

Tracked Road Rail Excavator

R 914 Rail

Litronic®

Generation

6

Operating Weight

18,900 – 19,900 kg

Engine

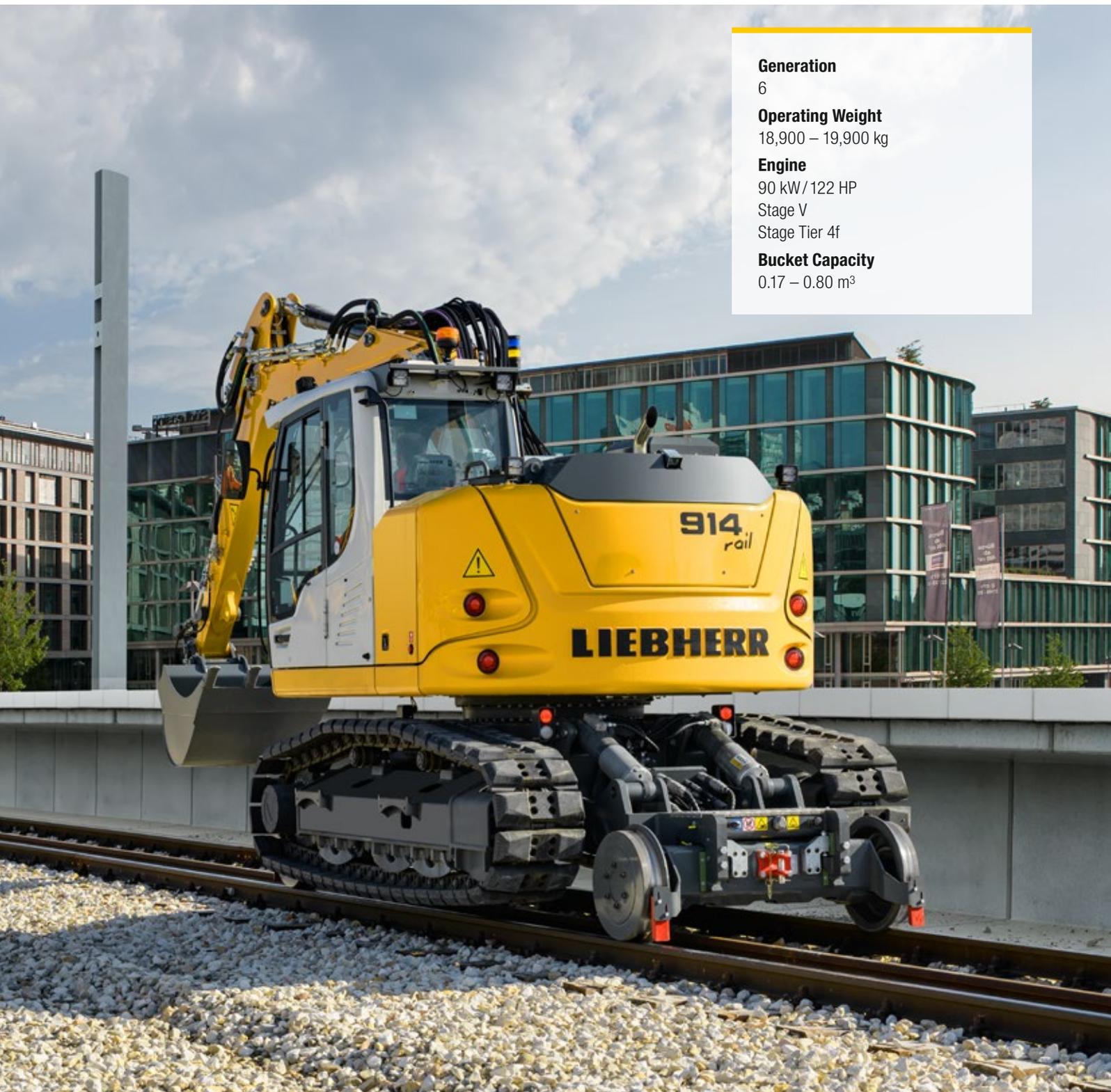
90 kW/122 HP

Stage V

Stage Tier 4f

Bucket Capacity

0.17 – 0.80 m³



LIEBHERR

Technical Data



Diesel Engine

| | |
|----------------------------|---|
| Rating per ISO 9249 | 90 kW (122 HP) at 1,800 RPM |
| Model | Deutz TCD3.6L4 |
| Type | 4 cylinder in-line |
| Bore/Stroke | 98/120 mm |
| Displacement | 3.6 l |
| Engine operation | 4-stroke diesel Common-Rail turbo-charged and after-cooled reduced emissions |
| Air cleaner | dry-type air cleaner with pre-cleaner, primary and safety elements |
| Engine idling | sensor controlled |
| Electrical system | |
| Voltage | 24 V |
| Batteries | 2 x 135 Ah/12 V |
| Alternator | three-phase current 28 V/80 A |
| Stage V | |
| Harmful emissions values | according to regulation (EU) 2016/1628 |
| Emission control | Deutz DOC/DPF + SCR |
| Fuel tank | 175 l |
| Urea tank | 20 l |
| Stage Tier 4f | |
| Harmful emissions values | in accordance with EPA/CARB-40CFR stage Tier 4f |
| Emission control | SCR technology |
| Fuel tank | 175 l |
| Urea tank | 20 l |



Cooling System

| | |
|----------------------|--|
| Diesel engine | water-cooled compact cooling system consisting cooling unit for water, hydraulic oil and charge air with stepless thermostatically controlled fan, fans for radiator cleaning can be completely folded away |
|----------------------|--|



Hydraulic Controls

| | |
|-----------------------------|--|
| Power distribution | via control valves with integrated safety valves, simultaneous and independent actuation of chassis, swing drive and equipment |
| Servo circuit | |
| Equipment and swing | with hydraulic pilot control and proportional joystick levers |
| Chassis | electro-proportional via foot pedal |
| Additional functions | proportional regulation via foot pedals or mini-joystick |



Hydraulic System

| | |
|--|---|
| Hydraulic pump | |
| for equipment and travel drive | Liebherr axial piston variable displacement pump |
| Max. flow | 300 l/min. |
| Max. pressure | 350 bar |
| Hydraulic pump regulation and control | Liebherr-Synchron-Comfort-system (LSC) with electronic engine speed sensing regulation, pressure and flow compensation, torque controlled swing drive priority |
| Hydraulic tank | 100 l |
| Hydraulic system | max. 230 l |
| Hydraulic oil filter | 1 main return filter with integrated partial micro filtration (5 µm) |
| MODE selection | adjustment of engine and hydraulic performance via a mode pre-selector to match application, e.g. for especially economical and environmentally friendly operation or for maximum digging performance and heavy-duty jobs |
| S (Sensitive) | mode for precision work and lifting through very sensitive movements |
| E (Eco) | mode for especially economical and environmentally friendly operation |
| P (Power) | mode for high performance with low fuel consumption |
| Engine speed and performance setting | stepless alignment of engine output and hydraulic power via engine speed |
| Option | Tool Control: 20 pre-adjustable pump flows and pressures for add-on attachments |



Swing Drive

| | |
|----------------------|--|
| Drive | Liebherr axial piston motor with integrated brake valve and torque control |
| Swing ring | Liebherr, sealed race ball bearing swing ring, internal teeth |
| Swing speed | 0 – 10.0 RPM stepless |
| Swing torque | 51 kNm |
| Holding brake | wet multi-disc (spring applied, pressure released) |
| Option | pedal controlled positioning swing brake |



Operator's Cab

| | |
|---|---|
| Cab | ROPS safety cab structure (roll-over protection system) with individual windscreens or featuring a slide-in subpart under the ceiling, work headlights integrated in the ceiling, a door with a sliding window (can be opened on both sides), large stowing and depositing possibilities, shock-absorbing suspension, sound damping insulating, tinted laminated safety glass, separate window shades for the sunroof window and windscreen |
| Operator's seat Standard | air cushioned operator's seat with 3D-adjustable armrests, headrest, lap belt, seat heater, manual weight adjustment, adjustable seat cushion inclination and length and mechanical lumbar vertebrae support |
| Operator's seat Comfort (Option) | in addition to operator's seat standard: lockable horizontal suspension, automatic weight adjustment, adjustable suspension stiffness, pneumatic lumbar vertebrae support and passive seat climatisation with active coal |
| Operator's seat Premium (Option) | in addition to operator's seat comfort: active electronic weight adjustment (automatic re-adjustment), pneumatic low frequency suspension and active seat climatisation with active coal and ventilator |
| Arm consoles | joysticks with control consoles and swivel seat, folding left control console |
| Operation and displays | large high-resolution operating unit, self-explanatory, colour display with touchscreen, video-compatible, numerous settings, control and monitoring options, e.g. air conditioning control, fuel consumption, machine and attachment parameters |
| Air-conditioning | automatic air-conditioning, recirculated air function, fast de-icing and demisting at the press of a button, air vents can be operated via a menu; recirculated air and fresh air filters can be easily replaced and are accessible from the outside; heating-cooling unit, designed for extreme outside temperatures, sensors for solar radiation, inside and outside temperatures (country-dependent) |
| Refrigerant | R134a |
| Global warming potential | 1,430 |
| Quantity at 25 °C | 1,260 g |
| CO ₂ equivalent | 1.80 t |
| Vibration emission* | |
| Hand/arm vibrations | < 2.5 m/s ² |
| Whole-body vibrations | < 0.5 m/s ² |
| Measuring inaccuracy | according with standard EN 12096:1997 |



Undercarriage

| | |
|-------------------------------|---|
| Crawler undercarriage | |
| Drive | Liebherr compact planetary reduction gear with Liebherr axial piston motor per side of undercarriage |
| Speed on chain | low range 3.1 km/h high range 6.8 km/h |
| Net drawbar pull on crawler | 154 kN |
| Track components | B4, maintenance-free |
| Track rollers/Carrier rollers | 8/2 |
| Tracks | sealed and greased |
| Track pads | triple grouser, rubber, width 500 mm special widths available on request |
| Holding brake | wet multi-disc (spring applied, pressure released) |
| Rail undercarriage | |
| Speed on rail | 0 – 20.0 km/h stepless 0 – max. 25.0 km/h Speeder (Option) |
| Drive | hydrostatic drive of the track wheels (four-wheel drive) |
| Gauge | narrow gauge 1,067 mm standard gauge 1,435 mm broad gauge 1,600 mm special widths available on request |
| Profiles | track wheel profile ANZR-1, isolated track wheel profile UIC special profiles available on request |
| Diameter track wheel | 560 mm |
| Option | wagon braking system 1-circuit hydraulic brake for trailers including trailer tipping |



Equipment

| | |
|----------------------------|---|
| Type | high-strength steel plates at highly-stressed points for the toughest requirements. Complex and stable mountings of equipment and cylinders |
| Hydraulic cylinders | Liebherr cylinders with special sealing and guide system and, depending on cylinder type, shock absorption |
| Bearings | sealed, low maintenance |

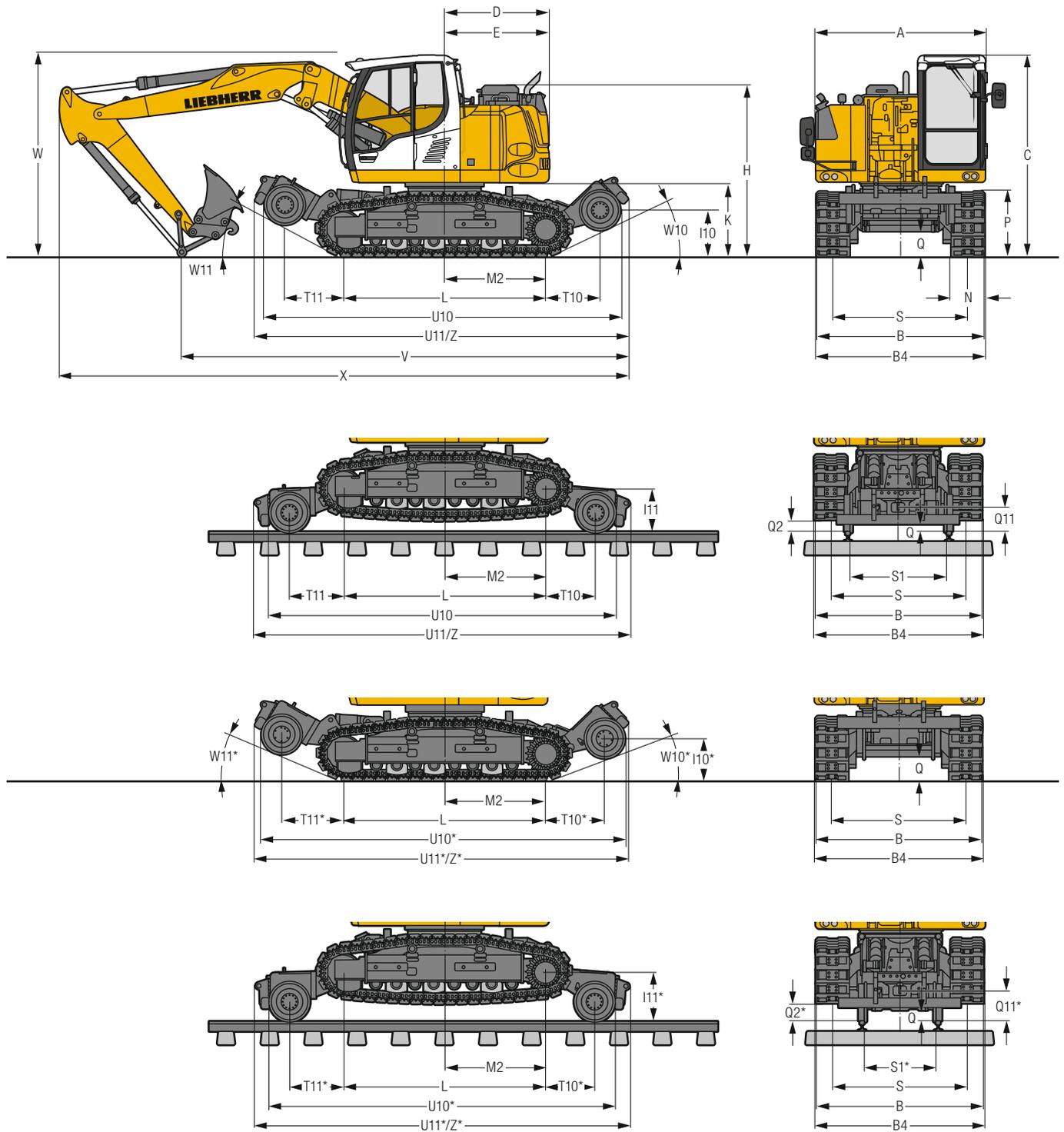


Complete Machine

| | | |
|-----------------------|---|----------------------------|
| Lubrication | Liebherr central lubrication system for upper-carriage and equipment, automatically | |
| Noise emission | | |
| ISO 6396 | L _{PA} (inside cab) | = 70 dB(A) (Stage V) |
| 2000/14/EC | L _{WA} (surround noise) | = 101 dB(A) (Stage V) |
| ISO 6396 | L _{PA} (inside cab) | = 71 dB(A) (Stage Tier 4f) |
| 2000/14/EC | L _{WA} (surround noise) | = 99 dB(A) (Stage Tier 4f) |

* for risk assessment according to 2002/44/EC see ISO/TR 25398:2006

Dimensions

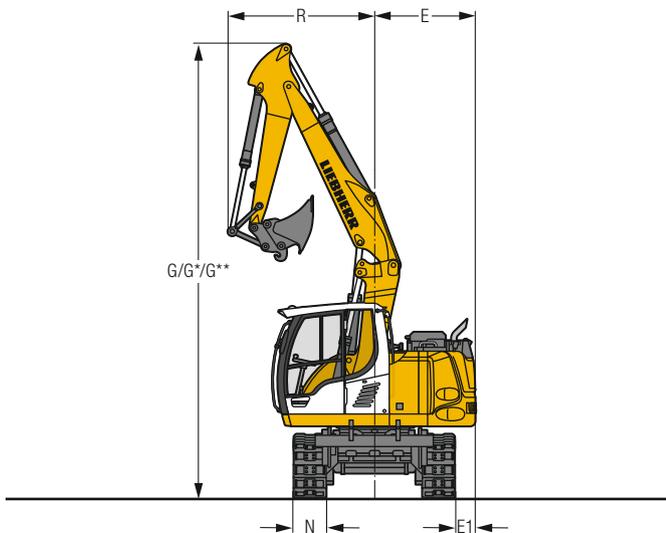


| | 1,435/1,600 mm on chain mm | 1,435/1,600 mm on rail mm | 1,067 mm on chain mm | 1,067 mm on rail mm |
|------|----------------------------------|---------------------------------|----------------------------|---------------------------|
| A | 2,525 | 2,525 | 2,525 | 2,525 |
| B | 2,500 | 2,500 | 2,500 | 2,500 |
| B4 | 2,525 | 2,525 | 2,525 | 2,525 |
| C | 3,030 | 3,260 | 3,030 | 3,345 |
| D | 1,550 | 1,550 | 1,550 | 1,550 |
| E | 1,550 | 1,550 | 1,550 | 1,550 |
| H | 2,575 | 2,805 | 2,575 | 2,890 |
| I10 | 740 | – | – | – |
| I10* | – | – | 640 | – |
| I11 | – | 635 | – | – |
| I11* | – | – | – | 720 |
| K | 1,095 | 1,325 | 1,095 | 1,415 |
| L | 3,000 | 3,000 | 3,000 | 3,000 |
| M2 | 1,500 | 1,500 | 1,500 | 1,500 |
| N | 500 | 500 | 500 | 500 |
| P | 985 | 1,065 | 985 | 1,065 |
| Q | 375 | 85 | 375 | 145 |
| Q2 | – | 150 ¹⁾ | – | – |
| Q2* | – | – | – | 235 ¹⁾ |
| Q11 | – | 355 | – | – |
| Q11* | – | – | – | 440 |
| S | 2,000 | 2,000 | 2,000 | 2,000 |
| S1 | – | 1,435/1,600 | – | – |
| S1* | – | – | – | 1,067 |
| T10 | 815 | 735 | – | – |
| T10* | – | – | 875 | 730 |
| T11 | 885 | 815 | – | – |
| T11* | – | – | 930 | 815 |
| U10 | 5,320 | 5,170 | – | – |
| U10* | – | – | 5,420 | 5,160 |
| U11 | 5,565 | 5,580 | – | – |
| U11* | – | – | 5,565 | 5,580 |
| W10 | 26° | – | – | – |
| W10* | – | – | 21° | – |
| W11 | 26° | – | – | – |
| W11* | – | – | 21° | – |
| Z | 5,565 | 5,580 | – | – |
| Z* | – | – | 5,565 | 5,580 |

* Narrow gauge

¹⁾ depending on chain tension

E = Tail radius



| | Stick m | Two-piece boom 4.85 m | |
|---|------------|-----------------------|----------------|
| | | 1,435/1,600 mm mm | 1,067 mm mm |
| V | 2.05 | 6,400 | 6,400 |
| | 2.25 | 6,700 | – |
| W | 2.45 | 6,700 | – |
| | 2.05 | 2,900 | 2,900 |
| X | 2.25 | 3,100 | – |
| | 2.45 | 3,150 | – |
| | 2.05 | 8,600 | 8,600 |
| | 2.25 | 8,500 | – |
| | 2.45 | 8,450 | – |

W = max. ground clearance including approx. 150 mm piping

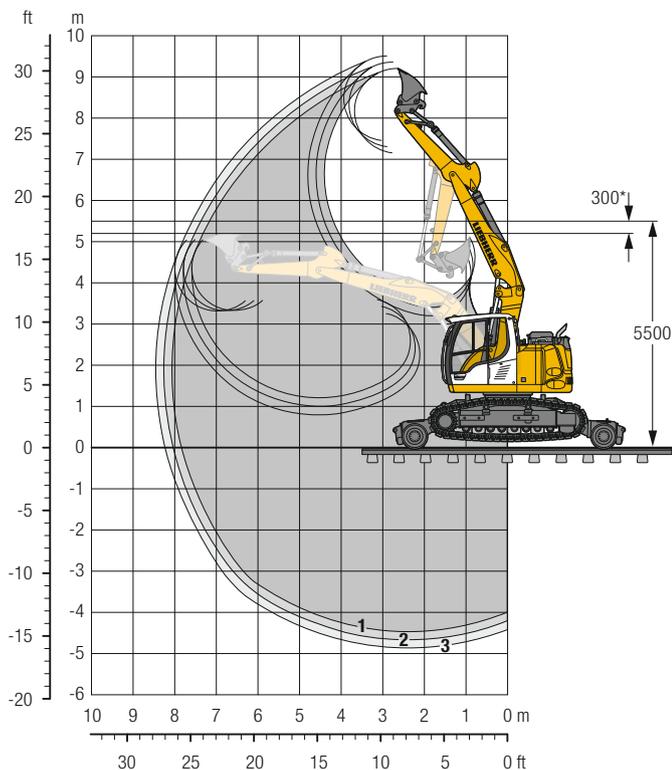
| Boom | Stick m | G mm | R mm | E mm | E1 mm |
|-----------------------|------------|---------|---------|---------|----------|
| Two-piece boom 4.85 m | 2.25 | 7,050 | 2,265 | 1,550 | 300 |

N = Track pads (500 mm)

G* = on rail 1,067 mm = 7,315 mm

G** = on rail 1,435/1,600 mm = 7,230 mm

Ditch Cleaning Bucket with Two-Piece Boom 4.85 m



* Safety distance to overhead wires

Digging Envelope Gauge 1,435 mm

| with quick coupler | | 1 | 2 | 3 |
|--|---|------|------|------|
| Stick length | m | 2.05 | 2.25 | 2.45 |
| Max. digging depth | m | 4.45 | 4.65 | 4.85 |
| Max. reach at ground level | m | 7.85 | 8.05 | 8.25 |
| Max. dumping height | m | 7.15 | 7.30 | 7.45 |
| Max. dumping height under overhead wires | m | 3.33 | 3.32 | 3.32 |
| Max. teeth height | m | 9.20 | 9.35 | 9.50 |
| Min. equipment radius | m | 2.22 | 2.27 | 2.32 |

Digging Forces

| without quick coupler | | 1 | 2 | 3 |
|--------------------------------|----|------|------|------|
| Max. digging force (ISO 6015) | kN | 73.7 | 68.8 | 64.5 |
| | t | 7.5 | 7.0 | 6.6 |
| Max. breakout force (ISO 6015) | kN | 85.1 | 85.1 | 85.1 |
| | t | 8.7 | 8.7 | 8.7 |

Max. breakout force with ripper bucket 123.9 kN (12.6 t)

Operating Weight and Ground Pressure

The operating weight includes the basic machine with triple grouser pads, two-piece boom 4.85 m, stick 2.25 m, quick coupler SWA 33 and ditch cleaning bucket 2,000 mm/0.65 m³.

| | | |
|-----------------|--------------------|----------|
| Undercarriage | | 1,435 mm |
| Pad width | mm | 500 |
| Weight | kg | 19,500 |
| Ground pressure | kg/cm ² | 0.60 |

Ditch Cleaning Buckets Machine stability per ISO 10567* (75% of tipping capacity)

| Cutting width mm | Capacity ISO 7451 ¹⁾ m ³ | Weight kg | on rail 1,435 mm | | | on chain | | |
|---------------------|--|--------------|------------------|------|------|------------------|------|------|
| | | | Stick length (m) | | | Stick length (m) | | |
| | | | 2.05 | 2.25 | 2.45 | 2.05 | 2.25 | 2.45 |
| 1,600 ²⁾ | 0.55 | 640 | ■ | △ | △ | ■ | ■ | ■ |
| 2,000 ²⁾ | 0.50 | 660 | ■ | ■ | △ | ■ | ■ | ■ |
| 1,500 ³⁾ | 0.50 | 360 | ■ | ■ | ■ | ■ | ■ | ■ |
| 2,000 ³⁾ | 0.48 | 350 | ■ | ■ | ■ | ■ | ■ | ■ |
| 2,000 ³⁾ | 0.65 | 390 | ■ | △ | △ | ■ | ■ | ■ |

* Indicated loads are based on ISO 10567 and do not exceed 75% of tipping or 87% of hydraulic capacity, max. stick length without quick coupler, lifted 360° on firm with blocked oscillating axle

¹⁾ comparable with SAE (heaped)

²⁾ with 2 x 50° rotator

³⁾ rigid ditch cleaning bucket

Max. material weight ■ = ≤ 1.8 t/m³, ■ = ≤ 1.5 t/m³, △ = ≤ 1.2 t/m³, – = not authorised

Lift Capacities

with Two-Piece Boom 4.85 m, Narrow Gauge 1,067 mm

Stick 2.05 m

| m | Undercarriage | 3.0 m | | 4.5 m | | 6.0 m | | Max. reach | | m |
|------|---------------|-------|-------|-------|------|-------|------|------------|------|-----|
| | | | | | | | | | | |
| 7.5 | on rail | | | | | | | 2.4 | 3.2* | 4.1 |
| | on chain | | | | | | | 3.4* | 3.4* | |
| 6.0 | on rail | | | 2.2 | 5.0* | | | 1.4 | 2.7* | 5.7 |
| | on chain | | | 4.7 | 4.9* | | | 2.7* | 2.7* | |
| 4.5 | on rail | 3.8 | 7.5* | 2.2 | 5.4* | 1.3 | 4.5* | 1.1 | 2.5* | 6.5 |
| | on chain | 6.8* | 6.8* | 4.7 | 5.3* | 3.0 | 4.4* | 2.5* | 2.5* | |
| 3.0 | on rail | 3.6 | 9.3* | 2.2 | 6.2* | 1.3 | 4.7* | 0.9 | 2.6* | 7.0 |
| | on chain | 8.2 | 9.3* | 4.6 | 6.0* | 3.0 | 4.5 | 2.3 | 2.6* | |
| 1.5 | on rail | 3.6 | 9.8* | 2.1 | 6.6* | 1.2 | 4.8* | 0.9 | 2.8* | 7.0 |
| | on chain | 8.1 | 9.6* | 4.6 | 6.6* | 2.9 | 4.5 | 2.2 | 2.7* | |
| 0 | on rail | 3.2 | 10.5* | 1.9 | 6.7* | 1.1 | 4.8* | 0.9 | 3.2* | 6.8 |
| | on chain | 8.2 | 10.5* | 4.5 | 6.6* | 2.8 | 4.4 | 2.3 | 3.1* | |
| -1.5 | on rail | 3.1 | 10.8* | 1.7 | 6.7* | 1.0 | 3.6* | 1.0 | 3.4* | 6.1 |
| | on chain | 7.9 | 10.7* | 4.2 | 6.8* | 2.7 | 4.1* | 2.5 | 3.5* | |
| -3.0 | on rail | 2.9 | 8.0* | | | | | 1.7 | 4.1* | 4.3 |
| | on chain | 7.6 | 9.2* | 4.1 | 4.6* | | | 3.5* | 3.5* | |

Height Can be slewed through 360° In longitudinal position of undercarriage Max. reach * Limited by hydr. capacity

The load values are quoted in tons (t) at stick end (without bucket), and may be swung 360° on firm and even ground. Adjacent values are valid for the undercarriage when in the longitudinal position (+/- 15°). Capacities are valid for 500 mm wide track pads with adjusting cylinder in optimal position. Indicated loads are based on ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic capacity (indicated via *), or are limited by the permissible load of the load lift hook. Lifting capacity of the excavator is limited by machine stability and hydraulic capacity.

In accordance with the harmonised European Standard EN 474-5, hydraulic excavators used for lifting operations must be equipped with pipe fracture safety valves, an overload warning device, a load lift hook and a lift capacity chart.

Please note that the stability will be reduced by approx. 25% in case of a 50 mm cant and 40% in case of a 105 mm cant.

Lift Capacities

with Two-Piece Boom 4.85 m, Standard Gauge 1,435 mm

Stick 2.05 m

| m | Undercarriage | 3.0 m | | 4.5 m | | 6.0 m | | Max. reach | | m |
|------|---------------|-------|-------|-------|------|-------|------|------------|------|-----|
| | | | | | | | | | | |
| 7.5 | on rail | | | | | | | 3.2* | 3.2* | 4.0 |
| | on chain | | | | | | | 3.4* | 3.4* | |
| 6.0 | on rail | | | 3.0 | 5.0* | | | 2.0 | 2.7* | 5.6 |
| | on chain | | | 4.7 | 4.9* | | | 2.7* | 2.7* | |
| 4.5 | on rail | 5.3 | 7.4* | 3.0 | 5.4* | 1.9 | 4.5* | 1.6 | 2.5* | 6.5 |
| | on chain | 6.8* | 6.8* | 4.7 | 5.3* | 3.0 | 4.4* | 2.5* | 2.5* | |
| 3.0 | on rail | 5.1 | 9.3* | 3.0 | 6.1* | 1.8 | 4.7* | 1.4 | 2.6* | 6.9 |
| | on chain | 8.2 | 9.3* | 4.6 | 6.0* | 3.0 | 4.5 | 2.3 | 2.6* | |
| 1.5 | on rail | 5.1 | 9.8* | 2.9 | 6.6* | 1.8 | 4.8* | 1.3 | 2.7* | 7.0 |
| | on chain | 8.1 | 9.6* | 4.6 | 6.6* | 2.9 | 4.5 | 2.2 | 2.7* | |
| 0 | on rail | 4.7 | 10.5* | 2.7 | 6.7* | 1.7 | 4.8* | 1.3 | 3.1* | 6.8 |
| | on chain | 8.2 | 10.5* | 4.5 | 6.6* | 2.8 | 4.4 | 2.3 | 3.1* | |
| -1.5 | on rail | 4.5 | 10.8* | 2.5 | 6.7* | 1.6 | 3.8* | 1.5 | 3.4* | 6.1 |
| | on chain | 7.9 | 10.7* | 4.2 | 6.8* | 2.7 | 4.1* | 2.6 | 3.5* | |
| -3.0 | on rail | 4.3 | 8.3* | | | | | 2.4 | 3.9* | 4.5 |
| | on chain | 7.6 | 9.2* | 4.1 | 4.6* | | | 3.5* | 3.5* | |

Stick 2.25 m

| m | Undercarriage | 3.0 m | | 4.5 m | | 6.0 m | | Max. reach | | m |
|------|---------------|-------|-------|-------|------|-------|------|------------|------|-----|
| | | | | | | | | | | |
| 7.5 | on rail | | | | | | | | | 4.3 |
| | on chain | | | | | | | 2.8* | 2.8* | |
| 6.0 | on rail | | | 3.1 | 4.7* | | | 1.9 | 2.4* | 5.9 |
| | on chain | | | 4.6* | 4.6* | | | 2.4* | 2.4* | |
| 4.5 | on rail | 5.3 | 6.5* | 3.0 | 5.2* | 1.9 | 4.4* | 1.5 | 2.3* | 6.7 |
| | on chain | 5.7* | 5.7* | 4.7 | 5.1* | 3.0 | 4.3* | 2.3* | 2.3* | |
| 3.0 | on rail | 5.1 | 9.4* | 3.0 | 6.0* | 1.9 | 4.6* | 1.3 | 2.3* | 7.1 |
| | on chain | 8.2 | 9.2* | 4.6 | 5.9* | 3.0 | 4.5 | 2.2 | 2.3* | |
| 1.5 | on rail | 5.0 | 9.7* | 2.9 | 6.5* | 1.8 | 4.8* | 1.2 | 2.5* | 7.2 |
| | on chain | 8.1 | 9.5* | 4.6 | 6.5* | 2.9 | 4.5 | 2.1 | 2.4* | |
| 0 | on rail | 4.7 | 10.5* | 2.7 | 6.6* | 1.7 | 4.8* | 1.3 | 2.8* | 7.0 |
| | on chain | 8.2 | 10.4* | 4.5 | 6.6* | 2.8 | 4.4 | 2.2 | 2.7* | |
| -1.5 | on rail | 4.5 | 10.7* | 2.5 | 6.8* | 1.6 | 4.1* | 1.4 | 3.4* | 6.4 |
| | on chain | 7.9 | 10.6* | 4.2 | 6.8* | 2.7 | 4.3 | 2.4 | 3.3* | |
| -3.0 | on rail | 4.3 | 9.1* | 2.4 | 4.6* | | | 2.1 | 3.5* | 4.9 |
| | on chain | 7.6 | 9.8* | 4.1 | 5.2* | | | 3.2* | 3.2* | |

Stick 2.45 m

| m | Undercarriage | 3.0 m | | 4.5 m | | 6.0 m | | Max. reach | | m |
|------|---------------|-------|-------|-------|------|-------|------|------------|------|-----|
| | | | | | | | | | | |
| 7.5 | on rail | | | 2.9 | 3.0* | | | 2.5* | 2.5* | 4.6 |
| | on chain | | | | | | | 2.6* | 2.6* | |
| 6.0 | on rail | | | 3.1 | 4.3* | 1.8 | 2.5* | 1.8 | 2.2* | 6.1 |
| | on chain | | | 4.2* | 4.2* | | | 2.2* | 2.2* | |
| 4.5 | on rail | 5.3 | 5.3* | 3.0 | 5.1* | 1.9 | 4.3* | 1.4 | 2.1* | 6.9 |
| | on chain | 4.8* | 4.8* | 4.7 | 5.0* | 3.0 | 4.2* | 2.1* | 2.1* | |
| 3.0 | on rail | 5.1 | 9.2* | 3.0 | 5.9* | 1.9 | 4.5* | 1.2 | 2.1* | 7.3 |
| | on chain | 8.2 | 8.8* | 4.6 | 5.7* | 3.0 | 4.5* | 2.1* | 2.1* | |
| 1.5 | on rail | 5.0 | 9.6* | 2.9 | 6.5* | 1.8 | 4.7* | 1.2 | 2.2* | 7.4 |
| | on chain | 8.1 | 9.5* | 4.6 | 6.4* | 3.0 | 4.5 | 2.0 | 2.2* | |
| 0 | on rail | 4.7 | 10.4* | 2.7 | 6.6* | 1.7 | 4.8* | 1.2 | 2.5* | 7.2 |
| | on chain | 8.1 | 10.3* | 4.5 | 6.6* | 2.8 | 4.4 | 2.1 | 2.4* | |
| -1.5 | on rail | 4.4 | 10.6* | 2.5 | 6.7* | 1.6 | 4.4* | 1.4 | 3.1* | 6.6 |
| | on chain | 7.9 | 10.6* | 4.3 | 6.7* | 2.7 | 4.3 | 2.3 | 3.0* | |
| -3.0 | on rail | 4.2 | 9.7* | 2.3 | 5.1* | | | 1.9 | 3.3* | 5.0 |
| | on chain | 7.7 | 10.2* | 4.1 | 5.7* | | | 2.9* | 2.9* | |

Height Can be slewed through 360° In longitudinal position of undercarriage Max. reach * Limited by hydr. capacity

The load values are quoted in tons (t) at stick end (without bucket), and may be swung 360° on firm and even ground. Adjacent values are valid for the undercarriage when in the longitudinal position (+/- 15°). Capacities are valid for 500 mm wide track pads with adjusting cylinder in optimal position. Indicated loads are based on ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic capacity (indicated via *), or are limited by the permissible load of the load lift hook. Lifting capacity of the excavator is limited by machine stability and hydraulic capacity.

In accordance with the harmonised European Standard EN 474-5, hydraulic excavators used for lifting operations must be equipped with pipe fracture safety valves, an overload warning device, a load lift hook and a lift capacity chart.

Please note that the stability will be reduced by approx. 20% in case of a 100 mm cant and 40% in case of a 180 mm cant.

Lift Capacities

with Two-Piece Boom 4.85 m, Broad Gauge 1,600 mm

Stick 2.05 m

| m | Undercarriage | 3.0 m | | 4.5 m | | 6.0 m | | Max. reach | | m |
|------|---------------|---------|----------|---------|----------|---------|----------|------------|----------|-----|
| | | on rail | on chain | on rail | on chain | on rail | on chain | on rail | on chain | |
| 7.5 | on rail | | | | | | | 3.2* | 3.2* | 4.0 |
| | on chain | | | | | | | 3.4* | 3.4* | |
| 6.0 | on rail | | | 3.4 | 5.0* | | | 2.3 | 2.7* | 5.6 |
| | on chain | | | 4.8 | 4.9* | | | 2.7* | 2.7* | |
| 4.5 | on rail | 6.0 | 7.4* | 3.4 | 5.4* | 2.1 | 4.5* | 1.8 | 2.5* | 6.5 |
| | on chain | 6.8* | 6.8* | 4.7 | 5.3* | 3.0 | 4.4* | 2.5* | 2.5* | |
| 3.0 | on rail | 5.8 | 9.3* | 3.4 | 6.1* | 2.1 | 4.7* | 1.6 | 2.6* | 6.9 |
| | on chain | 8.2 | 9.3* | 4.6 | 6.0* | 3.0 | 4.5 | 2.3 | 2.6* | |
| 1.5 | on rail | 5.8 | 9.8* | 3.3 | 6.6* | 2.0 | 4.8* | 1.5 | 2.7* | 7.0 |
| | on chain | 8.1 | 9.6* | 4.6 | 6.6* | 2.9 | 4.5 | 2.2 | 2.7* | |
| 0 | on rail | 5.4 | 10.5* | 3.1 | 6.7* | 1.9 | 4.8* | 1.6 | 3.1* | 6.8 |
| | on chain | 8.2 | 10.5* | 4.5 | 6.6* | 2.8 | 4.4 | 2.3 | 3.1* | |
| -1.5 | on rail | 5.2 | 10.8* | 2.8 | 6.7* | 1.8 | 3.8* | 1.8 | 3.4* | 6.1 |
| | on chain | 7.9 | 10.7* | 4.2 | 6.8* | 2.7 | 4.1* | 2.6 | 3.5* | |
| -3.0 | on rail | 5.0 | 8.3* | | | | | 2.8 | 3.9* | 4.5 |
| | on chain | 7.7 | 9.2* | 4.1 | 4.6* | | | 3.5* | 3.5* | |

Stick 2.25 m

| m | Undercarriage | 3.0 m | | 4.5 m | | 6.0 m | | Max. reach | | m |
|------|---------------|---------|----------|---------|----------|---------|----------|------------|----------|-----|
| | | on rail | on chain | on rail | on chain | on rail | on chain | on rail | on chain | |
| 7.5 | on rail | | | | | | | | | 4.3 |
| | on chain | | | | | | | 2.8* | 2.8* | |
| 6.0 | on rail | | | 3.5 | 4.7* | | | 2.2 | 2.4* | 5.9 |
| | on chain | | | 4.6* | 4.6* | | | 2.4* | 2.4* | |
| 4.5 | on rail | 6.0 | 6.5* | 3.4 | 5.2* | 2.1 | 4.4* | 1.7 | 2.3* | 6.7 |
| | on chain | 5.7* | 5.7* | 4.7 | 5.1* | 3.0 | 4.3* | 2.3* | 2.3* | |
| 3.0 | on rail | 5.8 | 9.4* | 3.4 | 6.0* | 2.1 | 4.6* | 1.5 | 2.3* | 7.1 |
| | on chain | 8.2 | 9.2* | 4.6 | 5.9* | 3.0 | 4.5 | 2.2 | 2.3* | |
| 1.5 | on rail | 5.8 | 9.7* | 3.3 | 6.5* | 2.0 | 4.8* | 1.4 | 2.5* | 7.2 |
| | on chain | 8.1 | 9.5* | 4.6 | 6.5* | 2.9 | 4.5 | 2.1 | 2.4* | |
| 0 | on rail | 5.4 | 10.5* | 3.1 | 6.6* | 1.9 | 4.8* | 1.5 | 2.8* | 7.0 |
| | on chain | 8.2 | 10.4* | 4.5 | 6.6* | 2.8 | 4.4 | 2.2 | 2.7* | |
| -1.5 | on rail | 5.2 | 10.7* | 2.9 | 6.8* | 1.8 | 4.1* | 1.7 | 3.4* | 6.4 |
| | on chain | 7.9 | 10.6* | 4.2 | 6.8* | 2.7 | 4.3 | 2.4 | 3.3* | |
| -3.0 | on rail | 5.0 | 9.1* | 2.7 | 4.6* | | | 2.4 | 3.5* | 4.9 |
| | on chain | 7.7 | 9.8* | 4.1 | 5.2* | | | 3.2* | 3.2* | |

Stick 2.45 m

| m | Undercarriage | 3.0 m | | 4.5 m | | 6.0 m | | Max. reach | | m |
|------|---------------|---------|----------|---------|----------|---------|----------|------------|----------|-----|
| | | on rail | on chain | on rail | on chain | on rail | on chain | on rail | on chain | |
| 7.5 | on rail | | | 3.0* | 3.0* | | | 2.5* | 2.5* | 4.6 |
| | on chain | | | | | | | 2.6* | 2.6* | |
| 6.0 | on rail | | | 3.5 | 4.3* | 2.1 | 2.5* | 2.0 | 2.2* | 6.1 |
| | on chain | | | 4.2* | 4.2* | | | 2.2* | 2.2* | |
| 4.5 | on rail | 5.3* | 5.3* | 3.4 | 5.1* | 2.2 | 4.3* | 1.6 | 2.1* | 6.9 |
| | on chain | 4.8* | 4.8* | 4.7 | 5.0* | 3.0 | 4.2* | 2.1* | 2.1* | |
| 3.0 | on rail | 5.8 | 9.2* | 3.3 | 5.9* | 2.1 | 4.5* | 1.4 | 2.1* | 7.3 |
| | on chain | 8.2 | 8.8* | 4.6 | 5.7* | 3.0 | 4.5* | 2.1* | 2.1* | |
| 1.5 | on rail | 5.7 | 9.6* | 3.3 | 6.5* | 2.1 | 4.7* | 1.4 | 2.2* | 7.4 |
| | on chain | 8.1 | 9.5* | 4.6 | 6.4* | 3.0 | 4.5 | 2.0 | 2.2* | |
| 0 | on rail | 5.5 | 10.4* | 3.1 | 6.6* | 1.9 | 4.8* | 1.4 | 2.5* | 7.2 |
| | on chain | 8.1 | 10.3* | 4.5 | 6.6* | 2.8 | 4.4 | 2.1 | 2.4* | |
| -1.5 | on rail | 5.2 | 10.6* | 2.9 | 6.7* | 1.8 | 4.4* | 1.6 | 3.1* | 6.6 |
| | on chain | 7.9 | 10.6* | 4.3 | 6.7* | 2.7 | 4.3 | 2.3 | 3.0* | |
| -3.0 | on rail | 4.9 | 9.7* | 2.7 | 5.1* | | | 2.3 | 3.3* | 5.0 |
| | on chain | 7.7 | 10.2* | 4.1 | 5.7* | | | 2.9* | 2.9* | |

Height Can be slewed through 360° In longitudinal position of undercarriage Max. reach * Limited by hydr. capacity

The load values are quoted in tons (t) at stick end (without bucket), and may be swung 360° on firm and even ground. Adjacent values are valid for the undercarriage when in the longitudinal position (+/- 15°). Capacities are valid for 500 mm wide track pads with adjusting cylinder in optimal position. Indicated loads are based on ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic capacity (indicated via *), or are limited by the permissible load of the load lift hook. Lifting capacity of the excavator is limited by machine stability and hydraulic capacity.

In accordance with the harmonised European Standard EN 474-5, hydraulic excavators used for lifting operations must be equipped with pipe fracture safety valves, an overload warning device, a load lift hook and a lift capacity chart.

Please note that the stability will be reduced by approx. 20% in case of a 100 mm cant and 40% in case of a 180 mm cant.

Equipments

Buckets/Tilt Buckets

Buckets Machine stability per ISO 10567* (75% of tipping capacity)

| Cutting width mm | Capacity ISO 7451 ¹⁾ m ³ | Weight kg | on rail 1,435 mm | | | on chain | | |
|---------------------|--|--------------|------------------|------|------|------------------|------|------|
| | | | Stick length (m) | | | Stick length (m) | | |
| | | | 2.05 | 2.25 | 2.45 | 2.05 | 2.25 | 2.45 |
| 300 ²⁾ | 0.17 | 220 | ■ | ■ | ■ | ■ | ■ | ■ |
| 400 ²⁾ | 0.24 | 250 | ■ | ■ | ■ | ■ | ■ | ■ |
| 500 ²⁾ | 0.28 | 250 | ■ | ■ | ■ | ■ | ■ | ■ |
| 550 ²⁾ | 0.29 | 260 | ■ | ■ | ■ | ■ | ■ | ■ |
| 650 ²⁾ | 0.36 | 290 | ■ | ■ | ■ | ■ | ■ | ■ |
| 850 ²⁾ | 0.50 | 340 | ■ | ■ | ■ | ■ | ■ | ■ |
| 1,050 ²⁾ | 0.65 | 380 | ■ | △ | △ | ■ | ■ | ■ |
| 1,250 ²⁾ | 0.80 | 430 | △ | - | - | ■ | ■ | ■ |

* Indicated loads are based on ISO 10567 and do not exceed 75% of tipping or 87% of hydraulic capacity, max. stick length without quick coupler, lifted 360° on firm with blocked oscillating axle

¹⁾ comparable with SAE (heaped)

²⁾ Bucket with teeth

³⁾ Bucket with teeth in HD-version

⁴⁾ Bucket with cutting edge (also available in HD-version)

Max. material weight ■ = ≤ 1.8 t/m³, ■ = ≤ 1.5 t/m³, △ = ≤ 1.2 t/m³, - = not authorised

Tilt Buckets Machine stability per ISO 10567* (75% of tipping capacity)

| Cutting width mm | Capacity ISO 7451 ¹⁾ m ³ | Weight kg | on rail 1,435 mm | | | on chain | | |
|---------------------|--|--------------|------------------|------|------|------------------|------|------|
| | | | Stick length (m) | | | Stick length (m) | | |
| | | | 2.05 | 2.25 | 2.45 | 2.05 | 2.25 | 2.45 |
| 1,500 ²⁾ | 0.60 | 660 | △ | △ | - | ■ | ■ | ■ |

* Indicated loads are based on ISO 10567 and do not exceed 75% of tipping or 87% of hydraulic capacity, max. stick length without quick coupler, lifted 360° on firm with blocked oscillating axle

¹⁾ comparable with SAE (heaped)

²⁾ with 2 x 50° rotator

Max. material weight ■ = ≤ 1.8 t/m³, ■ = ≤ 1.5 t/m³, △ = ≤ 1.2 t/m³, - = not authorised

Equipment

Undercarriage

| | |
|--|---|
| Crawler track operation | |
| 500 mm rubber track pads | • |
| Three-piece chain guide | • |
| Tool equipment, extended | + |
| Rail operation | |
| Lighting system white / red | • |
| Derailment bar, selectable for each gauge | + |
| Hydrostatic drive of the track wheels (four-wheel drive) | • |
| Load holding valve on each stabilization cylinder | • |
| Trailer operation kit: | |
| – Trailer coupling device | |
| – Park brake release, hydraulic | |
| – Power socket | |
| – Tipping circuit, hydraulic | + |
| Track wheel profile ANZR-1, isolated | + |
| Track wheel profile UIC | + |
| Rail sweeper | + |
| Protection for front piston rods, stabilizer cylinder | • |
| Speeder (rail) 25 km/h* | + |
| Gauge 1,067 mm, narrow gauge | + |
| Gauge 1,435 mm, standard gauge | + |
| Gauge 1,600 mm, broad gauge | + |
| Undercarriage STD Rail, track gauge 2,000 mm | • |
| Attachment holder, front | + |
| Pull rod | • |

Uppercarriage

| | |
|--|-----------------|
| Uppercarriage rear light, 2 pieces, LED | + ¹⁾ |
| Uppercarriage right side light, 1 piece, LED | + ¹⁾ |
| Uppercarriage front light, 2 pieces, LED | + ¹⁾ |
| Refuelling system with filling pump | + |
| Main battery switch for electrical system | • |
| Engine hood with gas spring | • |
| Emergency stop, left and right | + |
| Amber beacon, at uppercarriage, LED double flash | + |
| Service doors, lockable | • |



Hydraulic System

| | |
|--|---|
| Shut-off valve between hydraulic tank and pump(s) | • |
| Pressure test fittings | • |
| Hydraulic oil filter with integrated microfilter | • |
| Liebherr hydraulic oil from –20 °C to +40 °C | • |
| Liebherr hydraulic oil, biologically degradable | + |
| Liebherr hydraulic oil, specially for warm or cold regions | + |
| Bypass filter | + |
| Emergency actuation, electric | • |
| Switchover high pressure circuit and tipping cylinder | + |
| Switchover high pressure circuit and two-piece boom | + |



Diesel Engine

| | |
|--|---|
| Deutz particle filter (Stage V) | • |
| Fuel anti-theft device | + |
| Reversible fan drive, fully automatic | + |
| Air pre-filter with dust discharge | + |
| Automatic engine shut-down (time adjustable) | + |
| Radiator fine mesh protection grid | • |
| Preheating fuel | + |



Work Space Limitation

| | |
|------------------------------|---|
| Electronic lift limitation | • |
| Load torque limitation (RCL) | + |
| Load torque warning (RCI) | • |
| Swivel limitation | • |
| Virtual wall | • |

Equipment



Operator's Cab

| | |
|--|-----------------|
| Storage compartment | • |
| Cab lights rear, LED | + ¹⁾ |
| Cab lights front, LED (above rain cover) | + ¹⁾ |
| Cab lights front, LED (under rain cover) | + ¹⁾ |
| Mechanical hour meters, readable from outside the cab | • |
| Roof window made from impact-resistant laminated safety glass | • |
| Data logger | • |
| Operator's seat Standard | • |
| Operator's seat Comfort | + |
| Operator's seat Premium | + |
| Driving alarm (acoustic signal is emitted during travel, can be switched ON/OFF) | + |
| Fire extinguisher | + |
| Front screen made from impact-resistant laminated safety glass – not adjustable | + |
| Windscreen retractable (including upper part) | • |
| Bottom windscreen wiper | + |
| Intermittent windscreen wiper with wiper washer | • |
| Footrest | + |
| Speed indication for rail operation | • |
| Rubber floor mat, removable | • |
| Dome light | • |
| Automatic air conditioning | • |
| Fuel consumption indicator | • |
| Electric cool box (12 V) | + |
| LiDAT, vehicle fleet management* | • |
| Lightbar on cabin | + |
| Emergency exit rear window | • |
| Emergency stop | • |
| Positioning swing brake | + |
| Proportional control | • |
| Radio Comfort, control via display with handsfree set | + |
| Preparation for radio installation | • |
| Rain cover over front window opening | • |
| ROPS cab protection | • |
| Amber beacon, on cabin, LED double flash | + |
| Tinted windows | • |
| Windscreen wiper, roof | + |
| Door with sliding window | • |
| FOPS top guard | + |
| FGPS front guard | + |
| FGPS front guard, tiltable | + |
| Right side window and windshield made from laminated safety glass | • |
| Signal horn | • |
| Sun visor | + |
| Sun blind | • |
| Vigilance system | + |
| Electronic immobilizer | + |
| Cigarette lighter | • |
| Second display | • |



Equipment

| | |
|---|-----------------|
| Boom lights, 2 pieces, halogen | • ¹⁾ |
| Boom lights, 2 pieces, LED | + ¹⁾ |
| Stick lights, 2 pieces, LED | + ¹⁾ |
| High pressure circuit incl. unpressurised return line and Tool Control | + |
| Load holding valve tipping cylinder (not available in combination with protection for piston rods, tipping cylinder) | + |
| Leak oil line, additional for attachments | + |
| Liebherr ditch cleaning bucket | + |
| Liebherr quick coupler, hydraulic or mechanical | + |
| Liebherr tilt bucket | + |
| Liebherr backhoe bucket | + |
| Liebherr tooth system | + |
| Liebherr clamshell grab | + |
| Medium pressure circuit incl. lines | + |
| Pipe fracture safety valves hoist cylinders | • |
| Pipe fracture safety valve stick cylinder | • |
| Hose quick coupling at end of stick | • |
| Hose protection for LIKUFIX | + |
| Quick coupling system LIKUFIX SWA 33 | + |
| Quick coupling system LIKUFIX SWA 48 | + |
| Protection for piston rod, tipping cylinder | + |
| Protection for bottom side of stick | + |
| Tool Control, 20 attachment adjustments selectable over the display | + |
| Two-piece boom 4.85 m | • |



Complete Machine

| | |
|---|---|
| Lubrication | |
| Lubrication undercarriage, manually – decentralised (grease points) | • |
| Central lubrication system for uppercarriage and equipment, automatically (without quick coupler and connecting link)* | • |
| Centralised lubrication extended for quick coupler | + |
| Centralised lubrication extended for connecting link | + |
| Special coating | |
| Custom painting for attachments | + |
| Special coating, variants | + |
| Monitoring | |
| Rear view monitoring with camera | • |
| Side view monitoring with camera | • |
| Machine guidance system | |
| Preparation | + |
| National permit | |
| Preparation for AS 7502 | + |
| Preparation for EN 15746 | + |

• = Standard, + = Option

* = country-dependent

¹⁾ Equipment not individually available, but only as predefined packages

Options and/or special equipments, supplied by vendors other than Liebherr, are only to be installed with the knowledge and approval of Liebherr in order to retain warranty.

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