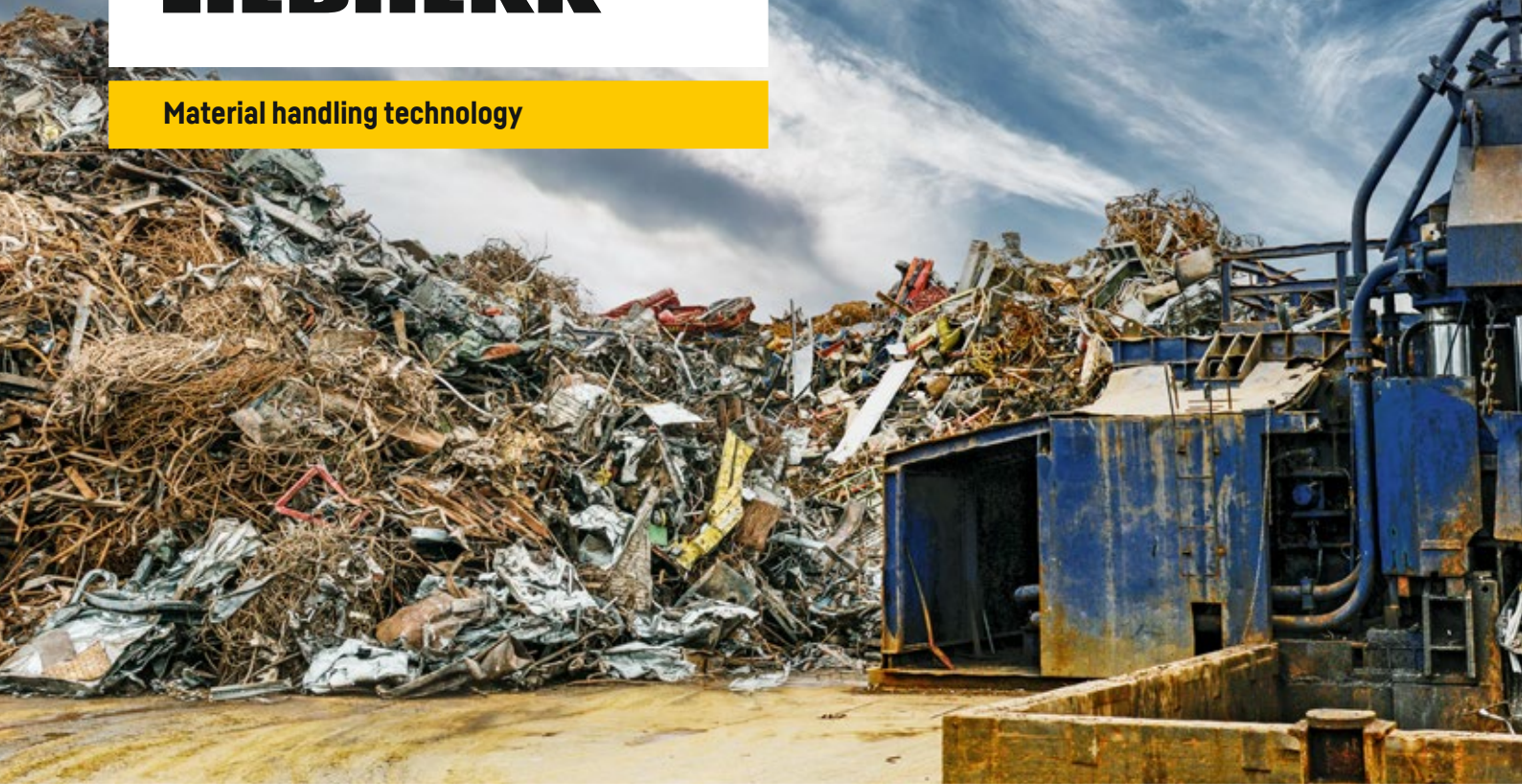

Scrap handling

LIEBHERR

Material handling technology



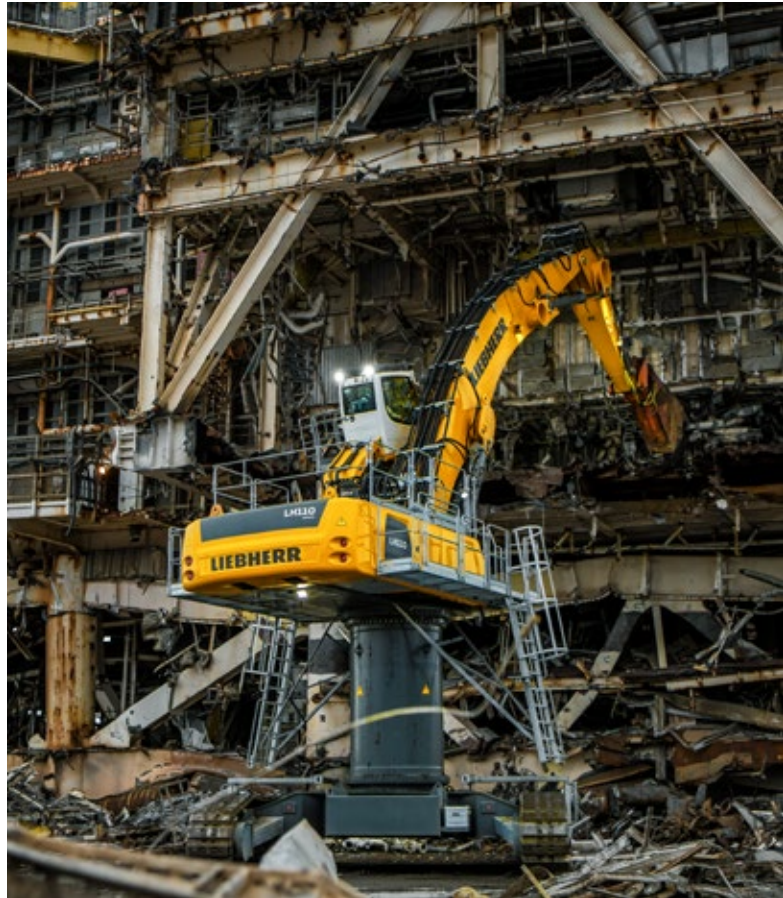
Liebherr specialized machines for scrap handling

Liebherr specialized machines are robust, reliable and designed for high performance and maximum efficiency in industrial material handling. Extremely sturdy by design, these powerful machines are built to withstand the toughest of demands. Liebherr accomplishes this, among other ways, through production of its components. The demands of industrial material handling are taken into account during the development stage of these components, and well-prepared Liebherr specialized machines for any application. Components such as the engine, injection system, hydraulic cylinders and electronics are optimally adapted to each

other and contribute towards the capability and efficiency of the machines. Handling scrap, steel and other metals is one of the toughest operational areas, whether loading or unloading HGVs, loading shredder conveyors or sorting out different kinds of metals, the Liebherr specialized machines are perfect machines for operationally effective scrap material handling.

- Material handling machines
- Mobile harbour cranes
- Wheel loaders





Material handling machines



Performance

Performance is extremely important in handling scrap materials. Whether sorting out mixed scrap material, loading and unloading HGVs and ships or loading shredders, shears and press plants, the Liebherr material handling machines are designed for the highest performance in a variety of work applications. High lift capacities and fast work cycles are essential for efficient handling operations. The optimum interplay between the hydraulics and electronics guarantee powerful, fast movements during handling while working with precision on challenging sorting tasks.

Economy

The existing generation of Liebherr material handlers possess a powerful efficiency through their internally manufactured engine technology that is highly compatible with controlled hydraulic systems. Liebherr's expertly designed engine technology, combined with the drive components generate high fuel efficiency. In addition to diesel-powered machines there are a number of electric drive material handlers in the range which guarantee extremely low operating costs. They are very environmentally friendly, completely emission-free and therefore independent of statutory exhaust emission standards. For conventional machines Liebherr-Power Efficiency (LPE), enables the machine to operate with low fuel consumption. LPE combined with the innovative Liebherr energy recovery system, a standard feature on the LH 40 range and above, also assists in lowering fuel consumption and accelerating the work cycles. These various machine components ensure the customer benefits from lowered fuel costs, while retaining efficient work operations.

Reliability

Liebherr material handling machines are designed for precise working and handling capacity. The sturdy and durable construction provides stability and ensures the lowest downtimes in the scrap recycling industry. Equipment such as cab guards, laminated smashing-resistant safety glass, protection of the cylinder piston rods and other safety devices are designed specifically for tough scrap handling operations and guarantee maximum reliability even in the toughest of conditions. The diesel engine, hydraulic and electronic components, slew ring, swivel drive and steel structure are developed, tested and produced by Liebherr. In-house production of these high-quality components ensure long service life and maximum machine availability. The attention to quality provides superior reliability.

Comfort

The operator cab provides the necessary space and comfort to promote work productivity of the operator. Visibility is provided by the large, impact resistant glass panels surrounding the cab and through the rear and side monitoring systems. Thanks to the low sound emissions and the lack of vibrations, the electric handling machines are particularly quiet and increase the working comfort significantly. The Comfort driver's seat, touchscreen display and central lubrication system for the machine tools ensure the operator maintains control and efficiency during work applications. The customer ultimately benefits from this comfortable cab, since the operator will retain concentration on important tasks, and initiate productive job operations.

Maintainability

The service-based machine design guarantees short servicing times, minimizing maintenance costs and down times. All the maintenance points are easily accessible due to the large, wide-opening service doors. The enhanced service concept places the maintenance points close to each other and reduces their number to a minimum so service work can be completed quickly and efficiently.

Material handling machines overview

Equipment

- High load capacities and extensive reach due to optimized kinematic properties and robust construction for greater handling performance
- Energy recovery cylinder filled with nitrogen for maximum efficiency through less fuel consumption at more handling capacity from machine class LH 40 Industry
- Pipe fracture safety valves on hoist and stick cylinders and retract stick shut-off for maximum safety during every application
- Quick coupling systems and attachments made by Liebherr for maximum machine capacity utilization and greater handling performance



Cab

- Joystick steering without steering column to provide convenient operation, greater legroom and clear view of the working area
- Less strain on the operator, workers and reduced environmental pollution due to lower noise emissions
- Optimum visibility due to large glass surfaces and standard rear and side area monitoring with camera
- Standard proportional control with 4-way mini joystick provides greater precision, high precision control and functions





Uppercarriage

- Greater energy efficiency due to the latest engine technology with intelligent machine control
- Optimal engine output and high pump flow for fast work cycles, convincing dynamics and maximum handling performance
- Reversible fan and large-meshed cooler as a reliable, sealed unit for high machine availability
- Optimized servicing concept and cleverly designed maintenance access points guarantees minimum machine downtime

Undercarriage

- Optimized hydraulics with closed slewing mechanism circuit for greater energy efficiency and faster work cycles from machine class LH 30
- Central lubrication system manual or fully automatic for more productive working time
- Standard load holding valves fitted on all support cylinders for maximum stability in every application
- Less downtime due to maintenance free support cylinders

Technical data

		LH 22 Industry Litronic	LH 24 Industry Litronic
Variants		M/C	M
Reach	ft in	36'1"	39'4"
Operating weight*	lb	approx. 42,300–48,900	approx. 50,000–51,100
Engine output	kW/HP	105/141	110/148
System performance	kW	–	–
Emission stage	Stage	Tier 4 Final	Tier 4 Final
Multi-tine grab capacity	yd ²	0.52–0.78	0.52–0.78

		LH 26 Industry Litronic	LH 30 Industry Litronic
Variants		M/C/P	M/C
Reach	ft in	42'8"	45'11"
Operating weight*	lb	approx. 53,400–61,500	approx. 58,400–66,600
Engine output	kW/HP	115/154	140/188
System performance	kW	105**	–
Emission stage	Stage	Tier 4 Final	Tier 4 Final
Multi-tine grab capacity	yd ²	0.52–0.78	0.52–0.78

		LH 35 Industry Litronic	LH 40 Industry Litronic
Variants		M	M/C
Reach	ft in	49'3"	52'6"
Operating weight*	lb	approx. 67,700–70,300	approx. 80,200–90,200
Engine output	kW/HP	140/188	155 (145**)/208
System performance	kW	–	237
Emission stage	Stage	Tier 4 Final	Tier 4 Final/ electric
Multi-tine grab capacity	yd ²	0.52–0.78	0.52–1.44

M = Mobile
C = Crawler
P = Pedestal

* without attachment
** only with electric

		LH 50 Industry Litronic	LH 60 Industry Litronic
Variants		M/M High Rise / C High Rise	M/M High Rise / C / C High Rise
Reach	ft in	59'1"	65'7"
Operating weight*	lb	approx. 88,200–121,000	approx. 114,600–175,900
Engine output	kW / HP	155 / 208	190 / 255
System performance	kW	269	334
Emission stage	Stage	Tier 4 Final	Tier 4 Final / electric
Multi-tine grab capacity	yd ²	0.52–1.44	1.44–2.22

		LH 80 Industry Litronic	LH 110 Industry Litronic
Variants		M/M High Rise / C / C High Rise / C Gantry	M/M High Rise / C / C High Rise / C Gantry
Reach	ft in	72'2"	78'9"
Operating weight*	lb	approx. 146,600–265,700	approx. 209,400–304,200
Engine output	kW / HP	230 / 313	300 / 408
System performance	kW	437	492
Emission stage	Stage	Tier 4 Final / electric	Tier 4 Final / electric
Multi-tine grab capacity	yd ²	1.44–3.92	1.44–3.92

		LH 150 Industry Litronic
Variants		M/M High Rise / M Gantry / C / C High Rise / C Gantry
Reach	ft in	91'10"
Operating weight*	lb	approx. 286,600–407,900
Engine output	kW / HP	400 / 543
System performance	kW	661
Emission stage	Stage	Tier 4 Final / electric
Multi-tine grab capacity	yd ²	1.44–3.92

Examples of use





Mobile harbour cranes



Performance

Maritime scrap handling sets tough requirements for modern machines. The robust handling equipment in Liebherr's mobile harbour crane portfolio efficiently meets such challenges. Experience from various business sectors flow directly into the development of our portfolio. Whether large or small quantities of scrap metal, Liebherr manufactures a wide range of products for the handling of all vessel sizes.

Economy

In port management, versatility is just as important as specialization. Liebherr mobile harbour cranes combine these factors for all types of cargo in practically any kind of port environment. Comprehensive, basic equipment, easy transport and high flexibility underline the effectiveness of the cranes as an investment. Efficient design and innovative technologies ensure that Liebherr's solutions master the tasks of scrap handling with economy in mind. This ensures a high level of productivity and low fuel consumption at the same time.

Reliability

Stability and robustness are very important criteria in scrap handling. Due to the interlocking of the material, enormous forces are exerted on the crane, which can exhaust the lifespan of the equipment very quickly. Liebherr mobile harbour cranes create optimum conditions for use in scrap handling, even in their basic design. The 4-chord lattice boom ensures maximum stability and precise crane movement. The X-shaped supporting base reduces the torsional stress on the steel structure, and the tubular tower design evenly transfers the forces to the steel structure and the slewing ring. These design principles significantly increase the service life of the crane.

Comfort

Operator comfort is just as important as a reliable machine. Liebherr mobile harbour cranes are designed to support the driver in terms of safety, comfort and control. The forward facing position of the tower cabin made of 70% glass (safety glass) ensures an excellent and unobstructed view of the working area. Ergonomically arranged monitors and controls can be conveniently operated from an adjustable comfortable driver's seat. Air conditioning and swing compensation further improve the cab conditions. Vibrations are reduced to an imperceptible minimum. Also, the cab is soundproofed.

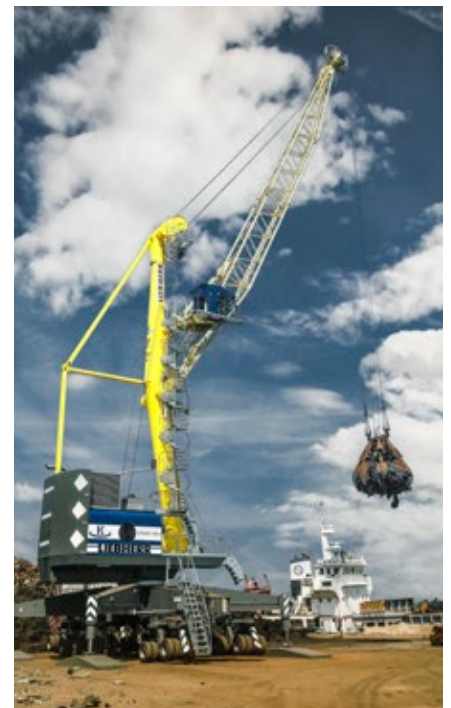
Maintainability

Based on many years of experience, Liebherr provides its customers with effective service and support presently and in the future. The constant enhancement and expansion of the service network is part of Liebherr's commitment to providing the best possible support to our customers worldwide. A team of more than 600 experienced, versatile and factory-trained service technicians work in more than 50 service centers around the globe. Their availability is ad hoc or on a contractual basis.

Technical data

		LHM 280	LHM 420	LHM 550
Reach	ft	32-131	36-157	36-177
Operating weight	lbs	531,314	753,98	881,849
Lifting capacity	lbs	185,188	273,373	339,512
Engine output (with Pactronic)	kW	390 (700)	750 (1,450)	750 (1,450)
Slewing speed	rpm	0-1.6	0-1.6	0-1.6
Hoisting/lowering speed	ft/s	0-4.9	0-6.6	0-6.6

Examples of use



Wheel loaders



Performance

A wide range of products ensures the versatile and universal operation of Liebherr wheel loaders in the field of scrap handling. In addition to the different types of machines, you can choose between industrial and Z-bar kinematics within the L 550 – L 566 XPower® wheel loaders and the L 580 XPower®. This means the right machine is always available for the specific operation such as transporting and loading steel and metal scrap or loading the shredder systems.

Economy

The innovative drive concept of Liebherr wheel loaders reduce fuel consumption by 30%. The drive concept also creates minimal tire and brake wear at maximum handling capacity. This concept is highly beneficial in reducing fuel and servicing costs for customers.

Reliability

Liebherr wheel loaders meet quality expectations in tough working conditions since many of its components were designed in-house to work in synergy. Customers benefit from these expertly designed components, seeing that they can place high reliance on the machine.

Comfort

The modern, ergonomic cab design provides maximum comfort level to operators, allowing productivity to become the main focus. The cab's control lever allows accurate control of the machine, ensuring safe and precise operation. The large surrounding cab windows offer operators excellent visibility of the work area. These features provide safety, comfort and productivity during application.

Maintainability

The Liebherr wheel loaders include easily accessible service points to lower maintenance costs and time for the customer.

Wheel loaders L 526 – L 580 XPower® overview

Maximum operator comfort for greater productivity

- Automatic central lubrication system *
- Liebherr control lever with mini joystick *
- Joystick steering *
- Operator's cab without steering wheel / steering column – joystick steering only *
- Liebherr weighing system with "Truck Payload Assist" *
- Ride control
- Preparation for protective ventilation and dust filtration device *
- Stroke limit damping *

Highest level of performance

- Industrial lift arm / parallel linkage or Z-bar linkage (L 526 – L 566 and L 580 *)
- High Lift arms *
- Solidlink quick coupler *
- Programmable automatic bucket return
- Programmable automatic lift and lowering arm position
- Comprehensive range of special equipment for scrap handling *
- Electronic tractive force regulation

Robustness and quality for durable machines

- Tilt cylinder protection *
- Lamp carrier in steel design (L 526 – L 546 as standard / L 550 – L 580 *)
- Guard for headlights *
- Integral tire pressure monitoring system *
- Special tires for scrap handling *

* optional





Productive and safe working

- Soundproof ROPS / FOPS cab
- Windscreen guard *
- Additional working lights, front / rear *
- Adaptive working lighting *
- Roof camera for front area monitoring (with Liebherr camera via Liebherr display) *
- Skyview 360° *
- Visualization of the equipment position
- Liebherr key with remote control incl. Coming Home / Leaving Home function (L 550 – L 580 *)

Short service times for greater productivity

- Radiator easy to maintain
- Particle protection for radiator *
- Large-mesh radiator (L 526 – L 546 as standard / L 550 – L 580 *)
- Reversible fan drive
- Air pre-cleaner *
- Turbocharger insulation (L 550 – L 580 *)
- Dust protection for alternator *

Productive and safe working

- Anti-slip steps and sturdy handrails
- Rear space monitoring camera via Liebherr display
- Active personnel detection at the rear *
- Reversing obstruction detector *
- Back-up alarm audible
- Back-up alarm visual *

Robustness and quality for durable machines

- Crash protection, rear *
- Crash protection, rear with guard (L 526 – L 546 *)
- Ramming guard with guard (L 550 – L 580 *)
- Chassis protection *
- Widening for mudguard *

Technical data

		L 526	L 538	L 546
Tipping load	lb	11,090–19,245	13,715–21,275	15,720–24,275
Bucket capacity	yd ³	2.6–7.2	2.9–8.5	3.4–9.8
Operating weight	lb	29,035–32,560	32,010–35,385	33,975–37,410
Engine output	kW / HP	116 / 156	129 / 173	138 / 185
Emission stage	Stage	Tier 4 Final	Tier 4 Final	Tier 4 Final

		L 550 XPower®	L 556 XPower®	L 566 XPower®
Tipping load	lb	18,300–27,560	20,505–30,315	26,675–35,055
Bucket capacity	yd ³	3.4–12.4	3.7–13.1	4.6–15.7
Operating weight	lb	40,895–45,415	43,210–47,620	52,690–59,305
Engine output	kW / HP	163 / 219	183 / 246	203 / 272
Emission stage	Stage	Tier 4 Final	Tier 4 Final	Tier 4 Final

		L 580 XPower®
Tipping load	lb	32,630–42,990
Bucket capacity	yd ³	5.9–18.3
Operating weight	lb	60,960–66,360
Engine output	kW / HP	233 / 313
Emission stage	Stage	Tier 4 Final

Examples of use



Strong partner – strong service

Our services are perfect for the challenges you face every day



Saving time – for experts who face the challenges themselves

Hand in hand to find the perfect solution.

Do you want to maintain and service your machines yourself? Do you want to order the spare part you require quickly and flexibly regardless of your location and the time and be certain that you have selected the correct part?

The documentation available online and the spare parts shop in MyLiebherr enable you to access all the information you require with just a few clicks. Use our sophisticated logistics for fast deliveries of the parts you require, all in genuine quality of course. That will enable you to work efficiently. And if you're not sure what to do next, our experts are just a phone call away.



For further information, services and contact details, go to

Transparency – your payment professionals have full details of availability, costs and much more at all times

Modular maintenance packages and Reman components to suit your company and budget. Are figures and the information they convey your strong point? Do you want to keep your current investments under review at all times and ideally be able to calculate in advance how much using the machine will cost and know all about its availability values?

Liebherr's modular CarePacks are tailored to your needs to show you in advance precisely what costs you can expect to ensure that your machine will continue to perform at its best in the future. For older machines, our Reman range delivers a smart, low cost solution for you.

Reliability and support – for decision-makers and advance planning

You are not just interested in short term success, you want to be successful in the long term. Do you regard success not just as turnover, but also satisfied customers and helping to protect resources?

Our dense service network delivers consistency and a basis for planning, today and in the future.

If necessary, our experts are available for you 24/7. Our genuine parts and service experts able you to ensure that your machines retain their value. Our Reman range and a range of lubricants enable you to be successful at low cost whilst also protecting valuable resources.

Some of our services for you in detail:



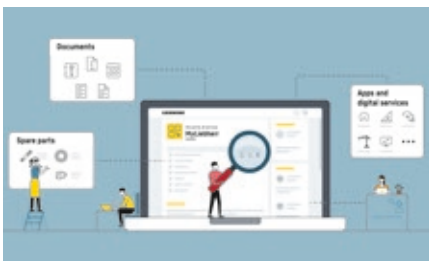
A strong partner

The safe feeling of having a strong partner by your side. Our dense service network means that our service experts are always close at hand. It is important to us that you always have a personal contact because when you need assistance, it's good to know that it's always available.



Reman range

The same performance and quality as a new part whilst reducing costs – that is what the replacement parts in our Reman range deliver. A wide range of components is available every day. An ideal solution, particularly for older machines, and at the same time you are helping to protect valuable resources by reusing parts.



MyLiebherr Portal

In the workshop, on the road or even at the weekend at home, the MyLiebherr portal provides you with the latest machine documentation and spare parts catalogue whenever and wherever you need them. Order the items conveniently and easily using the online shop.



Lubricants

Our portfolio of lubricants includes a series of products which enable you to actively help protect resources, including oils with longer change intervals or which are not harmful to the environment. One side-effect of these products is that they can also protect your wallet.



CarePacks

Our modular CarePacks can provide you with tailored packages of services at a fixed charge. That leaves you to concentrate on your work.

The Liebherr Group



Global and independent: more than 70 years of success

Liebherr was founded in 1949. With the development of the world's first mobile tower crane, Hans Liebherr laid the foundations of a successful family business which today comprises more than 140 companies on all continent and employs nearly 50,000 people. The parent company of the Group is Liebherr-International AG in Bulle (Switzerland), whose associates are exclusively members of the Liebherr family.

Technology leadership and pioneering spirit

Liebherr regards itself as a pioneer. This spirit has enabled the company to make a decisive contribution to the technological history of many industries. Today, employees around the world still share the courage of the company founder to take new paths. They are all united by a passion for technology and fascinating products and the determination to perform outstanding work for their customers.

Widely diversified product portfolio

Not only is Liebherr one of the biggest construction equipment manufacturers in the world, it also provides high-quality, user-oriented products and services in a wide range of other areas. The product portfolio includes the segments earthmoving, material handling technology, deep foundation machines, mining, mobile and crawler cranes, tower cranes, concrete technology, maritime cranes, aerospace and transportation systems, gear technology and automation systems, refrigeration and freezing, components and hotels.

Customized solutions and maximum customer benefit

Liebherr solutions are characterized by maximum precision, outstanding implementation and exceptional longevity. Its mastery of key technologies enables the company to offer its customers customized solutions. For Liebherr, customer focus does not end with the product; it also encompasses a wide range of services that make a real difference.

www.liebherr.us

WARNING

Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with exhaust system.
- Do not idle the engine except as necessary.

For more information go to www.P65warnings.ca.gov/diesel.

WARNING

This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm.

For more information go to www.P65warnings.ca.gov.