

Wheeled Excavator

A 924 Rail

Litronic®

Friction Drive

Generation

6

Operating Weight

21,800 – 25,000 kg

Engine

120 kW/163 HP

Stage V



LIEBHERR

Technical Data



Diesel Engine

Rating per ISO 9249	120 kW (163 HP) at 1,900 RPM
Model	Liebherr D924 A7
Type	4 cylinder in-line
Bore/Stroke	104/ 132 mm
Displacement	4.5 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/ 140 A
Stage V	
Harmful emissions values	according to regulation (EU) 2016/1628
Emission control	Liebherr-SCRT technology
Fuel tank	250 l
Urea tank	46 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
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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 electroproportional 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 equipment and travel drive	2 Liebherr axial piston variable displacement pumps (double construction)
Max. flow		2 x 220 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, suitable for continuous operation
Engine speed and performance setting		stepless alignment of engine output and hydraulic power via engine speed Tool Control: 20 preadjustable pump flows and pressures for add-on attachments



Swing Drive

Drive	Liebherr axial piston motor with integrated brake valve and torque control, Liebherr planetary reduction gear
Swing ring	Liebherr, sealed race ball bearing swing ring, internal teeth
Swing speed	0 – 9.0 RPM stepless
Swing torque	54 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 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
Control system	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 setting, control and monitoring options, e.g. air conditioning control, fuel consumption, machine and attachment 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
Refrigerant	R134a
Global warming potential	1,430
Quantity at 25 °C	1,300 g
CO ₂ equivalent	1.859 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

Drive	oversized 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)
Axes	manual or automatic hydraulically 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 2 circuit hydraulic brake for trailer
Rail undercarriage Stabilization	standard gauge 1,435 mm without outriggers



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 seal system
Bearings	sealed, low maintenance

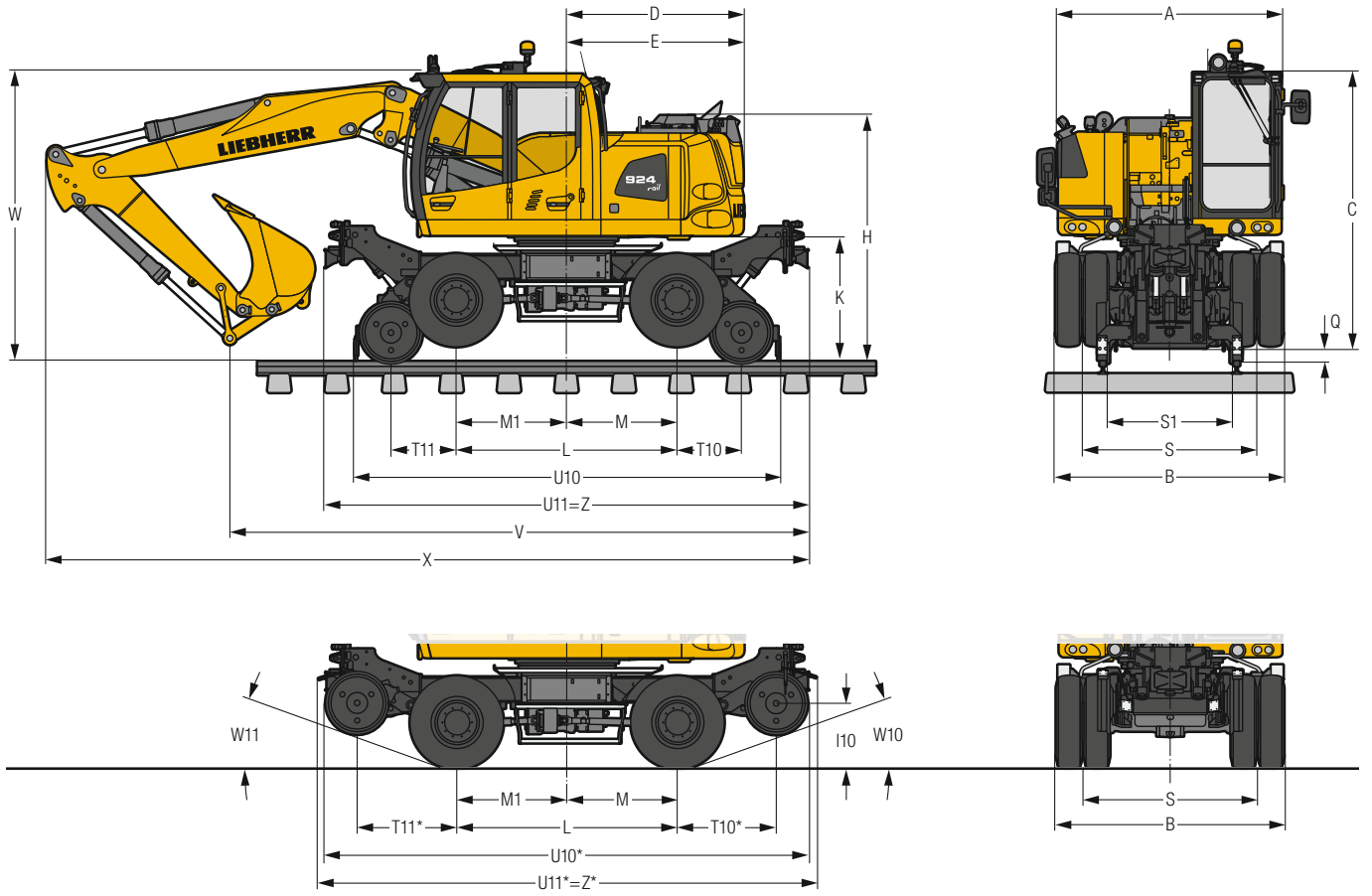


Complete Machine

Lubrication	Liebherr central lubrication system for upper-carriage and equipment, automatically
Noise emission	
ISO 6396	L _{PA} (inside cab) = 73 dB(A)
2000/14/EC	L _{WA} (surround noise) = 101 dB(A)

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

Dimensions



	on tyres	mm	on rail	mm
A		2,525		2,525
B		2,565		2,565
C		3,070		3,260
D		2,000/2,110*		2,000/2,110*
E		2,000/2,110*		2,000/2,110*
H		2,600		2,790
K		1,235		1,425
L		2,500		2,500
M		1,250		1,250
M1		1,250		1,250
I10		725		-
Q		345		145
S		1,973		1,973
S1		-		1,435
T10		-		730
T10*		1,125		-
T11		-		730
T11*		1,125		-
U10		-		4,680
U10*		5,470		-
U11		-		5,475
U11*		5,650		-
W10		20°		-
W11		20°		-
Z		-		5,475
Z*		5,650		-

* Execution required for acceptance Network Rail

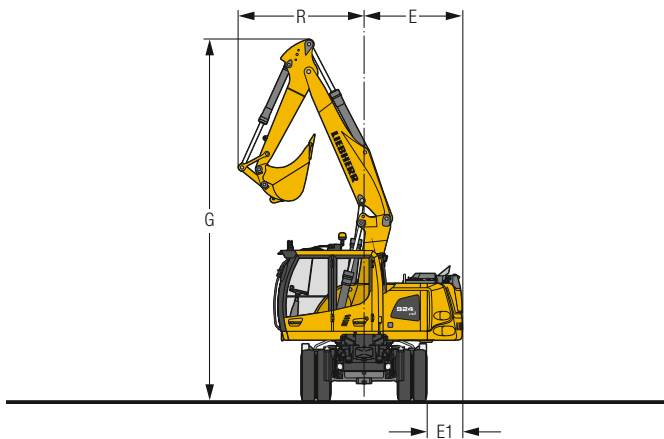
E = Tail radius

Tyres 10.00-20

	Stick	Two-piece boom 5.05 m
	m	mm
V	1.85	6,900
	2.05	6,650
	2.25	6,500
W	1.85	3,000
	2.05	3,050
	2.25	3,100
X	1.85	8,900
	2.05	8,750
	2.25	8,750

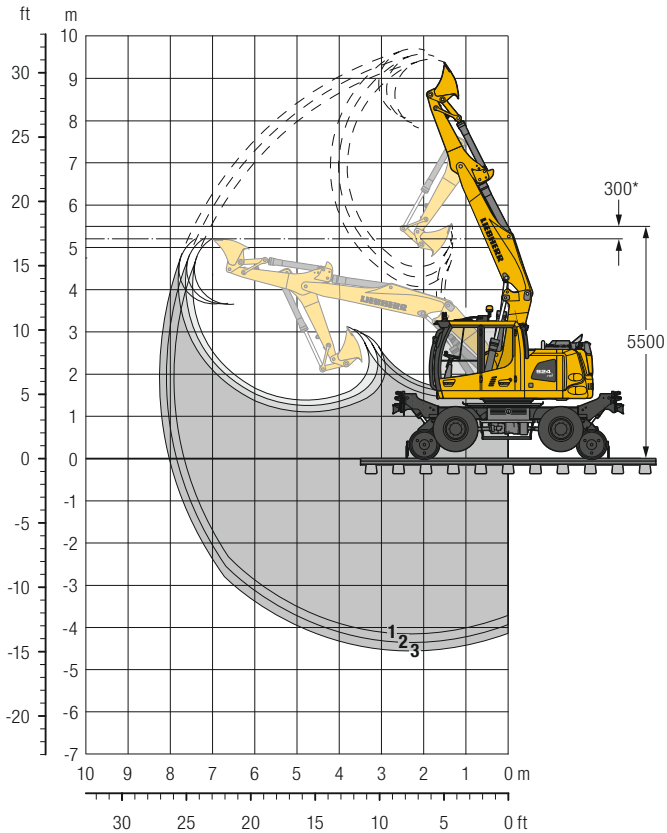
Dimensions are with attachment over steering axle

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



Boom	Stick	G	R	E	E1
	m	mm	mm	mm	mm
Two-piece boom 5.05 m	1.85	7,380	2,560	2,000/2,110	718/828
Two-piece boom 5.05 m	2.05	7,380	2,560	2,000/2,110	718/828
Two-piece boom 5.05 m	2.25	7,380	2,570	2,000/2,110	718/828

Ditch Cleaning Bucket with Two-Piece Boom 5.05 m



* Safety distance to overhead wires

Digging Envelope

		1	2	3
Stick length	m	1.85	2.05	2.25
Max. digging depth	m	4.15	4.35	4.55
Max. reach at ground level	m	7.65	7.85	8.00
Max. dumping height	m	7.85	7.95	8.05
Max. dumping height under overhead wires	m	3.65	3.67	3.67
Max. teeth height	m	9.45	9.60	9.70
Min. equipment radius	m	2.56	2.56	2.57

Digging Forces

		1	2	3
Max. digging force (ISO 6015)	kN	110.6	102.2	95.2
	t	11.3	10.4	9.7
Max. breakout force (ISO 6015)	kN	101.3	101.3	101.3
	t	10.3	10.3	10.3

Max. breakout force with ripper bucket 134.6 kN (13.7 t)

Operating Weight

The operating weight includes the basic machine with 8 tyres, two-piece boom 5.05 m, stick 2.25 m and ditch cleaning bucket 2,000 mm/0.65 m³.

Tail radius	Weight (kg)
A 924 Rail Litronic Friction Drive with tail radius 2,000 mm	22,200
A 924 Rail Litronic Friction Drive with tail radius 2,000 mm (heavy counterweight)	22,800
A 924 Rail Litronic Friction Drive with tail radius 2,110 mm	24,500

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

Cutting width mm	Capacity ISO 7451 ¹⁾ m ³	Weight kg	Tail radius 2,000 mm						Tail radius 2,000 mm (heavy counterweight)						Tail radius 2,110 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)				
1.85	2.05	2.25	1.85	2.05	2.25	1.85	2.05	2.25	1.85	2.05	2.25	1.85	2.05	2.25	1.85	2.05	2.25	1.85	2.05	2.25		
1,600 ¹⁾	0.80	445	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2,000 ¹⁾	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 5.05 m, Tail Radius 2,000 mm

Stick 1.85 m

m	Undercarriage	3.0 m		4.5 m		6.0 m		Max. reach		m
7.5	on rail	7.4	8.3*					4.2	5.6*	4.3
	on tyres	8.5*	8.5*					5.9*	5.9*	
6.0	on rail	7.4	7.6*	4.1	6.9*			2.6	4.4*	5.8
	on tyres	7.6*	7.6*	5.6	6.9*			3.8	4.5*	
4.5	on rail	7.1	10.1*	4.1	7.5*	2.5	6.2*	2.1	4.0*	6.6
	on tyres	10.0	10.3*	5.6	7.0	3.5	4.5	3.0	3.9	
3.0	on rail	6.9	10.4*	4.1	8.5*	2.5	6.4*	1.8	3.8*	7.0
	on tyres	9.7*	10.2*	5.5	6.8	3.5	4.5	2.7	3.4	
1.5	on rail	6.8	12.6*	3.9	8.9*	2.4	6.6*	1.8	3.9*	7.1
	on tyres	9.6	12.4*	5.5	6.8	3.4	4.4	2.6	3.3	
0	on rail	6.3	14.1*	3.7	9.0*	2.3	6.6*	1.9	4.3*	6.8
	on tyres	9.4	12.6	5.3	6.8	3.3	4.2	2.7	3.4	
-1.5	on rail	6.2	14.5*	3.5	9.1*	2.2	4.8*	2.1	4.2*	6.2
	on tyres	9.2	12.6	5.0	6.5	3.2	4.2	3.0	3.9	
-3.0	on rail	6.0	10.8*					3.9	6.4*	4.0
	on tyres	9.0	11.9*	4.9	5.7*			4.8	5.6*	

Stick 2.05 m

m	Undercarriage	3.0 m		4.5 m		6.0 m		Max. reach		m
7.5	on rail							3.9	5.2*	4.5
	on tyres							4.8*	4.8*	
6.0	on rail							6.9*	6.9*	6.0
	on tyres							4.2	6.7*	
4.5	on rail							7.2	10.3*	6.8
	on tyres							9.9*	9.9*	
3.0	on rail							6.9	10.9*	7.2
	on tyres							9.7	10.6*	
1.5	on rail							6.9	12.6*	7.2
	on tyres							9.6	12.4*	
0	on rail							6.4	14.1*	7.0
	on tyres							9.5	12.6	
-1.5	on rail							6.2	14.4*	6.4
	on tyres							9.2	12.6	
-3.0	on rail							6.0	11.9*	4.6
	on tyres							9.0	12.4	

Stick 2.25 m

m	Undercarriage	3.0 m		4.5 m		6.0 m		Max. reach		m
7.5	on rail							3.5	4.0*	4.8
	on tyres							4.1*	4.1*	
6.0	on rail							4.2	6.5*	6.2
	on tyres							5.7	6.4*	
4.5	on rail							7.2	9.9*	7.0
	on tyres							8.6*	8.6*	
3.0	on rail							6.9	11.1*	7.4
	on tyres							9.7	10.9*	
1.5	on rail							6.8	12.6*	7.4
	on tyres							9.6	12.4	
0	on rail							6.4	14.0*	7.2
	on tyres							9.5	12.5	
-1.5	on rail							6.2	14.3*	6.6
	on tyres							9.2	12.6	
-3.0	on rail							6.0	12.8*	5.0
	on tyres							9.0	12.4	

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 5.05 m, Tail Radius 2,000 mm (Heavy Counterweight)

Stick 1.85 m

m	Undercarriage	3.0 m		4.5 m		6.0 m		Max. reach		m
7.5	on rail	7.9	8.3*					4.5	5.6*	4.3
	on tyres	8.5*	8.5*					5.9*	5.9*	
6.0	on rail	7.6*	7.6*	4.4	6.9*			2.8	4.4*	5.8
	on tyres	7.6*	7.6*	6.0	6.9*			4.1	4.5*	
4.5	on rail	7.6	10.1*	4.4	7.5*	2.7	6.2*	2.3	4.0*	6.6
	on tyres	10.3*	10.3*	5.9	7.3	3.7	4.7	3.2	4.0*	
3.0	on rail	7.3	10.4*	4.3	8.5*	2.7	6.4*	2.0	3.8*	7.0
	on tyres	10.1	10.2*	5.8	7.2	3.7	4.7	2.9	3.6	
1.5	on rail	7.3	12.6*	4.2	8.9*	2.6	6.6*	1.9	3.9*	7.1
	on tyres	10.1	12.4*	5.8	7.2	3.7	4.6	2.8	3.5	
0	on rail	6.8	14.1*	4.0	9.0*	2.5	6.6*	2.0	4.3*	6.8
	on tyres	10.0	13.2	5.6	7.2	3.5	4.5	2.9	3.6	
-1.5	on rail	6.6	14.5*	3.7	9.1*	2.4	4.8*	2.3	4.2*	6.2
	on tyres	9.7	13.3	5.3	6.9	3.5	4.4	3.2	4.1	
-3.0	on rail	6.5	10.8*					4.2	6.4*	4.0
	on tyres	9.6	11.9*	5.2	5.7*			5.2	5.6*	

Stick 2.05 m

m	Undercarriage	3.0 m		4.5 m		6.0 m		Max. reach		m
7.5	on rail							4.2	5.2*	4.5
	on tyres							6.9*	6.9*	
6.0	on rail			4.4	6.7*			4.1	4.6*	6.0
	on tyres	6.9*	6.9*	6.0	6.7*			2.7	3.8*	
4.5	on rail	7.6	10.3*	4.4	7.4*	2.8	6.1*	2.2	3.5*	6.8
	on tyres	9.9*	9.9*	5.9	7.3*	3.8	4.8	3.1	3.5*	
3.0	on rail	7.4	10.9*	4.3	8.4*	2.7	6.4*	1.9	3.4*	7.2
	on tyres	10.2	10.6*	5.8	7.2	3.8	4.8	2.8	3.4*	
1.5	on rail	7.3	12.6*	4.2	8.9*	2.6	6.6*	1.9	3.5*	7.2
	on tyres	10.1	12.4*	5.8	7.1	3.7	4.7	2.7	3.4	
0	on rail	6.8	14.1*	4.0	9.0*	2.5	6.6*	2.0	3.9*	7.0
	on tyres	10.0	13.1	5.6	7.2	3.6	4.5	2.8	3.5	
-1.5	on rail	6.6	14.4*	3.8	9.2*	2.4	5.4*	2.2	4.3*	6.4
	on tyres	9.8	13.3	5.4	6.9	3.5	4.4	3.1	4.0	
-3.0	on rail	6.5	11.9*	3.6	5.8*			3.5	5.5*	4.6
	on tyres	9.6	12.8*	5.2	6.6*			4.5	5.0*	

Stick 2.25 m

m	Undercarriage	3.0 m		4.5 m		6.0 m		Max. reach		m
7.5	on rail			4.3	5.7*			3.8	4.0*	4.8
	on tyres			4.8*	4.8*			4.1*	4.1*	
6.0	on rail			4.4	6.5*	2.7	4.8*	2.6	3.3*	6.2
	on tyres			6.0	6.4*	3.8	3.9*	3.4*	3.4*	
4.5	on rail	7.6	9.9*	4.4	7.2*	2.8	5.9*	2.1	3.1*	7.0
	on tyres	8.6*	8.6*	5.9	7.0*	3.8	4.8	3.0	3.1*	
3.0	on rail	7.4	11.1*	4.3	8.2*	2.8	6.3*	1.9	3.1*	7.4
	on tyres	10.2	10.9*	5.8	7.2	3.8	4.8	2.7	3.1*	
1.5	on rail	7.3	12.6*	4.2	8.9*	2.7	6.5*	1.8	3.2*	7.4
	on tyres	10.1	12.4*	5.8	7.1	3.7	4.7	2.6	3.2*	
0	on rail	6.9	14.0*	4.0	8.9*	2.5	6.6*	1.9	3.5*	7.2
	on tyres	10.1	13.1	5.6	7.2	3.6	4.5	2.7	3.4	
-1.5	on rail	6.6	14.3*	3.8	9.2*	2.4	5.9*	2.1	4.2*	6.6
	on tyres	9.8	13.3	5.4	6.9	3.5	4.4	3.0	3.8	
-3.0	on rail	6.5	12.8*	3.6	6.7*			3.1	4.9*	5.0
	on tyres	9.6	13.1	5.2	6.7			4.0	4.5*	

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 5.05 m, Tail Radius 2,110 mm

Stick 1.85 m

m	Undercarriage	3.0 m		4.5 m		6.0 m		Max. reach		m
7.5	on rail	8.3*	8.3*					5.5	5.6*	4.3
	on tyres	8.5*	8.5*					5.9*	5.9*	
6.0	on rail	7.6*	7.6*	5.3	6.9*			3.5	4.4*	5.8
	on tyres	7.6*	7.6*	6.9*	6.9*			4.5*	4.5*	
4.5	on rail	9.0	10.1*	5.3	7.5*	3.4	6.2*	2.9	4.0*	6.6
	on tyres	10.3*	10.3*	6.9	7.4*	4.5	5.6	3.9	4.0*	
3.0	on rail	8.7	10.4*	5.2	8.5*	3.4	6.4*	2.6	3.8*	7.0
	on tyres	10.2*	10.2*	6.8	8.2	4.5	5.6	3.5	3.8*	
1.5	on rail	8.7	12.6*	5.1	8.9*	3.3	6.6*	2.5	3.9*	7.1
	on tyres	11.7	12.4*	6.8	8.2	4.4	5.5	3.4	3.9*	
0	on rail	8.3	14.1*	4.9	9.0*	3.2	6.6*	2.6	4.3*	6.8
	on tyres	11.9	14.0*	6.7	8.4	4.3	5.4	3.5	4.2*	
-1.5	on rail	8.2	14.5*	4.7	9.1*	3.1	4.8*	3.0	4.2*	6.2
	on tyres	11.7	14.4*	6.4	8.2	4.2	5.2*	4.0	4.3*	
-3.0	on rail	8.0	10.8*					5.3	6.4*	4.0
	on tyres	11.5	11.9*	5.7*	5.7*			5.6*	5.6*	

Stick 2.05 m

m	Undercarriage	3.0 m		4.5 m		6.0 m		Max. reach		m
7.5	on rail									4.5
	on tyres									
6.0	on rail									6.0
	on tyres	6.9*	6.9*	5.3	6.7*			3.4	3.8*	
4.5	on rail	9.0	10.3*	5.3	7.4*	3.4	6.1*	2.8	3.5*	6.8
	on tyres	9.9*	9.9*	6.9	7.3*	4.6	5.7	3.5*	3.5*	
3.0	on rail	8.8	10.9*	5.2	8.4*	3.4	6.4*	2.5	3.4*	7.2
	on tyres	10.6*	10.6*	6.8	8.3	4.6	5.6	3.4	3.4*	
1.5	on rail	8.7	12.6*	5.2	8.9*	3.3	6.6*	2.4	3.5*	7.2
	on tyres	11.7	12.4*	6.8	8.2	4.5	5.6	3.3	3.5*	
0	on rail	8.4	14.1*	4.9	9.0*	3.2	6.6*	2.5	3.9*	7.0
	on tyres	11.9	14.0*	6.7	8.3	4.4	5.4	3.4	3.8*	
-1.5	on rail	8.2	14.4*	4.7	9.2*	3.1	5.4*	2.9	4.3*	6.4
	on tyres	11.7	14.3*	6.5	8.2	4.2	5.3	3.8	4.4*	
-3.0	on rail	8.0	11.9*	4.6	5.8*			4.5	5.5*	4.6
	on tyres	11.5	12.8*	6.3	6.6*			5.0*	5.0*	

Stick 2.25 m

m	Undercarriage	3.0 m		4.5 m		6.0 m		Max. reach		m
7.5	on rail			5.2	5.7*			4.0*	4.0*	4.8
	on tyres			4.8*	4.8*			4.1*	4.1*	
6.0	on rail			5.4	6.5*	3.4	4.8*	3.2	3.3*	6.2
	on tyres			6.4*	6.4*	3.9*	3.9*	3.4*	3.4*	
4.5	on rail	9.0	9.9*	5.3	7.2*	3.5	5.9*	2.7	3.1*	7.0
	on tyres	8.6*	8.6*	6.9	7.0*	4.6	5.7	3.1*	3.1*	
3.0	on rail	8.7	11.1*	5.2	8.2*	3.4	6.3*	2.4	3.1*	7.4
	on tyres	10.9*	10.9*	6.8	8.1*	4.6	5.6	3.1*	3.1*	
1.5	on rail	8.7	12.6*	5.2	8.9*	3.3	6.5*	2.3	3.2*	7.4
	on tyres	11.7	12.4*	6.7	8.2	4.5	5.6	3.2*	3.2*	
0	on rail	8.4	14.0*	4.9	8.9*	3.2	6.6*	2.4	3.5*	7.2
	on tyres	11.8	13.8*	6.7	8.2	4.4	5.4	3.3	3.5*	
-1.5	on rail	8.2	14.3*	4.7	9.2*	3.1	5.9*	2.7	4.2*	6.6
	on tyres	11.7	14.2*	6.5	8.2	4.2	5.3	3.7	4.1*	
-3.0	on rail	8.0	12.8*	4.5	6.7*			3.9	4.9*	5.0
	on tyres	11.5	13.5*	6.3	7.4*			4.5*	4.5*	

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

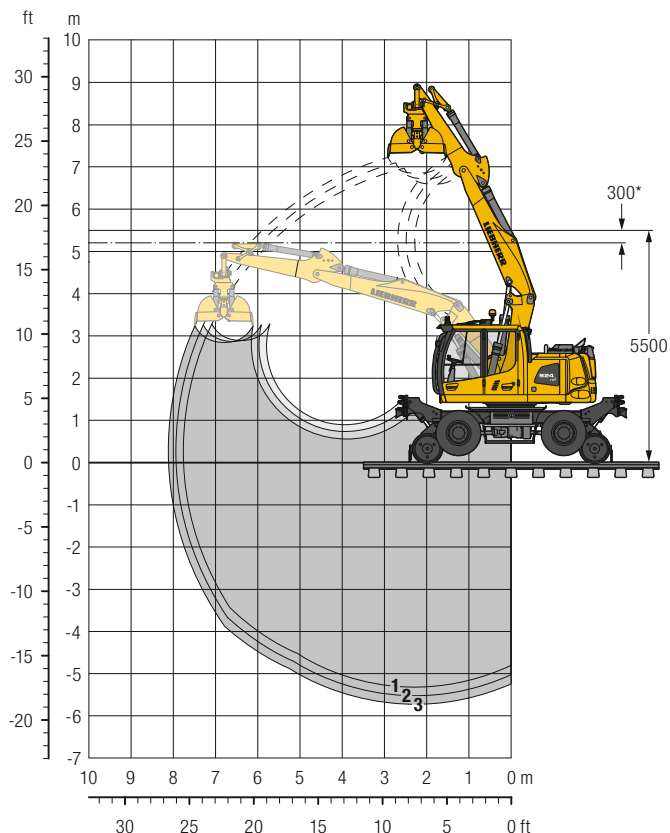
The lift capacities are stated in metric tonnes (t) at the stick end and can be lifted 360° on firm, level supporting surface with locked steering axle. These capacities can be slewed through 360° with the undercarriage in the transverse position. Capacities in the longitudinal position of the undercarriage (+/- 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.

Clamshell Grab

with Two-Piece Boom 5.05 m



* Safety distance to overhead wires

Digging Envelope

		1	2	3
Stick length	m	1.85	2.05	2.25
Max. digging depth	m	5.30	5.50	5.70
Max. reach at ground level	m	7.75	7.95	8.10
Max. dumping height	m	6.60	6.75	6.85
Max. dumping height under overhead wires	m	2.90	2.90	2.85

Operating Weight

The operating weight includes the basic machine with 8 tyres, two-piece boom 5.05 m, stick 2.25 m and clamshell grab GM 7C/0.35 m³.

Tail radius	Weight (kg)
A 924 Rail Litronic Friction Drive with tail radius 2,000 mm	22,700
A 924 Rail Litronic Friction Drive with tail radius 2,000 mm (heavy counterweight)	23,300
A 924 Rail Litronic Friction Drive with tail radius 2,110 mm	25,000

Clamshell Grab GM 7C Machine stability per ISO 10567* (75% of tipping capacity)

Width of clamshells mm	Capacity m ³	Weight kg	Tail radius 2,000 mm						Tail radius 2,000 mm (heavy counterweight)						Tail radius 2,110 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)			
			1.85	2.05	2.25	1.85	2.05	2.25	1.85	2.05	2.25	1.85	2.05	2.25	1.85	2.05	2.25	1.85	2.05	2.25	
300 ¹⁾	0.10	685	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
500 ²⁾	0.19	780	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
600 ²⁾	0.25	830	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
700 ²⁾	0.30	865	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
800 ²⁾	0.30	890	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1,000 ²⁾	0.38	965	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
600 ³⁾	0.35	905	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
800 ³⁾	0.48	985	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
1,000 ³⁾	0.70	1,115	△	△	-	■	■	■	■	■	■	△	■	■	■	■	■	■	■	■	■

* 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

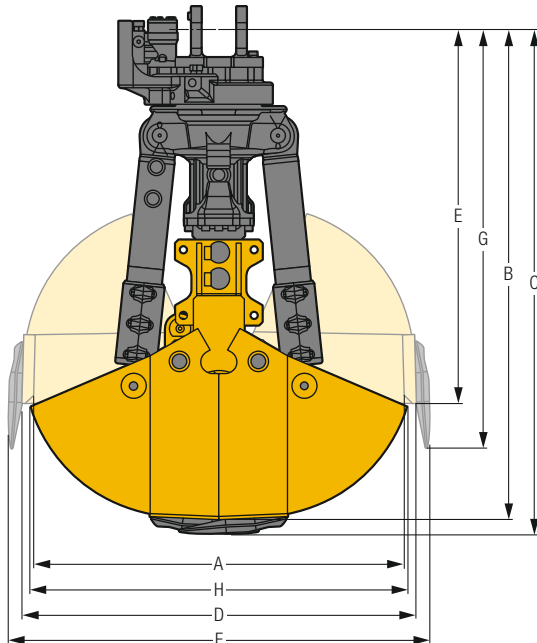
¹⁾ Track construction bucket

²⁾ Combination bucket

³⁾ Clamshell bucket

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

Clamshell Grab GM 7C



Scope of Delivery

	mm	Weight kg
Suspension		
suitable for quick change stick and standard pins		
Swing angle 45°	265	85
Swing angle 90°	370	90
for quick coupler SWA 33	645	165
Clamshell grab mechanism and clamshell carrier – upper part		
GM 7C		285
GM 7C-HD		310

Optional

	Weight kg
Ejectors (set of two)	
for special track clamshells and digging clamshells	
for clamshell width 300 mm	45
for clamshell width 600 mm	75
for clamshell width 800 mm	80

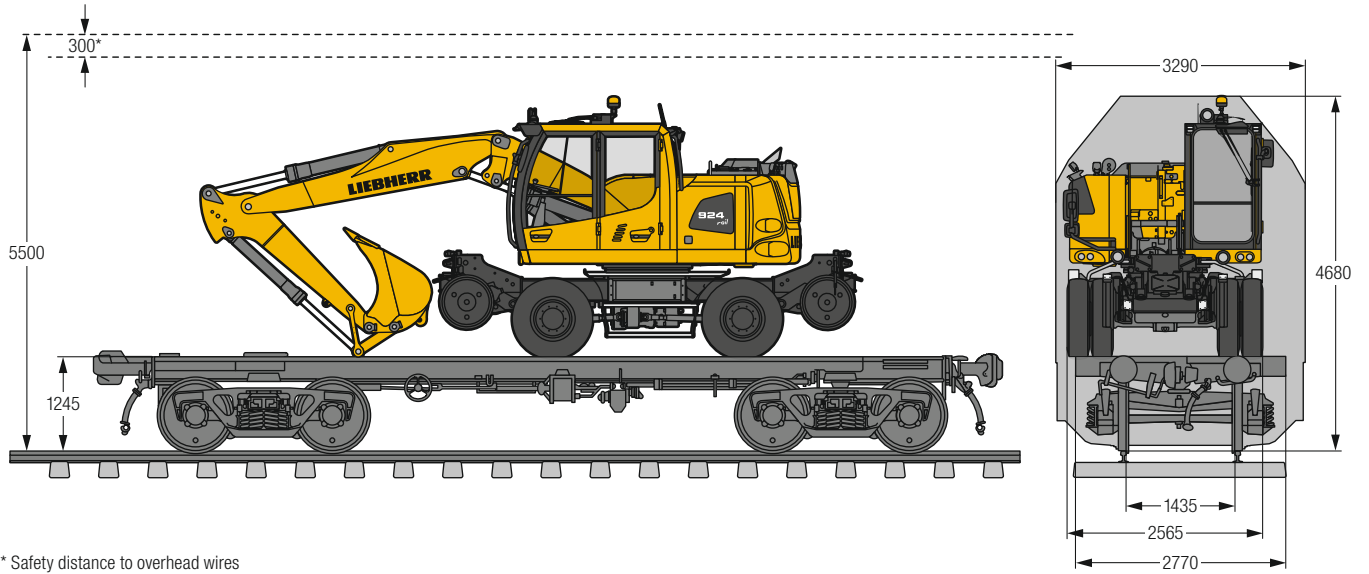
Dimensions/Weights

Capacity	Shell width	Number of teeth	A Width	Shell closed B Height	C Height with teeth	D Width	E Height	Shell open F Width with teeth	G Height with teeth	H Opening width	Weight without suspension
m ³	mm	Piece	mm	mm	mm	mm	mm	mm	mm	mm	kg
Track construction bucket (two-piece clamshell carrier)											
0.10	300	3	1,143	1,492	1,534	1,200	1,139	1,284	1,275	1,128	595
Combination bucket (two-piece clamshell carrier)											
0.19	500	5	1,189	1,542	1,585	1,298	1,140	1,386	1,258	1,225	690
0.25	600	5	1,189	1,542	1,585	1,298	1,140	1,386	1,258	1,225	740
0.30	700	7	1,189	1,542	1,585	1,298	1,140	1,386	1,258	1,225	775
0.30	800	7	1,189	1,542	1,585	1,298	1,140	1,386	1,258	1,225	800
0.38	1,000	9	1,189	1,542	1,585	1,298	1,140	1,386	1,258	1,225	875
Clamshell bucket (two-piece clamshell carrier)											
0.35	600	5	1,439	1,677	1,723	1,568	1,140	1,657	1,262	1,495	815
0.48	800	7	1,439	1,677	1,723	1,568	1,140	1,657	1,262	1,495	895
0.70	1,000	7	1,439	1,677	1,723	1,568	1,140	1,657	1,262	1,495	1,025

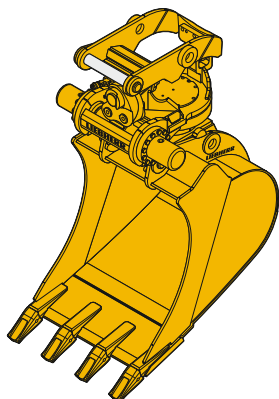
Technical Data

Lift capacity max.	Grab open/close		Grab turning		Torque 1 motor 200 cm ³
	Pressure max.	Flow max.	Pressure max.	Flow max.	
10 t	36 MPa	200 l/min.	15 MPa	30 l/min.	1.38 kNm

Dimensions for Transport

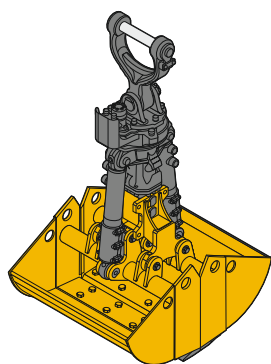


Attachments



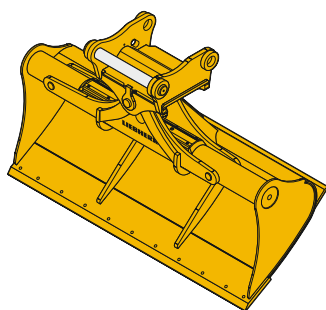
Tilt Rotator

Technical data	Slewing angle of 2 x 50° 360° rotation Quick change stick/SWA 33/SWA 48/LIKUFIX
Description	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.



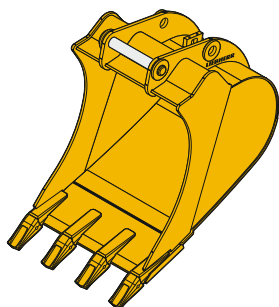
Clamshell Grab

Technical data	Width of clamshells 300 – 1,000 mm Capacity 0.10 – 0.48 m³ Opening length 1,200 – 1,580 mm Quick change stick/SWA 33/SWA 48/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

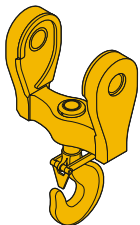
Technical data	Cutting width 1,600 and 2,000 mm Capacity (SAE) 0.70 – 1.00 m³ Slewing angle of 2 x 50° Quick change stick/SWA 33/SWA 48/LIKUFIX
Description	With the ditch cleaning bucket Liebherr offers a specific attachment for railroader applications. The cutting edge persists paralelly to the rotation axis, so that it's also possible to drive around obstacles without any difficulty. This attachment makes racking, arranging and profiling an easy task. The cylinders are inside and therefore optimally protected.



Backhoe Bucket

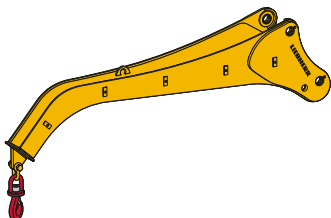
Technical data	Cutting width 400 – 1,250 mm Capacity 0.24 – 0.95 m³ Quick change stick/SWA 33/SWA 48/LIKUFIX
Description	Liebherr offers a suitable backhoe bucket for nearly every application. A broad programm in approved Liebherr quality and the appropriate quick hitch adapters provide a maximum of productivity.

Attachments



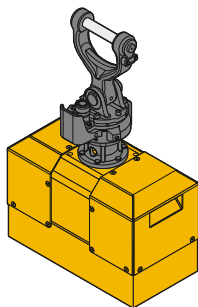
Load Lift Hook

Technical data	Lifting capacity up to 8 t Mechanical 360° rotating High-strength special type Quick change stick/ SWA 33/ SWA 48/ LIKUFIX
Description	Due to its low operating weight the Liebherr load hook allows the lifting of heavy loads. With this 360° rotatable attachment it's possible to exactly deposit loads.



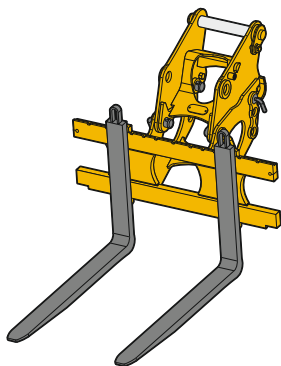
Load-Lifting Stick

Technical data	Length 2,500 mm Integrated load hook 2.5 t Quick change stick/ SWA 33/ SWA 48/ 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.



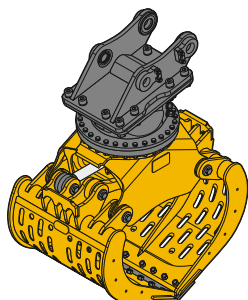
Hydro Magnet

Technical data	Hydro magnet II 5 kW Lifting capacity up to 5 t Swing drive 330° Quick change stick/ SWA 33/ SWA 48/ 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/ SWA 33/ SWA 48/ 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 m³ Opening length 1,200 – 1,970 mm Quick change stick/ SWA 33/ SWA 48/ 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 coupling Rockinger, semi-automatic	•
Drive via friction wheel (9B) or rail (9C)	+
Additional ascent laterally, left	+
Additional ascent laterally, right	+
Counterweight at undercarriage	+
Lighting system white / red incl. power socket	✘*
Earthing cable with ball-headed pin	✘
Rotating assembly position symmetric	•
Fire extinguisher 6 kg	✘
Hydraulic connection for tipping the trailer	+
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 undercarriage friction wheel, gauge 1,435 mm	•
Rail sweeper	•
Protection for oscillating axle cylinders	+
Proportional servo-steering with emergency function	•
Speeder	+
Storage compartment left – lockable	•
Storage compartment right – lockable	•
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	+
Pull rod	+

Uppercarriage

Uppercarriage rear light, 2 pieces, LED	+
Uppercarriage right side light, 1 piece, LED	•
Counterweight (tail swing radius 2,000 mm)	•
Counterweight (tail swing radius 2,000 mm), heavy	+
Counterweight (tail swing radius 2,110 mm)	+
Refuelling system with filling pump	+
External starting aid (battery connectors)	+
Handrails, non slip surfaces	•
Main battery switch for electrical system	•
Engine hood with gas spring	•
Uppercarriage doors, lockable	•
Amber beacon, at uppercarriage, LED double flash	+
Signal light DB, halogen	✘
Signal light DB, LED	+



Hydraulic System

Shut-off valve between hydraulic tank and pump(s)	•
Pressure test fittings	•
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	✘/✘*
Switchover clamshell operation and tipping cylinder (not available in combination with LKUFIX)	+
Switchover high pressure circuit and tipping cylinder	+
Switchover high pressure circuit 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	+
Preheating hydraulic oil	+
Preheating fuel	+
Preheating engine oil	+



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, 2 pieces, LED	•
Cab lights front, 2 pieces, LED (under rain cover)	•
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, vehicle fleet management*	•
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)	+
Amber beacon, on cabin, LED double flash	+
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 DB (safety flag, signal horn, warning triangle, warning light)	✘
Safety components GB (safety flag)	✘*
Sun blind	•
Auxiliary heating, adjustable (week time switch)	+
Power socket 12 V	•
Left control console, folding	•
Electronic immobilizer	+
Cigarette lighter / power socket 24 V	•



Equipment

Alternative connection medium pressure circuit on right side of stick	+
Boom lights, 2 pieces, LED	•
Stick lights, 2 pieces, LED	+
Grab lines for stick with tipping kinematic	•
High pressure circuit 1 incl. unpressurised return line and Tool Control	•
High pressure circuit 2 incl. lines	•
Free rotating load lift hook	+
Load holding valve bucket cylinder	+
Load lug on boom	+
Load lug on stick	+
Leak oil line, additional for attachments	+
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	•
PowerLift	•
Pipe fracture safety valves hoist cylinders	•
Pipe fracture safety valve stick cylinder	•
Hose quick coupling at grab lines	•
Hose protection for LIKUFIX	+
Quick coupling system LIKUFIX SWA 33	+
Quick coupling system LIKUFIX SWA 48	+
Signal contacts for LIKUFIX, 14-pin	+
Signal contacts for LIKUFIX, 14-pin, with control unit for second SWA	+
Special buckets and other attachments	+
Power socket on stick, commutable (2 circuits)	+
Tool Control, 20 attachment adjustments selectable over the display	•
Tool Management, automatic attachment recognition (in combination with LIKUFIX)	+
Latching for connecting link in grab operation	+
Two-piece boom	•
Offset two-piece boom	+



Complete Machine

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

• = Standard, + = Option, ✘ = Required for acceptance by the German RR (DB), ✘* = Required for acceptance by the British RR – necessary for compliance RIS 1530

* = optionally extendable after one year

Availability of equipment may differ by country.

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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