

Technical data



Diesel engine

Rating	
per SAE J1349	308 HP (230 kW) at 1,800 rpm
per ISO 9249	313 HP (230 kW) at 1,800 rpm
Model	Liebherr D946
Type	6 cylinder in-line
Bore / Stroke	5.1 / 5.9 in
Displacement	729 in ³
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	174 gal
Urea tank	17 gal
Stage IIIA (compliant)	
Harmful emissions values	In accordance with ECE-R.96 Power Band H
Fuel tank	174 gal
Tier 4 Final	
Harmful emissions values	In accordance with 40CFR1039 (EPA) / 13CCR (CARB)
Emission control	Liebherr-SCR technology
Fuel tank	174 gal
Urea tank	17 gal



Electric motor

Rating	220 kW at 1,800 rpm
Type	Three-phase squirrel cage motor
Secondary electric motor	Electric motor auxiliary equipment (air-conditioning compressor, alternator 24 V) 15 kW
Electrical system energy supply	Frequency converter fed drive system Heavy-duty version
Supply voltage	
Low voltage	380 V, 400 V
Frequency	50 / 60 Hz
Engine idling	Sensor controlled
Electrical system	Battery-assisted Control system, lighting, diagnostics system
Voltage	24 V
Batteries	2 x 135 Ah / 12 V
Alternator	Three-phase current 28 V / 140 A

Deviating parameters of the power supply system must always be clarified with Liebherr-Hydraulikbagger GmbH.



Cooling system

Diesel engine	Water-cooled Cooling system, consisting of a cooling unit for water and charge air and a 2nd 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



Hydraulic controls

Power distribution	Via control valves with integrated safety valves, simultaneous actuation of chassis and equipment. Swing drive in separate closed circuit
Servo circuit	
Equipment and swing	With electro-hydraulic pilot control and proportional joystick levers
Chassis mobile	Electro-proportional via foot pedal
Chassis crawler	With electric proportionally functioning foot pedals or adjusted with plugable levers
Additional functions	Via switch or electro-proportional foot pedals
Proportional control	Proportionally acting transmitters on the joysticks for additional hydraulic functions



Hydraulic system

Hydraulic pump	
For equipment and travel drive	2 Liebherr axial piston variable displacement pumps (double construction)
Max. flow	2 x 96 gpm
Max. pressure	5,076 psi
For swing drive	Reversible axial piston variable displacement pump, closed-loop circuit
Max. flow	52 gpm
Max. pressure	5,366 psi
Hydraulic pump regulation and control	2 circuit Liebherr-Synchron-Comfort-system (LSC) with electronic engine speed sensing regulation, pressure and flow compensation, automatic oil flow optimizer
Hydraulic tank	90 gal
Hydraulic system	251 gal
Filtration	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 environmentally friendly operation or for maximum material handling and heavy-duty jobs
S (Sensitive)	Mode for precision work and lifting through very sensitive movements
E (Eco)	Mode for especially economical and environmentally friendly operation
P (Power)	Mode for high performance with low fuel consumption
P+ (Power-Plus)	Mode for highest performance and for very heavy duty applications, suitable for continuous operation
Engine speed and performance setting	Stepless alignment of engine output and hydraulic power via engine speed
Option	Tool Control: 20 pre-adjustable pump flows and pressures for add-on attachments



Swing drive

Drive	Liebherr axial piston motor in a closed system, Liebherr planetary reduction gear
Swing ring	Liebherr, sealed race ball bearing swing ring, internal teeth
Swing speed	0-6.5 rpm stepless
Swing torque	103,996 lbf ft
Holding brake	Wet multi-disc (spring applied, pressure released)
Option	Slewing gear brake Comfort



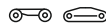
Cab

Cab	Safety cab structure with individual windscreens or featuring a slide-in subpart under the ceiling, 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, sound damping 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-adjustable armrests, headrest, lap belt, seat heater, adjustable seat cushion inclination and length, 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
Arm consoles	Joysticks with control consoles and swivel seat, folding left control console
Operation and displays	Large high-resolution operating unit, self-explanatory, color display with touchscreen, video-compatible, numerous setting, control and monitoring options, e.g. air conditioning control, fuel consumption respectively energy consumption, 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



Equipment

Type	High-strength steel plates at highly-stressed points for the toughest requirements. Complex and stable mountings of equipment and cylinders
Hydraulic cylinders	Liebherr cylinders with special sealing and guide system and, depending on cylinder type, shock absorption
Energy recovering cylinder	Liebherr gas cylinder with special sealing and control system
Bearings	Sealed, low maintenance



Undercarriage

Mobile	
Versions	Standard, High Rise
Drive Standard	One axle drive per drive axle with Liebherr axial piston motor and functional brake valve on both sides
Drive High Rise	One driven axle with transmission with Liebherr axial piston motor and functional brake valve on both sides
Travel speed	0-6.2 mph stepless
Joystick steering	0-2.2 mph stepless (creeper speed) (Diesel) 0-1.9 mph stepless (creeper speed) (Electric) 0-5.0 mph stepless (High Rise) 0-3.1 mph stepless (creeper speed) (High Rise) (Diesel) 0-1.6 mph stepless (creeper speed) (High Rise) (Electric)
Driving operation	Automotive driving using accelerator pedal, cruise control function: storage of variable accelerator pedal positions
Axles	198,400 lb drive axles; manual or automatic hydraulically 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	EW, SW, High Rise, Gantry
Drive	Liebherr compact planetary reduction gear with Liebherr axial piston motor per side of undercarriage
Travel speed	
EW	0-2.5 mph stepless 0-1.7 mph stepless (creeper speed)
SW	0-2.5 mph stepless 0-1.6 mph stepless (creeper speed)
High Rise	0-1.8 mph stepless 0-1.2 mph stepless (creeper speed)
Gantry	0-2.2 mph stepless 0-1.6 mph stepless (creeper speed)
Brake	Functional brake valves on both sides
Holding brake	Wet multi-disc (spring applied, pressure released)
Track pads	Triple grouser, flat
Tracks	Sealed and greased



Complete machine

Lubrication	Liebherr central lubrication system for uppercarriage and equipment, automatically
Mobile (Option)	Liebherr central lubrication system for undercarriage, automatically
Steps system	Safe and durable access system with anti-slip steps; main components hot-galvanized
Noise emission	
ISO 6396	70 dB(A) = L _{PA} (inside cab)
2000/14/EC	105 dB(A) = L _{WA} (surround noise)



WARNING

Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with exhaust system.
- Do not idle the engine except as necessary.

For more information go to www.P65warnings.ca.gov/diesel.



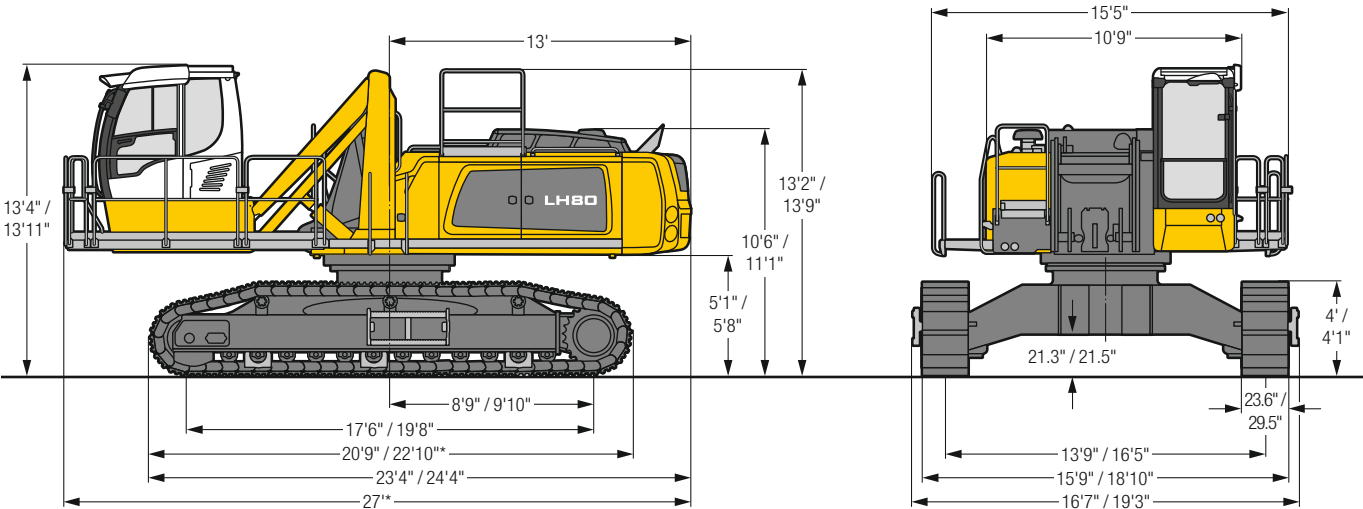
WARNING

This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm.

For more information go to www.P65warnings.ca.gov.

LH 80 C EW / SW – Dimensions

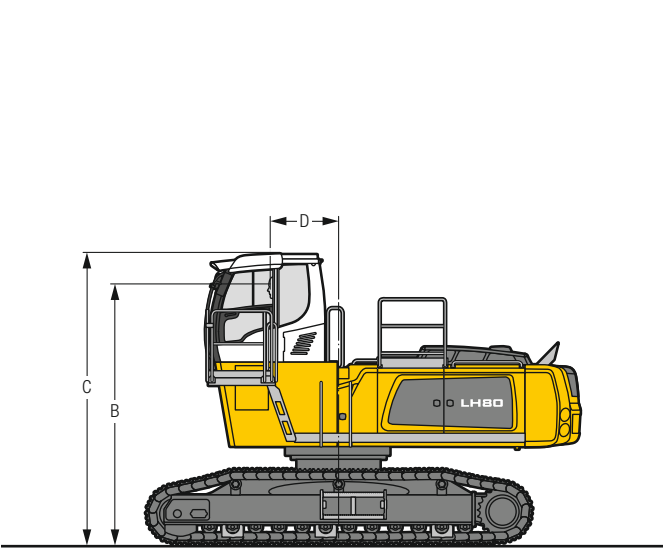
Industry



* For electric machines, the length of the machine is increased accordingly by the trailing cable / cable reel system. Detailed dimensions are available on request.

LH 80 C EW / SW – Choice of cab elevation

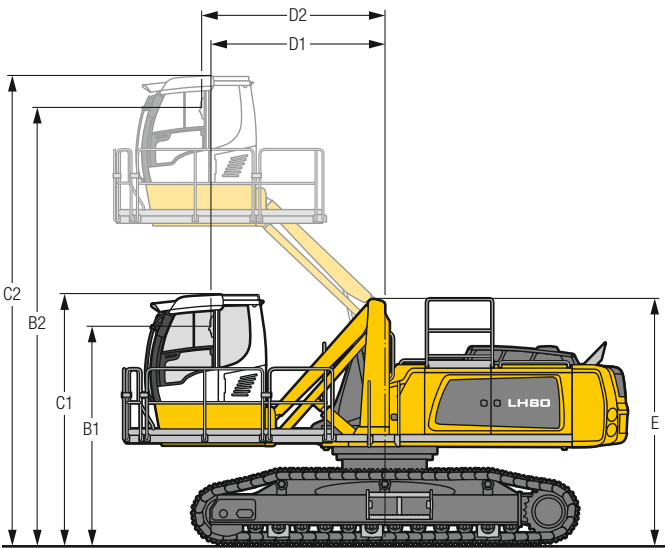
**Cab elevation LFC
(rigid elevation)**



Increase type	LFC 120	LFC 200
Height	3'11"	6' 7"
B	13'11" / 14' 6"	16'6" / 17' 1"
C	15' 7" / 16' 2"	18'3" / 18'10"
D	3' 8"	3' 8"

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 C is in this machine design for all rigid cab elevations 12'8".

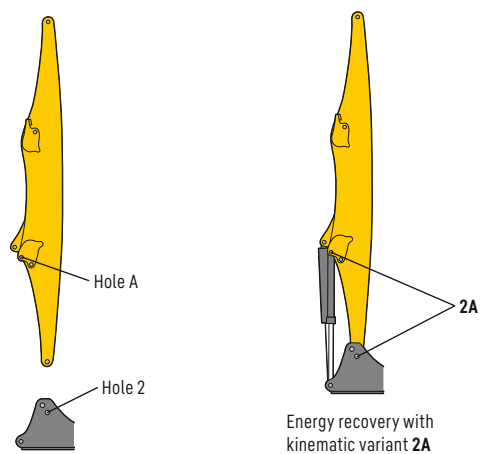
**Cab elevation LHC
(hydraulic elevation)**



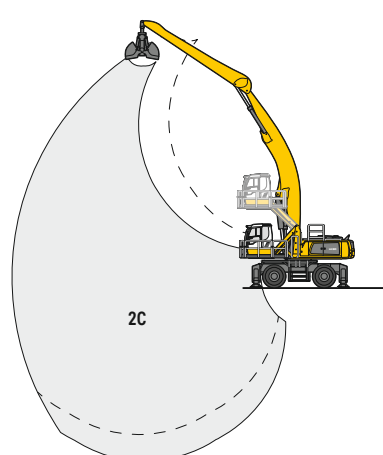
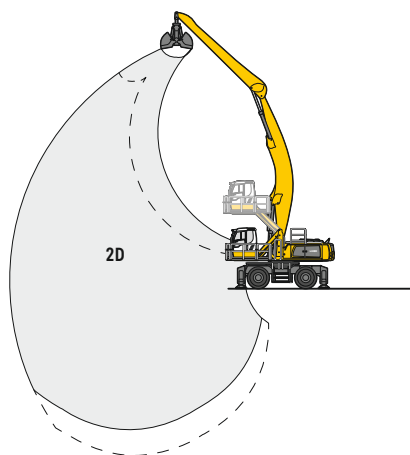
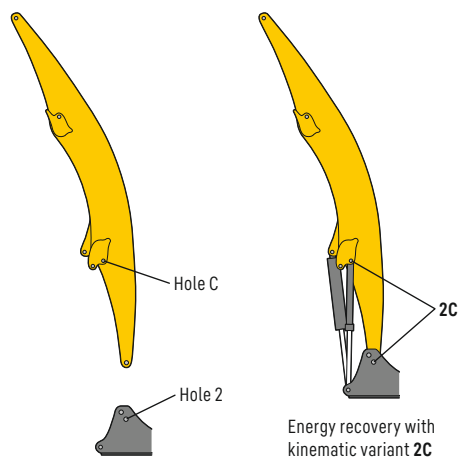
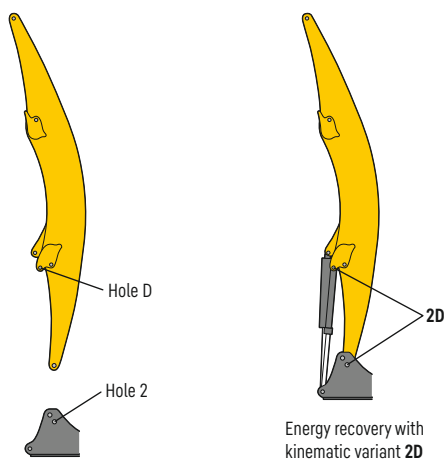
Increase type	LHC 255	LHC 340-35	LHC 360-50
B1	10' / 10' 7"	11' 2" / 11' 9"	11'7" / 12' 2"
B2	18'4" / 18'11"	22' 4" / 22'11"	23'4" / 23'11"
C1	11'8" / 12' 3"	12'10" / 13' 5"	13'4" / 13'11"
C2	20' / 20' 7"	24' / 24' 7"	25' / 25' 7"
D1	5' 6"	9' 2"	9' 4"
D2	5'11"	9' 2"	9'10"
E	11'4" / 11'11"	12' 7" / 13' 2"	13'1" / 13' 8"

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

Kinematic variant 2A



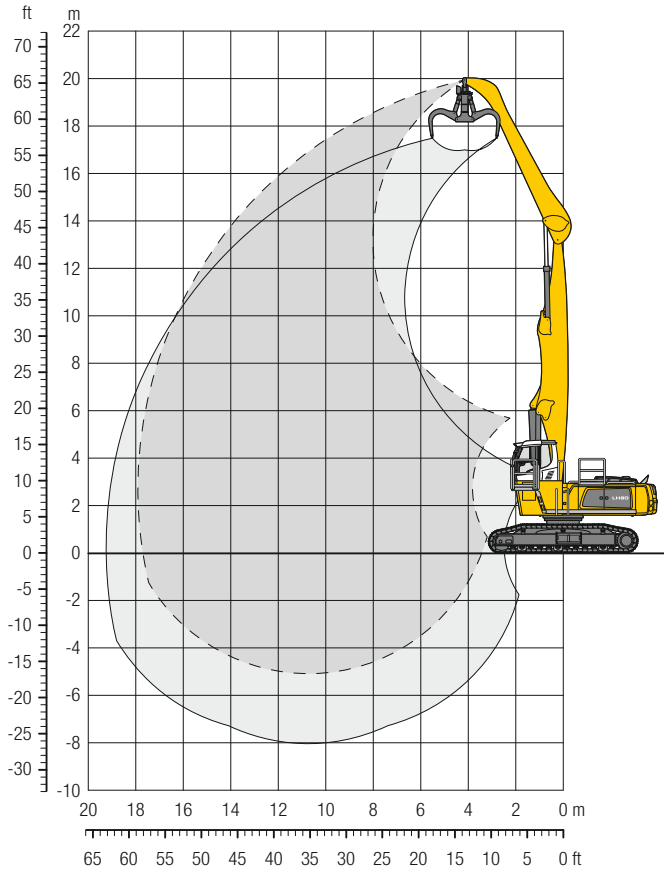
Kinematic variant 2D / 2C



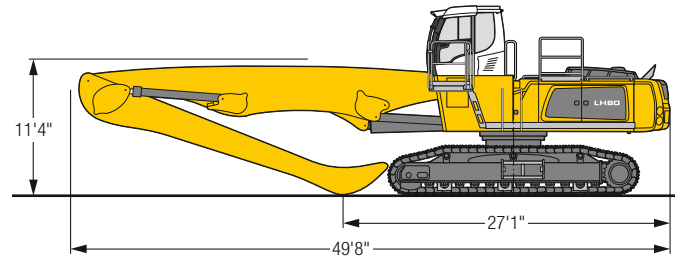
Altered range curve with additional reach depth, e.g. for unloading from ships

LH 80 C EW – Equipment GA18

Industry – Kinematic 2A



Dimensions



Operating weight and ground pressure

The operating weight includes the basic machine with rigid cab elevation, straight boom 34'5", angled stick 25'7" and multi-tine grab GMM 80-5 / 2.22 yd³ semi-closed tines.

Weight	149,900 lb
Pad width	24"
Ground pressure	on request

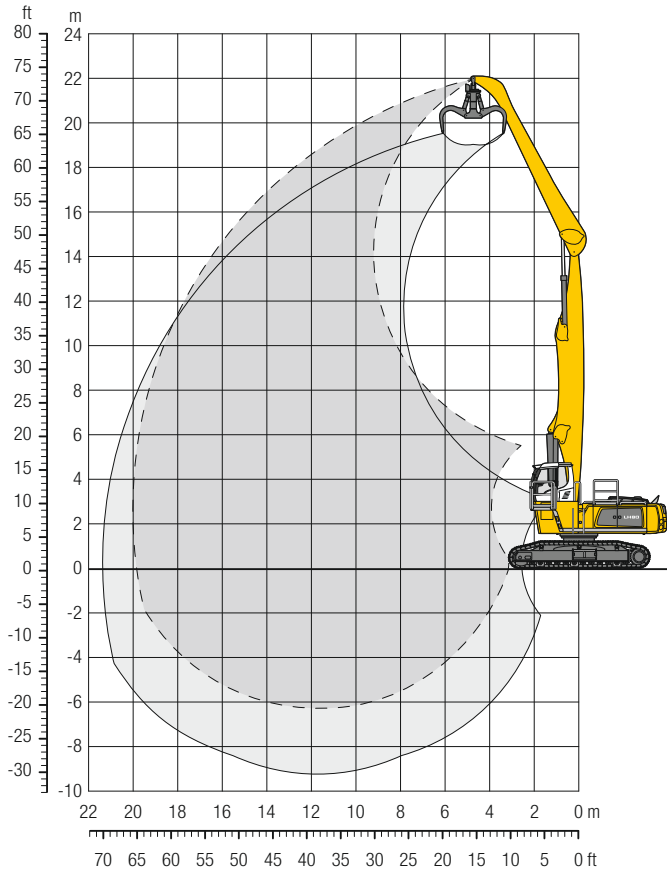
ft	Undercarriage	20 ft	25 ft	30 ft	35 ft	40 ft	45 ft	50 ft	55 ft	60 ft	65 ft	70 ft	ft in
70	EW												35,5" 35,5" 15' 2"
65	EW												25,5" 25,5" 28' 1"
60	EW		29,8" 29,8"										22,0" 22,0" 35' 11"
55	EW		33,5" 33,5"	29,7" 29,7"	23,6" 23,6"								20,0" 20,0" 41' 7"
50	EW			30,4" 30,4"	27,2" 27,2"	23,1" 23,1"							18,9" 18,9" 46' 1"
45	EW			30,0" 30,0"	26,8" 26,8"	24,4" 24,4"	20,0 21,3"						16,4 18,1" 49' 8"
40	EW			30,0" 30,0"	26,7" 26,7"	24,2" 24,2"	20,3 22,2"						14,6 17,6" 52' 6"
35	EW		34,9" 34,9"	30,3" 30,3"	26,9" 26,9"	24,3" 24,3"	20,2 22,2"	16,3 20,5"					13,3 17,3" 54' 10"
30	EW		35,9" 35,9"	31,0" 31,0"	27,3" 27,3"	24,6" 24,6"	19,9 22,3"	16,2 20,5"					12,4 16,2" 56' 6"
25	EW	40,0" 40,0"	37,3" 37,3"	31,9" 31,9"	28,0" 28,0"	24,0 25,0"	19,4 22,6"	16,0 20,5"	13,2 17,1"				11,7 15,5" 57' 8"
20	EW	48,2" 48,2"	39,2" 39,2"	33,1" 33,1"	28,8" 28,8"	23,1 25,5"	18,8 22,9"	15,6 20,1"	13,0 16,9"				11,3 14,9" 58' 5"
15	EW	51,8" 51,8"	41,3" 41,3"	34,4" 34,4"	27,4 29,6"	22,0 26,0"	18,1 23,2"	15,1 19,6"	12,7 16,6"				11,0 14,6" 58' 8"
10	EW	55,1" 55,1"	42,9 43,2"	32,6 35,6"	25,8 30,4"	21,0 26,4"	17,4 22,6"	14,6 19,1"	12,4 16,3"				10,9 14,5" 58' 7"
5	EW	28,8" 28,8"	39,7 44,5"	30,5 36,4"	24,4 30,8"	20,0 26,2"	16,7 21,9"	14,2 18,6"	12,1 16,1"				11,0 13,9" 58' 1"
0	EW	21,5" 21,5"	37,3 44,4"	28,9 36,5"	23,2 30,8"	19,2 25,4"	16,1 21,3"	13,8 18,3"	11,9 15,8"				12,5 14,0" 52' 6"
-5	EW	21,1" 21,1"	35,9 42,5"	27,7 35,3"	22,4 29,9"	18,6 24,7"	15,7 20,9"	13,5 18,0"	11,8 14,7"				15,6 17,0" 44' 6"
-10	EW	22,8" 22,8"	35,2 38,5"	27,1 32,6"	21,9 27,8"	18,2 23,6"	15,5 19,9"	13,4 16,2"					
-15	EW			26,9 28,0"	21,7 24,1"	18,0 20,3"							
-20	EW												

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

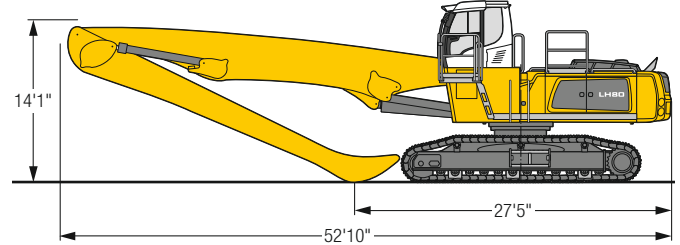
The lift capacities on the stick end without attachment are stated in lb x 1,000 and can be slewed through 360° on a firm, level supporting surface. Capacities are valid for 24" wide triple grouser pads (resp. flat pads). Indicated loads based on the ISO 10567 standard and do not exceed 75% of tipping 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.

LH 80 C EW – Equipment GA20

Industry – Kinematic 2A



Dimensions



Operating weight and ground pressure

The operating weight includes the basic machine with rigid cab elevation, straight boom 37'9", angled stick 29'6" and multi-tine grab GMM 80-5/2.22 yd³ semi-closed tines.

Weight	152,100 lb
Pad width	24"
Ground pressure	on request

		20 ft	25 ft	30 ft	35 ft	40 ft	45 ft	50 ft	55 ft	60 ft	65 ft	70 ft		
ft	Undercarriage													ft in
70	EW	29,3*	29,3*											26,3* 26,3*
65	EW													20,9* 20,9*
60	EW													18,4* 18,4*
55	EW													16,9* 16,9*
50	EW													15,6* 15,9*
45	EW													13,4 15,2*
40	EW													11,9 14,8*
35	EW													10,7 14,3
30	EW													9,8 13,2
25	EW													9,2 12,5
20	EW													8,7 11,9
15	EW													8,3 11,5
10	EW													8,1 11,2
5	EW													8,0 11,1
0	EW													8,0 10,8*
-5	EW													8,1 9,6*
-10	EW													8,7 9,9*
-15	EW													9,9 11,1*
-20	EW													13,4 14,5*

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 lb x 1,000 and can be slewed through 360° on a firm, level supporting surface. Capacities are valid for 24" wide triple grouser pads (resp. 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.

Liebherr ERC-System

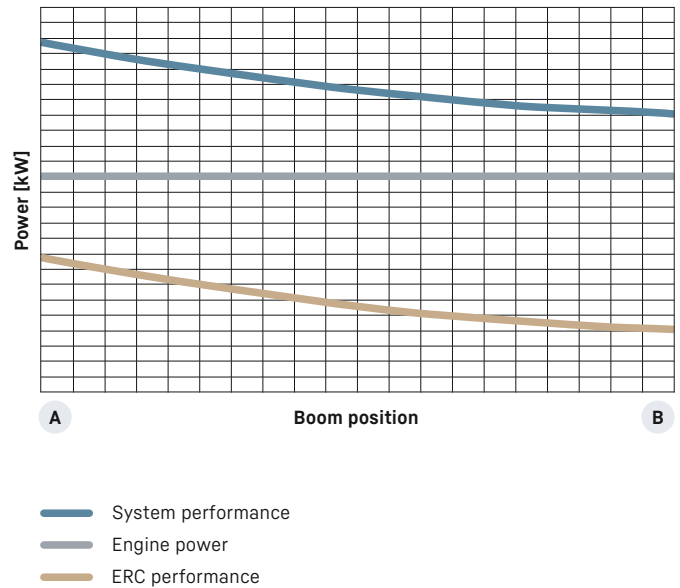
More performance, less consumption

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 energy saving – and, at the same time, even greater performance.

System performance

The energy recovery cylinder is a storage system which is independent of the electric motor or 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 engine.

ERC-System



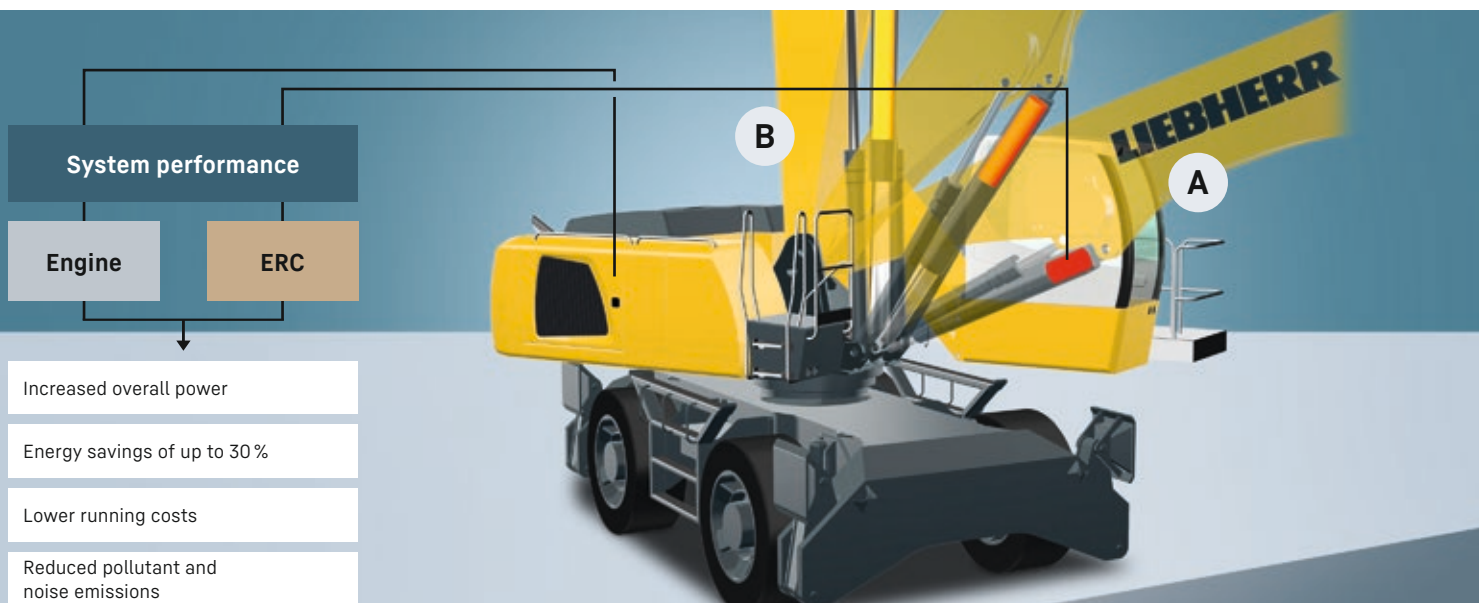
B 1. Equipment fitting raised / energy released



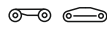
2. Lower equipment fitting / store energy
4. Raise equipment fitting / release energy



A 3. Equipment fitting lowered / energy stored



Equipment



Undercarriage

	80 M	80 C	80 M HR	80 C HR	80 C Gantry
Track pads, variants		+		+	+
Individual control outriggers	+		•		
Three-piece chain guide		•		•	•
Shuttle axle lock, automatic	•		•		
Outrigger monitoring system	+		+		
Tires, variants	+		+		
Trailing cable ²⁾	•	•	•	•	•
Protection for piston rods, outriggers	+		+		
Two storage compartments ¹⁾	•				
One storage compartment ²⁾	•				
Undercarriage, variants		+			
Cable reel system ²⁾	+	+ ³⁾	+	+	+



Uppercarriage

	80 M	80 C	80 M HR	80 C HR	80 C Gantry
Uppercarriage right side light, 1 piece, LED	•	•	•	•	•
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	+	+			
Protection for rear lights	+	+			
Tool equipment, extended	•	•	•	•	•



Hydraulic system

	80 M	80 C	80 M HR	80 C HR	80 C Gantry
Electronic pump regulation	•	•	•	•	•
Liebherr hydraulic oil from -4 °F to +104 °F	•	•	•	•	•
Liebherr hydraulic oil, biologically degradable	+	+	+	+	+
Liebherr hydraulic oil, specially for warm or cold regions	+	+	+	+	+
Magnetic rod in hydraulic tank	•	•	•	•	•
Bypass filter	+	+	+	+	+
Preheating hydraulic oil	+	+	+	+	+



Engine

	80 M	80 C	80 M HR	80 C HR	80 C Gantry
Fuel anti-theft device ¹⁾	+	+	+	+	+
Air pre-filter with dust discharge ¹⁾	+	+	+	+	+
Automatic engine shut-down (time adjustable)	+	+	+	+	+
Preheating fuel ¹⁾	+	+	+	+	+
Preheating coolant ¹⁾	+	+	+	+	+
Preheating engine oil* ¹⁾	+	+	+	+	+



Cooling system

	80 M	80 C	80 M HR	80 C HR	80 C Gantry
Reversible fan drive	+	+	+	+	+
Protective grid in front of cooler intake	•	•	•	•	•



Cab

	80 M	80 C	80 M HR	80 C HR	80 C Gantry
Stabilizer assistant	+		+		
Stabilizer, control lever, left console	+		+		
Stabilizer, proportional control on left joystick	●		●		
Cab lights rear, halogen	+	+	+	+	+
Cab lights rear, LED	+	+	+	+	+
Cab lights front, halogen	+	+	+	+	
Cab lights front, halogen (under rain cover)	●	●	●	●	●
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, personalized (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	●		●		
Joystick and wheel steering (slim version)	+		+		
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 cab, LED double flash	+	+	+	+	+
Windows made from impact-resistant laminated safety glass	+	+	●	●	●
Windscreen wiper, roof	+	+	+	+	+
Windshield wiper, entire windshield	●	●	●	●	●
FOPS top guard	+	+	+	+	+
FGPS front guard, tiltable	+	+	+	+	+
Sun visor	+	+	+	+	+
Stationary air-conditioning ²⁾	●	●	●	●	●
Left control console, folding	●	●	●	●	●



Equipment

	80 M	80 C	80 M HR	80 C HR	80 C Gantry
Boom lights, 2 pieces, halogen	●	●	●	●	●
Boom lights, 2 pieces, LED	+	+	+	+	+
Stick lights, 2 pieces, halogen	●	●	●	●	●
Stick lights, 2 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	+	+	+	+	+
Electronic lift limitation	+	+	+	+	+
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

	80 M	80 C	80 M HR	80 C HR	80 C Gantry
Lubrication					
Lubrication undercarriage, manually – decentralized (grease points)	●				
Lubrication undercarriage, manually – centralized (one grease point)	+		●		
Central lubrication system for uppercarriage and equipment, automatically	●	●	●	●	●
Central lubrication system for undercarriage, automatically	+		+		
Centralized lubrication extended for attachment	+	+	+	+	+
Special coating					
Special coating, variants	+	+	+	+	+
Monitoring					
Rear view monitoring with camera	●	●	●	●	●
Side view monitoring with camera	●	●	●	●	●

● = Standard, + = Option, +³⁾ = on request

* = country-dependent, ¹⁾ not with electric drive, ²⁾ only with electric drive

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