Combined Knuckle/Telescopic Cranes
Telescopic Boom Cranes
Stiff-boom Cranes

Jib (Knuckle) Cranes
Pipe Handling Cranes
Luxury Yacht Cranes
HS.MARINE:
Top quality for ship and offshore cranes

A complete crane range designed for hoisting operations in a marine environment.
Heavy duty designed with emphasis on the side load force of the marine operations.
The design of these cranes has been developed considering the stresses, the load conditions and the environment of the marine operations.

All HS.Marine’s cranes have been specifically designed and manufactured to work in a marine environment.

HS.Marine build cranes only for ship and offshore application.
HS.Marine Company offer a top level of servicing in equipment specifying, technical support, state of the art engineering, workshop facilities and after sale service.

HS.Marine products contain:
• Quality
• Innovation
• Reliability
• Experience

These hydraulic cranes are designed to outlast and outperform the competition.
Whether you are in the shipping or offshore industry, no other organisations has a wider selection of different crane models, ranging from 5 to approx. 400 tm. (New models are coming soon).
We will always focus on the clients specific needs, and offer the best solution based on our extensive and flexible modular crane concept in close co-operation with the client.
The marine / offshore crane design is founded on the modular approach within and transversal to the crane ranges. This permits a quick response to the market needs, reduction of parts in stock, and a constant top quality level of the final product for the various models offered.
The design of these cranes has been specially developed and improved for operation in a marine environment with all the relevant aspects considered when working with different heel and trim conditions in a shipboard or offshore situation.

We always have different cranes in stock with short delivery times.

HS.MARINE’S STATE OF THE ART DESIGN AND ATTENTION TO DETAIL INCREASE SERVICE LIFE WHILE SIGNIFICANTLY REDUCING MAINTENANCE COSTS.

The design of the HS.Marine cranes has been developed considering the stresses, the load conditions and the environment of the marine operations. HS.Marine design and build cranes only for the marine and offshore environment.
For this reason no part of an HS.Marine cranes is derived from a truck crane design.
These cranes can work also with high angles of inclination. The heel and trim angles indicated in the catalogue are intended to be the static angles at which the crane can rotate and simultaneously hoist and dynamically handle 100% capacity.
All the cranes are provided with a powerful revolving system composed of slewing-ring and motor reducers, perfectly driving the crane even with high angles of inclination or relevant side forces.
All structures have been designed to take up heavy lateral forces. Looking at the cranes structures you will recognise that all articulation points are specially reinforced to absorb overloads.
Normally pins and bronze bushing are also definitely bigger than competitors cranes as the crane’s design is undertaken considering a rotation at relevant heel and trim angles whilst simultaneously allowing hoisting and handling of 100% crane capacity.
The articulation between main and knuckle boom is always executed without connecting rods to avoid stress concentration points and permit the crane to absorb overloads better.

The design is mainly focused on protecting the crane against being overloaded, by absorbing the extra forces through the special boom construction. Our cranes offer an extremely high resistance to overloads and perfectly combine elasticity and rigidity thereby reducing the risk of accident. The crane structures are always designed to prevent stress concentration points. Reinforcements and double plates are studied to create a smooth passage between elastic and rigid points in the structure of the cranes. All crane structures will be built with high tensile stress material (type WELDOX 700 E or equivalent) which meets the requirements of the corresponding steel grades and qualities (according to EN 10025).

As our cranes are designed to operate during relevant movement of the vessel or load we focus our design on the elasticity concept. We do not allow our cranes to have relevant flexion when loaded as we believe that this could easily be a reason of major overloads.
# Product range

## Combined Knuckle/Telescopic Cranes

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type AK</td>
<td>Fully foldable telescopic knuckle type cranes with articulated boom, available in different capacities ranging from 5.5 to 55 tm.</td>
</tr>
<tr>
<td>Type AKC</td>
<td>Fully foldable telescopic/knuckle type cranes with articulated boom, available in different capacities ranging from 61 to 310 tm.</td>
</tr>
<tr>
<td>Type AKD</td>
<td>Fully foldable telescopic/knuckle heavy duty cranes available in five basic models in different capacities ranging from 74 to 250 tm. Designed for heavy duty support dredging operations.</td>
</tr>
</tbody>
</table>

## Telescopic Boom Cranes

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type AT</td>
<td>Telescopic boom marine cranes, available in different capacities ranging from 5.75 to 53 tm.</td>
</tr>
<tr>
<td>Type ATC</td>
<td>Telescopic marine cranes available in different capacities ranging from 61 to 310 tm. The ATC cranes can be custom built according to requested load, radius and sea state.</td>
</tr>
<tr>
<td>Type ATD</td>
<td>Telescopic boom marine cranes are available in different capacities ranging from 8 to 400 tm. The ATD cranes are custom built according to requested load, radius and sea state.</td>
</tr>
<tr>
<td>Type ATR</td>
<td>Telescopic marine cranes available in different capacities ranging from 8 to 400 tm. The ATR cranes are custom built according to requested load, radius and sea state.</td>
</tr>
</tbody>
</table>

## Stiffboom Cranes

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type AF</td>
<td>Stiff-boom marine cranes are available in different capacities ranging from 5 to 53 tm. The AF cranes are custom built according to requested load, radius and sea state.</td>
</tr>
<tr>
<td>Type AFC</td>
<td>Stiff-boom marine cranes are available in different capacities ranging from 61 to 310 tm. The AFC cranes are custom built according to requested load, radius and sea state.</td>
</tr>
<tr>
<td>Type AFD</td>
<td>Stiff boom marine cranes are available in different capacities ranging from 8 to 400 tm. The AFD cranes are custom built according to requested load, radius and sea state.</td>
</tr>
</tbody>
</table>

## Jib (Knuckle) Cranes

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type AKB</td>
<td>Heavy-duty articulated boom (JIB) marine cranes are available in different capacities ranging from 8 to 400 tm. The AKB cranes are custom built according to requested load, radius and sea state.</td>
</tr>
<tr>
<td>Type AP</td>
<td>Heavy-duty articulated boom marine cranes are prepared with support for a power block for fishing application ranging from 6.5 to 13 tm. The AP cranes are custom built according to requested load, radius and sea state.</td>
</tr>
</tbody>
</table>

## Pipe Handling Cranes

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type PJ</td>
<td>Pipe handling manipulators are for fixed or mobile offshore application. The design of each manipulator is fully customised to assure the interfacing with the customer’s drilling plant, to increase the working area, to simplify the pipe moving operations and to reduce the cycle time.</td>
</tr>
</tbody>
</table>

## Luxury Yacht Cranes

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type YC</td>
<td>Luxury yacht cranes. Low profile stiff-boom type.</td>
</tr>
<tr>
<td>Type YT</td>
<td>Low profile telescopic revolving cranes with linear winch, power pack and remote control. Telescopic boom marine cranes available S.W.L. up to 3000 Kg. Yacht cranes are custom-built to the requested load, radius and overall dimensions. Custom-built cranes are also available.</td>
</tr>
</tbody>
</table>
Combined Knuckle Telescopic Cranes

Fully foldable combined telescopic/knuckle type marine cranes with articulated boom available in different standard capacities, and custom-built to requested load, radius and sea state.

Type AK

Fully foldable telescopic knuckle type cranes with articulated boom. Capacities range: from 5.5 to 55 tm

<table>
<thead>
<tr>
<th>Type</th>
<th>Model</th>
<th>Capacity</th>
<th>Load</th>
<th>Radius</th>
<th>Sea State</th>
</tr>
</thead>
<tbody>
<tr>
<td>AK 7 E1</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>AK 7 E2</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>AK 10 NE1</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>AK 10 LNE1</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>AK 10 NE2</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>AK 10 LNE2</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>AK 13 HE1</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>AK 13 LHE1</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>AK 13 HE2</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>AK 13 LHE2</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>AK 16 HE1</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>AK 16 LHE1</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
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<tr>
<td>AK 16 HE2</td>
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<td>—</td>
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</tr>
<tr>
<td>AK 16 LHE2</td>
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<tr>
<td>AK 20 E1</td>
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<tr>
<td>AK 20 LE1</td>
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<td>—</td>
</tr>
<tr>
<td>AK 20 E2</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>AK 20 LE2</td>
<td>—</td>
<td>—</td>
<td>—</td>
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<tr>
<td>AK 20 E3</td>
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<tr>
<td>AK 20 LE3</td>
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<td>—</td>
</tr>
<tr>
<td>AK 20 E4</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>
## Combined Knuckle Telescopic Cranes

<table>
<thead>
<tr>
<th>Model</th>
<th>Capacity</th>
<th>Boom Length</th>
<th>Reach</th>
<th>Load Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>AK 30 LE4</td>
<td>9.20 m</td>
<td>3.20 m</td>
<td>3.20 m</td>
<td>5.20 kg</td>
</tr>
<tr>
<td>AK 34 LE2</td>
<td>9.10 m</td>
<td>3.20 m</td>
<td>3.20 m</td>
<td>5.20 kg</td>
</tr>
<tr>
<td>AK 34 HE2</td>
<td>9.15 m</td>
<td>3.20 m</td>
<td>3.20 m</td>
<td>5.20 kg</td>
</tr>
<tr>
<td>AK 34 LHE2</td>
<td>9.10 m</td>
<td>3.20 m</td>
<td>3.20 m</td>
<td>5.20 kg</td>
</tr>
<tr>
<td>AK 34 HE3</td>
<td>9.05 m</td>
<td>3.20 m</td>
<td>3.20 m</td>
<td>5.20 kg</td>
</tr>
<tr>
<td>AK 34 HE4</td>
<td>9.00 m</td>
<td>3.20 m</td>
<td>3.20 m</td>
<td>5.20 kg</td>
</tr>
<tr>
<td>AK 34 LHE4</td>
<td>9.05 m</td>
<td>3.20 m</td>
<td>3.20 m</td>
<td>5.20 kg</td>
</tr>
<tr>
<td>AK 40 E2</td>
<td>8.90 m</td>
<td>3.20 m</td>
<td>3.20 m</td>
<td>5.20 kg</td>
</tr>
<tr>
<td>AK 40 LE2</td>
<td>8.90 m</td>
<td>3.20 m</td>
<td>3.20 m</td>
<td>5.20 kg</td>
</tr>
<tr>
<td>AK 40 E3</td>
<td>8.90 m</td>
<td>3.20 m</td>
<td>3.20 m</td>
<td>5.20 kg</td>
</tr>
<tr>
<td>AK 40 E4</td>
<td>8.90 m</td>
<td>3.20 m</td>
<td>3.20 m</td>
<td>5.20 kg</td>
</tr>
<tr>
<td>AK 40 LE4</td>
<td>8.90 m</td>
<td>3.20 m</td>
<td>3.20 m</td>
<td>5.20 kg</td>
</tr>
<tr>
<td>AK 48 E2</td>
<td>8.80 m</td>
<td>3.20 m</td>
<td>3.20 m</td>
<td>5.20 kg</td>
</tr>
<tr>
<td>AK 48 LE2</td>
<td>8.80 m</td>
<td>3.20 m</td>
<td>3.20 m</td>
<td>5.20 kg</td>
</tr>
<tr>
<td>AK 48 E3</td>
<td>8.80 m</td>
<td>3.20 m</td>
<td>3.20 m</td>
<td>5.20 kg</td>
</tr>
<tr>
<td>AK 48 E4</td>
<td>8.80 m</td>
<td>3.20 m</td>
<td>3.20 m</td>
<td>5.20 kg</td>
</tr>
</tbody>
</table>

![Combined Knuckle Telescopic Cranes Image]
Combined Knuckle Telescopic Cranes

Type AKC

Fully foldable telescopic/knuckle type cranes with articulated boom. Capacities range: from 61 to 310 tm
Combined Knuckle/Telescopic Cranes

Type AKC

Type AKD

Fully foldable telescopic/knuckle heavy duty cranes available in five base model. Designed for heavy duty support dredging operations. Capacities range: from 74 to 250 tm.
Telescopic Boom Cranes

Telescopic boom marine cranes, available in different standard capacities, and custom-built to the requested load, radius and sea state.

**Type AT**

Telescopic boom marine cranes.

Capacities range: from 5.75 to 53 tm.

<table>
<thead>
<tr>
<th>Type</th>
<th>Capacities</th>
<th>Load (tg)</th>
<th>Radius (m)</th>
<th>Sea State</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT 7 E1</td>
<td>3.75 to 53</td>
<td>2.50 to 6.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AT 7 E2</td>
<td>2.50 to 6.30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AT 10 LE1</td>
<td>3.08 to 5.33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AT 10 E2</td>
<td>2.90 to 4.90</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AT 10 LE2</td>
<td>5.45 to 7.70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AT 13 LE1</td>
<td>3.13 to 5.38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AT 13 E2</td>
<td>2.05 to 5.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AT 13 LE2</td>
<td>6.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AT 18/7 E1</td>
<td>4.38 to 7.18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AT 18/10 E2</td>
<td>6.00 to 10.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Telescopic Boom Cranes

**Type ATC**

Telescopic marine cranes. Can be custom built according to requested load, radius and sea state. Crane built and designed in according to DIN 15018 rules class H2-B3. Capacities range from 61 to 310 tm.

**Type ATR**

Low profile telescopic boom marine cranes. Custom built. Capacities range from 8 to 40 tm.

**Type ATD**

Stiff boom marine cranes, custom built according to requested load, radius and sea state. Capacities range from 8 to 400 tm.
Stiff-boom Cranes

Stiff-boom marine cranes, available in different standard capacities, and custom built to the requested load, radius and sea state.

Type AF

Stiff-boom marine cranes, custom built according to requested load, radius and sea state. Capacities range: from 5 to 53 tm

Type AFC

Stiff-boom marine cranes, custom built according to requested load, radius and sea state. Capacities range: from 61 to 310 tm

Type AFD

Stiff boom marine cranes, custom built according to requested load, radius and sea state. Capacities range: from 8 to 400 tm
Jib (Knuckle) Cranes
Different standard capacities, and also custom-built to requested load, radius and sea state.

Type AKB
Heavy-duty articulated boom (JIB) marine cranes, custom built according to requested load, radius and sea state.
Capacities range: from 8 to 400 tm

Type AP
Heavy-duty articulated boom marine cranes prepared with support for a power block for fishing application.
The AP cranes are custom built according to requested load, radius and sea state.
Capacities range: from 6.5 to 13 tm
**Pipe Handling Cranes**

Pipe handling manipulators for fixed or mobile offshore applications.

**Type PJ**

Pipe handling manipulators for fixed or mobile offshore applications. The design of each manipulator is fully customised to assure the interface with the customer’s drilling plant and increase the working area, to simplify the pipe moving operations and to reduce the cycle time.

**Capacities:**
- Custom built

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**Luxury Yacht cranes**

**Type YC**

Low profile stiff-boom cranes. Custom-built cranes are also available.

**Capacities:**
- SWL up to 3000 kg

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**Type YT**

Low profile telescopic revolving cranes with linear winch, power pack and remote control. Telescopic boom marine cranes available S.W.L. up to 3000 Kg. Yacht cranes are custom-built to the requested load, radius and overall dimensions. Custom-built cranes are also available.

**Capacities:**
- SWL up to 3000 Kg
Standard general technical specification

All HS.Marine’s cranes have been specifically designed and manufactured to work in a marine environment and adopt all the best solutions to make them resistant to the corrosive atmosphere of the marine environment.

All the cranes include:
- Standard HS.Marine’s Treatment
- Powerful rotation utilising slewing ring unit
- 360° Limited rotation (on cranes < 30 tm) with Operator’s stand console outside the crane base with 2 m of hoses and steel cover protection
- 360° Continuous rotation (on cranes > 30 tm) with Operator’s seat console with access ladder on the column and steel cover protection
- Proportional Control valve block (on cranes > 60 tm) complete with high pressure filter
- Hydraulic limiting moment device
- Emergency stop device
- Topping cylinder rod and knuckle cylinder executed in NIKROM 350 material to attain top resistance to the salt environment.
- Telescopic cylinder rods will be built in double chromium top layers with marine execution.
- Stainless steel pipe and pipe nuts.
- Special waterproof sealing rubber hoses and rubber tape on all fittings
- Extensive use of stainless steel for all small plates, supports, etc.
- All not structural bolts are in stainless steel A4 type
- All the springs are stainless steel execution
- All medium and big size of bronze bushings have a greasing point for each bushing
- Stainless steel greasing nipples
- Marine grease protection on all mechanical parts where steel is in contact with steel
- Special sealing of all flanges (gear boxes, slewing rings) and holes where the salt fog can in the long term start corrosion problems
- Transport frame and/or transport boom – rest in welded steel construction

Alternative Options

HS.Marine representatives are always available to discuss the technical specifications of our equipment which will be implemented to your specific application. We are always available to discuss and develop the most cost-effective and the most reliable solution to your operating requirements. HS.Marine is particularly interested in customising each crane and advising on optional equipment.

A wide range of optional equipment is available to be installed on our cranes.

If you contact HS.Marine representatives you are guaranteed personal and individual attention catering for your own particular installation.
The HS.Marine treatment and design concept reduces maintenance and lifecycle costs, simplifies inspection and recoating. Simple and low cost maintenance are the benefits that HS.Marine grants our customers.

- All steel plates are carefully stress-relieved and shot blasted (SA 2.5) in order to remove all rust and impurities before painting, according to the Swedish Standard (SIS 1967-SS PC-SP 6). Before painting the crane and all components are thoroughly washed to ensure all surfaces are free from oil and dust guaranteeing maximum paint adhesion including the slew ring and motor reducer.

The marine painting consists of zinc primer treatment (after shot blasting), a thick coat of epoxy intermediate and a polyurethane topcoat for a total of 250 microns. The paint system is the result of severe tests and guarantees full protection of the crane against corrosion.

Colour: Yellow RAL 1007 (Different colours or procedures on request can be evaluated and executed).

- Flame metalising treatment is optional.
- All parts are painted disassembled.
- All the structures as much as possible are also painted internally.
- All valves and distributor blocks are perfectly degreased and painted independently with special paint to have the best result in terms of corrosion resistance.
- Control console are made of stainless steel or protected after shot blasting with a chemical treatment by immersion in a chemical bath.
- Special attention is given to the watertight sealing and to the painting of all the components for example gear boxes, slew ring and motors that cannot be sandblasted or can have parts bolted together that in the long term may present corrosion problems in the salty atmosphere.
- All articulation pins are sealed after assembling to prevent water infiltration.
- All steel bushings of a pin are protected with an anticorrosion grease to prevent adhesion before installation.
- The winches are protected with a marine paint system and all the parts are primary painted when disassembled, to ensure difficult parts to paint after assembly are covered, and finally the winches are painted again after total assembling.
- Special marine greases are largely used for the special protection of each treat, each flange and each part that cannot be painted prior to installation.

- Radio or cable remote control system
- Different position of the controls
- Stainless steel AISI 316 hose fittings
- Stainless steel stand console
- Marine winches with hydraulic limiting switch rope down and electric limiting switch rope up
- Fully hydraulic limiting switch rope up for the winch system (instead of electric)
- Winch limiting pull system
- Centralised greasing system

- Double setting limiting moment device (for different sea state conditions)
- Operator cabin
- Flood lights
- Full range of electro-hydraulic or diesel-hydraulic power pack units complete with starting panel
- Explosion proof execution for crane and its components
- Turret under base or mating flange for the basement
- Flame metalising of the crane structures (after shot blasting)
- Different colours or different painting procedures
**Important details**

### Painting Procedures

All parts are painted separately. No component is painted after installation. Any openings on the boom may be painted internally and greased. Crane components are dismounted and painted in parts and then reassembled. Distributor block, valves, etc. are always degreased and properly painted. This is our standard on all our productions.

### Stainless Steel

We use, as standard, a large proportion of stainless steel part type AISI 316 L. All bolts and nuts are of stainless steel A4 type except connections where high tensile strength bolts are required. Springs, distributor levers, small supports, hose guides and small plates not on original structure are made of stainless steel AISI 316. All greasing nipples are made of stainless steel. As minimum all pipes and pipe nuts are stainless steel (on request all fittings can be made of stainless steel). Stand console can also be made of stainless steel on request.

### Cylinders Rods

We are aware that cylinder rods are always a critical part on most of concurrent cranes. We do not believe that it is possible to compromise on the quality of the protection of the cylinder rods. As standard, and for top resistance in the salt environment lifting cylinders rods and knuckle cylinders rods will be will be executed in Nikrom 350 material. Telescopic cylinder rods will be built in double chromium layer MARINE treatment for marine application (not standard double chromium treatment). Cylinder rods will always be verified for low specific pressure and the cylinder plug guarantees a long support. We accept the value of elastic flexion on the cylinder rods is lower than what required by the standards. Compared to concurrent cranes will most probably look bigger. Only high quality seals are utilised.

### Waterproof Solutions

All fittings are covered by a special rubber hose or tape with waterproof sealing. We use high quality material for underwater applications that guarantee the sealing even in the event of hoses bending.

### Salt Atmosphere Proof Sealing

All the parts we know that salt fog can, in the long term, penetrate (like the surface where two flanges are bolted together, pins, plugs, gear box flanges or hydraulic motors flanges, etc) are completely sealed with special material. We like to keep the salt fog out!
ELECTRICAL COMPONENTS.
We use IP 67 protection on the electrical components exposed to the environment.

GREASE AND WAX PROTECTION.
All the surfaces where steel is in contact with steel i.e.; flanges, bolts threads, pin resting surfaces, etc, are protected with special marine grease to prevent adhesion and surfaces rusting.

All the most critical parts and all internal surfaces are also sprayed by a special transparent wax that in a very short drying time eaves a hard transparent film.

We also use different types of grease for the different components.

ARTICULATION POINTS AND HEAVY ROTATION GROUP
Compared to concurrent cranes our articulation point will most probably look bigger.

We always calculate the crane with side loading due to the heel effect and we like to have small specific pressure on the bronze bushing and on the articulation pins.

On nearly all cranes except the smallest ones each bronze bushing has independent greasing.

On request it is also possible to order a crane with an extra heavy rotation group to permit high angles of inclination (Version “H”).

STEEL FRAME
Cranes are supplied including a steel frame for easy transport, easy and secure crane loading/unloading and long term storage.

The steel frame includes fork lift attachment.

EASY INSTALLATION.
HS.Marine cranes guarantee easy installation.

The cranes are always delivered fully tested and each connection is prepared and correctly marked.

Our workshop facilities guarantee that the crane and their components are tested in any configuration. Our facilities include internal and external testing benches and our hydraulic facilities guarantee that the cranes are always tested with the correct hydraulic power supply.

Complete installation procedures with required size of connection fitting, hoses and cable dimensions are in the Use and Maintenance manual.

DOCUMENTATION.
The crane documentation always includes the following:

• Spare parts manual in English language (in electric format)
• Use and maintenance manual (complete with installation procedures, Load Charts, Overall dimensions drawings, General description, Main technical data) in the English language (in electric format)
• Hydraulic Schema
• Electrical schema (if supplied any electrical components)
• Hook and shackle manufacturer certificates
• Winch manufacturer certificate (if supplied the winch kit)
• Rope manufacturer certificate (if supplied the winch kit)
• Radio or cable remote control certificate (if supplied the radio or the cable remote control)
• Factory test certificate
Quality Solutions

**MARINE WINCHES**
We utilise marine winches. The winches are painted when disassembled and final coated after they are assembled to ensure all parts are well protected. All the bolts (not structural) and springs are made in stainless steel.

**FULLY HYDRAULICAL SOLUTIONS**
The winch kit always includes limiting switches rope up and rope down.
The system can optionally be made fully hydraulic (hydraulic limiting switch rope up and hydraulic limiting switch rope down).
This device is normally an electric type, but on request can be hydraulic type.

**APPLICATIONS FOR HAZARDOUS ENVIRONMENT**
The cranes can be prepared for installation in hazardous areas. We can supply a fully hydraulic crane safety system or when necessary we can install EX or EXD electrical equipment.

**REMOTE CONTROL POSITION FROM RADIO REMOTE CONTROL**
On request the crane can be supplied by a radio remote system.
Note: The same system can also be used as a cable remote control (as standard the system is supplied with 15 m of back-up cable).

**HPU**
Standard HPU with easy maintenance tanks with simple and compact design.
Electrical motor with vertical axis and submerged pump (high quality gear pump or piston pump).
All parts are marine quality painted and all bolts are type A4.
All connections are ready and clearly marked.
Steel bars for support of the control starting panel are bolted to the tank (easy to dismount and easy to install somewhere).
Each oil tank is also tested with liquid penetration test.
All power packs are completely tested before delivery.
All components installed are from companies with worldwide sales networks (easy procurement of spare parts).
Spare parts and use and maintenance manual including components manufacturer data sheet.
All power packs are completely tested before delivery.

**MARINE COATING PROCESS**
All steel parts are marine quality painted after being shot blasted (SA 2.5) in order to remove all rust and impurities before painting according to the Swedish Standard (SIS 1967-SS PC-SP 6).
The paint system is the result of severe tests and guarantees the crane full protection against corrosion. Colour: Yellow RAL 1007 (Different colours or procedures on request can be evaluated and executed).
Our standard marine/offshore painting process consists of zinc primer treatment (after shot blasting), a thick coat of epoxy intermediate and a polyurethane topcoat for a total of 250 microns.
On request the crane structures can be supplied with a flame metalizing treatment instead of an application of zinc primer.
HS.Marine believes that it is in ours and our customers’ best interests to maintain close contact not only in the purchase period, but also throughout the equipment’s lifetime. This way our customers will get the best product and we will continue to improve. Our responsibility does not stop after installation!

HS.Marine provides full after-sales service direct from the factory (utilising HS.Marine service and maintenance department) and via our network of local dealers abroad (World wide service network). Our world wide service network is based on our dealers being leading companies (involved in marine equipment supply and service) with experienced technicians who receive support and training from HS.Marine.

HS.Marine service and maintenance departments work in close collaboration with our world wide service networks and are always available to provide you the best service and will assist you directly when required.

Below we have tried to describe how HS.Marine’s Service & After sales system is organized.

We will assist you World Wide!

Please look at back page to see our network.
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