

# MANTSINEN

# 200

HybriLift®



More load, less energy.



MANTSINEN  
**200 HybriLift®**

The strongest  
and fastest for superior  
productivity.



Antwerp, Belgium



Uusikaupunki, Finland



Tuapse, Russia

MANTSINEN  
HybriLift®  
Increases Energy  
Efficiency by up to

**35%**



Antwerp, Belgium

# MANTSINEN 200 HybriLift®

2006

HybriLift® testing and development

2008

200 HybriLift® into production and operation

2010

120 HybriLift® into production and operation

2011

160 HybriLift® into production and operation

2012

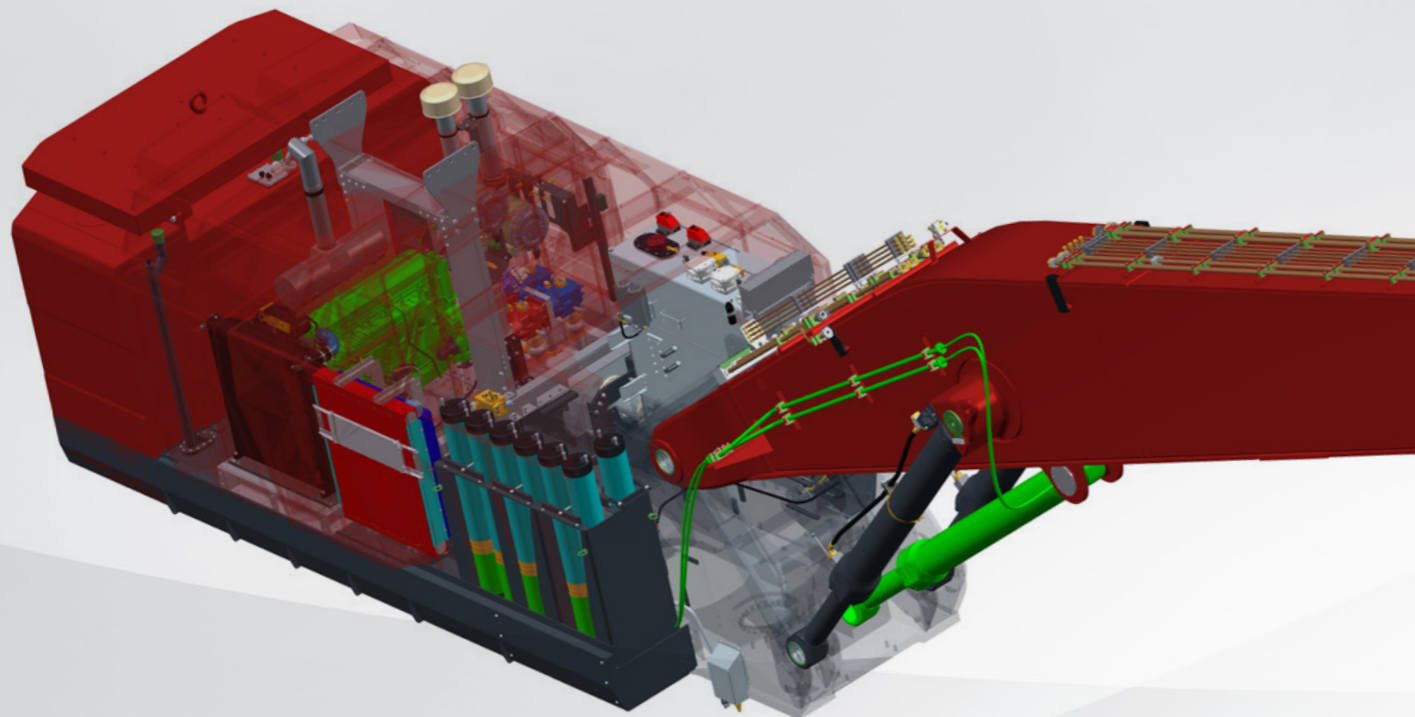
70 and 90 HybriLift® into production and operation

The unique HybriLift® energy storage and recovery system improves energy efficiency by up to 35 %.

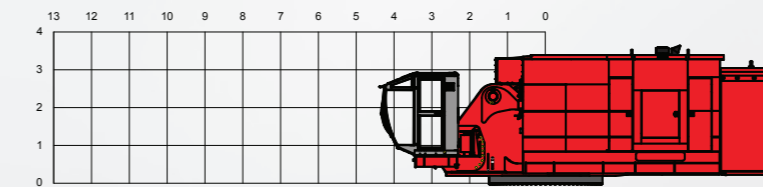
During each working cycle, energy is stored in a hydraulic accumulator system and again recovered to lift the main boom.

Mantsinen HybriLift® system allows using downsized engines and motors with lower emissions.

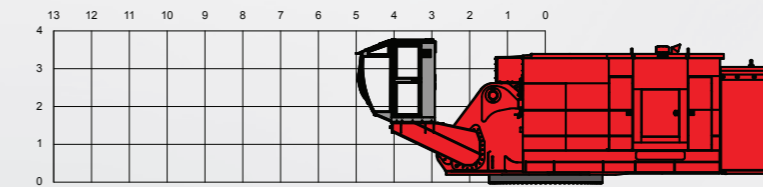
Mantsinen HybriLift® material handlers and attachments are designed for bulk material and general cargo handling.



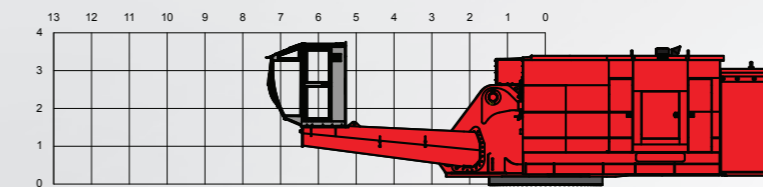
Fixed cab position 1



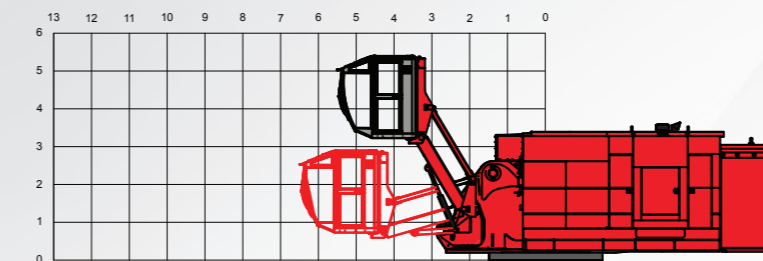
Fixed cab position 2



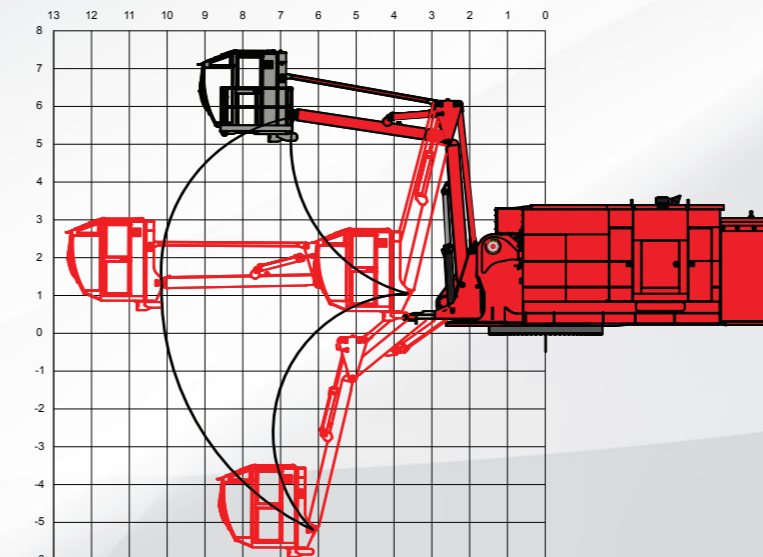
Fixed cab position 3



Cab elevator N1-3000



Cab elevator N2-6000



Maximum visibility.  
Optimum performance.

The Mantsinen 200 has three fixed cab options and two cab elevator options for complete visibility of loading operations.

All options feature a stainless steel operator cab, which has large windows for an excellent visibility. Operator seat and surroundings are ergonomic. Mantsinen safety system and control system displays are easily checked and operated. The cab is also equipped with an instructor seat.

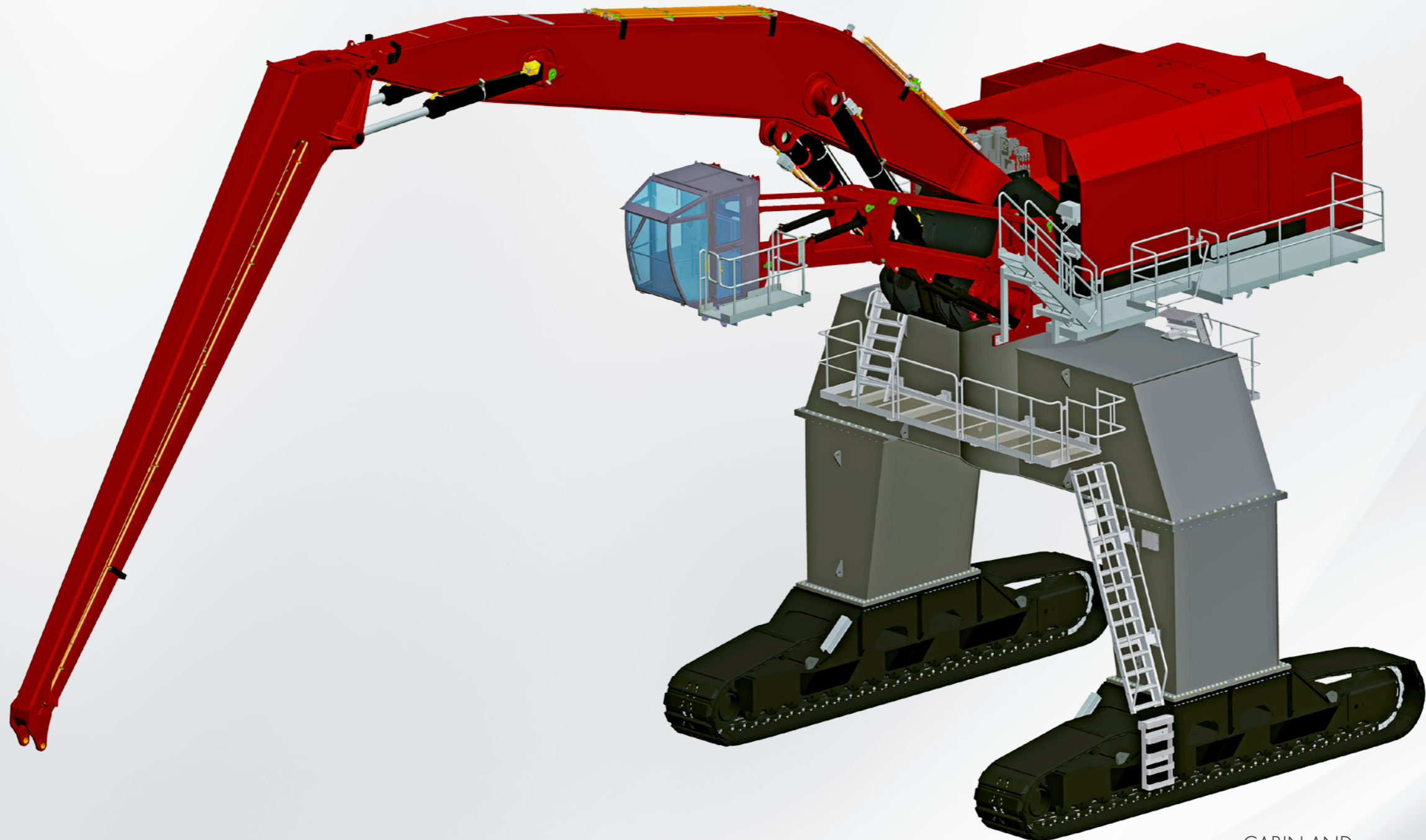


MANTSINEN  
Safety System



MANTSINEN  
Control System

# MANTSINEN 200 R



## FRONT EQUIPMENT

### STICK FOOT

Stick foot is a high tensile steel structure. The use of cast structures in the high load stress areas ensures the component's strength, durability and long service life.

### STICK BOX

The box of the stick is constructed of two C-profiles using fine-grain steel. The design allows the stick to be constructed with no welding seams in high stress areas, making it light and extremely durable. Hydraulic lines are well protected on sides of the stick.

### MAIN BOOM FOOT

Main boom foot is constructed of high tensile strength cast steel, providing an extended service life to one of the most stressed structural components of the machine. Double steel plates extend from the boom pivot points to the counterweight, providing an extremely rigid and strong upperstructure frame.

### MAIN BOOM BOSSES

Main boom bosses are constructed of high tensile cast steel. The optimized design ensures evenly distributed stresses on the boom box structure.

## UPPERSTRUCTURE

### ENGINE

The sound insulated engine and pump compartment keeps noise levels at a minimum. The transverse mounted engine is accessible from both sides. Hydraulic pumps are insulated from the engine by protective plates.

### RADIATOR

Side by side mounted radiator and hydraulic oil cooler provide easy access and cleaning. Fan reversing function continuously cleans radiator screens without interrupting machine operation.

### SWING MECHANISM

The Mantsinen 200 swing mechanism consists of two swing motors and a heavy-duty three-row roller type slewing ring. Internal teeth run in a grease bath. The swing drive has a separate pump, closed loop circuit providing an extremely smooth and controllable swing function for accurate and safe placement of loads.

### SERVICE WALKWAYS

The wide internal and external service walkways provide safe and easy access to all service points.

## UNDERCARRIAGE

### CRAWLER GANTRY

The gantry type undercarriage allows trucks or rail cars to pass through. Crawler gantry undercarriage is available in different heights. One or two additional fuel tanks are available as an option. Crawler gantry provides significant benefits for logistic layout planning. Machine cycle time is optimized due to the minimized swing angle.

### CRAWLER WITH PYLON

Crawler undercarriages can also be supplied with an additional pylon to optimize loading geometry and operator visibility.

### TRACKS

The long and wide undercarriage provides excellent stability and 360° lift capacities throughout all working ranges.

### TRACK SHOES

The Mantsinen designed flat cast steel track shoes run smoothly on gravel, asphalt and concrete.

## CABIN AND CABIN ELEVATOR

### OPERATOR'S CABIN

The spacious, air conditioned operator cab has large windows and a floor window for excellent visibility of loading operations. Stainless steel cab construction ensures a long service life in any environment.

### CAB ELEVATOR

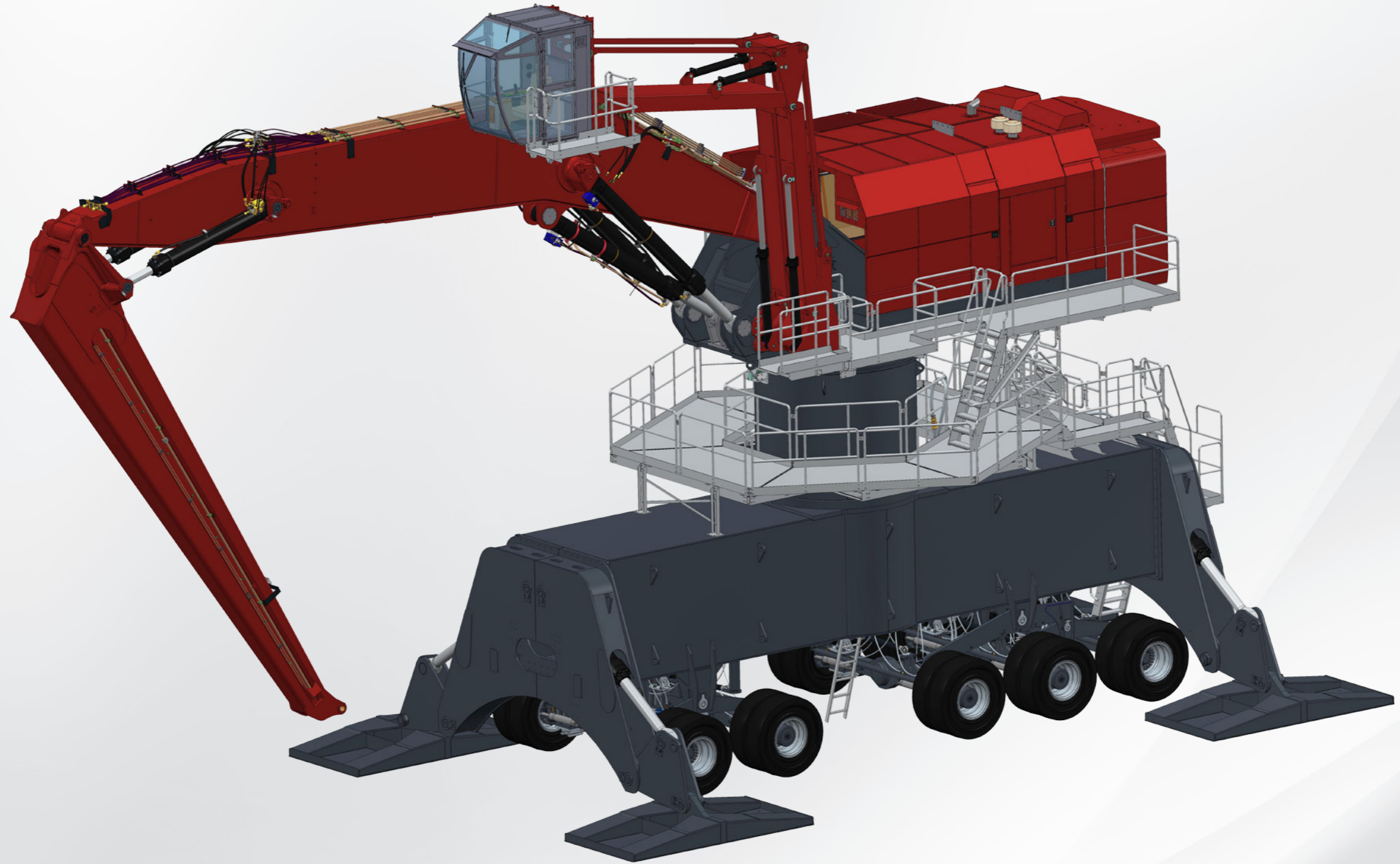
The Mantsinen N2-6000 cab elevator features independent vertical and horizontal movement to position the operator for maximum visibility of loading targets. Optional N1-3000 cab elevator and three fixed raised cab positions are available to meet the application requirement.

## ATTACHMENTS

The machine can be delivered with a wide range of attachments for bulk and general cargo handling. Customized attachments are available on request.

The Mantsinen hydraulic quick coupling system ensures simple and safe attachment change in a few minutes.

# MANTSINEN 200 M



## FRONT EQUIPMENT

### STICK FOOT

Stick foot is a high tensile steel structure. The use of cast structures in the high load stress areas ensures the component's strength, durability and long service life.

### STICK BOX

The box of the stick is constructed of two C-profiles using fine-grain steel. The design allows the stick to be constructed with no welding seams in high stress areas, making it light and extremely durable. Hydraulic lines are well protected on sides of the stick.

### MAIN BOOM FOOT

Main boom foot is constructed of high tensile strength cast steel, providing an extended service life to one of the most stressed structural components of the machine. Double steel plates extend from the boom pivot points to the counterweight, providing an extremely rigid and strong upperstructure frame.

### MAIN BOOM BOSSES

Main boom bosses are constructed of high tensile cast steel. The optimized design ensures evenly distributed stresses on the boom box structure.

## UPPERSTRUCTURE

### ENGINE

The sound insulated engine and pump compartment keeps noise levels at a minimum. The transverse mounted engine is accessible from both sides. Hydraulic pumps are insulated from the engine by protective plates.

### RADIATOR

Side by side mounted radiator and hydraulic oil cooler provide easy access and cleaning. Fan reversing function continuously cleans radiator screens without interrupting machine operation.

### SWING MECHANISM

The Mantsinen 200 swing mechanism consists of two swing motors and a heavy-duty three-row roller type slewing ring. Internal teeth run in a grease bath. The swing drive has a separate pump, closed loop circuit providing an extremely smooth and controllable swing function for accurate and safe placement of loads.

### SERVICE WALKWAYS

The wide internal and external service walkways provide safe and easy access to all service points.

## UNDERCARRIAGE

### RUBBER TYRE UNDERCARRIAGE

Rubber tyre undercarriage is available in different heights. Six-wheel drive provides excellent drawbar pull for operation on uneven surfaces. Large and wide tires minimize surface pressures.

Four individually controllable outriggers permit a full 360 degrees of rated loads lifting. The large 2 000 mm x 4 000 mm stabilizer pads are equipped with spherical bearings to adapt to surface conditions. The illustrated machine is equipped with optional dual 4 000 mm x 3 000 mm stabilizer pads.

## CABIN AND CABIN ELEVATOR

### OPERATOR'S CABIN

The spacious, air conditioned operator cab has large windows and a floor window for excellent visibility of loading operations. Stainless steel cab construction ensures a long service life in any environment.

### CAB ELEVATOR

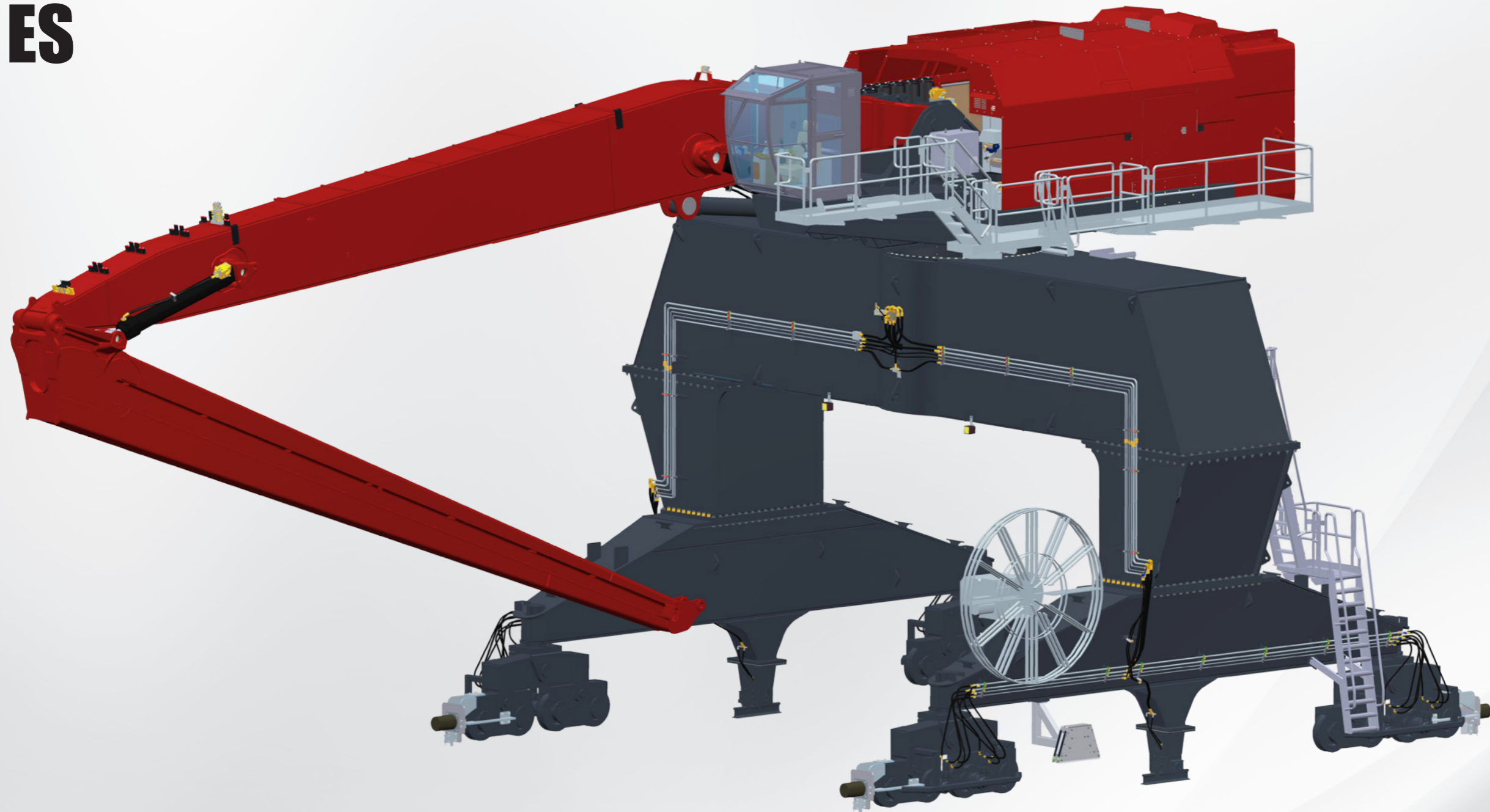
The Mantsinen N2-6000 cab elevator features independent vertical and horizontal movement to position the operator for maximum visibility of loading targets. Optional N1-3000 cab elevator and three fixed raised cab positions are available to meet the application requirement.

## ATTACHMENTS

The machine can be delivered with a wide range of attachments for bulk and general cargo handling. Customized attachments are available on request.

The Mantsinen hydraulic quick coupling system ensures simple and safe attachment changes in a few minutes.

# MANTSINEN 200 ES



## FRONT EQUIPMENT

### STICK FOOT

Stick foot is a high tensile steel structure. The use of cast structures in the high load stress areas ensures the component's strength, durability and long service life.

### STICK BOX

The box of the stick is constructed of two C-profiles using fine-grain steel. The design allows the stick to be constructed with no welding seams in high stress areas, making it light and extremely durable. Hydraulic lines are well protected on sides of the stick.

### MAIN BOOM FOOT

Main boom foot is constructed of high tensile strength cast steel, providing an extended service life to one of the most stressed structural components of the machine. Double steel plates extend from the boom pivot points to the counterweight, providing an extremely rigid and strong upperstructure frame.

### MAIN BOOM BOSSES

Main boom bosses are constructed of high tensile cast steel. The optimized design ensures evenly distributed stresses on the boom box structure.

## UPPERSTRUCTURE

### ELECTRIC MOTOR

Electric motor is mounted in a container unit, making it easily accessible from both sides. The sound isolated compartment keeps noise at minimum. Hydraulic pumps are isolated from the motor by a firewall.

### OIL COOLER

Hydraulic oil cooler is very easily accessible for cleaning. Fan reversing function continuously cleans the cooler screen without interrupting machine operation.

### SWING MECHANISM

The Mantsinen 200 swing mechanism consists of two swing motors and a heavy-duty three-row roller type slewing ring. Internal teeth run in a grease bath. The swing drive has a separate pump, closed loop circuit providing an extremely smooth and controllable swing function for accurate and safe placement of loads.

### SERVICE WALKWAYS

The wide internal and external service walkways provide safe and easy access to all service points.

## UNDERCARRIAGE

### RAIL MOUNTED UNDERCARRIAGE

The configuration of the rail undercarriage can be adapted to the existing rails. The gantry type undercarriage allows one or two railway wagons to pass through. Cable reels are available to meet requirements of drive distance and speed.

### BOGIES

Mantsinen 200 ES is available with 4 of 6 wheel bogies according to rail and quay carrying capacities. The distance between the bogies can also be chosen according to application.

### WHEELS

Wheel diameter can be optimized to match the loads of the machine and bogie design. There are  $\varnothing 400$  mm and  $\varnothing 630$  mm wheels available.

## CABIN AND CABIN ELEVATOR

### OPERATOR'S CABIN

The spacious, air conditioned operator cab has large windows and a floor window for excellent visibility of loading operations. Stainless steel cab construction ensures a long service life in any environment.

### CAB ELEVATOR

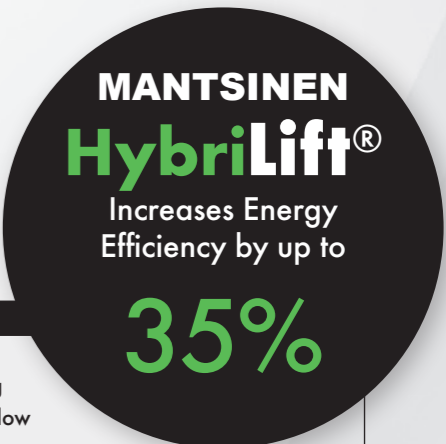
The Mantsinen N2-6000 cab elevator features independent vertical and horizontal movement to position the operator for maximum visibility of loading targets. Optional N1-3000 cab elevator and three fixed raised cab positions are available to meet the application requirement.

## ATTACHMENTS

The machine can be delivered with a wide range of attachments for bulk and general cargo handling. Customized attachments are available on request.

The Mantsinen hydraulic quick coupling system ensures simple and safe attachment changes in a few minutes.

# TECHNICAL SPECIFICATIONS



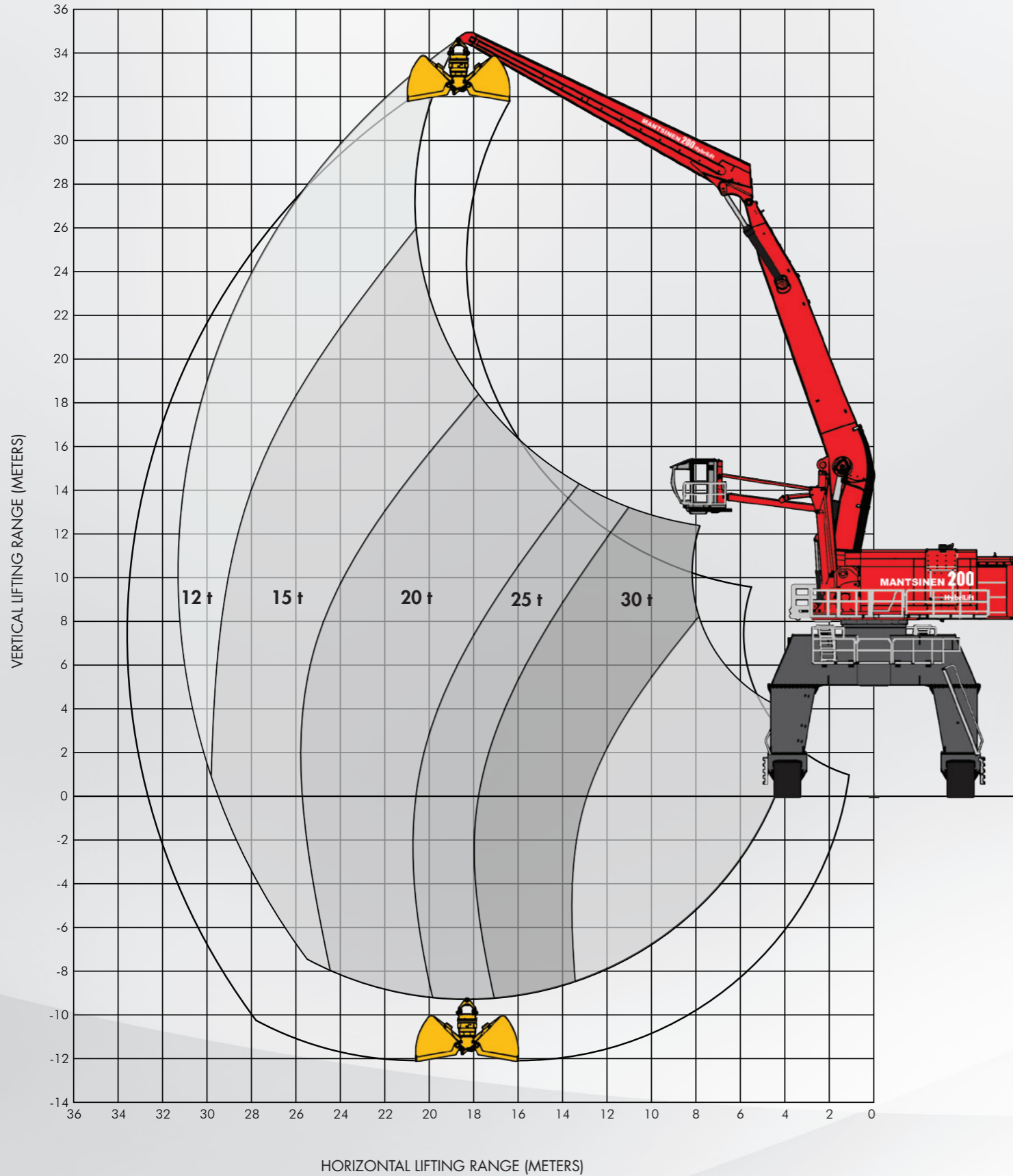
Front equipment	
Max. horizontal reach	37 m with 21,5 m boom + 18 m Stick configuration
Main boom lengths, straight and curved	10,5 / 13,5 / 14,5 / 16,5 / 17,5 / 19,5 / 21,5 m
Stick lengths	9 / 11 / 12 / 14 / 15 / 16 / 18 m
Diesel Engine	
Diesel Stage II/Tier2	Volvo TAD1643VE 565 kW /1800 r/min
Diesel Stage IV/Tier 4 Final	Volvo TAD1672VE 515 kW /1800 r/min
Displacement	16,1 l
Number of cylinders	6
Voltage	24 V
Batteries	2 x 225 Ah / 12V
Electric motor with soft starter	
Motor type	355 kW IEC cast iron motor 1500 rpm
Voltages	400 to 690 V as standard, other voltages upon request
Hydraulic system	
HybriLift® energy recovery system	Equivalent to 196 kW engine power
Oil flow, equipment and drive	4 x 420 l/min
Operating pressure	330 bar
Operating pressure, travel and Heavy Lift mode	360 bar
Oil flow swing closed loop system	540 l/min
Swing pressure, max.	300 bar
Max. swing speed	4,7 r/min
Swing torque	420 kNm
200 M / 200 EM with rubber tyres	
Weight without attachments	230 to 280 t depending on configuration
Heights	4,2 m as standard. With pylon 5,7 / 6,4 / 6,9 / 8,0 m
Wheelbase	2 m / 2 m / 4 m / 2 m
Tyres	20 pcs 16.00-25 solid rubber
Service brakes	Drum brakes
Parking brake	Automatic wet multiple-disc brake
Drive speed	Max 5 km/h
Stabilizer pads	2 000 x 4 000 mm. As option 2 x 2 000 x 3 000 mm
200 R / 200 ER with crawler	
Weight without attachments	230 to 270 t depending on configuration
Heights	3,5 m as standard. With pylon 5,0 / 5,7 / 6,2 m Gantry: 4,8 / 7,8 / 9,2m With pylon 11,4 m / 11,9 m
Load carrying track length	8 100 mm
Track shoes	1 050 mm two grouser or 1 200 mm flat shoe
Travel speed	0 - 2,8 km/h
200 S / 200 ES mounted on rails	
	According to customer specification.
200 F / 200 EF fixed	
	According to customer specification.
Refill capacities	
Hydraulic oil reservoir	1 800 l
Fuel tank	3 000 l
AdBlue tank for Tier 4 Final diesel	200 l

Operator's cabin	
<ul style="list-style-type: none"> <li>• Large crane cabin with an instructor seat</li> <li>• Ergonomic air-cushioned seat                             <ul style="list-style-type: none"> <li>- Adjustable armrests</li> <li>- Seat belt and seat heating</li> <li>- Adjustable lumbar support</li> <li>- Adjustable headrest</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Heating and air conditioning</li> <li>• Floor and roof window</li> <li>• Tinted window glasses</li> <li>• Windshield wiper with intermittent function and washer</li> <li>• Roof window wiper</li> <li>• Sun shades</li> <li>• Radio with CD, MP3-compatible</li> </ul>
Mantsinen Control System	
<ul style="list-style-type: none"> <li>• Ergonomic, adjustable multi-function joysticks</li> <li>• Drive and steering by one grip joystick</li> <li>• All front equipment and attachment functions proportional</li> <li>• Function speeds and ramps adjustable</li> <li>• Electric end cushion boom, stick and cab elevator</li> <li>• Precision mode</li> <li>• Heavy lift mode</li> <li>• Boost mode</li> </ul>	<ul style="list-style-type: none"> <li>• Colour display 5.7" user interface                             <ul style="list-style-type: none"> <li>- Operating data and gauges</li> <li>- Warning signals, illuminated pop up type symbols</li> <li>- Acoustic signal for critical alarms</li> <li>- Settings</li> <li>- Diagnostics</li> <li>- Log function</li> <li>- Instant power consumption</li> <li>- Periodic fuel or electric power consumption</li> </ul> </li> </ul>
Mantsinen Safety System	
<ul style="list-style-type: none"> <li>• Overload and stability control with motion cut</li> <li>• Cab collision prevention with motion cut</li> <li>• Adjustable operation limitations</li> <li>• Can Open CAN-bus technology</li> </ul>	<ul style="list-style-type: none"> <li>• Colour display 5.7" user interface                             <ul style="list-style-type: none"> <li>- Animated machine operation</li> <li>- Load, reach and height information</li> <li>- Attachment menu</li> </ul> </li> </ul>
Standard equipment	
<ul style="list-style-type: none"> <li>• Load control valves on boom and stick cylinders including hose rupture valves</li> <li>• Thermostat controlled hydraulic fans</li> <li>• Capable full flow filters</li> <li>• By-pass fine filter 3 µm with water absorption</li> <li>• Second pressure adjustment for attachments</li> </ul>	<ul style="list-style-type: none"> <li>• Central lubrication system for front equipment and slew bearing</li> <li>• Central lubrication system for rubber tyre undercarriage</li> <li>• LED working lights, 4 underneath the cabin and 4 on stick</li> <li>• Acoustic travel alarm</li> <li>• Signal horn</li> <li>• Service platforms</li> </ul>
Options	
<ul style="list-style-type: none"> <li>• Fixed cab positions</li> <li>• Cab elevator N1-3000</li> <li>• Cab elevator N2-6000</li> <li>• Operator seat BE-GE                             <ul style="list-style-type: none"> <li>- Airvent function</li> <li>- Air-cushioned</li> <li>- Centralized control panel</li> </ul> </li> <li>• Camera under stick</li> <li>• Rear view camera</li> <li>• Beacon light travel alarm</li> <li>• Loudspeaker</li> <li>• Bullet proof windshield</li> <li>• Mantsinen Control System remote access</li> </ul>	<ul style="list-style-type: none"> <li>• Automatic clamshell bucket leveling while closing</li> <li>• Biodegradable hydraulic oil</li> <li>• Large by-pass fine filter with water absorption</li> <li>• Second hydraulic function for attachment</li> <li>• Additional filters for attachment hydraulic lines</li> <li>• Engine preheating</li> <li>• Hydraulic oil preheating</li> <li>• Cab preheating</li> <li>• Magnet generator 30 or 40 kW</li> <li>• Additional fuel tanks, depending on configuration</li> <li>• Electric re-fuelling pump</li> <li>• Heavy Lift</li> </ul>

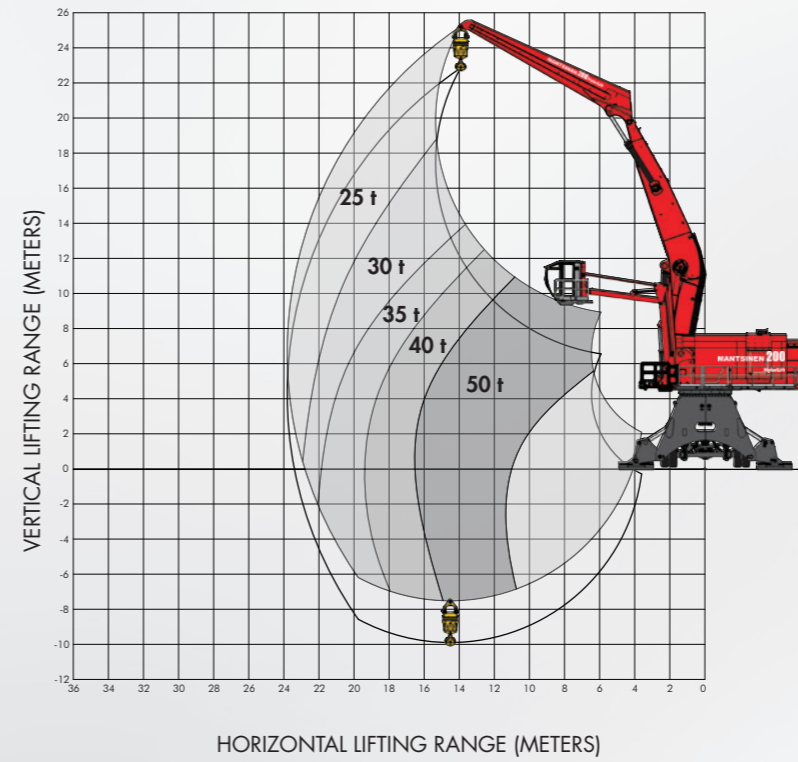
Specifications subject to change without prior notice. The photographs and/or drawings in this brochure are for illustrative purposes only. Refer to the Operator's Manual for instructions on the proper use of this equipment.

# MANTSINEN 200 HybriLift®

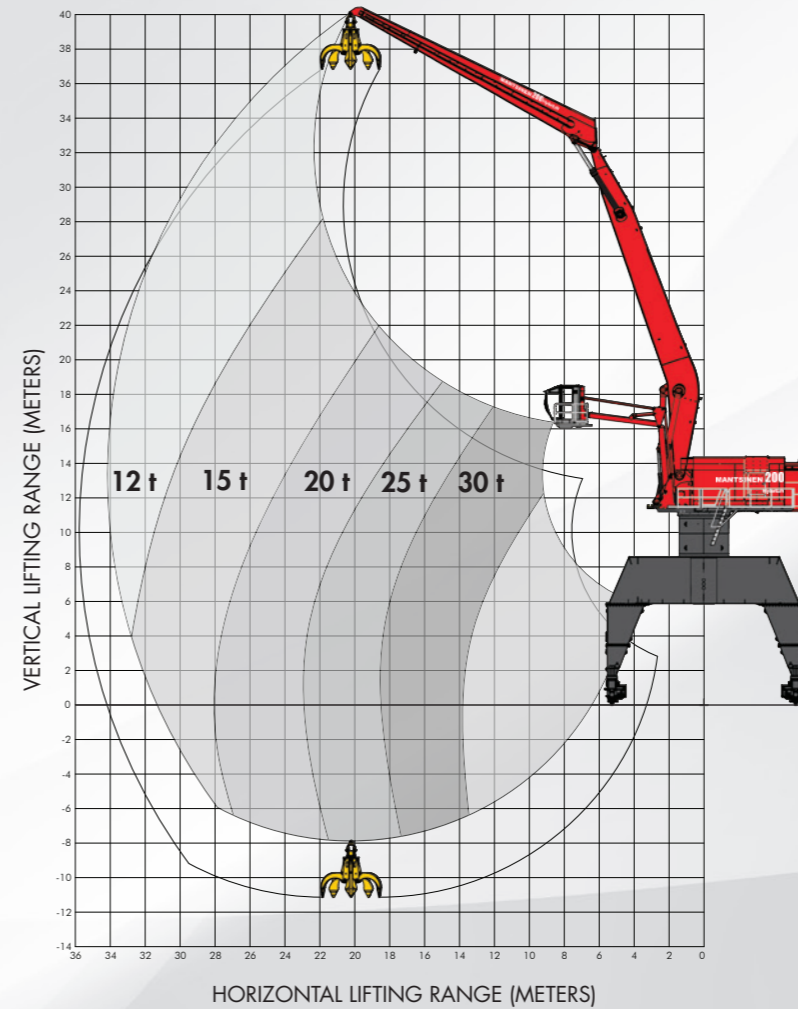
Lifting capacity range with 17,5 m curved main boom and 15 m stick



**HEAVY LIFT**  
Lifting capacity range with 13,5 m curved main boom and 11,0 m stick



Lifting capacity range with 19,5 m curved main boom and 16 m stick



## ATTACHMENTS

Mantsinen offers a wide variety of attachments to optimize production in any application. The Mantsinen hydraulic quick coupling enables fast and safe attachment changes. It only takes a few minutes to change from one attachment to another. Customized attachments are available on request.



Quick Couplers



Clamshell Buckets



Orange Peel Grabs



Roundwood Grapples



Lifting Hooks



Lumber Spreaders



Big Bag Spreaders



Pulp Bale Spreaders



Pallet Forks



Customized Tools



# More load, less energy.

## MANTSINEN 200 IN ACTION

For more information, images  
and videos visit our website  
[mantsinen.com](http://mantsinen.com)



**YOUR DEALER:**

**ISO 9001  
ISO 14001  
OHSAS 18001**

*We are committed to improve our integrated operational system continuously. We take care of environment and health&safety issues in all our operations.*

ISO 9001 ISO 14001  
OHSAS 18001



**DNV**  
CERTIFIED  
ORGANISATION



**Mantsinen Group Ltd Oy** Välikankaantie 3, FI-80400 Ylämylly, FINLAND  
Tel. +358 20 755 1230 | [info@mantsinen.com](mailto:info@mantsinen.com) | [www.mantsinen.com](http://www.mantsinen.com)