

Liebherr Mining Ground Engaging Tools made for Liebherr Buckets



LIEBHERR

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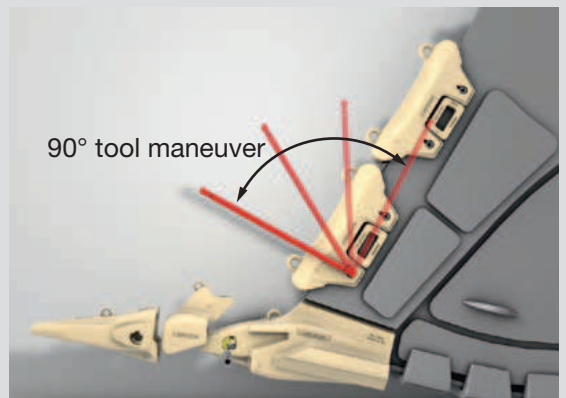


Ground Engaging Tools Range

- 3 tooth profiles in 5 tooth sizes
- Adapter and corner adapter
- Wear cap and corner wear cap
- Wing and lip shroud

Innovative Design

- Self-sharpening teeth
- One single locking system
- Truly hammerless system
- Interchangeable wing shrouds and corner wear caps



Liebherr Mining GET Solution - Outline



With an ever-increasing productivity focus, Liebherr has developed a complete mining Ground Engaging Tools solution to complement Liebherr's mining backhoe and face shovel bucket design. A synergy that enables easy material penetration while extending the life of the bucket.

Three Tooth Profiles, in Five Sizes

The Z system is available in three profiles to cover an extensive range of applications types, from well-blasted material to very hard ground. Liebherr GET solution is compatible with mining backhoes and face shovels from R 9100 up to R 9400.

Innovative Design

Thanks to the self-sharpening tooth design, machine operators will experience an optimal combination of bucket penetration and high fill factor over the teeth lifetime. To reduce parts inventory Liebherr has designed a single wing shrouds and corner wear caps for each model, interchangeable from left hand side, right hand side and top to bottom.

One Single Locking System

To increase machine uptime and reduce tooling to one unique extraction tool, the teeth, shrouds and wing shrouds are equipped with one single locking system. In addition the wear cap does not require any locking system as it is slipped on the adaptor and locked by the tooth.

Truly Hammerless System

With its unique hammerless locking system, the replacement of the teeth and the wing shrouds is simple: the securing pin, the tooth, and the adaptor are quickly locked by a 90° tool maneuver.

Customer Benefits

- Better supply chain coordination
- Higher productivity
- Reduced operating and owning costs
- Reduced parts inventory
- Maximized machine uptime



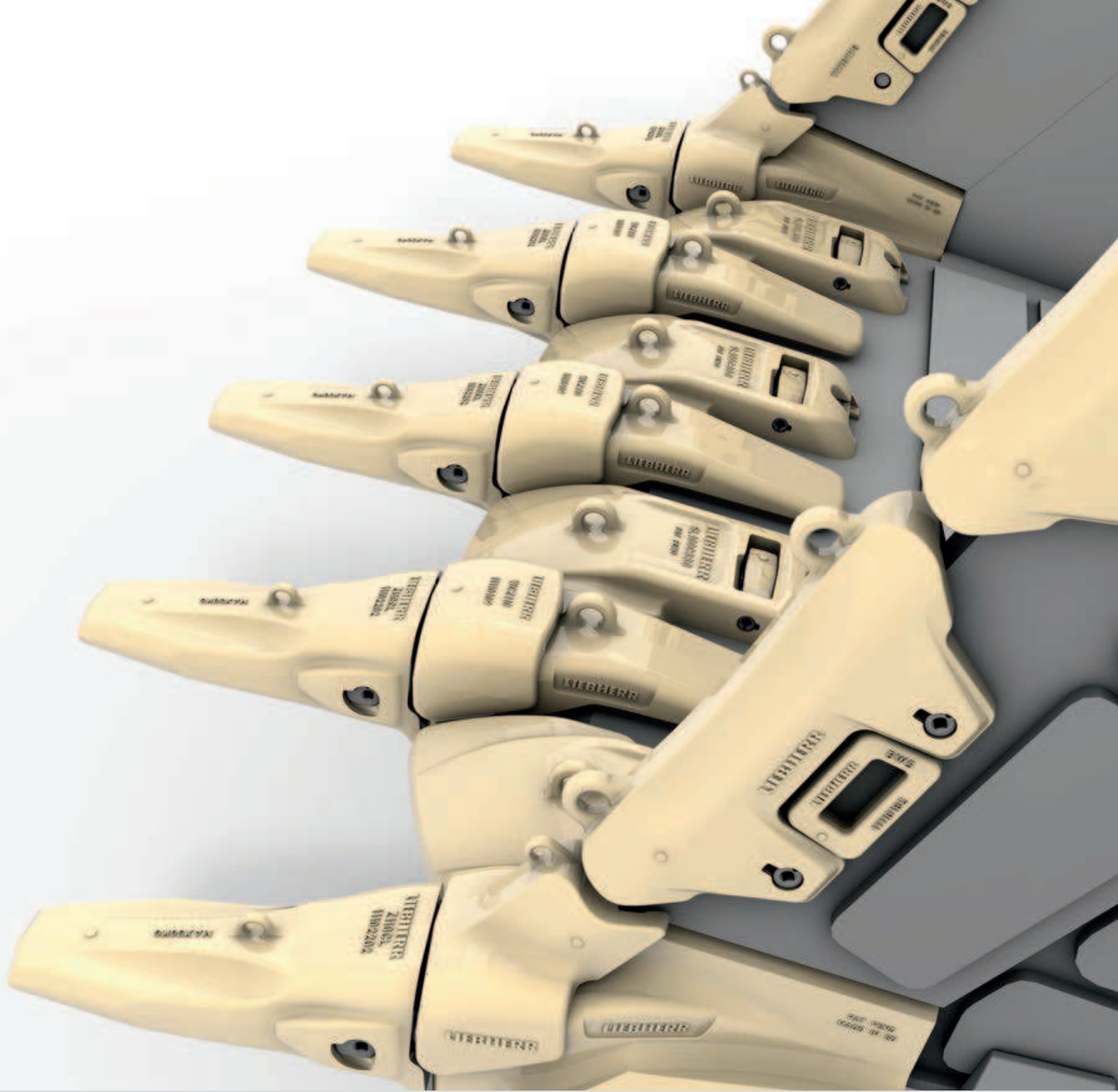
Easy Serviceability

- One single locking system
- Truly hammerless system
- A simple tooth exchange
- A single person can release it

Proactive Service Supplying

- Global network of Liebherr affiliates and exclusive representatives
- Customer specific requirement study
- Collaborative solution development





Tooth and Adapter



Wear Cap



Corner Wear Cap

Ground Engaging Tools Range

The Z system is available in three profiles to cover an extensive range of application types, from well-blasted material to very hard ground.

Tooth Profiles



CL-Profile

The long-drawn pointed shape provides a sharp cutting edge for superior penetration in rocky and blasted material up to medium compacted ground.



CR-Profile

The wide, thick tooth sole delivers long service life in abrasive soils and blasted rock applications; this profile perfectly fits a bottom dump bucket configuration.



P-Profile

The pointed shape offers optimal penetration for very hard and compacted ground applications.

Tooth Sizes

Available in five different sizes, Liebherr GET are compatible with mining backhoe and face shovel from R 9100 up to R 9400.

Buckets	R 9100 R 984 C	R 9150	R 9250	R 9350	R 9400
GP General Purpose	Z90	Z100	Z120	Z140	
HD Heavy Duty	Z100	Z110	Z120	Z140	
XHD Heavy Duty Rock	Z100	Z110	Z140		



Lip Shroud



Wing Shroud



Locking System



Innovative Design

With its unique design philosophy and innovative approach, the Liebherr Mining Ground Engaging Tools solution is able to exceed the most stringent customer expectations. The Liebherr solution reduces owning & operating cost by extending the equipment life.

Bucket Side Wall Protection

The rounded area of both wing shroud and corner wear cap is fully adaptable to each bucket side plate shape. To reduce downtime, the corner wear cap is mechanically attached to the corner adapter and can be removed independently from the lower wing shroud.

Thanks to the wing shroud “peanut” concept, the material is distributed on both ends to maximize penetration over the lifetime of the part.

Self-Sharpening Design

Machine operators will experience an optimal combination of bucket penetration and high fill factor over the teeth lifetime, thanks to the self-sharpening tooth design.

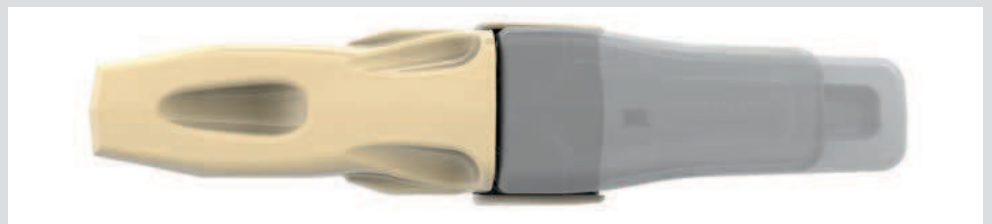
One Single Locking System

To increase machine uptime and reduce tooling to one unique extraction tool, the teeth, shrouds and wing shrouds are equipped with one single locking system. In addition the wear cap does not require any locking system as it is slipped on the adaptor and locked by the tooth.

Truly Hammerless System

A single and easy-to-carry double side extraction tool designed by Liebherr to match the complete range of tooth sizes.

Tooth Size	Z90	Z100	Z110	Z120	Z140
Socket Size	1/2"			3/4"	





1 Unlock the securing pin with the locking spanner.



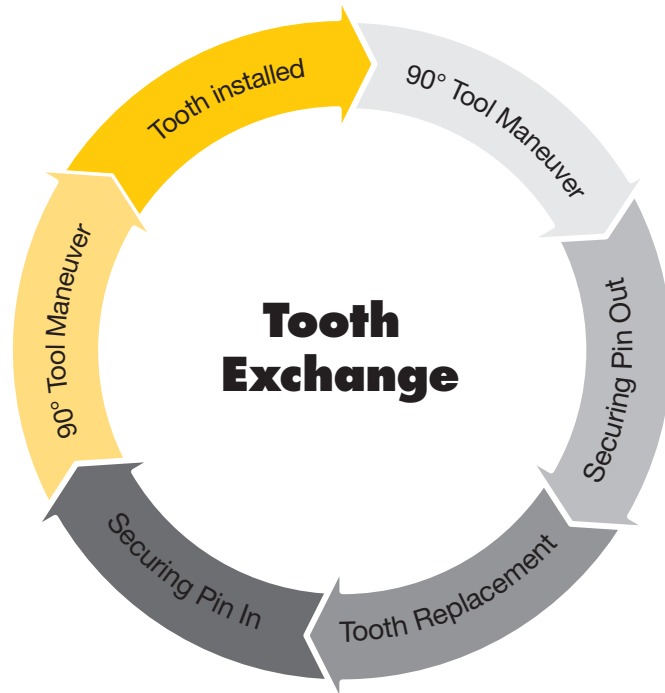
2 Remove the securing pin from the mounting.



3 Draw the worn tooth from the tooth adapter.

Easy Serviceability

The Liebherr Z Tooth System is a new, innovative and patented tooth system from Liebherr. It consists of tooth adapter, tooth, securing bolt with a locking arrangement and a protective plug. All that is required to replace the tooth is one simple tool – a truly hammerless system.



The securing pin, the tooth, and the adapter can be connected in no time, a single person can effortlessly release and remove the tooth without the need for brute force.

Note

- The wear cap and corner wear cap are slipped on the adapters and locked by the teeth; these protectors need to be positioned before tooth assembly.
- The lip and wing shrouds are attached with one unique locking system, the exchange procedure remains the same and no other tools are required.



4 Slide the new tooth onto the tooth adapter.



5 Slide the securing pin into the mounting.



6 Lock the securing pin with the locking spanner.

Liebherr Customized Buckets

In the mining industry, productivity & reliability are the keys to success. In order to exceed its customer's expectations, Liebherr has developed a complete range of buckets to tackle any application type.



The Liebherr buckets combined with Liebherr GET are designed to work in harmony to deliver an optimised, vertically integrated mining solution.

GP | General Purpose

Package

- | | |
|---------------------------------|---------------------------------|
| R 9100 / R 984 C / R 9150 | R 9250 / R 9350 / R 9400 |
| • underside wear strips | • Package R 9150 |
| • 1x outer side wall protection | + lip shrouds |
| | + 1x wing shroud per side |
| | + 1x corner protection per side |

Application

Coal, Limestone, ...

HD | Heavy Duty

Package

- | | |
|---------------------------------|--------------------------|
| R 9100 / R 984 C / R 9150 | R 9250 / R 9350 / R 9400 |
| • underside wear strips | • Package R 9150 |
| • 1x wing shroud per side | + heel shrouds |
| • 1x outer side wall protection | + inner wear strips |
| • 1x corner protection per side | |
| • lip shrouds | |

Application

Overburden, Copper, ...

XHD | Heavy Duty Rock

Package

- | | |
|------------------------------|-------------------------------|
| R 9100 / R 984 C / R 9150 | R 9250 / R 9350 / R 9400 |
| • underside wear strips | • Package R 9150 |
| • lip shrouds | + inner side wall protections |
| • 2x wing shrouds per side | |
| • heel shrouds | |
| • inner wear strips | |
| • outer side wall protection | |

Application

Iron Ore, Platinum, Gold, ...

Key Benefits

- Easy bucket penetration
- Wide range of wear packages
- Maximum bucket fill factor
- Integrated approach to machine capabilities
- Lightweight bucket for maximum loading capacity (option)



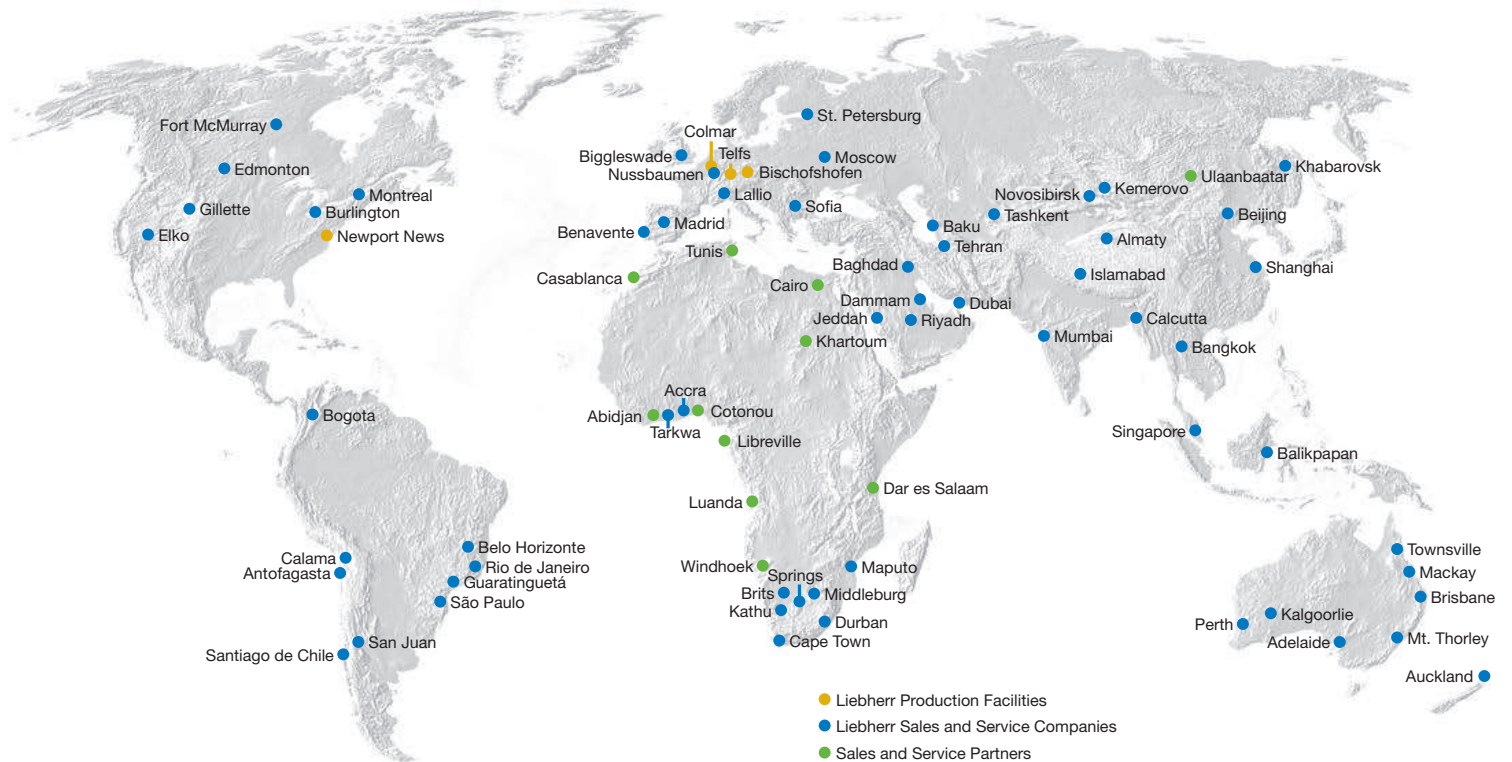
Proactive Service Supplying

As a global mining solutions provider, Liebherr is more than a mining equipment manufacturer. Ensuring a permanent dialogue with each machine owner, Liebherr provides tailored assistance to customer specific projects and site requirements.

With a truly global network composed of Liebherr affiliates and exclusive representatives, Liebherr's worldwide

presence enables the highest level of service support irrespective of equipment location.

Using advanced forecasting techniques and in-depth knowledge of regional populations, Liebherr service centers ensure that customers are always well looked after.



Quality: the Liebherr Trademark

Our relentless desire to innovate combined with our longstanding tradition of high-quality product manufacture, has enabled Liebherr to produce the class standard in wear resistance.

In collaboration with customers, Liebherr GET undergoes intensive factory and field testing program to diagnose technical constraints that might occur in severe environment.

The reliability of our field testing program relies on repeatability and consistency, giving the highest possible product value.



The Liebherr Group of Companies



Wide Product Range

The Liebherr Group is one of the largest construction equipment manufacturers in the world. Liebherr's high-value products and services enjoy a high reputation in many other fields. The wide range includes domestic appliances, aerospace and transportation systems, machine tools and maritime cranes.

Exceptional Customer Benefit

Every product line provides a complete range of models in many different versions. With both their technical excellence and acknowledged quality, Liebherr products offer a maximum of customer benefits in practical application.

State-of-the-art Technology

To provide consistent, top quality products, Liebherr attaches great importance to each product area, its components and core technologies. Important modules and components are developed and manufactured in-house, for instance the entire drive and control technology for construction equipment.

Worldwide and Independent

Hans Liebherr founded the Liebherr family company in 1949. Since that time, the enterprise has steadily grown to a group of more than 130 companies with over 39,000 employees located on all continents. The corporate headquarters of the Group is Liebherr-International AG in Bulle, Switzerland. The Liebherr family is the sole owner of the company.

www.liebherr.com

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