

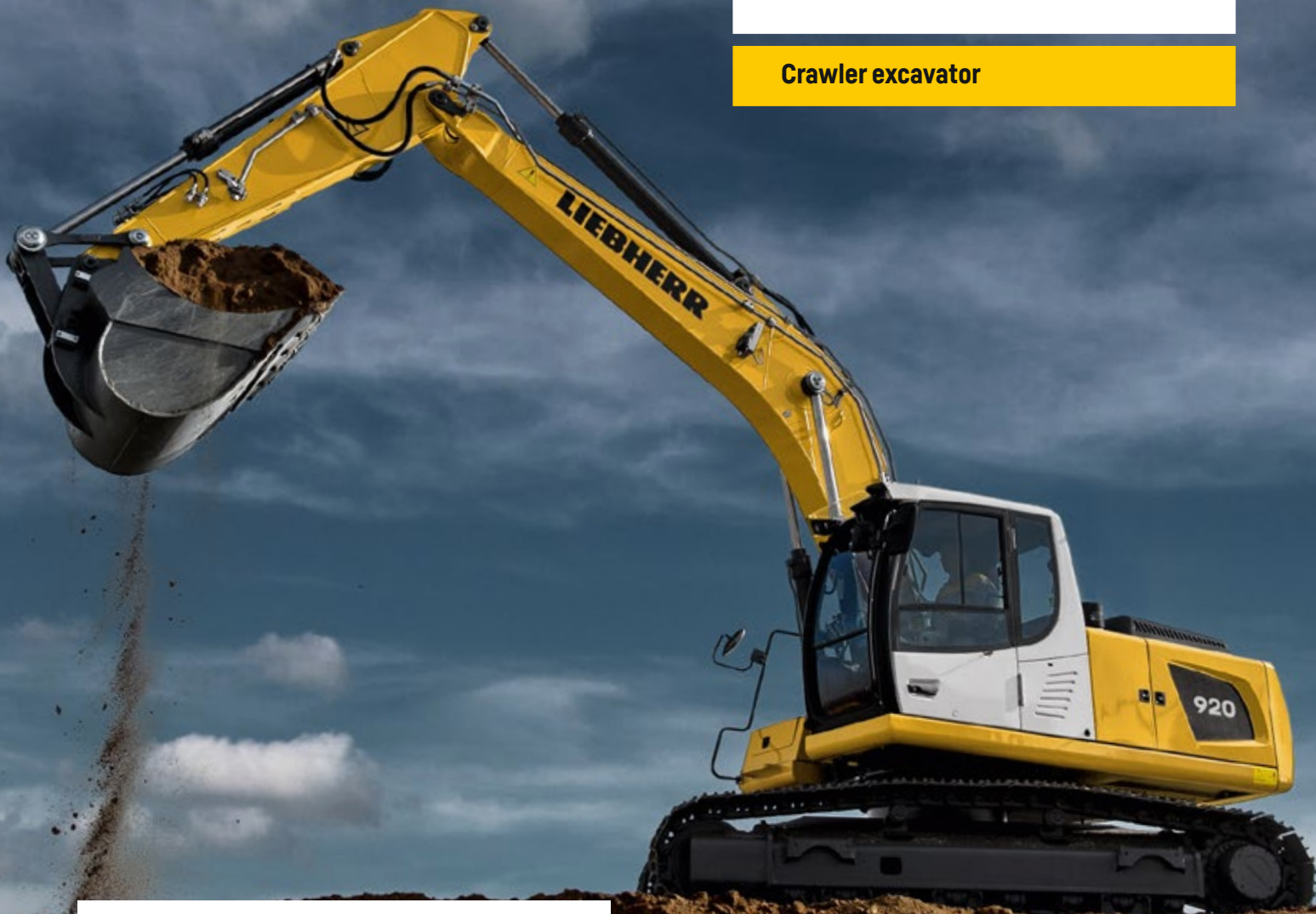
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# R 920 Litronic

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## LIEBHERR

Crawler excavator

**Generation**

5

**Operating weight**

21,400 – 21,900 kg

**Engine**

110 kW / 150 HP  
Stage IIIA / Tier 3

**Bucket capacity**

0.60 – 1.25 m<sup>3</sup>

# Long live progress with the R 920

## Safety

- Anti-slip coated access areas
- Full all-around visibility – optional rear and side surveillance cameras
- Emergency exit through the rear window in all excavator configurations
- Laminated and tinted glass right window and windscreen

## Equipment

- High digging and penetration force
- Integrated regeneration system
- Fast combined movements
- Cast steel elements
- Better resistance to stress
- Longer life of parts due to grouping of lubrication points and reduced maintenance time

## Frame

- Reliable and robust X-shaped chassis, easy to secure with integrated eyelets
- Special heat treatment for low sprocket wear
- Maintenance-free undercarriage and greased-for-life track rollers
- Easy to service





## Comfort

- Comfortable and spacious air-conditioned work area
- Easy to use 9" high resolution colour touch screen
- Large glass area
- Fully retractable front window
- New LED lighting as standard

## Engine

- Cummins EU Stage IIIA / EPA Tier 3 equivalent engine
- Low fuel consumption
- Large fuel tank for long range
- Steel engine hood and doors
- Hydrostatically driven fan on request
- Automatic idling and revving up

## Maintenance

- Maintenance concept with components accessible from the ground
- Central lubrication of equipment - Automatic as an option

# Technical data



## Engine

<b>Rating per SAE J1995 / ISO 3046</b>	110kW (150HP) at 1.800RPM
<b>Model</b>	Cummins QSB6.7
<b>Type</b>	6 cylinder in-line
<b>Bore</b>	107 mm
<b>Stroke</b>	124 mm
<b>Displacement</b>	6.7 l
<b>Engine operation</b>	4-stroke diesel Common-Rail, turbo
<b>Exhaust gas treatment</b>	Emission standard equivalent to EU Stage IIIA / EPA Tier 3
<b>Cooling system</b>	Water-cooled and integrated motor oil cooler, after-cooled and water-cooled
<b>Air cleaner</b>	Dry-type air cleaner with pre-cleaner, primary and safety elements
<b>Fuel tank</b>	580 l
<b>Fuel cleaner</b>	Pre-filter (7 µm) and fine filter (5 µm) for the fuel supply system
<b>Electrical system</b>	
Voltage	24 V
Batteries	2 x 135 Ah / 12 V
Starter	24 V / 7.8 kW
Alternator	Three-phase current 24 V / 70 A
Engine idling	Sensor controlled
<b>Motor management</b>	Connection to the integrated excavator system controlling via CAN-BUS to the economical utilisation of the service that is available



## Hydraulic controls

The controlling is conducted via the integrated excavator system technology, input and output modules, communicated via the CAN-BUS with the electronic central unit

<b>Power distribution</b>	Via control valves with integrated safety valves
<b>Flow summation</b>	To boom and stick
<b>Servo circuit</b>	
Equipment and swing Travel	Proportional via joystick levers - With proportionally functioning foot pedals and lever - Speed pre-selection or automatic adjustment
<b>Additional functions</b>	Proportional regulation via foot pedals or mini-joystick



## Hydraulic system

<b>Hydraulic system</b>	Positive Control hydraulic system. Demand-based, double independent pump flows Features high system dynamics and sensitivity provided by integrated system controlling
<b>Regeneration</b>	Integrated into the main hydraulic block
<b>Hydraulic pump</b>	Variable double pump, in-line and swashplate
Max. flow	2 x 216 l/min.
Max. pressure	350 bar
<b>Pump management</b>	Electronic pump management via the integrated system controlling (CAN-BUS) synchronous to the control block
<b>Hydraulic tank</b>	100 l
<b>Hydraulic system</b>	max. 300 l
<b>Filtration</b>	1 full flow filter (10 µm) in return line
<b>Cooling system</b>	Compact radiator, comprising cooling unit for water, hydraulic oil, after-cooler and hydrostatically driven fan
<b>MODE selection</b>	Adjustment of engine and hydraulic performance via a 3-mode selector to match application, e.g. ECO mode for economical and environmentally friendly operation or POWER+ mode for maximum digging performance and heavy-duty jobs
<b>RPM adjustment</b>	Stepless adjustment of engine output via RPM at each selected mode
<b>Tool Control</b>	20 pre-adjustable pump flows and pressures for add-on attachments



## Swing drive

<b>Drive</b>	Swashplate motor, shockless and antireaction
<b>Transmission</b>	Compact planetary reduction gear
<b>Swing ring</b>	Sealed race ball bearing swing ring, internal teeth
<b>Swing speed</b>	0-11.3 RPM stepless
<b>Swing torque</b>	73.3 kNm
<b>Holding brake</b>	Wet multi-disc (spring applied, pressure released)


**Cab**

<b>Cab</b>	ROPS (option) safety cab structure with windscreen, totally or partially retractable (only upper part), under cab roof, work headlights integrated in the roof, a door with a sliding window (can be opened on both sides), large storing possibilities, shock-absorbing suspension, sound damping insulating, tinted laminated safety glass, separate window shades for the sunroof window and windscreen, 24 V plug, 12 V optional, bottle holder
<b>Operator's seat</b>	Liebherr-Standard seat, mechanically suspended with weight adjustment, vertical seat damping including consoles and joysticks. Seat and armrests adjustable separately and in combination (adjustable in length, height, and inclination)
<b>Option</b>	Liebherr-Comfort seat, airsprung with automatic weight adjustment, vertical and longitudinal seat damping including consoles and joysticks, with seat heating
<b>Control system</b>	Arm consoles, moving with the seat
<b>Operation and displays</b>	Large high-resolution colour display with intuitive operation via touchscreen, versatile adjusting, control and monitoring facilities, e.g. implement and attachment parameters
<b>Air-conditioning</b>	Standard automatic air-conditioning, ambient air function, fast de-icing and demisting at the press of a button, air vents can be operated using special buttons. Filter for recycling and fresh air filter can be replaced and are accessible from the inside. Heating-cooling unit, designed for extreme outside temperatures
<b>Noise emission</b>	
ISO 6396	80 dB(A) = L <sub>PA</sub> (inside cab)
2000/14/EC	104 dB(A) = L <sub>WA</sub> (surround noise)

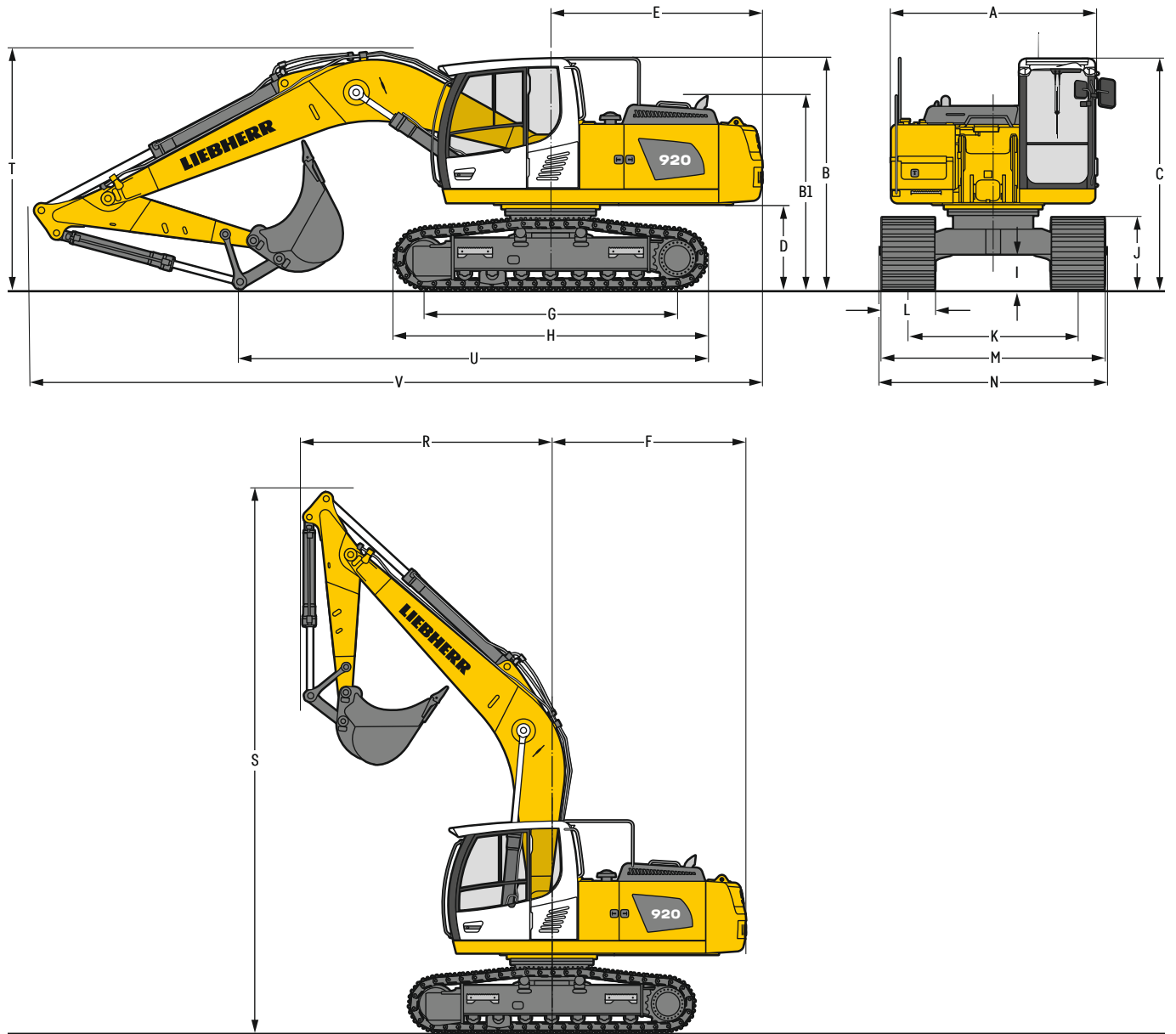

**Undercarriage**

<b>S</b>	Gauge 2,250 mm
<b>Drive</b>	Liebherr swashplate motor with brake valves on both sides
<b>Transmission</b>	Liebherr compact planetary reduction gear
<b>Maximum travel speed</b>	3 km/h low range 5 km/h high range
<b>Net drawbar pull on crawler</b>	228 kN
<b>Track components</b>	B60, maintenance-free
<b>Track rollers / Carrier rollers</b>	7 / 2
<b>Tracks</b>	Sealed and greased
<b>Track pads</b>	Triple grouser
<b>Holding brake</b>	Wet multi-disc (spring applied, pressure released)
<b>Brake valves</b>	Integrated into travel motor
<b>Lashing eyes</b>	Integrated


**Equipment**

<b>Type</b>	Combination of resistant steel plates and cast steel components
<b>Hydraulic cylinders</b>	Cylinders with special seal-system and shock protection
<b>Bearings</b>	Sealed, low maintenance
<b>Lubrication</b>	Manual central lubrication system or optional automatic central lubrication system (except link and tilt geometry)
<b>Hydraulic connections</b>	Pipes and hoses equipped with SAE split-flange connections

# Dimensions



		<b>S</b>	<b>mm</b>		
<b>A</b>	Upper-carriage width		2,700		
<b>B</b>	Upper-carriage height		3,080		
<b>B1</b>	Upper-carriage height (handrails folded)		2,560		
<b>C</b>	Cab height		3,060		
<b>D</b>	Counterweight ground clearance		1,125		
<b>E</b>	Rear-end length		2,800		
<b>F</b>	Tail swing radius		2,820		
<b>G</b>	Wheelbase		3,355		
<b>H</b>	Undercarriage length		4,155		
<b>I</b>	Undercarriage ground clearance		465		
<b>J</b>	Track height		960		
<b>K</b>	Track gauge		2,250		
<b>L</b>	Track pad width		600	700	800
<b>M</b>	Width over tracks		2,850	2,950	3,050
<b>N</b>	Width over steps		2,790	2,990 <sup>1)</sup>	2,990 <sup>1)</sup>

<sup>1)</sup> width with removable steps

		<b>Stick length m</b>	<b>Mono boom 5.70 m direct mounting mm</b>
<b>R</b>	Front swing radius		3,650
<b>S</b>	Height with boom up		7,950
<b>T</b>	Boom height	2.00	3,200
		2.50	3,250
		2.90	3,250
<b>U</b>	Length on ground	2.00	6,200
		2.50	5,700
		2.90	5,100
<b>V</b>	Overall length		9,750
		Bucket	0.80 m <sup>3</sup>

## Transport dimensions

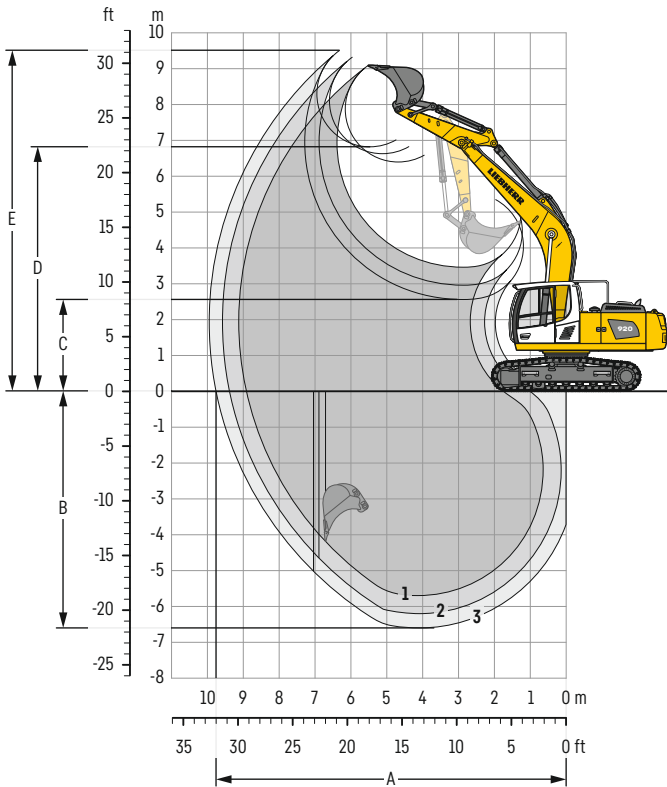
### removable elements disassembled

		<b>Mono boom 5.70 m</b>		
		<b>mm</b>		
Pad width		600	700	800
Transport width		2,850	2,990	3,050

		<b>Stick m</b>	<b>mm</b>
Transport length			9,750
Transport height	2.00		3,200
	2.50		3,250
	2.90		3,250
Bucket			0.80 m <sup>3</sup>

# Backhoe bucket

with mono boom 5.70 m



## Digging envelope

without quick coupler	1	2	3	
Stick length	m	2.00	2.50	2.90
A Max. reach at ground level	m	8.92	9.38	9.76
B Max. digging depth	m	5.70	6.20	6.60
C Min. dumping height	m	3.46	2.96	2.56
D Max. dumping height	m	6.39	6.63	6.81
E Max. cutting height	m	9.08	9.31	9.50

## Forces

without quick coupler	1	2	3	
Stick digging force (ISO 6015)	kN	146	126	113
Bucket digging force (ISO 6015)	kN	159	159	159
Stick digging force (SAE J1179)	kN	138	120	109
Bucket digging force (SAE J1179)	kN	139	139	139

## Operating weight and ground pressure

The operating weight includes the basic machine with counterweight 3.0t, mono boom 5.70 m, stick 2.90 m and bucket 0.80 m<sup>3</sup> (620 kg).

Undercarriage	S			
Pad width	mm	600	700	800
Weight	kg	21,400	21,650	21,900
Ground pressure	kg/cm <sup>2</sup>	0.49	0.43	0.38

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

Cutting width	Capacity ISO 7451	Weight <sup>3)</sup>	Weight <sup>4)</sup>	S undercarriage (with track pads 600 mm)					
				without quick coupler			with quick coupler		
mm	m <sup>3</sup>	kg	kg	2.00	2.50	2.90	2.00	2.50	2.90
850	0.60	540	550	▲	▲	▲	▲	▲	▲
1,050	0.80	620	630	▲	▲	▲	▲	▲	▲
1,050	0.95	660	670	▲	▲	▲	▲	▲	■
1,250	1.15	740	750	▲	■	▲	■	▲	■
1,250	1.25	850	870	■	■	△	▲	△	△
850	0.60	600	610	▲	▲	▲	▲	▲	▲
1,050	0.80	690	700	▲	▲	▲	▲	▲	▲
1,050	0.95	750	760	▲	▲	■	▲	▲	■
1,250	1.15	840	850	▲	▲	■	■	■	△
1,250	1.25	970	1,000	▲	■	△	▲	△	△

\* Indicated loads are based on ISO 10567, at maximum reach, and may be swung 360° on firm and even ground

<sup>1)</sup> Standard bucket with teeth Z 35

<sup>2)</sup> HD bucket with teeth Z 35

<sup>3)</sup> Bucket for direct mounting

<sup>4)</sup> Bucket for mounting to quick coupler

Other buckets available upon request

Max. material weight ▲ = ≤ 2.0t/m<sup>3</sup>, ■ = ≤ 1.8t/m<sup>3</sup>, ▲ = ≤ 1.65t/m<sup>3</sup>, ■ = ≤ 1.5t/m<sup>3</sup>, △ = ≤ 1.2t/m<sup>3</sup>



# Lift capacities

with mono boom 5.70 m, counterweight 3.0 t and track pads 600 mm

## Stick 2.00 m

Under-carriage m	3.0 m		4.5 m		6.0 m		7.5 m		m		
7.5									5.5	6.5*	5.1
6.0									3.8	5.5	6.4
4.5			6.3	8.1*	4.3	6.2			3.1	4.5	7.2
3.0			5.8	9.0	3.9	5.8	2.8	4.1	2.8	4.1	7.6
1.5			5.4	8.5	3.7	5.6	2.7	4.0	2.7	3.9	7.6
0			5.3	8.4	3.6	5.4			2.7	4.1	7.4
-1.5	10.3	10.5*	5.3	8.4	3.6	5.4			3.1	4.6	6.8
-3.0	10.5	12.8*	5.5	8.6					3.9	5.9	5.8
-4.5											

## Stick 2.50 m

Under-carriage m	3.0 m		4.5 m		6.0 m		7.5 m		m		
7.5									4.6	5.8*	5.8
6.0									3.3	4.8	7.0
4.5			6.5	7.3*	4.2	6.1	2.9	4.2	2.8	4.1	7.7
3.0			5.9	9.1	3.9	5.8	2.8	4.1	2.5	3.7	8.0
1.5			5.4	8.6	3.7	5.5	2.7	4.0	2.4	3.6	8.1
0			5.2	8.3	3.5	5.4	2.6	3.9	2.5	3.7	7.9
-1.5	9.9*	9.9*	5.2	8.3	3.5	5.3			2.7	4.1	7.3
-3.0	10.2	14.0*	5.3	8.4	3.6	5.4			3.3	5.0	6.4
-4.5			5.6	7.5*					5.1	6.8*	4.8

## Stick 2.90 m

Under-carriage m	3.0 m		4.5 m		6.0 m		7.5 m		m		
7.5					4.4	5.2*	4.0	5.2*	6.3		
6.0					4.4	5.2*	3.0	4.4	7.4		
4.5			6.6	6.7*	4.2	5.8*	2.9	4.2	2.6	3.7	8.1
3.0			6.0	8.6*	3.9	5.8	2.8	4.1	2.3	3.4	8.4
1.5			5.5	8.6	3.7	5.5	2.7	4.0	2.2	3.3	8.5
0	4.7*	4.7*	5.2	8.3	3.5	5.3	2.6	3.9	2.3	3.4	8.2
-1.5	9.4*	9.4*	5.1	8.2	3.4	5.3	2.6	3.9	2.5	3.7	7.7
-3.0	10.0	14.9*	5.2	8.3	3.5	5.3			2.9	4.4	6.9
-4.5	10.4	11.7*	5.4	8.4*					4.2	6.4	5.4

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. Capacities are valid for 600 mm wide track pads. Indicated loads are based on ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic capacity (indicated via \*). Without bucket cylinder, link and lever the lift capacities will increase by 300 kg. Lifting capacity of the excavator is limited by machine stability and hydraulic capacity.

According to European Standard, EN 474-5: In the European Union excavators have to be equipped with an overload warning device, a load diagram and automatic safety check valves on hoist cylinders and stick cylinder(s), when they are used for lifting operations which require the use of lifting accessories.

Determine maximum load lift from load lift chart displayed in the operator's cab or from load lift chart detailed in the operator's manual supplied with the machine.

# Serial equipment

## Undercarriage

Lashing eyes  
Sprocket with dirt ejector  
Track and carrier rollers, sealed and lifetime-lubricated  
Tracks, sealed and greased

## Uppercarriage

Anti-skid surfaces  
Automatic swing brake lock  
Engine hood with gas spring opening  
Filters accessible from ground level  
Handrails  
Hydraulic oil level, visible from ground level  
Lockable service doors  
Lockable storage and accessories compartment  
Main switch, manual, lockable  
Protection grid on radiator fan  
Sound insulation  
Tool set including storage case

## Hydraulic system

Hydraulic pressure measuring ports  
Liebherr Positive Control system with 2 independent circuits  
Magnetic rod  
Pressure accumulator for controlled lowering of equipment with engine turned off

## Engine

Air filter with automatic dust ejector  
Automatic engine idling / speed increase, controlled via joystick movement  
Common-Rail injection system  
Engine oil dipstick  
Fixed geometry turbocharger  
Fuel fine filter  
Fuel pre-filter and water separator  
Fuel priming pump  
Intercooler  
Power Pack equivalent to EU Stage IIIA / EPA Tier 3  
Stepless adjustable engine speed

## Cab

2" seat belt with retractor  
9" multifunction colour touchscreen  
Air conditioning, automatic, tri-zone  
Armrests adjustable in length, height and inclination  
Bottle holder  
Cab air filters housing, accessible from ground level  
Cab door sliding windows  
Cigarette lighter  
Coat hook  
Electric socket in cabin (24 V)  
Emergency hammer  
Footrest  
Fuel consumption on touchscreen  
Fuel level on touchscreen  
Interior lighting  
Laminated right hand side window  
Laminated roof window  
LiDAT Plus (Liebherr data transfer system)\*  
Mechanical hour meter, visible from ground level  
Mobile phone storage net  
Movement priority between swing and boom, adjustable via touchscreen  
Radio Comfort  
Rain hood over front window opening  
Rearview mirror  
Rear window emergency exit  
Retractable laminated two-piece windscreen  
Roll-down sun blinds for windscreen and roof window  
Rubber floor mat, fixed on floor and removable  
Shortcut button on joystick configurable  
Storage nets  
Storage spaces  
Tinted windows  
Visco-elastic damping  
Windscreen wiper and washer  
Work mode selector

## Equipment

Anti-drift system boom cylinders  
Anti-drift system stick cylinder  
Boom cylinders regeneration  
Pivot points made of cast steel  
SAE split flanges on high pressure lines  
Stick cylinder regeneration

\* optionally extendable after one year

# Equipment standard / option

## Undercarriage

Chain guide 1 piece	●
Chain guide 2 pieces	+
Chain guide 3 pieces	+
Cover and base plate for undercarriage centre section	●
Reinforced cover and base plate for undercarriage centre section	+
Steps	●
Steps wide	+
Track pads triple grouser 600 mm	●
Track pads triple grouser 700 / 800 mm	+
Undercarriage S	●

## Uppercarriage

Air pre-filter with cyclonical dust trap	+
Centralised lubrication system (automatic)	+
Centralised lubrication system (manual)	●
Counterweight standard 3.0t	●
Front right rearview mirror	●
Fuel anti-theft protection	+
Headlight on uppercarriage, lateral right, LED+, 1 piece	+ <sup>1)</sup>
Headlight on uppercarriage, lateral left, LED+, 1 piece	+ <sup>1)</sup>
Headlights on uppercarriage, rear, LED+, 2 pieces	+ <sup>1)</sup>
Lockable fuel tank cap	●
Lockable fuel tank cap with padlock	+
Pre-heating system for fuel	+
Rearview mirror on counterweight	●
Tank refilling pump fuel	+
Uppercarriage bottom closure sheets	●

## Hydraulic system

Filter for hydraulic hammer return flow	+
High pressure circuit with Tool Control (20 attachment adjustments on display)	+
Liebherr hydraulic oil	●
Liebherr hydraulic oil, adapted for extreme climate conditions	+
Medium pressure circuit	+
Preparation for medium pressure circuit	+

## Cab

Acoustic travel alarm deactivatable	+
FGPS front guard	+
FGPS front guard tiltable	+
FOPS top guard	+
Handrests elevated for joysticks	+
Headlights on cab, front, LED, 2 pieces	● <sup>1)</sup>
Headlights on cab, front, LED+, 2 pieces	+ <sup>1)</sup>
Luminosity control (LED+ headlights)	+ <sup>1)</sup>
Mini-joystick proportional	+
Operator seat Comfort	+
Operator seat Standard	●
Overload warning system	+
Rear view monitoring camera	+
Right hand side view monitoring camera	+
ROPS safety cab structure (ISO 12117-2)	+
Rotating beacon on cabin, LED, 1 piece	+
Sun visor	+

## Equipment

Boom bottom protection	+
Headlight on boom, right, LED, 1 piece	● <sup>1)</sup>
Headlight on boom, right, LED+, 1 piece	+ <sup>1)</sup>
Mono boom 5.70 m	●
Pipe fracture safety valve for stick cylinder	+
Pipe fracture safety valves for boom cylinders	+
Quick coupler SWA 48 hydraulic	+
Quick coupler SWA 48 mechanical	+
Stick 2.00 m	+
Stick 2.50 m	+
Stick 2.90 m	+
Stick bottom protection	+

● = Standard, + = Option

<sup>1)</sup> Equipment not individually available, but only as predefined packages

Non-exhaustive list, please contact us for further information.

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

# The Liebherr Group



## Global and independent: more than 70 years of success

Liebherr was founded in 1949 when, with the development of the world's first mobile tower crane, Hans Liebherr laid the foundations for a family business now employing nearly 51,000 people and comprising over 140 companies across every continent.

The parent company is Liebherr-International AG in Bulle, Switzerland, whose associates are exclusively members of the Liebherr family.

## Leaders and pioneers

Liebherr is a pioneer and its forward-looking approach has seen it make important contributions to technology history over a wide variety of industries. Employees throughout the world continue to share the courage of the founder, sharing a passion to produce innovative products and a determination to provide world-leading equipment and machinery.

## Diversified portfolio

The company is one of the world's biggest construction equipment manufacturers and provides high-quality, user-oriented products and services to sectors including: earthmoving, material handling, deep foundations, mining, mobile and crawler cranes, tower cranes, concrete production and distribution, maritime cranes, aerospace and transportation, gear technology and automation, refrigeration and freezing, components and hotels.

## Customised care

Liebherr solutions are characterised by precision, implementation and longevity. The company is committed to technological excellence and to providing customers with solutions that match their needs exactly. That customer focus does not end with delivery of a product but continues through a comprehensive range of back-up and support services.

[www.liebherr.com](http://www.liebherr.com)

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