

Experience progress: R 978 SME Super Mass Excavation

Equipment

- Wide choice of backhoe front boom and stick configurations
- Welded structure with cast steel components for improved stress-resistance and longer service life
- Safety check valves to prevent boom and stick cylinder pipes from bursting, with integrated regeneration system for lower fuel consumption

LIEBHERR

Buckets

- Different levels of protection to suit different areas of application:
 - Standard for loose, non-abrasive materials
 - HD for hard-to-break, moderately abrasive materials
 - HDV for highly abrasive materials
- Different blade designs:
 - straight (for earth-moving and grading)
 - semi-delta (for hard-to-break, hard-to-extract
 - delta (for compacted or slightly cracked materials)

New functions / options

- Liebherr Power Efficiency Engine Control
 Up to 10% lower fuel consumption
- Bucket Fill Assist
 Automatic bucket-filling cycle for increased productivity
- Modetronic
 Customisable operating modes for optimum adjustment of work cycles to each type of application

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Comfort

- Quiet, comfortable cab, the largest and most spacious in its category
- Seat with heater and pneumatic multi-directional shock absorption (air conditioning optional)
- High-resolution 9" color touchscreen

Undercarriage

- Welded undercarriage with rigid X profile for increased robustness
- Chamfered rack pads with double grouser for more manoeuvrability on difficult terrain
- Moulded two-tooth sprocket for longer service life
- Track rollers on double bearings for increased reliability and durability over time
- Stronger travel motor housing protection for improved resistance to wear and tear from hard, abrasive rocks

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Cab

- Cab riser for the best possible view of the loading area
- The largest and quietest cab in its category to date
- Mounted on viscoelastic rivets to absorb vibration
- Impact-resistant windscreen and roof glass panel
- Seat with heater and pneumatic multi-directional shock absorption (air conditioning optional)
- Large high-resolution colour touchscreen

Safety

- Completely unobstructed panoramic view, plus rear-view and side-view monitoring cameras for increased safety
- Retractable console for safe and easy access to the cab
- Impact-resistant windscreen and roof glass panel
- Cab riser for the best possible view of the loading area (optional)

Equipment second to none

- Cast steel components
- Shovel attachment with parallel drivetrain for powerful, even penetration
- Bucket cylinders located under the equipment for better protection
- Safety check valves to prevent boom cylinder pipes from bursting
- Front shovel with semi-automatic flap closure, ideally shaped for optimum material penetration and high filling rate



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Uppercarriage

- Left and right catwalks as standard;
 wide catwalks with hand rail optional
- Access platform for engine and hydraulic control block compartments to enable safe, ergonomic maintenance work
- Sleek design for a more extensive view
- New Stage V compliant engine
- Heavier counterweight for more stability and improved performance

Maintenance

- Access platform for engine and hydraulic control block compartments to enable safe, ergonomic maintenance work
- Left and right catwalks as standard;
 wide catwalks with hand rail optional
- Automatic central lubrication system as standard
- Shut-off valve on hydraulic tank outlet as standard

Robust undercarriage

- Fitted with components from the next size up excavator
- Chamfered rack pads with double grouser for more manoeuvrability on difficult terrain
- Moulded two-tooth sprocket for longer service life
- Carrier rollers on double bearings for increased reliability and durability over time
- Stronger travel motor housing protection for improved resistance to wear and tear from hard, abrasive rocks

Technical data



Rating per ISO 9249	330 kW (449 HP) at 1,800 RPM			
Torque	2,750 Nm at 1,100 RPM			
Model	Liebherr D9508 A7			
Туре	8 cylinder V engine			
Bore	128mm			
Stroke	157 mm			
Displacement	16.16l			
Engine operation	4-stroke diesel Common-Rail			
Exhaust gas treatment	Engine Stage IIIA: with EGR			
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	1,1401			
Electrical system				
Voltage	24V			
Batteries	2 x 180 Ah / 12 V			
Starter	24V/7.8kW			
Alternator	Three-phase current 28 V / 140 A			
Engine idling	Sensor controlled			
Motor management	Connection to the integrated excavator system con- trolling via CAN-BUS to the economical utilisation of the service that is available			



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
Equipment and swing	Proportional via joystick levers
Travel	- Proportional control via foot pedals or removable levers - Speed pre-selection
Additional functions	Proportional regulation via foot pedals or mini-joystick

Hydraulic system

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Hydraulic pumps	
For equipment and travel drive	Two Liebherr variable displacement, swashplate pumps
Max. flow	2 x 410 l/min.
Max. pressure	350 bar
For swing drive	Reversible, variable displacement, swashplate pump, closed-loop circuit
Max. flow	245 l/min.
Max. pressure	370 bar
Pump regulation	Electro-hydraulic with electronic engine speed sensing regulation, pressure compensation, flow compensation, high flow
Hydraulic tank	4351
Hydraulic system	9201
Filtration	2 full flow filters in return line with integrated fine filter area (5 µm)
Cooling system	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, 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	20 pre-adjustable pump flows and pressures for add-on



Swing drive

Drive	Liebherr swashplate motor with integrated brake valve
Transmission	Liebherr compact planetary reduction gears
Swing ring	Liebherr, sealed race ball bearing swing ring, internal teeth
Swing speed	0-5.6 RPM stepless
Swing torque	233 kNm
Holding brake	Wet multi-disc (spring applied, pressure released)



Cab	
Cab	LED work headlights integrated in the ceiling, a door with a sliding window (can be opened on both sides), large storing box and several stowing possibilities, shockabsorbing suspension, sound damping insulating, tinted laminated safety glass, separate window shades for the sunroof window and windscreen, cigarette lighter and 12V plug, storage bins, lunchbox, cup holder
Operator's seat	Liebherr-Comfort seat, airsprung with automatic weight adjustment, vertical and longitudinal seat damping including consoles and joysticks. Seat and armrests adjustable separately and in combination (adjustable in length, height and inclination), seat heating as standard
Arm consoles	Oscillating consoles with seat, tiltable console left
Operation and displays	Large high-resolution operating unit, intuitive, colour display with touchscreen, video-compatible, numerous setting, control and monitoring options, e.g. air conditioning control, fuel consumption, machine and attachment parameters
Air-conditioning	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
Noise emission	
ISO 6396	80 dB(A) = L _{pA} (inside cab)
2000/14/EC	109 dB(A) = L _{WA} (surround noise)

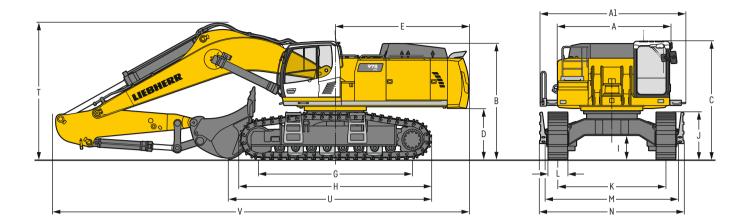
Undercarriage

S-HD	Gauge 3,350 mm
Drive	Liebherr swashplate motor with brake valves on both sides
Transmission	Liebherr compact planetary reduction gear
Maximum travel speed	3.5 km/h
Drawbar pull on crawler	568 kN
Track components	D9G, maintenance-free
Track rollers / Carrier rollers	8/2
Tracks	Sealed and greased
Track pads	Double grouser
Holding brake	Wet multi-disc (spring applied, pressure released)
Brake valves	Outside the travel motor
Lashing eyes	Integrated



Туре	Combination of resistant steel plates and cast steel components
Hydraulic cylinders	Liebherr cylinders with seal and guidance systems
Bearings	Sealed, low maintenance
Lubrication	Automatic central lubrication system (except link and tilt geometry)
Hydraulic connections	Pipes and hoses equipped with SAE split-flange connections
Buckets	Standard equipped with Liebherr tooth system

Dimensions



		S-HD		mm
Α	Uppercarriage width			3,515
A1	Uppercarriage width with catwalks			4,495
В	Uppercarriage height			3,585
С	Cab height			3,665
D	Counterweight ground clearance			1,585
E	Rear-end length			4,135
G	Wheelbase			4,770
Н	Undercarriage length			5,960
ı	Undercarriage ground clearance			745
J	Track height			1,460
K	Track gauge			3,350
L	Track pad width	500	600	750
М	Width over tracks	4,130	4,130	4,130
N	Width over steps	4,7601)	4,7601)	4,7601)

 $^{^{1)}}$ width with removable steps

		Stick length	Mono boom SME 7.00 m direct mounting
		m	mm
T	Boom height	2.60 SME	4,200
		3.00 SME	4,250
U	Length on ground	2.60 SME	11,500
		3.00 SME	6,300
٧	Overall length	2.60 SME	12,800
		3.00 SME	12,900
	Bucket		4.50 m ³

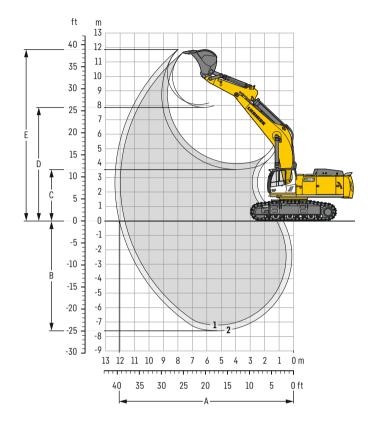
Transport dimensions

removable elements disassembled

		Mono boom SME 7.00 m mm
Transport width		4,495
	Stick	
	m	mm
Transport length	2.60 SME	12,800
	3.00 SME	12,900
Transport height	2.60 SME	4,200
	3.00 SME	4,250
Bucket		4.50 m ³

Backhoe bucket

with mono boom SME 7.00 m



Digging envelope

without quick coupler		1	2
Stick length	m	2.60	3.00
		SME	SME
A Max. reach at ground level	m	11.65	12.05
B Max. digging depth	m	7.20	7.60
C Min. dumping height	m	3.95	3.55
D Max. dumping height	m	7.85	8.05
E Max. cutting height	m	11.65	11.85

Forces

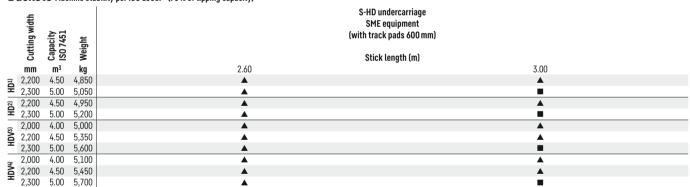
without quick coupler	1	2
Stick digging force (ISO 6015) kN	357	328
Bucket digging force (ISO 6015) kN	392	392
Stick digging force (SAE J1179) kN	335	309
Bucket digging force (SAE J1179) kN	339	339

Operating weight and ground pressure

The operating weight includes the basic machine with counterweight 14.5 t, mono boom SME $7.00\,\mathrm{m}$, stick SME $2.60\,\mathrm{m}$ and HD bucket $4.50\,\mathrm{m}^3$ ($4,850\,\mathrm{kg}$).

Undercarriage			S-HD	
Pad width	mm	500	600	750
Weight	kg	78,350	79,050	80,150
Ground pressure	kg/cm ²	1.54	1.30	1.05

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



 $^{^{*}}$ Indicated loads are based on ISO 10567, at maximum reach, and may be swung 360° on firm and even ground

Max. material weight $\triangle = \le 2.0 \text{ t/m}^3$, $\blacksquare = \le 1.8 \text{ t/m}^3$

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

²⁾ HD bucket with delta cutting edge and teeth Z 90 (appropriate for materials above classification 6, according to VOB, Section C, DIN 18300)

³⁾ HDV bucket with teeth Z 90 (appropriate for materials above classification 6, according to VOB, Section C, DIN 18300)

⁴⁾ HDV bucket with delta cutting edge and teeth Z 90 (appropriate for materials above classification 6, according to VOB, Section C, DIN 18300) Other buckets available upon request

Lift capacities

with mono boom SME 7.00 m, counterweight 14.5 t and track pads 600 mm

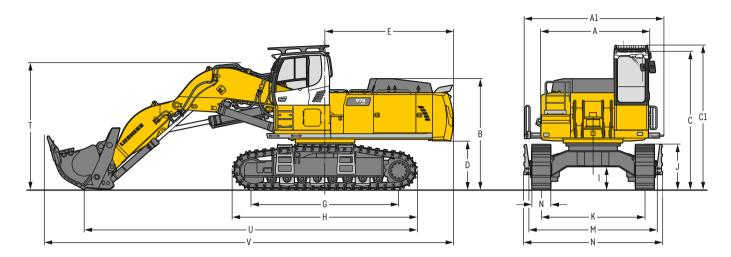
Stic	k SM	1E 2.	60 n	1											Stic	k SM	IE 3.	00 n	n										
. 8	1 4	3.0	m	4.5	m	6.0) m	7.5	m	9.0) m	1	<u></u>		. e	1 1	3.0) m	4.5	m	6.0) m	7.5	m	9.0) m		<u>~</u> g	3
Under- carriage	m	- -	B	- -		-5	Ŀ			-5	Ŀ		Ŀ	m	Under- carriage	m	- <u>-</u>	Ŀ	-5	Ŀ		Ŀ	-5	Ŀ		Ŀ	- <u>-</u>	6	m
	9.0											13.5*	13.5*	7.3		9.0							13.8*	13.8*			11.4*	11.4*	7.8
	7.5							14.6*	14.6*			12.7*	12.7*	8.5		7.5							13.8*	13.8*			10.7*	10.7*	8.9
	6.0			23.5*	23.5*	18.1*	18.1*	15.4*	15.4*	14.1*	14.1*	12.5*	12.5*	9.2		6.0					17.0*	17.0*	14.7*	14.7*	13.4*	13.4*	10.5*	10.5*	9.6
	4.5					20.8*	20.8*	16.7*	16.7*	14.6*	14.6*	12.6*	12.6*	9.6		4.5			28.4*	28.4*	19.8*	19.8*	16.0*	16.0*	14.0*	14.0*	10.6*	10.6*	10.0
S-HD	3.0					23.3*	23.3*	18.0*	18.0*	15.2*	15.2*	13.2*	13.2*	9.8	S-E	3.0					22.4*	22.4*	17.5*	17.5*	14.7*	14.7*	11.1*	11.1*	10.2
<u>~</u>	1.5					24.5*	24.5*	18.9*	18.9*	15.0	15.6*	13.4	14.2*	9.7	<u>:</u>	1.5					24.0*	24.0*	18.5*	18.5*	14.9	15.3*	11.8*	11.8*	10.1
	0			24.6*	24.6*	24.3*	24.3*	18.9	19.1*	14.8	15.5*	14.0	14.5*	9.4		0			26.9*	26.9*	24.2*	24.2*	18.7	18.9*	14.6	15.4*	13.1	13.1*	9.8
	-1.5	26.2*	26.2*	29.1*	29.1*	23.1*	23.1*	18.2*	18.2*			14.6*	14.6*	8.8		-1.5	25.4*	25.4*	30.2*	30.2*	23.3*	23.3*	18.3*	18.3*	14.6*	14.6*	13.9*	13.9*	9.2
	-3.0	29.8*	29.8*	25.4*	25.4*	20.4*	20.4*	15.8*	15.8*			14.4*	14.4*	7.9		-3.0	33.6*	33.6*	26.8*	26.8*	21.0*	21.0*	16.5*	16.5*			13.9*	13.9*	8.4
	- 4.5			19.0*	19.0*	14.8*	14.8*					13.1*	13.1*	6.5		-4.5			21.1*	21.1*	16.6*	16.6*					13.1*	13.1*	7.0
Î	-4.5 19.0* 19.0* 14.8* 14.8* 13.1* 13.1* 6.5 -4.5 21.1* 21.1* 16.6* 16.6* 13.1* 13.1* 7.0																												

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 1,220 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.

Determine maximum load lift from load lift chart displayed in the operator's cab or from load lift chart detailed in the operator's manual supplied with the machine.

Dimensions front shovel



		S-HD	mm
Α	Uppercarriage width		3,515
A1	Uppercarriage width with catwalks		4,495
В	Uppercarriage height		3,585
C	Cab height		4,465
C1	Cab height with FOPS top guard		4,660
D	Counterweight ground clearance		1,585
Ε	Rear-end length		4,135
G	Wheelbase		4,770
Н	Undercarriage length		5,960

		2-HD		mm
- 1	Undercarriage ground clearance			745
J	Track height			1,460
K	Track gauge			3,350
L	Track pad width	500	600	750
M	Width over tracks	4,130	4,130	4,130
N	Width over steps	4,7601)	4,7601)	4,7601)
Т	Boom height			4,100
U	Length on ground			10,750
٧	Overall length			13,200

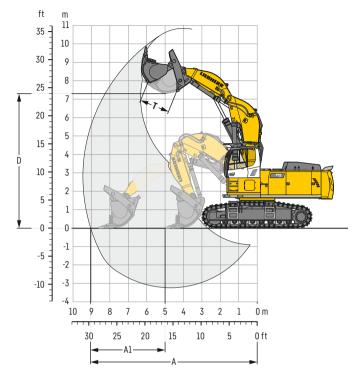
Transport dimensions

removable elements disassembled

	Shovel equipment mm
Transport width	4,495
Transport length	13,200
Transport height	4,660
Shovel	4.50 m ³

 $^{^{1)}}$ width with removable steps

Front shovel



Digging envelope

Α	Max. reach at ground level	m	9.05
A]	Max. crowd length	m	3.60
D	Max. dumping height	m	7.30
Т	Bucket opening width	mm	1.650

Forces

Max. crowd force	kN	500
Max. crowd force at ground level	kN	410
Max. breakout force	kN	370

Operating weight and ground pressure

The operating weight includes the basic machine with cab elevation 800 mm, shovel equipment SME and front shovel $4.50\,\text{m}^3$ (7,200 kg), level II.

Undercarriage			S-HD	
Pad width	mm	500	600	750
Weight	kg	79,100	79,900	81,000
Ground pressure	kg/cm ²	1.55	1.31	1.06

Front shovels



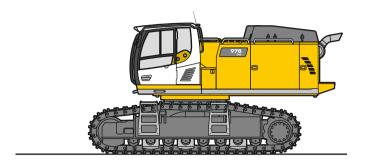
Level I: For non-abrasive materials, such as limestone without flint inclusion, shot material or easily breakable rock, i.e., deteriorated rock, soft limestone, shale, etc.

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.

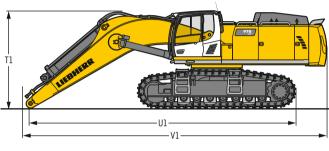
Max. material weight \triangle = $\leq 2.0 \text{ t/m}^3$, \blacksquare = $\leq 1.8 \text{ t/m}^3$, \triangle = $\leq 1.65 \text{ t/m}^3$

Dimensions and weights



Basic machine

Track pads	mm	500	600	750
Weight with backhoe equipment and				
S-HD-undercarriage without counterweight	kg	46,200	46,950	48,050
Weight with shovel equipment and				
S-HD-undercarriage without counterweight	kg	46,200	46,950	48,050



Machine without stick

T1	mm 3,650
U1	mm 10,050
V1	mm 11,450



Cab elevation

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L	Length	mm	1,890
Н	Height	mm	930
	Width	mm	1,370
	Weight	kg	600



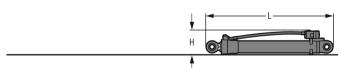
Counterweight

L	Length	mm	770
Н	Height	mm	1,550
	Width	mm	3,360
	Weight	ka	14 500



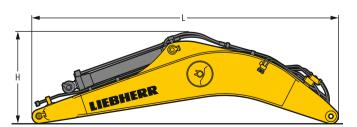
Upper protection screen

_	-		
L	Length	mm	1,960
Н	Height	mm	190
	Width	mm	1,110
	Weight	ka	75



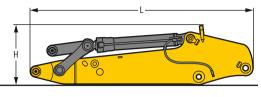
Hoist cylinders (two)

L	Length	mm	2,650
Н	Height	mm	490
	Width	mm	360
	Weight	kg	2 x 750



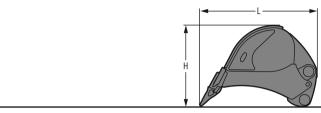
Mono boom with stick cylinder

L Length mm 7,35
H Height mm 2,25
Width mm 1,45
Weight kg 7,35



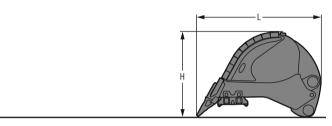
Stick with bucket cylinder

Sti	ck length	m	2.60	3.00
L	Length	mm	4,000	4,400
Н	Height	mm	1,350	1,350
	Width	mm	950	950
	Weight	kg	3,900	4,150



Ba	ickhoe buckets					HD
Cu	tting width	mm	2,200	2,300	2,200*	2,300*
	Capacity	m ³	4.50	5.00	4.50	5.00
L	Length	mm	2,650	2,650	2,750	2,750
Н	Height	mm	1,800	1,800	1,850	1,850
	Width	mm	2,250	2,350	2,250	2,350
	Weight	kg	4,850	5,050	4,950	5,200

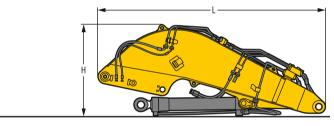
^{*} with delta cutting edge



Backhoe buckets

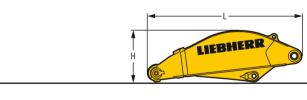
DC	ickline packers							при
Cu	tting width	mm	2,000	2,200	2,300	2,000*	2,200*	2,300*
	Capacity	m³	4.00	4.50	5.00	4.00	4.50	5.00
L	Length	mm	2,650	2,650	2,650	2,750	2,750	2,750
Н	Height	mm	1,800	1,800	1,800	1,850	1,850	1,850
	Width	mm	2,050	2,250	2,350	2,050	2,250	2,350
	Weight	kg	5,000	5,350	5,600	5,100	5,450	5,700

^{*} with delta cutting edge



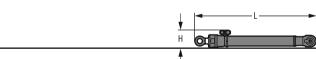
Shovel boom

L	Length	mm	4,750
Н	Height	mm	1,950
	Width	mm	1,900
	Weight without crowd cylinder	kg	5,050
	Weight crowd cylinder	kg	650



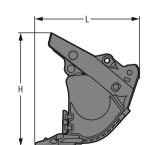
Shovel stick

L	Length	mm	3,250
Н	Height	mm	1,100
	Width	mm	1,500
	Weight	kg	2,500



Shovel bucket cylinders (two)

L	Length	mm	2,550
Н	Height	mm	350
	Width	mm	500
	Weight	kg	2 x 400



Front shovels

Cutting width	mm	2,600	2,600	2,600
Capacity	m ³	4.00	4.50	5.00
L Length	mm	2,200	2,200	2,300
H Height	mm	2,400	2,400	2,500
Width	mm	2,650	2,650	2,650
Weight				
Level I	kg	-	6,700	6,800
Level II	kg	-	7,200	7,500
Level III	ka	7 900	7 800	_

Serial equipment

Undercarriage

Lashing eyes

Sprocket with dirt ejector

Track and carrier rollers, sealed and lifetime-lubricated

Travel motor housing protection

Undercarriage S-HD

Uppercarriage

Access platforms without protruding parts

Anti-skid surfaces

Automatic swing brake lock

Centralised lubrication system (automatic)

Counterweight heavy 14.5t

Engine hood with gas spring opening

Extended tool set including tool box

Handrails

Liebherr Power Efficiency - Engine Control

Lockable fuel tank cap with padlock

Lockable service doors

Lockable storage box

Main switch, accessible from ground level

Pre-heating system for fuel

Protection grid on radiator fan

Sound insulation

Swing-out radiators

Windshield washer fluid tank



Hydraulic system

Dedicated swing circuit

Filter with integrated fine filters

Hydraulic pressure measuring ports

Hydraulic tank shut-off valve

Magnetic rod

Pressure accumulator for controlled lowering of equipment with engine turned off



Air filter with automatic dust ejector

Automatic engine idling / speed increase, controlled via joystick sensors

Common-Rail injection system

Exhaust gas after-treatment system - EGR

Fixed geometry turbocharger

Fuel fine filter

Fuel pre-filter and water separator

Fuel priming pump

Intercooler

Power Pack EU Stage IIIA (for select markets)

Stepless adjustable engine speed



9" multifunction colour touchscreen

Air conditioning, automatic, tri-zone, controlled via display

Armrests adjustable in length, height and inclination

Bottle holder

Cab door sliding windows

Cigarette lighter

Coat hook

Electric socket in cabin (12 V)

Electric socket in cabin (24V)

Emergency hammer

Engine oil level on touchscreen

Fuel consumption on touchscreen

Fuel level on touchscreen

Impact resistant roof window

Impact resistant two-piece windscreen

Interior lighting

Laminated right hand side window

LiDAT Plus (Liebherr data transfer system)*

Mobile phone storage net

Modetronic

Movement priority between swing and boom, adjustable via touchscreen

Rain hood over front window opening

Rearview mirror

Rear view monitoring camera

Rear view monitoring camera distance gauge

Rear window emergency exit

Roll-down sun blinds for windscreen and roof window

Rubber floor mat, fixed on floor and removable

Storage box

Storage nets

Storage spaces

Tiltable console left Tinted windows

Visco-elastic damping

Windscreen wiper and washer

Work mode selector



Anti-drift system boom cylinders

Anti-drift system stick cylinder

Boom bottom protection

Boom cylinders regeneration

Pipe fracture safety valve for stick cylinder

Pipe fracture safety valves for boom cylinders

Pivot points made of cast steel

SAE split flanges on high pressure lines

Stick bottom protection

Stick cylinder regeneration

^{*} optionally extendable after one year

Equipment standard / option

Undercarriage

Chain quide 3 pieces	
ů i	_
Chain guide full length	+
Reinforced cover and base plate for undercarriage centre section	+
Steps	•
Track pads double grouser 500 mm, chamfered	+
Track pads double grouser 600 mm, chamfered	•
Track pads double grouser 750 mm, chamfered	+
Travel drive gearbox protection	+
Undercarriage protection plate for drop-ball application	+

Uppercarriage

Air pre-filter with cyclonical dust trap	+
Boxing ring	+
	T .
Catwalks left and right	•
Catwalk wide with railing	+
Filter for hydraulic hammer return flow	+
Fixed cab riser 800 mm	+
Front right rearview mirror	•
Headlight on uppercarriage, lateral right, LED+, 1 piece	+1)
Headlights on uppercarriage, front, LED, 2 pieces, protections included	•1)
Headlights on uppercarriage, front, LED+, 2 pieces, protections included	+1)
Headlights on uppercarriage, rear, LED+, 2 pieces	+1)
Lighting for tank area	+1)
Lighting for uppercarriage access	+1)
Radiator fine mesh protection grid	+
Reversible fan drive	+
Skyview 360°	+
Special painting	+
Swing ring and lubrication hoses protection	+
Tank refilling pump fuel	+
Wiggins coupling for fuel	+

Hydraulic system

Bypass filter for hydraulic oil	+
Liebherr hydraulic oil	•
Liebherr hydraulic oil, adapted for extreme climate conditions	+
Liebherr hydraulic oil, biodegradable	+



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Engine shut-down with overrun	+
Lighting for engine compartment	+1)

Cal

2" seat belt with retractor	•
Acoustic travel alarm deactivatable	+
Auxilary heater programmable	+
Bottom windscreen wiper	+
Coming / Leaving Home	+1)
Cool box (12 V)	+
Dark tinted windows	+
Electrically adjustable and heated outside rear-view mirrors	+
Emergency stop in cab	+
FGPS front guard tiltable	+
Fire extinguisher	+
FOPS top guard	+
Handrests elevated for joysticks	+
Headlights on cab, front, LED, 2 pieces	•1)
Headlights on cab, front, LED+, 2 pieces	+1)
Headlights on cab roof, front, LED+, 2 pieces	+1)
High pressure circuit switchable on pedals or mini-joystick	+
High pressure circuit with Tool Control (20 attachment adjustments on display)	+
Lighting for cabin access	+1)
Luminosity control (LED+ headlights)	+1)
Medium pressure circuit	+
Operator seat Comfort	•
Operator seat Premium	+
Overload warning system	+
Radio Comfort	+
Radio pre-installation	•
Right hand side view monitoring camera	+
Roof sun shield	+
Roof window wiper	+
Rotating beacon on cabin, LED, 1 piece	+
Shortkey button on joystick configurable	•
Sun visor	+

Equip

Equipment	
Boom cylinder rods protection	+
Bucket cylinder rod protection	+
Bucket Fill Assist	+
loating boom	+
leadlights on boom, LED, 2 pieces, protections included	•1)
leadlights on boom, LED+, 2 pieces, protections included	+1)
10no boom SME 7.00 m	+
Preparation for ripper tooth	+
Quick coupler SWA 92 hydraulic	+
Shovel boom 4.50 m	+
Shovel stick 2.90 m	+
Special painting	+
Ctick SME 2.60 m	+
ctick SME 3.00 m	+

• = Standard. + = Option

1) Equipment not individually available, but only as predefined packages Non-exhaustive list, please contact us for further information.

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.

Notes

The Liebherr Group



Global and independent: more than 70 years of success

Liebherr was founded in 1949 when, with the development of the world's first mobile tower crane, Hans Liebherr laid the foundations for a family business now employing nearly 51,000 people and comprising over 140 companies across every continent.

The parent company is Liebherr-International AG in Bulle, Switzerland, whose associates are exclusively members of the Liebherr family.

Leaders and pioneers

Liebherr is a pioneer and its forward-looking approach has seen it make important contributions to technology history over a wide variety of industries. Employees throughout the world continue to share the courage of the founder, sharing a passion to produce innovative products and a determination to provide world-leading equipment and machinery.

Diversified portfolio

The company is one of the world's biggest construction equipment manufacturers and provides high-quality, user-oriented products and services to sectors including: earthmoving, material handling, deep foundations, mining, mobile and crawler cranes, tower cranes, concrete production and distribution, maritime cranes, aerospace and transportation, gear technology and automation, refrigeration and freezing, components and hotels.

Customised care

Liebherr solutions are characterised by precision, implementation and longevity. The company is committed to technological excellence and to providing customers with solutions that match their needs exactly. That customer focus does not end with delivery of a product but continues through a comprehensive range of back-up and support services.

www.liebherr.com