

# SENEBOGEN

PRELIMINARY



**224/228 kW**



**67-74 t**



**17 - 21 m**



**MAXCAB**

**MASTERCAB**

# 850E

Mobile material handling machine

TIER IVf emission  
standards

# 850E Technical data, equipment

M

## MACHINE TYPE

Model (type) **850**

## ENGINE

Power	<b>228 kW/305 hp at 2,000 rpm (Stage IIIa) 224 kW/300 hp at 2,000 rpm (TIER IVf)</b>
Model	<b>Cummins QSL 9-C300 Stage IV</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>
Electrical system	<b>24 V</b>
Batteries	<b>2 x 155 Ah</b> , battery disconnect switch
Options	<ul style="list-style-type: none"> <li>■ Engine block heater</li> <li>■ Electric fuel pump</li> </ul>

## UPPERCARRIAGE

Design	<p>Torsion-resistant box design, precision crafted, steel bushings for boom brackets</p> <p>Extremely service-friendly design, longitudinal engine</p>
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>■ Peripheral 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 for temperatures below -20 °C</li> <li>■ Low-temperature package for use at temperatures below -20 °C</li> <li>■ Hydraulically driven magnetic generator 15 kW/20 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
Operating pressure	<b>max. 350 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	0-7 rpm, variable

# 850E Technical data, equipment

M

## CAB MAX CAB

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>■ Cab E300/260 can be elevated 300 cm and moved forward 260 mm hydraulically</li> <li>■ Rigid cab height elevation 1.00 m</li> <li>■ Auxiliary heating system with timer</li> <li>■ Active-charcoal outside air filter for cab, ideal for waste recycling</li> <li>■ Steering wheel with adjustable steering column</li> <li>■ Sliding window in operator door</li> <li>■ Armored glass windshield, additional safety</li> <li>■ Armored glass roof window, additional safety</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> </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>■ Kinematics position II for greater working depth</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>■ Hoisting limiter / stick limitation adjustable for stop settings, e.g. in the hall</li> </ul>

## UNDERCARRIAGE

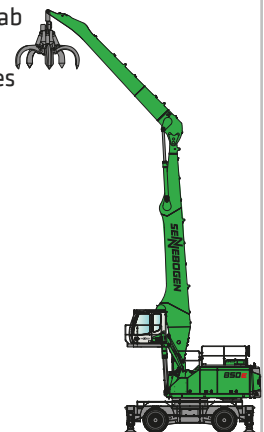
Design	MP50 E mobile undercarriage with integrated 4-point outrigger system, hydraulic locking pendulum steering axle and pendulum axle cylinder with pipe fracture safety valves
Drive	All-wheel drive powered by a variable-displacement hydraulic motor with direct-mounted, automatic brake valve and 2-gear power shift transmission Planetary axles with integrated steering cylinder and dual-circuit service brake
Parking brake	Spring-loaded multi-disk brake
Tires	8x <b>14.00-24</b>
Speed	Low: <b>0-5.4 kph</b> ; high: <b>0-14 kph</b>
Options	<ul style="list-style-type: none"> <li>■ Tires: 8x <b>16.00-25</b></li> <li>■ Individual outrigger control for stability on uneven ground</li> <li>■ Traction drive protection</li> <li>■ Shunting coupler</li> </ul>

## ELECTRIC DRIVE eGREEN

Option	<ul style="list-style-type: none"> <li>■ Power: <b>200 kW, 400 V, 50 Hz</b> Total connected load 270 kVA, customer-provided 355 A fuse (alternatively 400 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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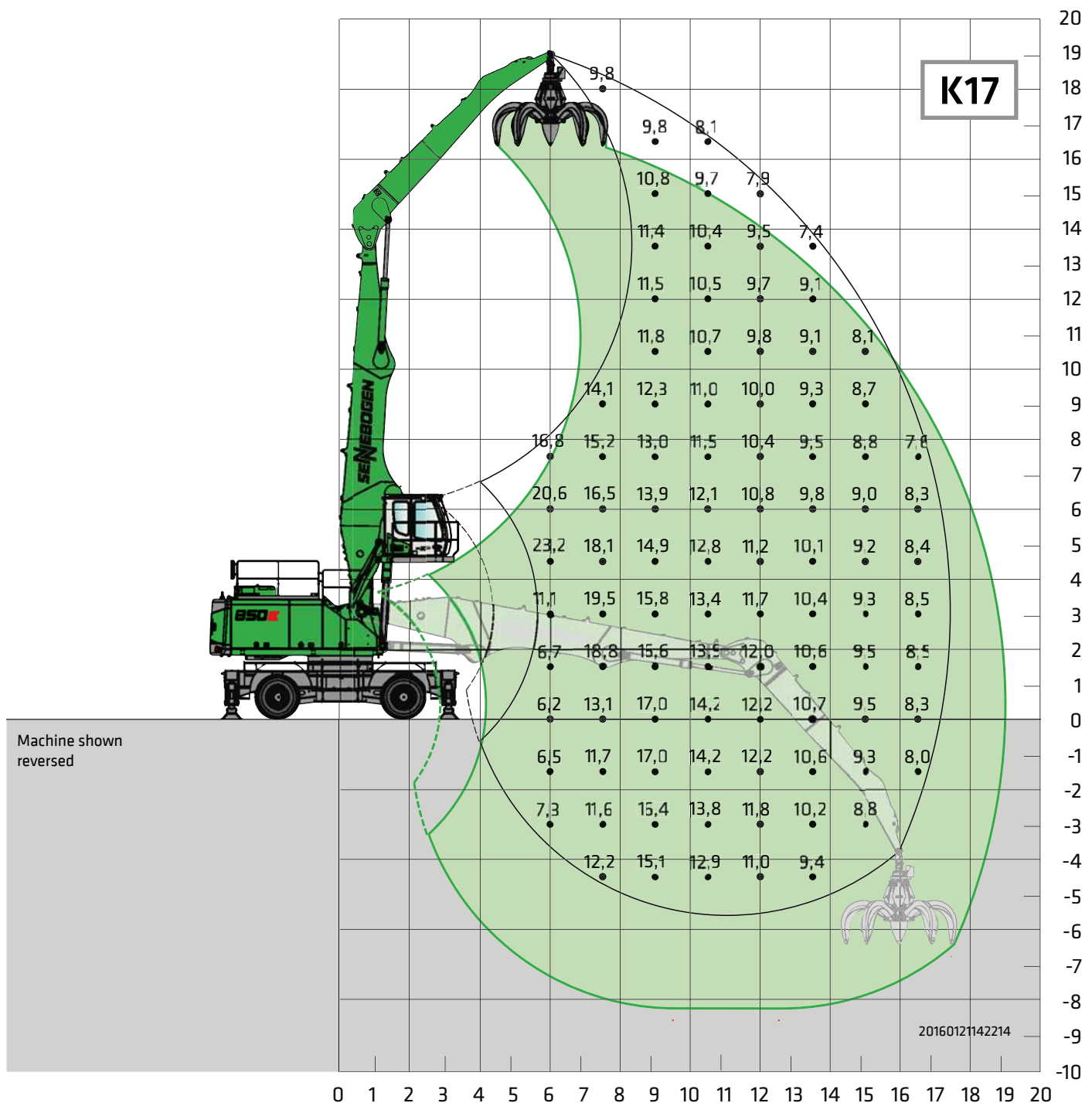
## OPERATING WEIGHT

Mass	<b>approx. 67,800 kg</b> 850 M basic machine with K21 equipment and 2,500 l multi-shell grab
Notice	Operating weight varies by design.



# 850E Load ratings

M



Undercarriage

MP50E

Compact boom  
Loading stick10.5 m  
7.5 m

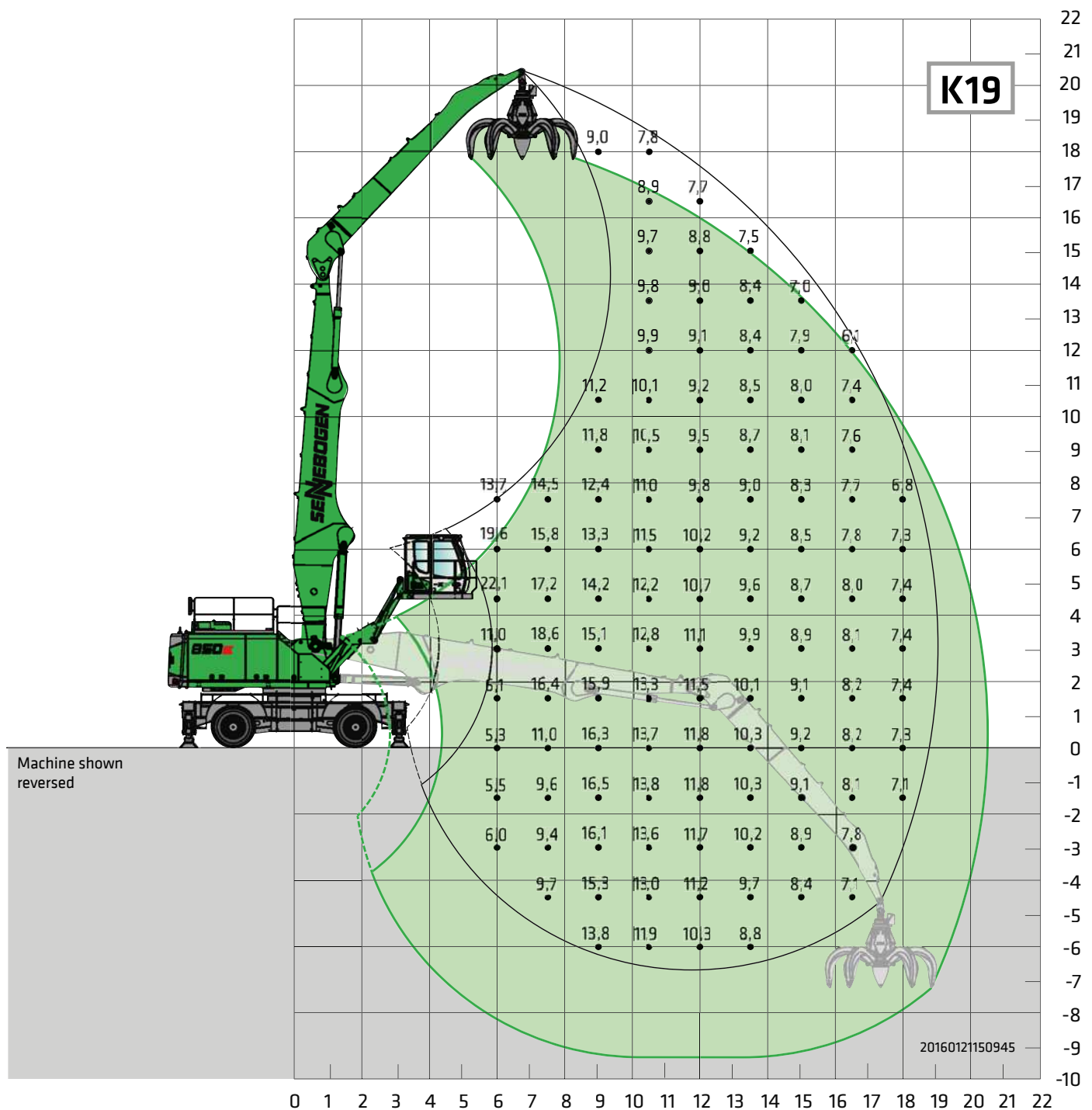
Cab

Maxcab E270,  
cab with hydraulic elevation 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.

# 850E Load ratings

M



Undercarriage

MP50E

Compact boom  
Loading stick11.2 m  
8.5 m

Cab

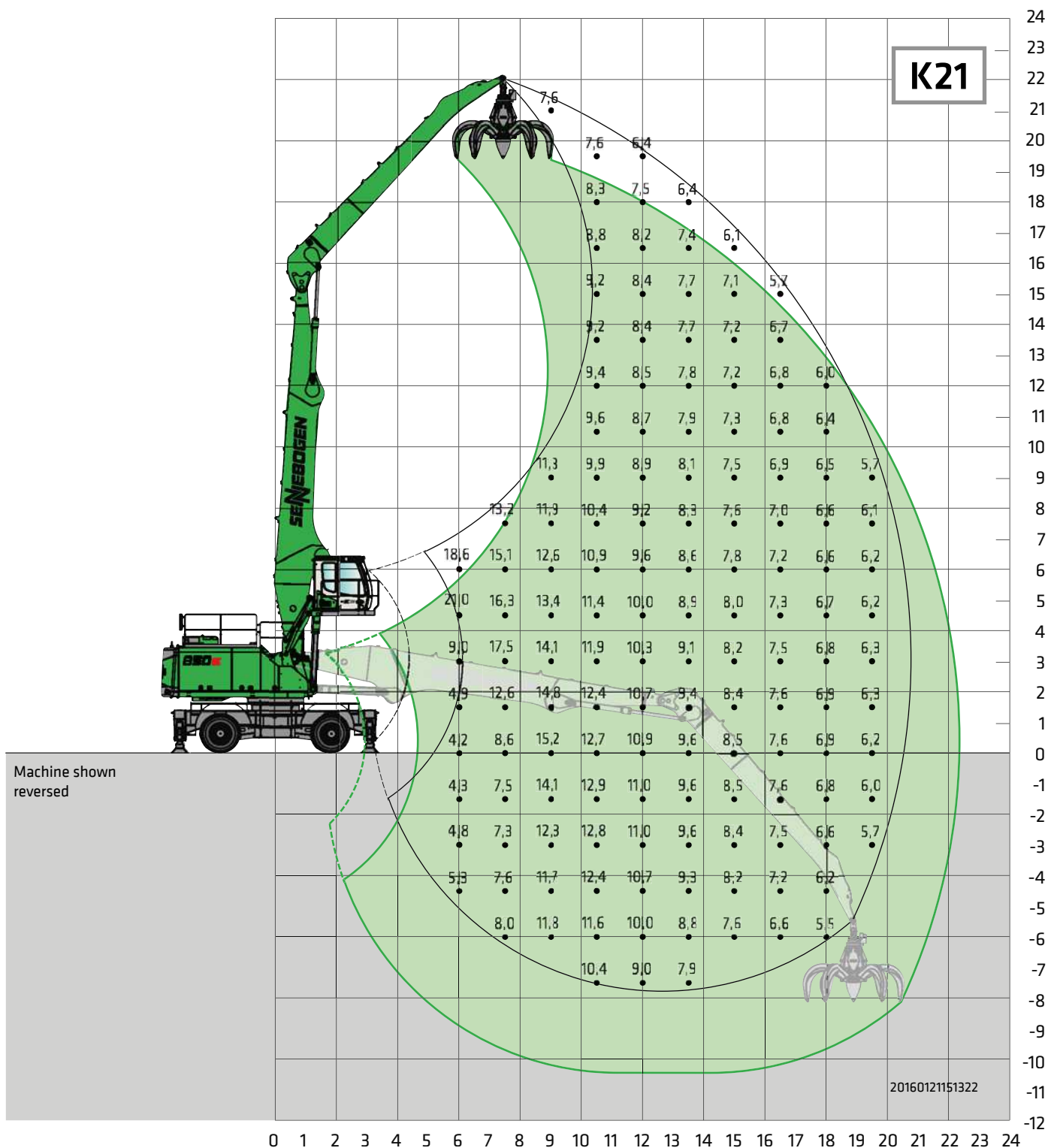
Maxcab E300/260, can be elevated  
and moved forward hydraulically

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.



# 850E Load ratings

M

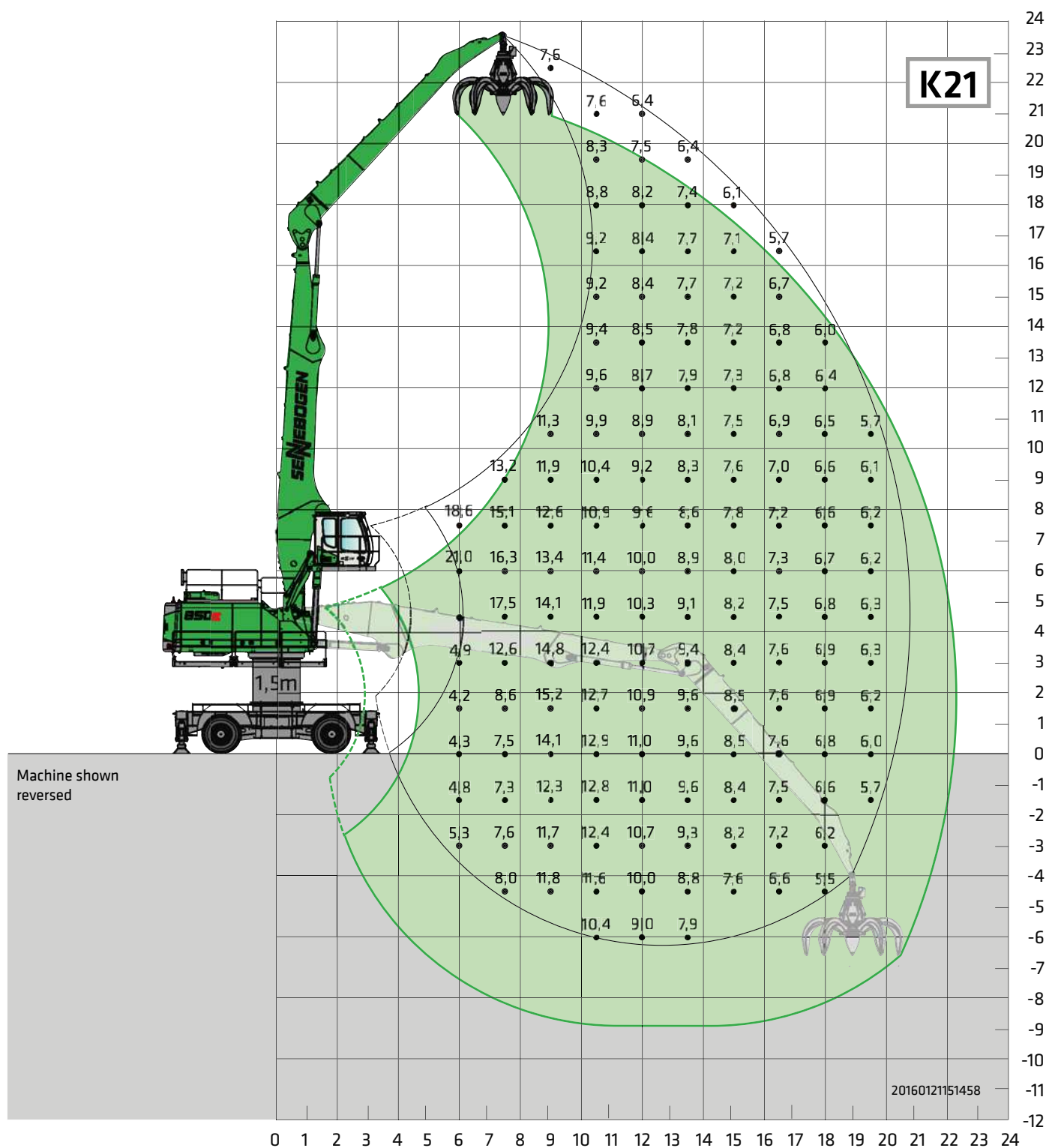


Undercarriage	MP50E	Compact boom Loading stick	12.1 m 9.5 m	Cab	Maxcab E270, cab with hydraulic elevation feature
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All values are in tons (t) and are 75% of the static tipping load or 87% of the hydraulic lifting force in accordance with ISO 10567, 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.

# 850E Load ratings

M

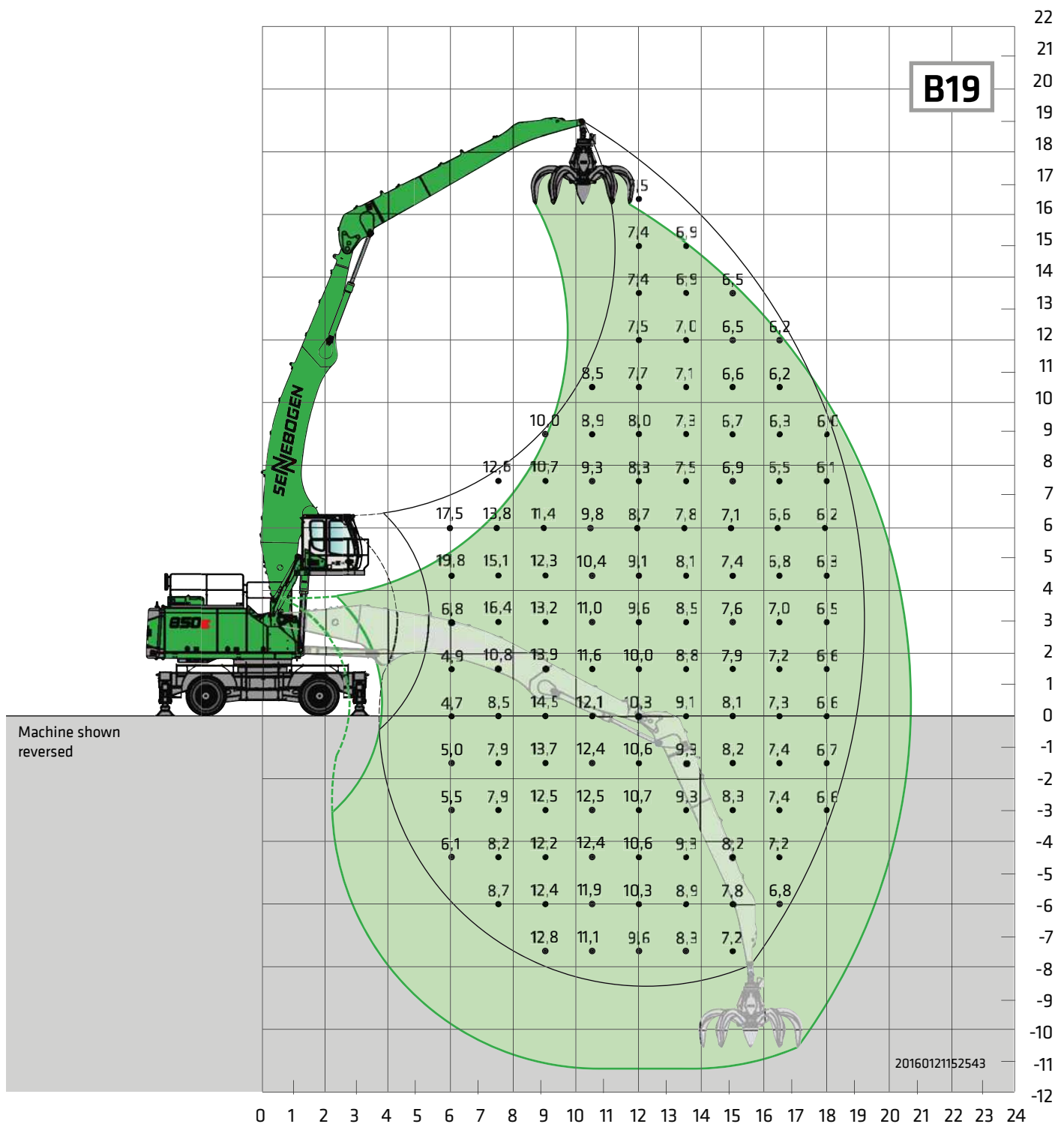


<b>Undercarriage Pylon</b>	<b>MP50E 1.5 m</b>	<b>Compact boom Loading stick</b>	<b>12.1 m 9.5 m</b>	<b>Cab</b>	<b>Maxcab E270, can be elevated and moved forward hydraulically</b>
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All values are in tons (t) and are 75% of the static tipping load or 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.

# 850E Load ratings

M



Undercarriage

MP50E

Compact boom  
Loading stick12 m  
8.5 m

Cab

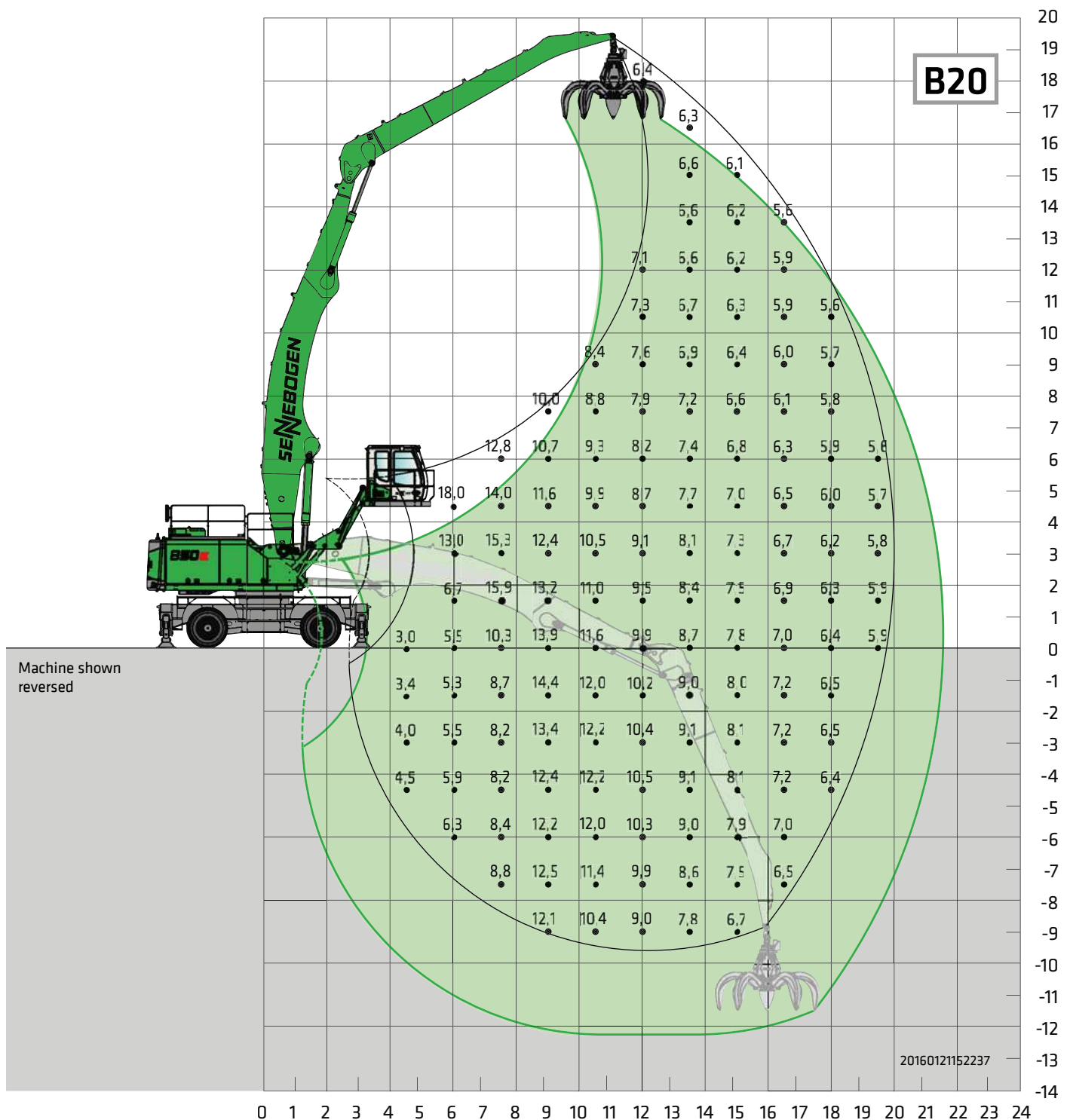
Maxcab E270, cab with hydraulic  
elevation feature

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.



# 850E Load ratings

M



Undercarriage

MP50E

Compact boom  
Loading stick12 m  
9.5 m

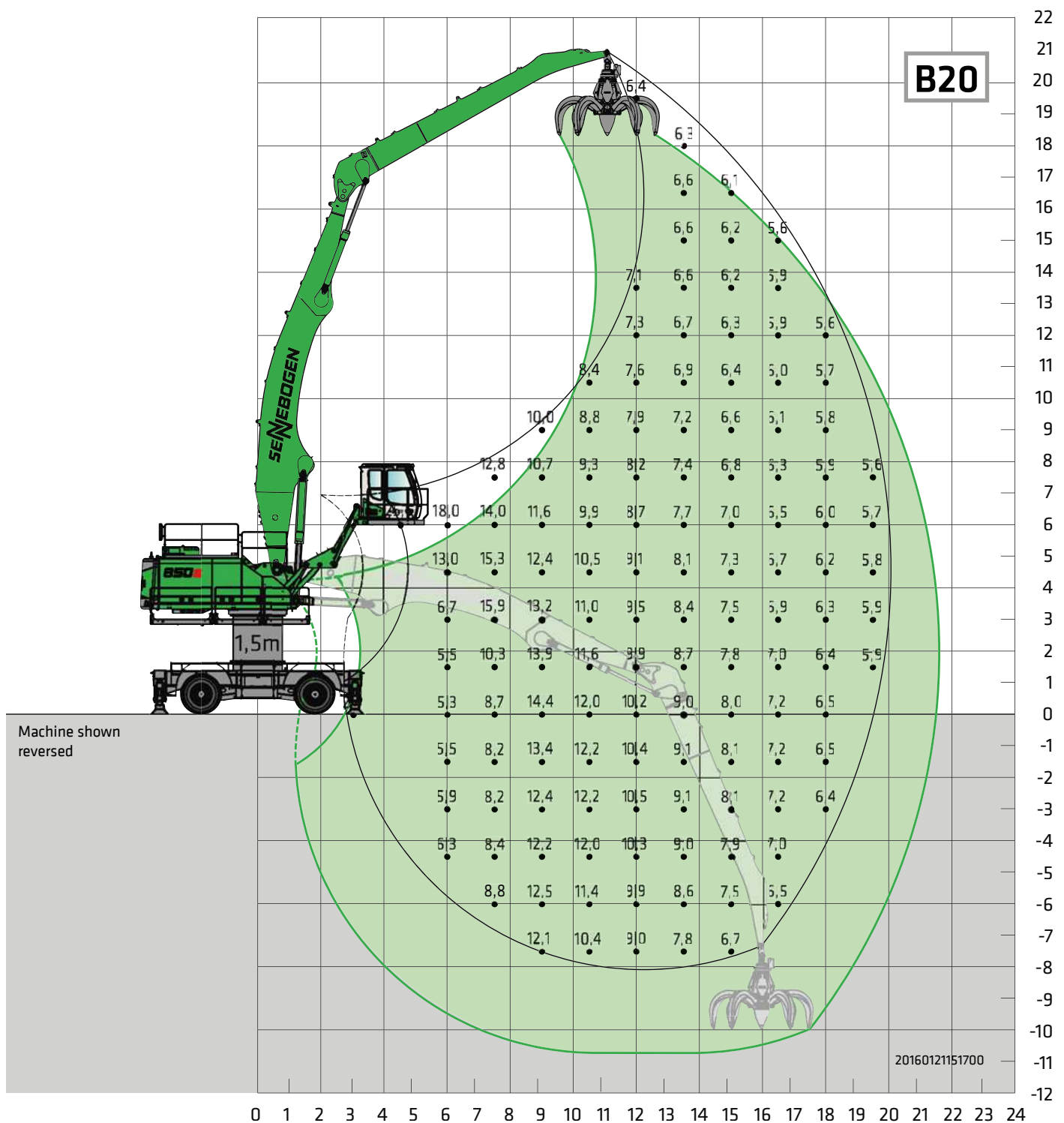
Cab

Maxcab E300/260,  
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.

# 850E Load ratings

M



Undercarriage  
Pylon

MP50E  
1.5 m

Compact boom  
Loading stick

12 m  
9.5 m

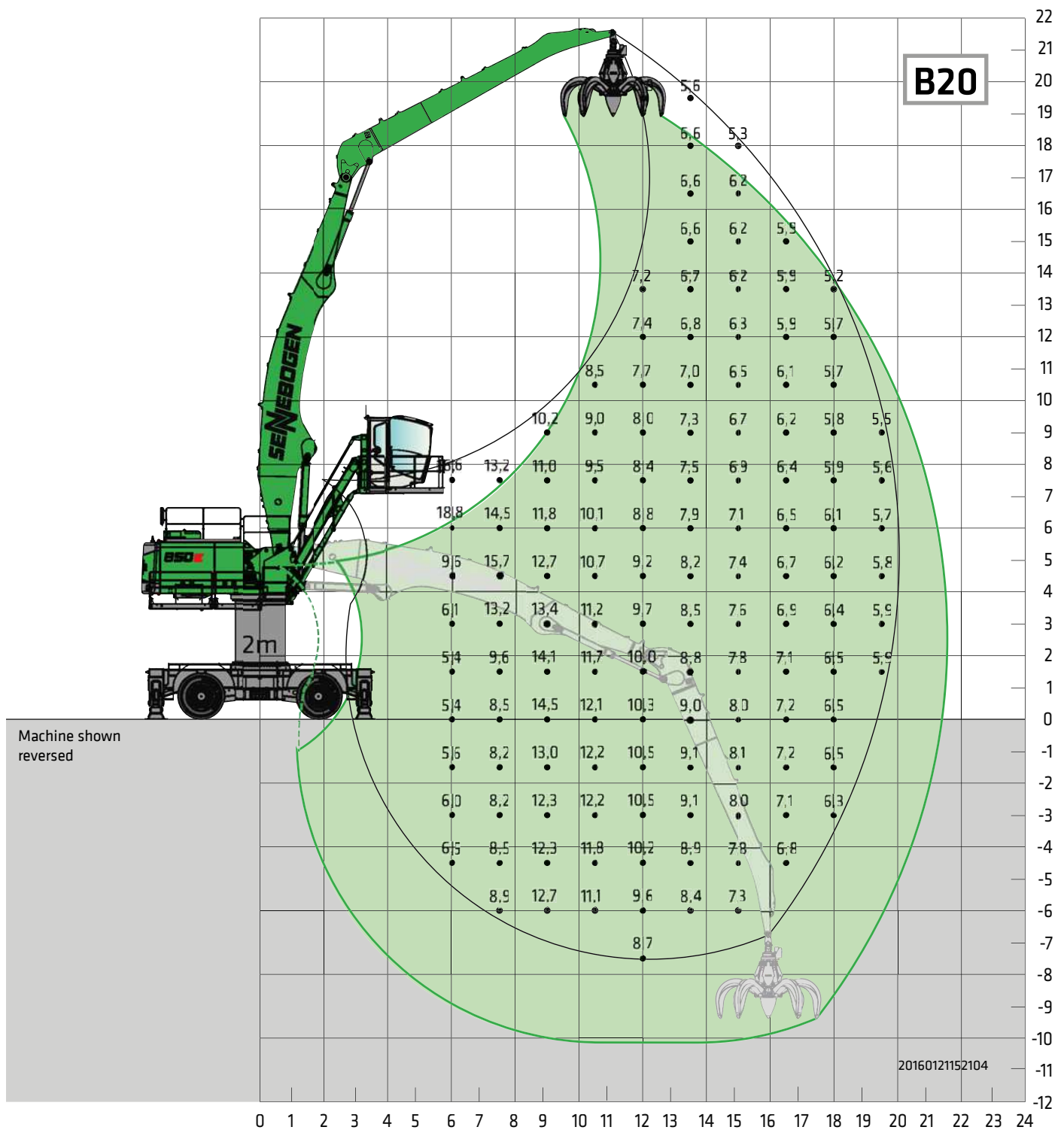
Cab

Maxcab E300/260, can be elevated and  
moved forward hydraulically

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.

# 850E Load ratings

M

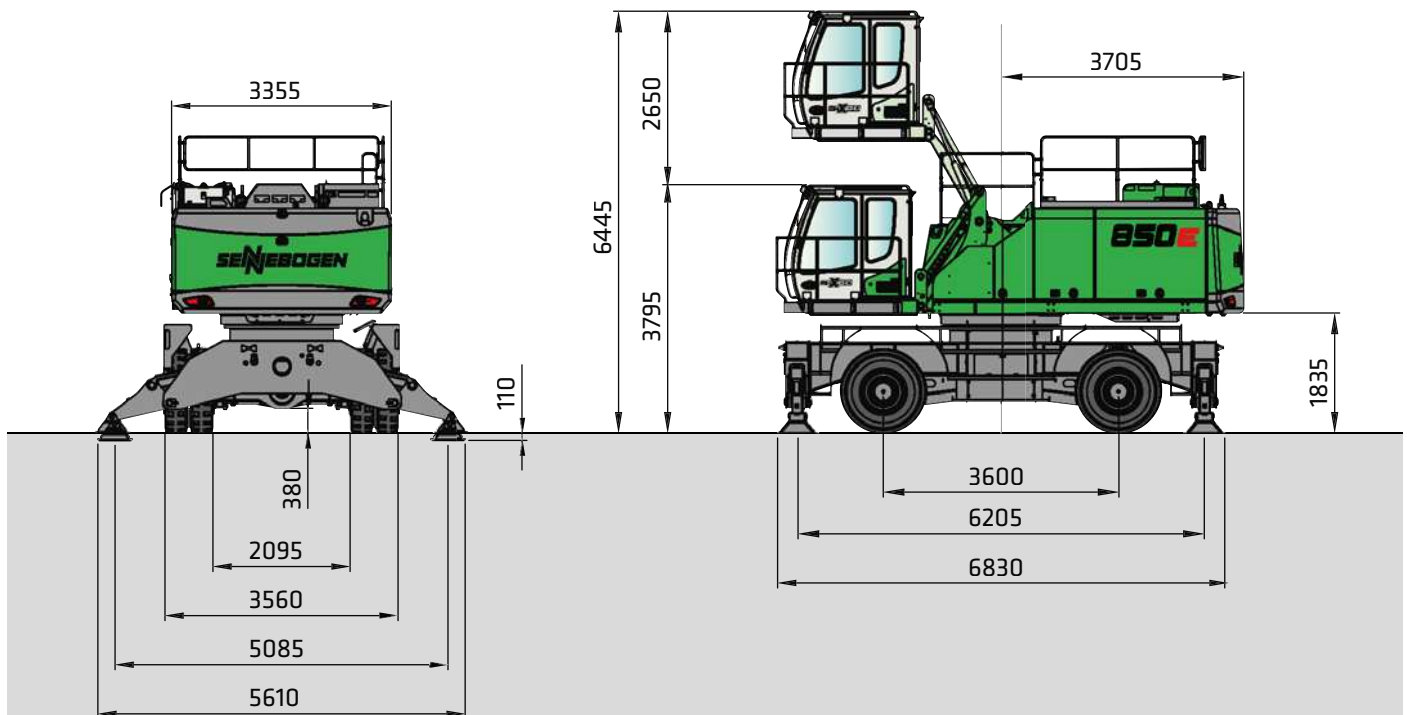


<b>Undercarriage Pylon</b>	<b>MP71E 2 m</b>	<b>Compact boom Loading stick</b>	<b>12 m 9.5 m</b>	<b>Cab</b>	<b>Skylift 700 Mastercab, cab with hydraulic elevation feature (option)</b>
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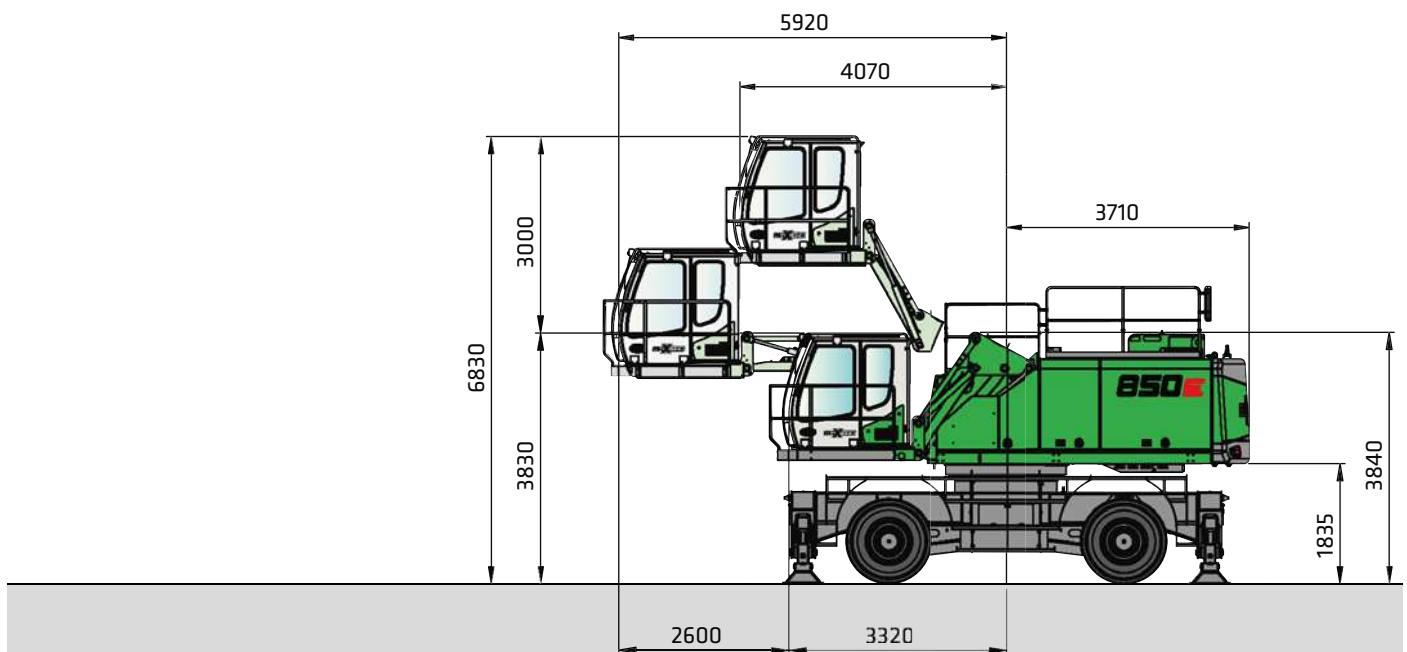
All values are in tons (t) and are 75% of the static tipping load or 87% of the hydraulic lifting force in accordance with ISO 10567, and apply at the required operating temperature in the Green Hybrid system. They apply 360° on solid, level ground. Safe working loads include attachments such as multi-shell 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.

# 850E Dimensions

M



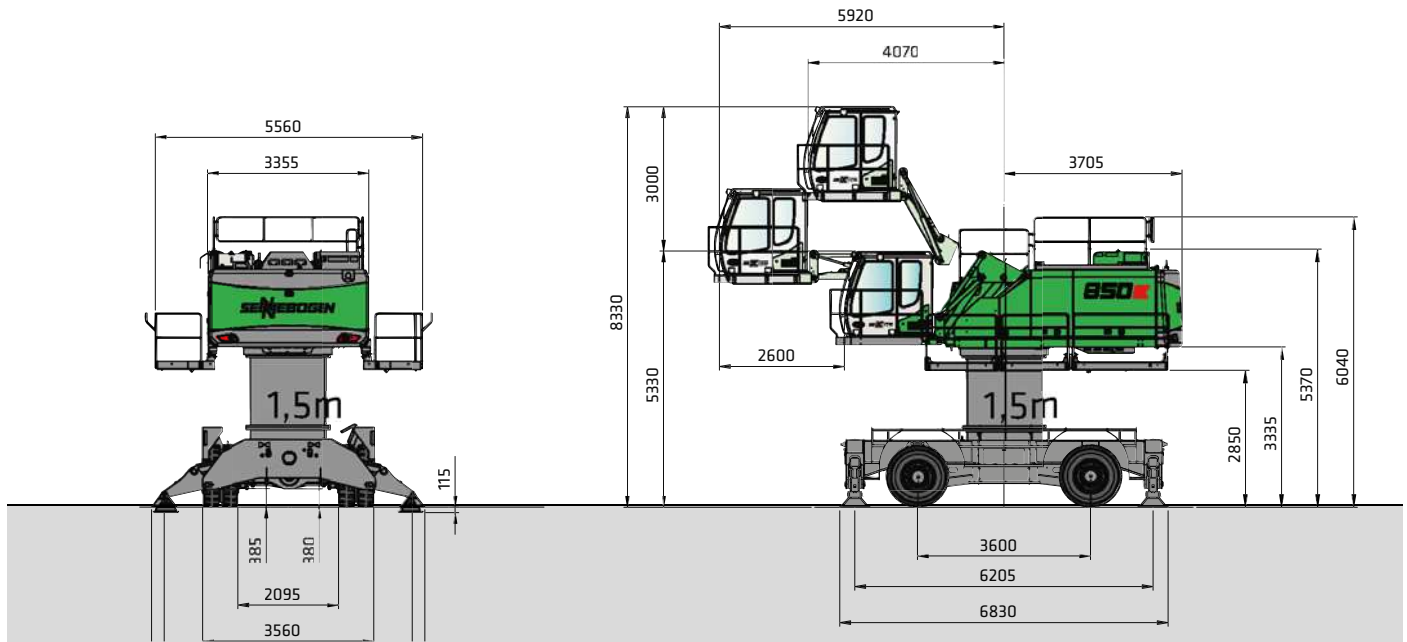
850 M with MP50 undercarriage and Maxcab E270 cab with hydraulic elevation feature



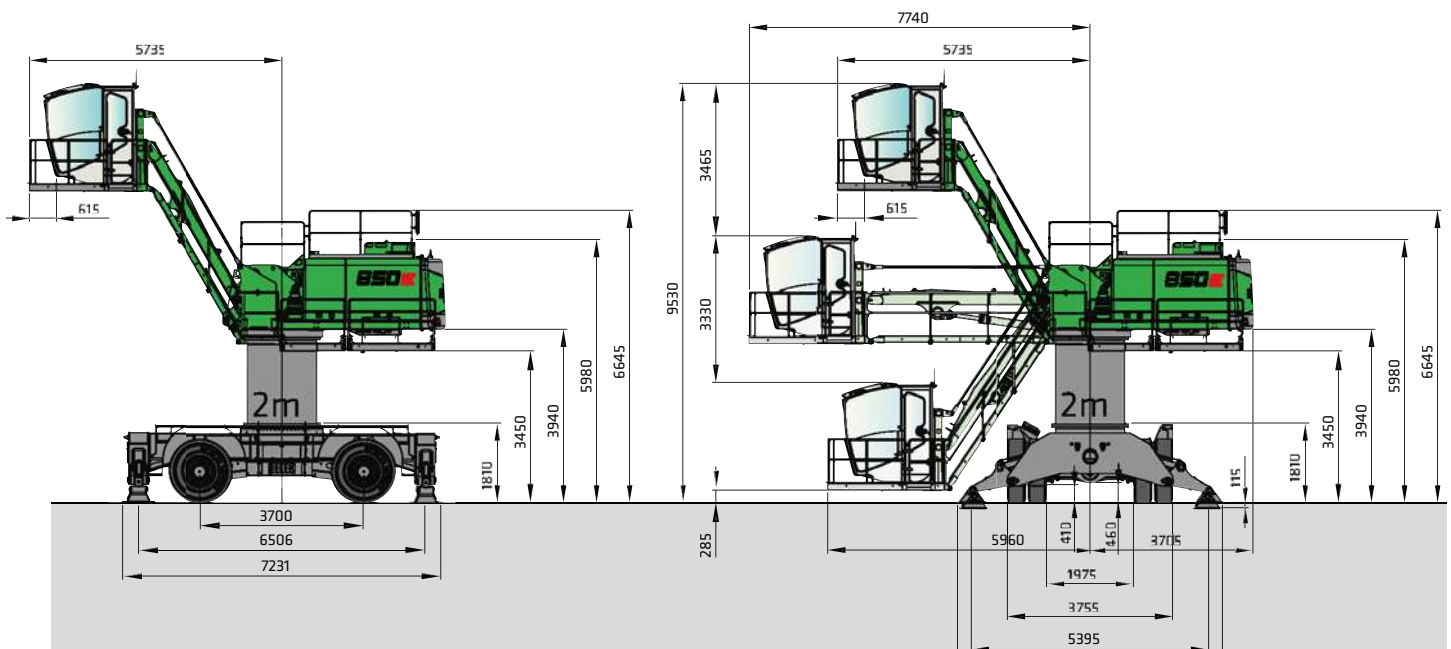
850 M with MP50 undercarriage Maxcab E300/260 cab with hydraulic elevation and tilt feature

# 850E Dimensions

M



850 M with MP50 undercarriage, Maxcab E300/260 cab with hydraulic elevation and tilt feature, and 1.5 m pylon

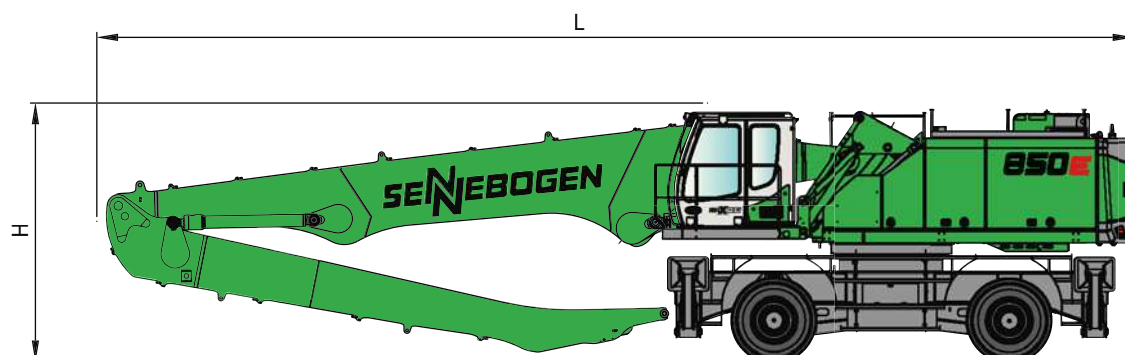


850 M with MP71 undercarriage and Skylift 700 Mastercab cab with hydraulic elevation feature



# 850E Transport dimensions

M



	Load boom	Grapple stick	Transport length (L)	Transport height (H)
K17	10.5 m	7.5 m	15.1 m	3.90 m
K19	11.2 m	8.5 m	15.8 m	3.95 m
K21	12.1 m	9.5 m	16.7 m	4.00 m
19b	12.0 m Banana	8.5 m	16.5 m	4.00 m
20b	12.0 m Banana	9.5 m	16.5 m	4.00 m

# 850E Recommended grapples

M

## 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	1989	8.0
2000.50	2000	2246	
2500.50	2500	2345	
3000.50	3000	2532	
4000.50	4000	2880	

## Magnetic plates



Type series / model	Power	Deadweight	Breakaway force	Load-bearing 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				

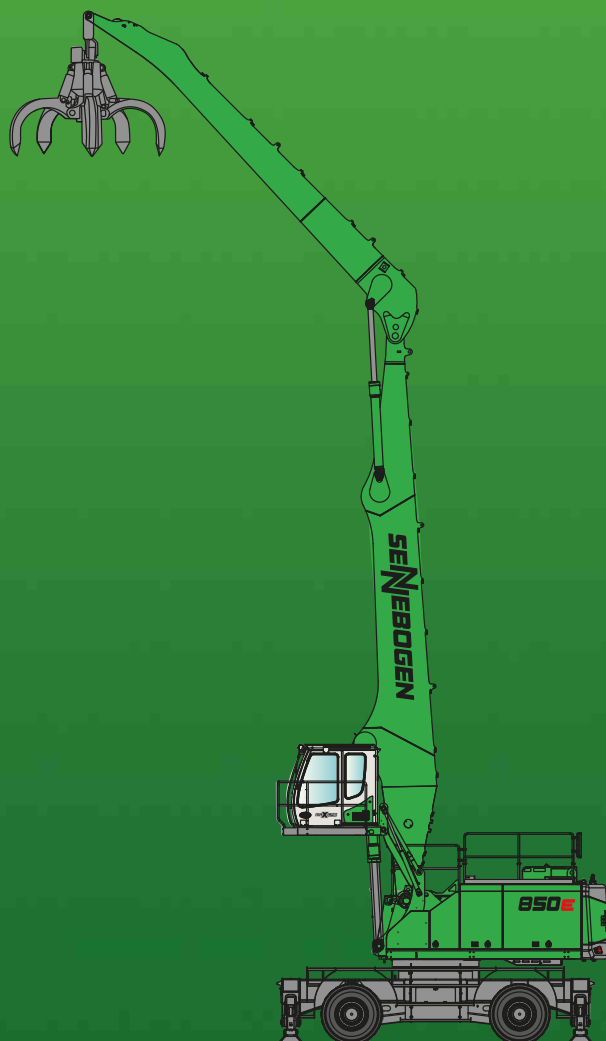
\*) Available upon request <sup>1)</sup> Weight information without grapple suspension, stick bolts, hose system

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

Detailed information on grapples, as well as log grapples, quick-release systems, and other attachments can be found in the "Attachments" brochure

Dimensions in [mm] 15

# 850E



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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