

Wheeled Excavator

A 924 Rail

Litronic®

Friction Drive

Operating Weight:
21,800 – 24,700 kg

Engine:
110 kW / 150 HP



LIEBHERR

Technical Data



Diesel Engine

Rating per ISO 9249	110 kW (150 HP) at 1,800 RPM
Model	Liebherr D834
Type	4 cylinder in-line
Bore/Stroke	108/125 mm
Displacement	4.6 l
Engine operation	4-stroke diesel Common-Rail turbo-charged and after-cooler 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 / 110 A
Stage IIIB	
Harmful emissions values	in accordance with 97/68/EG stage IIIB
Emission control	pre-installation particle filter with sound attenuation module
Option	Liebherr particle filter
Fuel tank	330 l



Cooling System

Diesel engine	water-cooled compact cooling system comprising cooling unit for water, hydraulic oil and charge air with stepless thermostatically controlled fan
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Hydraulic Controls

Power distribution	via control valves with integrated safety valves, simultaneous and independent actuation of chassis, swing drive and attachment
Servo circuit	
Attachment and swing	electroproportional via joystick levers
Chassis	electroproportional via foot pedal
Additional functions	via switch or electroproportional foot pedals
Proportional control	proportionally acting transmitters on the joysticks for additional hydraulic functions



Hydraulic System

Hydraulic pump	
for attachment and travel drive	Liebherr axial piston variable displacement double pump
Max. flow	2 x 215 l/min.
Max. pressure	350 bar / PowerLift 375 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	130 l
Hydraulic system	max. 300 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
P+ (Power-Plus)	mode for highest performance and for very heavy duty applications
Engine speed and performance setting	stepless alignment of engine output and hydraulic power via engine speed Tool Control: ten preadjustable pump flows and pressures for add on tools



Swing Drive

Drive	Liebherr axial piston motor with torque control and integrated brake valve, Liebherr planetary reduction gear
Swing ring	Liebherr, sealed race ball bearing swing ring, internal teeth
Swing speed	0 – 9.0 RPM stepless
Swing torque	50 kNm
Holding brake	wet multi-disc (spring applied, pressure released) pedal controlled positioning swing brake



Operator's Cab

Double cabin	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, operator's door with a sliding window (can be opened on both sides), large stowing and depositing possibilities, shock-absorbing suspension, sounddamping insulating, tinted laminated safety glass, separate window shades for the sunroof window and windscreen
Operator's seat Standard	air cushioned operator's seat with 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 readjustment), pneumatic low frequency suspension and active seat climatisation with active coal and ventilator
Control system	joysticks with arm consoles and swivel seat
Operation and displays	large high-resolution operating unit, selfexplanatory, colour display with touchscreen, video-compatible, numerous setting, control and monitoring options, e.g. air conditioning control, fuel consumption, machine and tool parameters, separate display for rear view and side view monitoring
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



Undercarriage

Drive	two speed power shift transmission with additional creeper speed, Liebherr axial piston motor with functional brake valve on both sides
Pulling force	117 kN
Travel speed	0 – 3.5 km/h stepless (creeper speed off-road) 0 – 7.0 km/h stepless (off-road) 0 – 13.0 km/h stepless (creeper speed on-road) 0 – 20.0 km/h stepless (road travel) 0 – max. 25.0 or 30.0 km/h Speeder (Option)
Driving operation	automotive driving using accelerator pedal, cruise control function: storage of variable accelerator pedal positions, both off-road, on-road and on-rail (country-dependent)
Axles	automatic or operator controlled front axle oscillation lock (country-dependent)
Service brake	two circuit travel brake system with accumulator; road axle wet and backlash-free disc brake; rail wheels with disc brake (spring applied, pressure released)
Holding brake	wet multi-disc (spring applied, pressure released)
Wagon braking system	1 circuit compressed air brake for railway wagon
Option	2 circuit compressed air brake for trailer
Stabilization	2 circuit hydraulic brake for trailer
	without outriggers



Attachment

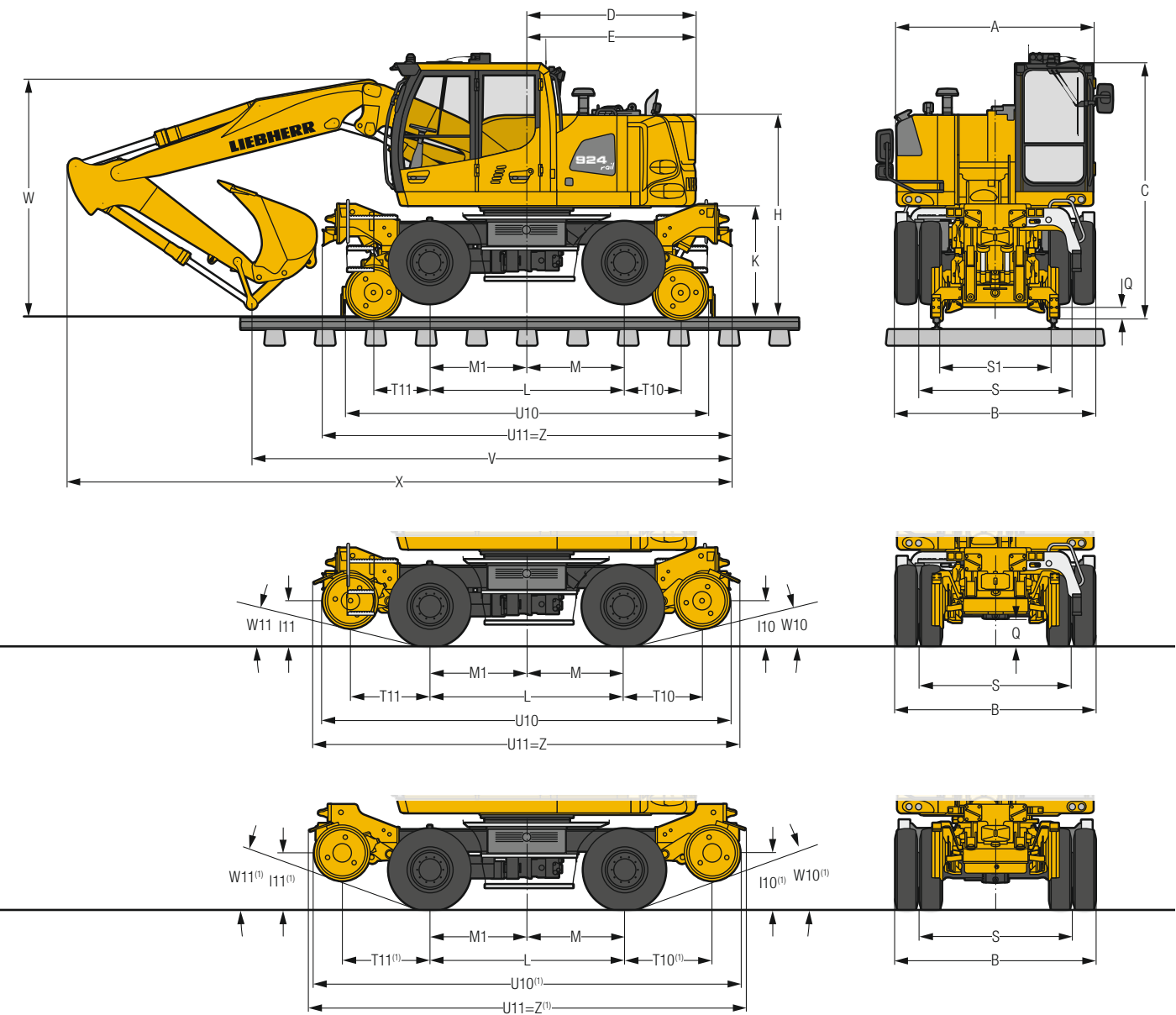
Type	high-strength steel plates at highllystressed points for the toughest requirements. Complex and stable mountings of attachment and cylinders
Hydraulic cylinders	Liebherr cylinders with special seal system as well as shock absorption
Bearings	sealed, low maintenance



Complete Machine

Lubrication	
Option	Liebherr central lubrication system for uppercarriage and attachment, automatically
Noise emission	
ISO 6396	L _{PA} (inside cab) = 72 dB(A)
2000/14/EC	L _{WA} (surround noise) = 100 dB(A)

Dimensions



	on tyres	mm	on rail	mm
A		2,525		2,525
B		2,565		2,565
C		3,065		3,255
D		2,000/2,050/2,160*		2,000/2,050/2,160*
E		2,000/2,050/2,160*		2,000/2,050/2,160*
H		2,395		2,585
K		1,235		1,425
L		2,500		2,500
M		1,250		1,250
M1		1,250		1,250
I10		575		—
I10¹⁾		725		—
I11		575		—
I11¹⁾		725		—
Q		345		145
S		1,976		1,976
S1		—		1,435
T10		1,020		730
T10¹⁾		1,125		—
T11		1,020		730
T11¹⁾		1,125		—
U10		5,260		4,675
U10¹⁾		5,470		—
U11		5,495		5,475
U11¹⁾		5,600		—
W10		14°		—
W10¹⁾		20°		—
W11		14°		—
W11¹⁾		20°		—
Z		5,495		5,475
Z¹⁾		5,600		—

* Execution required for acceptance Network Rail

¹⁾ UC-Slope inclination 20°

E = Tail radius

Tyres 10.00-20

	Stick m	Two-piece boom 5.10 m / Slope inclination 14° mm
V	1.85	6,800
	2.05	6,550
	2.25	6,350
	2.65	6,200*
W	1.85	3,000
	2.05	3,000
	2.25	3,050
	2.65	3,200*
X	1.85	8,900
	2.05	8,750
	2.25	8,750
	2.65	8,750*

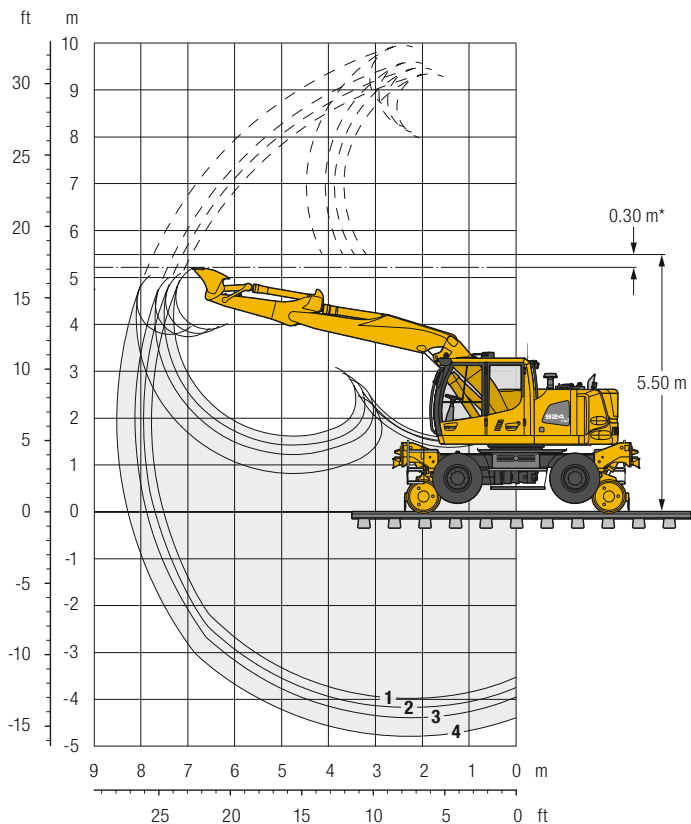
	Stick m	Two-piece boom 5.10 m / Slope inclination 20° mm
V	1.85	6,850
	2.05	6,600
	2.25	6,400
	2.65	6,250*
W	1.85	3,000
	2.05	3,000
	2.25	3,050
	2.65	3,200*
X	1.85	8,950
	2.05	8,800
	2.25	8,800
	2.65	8,800*

Dimensions are with attachment over steering axle

* without backhoe bucket

Ditch Cleaning Bucket

with Two-Piece Boom 5.10 m



* Safety distance to overhead wires

Digging Envelope

		1	2	3	4
Stick length	m	1.85	2.05	2.25	2.65
Max. digging depth	m	4.00	4.20	4.40	4.80
Max. reach at ground level	m	7.50	7.70	7.90	8.30
Max. dumping height	m	8.00	8.10	8.20	8.55
Max. dumping height under overhead wires	m	3.90	3.80	3.75	3.80
Max. teeth height	m	9.35	9.45	9.60	9.95

Digging Forces

		1	2	3	4
Max. digging force	kN	102.5	94.8	88.2	77.7
	t	10.4	9.7	9.0	7.9
Max. breakout force	kN	101.3	101.3	101.8	101.8
	t	10.3	10.3	10.4	10.4

Max. breakout force with ripper bucket

134.7 kN (13.7 t)

Operating Weight

The operating weight includes the basic machine with 8 tyres plus intermediate rings, two-piece boom 5.10 m, stick 1.85 m and ditch cleaning bucket 2,000 mm/0.65 m³.

Tail radius	Weight (kg)
A 924 Rail Litronic Friction Drive with 2,000 mm	22,300
A 924 Rail Litronic Friction Drive with 2,050 mm	22,900
A 924 Rail Litronic Friction Drive with 2,160 mm	24,700

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

Cutting width	Capacity ISO 7451 ¹⁾	Weight	Tail radius 2,000 mm								Tail radius 2,050 mm								Tail radius 2,160 mm							
			on rail				on tyres				on rail				on tyres				on rail				on tyres			
			Stick length (m)				Stick length (m)				Stick length (m)				Stick length (m)				Stick length (m)				Stick length (m)			
mm	m³	kg	1.85	2.05	2.25	2.65	1.85	2.05	2.25	2.65	1.85	2.05	2.25	2.65	1.85	2.05	2.25	2.65	1.85	2.05	2.25	2.65	1.85	2.05	2.25	2.65
1,600	0.80	445	■	■	■	△	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2,000	0.65	388	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1,600 ²⁾	0.80	766	■	△	△	—	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2,000 ²⁾	0.70	811	■	■	■	△	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

* 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

Lift Capacities

with Two-Piece Boom 5.10 m with Tail Radius 2,000 mm

Stick 1.85 m

Height m	Under-carriage	3.0 m	4.5 m	6.0 m	7.5 m	Max. reach m
9.0	on rail on tyres					
7.5	on rail on tyres	7.4 7.9*	7.9* 7.9*			4.6 5.2* 5.2*
6.0	on rail on tyres	6.7* 6.7*	6.7* 6.7*	4.1 5.4	6.9* 6.9*	2.7 3.7 3.9*
4.5	on rail on tyres	7.1 9.6	10.3* 10.3*	4.1 5.4	7.4* 7.0	2.5 3.4 4.5
3.0	on rail on tyres	6.9 9.3	10.2* 10.2*	4.1 5.4	8.4* 6.9	2.5 3.4 4.5
1.5	on rail on tyres	6.9 9.3	12.3* 12.3*	3.9 5.3	8.9* 6.9	2.4 3.3 4.4
0	on rail on tyres	6.4 9.0	14.0* 12.7	3.7 5.1	9.0* 6.8	2.3 3.2 4.3
-1.5	on rail on tyres	6.2 8.8	14.4* 12.7	3.5 4.8	9.2* 6.5	2.2 3.1 4.2
-3.0	on rail on tyres	6.0 8.7	11.9* 11.9*	3.4 4.7	5.7* 5.7*	

Stick 2.05 m

Height m	Under-carriage	3.0 m	4.5 m	6.0 m	7.5 m	Max. reach m
9.0	on rail on tyres					
7.5	on rail on tyres					4.2 4.2* 4.2*
6.0	on rail on tyres		4.1 5.5	6.6* 6.6*		2.6 3.4* 3.4*
4.5	on rail on tyres	7.2 9.1*	9.1* 9.1*	4.1 5.4	7.3* 7.0	2.6 3.4 4.5
3.0	on rail on tyres	6.9 9.4	10.6* 10.6*	4.1 5.4	8.3* 6.9	2.5 3.4 4.5
1.5	on rail on tyres	6.9 9.3	12.3* 12.3*	4.0 5.3	8.9* 6.9	2.5 3.4 4.4
0	on rail on tyres	6.4 9.1	13.9* 12.7	3.7 5.1	9.0* 6.8	2.3 3.2 4.3
-1.5	on rail on tyres	6.2 8.8	14.3* 12.7	3.5 4.8	9.2* 6.6	2.2 3.1 4.2
-3.0	on rail on tyres	6.0 8.7	12.8* 12.5	3.4 4.7	6.6* 6.4	

Stick 2.25 m

Height m	Under-carriage	3.0 m	4.5 m	6.0 m	7.5 m	Max. reach m
9.0	on rail on tyres					
7.5	on rail on tyres		4.0 4.2*	4.2* 4.2*		3.6* 3.6* 3.6*
6.0	on rail on tyres		4.2 5.5	6.0* 6.0*	2.5 3.4	3.4* 3.4*
4.5	on rail on tyres	7.2 7.5*	7.5* 7.5*	4.1 5.4	7.0 7.0	2.6 3.5 4.6
3.0	on rail on tyres	6.9 9.4	10.9* 10.9*	4.0 5.3	8.1* 6.9	2.6 3.5 4.5
1.5	on rail on tyres	6.8 9.2	12.2* 12.2*	4.0 5.3	8.8* 6.8	2.5 3.4 4.5
0	on rail on tyres	6.4 9.1	13.8* 12.6	3.7 5.1	8.9* 6.9	2.3 3.2 4.3
-1.5	on rail on tyres	6.2 8.8	14.2* 12.7	3.5 4.9	9.2* 6.6	2.2 3.1 4.2
-3.0	on rail on tyres	6.0 8.6	13.5* 12.5	3.3 4.7	7.4* 6.4	

Stick 2.65 m

Height m	Under-carriage	3.0 m	4.5 m	6.0 m	7.5 m	Max. reach m
9.0	on rail on tyres					4.7* 4.7* 4.7*
7.5	on rail on tyres		4.1 4.7*	4.7* 4.7*		2.8* 2.8* 2.8*
6.0	on rail on tyres		4.2 4.9*	4.9* 4.9*	2.6 3.5	4.3* 4.3*
4.5	on rail on tyres	5.2* 5.2*	5.2* 5.2*	4.1 5.4	5.7* 5.7*	2.6 3.5 4.6
3.0	on rail on tyres	6.9 9.4	10.7* 10.7*	4.0 5.3	7.7* 6.9	2.6 3.5 4.6
1.5	on rail on tyres	6.8 9.2	12.0* 12.0*	4.0 5.3	8.6* 6.8	2.5 3.4 4.5
0	on rail on tyres	6.5 9.2	13.3* 12.4	3.8 5.1	8.8* 6.8	2.4 3.3 4.3
-1.5	on rail on tyres	6.1 8.8	14.0* 12.7	3.6 4.9	9.0* 6.6	2.2 3.1 4.2
-3.0	on rail on tyres	6.1 8.7	14.3* 12.6	3.3 4.7	8.4* 6.4	2.2 3.0 4.0*

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

The lift capacities are stated in metric tonnes (t) at the stick end and can be lifted 360° on firm, level supporting surface with locked steering axle. These capacities can be slewed through 360° with the undercarriage in the transverse position. Capacities in the longitudinal position of the undercarriage (+/- 15°) are specified over the steering axle. The values apply when the adjusting cylinder is in the optimal position. Indicated loads based on the ISO 10567 standard and do not exceed 75 % of tipping or 87 % of hydraulic capacity, or are limited by the permissible load of the load lift hook.

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 5.10 m with Tail Radius 2,050 mm

Stick 1.85 m

Height	Under-carriage	3.0 m	4.5 m	6.0 m	7.5 m	Max. reach	m
9.0	on rail on tyres						
7.5	on rail on tyres	7.9* 7.9*				5.0 5.2*	4.0
6.0	on rail on tyres	6.7* 6.7*	4.4 6.9*			3.0 3.9*	5.6
4.5	on rail on tyres	7.7 10.3*	4.4 7.4*	2.7 6.2*		2.3 3.5*	6.5
3.0	on rail on tyres	7.4 10.2*	4.4 8.4*	2.7 6.4*		2.1 3.4*	7.0
1.5	on rail on tyres	7.4 12.3*	4.3 8.9*	2.7 6.6*		2.0 3.4*	7.1
0	on rail on tyres	6.9 14.0*	4.0 9.0*	2.5 6.6*		2.0 3.7*	6.9
-1.5	on rail on tyres	6.7 14.4*	3.8 9.2*	2.5 5.2*		2.3 4.2*	6.3
-3.0	on rail on tyres	6.6 11.9*	3.7 5.7*			3.6 5.6*	4.5

Stick 2.05 m

Height	Under-carriage	3.0 m	4.5 m	6.0 m	7.5 m	Max. reach	m
9.0	on rail on tyres						
7.5	on rail on tyres					4.2* 4.2*	4.3
6.0	on rail on tyres		4.5 6.6*			2.8 3.4*	5.8
4.5	on rail on tyres	7.7 9.1*	4.4 7.3*	2.8 6.0*		2.3 3.1*	6.7
3.0	on rail on tyres	7.5 10.6*	4.4 8.3*	2.8 6.3*		2.0 3.0*	7.1
1.5	on rail on tyres	7.4 12.3*	4.3 8.9*	2.7 6.6*		1.9 3.1*	7.2
0	on rail on tyres	7.0 13.9*	4.1 9.0*	2.6 6.6*		2.0 3.3*	7.0
-1.5	on rail on tyres	6.7 14.3*	3.8 9.2*	2.5 5.8*		2.2 3.9*	6.5
-3.0	on rail on tyres	6.6 12.8*	3.7 6.6*			3.2 5.0*	5.0

Stick 2.25 m

Height	Under-carriage	3.0 m	4.5 m	6.0 m	7.5 m	Max. reach	m
9.0	on rail on tyres						
7.5	on rail on tyres		4.2* 4.2*			3.6* 3.6*	4.6
6.0	on rail on tyres		4.5 6.0*	2.7 3.4*		2.7 2.9*	6.0
4.5	on rail on tyres	7.5* 7.5*	4.4 7.0*	2.8 5.9*		2.2 2.7*	6.9
3.0	on rail on tyres	7.5 10.9*	4.4 8.1*	2.8 6.2*		1.9 2.7*	7.3
1.5	on rail on tyres	7.4 12.2*	4.3 8.8*	2.7 6.5*		1.8 2.8*	7.4
0	on rail on tyres	7.0 13.8*	4.1 8.9*	2.6 6.6*		1.9 3.0*	7.2
-1.5	on rail on tyres	6.7 14.2*	3.8 9.2*	2.5 6.1*		2.1 3.5*	6.7
-3.0	on rail on tyres	6.6 13.5*	3.7 7.4*			2.9 4.5*	5.3

Stick 2.65 m

Height	Under-carriage	3.0 m	4.5 m	6.0 m	7.5 m	Max. reach	m
9.0	on rail on tyres					4.7* 4.7*	2.5
7.5	on rail on tyres		4.4 4.7*			2.8* 2.8*	5.2
6.0	on rail on tyres		4.5 4.9*	2.8 4.3*		2.4 2.4*	6.5
4.5	on rail on tyres	5.2* 5.2*	4.4 5.7*	2.9 5.3*		1.9 2.2*	7.3
3.0	on rail on tyres	7.5 10.7*	4.3 7.7*	2.9 6.0*	1.8 3.7*	1.7 2.2*	7.7
1.5	on rail on tyres	7.3 12.0*	4.3 8.6*	2.8 6.4*	1.8 4.5*	1.7 2.3*	7.8
0	on rail on tyres	7.0 13.3*	4.1 8.8*	2.6 6.5*	1.7 3.6*	1.7 2.4*	7.6
-1.5	on rail on tyres	6.7 14.0*	3.9 9.0*	2.5 6.4*		1.9 2.8*	7.1
-3.0	on rail on tyres	6.6 14.3*	3.6 8.4*	2.4 4.0*		2.4 3.9*	6.0

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

The lift capacities are stated in metric tonnes (t) at the stick end and can be lifted 360° on firm, level supporting surface with locked steering axle. These capacities can be slewed through 360° with the undercarriage in the transverse position. Capacities in the longitudinal position of the undercarriage (+/- 15°) are specified over the steering axle. The values apply when the adjusting cylinder is in the optimal position. Indicated loads based on the ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic capacity, or are limited by the permissible load of the load lift hook.












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 5.10 m with Tail Radius 2,160 mm*












Stick 1.85 m

 m	Under-carriage	3.0 m		4.5 m		6.0 m		7.5 m				m
												
9.0	on rail on tyres											
7.5	on rail on tyres	7.9*	7.9*							5.2*	5.2*	4.0
6.0	on rail on tyres	7.9*	7.9*							5.2*	5.2*	
6.0	on rail	6.7*	6.7*	5.3	6.9*					3.7	3.9*	5.6
	on tyres	6.7*	6.7*	6.8	6.9*					3.9*	3.9*	
4.5	on rail	9.1	10.3*	5.3	7.4*	3.4	6.2*			2.9	3.5*	6.5
	on tyres	10.3*	10.3*	6.7	7.4*	4.4	5.7			3.5*	3.5*	
3.0	on rail	8.8	10.2*	5.3	8.4*	3.4	6.4*			2.6	3.4*	7.0
	on tyres	10.2*	10.2*	6.6	8.3	4.4	5.7			3.4*	3.4*	
1.5	on rail	8.8	12.3*	5.2	8.9*	3.3	6.6*			2.5	3.4*	7.1
	on tyres	11.4	12.3*	6.6	8.3	4.3	5.6			3.3	3.4*	
0	on rail	8.5	14.0*	5.0	9.0*	3.2	6.6*			2.6	3.7*	6.9
	on tyres	11.6	14.0*	6.5	8.4	4.2	5.5			3.5	3.7*	
-1.5	on rail	8.3	14.4*	4.7	9.2*	3.1	5.2*			3.0	4.2*	6.3
	on tyres	11.3	14.4*	6.3	8.3	4.1	5.2*			3.9	4.2*	
-3.0	on rail	8.1	11.9*	4.6	5.7*					4.6	5.6*	4.5
	on tyres	11.2	11.9*	5.7*	5.7*					5.6*	5.6*	













Stick 2.05 m

	m	Under-carriage	3.0 m		4.5 m		6.0 m		7.5 m				m
													
9.0	on rail												
	on tyres												
7.5	on rail										4.2*	4.2*	4.3
	on tyres										4.2*	4.2*	
6.0	on rail				5.4	6.6*					3.4*	3.4*	5.8
	on tyres				6.6*	6.6*					3.4*	3.4*	
4.5	on rail	9.0	9.1*	5.3	7.3*	3.5	6.0*				2.8	3.1*	6.7
	on tyres		9.1*	6.8	7.3*	4.5	5.7				3.1*	3.1*	
3.0	on rail		8.8	10.6*	5.3	8.3*	3.5	6.3*			2.5	3.0*	7.1
	on tyres		10.6*	10.6*	6.6	8.3*	4.5	5.7			3.0*	3.0*	
1.5	on rail		8.8	12.3*	5.2	8.9*	3.4	6.6*			2.5	3.1*	7.2
	on tyres		11.4	12.3*	6.6	8.3	4.4	5.6			3.1*	3.1*	
0	on rail		8.5	13.9*	5.0	9.0*	3.2	6.6*			2.5	3.3*	7.0
	on tyres		11.6	13.9*	6.6	8.4	4.3	5.5			3.3*	3.3*	
-1.5	on rail		8.3	14.3*	4.8	9.2*	3.1	5.8*			2.8	3.9*	6.5
	on tyres		11.4	14.3*	6.3	8.3	4.2	5.4			3.7	3.9*	
-3.0	on rail		8.1	12.8*	4.6	6.6*					4.1	5.0*	5.0
	on tyres		11.2	12.8*	6.2	6.6*					5.0*	5.0*	

Stick 2.25 m

	m	Under-carriage	3.0 m		4.5 m		6.0 m		7.5 m				m
													
9.0	on rail												
	on tyres												
7.5	on rail			4.2*	4.2*						3.6*	3.6*	4.6
	on tyres			4.2*	4.2*						3.6*	3.6*	
6.0	on rail			5.4	6.0*	3.4*	3.4*				2.9*	2.9*	6.0
	on tyres			6.0*	6.0*	3.4*	3.4*				2.9*	2.9*	
4.5	on rail	7.5*	7.5*	5.3	7.0*	3.5	5.9*				2.7*	2.7*	6.9
	on tyres	7.5*	7.5*	6.8	7.0*	4.5	5.7				2.7*	2.7*	
3.0	on rail	8.8	10.9*	5.3	8.1*	3.5	6.2*				2.4	2.7*	7.3
	on tyres	10.9*	10.9*	6.6	8.1*	4.5	5.7				2.7*	2.7*	
1.5	on rail	8.7	12.2*	5.2	8.8*	3.4	6.5*				2.4	2.8*	7.4
	on tyres	11.4	12.2*	6.6	8.3	4.4	5.6				2.8*	2.8*	
0	on rail	8.5	13.8*	5.0	8.9*	3.3	6.6*				2.4	3.0*	7.2
	on tyres	11.5	13.8*	6.6	8.3	4.3	5.5				3.0*	3.0*	
-1.5	on rail	8.3	14.2*	4.8	9.2*	3.1	6.1*				2.7	3.5*	6.7
	on tyres	11.3	14.2*	6.3	8.3	4.1	5.4				3.5*	3.5*	
-3.0	on rail	8.1	13.5*	4.6	7.4*						3.6	4.5*	5.3
	on tyres	11.2	13.5*	6.1	7.4*						4.5*	4.5*	

Stick 2.65 m

	m	Under-carriage	3.0 m		4.5 m		6.0 m		7.5 m				m
													
9.0	on rail										4.7*	4.7*	2.5
	on tyres										4.7*	4.7*	
7.5	on rail			4.7*	4.7*						2.8*	2.8*	5.2
	on tyres			4.7*	4.7*						2.8*	2.8*	
6.0	on rail			4.9*	4.9*	3.5	4.3*				2.4*	2.4*	6.5
	on tyres			4.9*	4.9*	4.3*	4.3*				2.4*	2.4*	
4.5	on rail	5.2*	5.2*	5.3	5.7*	3.5	5.3*				2.2*	2.2*	7.3
	on tyres	5.2*	5.2*	5.7*	5.7*	4.5	5.3*				2.2*	2.2*	
3.0	on rail	8.8	10.7*	5.2	7.7*	3.5	6.0*	2.4	3.7*		2.2*	2.2*	7.7
	on tyres	10.7*	10.7*	6.6	7.7*	4.5	5.6	3.1	3.7*		2.2*	2.2*	
1.5	on rail	8.7	12.0*	5.2	8.6*	3.4	6.4*	2.3	4.5*		2.2	2.3*	7.8
	on tyres	11.3	12.0*	6.5	8.2	4.4	5.6	3.1	4.0		2.3*	2.3*	
0	on rail	8.6	13.3*	5.0	8.8*	3.3	6.5*	2.3	3.6*		2.2	2.4*	7.6
	on tyres	11.4	13.3*	6.6	8.2	4.3	5.5	3.0	3.6*		2.4*	2.4*	
-1.5	on rail	8.2	14.0*	4.8	9.0*	3.1	6.4*				2.4	2.8*	7.1
	on tyres	11.3	14.0*	6.4	8.4	4.1	5.4				2.8*	2.8*	
-3.0	on rail	8.2	14.3*	4.6	8.4*	3.1	4.0*				3.0	3.9*	6.0
	on tyres	11.2	14.3*	6.1	8.1	4.0*	4.0*				3.9*	3.9*	

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

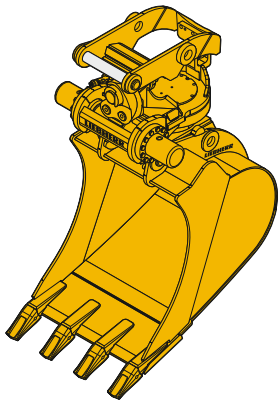
The lift capacities are stated in metric tonnes (t) at the stick end and can be lifted 360° on firm, level supporting surface with locked steering axle. These capacities can be slewed through 360° with the undercarriage in the transverse position. Capacities in the longitudinal position of the undercarriage (+/- 15°) are specified over the steering axle. The values apply when the adjusting cylinder is in the optimal position. Indicated loads based on the ISO 10567 standard and do not exceed 75 % of tipping or 87 % of hydraulic capacity, or are limited by the permissible load of the load lift hook.

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.

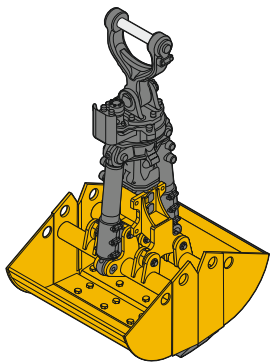
* Execution required for acceptance Network Rail

Working Tools



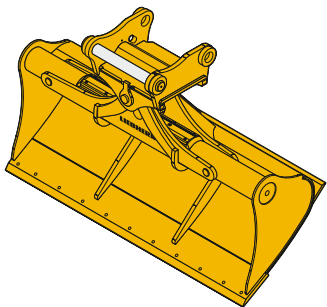
Tilt Rotator

Technical data	Slewing angle of 2 x 50°
	360° rotation
Description	Quick change stick/SW33/SW48/LIKUFIX
	The tilt rotator with its 360° rotatability, its patented tilt mechanism and a tilting angle of up to 50° offers a maximum of flexibility, specifically for channel digging. Its robust design makes it suitable for heavy operations.



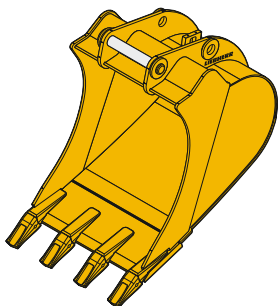
Clamshell Grab

Technical data	Width of clamshells 300 – 1,000 mm
	Capacity 0.10 – 0.48 m³
Description	Opening length 1,200 – 1,580 mm
	Quick change stick/SW33/SW48/LIKUFIX
Description	It's possible to individually fit special track shells or grab shells with only one clam mechanism.
	The grab shells and teeth are standardly in HD-version, moreover the reinforced cutting sheets ensure a high stability.



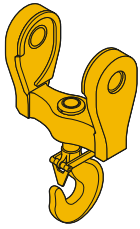
Ditch Cleaning Bucket

Technical data	Cutting width 1,600 and 2,000 mm
	Capacity (SAE) 0.70 – 1.00 m³
Description	Slewing angle of 2 x 50°
	Quick change stick/SW33/SW48/LIKUFIX
Description	With the ditch cleaning bucket Liebherr offers a specific tool for railroader applications. The cutting edge persists parallelly to the rotation axis, so that it's also possible to drive around obstacles without any difficulty. This working tool makes racking, arranging and profiling an easy task. The cylinders are inside and therefore optimally protected.



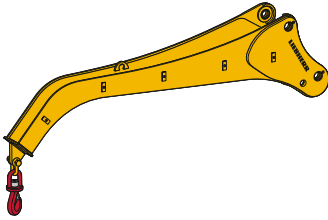
Backhoe Bucket

Technical data	Cutting width 550 – 1,250 mm
	Capacity 0.28 – 0.55 m³
Description	Quick change stick/SW33/SW48/LIKUFIX
	Liebherr offers a suitable backhoe bucket for nearly every application. A broad program in approved Liebherr quality and the appropriate quick hitch adapters provide a maximum of productivity.



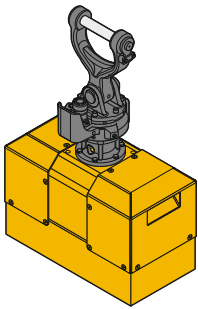
Load Lift Hook

Technical data	Lifting capacity up to 8 t Mechanical 360° rotating High-strength special type Quick change stick/SW33/SW48/LIKUFIX
Description	Due to its low operating weight the Liebherr load hook allows the lifting of heavy loads. With this 360° rotatable tool it's possible to exactly deposit loads.



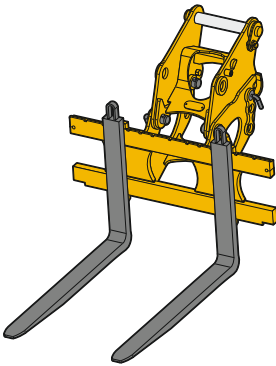
Load-Lifting Stick

Technical data	Length 2,500 mm Integrated load hook 2.5 t Quick change stick/SW33/SW48/LIKUFIX
Description	With the load-lifting stick an outreach of up to 10.0 m can be achieved. The load-lifting stick enables to work on the side rail track and to lift of long loads without any difficulty.



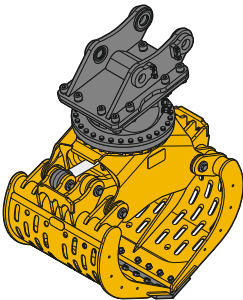
Hydro Magnet

Technical data	Hydro magnet II 5 kW Lifting capacity up to 5 t Swing drive 330° Quick change stick/SW33/SW48/LIKUFIX
Description	The hydro magnet is particularly suitable for picking up small iron parts for applications in the area of rebuilding and deconstruction.



Pallet Fork

Technical data	Max. width pallet fork 1,245 mm Pallet forks length 1,200 mm Lifting capacity up to 2,5 t (ISO 2328) Quick change stick/SW33/SW48/LIKUFIX
Description	Particularly well suited for transportation of pallets and pallet cages. Fast and secure setting of desired deployment height and width.



Sorting Grab

Technical data	Width of clamshells 800 – 1,400 mm Capacity 0.40 – 1.10 m ³ Opening length 1,200 – 1,970 mm Quick change stick/SW33/SW48/LIKUFIX
Description	Sensitive working on sorting activities. Different tine shapes for individual applications available. High closing force combined with lightweight construction.

Equipment

Undercarriage

Dual-circuit braking system with rail wheel brake, hydraulically	•
Trailer coupling on rolling stock axle	•
Trailer couplings	•
Drive concept 9B/9C**	+
Lighting system white/red incl. power socket	✕
Earthing cable with ball-headed pin	+
Travel speed levels (four)	•
Fire extinguisher 6 kg	+
Coupling bar	✕
Parking brake, maintenance-free	•
Tyre inflation hose with pressure gauge at wagon braking system	+
Rolling stock chassis cylinder pipe fracture safety device	•
Rail undercarriage oscillating steering axle, hydraulically locking, rear rigid	•
Rail sweeper	✕
Protection for oscillating axle cylinders	+
Proportional servo-steering with emergency function	•
Speeder	+
Lashing eyelets for transport	•
Wagon braking system (hydraulic, 2 circuits)	+
Wagon braking system (pneumatic, 1 circuit)	•
Wagon braking system (pneumatic, 2 circuits)	+
Tool equipment, extended	+
Tool box left – lockable	•
Tool box right – lockable	•
Two-speed power shift transmission	•

Uppercarriage

Uppercarriage rear light, 2 pieces, halogen	+
Uppercarriage rear light, 2 pieces, LED	+
Uppercarriage right side light, 1 piece, LED	+
Refuelling system with filling pump	+
External starting aid	+
Handrails, non slip surfaces	•
Main battery switch for electrical system	•
Tail radius, variants	+
Engine hood with gas spring	•
Uppercarriage doors, lockable	•
Signal light D.B., halogen	+
Signal light D.B., LED	+



Hydraulic System

Shut-off valve between hydraulic tank and pump(s)	•
Pressure test fittings	•
Accumulator for controlled lowering of the attachment with the engine shut down	•
Electronic pump regulation	•
High pressure circuit, continuous operation	•
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	✕
Priority circuit LSC for attachments	•
Electric switchover clamshell operation and tipping cylinder	•
Switchover high pressure circuit 1 and tipping cylinder	+
Switchover high pressure circuit 1 and two-piece boom	+
Preparation Liebherr hydro-magnet	+



Diesel Engine

Fuel anti-theft device	+
Sensor controlled engine idling	•
Liebherr particle filter	+
Air pre-filter with dust discharge	+
Pre-installation particle filter with sound attenuation module	•
Preheating hydraulic oil	+
Preheating fuel	+
Preheating coolant	+
Preheating engine oil	+



Work Space Limitation

Electronic lift limitation	✕
Load torque limitation (RCI/RCL)	✕
Swivel limitation	+
Overload warning device**	+
Virtual wall	✕

Equipment



Operator's Cab

Storage compartment	•
Cab lights rear, halogen	•
Cab lights rear, 2 pieces, LED	+
Cab lights front, halogen (under rain cover)	•
Cab lights front, 2 pieces, LED (under rain cover)	+
Left arm console, folding	•
Exterior mirror, electrical adjustable, with heating	+
Control elements for signal-horn and emergency brake at co-driver's seat	•
Mechanical hour meters, readable from outside the cab	•
Roof window made from impact-resistant laminated safety glass	•
Data logger	✗
Two seater cab	•
Circular bubble level	+
Pressure indication of rail axles on the display	•
Driver identification code	•
Driver profile, personalised	•
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 2 kg	✗
Windscreen retractable (including upper part)	•
Intermittent windscreen wiper with wiper washer	•
Footrest	+
Speed indication on the rail-display	•
Cruise control **	•
Rubber floor mat, removable	•
Dome light	•
Licence plate holder with light	+
Coat hook	•
Automatic air conditioning	•
Fuel consumption indicator	•
Electric cooler	+
Steering wheel lock	•
Steering column adjustable	•
LiDAT Plus (extended Liebherr data transfer system) *	•
Emergency exit rear window	•
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	•
Back-up alarm	•
(acoustic signal is emitted traveling backward, can not be switched off)	+
Warning beacon on cab	+
Windshield wiper with interval switching and washer, roof window	•
Windshield wiper with interval switching and washer, rear window	•
Driver door with sliding window	•
Slipcover for operator seat	+
Right side window and windshield made from laminated safety glass	•
Safety components GB (safety flag)	✗
Sun blind	•
Auxiliary heating, adjustable (week time switch)	+
Power socket 12 V	•
Electronic immobilizer	+
Cigarette lighter/power socket 24 V	•

• = Standard, + = Option, ✗ = Required for UK – necessary for compliance RIS 1530

* = optionally extendable after one year, ** = country-dependent



Attachment

Alternative connection medium pressure circuit on right side of stick	+
Boom lights, 2 pieces, halogen	•
Boom lights, 2 pieces, LED	+
Stick lights, 2 pieces, halogen	+
Stick lights, 2 pieces, LED	+
High pressure circuit 1 incl. unpressurised return line and Tool Control	•
High pressure circuit 2 incl. lines	•
Hydraulic lines for grab operation	•
Free rotating load lift hook	+
Load holding valve bucket cylinder	+
Load lug on boom	+
Load lug on stick	+
Leak oil line, additional for working tools	•
Liebherr ditch cleaning bucket	+
Liebherr quick coupler, hydraulic or mechanical	+
Liebherr tilt bucket	+
Liebherr tilt rotator	+
Liebherr sorting grab	+
Liebherr backhoe bucket	+
Liebherr tooth system	+
Liebherr clamshell grab	+
Stick prepared for quick coupler stick	•
Medium pressure circuit incl. lines	•
Pipe fracture safety valves hoist cylinders	•
Pipe fracture safety valve stick cylinder	•
Hose quick coupling at grab lines	•
Quick coupling system LIKUFIX	+
Special buckets and other attachments	+
Power socket on stick, 24 V/15 A, 20 A switchable	+
Tool Control, 10 tool adjustments selectable over the display	•
Tool Management, automatic tool recognition (in combination with LIKUFIX 48)	+
Latching for connecting link in grab operation	+
Two-piece boom	•
Cylinders with end damping	•



Complete Machine

Lubrication	
Lubrication undercarriage, manually – decentralised (grease points)	•
Lubrication undercarriage steering axle, manually – centralised (one grease point)	+
Central lubrication system for uppercarriage and attachment, automatically (without quick coupler and connecting link)	•
Central lubrication system, extension for quick coupler	+
Central lubrication system, extension for connecting link	+
Special coating	
Special coating undercarriage, uppercarriage, equipment	+
Monitoring	
Rear view monitoring with camera	•
Side view monitoring with camera	•

Options and/or special attachments, 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 of Companies



Wide Product Range

The Liebherr Group is one of the largest construction equipment manufacturers in the world. Liebherr's high-value products and services enjoy a high reputation in many other fields. The wide range includes domestic appliances, aerospace and transportation systems, machine tools and maritime cranes.

Exceptional Customer Benefit

Every product line provides a complete range of models in many different versions. With both their technical excellence and acknowledged quality, Liebherr products offer a maximum of customer benefits in practical applications.

State-of-the-art Technology

To provide consistent, top quality products, Liebherr attaches great importance to each product area, its components and core technologies. Important modules and components are developed and manufactured in-house, for instance the entire drive and control technology for construction equipment.

Worldwide and Independent

Hans Liebherr founded the Liebherr family company in 1949. Since that time, the enterprise has steadily grown to a group of more than 130 companies with over 41,000 employees located on all continents. The corporate headquarters of the Group is Liebherr-International AG in Bulle, Switzerland. The Liebherr family is the sole owner of the company.

www.liebherr.com

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