

# SENEBOGEN

PRELIMINARY



**224/228 kW**



**75-100 t**



**17 - 21 m**



**MAXCAB**

**MASTERCAB**

# 850E

Material handling machine

TIER IVf emission  
standards

# 850E Technical data, equipment

R

## MACHINE TYPE

Model (type) **850**

## ENGINE

|                   |                                                                                                                                                                 |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power             | <b>228 kW/305 hp at 2,000 rpm (Stage IIIa)<br/>224 kW/300 hp at 2,000 rpm (TIER IVf)</b>                                                                        |
| Model             | <b>Cummins QSL 9-C300 Stage IV</b><br>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</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

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## CAB MAX CAB

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cab type      | E270 cab with hydraulic elevation feature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 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         | Wide-gauge crawler undercarriage in stable, torsionally rigid box construction                                                                                                                                                                  |
| 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 | R83-420 telescopic crawler undercarriage with 2.65–4.2 m mechanical track adjustment and maintenance-free B7 crawler track (64 links, 6,650 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>■ R83-490 crawler undercarriage</li> <li>■ Maintenance-free B7 crawler track with 800 mm triple grouser track shoes</li> <li>■ Maintenance-free B7 crawler track with 900 mm flat track shoes</li> </ul> |

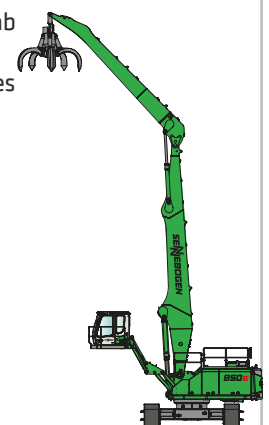
## ELECTRIC DRIVE eGREEN

|        |                                                                                                                                                                                                                                                                                                                                                                                |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Option | <ul style="list-style-type: none"> <li>■ Power: <b>200 kW, 400 V, 50 Hz</b><br/>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> |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## OPERATING WEIGHT

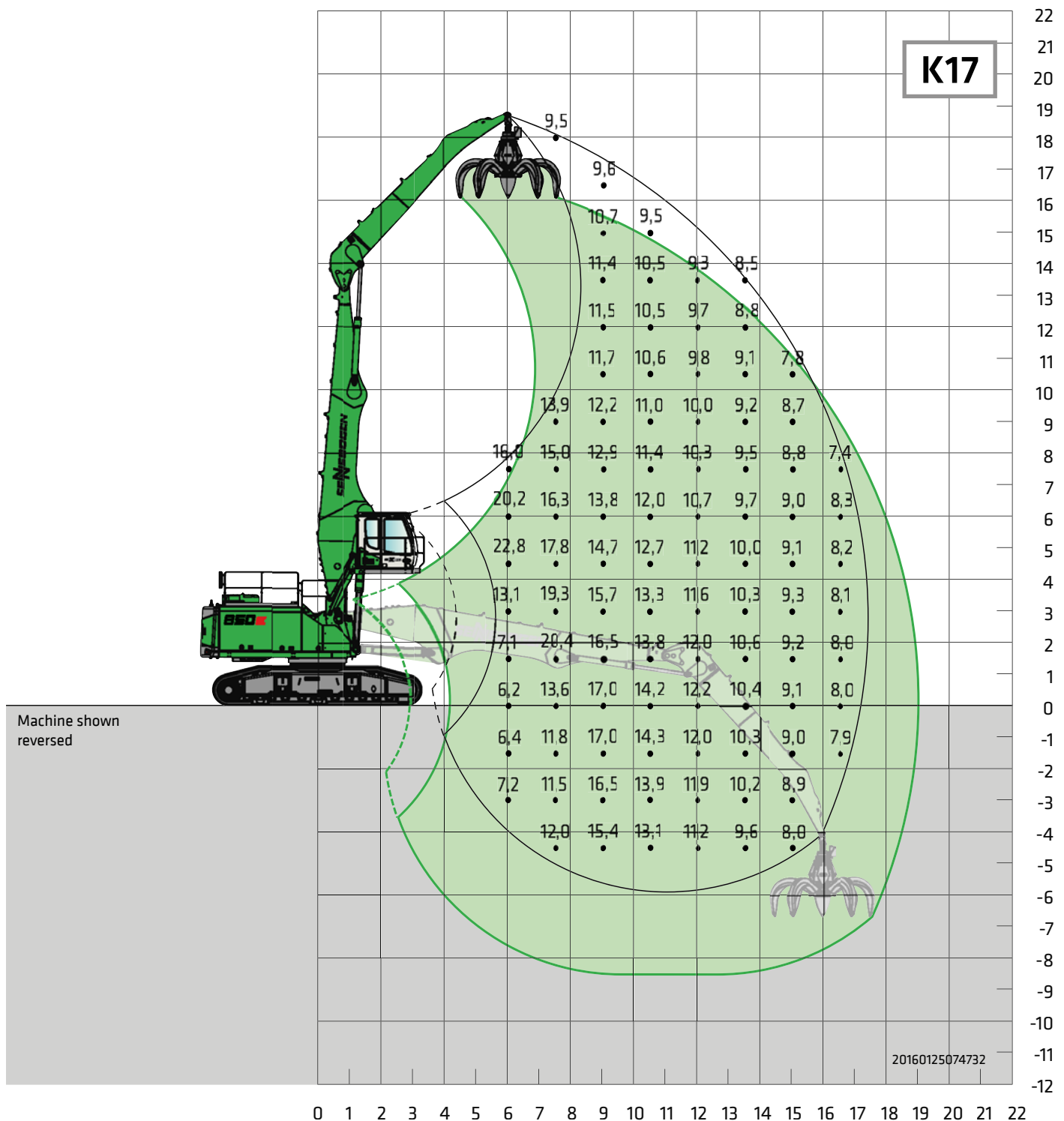
|      |                                                                                                |
|------|------------------------------------------------------------------------------------------------|
| Mass | <b>approx. 75,000 kg</b><br>850 R basic machine with K17 equipment and 2500 I multi-shell grab |
|------|------------------------------------------------------------------------------------------------|

|        |                                    |
|--------|------------------------------------|
| Notice | Operating weight varies by design. |
|--------|------------------------------------|



# 850E Load ratings

R



Undercarriage R83-420

Compact boom  
Loading stick10.5 m  
7.5 m

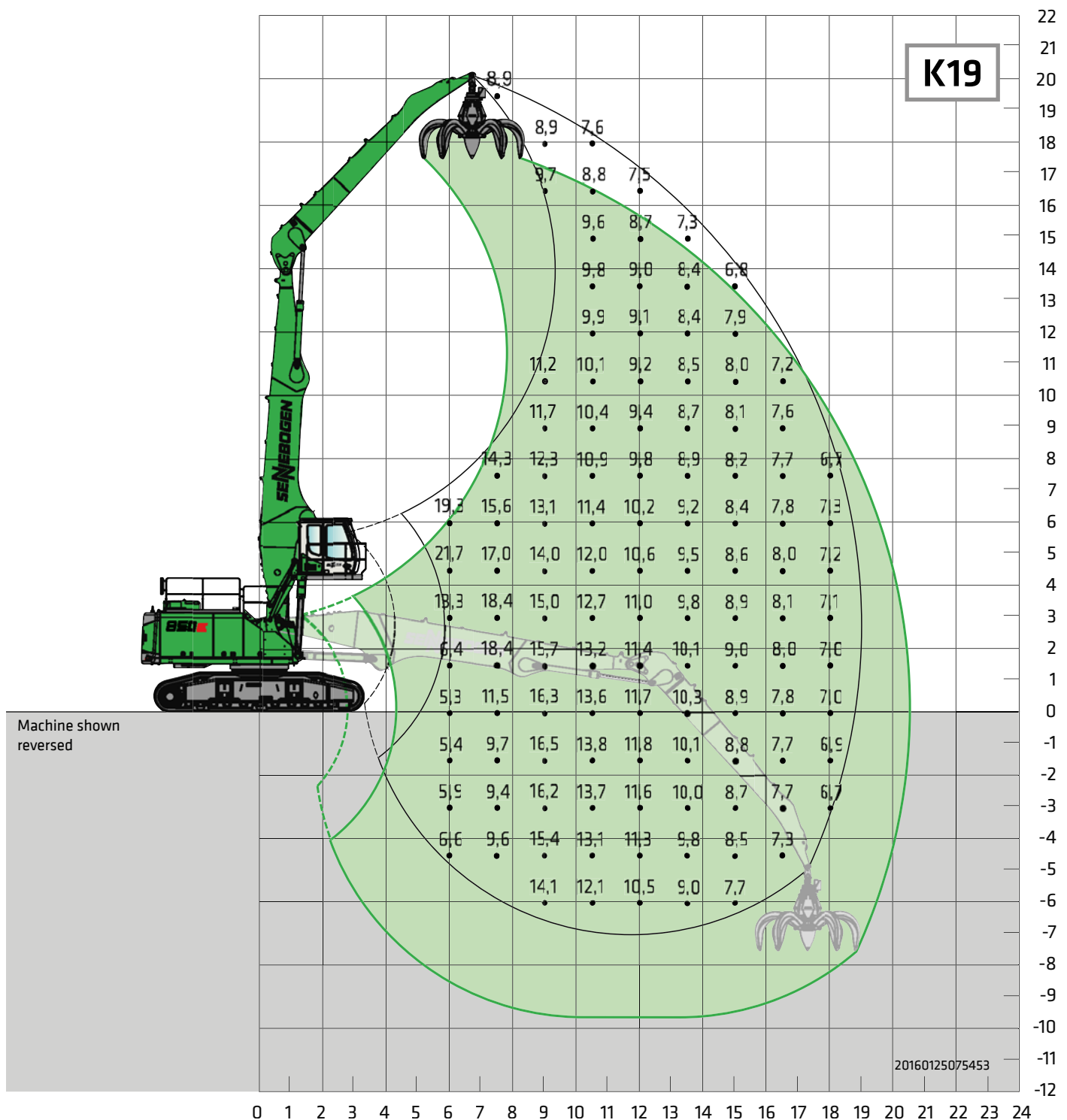
Cab

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

R

Undercarriage **R83-420**Compact boom  
Loading stick11.2 m  
8.5 m

Cab

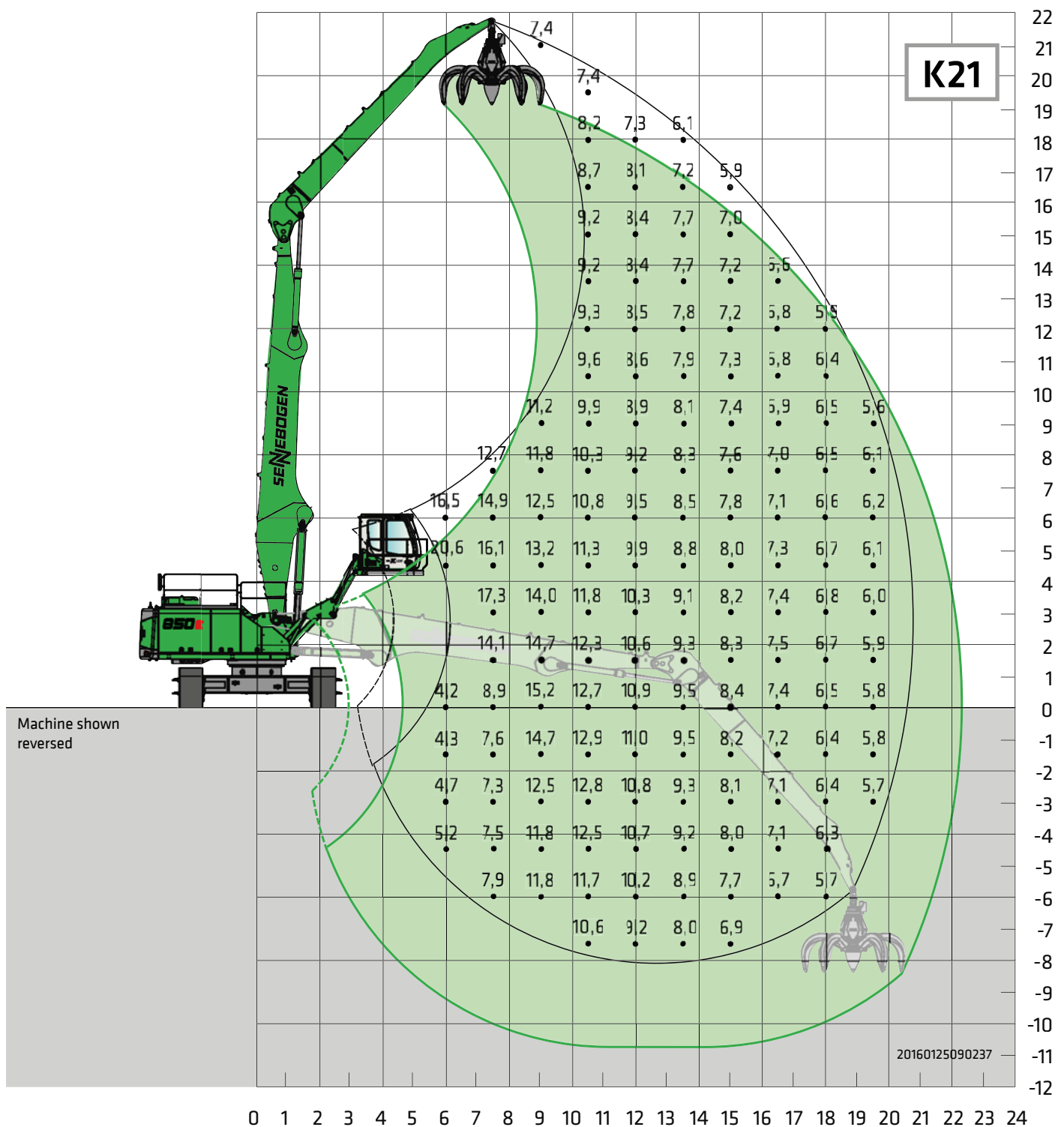
Maxcab E270,  
cab with hydraulic elevation feature

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

R



Undercarriage R83-420

Compact boom  
Loading stick12.1 m  
9.5 m

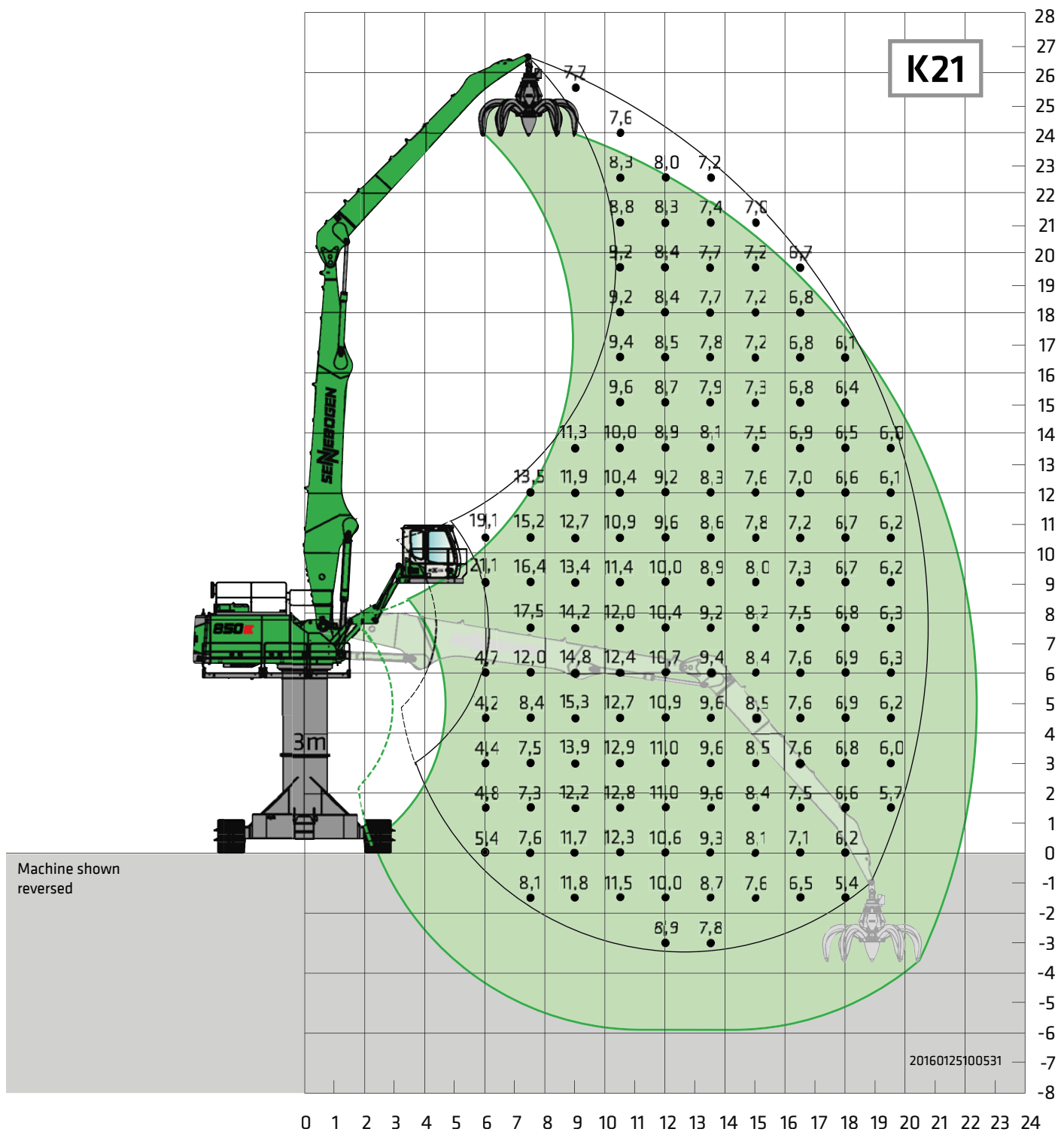
Cab

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.

# 850E Load ratings

R



**Undercarriage** R83-490  
**Pylon** 3.0 m

**Compact boom**  
**Loading stick**

**12.1 m**  
**9.5 m**

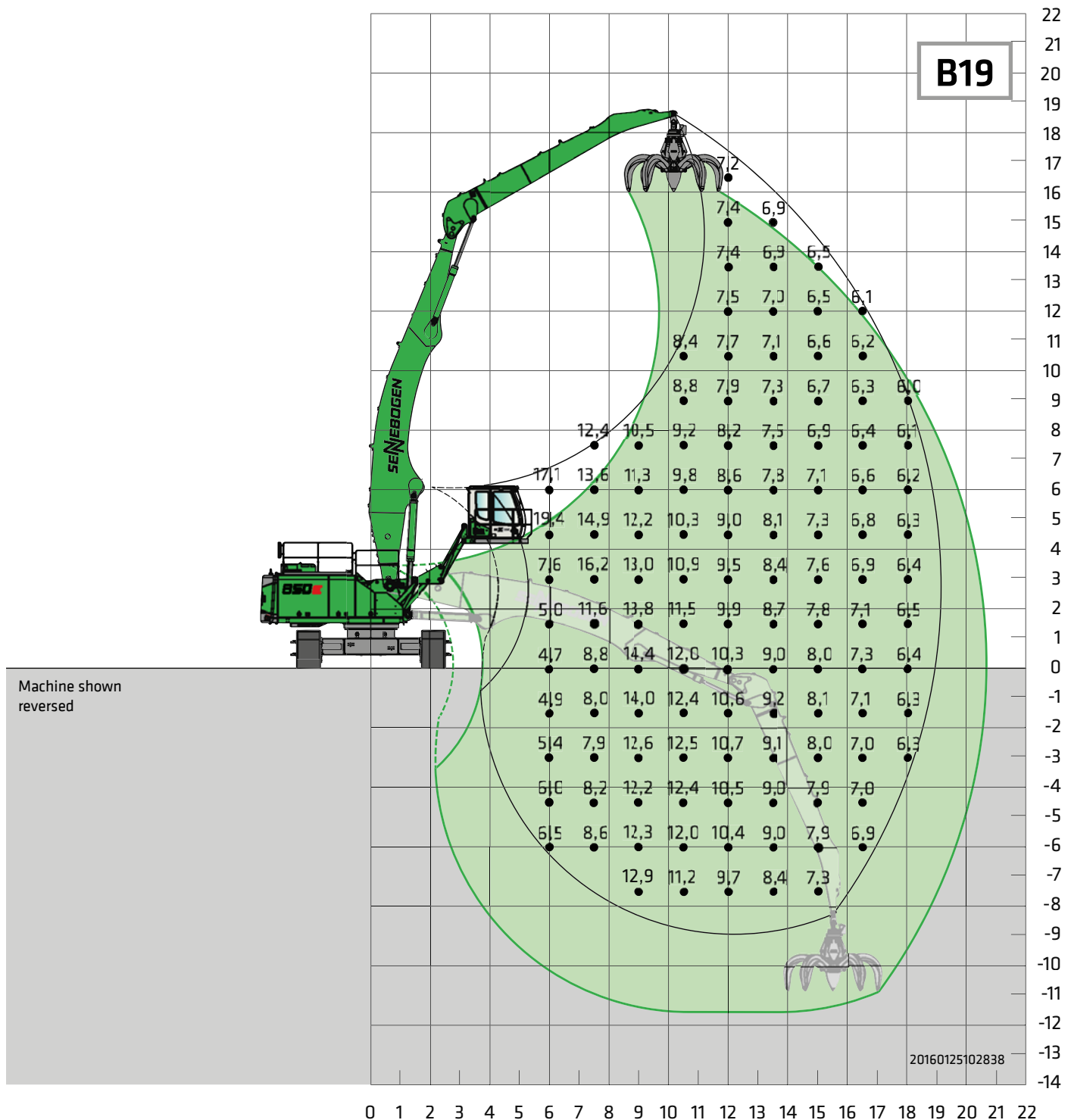
**Cab**

**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.

# 850E Load ratings

R



Undercarriage R83-420

Compact boom  
Loading stick12.0 m  
8.5 m

Cab

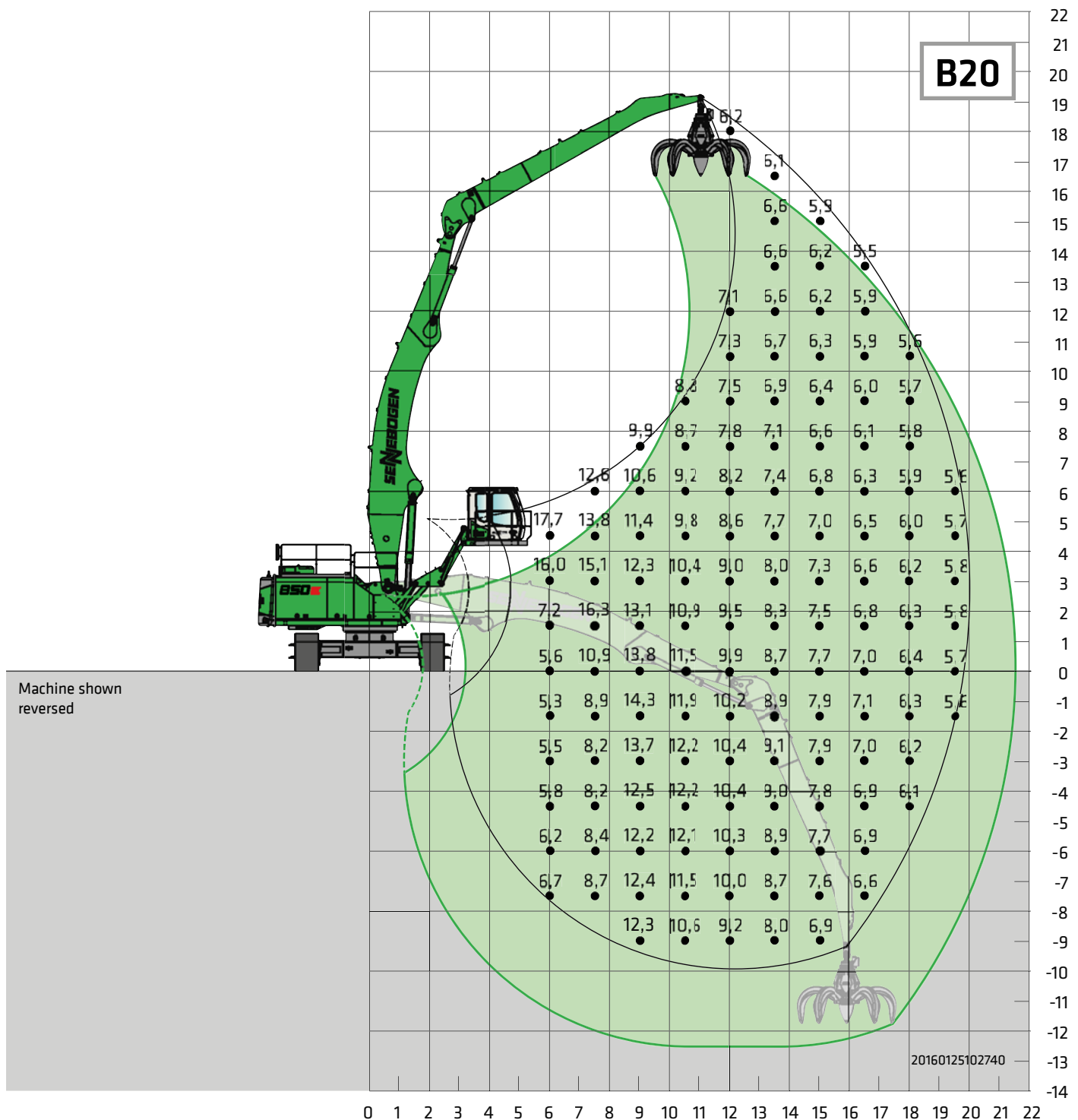
Maxcab E300/260,  
hydraulic elevation and tilt feature

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.



# B50E Load ratings

R



Undercarriage R83-420

Compact boom  
Loading stick12 m  
9.5 m

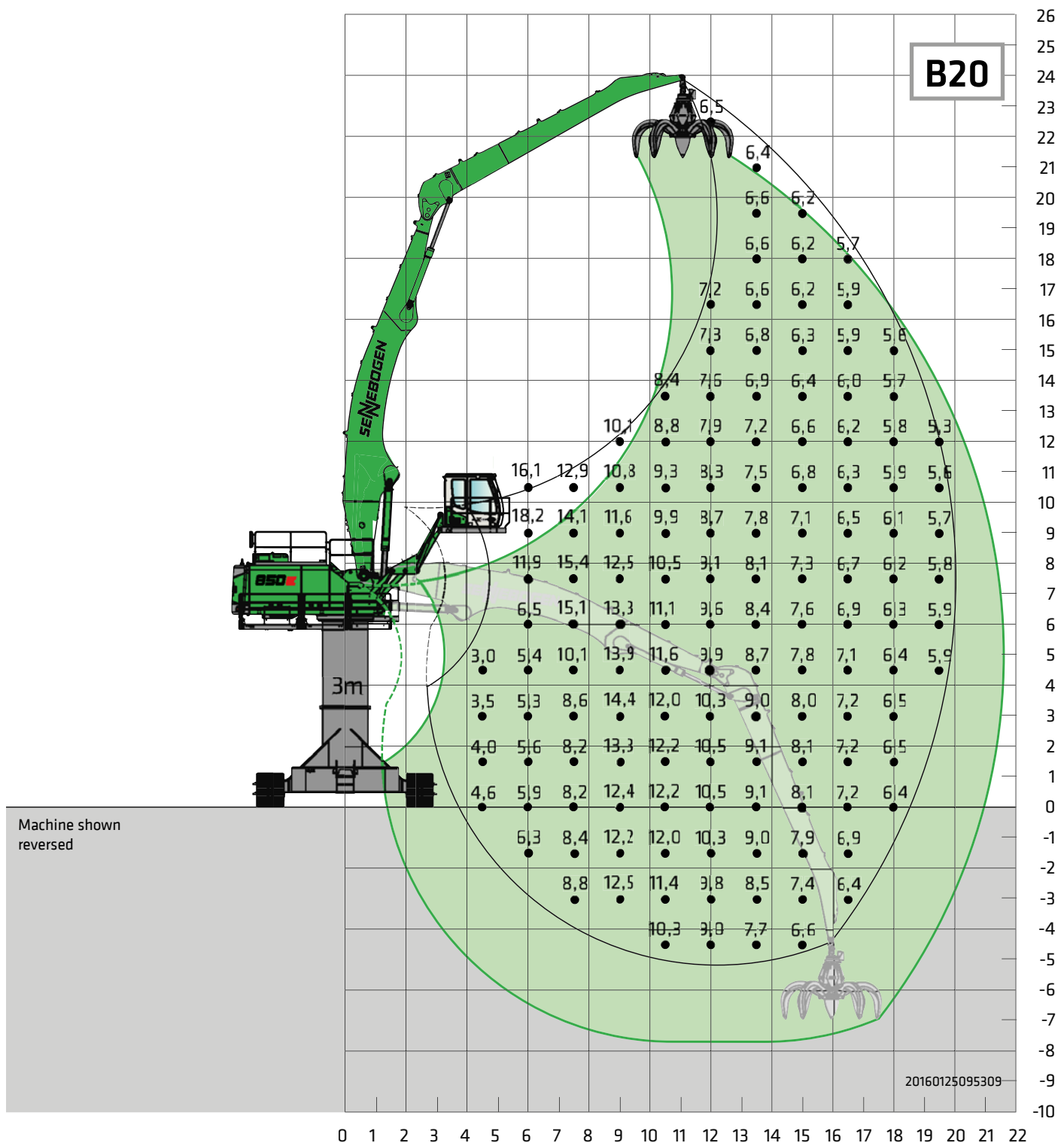
Cab

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.

# 850E Load ratings

R

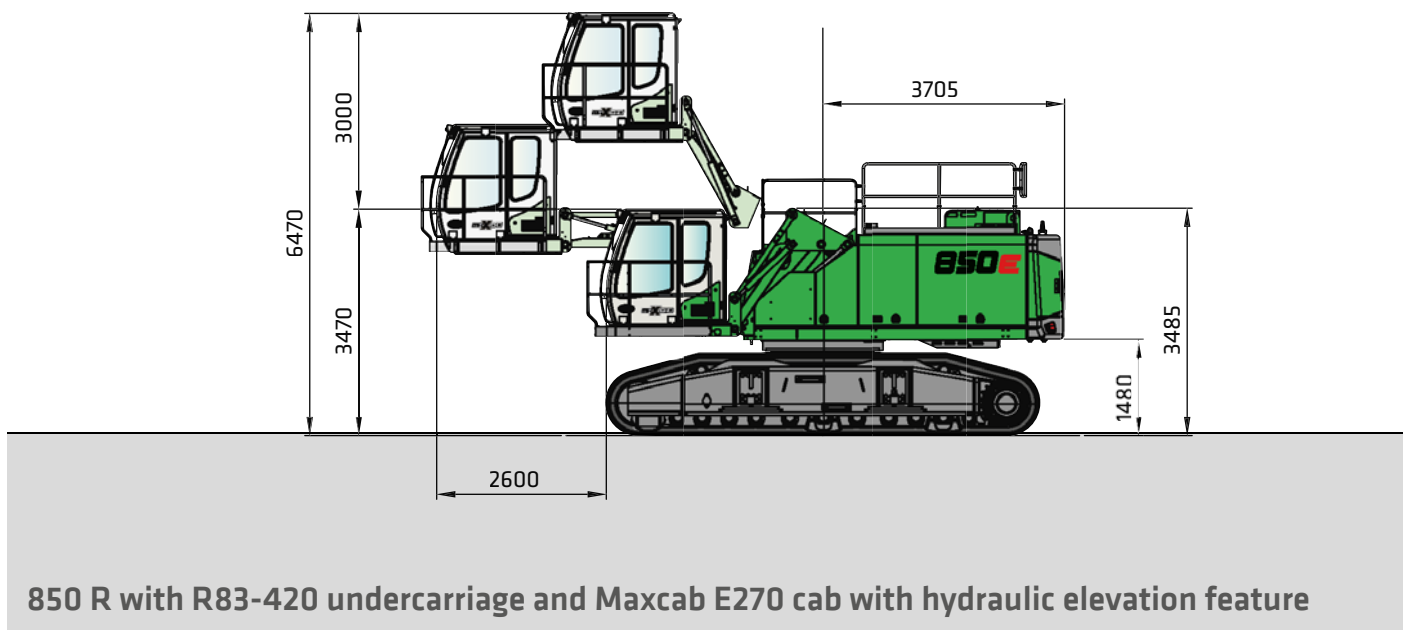
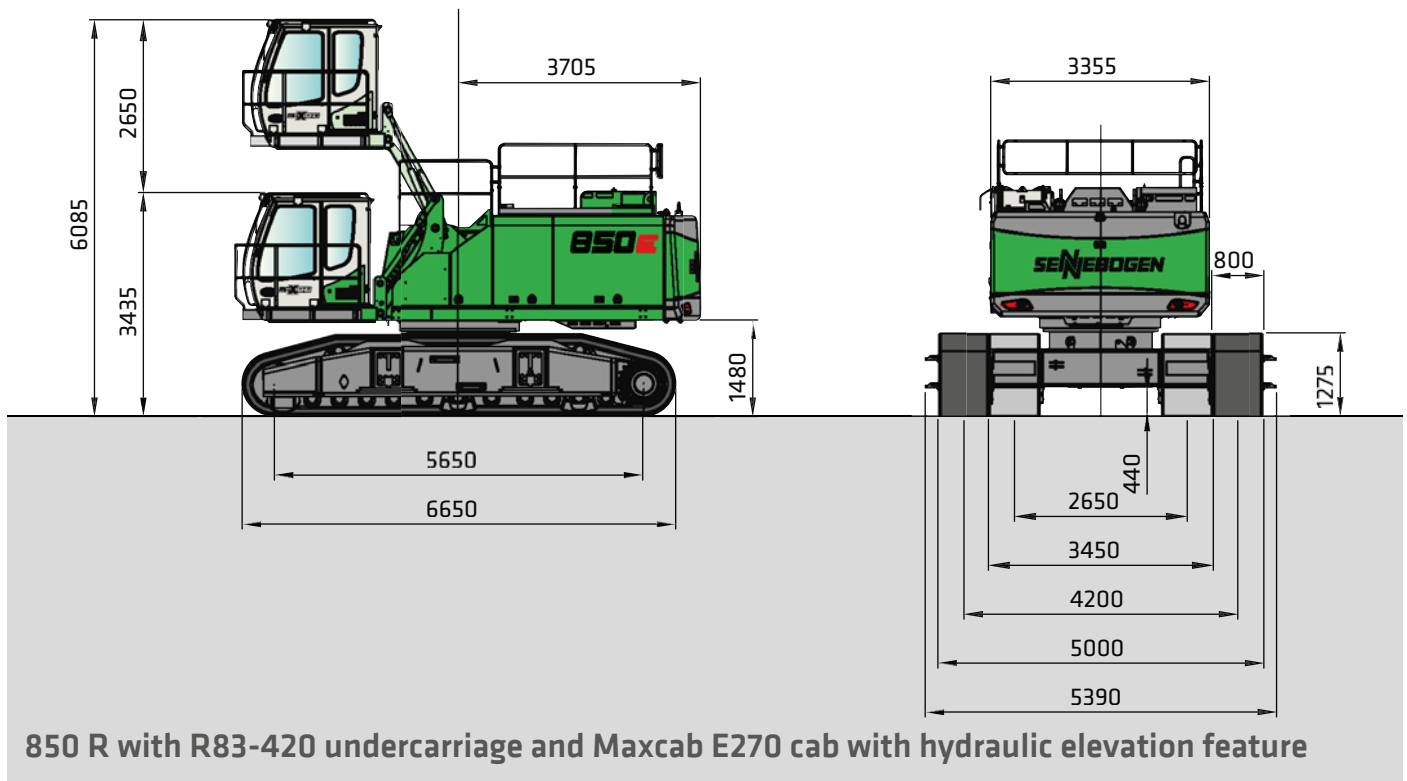


Undercarriage Pylon R83-490 3.0 m Compact boom Loading stick 12 m 9.5 m Cab Mastercab E300/260, elevation and tilt feature (option)

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.

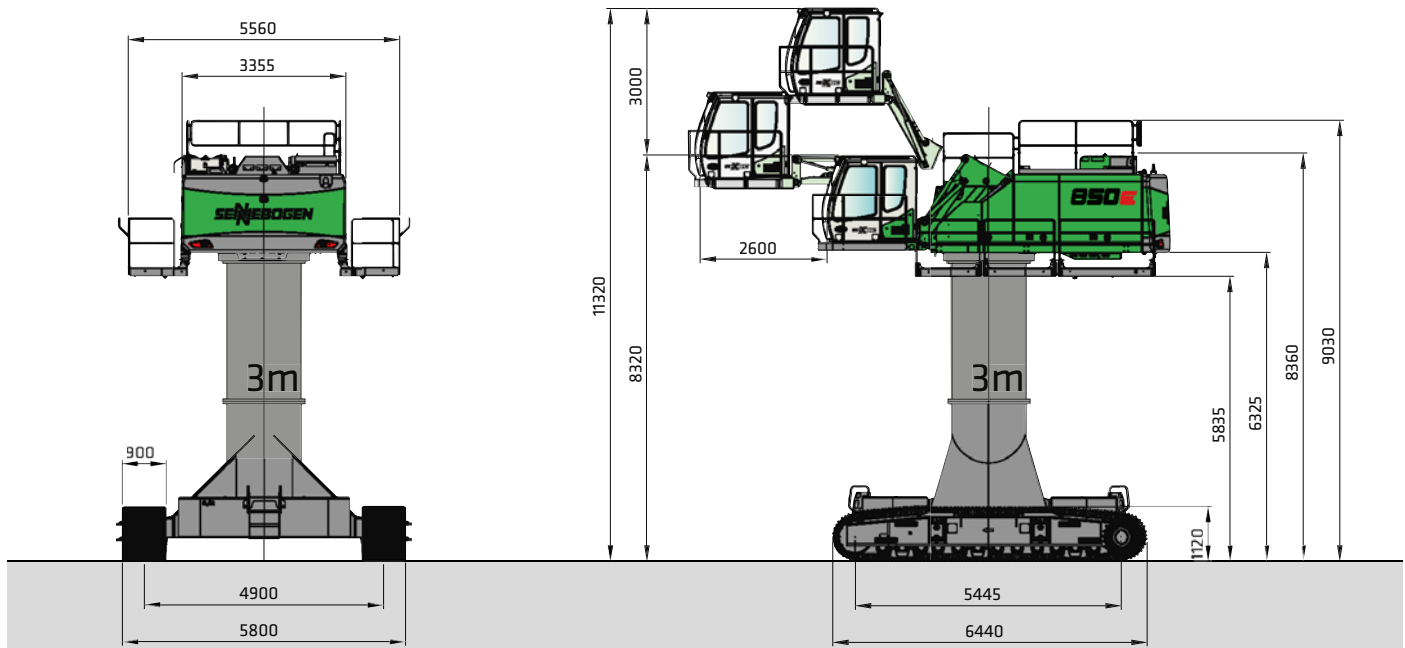
# 850E Dimensions

R

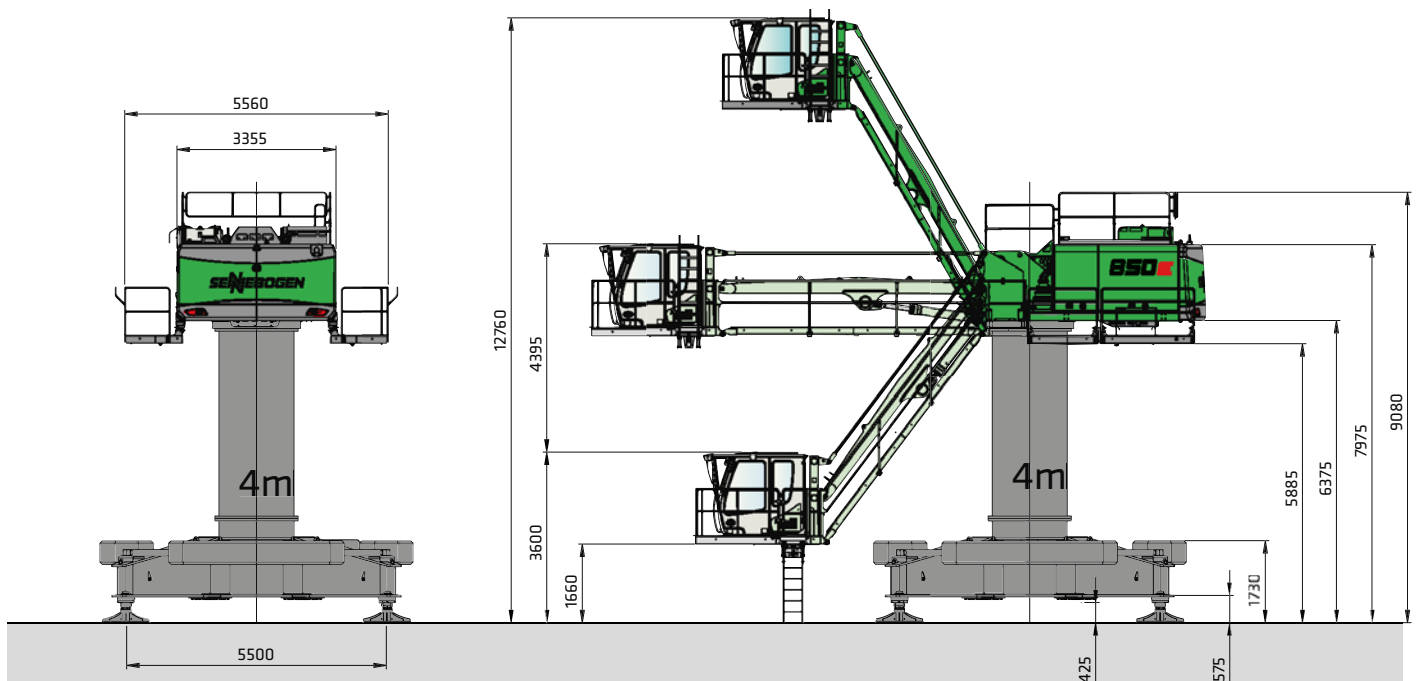


# 850E Dimensions

R



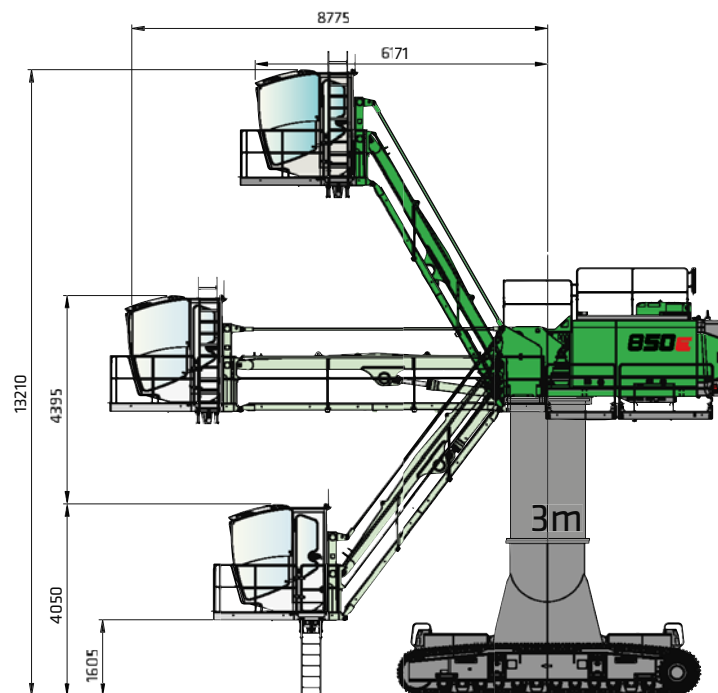
850 R with R83-490 undercarriage, Maxcab E300/260 with hydraulic elevation and tilt feature, and 3.0 m pylon



850 R with ST88-500 4-point undercarriage, Skylift 900 Mastercab cab with hydraulic elevation feature, and 4.0 m pylon

# 850E Dimensions

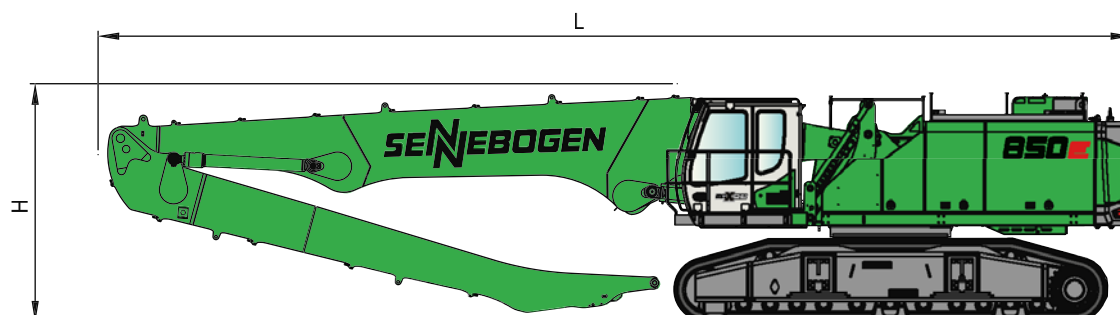
R



850 R with R83-490 undercarriage, Mastercab Skylift 900 cab with hydraulic elevation and tilt feature, and 3.0 m pylon

# 850E Transport dimensions

R



|     | Load boom     | Grapple stick | Transport length (L) | Transport height (H) |
|-----|---------------|---------------|----------------------|----------------------|
| K17 | 10.5 m        | 7.5 m         | 15.1 m               | 3.55 m               |
| K19 | 11.2 m        | 8.5 m         | 15.8 m               | 3.65 m               |
| K21 | 12.1 m        | 9.5 m         | 16.7 m               | 3.85 m               |
| 19b | 12.0 m Banana | 8.5 m         | 16.5 m               | 3.80 m               |
| 20b | 12.0 m Banana | 9.5 m         | 16.5 m               | 3.80 m               |



# 850E Recommended grapples

R

## SGM multi-shell grab (4 shells)



| Design / size | Grapple capa-<br>city | Weight <sup>1</sup> |      | Maximum<br>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 capa-<br>city | Weight <sup>1</sup>      |      | Maximum<br>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

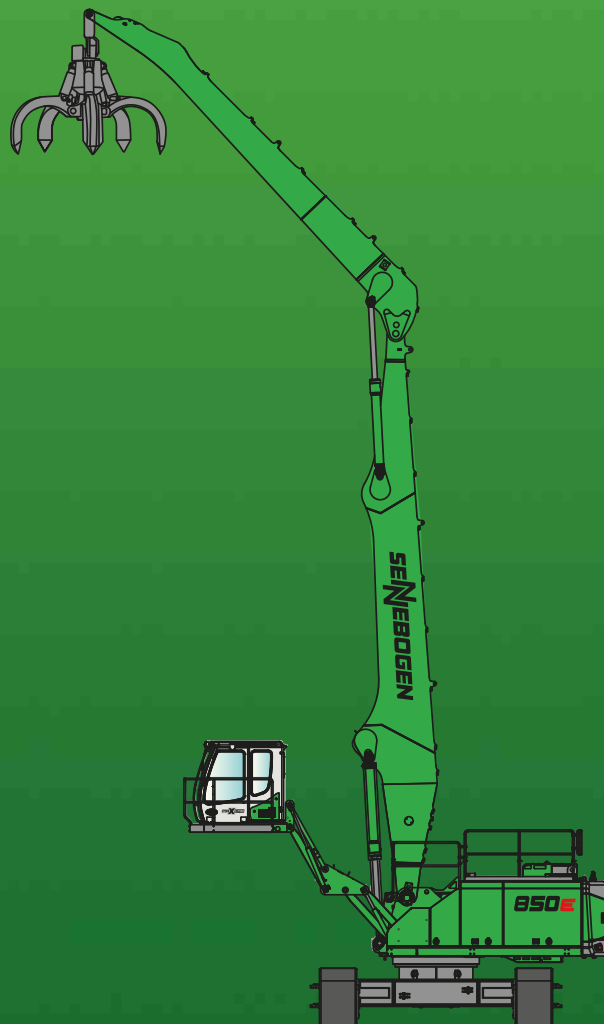


| Type series / model                      | Power | Deadweight | Breakaway force | Load-bearing capacity in kg |
|------------------------------------------|-------|------------|-----------------|-----------------------------|
| WOKO                                     | kW    | kg         | kN              | 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

# 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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