



**268** kW (Tier IIIa)  
**261** kW (Tier IVf)



**87,5 - 120** t



**18 - 23** m



**MAXCAB**

**MASTERCAB**

# 860E

Crawler material handling machine

Tier IVf emission standards

# 860E Advanced. The E-Series.



1962: rope-driven S833 with elevated operator cab

## What makes up the E-Series

- 60 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 product service life and high value retention

## Your top benefits:

**1 Green Efficiency**  
Save fuel – reduce operating costs  
Work quietly – protect operator and environment



**2 Peak performance**  
Durable mechanical systems – stressed parts optimized  
High speeds – high load capacities

**3 Maximum operating comfort**  
Comfortable Maxcab operator cab – relaxed work  
SENCON – SENNEBOGEN Control System



**4 Maximum safety**  
Safe entry and exit – no-slip steps  
State-of-the-art cameras – entire work area in view

**5 Maintenance and service made easy**  
Easy fault diagnosis – central measuring points  
Easy maintenance – clear labeling

**6 Consultation and support**  
3 production sites – 2 subsidiaries  
120 sales partners – over 300 service stations





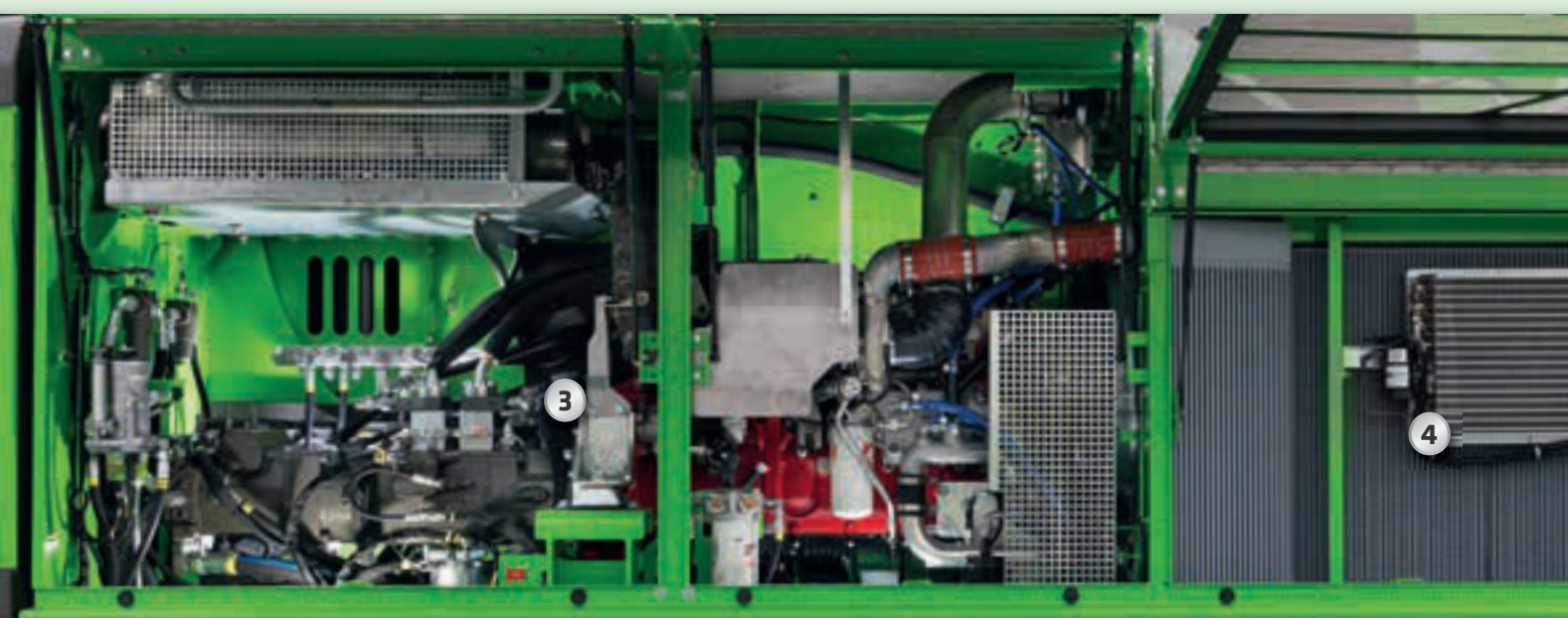


# 860E The E-Series. At a glance.



## Four ways to save fuel

- Up to 20% savings: working in Eco Mode 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 aftertreatment



## Quiet operation

- Consistently quiet operation thanks to decoupled engine mounts **3** and soundproofing in the doors
- Sound pressure level reduced by up to 4.5 dB; sound power level according to 2000/14/EC up to 2 dB lower than required

## High-capacity cooling

- Constant, reliable performance thanks to large-dimensioned and robust fans and coolers **4**
- Water and oil coolers with top-notch efficiency thanks to axial-piston pump and motor control and on-demand thermostatic control
- Charge-air cooler with mechanical drive





### Maximum safety

- No-slip work surfaces
- Peripheral railing\* 1
- 2 cameras to the right and rear
- Step grid with railing next to cab sliding door 2



### Smart cooler technology

- Standard features: automatic, fast and strong fan reversal for blowing out coolers and continuous cooling capacity
- Side-by-side coolers, easily accessible and clean cooling technology
- Fuel savings through optimized fan operation

### Powerful hydraulic system

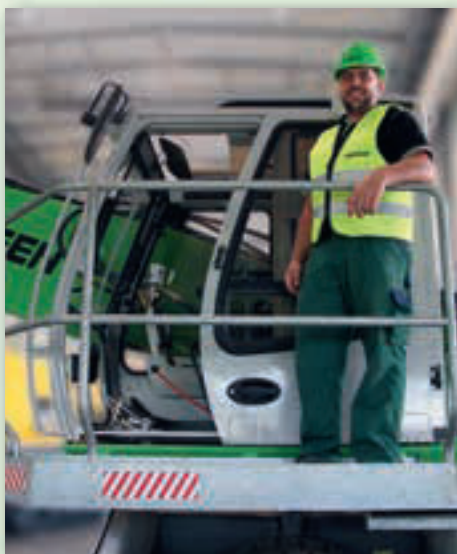
- Strong pumps with power reserves
- Top efficiency thanks to large-dimensioned hydraulic valves and lines
- Extra-long change intervals of 4,000 operating hours through initial fill-up with special oil with extended service life when using SENNEBOGEN HydroClean 5

\* Optional

# 860E The E-Series. Pure comfort.

## Maxcab comfort cab

- Air-suspension comfort seat with heater
- Convenient joystick control
- Hinged front window
- Sliding door, platform in front of cab
- Color monitor for right-side and rear-facing camera feeds
- SENNEBOGEN OptiMode: Various modes to optimize performance



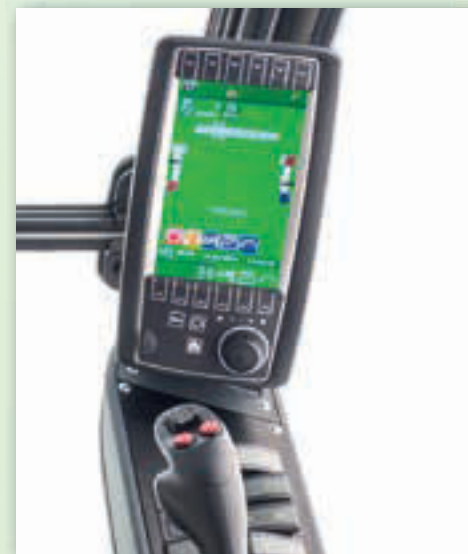
## Platform with railing

- Safety when entering and exiting the cab
- Sliding door makes entering and exiting easy and safe



## Automatic climate control

- Consistently pleasant cab climate thanks to 10 evenly distributed air vents
- Central controls make operation easy



## SENCAN

- Clear menu
- Determine operating values without the need for additional instruments
- Fast troubleshooting thanks to detailed messages



# 860E Maintenance and service made easy



## Optimized for maintenance

- Fast and easy troubleshooting thanks to straightforward and clearly labeled electrical distributor
- Easy access to all service points on the machine
- Automatic central lubrication for equipment and slewing gear raceway



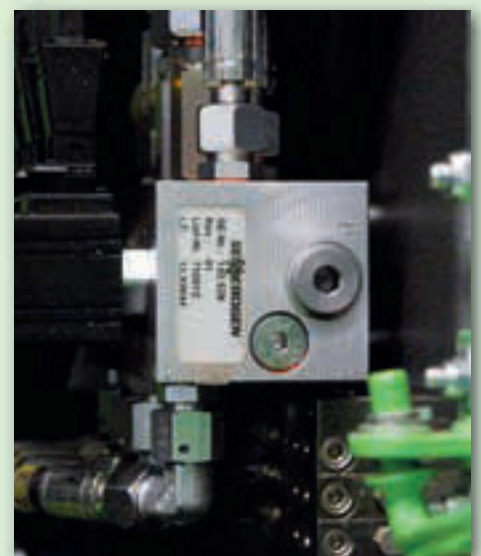
## HydroClean\*

- Optimal protection of hydraulic components thanks to 3  $\mu\text{m}$  micro-filter
- Cleaner hydraulic oil, longer service life



## Central reading points

- Easily accessible, central reading points
- Quickly inspect entire hydraulic system



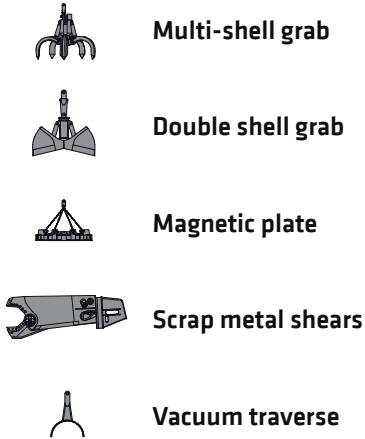
## Clear labeling

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

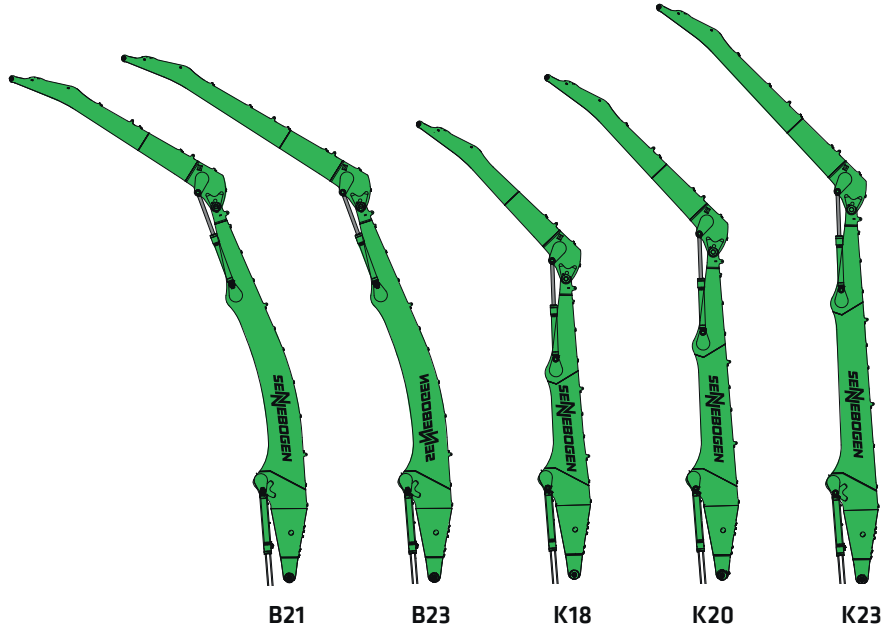


# 860E Modular design – versatile solutions

## Attachments



## Equipment options (others available upon request)



## Cabs



Maxcab

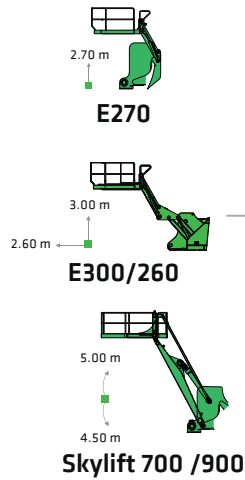


Maxcab Industry

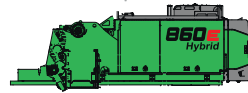


Mastercab

## Cab elevation



## Uppercarriage



Diesel-hydraulic drive



Electrohydraulic drive

## Options

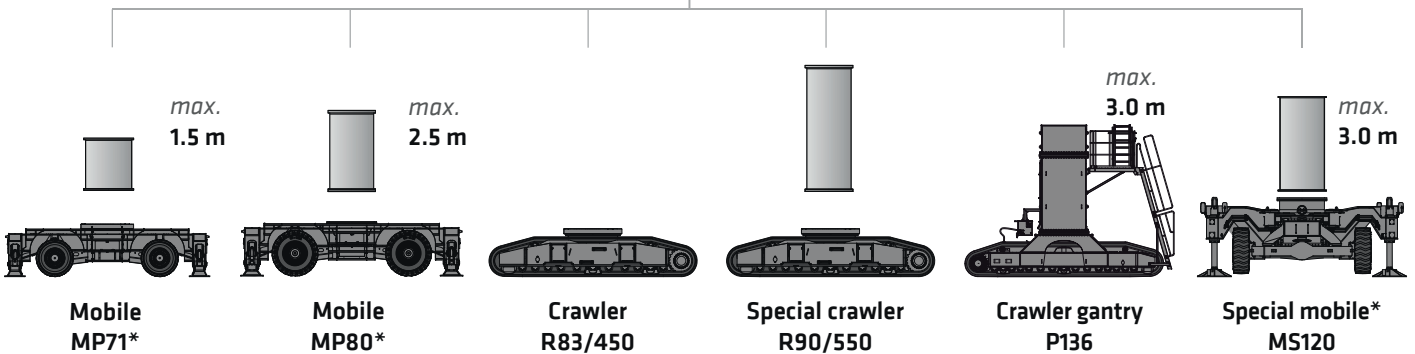


Engine line drum



Transformer

## Undercarriage variants





**Reliable operation**  
through robust and FEM-  
optimized equipment

- Decade-long experience
- most advanced  
Computer simulation
- the greatest degree of  
stability and longest  
service life

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

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

**Safe entry and exit**  
thanks to railings, grip handles  
and no-slip steps

**Robust side cover**  
Made of recyclable  
sheet steel

**Safe entry and exit**  
thanks to platform with railing

# 860E SENNEBOGEN Green Hybrid Energy Recovery System



## Save 30 % energy with the Green Hybrid system

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



### Safety

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

### Reduce operating costs

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



# 860E Recommended grabs

## SGM multi-shell grab (4 shells)



Design / size	Grapple capacity	Weight <sup>1</sup>		Maximum load capacity
		Shell shape		
		HO	G	
SGM	l	kg	kg	t
800.50-4	800	2245	2490	10.0
1000.50-4	1000	2345	2585	
1500.50-4	1500	2475	2830	
2000.50-4	2000	2660	3075	

## SGM multi-shell grab (5 shells)



Design / size	Grapple capacity	Weight <sup>1</sup>		Maximum load capacity
		Shell shape <sup>2</sup>		
		HO	G	
SGM	l	kg	kg	t
800.50	800	2420	2610	10.0
1000.50	1000	2480	2655	
1500.50	1500	2645	2930	
2000.50	2000	2800	3160	
2500.50	2500	3130	3615	
3000.50	3000	3250	3875	
3500.50	3500	3420	4140	

## Double-shell grab SGZ



Design / size	Grapple capacity	Weight <sup>1</sup>	Maximum load capacity
SGZ	l	kg	t
1500.50	1500	1950	12.0
2000.50	2000	2200	
2500.50	2500	2300	
3000.50	3000	2490	
4000.50	4000	2880	
2500.60	2500	3350	12.0
3000.60	3000	3530	
3500.60	3500	3720	
4000.60	4000	3920	

## Magnetic plates



Type series / model	Power	Deadweight	Breakaway force	Load-bearing capacity in kg
WOKO	kW	kg	kN	Slab (safety factor 2)
S-RSL 17	17.0	2500	460	23000
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 <sup>1</sup> Weight information without grapple suspension, stick bolts, hose system

<sup>2</sup> Half-open shells: shell sheet steel width 400 mm, 500 mm wide for 1250 l capacity and higher

# 860E Technical data, equipment

## MACHINE TYPE

Model (type) **860**

## ENGINE

Power	<b>261 kW/355 hp at 1,800 rpm (Tier IIIa) 268 kW/364 hp at 1,500 rpm (Tier IV)</b>
Model	<b>Cummins QSL 12- Tier IV Cummins QSM 11 - Tier IIIa</b> Direct injection, turbocharged, charge-air cooler, reduced emissions, EcoMode, automatic idle, auto-stop, fuel preheating
Cooling	Water-cooled, cooler fan reversal
Diesel filter	With water separator and heating system
Air filter	Dry filter with integrated pre-separator, automatic dust discharge, main element and safety element, contamination indicator
Fuel tank	<b>1000 l</b>
DEF tank	<b>110 l</b>
Electrical system	<b>24 V</b>
Batteries	<b>2 x 180 Ah</b> , battery disconnect switch
Options	<ul style="list-style-type: none"> <li>■ Engine block heater</li> <li>■ Electric fuel pump</li> <li>■ Jump-start terminals</li> </ul>

## UPPERCARRIAGE

Design	Torsion-resistant box design, precision crafted, steel bushings for boom bearings. Extremely service-friendly design, longitudinal engine
Central lubrication	Automatic central lubrication for equipment and slewing gear raceway
Electrical system	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"> <li>■ Slewing gear brake via foot pedal</li> <li>■ 360° uppercarriage railing for additional safety</li> <li>■ LED lighting package</li> <li>■ Fire extinguisher</li> <li>■ Maritime climate varnish as corrosion protection</li> <li>■ Electric heater for hydraulic tank</li> <li>■ Low temperature package</li> <li>■ Hydraulically driven magnetic generator 20 kW/25 kW</li> </ul>

## HYDRAULIC SYSTEM

Load sensing/LUDV hydraulic system, hydraulic pilot-controlled work functions, load limit sensing control	
Pump type	Swashplate-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 sensing control
Delivery rate	<b>2x 475 l/min</b> and <b>1x 274 l/min</b> for rotary drive in the closed circuit
Operating pressure	<b>max. 340 bar</b>
Filtration	High-performance filtration with long change interval
Hydraulic tank	<b>900 l</b>
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"> <li>■ Bio-oil – environmentally friendly</li> <li>■ ToolControl for programming the pressure/rate for up to 10 tools</li> <li>■ Additional hydraulic circuit for shear attachment</li> <li>■ Load moment warning with capacity utilization indicator</li> <li>■ Overload safeguard with shutdown</li> <li>■ 60 µm pressure filter for attachments</li> <li>■ 3 µm hydraulic micro-filter - SENNEBOGEN HydroClean</li> </ul>

## SLEWING DRIVE

Gearbox	Compact planetary gear with slant-axis hydraulic motor, integrated brake valves
Parking brake	Spring-loaded multi-disk brake
Slewing ring	External gear slewing ring with 360° protection and pinion gear lubrication
Slewing speed	0-5.5 rpm, variable

# 860E Technical data, equipment

## CAB MAX CRB

Cab type	Hydraulically elevating cab E270
Cab equipment	Sliding door, excellent ergonomics, automatic climate control, heated, air-suspension comfort seat, fresh/circulating air filter, joystick control, 12 V/24 V connections, SENCON
Options	<ul style="list-style-type: none"> <li>■ Active seat climatization</li> <li>■ Cab E300/260 can be elevated 300 cm and moved forward 260 mm hydraulically</li> <li>■ Cab adjustment Skylift 700</li> <li>■ Cab adjustment Skylift 900</li> <li>■ Auxiliary heating system with timer</li> <li>■ Cabs with active carbon filter</li> <li>■ Sliding window in operator door</li> <li>■ Armored-glass windshield</li> <li>■ Armored-glass sunroof</li> <li>■ Safety side window and rear window</li> <li>■ Floor window for a better view</li> <li>■ Rolling shade for roof window and windshield</li> <li>■ Protective roof grating</li> <li>■ FOPS protective roof grating</li> <li>■ Protective front grating</li> <li>■ Radio and CD player with speakers</li> <li>■ Enlarged industrial cab with undivided armored glass windshield</li> <li>■ Mastercab large area port cab with second seat</li> </ul>

## ATTACHMENTS

Design	Decades of experience, state-of-the-art computer simulation, highest level of stability, longest service life, large-dimensioned and low-maintenance bearing points, sealed special bearing bushes, precision-crafted, quick-release couplings on the connections - open/close/rotate grapple
Cylinders	Hydraulic cylinders with high-quality sealing and guide elements, end position damping, sealed bearing points
Options	<ul style="list-style-type: none"> <li>■ Ball valves in the hydraulic lines for quick and easy grapple switching</li> <li>■ Maritime climate varnishing</li> <li>■ Maritime climate coating of all cylinders, nickel-plated and chrome-plated</li> <li>■ Float position of the equipment</li> <li>■ Adjustable hoisting limiter/stick limiter</li> <li>■ LED Lighting</li> <li>■ Camera on a stick</li> </ul>

## UNDERCARRIAGE

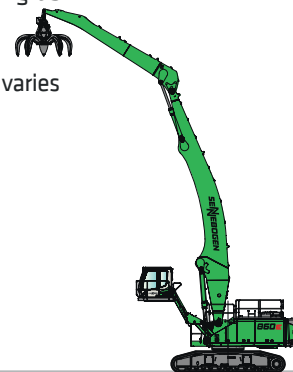
Design	Wide-gauge crawler undercarriage in a stable, torsion-resistant box design.
Drive	Hydraulic traction drive for each crawler integrated in the chassis and connected by a compact planetary gear to an axial piston motor.
Parking brake	Spring-loaded, hydraulically ventilated disk brakes. Hydraulic brake valves protect the traction motors when going downhill.
Traveling gear	R83-450 telescopic crawler undercarriage with 2.8–4.5 m mechanical track adjustment and maintenance-free B8b (C63 crawler track, 7,000 mm long), with canted 800 mm triple grouser track shoes.
Speed	<b>0 - 1.6 km/h</b> Level I: <b>0 - 3 km/h</b> Level II
Options	<ul style="list-style-type: none"> <li>■ 900 mm flat base plates, rounded</li> <li>■ 900 mm 3-grouser crawler shoes, splayed</li> <li>■ R90-550 special undercarriage with integrated 2 m pylon</li> <li>■ P136-585 crawler gantry with 5 m clearance</li> <li>■ ST90 4-point underframe</li> </ul>

## ELECTRIC DRIVE eGREEN

Option	<ul style="list-style-type: none"> <li>■ Power: <b>250 kW, 400 V, 50 Hz</b> Total connected load: 270 kVA, 500 A machine side fuse (alternatively 630 A with magnet system) for 400 V – star-delta connection motor start</li> <li>■ Advantages: Lowest operating costs, quiet and virtually vibration-free work, long service life of hydraulic components</li> </ul>
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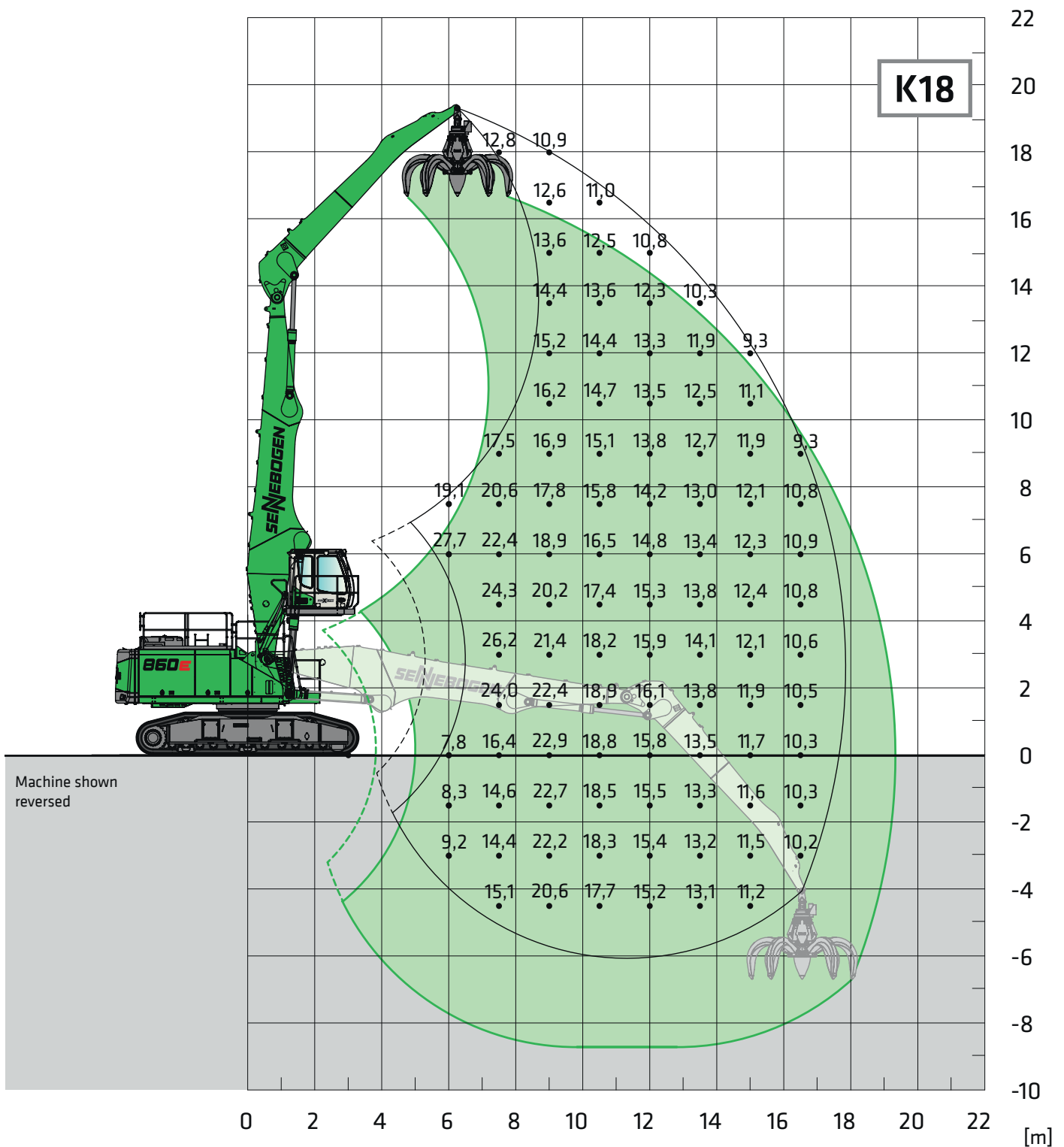
## OPERATING WEIGHT

Mass	<b>approx. 87,500 kg</b> 860 R basic machine with K18 equipment and 3000 l multi-shell grab
Notice	Operating weight varies by design.





# 860E Load ratings



Undercarriage **R83-450**

Compact boom  
Dipper stick

10.8 m  
7.8 m

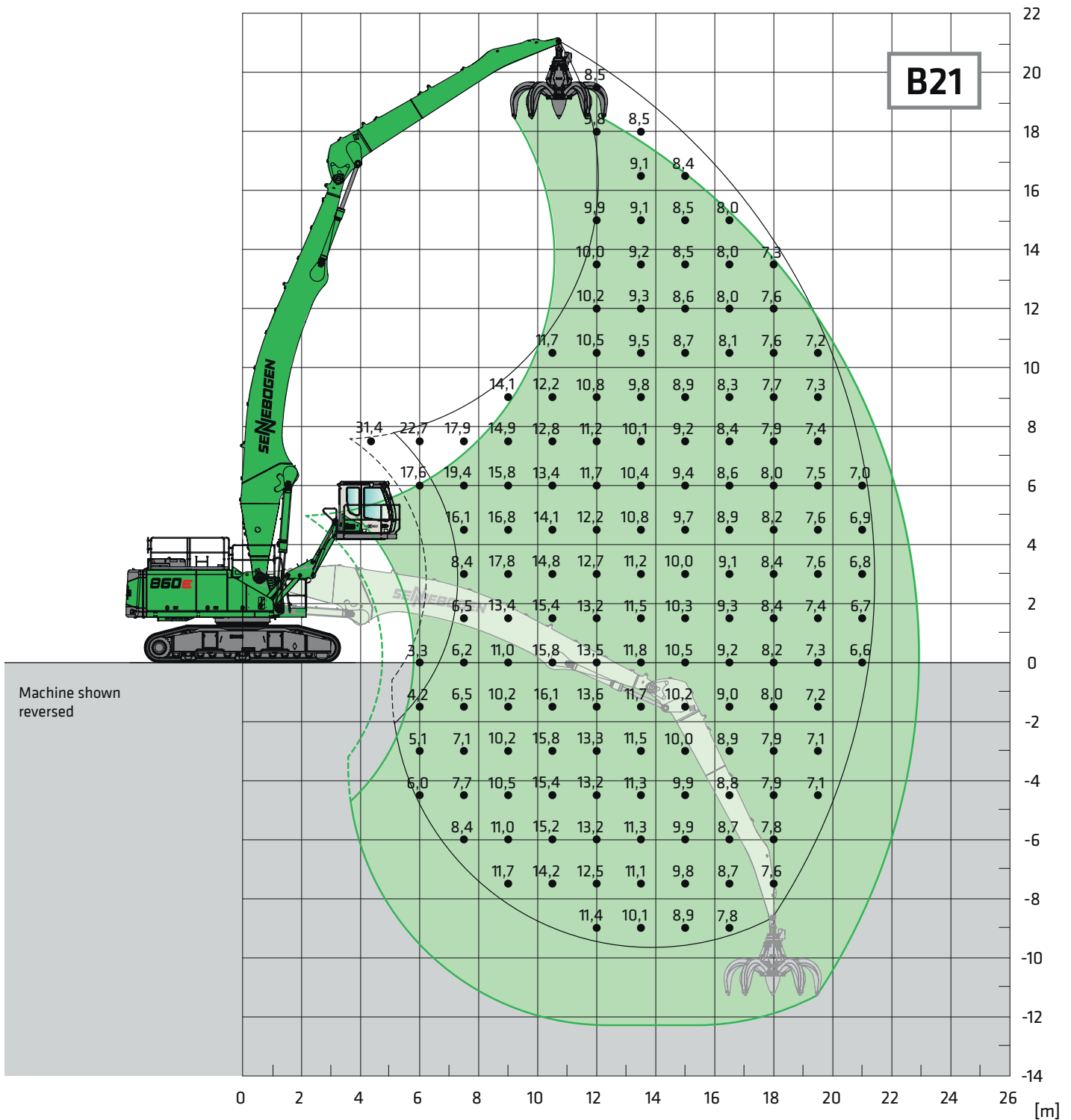
Cab

Maxcab E270,  
hydraulically elevating

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 360° on solid, level ground. Safe working loads include attachments such as multi-shell grapples, magnets, etc. According to harmonized EU standard EN 474-5, hydraulic excavators used for lifting must be equipped with pipe fracture safety devices on the hoist cylinders and an overload warning device.



# 860E Load ratings



Undercarriage R83-450

Compact boom  
Dipper stick

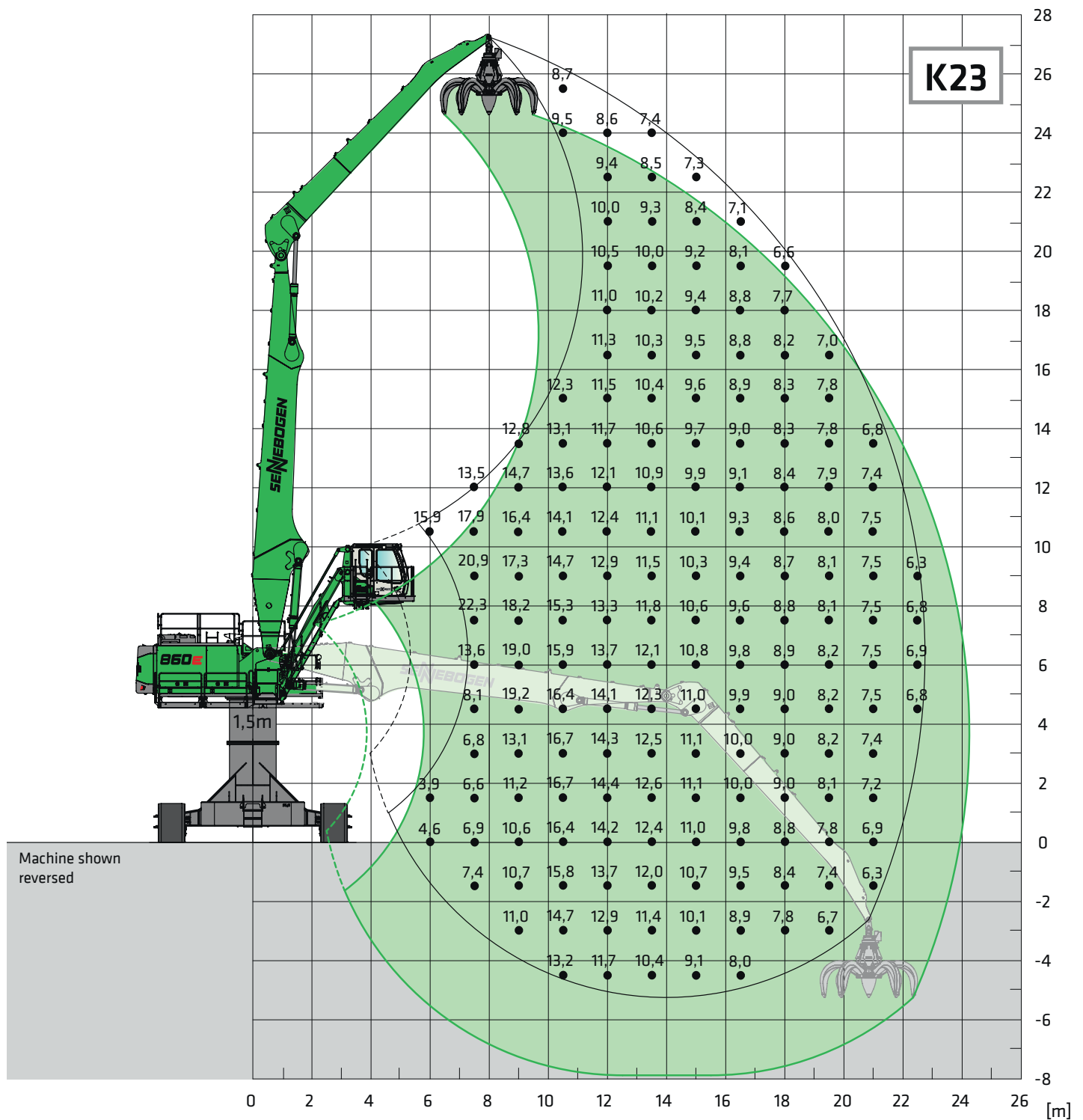
13.8 m  
8.8 m

Cab

Maxcab E300/260,  
hydraulic elevation and tilt feature

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 360° on solid, level ground. Safe working loads include attachments such as multi-shell grapples, magnets, etc. According to harmonized EU standard EN 474-5, hydraulic excavators used for lifting must be equipped with pipe fracture safety devices on the hoist cylinders and an overload warning device.

# 860E Load ratings

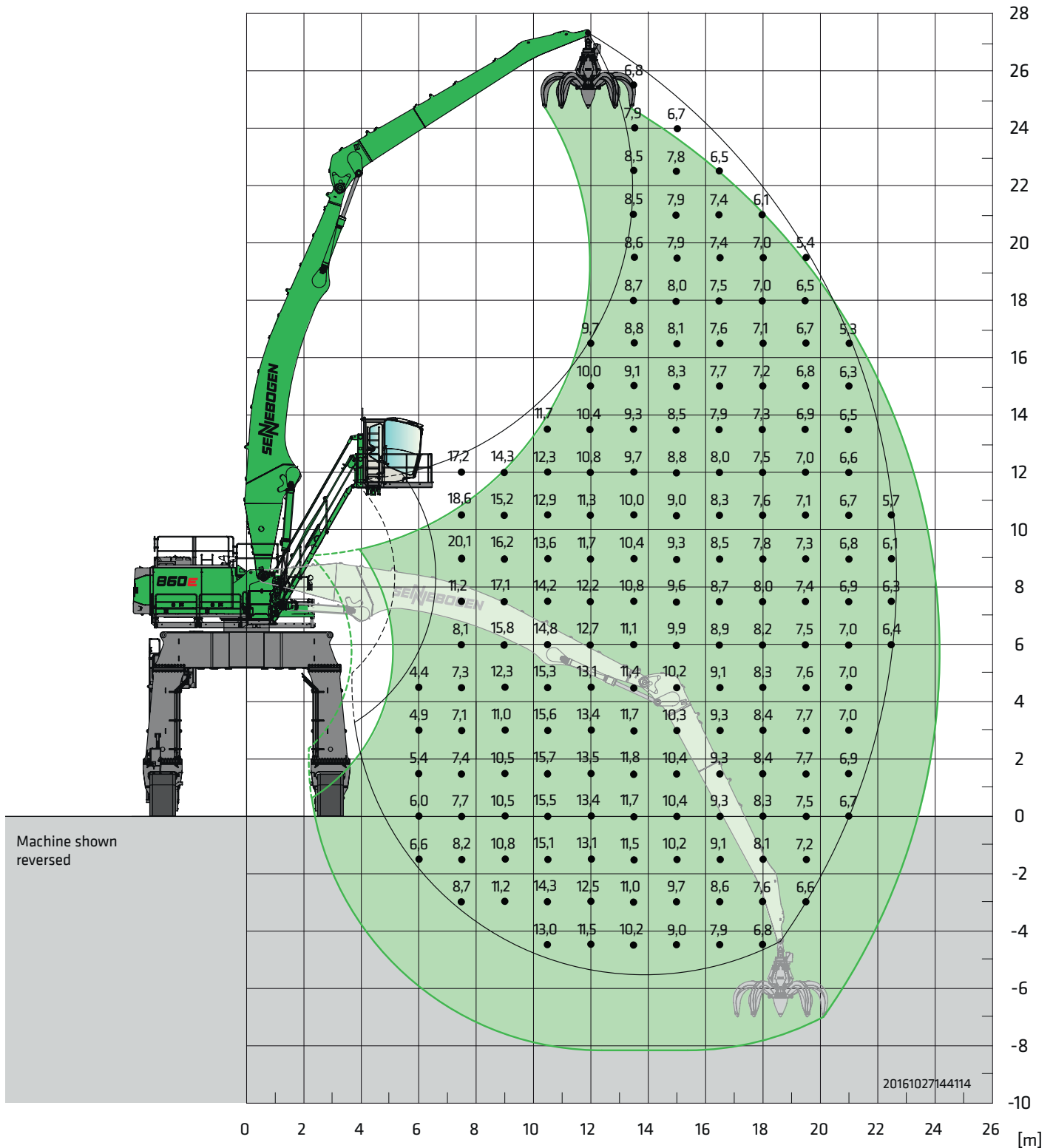


<b>Undercarriage Pylon</b>	<b>R90-550 1.5 m</b>	<b>Compact boom Dipper stick</b>	<b>13.5 m 10.2 m</b>	<b>Cab</b>	<b>Maxcab Skylift 700, hydraulically elevating</b>
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All values are in tons (t) and are 75% of the static tipping load or 87% of the hydraulic lifting force in accordance with ISO 10567, and apply at the required operating temperature in the Green Hybrid system. They apply 360° on solid, level ground. Safe working loads include attachments such as multi-shell grapples, magnets, etc. According to harmonized EU standard EN 474-5, hydraulic excavators used for lifting must be equipped with pipe fracture safety devices on the hoist cylinders and an overload warning device.



# 860E Load ratings



**Undercarriage P136-585**

**Compact boom  
Dipper stick**

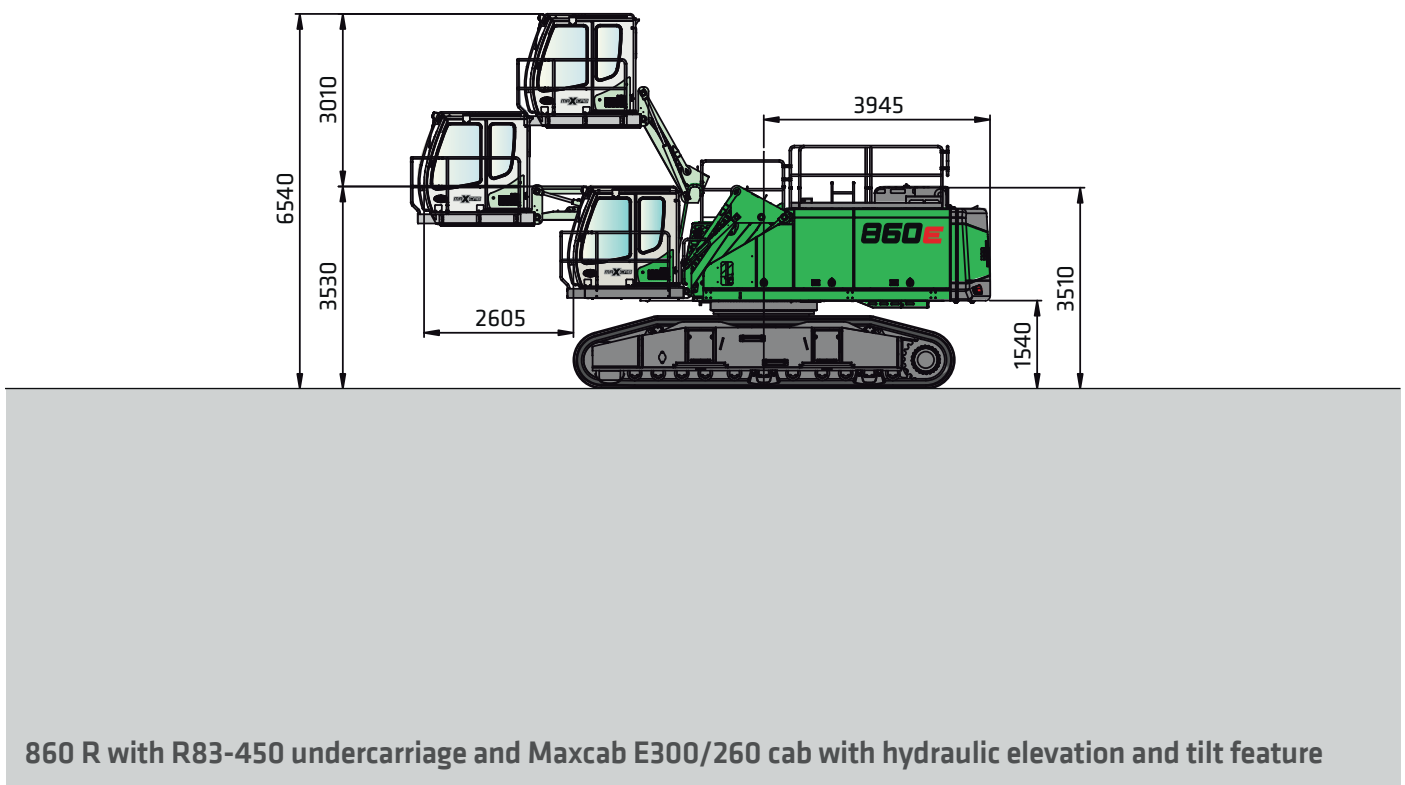
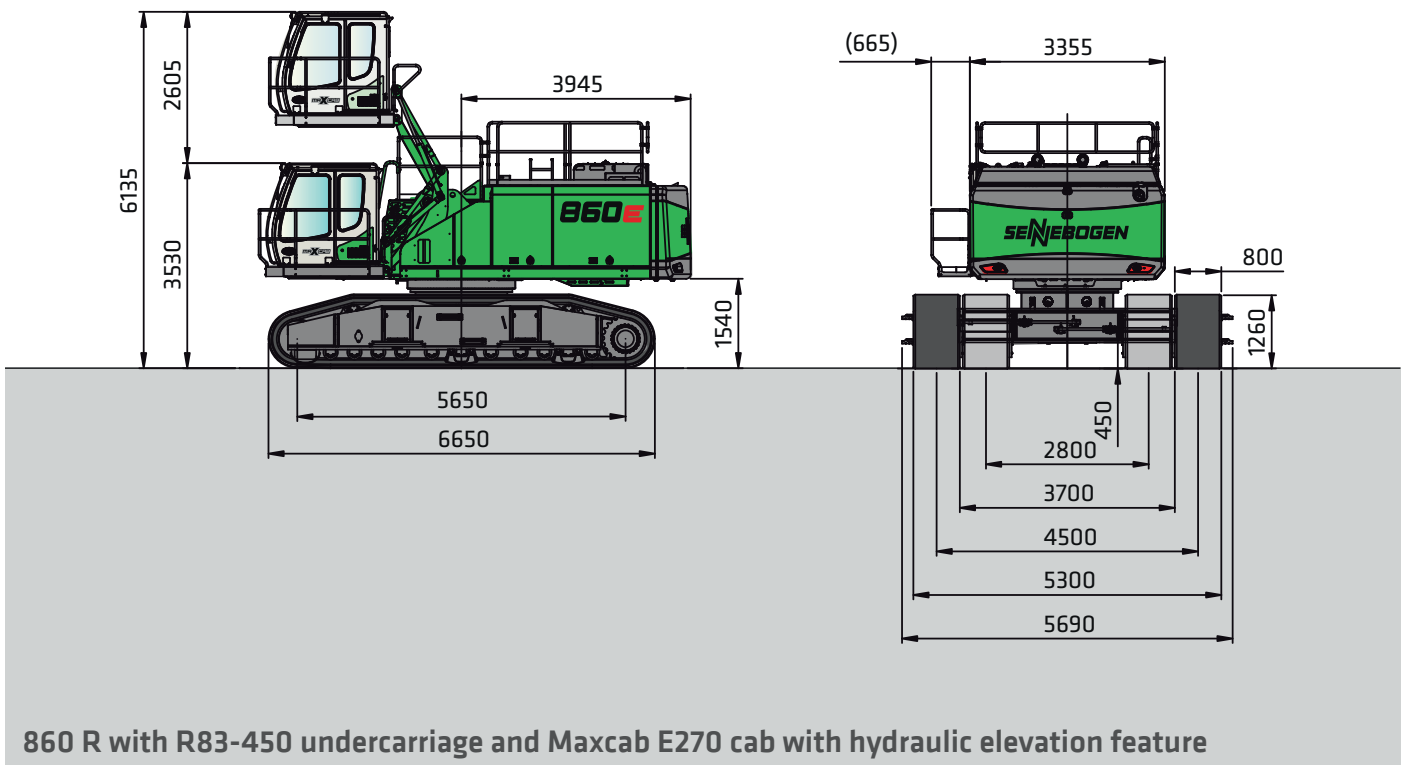
**13.8 m  
10.2 m**

**Cab**

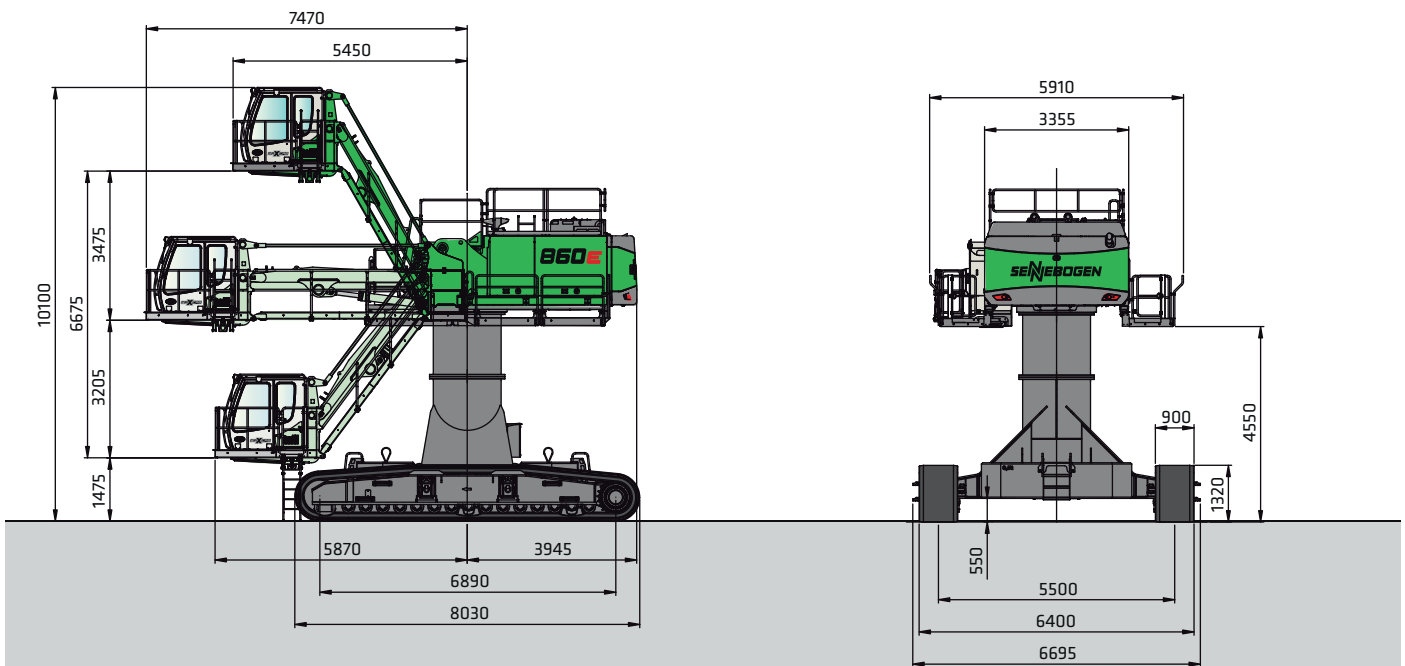
**Mastercab Skylift 900,  
hydraulic elevation**

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 360° on solid, level ground. Safe working loads include attachments such as multi-shell grapples, magnets, etc. According to harmonized EU standard EN 474-5, hydraulic excavators used for lifting must be equipped with pipe fracture safety devices on the hoist cylinders and an overload warning device.

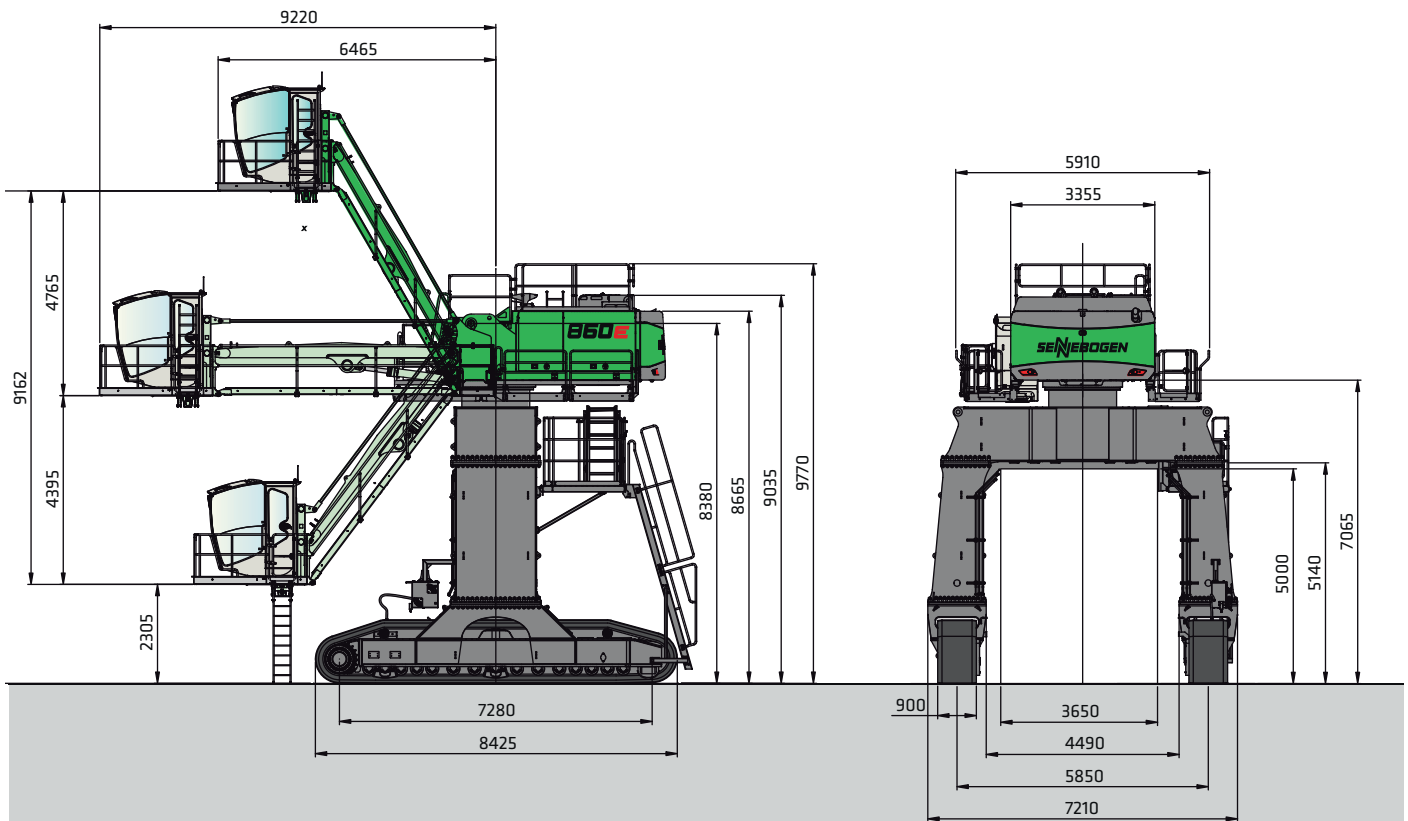
# 860E Dimensions



# 860E Dimensions



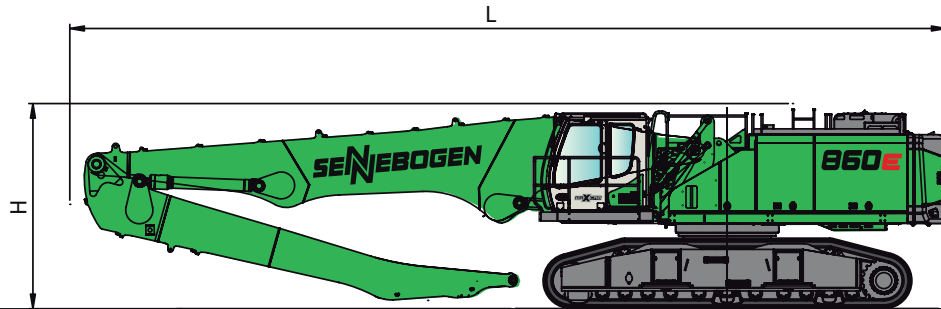
860 R with R90-550 undercarriage, hydraulic elevation cab Maxcab with Skylift 700 and pylon 1.5 m



860 R with P136-585 portal- undercarriage, hydraulic elevation cab Mastercab with Skylift 900



# 860E Transport dimensions



860 R with R83-450 undercarriage

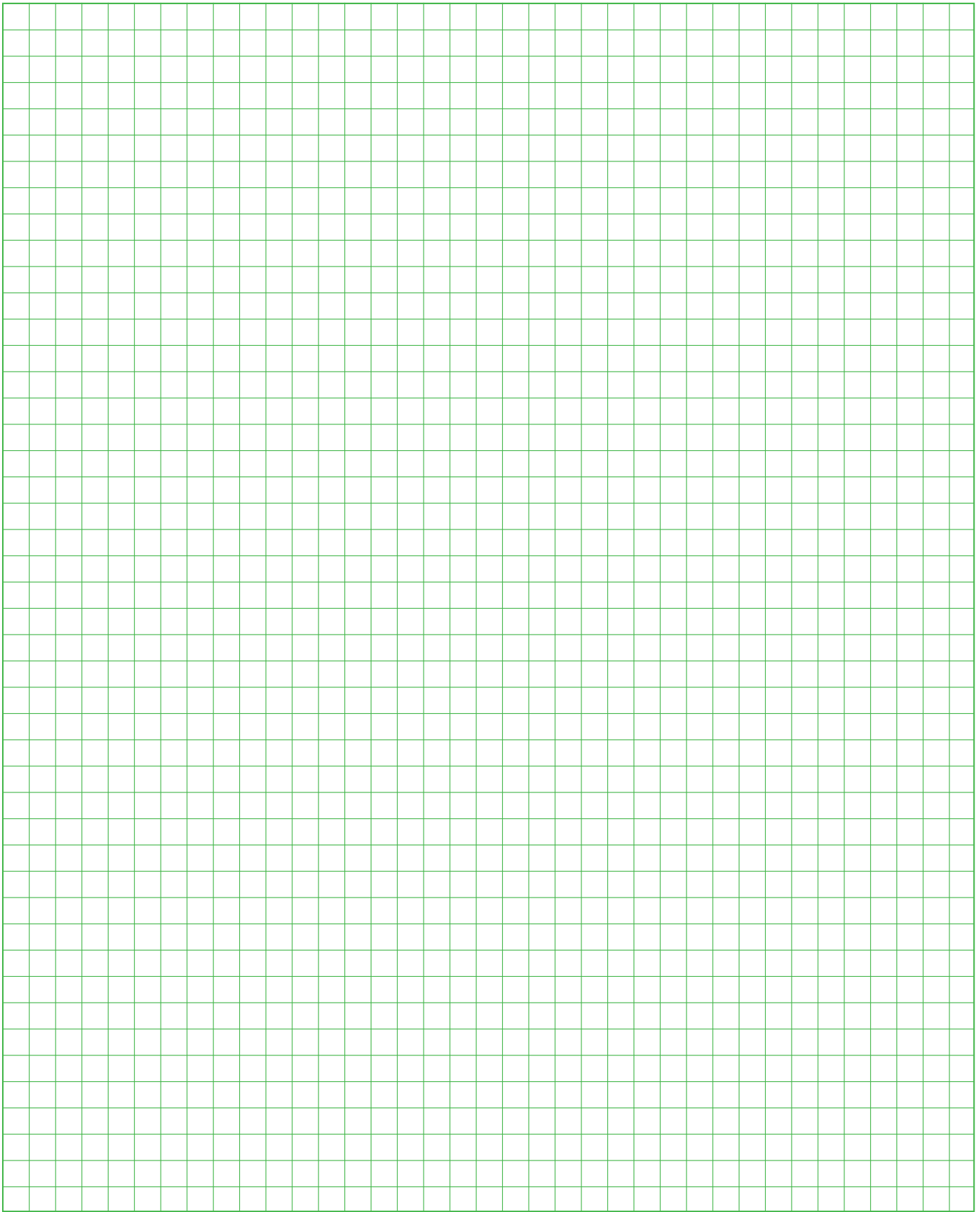
	Compact boom	Dipper stick	Transport length (L)	Transport height (H)
<b>K18</b>	10.8 m	7.8 m	15.80 m	3.70 m
<b>K20</b>	11.8 m	8.8 m	16.80 m	3.90 m
<b>B21</b>	13.8 m	8.8 m	18.45 m	3.80 m*
<b>K23</b>	13.5 m	10.2 m	18.40 m	3.75 m*
<b>B23</b>	13.8 m	10.2 m	18.60 m	3.80 m*

\* Stick removed

# 860E

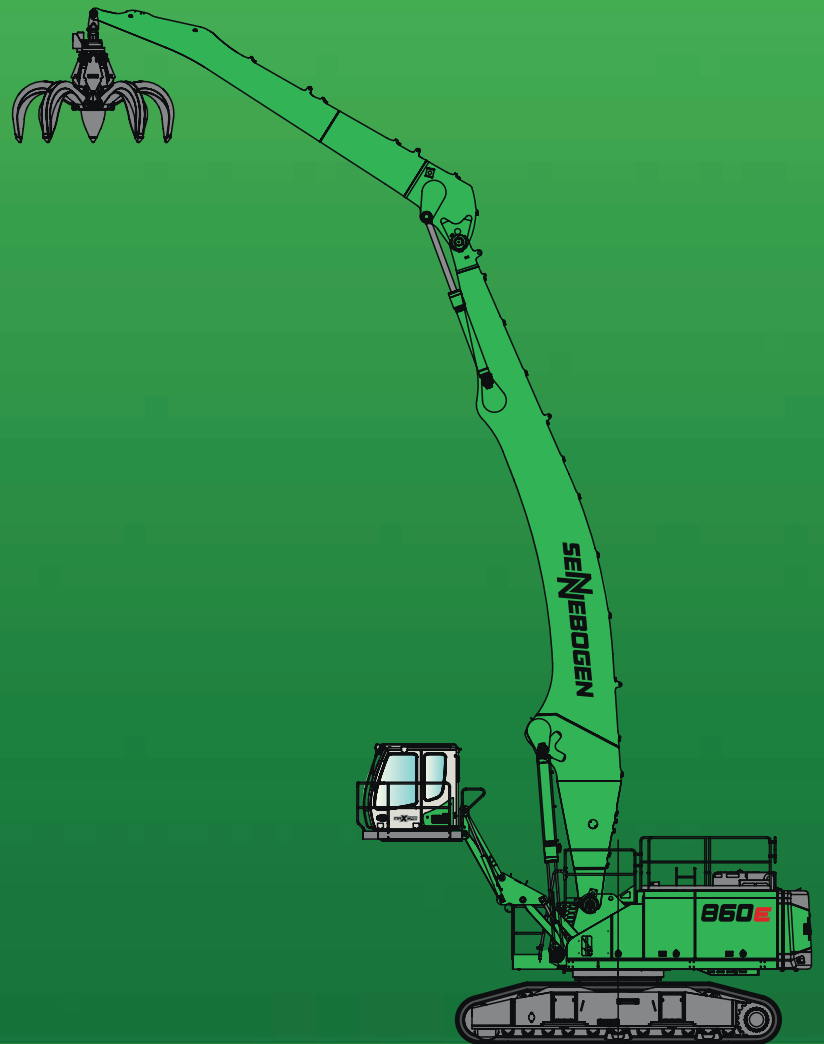


# 860E Notes





# 860E



This catalog describes machine models, scopes of equipment of individual models, and configuration options (standard equipment and optional equipment) of the machines supplied by SENNEBOGEN Maschinenfabrik. 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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**SENNEBOGEN**  
**Maschinenfabrik GmbH**  
Sennebogenstraße 10  
94315 Straubing, Germany

Tel. +49 9421 540-144/146  
Fax +49 9421 43 882  
marketing@sennebogen.de

Order no. / Item no. 299101  
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