



Picture 2.3.6

- 6) Move the counterjib near the ballast basket and connect them with T30×55 pins and M16×50 bolts, placing wedge plates "P" between the screw head and the ballast basket stanchion (picture 2.3.7).



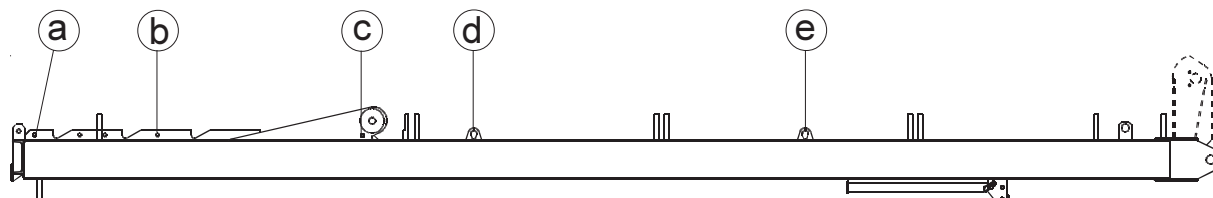
Picture 2.3.7

2.3.2 Slings the counterjib and the ballast basket

Lift the counterjib and the ballast basket with the right quantity of counterweights-**B** necessary for the jib configuration installed in place (see **Chapter 3B "Counterweights"** of the crane operation manual).

The slinging points vary according to the quantity of counterweights-**B** in place (see following schemes and table 2.3.1).

COUNTERWEIGHT	WEIGHT	
	[t]	[lbs]
B	0.8	1764

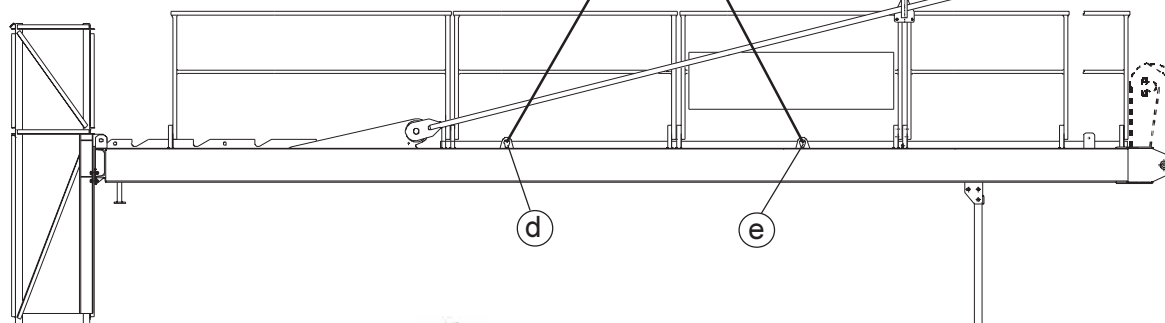


COUNTERJIB SLINGING	
SLINGING POINTS	QUANTITY OF COUNTERWEIGHTS- B IN THE BALLAST BASKET
d / e	no. 0
a / e	no. 1
b / d	no. 2
b / c	no. 3
a / c	no. 4

Table 2.3.1

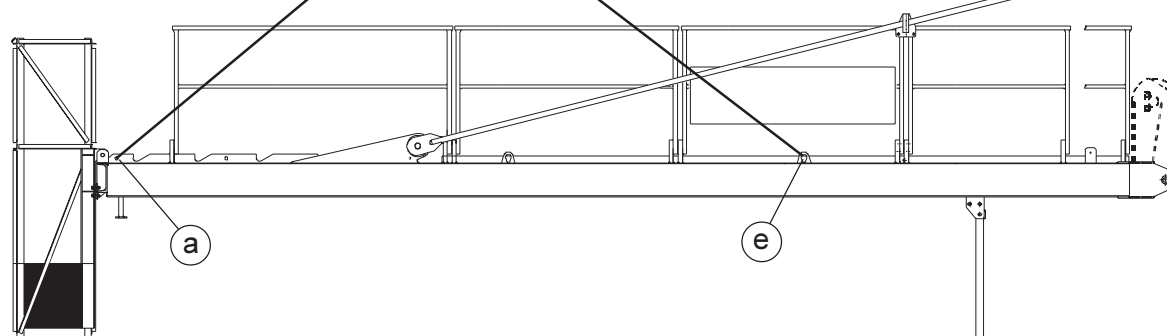
WEIGHT OF THE UNIT
2500 kg (5,513 lbs) - STD
2540 kg (5,601 lbs) - F11

no. 0 counterweights-**B**
in the ballast basket



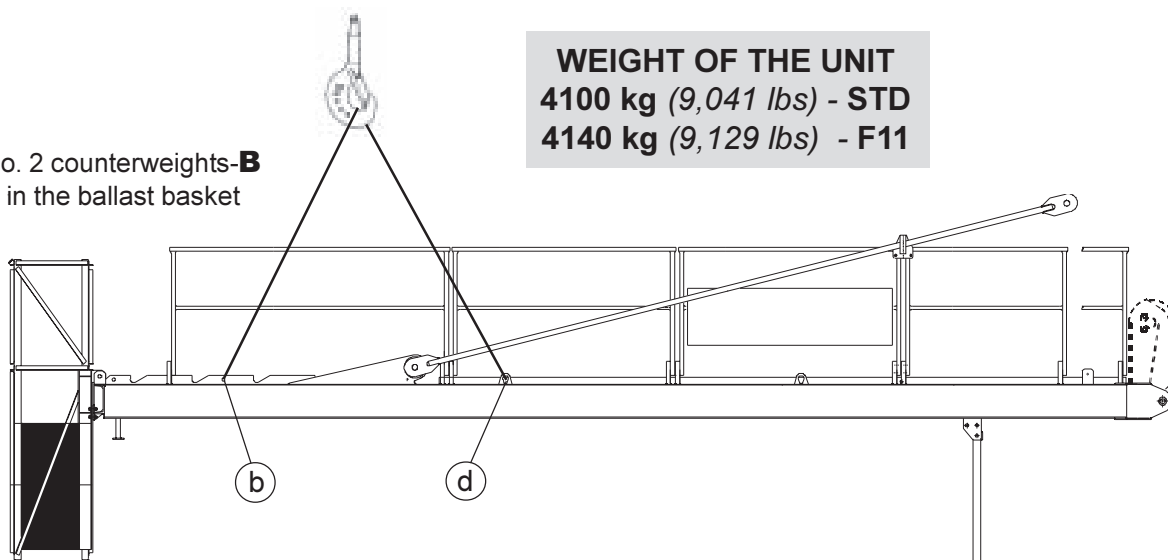
WEIGHT OF THE UNIT
3300 kg (7,277 lbs) - STD
3340 kg (7,365 lbs) - F11

no. 1 counterweights-**B**
in the ballast basket



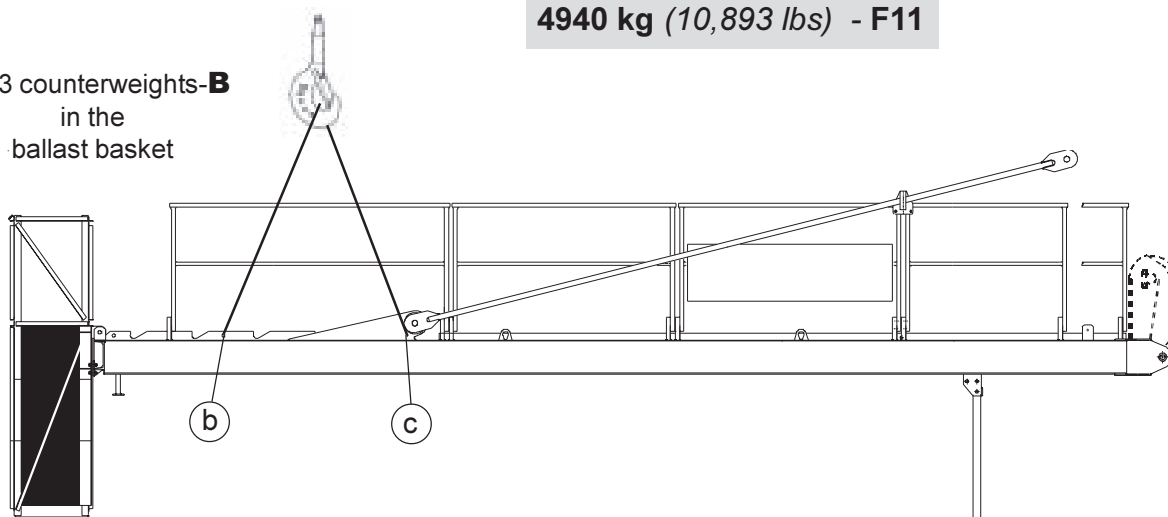
no. 2 counterweights-**B**
in the ballast basket

WEIGHT OF THE UNIT
4100 kg (9,041 lbs) - STD
4140 kg (9,129 lbs) - F11



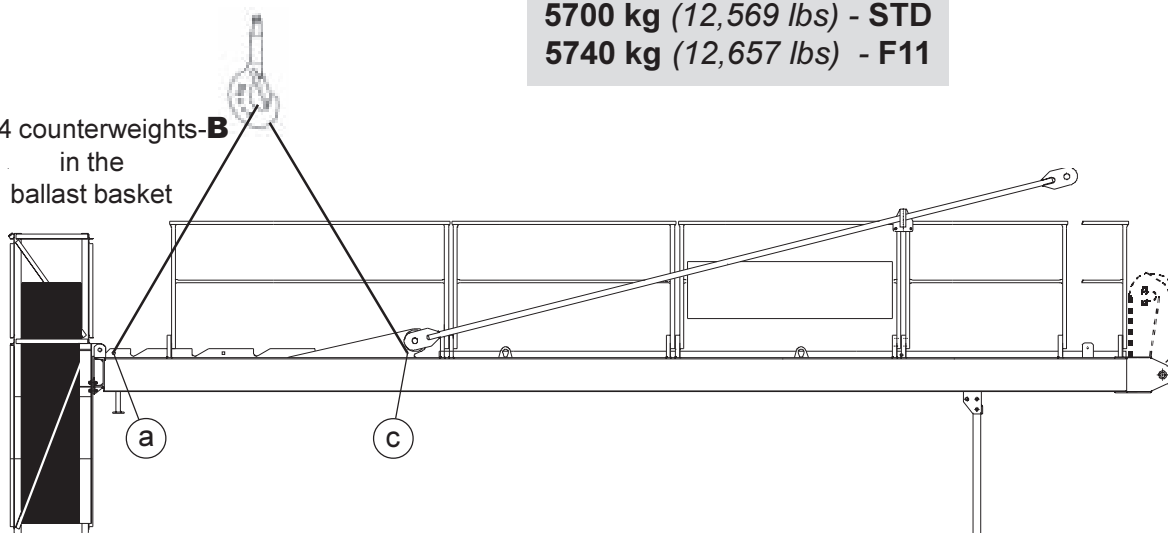
no. 3 counterweights-**B**
in the ballast basket

WEIGHT OF THE UNIT
4900 kg (10,805 lbs) - STD
4940 kg (10,893 lbs) - F11



no. 4 counterweights-**B**
in the ballast basket

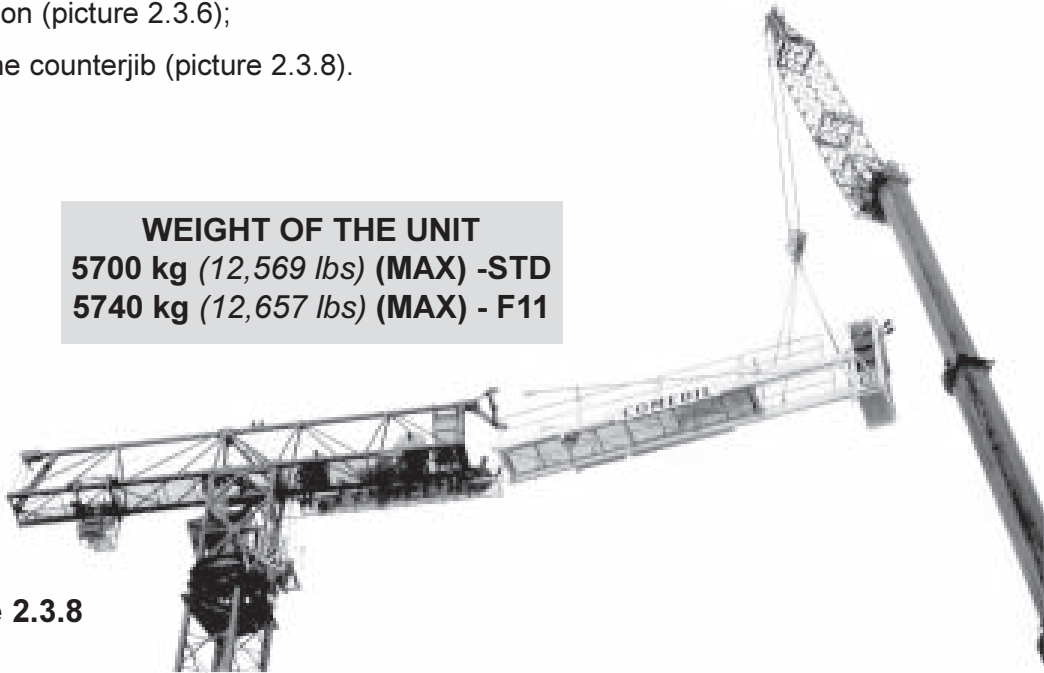
WEIGHT OF THE UNIT
5700 kg (12,569 lbs) - STD
5740 kg (12,657 lbs) - F11



2.3.3 Overhead assembly of the counterjib

- 1) Lift the counterjib a little bit off the ground, thus allowing supports “R” to move to horizontal position (picture 2.3.6);
- 2) Lift the counterjib (picture 2.3.8).

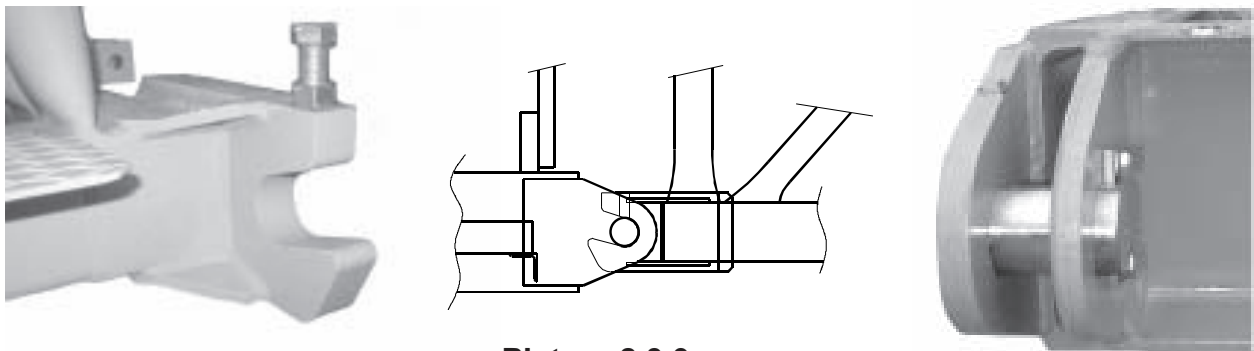
WEIGHT OF THE UNIT
5700 kg (12,569 lbs) (MAX) -STD
5740 kg (12,657 lbs) (MAX) - F11



Picture 2.3.8

- 3) Make it engage the proper housing (picture 2.3.9) until counterjib tie-bars **E** (picture 2.3.5) line up with the A-tie-bar **B** on jib section-**22** (picture 2.2.4).

Lift the back side of the counterjib with tie-bars **E** by mobile crane until its holes are in axis with those of A-tie-bar **B**.



Picture 2.3.9

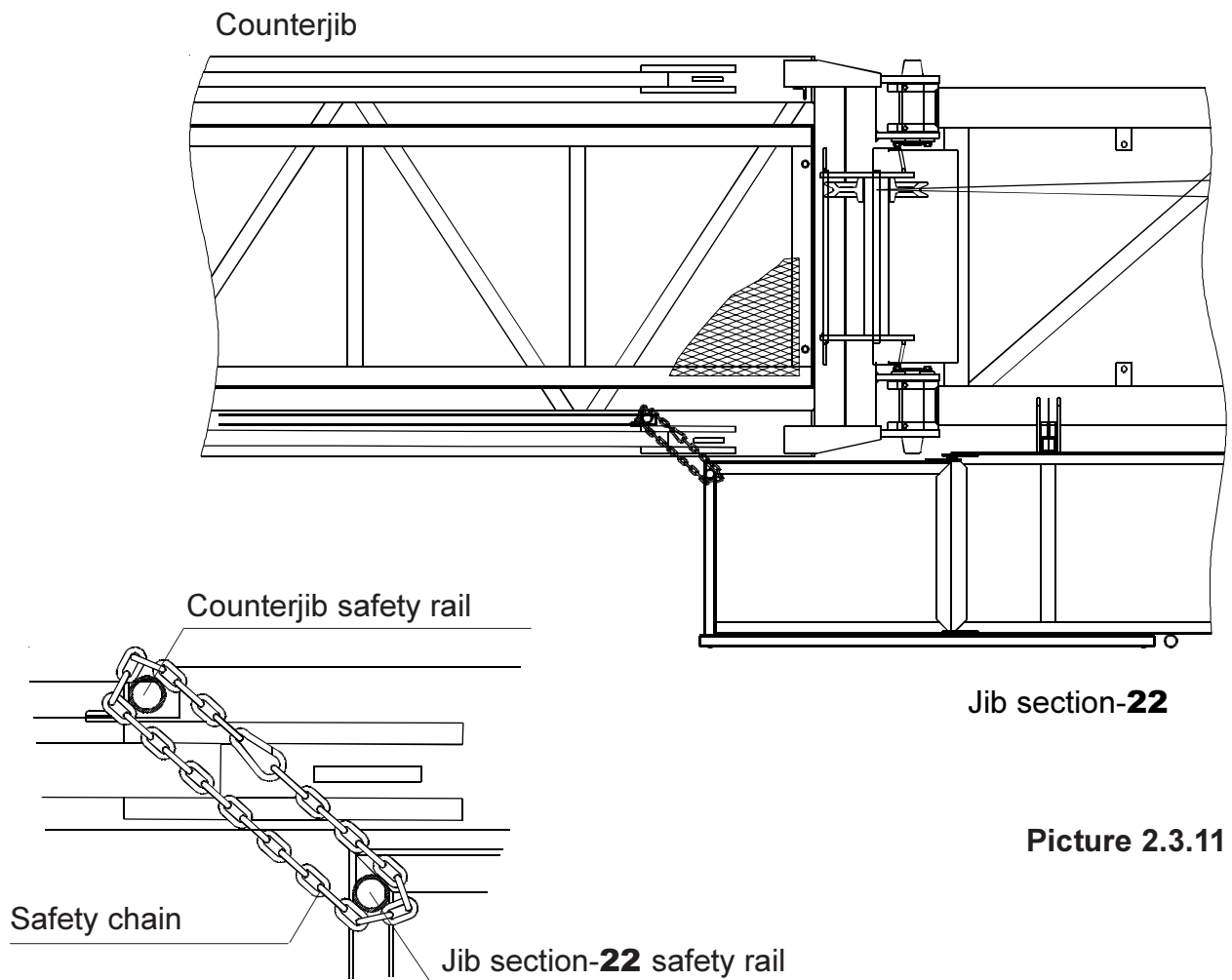
- 4) Connect the tie-bars with “CS” 50×110 pins and 8×100 split pins (picture 2.3.10).

Picture 2.3.10



- 5) Lower the counterjib and remove the ropes used for lifting.
- 6) Complete the connection of the counterjib to jib section-**22** tightening M22×100 screws and M22 nuts on the lower mounts of jib section-**22** (picture 2.3.9).

- 7) Mount the safety chain between jib section-**22** safety rail and counterjib safety rail connecting them with the two spring catches provided (picture 2.3.11).



Picture 2.3.11



- 8) If the crane is equipped with 30AFC40 F11 hoist winch carry out the hoist rope path Ø11 as described at para 2.2.16.

2.3.4 Positioning counterweight-A

Completed the operation indicated at para 2.3.3 position one 3.5 t (7718 lbs) counterweight-A on the counterjib as instructed in the following paragraphs.



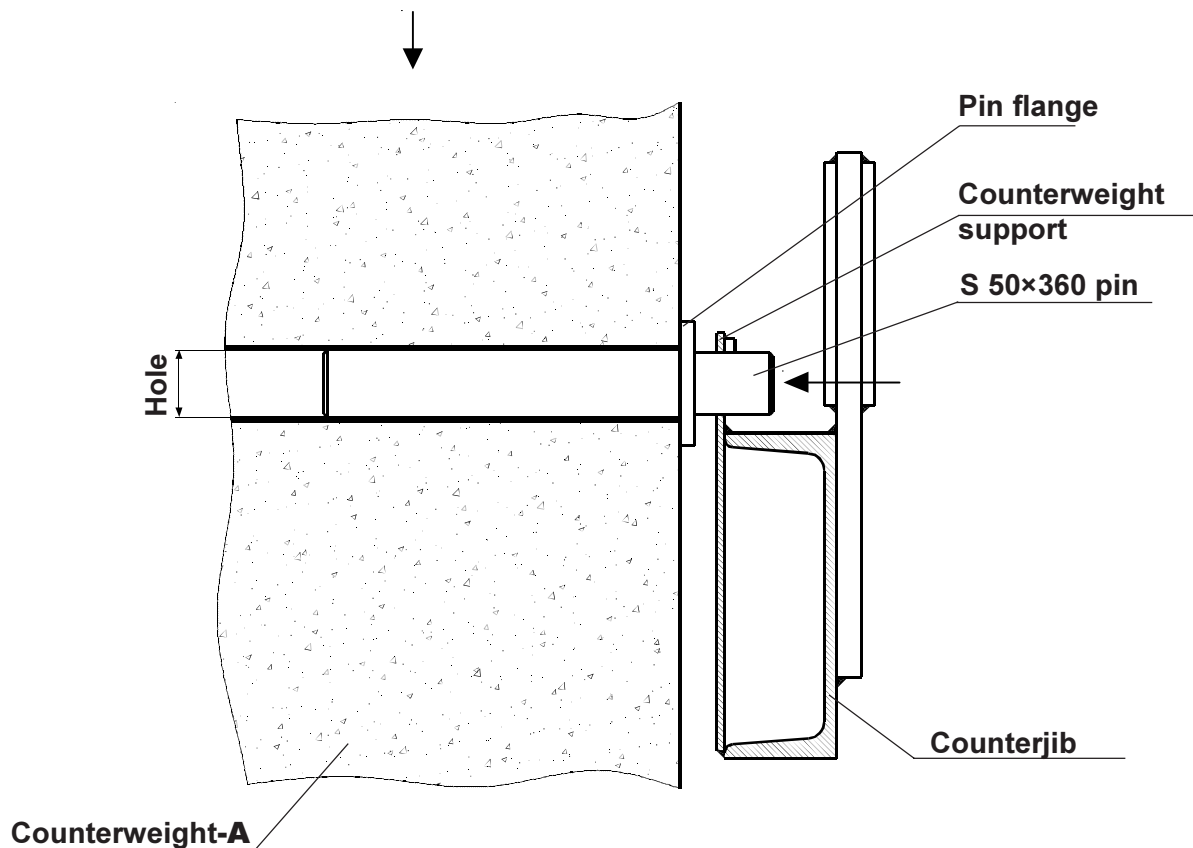
Prepare the space for the insertion of counterweight-A using the sliding platform along the footboard of the counterjib, draw back after each positioning of the correct space required for the operation.

The device allows the erector to work safely, without exposing himself in the space used for the counterweights.

Having positioned the counterweight, secure it to the counterjib with two S50×360 pins (picture 2.3.12).



The insertion of the fixing pins in the counterweight shall be carried out before the housing hole coincides with the support of the counterweight itself and the pin body flange shall be positioned between the counterweight and its support (picture 2.3.12).



Picture 2.3.12

2.4 GROUND ASSEMBLY OF THE JIB

2.4.1 General

The rest of the jib shall be preassembled on the ground and lifted by a single operation.

The different jib sections are equipped with an identification plate fixed on the upper longitudinal spar.

The jib section identification names and nameplate specifications are shown in table 2.4.1.

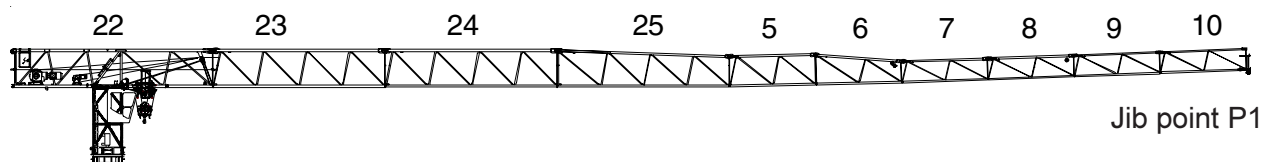
JIB SECTION	COMEDIL NAME	NAME PLATESPECIFICATIONS			
		code	name	weight	
JIB SECTION- 22	22 TT11 19.12	314516220	22 T.B.	3.6 t	7938 lbs
JIB SECTION- 23	23 TT11 19.10	314616230	23 T.B.	2.1 t	4631 lbs
JIB SECTION- 24	24 TT11 19.10	314616240	24 T.B.	1.6 t	3528 lbs
JIB SECTION- 25	25 TT11 16.10	314616250	25 T.B.	1.3 t	2867 lbs
JIB SECTION- 5	05 TT11 16.05	314616050	5 T.B.	0.5 t	1103 lbs
JIB SECTION- 6	06 TT11 16.05	314616060-1	6 T.B.	0.5 t	1103 lbs
JIB SECTION- 7	07 TT11 11.05	314616070	7 T.B.	0.5 t	1103 lbs
JIB SECTION- 8	08 TT11 11.05	314616080	8 T.B.	0.4 t	882 lbs
JIB SECTION- 9	09 TT11 11.05	314616090	9 T.B.	0.3 t	662 lbs
JIB SECTION- 10	10 TT11 11.05	314616100	10 T.B.	0.25 t	551 lbs
JIB POINT	CTT181-161-141-121-101	314916020	P1	0.05 t	110 lbs

Table 2.4.1

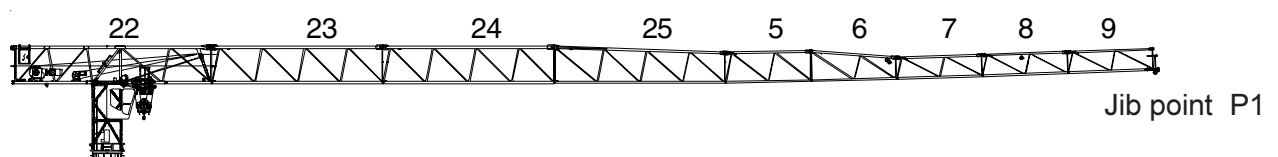
2.4.2 Jib configurations

The following pictures show the different jib configurations allowed:

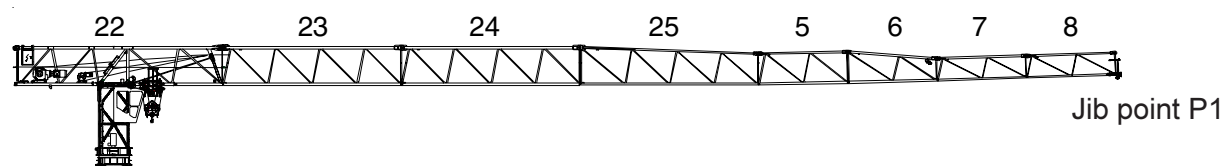
65 m (213 ft) jib



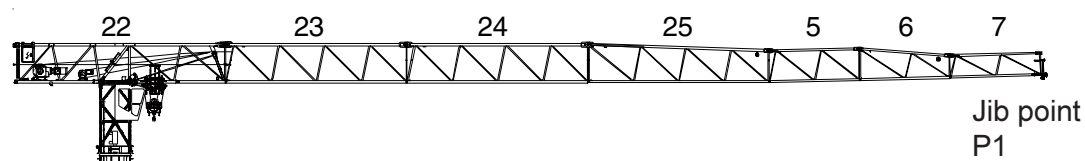
60 m (197 ft) jib



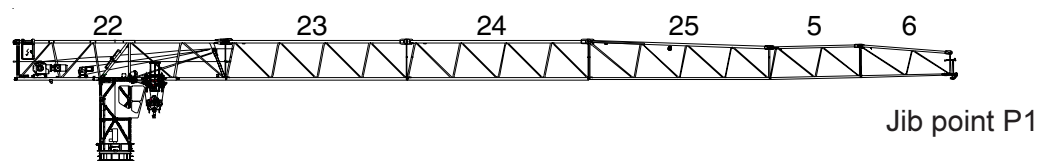
55 m (180 ft) jib



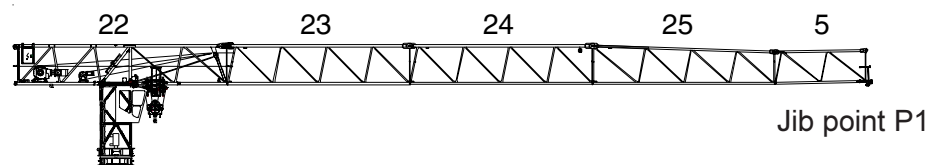
50 m (164 ft) jib



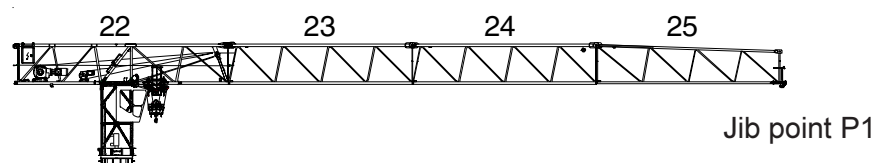
45 m (148 ft) jib



40 m (131 ft) jib



35 m (115 ft) jib



2.4.3 Assembling the jib

1) The lower longitudinal spars of the jib sections shall be connected with bolts as per table 2.4.2.



The correct tightening of the bolts is crucial.

Before reusing self-locking nuts, they should be inspected for good condition and replaced as necessary.

2) The upper longitudinal spars of the jib sections shall be connected, instead, with pins and special split pins (see table 2.4.2).

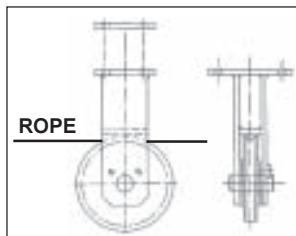
JIB SECTIONS CONNECTIONS	LOWER LONGITUDINAL SPARS					UPPER LONGITUDINAL SPARS	
	T.E.I.F. SCREW Grade 8.8	SELF-LOCKING NUT Grade 8	WASHER Grade 8	TORQUE WRENCH SETTING		"CS" PIN	SPLIT PIN
				[Nm]	[lbs-ft]		
22 - 23	M 20×80	M 20	M 20	440	325	100×305	13×120
23 - 24	M 20×80	M 20	M 20	440	325	90×245	13×120
24 - 25	M 20×80	M 20	M 20	440	325	85×230	13×110
25 - 5	M 20×80	M 20	M 20	440	325	70×185	13×110
5 - 6	M 20×80	M 20	M 20	440	325	60×180	10×90
6 - 7	M 20×80	M 20	M 20	440	325	60×180	10×90
7 - 8	M 20×80	M 20	M 20	440	325	60×180	10×70
8 - 9	M 20×80	M 20	M 20	440	325	50×165	10×70
9 - 10	M 20×80	M 20	M 20	440	325	45×140	10×70
10 - Jib point	M 20×80	M 20	M 20	440	325	-	-

Table 2.4.2

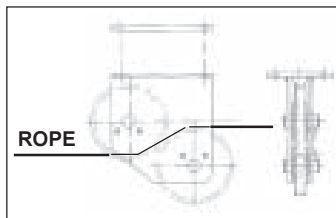
3) Secure the safety rope to the socket on jib section-**22** and to the jib point.
Tension it by the special tensioning tool.

4) Place sheaves "A", "B" and "C" holding the trolley ropes on the upper longitudinal spars of the jib sections in the positions shown in the schemes of para. 2.4.4.

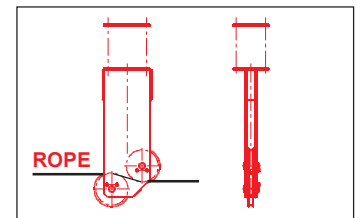
Trolley rope support sheave-A



Trolley rope support sheave-B



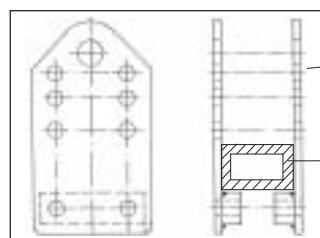
Trolley rope support sheave-C



Picture 2.4.2

5) Place the hoisting eyebolts (picture 2.4.3) on the upper longitudinal spars of the jib sections in the positions shown in the schemes of para. 2.4.4

Picture 2.4.3

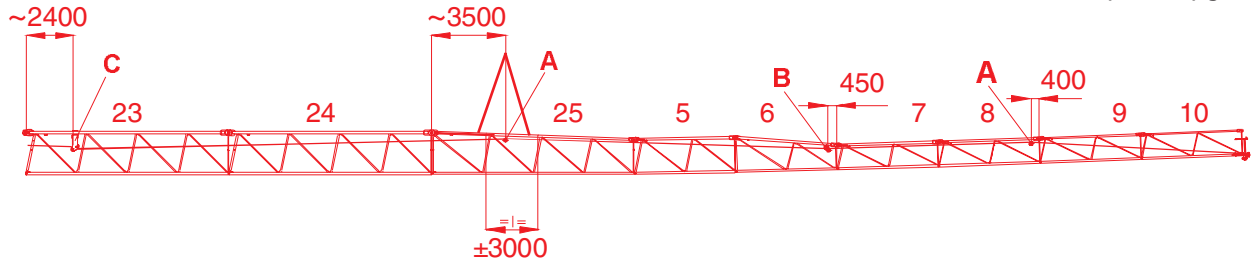


M16 threaded bar
M16 washer
M16 nut
Jib upper longitudinal spar

2.4.4 Jib weights and centers of gravity

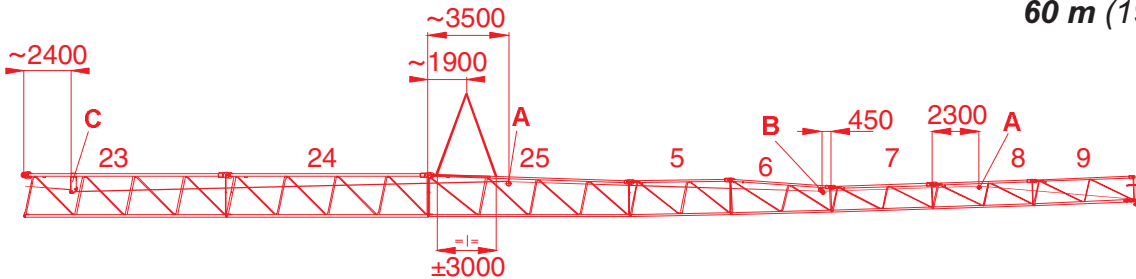
Sling the jib through the special hoisting eyebolts (picture 2.4.3) as shown in the following schemes:

65 m (213 ft) jib



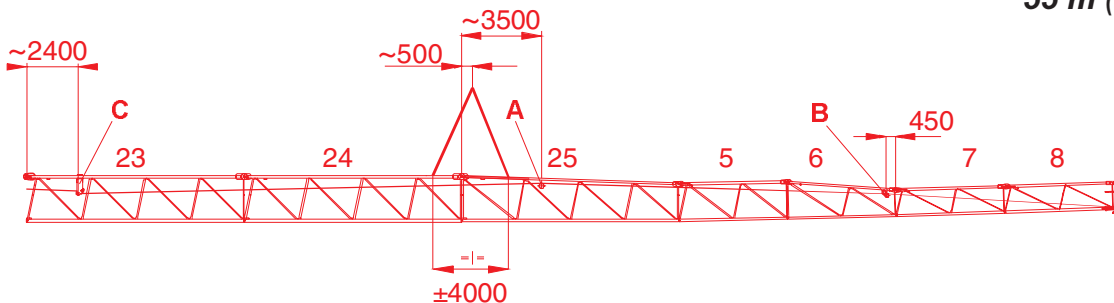
Weight ~ 7600 kg (16,758 lbs)

60 m (197 ft) jib



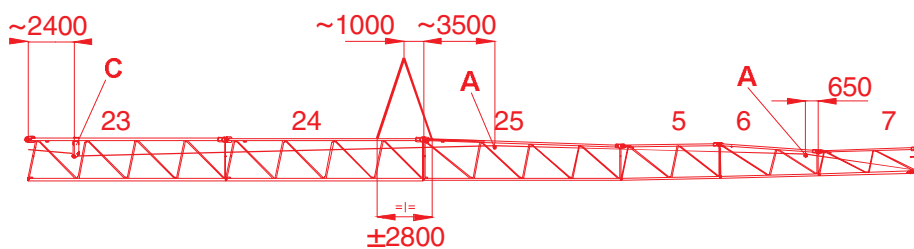
Weight ~ 7400 kg (16,317 lbs)

55 m (180 ft) jib

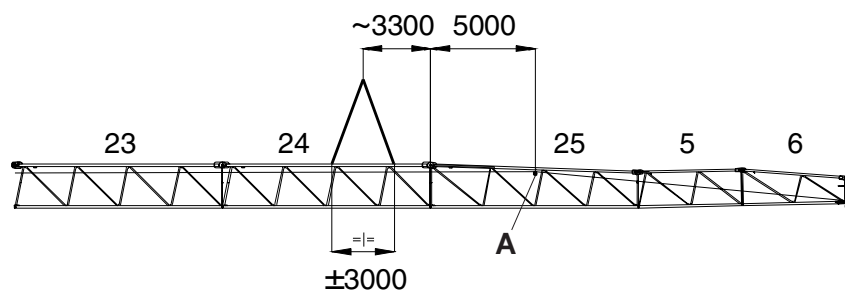


Weight ~ 7100 kg (15,656 lbs)

50 m (164 ft) jib

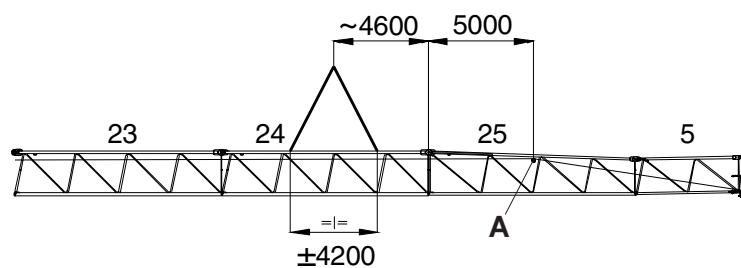


Weight ~ 6600 kg (14,553 lbs)



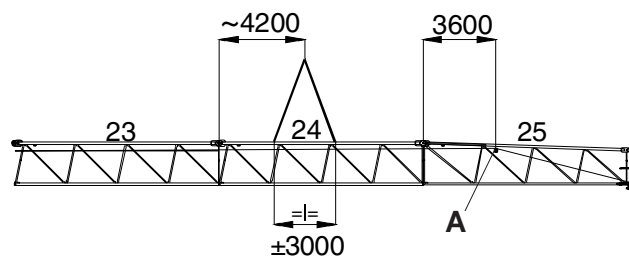
45 m (148 ft) jib

Weight ~ 6200 kg (13,671 lbs)



40 m (131 ft) jib

Weight ~ 5700 kg (12,569 lbs)



35 m (115 ft) jib

Weight ~ 5200 kg (11,466 lbs)

2.4.5 Assembling the trolley rope

Section-1 of the trolley rope (table 2.4.3) shall be preassembled on the jib on the ground.

Reeve rope section-1 and secure its dead ends to the special devices supplied (picture 2.4.4).

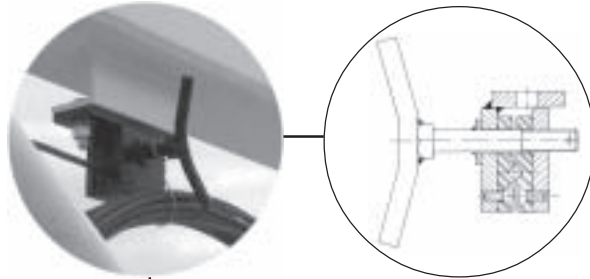
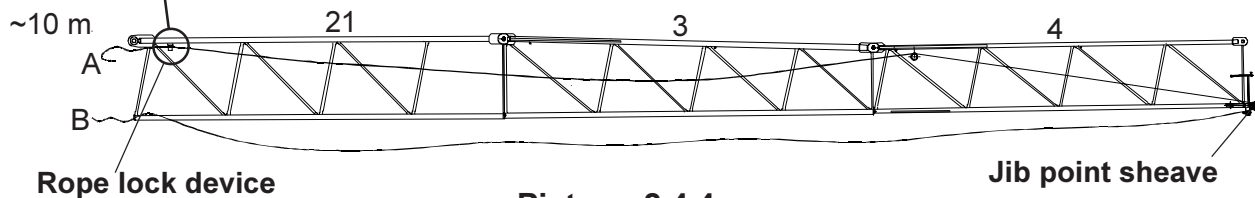


Table 2.4.3

Trolley Ropes Length			
CTT 181/A			
Jib length		Section-1	
[m]	[feet]	[m]	[feet]
35	115	80	262
40	131	90	295
45	148	100	328
50	164	110	361
55	180	120	394
60	197	130	427
65	213	140	459



Picture 2.4.4

When carrying out the upper uncoiling, have about 10 m (33 ft) dead ending rope-A left free for later coiling on the trolley drum.

Properly wind dead ending rope-A and -B free sections, securing them to the jib.

2.4.6 Assembling the load rating charts

Place the durable load rating charts supplied along the jib (operator's cab side - picture 2.4.5) observing the number and position specified at para. 2.4.6.1.

Secure the rating charts support brackets (picture 2.4.6), tightening the bolts at the rated torque.

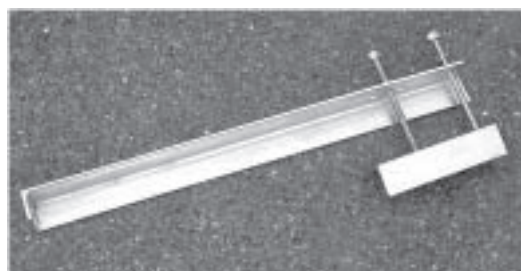
Adjust the position of the load rating charts through the special levers until it is perfectly visible to the operator while seated at the controls.

The size of the load charts allows to indicate only the rated loads for 4-part line and standard 2-part line (auxiliary hoist block in place), not those for special 2-part line (auxiliary hoist block not in place).

The values shown are, anyhow, in favour of safety



Picture 2.4.5



Picture 2.4.6

2.4.6.1 *Load rating charts configurations***65 m jib**

18.67	35	45	55	65	m
4000	3860	2840	2190	1750	kg
8000	3860	2840	2190	1750	kg

60 m jib

21.72	30	40	50	60	m
4000	4000	3960	3020	2400	kg
8000	5540	3960	3020	2400	kg

55 m jib

23.08	35	45	55	m
4000	4000	3710	2900	kg
8000	4980	3710	2900	kg

50 m jib

23.87	35	45	50	m
4000	4000	3860	3400	kg
8000	5180	3860	3400	kg

45 m jib

24.58	30	40	45	m
4000	4000	4000	4000	kg
8000	6390	4590	4000	kg

40 m jib

25.06	30	40	m
4000	4000	4000	kg
8000	6540	4700	kg

35 m jib

25.52	30	35	m
4000	4000	4000	kg
8000	6670	5600	kg

The following load charts are to be positioned on the jib when the crane is not provided with ICS (Integrated Control System). They apply for standard 2 or 4-part line crane (auxiliary hoist block in place).



On request, if the crane is to be used only with 2-part line and auxiliary hoist block not in place, Comedil can supply special load charts. Remember, though, that the supplied charts for use of the crane with standard 2 or 4-part line insure safety anyway.

**U.S. Customary Units****213 ft jib**

61	115	148	180	213	ft
8820	8511	6262	4829	3859	lbs
17640	8511	6262	4829	3859	lbs

197 ft jib

71	98	131	164	197	ft
8820	8820	8732	6659	5292	lbs
17640	12216	8732	6659	5292	lbs

180 ft jib

76	115	148	180	ft
8820	8820	8181	6395	lbs
17640	10981	8181	6395	lbs

164 ft jib

78	115	148	164	ft
8820	8820	8511	7497	lbs
17640	11422	8511	7497	lbs

148 ft jib

81	98	131	148	ft
8820	8820	8820	8820	lbs
17640	14090	10121	8820	lbs

131 ft jib

82	98	131	ft
8820	8820	8820	lbs
17640	14421	10364	lbs

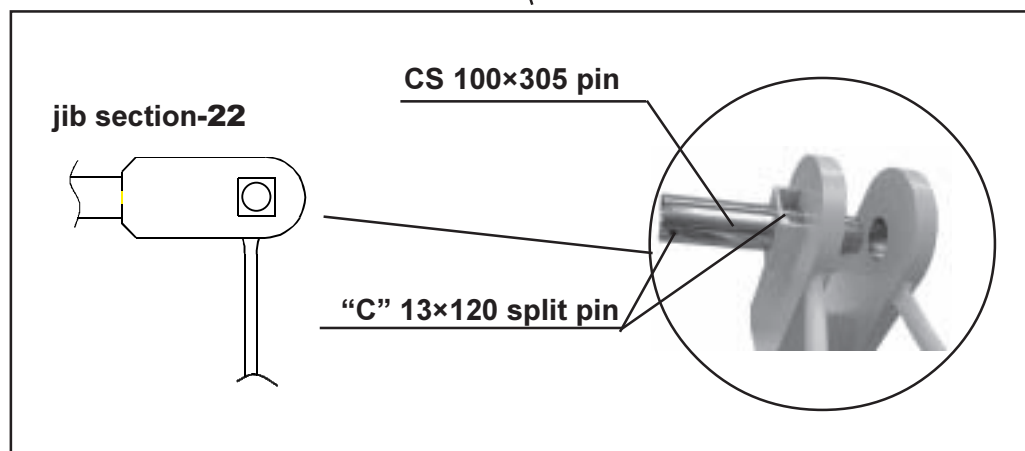
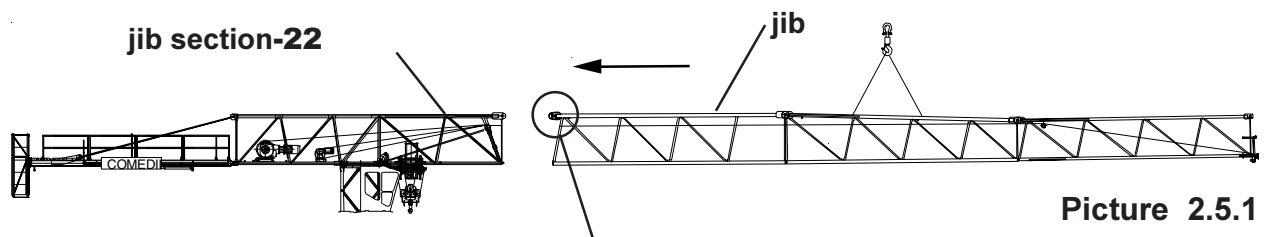
115 ft jib

84	98	115	ft
8820	8820	8820	lbs
17600	14707	12348	lbs

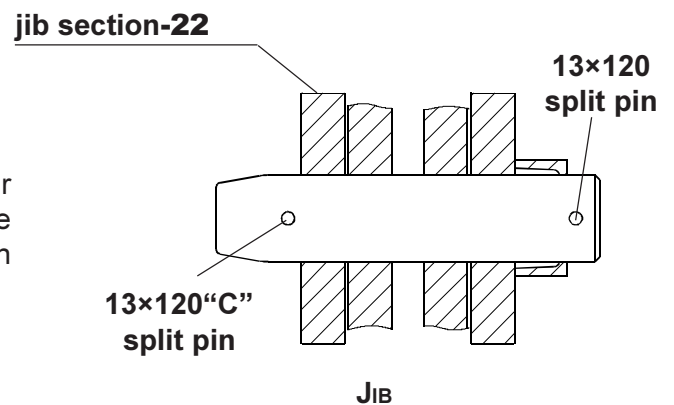
2.5 OVERHEAD ASSEMBLY OF THE JIB



Prior to installing the remaining jib sections (already assembled on the ground), make sure that pin CS 100×305 on the upper longitudinal spar of jib section-22 is off the joint but held in safe position by split pin “C” 13×120, thus allowing the proper connection of the units (picture 2.5.1).



Make the rest of the jib engage the proper housing, remove “C” 13×120 split pin and place CS 100×305 pin, securing it with the split pin previously removed (picture 2.5.2).



Connect the lower longitudinal spars of the jib with M20×80 bolts, washers and self-locking nuts.

2.6 COUNTERWEIGHTS ASSEMBLY



After the jib erection, place as many counterweights-**A** on the counterjib as required by the jib configuration used (see **Chapter 3B “Counterweights”** of the crane operation manual).

COUNTERWEIGHT	WEIGHT	
	[t]	[lbs]
A	3.5	7718



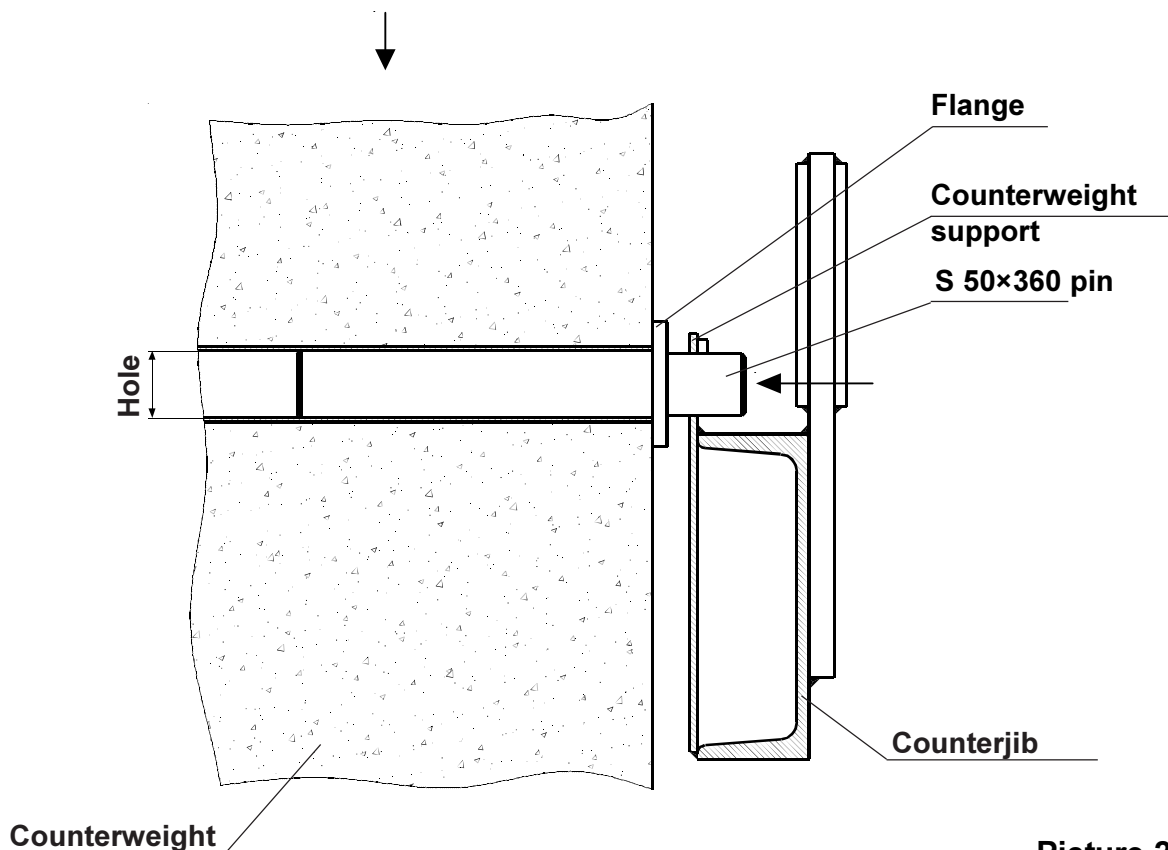
Prepare the space for the insertion of counterweight using the sliding platform along the footboard of the counterjib, draw back after each positioning of the correct space required for the operation.

The device allows the erector to work safely, without exposing himself in the space used for the counterweights.

Having positioned the counterweight, secure it to the counterjib with two S50×360 pins (picture 2.6.1).



The insertion of the fixing pins in the counterweight shall be carried out before the housing hole coincides with the support of the counterweight itself and the pin body flange shall be positioned between the counterweight and its support (picture 2.6.1).

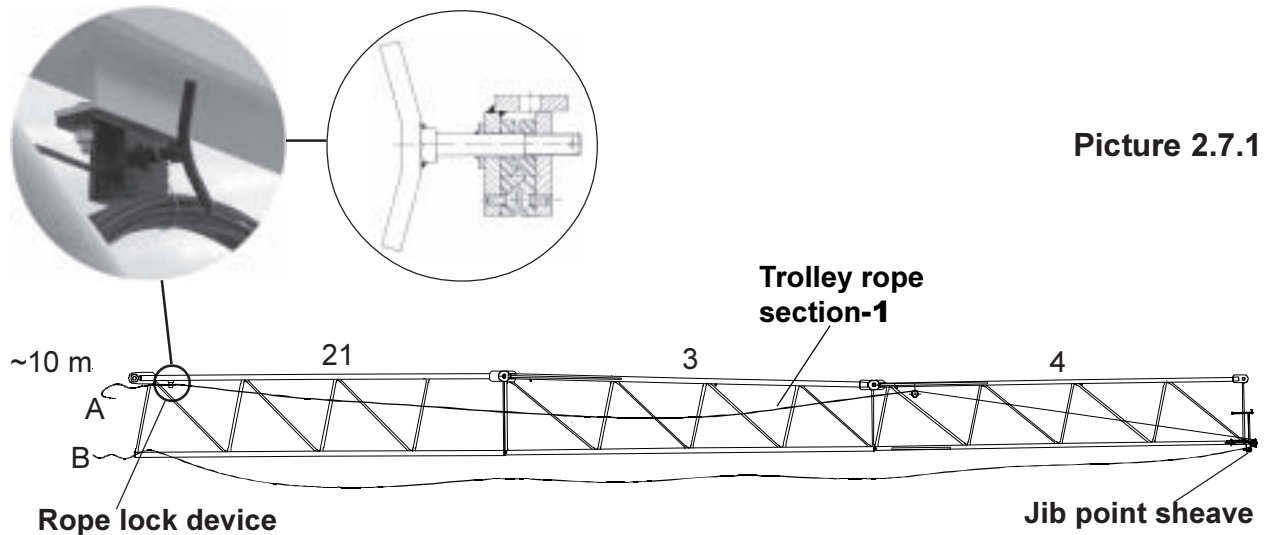


Picture 2.6.1

2.7 FINAL ROPES REEVING

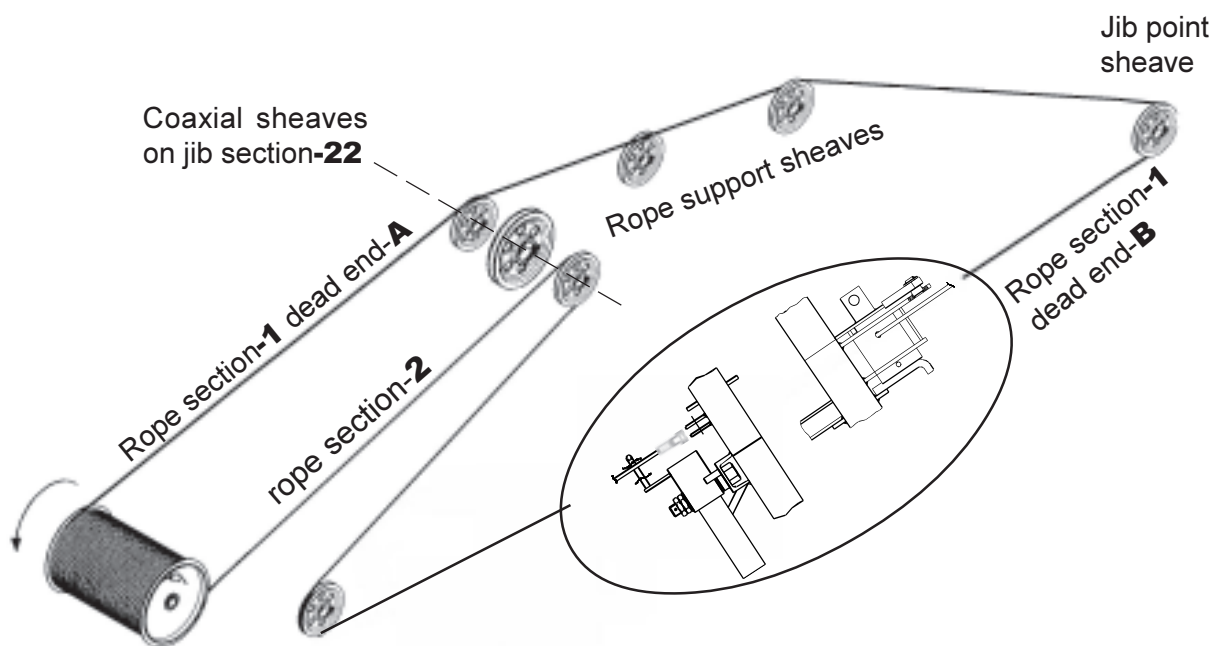
2.7.1 Trolley rope path

Connect trolley rope section-**1**, already preassembled on the jib (picture 2.7.1), to the trolley drum and to the jib trolley as indicated below:



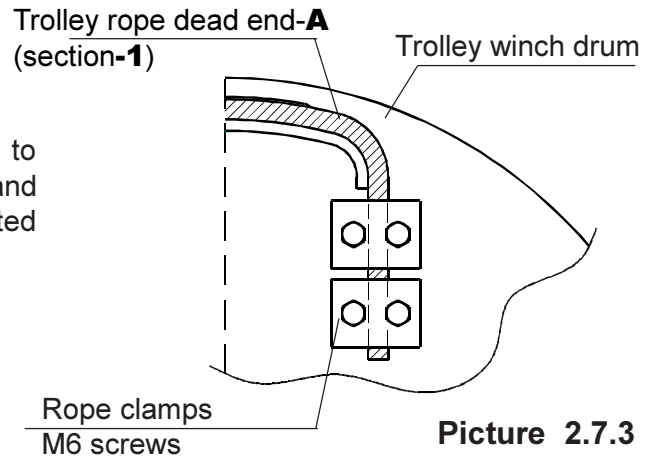
Picture 2.7.1

a) take the rope dead end-**A** of trolley rope section-**1** to the trolley winch drum (picture 2.7.2).



Picture 2.7.2

Secure dead end-**A** of trolley rope section-**1** to the trolley drum as shown in picture 2.7.3 and tighten the 2 + 2 screws M6 (grade 88) at rated torque 15 Nm (11 lbs.ft).

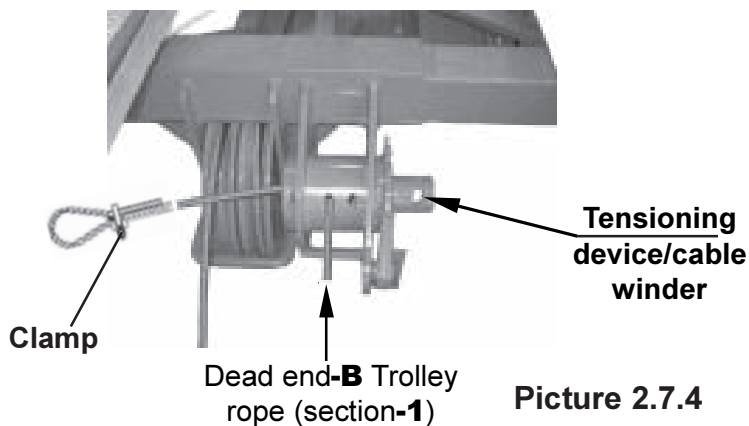


Picture 2.7.3

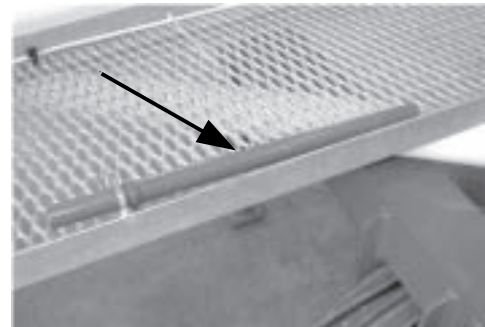
Release the rope lock device securing free rope section-**A** to the jib.

- b) Take the rope dead end-**B** of trolley rope section-**1** to the trolley and secure it to the special tensioning device supplied reeving it through the special hole and locking it with a clamp (picture 2.7.2 and 2.7.4).

Recover the trolley rope operating the special tensioning device (picture 2.7.4) by the special lever supplied (picture 2.7.5).



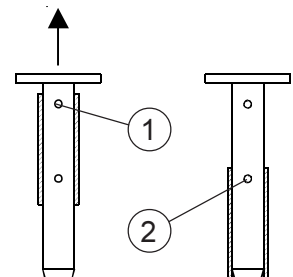
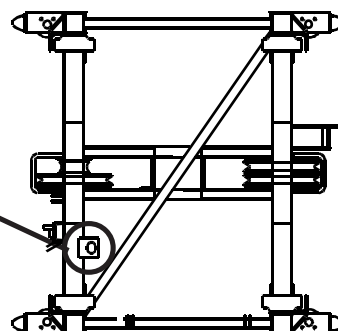
Picture 2.7.4



Picture 2.7.5

Release the rope lock device securing free rope section-**B** to the jib.

Remove the split pin of S30×185 pin from position (1); remove the pin and secure it again with the split pin in position (2) (picture 2.7.6).

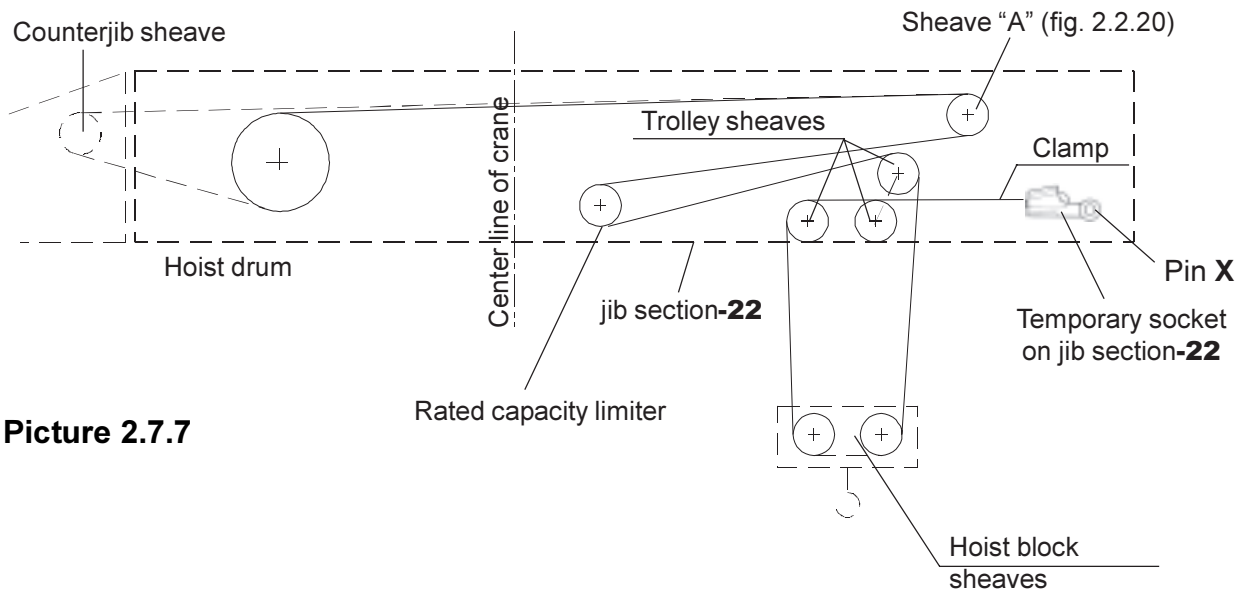


Picture 2.7.6

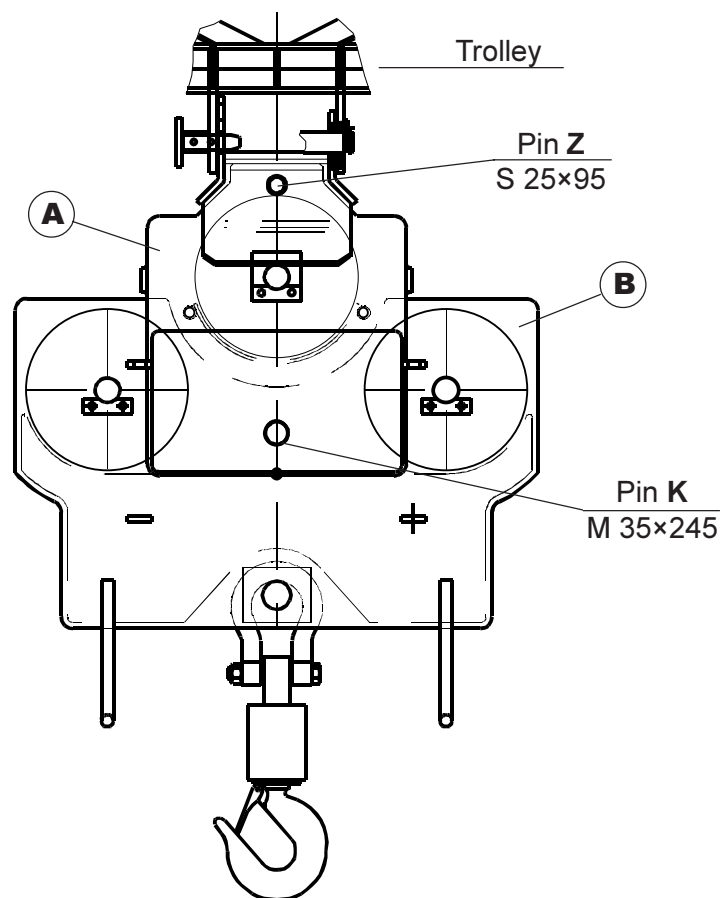
2.7.2 Hoisting rope path



Prior to removing pin-**X** temporarily securing hoist rope wedge socket on jib section-**22** (picture 2.7.7), visually inspect pin M35×245 (**K**), connecting hoist blocks (**A**) and (**B**), and pin S25×95 (**Z**), connecting hoist blocks (**A**) and (**B**) to the trolley, for proper installation, thus preventing the assembly from accidental dropping (picture 2.7.8).



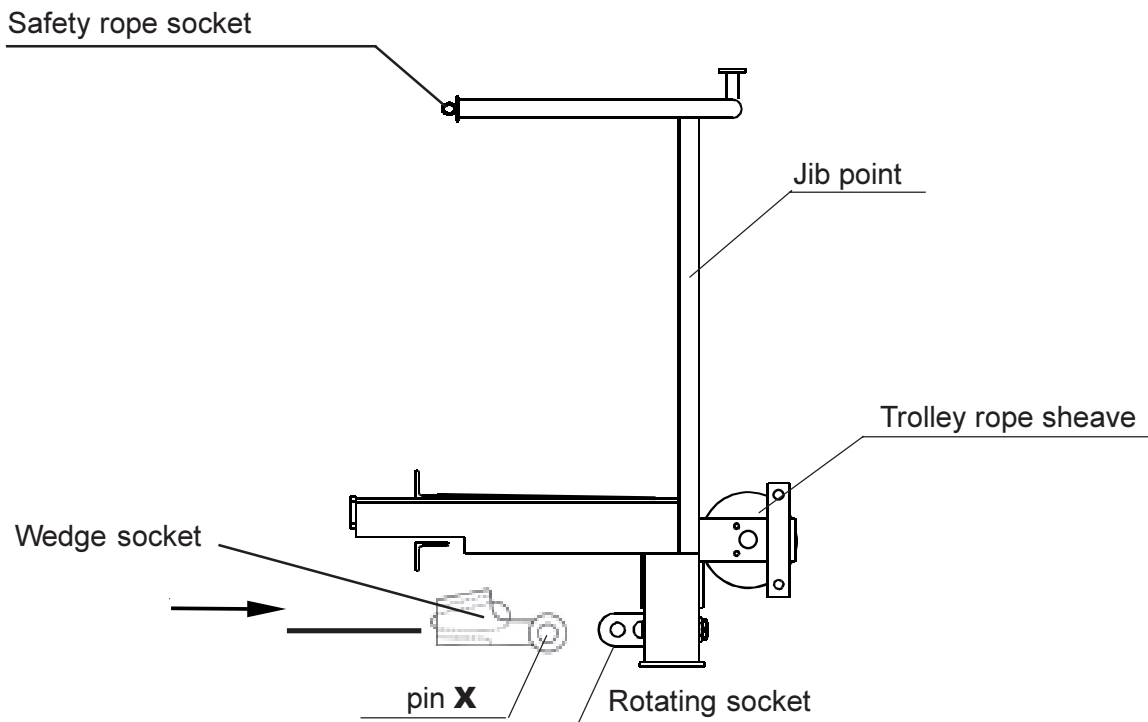
Picture 2.7.7



Picture 2.7.8



Trolley out to jib point and, while spooling off the rope from the hoist winch, take the wedge socket to jib point and secure it to the rotating socket in place with pin-**X** (picture 2.7.9).



Picture 2.7.9

On placing pin-**X** on the rotating socket on jib point, operate "*load lifting*" and slightly tension the hoisting rope until pin S25×95 "Z" can be removed and hoist blocks-**A** and **B** detached from the trolley (picture 2.7.8).

2.8 CONNECTION OF THE ELECTRICAL CABLES



On completing the crane erection, connect the proper electrical connectors.

2.9 CHECKING THE ANCHOR BOLTS TIGHTENING (only installations “R” with “PBR” plates)

Position the counterjib at right angle about a tower side (picture 2.9.1).

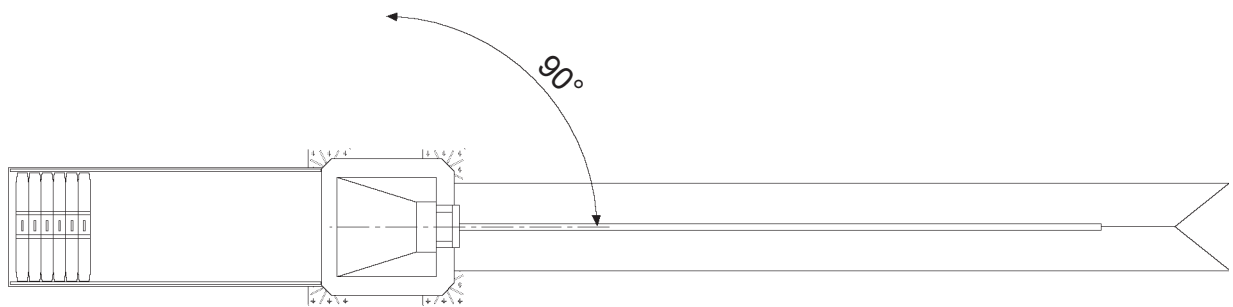
Tighten the anchor bolts of the plates on the tower side considered.

Turn the jib 180° and tighten the remaining nuts.



The rated torque is 1450 Nm (1069 lbs.ft) (anchor bolts Comedil M42).

Secure the fixing nuts with the lock nuts



Picture 2.9.1

2.10 FINAL CHECKS



Before handing over the crane to the operator, the erector shall check:

- that all pin safety split pins are properly positioned and open;
- that the rotating socket on jib point moves freely;
- that all sheaves turn freely;
- that all bolt connections are properly tightened (in particular, those on the lower longitudinal spars of the jib sections);
- that the electrical boxes are closed and the safety locks on all the electric plugs are in order;
- that the hermetic seal of the limit switches is in order.

3

DISMANTLING

3.1 REQUIREMENTS FOR DISMANTLING

- A) Establish an area inside the job site in which all the components of the slewing upper part shall be stored. It is advisable to keep all the parts off the ground.
- B) Verify that the slewing upper part is still structurally sound to carry out the disassembly in a safe manner.
- C) Ensure that there are no electric cables, overhead or ground systems which could interfere with the disassembly maneuvers.
- D) The person responsible for the job site shall check that there are no people within the crane disassembly area.
Put barriers where feasible.
- E) Check that the hoisting devices supplied by the Customer meet the job specific criteria.

*The mobile crane used for moving, assembling and disassembling the different crane components shall hoist at least **8900 kg (19,625 lbs)** to a minimum height of **9 m (30 ft)** above the "H" height of the crane tower (picture 1.3.1).*

*The appropriate crane truck shall be chosen, anyhow, by the competent person in charge of the erection according to the crane own configuration and to the recommended assembly procedure illustrated in the previous pages. For a correct choice **Chapters 4A** (Tower - Dimensions & Weights) and **4B** (Tower erection) of the crane operation manual, shall also be taken in due consideration.*

The erector shall inspect the conditions of the ropes, chains and slings which are to be used for hoisting the crane components.

The erector shall inform the mobile crane operator of the exact weight of the parts that are to be hoisted.

The mobile crane operator is fully responsible, instead, for the slinging and hoisting of the loads.

- F) During the slinging phases, before removing the bolt-connections of the various crane components, verify that the center of gravity of the part to be lifted and the attaching point of the cable coincide.

3.2 DISMANTLING THE SLEWING UPPER PART



In this phase the erector shall have continuous visual contact with the mobile crane operator.



Refer to **Chapter 1 “General Information”, para. 2.3** of the crane operation manual for instructions about verbal communications and hand signals.

These are absolutely necessary for a clear understanding and carrying out of the orders given by the erector to the operator of the mobile crane.

The erector should provide metal receptacles for the storage of pins and other small fittings; he should also care that pins and other small fittings are not permitted to drop.

Operating instructions for dismantling the upper slewing unit.



Reverse the sequence of the instructions given for the assembly of the upper slewing unit.

- A) Trolley out to jib point;
- B) join hoist blocks (**A**) and (**B**) together with pin M 35×245 (**K**) and then to the trolley with S 25×95 pin (**Z**) (picture 2.7.8);
- C) remove pin (**X**) from the rotating socket on jib point (picture 2.7.7 and 2.7.9);
- D) move the jib trolley to jib section-**22** (recovering the rope on the hoist winch) and lock it there;
- E) temporarily secure the hoisting rope to jib section-**22**;
- F) release dead end-**B** of trolley rope section-**1** from the tensioning device and secure it to the jib with the proper lock device;
- G) release trolley rope section-**A** of trolley rope section-**1** and secure it to the jib with the proper lock device.
- H) release dead end-**A** of trolley rope section-**1** from the trolley drum;
- I) remove counterweights-**A** (except for the tail counterweight) from the counterjib and place them on the ground;
- J) according to the jib configuration used, sling the jib in the positions shown at para. 2.4.4;
- K) remove the bolts and pins connecting jib section-**22** to jib section-**23**;
- L) lift the jib and then lower it to the ground;
- M) remove the tail counterweight;
- N) if the 30 AFC 40 F11 hoist winch is mounted, coil the Ø11rope on the respective drum;
- O) sling the counterjib according to the number of counterweights-**B** placed in the basket as indicated at para. 2.3.2; loosen the bolts connecting it to jib section -**22** and disconnect the tie-bars removing the pins concerned;
- P) lift the counterjib and lower it to the ground;
- Q) disconnect the electrical parts from “QEG” electrical box (see **Chapter 5C “ Electrical equipment location”** of the crane operation manual);
- R) sling jib section-**22** in the special eyebolts (a), (b) and (c) (picture 2.2.28), loosen the bolts and remove the pins connecting it to the cab mast section. Lift it and lower it to the ground;
- S) make sure that the disconnecting device on “QEL” electrical box, placed on the base mast section, is in “0” position and that the supply mains cable, running up the tower, is therefore not being energized;





T) sling the upper slewing unit and remove the bolts connecting it to the top mast section; lift it and lower it to the ground.

3.3 GROUND DISASSEMBLY OF THE JIB

Disconnect the jib sections removing the connecting pins from the upper longitudinal spars and the connecting bolts from the lower longitudinal spars.

3.4 GROUND DISASSEMBLY OF THE COUNTERJIB

Dismantle the counterjib and store the single items.

3.5 SLEWING UPPER PART STORAGE

Properly grease all the mounting holes and pins.

Protect the unpainted parts (close to the bolt-connections).

Protect all the electrical parts (motors included) against bad weather conditions by covering them with rainproof sheets.