
T 284

www.liebherr.com

LIEBHERR

Mining Truck



Nominal payload: Up to 375 t / 413 ton
Gross Vehicle Weight (GVW): 617 t / 680 ton

Engine power:
2,400 - 3,000 kW
3,218 - 4,023 HP

Speed on grade:
Diesel 14.9 km/h / 9.3 mph
Trolley 23.9 km/h / 14.9 mph
*Effective grade 10%

Overview

T 284



Engine Power
2,400 - 3,000 kW / 3,218 - 4,023 HP



Gross Vehicle Weight
617 tonnes / 680 tons



Nominal Payload
375 tonnes / 413 tons

Unmatched cycle time

- Class-leading payload
- Perfect match with Liebherr excavators
- High speed on grade
- Fast dump cycle times

Experienced reliability

- Proven design
- Solid state Liebherr Litronic Plus AC drive system
- Extended component lifetime

Perfect truck shovel match

Backhoe

- 6 pass loading of 600t class excavator
- 5 pass loading of 800t class excavator

Face Shovel

- 7 pass loading of 600t class excavator
- 6 pass loading of 800t class excavator



User-centric design

- Enhanced driving comfort
- Safe work environment
- Ground level service access

Versatile for all applications

- Autonomous solutions
- High altitude kit
- Cold climate
- Sound attenuation kit

Sustainable Performance

- US EPA Tier IV engine option
- Complete Liebherr powertrain solution
- Trolley Assist System option

Performance & sustainability

Powertrain

up to 3,000 kW

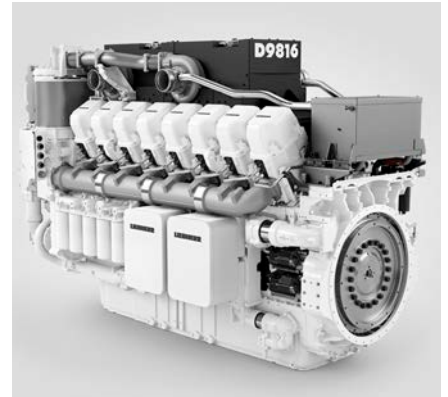




Liebherr D9816 engine

The Liebherr D9816 engine is highly responsive and reactive by design, providing superior performance and required horsepower for increased productivity. By utilizing in-house key components the D9816 delivers outstanding performance and fuel consumption.

2,700 kW / 3,621 HP at 1,800 RPM
16 cylinder V-engine
Displacement 83 l / 5,065 in³



Litronic Plus AC Drive System

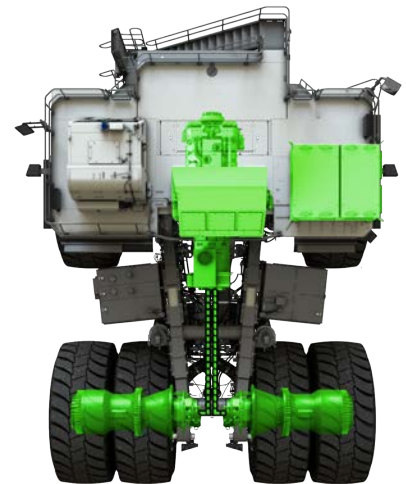
Designed, developed and built by Liebherr, the Litronic Plus AC Drive system maximizes the electrical power conversion into mechanical torque, increasing the acceleration and minimizing energy consumption.

High performance

- Maximized electrical power conversion into mechanical torque
- Lower weight vs mechanical drive
- High speed on grade and higher rim pull forces

Electric drive vs mechanical drive

- Reduced maintenance costs and total oil consumption
- Reduced cost of additional cooling system for downhill loaded operations
- Reduced service time



Complete Liebherr powertrain

With the integration of the Liebherr D98 engine series, Liebherr provides complete vertical integration of the powertrain for its large and ultra-class trucks.

Productivity

Hauling capacity

Class leading payload

The T 284 has the largest payload capacity in its class, moving more tonnes per hauling cycle. Pairing the 375 t / 413 ton Liebherr T 284 with the Liebherr R 9800 hydraulic excavator offers a versatile and productive mining fleet. The fast swing of the R 9800 and perfect bucket pass match to the T 284 will load it with five bucket passes providing quick loading times that lead to higher productivity.

Unmatched cycle times

The Liebherr T 284 offers consistent performance, powered by the most powerful engine in its class at 3,000 kW/ 4,023 HP along with the efficient Liebherr Litronic Plus AC Drive System. With the advanced hydraulic design and fast cycle times, the T 284 moves more material in less time. Designed with safety in mind, the T 284 is equipped with 4,500 kW/6,035 HP dynamic braking power to operate efficiently on downhill hauls.

High speed on grade

Speed on grade is a major contributor to fast cycle times. The Liebherr Litronic Plus AC Drive System improves cycle time efficiency by providing consistent uphill speed, differing from traditional mechanical drive trucks that require shifting of gears.



Lowest EVW
resulting in faster cycle times



Perfect pass match with Liebherr excavators

R 9800



Backhoe
47.5 m³ / 62.1 yd³
5 passes



Face shovel
42 m³ / 54.9 yd³
5 passes

R 9600



Backhoe
37.5 m³ / 49.1 yd³
6 passes



Face shovel
37 m³ / 48.4 yd³
6 passes



Comfort Operator environment



User-centric design

Liebherr is committed to designing mining trucks that operators want to drive. The ergonomic design of the T 284 cab creates a safe, comfortable, and productive environment for operators. The cab provides maximum visibility utilizing tinted safety glass windows, and is certified to protect against roll-over and falling-object incidents. The integrated HVAC system provides comfort in all temperature extremes.

Liebherr mining trucks are equipped with ladders and platforms that allow easy engine access. The ground level maintenance areas provide safe and efficient service access.



Cab features

- Spacious interior
- Ergonomic layout
- Large panoramic windshield
- Integrated color touchscreen
- Pressurized cab to prevent dust penetration



Active intelligent control systems

The Liebherr active intelligent control systems provide safety for the operator:

- Four wheel speed-sensing to optimize traction performance
- Slip / slide control to reduce torque on wheels which rotate faster and provide on-demand torque requirements
- Traction control in which torque is automatically adjusted to the rear wheels to maximize traction when cornering accelerating from a standstill, or traveling on wet or icy roads
- Anti-roll back operable in forward and reverse
- Operator adjustable dynamic braking speed limit control for downhill operations
- Configurable speed limits for loaded/unloaded states
- Configurable speed inhibitors for truck overload, reverse and dump body raise



Double A-arm suspension

- Keep optimal ground contact of the tire within the whole suspension stroke
- Reduce tread and wear with optimized camber and toe angle
- Improve operator ride quality and reduce overall body vibration exposure

Next generation mine automation

Get the best out of your Liebherr Mining truck fleet

Liebherr autonomous solutions deliver the next generation of onboard intelligence, with reduced dependency on site infrastructure and centralized supervisory systems. Together with vehicle-to-vehicle technologies, our smart autonomous solutions provide onboard obstacle avoidance and load area path planning capabilities for optimization of traffic flow.



Higher level of safety



More flexibility with seamless integration



Smart autonomous solutions



Liebherr autonomous solutions provide production advantages

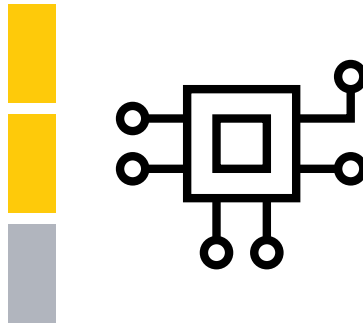


Flexible scope of supply



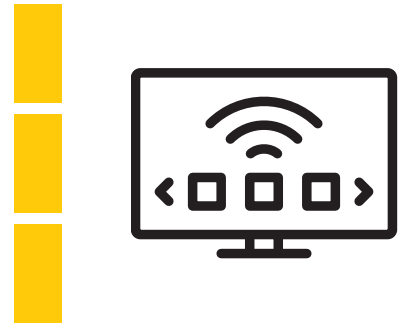
Autonomy Ready kit

Machine designed and configured with drive-by-wire capability



Autonomy kit

Autonomous Machine equipped with onboard perception and robotics - capable of integration via an "open protocol" to traffic management solutions



Complete solution

Complete autonomous haulage solution integrated with traffic and fleet management systems

Interoperability with other autonomous assets

In terms of Automation, Liebherr supports and promotes the development of an Open and Interoperable Mine Autonomy Platform that enables:

- Vendor agnostic control of mixed fleets of OEM robotic machines
- Use of multiple onboard autonomous solution options across multiple OEM models
- Trucks with different autonomous solutions working together supported by a single central control system via the use of standardized "Open Protocols"

Interoperable Mine Autonomy will provide customers the freedom to choose preferred combinations of equipment, onboard autonomous solutions and central control platforms.



Efficiency

Trolley Assist System



1.8x faster

Trolley vs Diesel speed on grade [10%]

35 - 70%

Less kt CO₂ emissions and fuel consumption*

*Based on 1-3 km / 0.6-1.9 mi trolley line (25 - 80% of entire cycle)

Low emissions solution

The Liebherr Trolley Assist System is an effective first step on the road to zero emission mine sites of the future. Utilizing an overhead pantograph to connect the electric-drive system to the electrical network. The Trolley Assist System offers:

- Increased truck fleet productivity, or reduction in fleet size while maintaining yearly production, versus standard trucks
- Reduction of fuel consumption from 50 l / 13.2 gal to 2.5 l / 0.7 gal of diesel for a 1 km / 0.6 mi trolley run
- Reduction of carbon footprint by decreasing the truck fleet CO₂ emissions

Zero emissions ready

Liebherr AC drive technology readily supports future Zero Emissions technologies. Our approach is aligned with the Liebherr Company values to be environmentally responsible by having a strong Zero Emission Strategy built on Liebherr embedded core competencies. Liebherr can offer today a solution to their mining customers to start their Zero Emission Journey.

Increased productivity

Liebherr has developed the Trolley system in which trucks are able to operate at higher speed on grade and reduce cycle times. By augmenting speed on grade up to 24 km/h / 15 mph, the Trolley Assist System maximizes productivity, offering higher production per hour.

Proven field experience

Liebherr delivers proven field experience with T 284 units fitted with the Trolley Assist System already in operation on different sites.

One-stop shop

Liebherr has developed strategic partnership agreements to support their customers with a complete solution.



Trolley Assist System

- Option for new truck units, all models
- Compatible and performance-enhancing in combination with diesel powertrain
- Supports zero emissions powertrain development

Agnostic approach on power supply and storage

- Diesel engine, batteries, hydrogen, ammonia, and methanol

Liebherr AC Drive System

- Maximize electrical power conversion into mechanical torque
- Deliver high speed on grade and higher rim pull forces

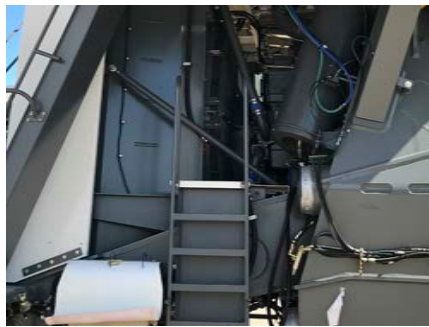
Protecting your most important assets

Safety



Operator safety

The T 284 is fitted with an ergonomic cab that creates a safe and comfortable environment for the operator. The cab provides maximum visibility utilizing tinted safety glass windows and is certified for roll-over and falling-object protection.



Safety in maintenance

The T 284 is equipped with ladders and platforms allowing easy engine access. The working heights of maintenance areas provide safe and efficient access.



Fire prevention features

Lower fire risk by:

- Routing piping and hosing away from hot areas and ignition points
- Encapsulating and insulating exhaust pipes as standard
- Insulating turbos and exhaust manifolds as standard



Stability and control

The innovative Traction Control System is designed and developed exclusively for Liebherr mining trucks. This advanced system improves steering and truck stability, extending tire life even in the most challenging conditions.



LED lighting system

The truck is easily visible at night or in extremely dusty working conditions thanks to the LED lights located throughout the truck.

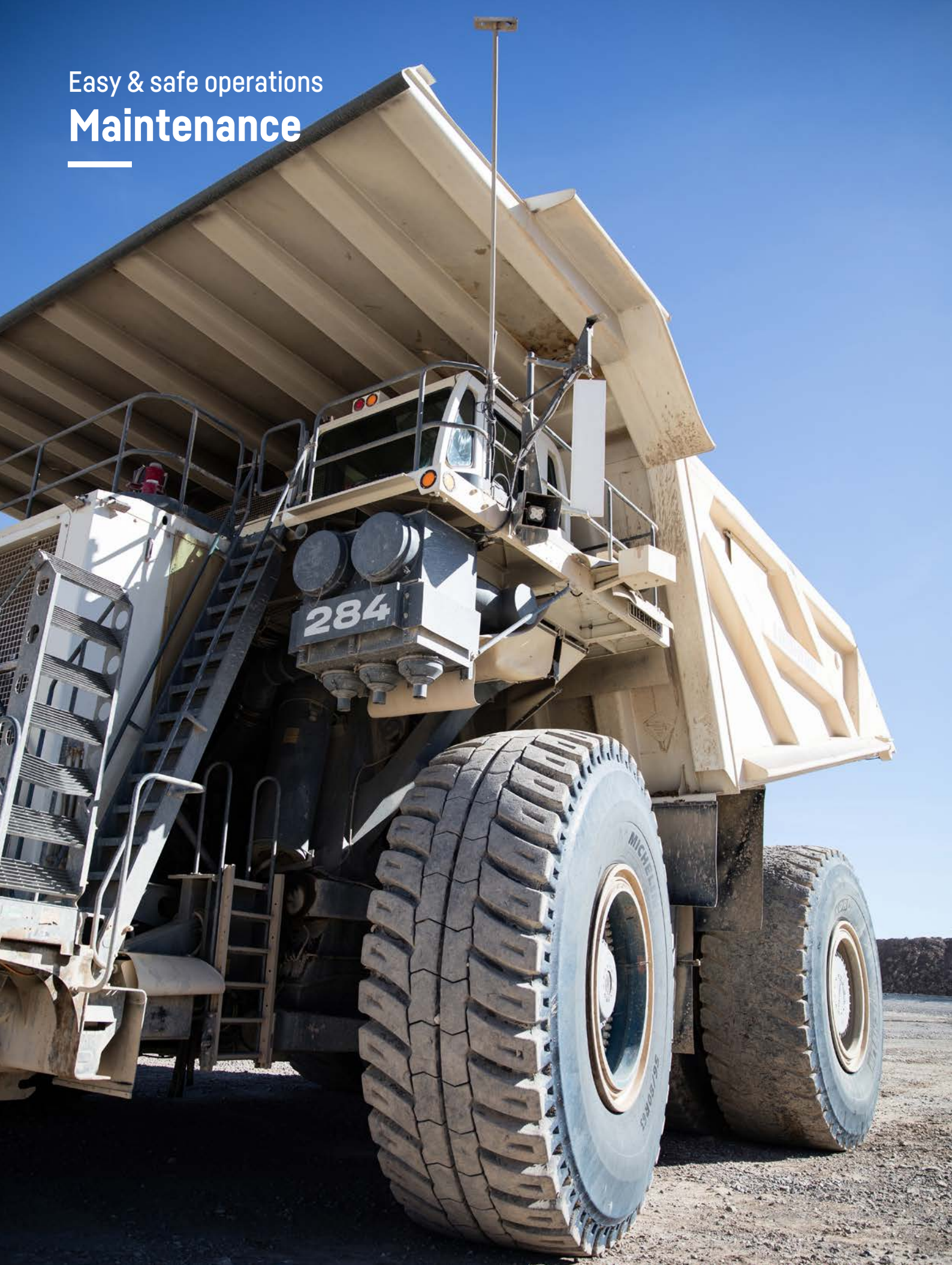


Safety in operation

A safe work environment is critical for every mine site, thus the T 284 offers:

- Payload overload warnings
- Certified steering and braking accumulators
- Engine shutdown switches in cab and at ground level

Easy & safe operations
Maintenance



Ground level access

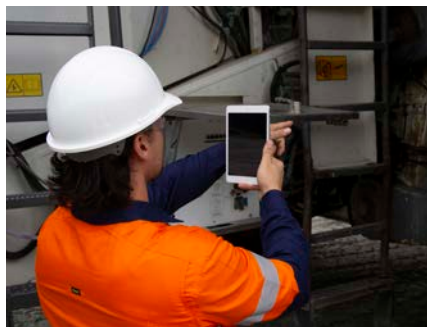
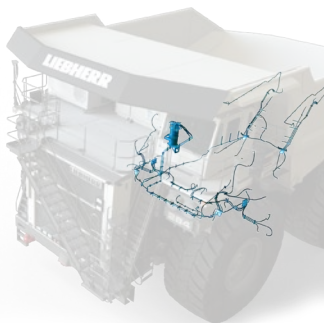
The T 284 has been designed for easier maintenance and quicker servicing. The central service station is located on the fuel tank and provides easy accessibility for maintenance as standard equipment. Refill and separate drain points of the T 284 are easily accessed from the ground with fast couplings and depressurized valves.



Filter and manifolds access

Central service station with quick disconnects

Service door on axle box for inspections



Lubrication system

- Test mode allows all injectors to be easily checked to verify they are working properly
- Automatic grease system allows sufficient lubrication of critical pivot points
- System controller offers programmable (5-30 min) lubrication of critical pivot points

Digital Services

- Connectivity enabled services utilize data generated on the machine to provide insights and recommendations required to drive fleet performance
- Enables the integration of Liebherr's technologies, engineering knowledge, and mining expertise with customer technology landscape

Easy and fast service

- Easy access to check brake component wear
- Service door on axle box for inspections
- Control box with multiple access doors and swing out modules

Long-lasting performances

Reliability

1 million
operating hours experience



Superior structure

- Durable, lightweight frame with class leading payload capability
- Designed according to international weld fatigue guidelines
- Fabricated according to American Welding Society standards
- Robotically welded
- Strategically located cast components and hollow box rails with fully welded internal stiffeners





Vertical Integration

As an Original Equipment Manufacturer (OEM), Liebherr has built an industry reputation as strong as the high quality mining components and truck that we develop and produce. The T 284 haul trucks has a proven design with the integration of the robust and reliable mining-optimized components developed and manufactured by Liebherr, ensuring the highest reliability and best performance.

Mining Know-How

Liebherr mining trucks are conceptualized, designed and built for the mining industry. Our mining equipment and customer service are dedicated to our customers; their success is our success.

To meet customer and industry requirements, Liebherr engineers use specific 3D simulation solutions such as Finite Element and Fatigue Life Analysis.

Solid state AC drive system

- Liquid cooled for reduced footprint and maintaining optimum component temperatures
- Complete drive system designed and manufactured by Liebherr for use in the most demanding mining environments



Quality: the Liebherr Trademark

Providing reliable machines for customer mine sites is the highest priority for Liebherr Mining. The engineering expertise and commitment to continuous improvement combine to make Liebherr mining equipment industry-leading machines. The T 284 is a robust solution with proven design, with 1 million operating hours.

Technical Data

Engine

Standard	
Model	MTU 20V4000 C22
Type	V configuration, 4-cycle, water-cooled
Aspiration	Single-stage turbocharged and aftercooled
Air cleaner	2 x dry-type, double element, pre-cleaner, automatic dust ejector, electronic restriction monitor
Lubrication system (method)	Pressurized by internal pump
Lubrication system (filtration)	Centrifugal oil filtration
Tier rating	Available in fuel-optimized (FO) mode
Engine speed	1,800 rpm
Gross power - ISO 3046-1	2,720 kW / 3,648 HP
Number of cylinders	20
Bore	165 mm / 6.5"
Stroke	210 mm / 8.3"
Displacement	89.8 l / 5,490 in ³
Starting	Electric
or	
Option A	
Model	Liebherr D9816
Type	V configuration, 4-cycle, water-cooled
Aspiration	Single-stage turbocharged and aftercooled
Air cleaner	2 x dry-type, double element, pre-cleaner, automatic dust ejector, electronic restriction monitor
Lubrication system (method)	Pressurized by internal pump
Lubrication system (filtration)	Spin-on filter canisters with centrifugal bypass filtering
Tier rating	Available in fuel-optimized (FO) mode
Engine speed	1,800 rpm
Gross power - ISO 3046-1	2,700 kW / 3,621 HP
Number of cylinders	16
Bore	175 mm / 6.9"
Stroke	215 mm / 8.5"
Displacement	83 l / 5,065 in ³
Starting	Electric
or	
Option B	
Model	MTU 20V4000 C23L
Type	V configuration, 4-cycle, water-cooled
Aspiration	Single-stage turbocharged and aftercooled
Air cleaner	2 x dry-type, double element, pre-cleaner, automatic dust ejector, electronic restriction monitor
Lubrication system (method)	Pressurized by internal pump
Lubrication system (filtration)	Centrifugal oil filtration
Tier rating	Available in fuel-optimized (FO) mode
Engine speed	1,800 rpm
Gross power - ISO 3046-1	3,000 kW / 4,023 HP
Number of cylinders	20
Bore	170 mm / 6.7"
Stroke	210 mm / 8.3"
Displacement	95.4 l / 5,822 in ³
Starting	Electric

* Consult factory for other engine options

Electric Drive System

Control system	Liebherr Litronic Plus AC drive system with IGBT technology
Control box	Liquid cooled power components, pressurized cabinet
Traction control	Litronic Plus traction control system, computer controlled in propel and dynamic braking, forward and reverse, all-wheel speed sensing
Main alternator	AC brushless, direct drive, forced air cooling
Wheel motors	Litronic Plus AC induction motors, forced air cooling
Gear ratio	43.7:1
Max. travel speed	57 km/h / 36 mph
Cooling system	Variable speed AC motor with twin impeller radial cooling fans
System voltage level	1,600 V AC / 2,000 V DC
Final drive type	Planetary

Braking Systems

Electric dynamic braking, forced air over quiet stainless steel grid resistors with dry disc service and secondary hydraulic braking system.	
Electric dynamic braking capacity	4,500 kW / 6,035 HP
Dynamic braking type	Electric
Dynamic braking speed control	Operator-adjustable, automatically limits truck speed on downhill grade when set
Service brake type - front	Inboard single disc, 5 x calipers per disc, wheel speed
Service brake type - rear	Dual discs per side, single caliper per disc, armature speed
Parking brake type	Spring-applied, pressure-released, single caliper per each rear disc
Adjustable speed limits	Configurable speed limits for empty and loaded, adjustable for site requirements
Brake certification	ISO 3450:1996
Filtration cleanliness level	15/13/11 per ISO 4406:2021

Steering

Ackermann center point lever system, full hydraulic power steering with accumulator safety backup. Isolated from dump hydraulic system. Two double-acting hydraulic cylinders.	
Filtration cleanliness level	15/13/11 per ISO 4406:2021
Steering standards	ISO 5010:2007
Turning radius - tire centerline	17.2 m / 56' 5" (ISO 5010:2007)
Vehicle clearance radius	19.9 m / 65' 5" (ISO 5010:2007)
Steering angle, left or right	+/- 18°

Hoist System

Two double-stage, double-acting hoist cylinders with inter-stage and end cushioning in both directions. Electronic joystick with integrated engine high-idle switch and full modulating control in both extend and retract.	
Dump angle	49° (45° with optional kick-out switch)
Dump cycle time	50 sec.
Body raise time – high idle	32 sec.
Body power down – high idle	18 sec.
Remote dump	Standard – quick disconnects for external power dumping accessible from ground level
Filtration cleanliness level	15/13/11 per ISO 4406:2021

Suspension System

System	
Front	Double A-arm with inclined king pin pivot, spindle, and nitrogen over oil suspensions with integral damping
Rear	Three bar linkage comprised of triangular upper link plus two bottom drag links and nitrogen over oil suspensions with integral damping
Rear axle oscillation	9°

Tire / Rims

Tires	59/80 R63
Rims	44" x 63" bolt on rims

Frame

Closed box structure with multiple torque tube cross-members, internal stiffeners and integrated front bumper. Steel castings are used in high stress areas.	
Welding	Frame rails welded inside and out with ultrasonic inspection aligned with AWS D1.1

Operator's Cab

Deluxe cab with integrated ROPS, FOPS, and double wall design for optimum insulation. Fully adjustable air suspension operator seat with double lumbar support and full-size second seat for training requirements. Operator comfort controls include a tilt steering wheel, heater, defroster and standard AC. Real-time vital truck information is clearly displayed to the operator and also recorded for download.	
Standards compliance	ISO 3449:2005 (Level II), ISO 3471:2008
HVAC capacity	8.4 kW

Weights

Nominal payload	
Standard	363 t / 400 ton
Optional ¹⁾	375 t / 413 ton
Gross vehicle weight (GVW)	
Standard	605 t / 667 ton
Optional ¹⁾	617 t / 680 ton
Empty vehicle weight (EVW)	
	242 t / 267 ton
Chassis weight²⁾	
	200 t / 220 ton
Body³⁾	
	42 t / 46 ton
Front axle weight distribution	
Empty (%)	50%
Loaded (%)	33%
Rear axle weight distribution	
Empty (%)	50%
Loaded (%)	67%

¹⁾ Subject to tire capacity, LMD installation and customer application approval

²⁾ Standard truck (less options), tires and rims, 100% fluids (fuel tanks, hydraulic tank, gears, suspensions, crankcase, coolant, grease and charged accumulators)

³⁾ Actual dump body weight will vary based on customer application and supplier design

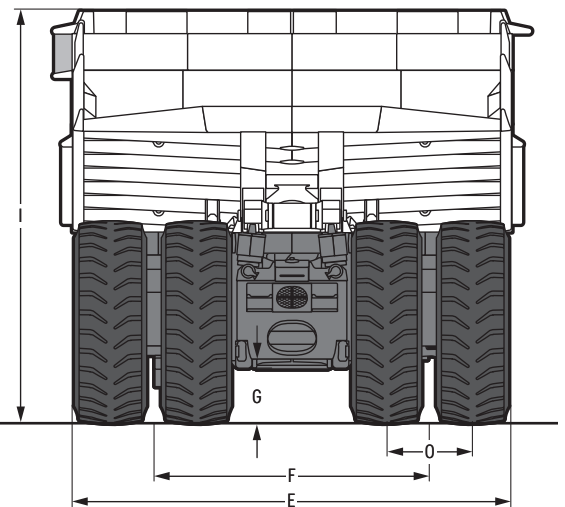
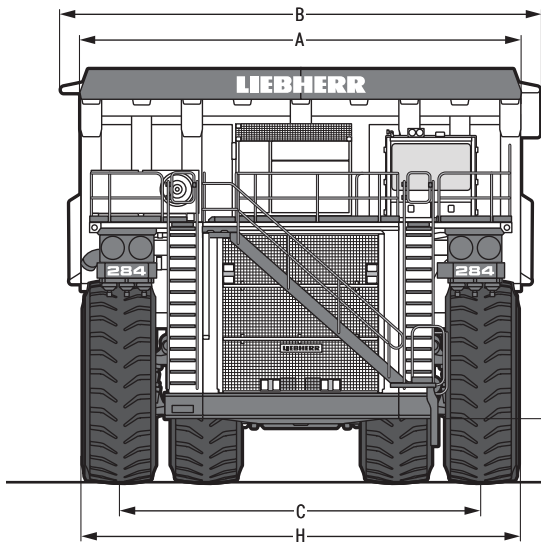
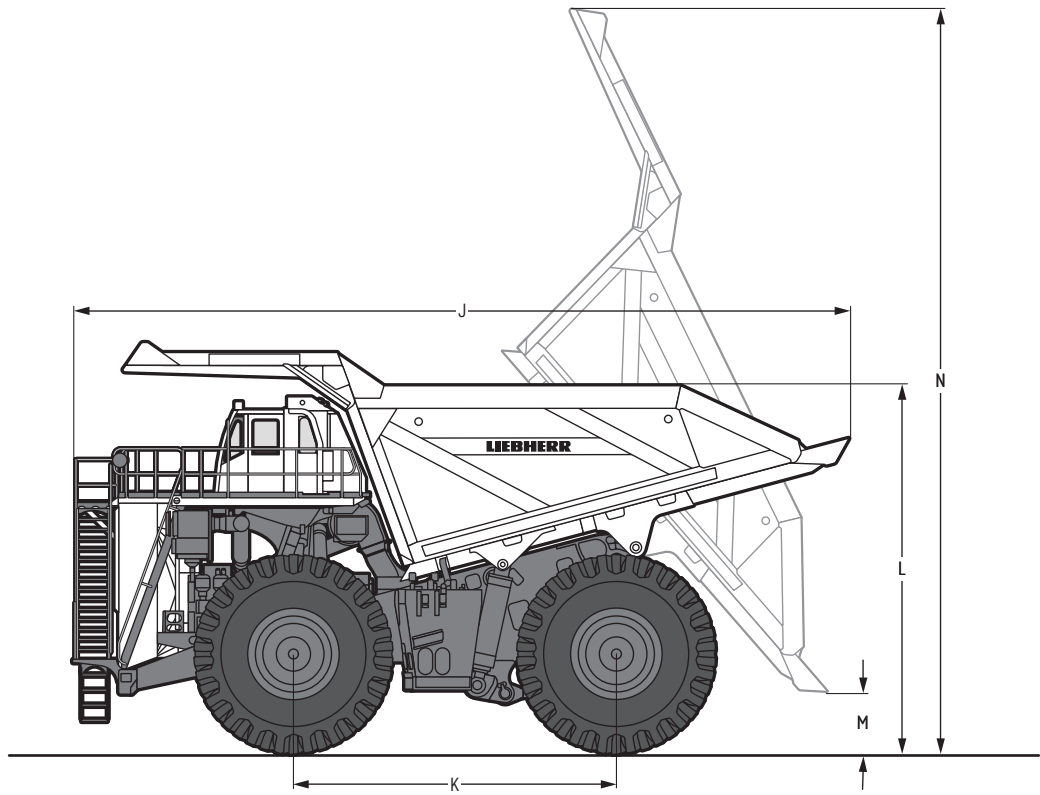
Fluid capacities

Fuel tank	
Standard	5,351 l / 1,414 gal
Optional	6,397 l / 1,690 gal
Brake & steering oil	
Tank	924 l / 244 gal
System	1,060 l / 280 gal
Hoist oil	
Tank	1,302 l / 344 gal
System	1,514 l / 400 gal
Cooling system	
Standard engine	719 l / 190 gal
Option A engine	694 l / 183 gal
Option B engine	666 l / 176 gal
Engine oil	
Standard engine	380 l / 100 gal
Option A engine	520 l / 137 gal
Option B engine	335 l / 88 gal
Rear wheel drive oil	
	2 x 280 l / 74 gal
Front wheel oil	
	2 x 60 l / 16 gal
Grease tank	
	55 kg / 120 lb
Pump drive oil	
	8.5 l / 2.2 gal

Body

Body sizes are custom designed to fit customer requirements and specific applications. Please contact factory for options.

Dimensions

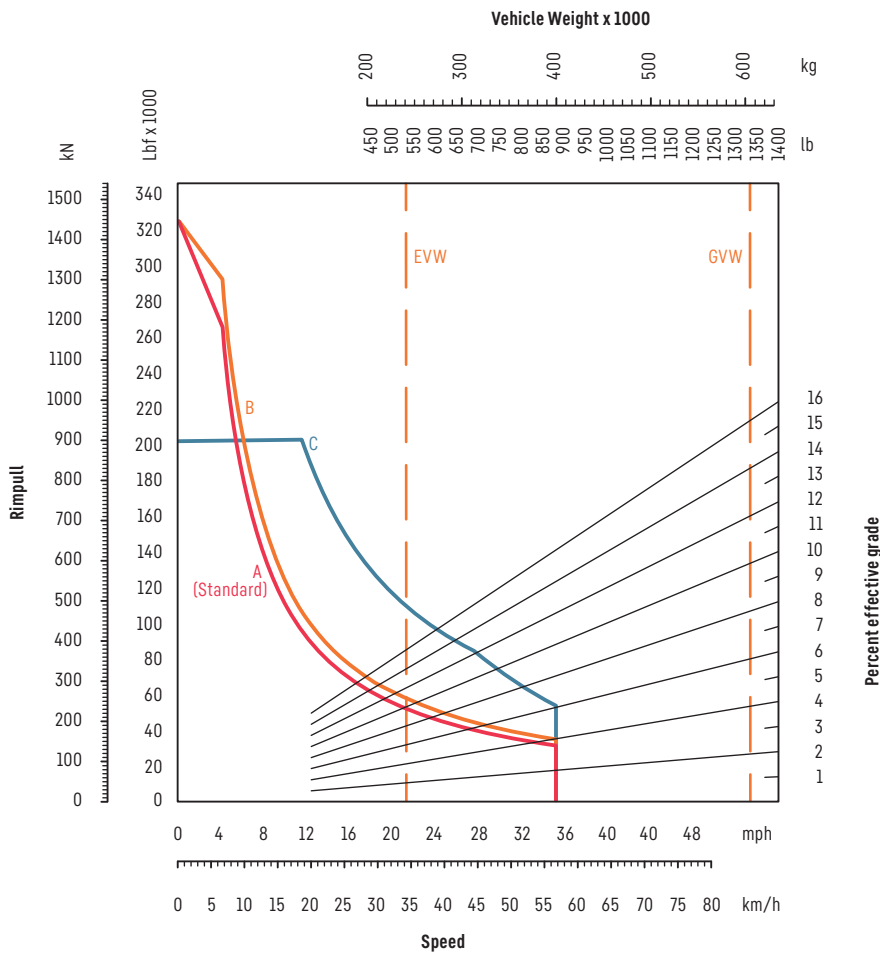


		mm / ft in
A	Overall canopy width*	8,891 / 29' 2"
B	Overall truck width (operating width)*	9,679 / 31' 9"
C	Front track width	7,366 / 24' 2"
D	Bumper to ground clearance	1,240 / 4' 1"
E	Overall rear dual tire width	9,011 / 29' 7"
F	Rear track width	5,766 / 18' 11"
G	Rear axle clearance	1,057 / 3' 6"
H	Overall front tire width	8,833 / 29' 7"

		mm / ft in
I	Front canopy height*	7,787 / 25' 7"
J	Overall truck length*	15,690 / 51' 6"
K	Wheelbase	6,553 / 21' 6"
L	Loading height*	7,033 / 23' 1"
M	Dump clearance*	1,249 / 4' 1"
N	Overall height - body raised*	15,526 / 50' 11"
O	Dual spacing	1,779 / 5' 10"

*dump body specific

Performance Curves



Performance Chart Parameters

Gross power	(Standard): 2,720 kW / 3,648 HP (A): 2,700 kW / 3,620 HP (B): 3,000 kW / 4,000 HP
Net power	(Standard) 2,574kW / 3,452HP (A): 2,551 kW / 3,422 HP (B): 2,852 kW / 3,825 HP
Tire size	59/80 R63
Gear ratio	43.7 to 1
Reference curves	(Standard): Propulsion 2,720 W / 3,648 HP (A): Propulsion 2,700 kW / 3,620 HP (B): Propulsion 3,000 kW / 4,023 HP (C): Dynamic Braking

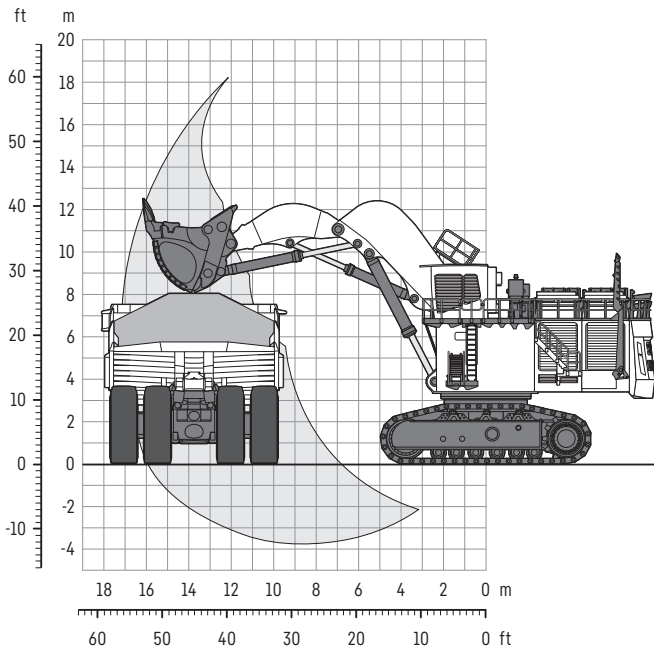
Note: The propulsion curve is calculated using net horsepower, therefore site specific and climatic variables will have an effect on the parasitic loss estimations.

Truck Match

Liebherr excavator and configuration		R 9600 BH	R 9600 FS	R 9800 BH	R 9800 FS
Standard bucket*	m ³	37.5	37	47.5	42
	yd ³	49.1	48.4	62.1	54.9
Number of passes	Standard / Optional	6	6	5	5

* for 1.8 t/m³ material density

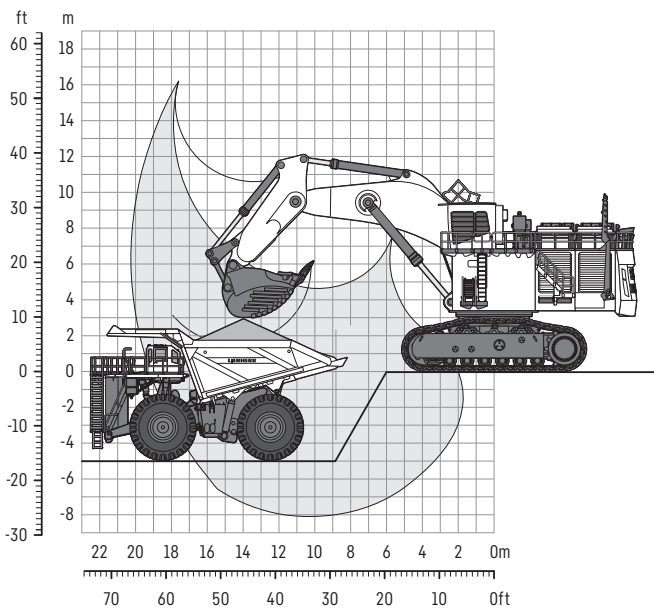
Loading Charts



T 284 Mining Truck

loaded by the Liebherr R 9600 hydraulic excavator in face shovel configuration

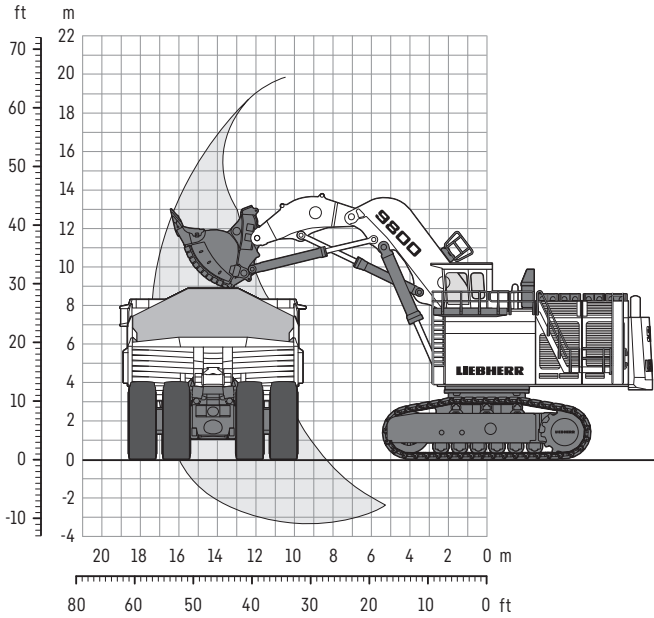
Maximum dump height	12.4 m / 40' 8"
Truck loading height	7 m / 23' 1"
Passes to fill (given 1.8 t/m ³ material density)	6 passes



T 284 Mining Truck

loaded by the Liebherr R 9600 hydraulic excavator in backhoe configuration

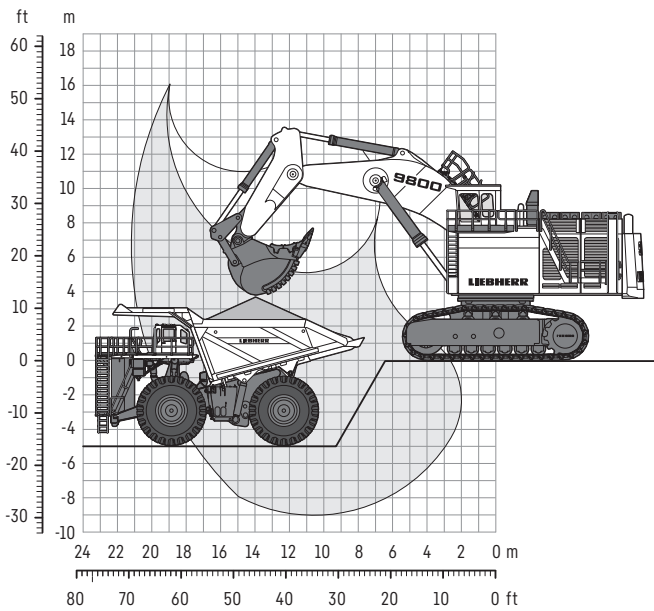
Maximum dump height	10.6 m / 34' 9"
Truck loading height	7 m / 23' 1"
Passes to fill (given 1.8 t/m ³ material density)	6 passes



T 284 Mining Truck

loaded by the Liebherr R 9800 hydraulic excavator in face shovel configuration

Maximum dump height	12.4 m / 40' 7"
Truck loading height	7m / 21' 1"
Passes to fill (given 1.8 t/m ³ material density)	5 passes



T 284 Mining Truck

loaded by the Liebherr R 9800 hydraulic excavator in backhoe configuration

Maximum dump height	10.9 m / 35' 9"
Truck loading height	7 m / 21' 1"
Passes to fill (given 1.8 t/m ³ material density)	5 passes

Standard Equipment

General

Access – 45° diagonal stair (driver's side access) with two side ladders with flexible steps

Accumulators – certified – steering (1 x 174 l/46 gal), front brakes (1 x 27 l/7 gal and 1 x 4 l/1 gal), rear brakes (1 x 7.6 l/2 gal and 1 x 4 l/1 gal), brake and steering unloader (1 x 7.6 l/2 gal)

Axle box – dual entry service access, rear air exhaust

Catwalk – right and left side of engine

Centralized service station – ground level, driver's side, with non-pressurized high flow fueling system

Color – white / gray

Fall protection – multiple personnel harness anchor points

Fluid sampling – multi-sampling ports close to component

Grease system – automatic lubrication system

Heat exchangers – 1 x hoist system, 2 x rear wheel drive, 1 x fuel

Hydraulic filters – high pressure and return line brake, steering and hoist w/electronic monitoring

Jacking points – labeled

LED payload display – 2 x superstructure mounted

Liebherr Mining Data (LMD)*

Mud guards – front and rear of hydraulic and fuel tanks, under superstructure and in front of battery disconnect box

Park brake – spring applied pressure release

Recovery system – auxiliary connectors for brake, steering and hoist "buddy system"

Reverse alarm

Rock ejectors – bar type

Service access ladders – right and left engine bay ladders w/ rubber flexible steps

Shut off valves – brake and steering and hoist w/electronic monitoring

Sight gauges – brake, steering, and hoist oil, fuel, coolant and front wheel hubs

Towing points – front and rear, labeled

* Subscription fee required

Engine

Air cleaner dust ejectors – automatic

Air cleaners – two units with 2 elements per unit with electronic restriction monitoring in cab

Exhaust – side-mounted mufflers with insulated exhaust pipes

Fan clutch – variable speed, temperature controlled

Fuel / water separator

Multi-point exhaust temperature monitoring system (ETMS)

Oil centrifuge filter

Prelube – pre-start engine oil pressurization to reduce dry engine turnover

Primary and secondary fuel filters

Radiator – L & M (Mesabi) flexible core with center-mounted level gauge on front face of surge tank

Roll out power module – radiator, engine and main alternator mounted on roll out subframe

Turbo thermal protection

Starter – electric

24 V Electrical

Batteries – 6 x 12 Volt, (3 banks of 2), 1,425 CCA each at -18 °C (0 °F), 1,755 CA at 0 °C (32 °F)

Battery box lockouts – ground level, battery (2 pole), propel and starter (single pole)

Electrical system – 24 VDC with circuit breaker protection

Engine stops – in-cab and ground level

AC Drive System and Controls

Anti roll-back – in forward and reverse

Brakes – dynamic braking w/automatic hydraulic brake blending and hydraulic service brakes

Gear ratio – 43.7:1

Grid box – resistor grid control system and variable AC grid box blower motor

Litronic Plus control box – IGBT technology, liquid cooled, pressurized, filtered air inlet, ground fault warning and detection

Rear wheel drive – Liebherr gears and wheel motors

Traction control system with four-wheel speed sensing

Lighting

Access lights – 3 ladder, 1 superstructure

Brake warning lights (cab mounted external) – forward facing dynamic brake and service brake (LED)

Headlights – 4 x high beam, 4 x low beam (LED)

Reverse lights – 2 x axle box, 1 x driver's side superstructure (LED)

Service lights – 4 x engine bay, 2 x axle box (LED)

Truck lights – marker / clearance, tail, brake, dynamic brake and turn indicators (LED)

Operator Environment

Climate control – combined heater and air conditioner w/ multiple air ducts and filtered air

Cup holder – 2 center console mounted

Diagnostics interface – CANopen, Ethernet

Display screen – dimmable color touch screen w/ operator information and warning

Dual overhead LED dome lights that illuminate when the door is opened

Integrated ROPS (ISO 3471:2008) and FOPS (ISO 3449:2005, Level II)

Mirrors – drivers side (flat), offside (convex) and access ladder (convex)

Power outlets – 12 VDC and 115 VAC

Power windows – driver and passenger

Pressurized cab – with fan on

Radio ready – wiring, speakers and DIN fitting

Seat belt – high visibility orange, 3 point, 50 mm wide

Seats – fully adjustable driver and passenger heated seats with air suspension

Speedometer – km/h / mph

Steering wheel – tilting and telescopic with horn and wiper control

Storage shelves and storage compartment located behind seats

Sun visors – 2 windshield sun visors and 1 driver's door pull down blind

Windows – tempered and tinted glass 6.3 mm

Windshield – laminated safety glass and tinted 9.5 mm

Wipers – two speed electric and intermittent with self park and dual wiper arms

Optional Equipment

General

Access stair – powered retractable stair to main diagonal stairway
Adjustable access ladders – engine bay
Automatic fire suppression system
Color – Liebherr yellow / gray
Dump body options – liners, tailgates, rock deflectors, 45° limit kick out switch
Multiple language decals
Rear view camera
Rims – double gutter
Undercarriage protection – front belly pan, fuel and hydraulic tank skid plates

Operator's cab

Centered dashboard gauge panel in metric or imperial
Radio AM/FM/CD/USB/MP3/Bluetooth

Engine

Engine "roll over" protection switch
EPA Tier 2 and Tier 4f certifications
Optional fuel tank 6,397 l / 1,690 gal
Quick fuel connector

Specific Solutions

Arctic package – diesel type engine coolant heater, heated mirrors, heated dump body exhaust, diesel fuel heater
Autonomy platform
Gear ratio – 37.33:1 and 53.33:1
High altitude package
Sound attenuation package
Trolley assist system

Lighting

Berm cornering lights (LED) – forward facing, superstructure mounted (DS and ODS)
Fog lights (LED) – 4 x bumper mounted
Grill illumination light (LED)
Hill cresting lights (LED) – 2 x top grill mounted
Overspeed light – externally mounted blue light on the top of cab
Park brake on/ truck in neutral warning light (LED) – externally mounted on top of cab
Reverse light (LED) – off driver's side superstructure
Truck ID light (blue LED) – diagonal staircase mounted

