

Machine for Industrial Applications

LH 60 M
Litronic® High Rise

Operating Weight: 69,700 – 71,200 kg
Engine Output: 180 kW / 244 HP
Max. System Performance: 288 kW



LIEBHERR

Technical Data



Engine

Rating per ISO 9249	180 kW (244 HP) at 1,700 RPM
Model	Liebherr D936 according to stage IIIB/Tier 4i
Type	6 cylinder in-line
Bore/Stroke	122/150 mm
Displacement	10.5 l
Engine operation	4-stroke diesel Common-Rail turbo-charged and after-cooled reduced emissions
Harmful emissions values	in accordance with 97/68/EG stage IIIB
Emission control	Liebherr particle filter
Cooling	water-cooled with integrated motor oil cooler
Air cleaner	dry-type air cleaner with pre-cleaner, primary and safety elements
Fuel tank	750 l
Engine idling	sensor controlled
Electrical system	
Voltage	24 V
Batteries	2 x 170 Ah/12 V
Alternator	three phase current 28 V/100 A



Hydraulic System

Hydraulic pump for attachment and travel drive	two Liebherr variable flow, swashplate pumps (double construction)
Max. flow	2 x 290 l/min.
Max. pressure	350 bar
Hydraulic pump regulation and control	electro-hydraulic with electronic engine speed sensing regulation, pressure compensation, flow compensation, automatic oil flow optimizer
Hydraulic pump for swing drive	reversible, variable flow, swashplate pump, closed-loop circuit
Max. flow	120 l/min.
Max. pressure	380 bar
Hydraulic tank	290 l
Hydraulic system	890 l
Hydraulic oil filter	2 main return filters with integrated partial micro filtration (5 µm)
Hydraulic oil cooler	compact cooling system consisting cooling unit for water, hydraulic oil and charge air with stepless thermostatically controlled fan
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 material handling and heavy-duty jobs
S (Sensitive)	for precision work and lifting through very sensitive movements
E (ECO)	for especially economical and environmentally friendly operation
P (Power)	for maximum digging power and heavy duty jobs
Tool Control (Option)	ten preadjustable pump flows and pressures for add on tools



Hydraulic Controls

Power distribution	via control valves in single block with integrated safety valves
Servo circuit	
Attachment and swing	with hydraulic pilot control and proportional joystick levers
Travel	electroproportional via foot pedal
Additional functions	via switch or electroproportional foot pedals
Option	proportional control, proportionally acting transmitters on the joysticks for additional hydraulic functions



Swing Drive

Drive	Liebherr swashplate motor in a closed system with integrated brake valve
Transmission	Liebherr planetary reduction gear
Swing ring	Liebherr, sealed single race ball bearing swing ring, internal teeth
Swing speed	0 – 4.5 RPM stepless
Swing torque	122 kNm
Brake	holding brake (spring applied – pressure released)
Option	pedal controlled positioning swing brake



Uppercarriage

Type	slewing platform made from high-strength steel plate, designed for the toughest requirements
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Operator's Cab

Cab	safety cab structure with integrated bullet proof front screen and roof window, work headlights integrated in the ceiling, a door with a side window (can be opened on both sides), large stowing and depositing possibilities, shock-absorbing suspension, sound-damping insulating, tinted laminated safety glass, separate shades for the sunroof window and wind-screen
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 climatization 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 climatization with active coal and ventilator
Control system	joysticks with arm consoles and swivel seat
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 tool parameters
Air-conditioning	automatic air-conditioning, recirculated air function, fast de-icing and demisting at the press of a button, air vents can be operated via a menu; recirculated air and fresh air filters can be easily replaced and are accessible from the outside; heating-cooling unit, designed for extreme out-side temperatures, sensors for solar radiation, inside and outside temperatures

Noise emission	
ISO 6396	L_{pA} (inside cab) = 71 dB(A)
2000/14/EC	L_{WA} (surround noise) = 105 dB(A)



Undercarriage

Type	torsion-resistant box design made from high-strength steel plate, designed for the toughest requirements
Drive	variable flow swashplate motor with automatic brake valve
Travel speed	0 – 9 km/h stepless
Driving operation	automotive driving using accelerator pedal, cruise control function: storage of variable accelerator pedal positions
Axles	90 t drive axles; manual or automatic hydraulically controlled front axle oscillation lock
Service brake	two circuit travel brake system with accumulator; maintenance-free, wet and backlash-free disc brake
Holding brake	wet, maintenance-free multi disc brakes
Stabilization	4 point outriggers



Attachment

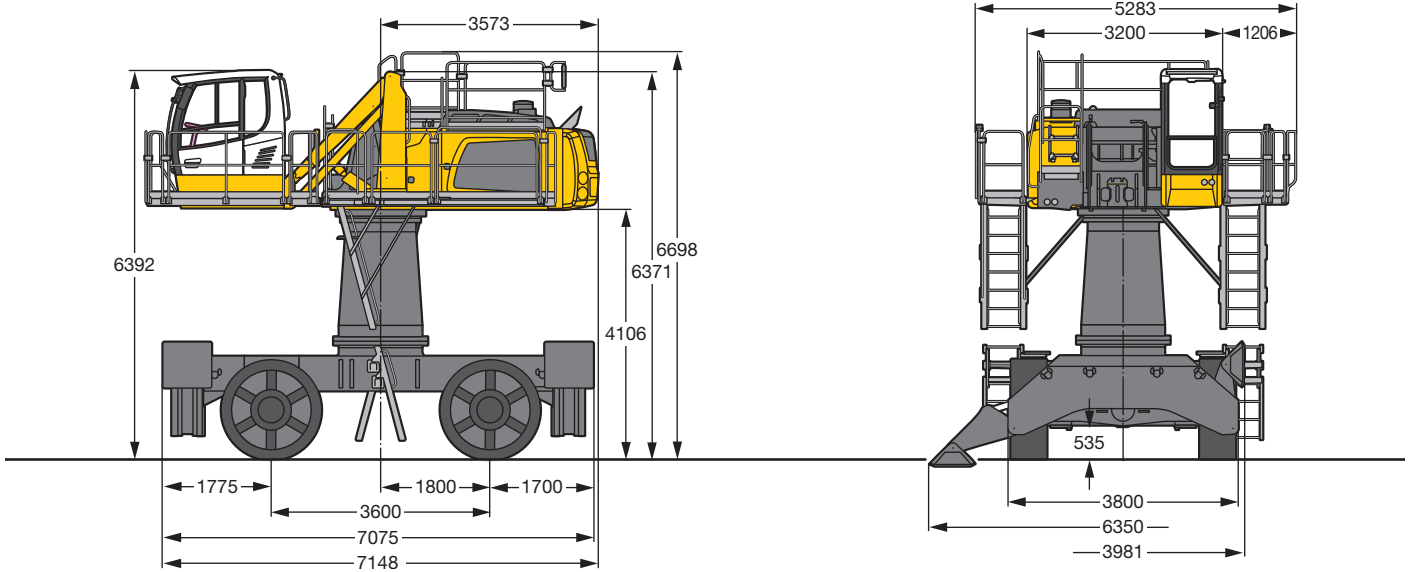
Type	high-strength steel plates at high-stressed points for the toughest requirements. Complex and stable mountings of attachment and cylinders
Hydraulic cylinders	Liebherr cylinders with special seal system. Shock absorption
Energy recovering cylinder	Liebherr gas cylinder with special sealing and control system
Bearings	sealed, low maintenance



Complete Machine

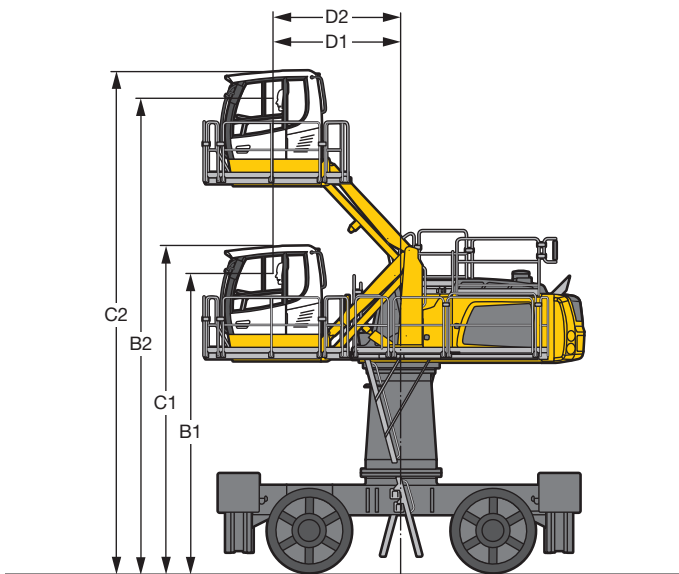
Lubrication	central lubrication system for uppercarriage and attachment, automatically
Option	central lubrication system for undercarriage, automatically
Steps system	undercarriage ascent via ladders uppercarriage with platform left and right and crossover possibility parts hot-dip galvanised, nonskid surface

Dimensions



Choice of Cab Elevation

Cab Elevation LHC (Hydraulic Elevation)

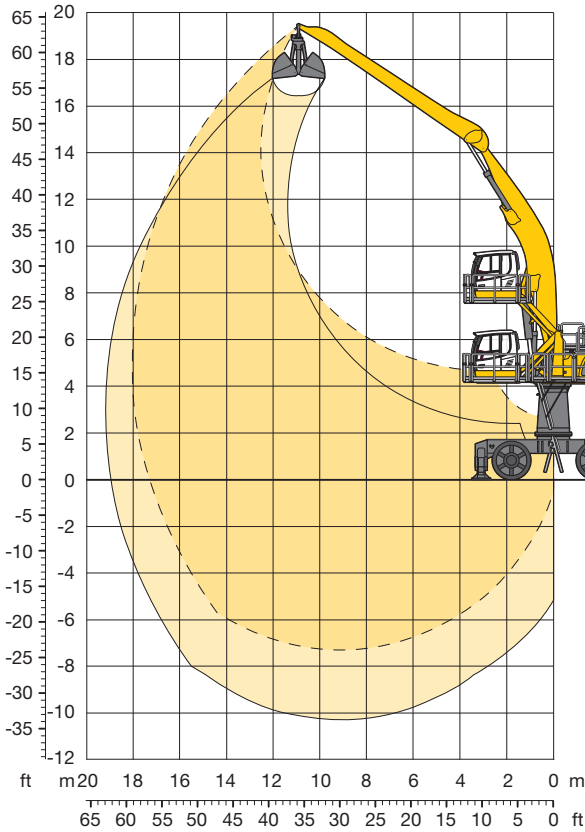


Increase Type	LHC 340-35
B1	5,849 mm
B2	9,264 mm
C1	6,392 mm
C2	9,806 mm
D1	2,484 mm
D2	2,485 mm

The hydraulically adjustable cab allows the driver, that he can choose his field of view freely and at any time within the stroke.

Tires 23.5 x 25

Attachment AG18 (Kinematic 2C)

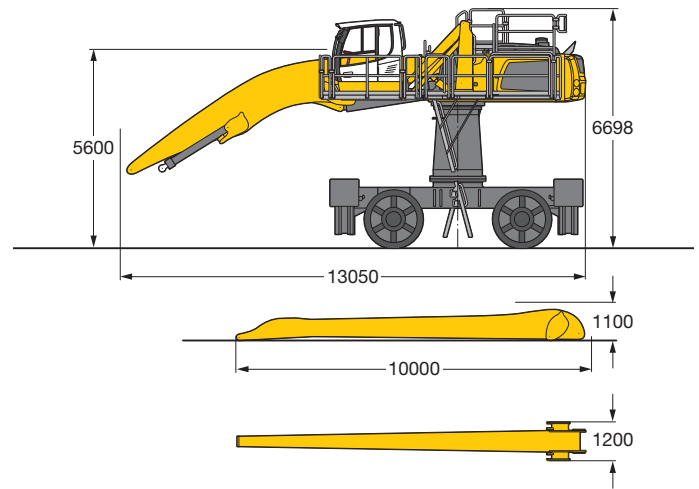


Operating Weight

The operating weight includes basic machine with 4 point outriggers, turret 2.00 m, hydr. cab elevation, 4 solid tires, industrial-type angled mono boom 9.50 m and industrial-type straight stick 9.50 m.

with clamshell model GM 20B/1.30 m ³ shells for loose material	69,700 kg
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Dimensions



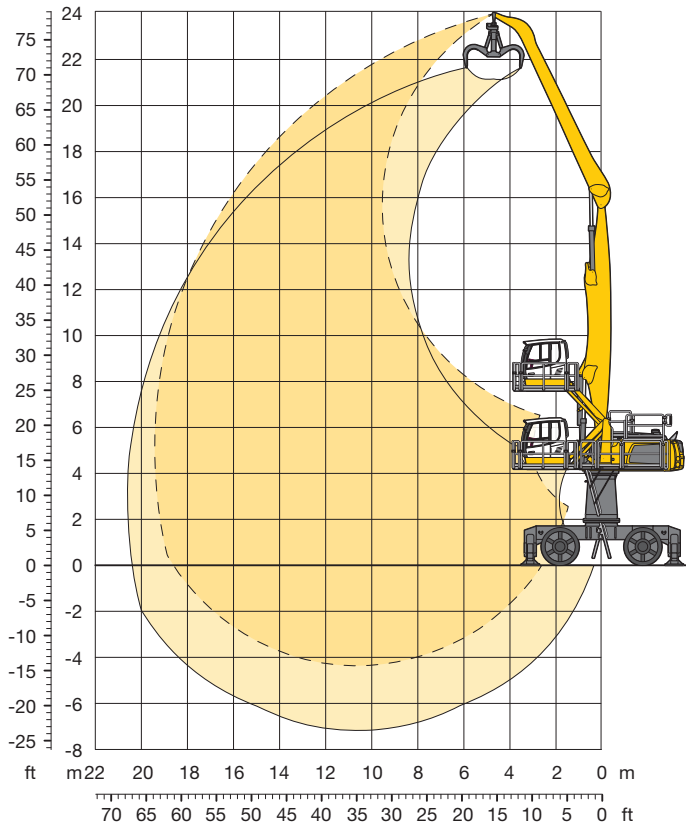
Industrial Stick 9.50 m

m	Undercarriage	3.0 m		4.5 m		6.0 m		7.5 m		9.0 m		10.5 m		12.0 m		13.5 m		15.0 m		16.5 m		18.0 m		19.5 m		m			
		↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔		
22.5	4 pt. outriggers down																												
21.0	4 pt. outriggers down																												
19.5	4 pt. outriggers down																												
18.0	4 pt. outriggers down														6.0*	6.0*											5.1*	5.1*	12.6
16.5	4 pt. outriggers down																5.6*	5.6*									4.8*	4.8*	13.9
15.0	4 pt. outriggers down																6.1*	6.1*	4.8*	4.8*							4.6*	4.6*	15.1
13.5	4 pt. outriggers down																6.0*	6.0*	5.9*	5.9*							4.5*	4.5*	15.9
12.0	4 pt. outriggers down																6.1*	6.1*	5.9*	5.9*	4.8*	4.8*					4.5*	4.5*	16.7
10.5	4 pt. outriggers down																6.6*	6.6*	6.2*	6.2*	5.9*	5.9*	5.7*	5.7*			4.5*	4.5*	17.2
9.0	4 pt. outriggers down																6.8*	6.8*	6.4*	6.4*	6.1*	6.1*	5.8*	5.8*			4.5*	4.5*	17.6
7.5	4 pt. outriggers down																7.8*	7.8*	7.2*	7.2*	6.7*	6.7*	6.3*	6.3*	5.9*	5.9*	4.6*	4.6*	17.9
6.0	4 pt. outriggers down									9.4*	9.4*	8.4*	8.4*	7.6*	7.6*	6.9*	6.9*	6.5*	6.5*	6.0*	6.0*	4.7*	4.7*			4.7*	4.7*	18.0	
4.5	4 pt. outriggers down	30.5*	30.5*	19.9*	19.9*	14.9*	14.9*	12.1*	12.1*	10.2*	10.2*	8.9*	8.9*	8.0*	8.0*	7.2*	7.2*	6.7*	6.7*	6.2*	6.2*	4.9*	4.9*			4.8*	4.8*	18.0	
3.0	4 pt. outriggers down	6.2*	6.2*	20.4*	20.4*	16.8*	16.8*	13.3*	13.3*	11.0*	11.0*	9.5*	9.5*	8.4*	8.4*	7.5*	7.5*	6.9*	6.9*	6.3*	6.3*					5.1*	5.1*	17.9	
1.5	4 pt. outriggers down	5.3*	5.3*	11.0*	11.0*	18.3*	18.3*	14.3*	14.3*	11.7*	11.7*	10.0*	10.0*	8.7*	8.7*	7.8*	7.8*	7.0*	7.0*	6.3*	6.3*					5.3*	5.3*	17.7	
0	4 pt. outriggers down	5.8*	5.8*	9.5*	9.5*	18.2*	18.2*	15.0*	15.0*	12.3*	12.3*	10.4*	10.4*	9.0*	9.0*	7.9*	7.9*	7.1*	7.1*	6.3*	6.3*					5.7*	5.7*	17.3	
-1.5	4 pt. outriggers down	6.5*	6.5*	9.5*	9.5*	15.7*	15.7*	15.3*	15.3*	12.5*	12.5*	10.6*	10.6*	9.1*	9.1*	8.0*	8.0*	7.0*	7.0*	6.0*	6.0*					5.8*	5.8*	16.8	
-3.0	4 pt. outriggers down	7.4*	7.4*	10.0*	10.0*	15.1*	15.1*	15.1*	15.1*	12.4*	12.4*	10.5*	10.5*	9.0*	9.0*	7.7*	7.7*	6.6*	6.6*							5.7*	5.7*	16.1	
-4.5	4 pt. outriggers down	8.2*	8.2*	10.7*	10.7*	15.4*	15.4*	14.3*	14.3*	11.9*	11.9*	10.0*	10.0*	8.5*	8.5*	7.1*	7.1*	5.7*	5.7*							5.4*	5.4*	15.2	
-6.0	4 pt. outriggers down			11.5*	11.5*	15.4*	15.4*	12.7*	12.7*	10.6*	10.6*	8.9*	8.9*	7.4*	7.4*	5.8*	5.8*									5.3*	5.3*	14.0	

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

The lift capacities on the stick end without attachment are stated in metric tons (t) and are valid on a firm, level supporting surface with blocked oscillating 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 with the stabilizers raised and over the rigid axle with the stabilizers down. Indicated loads comply with the ISO 10567 standard and do not exceed 75 % of tipping or 87 % of hydraulic capacity. The lift capacity values indicated are attained at the corresponding operating temperature. This operating temperature is ensured by continuous movement of the boom. Weights of fitted working tools (grabs, load hooks, etc.) and load accommodation equipment are to be deducted from the lift capacity values. The lift capacity of the unit is limited by its stability, the lifting capability of the hydraulic elements, or the maximum permissible lifting capacity of the load 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 hook and a lift capacity chart.

Attachment GA20 (Kinematic 2A)

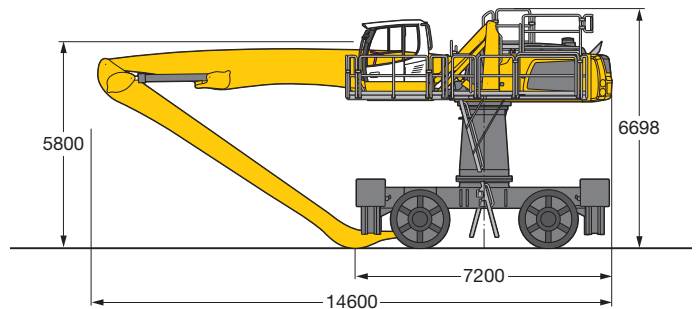


Operating Weight

The operating weight includes basic machine with 4 point outriggers, turret 2.00 m, hydr. cab elevation, 4 solid tires, industrial-type straight mono boom 10.50 m and industrial-type angled stick 9.50 m.

with grapple model GM 70C/1.10 m³ semi-closed tines | 70,050 kg

Dimensions



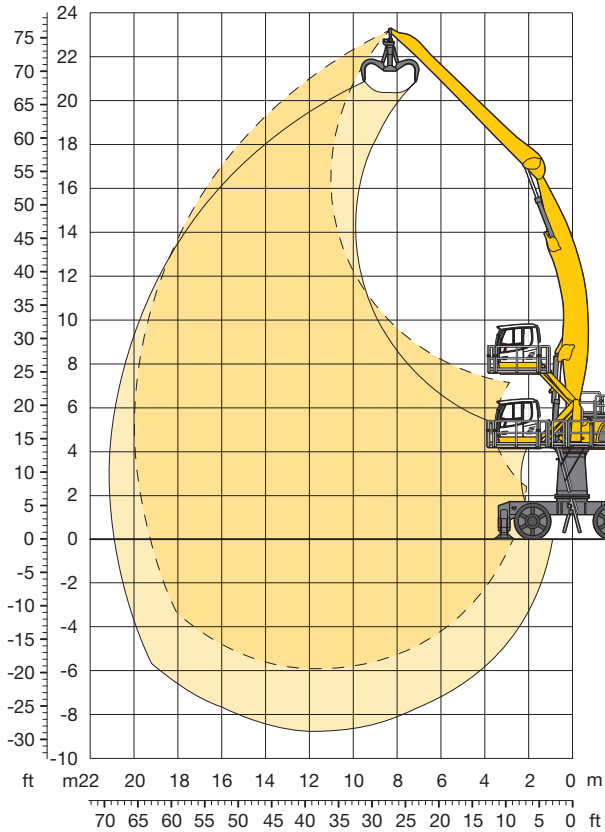
Industrial Stick 9.50 m

m	Undercarriage	3.0 m		4.5 m		6.0 m		7.5 m		9.0 m		10.5 m		12.0 m		13.5 m		15.0 m		16.5 m		18.0 m		19.5 m		m			
		⬇️	⬆️	⬇️	⬆️	⬇️	⬆️	⬇️	⬆️	⬇️	⬆️	⬇️	⬆️	⬇️	⬆️	⬇️	⬆️	⬇️	⬆️	⬇️	⬆️	⬇️	⬆️	⬇️	⬆️	⬇️	⬆️		
22.5	4 pt. outriggers down							8.7*	8.7*																	7.4*	7.4*	8.5	
21.0	4 pt. outriggers down									8.6*	8.6*	7.1*	7.1*													6.2*	6.2*	11.1	
19.5	4 pt. outriggers down									9.3*	9.3*	8.4*	8.4*	7.0*	7.0*											5.6*	5.6*	13.0	
18.0	4 pt. outriggers down											8.9*	8.9*	8.1*	8.1*	6.7*	6.7*									5.2*	5.2*	14.5	
16.5	4 pt. outriggers down											8.8*	8.8*	8.0*	8.0*	7.4*	7.4*	6.2*	6.2*							4.9*	4.9*	15.7	
15.0	4 pt. outriggers down											8.8*	8.8*	8.0*	8.0*	7.4*	7.4*	6.8*	6.8*	5.2*	5.2*					4.7*	4.7*	16.7	
13.5	4 pt. outriggers down											8.9*	8.9*	8.0*	8.0*	7.4*	7.4*	6.8*	6.8*	6.3*	6.3*					4.6*	4.6*	17.5	
12.0	4 pt. outriggers down										10.1*	10.1*	9.0*	9.0*	8.1*	8.1*	7.4*	7.4*	6.8*	6.8*	6.3*	6.3*	4.9*	4.9*			4.5*	4.5*	18.2
10.5	4 pt. outriggers down										10.4*	10.4*	9.2*	9.2*	8.3*	8.3*	7.5*	7.5*	6.9*	6.9*	6.3*	6.3*	5.8*	5.8*			4.5*	4.5*	18.7
9.0	4 pt. outriggers down								10.8*	10.8*	10.8*	10.8*	9.5*	9.5*	8.5*	8.5*	7.6*	7.6*	7.0*	7.0*	6.4*	6.4*	5.8*	5.8*			4.5*	4.5*	19.0
7.5	4 pt. outriggers down					11.2*	11.2*	13.2*	13.2*	11.2*	11.2*	9.8*	9.8*	8.7*	8.7*	7.8*	7.8*	7.0*	7.0*	6.4*	6.4*	5.8*	5.8*			4.5*	4.5*	19.3	
6.0	4 pt. outriggers down	15.3*	15.3*	18.8*	18.8*	17.4*	17.4*	14.0*	14.0*	11.7*	11.7*	10.1*	10.1*	8.9*	8.9*	7.9*	7.9*	7.1*	7.1*	6.4*	6.4*	5.7*	5.7*			4.6*	4.6*	19.4	
4.5	4 pt. outriggers down	1.9*	1.9*	16.2*	16.2*	18.6*	18.6*	14.7*	14.7*	12.2*	12.2*	10.4*	10.4*	9.1*	9.1*	8.0*	8.0*	7.1*	7.1*	6.4*	6.4*	5.6*	5.6*			4.7*	4.7*	19.4	
3.0	4 pt. outriggers down	1.5*	1.5*	6.0*	6.0*	19.4*	19.4*	15.2*	15.2*	12.5*	12.5*	10.6*	10.6*	9.2*	9.2*	8.0*	8.0*	7.1*	7.1*	6.3*	6.3*	5.4*	5.4*			4.4*	4.4*	19.3	
1.5	4 pt. outriggers down	2.3*	2.3*	5.2*	5.2*	11.8*	11.8*	15.3*	15.3*	12.6*	12.6*	10.6*	10.6*	9.1*	9.1*	8.0*	8.0*	7.0*	7.0*	6.1*	6.1*	5.1*	5.1*			4.1*	4.1*	19.1	
0	4 pt. outriggers down	3.3*	3.3*	5.6*	5.6*	10.2*	10.2*	15.0*	15.0*	12.4*	12.4*	10.4*	10.4*	8.9*	8.9*	7.7*	7.7*	6.7*	6.7*	5.7*	5.7*	4.5*	4.5*			3.8*	3.8*	18.6	
-1.5	4 pt. outriggers down			6.5*	6.5*	10.2*	10.2*	14.0*	14.0*	11.7*	11.7*	9.9*	9.9*	8.5*	8.5*	7.2*	7.2*	6.1*	6.1*	5.0*	5.0*					4.2*	4.2*	17.4	
-3.0	4 pt. outriggers down					10.8*	10.8*	12.4*	12.4*	10.5*	10.5*	8.9*	8.9*	7.6*	7.6*	6.4*	6.4*	5.2*	5.2*							4.8*	4.8*	15.5	
-4.5	4 pt. outriggers down																												
-6.0	4 pt. outriggers down																												

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

The lift capacities on the stick end without attachment are stated in metric tons (t) and are valid on a firm, level supporting surface with blocked oscillating 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 with the stabilizers raised and over the rigid axle with the stabilizers down. Indicated loads comply with the ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic capacity. The lift capacity values indicated are attained at the corresponding operating temperature. This operating temperature is ensured by continuous movement of the boom. Weights of fitted working tools (grabs, load hooks, etc.) and load accommodation equipment are to be deducted from the lift capacity values. The lift capacity of the unit is limited by its stability, the lifting capability of the hydraulic elements, or the maximum permissible lifting capacity of the load 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 hook and a lift capacity chart.

Attachment AG20 (Kinematic 2D)

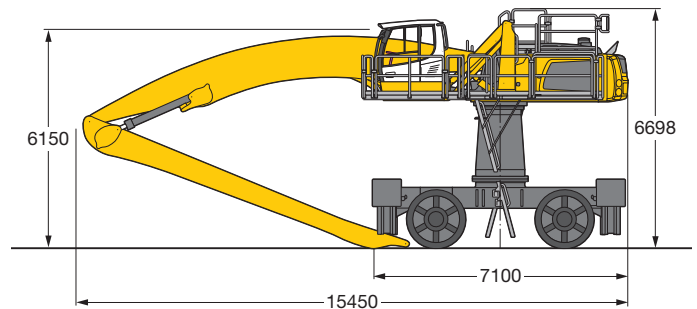


Operating Weight

The operating weight includes basic machine with 4 point outriggers, turret 2.00 m, hydr. cab elevation, 4 solid tires, industrial-type angled mono boom 11.50 m and industrial-type straight stick 9.50 m.

with grapple model GM 70C/1.10 m³ semi-closed tines | 71,200 kg

Dimensions



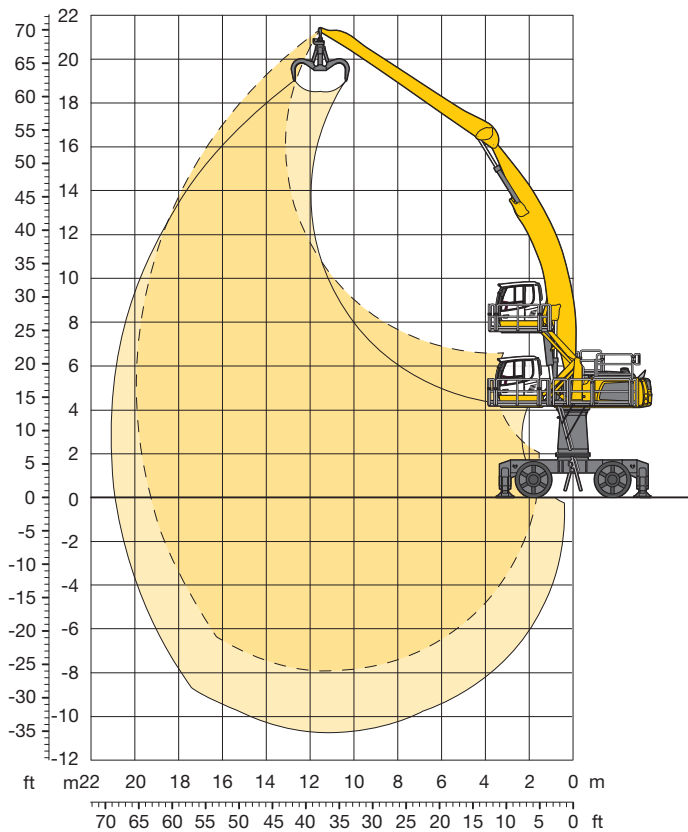
Industrial Stick 9.50 m

m	Undercarriage	3.0 m		4.5 m		6.0 m		7.5 m		9.0 m		10.5 m		12.0 m		13.5 m		15.0 m		16.5 m		18.0 m		19.5 m		m			
		↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔		
22.5	4 pt. outriggers down									6.9*	6.9*															6.2*	6.2*	9.6	
21.0	4 pt. outriggers down											7.0*	7.0*														5.5*	5.5*	12.0
19.5	4 pt. outriggers down													6.8*	6.8*	5.4*	5.4*										5.1*	5.1*	13.7
18.0	4 pt. outriggers down													6.7*	6.7*	6.2*	6.2*	5.1*	5.1*								4.8*	4.8*	15.2
16.5	4 pt. outriggers down													6.7*	6.7*	6.1*	6.1*	5.7*	5.7*								4.6*	4.6*	16.3
15.0	4 pt. outriggers down													6.7*	6.7*	6.1*	6.1*	5.7*	5.7*	5.3*	5.3*						4.5*	4.5*	17.3
13.5	4 pt. outriggers down													6.8*	6.8*	6.2*	6.2*	5.7*	5.7*	5.3*	5.3*	4.6*	4.6*				4.5*	4.5*	18.1
12.0	4 pt. outriggers down											7.7*	7.7*	6.9*	6.9*	6.3*	6.3*	5.7*	5.7*	5.3*	5.3*	5.0*	5.0*				4.5*	4.5*	18.7
10.5	4 pt. outriggers down										9.0*	9.0*	7.9*	7.9*	7.0*	7.0*	6.4*	6.4*	5.8*	5.8*	5.4*	5.4*	5.0*	5.0*			4.5*	4.5*	19.2
9.0	4 pt. outriggers down											9.4*	9.4*	8.2*	8.2*	7.2*	7.2*	6.5*	6.5*	5.9*	5.9*	5.4*	5.4*	5.0*	5.0*	4.6*	4.6*	19.5	
7.5	4 pt. outriggers down			18.1*	18.1*	14.5*	14.5*	11.7*	11.7*	9.8*	9.8*	8.5*	8.5*	7.5*	7.5*	6.7*	6.7*	6.0*	6.0*	5.5*	5.5*	5.1*	5.1*	4.6*	4.6*	4.6*	4.6*	19.8	
6.0	4 pt. outriggers down			21.3*	21.3*	15.6*	15.6*	12.4*	12.4*	10.3*	10.3*	8.8*	8.8*	7.7*	7.7*	6.8*	6.8*	6.1*	6.1*	5.6*	5.6*	5.1*	5.1*	4.6*	4.6*	4.5*	4.5*	19.9	
4.5	4 pt. outriggers down			6.8*	6.8*	16.7*	16.7*	13.0*	13.0*	10.7*	10.7*	9.1*	9.1*	7.9*	7.9*	7.0*	7.0*	6.2*	6.2*	5.6*	5.6*	5.1*	5.1*	4.6*	4.6*	4.5*	4.5*	19.9	
3.0	4 pt. outriggers down	1.6*	1.6*	4.6*	4.6*	11.0*	11.0*	13.5*	13.5*	11.1*	11.1*	9.3*	9.3*	8.1*	8.1*	7.1*	7.1*	6.3*	6.3*	5.7*	5.7*	5.1*	5.1*	4.5*	4.5*	4.4*	4.4*	19.8	
1.5	4 pt. outriggers down	2.5*	2.5*	4.6*	4.6*	8.6*	8.6*	13.8*	13.8*	11.3*	11.3*	9.5*	9.5*	8.2*	8.2*	7.2*	7.2*	6.3*	6.3*	5.7*	5.7*	5.0*	5.0*	4.4*	4.4*	4.3*	4.3*	19.6	
0	4 pt. outriggers down	3.5*	3.5*	5.1*	5.1*	8.2*	8.2*	13.7*	13.7*	11.3*	11.3*	9.5*	9.5*	8.2*	8.2*	7.1*	7.1*	6.3*	6.3*	5.6*	5.6*	4.9*	4.9*			4.2*	4.2*	19.3	
-1.5	4 pt. outriggers down			5.9*	5.9*	8.4*	8.4*	13.1*	13.1*	11.1*	11.1*	9.4*	9.4*	8.1*	8.1*	7.0*	7.0*	6.1*	6.1*	5.4*	5.4*	4.6*	4.6*			4.1*	4.1*	18.8	
-3.0	4 pt. outriggers down					8.9*	8.9*	12.5*	12.5*	10.5*	10.5*	9.0*	9.0*	7.7*	7.7*	6.7*	6.7*	5.8*	5.8*	5.0*	5.0*	4.0*	4.0*			3.9*	3.9*	18.2	
-4.5	4 pt. outriggers down							11.3*	11.3*	9.6*	9.6*	8.3*	8.3*	7.1*	7.1*	6.1*	6.1*	5.2*	5.2*	4.3*	4.3*					4.2*	4.2*	16.6	
-6.0	4 pt. outriggers down																												

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

The lift capacities on the stick end without attachment are stated in metric tons (t) and are valid on a firm, level supporting surface with blocked oscillating 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 with the stabilizers raised and over the rigid axle with the stabilizers down. Indicated loads comply with the ISO 10567 standard and do not exceed 75 % of tipping or 87 % of hydraulic capacity. The lift capacity values indicated are attained at the corresponding operating temperature. This operating temperature is ensured by continuous movement of the boom. Weights of fitted working tools (grabs, load hooks, etc.) and load accommodation equipment are to be deducted from the lift capacity values. The lift capacity of the unit is limited by its stability, the lifting capability of the hydraulic elements, or the maximum permissible lifting capacity of the load 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 hook and a lift capacity chart.

Attachment AG20 (Kinematic 2C)

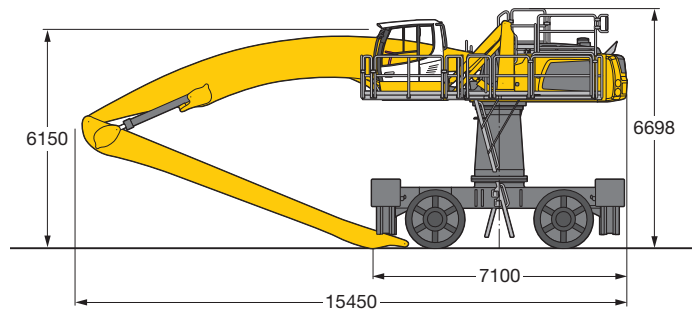


Operating Weight

The operating weight includes basic machine with 4 point outriggers, turret 2.00 m, hydr. cab elevation, 4 solid tires, industrial-type angled mono boom 11.50 m and industrial-type straight stick 9.50 m.

with grapple model GM 70C/1.10 m³ semi-closed tines | 71,200 kg

Dimensions



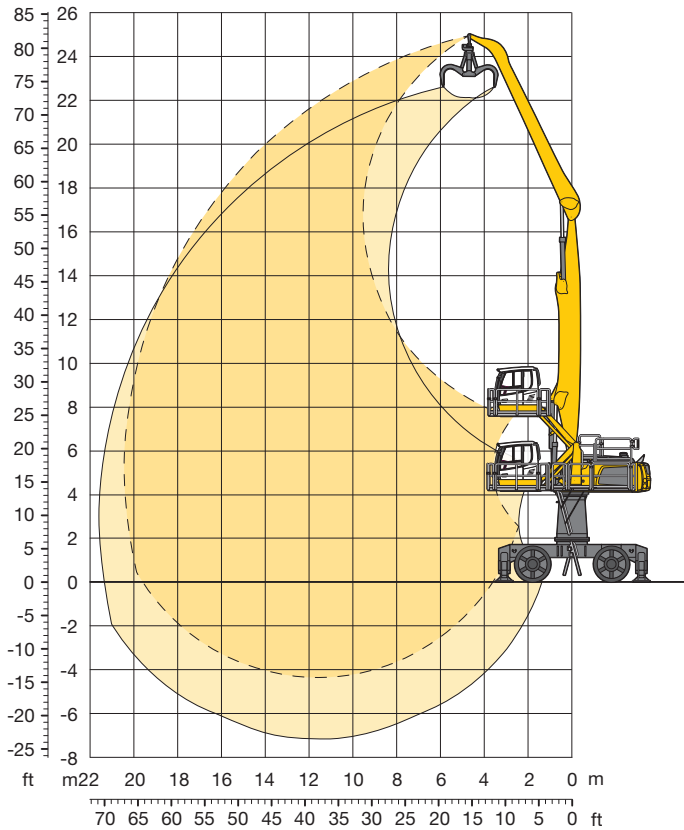
Industrial Stick 9.50 m

m	Undercarriage	Industrial Stick 9.50 m												m														
		3.0 m	4.5 m	6.0 m	7.5 m	9.0 m	10.5 m	12.0 m	13.5 m	15.0 m	16.5 m	18.0 m	19.5 m	Max. reach	Limited by hydr. capacity													
21.0	4 pt. outriggers down																5.5*	5.5*	12.0									
19.5	4 pt. outriggers down												5.4*	5.4*				5.1*	5.1*	13.7								
18.0	4 pt. outriggers down												5.5*	5.5*	5.1*	5.1*		4.8*	4.8*	15.2								
16.5	4 pt. outriggers down												5.5*	5.5*	5.1*	5.1*		4.6*	4.6*	16.3								
15.0	4 pt. outriggers down												5.5*	5.5*	5.1*	5.1*	4.8*	4.8*	4.5*	4.5*	17.3							
13.5	4 pt. outriggers down												5.5*	5.5*	5.1*	5.1*	4.8*	4.8*	4.6*	4.6*	18.1							
12.0	4 pt. outriggers down												5.6*	5.6*	5.2*	5.2*	4.9*	4.9*	4.6*	4.6*	18.7							
10.5	4 pt. outriggers down											6.3*	6.3*	5.8*	5.8*	5.3*	5.3*	4.9*	4.9*	4.6*	4.6*	19.2						
9.0	4 pt. outriggers down										7.3*	7.3*	6.5*	6.5*	5.9*	5.9*	5.4*	5.4*	5.0*	5.0*	4.7*	4.7*	19.5					
7.5	4 pt. outriggers down									8.8*	8.8*	7.7*	7.7*	6.8*	6.8*	6.1*	6.1*	5.6*	5.6*	5.1*	5.1*	4.8*	4.8*	19.8				
6.0	4 pt. outriggers down			19.4*	19.4*	14.2*	14.2*	11.3*	11.3*	9.4*	9.4*	8.0*	8.0*	7.1*	7.1*	6.3*	6.3*	5.7*	5.7*	5.2*	5.2*	4.8*	4.8*	4.5*	4.5*	4.4*	4.4*	19.9
4.5	4 pt. outriggers down			6.8*	6.8*	15.5*	15.5*	12.1*	12.1*	9.9*	9.9*	8.4*	8.4*	7.3*	7.3*	6.5*	6.5*	5.9*	5.9*	5.3*	5.3*	4.9*	4.9*	4.5*	4.5*	4.4*	4.4*	19.9
3.0	4 pt. outriggers down	1.6*	1.6*	4.6*	4.6*	11.0*	11.0*	12.7*	12.7*	10.4*	10.4*	8.8*	8.8*	7.6*	7.6*	6.7*	6.7*	6.0*	6.0*	5.4*	5.4*	4.9*	4.9*	4.5*	4.5*	4.4*	4.4*	19.8
1.5	4 pt. outriggers down	2.5*	2.5*	4.6*	4.6*	8.6*	8.6*	13.2*	13.2*	10.8*	10.8*	9.1*	9.1*	7.8*	7.8*	6.9*	6.9*	6.1*	6.1*	5.5*	5.5*	5.0*	5.0*	4.4*	4.4*	4.4*	4.4*	19.6
0	4 pt. outriggers down	3.5*	3.5*	5.1*	5.1*	8.2*	8.2*	13.4*	13.4*	11.0*	11.0*	9.2*	9.2*	7.9*	7.9*	6.9*	6.9*	6.2*	6.2*	5.5*	5.5*	4.9*	4.9*	4.3*	4.3*	4.3*	4.3*	19.3
-1.5	4 pt. outriggers down	4.4*	4.4*	5.9*	5.9*	8.4*	8.4*	13.1*	13.1*	11.0*	11.0*	9.2*	9.2*	8.0*	8.0*	6.9*	6.9*	6.1*	6.1*	5.4*	5.4*	4.7*	4.7*	4.3*	4.3*	4.3*	4.3*	18.8
-3.0	4 pt. outriggers down	5.3*	5.3*	6.6*	6.6*	8.9*	8.9*	12.8*	12.8*	10.7*	10.7*	9.1*	9.1*	7.8*	7.8*	6.8*	6.8*	5.9*	5.9*	5.1*	5.1*	4.3*	4.3*	4.2*	4.2*	4.2*	4.2*	18.2
-4.5	4 pt. outriggers down			7.4*	7.4*	9.6*	9.6*	11.9*	11.9*	10.1*	10.1*	8.6*	8.6*	7.4*	7.4*	6.4*	6.4*	5.5*	5.5*	4.6*	4.6*			4.0*	4.0*	4.0*	4.0*	17.5
-6.0	4 pt. outriggers down					10.3*	10.3*	10.5*	10.5*	9.0*	9.0*	7.8*	7.8*	6.7*	6.7*	5.7*	5.7*	4.8*	4.8*	3.6*	3.6*			3.6*	3.6*	3.6*	3.6*	16.5
-7.5	4 pt. outriggers down							7.5*	7.5*	6.5*	6.5*	5.5*	5.5*	4.6*	4.6*									4.3*	4.3*	4.3*	4.3*	13.9

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

The lift capacities on the stick end without attachment are stated in metric tons (t) and are valid on a firm, level supporting surface with blocked oscillating 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 with the stabilizers raised and over the rigid axle with the stabilizers down. Indicated loads comply with the ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic capacity. The lift capacity values indicated are attained at the corresponding operating temperature. This operating temperature is ensured by continuous movement of the boom. Weights of fitted working tools (grabs, load hooks, etc.) and load accommodation equipment are to be deducted from the lift capacity values. The lift capacity of the unit is limited by its stability, the lifting capability of the hydraulic elements, or the maximum permissible lifting capacity of the load 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 hook and a lift capacity chart.

Attachment GA21 (Kinematic 2A)

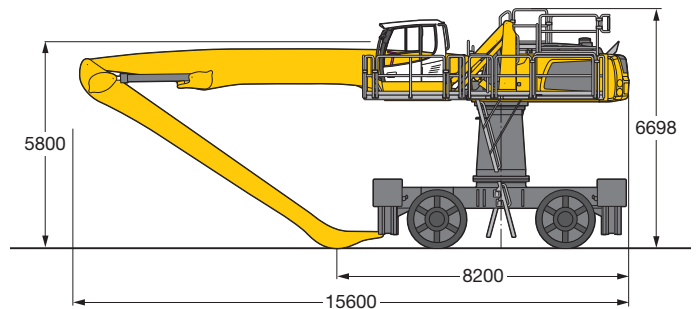


Operating Weight

The operating weight includes basic machine with 4 point outriggers, turret 2.00 m, hydr. cab elevation, 4 solid tires, industrial-type straight mono boom 11.50 m and industrial-type angled stick 9.50 m.

with grapple model GM 70C/1.10 m³ semi-closed tines | 70,500 kg

Dimensions



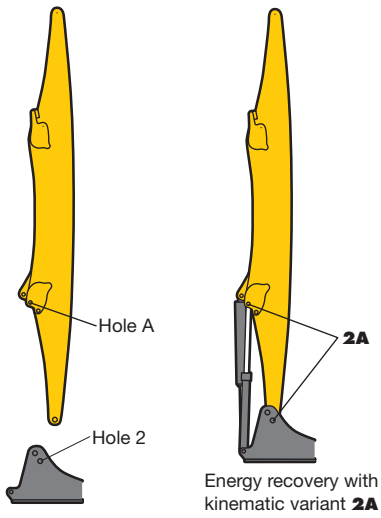
Industrial Stick 9.50 m

m	Undercarriage	3.0 m		4.5 m		6.0 m		7.5 m		9.0 m		10.5 m		12.0 m		13.5 m		15.0 m		16.5 m		18.0 m		19.5 m		m		
		↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	↕	↔	
24.0	4 pt. outriggers down							8.2*	8.2*																	8.1*	8.1*	7.5
22.5	4 pt. outriggers down							9.5*	9.5*	8.3*	8.3*	6.7*	6.7*													6.6*	6.6*	10.6
21.0	4 pt. outriggers down									9.1*	9.1*	8.2*	8.2*	6.8*	6.8*											5.8*	5.8*	12.7
19.5	4 pt. outriggers down											8.9*	8.9*	8.0*	8.0*	6.7*	6.7*									5.3*	5.3*	14.4
18.0	4 pt. outriggers down											8.8*	8.8*	7.9*	7.9*	7.2*	7.2*	6.3*	6.3*							5.0*	5.0*	15.8
16.5	4 pt. outriggers down											8.7*	8.7*	7.9*	7.9*	7.2*	7.2*	6.6*	6.6*	5.6*	5.6*					4.8*	4.8*	16.9
15.0	4 pt. outriggers down											8.7*	8.7*	7.9*	7.9*	7.2*	7.2*	6.6*	6.6*	6.1*	6.1*					4.7*	4.7*	17.8
13.5	4 pt. outriggers down											8.8*	8.8*	7.9*	7.9*	7.2*	7.2*	6.6*	6.6*	6.1*	6.1*	5.6*	5.6*			4.6*	4.6*	18.6
12.0	4 pt. outriggers down									10.2*	10.2*	9.0*	9.0*	8.0*	8.0*	7.3*	7.3*	6.6*	6.6*	6.1*	6.1*	5.6*	5.6*			4.5*	4.5*	19.2
10.5	4 pt. outriggers down									10.4*	10.4*	10.5*	10.5*	9.2*	9.2*	8.2*	8.2*	7.4*	7.4*	6.7*	6.7*	6.1*	6.1*	5.6*	5.6*	4.9*	4.9*	19.7
9.0	4 pt. outriggers down					10.1*	10.1*	12.1*	12.1*	10.9*	10.9*	9.5*	9.5*	8.4*	8.4*	7.5*	7.5*	6.8*	6.8*	6.2*	6.2*	5.6*	5.6*	5.1*	5.1*	4.5*	4.5*	20.0
7.5	4 pt. outriggers down	6.2*	6.2*	11.7*	11.7*	15.0*	15.0*	13.5*	13.5*	11.3*	11.3*	9.7*	9.7*	8.5*	8.5*	7.6*	7.6*	6.8*	6.8*	6.2*	6.2*	5.6*	5.6*	5.0*	5.0*	4.5*	4.5*	20.3
6.0	4 pt. outriggers down			24.2*	24.2*	17.8*	17.8*	14.1*	14.1*	11.7*	11.7*	10.0*	10.0*	8.7*	8.7*	7.7*	7.7*	6.9*	6.9*	6.2*	6.2*	5.6*	5.6*	4.9*	4.9*	4.4*	4.4*	20.4
4.5	4 pt. outriggers down			4.0*	4.0*	18.6*	18.6*	14.6*	14.6*	12.0*	12.0*	10.2*	10.2*	8.8*	8.8*	7.8*	7.8*	6.9*	6.9*	6.2*	6.2*	5.5*	5.5*	4.8*	4.8*	4.2*	4.2*	20.4
3.0	4 pt. outriggers down	0.3*	0.3*	2.9*	2.9*	8.5*	8.5*	14.9*	14.9*	12.2*	12.2*	10.3*	10.3*	8.9*	8.9*	7.8*	7.8*	6.9*	6.9*	6.1*	6.1*	5.3*	5.3*	4.5*	4.5*	3.9*	3.9*	20.3
1.5	4 pt. outriggers down	1.3*	1.3*	3.2*	3.2*	7.0*	7.0*	14.7*	14.7*	12.1*	12.1*	10.2*	10.2*	8.8*	8.8*	7.7*	7.7*	6.7*	6.7*	5.9*	5.9*	5.1*	5.1*	4.1*	4.1*	3.6*	3.6*	20.1
0	4 pt. outriggers down			4.0*	4.0*	7.0*	7.0*	12.8*	12.8*	11.7*	11.7*	9.9*	9.9*	8.5*	8.5*	7.4*	7.4*	6.4*	6.4*	5.6*	5.6*	4.7*	4.7*	3.5*	3.5*	3.4*	3.4*	19.6
-1.5	4 pt. outriggers down					7.5*	7.5*	12.2*	12.2*	10.9*	10.9*	9.3*	9.3*	8.0*	8.0*	6.9*	6.9*	6.0*	6.0*	5.0*	5.0*	4.0*	4.0*			3.6*	3.6*	18.4
-3.0	4 pt. outriggers down							11.1*	11.1*	9.7*	9.7*	8.4*	8.4*	7.2*	7.2*	6.2*	6.2*	5.2*	5.2*	4.2*	4.2*					4.2*	4.2*	16.5
-4.5	4 pt. outriggers down																											

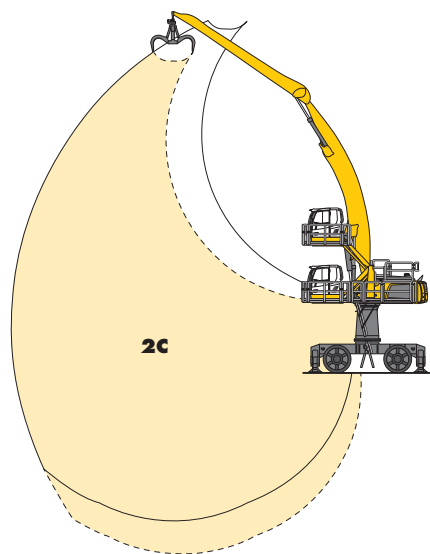
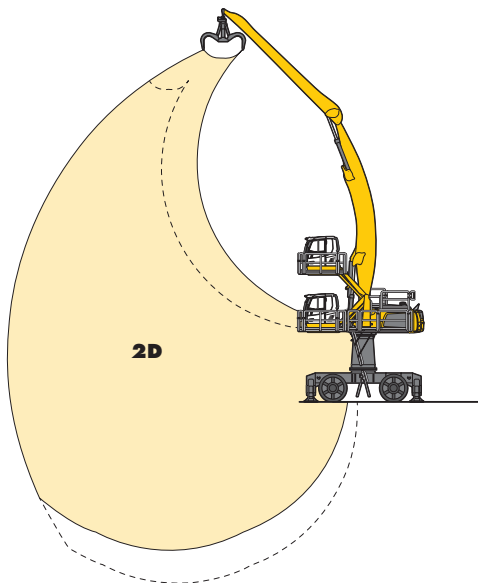
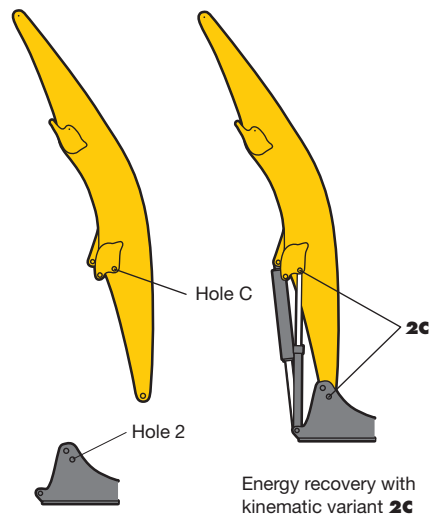
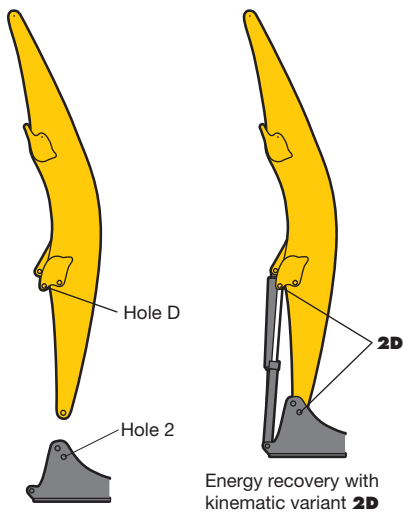
↕ Height ↔ Can be slewed through 360° 📏 In longitudinal position of undercarriage 🚧 Max. reach * Limited by hydr. capacity

The lift capacities on the stick end without attachment are stated in metric tons (t) and are valid on a firm, level supporting surface with blocked oscillating 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 with the stabilizers raised and over the rigid axle with the stabilizers down. Indicated loads comply with the ISO 10567 standard and do not exceed 75 % of tipping or 87 % of hydraulic capacity. The lift capacity values indicated are attained at the corresponding operating temperature. This operating temperature is ensured by continuous movement of the boom. Weights of fitted working tools (grabs, load hooks, etc.) and load accommodation equipment are to be deducted from the lift capacity values. The lift capacity of the unit is limited by its stability, the lifting capability of the hydraulic elements, or the maximum permissible lifting capacity of the load 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 hook and a lift capacity chart.

Kinematic Variant 2A

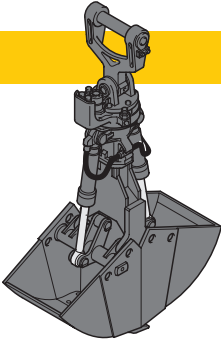


Kinematic Variant 2D/2C



Altered range curve with additional reach depth, e.g. for unloading from ships

Variety of Tools



Shells for Loose Material

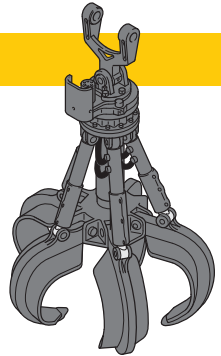
Shells for loose material with cutting edge (without teeth)

Clamshell Model GM 20B

Cutting width of shells	mm	1,000	1,200	1,600	2,000
Capacity	m ³	1.30	1.50	2.00	2.50
For loose material, specific weight up to	t/m ³	1.5	1.5	1.5	1.5
Weight	kg	1,355	1,415	1,550	1,820

Clamshell Model GMZ 80

Cutting width of shells	mm	1,300	1,500	1,700	
Capacity	m ³	3.00	3.50	4.00	
For loose material, specific weight up to	t/m ³	1.5	1.35	1.2	
Weight	kg	2,480	2,590	2,710	



Multiple Tine Grapples

open tines

semi-closed tines

closed tines

Grapple Model GM 69 (4 tines)

Capacity	m ³	0.80	1.10	0.80	1.10	0.80	1.10
Weight	kg	1,345	1,395	1,535	1,640	1,900	2,060

Grapple Model GM 70C (5 tines)

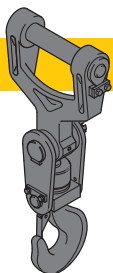
Capacity	m ³	0.80	1.10	0.80	1.10	0.80	1.10
Weight	kg	1,485	1,590	1,705	1,860	1,950	1,995



Wood Grapple

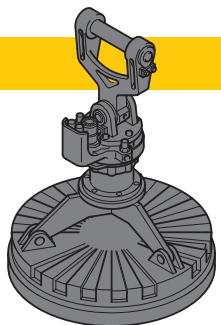
Grapple Model GM 20B

Claw width	mm	810	810	810	810
Size	m ²	1.50	1.70	1.90	2.10
Height of grapple, closed	mm	3,005	3,060	3,155	3,310
Weight	kg	1,725	1,775	1,910	1,950



Crane Hook with Suspension

Max. load	t	12.5
Height with suspension	mm	930
Weight	kg	96



Magnet Devices/Lifting Magnets

Generator	kW	13/20/25
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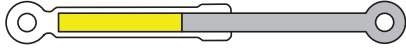
Electromagnets with Suspension

Power	kW	12.8/17.8
Diameter of magnet	mm	1,700
Weight	kg	3,280



ERC System - More performance, less consumption

Lowering the equipment stores energy in the ERC system. This stored energy is then made available to the machine to provide additional engine power. When the equipment is raised the stored energy is released and is reflected in powerful, homogeneous operating cycles. The result is a clear saving on fuel – and, at the same time, even greater performance.



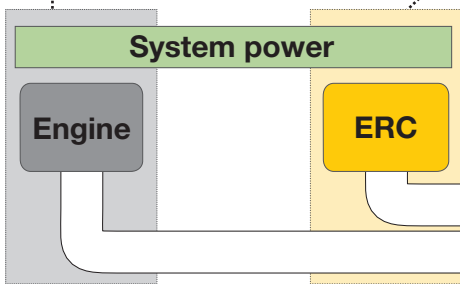
1. Attachment fitting raised / Energy released **B**



2. Lower attachment fitting / Store energy
4. Raise attachment fitting / Release energy



3. Attachment fitting lowered / Energy stored **A**

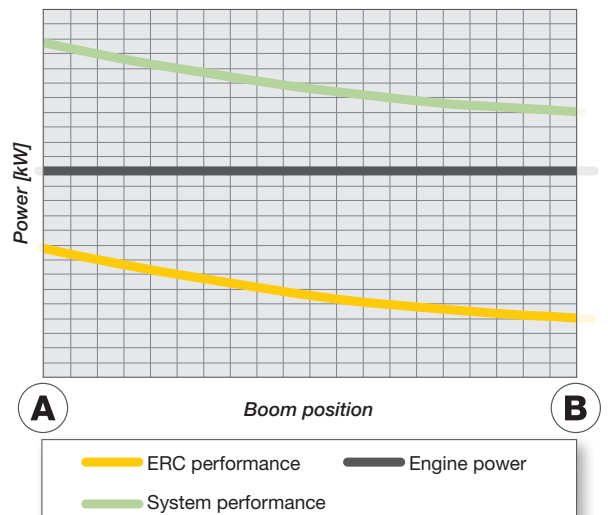


- increased overall power
- fuel savings of up to 30 %
- lower running costs
- reduced pollutant and noise emissions

System power

The energy recovery cylinder is a storage system which is independent of the diesel engine. The system performance of material handling machines fitted with the ERC system is composed of the installed engine power and the energy recovery cylinder. When the equipment is raised, energy from the ERC system is supplied in addition to the power from the diesel engine.

ERC-System



Equipment



Undercarriage

Support rocker, variants	+
Individual control outriggers	•
Shuttle axle lock, automatic	•
Outrigger monitoring system	+
Protection for piston rods, outriggers	+
Tool equipment, extended	•



Uppercarriage

Refuelling system with filling pump	+
Railing on uppercarriage	•
Generator	+
Main battery switch for electrical system	•



Hydraulics

Electronic pump regulation	•
Liebherr hydraulic oil from -20 °C to +40 °C	•
Liebherr hydraulic oil, biologically degradable	+
Magnetic rod in hydraulic tank	•
Bypass filter	+
Preheating hydraulic oil	+



Engine

Fuel anti-theft device	+
Liebherr particle filter	•
Reversible fan drive, fully automatic	+
Air pre-filter with dust discharge	+
Protective grid in front of cooler intake	•
Preheating fuel	+
Preheating coolant	+
Preheating engine oil	+



Operator's Cab

Cab lights rear, halogen	+
Cab lights rear, LED 1300 lumen	+
Cab lights front, halogen	•
Cab lights front, LED 1300 lumen	+
Circular bubble level	•
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	+
Joystick steering	+
Cab elevation, hydraulic (LHC)	•
Automatic air conditioning	•
Electric cooler	+
LiDAT Plus (extended Liebherr data transfer system)*	•

Bullet proof glass	•
Positioning swing brake	+
Proportional control	+
Radio Comfort (control via display)	+
Preparation for radio installation	•
Back-up alarm (acoustic signal is emitted traveling backward, can not be switched off)	+
Warning beacon on cab	+
Windscreen wiper, roof	+
Top guard	+
Front guard	+
Sun visor	+
Auxiliary heating, adjustable (week time switch)	+
Flashing light (xenon)	+
Electronic immobilizer	+



Attachment

Boom lights, 2 pieces, halogen	•
Boom lights, 2 pieces, LED 1300 lumen	+
Stick lights, 2 pieces, halogen	•
Stick lights, 2 pieces, LED 1300 lumen, with protection	+
Boom shutoff, ascending	•
AutoLift	+
Pressure warning mechanism hoist cylinder	•
ERC system	•
Height limitation and stick shutoff, electronically	+
Boom cylinder cushioning	•
Industrial stick with quick coupling	+
Stick camera (with separate monitor), bottom side, with protection	+
Liebherr lightweight stick	+
Liebherr multi coupling system	+
Pipe fracture safety valves hoist cylinders	•
Pipe fracture safety valve stick cylinder	•
Protection for piston rod, ERC	+
Protection for piston rod, hoist cylinder	+
Retract stick without pressure	•
Overload warning device	+
Protection for stick	+



Complete Machine

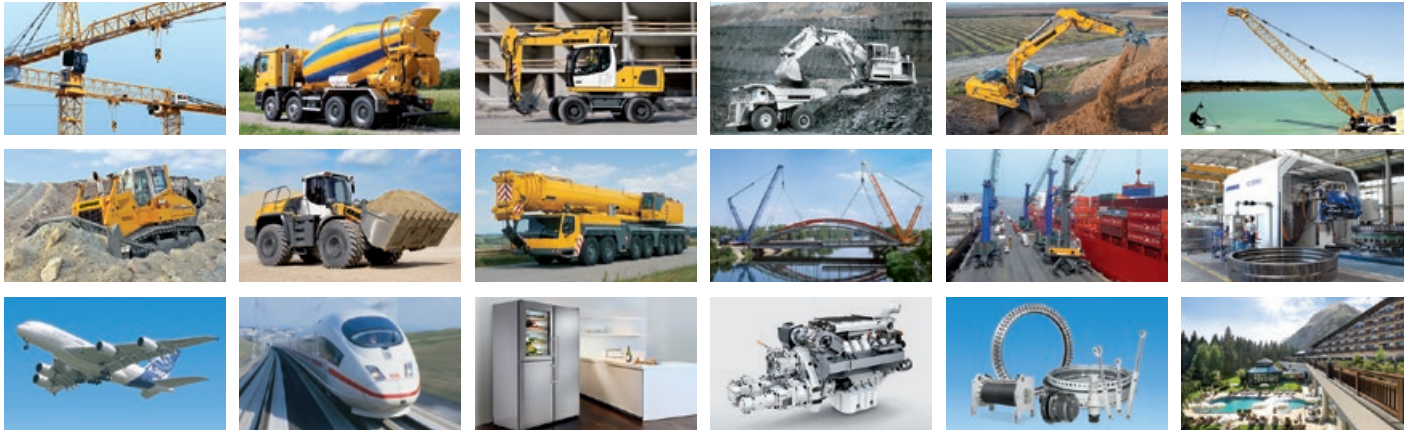
Lubrication	
Lubrication undercarriage, manually – decentralized (grease points)	•
Central lubrication system for uppercarriage and attachment, automatically	•
Central lubrication system for undercarriage, automatically	+
Special coating	
Single-coloured, grey parts excepted	+
Single-coloured, grey parts included (except power train)	+
Multicoloured (except power train)	+
Monitoring	
Rear view monitoring with camera	•
Side view monitoring with camera	+

• = Standard, + = Option

* = optionally extendable after one year

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 application.

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 38,000 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.

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