

Crawler Excavator

R 980 SME
Litronic®

Operating Weight with Backhoe Attachment:	93,900 – 97,800 kg
Operating Weight with Shovel Attachment:	98,400 – 102,300 kg
Engine Output:	400 kW / 544 HP
Bucket Capacity:	5.70 – 6.80 m ³
Shovel Capacity:	5.10 – 6.50 m ³
Emission standard:	Stage IIIA / Tier 3



LIEBHERR

R 980 SME excavator Super Mass Excavation



Equipment

The R 980 SME excavator is equipped to deliver the highest productivity and performance even when working in the most challenging applications and environments, whether it is used for heavy quarry digging or for mass excavation.

This equipment includes:

- Stick and bucket cylinders with increased diameter and purposely designed equipment result in higher breakout and digging forces
- Stick with internal protection for a longer service life
- Optional protection is available for the most exposed cylinders to avoid any direct contact with materials
- HD bucket standard for increased service life and others types as option

Operator's Cab

The new operator's cab features exceptional sound insulation. Features such as pneumatic heated seat, air conditioning and heating systems are fitted as standard maintaining a comfortable work environment during working shifts. Several other enhancements are also fitted as standard:

- 7" high resolution color touchscreen
- Fully automatic air-conditioning, 13 air outlet nozzles
- Operator's cab mount on visco-elastic studs
- Roof window and windshield made of safety glass
- Larger cab than comparable machines in the same size range
- Optional equipment includes a FOPS and FGPS front windshield guard

Uppercarriage

The uppercarriage provides a wide view of the work area and the working equipment. In addition, the machine is equipped with a rear-view camera as a standard feature offering excellent view to the back of the machine and increasing safety during machine operation. Additional features are:

- New engine that complies with stage IIIA / Tier 3 emissions standards
- Heavy counter-weight, for greater stability and performance



Undercarriage

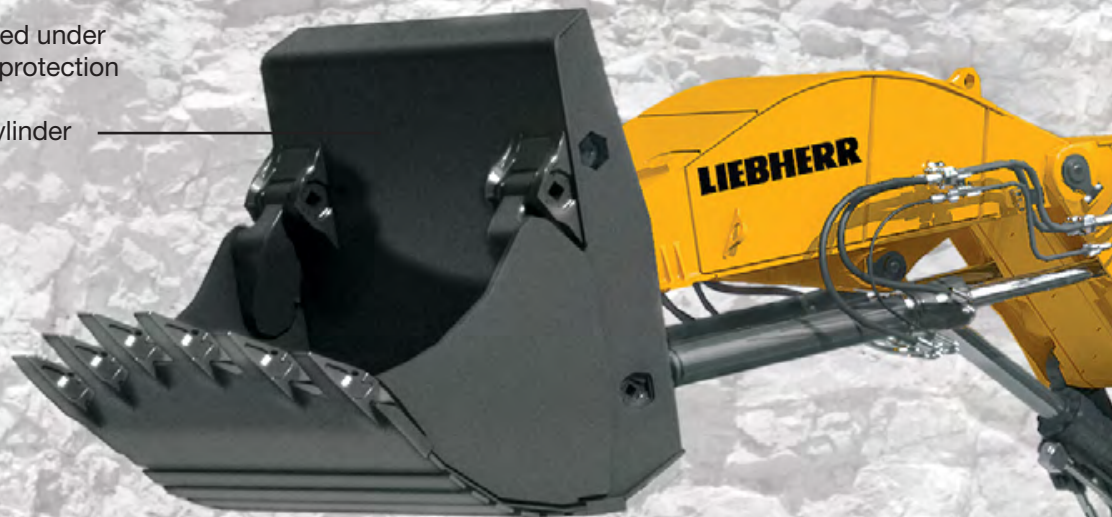
The R 980 SME excavator has been tailored to meet the specific requirements of mining, quarrying and general construction operations.

This undercarriage also features the following characteristics:

- Double-grouser beveled track pads are fitted as standard to assure excellent ground penetration and traction even over rough terrain
- Molded two-tooth sprocket for a longer service life
- Dual-pivot carrier rollers for increased reliability and long-term durability

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



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Technical Data



Engine

Rating per ISO 9249	400 kW (544 HP) at 1,800 RPM
Model	Liebherr D 9508
Type	8 cylinder V-engine
Bore/Stroke	128/157 mm
Displacement	16.16 l
Engine operation	4-stroke diesel common rail injection turbo-charged after-cooled reduced emissions
Cooling	water-cooled
Air cleaner	dry-type air cleaner with pre-cleaner, primary and safety elements
Fuel tank	1,498 l
Electrical system	
Voltage	24 V
Batteries	2 x 180 Ah/12 V
Starter	24 V/7.8 kW
Alternator	three phase current 28 V/100 A



Hydraulic System

Hydraulic pump for attachment and travel drive	two Liebherr variable flow, swash plate pumps
Max. flow	2 x 498 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	315 l/min.
Max. pressure	350 bar
Hydraulic tank	536 l
Hydraulic system	1,134 l
Hydraulic oil filter	2 full flow filters in return line with integrated fine filter area (5 µm)
Hydraulic oil cooler	compact cooler for water cooler, after-cooler, fuel cooler and transmission pump oil, sandwiched with cooler for oil and condenser of air-conditioning with hydrostatically controlled fan drives
MODE selection	adjustment of engine and hydraulic performance via a mode pre-selector to match application for especially economical and environmentally friendly operation or for maximum digging performance and heavy-duty jobs
RPM adjustment	stepless adjustment of engine output via RPM at each selected mode
Tool Control	10 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	electro-hydraulic control
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 – 5.9 RPM stepless
Swing torque	295 kNm
Holding brake	wet multi-disc (spring applied, pressure released)
Option	pedal controlled positioning brake



Operator's Cab

Cab	work headlights integrated in the ceiling, a door with a side window (can be opened on both sides), large stowing and depositing possibilities, shock-absorbing suspension, sounddamping insulating, tinted laminated safety glass, separate window shades for the sunroof window and wind-screen, 12 V plug, storage bins, lunchbox, cup holder
Operator's seat	Liebherr-Comfort seat, airsprung with automatic weight adjustment, vertical and horizontal seat damping including consoles and joysticks. Seat and armrests adjustable separately and in combination, seat heating as standard
Control system	arm consoles, swinging with the seat
Operation and displays	large high resolution colour display with self-explanatory operation via touch screen, video, versatile adjusting, control and monitoring facilities, e.g. climate control, implement and tool parameters
Air-conditioning	standard automatic air-conditioning, ambient air function, fast de-icing and demisting at the press of a button, air vents can be operated via a menu; ambient 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
Noise emission	
ISO 6396	L _{PA} (inside cab) = 80 dB(A)
2000/14/EC	L _{WA} (surround noise) = 110 dB(A)



Undercarriage

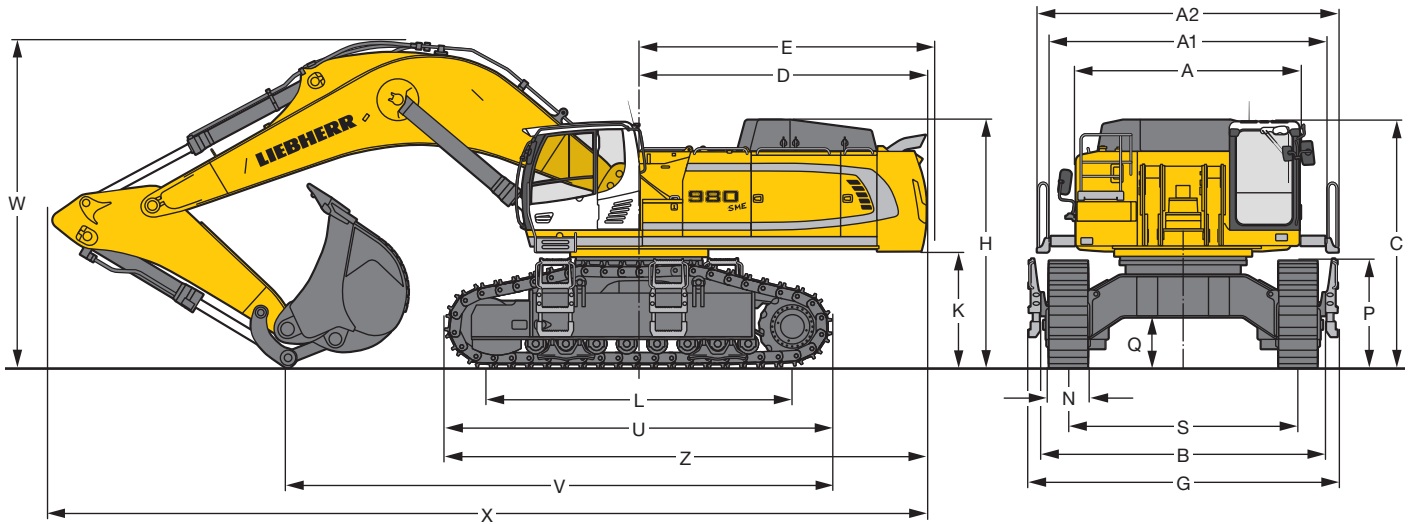
S-HD	gauge 3,600 mm
Drive	Liebherr swash plate motors with integrated brake valves on both sides
Transmission	Liebherr planetary reduction gears
Travel speed	low range – 2.6 km/h high range – 3.7 km/h
Net drawbar pull on crawler	645 kN
Track components	BMP280, maintenance-free
Track rollers/Carrier rollers	8/2
Tracks	sealed and greased
Track pads	double grouser
Digging locks	wet multi-discs (spring applied, pressure released)
Brake valves	outside the travel motor
Lashing eyes	integrated



Attachment

Type	combination of resistant steel plates and cast steel components
Hydraulic cylinders	Liebherr cylinders with special seal-system, shock protection
Pivots	sealed, low maintenance
Lubrication	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



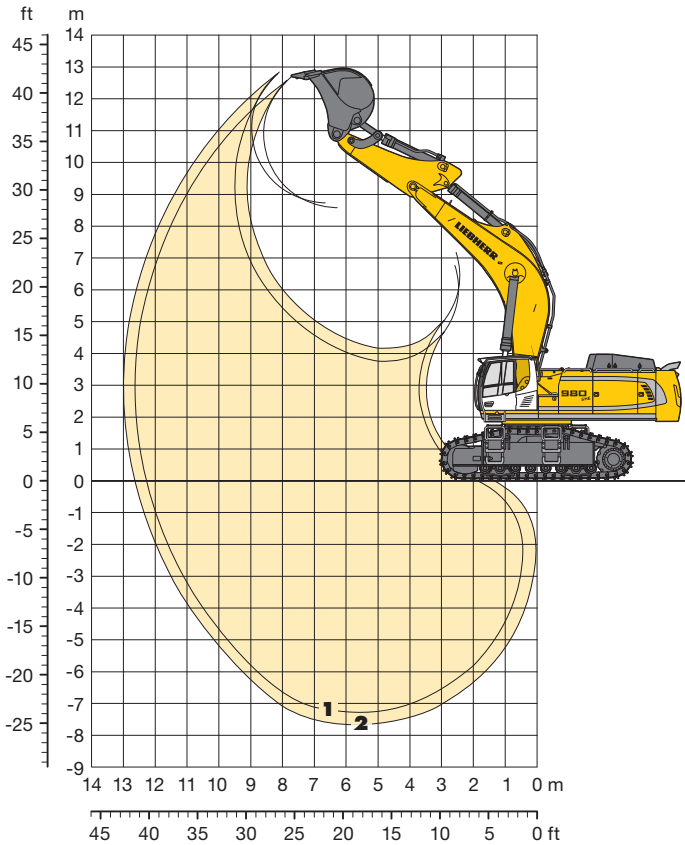
	mm		
A	3,565		
A1	4,355		
A2	4,730		
C	3,935/4,130*		
D	4,515		
E	4,640		
H	3,965		
K	1,860		
L	4,810		
P	1,715		
Q	810		
S	3,600		
U	6,095		
Z	7,565		
N	500	600	750
B	4,465	4,465	4,465
G	4,845	4,845	4,845

Mono boom SME 7.20 m			
Stick length SME			
	mm	2.90	3.30
V	8,600	8,400	
W	5,250	5,400	
X	13,800	13,450	

* with FOPS top guard

Backhoe Bucket

with Mono Boom SME 7.20 m



Digging Envelope

		1	2
Stick length	m	2.90	3.30
		SME	SME
Max. digging depth	m	7.30	7.70
Max. reach at ground level	m	12.30	12.65
Max. dumping height	m	8.60	8.75
Max. teeth height	m	12.70	12.85
Digging force ISO	kN	426	394
	t	43.4	40.2
Breakout force ISO	kN	508	508
	t	51.8	51.8

Operating Weight and Ground Pressure

The operating weight includes the basic machine with mono boom SME 7.20 m, stick SME 2.90 m and HD bucket 6.20 m³ (6,350 kg).

Undercarriage		S-HD		
Pad width	mm	500	600	750
Weight	kg	93,900	95,500	97,800
Ground pressure	kg/cm ²	1.79	1.51	1.24

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

Cutting width mm	Capacity ISO 7451 m ³	Weight kg	S-HD-Undercarriage	
			Stick length (m)	
			2.90	3.30
HD ¹⁾ 2,400	6.20	6,350	□	△
2,550	6.80	6,700	△	■
HDV ²⁾ 2,300	5.70	6,700	○	□
2,550	6.30	7,500	△	■

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

1) HD bucket with teeth Z 90 (appropriate for materials above classification 6, according to VOB, Section C, DIN 18300)

2) HDV bucket with teeth Z 90 (appropriate for materials above classification 6, according to VOB, Section C, DIN 18300)

Other backhoes available on request

Max. material weight ○ = ≤ 2.0 t/m³, □ = ≤ 1.8 t/m³, △ = ≤ 1.65 t/m³, ■ = ≤ 1.5 t/m³, ▲ = not authorized

Lift Capacities

with Mono Boom SME 7.20 m

Stick SME 2.90 m

↓ ↑ m	Under-carriage	3.0 m		4.5 m		6.0 m		7.5 m		9.0 m		10.5 m		m		
10.5	S-HD													22.9*	22.9*	6.8
9.0	S-HD							21.1*	21.1*					21.1*	21.1*	8.2
7.5	S-HD							21.6*	21.6*	20.3*	20.3*			20.2	20.3*	9.2
6.0	S-HD					27.5*	27.5*	23.1*	23.1*	20.7	20.7*			17.7	20.0*	9.8
4.5	S-HD					31.6*	31.6*	25.2*	25.2*	20.0	21.6*			16.4	19.9*	10.2
3.0	S-HD							25.2	27.0*	19.4	22.6*			15.7	20.0*	10.3
1.5	S-HD					33.5	36.4*	24.3	28.2*	18.8	23.1*			15.7	20.1*	10.2
0	S-HD					32.9	35.9*	23.8	28.2*	18.5	22.9*			16.3	20.2*	9.9
-1.5	S-HD			42.6*	42.6*	32.9	33.8*	23.6	26.9*	18.5	21.3*			17.8	20.1*	9.3
-3.0	S-HD	43.9*	43.9*	37.0*	37.0*	29.8*	29.8*	23.5*	23.5*					19.5*	19.5*	8.4
-4.5	S-HD			27.9*	27.9*	22.3*	22.3*							17.5*	17.5*	7.0

Stick SME 3.30 m

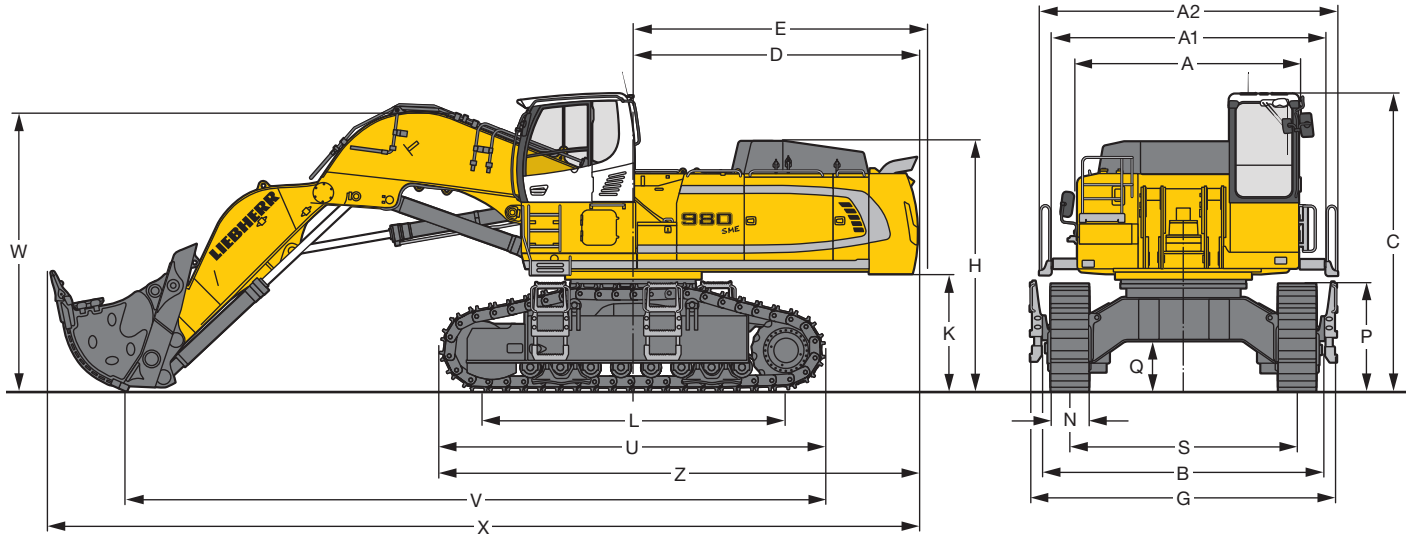
↓ ↑ m	Under-carriage	3.0 m		4.5 m		6.0 m		7.5 m		9.0 m		10.5 m		m		
10.5	S-HD													21.1*	21.1*	7.3
9.0	S-HD							19.8*	19.8*					19.8*	19.8*	8.7
7.5	S-HD							20.5*	20.5*	19.3*	19.3*			18.9	19.2*	9.6
6.0	S-HD					26.2*	26.2*	22.2*	22.2*	19.9*	19.9*			16.8	19.0*	10.2
4.5	S-HD					30.4*	30.4*	24.4*	24.4*	20.1	21.0*	15.7	19.0*	15.5	18.9*	10.6
3.0	S-HD					34.1*	34.1*	25.4	26.4*	19.4	22.1*	15.3	19.3*	14.9	19.0*	10.7
1.5	S-HD					33.7	36.0*	24.4	27.8*	18.8	22.8*	15.0	19.4*	14.9	19.2*	10.6
0	S-HD					32.9	36.1*	23.8	28.2*	18.4	22.9*			15.4	19.3*	10.3
-1.5	S-HD			42.4*	42.4*	32.7	34.5*	23.5	27.2*	18.3	21.8*			16.6	19.4*	9.7
-3.0	S-HD	42.6*	42.6*	39.3*	39.3*	31.0*	31.0*	23.7	24.5*					19.1*	19.1*	8.8
-4.5	S-HD			31.1*	31.1*	24.7*	24.7*							17.8*	17.8*	7.5

↓ ↑ 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 1,400 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 Front Shovel

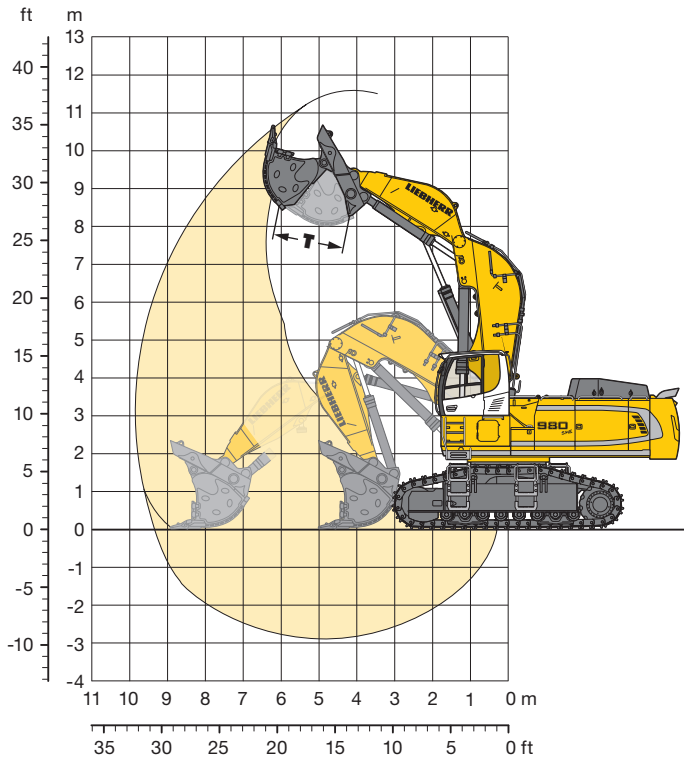


	mm
A	3,565
A1	4,355
A2	4,730
C	4,735/4,930*
D	4,515
E	4,640
H	3,965
K	1,860
L	4,810
P	1,715

	mm
Q	810
S	3,600
U	6,095
N	500 600 750
B	4,465 4,465 4,465
G	4,845 4,845 4,845
Z	7,565
V	11,100
W	4,600
X	13,800

* with FOPS top guard

Front Shovel



Digging Envelope

Max. reach at ground level	9.35 m
Max. dumping height	8.00 m
Max. crowd length	3.90 m
Bucket opening width T	1,825 mm
Max. crowd force	690 kN/70.4 t
Max. crowd force at ground level	490 kN/50.0 t
Max. breakout force	500 kN/51.0 t

Operating Weight and Ground Pressure

The operating weight includes the basic machine with cab elevation 800 mm, shovel attachment SME and front shovel 6.00 m³ (10,700 kg), level II.

Undercarriage	S-HD			
Pad width	mm	500	600	750
Weight	kg	98,400	100,000	102,300
Ground pressure	kg/cm ²	1.87	1.59	1.30

Front Shovels

Cutting width mm	Capacity ISO 7451 m ³	Weight kg	Wear kit level	S-HD-Undercarriage	
				Shovel Attachment	
2,700	5.10	10,150	III		○
2,700	5.60	8,750	I		○
2,700	5.60	9,450	II		○
2,700	5.60	10,600	III		□
2,700	6.00	9,950	I		□
2,700	6.00	10,700	II		□
2,700	6.00	11,950	III		□
2,700	6.50	10,700	I		△
3,150	6.50	11,600	II		△

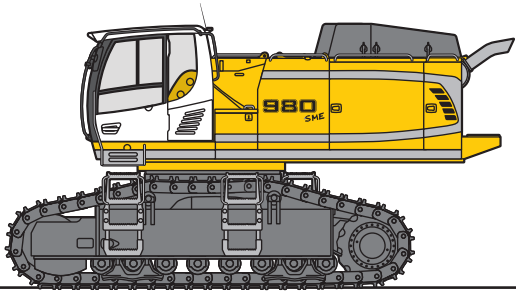
Level I: For non-abrasive materials, such as limestone without flint inclusion, shot material or easily breakable rock, i.e., deteriorated rock, soft limestone, shale, etc.

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

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

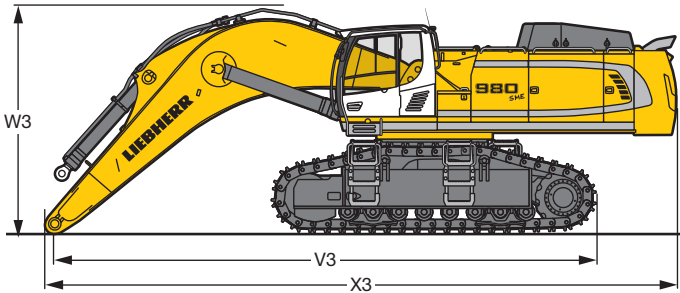
Max. material weight ○ = ≤ 2.2 t/m³, □ = ≤ 1.8 t/m³, △ = ≤ 1.65 t/m³

Component Dimensions and Weights



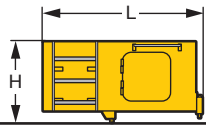
Basic Machine

Track pads	mm	500	600	750
Weight with backhoe attachment	kg	54,650	56,200	58,550
Weight with shovel attachment	kg	54,750	56,300	58,650



Basic Machine

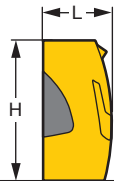
V3	mm	10,200
W3	mm	4,300
X3	mm	11,850



Cab Elevation

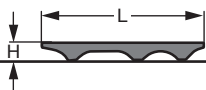
800 mm

L Length	mm	1,890
H Height	mm	925
Width	mm	1,370
Weight	kg	600



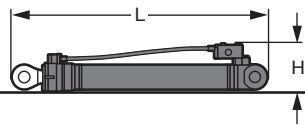
Counterweight

L Length	mm	775
H Height	mm	1,595
Width	mm	3,360
Weight	kg	16,000



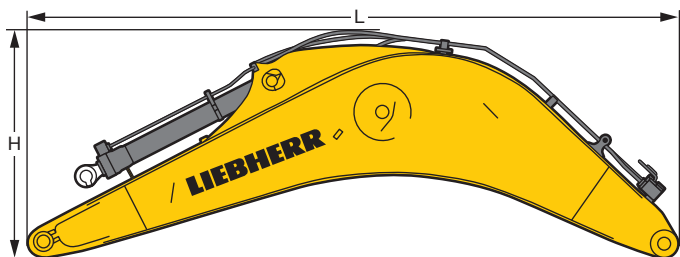
Upper Protection Screen

L Length	mm	1,960
H Height	mm	190
Width	mm	1,110
Weight	kg	75



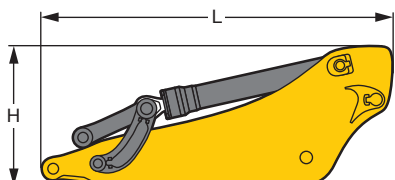
Hoist Cylinders (two)

L Length	mm	2,920
H Height	mm	550
Width	mm	400
Weight	kg	2 x 1,050



Mono Boom with Stick Cylinder

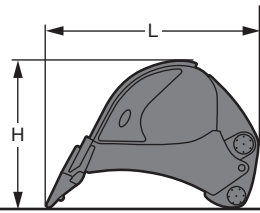
Stick length	m	7.20
L Length	mm	7,550
H Height	mm	2,700
Width	mm	1,460
Weight	kg	9,900



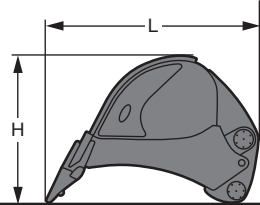
Stick with Bucket Cylinder

Stick length	m	2.90	3.30
L Length	mm	4,050	4,450
H Height	mm	1,700	1,650
Width	mm	900	900
Weight	kg	4,900	5,100

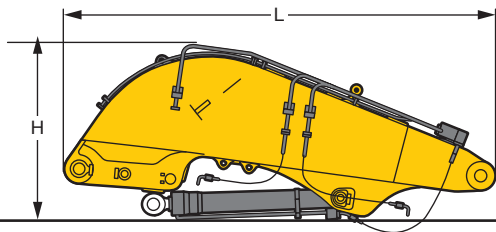
Component Dimensions and Weights



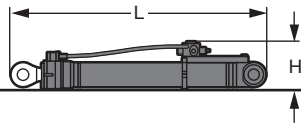
Backhoe Buckets		HD	
Cutting width	mm	2,400	2,550
Capacity	m ³	6.20	6.80
L Length	mm	2,550	2,550
H Height	mm	2,050	2,050
Width	mm	2,450	2,600
Weight	kg	6,350	6,700



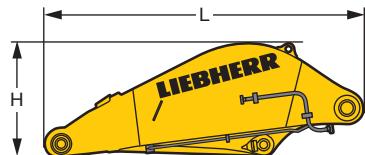
Backhoe Buckets		HDV	
Cutting width	mm	2,300	2,550
Capacity	m ³	5.70	6.30
L Length	mm	2,600	2,550
H Height	mm	2,050	2,050
Width	mm	2,350	2,600
Weight	kg	6,700	7,500



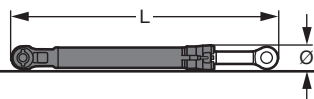
Shovel Boom			
L Length	mm	4,950	
H Height	mm	2,050	
Width	mm	1,650	
Weight without crowd cylinder	kg	7,300	
Weight crowd cylinder	kg	2 x 450	



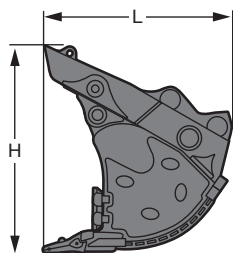
Shovel Hoist Cylinders (two)			
L Length	mm	2,920	
H Height	mm	550	
Width	mm	400	
Weight	kg	2 x 1,100	



Shovel Stick			
L Length	mm	3,660	
H Height	mm	1,300	
Width	mm	1,800	
Weight	kg	4,650	



Shovel Bucket Cylinders (two)			
L Length	mm	3,050	
Ø Diameter	mm	300	
Weight	kg	2 x 625	



Front Shovels					
Cutting width	mm	2,700	2,700	2,700	3,150
I Capacity	m ³	5.10	5.60	6.00	6.50
L Length	mm	2,600	2,700	2,600	2,800
H Height	mm	2,600	2,600	2,600	2,800
Width	mm	2,750	2,750	3,200	3,200
Weight					
Level I	kg	–	8,750	9,950	10,750
Level II	kg	–	9,450	10,700	11,600
Level III	kg	10,150	10,600	11,950	–

Standard Equipment



Undercarriage

- Lashing eyelets
- Lifetime-lubricated track rollers
- Track guide at each track frame (two pieces)
- Tracks sealed and greased



Uppercarriage

- Engine hood with lift help
- Extended tool kit
- Fuel tank cap, lockable
- Handrails, non slip surfaces
- Heavy counterweight
- Maintenance-free swing brake lock
- Sound insulation
- Toolbox lockable
- Walkway, both-sided



Hydraulic System

- Filter with integrated fine filter area
- Hydraulic tank shut-off valve and pumps
- Liebherr hydraulic oil
- Pressure storage for controlled lowering of equipment with engine turned off
- Pressure test ports for hydraulic
- Stepless work mode selector



Engine

- After-cooled
- Common-Rail system injection
- Conform with stage IIIA/ Tier 3 emission standard
- Dry-type air cleaner w/pre-cleaner, main and safety elements
- Engine cold starting aid
- Fuel filter and water separator
- Sensor-controlled automatic engine idling
- Turbo charger



Operator's Cab

- 7" colour multifunction display with touchscreen
- All tinted windows
- Automatic air conditioning
- Cigarette lighter and ashtray
- Coat hook
- Cup holder
- Dome light
- Door with sliding windows
- Emergency exit rear window
- Fuel consumption indicator
- Hydro mounts
- Impact-resistant front window and roof window
- LIDAT Plus (enhanced Liebherr data transfer system)*
- Mechanical hour meters, readable from outside the cab
- Operator seat Liebherr-Comfort
- Preparation for radio installation
- Rain hood over front window opening
- Rear space monitoring with camera
- Roll-down sun blind
- Rubber floor mat
- Seat belt
- Storage bin
- Storage space
- Two headlights (Halogen)
- Wiper/washer



Attachment

- Bottom boom protection for stick
- Headlights on boom (both-sided, halogen)
- Liebherr full-automatic central lubrication system (except connecting link for bucket kinematics)
- Re-Generation plus
- Safety check valves hoist cylinder
- Safety check valves stick cylinder

* optionally extendable after one year

Individual Options



Undercarriage

- Cover and base protection plates
- Protection plate for wrecking ball operation
- Track guide at each track frame (three pieces)
- Travel drive protection
- Travel gear support, reinforced



Uppercarriage

- Cab elevation
- Headlights with protection
- Refuelling pump (electrical)
- Rock protection (swing gear and lubrication pipes)
- Walkway, wide version with guard rail
- Wiggins quick-coupling for fuel



Hydraulic System

- Bypass filter
- Liebherr hydraulic oil, specially for warm and cold regions
- Pre-heating for hydraulic oil



Engine

- Automatic engine shut-down (adjustable time-period)
- Engine compartment light
- Pre-heating for fuel, coolant and engine oil



Operator's Cab

- Additional headlights front or/and rear (Halogen or LED)
- Amber beacon
- Auxiliary heater (programmable)
- Camera for side area monitoring
- Electric cool box (12 V)
- Electronic drive away lock
- Engine shut-down (emergency stop) in cab
- FGPS front guard, lockable
- Fire extinguisher
- Footrest
- FOPS top guard
- Headlights (two pieces, LED)
- Operator seat Liebherr-Premium
- Proportional controls Liebherr
- Radio Comfort
- Roof wiper
- Sun visor
- Travel alarm system



Attachment

- Automatic lubrication system for connecting link
- Headlights on boom (both-sided, LED)
- High pressure circuit
- Hydraulic or mechanical quick coupler
- Liebherr line of buckets
- Liebherr tooth system
- Middle pressure circuit
- Overload warning device
- Piston rod guard for bucket cylinder
- Piston rod guard for crowd cylinder
- Piston rod guard for hoist cylinder
- Security for hoist cylinder in grab or hammer operation

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