



261 kW (Stage V)



268 kW (Stage IIIa)

250 kW (Electro)



104 - 145 t



27 m



MAXCAB

MASTERCAB

870E Hybrid

Crawler material handling machine



1962: rope-driven S833 with elevated operator cab

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 ease of use

Maxcab comfort cab - work in comfort
SENCON - work program selection made easy



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
130 sales partners - over 350 service stations



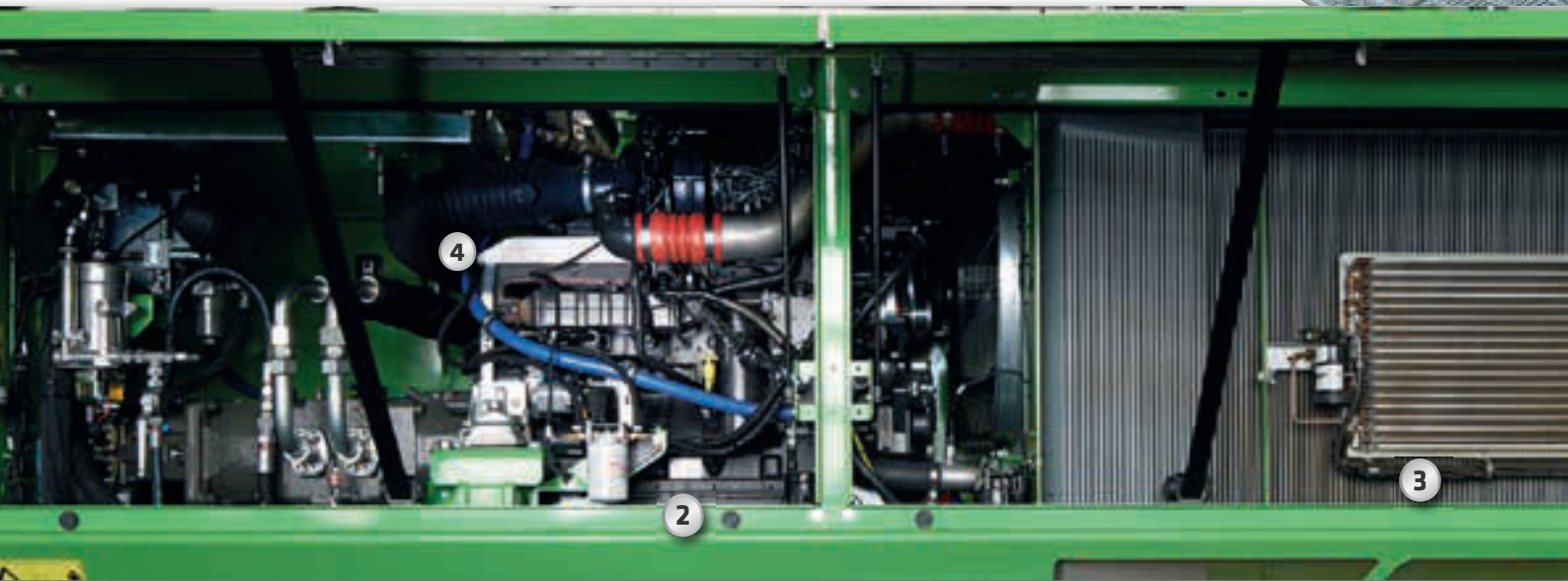


870E Hybrid The E-Series. At a glance.



Four ways to save fuel

- Savings of up to 20 %: Work in EcoMode with reduced engine speed
- Idle automation reduces speed to 40 % of operating speed
- Stop automation switches the engine off when not needed
- Optimized engine settings, reduced specific fuel consumption, state-of-the-art exhaust after treatment



Quiet operation 2

- Consistently quiet operation thanks to decoupled engine mounts and sound proofing in the doors
- Sound pressure level in accordance with 2000/14/EC as much as 2 dB lower than required

High-capacity cooling 3

- Constant, reliable performance thanks to large-scale, robust fans and coolers
- Water and oil coolers with top-notch efficiency thanks to axial-piston pump and engine control and on-demand thermostatic control
- Intercooler with mechanical drive



hydraulically elevating cab

Picture shows machine with mobile undercarriage.

Maximum safety

- Non-slip work surfaces
- Hand rails* **1**
- 2 cameras to the right and rear
- Platform with railing next to cab sliding door

Powerful hydraulic system **4**

- Strong pumps with power reserves
- Top efficiency thanks to large-scale hydraulic valves and lines
- Extra-long change intervals of 4,000 operating hours through initial fill-up with special oil with extended service life when using SENNEBOGEN HydroClean*

* Option



The premium cab.

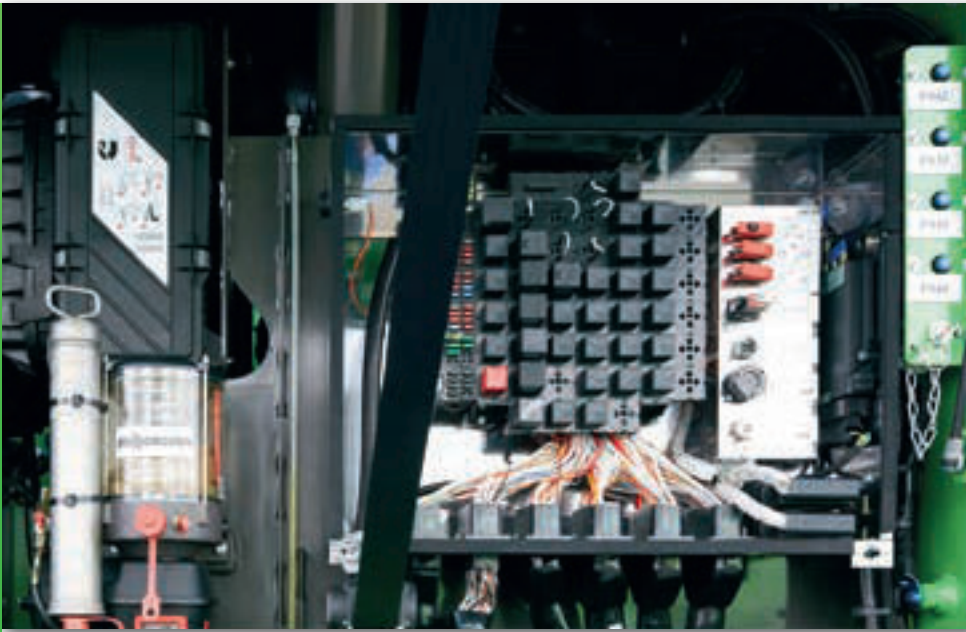
Panoramic view

Equipment features

- optimal indoor climate with automatic climate control, partly tinted windows
- comfortable even temperature distribution via 9 air vents
- panoramic view
- air-suspension climate-control led comfort seat*, seat heater
- quiet due to optimized soundproofing
- safety & comfort thanks to the sliding door, large access opening
- operating elements arranged ergonomically
- 12 V, 24 V, and USB charging sockets, cellphone holder, document folder
- various options: electric cooling box behind operator seat, slip covers, seat climate control

Unsere SENNEBOGEN-Joysticks

- Joysticks on resonant, seat-mounted consoles
- Comfortable grip thanks to ergonomic design
- Shortcuts for direct and sensitive control of all functions
- Quicker access thanks to optimized design of buttons and switches



Optimized for maintenance

- Quick and easy diagnosis thanks to straightforward and clearly labeled electrical distributor
- Easy access to all the machine's service points
- Automatic central lubrication for equipment and live ring track



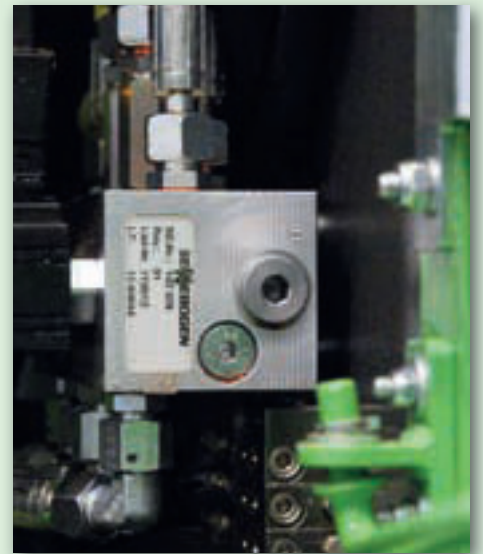
HydroClean*

- Optimal protection of hydraulic components thanks to 3 μm micro-filter
- Cleaner hydraulic oil, extended oil service life



Central measuring points

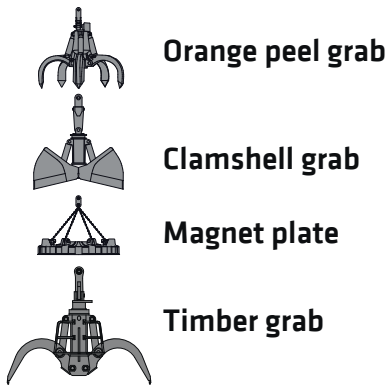
- Easily accessible
- Quickly inspect the entire hydraulic system



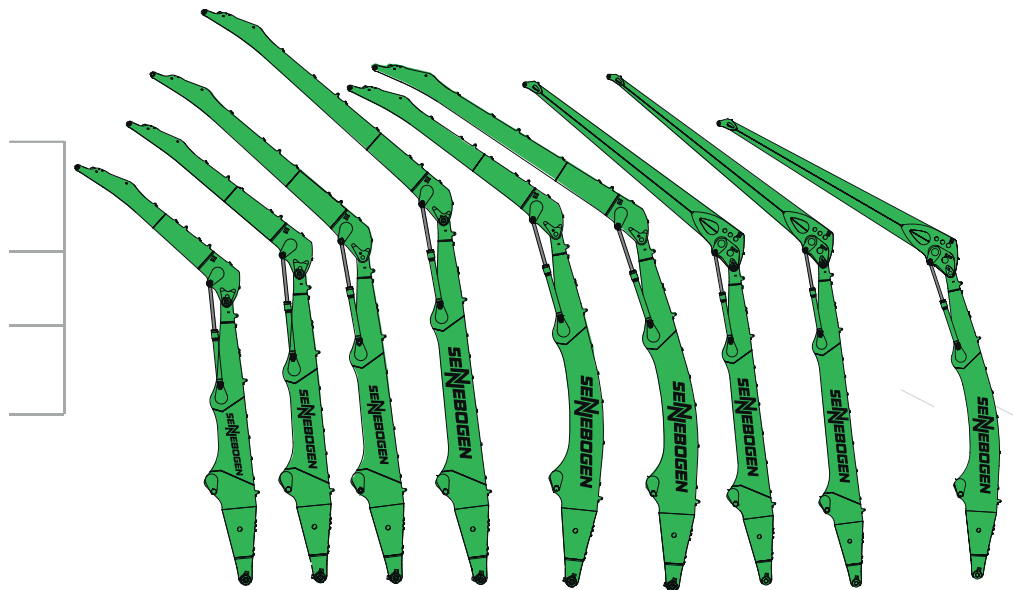
Clear labeling

- All parts labeled with a unique part number
- Easy and reliable spare parts ordering

Attachments



Equipment options (others available upon request)



Cabs



Maxcab

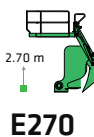
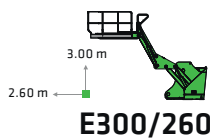


Maxcab Industry



Mastercab

Cab elevation



K18 K20 K22 K25 B21 B24 K25* Port K27* Port B24* Port

Uppercarriage



Diesel-hydraulic drive



Electrohydraulic drive

Options

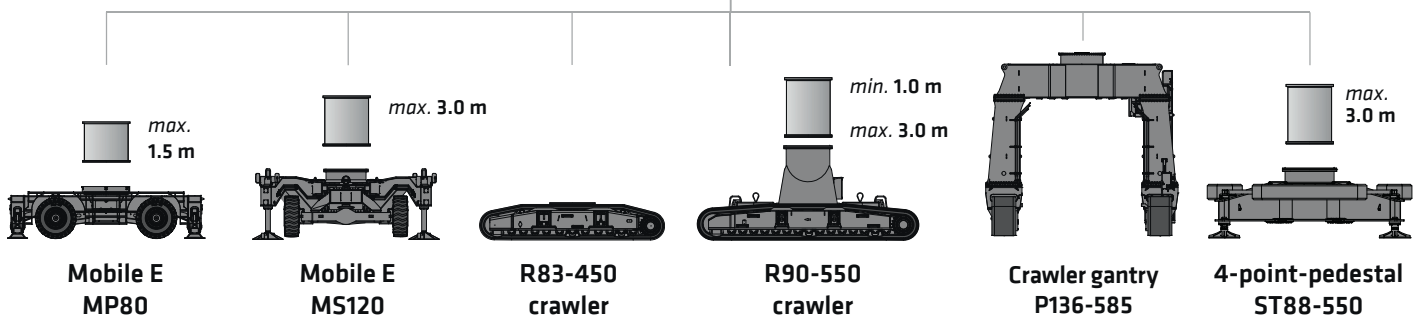


Motorized cable reel



Transformer

Undercarriage variants



870E Hybrid Advantages at a glance

- decade-long experience
- most advanced computer simulation
- the greatest degree of stability and longest service life

Reliable working thanks to robust and FEM optimized equipment

Better illumination of the work area through powerful LED headlights

Save up to 30 % energy with the energy recovery system

SENEBOGEN
GreenHybrid

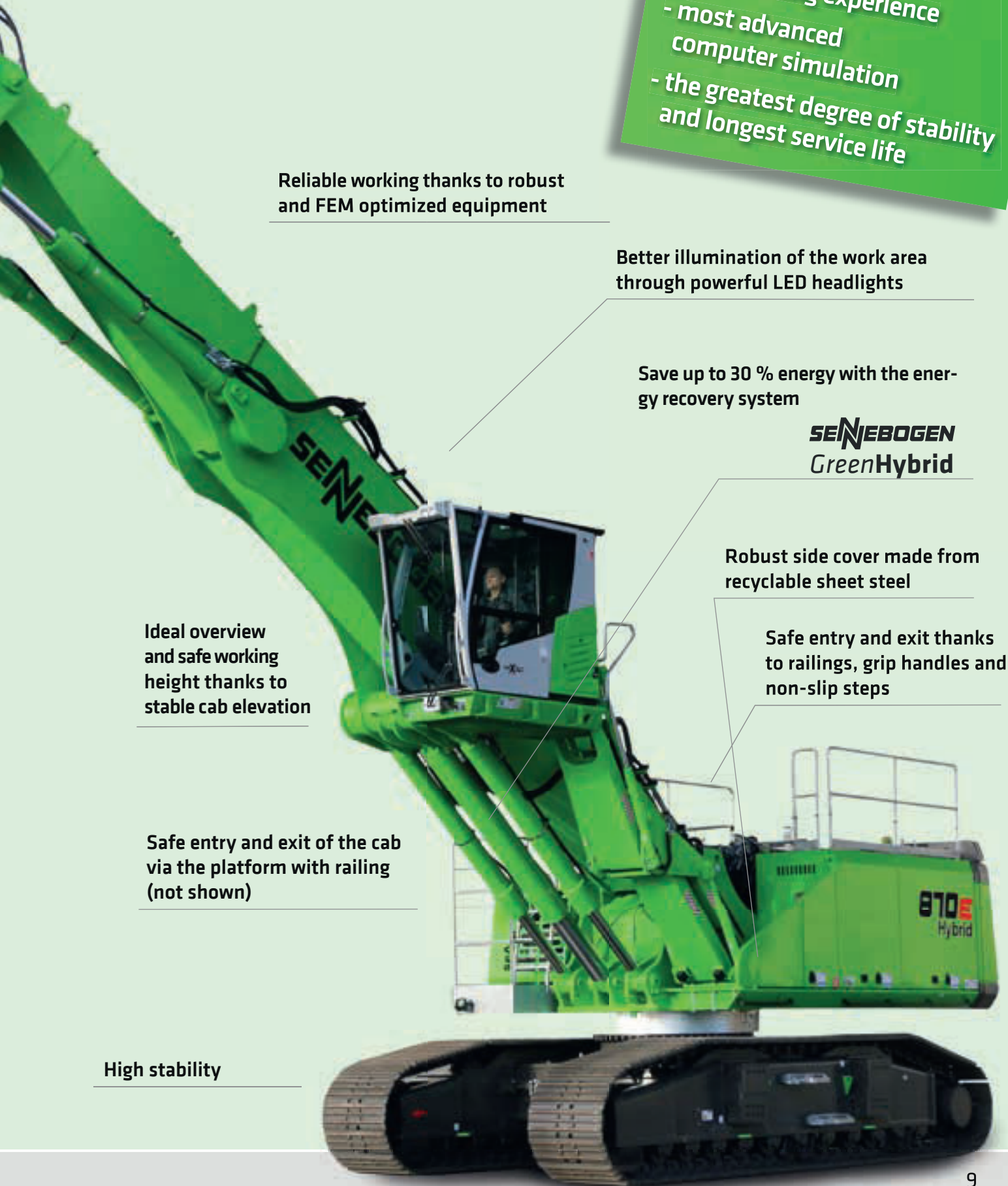
Robust side cover made from recyclable sheet steel

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

Ideal overview and safe working height thanks to stable cab elevation

Safe entry and exit of the cab via the platform with railing (not shown)

High stability



MACHINE TYPE

Model (type) **870**

ENGINE

Power	Stage V: 261 kW at 1800 min ⁻¹ Stage IIIa: 268 kW at 1800 min ⁻¹
Model	Cummins 12 (Stage V) Cummins 11 (Stage IIIa) Direct injection, turbo charged, intercooling, reduced-emission, ECO mode, idle automation, automatic stop/start, fuel preheating
Cooling	Water-cooled, cooling fans change direction
Diesel filter	with water separator and heater
Air filter	Dry filter with integrated pre-separator, automatic dust discharge, main element and safety element, contamination indicator
Fuel tank	1000 l
DEF tank	100 l
Electr. system	24 V
Batteries	2 x 180 Ah , battery disconnect switch
Options	<ul style="list-style-type: none"> ■ Engine block heater ■ Electric fuel pump ■ Jump start pole

UPPERCARRIAGE

Design	Torsion-resistant box design, precision crafted, steel bushings for boom mounting Very service-friendly design, engine installed in the longitudinal direction
Central lubrication	Automatic central lubrication for equipment and live ring track
Electro	Central electrical distributor, battery disconnect switch
Cooling system	3-circuit cooling system with high cooling output, thermostatically regulated fan drive for oil cooler and water cooler, fan reversal for cleaning
Options	<ul style="list-style-type: none"> ■ Swing bearing brake via foot pedal ■ LED lighting packages ■ Fire extinguisher ■ Sea climate resistant coating as corrosion protection ■ Electric heater for hydraulic tank

Options


- SENtrack DS telematic system
- Low temperature package
- Hydraulically-driven magnetic generator 25 kW / 33 kW

HYDRAULIC SYSTEM

Load-sensing/ LUDV hydraulic system, hydraulically operated work functions, load limit control	
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
Flow rate	2x 475 l/min and 1x 274 l/min for rotary drive in the closed circuit
Operating pressure	up to 350 bar
Filtration	High-performance filtration with long change interval
Hydraulic tank	900 l
Control system	Proportional, precision hydraulic actuation of work movements, 2 hydraulic servo joysticks for the work functions, additional functions via switches and foot pedals
Safety	Hydraulic circuits with safety valves, secured emergency lowering of the equipment at engine standstill, pipe fracture safety valves for lift cylinder and stick cylinder
Options	<ul style="list-style-type: none"> ■ Bio-oil – environmentally friendly ■ Tool Control for programming pressure/rate of up to 10 tools ■ Supplementary hydraulic circuit for shear attachment ■ Load moment warning with capacity display ■ Overload safeguard with shutdown ■ 60 µm pressure filter for attachments ■ 3 µm hydraulic micro-filter - SENNEBOGEN HydroClean


ROTARY DRIVE

Gearbox	Compact planetary gear with bent-axis hydraulic engine, integrated brake valves
Parking brake	Spring-loaded multi-disk brake
Slewing ring	Externally geared slewing ring with 360° protection and pinion lubrication
Slewing speed	0-5 min ⁻¹ , variable

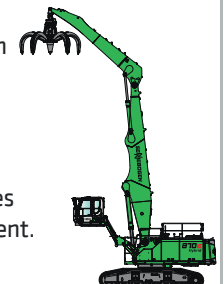
CAB 	
Cab type	E270 hydraulically elevating cab
Cab equipment	Sliding door incl. sliding window, vibration damper, tinted safety glass, opening windshield, skylight, windshield wipers, radio, air-suspension comfort seat, joystick steering, SENCON
Options	<ul style="list-style-type: none"> ■ E300/260 cab can be elevated and moved forward hydraulically ■ Cab elevation Skylift 700/900 ■ Maxcab Industry cab ■ Mastercab large capacity port cab ■ Platform next to cab ■ Bullet proof windshield ■ Bullet proof skylight ■ Polycarbonate safety glass ■ Wipers for windshield and skylight ■ Sun protection for skylight and windshield ■ Protective roof grating, FOPS where appropriate ■ Protective front grating ■ In cab active carbon filter for circulating/external air ■ Auxiliary heating system ■ Air-conditioned seat ■ Radio ■ Cooling box

UNDERCARRIAGE	
Design	Wide-gauge crawler undercarriage in stable, torsionally rigid box construction.
Drive	Hydraulic travel drive, integrated in the traveling gear frame for each traveling gear side through an axial piston engine via compact planetary gear.
Parking brake	Spring-loaded, hydraulically ventilated disk brakes. Hydraulic brake valves protect the drive engines when moving downhill.
Traveling gear	R83-450 telescopic crawler undercarriage with 2.8 - 4.5 m mechanical track adjustment and maintenance-free B8b crawler track (63 links, 7,000 mm long) with 800 mm canted triple grouser shoes.
Speed	0 - 1.6 km/h Stage I, 0 - 3 km/h Stage II
Options	<ul style="list-style-type: none"> ■ Maintenance-free B8b crawler track with 900 mm rounded flat track shoes ■ Maintenance-free B8b crawler track with 900 mm canted triple grouser shoes ■ R90-550 special undercarriage with integrated 2 m pylon ■ P136-585 crawler gantry with 5 m vertical clearance

EQUIPMENT	
Design	Decade-long experience, most advanced computer simulation, the greatest degree of stability and longest service life, large-scale mounting points and precision-crafted sealed low-maintenance special bushings, quick change couplings for connecting/removing/turning grabs
Cylinders	Hydraulic cylinders with high-quality sealing and guide elements, end position damping, sealed bearing points
Options	<ul style="list-style-type: none"> ■ Ball valves in the hydraulic lines for quick and easy grab switching ■ Sea climate resistant coating ■ Sea climate resistant coating of all cylinders, nickel-plated and chrome-plated ■ Equipment floating position ■ Adjustable stroke limiter / stick limiter ■ LED lighting ■ Stick mounted camera

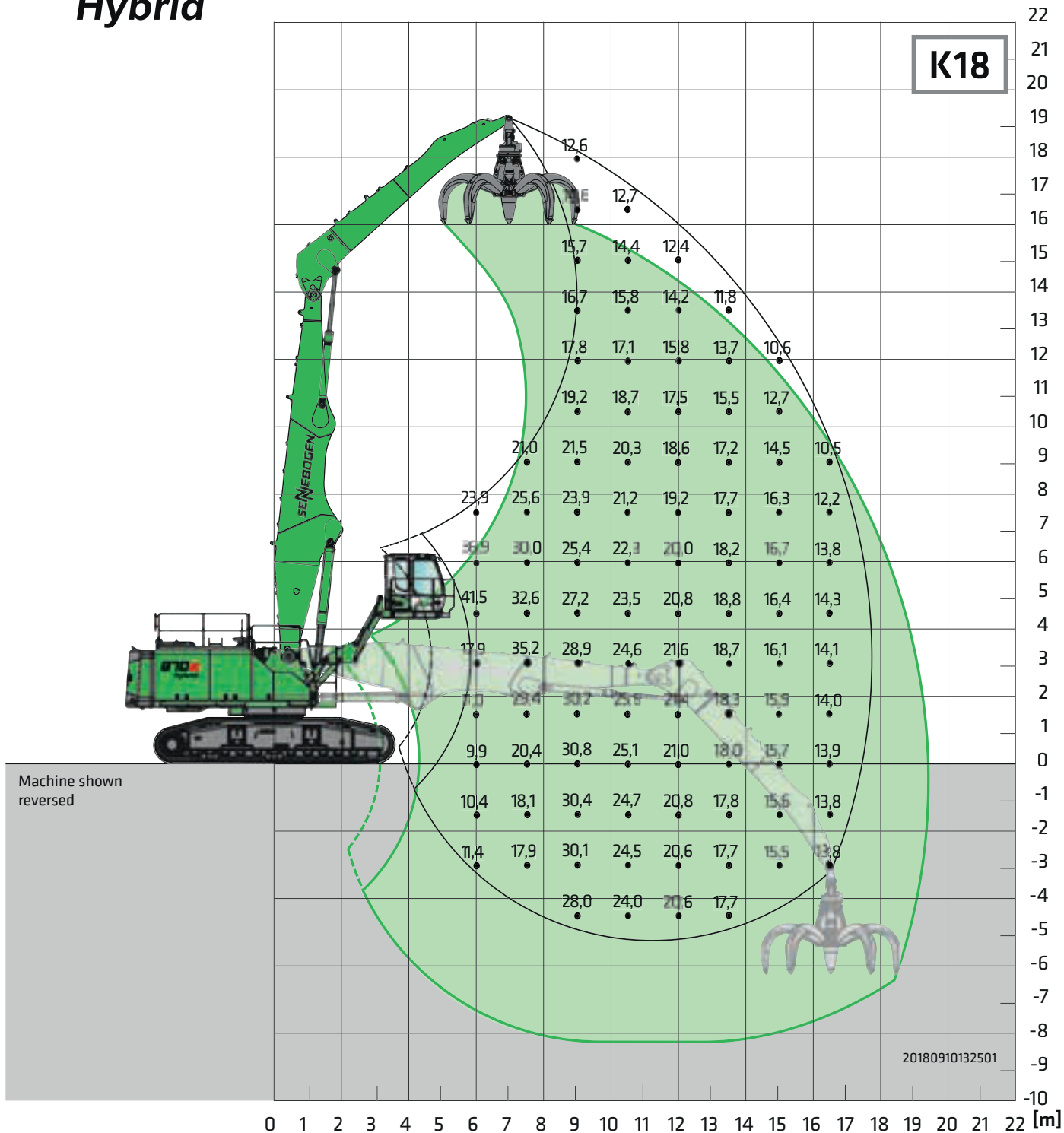
ELECTRIC DRIVE 	
Option	<ul style="list-style-type: none"> ■ Power: 250 kW / 400 V / 50 Hz Total connected load 410 kVA, machine side fuse 500 A (alternatively 630 A with magnet system) for 400 V - star-delta connection engine start ■ Advantages: lowest operating costs, low-noise and virtually vibration-free work, long service life of the hydraulic components

OPERATING WEIGHT	
Mass	approx. 104,000 kg Basic 870 R machine with K18 equipment and 3000 l orange peel grab
Note	The operating weight varies depending on the equipment.



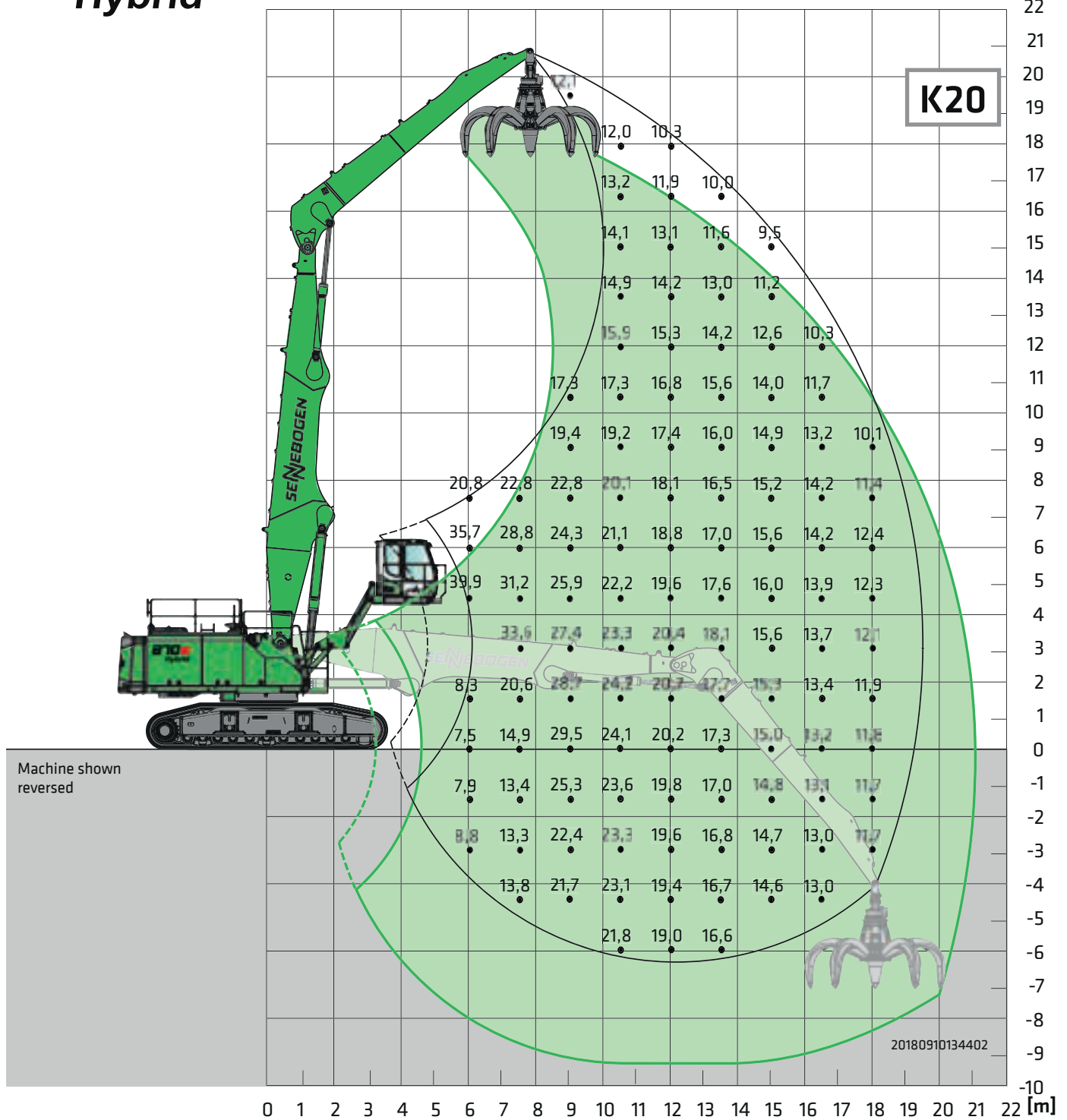
870E Hybrid Load ratings

R



Undercarriage: R83-450 **Compact boom:** 10.8 m **Cab:** Maxcab E300/260, can be elevated and moved forward hydraulically
Grab stick: 7.8 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 excavators used for hoisting must be equipped with pipe fracture safety devices on the hoist cylinders and an overload warning device.



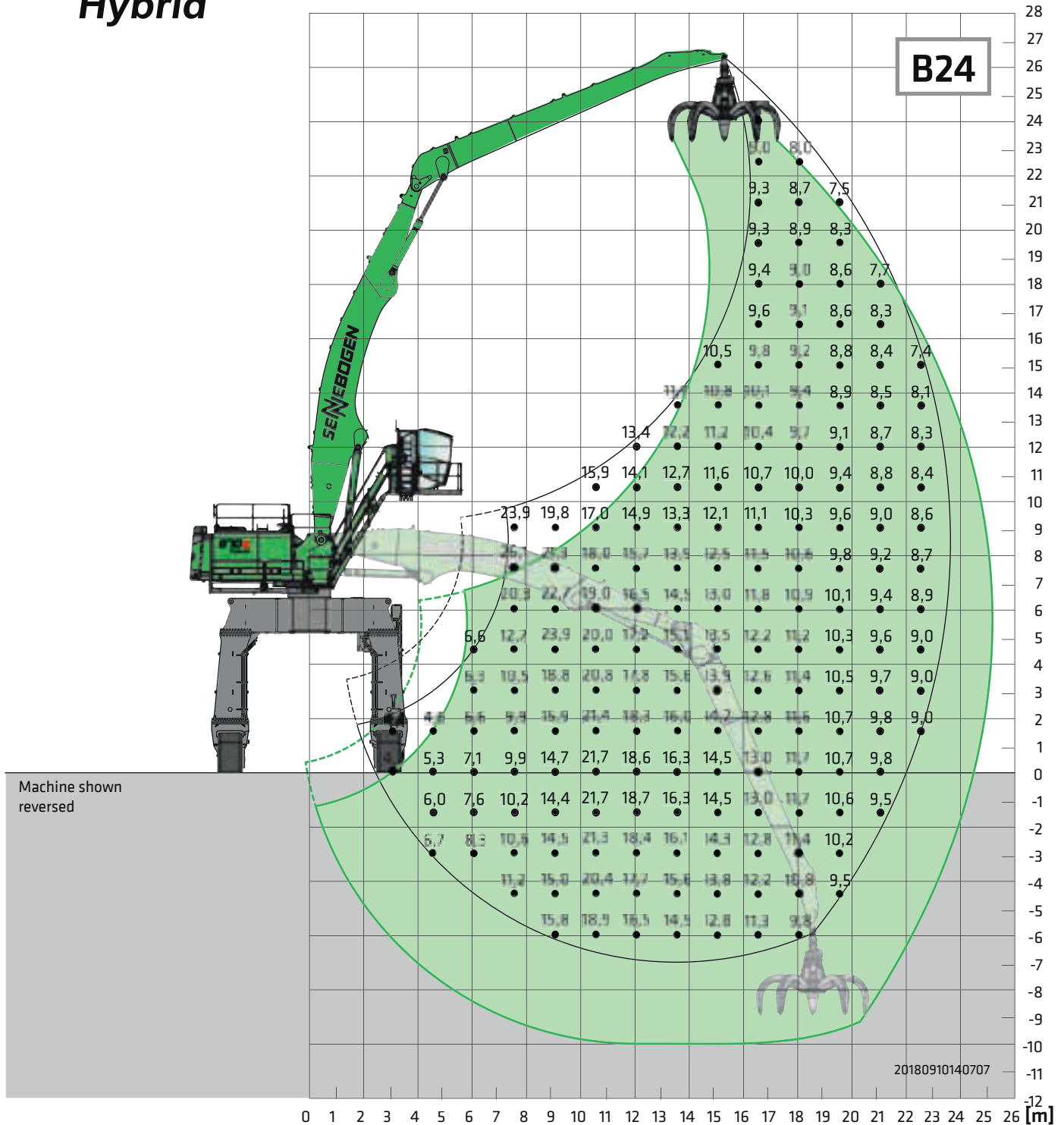
Undercarriage: R83-450 **Compact boom:** 11.8 m **Cab:** Maxcab E300/260, can be elevated and moved forward hydraulically
Grab stick: 8.8 m

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870E Load ratings

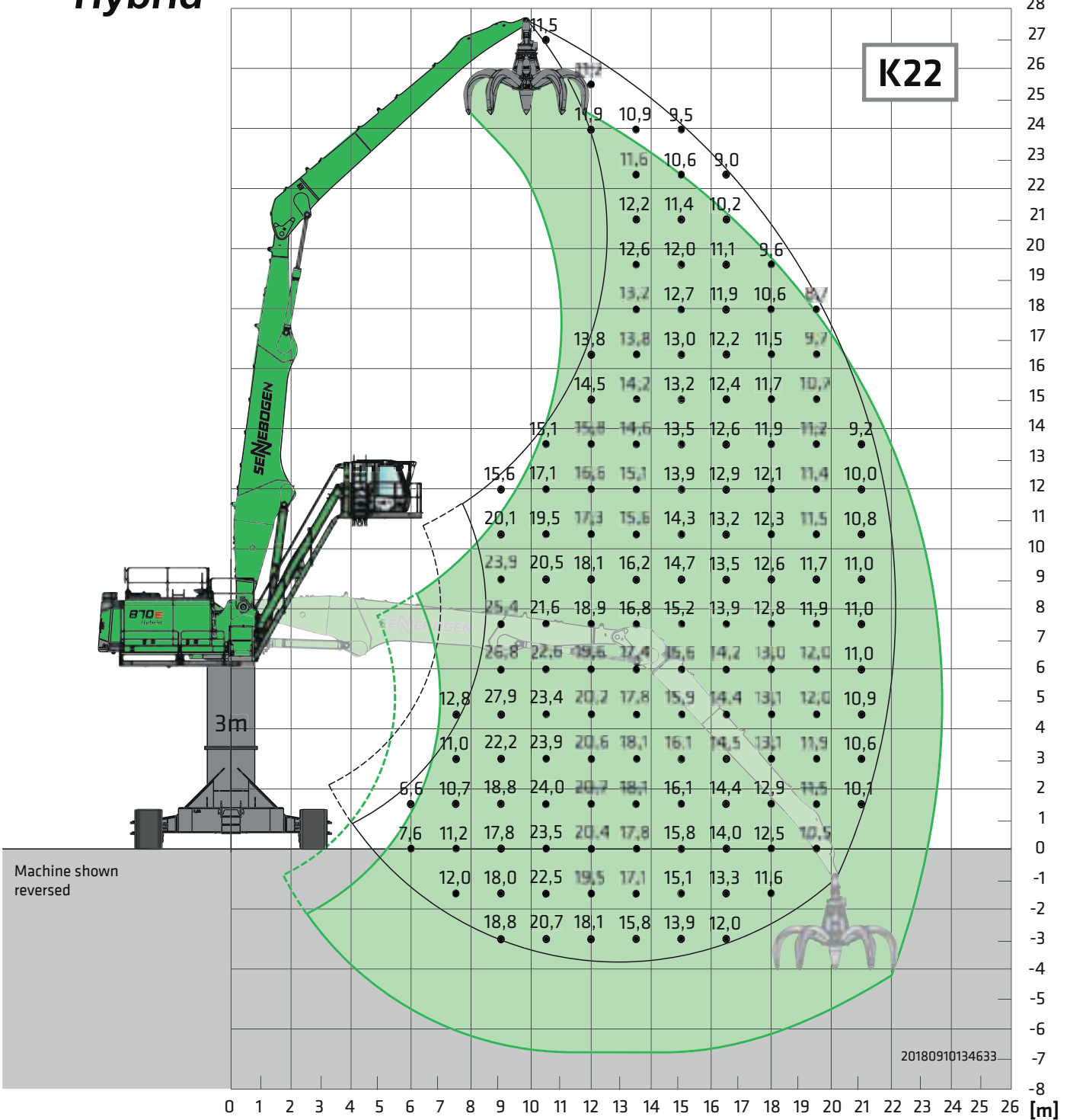
Hybrid

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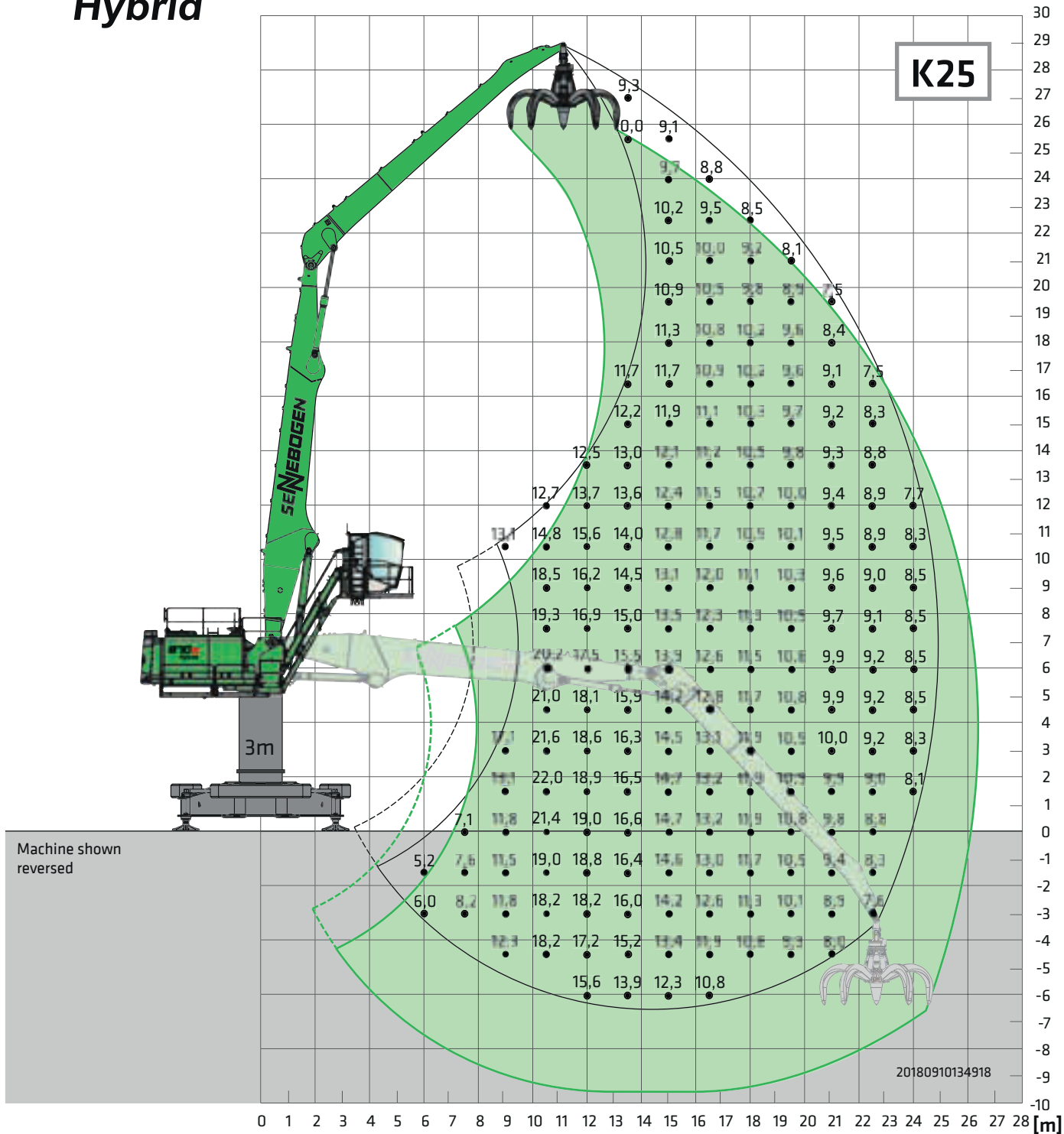
Undercarriage: P136-585 **Compact boom:** 13.5 m Banana **Cab:** Mastercab Skylift 700, hydraulically elevating (option)
Grab stick: 12.3 m

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 excavators used for hoisting must be equipped with pipe fracture safety devices on the hoist cylinders and an overload warning device.



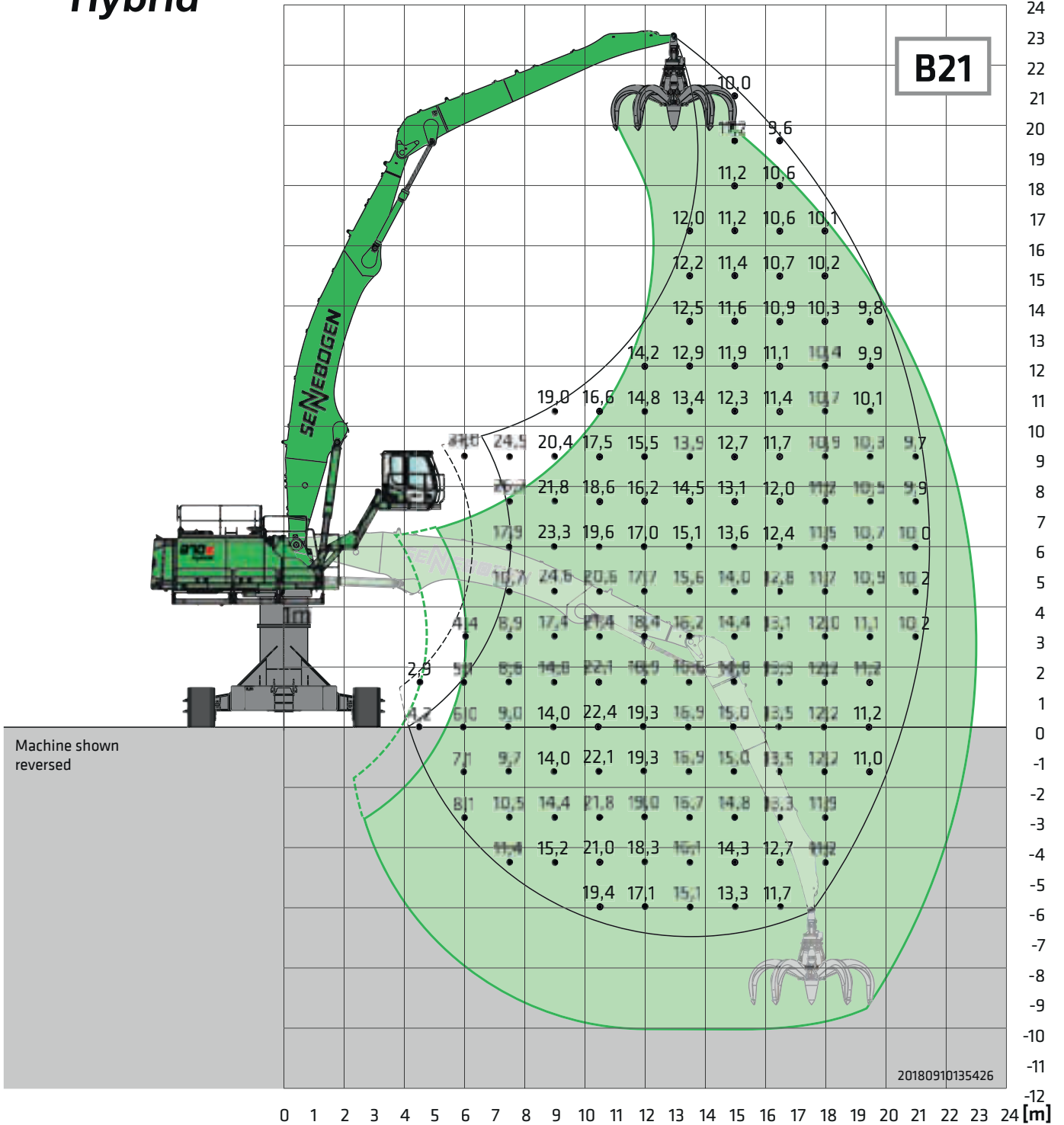
Undercarriage: R90-550 **Compact boom:** 12.5 m **Cab:** Maxcab Skylift 900, hydraulically elevating (option)
Pylon: 3.0 m **Grab stick:** 10.8 m

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 excavators used for hoisting must be equipped with pipe fracture safety devices on the hoist cylinders and an overload warning device.



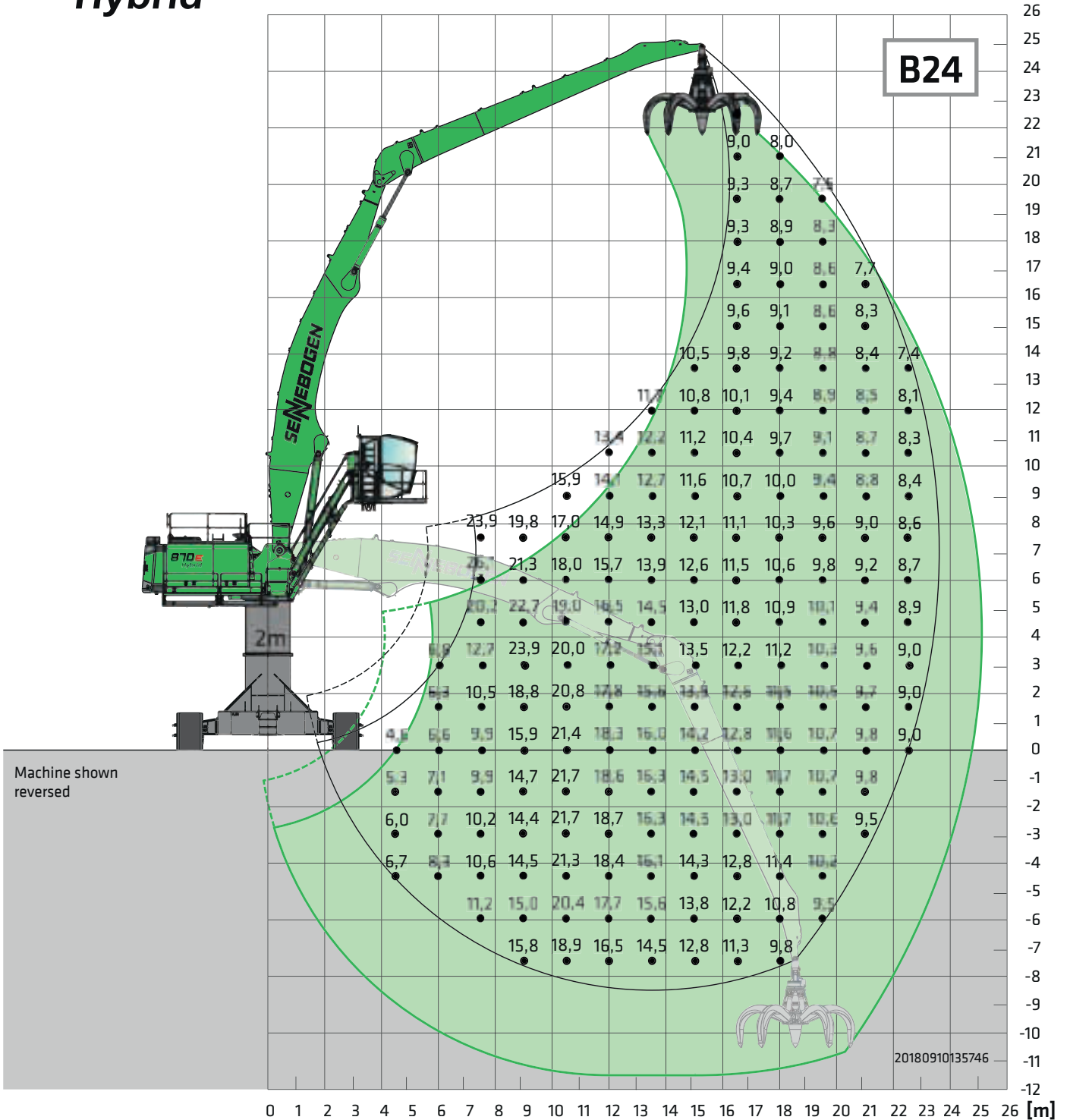
Undercarriage: ST88-550 **Compact boom:** 14.0 m **Cab:** Mastercab Skylift 700, hydraulically elevating (option)
Pylon: 3.0 m **Grab stick:** 12.3 m

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 excavators used for hoisting must be equipped with pipe fracture safety devices on the hoist cylinders and an overload warning device.



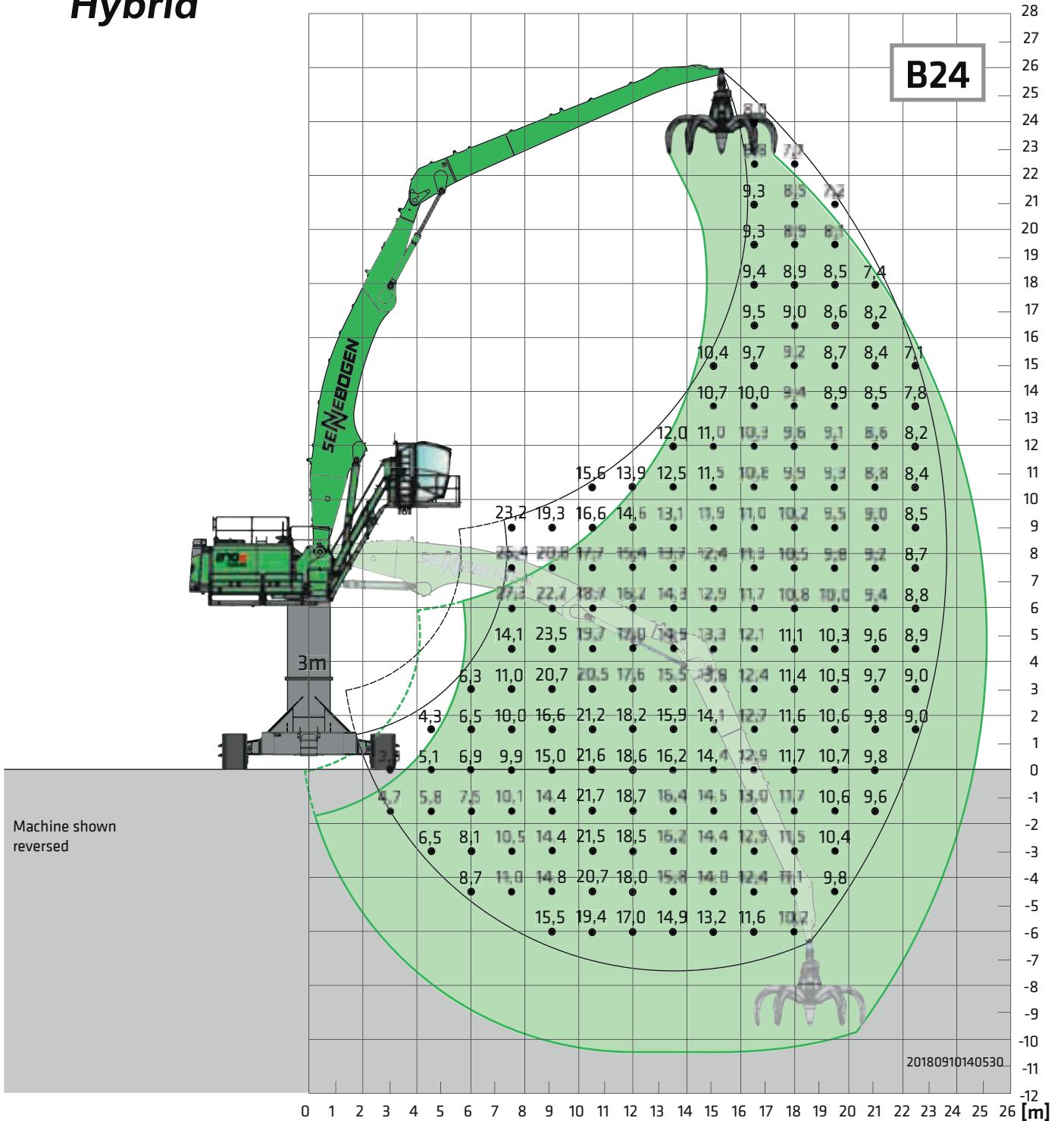
Undercarriage: R90-550 **Compact boom:** 13.5 m Bananna **Cab:** Maxcab E300/260, can be elevated and moved forward hydraulically
Pylon: 1.0 m **Grab stick:** 9.8 m

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 excavators used for hoisting must be equipped with pipe fracture safety devices on the hoist cylinders and an overload warning device.



Undercarriage: R90-550	Compact boom: 13.5 m Banana	Cab: Mastercab Skylift 700, hydraulically elevating (option)
Pylon: 2.0 m	Grab stick: 12.3 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 excavators used for hoisting must be equipped with pipe fracture safety devices on the hoist cylinders and an overload warning device.



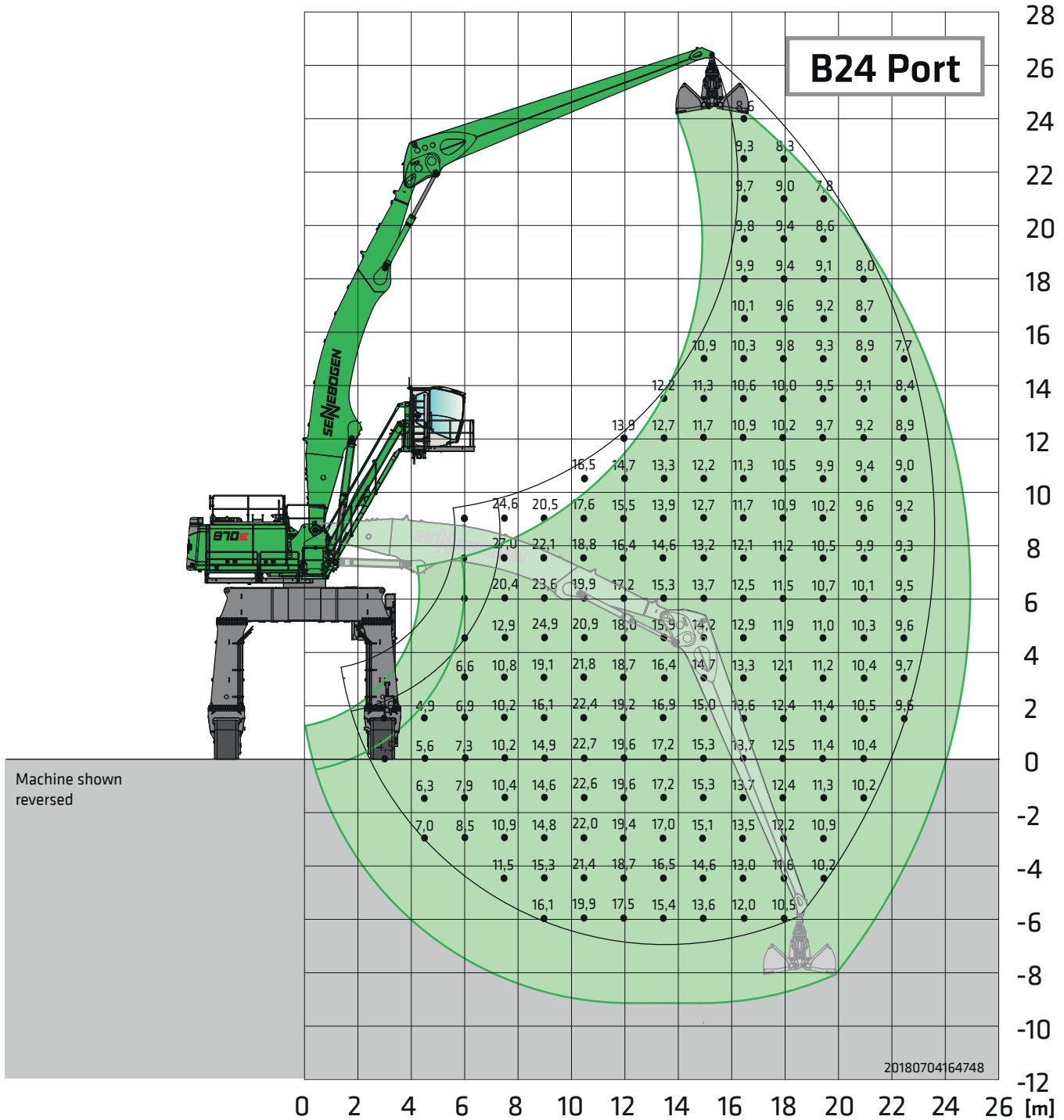
Undercarriage: R90-550 **Compact boom:** 13.5 m Banana **Cab:** Mastercab Skylift 700, hydraulically elevating (option)
Pylon: 3.0 m **Grab stick:** 12.3 m

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 excavators used for hoisting must be equipped with pipe fracture safety devices on the hoist cylinders and an overload warning device.



870E Hybrid Load ratings

R



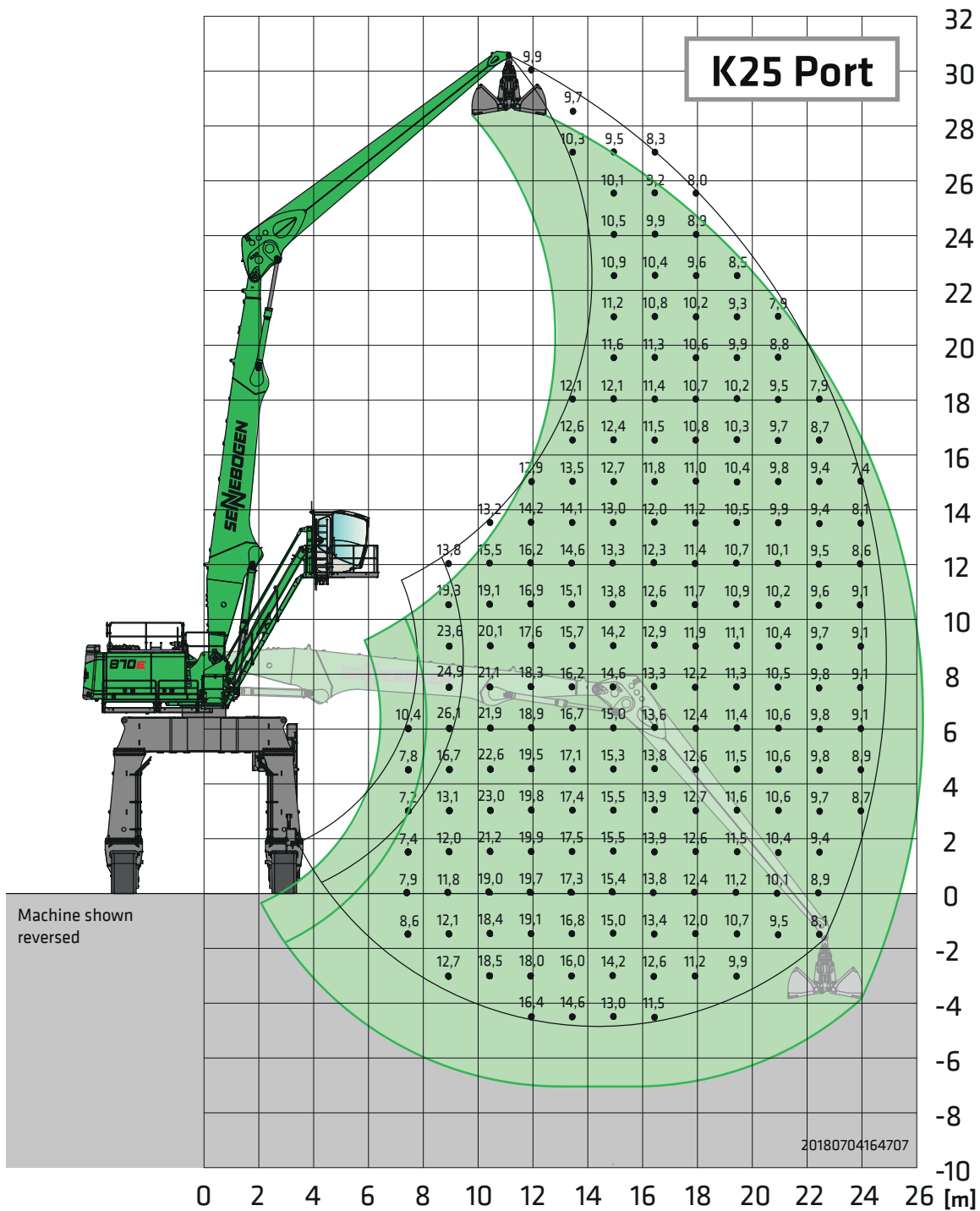
Undercarriage: P136-585 **Compact boom:** 13.5 m Banana **Cab:** Mastercab Skylift 900, hydraulically elevating (option)
Grab stick: 12.3 m

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 excavators used for hoisting must be equipped with pipe fracture safety devices on the hoist cylinders and an overload warning device.

870E Load ratings

Hybrid

R



Undercarriage: P136-585

Compact boom: 14.5 m

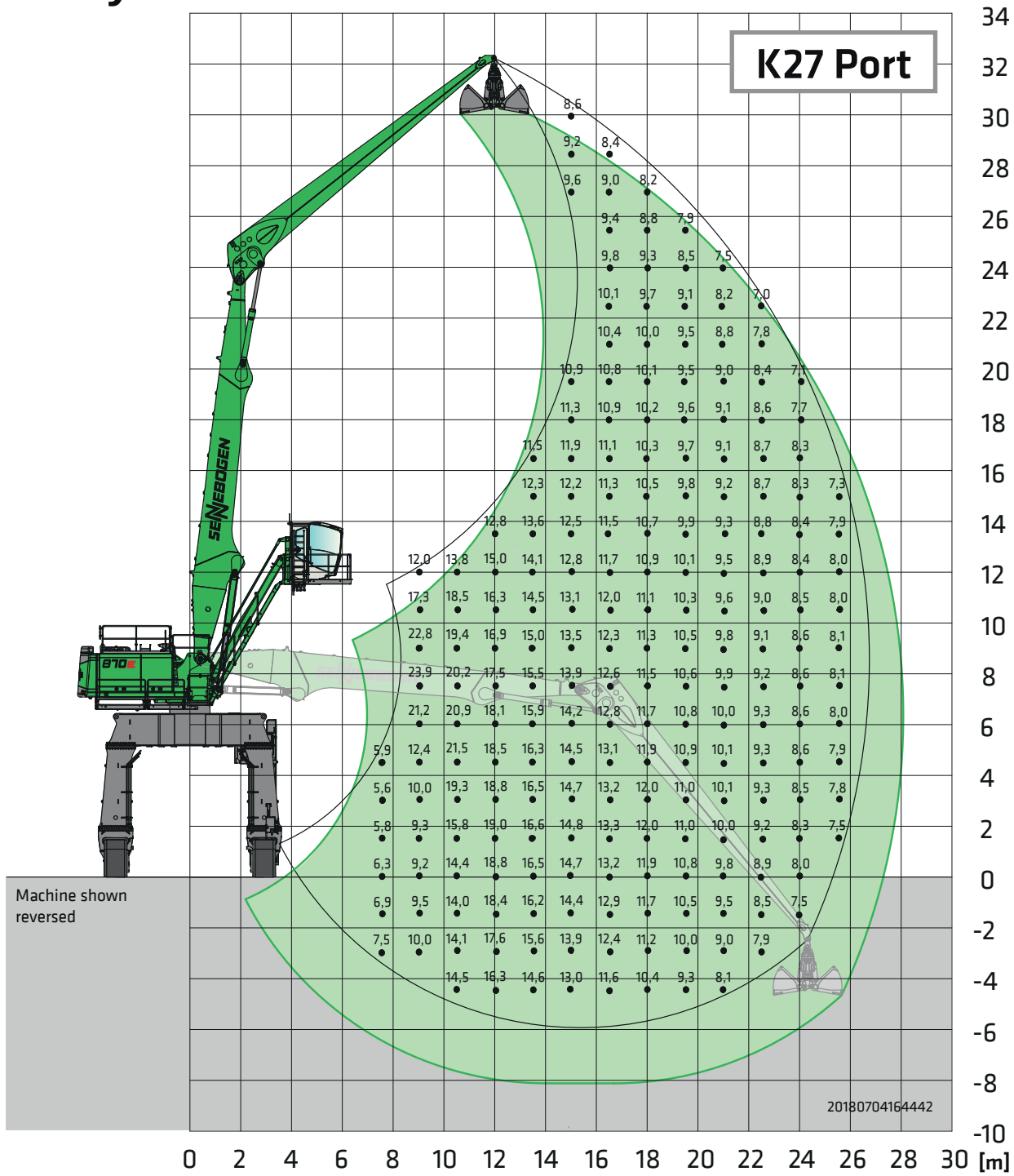
Cab: Mastercab Skylift 900, hydraulically elevating (option)

Grab stick: 12.3 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 excavators used for hoisting must be equipped with pipe fracture safety devices on the hoist cylinders and an overload warning device.

870E Hybrid Load ratings

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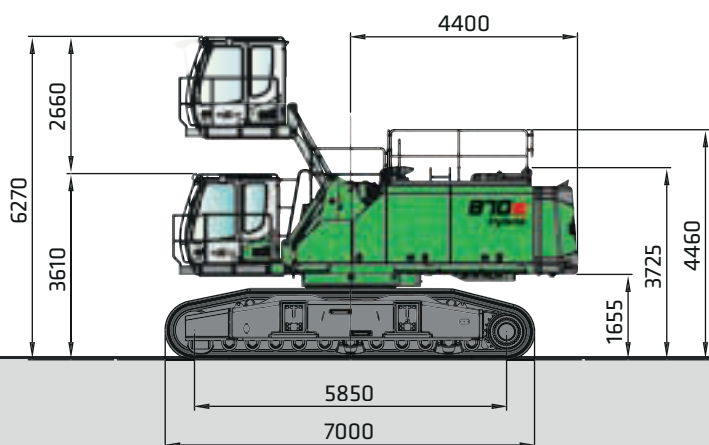


Undercarriage: P136-585	Compact boom: 15.5 m	Cab: Mastercab Skylift 900, hydraulically elevating (option)
	Grab stick: 13.3 m	

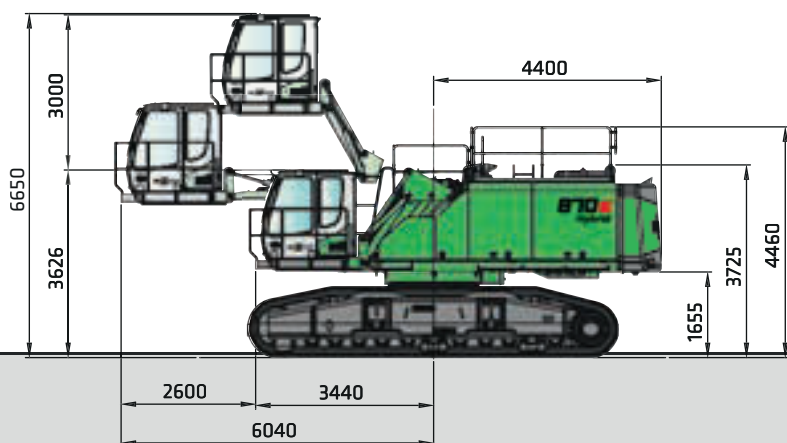
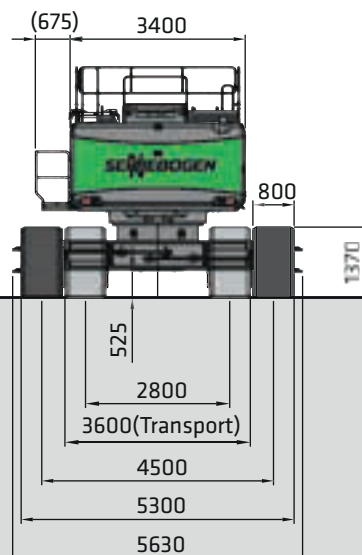
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870E Hybrid Transport dimensions

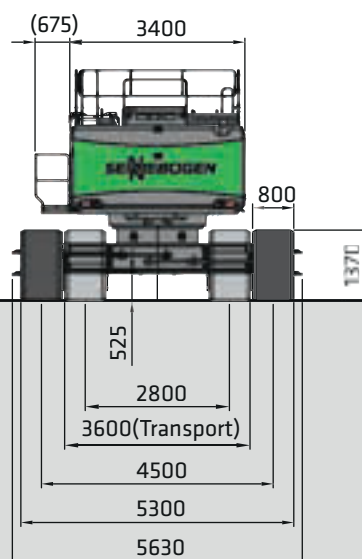
R



870 R with R83-450 undercarriage and hydraulically elevating Maxcab E270

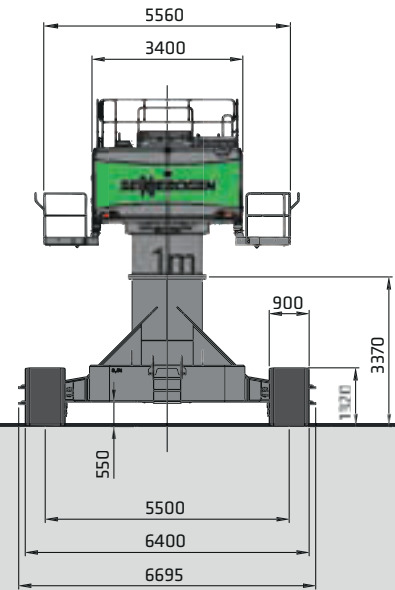
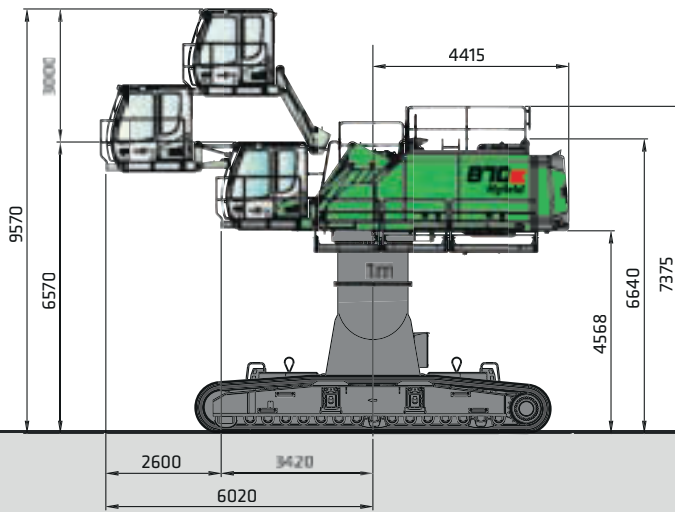


870 R with R83-450 undercarriage and Maxcab E300/260 which can be elevated and moved forward hydraulically

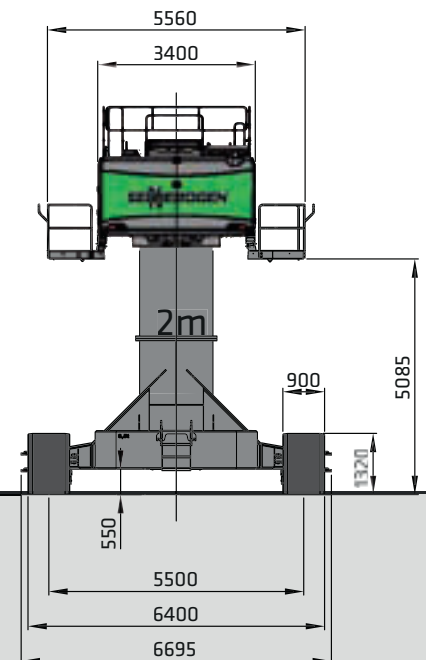
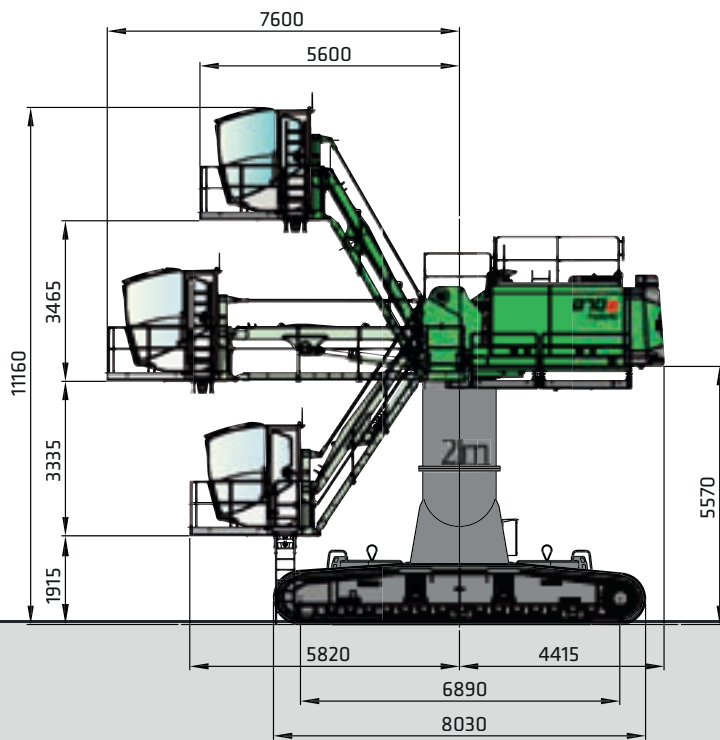


870E Hybrid Dimensions

R



870 R special with R90-550 undercarriage and Maxcab E300/260 which can be elevated and moved forward hydraulically and 1.0 m pylon

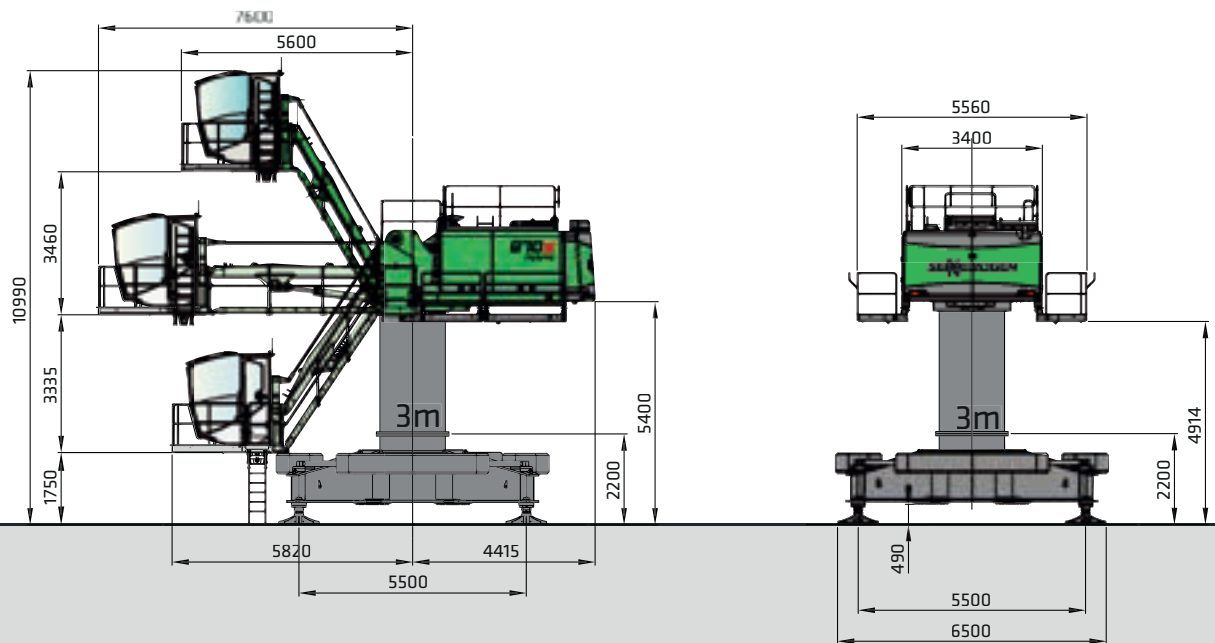


870 R special with R90/550 undercarriage with hydraulically elevating Mastercab with Skylift 700 and 2.0 m pylon

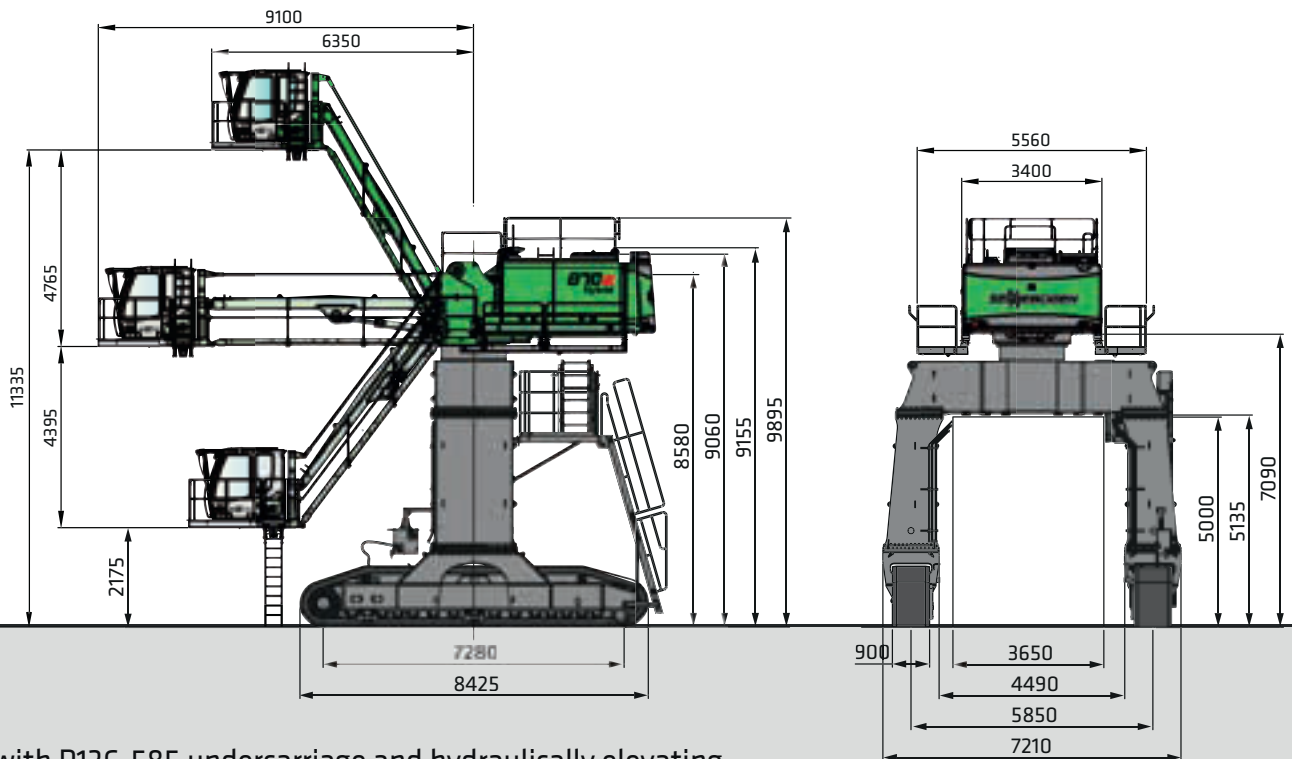
870E Dimensions

Hybrid

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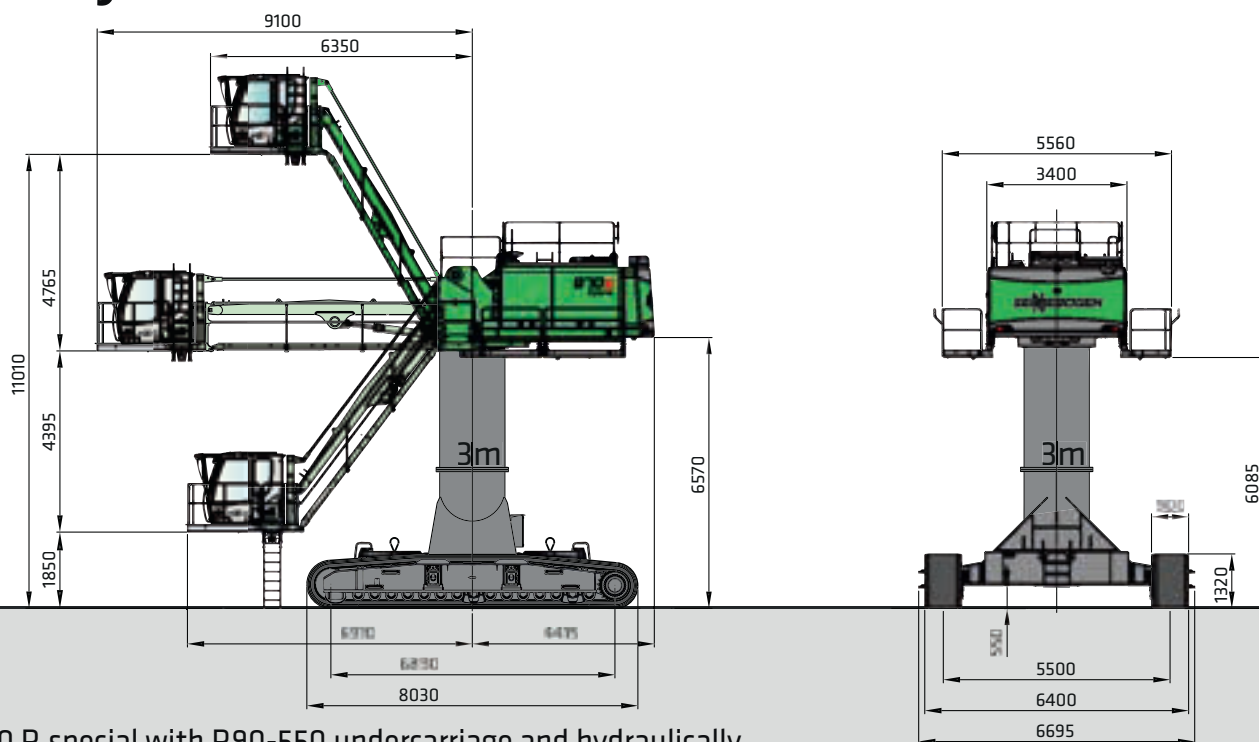
870 special with ST88-550 4-point-pedestal and hydraulically elevating Mastercab with Skylift 700 and 3.0 m pylon



870 R with P136-585 undercarriage and hydraulically elevating Maxcab Industry with Skylift 900

870E Dimensions Hybrid

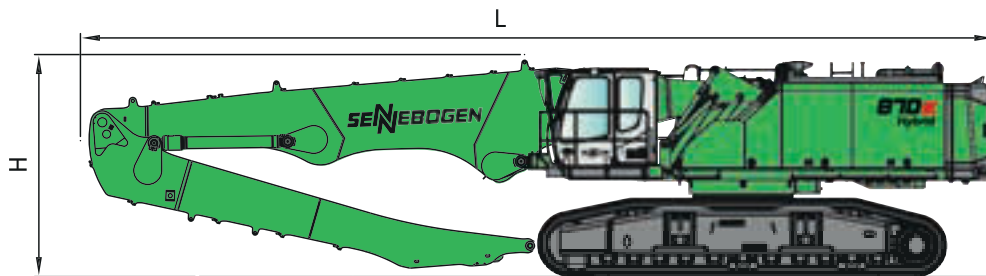
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870 R special with R90-550 undercarriage and hydraulically elevating Maxcab Industry with Skylift 900

870E Hybrid Transport dimensions

R



	Compact boom	Grab stick	Transport length (L)	Transport height (H)
K18	10.8 m	7.8 m	15.85 m	4.10 m
K20	11.8 m	8.8 m	16.9 m	4.10 m
K22	12.5 m	10.8 m	18.0 m	4.10 m
K25	14.0 m	12.3 m	19.4 m*	4.10 m
B21	13.5 m	9.8 m	18.3 m*	4.10 m
B24	13.5 m	12.3 m	18.8 m*	4.10 m
K25 Port	14.0 m	12.3 m	19.4 m*	4.10 m
K27 Port	15.0 m	13.3 m	20.5 m*	4.10 m
B24 Port	13.5 m	12.3 m	18.8 m*	4.10 m

* stick removed.



870E Hybrid Recommended grabs

SGM orange peel grab (4 shells)



Design / size	Grab capacity	Weight ¹		max. piled density
		Shell profile		
		HO	G	
SGM	l	kg	kg	t/m ³
800.50-4	800	2245	2490	2.0
1000.50-4	1000	2345	2585	
1500.50-4	1500	2475	2830	
2000.50-4	2000	2660	3075	

SGM orange peel grab (5 shells)



Design / size	Grab capacity	Weight ¹		max. piled density
		Shell profile ²		
		HO	G	
SGM	l	kg	kg	t/m ³
800.50	800	2580	2740	2.0
1000.50	1000	2710	2870	
1500.50	1500	2860	3100	
2000.50	2000	3060	3370	
2500.50	2500	3130	3615	
3000.50	3000	3250	3875	
3500.50	3500	3420	4140	

SGZ clamshell grab



Design / size	Grab capacity	Weight ¹	max. piled density
SGZ	l	kg	t/m ³
2500.60	2500	2850	2.6
3000.60	3000	3030	2.0
3500.60	3500	3320	
4000.60	4000	3420	

Magnet plates



Type series / model	Power	Dead weight	Pull-off strength	Lifting capacity in kg
WOKO	kW	kg	kN	Slab (safety factor 2)
S-RLB 15	11.7	2400	380	19000
S-RLB 17	17.8	3300	640	32000
S-RLB 19	22.0	5090	790	39500
Recommended magnetic generator: 20 - 25 kW				

*) Available upon request ¹⁾ Weight information without grab suspension, stick bolts, hose system

²⁾ Half-open shells: shell sheet steel width 400 mm, 500 mm for 1,250 l capacity and higher

870E
Hybrid

SENNEBOGEN Green Hybrid Energy Recovery System



Save 30 % energy with the Green Hybrid system

- A combination of hydraulic cylinders at the boom and nitrogen piston accumulators with gas recover energy during the work procedure
- Use of the recovered energy during the next working cycle reduces the engine power required



Safety

- Use of standard hydraulic components
- Energy storage in the enclosed rear section

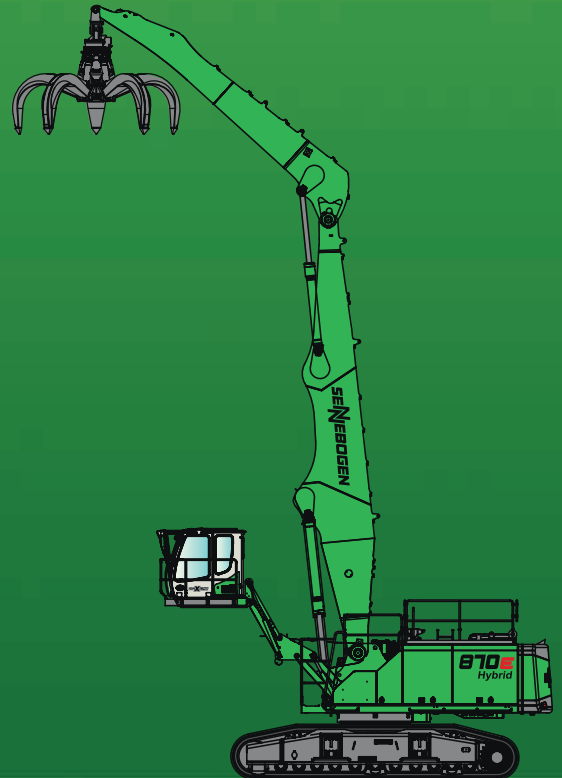
Reduced operating costs

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



870E

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This catalog describes machine models, the 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.

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The Sennebogen logo, consisting of the word 'SENNEBOGEN' in a bold, stylized, sans-serif font. The letters are white with a blue outline and are set against a dark blue rectangular background.

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