

# COMANSA LIFTING SOLUTIONS FOR SHIPYARDS



**COMANSA**



**COMANSA** IS A  
MULTINATIONAL  
COMPANY SPECIALIZED  
IN TOWER CRANES  
AND OFFERS ITS  
SERVICES GLOBALLY



# COMMITTED TO LIFTING EVOLUTION

## OVER 60 YEARS OF EXPERIENCE WORLDWIDE

With over 60 years of experience in the design, manufacturing, supply, and support of tower cranes, along with the trust of numerous customers worldwide, **COMANSA** is recognized as one of the leading specialists in the industry. A pioneering manufacturer in the development of modular and Flat-top designs, **COMANSA** builds upon the renowned Linden system, which revolutionized the sector in the 1970s.



Through its commitment to this concept and the subsequent development of the original design, **COMANSA has been a driving force** in the creation of the **new Modular System** and **Flat-Top tower cranes**, a strategy that, over time, has been adopted by the rest of the industry due to its significant advantages for customers.

**Customer commitment and a dedication to developing innovative and competitive solutions are the core values of the team that makes up COMANSA.**

## COMANSA AROUND THE WORLD

From its own headquarters in Spain, the United States, and China, as well as its sales branches in France, Singapore, Australia, and India, **COMANSA** serves its customers and handles all technical, commercial, and after-sales enquiries worldwide.

### HEADQUARTERS

#### COMANSA's

headquarters have been located in Huarte - Pamplona since the company's foundation.

The facilities include a production center dedicated to manufacturing the entire LC range, as well as the central services of the group.

From its headquarters in Spain, **COMANSA** provides commercial support and after-sales service for Europe, Africa, South America, and the Middle East.

### N. AMERICA

**COMANSA** has had a direct presence in North America since 2002.

From its offices in Pineville, near Charlotte NC, Dallas TX, Seattle WA, **COMANSA** provides commercial and service coverage to its customers in the United States and Canada.

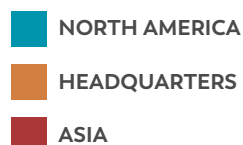
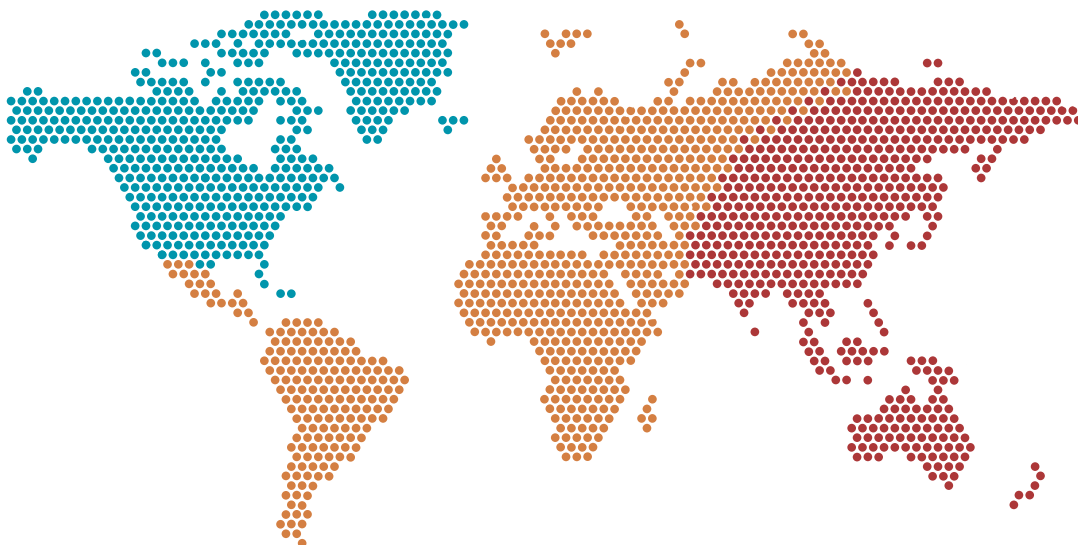
Its facilities include training rooms and a large warehouse for structural components and spare parts, ensuring fast and efficient service across the region.

### ASIA

In 2006, the Hangzhou factory in China opened its doors, and in 2015, its facilities were renovated and expanded.

This production center manufactures the CM range of cranes, which are distributed across Asia, South America, Africa, and the Middle East.

From this modern facility, **COMANSA** provides commercial and after-sales support to the Asian and Oceanian markets.





## COMANSA TECHNOLOGY

### 01 - APPLICATIONS AND FUNCTIONALITIES

Following this same philosophy and aiming for the same customer benefits, **COMANSA** has continued to develop the Linden system, adding new designs and applications that enhance the performance of its cranes, some of which clearly distinguish **COMANSA** in the market.



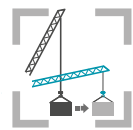
**CUBE CAB**

- Maximum productivity and comfort
- Optimal view of the load and the work area
- Better control over operations and the site
- Spacious and comfortable interior
- Fully equipped



**DOUBLE TROLLEY**

- Optimized load-chart for Flat Top cranes:
- Single trolley: Greater speed and jib-end load
- Double trolley: Maximum load capacity
- The switchover is done very quickly using the operator's controls



**LEVEL LUFFING**

- Coordination between luffing and hoist movements
- Enables to move a load horizontally, automatically keeping it at the same height
- Standard on practically all luffing-jib cranes



**POWER LIFT**

- Standard on all flat-top cranes
- Improves the load diagram by 10%
- Works at a reduced speed, increasing the loading capacity for jobs that require it
- This system is activated by the crane operator



**EFFI PLUS**

- Increases significantly the hoisting and lowering speeds for light loads
- No increased power or consumption
- Shortens work cycles
- Increases the productivity of the crane
- Applied to hoist mechanisms between 24 and 132 kW



**ECO MODE**

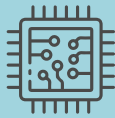
- Work in progress – still not available in the cranes
- Crane reduced power consumption, saving energy and lowering costs
- Environmentally friendly helping to conserve resources
- Improved machine durability by minimizing equipment degradation

## COMANSA TECHNOLOGY

### 02 - CRANE MATE

**CRANE MATE** is **COMANSA'S fleet management** and crane monitoring system. Thanks to this cutting-edge communications technology, we can know in real time technical information, location, alerts, and even data related to the productivity and maintenance of the crane.

#### HARDWARE



A complete pre-installed turnkey kit, consisting of:

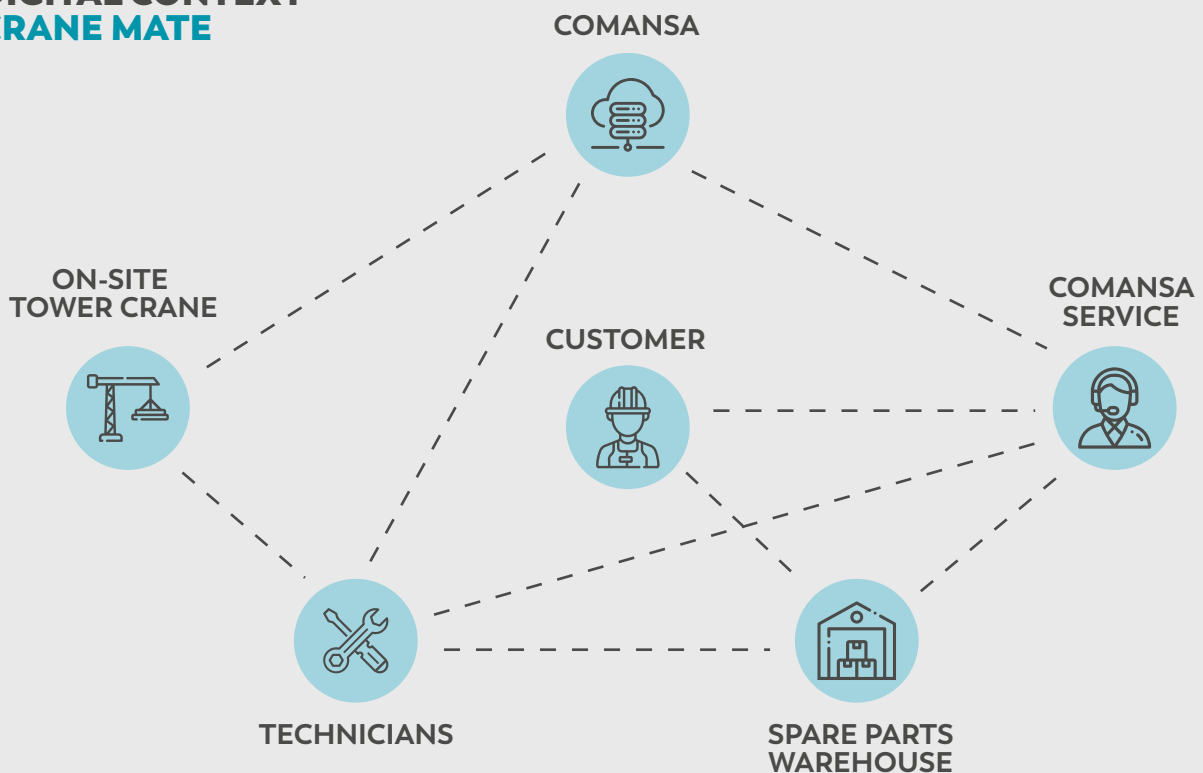
- Industrial PC (1)
- Wifi Router (1)
- PLC (1)
- I/O Moduls

#### SOFTWARE



An online access platform with restricted and secured access. Visualisation of machine parameters and functionalities and other useful services for the customer

#### DIGITAL CONTEXT CRANE MATE



## CRANE MATE FEATURES



More than 100 tower crane parameters real time monitoring



Alert configuration: wind speed, load limiters, load moment, etc.



Historical data logging



Event messages report



Worldwide location of the tower crane position (GPS)



Registration of rental periods and tasks for cranes and projects



Operating and idle times control



Customized web portal and much more...



Lifting capacity tables, load cycles visualization



## SHIPYARDS OVERVIEW

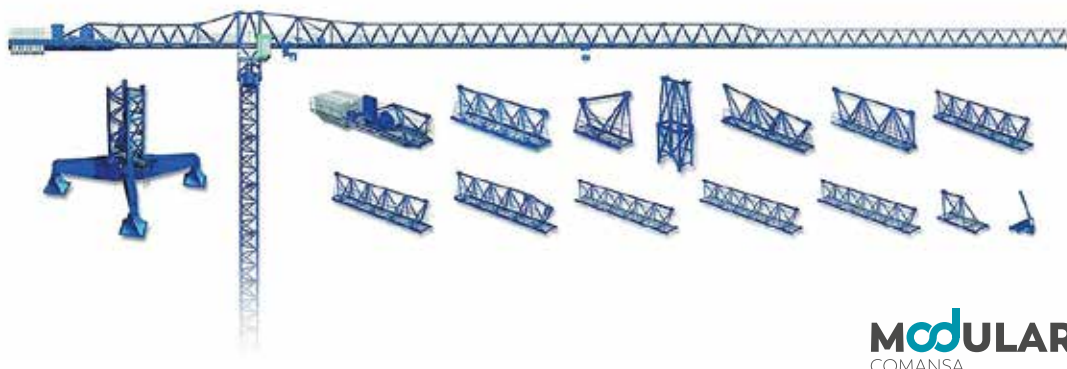
Shipyards require demanding applications, for which Comansa has delivered proven solutions all over the world. Comansa cranes feature a number of **advantages for shipyard adaptations**.





## PERSONALIZATION IS ACHIEVED WITH THE MODULAR DESIGN CONCEPT

Modular Design concept enables the adaption to customer's needs by means of a wide range of modules available to configure each machine model, specially to get the best freestanding height by the combination of available tower sections and transitions, all done by the use of standard modules.

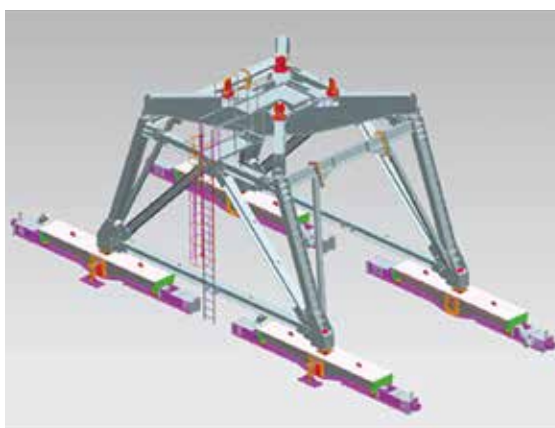


**MODULAR**  
COMANSA

## CUSTOMIZATION IS ACHIEVED THANKS TO COMANSA'S EXPERIENCED R&D TEAM AND WIDE MANUFACTURING CAPABILITIES

Modular Design concept enables the adaption to customer's needs by means of a wide range of modules available to configure each machine model, specially to get the best freestanding height by the combination of available tower sections and transitions, all done by the use of standard modules.

- Comansa's experienced R&D team and wide manufacturing capabilities makes possible a high flexibility in the adaption to customer's needs, especially in portals and travelling systems to accommodate the site conditions.
- This "all-under-one-roof" concept ensures agility in the development and control over the whole solution, from conception to reality.



## GROUND LEVEL ARRANGEMENTS

### 01 - CRANE ON FOUNDATION

The crane can be stationary, standing embedded in a concrete foundation or on a concrete structure by means of fixing anchors or bolted feet. The concrete structure can be part of the pier building.



Vigor Shipyard  
Seattle, USA  
Machine Model LCL560



Sitecna Houseboat Shipyard  
Puerto Montt, Chile  
Machine Model 5LC5010

## GROUND LEVEL ARRANGEMENTS

### 02 - CRANE ON STATIC BASE

- The base of the crane can be a standard static cross base on pyramids.
- The dimensions will depend on the size of the crane, on the hook height and on the calculated wind speed.



#### AVAILABLE STANDARD SIZES ARE

3,8 m

4,5 m

6 m

8 m

10 m



## GROUND LEVEL ARRANGEMENTS

### 03 - CRANE ON STATIC PORTAL

- The base of the crane can be a standard static portal.
- Similar to the static base, the dimensions will depend on the size of the crane, on the hook height and on the calculated wind speed.



#### AVAILABLE STANDARD SIZES ARE

6 m

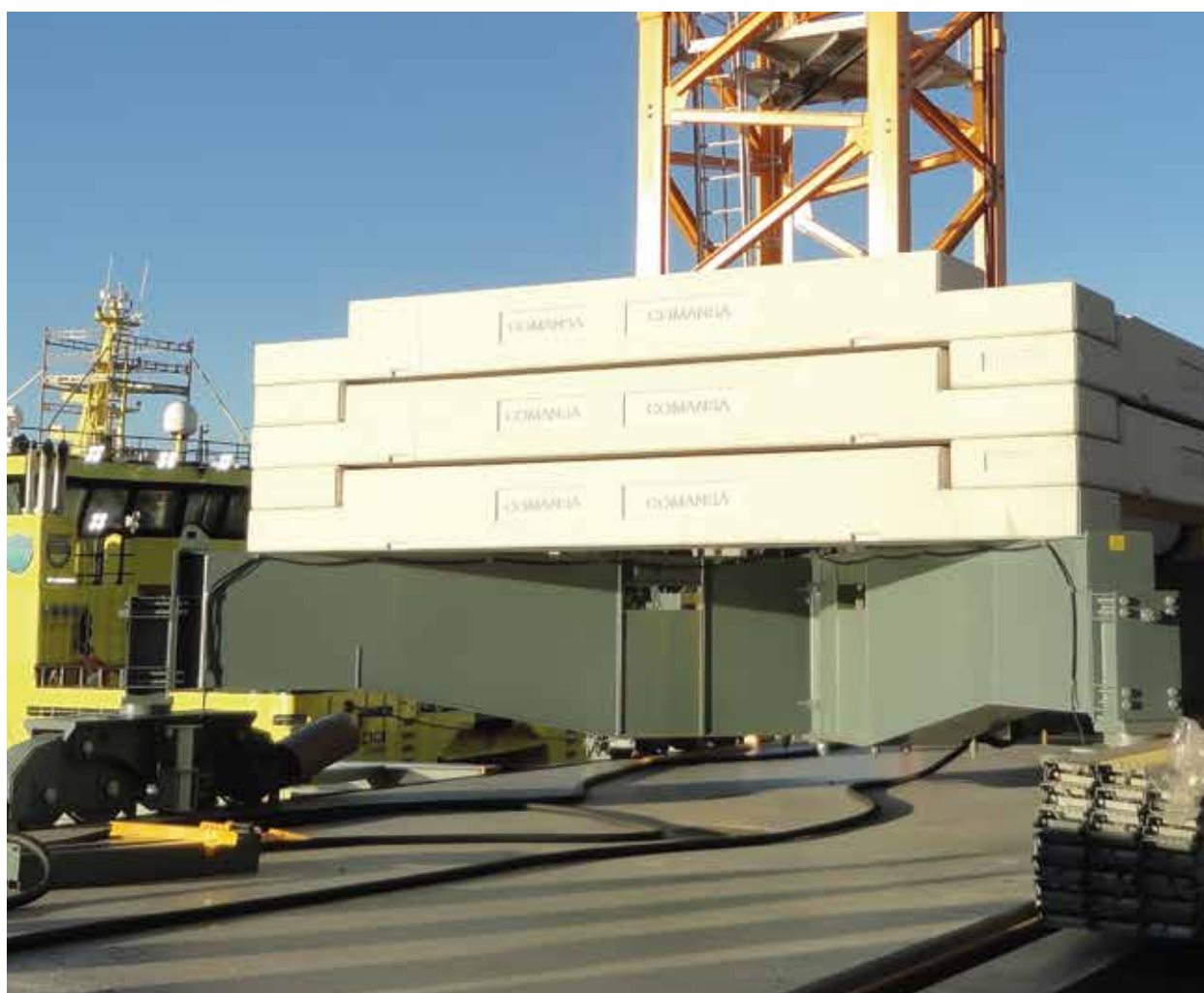
8 m

10 m

## GROUND LEVEL ARRANGEMENTS

### 04 - CRANE ON TRAVELLING BASE

The travelling base of the crane could be with standard cross base from Comansa or a standard base with one adaption to the cross base by adding extra support beams if needed in case of different rail track dimensions.



#### AVAILABLE STANDARD SIZES ARE

3,8 m

4,5 m

6 m

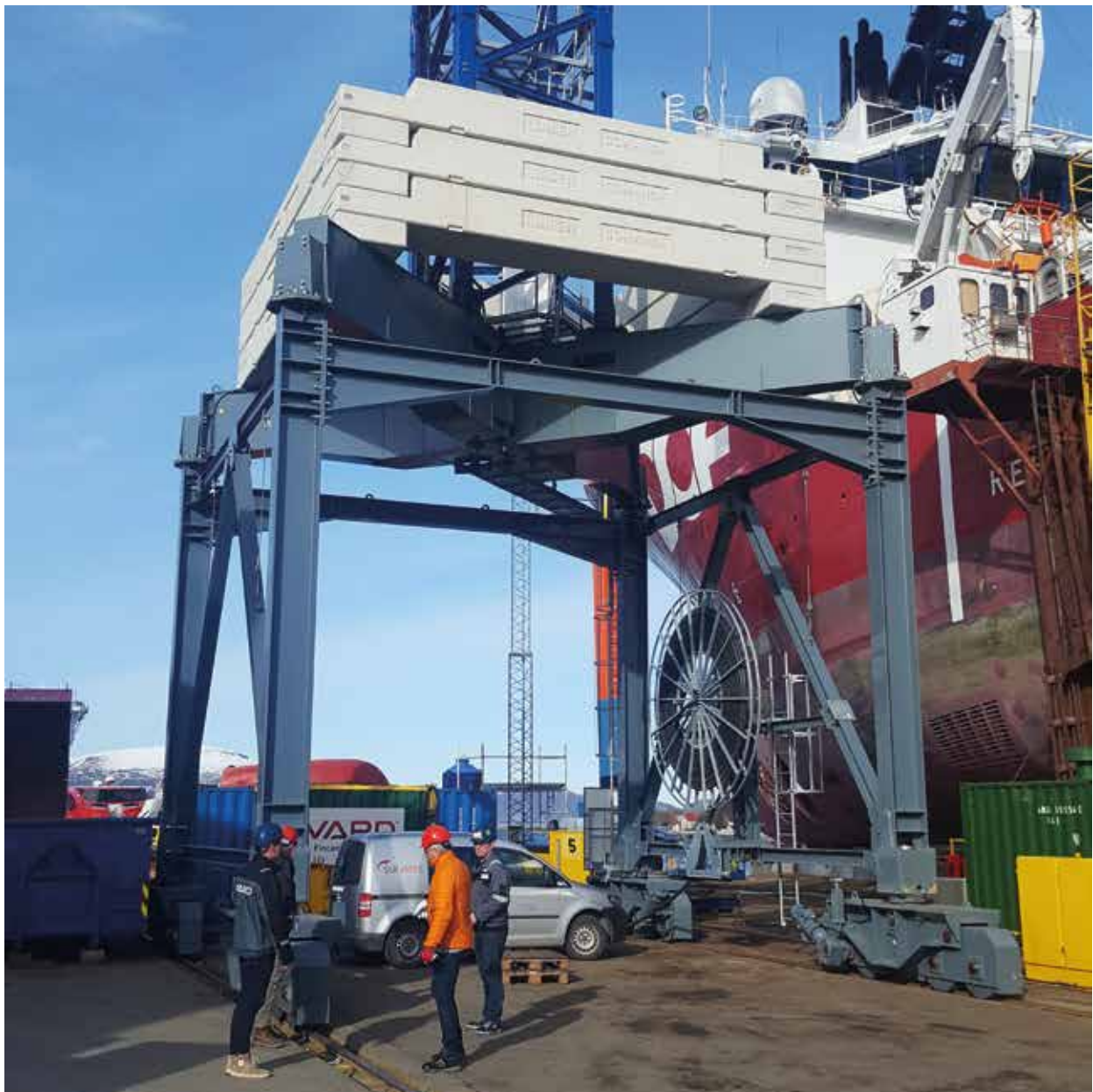
8 m

10 m

## GROUND LEVEL ARRANGEMENTS

### 05 - CRANE ON TRAVELLING PORTAL

- The most common and convenient solution for shipyards is the Base on Portal with rail travelling system.
- Standard Portal with travelling boogies.
- For intermediate or wider rail trucks customized solutions as rectangular Portals are available upon request.



#### AVAILABLE STANDARD SIZES ARE

6 m

8 m

10 m

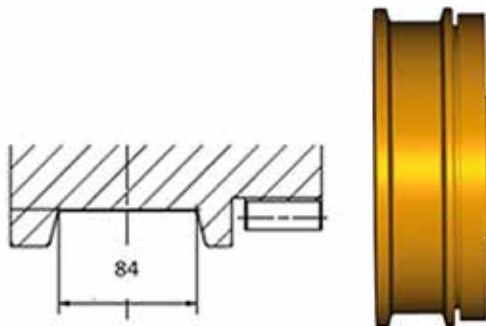


## GROUND LEVEL ARRANGEMENTS

### 06 - TRAVELLING SYSTEM

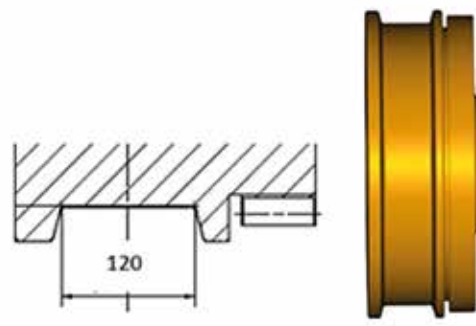
The travelling base of the crane could be with standard cross base from Comansa or a standard base with one adaption to the cross base by adding extra support beams if needed in case of different rail track dimensions.

#### EN13674 RAIL SIZE (70/72 mm head width)



D	v	e	f	$f+e/2+e/2$
495	197	592	1008	1600

#### EN13674 RAIL SIZE (70/72 mm head width)



D	v	e	f	$f+e/2+e/2$
630	245	736	1264	2000

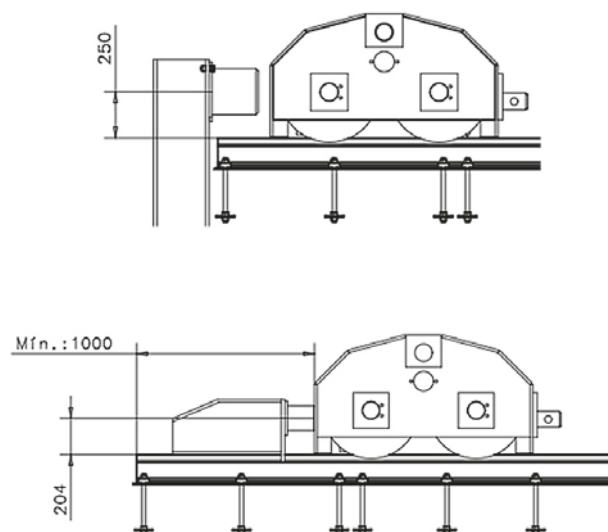
#### CABLE REEL

A motorized mono spiral cable winder, galvanized and with a stainless-steel electric cabin.



#### PARKING AREA

The parking area is the place where the crane will be left in out of service condition.







## **SUPERFICIAL PROTECTION**

### **01 - STRUCTURE PAINT**

- The harsh environment near the sea requires a special finishing of the crane's structure.
- Comansa has defined a paint system compliant to C5M as per EN 12944, with a thickness of 250  $\mu\text{m}$  and the following scheme:
  - Cleaning by Shot blasting (SA 2 ½ quality)
  - Primer, Epoxy paint, Rich in Zinc (80 - 100  $\mu\text{m}$ )
  - 1st Layer, Hydro Epoxy (100 - 120  $\mu\text{m}$ )
  - Drying and catalysis in Oven
  - 2nd Layer, Hydro Epoxy paint (70 - 90  $\mu\text{m}$ )
  - Final drying and catalysis in Oven
- Colour is to be defined in each case.
- Other specifications are available on request.

## **SUPERFICIAL PROTECTION**

### **02 - EQUIPMENT / ARRANGEMENTS AVAILABLE ON REQUEST**

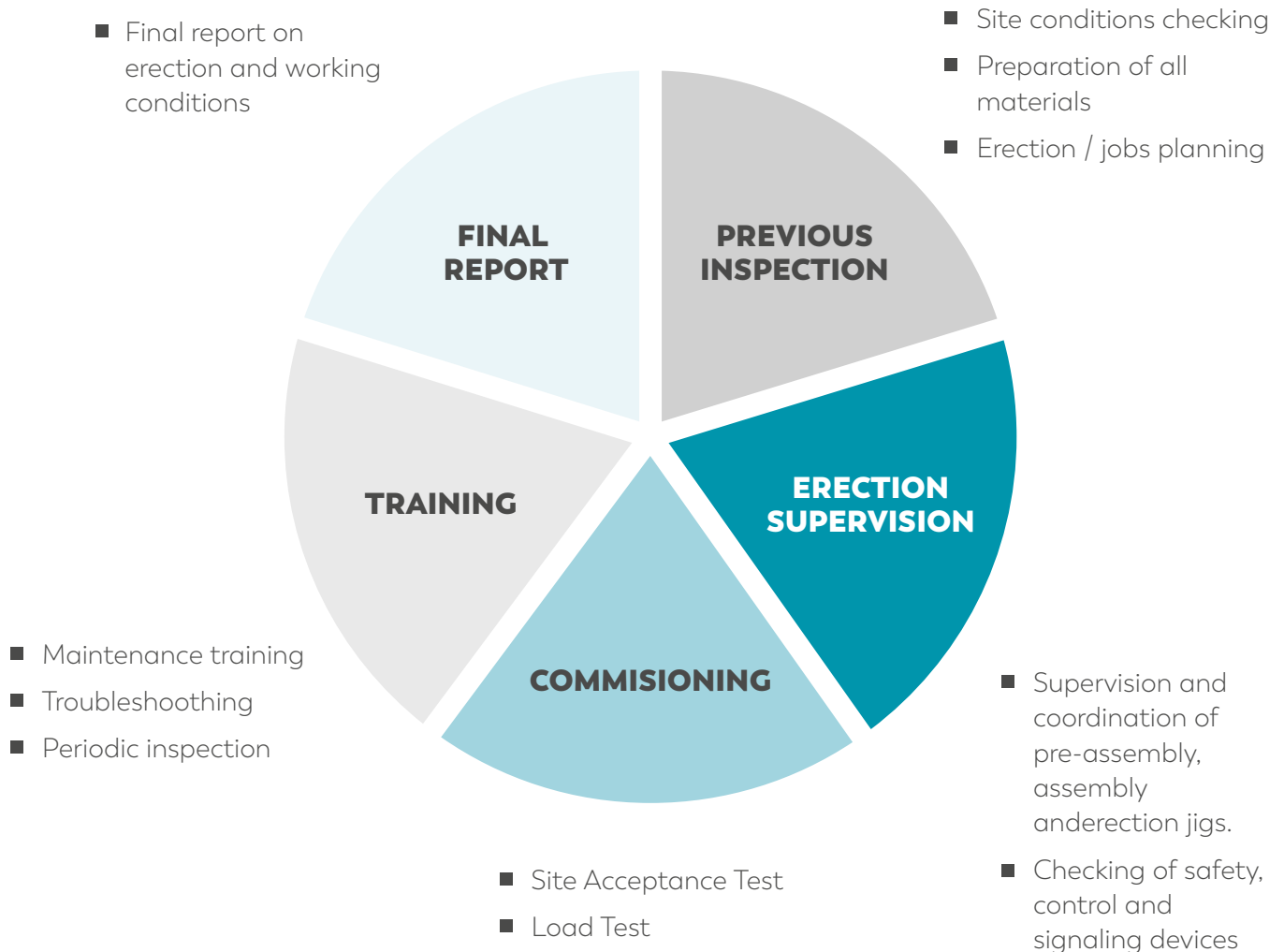
- Accessing elements, ladders, handrails → Galvanized
- Junctions of critical components → Zinc Flake Coatings with Final Finish Coating
- Electrical cabins → Stainless steel, painted in white
- Other commercial material (i.e. motors, gearboxes, etc) → C5M



## ADDED VALUE SERVICES OFFERED BY COMANSA

**Comansa can provide comprehensive support for shipyard projects so that the start of operation is smoothly done.**

This goes from the assessment of conditions to machine commissioning and training, all done hand by hand with the team designated by the client.





**Comansa tower cranes offer several advantages over other types of cranes in shipyards like portal, dockyard, ship to shore container or permanently-installed cranes as Electrical Level Luffing (“ELL”):**

- Foundation / forces reaction
- Time assembly and dismantling (don't affect Shipyard work schedule)
- Tower crane movements in rails are simple and faster than ELL
- Maintenance
- Adaptability & Modularity & Retrofitting
- Versality of use
- Better working radius
- Latest technology
- Maximum height under hook & jib length
- Coexistence with Ship Lift System
- Extra Equipment: hoist/elevator, camera hook block (monitor inside), panel heaters (no sound), fridge, digital radio, microwave, water pipe, “wing seals”
- Level of confort
- Standard cabin, optional XL stainless steel cabin
- Different heating systems in cabin, motors and electrical pannels.
- Protection and housing in the resistance, limiters boxes: salt, humidity, etc.
- Complete winch protection, sound level and protections

## ADDED VALUE SERVICES OFFERED BY COMANSA

Comansa tower cranes offer several advantages over other types of cranes in shipyards like portal, dockyard, ship to shore container or permanently-installed cranes as Electrical Level Luffing (“ELL”):

### ADAPTABILITY & MODULARITY & RETROFITTING

- Depending on the Vessel project, you may need one crane capacity or another, You may need more HUH or less, more jib radius or less.
- Time assembly and dismantling (don't affect Shipyard work schedule).

### VERSATILITY OF USE



### LATEST TECHNOLOGY

#### BETTER WORKING RADIUS

- Tower cranes tend to have bigger crowns and smaller jibs, meaning they can work at smaller radius.
- Also in big radius the crane need to achieve those lengths are smaller than comparing with the ELL.



## **MAXIMUM HEIGHT UNDER HOOK & JIB LENGTH**

## **COEXISTENCE WITH SHIP LIFT SYSTEM**

## **EXTRA EQUIPMENT**

Hoist/elevator, camera hook block (monitor inside), panel heaters (no sound), fridge, digital radio, microwave, water pipe, "wing seals".

## **LEVEL OF COMFORT**



## **XL CABIN IN STAINLESS STEEL**

## **DIFFERENT HEATING SYSTEMS:**

in cabin, motors and electrical pannels.

## **PROTECTION AND HOUSING**

in the resistance, limiters boxes: salt, humidity, etc.

## **COMPLETE WINCH PROTECTION**

sound level and protections.

## MAIN DELIVERIES TO SHIPYARDS MADE BY COMANSA



VARD – SOVIK, NORWAY  
**21LC660**





BOLINGER SHIPYARD - TEXAS CITY, USA  
**21LC290**



## MAIN DELIVERIES TO SHIPYARDS MADE BY COMANSA



IHC – KINDERDIJK, THE NETHERLANDS  
**21LC335**

ENSENADA PORT - ENSENADA, MEXICO  
**MODEL 21LC550**



SHIPYARD - NORWAY  
**21LC335**



PT INDUSTRY KAPAL SHIPYARD –  
 MAKASSAR, INDONESIA  
**LC8952**

## MAIN DELIVERIES TO SHIPYARDS MADE BY COMANSA



NAKILAT-KEPPEL OFFSH. & MARINE SHIP. - RAS LAFFAN, QATAR  
**21LC750**



GDANSK SHIPYARD – GDANSK, POLAND  
**LC5211**



PORT OF BILBAO  
**LC2060**



PT INDUSTRY KAPAL SHIPYARD –  
MAKASSAR, INDONESIA  
**LC8952**



# COMMITTED TO LIFTING EVOLUTION

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