

# Crawler Excavator

**R 954 C SME**  
Litronic®

Operating Weight with Backhoe Attachment: 59,400 – 60,900 kg  
Operating Weight with Shovel Attachment: 61,850 – 62,450 kg  
Engine Output: 240 kW / 326 HP  
Bucket Capacity: 3.00 – 3.70 m<sup>3</sup>  
Shovel Capacity: 3.50 m<sup>3</sup>



# LIEBHERR



## Super Mass Excavation Equipment

- Cast steel elements
- Reinforced welded structure
- Special cinematic for higher forces
- Bottom stick protection plate as standard (and boom in option)
- Heavy duty protection for stick and boom cylinders available
- Safety check valves for stick and boom cylinders with integrated regeneration
- Backhoe and front shovel equipment available

## Increased productivity

- HD bucket, up to 3.7 m<sup>3</sup> (for 1.8 t/m<sup>3</sup> material density)
- High digging and breakout forces
- New Liebherr Z-type tooth system

## Extreme robust undercarriage

- Fitted with excavator components from the next size up machine
- Three track guides as standard
- Double grouser chamfered track pads
- Sprocket wheel with double teeth
- Double sided bearings on carrier rollers
- Reinforced travel drive protection





### **Silent and comfortable cab**

- Mounted on visco-elastic elements to absorb vibrations
- Pneumatic multidirectional suspension seat
- Integrated seat heating system (cooling system in option)
- Impact-resistant front window and roof window in option
- Optional FOPS and FGPS integral guard

# Technical Data



## Engine

Rating per ISO 9249	240 kW (326 HP) at 1,800 RPM
Model	Liebherr D 936 L
Type	6 cylinder in-line
Bore/Stroke	122/150 mm
Displacement	10.5 l
Engine operation	4-stroke diesel unit pump system turbo-charged and after-cooled reduced emissions
Cooling	water-cooled and integrated motor oil cooler
Air cleaner	dry-type air cleaner with pre-cleaner, primary and safety elements, automatic dust discharge
Fuel tank	700 l
Standard	sensor controlled engine idling
Electrical system	
Voltage	24 V
Batteries	2 x 170 Ah/12 V
Starter	24 V/7.8 kW
Alternator	three phase current 28 V/80 A



## Hydraulic System

Hydraulic pump	
for attachment and travel drive	two Liebherr variable flow, swash plate pumps
Max. flow	2 x 350 l/min.
Max. pressure	350 bar
Pump regulation	electro-hydraulic with electronic engine speed sensing regulation, pressure compensation, flow compensation, automatic oil flow optimizer
Hydraulic pump	
for swing drive	reversible, variable flow, swash plate pump, closed-loop circuit
Max. flow	211 l/min.
Max. pressure	384 bar
Hydraulic tank	440 l
Hydraulic system	790 l
Hydraulic oil filter	2 full flow filters in return line with integrated fine filter area (5 µm)
Hydraulic oil cooler	cooler unit, consisting of radiator for engine coolant with after-cooler core, sandwiched with cooler for hydraulic fluid and fuel with hydrostatically controlled fan drives
MODE selection	adjustment of machine performance and the hydraulics via a mode selector to match application
ECO	for especially economical and environmentally friendly operation
POWER	for maximum digging power and heavy duty jobs
LIFT	for lifting
FINE	for precision work and lifting through very sensitive movements
RPM adjustment	stepless adjustment of engine output via the rpm at each selected mode
Tool Control	ten preadjustable pump flows and pressures for add on tools



## Hydraulic Controls

Power distribution	via control valves in single block with integrated safety valves
Flow summation	to boom and stick
Closed-loop circuit	for uppercarriage swing drive
Servo circuit	
Attachment and swing	proportional via joystick levers
Travel	– proportional via foot pedals or removable hand levers – speed pre-selection
Additional functions	via foot pedals or joystick toggle switch



## Swing Drive

Drive by	Liebherr swash plate motor with integrated brake valves
Transmission	Liebherr compact planetary reduction gear
Swing ring	Liebherr, sealed single race ball bearing swing ring, internal teeth
Swing speed	0 – 5.6 RPM stepless
Swing torque	165 kNm
Holding brake	wet multi-disc (spring applied, pressure released)
Option	pedal controlled positioning brake



## Operator's Cab

Cab	resiliently mounted, sound insulated, tinted windows, front window stores overhead, door with sliding window
Operator's seat	fully adjustable, shockabsorbing suspension, adjustable to operator's weight and size, 6-way adjustable Liebherr seat
Joysticks	integrated into adjustable consoles
Monitoring	menu driven query of current operating conditions via the LCD display. Automatic monitoring, display, warning (acoustical and optical signal) and saving machine data, for example, engine overheating, low engine oil pressure or low hydraulic oil level
Air conditioning	standard air conditioning, combined cooler / heater, additional dust filter in fresh air/recirculated
Noise emission	
2000/14/EC	L <sub>WA</sub> (surround noise) = 105 dB(A)



## Undercarriage

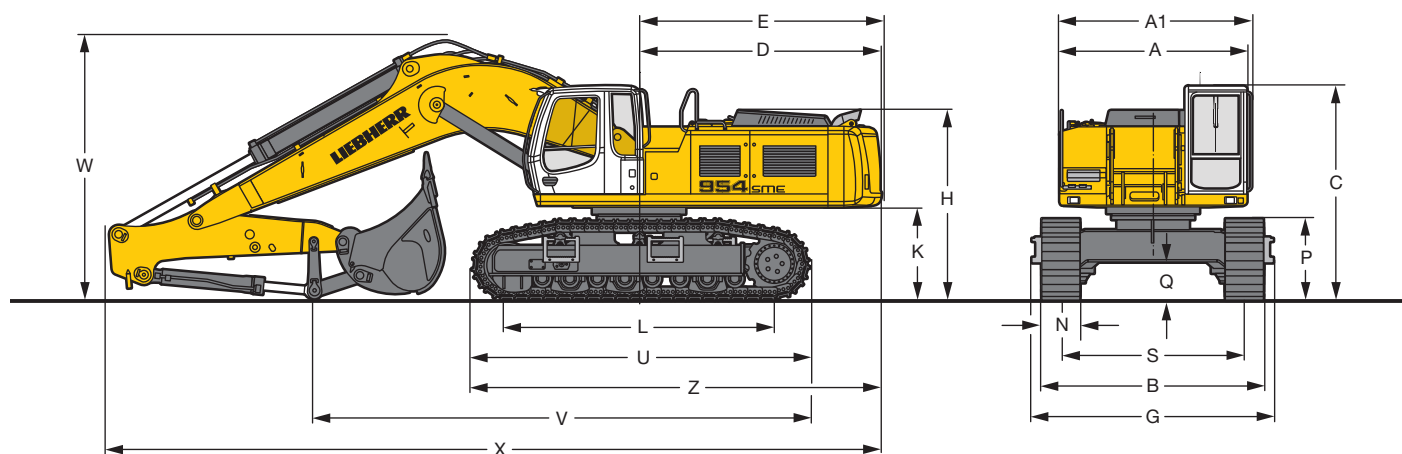
S-HD	super-HD-undercarriage for extreme and very tough applications, e.g. quarries
Drive	Liebherr swash plate motors with integrated brake valves on both sides
Transmission	Liebherr planetary reduction gears
Travel speed	low range – 2.6 km/h high range – 3.6 km/h
Net drawbar pull on crawler	478 kN
Track components	D8K, maintenance-free
Track rollers/Carrier rollers	8/3
Tracks	sealed and greased
Track pads	double grouser
Digging locks	wet multi-discs (spring applied, pressure released)



## Attachment

Type	combination of resistant steel plates and cast steel components
Hydraulic cylinders	Liebherr cylinders with special seal-system, shock absorbed
Pivots	sealed, low maintenance
Lubrication	semi-automatic central lubrication system (except link and tilt geometry)
Hydraulic connections	pipes and hoses equipped with SAE split-flange connections
Bucket	standard equipped with Liebherr tooth system

# Dimensions

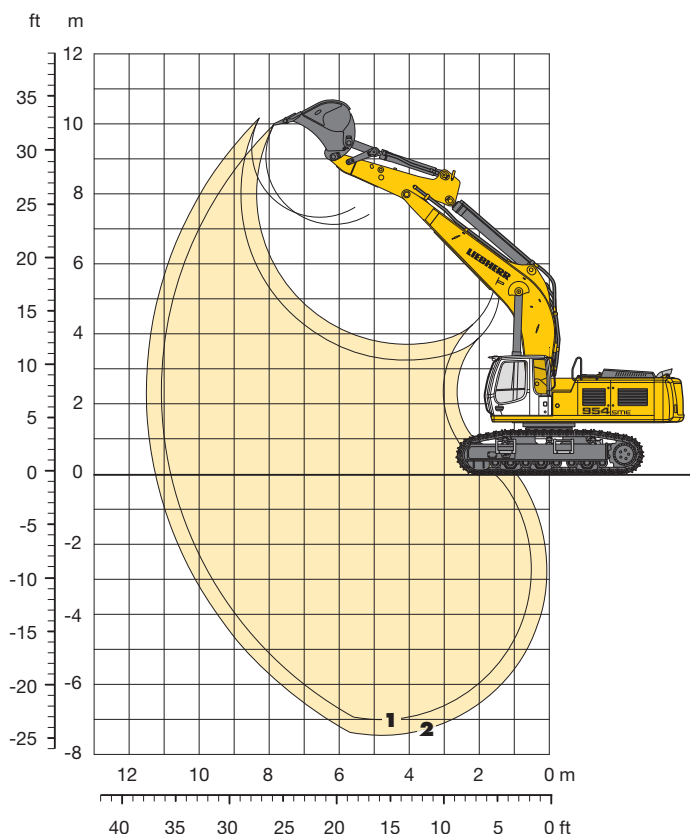


	mm		
A	2,980		
A1	3,060		
C	3,395		
D	3,850		
E	3,850		
H	3,010		
K	1,460		
L	4,280		
P	1,290		
Q	605		
S	2,900		
U	5,345		
Z	6,495		
N	500	600	750
B	3,626	3,626	3,650
G	3,820	3,820	3,820

Stick length		Mono boom 6.70 m	
m		mm	
V	2.35 SME	7,900	
	2.80 SME	6,100	
W	2.35 SME	4,200	
	2.80 SME	4,200	
X	2.35 SME	12,350	
	2.80 SME	12,350	

# Backhoe Bucket

## Super Mass Excavation with Mono Boom SME 6.70 m and Heavy Counterweight



### Digging Envelope

		1	2
Stick length	m	2.35	2.80
		SME	SME
Max. digging depth	m	7.00	7.50
Max. reach at ground level	m	10.80	11.25
Max. dumping height	m	7.15	7.30
Max. teeth height	m	10.00	10.15
Digging force ISO	kN	321	287
	t	32.7	29.3
Breakout force ISO	kN	346	346
	t	35.3	35.3

### Operating Weight and Ground Pressure

The operating weight includes the basic machine with heavy counterweight, mono boom SME 6.70 m, stick SME 2.80 m and bucket HD 3.25 m<sup>3</sup>.

Undercarriage		S-HD		
Pad width	mm	500	600	750
Weight	kg	59,400	60,000	60,900
Ground pressure	kg/cm <sup>2</sup>	1.28	1.08	0.87

### Buckets Machine stability per ISO 10567\* (75% of tipping capacity)

	Cutting width mm	Capacity ISO 7451 m <sup>3</sup>	Weight kg	S-HD-Undercarriage SME Attachment	
				Stick length (m)	
				2.35	2.80
HD <sup>1)</sup>	2,100	3.25	3,400	○	□
	2,250	3.50	3,550	□	△
	2,100	3.70	3,500	□	△
HDV <sup>2)</sup>	1,950	3.00	3,800	○	□
	2,100	3.25	4,000	○	□
	2,100	3.50	4,200	□	■

\* Indicated loads are based on ISO 10567 max. stick length, lifted 360° on firm

<sup>1)</sup> HD bucket with Liebherr teeth Z 70 (appropriate for materials above classification 6, according to VOB, Section C, DIN 18300)

<sup>2)</sup> HDV bucket with Liebherr teeth Z 70 (appropriate for materials above classification 6, according to VOB, Section C, DIN 18300)

Max. material weight ○ = ≤ 2.0 t/m<sup>3</sup>, □ = ≤ 1.8 t/m<sup>3</sup>, △ = ≤ 1.65 t/m<sup>3</sup>, ■ = ≤ 1.5 t/m<sup>3</sup>



# Lift Capacities

## Super Mass Excavation with Mono Boom SME 6.70 m and Heavy Counterweight

### Stick SME 2.35 m

Height m	Under-carriage	3.0 m	4.5 m	6.0 m	7.5 m	9.0 m	Max. reach m
9.0	S-HD						11.7* 11.7* 6.3
7.5	S-HD				11.0* 11.0*		11.0* 11.0* 7.6
6.0	S-HD			12.5* 12.5*	11.1* 11.1*		10.6 10.8* 8.5
4.5	S-HD		20.5* 20.5*	14.4* 14.4*	11.9* 11.9*		9.4 10.8* 9.0
3.0	S-HD			16.0 16.3*	11.8 12.9*	9.1 11.1*	8.7 10.9* 9.2
1.5	S-HD			15.3 17.5*	11.3 13.6*	8.8 11.4*	8.6 11.2* 9.2
0	S-HD		20.2* 20.2*	14.9 17.8*	11.0 13.9*		8.8 11.4* 8.9
-1.5	S-HD	19.6* 19.6*	22.1* 22.1*	14.9 17.1*	11.0 13.5*		9.7 11.6* 8.4
-3.0	S-HD	24.2* 24.2*	19.6* 19.6*	15.3 15.4*			11.5 11.7* 7.4
-4.5	S-HD		15.0* 15.0*				11.0* 11.0* 6.0

### Stick SME 2.80 m

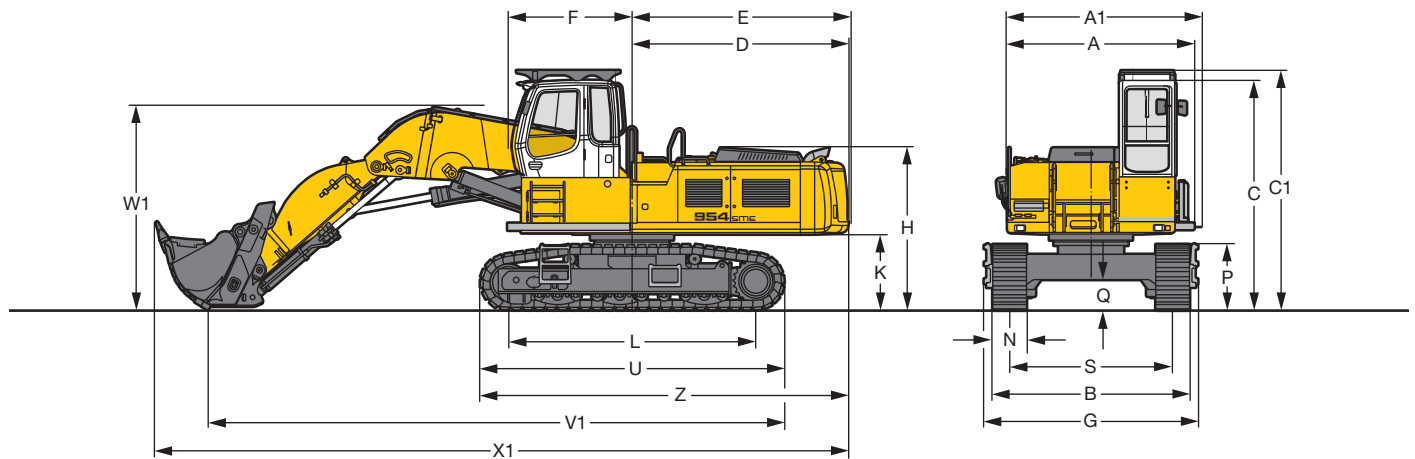
Height m	Under-carriage	3.0 m	4.5 m	6.0 m	7.5 m	9.0 m	Max. reach m
9.0	S-HD						10.1* 10.1* 6.9
7.5	S-HD				10.1* 10.1*		9.2* 9.2* 8.1
6.0	S-HD				10.5* 10.5*		8.9* 8.9* 8.9
4.5	S-HD		18.6* 18.6*	13.6* 13.6*	11.3* 11.3*	9.4 10.2*	8.7 8.9* 9.4
3.0	S-HD			15.6* 15.6*	11.9 12.4*	9.1 10.7*	8.2 9.2* 9.7
1.5	S-HD		13.9* 13.9*	15.3 17.1*	11.3 13.3*	8.8 11.1*	8.0 9.8* 9.6
0	S-HD		22.9 23.3*	14.9 17.7*	11.0 13.7*	8.6 11.3*	8.2 10.7* 9.4
-1.5	S-HD	20.1* 20.1*	23.0* 23.0*	14.8 17.3*	10.9 13.6*		8.9 11.0* 8.8
-3.0	S-HD	27.2* 27.2*	20.7* 20.7*	15.0 15.9*	11.1 12.3*		10.4 11.2* 7.9
-4.5	S-HD	21.5* 21.5*	16.7* 16.7*	12.7* 12.7*			10.9* 10.9* 6.6

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

The load values are quoted in tons (t) at stick end (without bucket), and may be swung 360° on firm and even ground. Adjacent values are valid for the undercarriage when in the longitudinal position. Capacities are valid for 600 mm wide double grouser pads. Indicated loads are based on ISO 10567 standard and do not exceed 75 % of tipping or 87 % of hydraulic capacity (indicated via \*). Without bucket cylinder, link and lever the lift capacities will increase by 950 kg. Lifting capacity of the excavator is limited by machine stability and hydraulic capacity.

According to European Standard, EN 474-5: In the European Union excavators have to be equipped with an overload warning device, a load diagram and automatic safety check valves on hoist cylinders and stick cylinder(s), when they are used for lifting operations which require the use of lifting accessories.

# Dimensions



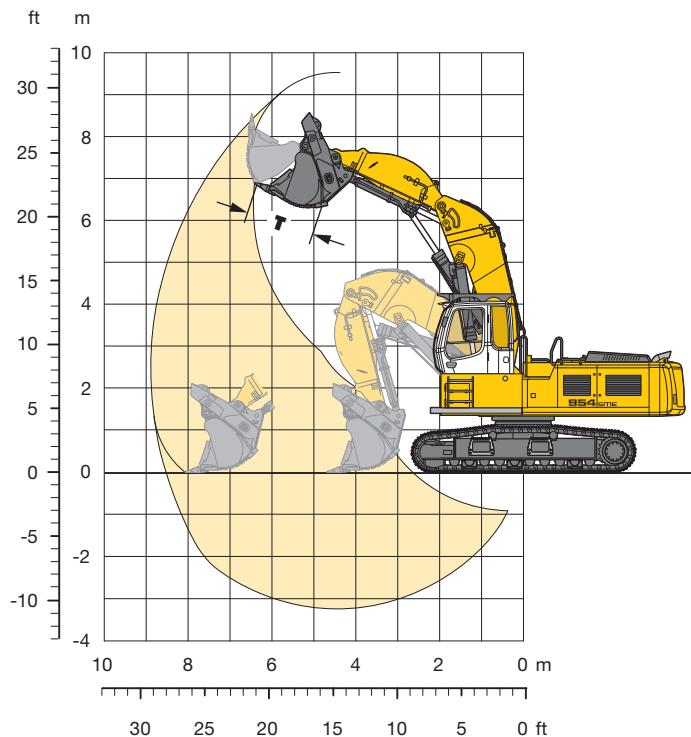
	mm
A	3,325
A1	3,460
C	4,200
C1	4,375
D	3,850
E	3,850
F	2,200
H	3,010
K	1,460
L	4,280
P	1,290

	mm
Q	605
S	2,900
U	5,345
Z	6,495
N	500 600
B	3,626 3,626
G	3,820 3,820
V1	10,200
W1	3,700
X1	12,350



# Front Shovel

## Super Mass Excavation



### Digging Envelope

Max. reach at ground level	8.50 m
Max. dumping height	6.30 m
Max. crowd length	3.38 m
Bucket opening width T	1,640 mm
Max. crowd force	435 kN/44.3 t
Max. crowd force at ground level	275 kN/28.0 t
Max. breakout force	355 kN/36.2 t

### Operating Weight and Ground Pressure

The operating weight includes the basic machine with heavy counterweight, cab elevation, shovel attachment and front shovel 3.50 m<sup>3</sup>, level II.

Undercarriage	S-HD	
Pad width	mm	500 600
Weight	kg	61,850 62,450
Ground pressure	kg/cm <sup>2</sup>	1.33 1.12

### Front Shovels

Cutting width mm	Capacity ISO 7451 m <sup>3</sup>	Weight kg	Wear kit level	S-HD-Undercarriage	
				Shovel Attachment SME	
2,450	3.50	6,150	II		<input type="checkbox"/>
2,450	3.50	6,700	III		<input type="checkbox"/>

Level I: For non-abrasive materials, such as limestone without flint inclusion, shot material or easily breakable rock, i.e., deteriorated rock, soft limestone, shale, etc.

Level II: For pre-blasted heavy rock, or deteriorated, cracked material (classification 3 to 4, according to DIN 18300)

Level III: For highly-abrasive materials such as rock with a high silica content, sandstone etc.

Max. material weight ☐ = ≤ 1.8 t/m<sup>3</sup>

# Standard Equipment



## Undercarriage

Lashing eyelets  
Sprocket double-toothed with dirt ejector  
Supporting rollers with double bearings  
Track guides (three pieces per track frame)  
Track pads, chamfered  
Track rollers, lifetime-lubricated  
Tracks, sealed and greased  
Travel gear support, reinforced



## Uppercarriage

Fuel tank cap lockable with padlock  
Handrails  
Heavy counterweight  
Liebherr central lubrication system  
Manual main switch  
Sound insulation  
Storage box, lockable  
Swing brake lock, maintenance-free  
Tool set 29 pieces  
Uppercarriage headlights (halogen) with protection



## Hydraulics

Dedicated swing circuit  
Filter with integrated fine filter area  
Liebherr hydraulic oil  
Pressure storage for controlled lowering of equipment with engine turned off  
Pressure test ports for hydraulic  
Shut-off valve between hydraulic tank and pumps  
Work mode selector



## Engine

Conform with stage IIIA/Tier 3 emission standard  
Engine idling, automatic, sensor-controlled  
Fixed geometry turbo charger  
Fuel filter and water separator  
Intercooler



## Operator's Cab

Air conditioning, automatic  
Cigarette lighter and ashtray  
Coat hook  
Cup holder  
Headlights (two pieces, Halogen)  
Interior light  
LiDAT Plus (Liebherr data transfer system)\*  
Mechanical hour meters, readable from outside the cab  
Multifunction display  
Operator seat "Comfort"  
Preparation for radio installation  
Rain hood over front window opening  
Rearview mirrors  
Rear window emergency exit  
Removable handles for travel pedals  
Retractable seat belt 51 mm  
Roll-down sun blind  
Rubber floor mat  
Sliding windows in cab door  
Storage bin  
Storage space  
Tinted windows  
Wiper/washer



## Attachment

Boom oil-recirculation  
Bottom protection for stick  
Headlights on boom (right and left, Halogen) with protection structure  
Safety check valves on hoist cylinders  
Stick oil-recirculation

Non-exhaustive list, please contact us for further information.

\* optionally extendable after one year

# Individual Options



## Undercarriage

Cover and base protection plates  
Protection plate for drop ball operation  
Travel drive protection



## Uppercarriage

Additional right-hand rearview mirror  
Cab elevation  
Diesel refuelling pump (electric)  
Fan drive, reversible  
Fine filter protection grid for radiator  
Lubrication line protection (swing ring)  
Walkway, retractable



## Hydraulics

Hydraulic bypass fine filter  
Liebherr hydraulic oil, adapted for extreme climate conditions  
Liebherr hydraulic oil, biodegradable  
Preheating for hydraulic oil



## Engine

Air pre-filter with dust trap  
Engine compartment lighting  
Preheating for fuel, coolant and engine oil



## Operator's Cab

Additional front and/or rear cab headlights (Halogen or LED)  
Amber beacon  
Auxiliary heater (programmable timer)  
Electric cool box (12 V)  
Electronic immobilizer  
Emergency stop button in cab  
Falling objects protection structure (FOPS)  
Fire extinguisher  
Footrest  
Front guard protection structure (FGPS) pivotable  
Front headlights (two pieces, LED)  
Handrest for joysticks  
Integral protection guard (FOPS + FGPS)  
Impact-resistant front window  
Impact-resistant roof window  
Lighting for cabin access  
Radio "Comfort"  
Rear view monitoring camera  
Roof window wiper  
Side view monitoring camera  
Sun visor  
Sunshield on cab roof  
Travel alarm



## Attachment

Bottom protection for boom  
Bucket cylinder protection  
Headlight on boom (LED)  
Hoist cylinders float position  
Hoist cylinders protection  
Liebherr bucket range  
Liebherr tooth system  
Overload warning device

Non-exhaustive list, please contact us for further information.

**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 41,000 employees located on all continents. The corporate headquarters of the Group is Liebherr-International AG in Bulle, Switzerland. The Liebherr family is the sole owner of the company.

[www.liebherr.com](http://www.liebherr.com)

## Liebherr-France SAS

2 avenue Joseph Rey, B.P. 90287, FR-68005 Colmar Cedex  
☎ +33 389 21 30 30, Fax +33 389 21 37 93  
[www.liebherr.com](http://www.liebherr.com), E-Mail: [info.lfr@liebherr.com](mailto:info.lfr@liebherr.com)  
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