# MARINE & OFFSHORE CRANES

AMCO VEBA MARINE

HYVA GROUP

# CUSTOMER SATISFACTION THE CORE OF OUR DNA

## BUILT FOR MARINE ENVIRONMENT

**AMCO VEBA MARINE** is the dedicated marine crane brand of **Hyva Group** and is recognized worldwide as one of the global leaders in the production of marine foldable cranes.

We design, manufacture and support the largest extensive range of folded telescopic and articulated cranes expressly created for marine environment and destined for onshore, shipboard and offshore installations.
Founded in 1980, **AMCO VEBA MARINE** has been re-located in a new bigger factory in Poviglio, in Reggio Emilia's province, in Italy, in 2000.
**AMCO VEBA MARINE** has been part of **Hyva Group** since 2007 and is now fully invested in the key success elements of **Hyva:** the quality and innovative nature of the company's solutions and the excellence of its customer support.

**LEAN**
MANUFACTURING

**WORLDWIDE**
PRESENCE

FAST DELIVERY
**TIMES**


# OUR CORE VALUES

### CUSTOMER EXCELLENCE
Hyva doesn't simply sell products; we sell a continued customer experience that sets us apart as the first choice for our partners. We add value to our customers' businesses by listening to their needs and prioritizing innovative solutions.

### TRUST & RESPECT
Trust and respect are the cornerstones of our relationships with partners and employees around the world. Our ongoing partnerships inspire trust and respect through open communication, authenticity and valuing diverse opinions.

### INTEGRITY
We are real, consistent, transparent and fair. Whether launching new initiatives or supporting proven strategies, our people take ownership and accountability for everything they do, following through on our promises without sacrificing quality.

### PASSION
At the root of everything we do is our passion to move boundaries and make a positive difference through our work. We are dedicated, enthusiastic and proud of our energy and passion to connect communities worldwide.

### INNOVATIVE & ENTREPRENEURIAL SPIRIT
From our first steps to moving boundaries worldwide, experience and expertise is fueled by the innovation and entrepreneurial spirit we were founded upon and which makes us a global leader today.

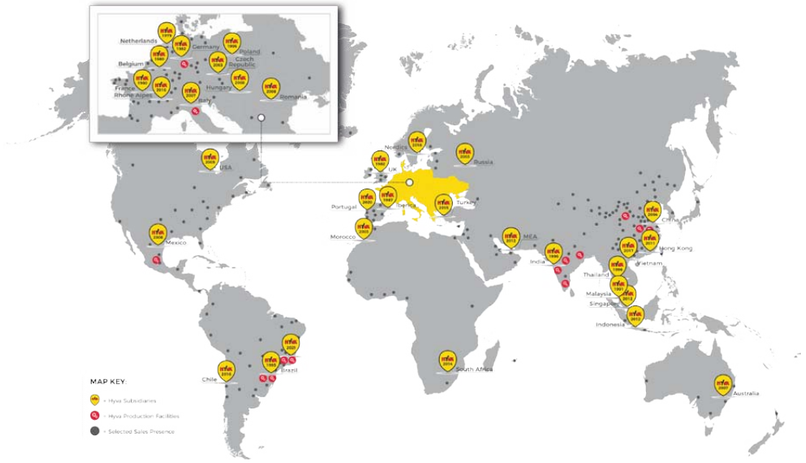
### SOCIAL RESPONSIBILITY
We are committed to responsible manufacturing, global safety practices that protect our employees and building lasting partnerships in the communities we serve - inside AMCO VEBA MARINE and our customers operate and where our products are used.



# BEING PART OF HYVA A WORLDWIDE SOLUTIONS PROVIDER

## WE MOVE YOUR WORLD

Service quality, is a fundamental part of **Hyva** business philosophy.
With operations in more than 110 countries, more than 30 subsidiaries, 14 production plants worldwide and more than 3.500 employees, the company operates one of the world's most extensive customer support networks in the industry.
It is a network which has earned **Hyva** an international reputation for excellence in customer care.
The entrepreneurial culture of the company, together with a commitment to innovation and quality, has established **AMCO VEBA MARINE** as a well-known and respected brand around the world.
Personnel safety and respect for the environment are primary concerns for **AMCO VEBA MARINE.**
To this end, significant investments have been made in facilities and equipment to reduce risk and minimise pollution granting to our clients high quality products and a longterm trustable relationship and supply.




# MARINE PLANT IN ITALY

# CREATORS OF INNOVATIVE SOLUTIONS

## RESEARCH & DEVELOPMENT IS OUR DRIVING FORCE

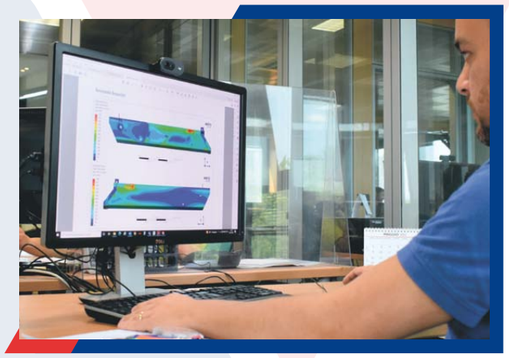
Our in-house R&D team develops breakthrough, mechanically and electrically integrated cranes that change the way companies do business.
Every day, **AMCO VEBA MARINE** strives to exceed conventional limits and to deliver reliable efficient solutions capable of supporting our customers' growth.

Over 20 mechanical and electrical engineers work alongside customers to co-engineer products that help prevent downtime, increase efficiency and reduce failure risk with a view to growing their business.

Collaboration with universities and research centres gives us the opportunity to work with brilliant young minds on new approaches to product development and improvement.

Each crane component is designed using state of the art 3D CAD System and verified with ANSYS Software FEM technique (Finite Element Analysis) to check and assure the structural integrity.

Standard cranes are designed in accordance with European standards such as EN12999/EN13001. We also offer to our clients a wide range of products designed according to major International specific norms and according to the marine Classification Society Regulations like ABS, BV, DNV, GL and others.



**FLEXIBLE** APPROACH

LEADING **MARKET** TRENDS

**CREATING** SOLUTIONS FOR TOMMORROW

# NEW PRODUCT DEVELOPMENT

Our concept to field approach assures that every solution is expertly designed with cutting-edge technology and extensive structural verification techniques to meet precise specifications, while prototypes are rigorously field-tested in real, day-to-day operating conditions to guarantee operational durability and effectiveness. Our commitment to your success extends beyond delivery through a series of comprehensive training and feedback programs that prepare your team to make the most of our purpose-built solutions.

### 3D DEVELOPMENT
Our research and development department uses a state-of-the-art 3D CAD system to model each individual component of the crane and assess adequate functional geometry for all movements.

### FINITE ELEMENT METHOD (FEM)
Finite Element Method (FEM) facilitates the detailed analysis of the crane's structure as well as loading conditions and helps achieve strength-to-weight optimisation at the design stage.

### PROTOTYPE PRODUCTION
All components are thoroughly assessed for compliance with design specifications before the prototype is assembled in a dedicated area. The entire process is documented so that it can be optimised for the production phase.

### FIELD TESTS
Expert users test the crane in real, day-to-day operating conditions, directly communicating any feedback to our team for further enhancements. Cranes are only launched once the extensive field testing programme is complete.

### TESTED IN ALL CONDITIONS
The prototype is fatigue-tested in different positions and working conditions for up to 600,000 loading cycles, simulating 10 years of regular use, while being computer-monitored to detect any operational inconsistencies.

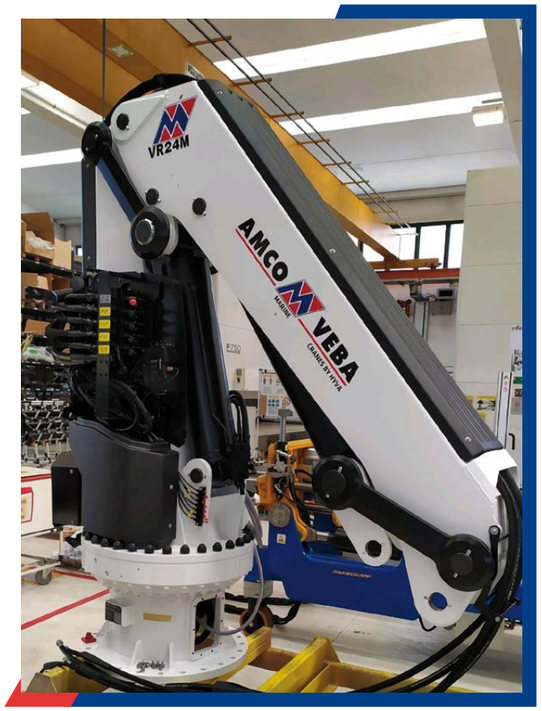


# EVOLUTE AND SUSTAINABLE MANUFACTURING

**Hyva** has globalized production over the years. Today, we operate in 14 manufacturing plants around the world to serve customers in local markets more effectively. Our plants in the Nederland, Germany, Italy, Brazil, India and China produce a large range of products serving clients with a truly efficient distribution network.

**AMCO VEBA MARINE** cranes are produced in Hyva Capital Equipment located in the North of Italy with 250 people in a dedicate production plant with a surface of 2500 square mt.
Production is based on the most advanced production management system based on LEAN manufacturing, KANBAN methodology and Kaizen that are fully integrated in our process.

**AMCO VEBA MARINE** is fully committed to a more sustainable workplace and every employee pays the closest attention to even the smallest details to ensure that our customers benefit from unrivalled quality.
We have made huge investments in all our production lines adopting the most evolute equipment and dedicate assembling bench that grant safety for the workers and reliability to the product.




# SHARING THE VALUE OF OUR WORK WITH YOU

Our team is fully dedicated to continuous improvement in the fields of quality, safety and the environment, across the entire value chain, from the smallest supplier to the end customer.

**AMCO VEBA MARINE** management systems are certified to ISO 9001:2015 and ISO 14001:2015 while our products are covered with international certifications.
The demonstrated superior quality is the result of more than 40 years of technical expertise, development and production to the highest quality standards in components and process.

Designed for various marine applications, from general cargo handling to many different offshore applications. **AMCO VEBA MARINE** cranes can be used onboard many different types of vessels for various on-board and off-board lifting operations but also used on offshore platforms and production units.

Lloyd's Register

Certificate of Approval

This is to certify that the Management System of:

H.C.E SRL

Via A. Einstein 4, 42028 Poviglio - RE, Italy

has been approved by Lloyd's Register to the following standards:

ISO 14001:2015

Approval number(s): ISO 14001 – 0029011

The scope of this approval is applicable to:
Design, Manufacture and Service of hydraulic powered loader cranes for trucks and for trucks and marine applications. Manufacture and Service of hoistloader and roller crane.

Daniel Oliva Marcílio de Sousa
Area Operations Manager – South Europe
Issued by: Lloyd's Register Quality Assurance Italy Srl
for and on behalf of: Lloyd's Register Quality Assurance Limited

Lloyd's Register

Certificate of Approval

This is to certify that the Management System of:

Amco Veba Marine
(H.C.E. S.r.l. Unico Socio)

Via Einstein, 4/6, 42028 Poviglio, Italy

has been approved by Lloyd's Register to the following standards:

ISO 9001:2015

Approval number(s): ISO 9001 – 0023911-001

This certificate forms part of the approval identified by approval number: 0023911

The scope of this approval is applicable to:
Design, manufacture, sales, trade under own brand name and after-sales service for hydraulic-powered loader cranes for marine applications.

Paul Graaf
Area Operations Manager, Europe
Issued by: Lloyds Register Nederland B.V.
for and on behalf of: Lloyd's Register Quality Assurance Limited

# MLP PROGRAM, THE UNIQUE MULTI LEVEL PROTECTION PROGRAM

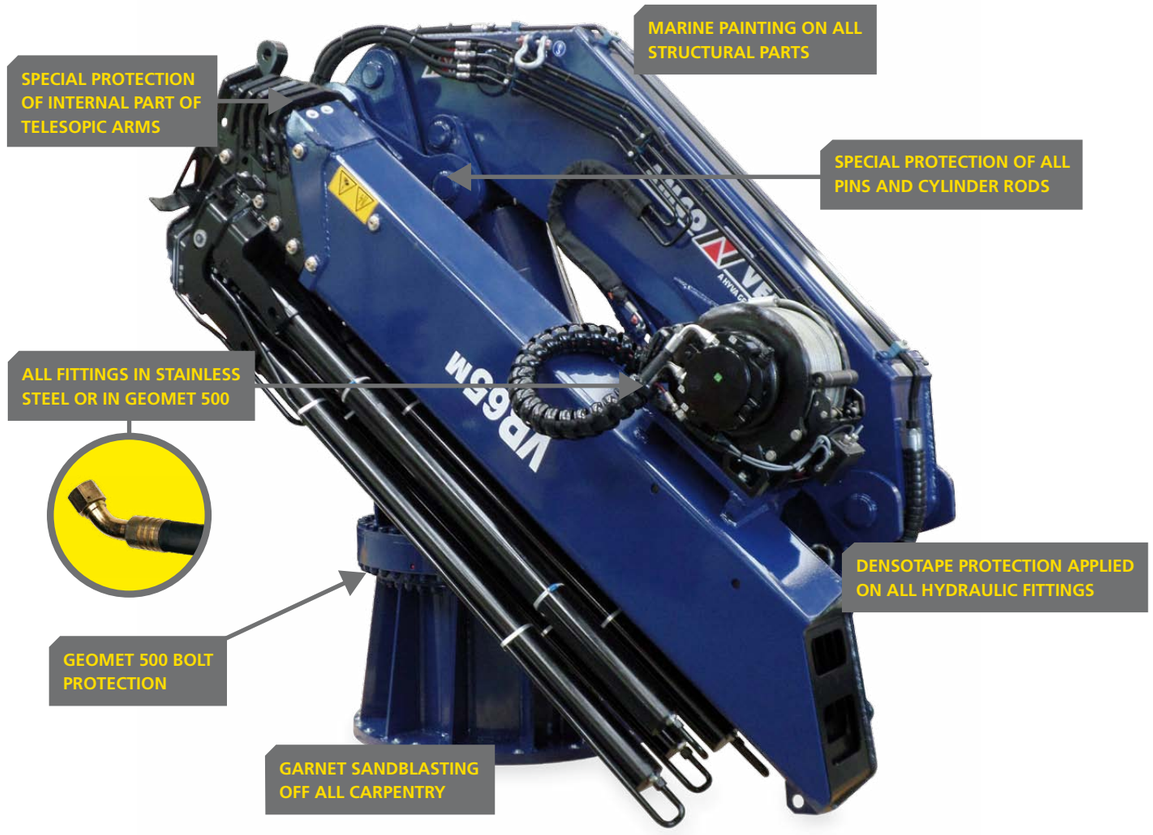
**MLP PROGRAM** is an integrated and structural plan of solutions with care for all crane parts, from the structural complete surface treatment up to the hi-durability of hydraulic cylinder rods, pins, hydraulic fittings, rigid pipes, rubber flexible hoses, screws, bolts, junction box and all electrical components.


Our **AMCO VEBA MARINE CRANES** have been specifically developed and improved for operation in the marine environment; all parts have been designed for easy maintenance and each crane component selected and designed for long life.

We totally understand what maintenance downtime and service cost impacts means, but also how much the value of deep protection treatment has in some cases needless huge cost impacts.

With a focus on high Customer Satisfaction, we have created the **AMCO VEBA MARINE MLP PROGRAM** to allow our clients the possibility to select the most suitable **CRANE PROTECTION LEVEL** for the environment in which the crane is expected to operate.
From the softer ambient conditions till the most severe and harsh humid salt ambient.

## THE MLP PROGRAM INCLUDES 4 DIFFERENT PROTECTION LEVELS




### F LO

**BASIC PROTECTION LEVEL**
Mostly for Inland application.
Perfect for INLAND WATERS installations or boats sailing solely on internal channels, rivers and lakes.

### F L1

**HEAVY DUTY BASIC PROTECTION LEVEL**
Suitable for MORE SEVERE INLAND APPLICATIONS.
Grants a longer lifetime and can be used in more severe applications but always in environment without high water salinity, mainly on river, lakes and inland waters.

### M L2

**MARINE PROTECTION LEVEL**
Suitable for MARINE APPLICATIONS with salt atmosphere and high salinity. The marine protection in respect of ISO12944 C5M is effective on all structural parts and all crane components granting 5 - 15 years corrosion resistance in fix port installation or installed on boat sailing on sea.

### M L3

**HEAVY DUTY MARINE PROTECTION LEVEL**
Suitable for HEAVY DUTY MARINE APPLICATION with presence of high humidity and high salinity and very harsh marine conditions. To be adopted for the higher severe marine applications on offshore vessel, boats and offshore platform.

**THERMAL METAL SPRAY PROCESS**
Additional protection process available on **M L2** and **M L3**.
Thermal Metal spraying is a surface coating process where a liquid metal alloy (zinc/aluminum) is sprayed onto the surface of crane carpentry. It provide the higher level of corrosion protection to ferrous metals and improve wear resistance in respect of ISO 12944 CX level granting more of 15 years lifetime.

# APPLICATIONS - OUR CRANES AT WORK

AMCO VEBA MARINE Cranes are operating across the globe in a variety of applications in the marine environment - both on vessels and boats or in quay side installations.

## FISH FARMING
Feed barges, Service vessels, Catamarans

## FISHING
Fishing boats, Fishing harbours

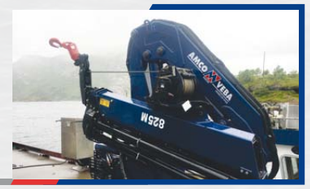
## WORKBOATS
Tug boats, Multicats, Utility support vessels, Research vessels, Oil spill response vessels

## WIND PARKS
Crew transfer vessels, Wind farm vessels

## FERRY
Ferry boats, Landing crafts

## RIVER AND LAKES
Pontoons, River cleaning workboats, Barges, Dredgers

## QUAY SIDE
Harbours, Marinas




## NAVY AND COASTGUARD
Patrol boats, Pilot boats, Cutter vessels, Firefighting boats

# CRANE LINES OVERVIEW

**AMCO VEBA MARINE CRANES** range cover five lines of products:
**Mini telescopic, Telescopic, Fully Foldable, Fully Foldable with Power Link and Fully Foldable with slewing ring.**

All our cranes are designed to perfectly work in fixed onshore applications, inland water applications like river, lake or internal channels but mostly for all marine & offshore vessels or offshore platforms.

**NEW GENERATION Line crane models available in fully foldable and fully foldable with slewing bearing families.**

A structured design and build process, from concept to field operation, has created these NEW GENERATION cranes which cover all possible applications by offering top performance, semplicity of use and maintenance and the highest level of modularity in models, features and accessories.
The most ergonomic working positions and user-friendly interfaces combine to deliver accurate and safe operation with reduced working risk.

**Innovative features which increase crane's protection from environmental agents:**
- Multi Level Protection **(MLP)** program
- **Denso tape protection**. Standard on L2 protection level, all hydraulic fittings are protected with a manually applied oil greased denso tape to grant a perfect resistance to salt ambient.
- **Plastic covers**. A set of plastic covers made of ABS LAC700 composite material are protecting the most delicate hydraulic components such as valve banks, gear motors, swivel joints from water sprinkles and UV rays and other forms of environmental agents.

**These features include:**
- Hoses and pipes running inside column and booms to guarantee a longer lifetime
- Sprint Generation System **(SGS)** to increase the speed of extensions without compromising safety
- Soft Descent Drive **(SDD)** to reduce oscillation and assure perfect control
- **Double linkage** to improve versatility in many different working positions
- Soft closing retraction to reduce oscillation of the load during retraction
- Centralized Greasing System making regular maintenance easier
- High pressure filter
- Moment load limiter device
- A wide range of radio controls
- Rotating operator Stand Up Platform.


## MINI TELESCOPIC CRANES
### SMALL MONO-BOOM CRANES WITH WORM GEAR SLEWING ROTATION SYSTEM
- A light, compact and hi-tech crane, modern and user-friendly
- Thanks to its concept and modularity, it represents the ideal solution for installation where space is a must
- 1 - 5 Tm class
- Telescopic boom and foldable


## TELESCOPIC CRANES
### MONO-BOOM CRANES WITH DOUBLE RACK & PINION ROTATION SYSTEM
- The ideal solution when rapidity in operation is needed
- Powerful and compact grant great performances and quick operation
- 4 - 15 Tm class
- Telescopic boom and foldable


## FULLY FOLDABLE CRANES
### FOLDABLE BOOM CRANES WITH DOUBLE RACK & PINION ROTATION SYSTEM
- Designed to keep constant the torque momentum reducing the pendulum effect of the load
- A very compact and light design make them ideal for all vessels where reduced compact power is mandatory
- 3 - 28 Tm class
- Knuckle Telescopic boom and foldable


## FULLY FOLDABLE CRANES WITH POWER LINK
### FOLDABLE BOOM CRANES WITH DOUBLE RACK & PINION ROTATION SYSTEM AND DOUBLE LINKAGE
- The Power link system gives the mechanical advantage to provide consistent force in all working angles of the boom granting power and great performances; it also permits negative angle working possibility
- Extensive powerful cranes in reduced overall size dimensions.
- 20 - 50 Tm class
- Knuckle Telescopic boom and foldable with Power Link


## FULLY FOLDABLE CRANES WITH SLEWING BEARING
### FOLDABLE BOOM CRANES WITH SLEWING BEARING ROTATION SYSTEM AND DOUBLE LINKAGE
- The ideal solution for highly demanding applications
- Top Lifting class cranes with unlimited rotation during operation, space saving when not in use.
- 24 - 85 Tm class
- Knuckle Telescopic boom and foldable

# 600T LINE
## MINI TELESCOPIC CRANES

### COMPACT AND LIGHTWEIGHT

Small telescopic and foldable cranes with a wide range of accessories such as radio, winch, powerpack and extra-functions for tool use.

Compact and light weight, make them ideal for small vessels such as pilot boats, fishing boats, landing craft and oil spill response vessels.

Easy to install on light structural materials such as aluminium or glass fibre.


## FEATURES

- 1- 5 tm class
- Worm and gear rotation system completely enclosed in cast housing with oil lubrication bath
- Counterbalance valves directly mounted on each cylinder
- Hexagonal shaped telescopic booms with strong capacity and self-aligning, offering great load handling control
- Control valve plumbed in. Shipped demounted with sufficient hose lenght for easy installation
- ABS protective cover on controls

## OPTIONS

- Large winch range
- Radio Remote Control (RRS)

## WORM AND GEAR ROTATION

Completly enclosed cast housing with oil lubrication bath.

## TYPICAL APPLICATIONS

FISH FARMING · FISHING · WORKBOATS · QUAY SIDE · NAVY · COAST GUARD · LAKES & RIVERS · WIND PARKS



## TECHNICAL DATA - MINI TELESCOPIC CRANES

| Crane model | No. of extensions | | Boom length closed and extended (mt) 1 - 1.5 | 1.5 - 2 | 2 | 3 | 4 | 5 | Dyn. Lifting Moment (daNm) | Net. Lifting Moment (daNm) | Weight (kg) | Slewing angle (°) | Working Pressure (bar) | Max Oil Flow (l/min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 601T | 1S | m | 1,08 | 1,9 | | | | | 1.154 | 920 | 145 | 328 | 180 | 5 |
| | | Kg | 860 | 485 | | | | | | | | | | |
| | 2S | m | 1,15 | 1,97 | 2,79 | | | | | 902 | 164 | | | |
| | | Kg | 800 | 450 | 310 | | | | | | | | | |
| 602T | 1S | m | 1,08 | 1,9 | | | | | 1.544 | 1.250 | 174 | 335 | 160 | 8 |
| | | Kg | 1.175 | 665 | | | | | | | | | | |
| | 2S | m | 1,15 | 1,97 | 2,79 | | | | | 1.240 | 193 | | | |
| | | Kg | 1.100 | 630 | 435 | | | | | | | | | |
| 603T | 1S | m | 1,25 | | 2,17 | | | | 2.140 | 1.960 | 216 | 335 | 160 | 8 |
| | | Kg | 1.590 | | 920 | | | | | | | | | |
| | 2S | m | 1,33 | | 2,25 | 3,18 | | | | 1.937 | 240 | | | |
| | | Kg | 1.485 | | 870 | 615 | | | | | | | | |
| | 3S | m | 1,4 | | 2,32 | 3,25 | 4,17 | | | 1.744 | 262 | | | |
| | | Kg | 1.270 | | 745 | 520 | 405 | | | | | | | |
| 604T | 1S | m | 1,33 | | 2,26 | | | | 3.290 | 2.680 | 263 | 335 | 160 | 10 |
| | | Kg | 2.055 | | 1.210 | | | | | | | | | |
| | 2S | m | 1,39 | | 2,32 | 3,25 | | | | 2.638 | 295 | | | |
| | | Kg | 1.935 | | 1.150 | 815 | | | | | | | | |
| | 3S | m | 1,48 | | 2,4 | 3,33 | 4,25 | | | 2.656 | 321 | | | |
| | | Kg | 1.830 | | 1.095 | 775 | 600 | | | | | | | |
| 605T | 1S | m | 1,44 | | 2,5 | | | | 4.330 | 3.390 | 301 | 395 | 175 | 10 |
| | | Kg | 2.390 | | 1.380 | | | | | | | | | |
| | 2S | m | | 1,52 | 2,58 | 3,64 | | | | 3.362 | 337 | | | |
| | | Kg | | 2.255 | 1.310 | 925 | | | | | | | | |
| | 3S | m | | 1,59 | 2,65 | 3,71 | 4,77 | | | 3.322 | 370 | | | |
| | | Kg | | 2.130 | 1.250 | 875 | 675 | | | | | | | |
| | 4S | m | | 1,67 | 2,73 | 3,79 | 4,85 | 5,91 | | 3.293 | 399 | | | |
| | | Kg | | 2.010 | 1.185 | 880 | 635 | 520 | | | | | | |

Crane lifting capacity for harbor condition in sea state 0. Crane capacity calculated in respect of EN 12999 HC1 S4.

### HOW TO USE THE TABLE FOR CRANE SELECTION

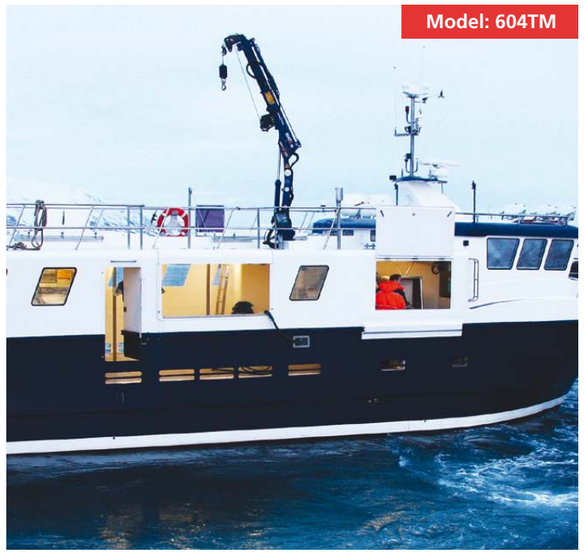
**EXAMPLE:**

**Select a crane with requested capacity of 600 kg at 4 mt.**

1) Select the column related to the desidered max. length of the fully extended crane (m). In this case column 4 (4.25 m).
2) Scroll down and chose the crane model with the lifting capacity that is closer to the requested one (kg).

**In this case crane model 604T with 600 kg at 4.25 mt**

| Crane model | No. of extensions | | Boom length closed and extended (mt) 1 - 1.5 | 1.5 - 2 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|
| 604T | 1S | m | 1,33 | | 2,26 | | |
| | | Kg | 2.055 | | 1.210 | | |
| | 2S | m | 1,39 | | 2,32 | 3,25 | |
| | | Kg | 1.935 | | 1.150 | 815 | |
| | 3S | m | 1,48 | | 2,4 | 3,33 | 4,25 |
| | | Kg | 1.830 | | 1.095 | 775 | 600 |



# 800T LINE
## TELESCOPIC CRANES

### STRONG AND FAST

Medium-size range of Telescopic cranes.

Ideal for jobs where speed is important and a winch is required, for example in the fishing industry and quay side operations.


## FEATURES

- 4 - 18 tm class
- Base with double rack and pinion system. Powerful rotation system especially designed for marine conditions
- Stationary base for easy installation on vessel
- Counterbalance valves directly mounted on each cylinder
- Hexagonal shaped telescopic booms with strong capacity and self-aligning, offering great load handling controll
- Control valve plumbed in. Shipped demounted with sufficient hose lenght for easy installation

## OPTIONS

- Radio Remote Control (RRS and/or RDC)
- Winch

## DOUBLE RACK AND PINION

This system increases strength, reliability and precision where the crane requires extra torque and operate in unstable conditions.

## TYPICAL APPLICATIONS

FISH FARMING · FISHING · WORKBOATS · QUAY SIDE · LAKES & RIVERS



## TECHNICAL DATA - TELESCOPIC CRANES

| Crane model | No. of extensions | | Boom length closed and extended (mt) 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Dyn. Lifting Moment (daNm) | Net. Lifting Moment (daNm) | Weight (kg) | Slewing angle (°) | Working Pressure (bar) | Max Oil Flow (l/min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V805T | 2S | m | 1,85 | | 3,2 | 4,57 | | | | | | 3.924 | 3.780 | 520 | 380 | 220 | 16 |
| | | Kg | 2.080 | | 1.190 | 830 | | | | | | | | | | | |
| | 3S | m | 1,95 | | 3,3 | 4,67 | | 6,03 | | | | | 3.692 | 570 | | | |
| | | Kg | 1.930 | | 1.110 | 765 | | 585 | | | | | | | | | |
| | 4S | m | | 2,05 | 3,4 | 4,77 | | 6,13 | 7,5 | | | | 3.560 | 615 | | | |
| | | Kg | | 1.770 | 1.020 | 700 | | 525 | 425 | | | | | | | | |
| V807NT | 2S | m | | 2,04 | 3,6 | | 5,15 | | | | | 6.602 | 6.610 | 680 | 387 | 260 | 18 |
| | | Kg | | 3.300 | 1.860 | | 1.290 | | | | | | | | | | |
| | 3S | m | | 2,1 | 3,67 | | 5,25 | 6,8 | | | | | 6.486 | 740 | | | |
| | | Kg | | 3.150 | 1.770 | | 1.220 | 930 | | | | | | | | | |
| | 4S | m | | 2,2 | 3,78 | | 5,35 | 6,9 | | 8,45 | | | 6.409 | 800 | | | |
| | | Kg | | 2.970 | 1.680 | | 1.140 | 860 | | 690 | | | | | | | |
| V809T | 2S | m | | 2,55 | | 4,25 | | 6 | | | | 8.240 | 8.250 | 995 | 395 | 250 | 20 |
| | | Kg | | 3.300 | | 1.930 | | 1.350 | | | | | | | | | |
| | 3S | m | | 2,8 | | 4,5 | | 6,25 | | 8 | | | 8.240 | 1.075 | | | |
| | | Kg | | 3.000 | | 1.770 | | 1.230 | | 940 | | | | | | | |
| | 4S | m | | 2,55 | | 4,25 | | 6 | 7,75 | | 9,95 | | 8.004 | 1.140 | | | |
| | | Kg | | 3.200 | | 1.810 | | 1.215 | 910 | | 725 | | | | | | |
| V811T | 2S | m | | 2,55 | | 4,25 | | 6 | | | | 10.104 | 10.110 | 995 | 395 | 295 | 20 |
| | | Kg | | 4.060 | | 2.400 | | 1.670 | | | | | | | | | |
| | 3S | m | | 2,8 | | 4,5 | | 6,25 | | 8 | | | 10.025 | 1.075 | | | |
| | | Kg | | 3.650 | | 2.200 | | 1.540 | | 1.190 | | | | | | | |
| | 4S | m | | 2,55 | | 4,25 | | 6 | 7,75 | | 9,95 | | 9.881 | 1.140 | | | |
| | | Kg | | 3.950 | | 2.275 | | 1.550 | 1.170 | | 940 | | | | | | |

Crane lifting capacity for harbor condition in sea state 0. Crane capacity calculated in respect of EN 12999 HC1 S4

# V800 LINE
## FULLY FOLDABLE CRANES

### FLEXIBLE AND SMART

Designed to keep constant the torque momentum reducing the pendulum effect of the load.

A very compact and light design makes them ideal for all vessels where reduced compact power is mandatory.


## FEATURES

- 3 - 28 tm class
- Base with double rack and pinion system. Powerful rotation system especially designed for marine conditions
- Counterbalance valves directly mounted on each cylinder
- Hexagonal shaped telescopic booms with strong capacity and self-aligning, offering great load handling control
- Control valve plumbed in. Shipped demounted with sufficient hose lenght for easy installation

## OPTIONS

- Radio Remote Control (RDC)
- Winch

## DOUBLE RACK AND PINION

This system increases strength, reliability and precision where the crane requires extra torque and operate in unstable conditions.

## TYPICAL APPLICATIONS

FISH FARMING · FISHING · WORKBOATS · **FERRYS** · NAVY · COAST GUARD · LAKES & RIVERS · WIND PARKS



# TECHNICAL DATA - FULLY FOLDABLE CRANES (1)

| Crane model | No. of extensions | | Boom length closed and extended (mt) 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | 12 | 13 | 14 | 15 | 16 | Dyn. Lifting Moment (daNm) | Net. Lifting Moment (daNm) | Weight (kg) | Slewing angle (°) | Working Pressure (bar) | Max Oil Flow (l/min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V803N | 1S | m | 3,20 | 4,55 | | | | | | | | | | | | | | 2.550 | 2.550 | 415 | 370 | 175 | 8 |
| | | Kg | 810 | 570 | | | | | | | | | | | | | | | | | | | |
| | 2S | m | 3,30 | 4,65 | | 6,00 | | | | | | | | | | | | | 2.450 | 450 | | | |
| | | Kg | 755 | 525 | | 405 | | | | | | | | | | | | | | | | | |
| | 3S | m | 3,40 | 4,75 | | 6,05 | 7,40 | | | | | | | | | | | | 2.350 | 480 | | | |
| | | Kg | 710 | 490 | | 370 | 300 | | | | | | | | | | | | | | | | |
| V804N | 1S | m | 3,62 | 4,98 | | | | | | | | | | | | | | 3.770 | 3.800 | 540 | 380 | 235 | 16 |
| | | Kg | 1.060 | 770 | | | | | | | | | | | | | | | | | | | |
| | 2S | m | 3,67 | | 5,03 | 6,39 | | | | | | | | | | | | | 3.550 | 590 | | | |
| | | Kg | 990 | | 710 | 550 | | | | | | | | | | | | | | | | | |
| | 3S | m | 3,77 | | 5,13 | 6,49 | 7,85 | | | | | | | | | | | | 3.450 | 640 | | | |
| | | Kg | 930 | | 650 | 500 | 410 | | | | | | | | | | | | | | | | |
| | 4S | m | 3,87 | | 5,23 | 6,59 | 7,59 | | 9,31 | | | | | | | | | | 3.300 | 685 | | | |
| | | Kg | 870 | | 600 | 450 | 360 | | 300 | | | | | | | | | | | | | | |
| V805 | 1S | m | 3,51 | 4,87 | | | | | | | | | | | | | | 4.307 | 4.300 | 540 | 380 | 265 | 16 |
| | | Kg | 1.250 | 900 | | | | | | | | | | | | | | | | | | | |
| | 2S | m | 3,61 | 4,97 | | 6,33 | | | | | | | | | | | | | 4.150 | 590 | | | |
| | | Kg | 1.170 | 830 | | 650 | | | | | | | | | | | | | | | | | |
| | 3S | m | 3,71 | | 5,07 | 6,43 | 7,79 | | | | | | | | | | | | 4.000 | 640 | | | |
| | | Kg | 1.100 | | 770 | 590 | 480 | | | | | | | | | | | | | | | | |
| | 4S | m | 3,81 | | 5,17 | 6,53 | 7,89 | | 9,25 | | | | | | | | | | 3.850 | 685 | | | |
| | | Kg | 1.030 | | 710 | 540 | 430 | | 360 | | | | | | | | | | | | | | |
| V806N | 1S | m | 3,88 | | 5,44 | | | | | | | | | | | | | 6.480 | 6.500 | 720 | 387 | 245 | 20 |
| | | Kg | 1.700 | | 1.210 | | | | | | | | | | | | | | | | | | |
| | 2S | m | 3,98 | | 5,55 | | 7,10 | | | | | | | | | | | | 6.300 | 790 | | | |
| | | Kg | 1.610 | | 1.130 | | 875 | | | | | | | | | | | | | | | | |
| | 3S | m | | 4,05 | 5,60 | | 7,18 | 8,74 | | | | | | | | | | | 6.050 | 850 | | | |
| | | Kg | | 1.520 | 1.055 | | 800 | 650 | | | | | | | | | | | | | | | |
| | 4S | m | | 4,15 | 5,70 | | 7,30 | 8,83 | | 10,40 | | | | | | | | | 5.800 | 900 | | | |
| | | Kg | | 1.440 | 980 | | 735 | 585 | | 490 | | | | | | | | | | | | | |
| V807N | 1S | m | 3,94 | | 5,50 | | | | | | | | | | | | | 7.063 | 7.050 | 735 | 387 | 265 | 20 |
| | | Kg | 1.820 | | 1.280 | | | | | | | | | | | | | | | | | | |
| | 2S | m | | 4,00 | 5,56 | | 7,12 | | | | | | | | | | | | 6.750 | 815 | | | |
| | | Kg | | 1.720 | 1.210 | | 935 | | | | | | | | | | | | | | | | |
| | 3S | m | | 4,05 | 5,60 | | 7,20 | 8,76 | | | | | | | | | | | 6.500 | 875 | | | |
| | | Kg | | 1.635 | 1.135 | | 860 | 700 | | | | | | | | | | | | | | | |
| | 4S | m | | 4,18 | 5,70 | | 7,30 | 8,86 | | 10,40 | | | | | | | | | 6.350 | 935 | | | |
| | | Kg | | 1.550 | 1.060 | | 790 | 630 | | 525 | | | | | | | | | | | | | |
| V808N | 1S | m | 3,95 | | 5,50 | | | | | | | | | | | | | 7.877 | 7.750 | 765 | 387 | 285 | 29 |
| | | Kg | 2.000 | | 1.420 | | | | | | | | | | | | | | | | | | |
| | 2S | m | | 4,00 | 5,56 | | 7,15 | | | | | | | | | | | | 7.550 | 845 | | | |
| | | Kg | | 1.920 | 1.350 | | 1.040 | | | | | | | | | | | | | | | | |
| | 3S | m | | 4,08 | 5,65 | | 7,20 | 8,76 | | | | | | | | | | | 7.300 | 905 | | | |
| | | Kg | | 1.820 | 1.270 | | 965 | 785 | | | | | | | | | | | | | | | |
| | 4S | m | | 4,18 | 5,75 | | 7,30 | 8,86 | | 10,45 | | | | | | | | | 7.050 | 965 | | | |
| | | Kg | | 1.720 | 1.180 | | 890 | 710 | | 595 | | | | | | | | | | | | | |

Crane lifting capacity for harbor condition in sea state 0. Crane capacity calculated in respect of EN 12999 HC1 S4

# TECHNICAL DATA - FULLY FOLDABLE CRANES (2)

| Crane model | No. of extensions | | Boom length closed and extended (mt) 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | 12 | 13 | 14 | 15 | 16 | Dyn. Lifting Moment (daNm) | Net. Lifting Moment (daNm) | Weight (kg) | Slewing angle (°) | Working Pressure (bar) | Max Oil Flow (l/min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V810 | 1S | m | | 4,20 | 5,94 | | | | | | | | | | | | | 9.400 | 9.300 | 1.080 | 395 | 290 | 40 |
| | | Kg | | 2.280 | 1.590 | | | | | | | | | | | | | | | | | | |
| | 2S | m | | 4,20 | 5,94 | | 7,74 | | | | | | | | | | | | 8.850 | 1.160 | | | | |
| | | Kg | | 2.180 | 1.500 | | 1.130 | | | | | | | | | | | | | | | | |
| | 3S | m | | 4,30 | | 6,04 | 7,84 | | 9,70 | | | | | | | | | | 8.600 | 1.260 | | | | |
| | | Kg | | 2.050 | | 1.370 | 1.020 | | 810 | | | | | | | | | | | | | | |
| | 4S | m | | 4,40 | | 6,14 | 7,95 | | 9,80 | | 11,80 | | | | | | | | 8.300 | 1.350 | | | | |
| | | Kg | | 1.930 | | 1.280 | 930 | | 725 | | 590 | | | | | | | | | | | | |
| | 5S | m | | 4,48 | | 6,24 | | 8,05 | 9,90 | | 11,75 | | | | | | | | 8.000 | 1.420 | | | | |
| | | Kg | | 1.820 | | 1.190 | | 850 | 645 | | 520 | | | | | | | | | | | | |
| V811NG | 1S | m | | 4,10 | 5,79 | | | | | | | | | | | | | 12.460 | 10.400 | 995 | 425 | 310 | 40 radio<br>20 no radio |
| | | Kg | | 2.580 | 1.820 | | | | | | | | | | | | | | | | | | |
| | 2S | m | | 4,11 | 5,79 | | 7,48 | | | | | | | | | | | | 10.000 | 1.100 | | | | |
| | | Kg | | 2.475 | 1.720 | | 1.325 | | | | | | | | | | | | | | | | |
| | 3S | m | | 4,19 | 5,87 | | 7,56 | | 9,36 | | | | | | | | | | 9.400 | 1.200 | | | | |
| | | Kg | | 2.285 | 1.565 | | 1.185 | | 950 | | | | | | | | | | | | | | |
| | 4S | m | | 4,27 | 5,95 | | 7,64 | | 9,44 | | 11,24 | | | | | | | | 9.150 | 1.290 | | | | |
| | | Kg | | 2.170 | 1.475 | | 1.100 | | 865 | | 715 | | | | | | | | | | | | |
| V812 | 1S | m | | 4,34 | | 6,14 | | | | | | | | | | | | | 11.680 | 11.600 | 1.285 | 380 | 310 | 25 |
| | | Kg | | 2.730 | | 1.910 | | | | | | | | | | | | | | | | | |
| | 2S | m | | 4,42 | | 6,23 | | 8,10 | | | | | | | | | | | 11.050 | 1.415 | | | | |
| | | Kg | | 2.550 | | 1.800 | | 1.360 | | | | | | | | | | | | | | | |
| | 3S | m | | 4,51 | | 6,31 | | 8,18 | | 10,16 | | | | | | | | | 10.750 | 1.535 | | | | |
| | | Kg | | 2.430 | | 1.700 | | 1.260 | | 1.000 | | | | | | | | | | | | | |
| | 4S | m | | 4,60 | | 6,40 | | 8,27 | | 10,25 | | | 12,23 | | | | | | 10.500 | 1.635 | | | | |
| | | Kg | | 2.320 | | 1.580 | | 1.160 | | 890 | | | 730 | | | | | | | | | | |
| | 5S | m | | 4,68 | | 6,48 | | 8,35 | | 10,33 | | | 12,31 | | 14,31 | | | | 10.300 | 1.705 | | | | |
| | | Kg | | 2.250 | | 1.535 | | 1.110 | | 835 | | | 665 | | 545 | | | | | | | | |
| V813NG | 1S | m | | 4,54 | | 6,34 | | | | | | | | | | | | | 15.570 | 12.150 | 1.285 | 425 | 285 | 60 radio<br>30 no radio |
| | | Kg | | 2.740 | | 1.940 | | | | | | | | | | | | | | | | | |
| | 2S | m | | 4,54 | | 6,34 | | 8,14 | | | | | | | | | | | 11.600 | 1.405 | | | | |
| | | Kg | | 2.610 | | 1.810 | | 1.395 | | | | | | | | | | | | | | | |
| | 3S | m | | 4,62 | | 6,42 | | 8,22 | | 10,20 | | | | | | | | | 11.200 | 1.520 | | | | |
| | | Kg | | 2.475 | | 1.690 | | 1.280 | | 1.015 | | | | | | | | | | | | | |
| | 4S | m | | 4,71 | | 6,51 | | 8,31 | | 10,29 | | | 12,27 | | | | | | 11.000 | 1.610 | | | | |
| | | Kg | | 2.355 | | 1.585 | | 1.175 | | 910 | | | 755 | | | | | | | | | | |
| | 5S | m | | 4,78 | | 6,58 | | 8,38 | | 10,36 | | | 12,34 | | 14,39 | | | | 10.500 | 1.655 | | | | |
| | | Kg | | 2.245 | | 1.490 | | 1.085 | | 825 | | | 665 | | 560 | | | | | | | | |
| V815 | 1S | m | | 4,34 | | 6,14 | | | | | | | | | | | | | 18.110 | 13.620 | 1.470 | 380 | 290 | 25 |
| | | Kg | | 3.200 | | 2.240 | | | | | | | | | | | | | | | | | |
| | 2S | m | | 4,42 | | 6,23 | | 8,10 | | | | | | | | | | | 13.010 | 1.600 | | | | |
| | | Kg | | 3.000 | | 2.100 | | 1.600 | | | | | | | | | | | | | | | |
| | 3S | m | | 4,51 | | 6,31 | | 8,18 | | 10,16 | | | | | | | | | 12.750 | 1.720 | | | | |
| | | Kg | | 2.860 | | 1.980 | | 1.480 | | 1.180 | | | | | | | | | | | | | |
| | 4S | m | | 4,60 | | 6,40 | | 8,27 | | 10,25 | | | 12,23 | | | | | | 12.450 | 1.820 | | | | |
| | | Kg | | 2.760 | | 1.870 | | 1.370 | | 1.065 | | | 880 | | | | | | | | | | |
| | 5S | m | | 4,68 | | 6,48 | | 8,35 | | 10,33 | | | 12,31 | | 14,31 | | | | 12.170 | 1.910 | | | | |
| | | Kg | | 2.650 | | 1.780 | | 1.280 | | 990 | | | 800 | | 610 | | | | | | | | |
| V817 | 1S | m | | 4,36 | | 6,23 | | | | | | | | | | | | | 22.400 | 15.484 | 1.770 | 410 | 310 | 32 |
| | | Kg | | 3.620 | | 2.520 | | | | | | | | | | | | | | | | | |
| | 2S | m | | 4,36 | | 6,23 | | 8,10 | | | | | | | | | | | 14.994 | 1.910 | | | | |
| | | Kg | | 3.520 | | 2.410 | | 1.830 | | | | | | | | | | | | | | | |
| | 3S | m | | 4,36 | | 6,23 | | 8,10 | | 10,05 | | | | | | | | | 14.700 | 2.030 | | | | |
| | | Kg | | 3.450 | | 2.320 | | 1.730 | | 1.370 | | | | | | | | | | | | | |
| | 4S | m | | 4,36 | | 6,23 | | 8,10 | | 10,05 | | | 12,00 | | | | | | 14.406 | 2.150 | | | | |
| | | Kg | | 3.370 | | 2.220 | | 1.620 | | 1.260 | | | 1.040 | | | | | | | | | | |
| | 5S | m | | 4,45 | | 6,32 | | 8,20 | | 10,15 | | | 12,10 | | 14,10 | | | | 14.112 | 2.250 | | | | |
| | | Kg | | 3.230 | | 2.100 | | 1.510 | | 1.160 | | | 935 | | 790 | | | | | | | | |
| | 6S | m | | 4,52 | | 6,40 | | 8,26 | | 10,20 | | | 12,20 | | 14,20 | | 16,20 | | 13.720 | 2.340 | | | | |
| | | Kg | | 3.100 | | 2.000 | | 1.420 | | 1.060 | | | 845 | | 700 | | 600 | | | | | | |

= NEW GENERATION CRANE

Crane lifting capacity for harbor condition in sea state 0. Crane capacity calculated in respect of EN 12999 HC1 S4

# TECHNICAL DATA - FULLY FOLDABLE CRANES (3)

| Crane model | No. of extensions | | Boom length closed and extended (mt) 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | | 12 | 13 | 14 | 15 | 16 | Dyn. Lifting Moment (daNm) | Net. Lifting Moment (daNm) | Weight (kg) | Slewing angle (°) | Working Pressure (bar) | Max Oil Flow (l/min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V817NG | 1S | m | | 4,54 | | 6,34 | | | | | | | | | | | | | 19.700 | 15.500 | 1.475 | 425 | 280 | 60 radio<br>40 no radio |
| | | Kg | | 3.490 | | 2.475 | | | | | | | | | | | | | | | | | |
| | 2S | m | | 4,54 | | 6,34 | | 8,14 | | | | | | | | | | | | 14.700 | 1.610 | | | |
| | | Kg | | 3.310 | | 2.305 | | 1.775 | | | | | | | | | | | | | | | |
| | 3S | m | | 4,62 | | 6,42 | | 8,22 | | 10,20 | | | | | | | | | | 14.300 | 1.725 | | | |
| | | Kg | | 3.150 | | 2.170 | | 1.645 | | 1.305 | | | | | | | | | | | | | |
| | 4S | m | | 4,71 | | 6,51 | | 8,31 | | 10,29 | | | 12,27 | | | | | | | 14.000 | 1.830 | | | |
| | | Kg | | 3.005 | | 2.040 | | 1.520 | | 1.185 | | | 980 | | | | | | | | | | |
| | 5S | m | | 4,78 | | 6,58 | | 8,38 | | 10,36 | | | 12,34 | | 14,39 | | | | | 13.500 | 1.880 | | | |
| | | Kg | | 2.875 | | 1.925 | | 1.410 | | 1.080 | | | 875 | | 740 | | | | | | | | |
| V820<br>V820N* | 1S | m | | 4,36 | | 6,23 | | | | | | | | | | | | | 19.230 | 19.250 | 1.920 | 387 | 300 | 40 |
| | | Kg | | 4.500 | | 3.150 | | | | | | | | | | | | | | | | | |
| | 2S | m | | 4,36 | | 6,23 | | 8,10 | | | | | | | | | | | | 18.850 | 2.070 | | | |
| | | Kg | | 4.400 | | 3.050 | | 2.300 | | | | | | | | | | | | | | | |
| | 3S | m | | 4,36 | | 6,23 | | 8,10 | | 10,05 | | | | | | | | | | 18.350 | 2.210 | | | |
| | | Kg | | 4.280 | | 2.900 | | 2.180 | | 1.725 | | | | | | | | | | | | | |
| | 4S | m | | 4,36 | | 6,23 | | 8,10 | | 10,05 | | | 12,00 | | | | | | | 17.900 | 2.340 | | | |
| | | Kg | | 4.180 | | 2.800 | | 2.060 | | 1.590 | | | 1.315 | | | | | | | | | | |
| | 5S | m | | 4,45 | | 6,32 | | 8,20 | | 10,15 | | | 12,10 | | 14,10 | | | | | 17.450 | 2.440 | | | |
| | | Kg | | 4.000 | | 2.640 | | 1.920 | | 1.480 | | | 1.190 | | 1.000 | | | | | | | | |
| | 6S | m | | 4,52 | | 6,40 | | 8,26 | | 10,20 | | | 12,20 | | 14,20 | | 16,20 | | | 17.050 | 2.540 | | | |
| | | Kg | | 3.850 | | 2.530 | | 1.820 | | 1.385 | | | 1.100 | | 910 | | 770 | | | | | | |
| V823<br>V823N* | 1S | m | | 4,36 | | 6,23 | | | | | | | | | | | | | 19.920 | 20.300 | 1.920 | 387 | 315 | 40 |
| | | Kg | | 4.660 | | 3.320 | | | | | | | | | | | | | | | | | |
| | 2S | m | | 4,36 | | 6,23 | | 8,10 | | | | | | | | | | | | 19.600 | 2.070 | | | |
| | | Kg | | 4.560 | | 3.210 | | 2.460 | | | | | | | | | | | | | | | |
| | 3S | m | | 4,36 | | 6,23 | | 8,10 | | 10,05 | | | | | | | | | | 18.950 | 2.210 | | | |
| | | Kg | | 4.430 | | 3.050 | | 2.330 | | 1.890 | | | | | | | | | | | | | |
| | 4S | m | | 4,36 | | 6,23 | | 8,10 | | 10,05 | | | 12,00 | | | | | | | 18.450 | 2.340 | | | |
| | | Kg | | 4.330 | | 2.950 | | 2.200 | | 1.740 | | | 1.460 | | | | | | | | | | |
| | 5S | m | | 4,45 | | 6,32 | | 8,20 | | 10,15 | | | 12,10 | | 14,10 | | | | | 18.050 | 2.440 | | | |
| | | Kg | | 4.140 | | 2.780 | | 2.050 | | 1.620 | | | 1.320 | | 1.140 | | | | | | | | |
| | 6S | m | | 4,52 | | 6,40 | | 8,26 | | 10,20 | | | 12,20 | | 14,20 | | 16,20 | | | 17.700 | 2.540 | | | |
| | | Kg | | 3.990 | | 2.660 | | 1.950 | | 1.520 | | | 1.220 | | 1.040 | | 900 | | | | | | |
| V825 | 1S | m | | 4,40 | | 6,17 | | | | | | | | | | | | | 24.530 | 24.500 | 2.580 | 400 | 290 | 50 |
| | | Kg | | 5.700 | | 4.000 | | | | | | | | | | | | | | | | | |
| | 2S | m | | 4,41 | | 6,18 | | 8,03 | | | | | | | | | | | | 24.250 | 2.760 | | | |
| | | Kg | | 5.600 | | 3.830 | | 2.860 | | | | | | | | | | | | | | | |
| | 3S | m | | 4,41 | | 6,18 | | 8,03 | 9,93 | | | | | | | | | | | 23.600 | 2.900 | | | |
| | | Kg | | 5.450 | | 3.680 | | 2.720 | 2.140 | | | | | | | | | | | | | | |
| | 4S | m | | 4,50 | | 6,27 | | 8,12 | | 10,02 | 11,92 | | | | | | | | | 23.000 | 3.060 | | | |
| | | Kg | | 5.200 | | 3.480 | | 2.540 | | 1.970 | 1.610 | | | | | | | | | | | | |
| | 5S | m | | 4,58 | | 6,35 | | 8,20 | | 10,10 | | | 12,00 | 13,98 | | | | | | 22.550 | 3.200 | | | |
| | | Kg | | 5.000 | | 3.340 | | 2.400 | | 1.850 | | | 1.490 | 1.250 | | | | | | | | | |
| | 6S | m | | 4,64 | | 6,41 | | 8,26 | | 10,16 | | | 12,06 | | 14,04 | | | | | 22.450 | 3.295 | | | |
| | | Kg | | 4.930 | | 3.270 | | 2.350 | | 1.790 | | | 1.435 | | 1.200 | | | | | | | | |
| V828 | 1S | m | | 4,40 | | 6,17 | | | | | | | | | | | | | 25.310 | 26.350 | 2.630 | 400 | 305 | 50 |
| | | Kg | | 5.870 | | 4.180 | | | | | | | | | | | | | | | | | |
| | 2S | m | | 4,41 | | 6,18 | | 8,03 | | | | | | | | | | | | 25.000 | 2.810 | | | |
| | | Kg | | 5.770 | | 4.000 | | 3.020 | | | | | | | | | | | | | | | |
| | 3S | m | | 4,41 | | 6,18 | | 8,03 | 9,93 | | | | | | | | | | | 24.300 | 2.950 | | | |
| | | Kg | | 5.620 | | 3.840 | | 2.870 | 2.280 | | | | | | | | | | | | | | |
| | 4S | m | | 4,50 | | 6,27 | | 8,12 | | 10,02 | 11,92 | | | | | | | | | 23.650 | 3.110 | | | |
| | | Kg | | 5.350 | | 3.630 | | 2.680 | | 2.100 | 1.740 | | | | | | | | | | | | |
| | 5S | m | | 4,58 | | 6,35 | | 8,20 | | 10,10 | | | 12,00 | 13,98 | | | | | | 23.200 | 3.250 | | | |
| | | Kg | | 5.160 | | 3.490 | | 2.540 | | 1.980 | | | 1.610 | 1.360 | | | | | | | | | |
| | 6S | m | | 4,64 | | 6,41 | | 8,26 | | 10,16 | | | 12,06 | | 14,04 | | 16,02 | | | 22.550 | 3.345 | | | |
| | | Kg | | 5.100 | | 3.420 | | 2.480 | | 1.910 | | | 1.550 | | 1.310 | | 1.060 | | | | | | |

■ = NEW GENERATION CRANE

*) ROUND CRANE BASE VERSION

Crane lifting capacity for harbor condition in sea state 0. Crane capacity calculated in respect of EN 12999 HC1 S4


# V900 LINE
## FULLY FOLDABLE CRANES WITH POWER LINK

### VERSATILE AND PRECISE

The Power link system gives the mechanical advantage to provide consistent force in all working angles of the boom granting power and great performances; it also permits negative angle working possibility.

Extensive powerful cranes in reduced overall size dimensions.


### FEATURES

- 20 - 50 tm class
- Base with double rack and pinion system. Powerful rotation system especially designed for marine conditions
- Counterbalance valves directly mounted on each cylinder
- Hexagonal shaped telescopic booms with strong capacity and self-aligning, offering great load handling control
- Control valve plumbed in. Shipped demounted with sufficient hose lenght for easy installation
- Double linkage

### OPTIONS

- Radio Remote Control (RDC)
- Winch

### DOUBLE RACK AND PINION

This system increases strength, reliability and precision where the crane requires extra torque or is not operating in levelled conditions.

### TYPICAL APPLICATIONS

FISH FARMING · QUAY SIDE · WORKBOATS · LAKES & RIVERS · NAVY · COAST GUARD · FISHING



# TECHNICAL DATA - FULLY FOLDABLE CRANES WITH POWER LINK

| Crane model | No. of extensions | | Boom length closed and extended (mt) | | | | | | | | | | | | | | | | | | Dyn. Lifting Moment (daNm) | Net. Lifting Moment (daNm) | Weight (kg) | Slewing angle (°) | Working Pressure (bar) | Max Oil Flow (l/min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | | 16 | 17 | 18 | 19 | 20 | 21 | | | | | | |
| V933 | 2S | m | 4,18 | 5,95 | | 7,80 | | | | | | | | | | | | | | | | 29.730 | 29.700 | 3.370 | 397 | 300 | 45 |
| | | Kg | 7.250 | 5.000 | | 3.800 | | | | | | | | | | | | | | | | | | | | | |
| | 3S | m | 4,20 | 5,95 | | 7,80 | | 9,80 | | | | | | | | | | | | | | | 29.000 | 3.590 | | | |
| | | Kg | 7.050 | 4.850 | | 3.620 | | 2.840 | | | | | | | | | | | | | | | | | | | |
| | 4S | m | 4,30 | | 6,05 | 7,90 | | 9,90 | | 11,90 | | | | | | | | | | | | | 28.500 | 3.820 | | | |
| | | Kg | 6.750 | | 4.610 | 3.410 | | 2.630 | | 2.160 | | | | | | | | | | | | | | | | | |
| | 5S | m | 4,40 | | 6,15 | | 8,00 | | 10,00 | | 12,00 | | 14,20 | | | | | | | | | | 28.000 | 3.990 | | | |
| | | Kg | 6.480 | | 4.410 | | 3.240 | | 2.460 | | 1.990 | | 1.660 | | | | | | | | | | | | | | |
| | 6S | m | 4,45 | | 6,30 | | 8,10 | | 10,10 | | 12,10 | | 14,30 | | | 16,50 | | | | | | | 27.300 | 4.150 | | | |
| | | Kg | 6.250 | | 4.200 | | 3.050 | | 2.300 | | 1.830 | | 1.500 | | | 1.280 | | | | | | | | | | | |
| | 7S | m | 4,60 | | 6,40 | | 8,30 | | 10,30 | | 12,30 | | 14,50 | | | 16,70 | | 18,85 | | | | | 26.700 | 4.270 | | | |
| | | Kg | 5.920 | | 4.000 | | 2.900 | | 2.160 | | 1.690 | | 1.360 | | | 1.140 | | 995 | | | | | | | | | |
| | 8S | m | 4,70 | | 6,50 | | 8,40 | | 10,40 | | 12,40 | | 14,60 | | | 16,80 | | 19,00 | | | 21,15 | | 26.300 | 4.390 | | | |
| | | Kg | 5.700 | | 3.800 | | 2.720 | | 2.000 | | 1.560 | | 1.240 | | | 1.025 | | 880 | | | 780 | | | | | | |
| V936 | 2S | m | 4,18 | 5,95 | | 7,80 | | | | | | | | | | | | | | | | 30.510 | 30.500 | 3.370 | 397 | 310 | 45 |
| | | Kg | 7.450 | 5.190 | | 3.980 | | | | | | | | | | | | | | | | | | | | | |
| | 3S | m | 4,20 | 5,95 | | 7,80 | | 9,80 | | | | | | | | | | | | | | | 29.800 | 3.590 | | | |
| | | Kg | 7.240 | 5.030 | | 3.800 | | 3.010 | | | | | | | | | | | | | | | | | | | |
| | 4S | m | 4,30 | | 6,05 | 7,90 | | 9,90 | | 11,90 | | | | | | | | | | | | | 29.300 | 3.820 | | | |
| | | Kg | 6.940 | | 4.790 | 3.580 | | 2.790 | | 2.320 | | | | | | | | | | | | | | | | | |
| | 5S | m | 4,40 | | 6,15 | | 8,00 | | 10,00 | | 12,00 | | | | | | | | | | | | 28.750 | 3.990 | | | |
| | | Kg | 6.660 | | 4.580 | | 3.400 | | 2.610 | | 2.140 | | | | | | | | | | | | | | | | |
| | 6S | m | 4,45 | | 6,30 | | 8,10 | | 10,10 | | 12,10 | | 14,30 | | | | | | | | | | 28.000 | 4.150 | | | |
| | | Kg | 6.430 | | 4.370 | | 3.200 | | 2.440 | | 1.970 | | 1.630 | | | | | | | | | | | | | | |
| | 7S | m | 4,60 | | 6,40 | | 8,30 | | 10,30 | | 12,30 | | 14,50 | | | 16,70 | | 18,85 | | | | | 27.500 | 4.270 | | | |
| | | Kg | 6.100 | | 4.160 | | 3.050 | | 2.300 | | 1.820 | | 1.480 | | | 1.260 | | 1.110 | | | | | | | | | |
| | 8S | m | 4,70 | | 6,50 | | 8,40 | | 10,40 | | 12,40 | | 14,60 | | | 16,80 | | 19,00 | | | 21,15 | | 27.100 | 4.390 | | | |
| | | Kg | 5.870 | | 3.960 | | 2.860 | | 2.130 | | 1.680 | | 1.350 | | | 1.130 | | 980 | | | 880 | | | | | | |
| V946B | 2S | m | 4,32 | | 6,10 | 7,95 | | | | | | | | | | | | | | | | 42.380 | 42.379 | 4.060 | 400 | 300 | 50 |
| | | Kg | 10.000 | | 7.120 | 5.450 | | | | | | | | | | | | | | | | | | | | | |
| | 3S | m | 4,43 | | 6,20 | | 8,05 | | 10,00 | | | | | | | | | | | | | | 41.546 | 4.310 | | | |
| | | Kg | 9.560 | | 6.800 | | 5.180 | | 4.140 | | | | | | | | | | | | | | | | | | |
| | 4S | m | 4,55 | | 6,30 | | 8,15 | | 10,10 | | 12,00 | | | | | | | | | | | | 40.975 | 4.590 | | | |
| | | Kg | 9.180 | | 6.500 | | 4.900 | | 3.880 | | 3.220 | | | | | | | | | | | | | | | | |
| | 5S | m | 4,55 | | 6,30 | | 8,15 | | 10,10 | | 12,00 | | | | | | | | | | | | 40.172 | 4.830 | | | |
| | | Kg | 9.000 | | 6.300 | | 4.680 | | 3.650 | | 2.990 | | | | | | | | | | | | | | | | |
| | 6S | m | 4,60 | | 6,35 | | 8,20 | | 10,10 | | 12,10 | | 14,10 | | | | | | | | | | 39.260 | 5.030 | | | |
| | | Kg | 8.700 | | 6.050 | | 4.470 | | 3.450 | | 2.800 | | 2.330 | | | | | | | | | | | | | | |
| | 7S | m | 4,60 | | 6,35 | | 8,20 | | 10,10 | | 12,10 | | 14,10 | | | 16,20 | | | | | | | 38.492 | 5.220 | | | |
| | | Kg | 8.530 | | 5.860 | | 4.280 | | 3.260 | | 2.600 | | 2.140 | | | 1.820 | | | | | | | | | | | |
| | 8S | m | 4,70 | | 6,40 | | 8,30 | | 10,20 | | 12,20 | | 14,20 | | | 16,30 | | | | | | | 37.807 | 5.400 | | | |
| | | Kg | 8.200 | | 5.620 | | 4.080 | | 3.080 | | 2.420 | | 1.950 | | | 1.640 | | | | | | | | | | | |
| V946 | 2S | m | 4,32 | | 6,10 | 7,95 | | | | | | | | | | | | | | | | 55.300 | 42.379 | 4.060 | 400 | 300 | 80 |
| | | Kg | 10.000 | | 7.120 | 5.450 | | | | | | | | | | | | | | | | | | | | | |
| | 3S | m | 4,43 | | 6,20 | | 8,05 | | 10,00 | | | | | | | | | | | | | | 41.546 | 4.310 | | | |
| | | Kg | 9.560 | | 6.800 | | 5.180 | | 4.140 | | | | | | | | | | | | | | | | | | |
| | 4S | m | 4,55 | | 6,30 | | 8,15 | | 10,10 | | 12,00 | | | | | | | | | | | | 40.975 | 4.590 | | | |
| | | Kg | 9.180 | | 6.500 | | 4.900 | | 3.880 | | 3.220 | | | | | | | | | | | | | | | | |
| | 5S | m | 4,55 | | 6,30 | | 8,15 | | 10,10 | | 12,00 | | 14,10 | | | | | | | | | | 40.172 | 4.830 | | | |
| | | Kg | 9.000 | | 6.300 | | 4.680 | | 3.650 | | 2.990 | | 2.530 | | | | | | | | | | | | | | |
| | 6S | m | 4,60 | | 6,35 | | 8,20 | | 10,10 | | 12,10 | | 14,10 | | | | | | | | | | 39.260 | 5.030 | | | |
| | | Kg | 8.700 | | 6.050 | | 4.470 | | 3.450 | | 2.800 | | 2.330 | | | | | | | | | | | | | | |
| | 7S | m | 4,60 | | 6,35 | | 8,20 | | 10,10 | | 12,10 | | 14,10 | | | | | | | | | | 38.492 | 5.220 | | | |
| | | Kg | 8.530 | | 5.860 | | 4.280 | | 3.260 | | 2.600 | | 2.140 | | | | | | | | | | | | | | |
| | 8S | m | 4,70 | | 6,40 | | 8,30 | | 10,20 | | 12,20 | | 14,20 | | | 16,30 | | 18,40 | | | 20,60 | | 37.808 | 5.400 | | | |
| | | Kg | 8.200 | | 5.620 | | 4.080 | | 3.080 | | 2.420 | | 1.950 | | | 1.640 | | 1.410 | | | 1.250 | | | | | | |
| V950 | 2S | m | 4,32 | | 6,10 | 7,95 | | | | | | | | | | | | | | | | 44.150 | 43.396 | 4.100 | 400 | 320 | 80 |
| | | Kg | 10.240 | | 7.335 | 5.660 | | | | | | | | | | | | | | | | | | | | | |
| | 3S | m | 4,43 | | 6,20 | | 8,05 | | 10,00 | | | | | | | | | | | | | | 42.502 | 4.350 | | | |
| | | Kg | 9.780 | | 7.010 | | 5.380 | | 4.340 | | | | | | | | | | | | | | | | | | |
| | 4S | m | 4,55 | | 6,30 | | 8,15 | | 10,10 | | 12,00 | | | | | | | | | | | | 41.957 | 4.630 | | | |
| | | Kg | 9.400 | | 6.720 | | 5.100 | | 4.080 | | 3.405 | | | | | | | | | | | | | | | | |
| | 5S | m | 4,55 | | 6,30 | | 8,15 | | 10,10 | | 12,00 | | | | | | | | | | | | 41.109 | 4.870 | | | |
| | | Kg | 9.210 | | 6.500 | | 4.880 | | 3.830 | | 3.160 | | | | | | | | | | | | | | | | |
| | 6S | m | 4,60 | | 6,35 | | 8,20 | | 10,10 | | 12,10 | | | | | | | | | | | | 40.252 | 5.070 | | | |
| | | Kg | 8.920 | | 6.250 | | 4.650 | | 3.630 | | 2.970 | | | | | | | | | | | | | | | | |
| | 7S | m | 4,60 | | 6,35 | | 8,20 | | 10,10 | | 12,10 | | 14,10 | | | 16,20 | | 18,40 | | | | | 39.395 | 5.260 | | | |
| | | Kg | 8.730 | | 6.050 | | 4.455 | | 3.420 | | 2.760 | | 2.290 | | | 1.970 | | 1.730 | | | | | | | | | |
| | 8S | m | 4,70 | | 6,40 | | 8,30 | | 10,20 | | 12,20 | | 14,20 | | | 16,30 | | 18,40 | | | 20,60 | | 38.730 | 5.440 | | | |
| | | Kg | 8.400 | | 5.800 | | 4.250 | | 3.240 | | 2.570 | | 2.090 | | | 1.780 | | 1.540 | | | 1.370 | | | | | | |

Crane lifting capacity for harbor condition in sea state 0. Crane capacity calculated in respect of EN 12999 HC1 S4

# VR LINE
## FULLY FOLDABLE CRANES WITH SLEWING BEARING


### STRONG AND COMPACT

The ideal solution for highly demanding applications.

Top Lifting class cranes with unlimited rotation during operation, space saving when it's not in use.

Knuckle Telescopic boom and foldable Articulated Foldable boom cranes with slewing bearing rotation system and double linkage.


### FEATURES

- 24 - 85 tm class
- Round base with slewing bearing rotation system
- Hexagonal shaped telescopic booms with strong capacity and self-aligning, offering great load handling control
- Power links
- Manual crane control seat operator and emergency control system on board
- Counterbalance valves directly mounted on each cylinder

### OPTIONS

- Radio Remote Control (RDC)
- Winch

### SLEWING BEARING

Thanks to a powerful slew bearing an strong planetary gear motors, the system has very low play for high precise operations.

### TYPICAL APPLICATIONS

FISH FARMING · QUAY SIDE · WORKBOATS · LAKES & RIVERS · NAVY · FISHING



# TECHNICAL DATA - FULLY FOLDABLE CRANES WITH SLEWING BEARING

| Crane model | No. of extensions | | Boom length closed and extended (mt) 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 16 | | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Dyn. Lifting Moment (daNm) | Net. Lifting Moment (daNm) | Weight (kg) | Slewing angle (°) | Working Pressure (bar) | Max Oil Flow (l/min) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VR24 | 2S | m | 4,28 | | 6,18 | | 8,08 | | | | | | | | | | | | | | | | | | 28.290 | 22073 | 2.245 | Endless | 310 | 50 |
| | | Kg | 5.265 | | 3.595 | | 2.730 | | | | | | | | | | | | | | | | | | | | | | |
| | 3S | m | 4,28 | | 6,18 | | 8,08 | | 10,11 | | | | | | | | | | | | | | | | | 21728 | 2.385 | | | |
| | | Kg | 5.175 | | 3.495 | | 2.625 | | 2.080 | | | | | | | | | | | | | | | | | | | | | |
| | 4S | m | 4,36 | | 6,26 | | 8,33 | | 10,19 | | 12,22 | | | | | | | | | | | | | | | 20894 | 2.525 | | | |
| | | Kg | 4.885 | | 3.270 | | 2.425 | | 1.895 | | 1.565 | | | | | | | | | | | | | | | | | | | |
| | 5S | m | 4,44 | | 6,34 | | 8,24 | | 10,27 | | 12,3 | | 14,43 | | | | | | | | | | | | | 20079 | 2.650 | | | |
| | | Kg | 4.610 | | 3.055 | | 2.235 | | 1.720 | | 1.400 | | 1.180 | | | | | | | | | | | | | | | | | |
| | 6S | m | 4,53 | | 6,43 | | 8,33 | | 10,36 | | 12,39 | | 14,52 | | 16,65 | | | | 18,89 | | | | | | | 19687 | 2.755 | | | |
| | | Kg | 4.430 | | 2.910 | | 2.105 | | 1.595 | | 1.275 | | 1.055 | | 905 | | | | 605 | | | | | | | | | | | |
| | 7S | m | 4,61 | | 6,51 | | 8,41 | | 10,44 | | 12,47 | | 14,6 | | 16,73 | | | | 18,90 | | | | | | | 19311 | 2.875 | | | |
| | | Kg | 4.270 | | 2.780 | | 1.985 | | 1.480 | | 1.160 | | 940 | | 795 | | | | 695 | | | | | | | | | | | |
| | 8S | m | 4,7 | | 6,6 | | 8,5 | | 10,53 | | 12,56 | | 14,69 | | 16,82 | | | | 18,98 | | | 21,18 | | | | 19042 | 2.965 | | | |
| | | Kg | 4.130 | | 2.670 | | 1.890 | | 1.390 | | 1.070 | | 850 | | 705 | | | | 605 | | | 535 | | | | | | | | |
| VR34 | 2S | m | 4,45 | | 6,12 | | 8,08 | | | | | | | | | | | | | | | | | | | 31780 | 2.245 | | | |
| | | Kg | 7.280 | | 5.250 | | 4.000 | | | | | | | | | | | | | | | | | | | | | | | |
| | 4S | m | 4,5 | | 6,2 | | 8,1 | | 10,1 | | | | | | | | | | | | | | | | | 31034 | 2.385 | | | |
| | | Kg | 7.030 | | 5.020 | | 3.770 | | 3.000 | | | | | | | | | | | | | | | | | | | | | |
| | 6S | m | 4,55 | | 6,22 | | 8,15 | | 10,15 | | 12,15 | | | | | | | | | | | | | | | 30307 | 2.525 | | | |
| | | Kg | 6.790 | | 4.800 | | 3.560 | | 2.790 | | 2.310 | | | | | | | | | | | | | | | | | | | |
| | 8S | m | 4,63 | | 6,3 | | 8,2 | | 10,2 | | 12,2 | | 14,3 | | | | | | | | | | | | | 29617 | 2.650 | | | |
| | | Kg | 6.520 | | 4.580 | | 3.350 | | 2.590 | | 2.110 | | 1.790 | | | | | | | | | | | | | | | | | |
| | 6S | m | 4,63 | | 6,3 | | 8,2 | | 10,2 | | 12,2 | | 14,3 | | 16,4 | | | | | | | | | | | 28978 | 2.755 | | | |
| | | Kg | 6.380 | | 4.420 | | 3.190 | | 2.430 | | 1.940 | | 1.610 | | 1.390 | | | | | | | | | | | | | | | |
| | 7S | m | 4,8 | | 6,5 | | 8,4 | | 10,4 | | 12,4 | | 14,5 | | 16,6 | | | | 18,72 | | | | | | | 28488 | 2.875 | | | |
| | | Kg | 6.050 | | 4.180 | | 2.990 | | 2.240 | | 1.770 | | 1.440 | | 1.220 | | | | 1.070 | | | | | | | | | | | |
| | 8S | m | 4,8 | | 6,5 | | 8,4 | | 10,4 | | 12,4 | | 14,5 | | 16,6 | | | | 18,75 | | 20,9 | | | | | 27876 | 2.965 | | | |
| | | Kg | 5.920 | | 4.050 | | 2.850 | | 2.100 | | 1.630 | | 1.300 | | 1.080 | | | | 925 | | 820 | | | | | | | | | |
| VR40 | 2S | m | 4,45 | | 6,12 | | 8,02 | | | | | | | | | | | | | | | | | | | 34050 | 2.245 | | | |
| | | Kg | 7.810 | | 5.650 | | 4.300 | | | | | | | | | | | | | | | | | | | | | | | |
| | 3S | m | 4,5 | | 6,2 | | 8,1 | | 10,1 | | | | | | | | | | | | | | | | | 33329 | 2.385 | | | |
| | | Kg | 7.550 | | 5.400 | | 4.070 | | 3.240 | | | | | | | | | | | | | | | | | | | | | |
| | 4S | m | 4,55 | | 6,22 | | 8,15 | | 10,15 | | 12,15 | | | | | | | | | | | | | | | 32673 | 2.525 | | | |
| | | Kg | 7.320 | | 5.190 | | 3.860 | | 3.040 | | 2.515 | | | | | | | | | | | | | | | | | | | |
| | 5S | m | 4,63 | | 6,3 | | 8,2 | | 10,2 | | 12,2 | | 14,3 | | | | | | | | | | | | | 31930 | 2.650 | | | |
| | | Kg | 7.030 | | 4.960 | | 3.650 | | 2.830 | | 2.315 | | 1.960 | | | | | | | | | | | | | | | | | |
| | 6S | m | 4,63 | | 6,3 | | 8,2 | | 10,2 | | 12,2 | | 14,3 | | 16,4 | | | | | | | | | | | 31294 | 2.755 | | | |
| | | Kg | 6.890 | | 4.800 | | 3.490 | | 2.670 | | 2.150 | | 1.790 | | 1.550 | | | | | | | | | | | | | | | |
| | 7S | m | 4,8 | | 6,5 | | 8,4 | | 10,4 | | 12,4 | | 14,5 | | 16,6 | | | | 18,72 | | | | | | | 30843 | 2.875 | | | |
| | | Kg | 6.550 | | 4.550 | | 3.280 | | 2.480 | | 1.970 | | 1.620 | | 1.375 | | | | 1.205 | | | | | | | | | | | |
| | 8S | m | 4,8 | | 6,5 | | 8,4 | | 10,4 | | 12,4 | | 14,5 | | 16,6 | | | | 18,75 | | 20,9 | | | | | 30419 | 2.965 | | | |
| | | Kg | 6.460 | | 4.420 | | 3.140 | | 2.340 | | 1.830 | | 1.470 | | 1.230 | | | | 1.060 | | 940 | | | | | | | | | |
| VR60 | 2S | m | 4,35 | | 6,15 | | 8 | | | | | | | | | | | | | | | | | | | 56.407 | 4.270 | | | |
| | | Kg | 13.000 | | 9.240 | | 7.185 | | | | | | | | | | | | | | | | | | | | | | | |
| | 4S | m | 4,46 | | 6,26 | | 8,06 | | 10 | 11,96 | | | | | | | | | | | | | | | | 53.641 | 4.850 | | | |
| | | Kg | 12.260 | | 8.625 | | 6.610 | | 5.270 | 4.400 | | | | | | | | | | | | | | | | | | | | |
| | 6S | m | 4,48 | | 6,28 | | 8,1 | | 10,05 | | 12 | | 14 | | 16,2 | | | | | | | | | | | 50.937 | 5.390 | | | |
| | | Kg | 11.590 | | 8.000 | | 6.005 | | 4.685 | | 3.820 | | 3.195 | | 2.760 | | | | | | | | | | | | | | | |
| | 8S | m | 4,69 | | 6,47 | | 8,3 | | 10,25 | | 12,2 | | 14,3 | | 16,4 | | | | 18,52 | | 20,7 | | | | | 49.752 | 5.820 | | | |
| | | Kg | 10.860 | | 7.450 | | 5.530 | | 4.240 | | 3.395 | | 2.780 | | 2.350 | | | | 2.045 | | 1.820 | | | | | | | | | |
| VR62 | 2S | m | 4,35 | | 6,15 | | 8 | | | | | | | | | | | | | | | | | | | 57353 | 2.245 | | | |
| | | Kg | 13.440 | | 9.570 | | 7.450 | | | | | | | | | | | | | | | | | | | | | | | |
| | 4S | m | 4,46 | | 6,26 | | 8,06 | | 10 | 11,96 | | | | | | | | | | | | | | | | 32673 | 2.525 | | | |
| | | Kg | 12.710 | | 8.950 | | 6.870 | | 5.480 | 4.580 | | | | | | | | | | | | | | | | | | | | |
| | 6S | m | 4,48 | | 6,28 | | 8,1 | | 10,05 | 11,98 | | | 14.08 | | 16,18 | | | | | | | | | | | 53837 | 2.755 | | | |
| | | Kg | 12.250 | | 8.480 | | 6.380 | | 5.000 | 4.080 | | | 3.420 | | 2.960 | | | | | | | | | | | | | | | |
| | 8S | m | 4,67 | | 6,47 | | 8,3 | | 10,25 | | 12,2 | | 14,3 | | 16,4 | | | | 18,52 | | 20,7 | | | | | 52685 | 2.965 | | | |
| | | Kg | 11.500 | | 7.920 | | 5.900 | | 4.550 | | 3.650 | | 3.000 | | 2.550 | | | | 2.200 | | 1.970 | | | | | | | | | |
| VR75 | 2S | m | 4,25 | 5,95 | | 7,75 | | | | | | | | | | | | | | | | | | | | 68.580 | 6.185 | | | |
| | | Kg | 16.100 | 11.650 | | 9.020 | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4S | m | 4,32 | | 6,05 | 7,85 | | 9,75 | | 11,65 | | | | | | | | | | | | | | | | 65.052 | 6.835 | | | |
| | | Kg | 15.350 | | 10.960 | 8.360 | | 6.670 | | 5.550 | | | | | | | | | | | | | | | | | | | | |
| | 6S | m | 4,47 | | 6,2 | 7,97 | | 9,9 | | 11,8 | | 13,8 | | 15,8 | | | | | | | | | | | | 63.145 | 7.435 | | | |
| | | Kg | 14.400 | | 10.200 | 7.650 | | 6.000 | | 4.950 | | 4.150 | | 3.600 | | | | | | | | | | | | | | | | |
| | 8S | m | 4,47 | | 6,2 | 7,97 | | 9,9 | | 11,8 | | 13,8 | | 15,8 | | | 17,8 | | 19,8 | | | | | | | 61.391 | 7.935 | | | |
| | | Kg | 14.000 | | 9.800 | 7.220 | | 5.550 | | 4.450 | | 3.660 | | 3.100 | | | 2.700 | | 2.400 | | | | | | | | | | | |
| | 10S | m | 4,75 | | 6,45 | | 8,25 | | 10,2 | | 12,05 | | 14,05 | | 16,05 | | | | 18,05 | | 20,05 | | 22,2 | | 24,35 | 60.810 | 8.335 | | | |
| | | Kg | 13.050 | | 9.100 | | 6.680 | | 5.060 | | 4.000 | | 3.220 | | 2.680 | | | | 2.300 | | 2.000 | | 1.760 | | 1.600 | | | | | |
| VR85 | 2S | m | 4,25 | 5,95 | | 7,75 | | | | | | | | | | | | | | | | | | | | 72.600 | 6.040 | | | |
| | | Kg | 17.100 | 12.400 | | 9.550 | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4S | m | 4,32 | | 6,05 | 7,85 | | 9,75 | | 11,65 | | | | | | | | | | | | | | | | 68.866 | 6.690 | | | |
| | | Kg | 16.250 | | 11.620 | 8.820 | | 7.010 | | 5.820 | | | | | | | | | | | | | | | | | | | | |
| | 6S | m | 4,47 | | 6,2 | 7,97 | | 9,9 | | 11,8 | | 13,8 | | 15,8 | | | | | | | | | | | | 67.721 | 7.290 | | | |
| | | Kg | 15.150 | | 10.800 | 8.150 | | 6.350 | | 5.200 | | 4.380 | | 3.800 | | | | | | | | | | | | | | | | |
| | 8S | m | 4,47 | | 6,2 | 7,97 | | 9,9 | | 11,8 | | 13,8 | | 15,8 | | | 17,8 | | 19,8 | | | | | | | 64.680 | 7.790 | | | |
| | | Kg | 14.750 | | 10.350 | 7.650 | | 5.900 | | 4.770 | | 3.920 | | 3.320 | | | 2.890 | | 2.580 | | | | | | | | | | | |
| | 10S | m | 4,75 | | 6,45 | | 8,25 | | 10,2 | | 12,02 | | 14,05 | | 16,05 | | | | | | 20,05 | | 22,2 | | 24,35 | 64.071 | 8.190 | | | |
| | | Kg | 13.750 | | 9.650 | | 7.100 | | 5.400 | | 4.300 | | 3.500 | | 2.920 | | | | | | 2.185 | | 1.935 | | 1.750 | | | | | |

| Crane model | Dyn. Lifting Moment (daNm) | Net. Lifting Moment (daNm) | Weight (kg) | Slewing angle (°) | Working Pressure (bar) | Max Oil Flow (l/min) |
|---|---|---|---|---|---|---|
| VR24 | 28.290 | 22073 | 2.245 | Endless | 310 | 50 |
| | | 21728 | 2.385 | | | |
| | | 20894 | 2.525 | | | |
| | | 20079 | 2.650 | | | |
| | | 19687 | 2.755 | | | |
| | | 19311 | 2.875 | | | |
| | | 19042 | 2.965 | | | |
| VR34 | 42.030 | 31780 | 2.245 | Endless | 310 | 50 |
| | | 31034 | 2.385 | | | |
| | | 30307 | 2.525 | | | |
| | | 29617 | 2.650 | | | |
| | | 28978 | 2.755 | | | |
| | | 28488 | 2.875 | | | |
| | | 27876 | 2.965 | | | |
| VR40 | 44.750 | 34050 | 2.245 | Endless | 310 | 50 |
| | | 33329 | 2.385 | | | |
| | | 32673 | 2.525 | | | |
| | | 31930 | 2.650 | | | |
| | | 31294 | 2.755 | | | |
| | | 30843 | 2.875 | | | |
| | | 30419 | 2.965 | | | |
| VR60 | 72.620 | 56.407 | 4.270 | Endless | 335 | 70 |
| | | 53.641 | 4.850 | | | |
| | | 50.937 | 5.390 | | | |
| | | 49.752 | 5.820 | | | |
| VR62 | 72.300 | 57353 | 2.245 | Endless | 310 | 50 |
| | | 32673 | 2.525 | | | |
| | | 53837 | 2.755 | | | |
| | | 52685 | 2.965 | | | |
| VR75 | 68.670 | 68.580 | 6.185 | Endless | 295 | 80 |
| | | 65.052 | 6.835 | | | |
| | | 63.145 | 7.435 | | | |
| | | 61.391 | 7.935 | | | |
| | | 60.810 | 8.335 | | | |
| VR85 | 72.594 | 72.600 | 6.040 | Endless | 315 | 100 |
| | | 68.866 | 6.690 | | | |
| | | 67.721 | 7.290 | | | |
| | | 64.680 | 7.790 | | | |
| | | 64.071 | 8.190 | | | |

■ = NEW GENERATION CRANE

Crane lifting capacity for harbor condition in sea state 0. Crane capacity calculated in respect of EN 12999 HC1 S4

# HOW TO CONSIDER MARINE CRANES

## INTRODUCTION

Marine & Offshore crane selection must consider different parameters according to the operating conditions. During their use cranes are subjected to loads due to the lifted load, its own weight, wind, vessel motions and, for off-board lifts, motions of the vessel the load is being lifted from. We intend to give our clients some indication to be used as a guideline for a first selection of the crane, but must be kept in mind, that only precise calculations done by Amco Veba Marine can confirm the correct selected crane.

## DEFINITION OF MARINE & OFFSHORE CRANES

We intend to underline the terminology normally used on the market for the definition of marine & offshore cranes.

### Shipboard cranes (marine mostly)

Shipboard cranes generally refer to lifting appliances designed to operate in harbor or sheltered water and where there is not significant movement of the ship due to wave actions and the wave height cannot be greater than 0,6 m. Cranes mounted on fixed installations used solely for lifting operations within the installation itself are normally considered as shipboard cranes.

### Offshore cranes

Offshore cranes generally refer to lifting appliances designed to operate inopen sea conditions with significant movement of the ship due to wave actions on which the crane is mounted, or cranes installed on fixed installation that lift from ships with movement. The sea state is higher than a significant wave height of 0,6 m. Due to this situation for all offshore cranes we have 2 different types of classifications.
On-board lifting: the lifting activity it is within the vessel/platform where the crane is mounted on.
Off-board lifting: the lifting activity it is from anywhere not on the same vessel/platform where the crane is mounted on (for example another moving vessel).

## DEFINITION OF SEA STATE

Waves generate vessel movement causing accelerations on lifted loads and impacting on crane strength. This situation must be considered during crane selection.

### Different type of international scale

There are different sea state scales and different ways to indicate the waves movement, the most common are Douglas scale, Beaufort Scale and Significant wave height. Scale use different classification, and this must be clearly defined during definition of the wave height and crane selection.

### Beaufort wind force scale

The Beaufort scale is an empirical measure that relates wind speed to observed conditions at sea, although it is a measure of wind speed and not of force of sea.

| Scale | Descript. | Wind speed | Wave height (mt) | Sea conditions |
|---|---|---|---|---|
| 0 | Calm | < 0.3 m/s | 0 | Flat |
| 1 | Light air | 0.6 - 3.0 knot<br>0.3 - 1.5 m/s | 0 - 0.2 | Ripples without crests |
| 2 | Light breeze | 3.0 - 6.4 knot<br>1.5 - 3.3 m/s | 0.2 - 0.5 | Small wavelets.<br>Crests of glassy appearance |
| 3 | Gentle breeze | 6.4 - 10.6 knot<br>3.3 - 5.5 m/s | 0.5 - 1.0 | Large wavelets. Crests begin to break |
| 4 | Moderate breeze | 10.6 - 15.5 knot<br>5.5 - 8.0 m/s | 1.0 - 2.0 | Small waves with breaking crests.<br>Fairly frequent whitecaps. |
| 5 | Fresh breeze | 15.5 - 21.0 knot<br>8.0 - 10.8 m/s | 2.0 - 3.0 | Moderate waves of some length.<br>Many whitecaps. Small amont of spray. |
| 6 | Strong breeze | 21.0 - 26.9 knot<br>10.8 - 13.9 m/s | 3.0 - 4.0 | Long waves begin to form. White foam crests are very frequent, some airborne spray is present. |
| 7 | High wind, moderate gale | 26.9 - 33.4 knot<br>13.9 - 17.2 m/s | 4.0 - 5.5 | Sea heaps up. Some foam from breaking waves is blown into streaks. Moderate amounts of airborne spray. |
| 8 | Gale, fresh gale | 33.4 - 40.3 knot<br>17.2 - 20.7 m/s | 5.5 - 7.5 | Moderately high waves with breaking crests forming spindrift. Well-marked streaks of foam are blown along wind direction. Considerable airborne spray. |
| 9 | Strong gale | 40.3 - 47.6 knot<br>20.7 - 24.5 m/s | 7.0 - 10.0 | High waves whose crests sometimes roll over. Dense foam is blown. Large amounts of airborne spray reduce visibility. |
| 10 | Storm, whole gale | 47.6 - 55.3 knot<br>24.5 - 28.4 m/s | 9.0 - 12.5 | Very high waves with crests foam give the sea a white appearance. Amounts of airborne spray reduce visibility. |
| 11 | Violent storm | 55.3 - 63.4 knot<br>28.4 - 32.6 m/s | 11.0 - 16.0 | Exceptionally high waves. Very large foam cover much of the sea surface. Airborne spray severaly reduce visibility. |
| 12 | Hurricane force | ≥ 63.4 knot | ≥ 14 | Huge waves. Sea is completely white with foam and spray. Air is filled with driving spray. Greatly reducing visibility. |

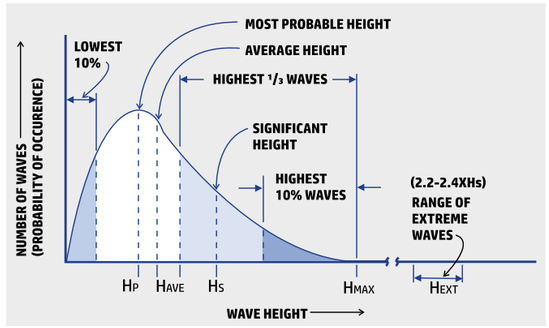
### Douglas Scale international sea and swell scale

The Douglas scale has the scope to estimate the roughness of the sea for navigation and has two codes: one is to estimating the sea state, the other is to describing the swell.

| STATE OF SEA (WIND SEA) | | | STATE OF SEA (SWELL DESCRIPTION) |
|---|---|---|---|
| Degre | Height (mt) | Description | Description |
| 0 | No wave | Calm Glassy | No swell |
| 1 | 0 - 0.1 | Calm Rippled | Very low (short and low wave) |
| 2 | 0.1 - 0.5 | Smooth | Low (long and low wave) |
| 3 | 0.5 - 1.25 | Slight | Light (short and moderate wave) |
| 4 | 1.25 - 2.5 | Moderate | Moderate (average and moderate wave) |
| 5 | 2.5 - 4.0 | Rough | Moderate (rough long and moderate wave) |
| 6 | 4.0 - 6.0 | Very Rough | Rough (short and heavy wave) |
| 7 | 6.0 - 9.0 | High | High (average and heavy wave) |
| 8 | 9.0 - 14.0 | Very High | Very high (long and heavy wave) |
| 9 | Above 14.0 | Phenomenal | Confused (wave length and Height indefinable) |

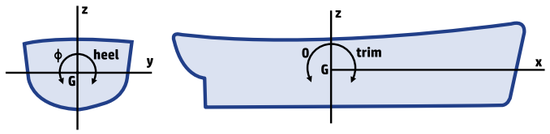
### Significant wave height Hs or Hsig

It is a different method to identify waves; it is not a classification or scale but an indication of the height of waves in mt. Significant wave height, represented as Hs or Hsig, is an important parameter for the statistical distribution of waves. The most common waves are less in height than Hs. Specifically, for Hsig. it is intended the average height of the highest one third of the individual wave heights in a short-term constant sea-state, typically 3 hours. *The major IAICS regulation refer to the significant wave height for crane calculation*.




## DEFINITION OF HEEL AND TRIM

Heel and trim are also important expression indicating a vessel inclination angle due to the waves forces.
**Heel:** the heel angle in degrees is the inclination angle about the longitudinal axis.
**Trim:** the trim angle in degrees is the inclination angle about the transverse axis.
The major regulation normally refer also to heel and trim to define crane definition factors.




## DYNAMIC AMPLIFICATION FACTOR

*Dynamic amplification factor* is a factor by which the Load is multiplied to consider accelerations during lifting operation. The dynamic amplification factors DAF represent the safety factor of the crane to resist to dynamic effects. All cranes working with sea state must be calculated considering the relative DAF. Major IACS Class Society indicate dynamic amplification factors to be considered depending from type of cranes, crane capacity in tons, type of lifting and sea state condition.



# AMCO VEBA MARINE CRANE SELECTION

**AMCO VEBA MARINE CRANE LOAD CAPACITY,** as indicated for each crane model in the catalogue, are calculated to operate in harbor conditions or sheltered water conditions; this is the typical condition of shipboard cranes working with:

- sea state 0 (zero)
- with a maximum Hsig (significant wave height) not exceeding 0,6 mt
- heel and trim do not exceed respectively 5° and 2°

With the use of the **AVK FACTOR** as indicated in the relative Table , it is possible to select all **AMCO VEBA MARINE CRANE** models for different offshore conditions and know the real lifting capabilities in specific operation use.

## HOW TO USE THE AMCO VEBA AVK FACTOR

All selections start from the standard lifting capacity of AMCO VEBA MARINE crane models for shipboard working condition in sea state zero and it is possible to choose 2 types of selection:

**Case 1** - Calculate the real lifting capacity of a selected AMCO VEBA MARINE crane model in different sea states condition.

**Case 2** - Identify the correct AMCO VEBA MARINE crane model able to lift a specific requested load in a specific sea state condition.

### CASE 1 EXAMPLE

**CALCULATE THE LIFTING CAPACITY OF AMCO VEBA MARINE CRANE VR60/6S IN A SPECIFIC SEA STATE**

- Crane VR60/6S lifting capacity is 2.760 kg@16.2 mt (shipboard sea state zero values as in table at pag. 31)
- We want to know the lifting crane capacity in offshore condition with Hsig = 1,6 mt with off-board lifting

From the below table we get the **AVK KEY FACTOR** = 0,56
**VR60/6S CRANE CAPACITY WITH HSIG 1,6 = 2.760 KG X AVK 0,56 = 1.545 KG**

### CASE 2 EXAMPLE

**SELECTION OF A MARINE CRANE FOR SEA STATE 3**

- Requested lifting capacity 1.600kg@ 12mt
- Working in Douglas Sea State 3 on-board lifting.

**FROM THE BELOW TABLE WE GET AVK KEY FACTOR** = 0,75
We can calculate the corrispondent harbor lifting capacity of the requested crane. Crane requested lifting capacity in Sea state 3, **1.600 kg / AVK FACTOR 0,75 = 2.130 kg in sea state zero (harbor).**
It will be necessary to choose in the pages of the catalogue a crane with a capacity of 2.130 kg@ 12 mt.
**CRANE can be a V936/5S with lifting capacity of 2.140@12 mt.**

| SEA STATE (S.S.) | | | | | VESSEL MOVEMENT | | ONBOARD LIFTING | | OFF-BOARD LIFTING | |
|---|---|---|---|---|---|---|---|---|---|---|
| Hsig mt | Douglas | | Beaufort | | Hell | Trim | DAF | AVK | DAF | AVK |
| | Grade | Tripology | Grade | Tripology | Pitch | Roll | | | | |
| 0 | 0 | no wave - Calm glassy | 0 | no wave - Flat | 2° | 5° | | **1** | | **1** |
| 0.6 | 1 | 0-0.1mt - Calm Rippled | 1 | 0-0.2mt - Ripples without crest | 2° | 5° | 1.40 | **0.82** | 1.60 | **0.75** |
| | 2 | 0.1-0.5mt - Smooth | 2 | 0.2-0.5mt - Small wavelets | | | | | | |
| 1.1 | 3 | 0.5-1.25mt - Slight | 3 | 0.5-1mt - Large wavelets | 3° | 6° | 1.60 | **0.75** | 1.85 | **0.63** |
| 1.6 | 4 | 1.25-2.5mt moderate | 4 | 1-2mt - Small waves | | | 1.75 | **0.66** | 2.10 | **0.56** |
| 2.4 | 5 | 2.5-4mt Rough | 5 | 2-3mt - Moderate waves | 4° | 7° | 2.00 | **0.57** | 2.50 | **0.46** |
| 3.1 | | | 6 | 3-4mt - Long waves being to form | 4° | 8° | 2.30 | **0.51** | 2.80 | **0.42** |


# CONTROL AND VERSATILITY

## RADIO REMOTE CONTROLS

Various forms of radio remote control are available. All utilise proportional control valves which facilitate the movement of loads smoothly and with high precision.

### SINGLE HAND PROPORTIONAL SYSTEM (RRS)

The Single hand control is compact and ergonomic, allowing safe proportional control of any single movement of the crane using thumb and index finger. Cable remote control, to avoid radio frequency interference, is available as an option. AA battery powered.

### MULTIFUNCTION CONTROL (RDC)

The Multifunction control allows the operator, using two hands simultaneously, to move 2, 3, 4 or more functions of the crane at once. Equipped with 8 ergonomic proportional levers to control up to 8 functions of the crane.

Cable remote control, to avoid radio frequency interference, is available as an option. Re-chargeable battery.

## WINCHES

Cranes can be supplied prepared for winch installation or complete with winch installed. Several winch options are available.

### TMA

Hydraulic and mechanical safety device winches. AMCO VEBA MARINE and TMA worked together to design a product suitable for the Marine environment. (No electric/electronic components).

### ROTZLER

Rotzler winches are famous worldwide for it's unique characteristics: compact dimensions, low weight and high power. Many components are manufactured from stainless steel.

ROTZLER TITAN

### DINAMIC OIL

Small, compact winches. Available only for our small range cranes.

## DENSO TAPE PROTECTION

Standard on L2 protection level, all hydraulic fittings are protected with a manually applied oil greased denso tape to grant a perfect resistance to salt ambient and allow a safe and reliable operation in case of service activities.

## CENTRALIZED GREASING SYSTEM

By gathering a group of greasing points together in one place, maintenance can be performed much more quickly.

## LOAD SENSING (LS) SYSTEM

A main control valve prepared for the load sensing pump is the best solution for complex hydraulic circuits. This feature increases the efficiency of the hydraulic circuit, reducing power loss and overheating of the system.

It matches the output flow to the exact amount required by the system, bringing the use of energy in the circuit to its optimum performance.

## LED WORKING LIGHTS

LED working lights fitted on the boom of the crane to allow illumination of the working area around the crane.

## EXTRA FUNCTIONS

Our design process takes into account the need for special equipment, so the cranes can be fitted with additional equipment as necessary.

### EXTRA FUNCTIONS NOT ACTIVATED

On request it is possible to add one or two extra functions on the crane with levers to control an hydralic accessory mounted by the installer.

### EXTRA FUNCTIONS ACTIVATED

An extra activated function includes an extra valve section, spool open or closed as required. It also includes all of the hoses and piping necessary to the end of the boom. At the end of the boom the pipes end in quick-connectors.

## ELECTRO-HYDRAULIC POWER PACK

Electro-hydraulic power packs allow the cranes to be used where there is no engine or power take-off available (e.g. small boats, quay sides).

# MAP OF STANDARD CRANE CONFIGURATIONS AND POSSIBLE AVAILABLE OPTIONS

| CRANE MODEL | | CRANE MANUALLY OPERATED OPERATOR CONSOLLE SYSTEM | | | | | | CRANE OPERATED WITH RADIO REMOTE SYSTEM | | | | | | | | | | HYDRAULIC BLOCK VALVE | | | HIGH PRESSURE OIL FILTER | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | RRS | | | RDC | | | | | | | | | | | | |
| | | Loose external Block Valve with levers | External consolle with ABS Protective cover | External open footboard consolle PPA2 | External close footboard consolle PPB2 | Bulkhead connector with 2mt hoses PP2 | CIA - Seat on column with manual controls | Loose external BlockValve with levers | Bulkhead connector with 2mt hoses PP2 | Hetronic Radio Single hand RRS | External open footboard consolle PPA2 | External close footboard consolle PPB2 | Bulkhead connector with 2mt hoses PP2 | PIA - Seat on column with radio controls | Stand up platform only emergency use | Hetronic Radio Portable RDC | Scanreco Radio Portable RDC | Danfoss PVG32 with Manual controls | PVG32 with radio Portable RDC | Load Ssensing port on PVG32 | Crane operated manually | Crane opeated with Radio RRS | Crane opeated with Radio RDC |
| MINI TELESCOPIC | 601T | | ● | △ | | △ | | ● | ○ | ● | ● | | ● | | | ● | ○ | ○ | ● | | △ | ● | ● |
| | 602T | | ● | △ | | △ | | ● | ○ | ● | ● | | ● | | | ● | ○ | ○ | ● | | △ | ● | ● |
| | 603T | | ● | △ | | △ | | ● | ○ | ● | ● | | ● | | | ● | ○ | ○ | ● | | △ | ● | ● |
| | 604T | | ● | △ | | △ | | ● | ○ | ● | ● | | ● | | | ● | ○ | ○ | ● | | △ | ● | ● |
| | 605T | | ● | △ | | △ | | ● | ○ | ● | ● | | ● | | | ● | ○ | ○ | ● | | △ | ● | ● |
| TELESCOPIC | V805T | ● | | △ | | ● | | ● | ● | ● | ● | | ● | | | ● | ○ | ○ | ● | ○ | △ | ● | ● |
| | V807NT | ● | | △ | | ○ | | ● | ○ | ● | ● | | ○ | | | ● | ○ | ○ | ● | ○ | △ | ● | ● |
| | V809T | | | ● | | ○ | ○ | | | | ● | | ○ | ○ | | ● | ○ | ○ | ● | ○ | △ | | ● |
| | V811T | | | ● | ○ | ○ | ○ | | | | ● | ○ | ○ | ○ | | ● | ○ | ○ | ● | ○ | △ | | ● |
| ARTICULATED | V803N | ● | | △ | | ● | | ● | ● | ● | ● | | ● | | | ● | ○ | ○ | ● | ○ | △ | ● | ● |
| | V804N | ● | | △ | | ● | | ● | ● | ● | ● | | ● | | | ● | ○ | ○ | ● | ○ | △ | ● | ● |
| | V805N | ● | | △ | | ● | | ● | ● | ● | ● | | ● | | | ● | ○ | ○ | ● | ○ | △ | ● | ● |
| | V807N | ● | | △ | | ○ | | ● | ○ | ● | ● | | ○ | | | ● | ○ | ○ | ● | ○ | △ | ● | ● |
| | V808N | ● | | △ | | ○ | | | | | ● | | ○ | | | ● | ○ | ○ | ● | ○ | △ | ● | ● |
| | V810 | | | ● | ○ | ○ | ○ | | | | ● | ○ | ○ | ○ | | ● | ○ | ○ | ● | ○ | △ | | ● |
| | V811NG | | | ● | ○ | ○ | ○ | | | | ● | ○ | ○ | ○ | | ● | ○ | ○ | ● | ○ | △ | | ● |
| | V812 | | | ● | ○ | ○ | ○ | | | | ● | ○ | ○ | ○ | | ● | ○ | ○ | ● | ○ | △ | | ● |
| | V813NG | | | ● | ○ | ○ | ○ | | | | ● | ○ | ○ | ○ | | ● | ○ | ○ | ● | ○ | △ | | ● |
| | V815 | | | ● | ○ | ○ | ○ | | | | ● | ○ | ○ | ○ | | ● | ○ | ○ | ● | ○ | △ | | ● |
| | V817 | | | ● | ○ | ○ | ○ | | | | ● | ○ | ○ | ○ | | ● | ○ | ○ | ● | ○ | △ | | ● |
| | V817NG | | | ● | ○ | ○ | ○ | | | | ● | ○ | ○ | ○ | | ● | ○ | ○ | ● | ○ | △ | | ● |
| | V820 | | | ● | ○ | ○ | ○ | | | | ● | ○ | ○ | ○ | | ● | ○ | ○ | ● | ○ | △ | | ● |
| | V823 | | | ● | ○ | ○ | ○ | | | | ● | ○ | ○ | ○ | | ● | ○ | ○ | ● | | ● | | ● |
| | V825 | | | ● | ○ | ○ | ○ | | | | ● | ○ | ○ | ○ | | ● | ○ | ○ | ● | ○ | △ | | ● |
| | V828 | | | ● | ○ | ○ | ○ | | | | ● | ○ | ○ | ○ | | ● | ○ | ○ | ● | | ● | | ● |
| ARTICULATED WITH POWER LINK | V933 | | | ● | ○ | ○ | ○ | | | | ● | ○ | ○ | ○ | | ● | ○ | △ | ● | ○ | △ | | ● |
| | V936 | | | ● | ○ | ○ | ○ | | | | ● | ○ | ○ | ○ | | ● | ○ | ○ | ● | | ● | | ● |
| | V946B | | | ● | ○ | ○ | ○ | | | | | | | ○ | | | | △ | | ○ | △ | | | |
| | V946 | | | | | | | | | | | ● | ● | | | ● | | | ● | ○ | | | | ● |
| | V950 | | | | | | | | | | | ● | ● | | | ● | | | ● | | | | | ● |
| ARTICULATED SLEWING BEARING | VR24 | | | | | | | | | | | | | ○ | *■ | ● | ○ | | ● | ○ | | | | ● |
| | VR34 | | | | | | | | | | | | | ○ | *■ | ● | ○ | | ● | ○ | | | | ● |
| | VR40 | | | | | | | | | | | | | ○ | *■ | ● | ○ | | ● | ○ | | | | ● |
| | VR60 | | | | | | | | | | | | | ○ | *■ | ● | ○ | | ● | ○ | | | | ● |
| | VR62 | | | | | | | | | | | | | ○ | *■ | ● | ○ | | ● | | | | | ● |
| | VR75 | | | | | | ● | | | | | | | ○ | *■ | ● | ○ | ● | ● | ○ | ● | | | ● |
| | VR85 | | | | | | | | | | | | | ○ | *□ | ● | ○ | | ● | | | | | ● |

| CRANE MODEL | | LOAD MOMENT VALVE SAFETY DEVICE | | | | | | SPECIAL DEVICES | | | | SLEWING LIMIT ROTATION | | | ACCESSORIES | | | | WINCHES | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Crane NO CE | | | Crane CE MARKET | | | | | | | | | | | | | | | ROTZLER | | | | DINAMIC OIL | | | TMA | | | |
| | | Manual controls | Radio RRS | Radio RDC | Manual controls | Radio RRS | Radio RDC | SGS | SDD | AVPS | EBB | Crane NO CE | Crane CE MARK | Elecric adjustable CE - No CE | Centralized Lubrication System | Emergency hand pump | Work Lights | Kit fixing screws for base | Extra Function for winch | TI1 1.000 kg | TI2 2.000 kg | TI3 3.200 kg | TI5 5.000 kg | NP05 - 500 kg | NP08 - 800 kg | NP10 - 1.000 kg | MW09 - 800 kg | MW22 - 2.000 kg | MW32 - 3.100 kg | MW50 - 5.000 kg |
| MINI TELESCOPIC | 601T | | | | | | | | | | | M ○ | M ● | | | ○ | ○ | ● | ○ | | | | | ○ | | | | | | |
| | 602T | | | | E ● | E ● | H ● | | | | | M ○ | M ● | | | ○ | ○ | ● | ○ | | | | | ○ | | | | | | |
| | 603T | | | | E ● | E ● | H ● | | | | | M ○ | M ● | | | ○ | ○ | ● | ○ | | | | | ○ | ○ | | | | | |
| | 604T | | | | E ● | E ● | H ● | | | | | M ○ | M ● | | | ○ | ○ | ● | ○ | | | | | | ○ | | △ | | | |
| | 605T | | | | E ● | E ● | H ● | | | | | M ○ | M ● | | | ○ | ○ | ● | ○ | | | | | | ○ | | △ | | | |
| TELESCOPIC | V805T | H ○ | E ○ | H ○ | H ● | E ● | H ● | | | | | M ○ | M ● | | ○ | ○ | ○ | ○ | ○ | ○ | | | | | ○ | | △ | | | |
| | V807NT | H ○ | E ○ | H ○ | H ● | E ● | H ● | | | | | M ○ | M ● | | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | ○ | △ | | | |
| | V809T | H ○ | | H ○ | H ● | | H ● | | | | | M ○ | M ● | | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | ○ | △ | | | |
| | V811T | H ○ | | H ○ | H ● | | H ● | | | | | M ○ | M ● | | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | ○ | △ | | | |
| ARTICULATED | V803N | H ○ | H ○ | H ○ | H ○ | H ○ | H ○ | | | | | M ○ | M ● | | | ○ | ○ | ○ | ○ | | | | | ○ | | | | | | |
| | V804N | H ○ | H ○ | H ○ | H ○ | H ○ | H ○ | | | | | M ○ | M ● | | | ○ | ○ | ○ | ○ | | | | | | ○ | | △ | | | |
| | V805N | H ○ | H ○ | H ○ | H ● | E ● | H ● | | | | | M ○ | M ● | | | ○ | ○ | ○ | ○ | | | | | | ○ | | △ | | | |
| | V807N | H ○ | H ○ | H ○ | H ● | E ● | H ● | | | | | M ○ | M ● | | | ○ | ○ | ○ | ○ | | | | | | | ○ | △ | | | |
| | V808N | H ○ | | H ○ | H ● | | H ● | | | | | M ○ | M ● | | | ○ | ○ | ○ | ○ | | | | | | | ○ | △ | | | |
| | V810 | H ○ | | H ○ | H ● | | H ● | ● | | | | M ○ | M ● | | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | △ | | | |
| | V811NG | H ● | | H ● | H ● | | H ● | ● | | | | M ○ | M ● | | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | |
| | V812 | H ● | | H ● | H ● | | H ● | ● | | | | M ○ | M ● | | | ○ | ○ | ○ | ○ | ○ | | | | | | | △ | △ | | |
| | V813NG | H ● | | H ● | H ● | | H ● | ● | | | | M ○ | M ● | | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | △ | | | |
| | V815 | H ● | | H ● | H ● | | H ● | ● | | | | M ○ | M ● | | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | △ | △ | | |
| | V817 | H ● | | H ● | H ● | | H ● | ● | ● | | | M ○ | M ● | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | △ | △ | | |
| | V817NG | H ● | | H ● | H ● | | H ● | ● | | | | M ○ | M ● | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | △ | △ | | |
| | V820 | H ● | | H ● | H ● | | H ● | ● | ● | | | M ○ | M ● | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | △ | △ | | |
| | V823 | H ● | | H ● | H ● | | H ● | ● | ● | ● | | M ○ | M ● | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | △ | △ | | |
| | V825 | H ● | | H ● | H ● | | H ● | | | | | M ○ | M ● | | ○ | ○ | ○ | ○ | ○ | | ○ | | | | | | △ | | | |
| | V828 | H ● | | H ● | H ● | | H ● | | | ● | | M ○ | M ● | | ○ | ○ | ○ | ○ | ○ | | ○ | | | | | | △ | | | |
| ARTICULATED WITH POWER LINK | V933 | H ● | | H ● | H ● | | H ● | ● | ● | | | M ○ | M ● | | ○ | ○ | ○ | ○ | ○ | | ○ | | | | | | △ | | | |
| | V936 | H ● | | H ● | H ● | | H ● | ● | ● | ● | | M ○ | M ● | | ○ | ○ | ○ | ○ | ○ | | ○ | | | | | | △ | | | |
| | V946B | H ● | | | H ● | | | ● | ● | | | M ○ | M ● | | ○ | ○ | ○ | ○ | ○ | | ○ | ○ | | | | | △ | △ | | |
| | V946 | | | H ● | | M ● | | ● | ● | | | M ○ | M ● | | ● | ○ | ○ | ○ | ○ | | ○ | ○ | | | | | △ | △ | | |
| | V950 | | | H ● | | M ● | | ● | ● | ● | | M ○ | M ● | | ● | ○ | ○ | ○ | ○ | | ○ | ○ | | | | | △ | △ | | |
| ARTICULATED SLEWING BEARING | VR24 | | | H ● | | | H ● | ● | ● | | | | | | ○ | ○ | ○ | ○ | ○ | | ○ | | | | | | △ | | | |
| | VR34 | | | H ● | | | H ● | ● | ● | | | | | | ○ | ○ | ○ | ○ | ○ | | ○ | | | | | | △ | | | |
| | VR40 | | | H ● | | | H ● | ● | ● | | | | | | ○ | ○ | ○ | ○ | ○ | | ○ | | | | | | △ | | | |
| | VR60 | | | H ● | | | H ● | ● | ● | | | | | | ○ | ○ | ○ | ○ | ○ | | | ○ | | | | | | △ | | |
| | VR62 | | | H ● | | | H ● | ● | ● | ● | | | | | ○ | ○ | ○ | ○ | ○ | | | ○ | | | | | | △ | | |
| | VR75 | E ● | | H ● | E ● | | H ● | ● | ● | | | # ● | # ● | | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | | | | | △ | △ | |
| | VR85 | | | E ● | | | E ● | ● | ● | ● | ● | | | ● | ○ | ○ | ○ | ○ | ○ | | | ○ | ○ | | | | | △ | △ | |

● Standard
○ Optional
▲ Standard available in connection with Danfoss PVG32 Blck valve
△ Option available in connection with Danfoss PVG 32 Block valve

E ●○ Electric device
M ●○ Mechanical device
H ●○ Hydraulic device
# ●○ Slewing limiting device hydraulic (No endless rotation crane)
* ■□ Crane operated with Radio Remote System, Stand-up platform only for emergency manual controls

# CRANE CODES FOR ORDERING

## EXAMPLE

| 1 | 2 | 3 | 4 | 5 | 6 | 6 | 7 | 8 | 8 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 605T | F L1 | 3S | CE | SB SST | - | - | LM | 5ELCAATA | EL1CHAT | - | RRS | 24V | - | - |
| V813NG | M L2 MET | 5S | - | - | PPB2 | DNF | LI | 5ELCAATA | - | - | RDC H | 24V | WL | LS |

### 1- CRANE MODEL

| Mini Telescopic | Telescopic |
|---|---|
| 601T | V805T |
| 602T | V807NT |
| 603T | V809T |
| 604T | V811T |
| 605T | |

| Articulated | Articulated with Power Link |
|---|---|
| V803N | |
| V804N | V933 |
| V805N | V936 |
| V807N | V946B |
| V808N | V946 |
| V810 | V950 |
| V811NG | |
| V812 | |
| V813NG | |
| V815 | |
| V817 | |
| V817NG | |
| V820 | |
| V823 | |
| V825 | |
| V828 | |

| Articulated Slew Bearing |
|---|
| VR24NG |
| VR34NG |
| VR40NG |
| VR60NG |
| VR62NG |
| VR65 |
| VR75 |
| VR85 |

### 2 - MLP PROGRAM CORROSION PROTECTION

| | | |
|---|---|---|
| F L0 | = | Inland River treatment |
| F L1 | = | Marine treatment |
| M L2 | = | Marine treatment ISO 12944 C5M |
| M L2 MET | = | Marine treatment ISO 12944 C5M + metallization |
| M L3 | = | Marine treatment ISO 12944 C5M + stainless steel fittings |
| M L3 MET | = | Marine treatment ISO 12944 C5M + stainless steel fittings + metallization |

### 3 - NUMBER OF EXTENSIONS

| | | |
|---|---|---|
| 1S | = | 1 extension |
| 2S | = | 2 extensions |
| 3S | = | 3 extensions |
| 4S | = | 4 extensions |
| 5S | = | 5 extensions |
| 6S | = | 6 extensions |
| 7S | = | 7 extensions |
| 8S | = | 8 extensions |

### 4 - CE VERSION

| | | |
|---|---|---|
| Empty cell | = | No CE |
| CE | = | CE market version with certificate |

### 5 - BASEMENT

| | | |
|---|---|---|
| Empty cell | = | With basement |
| SB SST | = | No base (only 600 serie cranes) |

### 6 - CRANE CONTROL SYSTEM

| | | |
|---|---|---|
| Empty cell | = | External console block valve for free installation with ABS protection cover (600 serie crane) |
| PP2 | = | External bulkhead flexible hoses connector |
| PPA2 | = | Footboard external console + bulkhead connectors + 2 mt flexible hoses |
| PPA4 | = | Footboard external console + bulkhead connectors + 4 mt flexible hoses |
| PPB2 | = | Closed external console + bulkhead connectors + 2 mt flexible hoses |
| PPB4 | = | Closed external console + bulkhead connectors + 4 mt flexible hoses |
| CIA | = | Seat Operator on crane column with manual controls (see configuration map) |
| PIA | = | Seat operator on crane column (operated only by radio) |
| DNF | = | Block Valve DANFOSS PVG32 |

### 7 - CRANE LOAD MOMENT CONTROL SYSTEM

| | | |
|---|---|---|
| LI | = | Crane Hydraulic Load Moment no CE *(see configuration map if standard)* |
| LM | = | Crane Electronic Load moment *(see configuration map if standard)* |

### 8 - ADDITIONAL HYDRAULIC ACTIVATIONS ( MAX. 3 ACTIVATIONS)

| | | |
|---|---|---|
| Empty cell | = | No supplementary activations on hydraulic blok valve |
| 5ELCHNA | = | Element on block valve not activated - Closed Circuit |
| 5ELCANA | = | Element on block valve not activated - Open Circuit |
| 5ELCAATA | = | Element on block valve activated for winch with flexible hoses - Open Circuit |
| EL1CHAT | = | 1st supplementary activation with flexible hoses till boom tip (chain and sliding guides) |
| EL2CHAT | = | 2nd supplementary activation with flexible hoses till boom tip (chain and sliding guides) |
| ELAVV | = | Supplementary activation till boom tip with hose reel |
| EL1BR I | = | 1st Supplementary activation till 1st boom (no hose reel , no chain and sliding guides) |
| EL2BR II | = | 2nd Supplementary activation till 2nd boom (no hose reel , no chain and sliding guides) |

### 9 - RADIO REMOTE CONTROL SYSTEM

| | | |
|---|---|---|
| RDC H | = | Radio Remote Hetronic (standard) |
| RDC S | = | Radio Remote SCANRECO (option) |
| RRS | = | Single hand Radio Remote Hetronic |

### 10 - CRANE VOLTAGE

**24V** = standard
**12V** = option

### 11 - WORKING LIGHTS

**WL** = Led lamps on 1st & 2nd boom

### 12 - LOAD SENSING

**LS** = Load Sensing

# MARINE & OFFSHORE CRANES

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0336-E-AD / 08-06-2022 (5800415)