

Crawler excavator

R 950 SME

Litronic®

Motor:
220 kW / 299 HP

Stage IV

Operating Weight:
43,900 – 45,750 kg

Bucket Capacity:
2.00 – 3.00 m³



LIEBHERR

Crawler Excavator R 950 SME

Super Mass Excavation

Equipment and working tool

Equipment on the R 950 SME is designed to withstand the stresses and demands of a mass excavator. This equipment includes:

- Stick and bucket cylinders with increased diameter and purposely designed equipment result in higher breakout and digging forces
- Boom and stick with locking plate on internal side, increasing service life
- Optional equipment includes cylinder protection, cab front guards and much more
- HD bucket standard for increased service life and others types as option
- New short stick for strength force and a greater bucket

Undercarriage

To meet the requirements of a super mass excavator, the R 950 SME is equipped with the undercarriage of the next larger excavator. This undercarriage also features the following characteristics:

- 3 guiding guards per track – standard





Operator's cab

The new operator's cab features exceptional soundproofing, air conditioning and is standard equipped with a pneumatic seat with heating. Other improvements equipped standard:

- 7" high resolution color touchscreen
- Fully automated A/C with 13 air vents
- Cab is mounted on viscoelastic studs
- One-piece impact resistant window (optional)
- LED headlights with adjustable current value
- Engine oil level visible on display

Uppercarriage

The uppercarriage has been designed to increase visibility to the rear of the machine.

- A new engine, that complies with stage IV/Tier 4f emissions standards
- Heavy counter-weight, for greater stability and performance
- Optimized design to allow a secure emergency exit through the rear window
- The fully-automatic central lubrication system, fitted as standard, allows for rapid maintenance: It saves time-consuming individual lubricating and downtime
- Rear space monitoring with camera, camera for side area monitoring or 360° SkyView camera (optional)

Technical Data



Engine

Rating per ISO 9249	220 kW (299 HP) at 1,800 RPM
Model	Liebherr D936 A7
Type	6 cylinder in-line
Bore/Stroke	122/150 mm
Displacement	10.52 l
Engine operation	4-stroke diesel Common-Rail, monoturbo
Exhaust gas treatment	SCR with urea injection emission standard stage IV/Tier 4f
Cooling system	water-cooled and integrated motor oil cooler, after-cooled and fuel cooled
Air cleaner	dry-type air cleaner with pre-cleaner, primary and safety elements
Fuel tank	710 l
Urea tank	96 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
Engine idling	sensor controlled
Motor management	connection to the integrated excavator system controlling via CAN-BUS to the economical utilisation of the service that is available



Hydraulic Controls

The controlling is conducted via the integrated excavator system technology, input and output modules, communicated via the CAN-BUS with the electronic central unit.

Power distribution	via control valve with integrated safety valves
Servo circuit	
Attachment and swing	proportional via joystick levers
Travel	– with proportionally functioning foot pedals and adjusted with a plugable lever – speed pre-selection
Additional functions	proportional regulation via foot pedals or rocker



Hydraulic System

Hydraulic system	Positive Control. Dual circuit hydraulic system for independent and need-based quantity allotment via the hydraulic pumps; sensor-guided. Features high system dynamics and sensibility provided by integrated system controlling. Independent circuit for rotation
Hydraulic pump	
for attachment and travel drive	Liebherr, variable displacement, swashplate double pump
Max. flow	2 x 305 l/min.
Max. pressure	380 bar
for swing drive	reversible, variable flow, swashplate pump, closed-loop circuit
Max. flow	205 l/min.
Max. pressure	400 bar
Pump management	electronic pump management via the integrated system controlling (CAN-BUS) synchronous to the control block
Hydraulic tank	340 l
Hydraulic system	max. 590 l
Hydraulic oil filter	1 full flow filter (10 µm) in return line
Cooling system	compact cooler, consisting of a water cooler, sand-wiched with hydraulic oil cooler, gearbox oil cooler, fuel cooler and after-cooler cores and hydrostatically driven fan
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 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



Swing Drive

Drive	Liebherr swashplate motor
Transmission	Liebherr compact planetary reduction gear
Swing ring	Liebherr, sealed single race ball bearing swing ring, internal teeth
Swing speed	0 – 8.7 RPM stepless
Swing torque	115 kNm
Holding brake	wet multi-disc (spring applied, pressure released)



Operator's Cab

Cab	ROPS 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 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 windscreen, 12 V plug, storage bins, lunchbox, cup holder	
Operator's seat	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 selfexplanatory operation via touchscreen, 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)	= 72 dB(A)
2000/14/EC	L_{WA} (surround noise)	= 106 dB(A)



Undercarriage

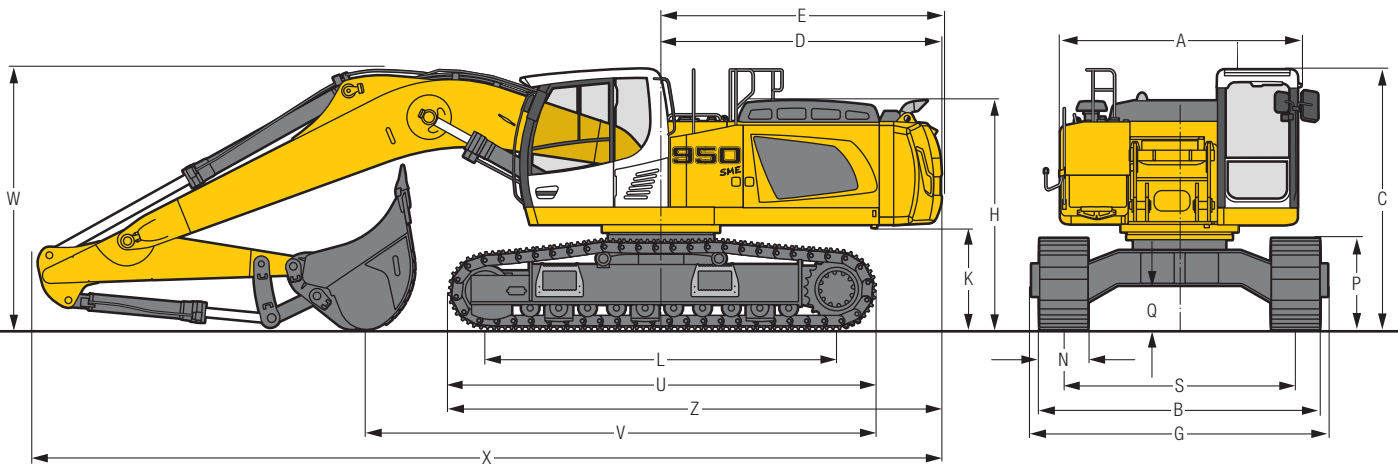
S-HD	gauge 2,900 mm
Drive	Liebherr swash plate motors with integrated brake valves on both sides
Transmission	Liebherr planetary reduction gears
Travel speed	low range – 3.0 km/h high range – 4.9 km/h
Net drawbar pull on crawler	348 kN
Track components	D 7 G, maintenance-free
Track rollers/Carrier rollers	10/2
Tracks	sealed and greased
Track pads	triple grouser
Holding brake	wet multi-discs (spring applied, pressure released)
Lashing eyes	integrated



Attachment

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

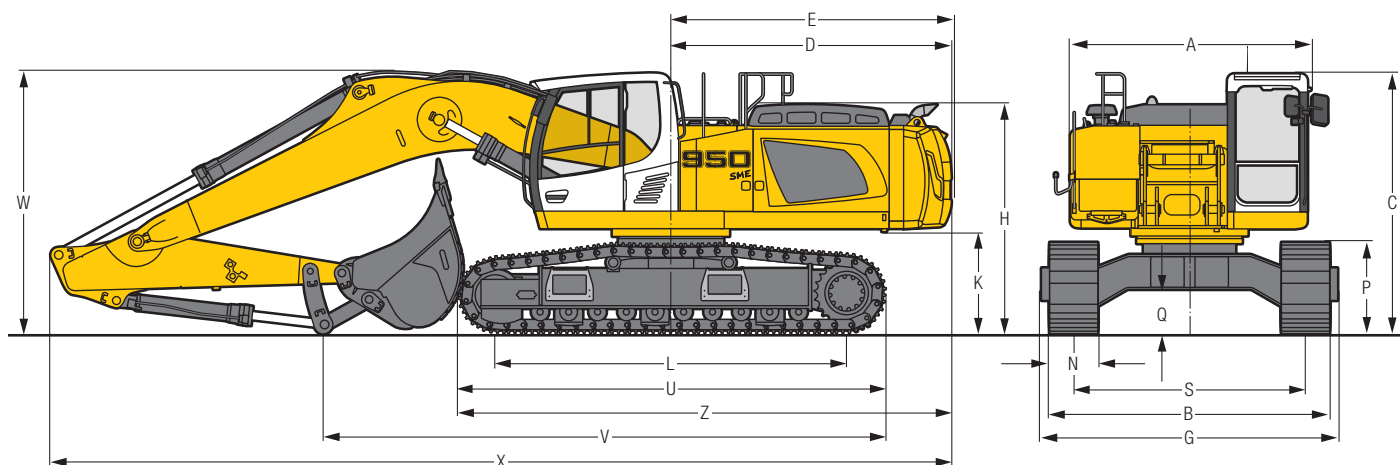
Dimensions



	mm		
A*	2,995		
C	3,260		
D	3,520		
E	3,550		
H	2,890		
K	1,280		
L	4,400		
P	1,155		
Q	550		
S	2,900		
U	5,370		
N	500	600	750
B	3,400	3,500	3,650
G	3,715	3,715	3,715
Z	6,195		

Mono boom SME 6.45 m		mm
Stick length SME 2.10 m		
V	6,400	
W	3,350	
X	11,400	

* without door stop device and spacer



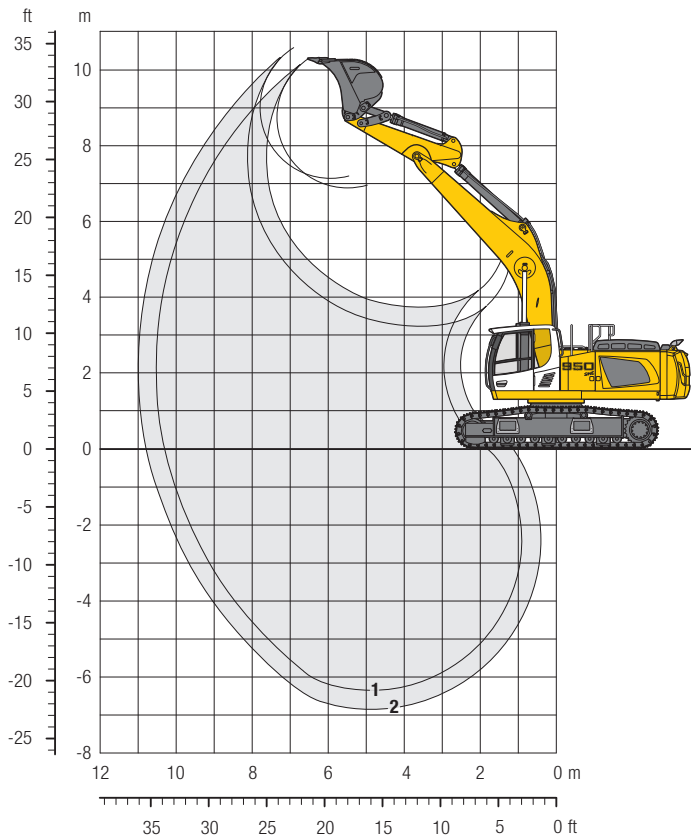
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Mono boom SME 6.45 m		mm
Stick length SME 2.60 m		
V		7,050
W		3,400
X		11,400

* without door stop device and spacer

Backhoe Bucket

with Mono Boom SME 6.45 m



Digging Envelope

		1	2
Stick length	m	2.10	2.60
		SME	SME
Max. digging depth	m	6.35	6.85
Max. reach at ground level	m	10.30	10.55
Max. dumping height	m	6.90	7.15
Max. teeth height	m	10.30	10.80
Digging force ISO	kN	243	213
	t	24.8	21.7
Breakout force ISO	kN	264	264
	t	26.9	26.9

Operating Weight and Ground Pressure

The operating weight includes the basic machine with mono boom SME 6.45 m, stick SME 2.60 m and HD bucket 2.50 m³ (2,100 kg).

Undercarriage		S-HD		
Pad width	mm	500	600	750
Weight	kg	43,900	44,500	45,750
Ground pressure	kg/cm ²	0.93	0.78	0.64

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

					S-HD-Undercarriage SME Attachment			
					Stick length (m)			
					2.10	2.60	2.10	2.60
					without quick coupler		with quick coupler	
HD ¹⁾	Cutting width mm	Capacity ISO 7451 ¹⁾ m ³	Weight ³⁾ kg	Weight ⁴⁾ kg				
	1,650	2.00	1,850	1,650	▲	▲	▲	▲
	1,650	2.25	1,900	1,750	▲	▲	▲	▲
	1,850	2.50	2,100	1,950	▲	▲	▲	■
	1,850	2.75	2,150	2,000	▲	■	■	▲
HDV ²⁾	1,850	3.00	2,200	—	■	▲	—	—
	1,650	2.00	2,600	—	▲	▲	—	—
	1,650	2.25	2,700	—	▲	■	—	—
	1,650	2.50	2,800	—	■	▲	—	—

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

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

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

³⁾ Rock bucket for direct fitting

⁴⁾ Rock bucket for fitting to quick coupler

Other backhoes available on request

Max. material weight ▲ = ≤ 2.2 t/m³, ■ = ≤ 1.8 t/m³, ▲ = ≤ 1.5 t/m³

Lift Capacities

with Mono Boom SME 6.45 m

Stick SME 2.10 m

Height m	Under-carriage	3.0 m	4.5 m	6.0 m	7.5 m	9.0 m	Max. reach m
7.5	S-HD			11.0* 11.0*			9.8* 9.8* 6.7
6.0	S-HD			11.5* 11.5*	9.8 10.5*		9.2* 9.2* 7.7
4.5	S-HD		17.4* 17.4*	12.9* 12.9*	9.6 10.9*		8.2 9.2* 8.3
3.0	S-HD			12.6 14.3*	9.3 11.5*		7.6 9.5* 8.6
1.5	S-HD			12.2 15.2*	9.0 12.0*		7.5 10.1* 8.6
0	S-HD		16.5* 16.5*	12.0 15.3*	8.9 12.0*		7.7 10.5* 8.4
-1.5	S-HD	13.5* 13.5*	18.3* 18.3*	12.0 14.4*	8.9 11.2*		8.5 10.4* 7.8
-3.0	S-HD	17.9* 17.9*	15.6* 15.6*	12.3 12.3*			10.1* 10.1* 6.9
-4.5	S-HD						9.4* 9.4* 5.0

Stick SME 2.60 m

Height m	Under-carriage	3.0 m	4.5 m	6.0 m	7.5 m	9.0 m	Max. reach m
7.5	S-HD						7.5* 7.5* 7.3
6.0	S-HD			10.7* 10.7*	9.8* 9.8*		7.2* 7.2* 8.3
4.5	S-HD		16.0* 16.0*	12.1* 12.1*	9.6 10.3*		7.1* 7.1* 8.8
3.0	S-HD		19.2 19.5*	12.7 13.7*	9.3 11.1*	7.1 9.1*	7.0 7.3* 9.1
1.5	S-HD		13.5* 13.5*	12.2 14.9*	9.0 11.7*	7.0 9.8*	6.8 7.8* 9.1
0	S-HD		18.2 19.3*	11.9 15.2*	8.8 11.9*		7.0 8.6* 8.9
-1.5	S-HD	14.7* 14.7*	18.3 19.2*	11.9 14.7*	8.7 11.5*		7.7 9.8* 8.3
-3.0	S-HD	21.1* 21.1*	16.8* 16.8*	12.0 13.1*			9.0 9.7* 7.5
-4.5	S-HD		12.6* 12.6*	9.1* 9.1*			8.8* 8.8* 6.1

 **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 track 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 700 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.

Standard Equipment

Undercarriage

Lashing eyelets
Lifetime-lubricated track rollers
Sprocket with dirt ejector
Track guide at each track frame (three pieces)
Tracks sealed and greased

Uppercarriage

Engine hood with lift help
Handrails, non slip surfaces
Liebherr full-automatic central lubrication system (except connecting link for bucket kinematics)
Maintenance-free swing brake lock
Sound insulation

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 IV/Tier 4f emission standard
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
Completely retractable windscreen
Cup holder
Dome light
Door with sliding windows
Emergency exit rear window
Front windscreen (bottom) retractable
Fuel consumption indicator
Headlights (two pieces, Halogen)
Hydro mounts
LiDAT Plus (Liebherr data transfer system)*
Mechanical hour meters, readable from outside the cab
Operator seat Comfort
Preparation for radio installation
Rain hood over front window opening
Rear space monitoring with camera
Roll-down sun blind
ROPS safety cab structure
Rubber floor mat
Seat belt
Storage bin
Storage space
Sunroof, right window and windshield with safety glass
Wiper/washer

Attachment

Bottom boom protection for stick
Headlight on boom (right, Halogen)
Safety check valves hoist cylinder

* optionally extendable after one year

Options

Undercarriage

Lockable tool box
Protection plate for wrecking ball operation
Reinforced base panel for centre section
Reinforced cover plate and base plate for centre section
Track guide at each track frame (four pieces)
Track pads double grouser

Uppercarriage

360° SkyView camera
Camera for side area monitoring
Customized colors
Fuel anti-theft device
Lockable tool box
Refuelling pump (electrical)
Reversible fan drive
Rock protection (swing gear and lubrication pipes)
Socket (24 V) for urea filling station
Uppercarriage guard at bottom and sides
Wiggins diesel fuel

Hydraulic System

Bypass filter
Liebherr hydraulic oil, biodegradable
Liebherr hydraulic oil, specially for warm and cold regions

Engine

Air pre-filter with dust trap
Automatic engine shut-down (adjustable time-period)
Fuel pre-heating system
Liebherr particle filter
Lighting engine compartment

Operator's Cab

Additional headlights or/and rear headlights (Halogen or LED)
Amber beacon
Auxiliary heater (programmable timer)
Electric cool box (12 V)
Electronic drive away lock
Engine shut-down (emergency stop) in cab
Falling objects protection structure (FOPS)
Fire extinguisher
Follow me home (headlight cutoff delay)
Footrest
Front guard protection structure (FGPS)
Headlights (two pieces, LED)
Headlights with adjustable intensity (LED)
Impact resistant front window (one piece, fixed installation – can not be opened)
Impact resistant front window (two pieces, fixed installation – can not be opened)
Impact resistant glass panel in roof
Operator seat Premium
Proportional controls Liebherr
Radio Comfort controllable from the display
Roof wiper
Seat belt 4 points
Sun visor
Travel alarm system
Windscreen wiper on bottom part

Attachment

Additional headlights on boom (left, Halogen or Xenon)
Bottom boom protection for mono boom
Headlights on boom (right, Xenon)
High pressure circuit
Hoist cylinder hose protection
Hydraulic or mechanical quick coupler
Liebherr automatic lubrication system for link geometry
Liebherr line of buckets
Liebherr tooth system
LIKUFIX
Middle pressure circuit
Overload warning device
Piston rod guard for bucket cylinders
Safety check valves stick cylinder
Security for hoist cylinder in grab or hammer operation
Stick cylinder shut-down, adjustable
Tool Control

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.

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