

# SENEBOGEN



**97** kW (Tier IIIa)

**104** kW (Tier IVf)



**26.3** t



**11** m



**MAXCAB**

## 821E

Material handling crawler machine

Tier IVf emission  
standards

# 821E 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 reading points  
Easy maintenance – clear labeling

6

### Consultation and support

3 production sites – 2 subsidiaries  
120 sales partners – over 300 service stations





# 821E The E-Series. At a glance.



## Four ways to save fuel

- Up to 20% savings: working in Eco Mode with reduced 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 and soundproofing in the doors **3**
- 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 oversized and robust fans and radiators **4**
- Charge air cooler, water and oil coolers with top-notch efficiency thanks to axial-piston pump and motor control and on-demand thermostatic control



### Maximum safety

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



### Smart radiator technology

- Comes standard: automatic, fast and strong fan reversal for blowing out radiators and continuous cooling capacity
- Side-by-side radiators, easily accessible and clean cooling technology **5**
- Fuel savings through optimized fan operation **6**

### Powerful hydraulic system

- Strong pumps with power reserves
- Top efficiency thanks to oversized hydraulic valves and lines
- Extra long change intervals of 4,000 operating hours through initial fill-up with HVLPD oil with extended service life when using SENNEBOGEN HydroClean\* **7**

\* Optional, see page 7

# 821E The E-Series. Pure comfort.

## Maxcab comfort operator 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

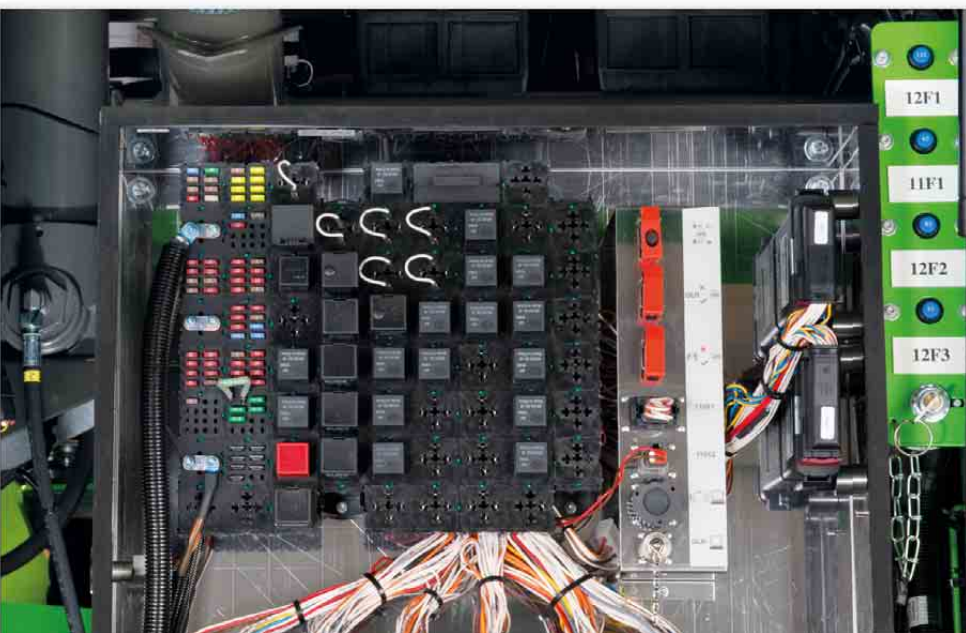
- Consistently pleasant cab climate thanks to 10 evenly distributed air vents
- Central controls make operation easy



## SENCON

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

# 821E Maintenance and service made easy



## Maintenance-optimized

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



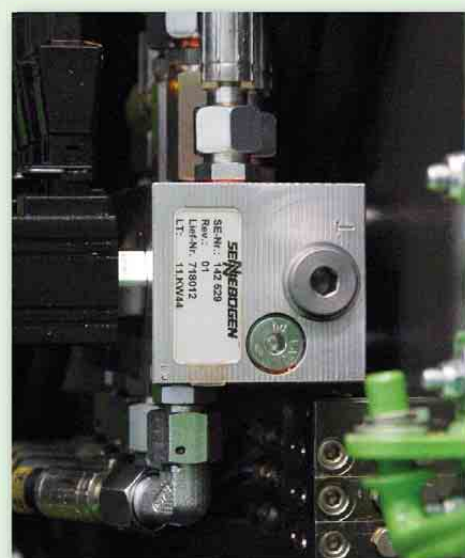
## HydroClean\*

- 3-µm microfilter for optimal protection of hydraulic components
- 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

\* Optional

# 821E Modular design – versatile solutions

## Attachments



Orange-peel grapple



Double-shell grapple



Magnetic plate



Scrap metal shears

## Equipment options (others available upon request)



K11



K11 ULM

## Cabs



MAXCAB

E270 with Maxcab

## Uppercarriage



Diesel-hydraulic drive



Electrohydraulic drive

## Options

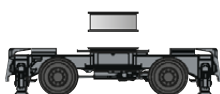


Engine line drum



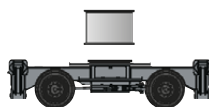
Transformer

## Undercarriage variants



M mobile

max.  
0.6 m

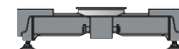


MHD mobile

max.  
1.0 m



R25/240 crawler\*



4-point underframe

max.  
3.0 m



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

**Sliding door**  
for convenient  
entry and exit

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

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

**Robust side covers**  
made of recyclable  
sheet steel

**Better illumination**  
of the work area with  
powerful LED  
headlights\*

**Safe  
entry and  
exit**  
thanks to  
railing\*,  
handles and  
no-slip steps

\*Option

# 821E Technical data, equipment

## MACHINE TYPE

Model (type) **821**

## ENGINE

Power	<b>97 kW / 130 hp at 2,200 rpm (IIIa)</b> <b>104 kW / 141 hp at 2,200 rpm (IVf)</b>
Model	<b>Cummins QSB 4.5 Tier IVf</b> Direct injection, turbo-charged, charge air cooler, reduced emissions, Eco Mode, idle automation
Cooling	Water-cooled
Air filter	Dry air filter with cyclonic pre-filter, safety element, contamination indicator
Fuel tank	<b>330 l</b>
DEF tank	<b>30 l</b>
Electrical system	<b>24 V</b>
Batteries	2 x cold-start high-performance batteries
Options	<ul style="list-style-type: none"> <li>■ Engine block heater for temperatures below -20 °C</li> <li>■ Electric fuel pump</li> <li>■ Jump-start terminals</li> </ul>

## UPPERCARRIAGE

Design	Torsion-resistant upper frame with end shields all the way from boom linkage to counterweight for optimized force transmission, precision-crafted steel bushings for boom bearings, lockable storage compartment, outstanding design, very low noise emissions
Central lubrication	Automatic central lubrication for equipment and slewing gear raceway
Electrical system	Central electrical distributor, battery disconnect switch
Safety	Right and rearview cameras
Options	<ul style="list-style-type: none"> <li>■ Slewing gear brake via foot pedal</li> <li>■ Perimeter uppercarriage railing for additional safety</li> <li>■ LED lighting package</li> <li>■ Fire extinguisher</li> <li>■ Special paint finish</li> <li>■ Electric hydraulic tank preheater with uppercarriage power socket</li> <li>■ Low-temperature package (oils, battery heater, hydraulic oil preheater, cab preheater, motor preheater)</li> <li>■ Platform with railing next to cab</li> <li>■ Hydraulically driven 9 kW/15 kW magnetic generator</li> </ul>

## HYDRAULIC SYSTEM

Load-sensing/LUDV hydraulic system for work and travel functions	
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>260 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	All hydraulic circuits secured with safety valves, hydraulic accumulator for emergency attachment and cab lowering if engine fails, pipe-fracture safety valves for stick and hoist cylinders
Options	<ul style="list-style-type: none"> <li>■ Bio-oil – environmentally friendly</li> <li>■ ToolControl for programming pressure/rate of up to 10 tools</li> <li>■ Additional hydraulic circuit for shear attachment</li> <li>■ Load moment warning with capacity utilization indicator with/without shutdown</li> <li>■ Electronic overload safeguard with overload shutdown</li> <li>■ SENNEBOGEN HydroClean 3-µm hydraulic microfilter system</li> </ul>

## SLEWING DRIVE

Gearbox	Planetary gearbox with axial piston motor and integrated brake valve
Parking brake	Spring-loaded, hydraulically vented safety multi-disk brake
Slewing ring	Oversized slewing ring
Slewing speed	0–8 rpm, continuous. Hydraulic brake valves integrated into motor ensure wear-free braking.

# 821E Technical data, equipment

## CAB **MAX<sup>CRB</sup>**

Cab type	E270 hydraulically elevating cab
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>■ Auxiliary heating system with timer</li> <li>■ Activated carbon filter for fresh/circulating air</li> <li>■ Steering wheel with adjustable steering column</li> <li>■ Sliding window in operator door</li> <li>■ Armored-glass windshield</li> <li>■ Armored-glass roof window</li> <li>■ Polycarbonate safety side and rear panels</li> <li>■ Windshield wiper with washer for bottom front/roof glass panel</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>■ Maxcab industrial cab with single-piece armored windshield</li> <li>■ Radio kit/radio and CD with speakers</li> </ul>
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## UNDERCARRIAGE

Design	Crawler undercarriage in stable, torsionally rigid box design
Travel drive	Hydraulic travel drive
Parking brake	Spring-loaded multi-disk brakes with hydraulic brake valves
Traveling gear	Undercarriage with 600 mm B4HD traveling gear and 3-grouser track shoes R25/240 crawler undercarriage
Travel speed	Stage I: 0–1.8 km/h; Stage II: 0–2.4 km/h
Options	<ul style="list-style-type: none"> <li>■ B4HD crawler track with 700 mm 3-grouser canted track shoes</li> </ul>

## ELECTRIC DRIVE **eGREEN**

Option	<ul style="list-style-type: none"> <li>■ Power: <b>90 kW, 400 V, 50 Hz</b> Total connected load 200 kVA, customer-provided 250 A fuse (alternatively 315 A with magnet system) for 400 V – delta-wye 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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## ATTACHMENTS

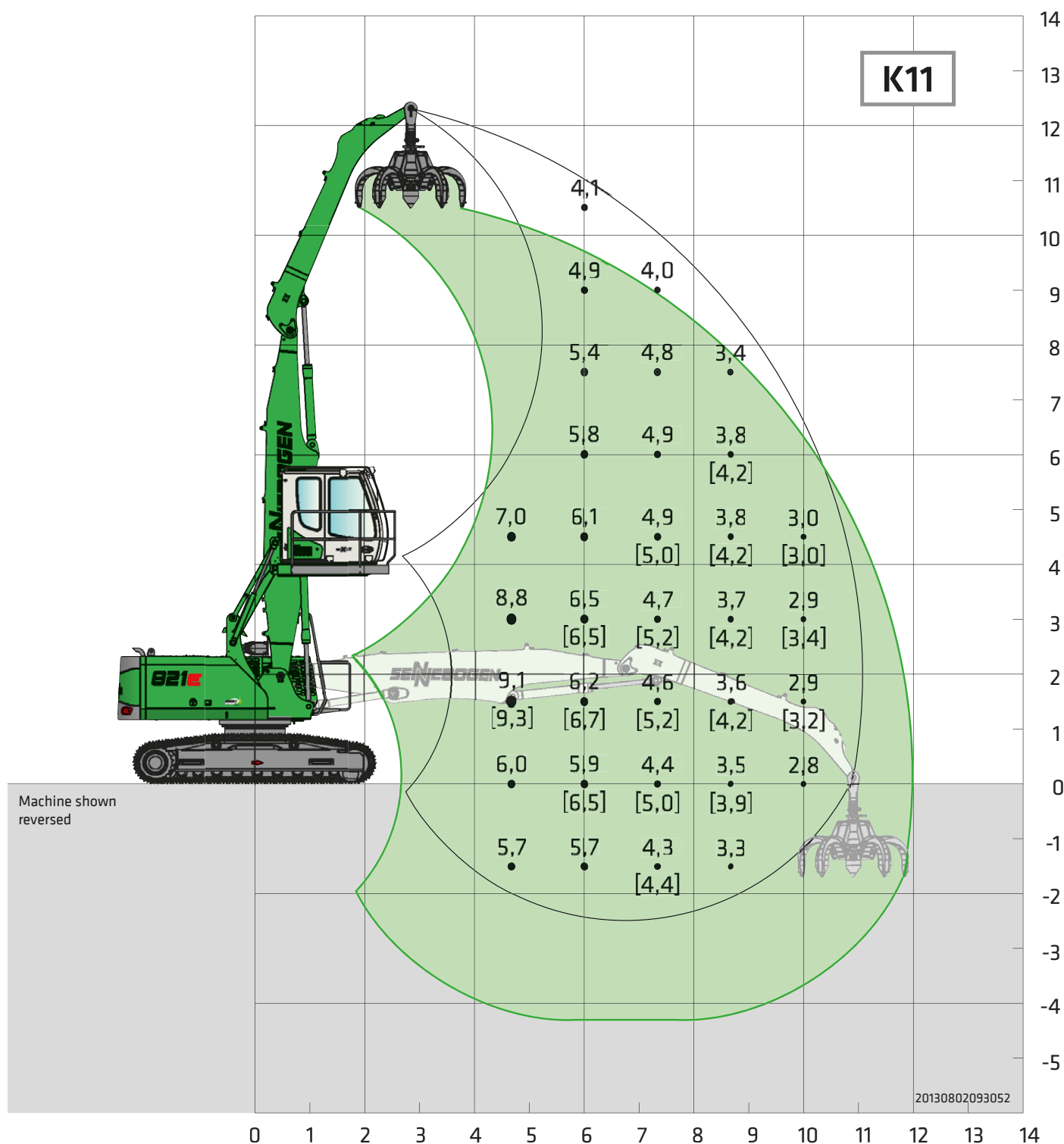
Design	Sealed and soiling-protected box design with oversized bearing points for long service life. Oversized bearing points with low-maintenance, sealed special bushings, precision-crafted
Cylinders	Special hydraulic cylinder with hydraulic end position damping, optimized kinematics for high lifting power. The material handling attachment is specifically designed for high-performance applications.
Central lubrication	Automatic central lubrication system
Options	<ul style="list-style-type: none"> <li>■ Ball valves on the hydraulic lines to open, close, and rotate grapple</li> <li>■ Multi-coupling</li> <li>■ Adjustable hoisting limiter/stick limiter</li> </ul>

## OPERATING WEIGHT

Mass	821 R with R25/240 undercarriage, K11 compact attachment and 600-l orange-peel grapple <b>Approx. 23,950 kg</b>
Note	Operating weight varies by model and equipment.



# 821E Load ratings



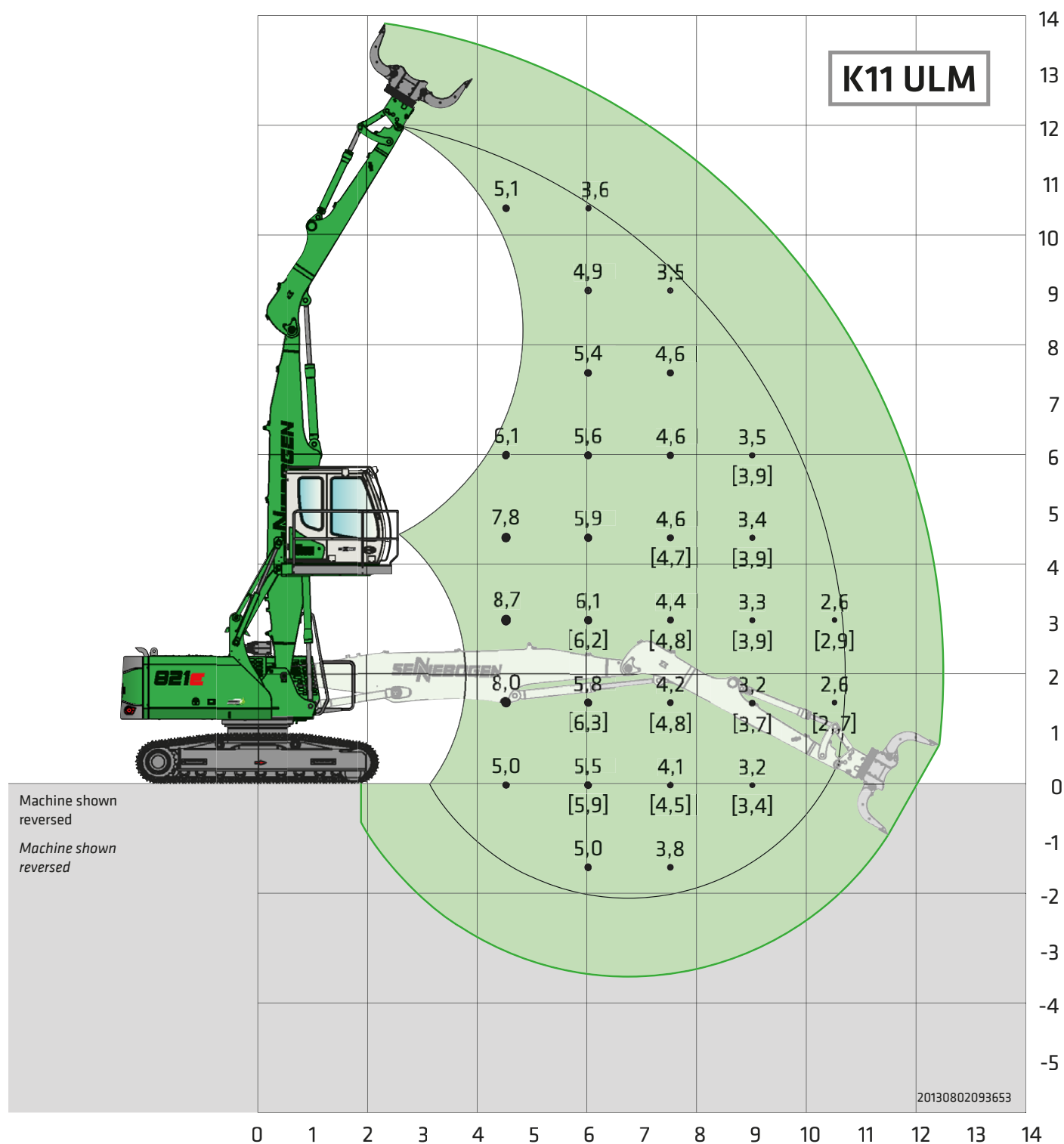
Undercarriage R25/240

Compact boom 6.3 m  
Dipper stick 4.6 m

Cab E270 Maxcab,  
hydraulically elevating

All ratings are in tons (t) and constitute 75% of the static tipping load or 87 % of the hydraulic lifting power in accordance with ISO 10567. They apply on firm and level ground and 360° slewing. The values in brackets [ ] apply 360° freestanding. Attachments such as orange-peel grapples, 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.

# 821E Load ratings



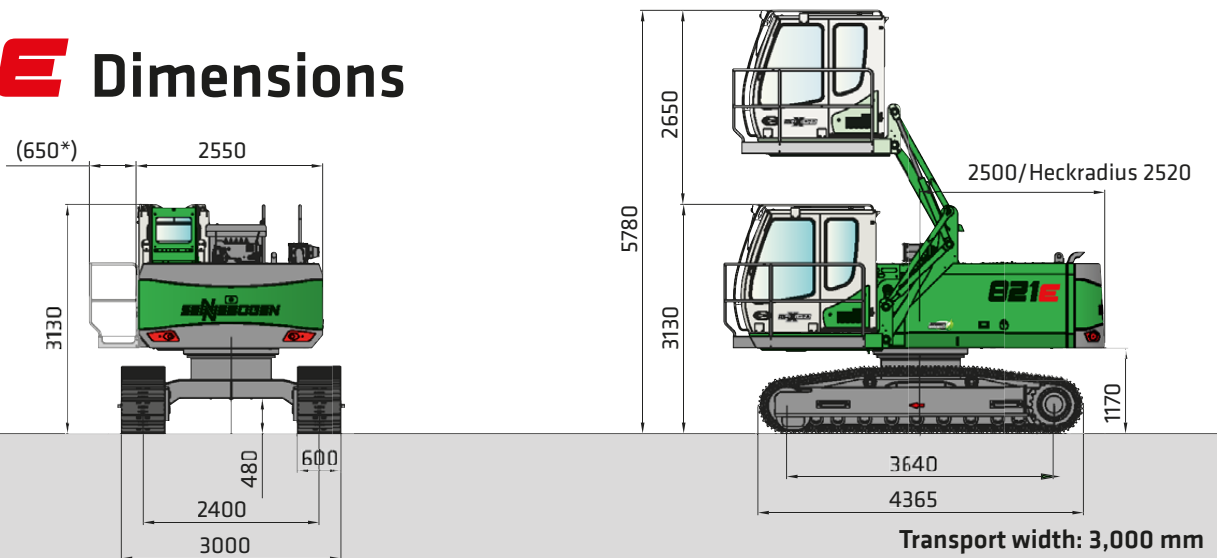
**Undercarriage R25/240**

**Compact boom 6.3 m  
Dipperstick 4.2 m ULM**

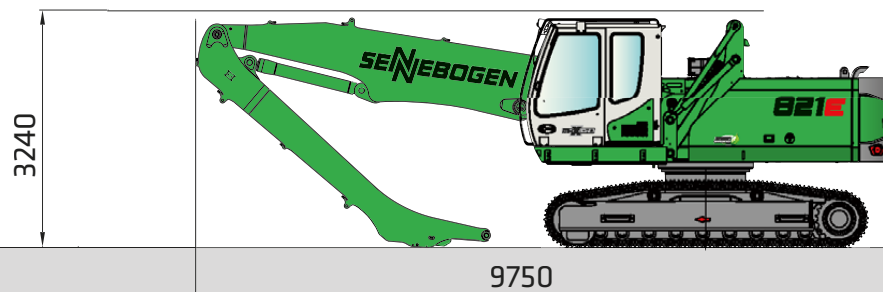
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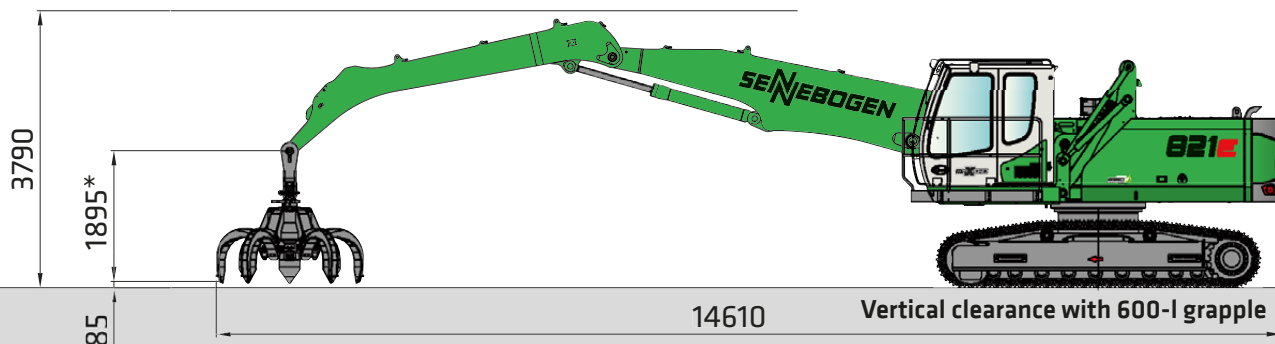
# 821E Dimensions



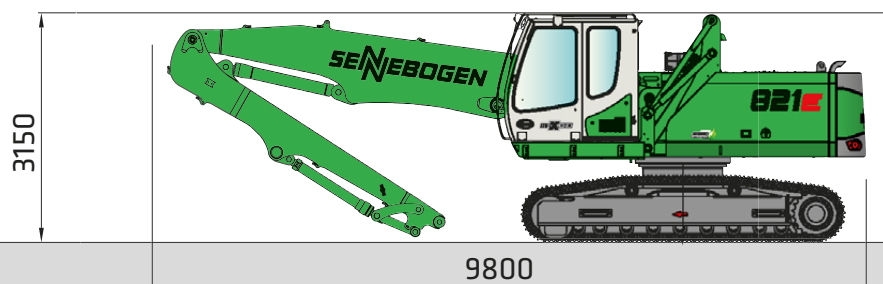
821R with R25/240 undercarriage and E270 hydraulically elevating cab



821 R with 6.3 m compact boom and 4.6 m dipperstick



821 R with 6.3 m compact boom and 4.6 m dipperstick with SENNEBOGEN orange-peel grapple



821 R with 6.3 m compact boom and 4.2 m ULM dipperstick

# 821E Recommended grapples

## SGM orange-peel grapple (4 shells)



Design/size	Grapple capacity	Weight <sup>1</sup>		Max. load capacity
		Shell		
		HO	G	
SGM	l	kg	kg	t
400.30-4	400	1275	1385	4.0
600.30-4	600	1300	1435	
800.30-4	800	1345	1510	

## SGM orange-peel grapple (5 shells)



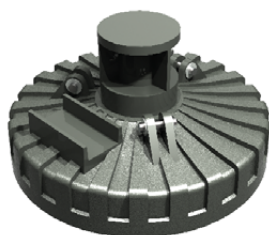
Design/size	Grapple capacity	Weight <sup>1</sup>		Max. load capacity
		Shell <sup>2</sup>		
		HO	G	
SGM	l	kg	kg	t
400.30-5	400	1465	1528	4.0
600.30-5	600	1490	1580	
800.30-5	800	1540	1650	

## SGZ double-shell grapple



Design/size	Grapple capacity	Weight <sup>1</sup>	Max. load capacity
		kg	
			t
1000.40	1000	1270	4.0
1200.40	1200	1360	
1400.40	1400	1420	
1600.40	1600	1530	

## Magnetic plates



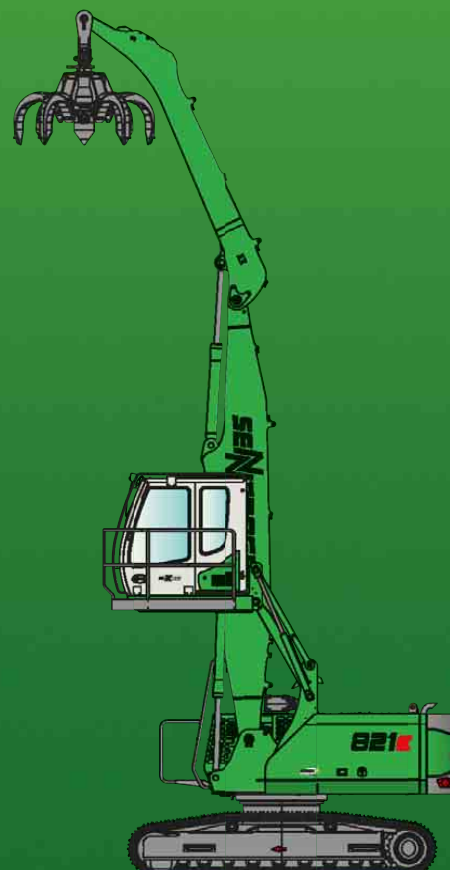
Type series/model	Power	Tare weight	Breakaway force	Load capacity in kg
WOKO	kW	kg	kN	Slab (safety factor 2)
S-RSL 13	10.5	1300	260	13000
S-RLB 10	4.8	730	190	9500
S-RLB 11.5	5.5	1060	240	12000
S-RLB 12.5	8.8	1310	280	14000
S-RLB 13.5	10.0	1700	300	15000
Recommended magnetic generator: 9 kW/15 kW				

\*) 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 for 1,250 l capacity and higher

# 821E



This catalog describes machine models, what equipment comes with individual models, and configuration options (standard equipment and optional equipment) of the machines delivered by SENNEBOGEN Maschinenfabrik. Machine illustrations may contain optional and additional 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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