

SENEBOGEN

PRELIMINARY



585 kW (Stage V)



552 kW (Stage II)

500 kW (Electro)



ca. **420** t



28 - 40 m



PORTCAB

895E Hybrid

Material handling machine

895E Advanced. The E-Series Hybrid



1967: SH 40 material handler in scrap operation

What makes up the E-Series

- 65 years of experience in designing and constructing hydraulic material handling machines
- Uncompromisingly high performance in all areas: Focus on material handling
- Technology that can be mastered: High-quality components without over-engineering
- Long service life and high value retention

Your top benefits

1

Green Efficiency

Save fuel - reduce operating costs
Work quietly - protect operator and environment



2

Top-level performance

Durable mechanical systems - stressed parts optimized
High speeds - high load capacities

3

Maximum comfort – ergonomically optimized work station

Optimal overview and work conditions 
in the Portcab

4

Maximum safety

Safe entry and exit - non-slip steps
State-of-the-art cameras - entire work area in view

5

Maintenance and service made easy

SENNEBOGEN control system - easy diagnosis
Simple maintenance - clear labeling

6

Consultation and support in your area

3 production sites - 2 subsidiaries
150 sales partners - over 350 service stations



Discover the largest material
handler in the world

- viewing height of up to 22 m
- 40 m reach

55 %
Energy savings

SENEBOGEN
GreenHybrid





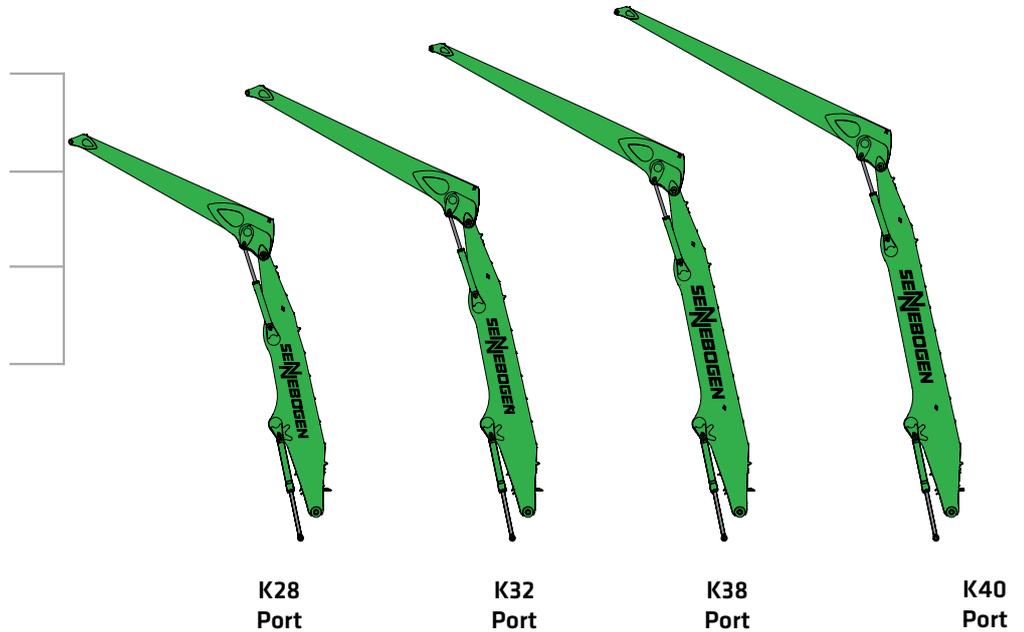


895E Modular Design - versatile solutions Hybrid

Attachments



Equipment options (others available upon request)



Cab

Cab elevation



Uppercarriage



Diesel-hydraulic drive



Electrohydraulic drive

Options

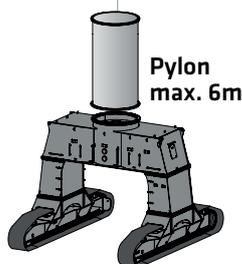


Motorized cable reel

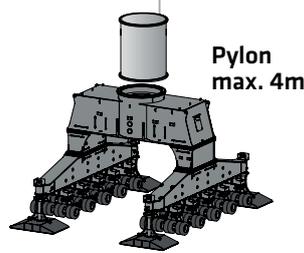


Transformer

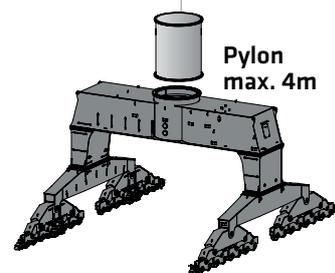
Undercarriage variants



Crawler gantry PR400/840



Mobile gantry PM400/840



Rail gantry*

Advantages at a glance

High load capacities even when fully extended, thanks to massive cylinders

Better illumination of the work area through powerful LED headlights*

Easy accessibility to all maintenance and service components in the SENNEBOGEN Power Pack incl. maintenance cover

Large port cab with floor window for optimal all-round view

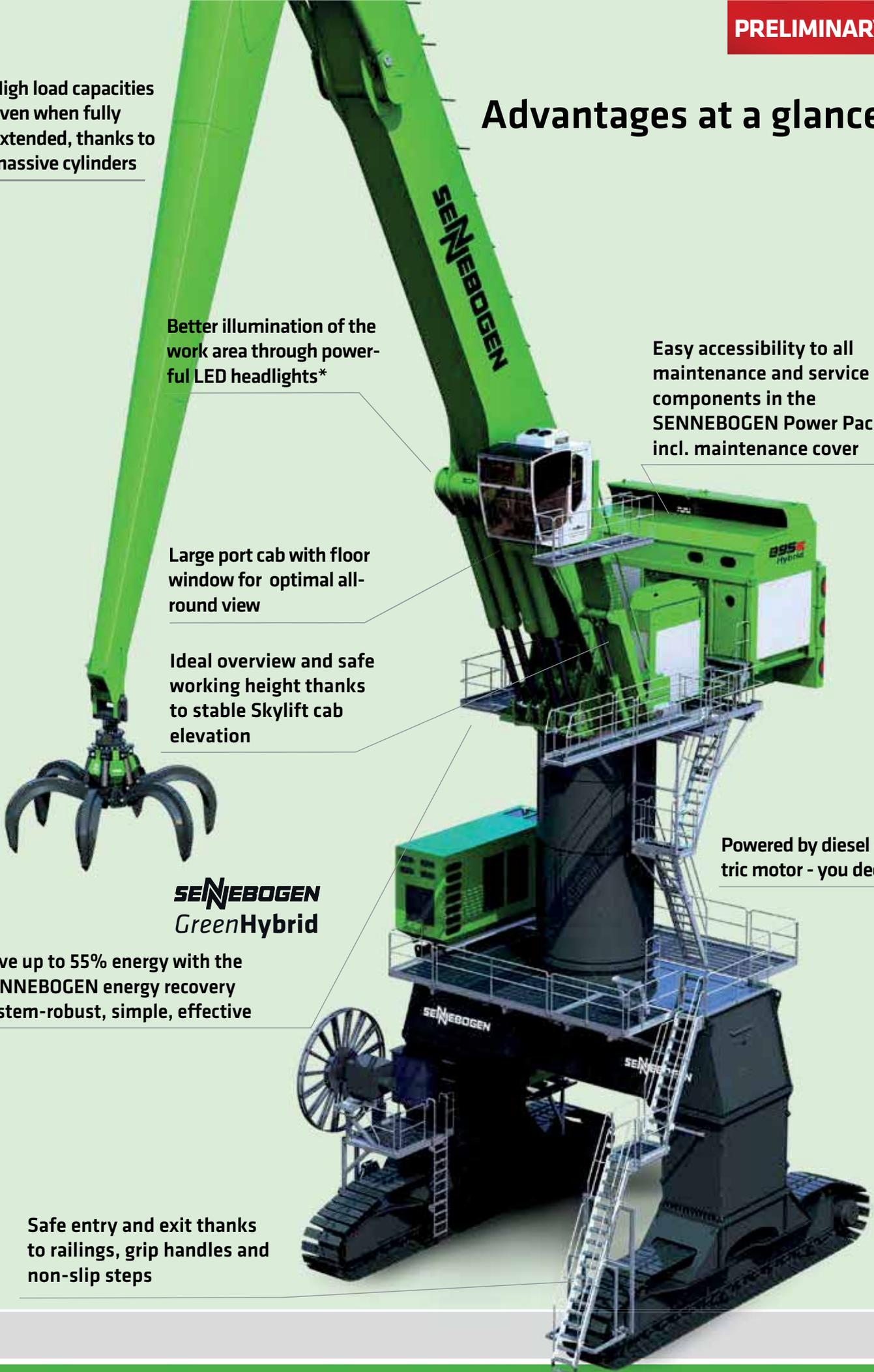
Ideal overview and safe working height thanks to stable Skylift cab elevation

Powered by diesel or electric motor - you decide!

SENNEBOGEN
GreenHybrid

Save up to 55% energy with the SENNEBOGEN energy recovery system-robust, simple, effective

Safe entry and exit thanks to railings, grip handles and non-slip steps



895E Portcab Highlights Hybrid



Features	Standard	Option
Spacious operator's cab: developed for port applications with excellent visibility, C5 corrosion protection, sound insulation and cushioned to minimize vibration	x	
Air suspended operator's seat: with lumbar support, headrest and plenty ergonomic adjustments	x	
Seat heating	x	
Adjustable arm and foot rests	x	
Ergonomic proportional Joystick adjustable with the armatures	x	
Safety lever to avoid unintentional joystick activation	x	
Electric air conditioning and heating system: with optimised de-icing and de-mist function	x	
Large 10,2" Monitor: with surveillance cameras over rear and right side of the machine	x	
Additional trainer's seat with seat belt	x	
SENECON diagnostic system	x	
Large scale floor window, safety glass	x	
Parallelogram-windscreen wiper for harsh weather conditions	x	
12V, 24V, USB and 240V (electric version) charging sockets	x	
Bottle/cup holder	x	
Preparation for shortwave radio set	x	
Tainted double glazing for side windows	x	
Wipers for roof window	x	
Air conditioned operator's seat		x
Speaker system		x
Sun protection package		x
Preheating system		x
Adjustable zoom camera -stick mounted- to monitor the loading area		x
17" camera monitor		x
Cooling box for drinks and food		x

895E Hybrid

One Machine - Three modes of use

01

Fast loading cycles

The 895 E-Series combines speed and efficiency

Especially when handling bulk materials, great loading and unloading speed is necessary to save money. Therefore, the port specialist works in a material handling mode optimised for speedy working cycles as standard.



02

Precise cargo handling

General cargo is all about accuracy in every respect

The 895 E-Series moves pulp bundles, big bags or other general cargo with maximum precision - at the touch of a button on the joystick and without interrupting work.



03

Heavy Lift

„Heavy Lift“ is about bringing out the best in the 895 E-Series, especially when handling heavy loads such as containers or coils:

Working in heavy lift mode increases the load capacity of the machine significantly and, at the same time, the machine's equipment maneuvers to its destination with even greater sensitivity.



895E SENNEBOGEN Powerpacks Hybrid

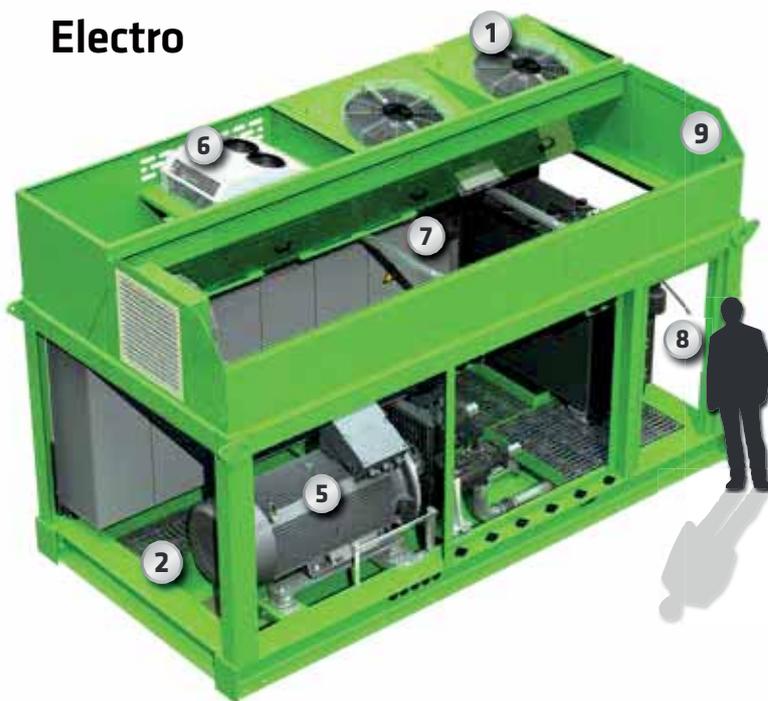
Easy maintenance, ideal accessibility

- Weather-independent, protected in the closed SENNEBOGEN Powerpack
- Ideal accessibility to all machine components
- Optimized ventilation and filter system, ideal for bulk cargo handling
- Masterable technology
- Clearly arranged control cabinet
- Maintenance cover for quick and easy service, can be opened upwards
- Central hydraulic measuring points
- Isolated airflow, improved dust discharge

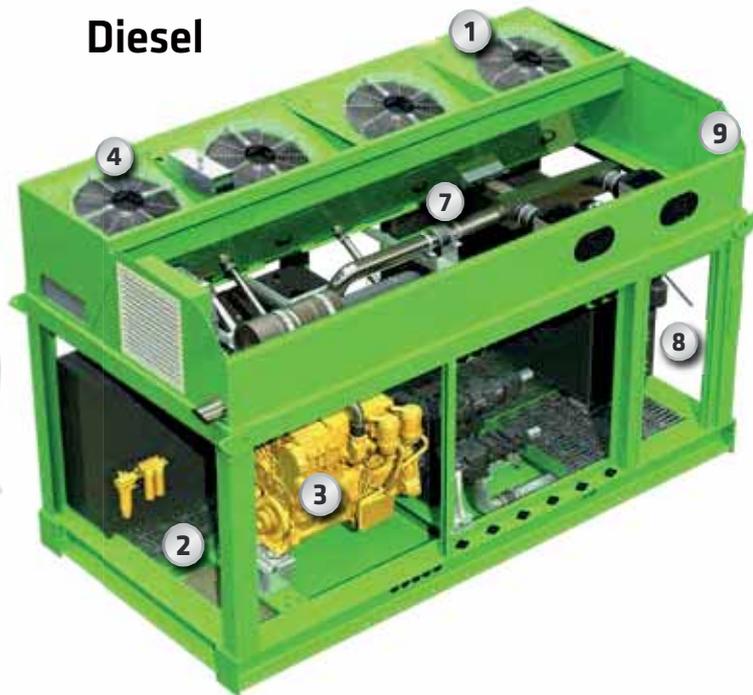


Illustration shows isolated airflow

Electro



Diesel



- | | |
|------------------------|---|
| ① Oil cooler | ⑥ Air conditioning |
| ② Fresh air intake | ⑦ Control cabinet |
| ③ Diesel engine | ⑧ Central lubrication system |
| ④ Diesel engine cooler | ⑨ Powerpack maintenance cover, controlled hydraulically |
| ⑤ Electric engine | |

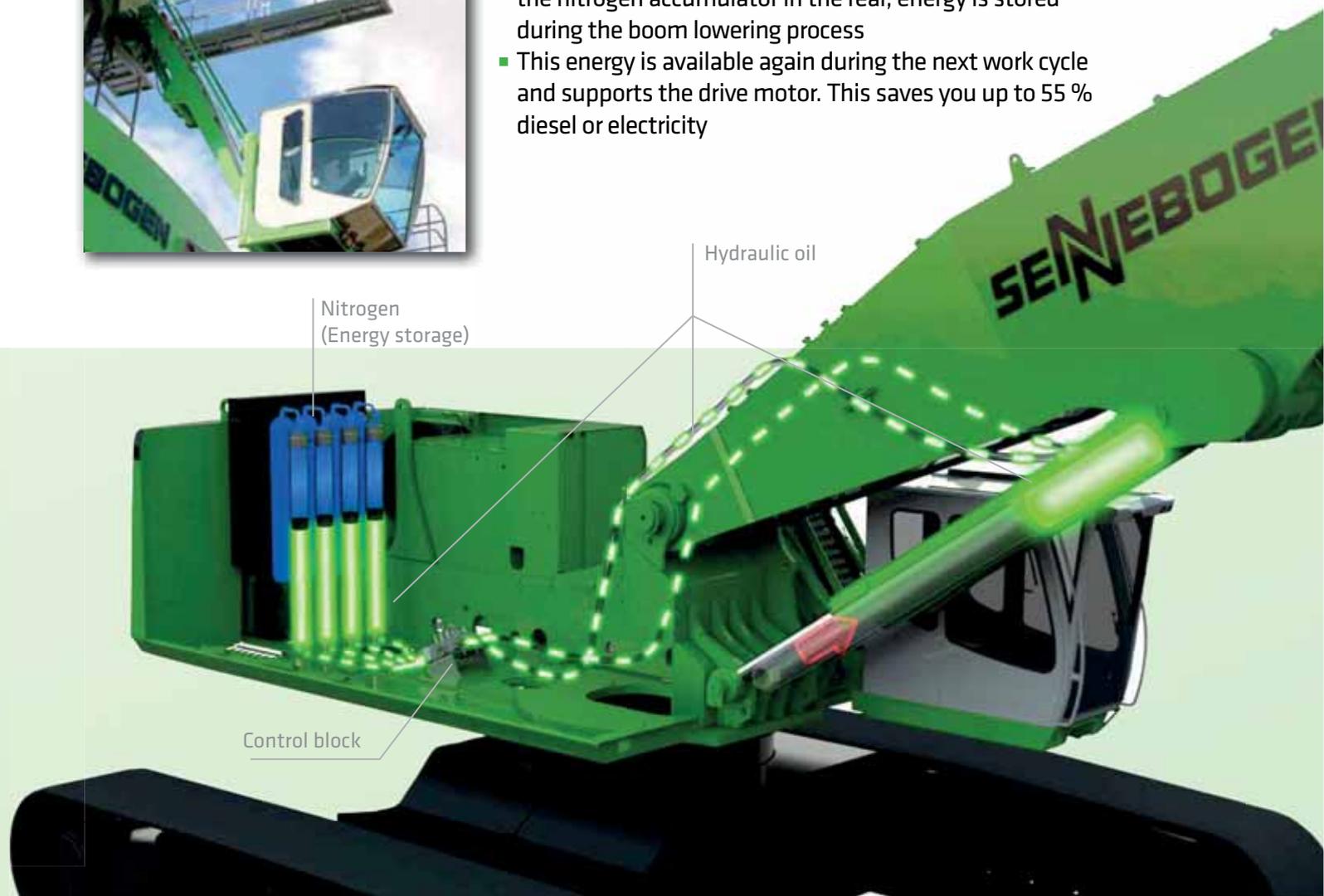
895E Green Hybrid Energy Recovery System

Hybrid



Save up to 55 % energy with the Green Hybrid System - robust, simple and effective

- In combination with the hybrid hydraulic cylinders and the nitrogen accumulator in the rear, energy is stored during the boom lowering process
- This energy is available again during the next work cycle and supports the drive motor. This saves you up to 55 % diesel or electricity



Safety

- Use of standard hydraulic components
- Energy storage in the rear area of the machine
- Constant surveillance of pressure and temperature
- Thoroughly temperature-controlled energy storage
- Pressure level compensation from the cab

Reduced operating costs

- High quality components for long service life and reliability
- Proven concept: has been used successfully worldwide since 2013
- High system efficiency - already very effective in small lifting movements

895E Hybrid

Technical data, equipment

MACHINE TYPE

Model (type) **895**

ENGINE

Power	<p>Stage V: Rated power: 597 kW at 1800 rpm Operating point: 585 kW at 1600 rpm</p> <p>Stage II: Rated power: 570 kW at 1800 rpm Operating point: 552 kW at 1600 rpm</p>
Model	<p>CAT C18 Direct injection, turbocharged, charge air cooling, reduced emissions, ECO-mode, automatic idle</p>
Cooling	Water-cooled
Air filter	Dry filter with integrated pre-separator, automatic dust discharge, main element and safety element, contamination indicator
Fuel tank	2250 l, additional tanks optional
Electr. system	24 V
Batteries	2 x 210 Ah , battery disconnect switch
Options	<ul style="list-style-type: none"> ■ Engine block heater ■ Electric fuel pump

UPPERCARRIAGE

Design	Torsion-resistant box design, precision crafted, steel bushings for boom mountings. Clear, service-friendly design, sea climate resistant coating, camera package (right/rear), telematic system SENtrack DS
Central lubrication	Automatic central lubrication system for equipment and slewing ring
Cooling system	Compact 3-circuit cooling system with large cooling capacity, thermostatically regulated fan drive for oil and water cooler reduces energy consumption and noise emissions, fan reversal for easy and regular cleaning
Hybrid system	2 hybrid stores installed on both sides on the uppercarriage, 2 energy recovery cylinders in the hoisting system for a significant increase in efficiency
Options	<ul style="list-style-type: none"> ■ Swing bearing brake via foot pedal ■ LED lighting packages ■ Fire extinguisher ■ Electric hydraulic tank preheating for temperatures below -20°C

- Low temperature packages
- Hydraulically-driven magnetic generator 30 /33 kW

HYDRAULIC SYSTEM

Load-sensing/LUDV hydraulic system, hydraulically operated work functions	
Pump type	Swash plate-type variable-displacement piston pump, load pressure-independent flow distribution for simultaneous, independent control of work functions
Pump control	Zero-stroke control, on-demand flow control-the pumps only pump as much oil as will actually be used, pressure purging, load limit control
Hydraulic tank	2170 l
Flow rate	4x 570 l/min (load sensing) and 2x 380 l/min
Control system	Proportional, precision electric actuation of work movements, joystick control for the work functions, additional functions via switches and foot pedals
Safety	Hydraulic circuits safeguarded with safety valves, emergency lowering of the equipment and the cab also during engine standstill
Options	<ul style="list-style-type: none"> ■ Bio-oil environmentally friendly ■ Tool Control for programming pressure/rate of up to 10 tools ■ Load moment warning with capacity display ■ Overload safeguard with shutdown

SLEWING DRIVE

Gearbox	Compact planetary gear with bent-axis hydraulic engine, integrated brake valves
Parking brake	Spring-loaded multi-disk brake
Slewing ring	Strong, 3-row roller slewing ring, sealed. Externally geared slewing ring with 360° grease drip tray and pinion lubrication
Slewing speed	0-3.6 rpm, stepless
Swing torque	750 kN
Options	<ul style="list-style-type: none"> ■ Slewing ring with 360°-protection

895E Hybrid Technical data, equipment

CAB

Cab type	Portcab, Skylift 1100, hydraulic elevation stepless
Cab features	SENNEBOGEN Portcab - large, special operator's cab with outstanding all-around visibility, large floor window at the front, high-performance heating and climate control, comfortable, air-suspended seat with seat ventilation, lumbar support, heated seat, headrest and seat belt, additional training seat, control elements according to the latest ergonomic standards, roof and floor window made from bulletproof glass, sun protection for roof and side windows, control and diagnostic system SENCON
Options	<ul style="list-style-type: none"> ■ Bullet proof windshield ■ Safety side window and rear window ■ Polycarbonate safety glass ■ Wipers for lower front window/skylight ■ Sun blinds on the side windows ■ Speaker system with gooseneck microphone ■ Radio ■ electric cooling box

EQUIPMENT

Design	Decades of experience and state-of-the-art computer simulation guarantee maximum stability and service life. Mounting points are extremely large with low-maintenance, sealed special bearing bushes, precision-crafted, special port equipment with increased load capacities. Ball valves in the hydraulic lines for changing grabs quickly
Cylinders	Hydraulic cylinders with high-quality sealing and bearing elements, end position damping, mounting points sealed; sea climate resistant coating of all cylinders (nickel-plated and chromium-plated), pipe break protection (hoisting/stick cylinder)
Central lubrication	automatic central lubrication system
Options	<ul style="list-style-type: none"> ■ Equipment floating position ■ Lift limitation/shaft limitation adjustable to the stop settings ■ LED lighting ■ Stick mounted camera

UNDERCARRIAGE

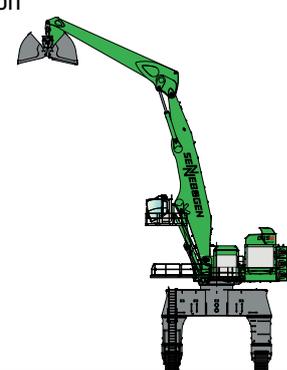
Design	Undercarriage in stable, torsion-resistant box design in different versions
Mobile undercarriage	Stable mobile gantry undercarriage PM 400/840 with 20 wheel sets and integrated 4-point support, automatic load compensation via corresponding level control for even floor relief. Simple, reliable and rapid maneuvering thanks to all-wheel steering on all wheel sets and crab steering. Very good agility and maneuverability with small turning radius
Crawler undercarriage	Crawler undercarriage with hydraulic travel drive on each chassis side integrated in the chassis frame by an axial piston motor via compact planetary gears, spring-loaded parking brake, hydraulically ventilated multi-disk brake, crawler gantry undercarriage PR400/840, flat track shoes 1200 mm
Speed	0-1,5 km/h (crawler gantry) 0-4 km/h (mobile gantry)

ELECTRIC DRIVE **eGREEN**

Option	<ul style="list-style-type: none"> ■ Power: 500 kW / 400 Volt / 50 Hz Total connected load 615 kVA, (with generator 645 kVA), machine side fuse 1000 A (also with generator) at 400 V - engine start via frequency converter ■ Advantages: lowest operating costs, low-noise and virtually vibration-free work, long service life of the hydraulic components
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OPERATING WEIGHT

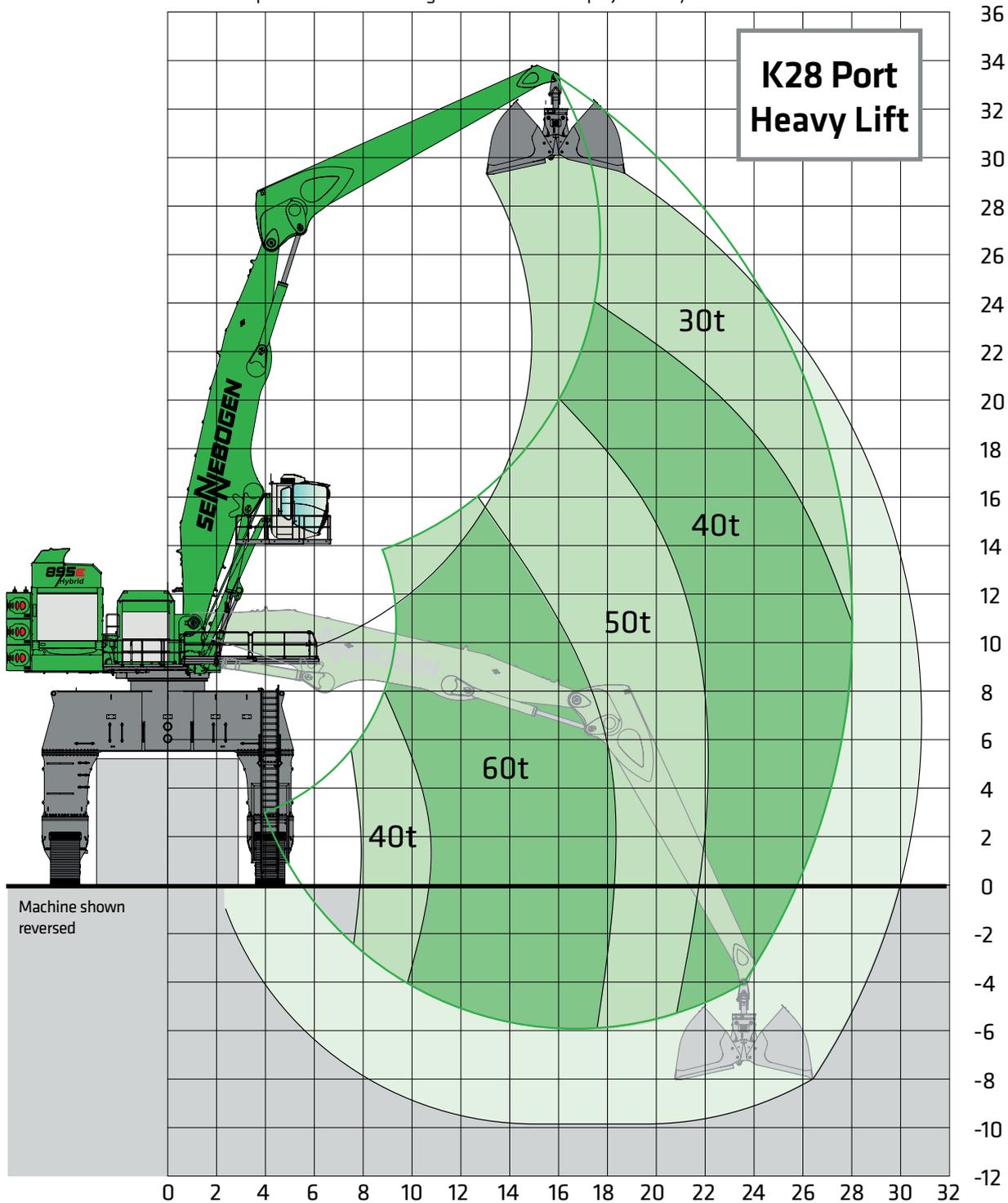
Mass	approx. 420 t 895 E with equipment K38 and grab
Notice	The operating weight varies depending on the version and equipment.



895E Load ratings

Hybrid

The specified load ratings are for information only. Please contact our regional sales partner or portdivision@sennebogen.de for a detailed project study.



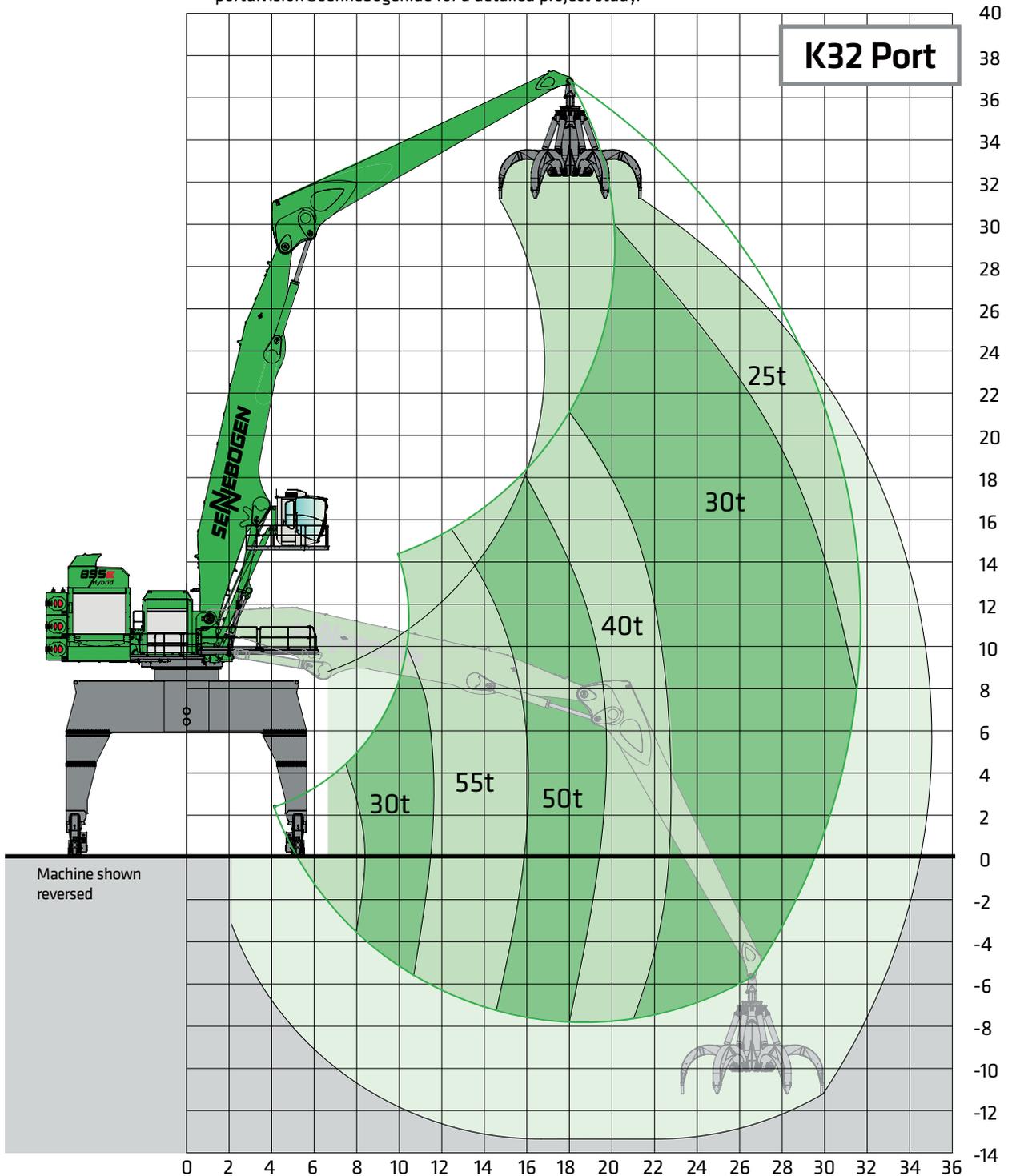
Undercarriage	PR400/840	Compact boom	16 m	Cab	Portcab, Skylift 1100, stepless hydraulic cab elevation
		Grab stick	13.5 m		

All values are in tons (t) and are 75% of the static tipping load or 87% of the hydraulic lifting force in accordance with ISO 10567, and apply at the required operating temperature in the Green Hybrid system. They apply on firm and level ground and 360° slewing. Attachments such as orange peel grabs, magnets, etc. are included in the load capacity. In accordance with harmonized EU standard EN 474-5, hydraulic material handling machines used for hoisting must be equipped with pipe fracture safety devices on the hoist cylinders and an overload warning device.

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Hybrid

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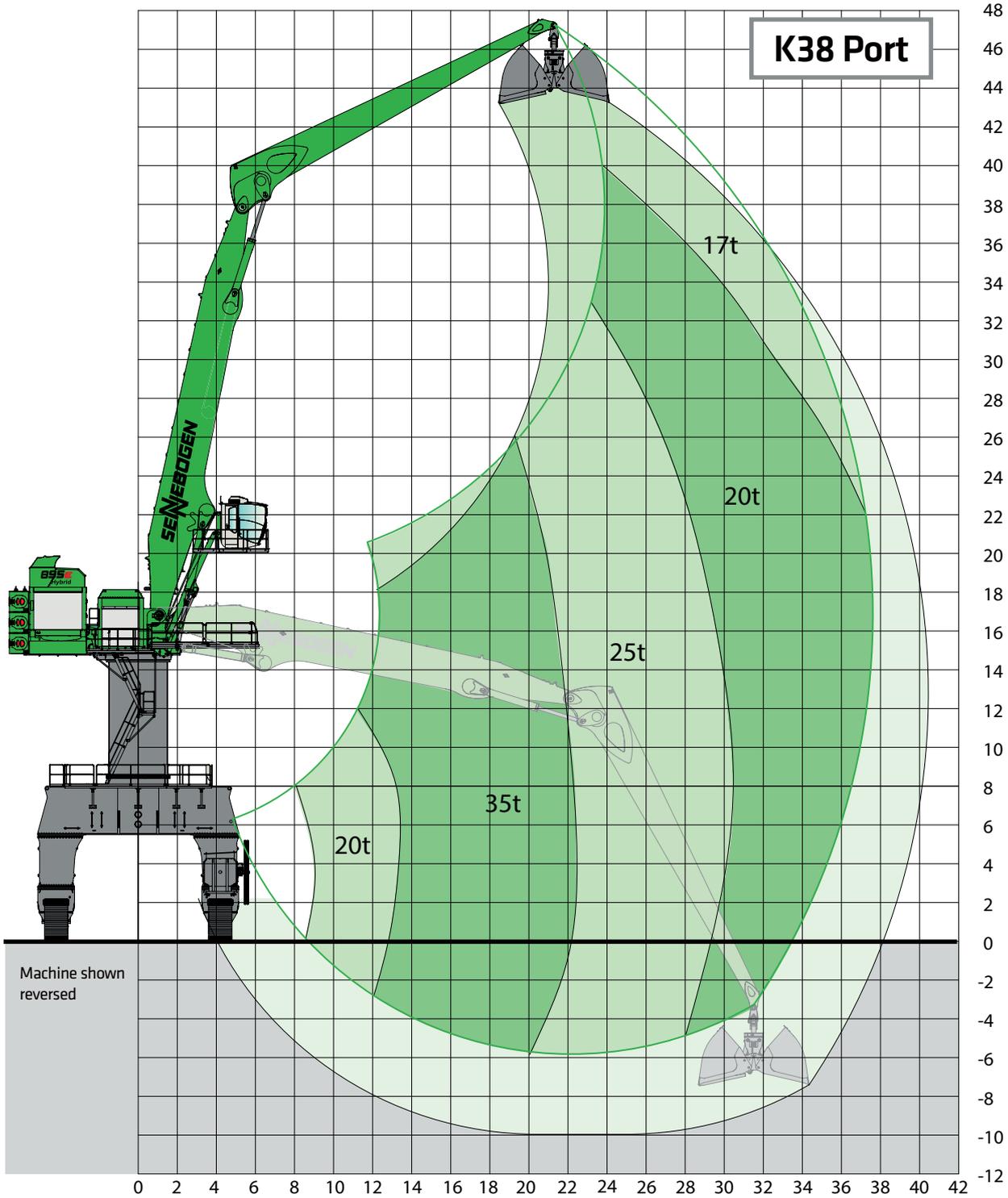
Undercarriage	Crawler gantry	Compact boom	18 m	Cab	Portcab, Skylift 1100,
		Grab stick	15.5 m		stepless hydraulic cab elevation

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895E Load ratings

Hybrid

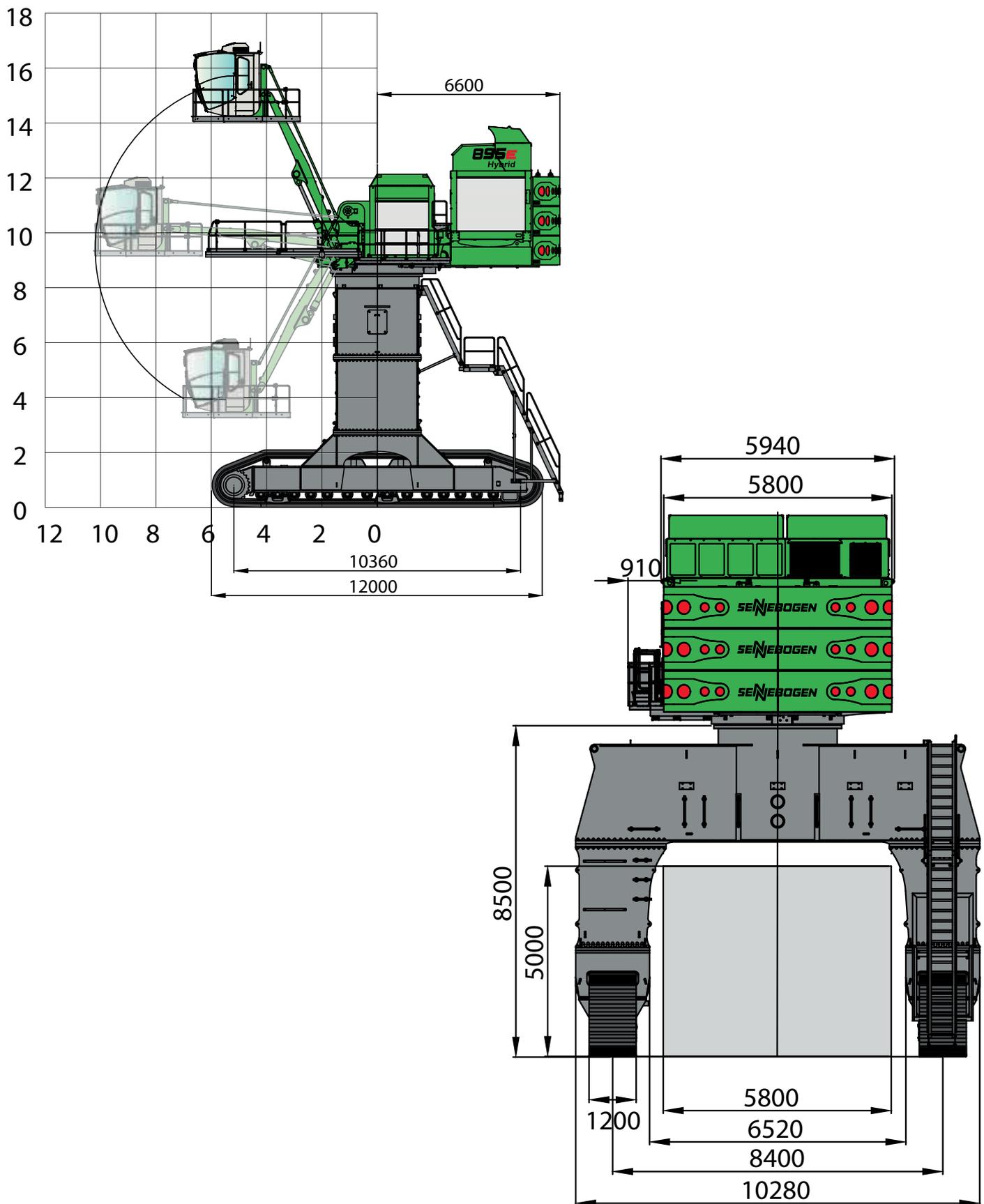
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Undercarriage Pylon	PR400/840 6 m	Compact boom Grab stick	21.5 m 18.5 m	Cab	Portcab, Skylift 1100, hydraulic cab elevation
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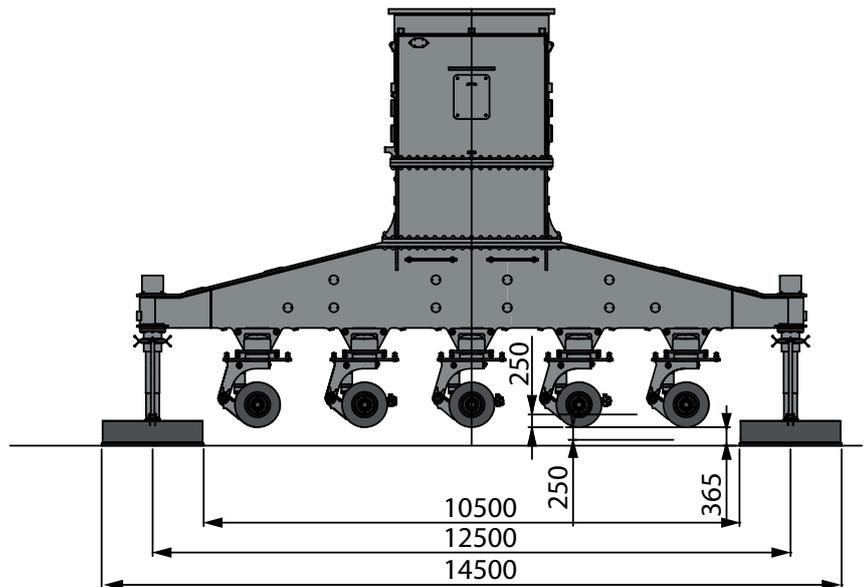
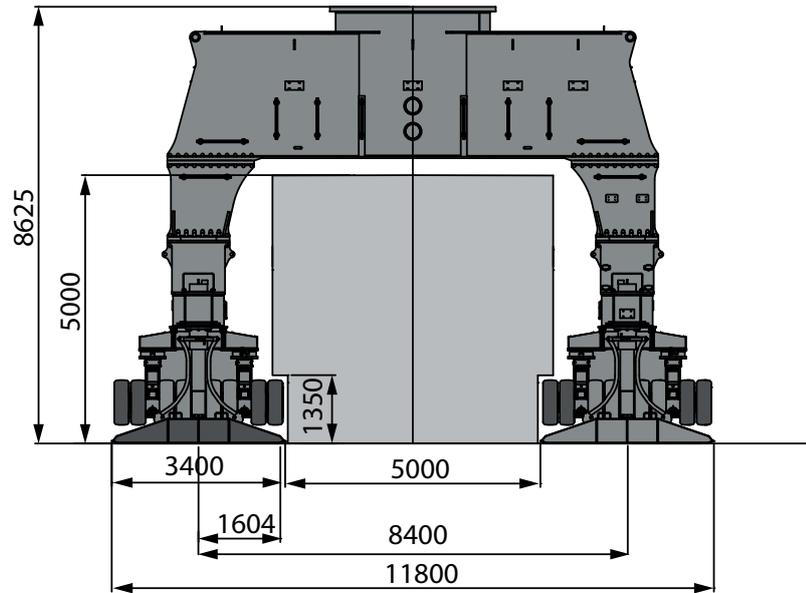
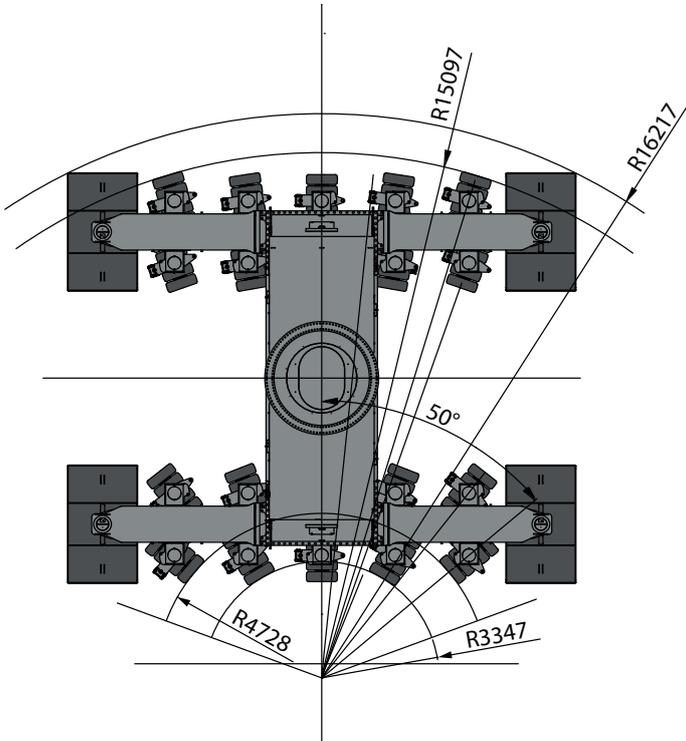
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Crawler gantry PR400/840



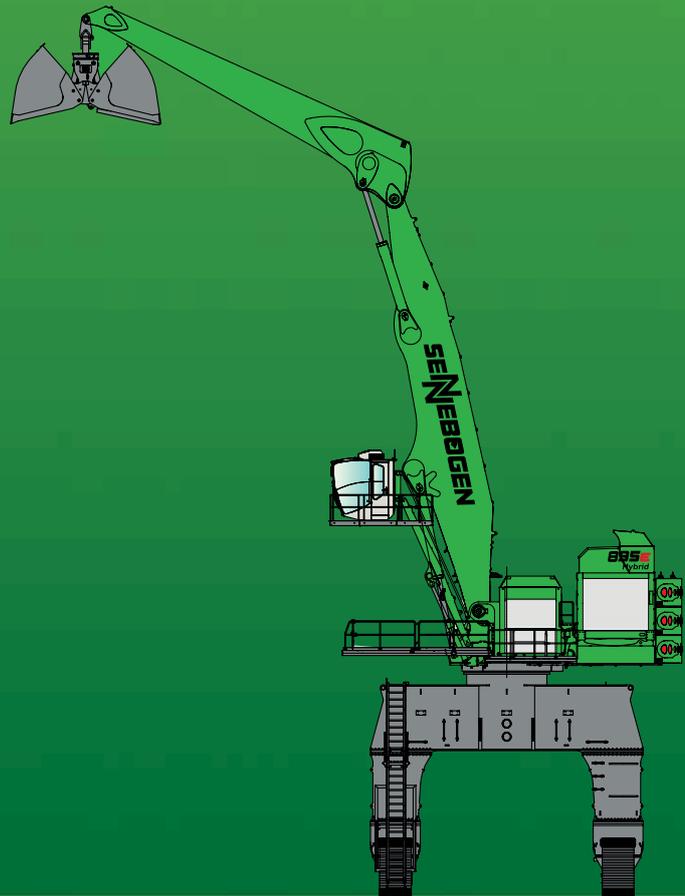
895E Hybrid

Mobile gantry PM400/840





895E Hybrid



This catalog describes machine models, scope of equipment of individual models, and configuration options (standard equipment and optional equipment) of the machines delivered by SENNEBOGEN Maschinenfabrik GmbH. Machine illustrations can contain optional equipment and supplemental equipment. Actual equipment may vary depending on the country to which the machines are delivered, especially in regard to standard and optional equipment and tolerances.

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