R 9300

Generation 8

LIEBHERR

Mining excavator

Technologies
- Assistance Systems
- Liebherr Power Efficiency
- Bucket Filling Assistant

Powertrain options

Cummins ICE – Diesel:	1,007 kW (FCO, Tier 4f) 1,350 HP
GE E-Motor:	1,000 kW (50 Hz, 60 Hz) 1,341 HP

Backhoe configuration

Overall weight:	252 tonnes 278 tons
Bucket payload:	29.7 tonnes 32.7 tons

Face shovel configuration

Overall weight:	253 tonnes 279 tons
Bucket payload:	28.8 tonnes 31.7 tons

Overview
R 9300

Diesel drive 1,007 kW / 1,350 HP
Electric drive 1,000 kW / 1,341 HP

BH 16.5 m³ / 21.6 yd³
FS 16 m³ / 20.9 yd³

BH 252 tonnes / 278 tons
FS 253 tonnes / 279 tons

Weight-optimised attachment
The R 9300 attachment makes use of smart component design such as the patented “EVO” backhoe bucket, hydraulic cylinders, shift levers, bucket links and attachment pins.
The result is an increased overall production rate without compromising component lifetime.

Standard heavy-duty bucket
- Maximised payload with versatile Liebherr Bucket Solution
- Shift levers and bucket links with integrated greasing system

Perfect shovel truck match
3-4 pass loading of 100 tonne trucks
5 pass loading of 140 tonne trucks
7 pass loading of 190 tonne trucks

Latest cabin generation
Increased comfort and ergonomics
- User-friendly operator station
- Panoramic vision with direct view on tracks
- Modern and ergonomic line dash
- High comfort folding trainer seat

Latest cutting-edge technologies
- Liebherr Assistance Systems
- Advanced machine monitoring with modern 10"5' and 15" touchscreens (day & night mode)
- Permanent 270° vision system

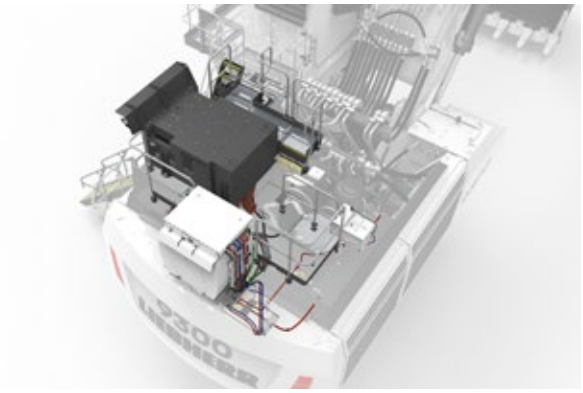
Sustainable performance
- US EPA Tier 4 / EU Stage V compliant engine
- SCR after-treatment technology
- Serial implementation of Liebherr Power Efficiency solutions
- Electric drive version

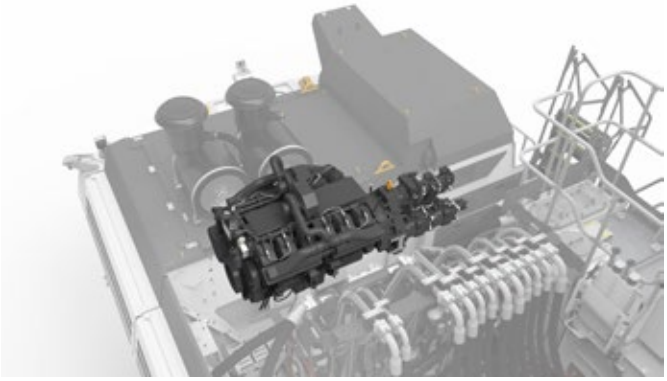
Performance

Productive, efficient and reliable

Diesel drives

The R 9300 is fitted with the Cummins QSK38 engine, providing superior performance for increased productivity.





US EPA Tier 4 / EU Stage V
Selective catalytic reduction technology to comply with latest emission regulations the R 9300 combines flexibility to meet customer expectations without compromising productivity.

Cummins QSK38
- 1,007 kW / 1,350 HP at 1,800 RPM
- 12 cylinder V-engine
- Displacement 37.8 l / 2,307 in³
- FCO available

Electric drive

Liebherr offers an alternative to diesel engines allowing customers to balance performance with environmental consciousness. Building on 40 years' experience in electric drive excavators, the electric drive option allows lower maintenance costs and reduced noise pollution. With high motor efficiency, the electric drive gives maximum performance.

- Lower maintenance costs
- 6,000 V (other voltage on request)
- Integrated design elements on all machine structures
- Optional cable reel

No exhaust emission
Liebherr electric R 9300 provides class leading cycle times using electric motors without exposing people and the environment to diesel exhaust emissions. Complying with all Non Road Mobile Machinery (NRMM) emission regulations, the R 9300 E can be operated all around the world.

Less noise level
Liebherr electric driven machines can be operated without restrictions in noise sensitive areas.

Productivity

Attachment

Reach the next level

Backhoe

16.5 m³ / 21.6 yd³

190 t trucks
7 passes

140 t trucks
5 passes

100 t trucks
3-4 passes

Face shovel

16 m³ / 20.9 yd³

190 t trucks
8 passes

140 t trucks
6 passes

100 t trucks
4-5 passes

Site-specific factors like loose material density, bucket size, fill factors, truck body size and payload capacity will influence pass match. Contact your local Liebherr affiliate or sales partner for analysis of your site.

Smart component design
The optimised design of the R 9300 attachment increases the overall productivity without compromising component lifetime.

Maximised payload
Designed for best force distribution, the attachment design delivers high digging and hoisting forces, which ensures maximum payload during each cycle. The EVO bucket allows the operator to take advantage of each pass and therefore increase productivity.

Optimised cost per tonne
Built to deliver maximum efficiency in the 250 t class, the R 9300 offers superior durability through its brand new attachment and component design, delivering state-of-the-art capabilities and reliability.

The R 9300 ensures maximum effectiveness

IoMine

Automation

Bucket Filling Assistant
The first automation product of the Liebherr hydraulic excavator portfolio allows easier bucket filling and consistent bucket fill factors, especially in blocky or hard digging conditions. As a result overall productivity improves while operator's fatigue decreases.

Anti-stalling function
Prevents the bucket from being stalled during the digging phase.

Semi-automatic bucket filling function
Allows the machine electronic to realise fully automatic attachment movements.

Discover more.

Comfort

Operator cabin

Working environment

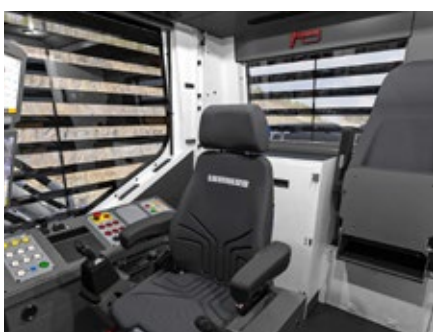
Operator comfort
Operator comfort and safety were the main concerns when designing the R 9300 cabin: a panoramic view, low noise level, strong structure (FOPS) and high safety standards. In addition Liebherr provides options to adapt the cab to specific thermal conditions or requirements.

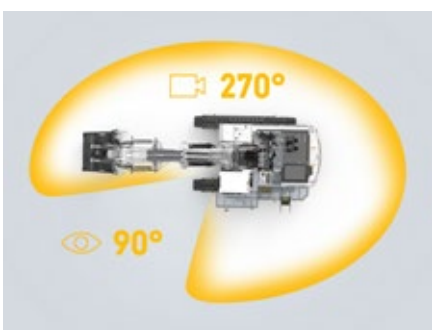
Optional
- Double A / C system
- External louvers
- Premium heated seats
- Sliding hatch window
- Front protective grid
- HEPA filtration system
- Four point harness

Latest cabin generation
- Modern and large touchscreens
- State-of-the-art on-board technologies
- User-friendly piloting station
- On-board diagnostics to service staff

Superior comfort
- Tinted laminated safety glass
- Armored front window
- Adjustable air suspended seat
- Foldable trainer seat
- Pressurised A / C system (single or double)

Vision system
The R 9300 offers superior visibility of the machine's surroundings. The dedicated monitor inside the cabin provides continuous 270 degree vision around the machine. The Skyview system is available as an option to provide continuous 360° vision.





IoMine

Unleash the full potential of your mine.

IoMine

Your connected mining ecosystem

IoMine, Liebherr Mining's cutting-edge technology product line, supports customers' transition to integrated operations. By adopting IoMine, customers can improve decision-making and provide greater operational safety – all while fostering sustainable development and ensuring cost optimisation in the management of their mines. IoMine is a reliable partner for achieving a more efficient, cost-effective, and productive mining operation.

Partnering for mining success

IoMine, Liebherr Mining's advanced technology product line, optimises operations by improving asset availability, efficiency and productivity. These products enhance fleet capabilities, simplify operations and improve fleet management for more profitability and smarter energy use.

Unlock peak performance

Enhanced decision-making
Optimise your mining operations and increase efficiency by making informed decisions supported by accurate, real-time data.

Increased safety
Real-time machine monitoring and operator alerts from assistance systems enhance safety while autonomous technology reduces risks, ensuring a safer worksite.

Increased operational efficiency
Real-time operator assistance, streamlined maintenance and autonomous technologies work together to enhance integration, productivity, efficiency and profitability.

Maximised machine availability
Proactive maintenance, operational insights and advanced automation collectively prevent breakdowns, minimise downtime and boost efficiency, productivity and profitability for continuous operations.

Let’s journey together on the path to data-driven decision-making and autonomy in digging, dozing and hauling.

Operate –
Empower mining success.
Find the right IoMine products dedicated to operations to optimise processes, reinforce safety and increase the profitability of your mining operations.

Automate –
Safe. Efficient. Automated.
Liebherr’s advanced automation solutions integrate seamlessly into your existing systems for real-time monitoring and intelligent automation.

Maintain –
Less downtime, more mining.
Keep your mining fleet running at peak performance with IoMine's dedicated maintenance products, whose innovative maintenance solutions are designed to minimise downtime and increase efficiency.

Assistance Systems
The best performance. Easy.

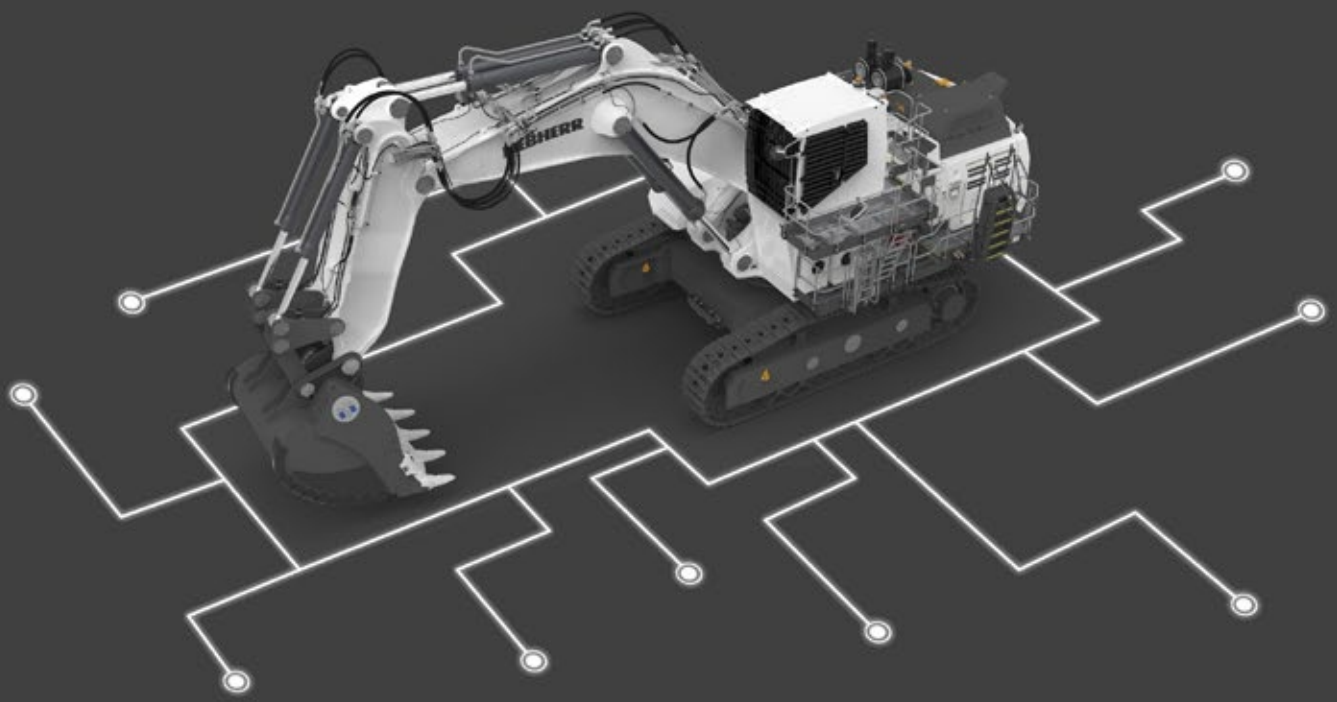
IoMine

Get the best out of your Liebherr mining excavator

Available today on the R 9300, the Liebherr Assistance Systems are advanced onboard applications designed to support operators to become more efficient through analytics and actionable insights. Systems will assist the operator to obtain optimal productivity and efficiency by providing realtime operational information.

Want to live the real experience?

- Measure and analyse every bucket payload for optimal truck loading
- Data visualised within different views & advanced filtering
- Display targeted productivity and actual payload with 99 % accuracy
- Provide transparency of performance, operating time and fuel efficiency
- Identify operational conformance and improve operator effectiveness
- State-of-the-art on-board touchscreen displays
- Make informed decisions
- Increase productivity



Truck Loading Assistant

Assists the operator to obtain target truck payloads.

With 99 % measurement accuracy
- Measures instantaneously the bucket payload
- Provides real-time information to the operator
- Strategises the number of passes required
- Computes the best truck loading strategy
- Automatic truck recognition (optional)

Performance monitoring

Measures and analyses the overall performance.

Using KPIs, histograms and time-related charts
- Production KPIs
- Loading indicators
- Time distribution
- Energy efficiency

Application severity

Quantifies application, reports severity indicators and provides an overall application severity score.

KPIs to indicate and display the application as sensed by the machine
- Underfoot and digging conditions
- Abrasiveness and travel ratio
- Engine load factor and temperature variation
- Machine inclination, loading, etc.

Operational conformance

Detects and counts events to improve operator effectiveness.

Several filtering criteria to identify specific events
- Swinging into digging face
- Digging with swing brake activated
- Turning the machine with the attachment
- Bucket hitting track pads, etc.


Adapt the power and the hydraulic flow specifically to the load profile
Digging force
810 kN
Breakout force
885 kN

Performance

Advanced hydraulic system

Fast & precise movement

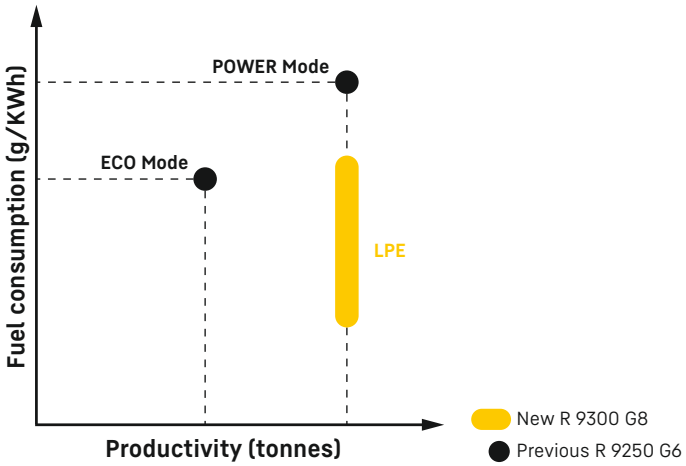
Intelligent power management system
The Liebherr R 9300 mining excavator is equipped with a closed loop swing circuit. Kinetic energy is recovered when the swing motion is used during deceleration to drive the main and auxiliary pumps resulting in fuel consumption reduction. Cylinder dampening through IMUs provides smoother attachment movements without affecting attachment speed.

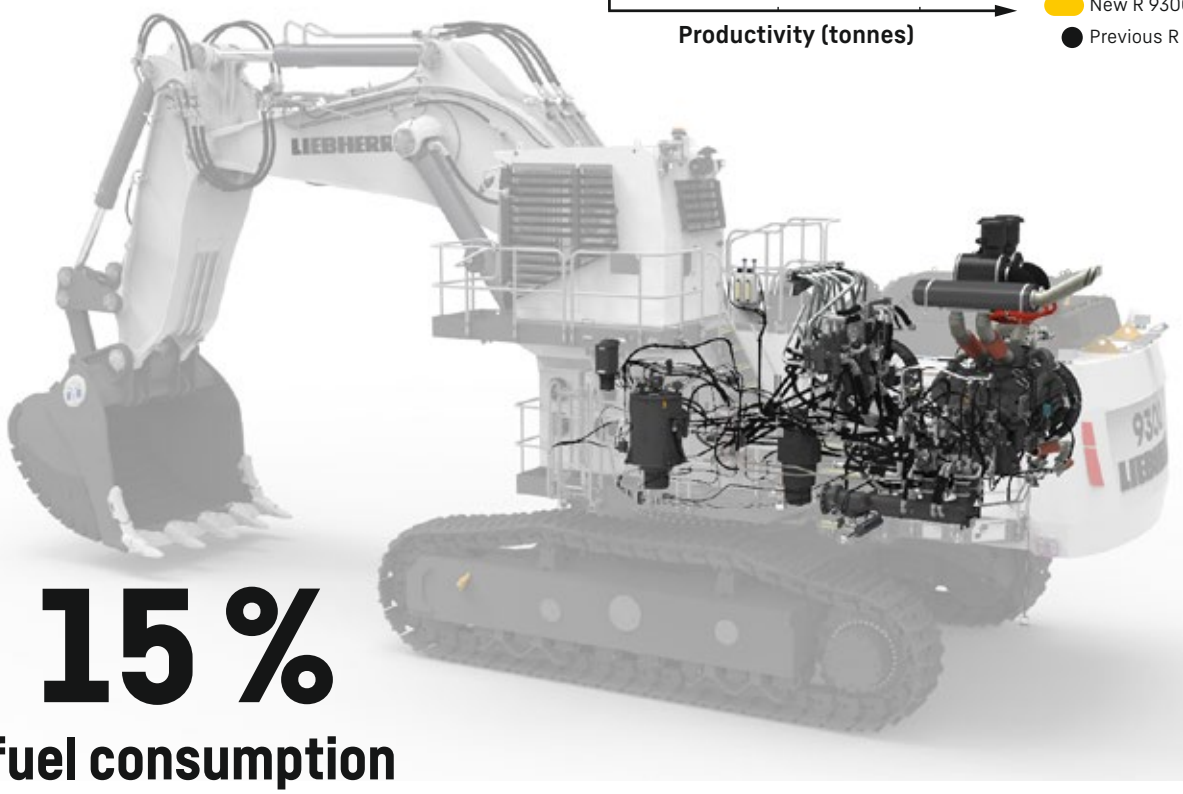
Independent cooling system
Oil and water cooling fans are independently and electronically managed. The oversized cooling systems reduce parasitic demand on engine horsepower ensuring maximum available horsepower is provided to the excavator working circuits.

New valve bank control system
- Under slung arch hoses to improve lifetime
- Flow optimized hose fittings
- Less hydraulic pressure losses by design
- Pilot valves integrated into valve blocks

Moving more with less

Patented Liebherr Power Efficiency
Specific engine and hydraulic management, drastically reducing fuel consumption without any compromise on machine productivity.
- Adapted piloting processes according to operator requirements and machine condition
- Electronically controlled pressure and oil flow
- Reduce hydraulic throttling and load profile of the engine for increased component lifetime





Up to 15 %
less fuel consumption

Safety

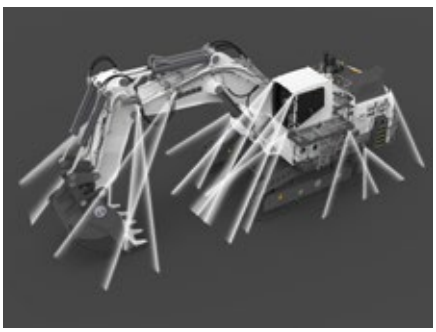
Protecting your most important assets

Machine accessibility
The R 9300 is fitted with an ergonomic hydraulically controlled 45 degree stairway with handrails, providing safe access to the uppercarriage.

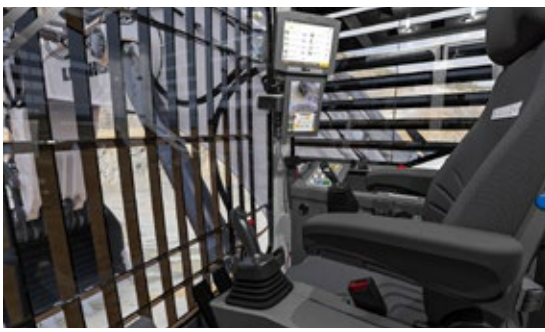
Wide catwalks for inspection
Enlarged walkways allow easy and safe access for inspection and maintenance around engines, fans, and pumps. All routine service items have been located to allow effortless inspection and replacement.

Emergency stops and emergency exits
Emergency stops are specifically located throughout the machine, increasing safety. A mechanical emergency egress guaranties safe and quick exit from the machine.

Advanced engine fire protection
After treatment systems and turbo-chargers are heat shielded. The engines are mechanically segregated from hydraulic components, further improving on machine safety.



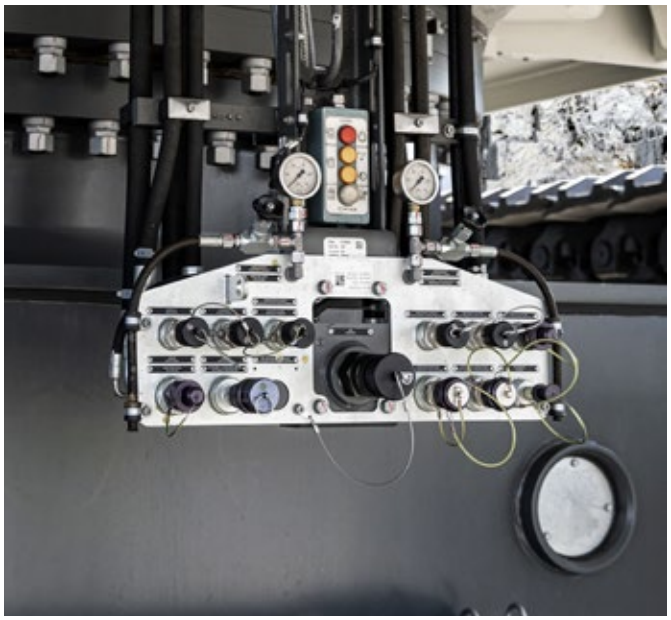
LED lighting system
Thanks to LED long-reach lights located on attachment, uppercarriage and counterweight, the machine offers best visibility to the operator and to the people/equipment around.



Safe surrounding area
Horn, LED working lights, LED service lights, LED access lights, flashing lights and travel alarm guarantee safe 24/7 operation and maintenance conditions.

Maintenance

Easy & safe operations



Centralised service

Service flap
Uppercarriage of the R 9300 has been designed for easier maintenance and quicker servicing. The central service area provides accessibility to uppercarriage fluid compartments reducing machine downtime. Refill and separate drain points of the R 9300 are easily accessed from the ground with fast couplings and depressurised valves.

Optional

- Rock protection for swing gear
- Steel grease lines on swing ring
- Swing ring scrapers
- Banlaw or Wiggins couplings
- Engine coolant refill on service flap
- Kidney loop filtration system

Automatic greasing system
- Grease tank for the attachment, uppercarriage and swing ring bearing
- Grease tank for the swing ring teeth
- Simplified component layout
- Automatic greasing cycles
- Reduced number of injectors & hoses
- Electric shut-off valve in the refill line

Superior engine accessibility
- Central service area
- Maintenance-friendly maintenance items installation
- Wide catwalks with slip-resistant surfaces

Ease of troubleshooting
- Signal panels
- Control system hardware and software completely developed and managed by Liebherr
- Reduced number of connections and connectors

Quality

The Liebherr trademark

Providing reliable machinery is the highest priority for Liebherr mining. Utilised in tough mining applications all around the world, our R 9300 is built to last over 60,000 operational hours. Liebherr's engineering expertise and continuous improvement programs combine to deliver industry leading machines.

Vertical integration
As an OEM, Liebherr has built a solid reputation for its development and production of high quality strategic mining components. The R 9300 integrates robust and reliable mining optimised components that are developed and manufactured by Liebherr, which ensures the best reliability and highest performance.

Mining know-how
Liebherr mining excavators are conceptualised, designed and dedicated to the mining industry.
The engineering department uses specific 3D simulation solutions in order to meet possible requirements, such as finite element and fatigue life analysis.

60,000
Operational hours

Robust undercarriage
- Heavy-duty conception with durable side frame links
- Final drive with double lifetime sealing in series
- Fatigue resistant steel structure design
- Sealed for life heavy-duty carrier and track rollers

The four pillars of the Liebherr mining division

With more than 50 years of experience in the mining industry, Liebherr has identified four key factors of customer satisfaction: Performance, Safety, Service, and Sustainability. These pillars provide structure and focus for all our activities, and embody Liebherr's customer commitments.

Performance
Productive, efficient and reliable

Safety
Protecting your most important assets

Service
Where you need it, when you need it

Sustainability
Committed to our future

Technical data

Powertrain

1 Cummins ICE – Diesel	
Rating per SAE J1995	1,007 kW (1,350 HP) at 1,800 rpm
Model	Cummins QSK38 (US EPA Tier 4f / EU Stage V compliant or fuel consumption optimized setting)
Type	12 cylinder V-engine
Bore / Stroke	159 / 159 mm / 6.26 / 6.26 in
Displacement	37.8 l / 2,307 in^3
Aspiration	turbocharged after cooled
Fuel tank capacity	4,500 l / 1,189 gal
DEF tank capacity	665 l / 176 gal
Electrical system	Gen 8 electronic architecture
Voltage	24 V
Batteries	4 x 180 Ah / 12 V + jump start connector
Alternator	24 V / 260 A
Liebherr Power Efficiency – Engine Control	engine management systems adapting the power specifically to the load profile
Automatic engine shut off protection	engine self-controlled shut off 3 min.
Water cooler	cooler with temperature controlled fans driven via hydraulic piston motor
or	
1 GE E-Motor	
Power output	1,000 kW (1,341 HP)
Type	3-phase AC squirrel cage motor
Voltage	6,000 V, other voltage on request
Frequency	50 Hz (or 60 Hz)
Revolutions	1,500 rpm or 1,800 rpm
Motor cooling	integrated air-to-air heat exchanger
Starting method	inrush current limited to 2.2 full load current

Electro-hydraulic controls

Servo circuit	independent, electric over hydraulic proportional controls of each function
Emergency control	via accumulator for all attachment functions with stopped engine
Power distribution	via monoblock control valves with integrated primary and secondary relief valves, 4 independent circuits
Flow summation	attachment and travel drive
Attachment and swing	proportional via electronic joystick levers
Travel	proportional via electronic pedals or removable hand levers
Shovel flap functions	proportional via electronic pedals or rocker
Electronic dampening system	Liebherr designed electronic control of cylinder position via inertial measurement units

Swing drive

Hydraulic motor	2 Liebherr axial piston motors
Swing gear	2 Liebherr planetary reduction gears
Swing ring	Liebherr, sealed triple roller swing ring, internal teeth
Swing speed	0–4.0 rpm
Swing-holding brake	hydraulically actuated, maintenance-free, multi-disc brakes integrated in each swing gear

Hydraulic system

Hydraulic pump	
for attachment and travel drive	4 variable flow axial piston pumps
Max. flow	4 x 512 l/min. / 4 x 135 gpm
Max. pressure	350 bar / 5,076 psi
for swing drive	1 reversible swashplate pump, closed-loop circuit
Max. flow	1 x 640 l/min. / 1 x 169 gpm
Max. pressure	350 bar / 5,076 psi
Pump management	electronically controlled pressure, flow and power management with oil flow optimisation
Hydraulic tank capacity	1,800 l / 475 gal
Hydraulic system capacity	3,400 l / 900 gal
Hydraulic oil filter	1 high pressure safety filter after each high pressure pump + extra-fine filtration of entire return flow with integrated by-pass filtration (15 / 5 µm) + dedicated leak-oil filtration
Hydraulic oil cooler	cooler with temperature controlled fans driven via hydraulic piston motor, reverse fan function
Liebherr Power Efficiency – Hydraulic Control	hydraulic management system adapting the hydraulic flow specifically to the load profile

Electric system

Electric isolation	easy accessible battery isolations – single point isolation for positive and negative battery terminals (standard) – separate engine ECM isolation (standard) – separate isolation of starter circuit accessible from ground (optional)
Working lights	high brightness LED working lights: – 2 on cabin (LHS) – 4 on working attachment (with grid protection) – 5 on RHS of uppercarriage – 3 on LHS of uppercarriage other: – 10 LED service lights with timer 20 min.
Emergency stop switches	at ground level, in hydraulic compartment, in engine compartment and in operator cab
Electrical wiring	heavy duty execution in IP 68 standard for operating conditions of – 75 °C to 150 °C / – 103 °F to 302 °F (ext cab) – 40 °C to 105 °C / – 40 °F to 221 °F (int cab)

Uppercarriage

Design	torque resistant designed upper frame in boxtype construction for superior strength and durability
Attachment mounting	parallel longitudinal main girders in box section construction
Machine access	hydraulically operated 45° access stair, full controlled descent, in case of emergency stop additional emergency ladder fitted near the cab

Cab

Design	resiliently mounted, sound insulated, large windows for all around visibility, integrated falling object protection FOPS (ISO 10262)
Operator's seat	suspended pneumatic seat, body-contoured with shock absorber, adjustable to operator's weight, seat heating, additional "retractable passenger / trainer seat"
Cabin windows	tinted armored glass P5A (EN 356) for front window and right-hand side windows, all other windows in tinted safety glass, windshield-washer system 30 l / 8 gal watertank, sun louvers on all windows in heavy duty design optional and frontguard optional
Heating system / Air conditioning	heavy duty, fully automatic, high output air conditioner and heater unit, contains fluorinated greenhouse gases HFC 134a with a Global Warming Potential (GWP) of 1430, the AC circuit contains 3.6 kg / 7.9 lb of HFC-134 representing an equivalent of 5.1 tonnes / 5.6 tons of CO_2, the 2nd AC circuit (optional) contains 2.2 kg / 4.8 lb of HFC-134 representing an equivalent of 3.1 tonnes / 3.4 tons of CO_2
Cabin pressurization	ventilation with filter
Controls	joystick levers integrated into armrest of seat
Monitoring	via 12" touch display, data memory
Vision system	3 HD camera displayed on screen (U shape configuration): – 1 on counterweight – 1 on LHS – 1 on RHS
Noise level (ISO 6396)	Diesel: L_{pA} (inside cab) = 71 dB(A)
Hand-arm vibrations	≤ 2.5 m/s²
Whole-body vibrations	≤ 0.5 m/s²

Undercarriage

Design	3-piece undercarriage, box-type structures for center piece and side frames, stress relieved
Hydraulic motor	1 axial piston motor per side frame
Travel gear	Liebherr planetery reduction gear
Travel speed	0–2.4 km/h / 0–1.5 mph
Parking brake	hydraulically actuated, maintenance-free, multi-disc brakes for each travel motor
Track components	BMP 350, maintenance-free, forged double grouser pad
Track rollers / Carrier rollers	8 / 2 per side frame
Track tensioner	hydraulic and grease tensioner
Transport	undercarriage side frames are removable

Service flap

Design	manually actuated service flap, easily accessible from ground level to allow: – fuel fast refill – engine oil quick change – attachment / swing ring bearing grease barrel refilling via grease filter – 2 x swing gear oil refill – 2 x swing gear oil draining – splitterbox oil change – hydraulic oil fill other coupler type on request

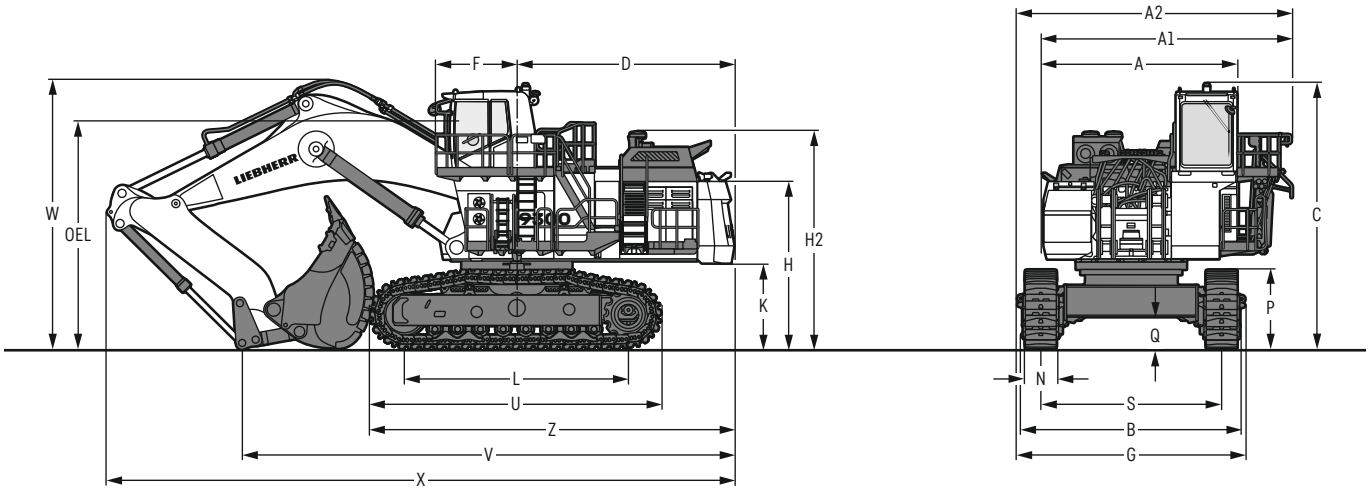
Central lubrication system

Type	single-line lubrication system, for the entire attachment / swing ring bearing and teeth
Grease pumps	hydraulic grease pump for the attachment / swing ring bearing, electric grease pump for the swing ring teeth
Capacity	340 l / 90 gal bulk container for attachment / swing ring bearing, separated 20 l / 5.3 gal bulk container for swing ring teeth
Refill	via the service flap for both containers, fill line with grease filters and electric shut-off valve to prevent grease over filling
Monitoring	via a specific Liebherr control module with data memory

Attachment

Design	box-type structure with large steel castings in all high-stress areas
Stick	wear protection underneath lower beam plate
Hydraulic cylinder	Liebherr design, electronically controlled end-cushioning
Hydraulic connections	pipes and hoses equipped with SAE flange connections
Pivots bucket-to-stick Pivots bucket-to-link	O-ring sealed and completely enclosed
Kinematics	Liebherr parallel face shovel attachment geometry, electronic controlled end-cushioning

Dimensions

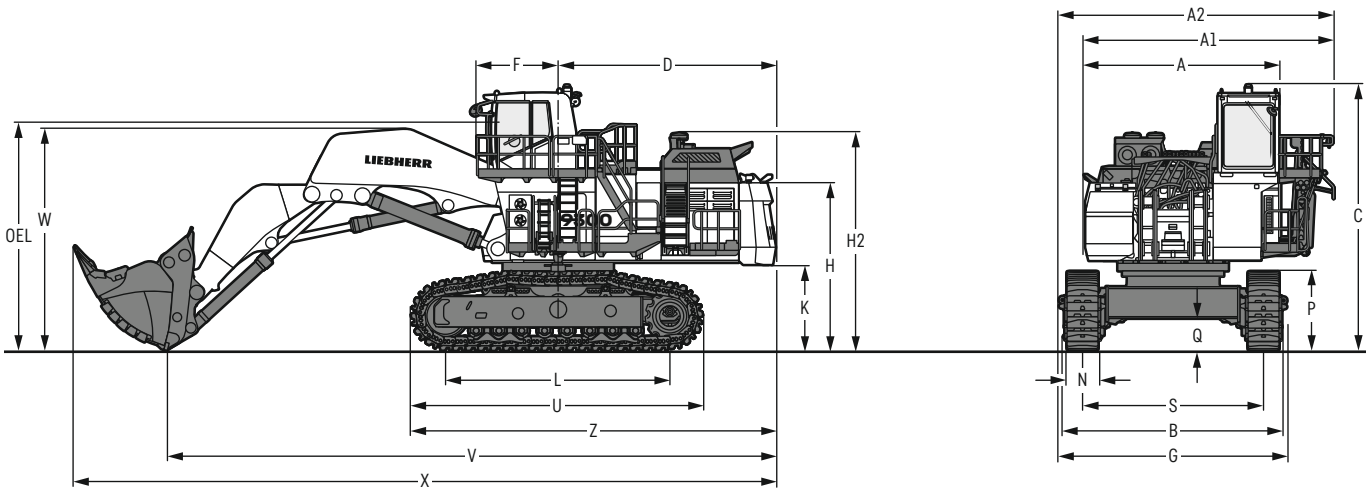


	mm / ft in
A	5,450 / 17'9"
A1	6,900 / 22'6"
A2	7,590 / 24'9"
B	6,130 / 20'1"
C	7,360 / 24'2"
D	6,014 / 19'7"

	mm / ft in
F	2,260 / 7'4"
G	6,310 / 20'7"
H	4,640 / 15'2"
H2	6,020 / 19'8"
K	2,380 / 7'8"
L	6,203 / 20'4"

	mm / ft in
N	850 / 2'8"
P	2,222 / 7'3"
Q	894 / 2'9"
S	5,000 / 16'4"
U	8,060 / 24'4"
V	11,600 / 38'1"

	mm / ft in
W	7,450 / 24'4"
X	17,400 / 57'1"
Z	10,044 / 33'
OEL (Operator's eye level)	6,316 / 20'8"



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	mm / ft in
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G	6,310 / 20'7"
H	4,640 / 15'2"
H2	6,020 / 19'8"
K	2,380 / 7'8"
L	6,203 / 20'4"

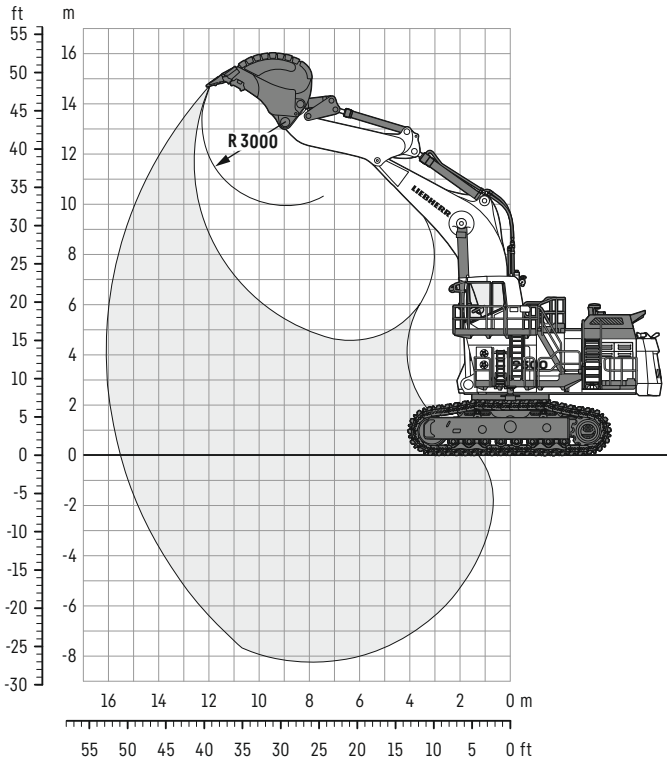
	mm / ft in
N	850 / 2'8"
P	2,222 / 7'3"
Q	894 / 2'9"
S	5,000 / 16'4"
U	8,060 / 24'4"
V	14,820 / 48'6"

	mm / ft in
W	6,130 / 20'1"
X	19,420 / 63'7"
Z	10,044 / 33'
OEL (Operator's eye level)	6,316 / 20'8"

According to ISO 9248, measurements of general machinery dimensions, performances and capacities may vary within tolerances given by this norm.

Backhoe attachment

with mono boom 9.00 m / 29'6"



Digging envelope

Stick length	m ft in	4.00 13'1"
Max. digging depth	m ft in	8.30 27'2"
Max. reach at ground level	m ft in	15.60 51'2"
Max. dumping height	m ft in	9.90 32'5"
Max. teeth height	m ft in	14.90 48'9"

Forces

Max. digging force (ISO 6015)	kN lbf	810 182,095
Max. breakout force (ISO 6015)	kN lbf	885 198,956

Machine shown without option with a bucket for average material abrasiveness and 1.8 t/m³ (3,034 lb/yd³) density.
The characteristics of the material to be extracted and additionnal options can change the bucket volume, its shape, its radius and therefore may also change the work area reachable by the bucket.

Operating weight and ground pressure

The operating weight includes the basic machine with backhoe attachment and backhoe bucket 16.5 m³ / 21.58 yd³.

Pad width	mm ft in	850 2'8"
Weight	t sh tn	252 278
Ground pressure*	kg/cm² psi	2.10 29.87

* according to ISO 16754

Backhoe buckets

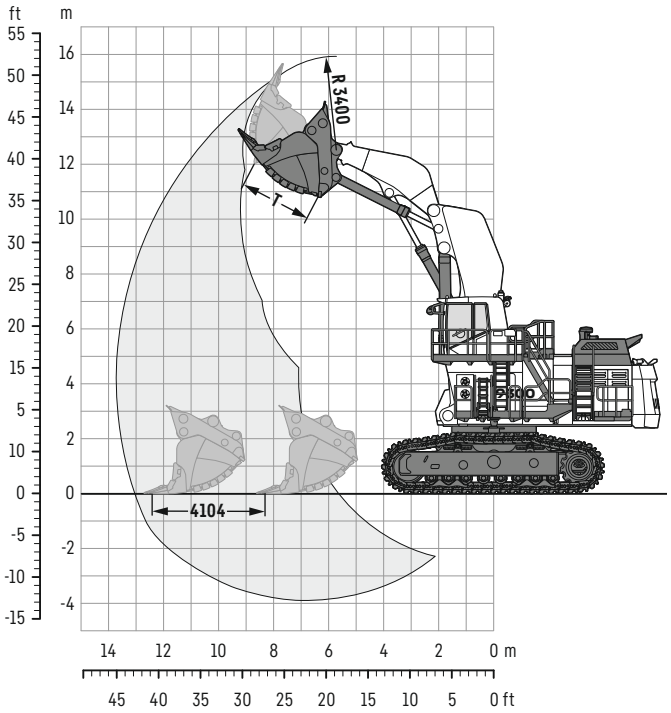
For materials class according to VOB, Section C, DIN 18300		< 5	< 5	5–6	5–6	5–6	7–8	7–8
Typical operation according to VOB, Section C, DIN 18300		GP	GP	GP	HD	HD	XHD	XHD
Capacity ISO 7451	m³ yd³	19.00 24.85	17.50 22.89	17.50 22.89	16.50 21.58	15.00 19.62	15.00 19.62	13.00 17.00
Suitable for material up to a specific weight of	t/m³ lb/yd³	1.6 2,698	1.75 2,951	1.65 2,782	1.8 3,035	2.0 3,373	1.9 3,204	2.2 3,710
Cutting width	mm ft in	3,600 11'9"	3,400 11'1"	3,400 11'1"	3,200 10'5"	3,120 10'2"	3,120 10'2"	2,800 9'2"
Weight	kg lb	14,200 31,306	14,000 30,865	15,500 34,172	14,900 32,849	14,600 32,187	16,100 35,494	15,800 34,833
Wear kit level		I	I	II	II	II	III	III
Fill factor	%	0.95	0.95	0.95	0.95	0.95	0.9	0.9

GP: Loading bucket with Liebherr Z14 teeth
HD: Heavy-duty bucket with Liebherr Z14 teeth
XHD: Heavy-duty rock bucket with Liebherr Z14 teeth

According to ISO 9248, measurements of general machinery dimensions, performances and capacities may vary within tolerances given by this norm.

Face shovel attachment

with shovel boom 6.37 m / 20'9"



Digging envelope

Stick length	m ft in	4.20 13'9"
Max. reach at ground level	m ft in	13.10 43'
Max. dumping height	m ft in	10.80 35'5"
Max. crowd length	m ft in	4.10 13'5"
Bucket opening width T	m ft in	2.60 8'5"

Forces

Max. crowd force at ground level (ISO 6015)	kN lbf	1,105 248,414
Max. crowd force (ISO 6015)	kN lbf	1,265 284,383
Max. breakout force (ISO 6015)	kN lbf	980 220,313

Machine shown without option with a bucket for average material abrasiveness and 1.8 t/m³ (3,034 lb/yd³) density.
The characteristics of the material to be extracted and additionnal options can change the bucket volume, its shape, its radius and therefore may also change the work area reachable by the bucket.

Operating weight and ground pressure

The operating weight includes the basic machine with shovel attachment and bucket 16.00 m³ / 20.93 yd³.

Pad width	mm ft in	850 2'8"
Weight	t sh tn	253 279
Ground pressure*	kg/cm² psi	2.17 30.86

* according to ISO 16754

Face shovel buckets

For materials class according to VOB, Section C, DIN 18300		< 5	5-6	5-6	7-8	7-8
Typical operation according to VOB, Section C, DIN 18300		GP	HD	HD	XHD	XHD
Capacity ISO 7451	m³ yd³	18.00 23.54	14.00 18.31	16.00 20.93	12.00 15.70	14.00 18.31
Suitable for material up to a specific weight of	t/m³ lb/yd³	1.6 2,698	2.1 3,541	1.8 3,035	2.3 3,879	1.8 3,035
Cutting width	mm ft in	3,850 12'7"	3,850 12'7"	3,850 12'7"	3,850 12'7"	3,850 12'7"
Weight	kg lb	27,800 61,288	27,300 60,186	28,000 61,729	29,400 64,816	31,000 68,343
Wear kit level		I	II	II	III	III
Fill factor	%	0.95	0.95	0.95	0.9	0.9

GP: Loading bucket with Liebherr Z14 teeth
HD: Heavy-duty bucket with Liebherr Z14 teeth
XHD: Heavy-duty rock bucket with Liebherr Z14 teeth

According to ISO 9248, measurements of general machinery dimensions, performances and capacities may vary within tolerances given by this norm.

Optional equipment

Undercarriage

- Undercarriage bottom cover
- Rock protection for travel drive
- Full length chain guide

Uppercarriage

- Fast fueling system with Multiflo Hydrau-Flo®
- Wiggins / Banlaw counter plugs for fuel / lube trucks
- Rock protection for swing gear
- Steel grease lines on swing ring
- Semi-automatic swing brake with joystick control
- Swing ring scrapers
- Engine coolant refill on service flap

Hydraulic system

- Bio-degradable hydraulic oil
- Oil cooler inlet screens
- By-pass filtration system
- Bleed down manifold
- Reverse fan

Cab

- Front protective grid
- Double A/C system
- External louvers on back and side cab windows
- Operator comfort package
- Sliding hatch window on door
- HEPA filtration system

Attachment

- Piston rod guard for bucket cylinder (BH)
- Piston rod guard for hoist cylinder (BH / FS)

Specific solutions

- Arctic package (different stages available)
- High altitude package

Safety

- Automatic fire suppression system
- Isolation & energy dissipation system – MDG 41 compliant

General

- Maritime transport packaging

E-drive

- Automatic cable reel

IoMine

- Truck Loading Assistant
- Operational Analytics
- Bucket Filling Assistant

Notes

Quality commitment

- Liebherr-Mining Equipment Colmar, France, ISO 9001 certified
- Compliance of materials tested in laboratory
- Quality control during all stages of production
- CE certified, MDG 15 & MDG 41 compliant

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