

Optional Features



Mining Equipment

R 9100

LIEBHERR





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R 9100

Because every project is unique, Liebherr always strives to offer the best solution to meet customer needs. As a result, Liebherr has developed a large range of optional features available for mining excavators in order to maximize machine performance, reduce maintenance time, ensure continuous reliability or further improve operator safety and comfort. In all circumstances, customers can rely on the optional features to achieve their most challenging objectives.

Track Pads / Side Frames



Large 750 mm Track Pads

Removable Side Frames



Removable Side Frames

3-piece undercarriage allows for machine transportability if transported by train or through narrow transportation routes. «Hook & Key» system with horizontal bolting prevents torsion and reduce shear stress. (lead time on request)

Standard



Large 750 mm Track Pads

Using 750 mm track pads instead of the standard 600 mm track pads reduces the applied ground pressure without compromising machine mobility. Increasing track pad width increases the machine's range of use.

Standard

600 mm track pads

Rock Protection



Steel Grease Lines on Swing Ring

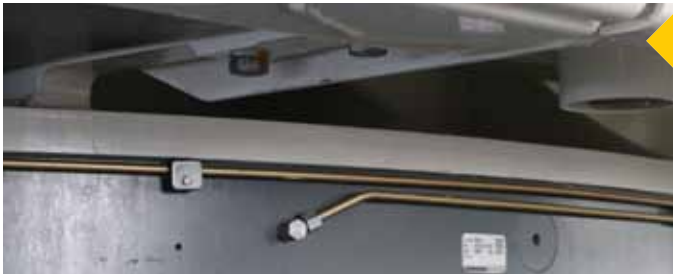
Rock Protection for Undercarriage Center Frame

Rock Protection for Idler Wheel



Rock Protection for Idler Wheel

The rock protection covers the idler wheel area at side frame extremity. The cover prevents material from accumulating between the wheel and the grease tensioner located inside of the side frame. This ensures suitable track chain tensioning to promote extended track-related component lifetime and machine mobility.



Steel Grease Lines on Swing Ring

This option consists of replacing standard flexible hoses located on the swing ring by steel grease lines. This device prevents grease lines from being prematurely damaged or ripped in case of front material projection, ensuring continuous and optimal greasing of the swing ring installation.



Rock Protection for Undercarriage Center Frame

The rock protection for undercarriage center frame prevents this related steel structure from being damaged or weakened in case of frontal collision. A robust steel plate is installed on the lower front part of the center frame to ensure protection against potential frontal impacts which may occur throughout the operation.

Rock Protection (Backhoe)



Piston Rod Guard
for Bucket Cylinder




Piston Rod Guard for Bucket Cylinder

The piston rod guard for the bucket cylinder consists of a robust steel protective cover sliding over the cylinder in order to provide maximum protection regardless of the cylinder position during movement. This system protects the cylinder from being damaged by falling rocks.

Standard



Mud Protection



Swing Ring Scrapers

**Heavy-Duty Travel Gear
for Muddy Applications**



Heavy-Duty Travel Gear for Muddy Applications

The HD travel gear seal system is recommended if machine is to be used in muddy environments. This feature avoids mud intrusion into the travel gearbox which can cause dysfunction or considerable reduction of transmission system efficiency.



Swing Ring Scrapers

The swing ring scrapers prevent grease lines from being damaged during machine rotation. The two steel plates are positioned at two opposite locations of the swing ring to efficiently remove accumulated thick sludge and rocks from this area regardless of the swing working angle.

Means of Access



Hydraulically Operated
45° Access Stair



Hydraulically Operated 45° Access Stair

The hydraulically operated 45° access stair provides operator and service staff with easy, fast, and safe access to the machine uppercarriage. Automatic descent of the access stair is ensured in case of emergency. 45° access stair is fitted with two actuation switches accessible from the uppercarriage or from ground level enabling operator to retract the stair once departing the machine (possible only during delayed engine stoppage as stair system requires running engine to retract). An electric-circuit breaker is accessible from the ground to secure the machine afterwards.

Standard

Fixed ladder



Operator Comfort

Cab Elevation 500 / 1200 mm

Swing Brake Control with Joystick

4-Point Seat Belt

Operator Comfort Package

Pre-Heating System for Cab





Cab Elevation 500 / 1200 mm

The optional cab elevation provides a panoramic view over the entire attachment and loading / unloading spot. Depending on truck size and bench height, the elevated cab may prove to be the best solution to promote efficient loading into the dump body. This contributes to reach expected level of productivity. 1200 mm cab elevation is a standard feature on R 9100 face shovel.

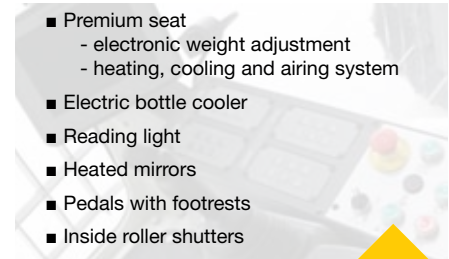
Pre-Heating System for Cab

The pre-heating system involves a water heating system to be installed in order to quickly generate warm air into the cabin. Using a programmer, this system enables to schedule the warm-up phase of the cab prior to operator arrival (between 1 to 120 minutes) which contributes to increase operator comfort in cold conditions.

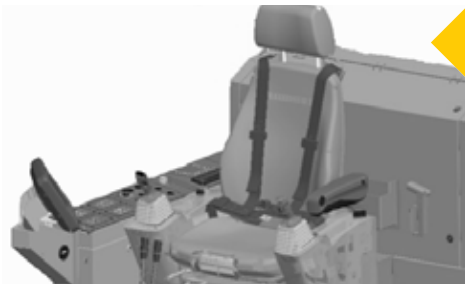


Swing Brake Control with Joystick

The swing brake control with joystick enables the operator to lock the machine rotation in the required angle by simply pressing a button. This is particularly useful when the machine is to be used on sloping ground as it allows the operator to concentrate on digging.



- Premium seat
 - electronic weight adjustment
 - heating, cooling and airing system
- Electric bottle cooler
- Reading light
- Heated mirrors
- Pedals with footrests
- Inside roller shutters



4-Point Seat Belt

The 4-point seat belt consists of two shoulder belts securing the operator's back and pelvis in the seat. The 4-point seat belt is particularly effective when the machine is to be used on a sloping ground for an optimal operator safety and comfort.

Operator Comfort Package

The operator comfort package is composed of various features that are intended to put the operator in the perfect position to work under the best possible conditions while reducing fatigue. Promoting ergonomic working conditions, the comfort package contributes to maximize operator working efficiency throughout the entire operation.





Operator Safety



Cab Pressurization

FOPS Top Guard

Front Protective Grid



Cab Pressurization (with or without HEPA Filtration)

The optional cab pressurization system prevents dust from entering into the cab. This system features a standard filter (filter class G1-G2: tested according to EN 779) and creates a microenvironment enabling the operator to breathe in a dust-free atmosphere even in extremely dusty environments. The HEPA filtration (filter class H12: tested according to EN 779) is appropriate when machine is to be used in environment with hazardous airborne particles or harmful gases.

FOPS Top Guard

The optional FOPS-approved (ISO 10262) top guard prevents cab roof from being damaged in case of falling rocks. The guard has been designed in order to provide maximum protection for the operator and is topped by a smooth and sloped plate to encourage easy removal of accumulated material.



Front Protective Grid

The approved (ISO 10262) optional protective front grid prevents windshield from being damaged by projected rocks. The grid has been designed and sized in order to maintain an optimal visibility over the loading / unloading spot while promoting operator safety.



Refilling Systems

Hydraulic-Powered Grease Refill Station

Preparation for Hydraulic-Powered Grease Refill Station Installation

Wiggins Fast Fueling System

Wiggins Fast Fueling System with Multiflo Hydro-Flo

Electric-Powered Refueling Pump

Ground Level Access Service Points with Wiggins Couplings



Wiggins¹ Fast Fueling System

The Wiggins fast fueling system enables service staff to safely refill the fuel tank from ground level, minimizing the required amount of time allocated for refuelling.

Wiggins¹ Fast Fueling System with Multiflo Hydro-Flo

The Multiflo Hydro-Flo cuts off fuel flow when the tank is full without the need for the fuel tank to rise in pressure leading to clogging action. This system works as a complementary feature to the Wiggins fast fueling system.

Standard

Refill points accessible from the upperstructure

1 Wiggins / Banlaw / other brand names available

Electric-Powered Refueling Pump

The electric-powered refueling pump enables direct aspiration of fuel from an auxiliary fuel tank. This system is particularly useful when the machine user does not have site access for service trucks equipped with a fuel filling pump. The electric-powered pump is directly connected to the electric circuit of the machine. Cut-off of fuel flow is automatic when tank is full.



Preparation for Hydraulic-Powered Grease Refill Station Installation

This option involves the machine to be prepared for the possible use of an hydraulic-powered grease refill station. Arrangement enables the grease refill device to be directly connected to the R 9100's low pressure piloting circuit. Connecting points are clearly identified ensuring a proper and fast connection.

Hydraulic-Powered Grease Refill Station

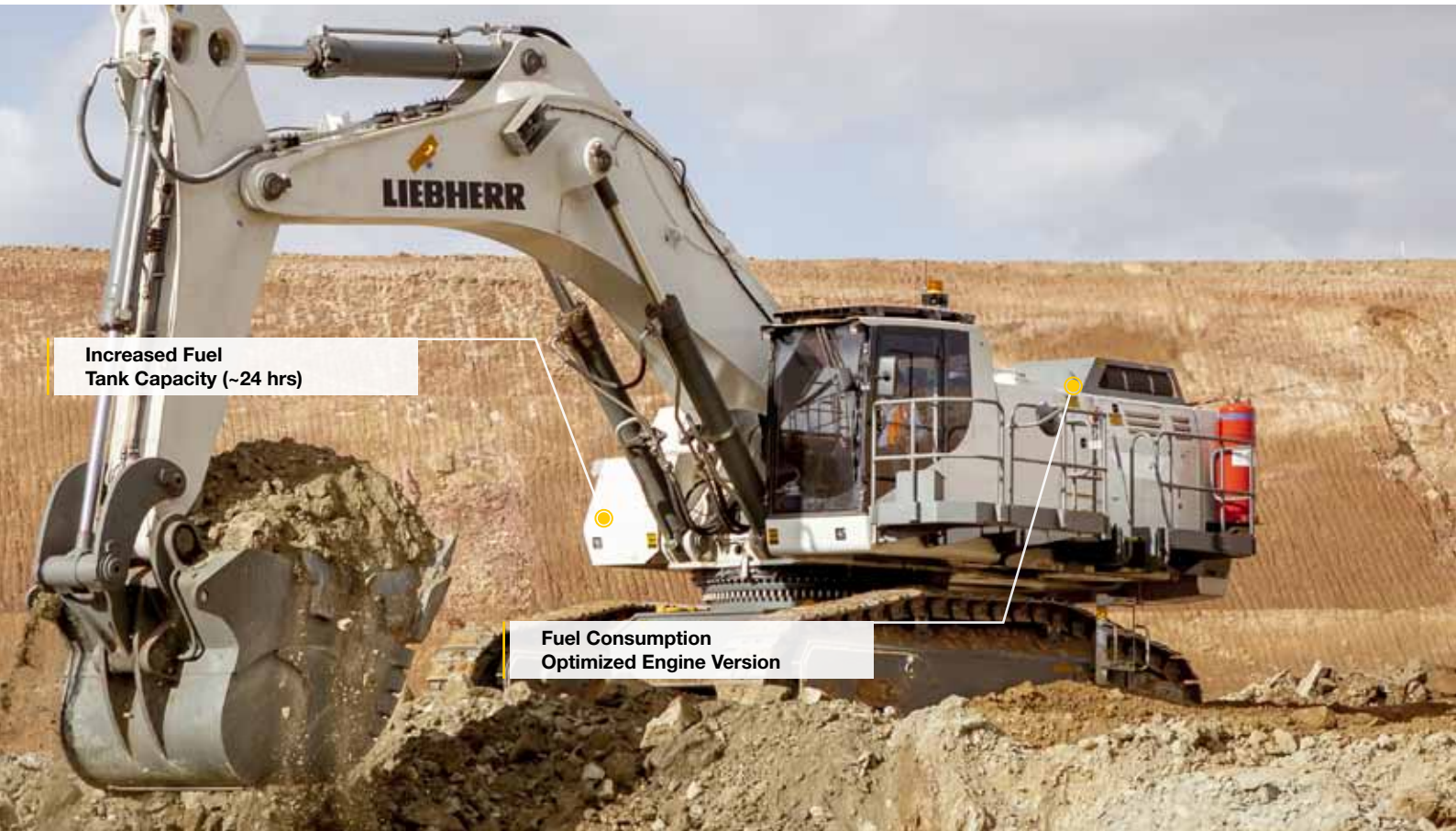
This device enables pumping of grease from an auxiliary drum to refill excavator's grease tank. This system is useful when machine user does not have a lube truck. Pump has to be connected to an external hydraulic circuit or directly to the excavator's circuit.



Ground Level Access Service Points with Wiggins¹ Couplings

This option involves the relocation of all main service points to the underside of the machine. Having service points directly accessible from the ground level encourages easy, comfortable and safe maintenance conditions for service staff. Service points are equipped with Wiggins couplings for fast refill.

Diesel Drive



**Increased Fuel
Tank Capacity (~24 hrs)**

**Fuel Consumption
Optimized Engine Version**



Fuel Consumption Optimized Engine Version

The optional fuel consumption optimized engine version involves the standard Liebherr D9512 diesel engine to be set in order to reduce average fuel burn by 3% and even 9% when Eco-Mode is selected (depending on use). The option enables to significantly minimize machine operating costs but the engine no longer complies with the USA/EPA Tier 2 standards.

Increased Fuel Tank Capacity (~24 hrs)

The enlarged fuel tank capacity enables an excavator equipped with a USA/EPA Tier 2 certified diesel engine to achieve ~24 hour non-stop operations instead of ~14 hours for a machine equipped with the standard tank. The fuel tank capacity is increased by 75 per cent (from 1,478 L to 2,580 L).



Lighting Systems



**Grid Protection for
Front Headlights**

Xenon / LED Lighting

**Additional Xenon / LED Lighting
With Timer (Access)**



Xenon / LED Lighting

The optional Xenon / LED lighting involves replacing standard halogen headlights with Xenon / LED headlights and increasing the total number of lighting points in the aim to further increase lighting system performance. Xenon / LED lighting is recommended if the machine is deemed to be frequently operated at night or in low light conditions.



Additional Xenon / LED Lighting With Timer (Access)

The additional Xenon / LED lighting is dedicated to improve visibility over the access stair and catwalk for safe access. Located at the left rear cab corner, the additional headlight can be controlled by the use of a dedicated switch when the machine is turned off. The timer maintains headlights on during three minutes after the machine has been turned off, enabling the operator to safely leave the machine within a reasonable period of time.

Grid Protection for Front Headlights

The protective metal grids prevent front headlights from being damaged in case of rock projections. Protective grids increase lifetime while ensuring a continuous operator visibility over the loading / unloading spot.



Arctic Packages



Arctic Package -20°C

Arctic Package -30°C

Arctic Package -40°C



Arctic Package -20°C / -30°C / -40°C

The Arctic package enables the R 9100 to be operated at low temperatures. With various features for preheating and ensuring continuous machine operation in cold climate conditions, the Arctic package promotes consistent productivity without compromising operator comfort.

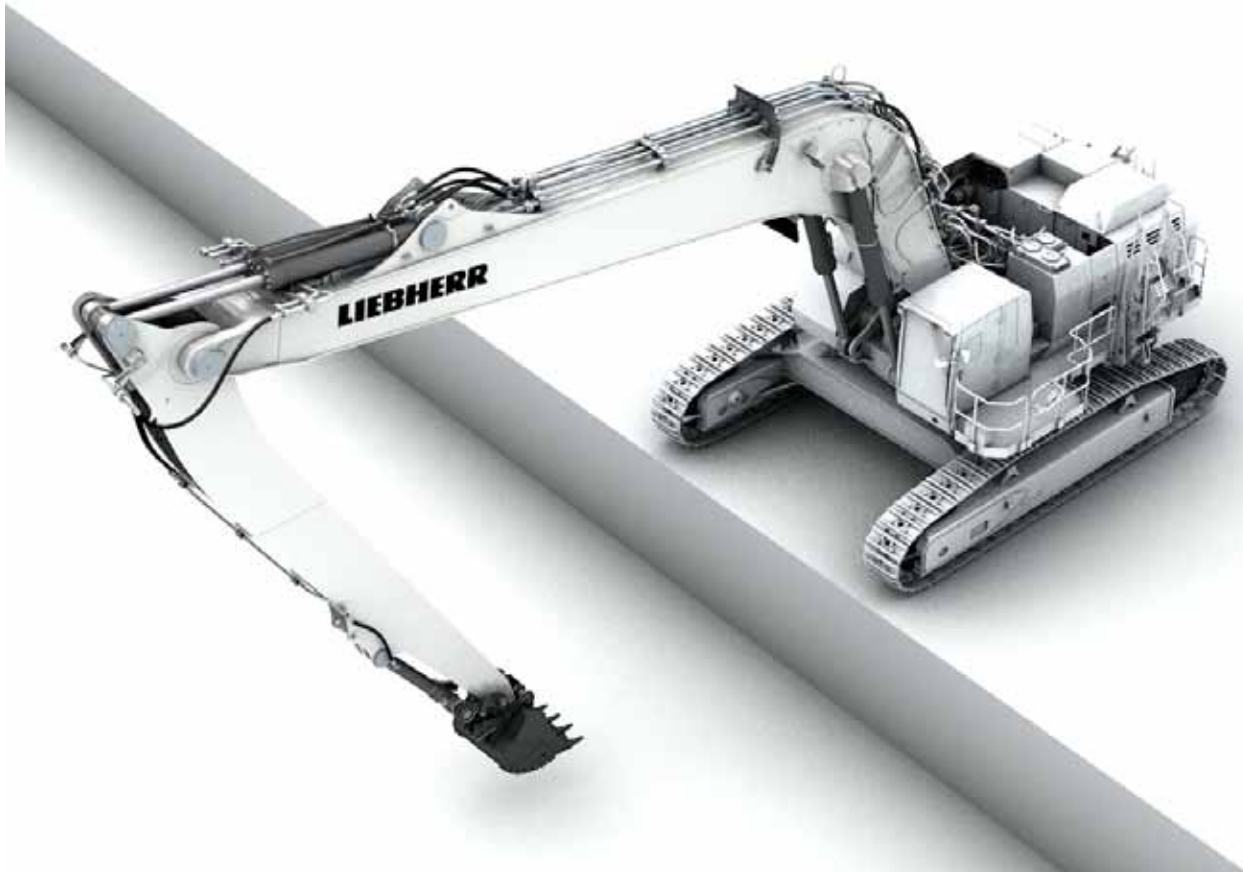
Basic features

- Pre-heating system for engine (programmable and autonomous)
- Pre-heating system for fuel filters
- Cold application fluids (oil, grease, engine coolant)
- Oil flushing system for travel motors
- Cold application cab (advanced insulation and heating)
- Temperature control startup assistance (displayed in cab)
- Cold application undercarriage components
- Cold application hydraulic hoses

Arctic+ features

- Pre-heating system for hydraulic oil
- Connection for warm air duct
- Thermal insulation kit

Non-Mining Applications





Great Depth

Liebherr offers a complete range of attachments designed to provide greater digging depth capabilities. Attachment is prepared to be fitted with bucket, grapple for applications such as material extraction from docks or from gravel pit banks.

Long Reach

For applications requiring long reach capabilities such as ripping from a river bank, Liebherr offers customer the possibility to fit the machine with specific equipment. Long-range attachment can be fitted with bucket or grapple.

High Reach

High reach attachment configuration enables the operator to conduct high benches scrapping or levelling. Thus, Liebherr offers the possibility to equip the machine with a bucket, leveling plate.

Quick-Change

Some applications may require the alternative use of several tools such as ripper combined with bucket. In such cases, Liebherr has developed a quick-change solution enabling the operator to quickly and safely proceed tool change directly from the cab.

Object Handling

Object handling equipments are available for ship loading / unloading works from the harbor docks, as a stationary installation for sorting of scrap.

Note : special attachment configurations may require excavator to be equipped with wider undercarriage and / or heavier counterweight.

Emergency Devices



Automatic Fire Suppression System

Additional Emergency Stop



Automatic Fire Suppression System

The automatic fire suppression system consists of a twin-agent system using dry chemical (powder) to rapidly knock down flames and wet chemical agent that cools surrounding areas while helping to minimize the possibility of reflash. Set for 24-hour availability, this system ensures continuous protection for the machine and its related components, and promotes operator and service staff safety in the event of a fire.

On the R 9100, the automatic fire suppression system features electric actuator with Interface Control Module. The entire system is electronic based for supervision, communication and control of system components to notify operator of system status.



Additional Emergency Stop

The additional emergency stop consists of an additional pull-rope type shutdown system to be accessible from the ground level. This enables to shut down the engine, disconnect the electrical system and to lower the 45° access stair (if this feature is installed on the machine) by someone who is not located on the upperstructure.

08.16

All features and specifications subject to change without notice.

Please contact your local Liebherr location to discuss the possibility of retrofitting your existing Liebherr equipment.

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