

# Crawler Excavator

**R 954 C**  
Litronic®

Operating Weight with Backhoe Attachment:	49,550 – 51,400 kg
Operating Weight with Shovel Attachment:	53,700 – 54,300 kg
Engine Output:	240 kW / 326 HP
Bucket Capacity:	1.65 – 3.30 m <sup>3</sup>
Shovel Capacity:	2.50 – 3.10 m <sup>3</sup>



# LIEBHERR



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## Performance

Liebherr crawler excavators feature state-of-the-art technology and high-quality workmanship. The most important components of the drive system are all produced by Liebherr and are perfectly coordinated with one another. The engine generation, as further developed for the "C-series", assures an effective power delivery, a high degree of efficiency, long life expectancy and complies with the emission standard IIIA/Tier 3.

## Reliability

High demand for performance and quality is consequently converted into landmark solutions to achieve the highest level of dependability and reliability. Liebherr has over 50 years experience in the production of hydraulic excavators and has an unparalleled competence in design and know-how.

## Comfort

In the operator's station, the operator can look forward to a comfortable workstation that is designed according to the most up-to-date ergonomically know-how. The standard automatic climate control provides a pleasant working environment in all weather conditions.

Liebherr crawler excavators are particularly service-friendly: Maintenance work is simply and quickly accomplished due to well accessible service points.

## Economy

Liebherr crawler excavators stand for maximum productivity. The sensitive excavator controls assure optimal efficiency in the interaction of excavator hydraulics and electronics. A wide selection of attachments, accessory tools and undercarriages with various dimensions provide the correct choice for every application.





## Equipment

- Cast steel elements
- Greater resistance to stresses
- Longer service life
- Safety check valves for stick and boom cylinders with integrated regeneration for less fuel consumption

## Tools

- Different levels of protection to suit the different areas of application
- New Liebherr Z-type tooth system

## Undercarriage

- Robust structure thanks to the more rigid profile
- Improved self-cleaning capacity
- 3 guiding guards per track – standard





### **Operator's cab**

- Comfortable and ergonomic
- Bullet-proof panels at the front and in the roof optional
- Optional FOPS and FGPS protective guards
- Rear window with extended visibility and emergency exit





## **Buckets**

- The front shovel is the perfect shape for digging deep into the material and for a high filling rate
- Several levels of protection for the front shovel, depending on requirements



## Equipment

- Cast steel parts
- Parallel kinematics for powerful and regular digging
- Bucket cylinders positioned under the equipment for better protection against the elements
- Safety valves on boom cylinder for pipe burst protection

## Operator's cab

- Comfortable and ergonomic
- Bullet-proof panels at the front and in the roof optional
- Optional FOPS and FGPS protection guards
- Operator's cab with a fixed riser for a full view over the work area



# 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	
ISO 6396	L <sub>DA</sub> (inside cab) = 77 dB(A)
2000/14/EC	L <sub>WA</sub> (surround noise) = 105 dB(A)



## Undercarriage

HD	heavy duty
Drive	Liebherr swash plate motors with integrated brake valves on both sides
Transmission	Liebherr planetary reduction gears
Travel speed	low range – 3.3 km/h high range – 4.8 km/h
Net drawbar pull on crawler	359 kN
Track components	D 7 G, maintenance-free
Track rollers/Carrier rollers	10/2
Tracks	sealed and greased
Track pads	double or triple grouser
Digging locks	wet multi-discs (spring applied, pressure released)

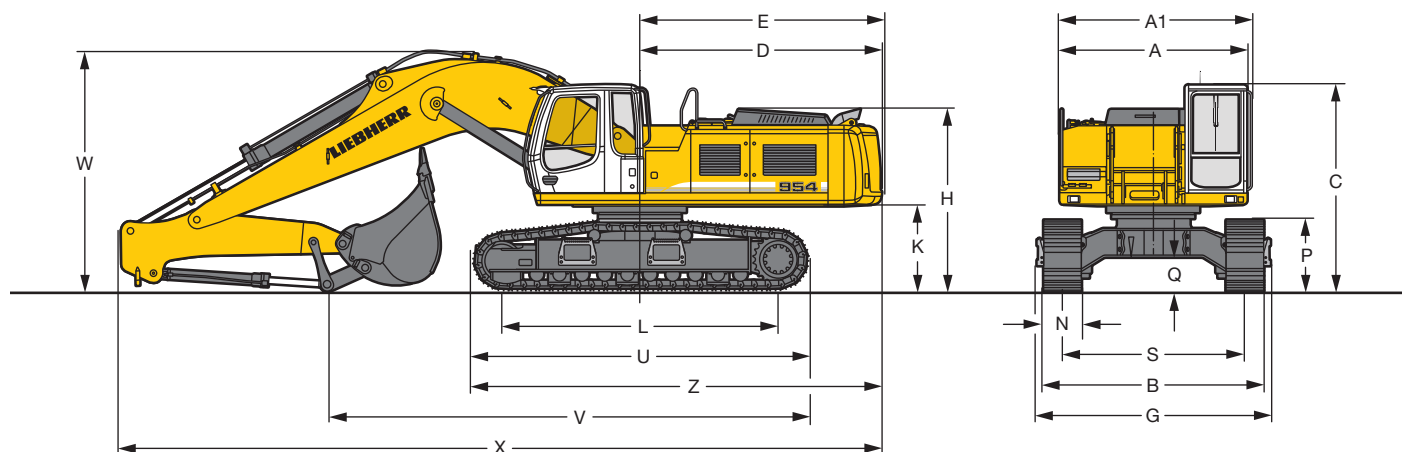


## Attachment

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



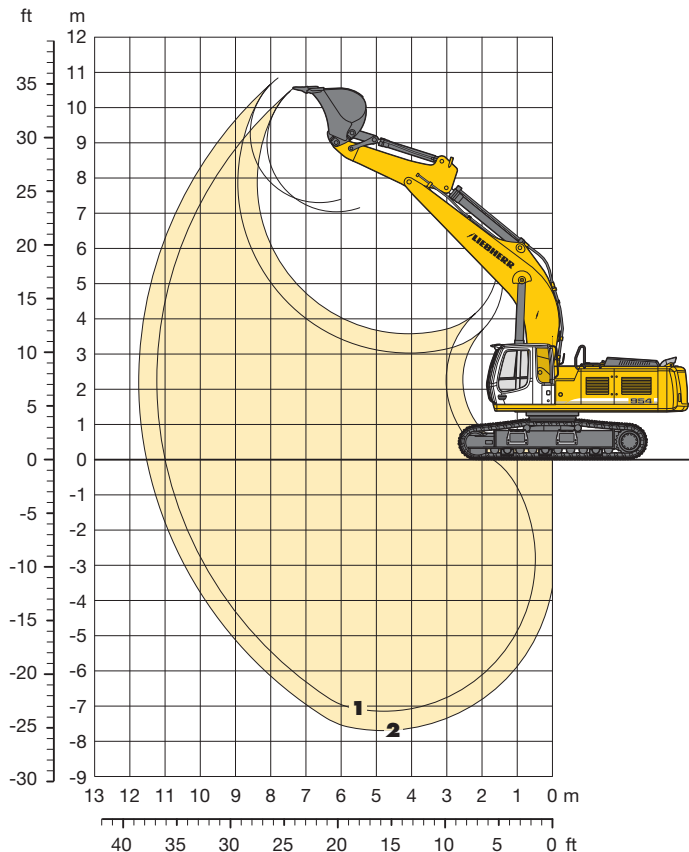
	mm		
A	2,980		
A1	3,060		
C	3,305		
D	3,850		
E	3,850		
H	2,915		
K	1,370		
L	4,400		
P	1,150		
Q	560		
S	2,900		
U	5,365		
Z	6,550		
N	500	600	750
B	3,460	3,500	3,650
G	3,715	3,715	3,715

Stick length			Mono boom 6.70 m	
	m	mm		
V	2.35	7,650		
	2.90	7,100		
W	2.35	3,900		
	2.90	3,950		
X	2.35	12,150		
	2.90	12,200		



# Backhoe Bucket

with Mono Boom 6.70 m



## Digging Envelope

		1	2
Stick length	m	2.35	2.90
Max. digging depth	m	7.15	7.70
Max. reach at ground level	m	11.10	11.50
Max. dumping height	m	7.05	7.30
Max. teeth height	m	10.55	10.85
Digging force ISO	kN	248	217
	t	25.8	22.1
Breakout force ISO	kN	313	313
	t	31.9	31.9

Breakout force max. ISO

345 kN/35.2 t

## Operating Weight and Ground Pressure

The operating weight includes the basic machine with mono boom 6.70 m, stick 2.35 m and bucket 2.70 m<sup>3</sup>.

Undercarriage		HD		
Pad width	mm	500	600	750
Weight	kg	49,550	50,150	51,400
Ground pressure	kg/cm <sup>2</sup>	1.05	0.88	0.72

Optional: heavy counterweight

(heavy counterweight increases the operating weight by 2,000 kg and ground pressure by 0.04 kg/cm<sup>2</sup>)

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

				HD-Undercarriage	
				Stick length (m)	
				2.35	2.90
STD <sup>1)</sup>	Cutting width mm	Capacity ISO 7451 m <sup>3</sup>	Weight kg		
	1,350	1.65	2,100	○	○
	1,550	2.00	2,250	○	○
	1,750	2.35	2,400	○	○
	1,950	2.70	2,650	○	□
HD <sup>2)</sup>	1,950	3.00	2,750	□	△
	2,100	3.30	2,850	△	△
	1,350	1.65	2,350	○	○
	1,550	2.00	2,650	○	○
	1,750	2.35	2,850	○	□
HDV <sup>3)</sup>	1,950	2.70	3,100	□	□
	2,100	3.00	3,200	□	△
	1,650	2.35	3,300	○	□

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

<sup>1)</sup> Standard bucket with Liebherr teeth Z 70 (appropriate for materials up to classification 5, according to VOB, Section C, DIN 18300)

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

<sup>3)</sup> HDV bucket with Liebherr teeth Z 70 (appropriate for materials above classification 6, according to VOB, Section C, DIN 18300)















Other backhoes available on request

Max. material weight ○ = ≤ 2.2 t/m<sup>3</sup>, □ = ≤ 1.8 t/m<sup>3</sup>, △ = ≤ 1.5 t/m<sup>3</sup>, ■ = ≤ 1.2 t/m<sup>3</sup>, ▲ = not authorized



**with Mono Boom 6.70 m**

**Stick 2.35 m**
















 m		<b>3.0 m</b>		<b>4.5 m</b>		<b>6.0 m</b>		<b>7.5 m</b>		<b>9.0 m</b>				<b>m</b>
<b>Under-carriage</b>														
<b>9.0</b>	HD											10.3*	10.3*	<b>6.2</b>
<b>7.5</b>	HD							10.2*	10.2*			9.3*	9.3*	<b>7.6</b>
<b>6.0</b>	HD					13.0*	13.0*	11.0	11.7*			8.9*	8.9*	<b>8.4</b>
<b>4.5</b>	HD			21.2*	21.2*	14.6	15.0*	10.5	12.5*			7.9	8.9*	<b>9.0</b>
<b>3.0</b>	HD					13.5	17.2*	10.0	13.6*	7.6	11.7	7.3	9.1*	<b>9.2</b>
<b>1.5</b>	HD					12.8	18.6*	9.5	14.4*	7.4	11.5	7.2	9.7*	<b>9.2</b>
<b>0</b>	HD			14.5*	14.5*	12.5	18.9*	9.3	14.7			7.4	10.8*	<b>9.0</b>
<b>-1.5</b>	HD	13.7*	13.7*	19.5	23.7*	12.5	18.3*	9.2	14.4*			8.0	12.4*	<b>8.4</b>
<b>-3.0</b>	HD	26.2*	26.2*	19.8	21.2*	12.7	16.6*	9.5	12.5*			9.5	12.4*	<b>7.5</b>
<b>-4.5</b>	HD			16.6*	16.6*	12.3*	12.3*					11.9*	11.9*	<b>6.1</b>

 **Height**
 **Can be slewed though 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 triple 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 825 kg. Lifting capacity of the excavator is limited by machine stability and hydraulic capacity.

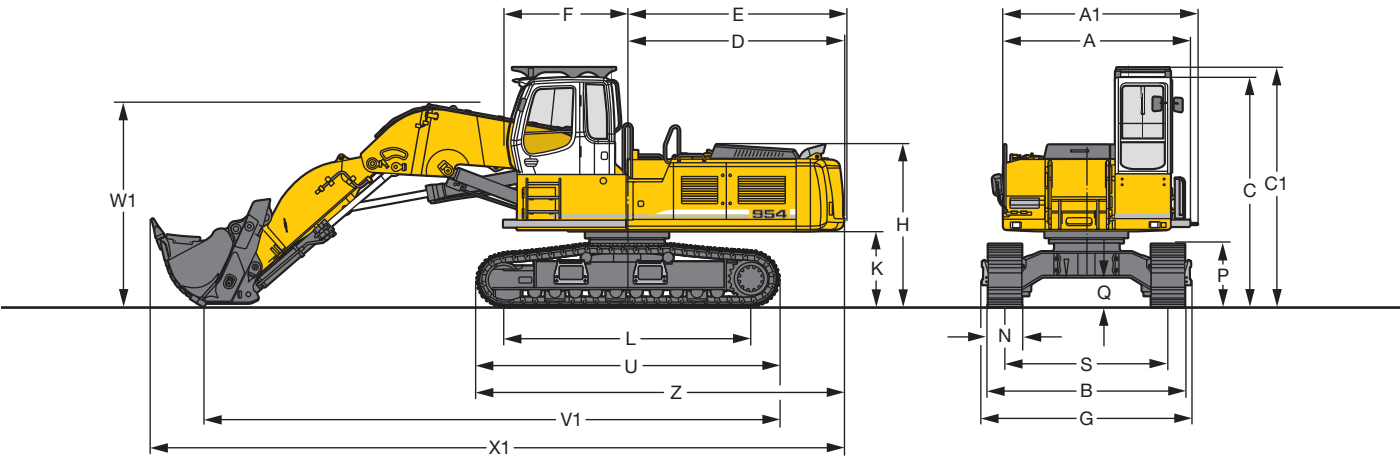
According to European Standard, EN 474-5: In the European Union excavators have to be equipped with an overload warning device, a load diagram and automatic safety check valves on hoist cylinders and stick cylinder(s), when they are used for lifting operations which require the use of lifting accessories.

**Stick 2.90 m**

 		3.0 m		4.5 m		6.0 m		7.5 m		9.0 m			
m	Under-carriage												
9.0	HD											7.8*	7.8*
7.5	HD							10.4*	10.4*			7.1*	7.1*
6.0	HD							10.8*	10.8*	7.0*	7.0*	6.9*	6.9*
4.5	HD			18.9*	18.9*	14.0*	14.0*	10.6	11.8*	7.9	10.7*	6.9*	6.9*
3.0	HD			15.3*	15.3*	13.8	16.3*	10.0	13.0*	7.7	11.3*	6.7	7.0*
1.5	HD			11.6*	11.6*	13.0	18.0*	9.6	14.0*	7.4	11.5	6.6	7.5*
0	HD			17.6*	17.6*	12.5	18.8*	9.2	14.6*	7.2	11.3	6.7	8.2*
-1.5	HD	14.6*	14.6*	19.2	24.7*	12.4	18.6*	9.1	14.5*			7.2	9.5*
-3.0	HD	25.0*	25.0*	19.5	22.6*	12.5	17.3*	9.2	13.4*			8.3	11.8*
-4.5	HD	24.6*	24.6*	18.8*	18.8*	13.0	14.3*					10.8	11.7*



# Dimensions Front Shovel

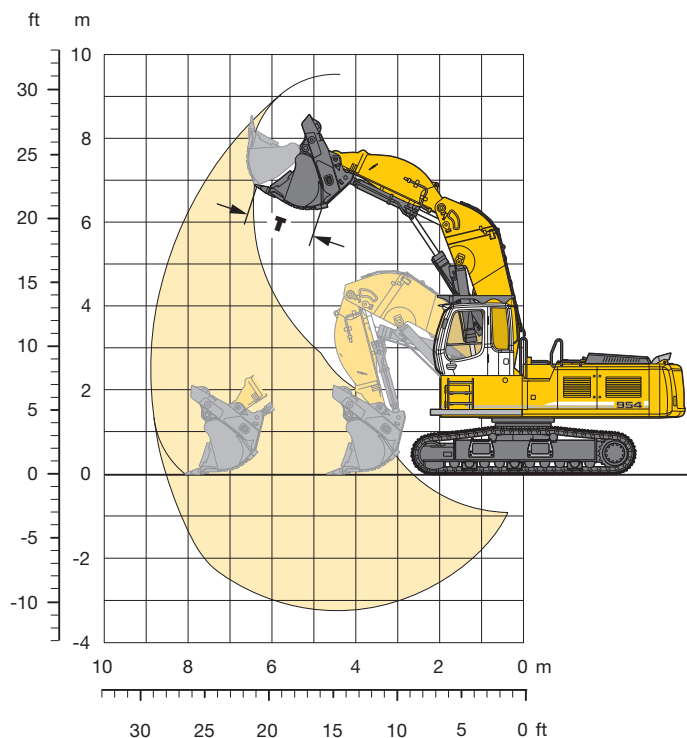


	mm
A	3,325
A1	3,460
C	4,100
C1	4,275
D	3,850
E	3,850
F	2,200
H	2,900
K	1,360
L	4,400
P	1,150

	mm
Q	560
S	2,900
U	5,365
Z	6,550
N	500 600
B	3,462 3,500
G	3,715 3,715
V1	10,250
W1	3,650
X1	12,350



# Front Shovel



## 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 cab elevation, shovel attachment and front shovel 3.10 m<sup>3</sup>, level II.

Undercarriage	HD	
Pad width	mm	500 600
Weight	kg	53,700 54,300
Ground pressure	kg/cm <sup>2</sup>	1.13 0.96

## Front Shovels

Cutting width mm	Capacity ISO 7451 m <sup>3</sup>	Weight kg	Wear kit level	HD-Undercarriage	
				Shovel Attachment	
1,850	2.50	4,700	II	○	
1,850	2.50	5,050	III	○	
2,150	3.10	5,050	I	□	
2,150	3.10	5,650	II	□	
2,150	3.10	5,750	III	□	

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 ○ = ≤ 2.2 t/m<sup>3</sup>, □ = ≤ 1.8 t/m<sup>3</sup>



# Standard Equipment



## Undercarriage

Idler protection  
 Lifetime lubricated track rollers  
 Pads 600 mm  
 Track guide at each track frame (three piece)  
 Tracks sealed and greased  
 Two-stage travel motors



## Uppercarriage

Handrails, non slip surfaces  
 Lockable tool box  
 Main switch for electric circuit  
 Maintenance-free HD-batteries  
 Maintenance-free swing brake lock  
 Sound insulation  
 Tool kit



## Hydraulics

Additional hydraulic circuits  
 Electronic pump regulation  
 Filter with integrated fine filter area  
 Flow compensation  
 Hydraulic tank shut-off valve  
 Leakage filter  
 Pressure compensation  
 Pressure storage for controlled lowering of attachments with engine turned off  
 Pressure test ports  
 Stepless work mode selector



## Engine

After-cooled  
 Air filter with automatic dust ejector  
 Conform with standard level IIIA/Tier 3  
 Dry-type air cleaner w/pre-cleaner, main and safety element  
 Fuel water separator  
 Sensor controlled engine idling  
 Turbo charger  
 Two hydrostatic fans  
 Unit pump system



## Operator's Cab

Automatic air conditioning with defroster  
 Bullet-proof windscreen (fixed installation – can not be opened) and bullet-proof roof windows  
 Cigarette lighter and ashtray  
 Closed storage space – literature tray  
 Cloth hook  
 Displays for engine operating condition  
 Dome light  
 Door with sliding window  
 Emergency exit rear window  
 Inside rear mirror  
 Load bearing sectional profile structure, covered with deep-drawn panels  
 Mechanical hour meters, readable from outside the cab  
 Operator seat Comfort  
 Preparation for radio installation  
 Removable customized foot mat  
 Removable handles for travel pedals  
 Right window made of one piece (without post)  
 Seat belt  
 Storage tray  
 Sun roller blind  
 Tinted side windows  
 Washer-wiper for front and roof window



## Attachment

27 t lifting hook on quick change coupler  
 Cylinders with shock absorbers  
 ReGeneration plus  
 SAE split flanges on all high pressure lines  
 Semi-automatic central lubrication system (except link and tilt geometry)  
 Tool Control  
 Work light on boom

# Individual Options



## Undercarriage

Different undercarriage versions  
Pads 500 mm  
Pads 750 mm  
Reinforced cover  
Streng. bottom sheet center part  
Track guide at each track frame (four piece)



## Uppercarriage

Camera for side area monitoring  
Electric fuel tank filler pump  
Foot pedal swing positioning brake  
Heavy counterweight  
Rear view monitoring camera



## Hydraulics

Liebherr hydraulic oil, adapted for extreme climate conditions  
Preheating for hydraulic oil



## Engine

Air pre-filter with dust trap  
Engine cold starting aid



## Operator's Cab

Additional flood lights (back)  
Additional flood lights (front)  
Auxiliary heating with clock timer  
Beacon  
Electric cool box  
Electronic drive away lock  
Extinguisher  
FOPS Protection  
Front guard tiltable or fixed (FGPS)  
Lower windscreen with wiper  
Operator seat Premium  
Stereo radio  
Sun visor



## Attachment

Automatic central lubrication system (except link and tilt geometry)  
Hydraulic lines for additional tools  
Hydr. or mechanical quick change coupler  
Liebherr line of buckets  
Overload warning device  
Piston rod protection  
Special application buckets

**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 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 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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