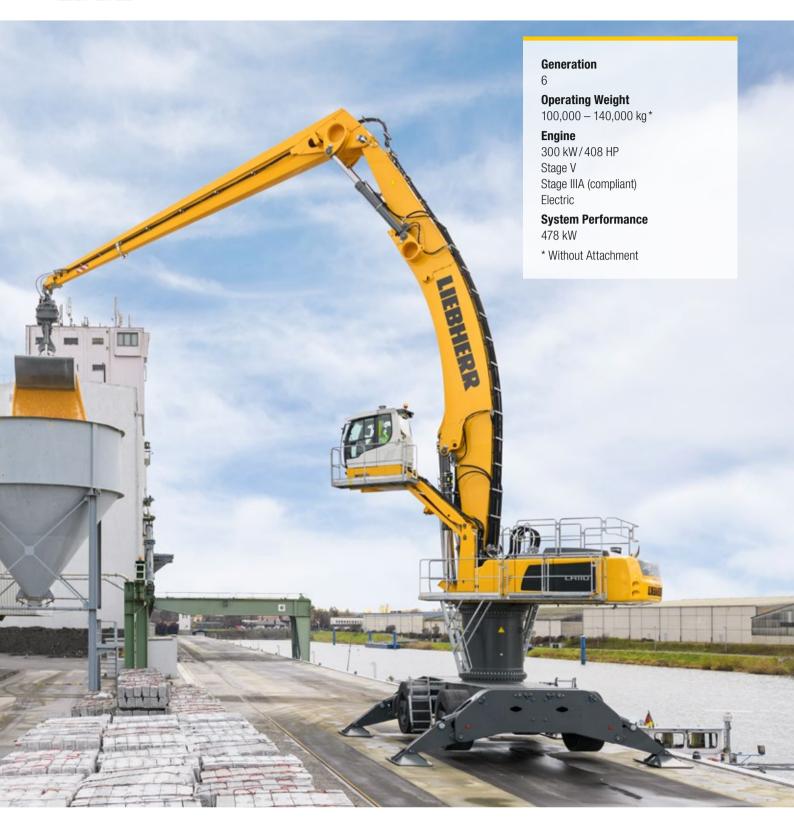
Material Handling Machine

LH 110 Port

Litronic®



LIEBHERR

Material Handling Machines Overview

Equipment

- High lift capacities and long reaches thanks to weight-optimised design for more handling capacity
- Energy recovery cylinder filled with nitrogen for maximum efficiency through less fuel consumption at more handling capacity
- Pipe fracture safety valves on hoist and stick cylinders and retract stick shut-off for maximum safety during every application
- Electro-hydraulic end position control extends the service life of the components
- Quick coupling systems and attachments made by Liebherr for maximum machine capacity utilisation and greater handling performance

Operator's Cab

- Hydraulic cab elevations for always the best view downwards as well as forwards
- Less strain on the operator, workers and reduced environmental pollution due to lower noise emissions
- Optimum visibility thanks to large glass surfaces and standard rear and side area monitoring with camera
- Joystick steering without steering column as standard for convenient operation, greater legroom and clear view of the working area at mobile undercarriage
- Proportional control as standard with 4-way minijoystick for greater precision, highprecision control and functions





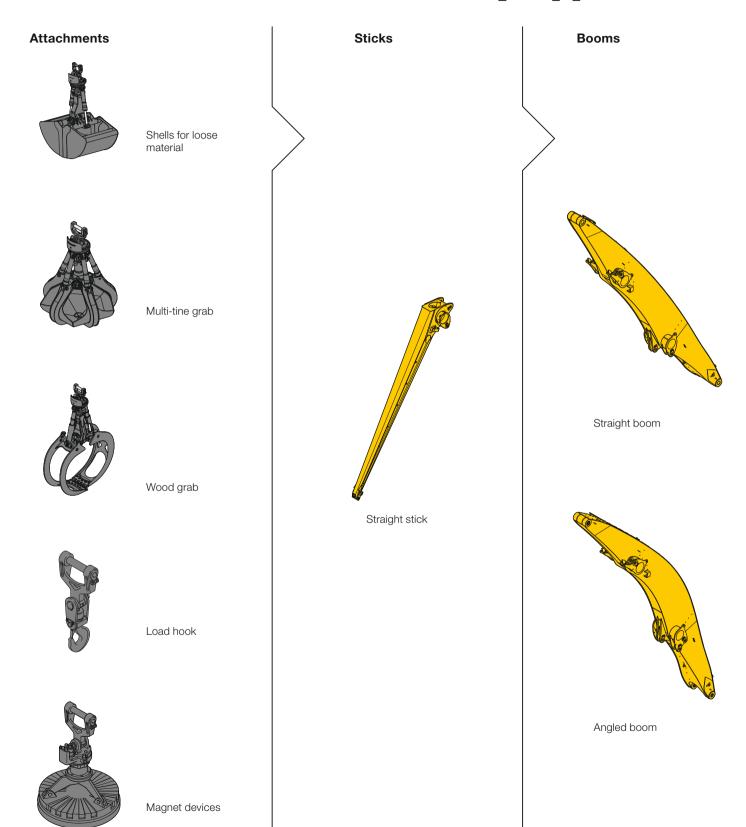
Uppercarriage

- 2-circuit Liebherr-Synchron-Comfort-Hydraulicsystem (LSC) with LUDV technology for faster working speed at minimum fuel consumption
- 300 kW engine output and high pump flow for fast work cycles, convincing dynamics and maximum handling performance
- Electrical pilot control enables individual settings for the operator and new options such as load torque limitation
- Reduction in operating costs thanks to built-in maintenance advantages and optimum service accessibility
- Optimised hydraulics with closed slewing mechanism circuit for greater fuel efficiency and faster work cycles

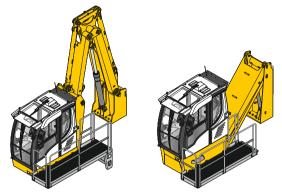
Undercarriage

- Central lubrication system manually centralised or automatically for more productive working time at mobile undercarriage
- Large footprint for high stability and maximum lift capacities
- Variety of undercarriage variants for different applications available
- Low service costs thanks to travel drive without gearbox and cardan shafts at mobile undercarriage

The Perfect Solution for Every Application



Cab Elevations

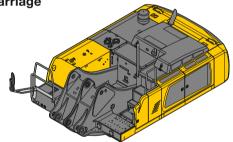


Hydraulic cab elevation

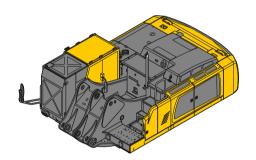


Rigid cab elevation

Uppercarriage



Diesel engine

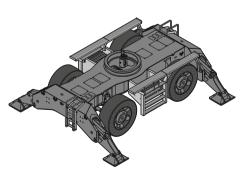


Electric motor

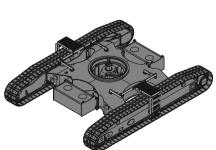
Undercarriage



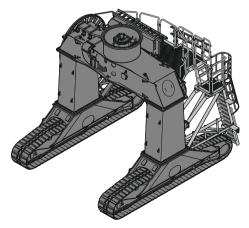
Turret Elevations



Mobile



Crawler



Gantry (Crawler)

Technical Data

Diesel Engine

Rating per ISO 9249	300 kW (408 HP) at 1,800 RPM
Model	Liebherr D946
Туре	6 cylinder in-line
Bore/Stroke	130/150 mm
Displacement	11.95 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 180 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-SCRFilter technology
Fuel tank	1,350 l
Urea tank	180 l
Stage IIIA (compliant)	
Harmful emissions values	in accordance with ECE-R.96 Power Band H
Fuel tank	1,350 l

■ Electric Motor

Rating	300 kW at 1,700 RPM
Model	Liebherr KGF1182/6
Туре	three-phase squirrel cage motor
Secondary electric motor	
Electric motor auxiliary	15 kW
equipment (air-conditioning	
compressor, alternator 24 V)	
Electrical system	Liebherr drive components and control cabinets
energy supply	for uppercarriage and undercarriage
	Liebherr frequency converter fed drive system
	heavy-duty version
Manufacturer	Liebherr
Supply voltage	
Low voltage	380 - 690 V
High voltage	2.14 – 20 kV
Frequency	50/60 Hz
Engine idling	sensor controlled
Electrical system	battery-assisted
	control system, lighting, diagnostics system
Voltage	24 V
Batteries	2 x 180 Ah/12 V
Alternator	three-phase current 28 V/140 A

⇒ Cooling System

0,	
Diesel engine	water-cooled cooling system, consisting of a cooling unit for water and charge air and a 2 nd cooler for hydraulic oil, each with an infinitely variable, thermostatically controlled fan drive system
Electric motor	air-cooled cooling system for hydraulic oil with an infinitely variable, thermostatically controlled fan drive system frequency converter water-cooled

Hydraulic Controls

via control valves with integrated safety valves, simultaneous actuation of chassis and equip- ment. Swing drive in separate closed circuit
with electro-hydraulic pilot control and proportional joystick levers
with electric proportionally functioning foot pedals or adjusted with plugable levers
via switch or electroproportional foot pedals
proportionally acting transmitters on the joy- sticks for additional hydraulic functions

Hydraulic System

E Trydraunc Syst	CIII
Hydraulic pump	
for equipment	2 Liebherr axial piston variable displacement
and travel drive	pumps (double construction)
Max. flow	2 x 462 l/min.
Max. pressure	350 bar
for swing drive	reversible axial piston variable displacement
	pump, closed-loop circuit
Max. flow	355 I/min.
Max. pressure	345 bar
Hydraulic pump	2 circuit Liebherr-Synchron-Comfort-system
regulation and control	(LSC) with electronic engine speed sensing
	regulation, pressure and flow compensation,
	automatic oil flow optimizer
Hydraulic tank	455
Hydraulic system	1,175
Hydraulic oil filter	2 main return filters 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 environmen-
	tally friendly operation or for maximum material
0. (0 iti)	handling and heavy-duty jobs
S (Sensitive)	mode for precision work and lifting through very sensitive movements
E (Eco)	mode for especially economical and environ-
	mentally friendly operation
P (Power)	mode for high performance with low fuel con-
	sumption
P+ (Power-Plus)	mode for highest performance and for very
	heavy duty applications, suitable for continuous
	operation
Engine speed and	stepless alignment of engine output and
performance setting	hydraulic power via engine speed
Option	Tool Control: 20 preadjustable pump flows and
	pressures for add-on attachments

Swing Drive

on motor in a closed system, reduction gear
ace ball bearing swing ring,
ess
ring applied, pressure
e Comfort

Operator's Cab

Operator s cal	-
Cab	safety cab structure with fixed built-in front and roof window made from impact-resistant laminated safety glass, work headlights integrated in the ceiling, a door with a sliding window (can be opened on both sides), large stowing and depositing possibilities, shock-absorbing suspension, sounddamping insulating, tinted laminated safety glass, separate shades for the sunroof window and windscreen
High Rise/Gantry	deviating from standard: safety cab structure with fixed built-in front and roof window made from impact-resistant laminated safety glass
Operator's seat Comfort	air cushioned operator's seat with 3D-adjust- able armrests, headrest, lap belt, seat heater, adjustable seat cushion inclination and length, lockable horizontal suspension, automatic weight adjustment, adjustable suspension stiff- ness, 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 suspen- sion 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, selfexplan- atory, colour display with touchscreen, video- compatible, numerous setting, control and monitoring options, e.g. air conditioning control, fuel consumption respectively energy consump- tion, machine and attachment parameters
Air-conditioning	
Diesel engine	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
Electric motor	in addition to diesel engine: stationary air conditioning function with external climate condenser – controlled by a weekly timer
Refrigerant	R134a
Global warming potential	1,430
Quantity at 25 °C*	1,500 – 2,000 g
CO ₂ equivalent*	2.145 – 2.86 t
Vibration emission**	0.5 /-0
Hand/arm vibrations	< 2.5 m/s ²
Whole-body vibrations	< 0.5 m/s ²
Measuring inaccuracy	according with standard EN 12096:1997



	9-
Mobile	
Versions	Standard, High Rise
Drive	one driven axle with transmission with Liebherr
	axial piston motor and functional brake valve on
	both sides
Travel speed	
Joystick steering	0 – 5.0 km/h stepless (creeper speed)
-	0 – 8.0 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 hydrauli-
	cally controlled front axle oscillation lock
Service brake	two circuit travel brake system with accumulator
	wet and backlash-free disc brake
Holding brake	wet multi-disc (spring applied, pressure
	released)
Stabilization	4 point outriggers
Crawler	
Versions	SW, High Rise, Gantry
Drive	Liebherr compact planetary reduction gear with
	Liebherr axial piston motor per side of under-
	carriage
Travel speed	0 – 2.6 km/h stepless (creeper speed)
	0 – 4.0 km/h stepless
Brake	functional brake valves on both sides
Holding brake	wet multi-disc (spring applied, pressure
	released)
Track pads	flat
Tracks	sealed and greased

Equipment

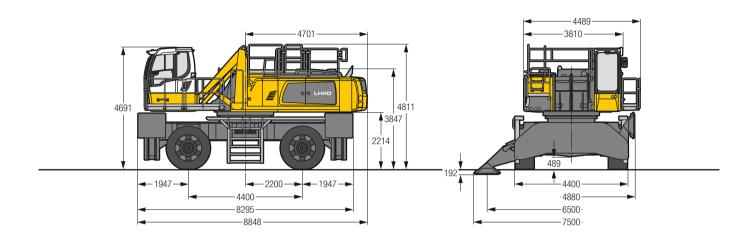
1-/ Equipment	
Туре	weight-optimised design for bulk and general cargo handling at optimal handling capacity. Complex and stable mountings of equipment and cylinders
Hydraulic cylinders	Liebherr cylinders with special seal system as well as shock absorption
Energy recovering cylinder	Liebherr gas cylinder with special sealing and control system
Bearings	sealed, low maintenance

Complete Machine

Lubrication	Liebnerr central lubrication system for upper-											
	carriage and equipment, automatically											
Mobile (Option)	Liebherr central lubrication system for under-											
	carriage, automatically											
Steps system	safe and durable access system with anti-slip											
	steps											
	main components hot-galvanised											
Noise emission												
ISO 6396	L_{pA} (inside cab) = 70 dB(A) (Stage V)											
2000/14/EC	L _{WA} (surround noise) = 107 dB(A) (Stage V)											
ISO 6396	L_{pA} (inside cab) = 71 dB(A)											
	(Stage IIIA compliant)											
2000/14/EC	L _{WA} (surround noise) = 107 dB(A)											
	(Stage IIIA compliant)											

^{*} depending on configuration
** for risk assessment according to 2002/44/EC see ISO/TR 25398:2006

LH 110 M – Dimensions



LH 110 M - Choice of Cab Elevation

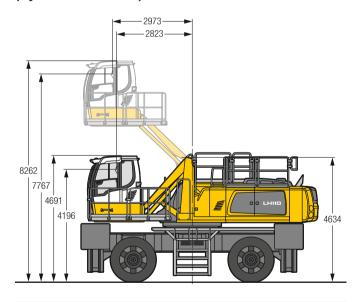
Cab Elevation LFC (Rigid Elevation)

5391 4896

Increase type LFC 120 A rigid cab elevation has a fixed eye level height. For a lower transport height, the shell of the cab

A rigid cab elevation has a fixed eye level height. For a lower transport height, the shell of the cab can be removed and replaced by a transport device. The dimension 5,391 mm is in this machine design for all rigid cab elevations 4,495 mm.

Cab Elevation LHC (Hydraulic Elevation)

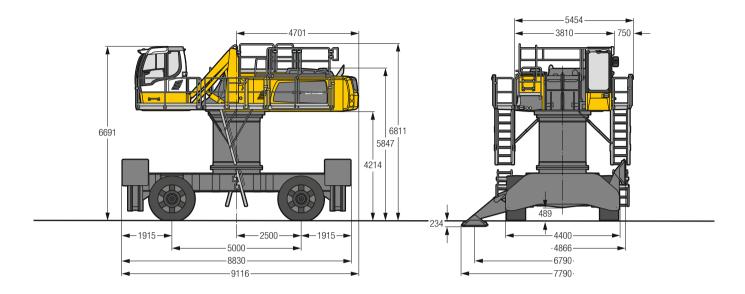


Increase type LHC 360-50

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

Tyres 26.5-66

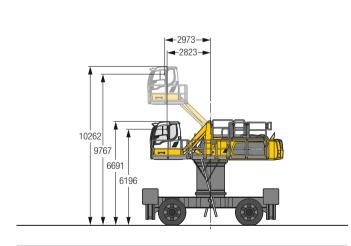
LH 110 M HR – Dimensions



LH 110 M HR - Choice of Cab Elevation

Cab Elevation LHC (Hydraulic Elevation)

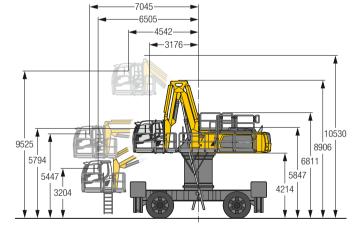
Cab Elevation LHC-D (Hydraulic Elevation)



Increase type

LHC 360-50

The hydraulically adjustable cab allows the driver, that he can choose his field of view freely and at



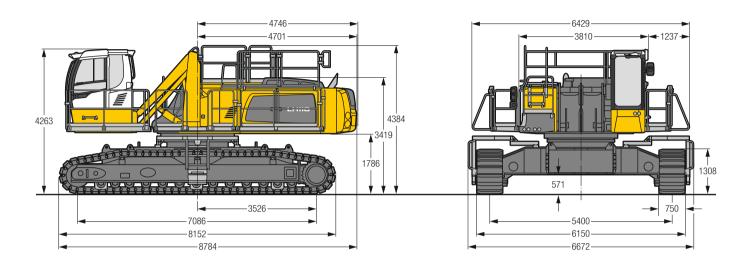
Increase type LHC-D 730

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

Tyres 28.00-69

any time within the stroke.

LH 110 C - Dimensions



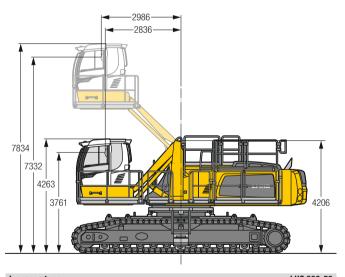
LH 110 C - Choice of Cab Elevation

Cab Elevation LFC (Rigid Elevation)

1110 4963 4461

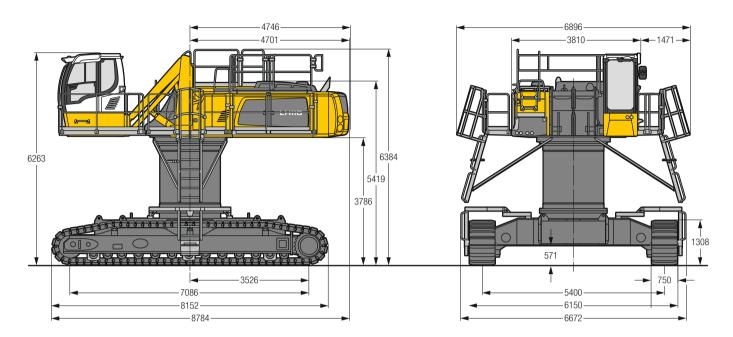
LFC 120 Increase type A rigid cab elevation has a fixed eye level height. For a lower transport height, the shell of the cab can be removed and replaced by a transport device. The dimension 4,963 mm is in this machine design for all rigid cab elevations 4,067 mm.

Cab Elevation LHC (Hydraulic Elevation)



Increase type LHC 360-50 The hydraulically adjustable cab allows the driver, that he can choose his field of view freely and at any time within the stroke.

LH 110 C HR - Dimensions

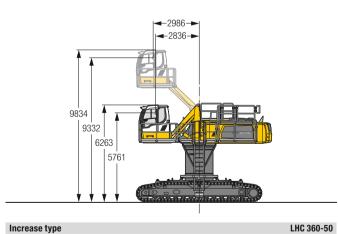


LH 110 C HR - Choice of Cab Elevation

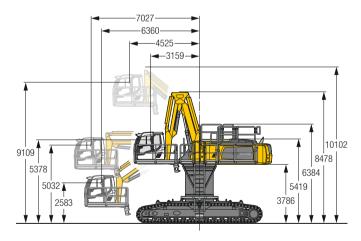
Cab Elevation LHC (Hydraulic Elevation)

Cab Elevation LHC-D (Hydraulic Elevation)

any time within the stroke.

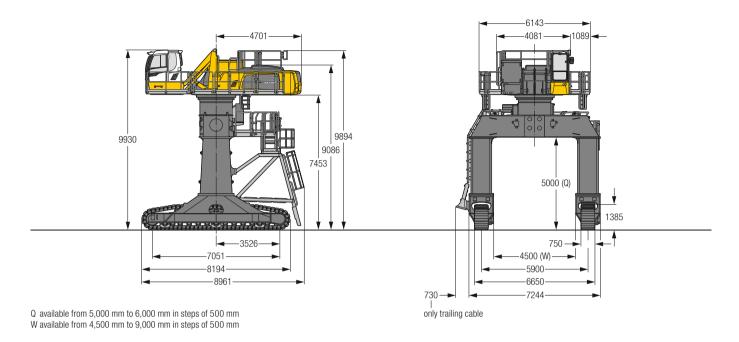


The hydraulically adjustable cab allows the driver, that he can choose his field of view freely and at any time within the stroke.



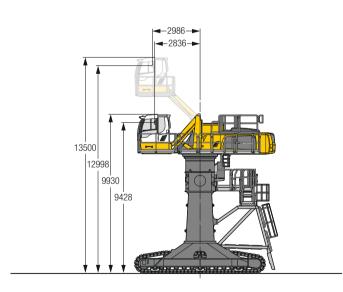
Increase type LHC-D 730 The hydraulically adjustable cab allows the driver, that he can choose his field of view freely and at

LH 110 C Gantry - Dimensions



LH 110 C Gantry - Choice of Cab Elevation

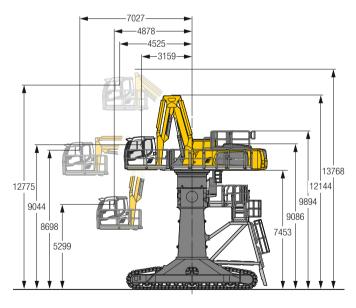
Cab Elevation LHC (Hydraulic Elevation)



Increase type LHC 360-50

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

Cab Elevation LHC-D (Hydraulic Elevation)



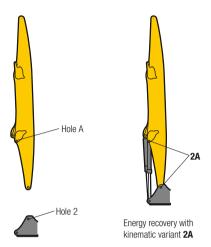
Increase type

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

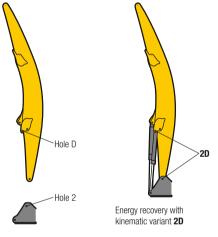
Kinematic Variants

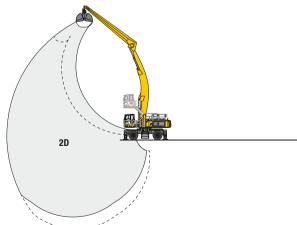


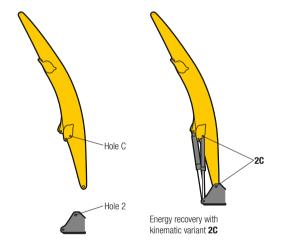
Kinematic Variant 2A

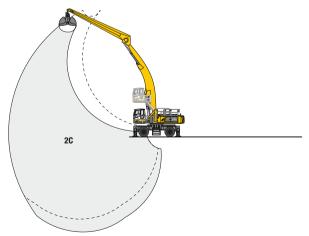


Kinematic Variant 2D/2C





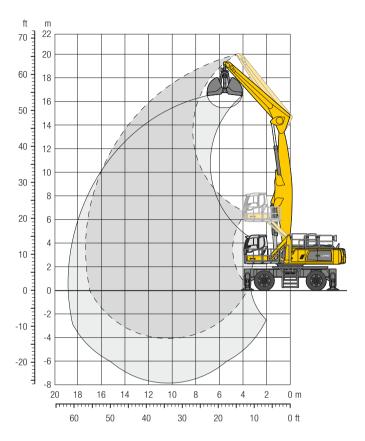




Altered range curve with additional reach depth, e.g. for unloading from ships

LH 110 M – Equipment GG17

Port - Kinematic 2A

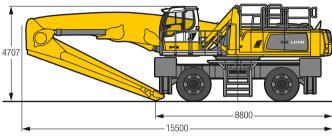


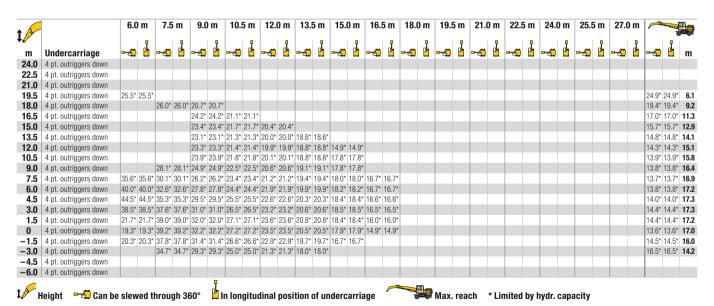
Operating Weight

The operating weight includes the basic machine with 4 point outriggers, hydr. cab elevation, 4 solid tyres, straight boom 10.00 m, straight stick 7.50 m and grab for loose material GMZ 120/8.00 m³.

Weight 100,900 kg

Dimensions



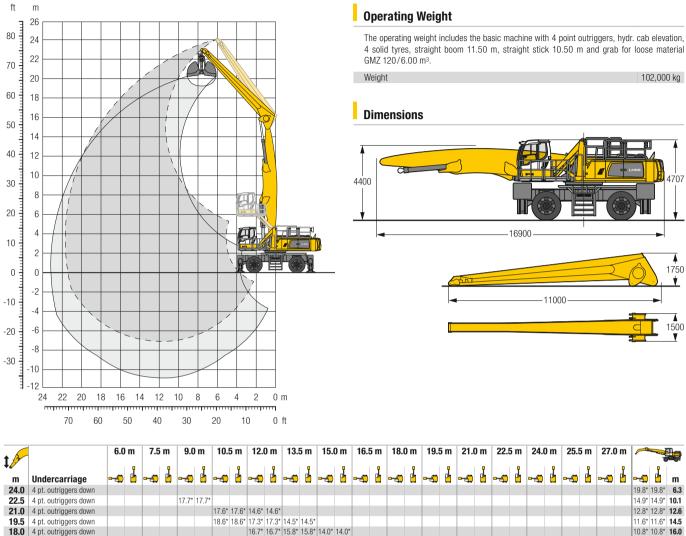


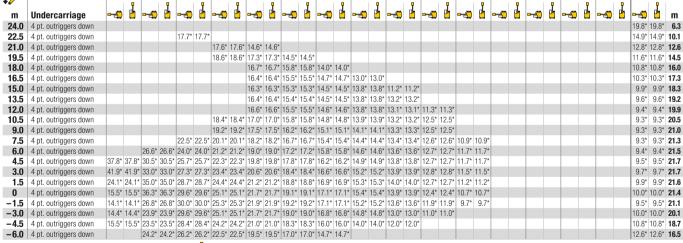
The lift capacities on the stick end without attachment are stated in metric tons (t) and are valid on a firm, level supporting surface with blocked oscillating axle. These capacities can be slewed through 360° with the undercarriage in the transverse position. Capacities in the longitudinal position of the undercarriage (+/-15°) are specified over the rigid axle with the stabilizers down. Indicated loads based on 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 attachments (grabs, load hooks, etc.) and load accommodation attachment 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.

LH 110 M – Equipment GG22

Port - Kinematic 2A





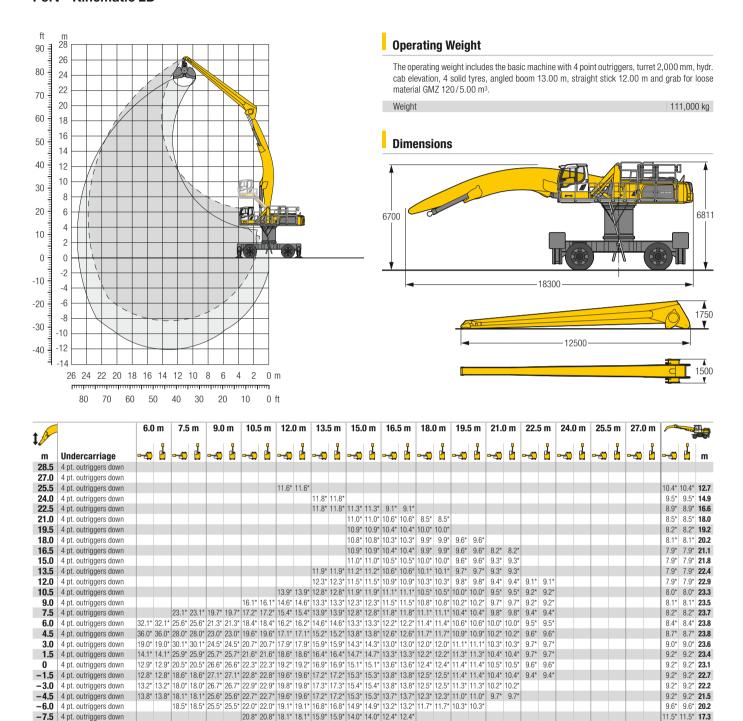
Height Can be slewed through 360° In longitudinal position of undercarriage Max. reach *Limited by hydr. capacity

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 rigid axle with the stabilizers down. Indicated loads based on 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 attachments (grabs, load hooks, etc.) and load accommodation attachment 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.

LH 110 M HR – Equipment AG24

Port - Kinematic 2D



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 rigid axle with the stabilizers down. Indicated loads based on 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 attachments (grabs, load hooks, etc.) and load accommodation attachment 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 longitudinal position of undercarriage

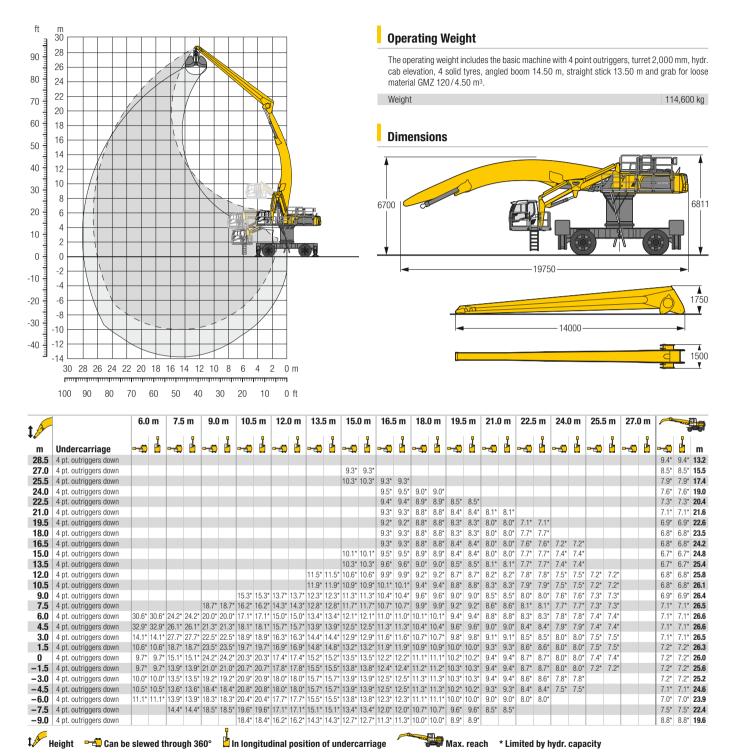
In accordance with the harmonised European Standard EN 474-5, hydraulic excavators used for lifting operations must be equipped with pipe fracture safety valves, an overload warning device, a load hook and a lift capacity chart.

-9.0 4 pt. outriggers down

Height •• Can be slewed through 360°

LH 110 M HR - Equipment AG27

Port - Kinematic 2D

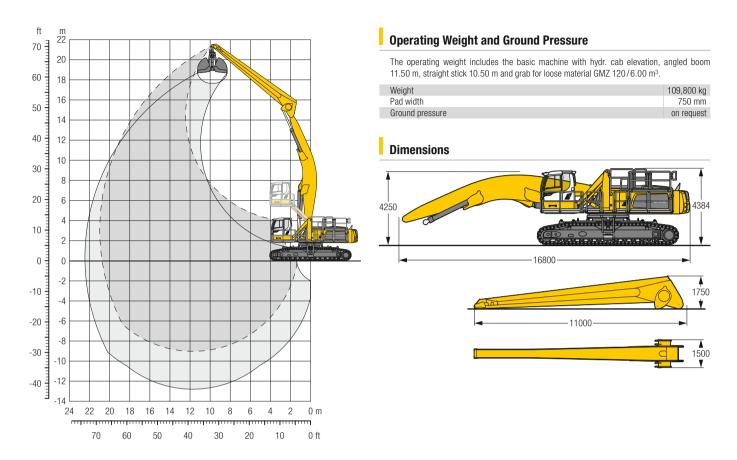


The lift capacities on the stick end without attachment are stated in metric tons (t) and are valid on a firm, level supporting surface with blocked oscillating axle. These capacities can be slewed through 360° with the undercarriage in the transverse position. Capacities in the longitudinal position of the undercarriage $(+/-15^{\circ})$ are specified over the rigid axle with the stabilizers down. Indicated loads based on 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 attachments (grabs, load hooks, etc.) and load accommodation attachment 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.

LH 110 C - Equipment AG21

Port - Kinematic 2D



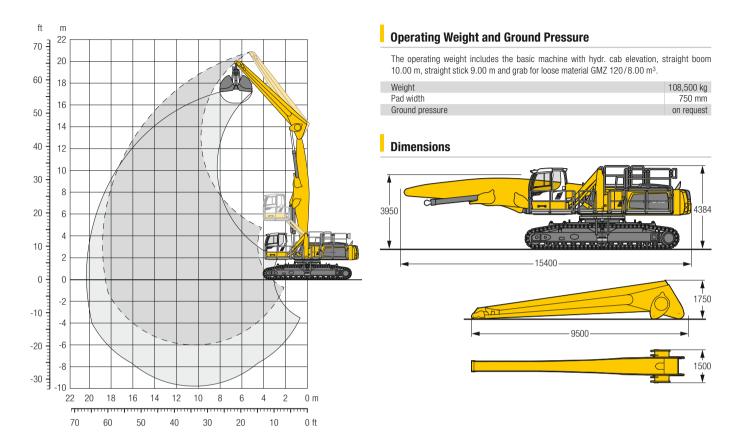
		6.0) m	:	7.5	m	9	9.0 n	1	10.	5 m	12.	0 m	13.	5 m	15.	0 m	16.	5 m	18.	0 m	19.	5 m	21.0	0 m	22.	5 m	24.0) m	25.5	j m	27.0) m		20
	Undercarriage	5	j j		5	j		5	<u>,</u>	-4	ď	<u>5</u>	l d	5	<u>L</u>	5	ď	- -5	j	<u>⊶</u> _	<u>L</u>	5	ď	5	ď	5	<u>L</u>	5	<u>L</u>	5	<u>L</u>	<u>⊶</u> _	<u>i</u>	5	j
	SW								1	12.8*	12.8*																							12.5* 1	12.5*
5	SW				Т		П		П			13.2*	13.2*																					11.3* 1	11.3*
	SW											13.9*	13.9*	13.1	13.1*																			10.5* 1	10.5*
5	SW				П		Π		П					13.0	13.0*	12.6*	12.6*																	10.0* 1	10.0*
	SW													12.8	12.8*	12.4*	12.4*	11.7*	11.7*															9.7*	9.7*
5	SW				П		П		П					12.8	12.8*	12.3*	12.3*	12.0*	12.0*	10.0*	10.0*													9.5*	9.5*
	SW													13.0	13.0*	12.4*	12.4*	12.0*	12.0*	11.7*	11.7*													9.3*	9.3*
	SW						Τ		П			14.0*	14.0*	13.2	13.2*	12.6*	12.6*	12.1*	12.1*	11.7*	11.7*	9.7*	9.7*											9.3*	9.3
	SW											14.5*	14.5*	13.7	13.7*	12.9*	12.9*	12.3*	12.3*	11.8*	11.8*	11.4*	11.4*											9.3*	9.3
5	SW				П		Т		1	16.5*	16.5*	15.2*	15.2*	14.2	14.2*	13.3*	13.3*	12.6*	12.6*	12.0*	12.0*	11.6*	11.6*											9.4*	9.4
	SW						19	.7* 19	.7* 1	17.7*	17.7*	16.1*	16.1*	14.8	14.8*	13.8*	13.8*	13.0*	13.0*	12.3*	12.3*	11.7*	11.7*											9.5*	9.5
5	SW	30.5*	30.5	* 25	.1* 2	25.1*	21.	.5* 21	.5* 1	19.0*	19.0*	17.0*	17.0*	15.5	15.5*	14.4*	14.4*	13.4*	13.4*	12.6*	12.6*	11.9*	11.9*											9.7*	9.7
	SW	35.4*	35.4	* 28	1.1* 2	28.1*	23	.5* 23	.5* 2	20.3*	20.3*	18.0*	18.0*	16.3	16.3*	14.9*	14.9*	13.8*	13.8*	12.9*	12.9*	12.1*	12.1*											10.0* 1	10.0
5	SW	39.7*	39.7	* 30	.9* 3	30.9*	25	.4* 25	.4* 2	21.7*	21.7*	19.0*	19.0*	17.0	17.0*	15.5*	15.5*	14.2*	14.2*	13.2*	13.2*	12.3	12.3*											10.4* 1	10.4
	SW	23.2*	23.2	2* 33	.2* 3	33.2*	27.	.0* 27	.0* 2	22.9*	22.9*	19.9*	19.9*	17.7	17.7*	16.0*	16.0*	14.6*	14.6*	13.5*	13.5*	12.1	12.5*											10.8* 1	10.8
5	SW	18.6*	18.6	* 34	.3* 3	34.3*	28	.3* 28	.3* 2	23.9*	23.9*	20.7*	20.7*	18.3	18.3*	16.4*	16.4*	14.9*	14.9*	13.4	13.6*	11.9	12.5*											11.1 1	11.4
	SW	17.4*	17.4	* 28	.0* 2	28.0*	29	.1* 29	.1* 2	24.6*	24.6*	21.2*	21.2*	18.7	18.7*	16.7*	16.7*	14.9	15.1*	13.2	13.7*	11.8	12.3*											11.4 1	11.8
5	SW	17.4*	17.4	* 25	.9* 2	25.9*	29	.4* 29	.4* 2	24.8*	24.8*	21.5*	21.5*	18.8	18.8*	16.8*	16.8*	14.7	15.0*	13.1	13.4*	11.8	11.8*											11.7 1	11.8*
)	SW	18.0*	18.0)* 25	.3* 2	25.3*	29	.1* 29	.1* 2	24.6*	24.6*	21.3*	21.3*	18.7	18.7*	16.5*	16.5*	14.6*	14.6*	12.8*	12.8*													11.7* 1	11.7
5	SW			25	.7* 2	25.7*	27.	.9* 27	.9* 2	23.8*	23.8*	20.6*	20.6*	18.0	18.0*	15.8*	15.8*	13.8*	13.8*															12.8* 1	12.8*
	SW											19.2*	19.2*																					18.4* 1	18.4*

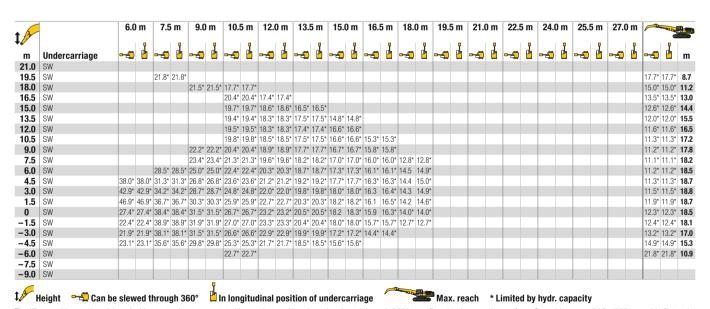
The lift capacities on the stick end without attachment are stated in metric tons (t) and can be slewed through 360° on a firm, level supporting surface. Capacities are valid for 750 mm wide flat pads. Indicated loads based on the ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic 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 attachments (grabs, load hooks, etc.) and load accommodation attachment 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.

LH 110 C - Equipment GG19

Port - Kinematic 2A





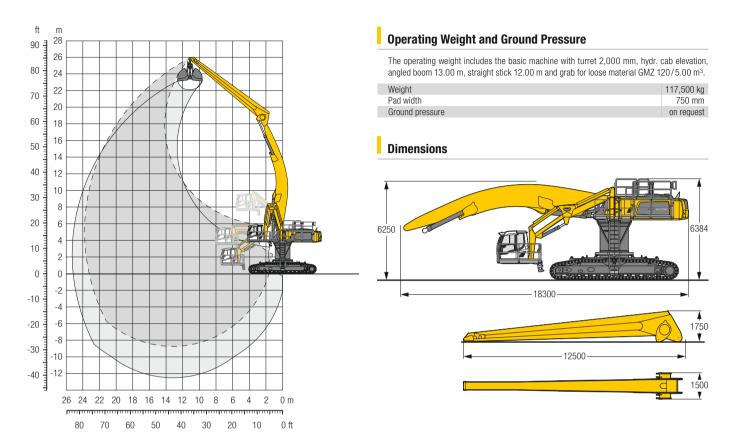
The lift capacities on the stick end without attachment are stated in metric tons (t) and can be slewed through 360° on a firm, level supporting surface. Capacities are valid for 750 mm wide flat pads. Indicated loads based on the ISO 10567 standard and do not exceed 75% of tipping or 87% of hydraulic 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 attachments (grabs, load hooks, etc.) and load accommodation attachment 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.

LH 110 C HR - Equipment AG24

Port - Kinematic 2D



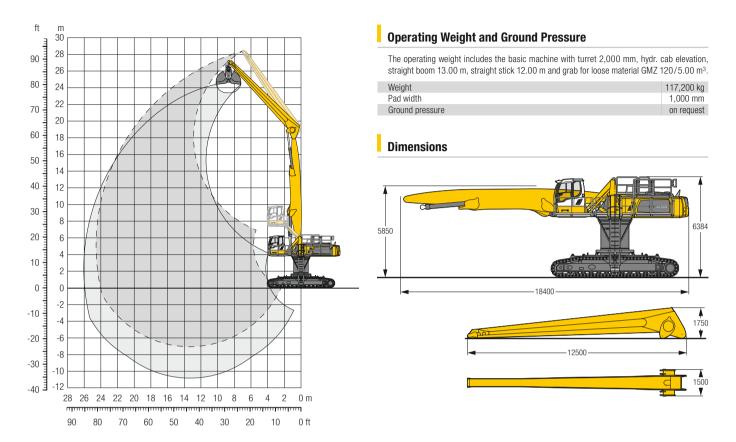
13		6.0) m	7.	5 m	9.0) m	10.	5 m	12.	0 m	13.	5 m	15.	0 m	16.	5 m	18.0) m	19.	5 m	21.0) m	22.5	5 m	24.0) m	25.5	m	27.0	m		20
<i>/</i> m	Undercarriage	- -3	J.		<u>.</u>	3	J.	5	<u>L</u>	3	d d	5	ď	5	J.	5	<u>L</u>	5	<u>L</u>	5	<u>L</u>	5	å	5	<u>L</u>	5	d.	5	d.	5	<u>.</u>	 	4
25.5	SW																														1	10.8* 1	10.8*
24.0	SW											11.0*	11.0*																			9.7*	9.7*
2.5	SW											12.0*	12.0*	11.0*	11.0*																	9.1*	9.1*
1.0	SW													11.1*	11.1*	10.7*	10.7*															8.6*	8.6*
9.5	SW													10.9*	10.9*	10.4*	10.4*	10.1*	10.1*													8.3*	8.3*
3.0	SW													10.8*	10.8*	10.3*	10.3*	10.0*	10.0*	9.1*	9.1*											8.1*	8.1*
5.5	SW													10.8*	10.8*	10.3*	10.3*	9.9*	9.9*	9.6*	9.6*											8.0*	8.0*
.0	SW													10.9*	10.9*	10.4*	10.4*	10.0*	10.0*	9.6*	9.6*	9.3*	9.3*									7.9*	7.9*
.5	SW											11.8*	11.8*			10.6*						9.3*										7.9*	7.9*
0	SW															10.8*					9.8*	9.4*	9.4*	8.6*	8.6*							7.9*	7.9
5	SW									13.6*	13.6*			_		11.0*								9.1*							_		7.9
0	SW							15.8*	15.8*							11.4*	_						9.6*	9.2*							_	8.0*	
5	SW					19 1*	19 1*									11.7*							9.8*	9.3*							_		8.2
0	SW	30.7*	30.7*	24 7*	24 7	* 20.8*																		9.4*							_		8.3
5	SW			_		* 22.4*										_								9.5*							_		8.6
0	SW					* 24.0*											_					-		9.6*							_		8.9
5	SW	-				* 25.3*				_				_										9.7*							_		9.2
.0	SW					* 26.3*											-					-	-	9.6*							_		9.2
5	SW					* 27.0*														_											_	9.2*	
.0	SW					* 27.2*											-	-						0.0	0.0						_	9.2*	
5	SW					* 25.8*													-	_											_	9.2*	
.0	SW					* 25.4*											-					0.0	0.0								_	9.3*	
	SW	17.2	1-7.2	10.4	10.4											12.7*				10.0	10.0											10.6* 1	
.0	011					27.7	27.7	21.0	21.0	10.0	10.0	10.0	10.0	17.7	17.7	12.1	12.1	11.2	11.4													0.0	10.0

The lift capacities on the stick end without attachment are stated in metric tons (t) and can be slewed through 360° on a firm, level supporting surface. Capacities are valid for 750 mm wide flat pads. Indicated loads based on 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 attachments (grabs, load hooks, etc.) and load accommodation attachment 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.

LH 110 C HR - Equipment GG25

Port - Kinematic 2A



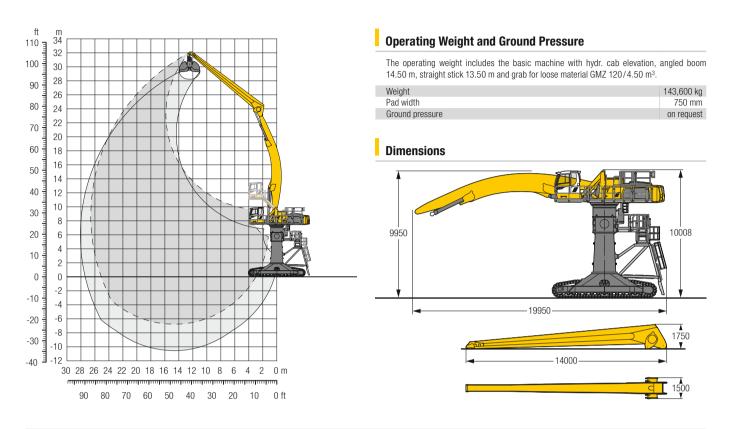
A /3		6.0) m	7.	5 m	9.	0 m	10.	5 m	12.	0 m	13.	5 m	15.	0 m	16.	5 m	18.	0 m	19.	5 m	21.	0 m	22.	5 m	24.	0 m	25.	5 m	27.0	0 m	_	20	
↓ ⁄⁄ m	Undercarriage	<u>4</u>)	<u>L</u>		d d	<u></u> -€	, d	<u></u> 3	j	<u>5</u>	<u>L</u>	<u></u> -∰	<u>L</u>		j.	5	<u>L</u>	<u>⊶</u>	j.	- -5	<u>L</u>	- -5	<u>L</u>	- -5	<u>L</u>	5	d e	 -5	<u>L</u>	<u></u> 5	<u>L</u>	5	<u>.</u>	m
27.0	SW					16.5	16.5*	13.8*	13.8*																							13.3*	13.3*	10.7
25.5	SW							16.3*	16.3*	14.2*	14.2*																					11.4*	11.4*	13.4
24.0	SW									15.9*	15.9*	14.2*	14.2*	11.6*	11.6*																	10.3*	10.3*	15.5
22.5	SW											14.5*	14.5*	13.6*	13.6*	11.3*	11.3*															9.6*	9.6*	17.
21.0	SW											14.2*	14.2*	13.3*	13.3*	12.6*	12.6*	10.7*	10.7*													9.0*	9.0*	18.
19.5	SW											14.0*	14.0*	13.1*	13.1*	12.4*	12.4*	11.7*	11.7*	9.7*	9.7*											8.7*	8.7*	19.
18.0	SW											14.0*	14.0*	13.1*	13.1*	12.3*	12.3*	11.6*	11.6*	11.1*	11.1*											8.4*	8.4*	20.8
16.5	SW											14.0*	14.0*	13.1*	13.1*	12.3*	12.3*	11.6*	11.6*	11.0*	11.0*	10.4*	10.4*									8.2*	8.2*	21.7
15.0	SW											14.1*	14.1*	13.2*	13.2*	12.3*	12.3*	11.6*	11.6*	11.0*	11.0*	10.5*	10.5*									8.0*	8.0*	22.5
13.5	SW									15.6*	15.6*	14.4*	14.4*	13.3*	13.3*	12.5*	12.5*	11.7*	11.7*	11.0*	11.0*	10.5*	10.5*	9.9*	9.9*							7.9*	7.9*	23.
12.0	SW									16.0*	16.0*	14.7*	14.7*	13.6*	13.6*	12.6*	12.6*	11.8*	11.8*	11.1*	11.1*	10.5*	10.5*	9.9*	9.9*							7.9*	7.9*	23.
10.5	SW							18.3*	18.3*	16.5*	16.5*	15.1*	15.1*	13.9*	13.9*	12.8*	12.8*	12.0*	12.0*	11.2*	11.2*	10.6*	10.6*	9.9*	9.9*							7.9*	7.9*	24.0
9.0	SW					20.4	20.4*	19.1*	19.1*	17.1*	17.1*	15.5*	15.5*	14.2*	14.2*	13.1*	13.1*	12.2*	12.2*	11.4*	11.4*	10.6*	10.6*	10.0*	10.0*	9.0*	9.0*					7.9*	7.9*	24.
7.5	SW			21.8*	21.8	23.0	23.0*	20.0*	20.0*	17.8*	17.8*	16.0*	16.0*	14.6*	14.6*	13.4*	13.4*	12.4*	12.4*	11.5*	11.5*	10.7*	10.7*	10.0*	10.0*	9.2*	9.2*					8.0*	8.0*	24.
6.0	SW	34.5*	34.5*	_		_		_		_				_		13.6*		_		_		_		_		9.1*	9.1*					8.1*	8.1*	24.
4.5	SW	39.8*	39.8*	31.2*	31.2	25.7	25.7*	21.9*	21.9*	19.1*	19.1*	17.0*	17.0*	15.3*	15.3*	13.9*	13.9*	12.7*	12.7*	11.7*	11.7*	10.8*	10.8*	9.9*	9.9*	8.9*	8.9*					8.2*	8.2*	24.6
3.0	SW	14.7*	14.7*	32.8*	32.8	26.8	26.8*	22.7*	22.7*	19.7*	19.7*	17.4*	17.4*	15.6*	15.6*	14.1*	14.1*	12.8*	12.8*	11.8*	11.8*	10.8*	10.8*	9.8*	9.8*	8.7*	8.7*					8.2*	8.2*	24.5
1.5	SW															14.2*									9.6*		8.3*					7.9*		
0	SW	-		-		-	-									14.2*				_			-	9.2*	9.2*	7.6*	7.6*					7.5*	7.5*	
-1.5	SW	9.9*	9.9*	15.8*	15.8	27.6	27.6*	23.4*	23.4*	20.2*	20.2*	17.7*	17.7*	15.7*	15.7*	14.1*	14.1*	12.6*	12.6*	11.3*	11.3*	10.0*	10.0*	8.6*	8.6*		-					7.4*	7.4*	23.4
-3.0	SW															13.7*																7.9*	7.9*	
-4.5	SW															13.0*																	8.6*	
-6.0		1.710														11.8*					5.0											10.0*		
0.0						1	Ç	1.0.0								1																10.0		
1 /2 H	leight 😘 Can bo	e slev	ved t	hrou	ah 3	60°	<u></u>	n Ion	aitu	dinal	nosi	tion	of ur	der	arria	age		20		Max	x. rea	nch	* Li	mite	d hv	hvdr	. car	acity	,					

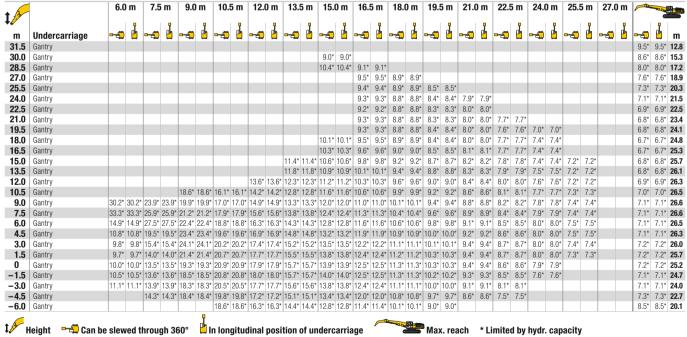
The lift capacities on the stick end without attachment are stated in metric tons (t) and can be slewed through 360° on a firm, level supporting surface. Capacities are valid for 1,000 mm wide flat pads. Indicated loads based on the ISO 10567 standard and do not exceed 75 % of tipping or 87 % of hydraulic 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 attachments (grabs, load hooks, etc.) and load accommodation attachment 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.

LH 110 C Gantry - Equipment AG27

Port - Kinematic 2D



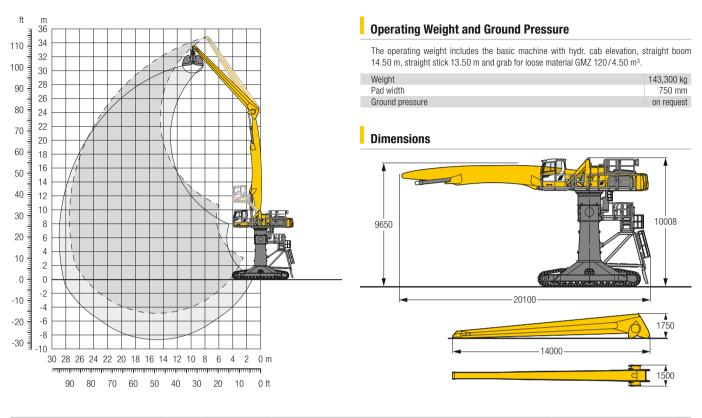


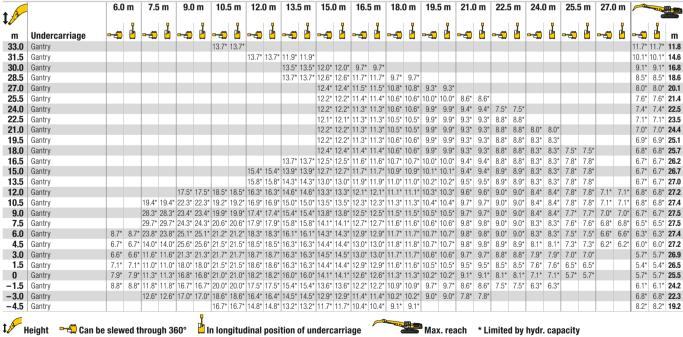
The lift capacities on the stick end without attachment are stated in metric tons (t) and can be slewed through 360° on a firm, level supporting surface. Capacities are valid for 750 mm wide flat pads. Indicated loads based on the ISO 10567 standard and do not exceed 75 % of tipping or 87 % of hydraulic 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 attachments (grabs, load hooks, etc.) and load accommodation attachment 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.

LH 110 C Gantry - Equipment GG28

Port - Kinematic 2A

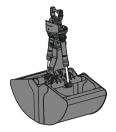




The lift capacities on the stick end without attachment are stated in metric tons (t) and can be slewed through 360° on a firm, level supporting surface. Capacities are valid for 750 mm wide flat pads. Indicated loads based on the ISO 10567 standard and do not exceed 75 % of tipping or 87 % of hydraulic 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 attachments (grabs, load hooks, etc.) and load accommodation attachment 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.

Attachments



Grab for Loose Material

Shells for loose material with cutting edge (without teeth)

Grab model GMZ 50								
Width of shells	mm	1,400	1,600	1,800	2,000	2,200	2,400	3,200
Capacity	m ³	3.50	4.00	4.50	5.00	5.50	6.00	8.00
Loose material, specific weight up to	t/m³	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Weight	kg	2,615	2,745	2,820	2,955	3,085	3,215	3,750
Grab model GMZ 80								
Width of shells	mm	1,300	1,500	1,750	2,000	2,200	2,600	3,400
Capacity	m ³	3.00	3.50	4.00	4.50	5.00	6.00	8.00
Weight	kg	2,510	2,625	2,770	2,940	3,035	3,265	3,730
Grab model GMZ 120								
Width of shells	mm	1,800	2,000	2,400	3,200			
Capacity	m ³	4.50	5.00	6.00	8.00			
Weight	kg	3,200	3,335	3,610	4,160			



Multi-Tine Grab closed

Grab model GMM 80-5 (5 tines	s)			
Capacity	m³ 1.10*	1.40*	1.70*	
Weight	kg 2,440	2,580	2,740	
Grab model GMM 120-5 (5 tine	es)			
Capacity	m³ 1.70	2.00	2.50	3.00

^{*} heart-shaped



Wood Grab

Grab model GMH 50 round-shaped (o	verlap	ping, horizontal cylinde	rs)			
Size	m^2	2.50	2.50	2.80	3.20	3.60
Cutting width	mm	870	1,000	1,000	1,000	1,000
Height of grab, closed	mm	2,416	2,416	2,521	2,649	2,814
Weight	kg	2,100	2,175	2,260	2,315	2,370
Grab model GMH 80 round-shaped (c	omple	te overlapping, vertical	cylinders)			
Size	m ²	1.60	1.90	2.20	2.50	
Cutting width	mm	870	870	870	870	
Height of grab, closed	mm	2,908	2,984	3,062	3,140	
Weight	kg	2,260	2,305	2,340	2,380	
Grab model GMH 120 round-shaped ((comp	lete overlapping, vertic	al cylinders)			
Size	m ²	2.80	3.20			
Cutting width	mm	870	870			
Height of grab, closed	mm	3,574	3,673			
Weight	kg	2,770	2,800			



Load Hook

Max. load	t 25
Weight k	255



Magnet Devices/Lifting Magnets

Generator	kW	30	30
Electromagnet with suspension			
Power	kW	17.8	22
Diameter of magnet	mm	1,700	1,900
Weight	kg	3,280*	5,090*

^{*} only magnet plate



Liebherr ERC-System

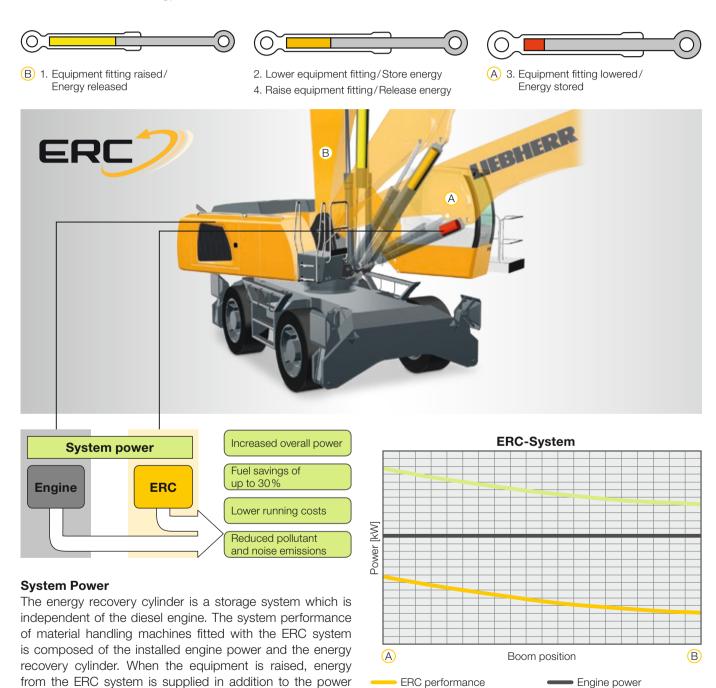
ERC System -

from the diesel engine.

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.



System performance

Equipment

Undercarriage	110 M	110 C	110 M HR	110 C HR	110 C Gantry
Track pads, variants		+		+	+
Individual control outriggers	+		•		
Three-piece chain guide		•		•	•
Shuttle axle lock, automatic	•		•		
Outrigger monitoring system	+		+		
Tyres, variants	+		+		
Trailing cable 2)		•		•	•
Protection for piston rods, outriggers	+		+		
Two lockable storage compartments	•				
Cable reel system ²⁾		+		+	+

Hydraulic System	110 M	110 C	110 M HR	110 C HR	110 C Gantr
Electronic pump regulation	•	•	•	•	•
Liebherr hydraulic oil from −20 °C to +40 °C	•	•	•	•	•
Liebherr hydraulic oil, biologically degradable	+	+	+	+	+
Liebherr hydraulic oil, specially for warm or cold regions	+	+	+	+	+
Magnetic rod in hydraulic tank	•	•	•	•	•
Bypass filter	+	+	+	+	+
Preheating hydraulic oil	+	+	+	+	+

— Uppercarriage	110 M	110 C	110 M HR	110 C HR	110 C Gantry
Uppercarriage right side light, 1 piece, halogen	•	•	•	•	•
Uppercarriage rear light, 2 pieces, LED	+	+			
Uppercarriage underneath rear light, 1 piece, LED			+	+	+
Refuelling system with filling pump 1)	+	+	+	+	+
Railing on uppercarriage	•	•	•	•	•
Generator	+	+	+	+	+
Main battery switch for electrical system	•	•	•	•	•
Amber beacon, at uppercarriage, LED double flash	+	+	+	+	+
Protection for headlights	+	+			
Tool equipment, extended	•	•	•	•	•

Engine	110 M	110 C	110 M HR	110 C HR	110 C Gant
Fuel anti-theft device 1)	+	+	+	+	+
Air pre-filter with dust discharge	+	+	+	+	+
Automatic engine shut-down (time adjustable)	+	+	+	+	+
Preheating fuel 1)	+	+	+	+	+
Preheating coolant	+	+	+	+	+
Preheating engine oil * 1)	+	+	+	+	+

⇒E Cooling System	110 M	110 C	110 M HR	110 C HR	110 C Gantry	
Reversible fan drive, fully automatic	+	+	+	+	+	
Protective grid in front of cooler intake	•	•	•	•	•	

Operator's Cab	110 M	110 C	110 M HR	110 C HR	110 C Gantry
Stabilizer, control lever, left console	+		+		
Stabilizer, proportional control on left joystick	•		•		
Cab lights rear, LED	+	+	+	+	+
Cab lights front, LED	+	+	+	+	+
Cab lights front, LED (under rain cover)	•	•	•	•	•
Armrest adjustable	•	•	•	•	•
Circular bubble level	•	•	•	•	•
Slewing gear brake Comfort, button on the left or right joystick	+	+	+	+	+
Driver profile, personalised (max. 5 drivers)	+	+	+	+	+
Operator's seat Comfort	•	•	•	•	•
Operator's seat Premium	+	+	+	+	+
Driving alarm (acoustic signal is emitted during travel, can be					
switched ON/OFF)	+	+	+	+	+
Fire extinguisher	+	+	+	+	+
Footrest	+	+	+	+	+
Horn, button on left joystick	•	•	•	•	•
Joystick steering	•		•		
Cab elevation, hydraulic (LHC)	•	•	•	•	•
Cab elevation, hydraulic with double parallelogram (LHC-D)	+	+	+	+	+
Cab elevation, rigid (LFC)	+	+	+	+	+
Automatic air conditioning	•	•	•	•	•
Wheel steering (slim version)	+		+		
LiDAT, vehicle fleet management	•	•	•	•	•
Engine shut-down (emergency stop) cab 2)		•		•	•
Proportional control	•	•	•	•	•
Radio Comfort, control via display with handsfree set	+	+	+	+	+
Preparation for radio installation	•	•	•	•	•
Back-up alarm (acoustic signal is emitted traveling backward,					
can not be switched off)	+		+		
Amber beacon, on cabin, LED double flash	+	+	+	+	+
Windows made from impact-resistant laminated safety glass	•	•	•	•	•
Windscreen wiper, roof	+	+	+	+	+
Windshield wiper, entire windscreen	•	•	•	•	•
Top guard	+	+	+	+	+
Front guard, adjustable	+	+	+	+	+
Sun visor	+	+	+	+	+
Stationary air-conditioning 2)		•		•	•
Left control console, folding	•	•	•	•	•

Equipment	110 M	110 C	110 M HR	110 C HR	110 C Gantry
Boom lights, 2 pieces, LED	•	•	•	•	•
Stick lights, 4 pieces, LED	•	•	•	•	•
Boom shutoff (retract/extend), electronically	+	+	+	+	+
Equipment with electro-hydraulic end position control	•	•	•	•	•
AutoLift	+	+	+	+	+
Pressure warning mechanism hoist cylinder	•	•	•	•	•
ERC system	•	•	•	•	•
Filter system for attachment	+	+	+	+	+
Boom cylinder cushioning	•	•	•	•	•
Stick camera (with separate monitor), bottom side, with protection	+	+	+	+	+
Load torque limitation	+	+	+	+	+
Liebherr multi coupling system	+	+	+	+	+
Pipe fracture safety valves hoist cylinders	•	•	•	•	•
Pipe fracture safety valves stick cylinders	•	•	•	•	•
Quick coupling system MH 110B	+	+	+	+	+
Protection for piston rod, energy recovering cylinder	+	+	+	+	+
Protection for piston rods, hoist cylinder	+	+	+	+	+
Stick shutoff (retract), electronically	•	•	•	•	•
Stick shutoff (retract/extend), electronically	+	+	+	+	+
Retract stick without pressure	•	•	•	•	•
Sticks with quick coupling	+	+	+	+	+
Overload warning device	+	+	+	+	+

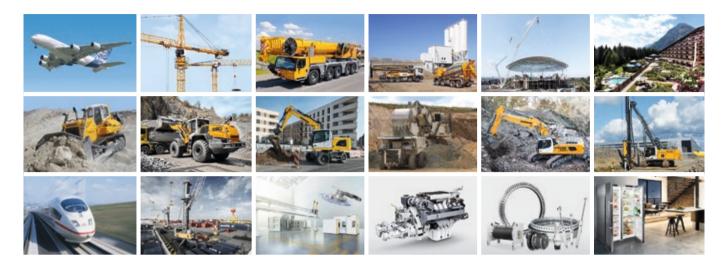
Complete Machine	110 M	110 C	110 M HR	110 C HR	110 C Gantry
Lubrication					
Lubrication undercarriage, manually – centralised (one grease point)	•		•		
Central lubrication system for uppercarriage and equipment, automatically				•	
Central lubrication system for undercarriage, automatically	+		+		
Central lubrication system, extension for attachment	+	+	+	+	+
Special coating					
Special coating, variants	+	+	+	+	+
Monitoring					
Rear view monitoring with camera	•	•	•	•	•
Side view monitoring with camera	•	•	•	•	•

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.

^{• =} Standard, + = Option * = country-dependent, $^{1)}$ not with electric drive, $^{2)}$ only with electric drive

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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 then, the family business has steadily grown to a group of more than 130 companies with nearly 44,000 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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