
R 9800

Generation 6

LIEBHERR

Mining excavator



Technologies

- Assistance Systems
- Liebherr Power Efficiency - Engine Control
- Bucket Filling Assistant

Powertrain

- Liebherr ICEs - Diesel: 3,000 kW (FCO)
4,023 HP
- Cummins ICEs - Diesel: 2,984 kW (FCO, Tier 4f)
4,000 HP

Backhoe configuration

- Overall weight: 800 tonnes
882 tons
- Bucket payload: 86 tonnes
95 tons

Face shovel configuration

- Overall weight: 810 tonnes
893 tons
- Bucket payload: 76 tonnes
84 tons

Overview
R 9800





Diesel drive 3,000 kW / 4,023 HP



BH 47.5 m³ / 62.1 yd³
FS 42 m³ / 54.9 yd³



BH 800 tonnes / 882 tons
FS 810 tonnes / 893 tons



Performance

Productive, efficient and reliable



Engine options

Twin-engine available versions:

- Cummins QSK60 US EPA Tier 4f / EU Stage V compliant
- Fuel consumption optimized version for Liebherr or Cummins engines



The R 9800 is built to outperform all competitors in the Ultra class mining market. As a perfect loader for 300 t, 330 t, 360 t and 375 t class mining trucks, the R 9800 is the right match for the Liebherr T 264, T 274 and T 284. Developed as the optimal loading tool for large scale mining operations, the R 9800 can achieve the most challenging targets.

Fast and precise movement

Proven mining engine

The R 9800 can be optioned with two versions of diesel drive systems. Customers can choose between Liebherr or Cummins as their preferred engine partner. The R 9800 combines flexibility and productivity to meet customer expectations.

Fast cycle time

Rather than using open hydraulic circuit, the R 9800 employs a closed-loop swing circuit to enable maximum swing torque while retaining the full oil flow for the working circuit. The independent swing circuit in combination with the powerful drive system leads to fast arm motion, which contributes to faster cycle times.

Precise machine motions

The R 9800 design integrates the Litronic Plus electronic control system to allow for easy control even when simultaneous movements are required. The patented Liebherr electronic damping system provides controlled end-cushioning for smooth attachment motions.

High digging and lifting capabilities

High digging forces & power-oriented energy management

Designed for the best mechanical force distribution, the production-tailored attachment delivers high digging and lifting forces. Integrating Liebherr-made cylinders and a wide range of buckets, the R 9800's attachment ensures the highest forces, easy bucket penetration and high fill factor to perform even in the most demanding conditions.

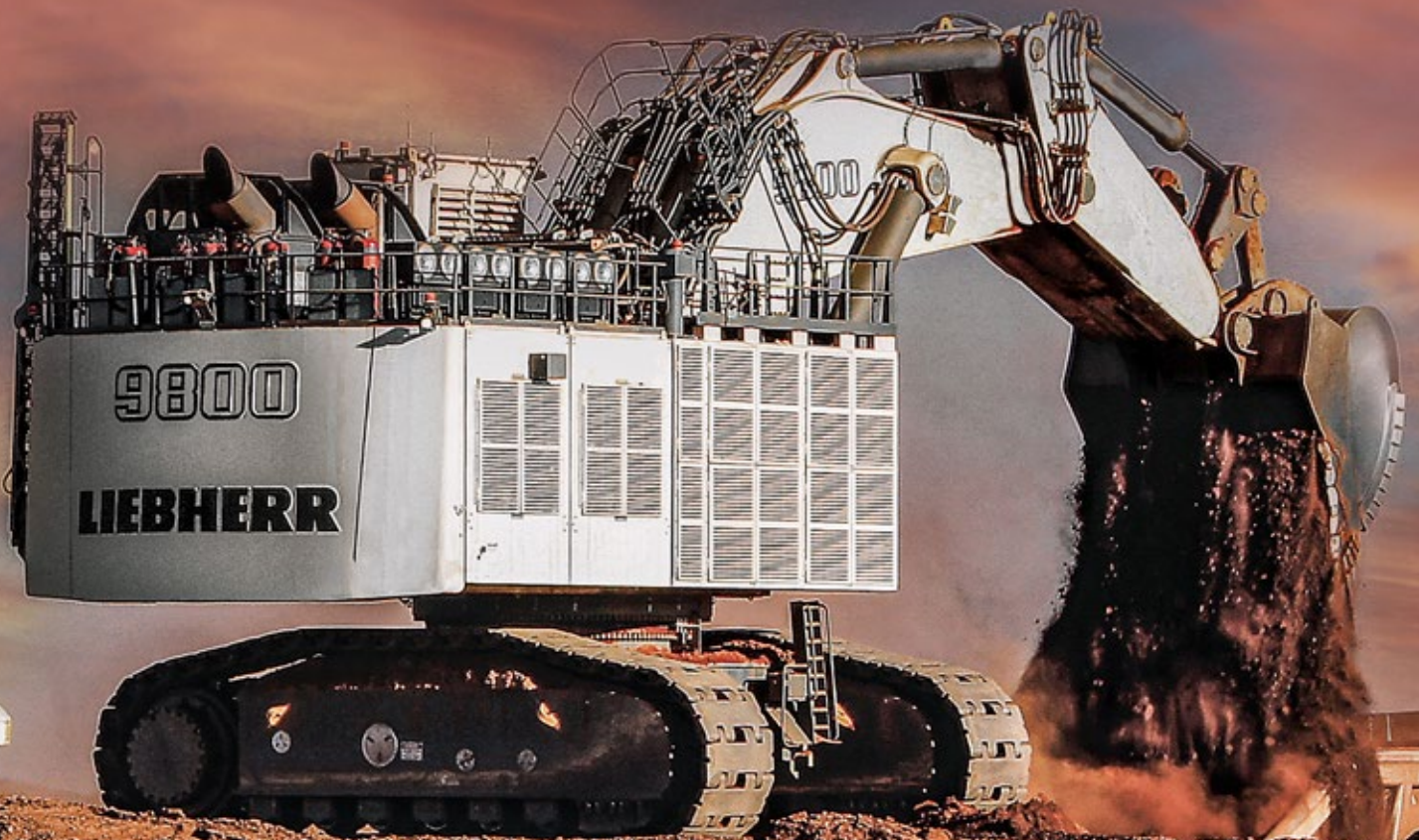


High performance execution

An innovative attachment solution to improve cost per tonne, maximize machine productivity / truck utilization without any compromise in structural / component life and cycle time:

- Use of smart components design to reduce total weight, increasing bucket payload and reinforcing bucket wear protection for extended lifetime (GP, HD, XHD)
- Maximized loading capacity thanks to Liebherr bucket solution and patented EVO design

The R 9800 follows the Liebherr design philosophy of maximizing the machine's performance by improving the efficiency of all individual subsystems. Engineered for optimum serviceability, the machine is designed to ensure maximum uptime. The R 9800's modern cab creates a comfortable working environment ensuring peak operator performance, every shift.



Up to **4%**
less fuel consumption

Optimized for maximum profitability

Electro-hydraulic system efficiency

Liebherr hydraulic technology in combination with the precision of electronic control contributes to the R 9800's energy optimization. The high-pressure hydraulic system and the optimized pipe and hose layout maximize usable power transmission. The hydraulic pumps are electronically managed to provide optimal pressure compensation and oil flow management. The hydraulic system is independently regulated over the engine circuit for the best operational efficiency.

Independent cooling system

Oil and water cooling fans are independent and electronically managed. The on-demand cooling control enables to maximize available power for the working process. This technology contributes to maintain sustainable temperature of all the hydraulic components extending their life.

Closed loop swing circuit

The Liebherr Mining excavators are all 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, reducing fuel consumption.

Comfortable cab for efficient work

The large and spacious cab which equips the R 9800 offers ideal working conditions and optimal operator's comfort. Mounted on rubber isolator, the cab design reduces vibrations and limit noise pollution to provide a quiet environment.

Patented Liebherr Power Efficiency solutions

- Sensor and piloting signals, the Engine Control functionalities adapt automatically to working phases, which provide high fuel efficiency while reducing engine load profile.
- Energy management system patented by Liebherr Mining and integrated directly into the machine control

Extended components lifetime

The R 9800's hydraulic oil filtration systems remove fluid contaminants to offer the highest rate of hydraulic components durability. To maintain oil quality, all return hydraulic oil flow goes through a fine filtration system (15/5 μm) and oil tank is sized to considerably extend the time between service intervals.



Machine monitoring system

- 10.5" LCD color screen
- Information interface to operator
- On-board diagnostics to service staff
- Real text information
- Long term data storage for maintenance



Central service station

- The service flap is hydraulically actuated and accessible from the ground level allowing for fast maintenance:
- Hydraulic oil
 - Engine oil
 - Splitter box oil
 - Swing gearbox oil
 - Attachment / swing ring bearing grease with filters
 - Swing ring teeth grease with filter
 - Windshield water
 - Fuel (non-pressurised refueling system in option, second fuel refilling line in option)



Hydraulic system efficiency

- Optimal oil flow distribution through the valves blocks reducing hydraulic losses
- Reduced pressure drops between pumps and consumers (hydraulic motors / cylinders)
- Allows the combination of the main movements under maximal forces
- Earlier maximal forces generation for an accurate control of the combination of force and cylinder speed
- Increased hydraulic oil cooling efficiency
- Enables fast cycle times

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.

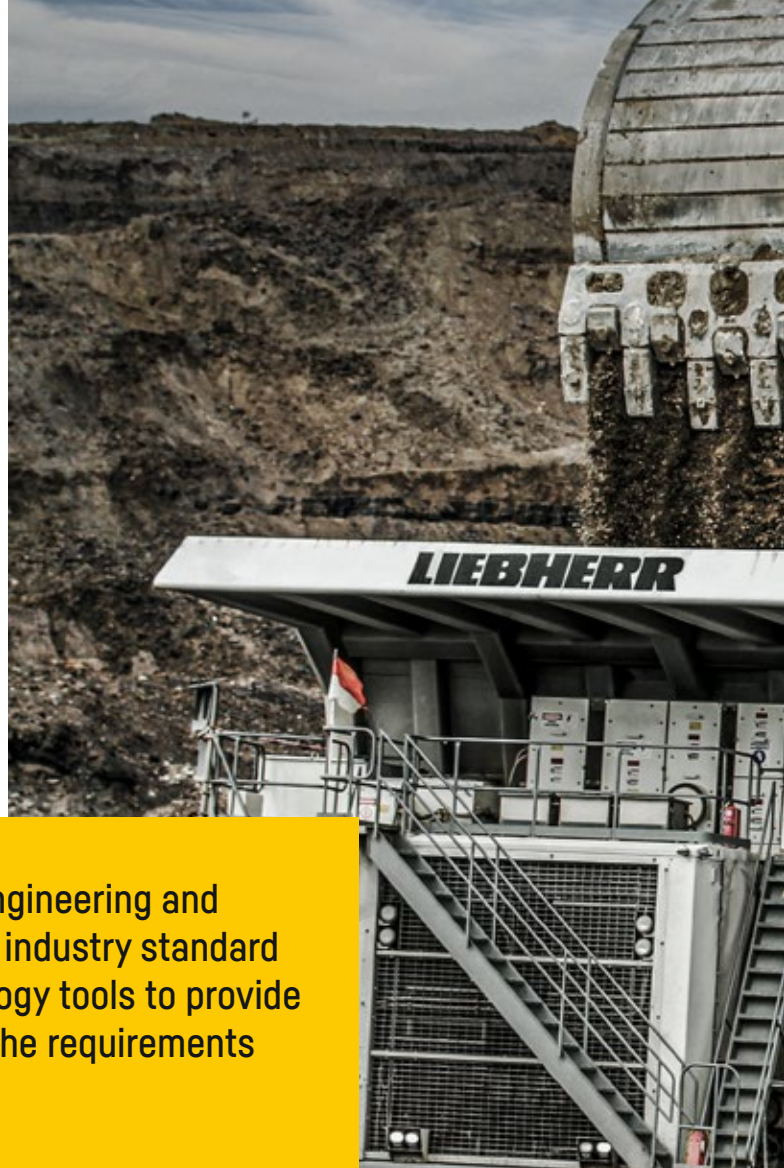
Keep your mining fleet running at peak performance with IoMine's dedicated maintenance products, whose innovative maintenance solutions are designed to minimise downtime and increase efficiency.



Quality

The Liebherr

trademark



With over 50 years of innovative thinking, engineering and manufacturing excellence, Liebherr sets the industry standard for advanced equipment design and technology tools to provide the most up-to-date product responding to the requirements of the mining customers.

Long-lasting job performances

Maximized components lifetime

The R 9800 is equipped with an automatic single line lubrication system for the entire attachment and swing ring. All greasing points are suitably protected against external damages. This extends component life and ensures constant performance over the excavator's operational life.

Rugged undercarriage structure

The R 9800 is mounted on a heavy duty fatigue resistant undercarriage. The swing ring is reinforced to provide an improved superstructure weight distribution. Designed and built for both shovel and backhoe configurations, the enlarged undercarriage offers an efficient ground bearing pressure repartition providing the necessary stability and reliability.

Liebherr components integration

As an OEM, Liebherr has built a solid reputation for its development and production of high quality strategic mining components. The R 9800 integrates robust and reliable mining optimized components that are developed, manufactured and controlled by Liebherr ensuring reliability and high performance for the entire machine.

Machine reliability survey

Based on years of experience and the systematic measurement of key performance indicators of the machine behavior in the field, the Liebherr Mining Reliability Engineering Group is constantly seeking new ways to enhance reliability.

Quality management continuous improvement

Liebherr quality begins during machine design and simulations. Liebherr meets the highest standards for special selections of steels and casting materials. Based on the expertise of certified internal auditors and a highly qualified workforce, all manufacturing process steps are devised to provide the most comprehensive control, monitoring and traceability. Liebherr-Mining Equipment Colmar SAS is ISO 9001 certified.



Heavy duty undercarriage

- Designed for an optimal weight distribution
- Optimized to provide the best machine stability
- External travel drive for easy maintenance access
- Heavy duty rock protection for travel drive
- Automatic track tensioning system
- Monobloc dual pin combined pad links



Quality commitment

- Liebherr-Mining Equipment Colmar, France, ISO 9001 certified
- Compliance of materials tested in laboratory
- Quality control during the stages of production
- Vertical integration practice
- CE certified (2006/42/EC), MDG 15 and MDG 41 compliant



Reliable attachment design

- Under slung arch hoses to improve lifetime
- Fatigue resistant steel structure
- Use of the most advanced welding techniques
- Heat treatment to reduce residual stresses and increase fatigue life
- Reinforced with strategically located castings in high stress areas
- Designed for optimized digging force distribution

Service

Where you need it, when you need it

A daily partner to the customer, for global long term sustainable performances, Liebherr implements tailored solutions from technical support, spare parts and logistics solutions to global maintenance for all types of equipment, all over the world.



Liebherr service tools

Liebherr delivers a wide range of service tools for excavator-specific maintenance ensuring optimal working conditions no matter the size of the component.

- An OEM-certified solution according to international standard
- Maximized machine uptime
- Cost-efficient maintenance
- Easy machine serviceability
- Uncompromising operational safety



MyLiebherr customer portal

- Easy access parts online
- Available any time anywhere
- User friendly interface
- Online ordering
- Save time and money



The Liebherr-Mining remanufacturing program

- Liebherr certified quality
- As-new warranty
- OEM expertise
- Reduced costs and investment
- Fast availability



Customer support

International service organization

The Liebherr service support has always been an important focus for the company. Complete service during all operating phases from machinery installation to problem solving, spare parts inventory and technical service. Our service team is close to our customers, delivering the best specific maintenance solution to reduce both equipment downtime and repair costs.

Complete training programs

The Liebherr mining training system provides blended training sessions for operator and maintenance staff to encourage productive, cost-effective and safe mining operation. The Liebherr mining training system employs online learning programs, factory and on-site sessions and simulator training.

Remanufacturing

Reduced costs and investment

Over the course of a mining machine's lifetime, major components must be replaced to ensure continued safety, productivity and reliability. The Liebherr mining remanufacturing program offers customers an OEM alternative to purchasing brand new replacement components. Enabling customers to achieve lowest possible equipment lifecycle costs without compromising quality, performance or reliability.

Fast availability

A international service network and component facilities worldwide means that component repair services and exchange components are available to customers regardless of their location.

Genuine parts

Performance

Using genuine Liebherr components ensures the best interaction within your machine, encouraging optimal performance and most effective machine operation. For all major components, Liebherr relies on its Liebherr maintenance management system to follow and monitor service life while predicting maintenance activities.

Partnership

Liebherr regularly reviews requirements for parts and components for individual machines, based on operating hours, consumption and planned maintenance, resulting in minimized down time for customers. With access to the global stock via all Liebherr mining warehouses, you will improve productivity by having the part you need, when you need it.

Safety

Protecting your most important assets

The Liebherr R 9800 provides uncompromising safety for operators and maintenance crews. Equipped with the service flap accessible from the ground level and integrating wide open accesses, the R 9800 allows quick and safe maintenance. The R 9800's cab provides numerous features for operator safety.



Safety-first working conditions

Safe service access

The R 9800 is fitted with ergonomic access for fast and safe maintenance. All service points are within reach from one side and at machine level. The R 9800's upperstructure is accessible via a hydraulic actuated 45° stairway.

Secure maintenance

All components have been located allowing effortless inspection and replacement. Numerous service lights are strategically located in the service areas to sustain suitable maintenance conditions, day or night. Emergency stops have been strategically placed in the cab, engine compartment and at ground level. The R 9800 eliminates hazards to ensure a safe environment for the service staff during maintenance.

Efficient machine protection

Protection against fire ignition

The engine compartment has a bulkhead wall to separate the engine from the hydraulic pumps. This reduces the risk of hydraulic oil entering the engine compartment. The turbochargers and exhaust systems are heat shielded, and all hydraulic hoses are made from a highly resistant material to prevent the risk of fires.

Automatic fire suppression system

The R 9800 can be equipped with a fully integrated fire suppression, employing a dual agent solution to prevent and protect the machine. The fire suppression system has both automatic and manual release capabilities. E-stops, interconnected with the fire suppression system, are strategically located in the cab, over the machine, on the ground level to be easily accessible in any case by the operator or maintenance. The automatic fire suppression system is connected to the machine electronic, in case of release, the 45° access stairway is automatically activated.



Improved accessibility, ease of maintenance

The machine is easily visible even by night or in extremely dusty working environments thanks to:

- 16 long-range working LED lights located on attachment, upper-carriage and counter weight
- Travel alarm system with light and buzzer



Machine access

Designed for safe access on the machine upperstructure via:

- A 45° powered stairway and catwalks with handrails and perforated steps
- Walkways with slip-resistant surfaces
- Emergency egress with handrails in front of the excavator
- Optional service folding platform for safe action on front swing gears and attachment pins



Commitment to employees safety

- Safe and protected access to the components
- Major components centralized to be easily accessible
- E-stops located for the operator and maintenance staff
- Maintenance fluids reach at ground level in option
- Rear and side vision system

Sustainability

Committed to our future



Reman

The Liebherr-Mining remanufacturing program

- Second life for your components
- Liebherr certified workshops
- Reduced environmental impact
- Reduced costs and investment
- Alternative to purchase brand-new replacement components

Automatic idle control

Electronic idle control of the engine results in:

- Less fuel consumption
- Less load on the engine
- Reduced emissions
- More comfort to the operator (reduced noise pollution)



Liebherr considers the preservation of the environment as a major challenge for the present and future. Liebherr takes greater account of environmental issues in designing, manufacturing and managing machine's structures. This commitment provides solutions that allow customers to balance high performance with environmental consciousness.

Minimized environmental impact

Optimized energy consumption, fewer emissions

The intelligent energy management system coordinates optimal interaction between the hydraulic system and engine output with the goal of a maximum performance with a minimum consumption. With the "Eco-Mode", the machine is set up to reduce engine load, improve significantly fuel consumption and optimize emissions.

Controlled emission rejection

The R 9800 can be offered with Cummins engines that comply with US EPA Tier 4f / EU Stage V emission limits. This power drive makes the R 9800 cost effective without compromising productivity while reducing the machine's impact on the environment.

Sustainable design and manufacturing process

Certified environment management systems

Subject to the stringent European program for the regulation of the use of chemical substances in the manufacturing process REACH*, Liebherr undertakes a global evaluation to minimize the impacts of hazardous material, pollution control, water conservation, energy and environmental campaigns.

Extended components and fluids lifetime

Liebherr is constantly working on ways to extend component life. Through the Liebherr-Mining remanufacturing program, superior lubrication systems and the reinforcement of parts under stress, Liebherr can reduce frequency of part replacement. The result minimizes environmental impact and lowers the overall total cost of ownership.

*REACH is the European Community Regulation on chemicals and their safe use (EC 1907 / 2006). It deals with the registration, evaluation, authorization and restriction of chemical substances.



Future proof

One modular platform, many possibilities

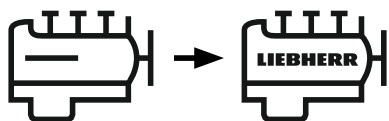
Liebherr has a modular design approach for its largest excavators. The company's engineers follow this approach from the earliest stages of machine design when developing our internal combustion engines (ICE).



Modular maintenance

Liebherr's modular maintenance program offers customers an opportunity to optimise the replacement of major component assemblies (modules). This program effectively delivers required maintenance for mobile equipment while minimising downtime, maximising efficiencies and improving overall safety.

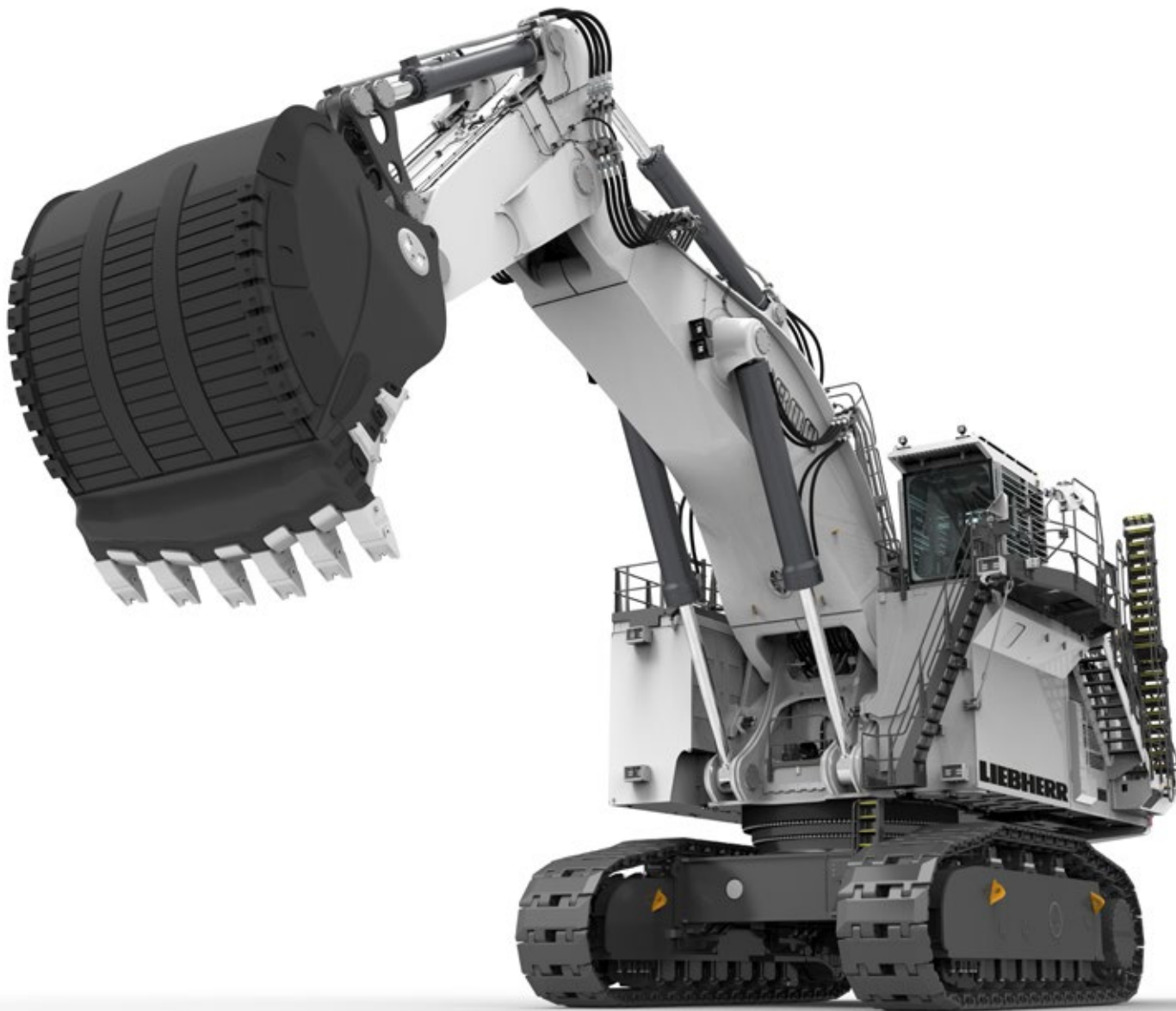
Reduce
downtime
by up to **50 %**



Repowering of internal combustion engines

Liebherr's repowering solutions involve replacing the existing internal combustion engine (ICE) within one of the company's large excavators with Liebherr's D9812 ICE. This engine provides a proven increase in productivity, HVO compatibility, up to 5% less fuel consumption and less stress on the excavator's components.

Reduce fuel
consumption
by up to **5 %**



Retrofit solutions

Liebherr retrofits are the right solution for customers wanting to upgrade their equipment by adding new features and/or products. They enable customers to:

- Flexibly upgrade their equipment to make it future proof
- Implement assistance systems that provide insights for operational decision-making and safety
- Comply with regulatory emission requirements and standards

***Unlock the full potential
of your excavator***

For more information, please contact your local Liebherr sales and service company or sales partner.

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

2 Liebherr ICEs – Diesel	
Rating per ISO 3046	2 x 1,500 kW (2 x 2,011 HP) at 1,500 rpm
Model	D9812 (Fuel consumption optimized setting)
Type	12 cylinder V-engine
Bore/Stroke	175/215 mm / 6.89/8.46 in
Displacement	62l/3,786 in ³
Liebherr Power Efficiency – Engine Control	engine management systems adapting the power specifically to the load profile
or	
2 Cummins ICEs – Diesel	
Rating per SAE J1995	2 x 1,492 kW (2 x 2,000 HP) at 1,800 rpm
Model	Cummins QSK60 (US EPA Tier 4f/EU Stage V compliant or fuel consumption optimized setting)
Type	16 cylinder V-engine
Bore/Stroke	159/190 mm / 6.26/7.48 in
Displacement	60l/3,661 in ³
Engine cooling system	fans driven via hydraulic piston motors
Liebherr Power Efficiency – Engine Control	engine management systems adapting the power specifically to the load profile
Air cleaner	dry-type air cleaner with pre-cleaner, with automatic dust ejector, primary and safety elements
Fuel tank capacity	17,597 l / 4,649 gal
DEF tank capacity	1,330 l / 351 gal
Fuel filtration	Liebherr: 3 stage filtration, water separator, electric pump Cummins: 2 stage Nanonet™ filtration, water separator, electric pump
Engine lubrication	Liebherr: spin-on filters and oil centrifuge filter Cummins: ELIMINATOR™, combination full flow and centrifugal system that eliminates the need for disposable oil filters
Electrical system	
Voltage	24 V
Batteries	8 x 180 Ah / 12 V starting battery 4 x 180 Ah / 12 V service systems
Alternator	2 x 24 V / 260 A (brushless)
Engine idling	electronically controlled
Electronic engine power management	engine power and speed sensing over the entire engine rpm range

Swing drive

Hydraulic motor	4 Liebherr axial piston motors
Swing gear	4 Liebherr planetary reduction gears
Swing ring	Liebherr, sealed triple roller swing ring, internal teeth
Swing speed	0–3.6 rpm
Swing-holding brake	4 hydraulically released, maintenance-free, external multi-disc brakes

Electro-hydraulic controls

Servo circuit	independent, electronic over hydraulic proportional controls of each function
Emergency control	emergency lowering of the attachment to the ground
Power distribution	via monoblock control valves with integrated primary relief valves, proportional and safety valves. Integrated secondary relief valves on functional blocks and motors
Flow summation	to attachment and travel drive
Electro-hydraulic servo control	
Attachment and swing	electronic optimized control via proportional valves
Travel	electronic optimized control via proportional valves
Electronic damping system	Liebherr designed electronic control of cylinder end-position

Hydraulic system

Hydraulic pump	for attachment and travel drive	10 variable flow axial piston pumps
Max. flow		10 x 750 l/min. / 10 x 198 gpm
Max. pressure		320 bar / 4,640 psi
for swing drive		4 reversible swashplate pumps, closed-loop circuit
Max. flow		4 x 535 l/min. / 4 x 141 gpm
Max. pressure		320 bar / 4,640 psi
Pump management		electronically controlled pressure and flow management with oil flow optimisation
Hydraulic tank capacity		5,800 l / 1,532 gal
Hydraulic system capacity		10,000 l / 2,642 gal
Hydraulic oil filter		1 high pressure safety filter after each main pump + fine filtration of entire return flow (15/5 µm)
Hydraulic oil cooler		4 separate coolers, 4 temperature controlled fans driven via hydraulic piston motors

Electric system

Electric isolation	easy accessible battery isolations
Working lights	high brightness LED lights: – 4 on working attachment – 2 on cabin – 5 on RHS of uppercarriage – 5 on LHS of uppercarriage
Emergency stop switches	at ground level, in hydraulic compartment, in engine and pumps compartment, at valve bank and in operator cab
Electrical wiring	heavy duty execution in IP 65 standard for operating conditions of –50°C to 100°C / –58°F to 212°F

Uppercarriage

Design	torsion resistant designed upper frame in box-type construction for superior strength and durability
Attachment mounting	parallel longitudinal main girders in box section construction
Machine access	45° access system with handrails on the cab side of the uppercarriage, full controlled descent, in case of emergency stop additional emergency ladder fitted near the cab + emergency rope ladder in pump compartment

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, additional "retractable passenger/trainer seat" seat heating
Cabin windows	20.8 mm / 0.8 in tinted armored glass for front window and 19.5 mm / 0.8 in for right-hand side windows, all other windows in tinted safety glass, high pressure windshield-washer system with 75l / 20 gal watertank, sun louvers on all windows in heavy duty design
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 5.7 kg / 13 lb of HFC-134 representing an equivalent of 8.2 tonnes / 9.0 tons of CO ₂ , the 2 nd AC circuit (optional) contains 5.7 kg / 13 lb of HFC-134 representing an equivalent of 8.2 tonnes / 9.0 tons of CO ₂
Cabin pressurization	ventilation with filters, minimum pressurization of 50 Pa (ISO 10263-3)
Controls	joystick levers integrated into armrest of seat, armrest adjusted to seat position
Display	10.5 in color LCD-display with low and high brightness settings
Condition monitoring	machine condition monitoring system with error reporting and operational information
Rear vision system	camera installation on counterweight and right-hand side of the uppercarriage displayed over an additional LCD-display
Safety functions	
Automatic engine shut off	engine self-controlled power limitation and shut off
Safety functions	additional gauges with constant display for: engine speed, hourmeter, voltmeter, safety mode for engine speed control and pump regulation
Noise level (ISO 6396)	Diesel: L _{PA} (inside cab) = 76 dB(A)
Hand-arm vibrations	≤ 2.5 m/s ²
Whole-body vibrations	≤ 0.5 m/s ²

Central lubrication system

Type	single-line lubrication system for the entire attachment / swing ring bearing and teeth
Grease pumps	2 hydraulic grease pumps for attachment / swing ring bearing lubrication with switch over function 1 hydraulic grease pump for swing ring teeth lubrication
Capacity	600l / 158.5 gal bulk container for attachment / swing ring bearing, separated 80l / 21 gal container for swing ring teeth
Refill	via the service flap for both containers with grease filters
Monitoring	via a specific Liebherr control module with data memory

Undercarriage

Design	3-piece undercarriage, box-type structure for center piece and side frames, stress relieved
Hydraulic motor	3 axial piston motors per side frame
Travel gear	Liebherr planetary reduction gear
Travel speed	Diesel: 0-2.0-2.6 km/h / 0-1.2-1.6 mph
Parking brake	spring engaged, hydraulically pressure released external wet multi-disc brakes for each travel motor, maintenance-free
Track components	maintenance-free dual pin cast link and pad combined
Track rollers / Carrier rollers	6 / 3 per side frame
Automatic track tensioner	pressurized hydraulic cylinder with accumulator, maintenance-free
Transport	undercarriage side frames are removable

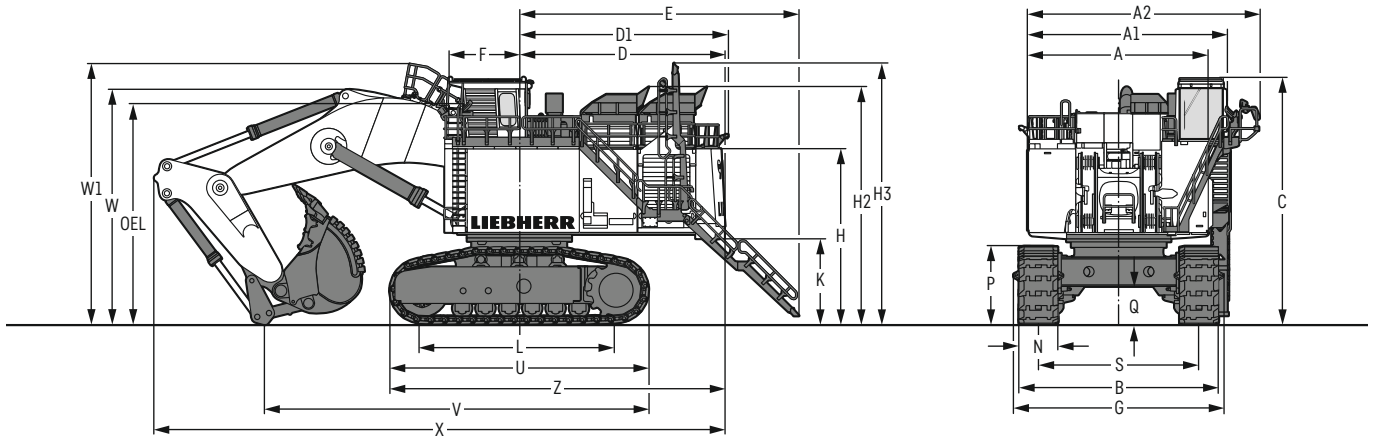
Service flap

Design	hydraulically actuated service flap, easily accessible from ground level to including: <ul style="list-style-type: none"> - 2 fast fuel refill lines - hydraulic oil refill - engine oil exchange - splitterbox oil exchange - swing gearbox oil exchange (4 x draining / 4 x refill) - swing ring teeth grease barrel refilling with grease filter - attachment / swing ring bearing grease barrel refilling with grease filter - windshield washer water refilling - oil reserve system refilling (optional) - different couplings available on request
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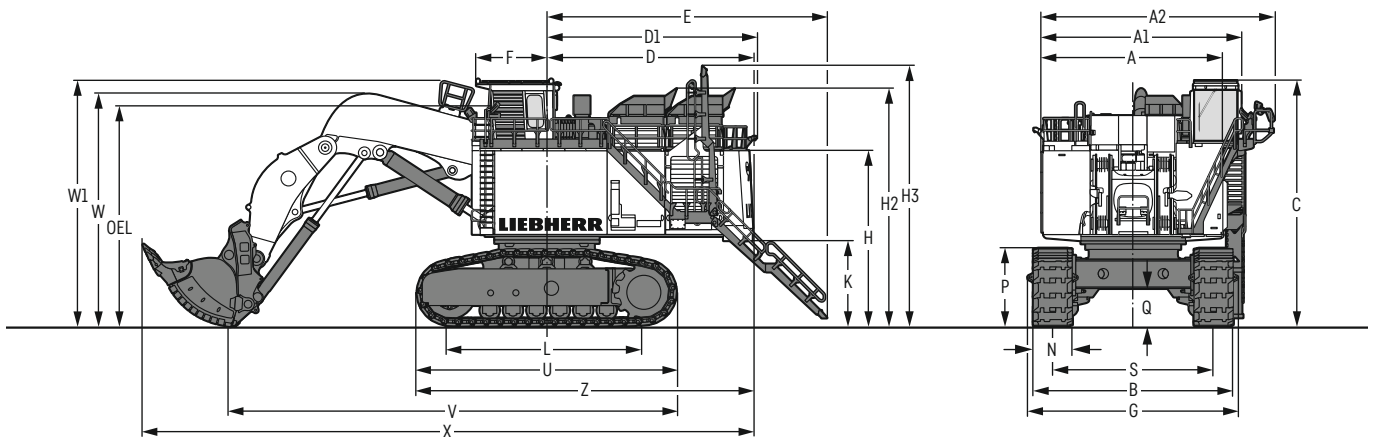
Attachment

Design	box-type structure with large steel castings in all high-stress areas
Stick	wear protection underneath lower beam plate
Pivots	two floating pins per pivot, sealed covers, all bearings with wear resistant steel bushings, bolts hardened and chromium-plated
Hydraulic cylinder	Liebherr design, electronically controlled end-cushioning
Hydraulic connections	pipes and hoses equipped with SAE connections
Pivots bucket-to-stick Pivots bucket-to-link	O-ring sealed and completely enclosed
Lubrication	connected to the centralized lubrication system, each lubrication point independently lubricated

Dimensions



A	mm / ft in	E	mm / ft in	L	mm / ft in	W	mm / ft in
A1	8,480 / 27' 10"	F	11,700 / 38' 5"	N	8,100 / 26' 7"	W1	11,065 / 36' 4"
A2	10,315 / 33' 10"	G	3,165 / 10' 5"	P	1,630 / 5' 4"	X	23,910 / 78' 5"
B	10,550 / 34' 7"	H	8,780 / 28' 10"	Q	3,261 / 10' 8"	Z	14,020 / 45' 2"
C	8,330 / 27' 3"	H2	7,350 / 24' 1"	S	1,574 / 5' 1"	OEL (Operator's eye level)	8,800 / 28' 10"
D	10,350 / 33' 11"	H3	9,940 / 32' 7"	U	6,700 / 21' 11"		
D1	8,585 / 28' 2"	K	10,960 / 35' 11"	V	10,846 / 35' 6"		

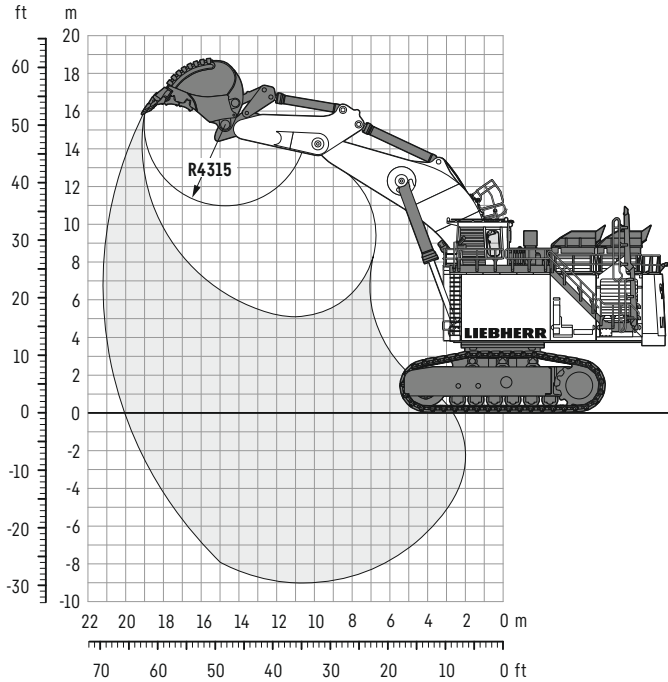


A	mm / ft in	E	mm / ft in	L	mm / ft in	W	mm / ft in
A1	8,480 / 27' 10"	F	11,700 / 38' 5"	N	8,100 / 26' 7"	W1	9,780 / 32' 1"
A2	10,315 / 33' 10"	G	3,165 / 10' 5"	P	1,630 / 5' 4"	X	10,300 / 33' 8"
B	10,550 / 34' 7"	H	8,780 / 28' 10"	Q	3,261 / 10' 8"	Z	25,530 / 83' 8"
C	8,330 / 27' 3"	H2	7,350 / 24' 1"	S	1,574 / 5' 1"	OEL (Operator's eye level)	14,020 / 45' 2"
D	10,350 / 33' 11"	H3	9,940 / 32' 7"	U	6,700 / 21' 11"		
D1	8,585 / 28' 2"	K	10,960 / 35' 11"	V	10,846 / 35' 6"		

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 11.75 m / 38'6"



Digging envelope

Stick length	m	5.00
	ft in	16'4"
Max. digging depth	m	9.00
	ft in	29'6"
Max. reach at ground level	m	20.10
	ft in	65'11"
Max. dumping height	m	10.90
	ft in	35'9"
Max. teeth height	m	16.20
	ft in	53'1"

Forces

Max. digging force (ISO 6015)	kN	1,760
	lbf	395,664
Max. breakout force (ISO 6015)	kN	1,980
	lbf	445,121

Machine shown without option with a bucket for average material abrasiveness and 1.8t/m³ (3,034 lb/yd³) density.

The characteristics of the material to be extracted and additional 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 standard backhoe attachment and backhoe bucket 47.50 m³ / 62.1 yd³.

Pad width	mm	1,630
	ft in	5'4"
Weight	kg	800,000
	lb	1,763,700
Ground pressure*	kg/cm ²	2.71
	psi	38.45

* according to ISO 16754

Backhoe buckets

For materials class according to VOB, Section C, DIN 18300		5-6	5-6	5-6	7-8
Typical operation according to VOB, Section C, DIN 18300		HD	HD	HD	XHD
Capacity ISO 7451	m ³	45.00	47.50	52.00	47.00
	yd ³	58.9	62.1	68.0	61.5
Suitable for material up to a specific weight of	t/m ³	1.9	1.8	1.6	1.75
	lb/yd ³	3,204	3,035	2,698	2,951
Cutting width	mm	4,800	4,800	4,800	4,800
	ft in	15'8"	15'8"	15'8"	15'8"
Weight	kg	39,100	39,630	41,100	42,800
	lb	86,201	87,369	90,389	94,358

HD: Heavy-duty bucket

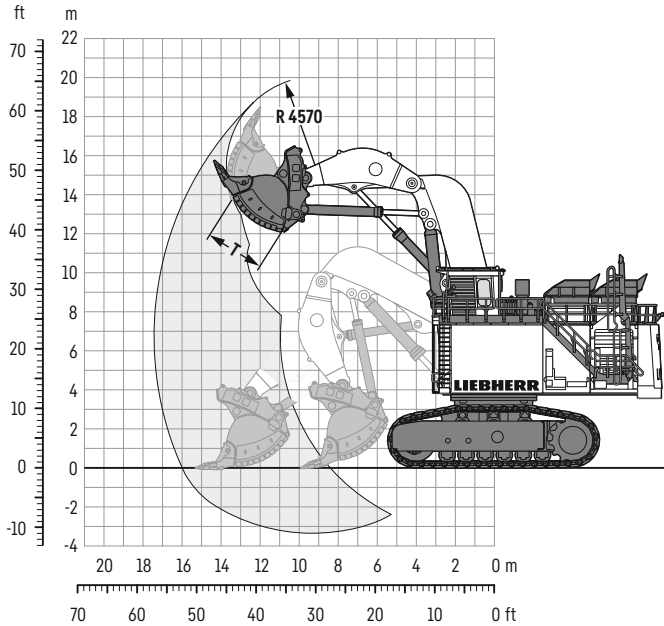
XHD: Heavy-duty rock bucket

Other buckets for other densities and / or material class on request

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 8.55 m / 28'



Digging envelope

Stick length	m	5.45
	ft in	17'9"
Max. reach at ground level	m	16.00
	ft in	52'5"
Max. dumping height	m	12.40
	ft in	40'7"
Max. crowd length	m	5.40
	ft in	17'7"
Bucket opening width T	m	3.00
	ft in	9'10"

Forces

Max. crowd force at ground level (ISO 6015)	kN	2,900
	lbf	651,946
Max. crowd force (ISO 6015)	kN	3,000
	lbf	674,427
Max. breakout force (ISO 6015)	kN	2,395
	lbf	538,417

Machine shown without option with a bucket for average material abrasiveness and 1.8t/m³ (3,034 lb/yd³) density.

The characteristics of the material to be extracted and additional 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
42.00 m³ / 54.9 yd³.

Pad width	mm	1,630
	ft in	5'4"
Weight	kg	810,000
	lb	1,785,700
Ground pressure*	kg/cm ²	2.74
	psi	38.94

* according to ISO 16754

Face shovel buckets

		7-8	5-6	5-6	5-6
For materials class according to VOB, Section C, DIN 18300					
Typical operation according to VOB, Section C, DIN 18300		XHD	HD	HD	HD
Capacity ISO 7451	m ³	38.00	40.00	42.00	44.00
	yd ³	49.7	52.3	54.9	57.5
Suitable for material up to a specific weight of	t/m ³	2.0	1.9	1.8	1.7
	lb/yd ³	3,373	3,204	3,035	2,867
Cutting width	mm	5,600	5,600	5,600	5,600
	ft in	18'4"	18'4"	18'4"	18'4"
Weight	kg	75,000	75,300	75,500	78,000
	lb	165,347	166,008	166,449	171,960

HD: Heavy-duty bucket

XHD: Heavy-duty rock bucket

Other buckets for other densities and / or material class on request

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

Optional equipment

Undercarriage

Different track pad width
Full length chain guide

Uppercarriage

Rock protection for fuel tank
Swing ring scraper
Wiggins / Banlaw / other brand name fast refilling system
Wiggins / Banlaw / other brand name counter plugs (service trucks)
Service folding platform
Electric incinerating toilet
Slewing ring with 90° installation arrangement

Hydraulic system

Oil cooler inlet screen

Powertrain

Fuel consumption optimized engine version (non-certified)
Cummins oil reserve system
Pre-filter for engine oil refilling

Cab

4-point seat belt
Additional back and side wipers
Double A/C system
Front protective grid
Sliding window

Specific solutions

Arctic package (different stages available)
High altitude package

Safety

Automatic fire suppression system
Installation kit for extra cameras
Additional camera / display for double side loading
Isolation & energy dissipation system – MDG 41 compliant

General

Maritime transport packaging

IoMine

Truck Loading Assistant
Operational Analytics
Bucket Filling Assistant



Mining excavator



Mining truck



Mining dozer



Mining dragline



Service tools



Customer service

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

Subject to technical modifications. All comparisons and claims of performance are made with respect to the prior Liebherr model unless specifically stated.

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