

Liebherr Specialist Machines **for Scrap Handling**



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Handling scrap steel metal and other metals is one of the toughest operational areas in industrial material handling. To cope with this, robustness and reliability are needed in particular. But high performance and efficient operation are also areas of focus in the construction of Liebherr specialist machines for scrap material handling. The challenge, on one hand, is to build machines that are extremely sturdy to deal with the toughest of demands and, on the other, to make them extremely powerful yet economical. Liebherr masters this, among other ways, by producing many of the components in-house. The demands that have to be met for later deployment are included right from the development stage of these components, which means that Liebherr specialist machines are well prepared for any work situation. Components such as the engine, injection system, hydraulic cylinders, electronics are adapted optimally to each other and thereby contribute towards the capability and efficiency. Whether loading or unloading HGVs, loading shredder conveyors or sorting out different kinds of metals, the Liebherr specialist machines are the perfect machines for operationally effective scrap material handling.

Material Handling Machines

Electric Material Handling Machines

Material Handling Machines



Performance

In the area of scrap handling, performance is extremely important. Whether sorting out mixed scrap material, loading and unloading HGVs and ships or loading shredders, shears and press plant, the Liebherr material handling machines have been developed for the highest productivity. High lift capacities and fast work cycles are the essential prerequisites for efficient handling operations. The optimum interplay between the hydraulics and electronics guarantee powerful, fast movements during handling and at the same time make it possible to work sensitively and precisely on challenging sorting tasks.

Economy

The new generation of material handling machines are powerful and efficient. Liebherr achieves this difficult balancing act with its own engine technology manufactured in-house and optimised to meet the requirements of controlled hydraulics. Liebherr relies on state-of-the-art engine technology here with intelligent machine controls that optimise the interplay of the drive components in terms of efficiency. Liebherr Power Efficiency (LPE) enables machine operation in the area of the lowest specific fuel use. Combined with the innovative Liebherr energy recovery system, which is a standard feature from machine class LH 40, fuel consumption is reduced to a minimum and, at the same time, material handling is significantly increased thanks to faster and more homogeneous work cycles - for the lowest consumption and greater efficiency at maximum output.

Reliability

Liebherr material handling machines guarantee the prerequisite stability and with their sturdy and durable construction ensure the lowest downtimes in the scrap recycling industry. Equipment such as cab guards, laminated safety glass smashing-resistant, protection of piston rods of the cylinder and other safety devices have been developed especially for tough scrap handling operations and guarantee maximum reliability even in the toughest of conditions. Long service life along with maximum machine availability are assured thanks to the in-house production of all key components. Diesel engine, hydraulic components, electronic components, slew ring, swivel drive and steel structure, developed, tested and produced by Liebherr all at the high level of quality one would expect.

Comfort

The newly developed Liebherr cab gives the operator the necessary space and comfort to make the best possible use of his or her machine's capability. Large glass panels, different types of cab elevations and rear and side area monitoring enable optimum viewing of the working area and the area around the machine at all times for the operator. In addition, the driver seat Comfort, the intuitive touchscreen colour display and central lubrication systems for the machine and its working tool provide the necessary comfort for the driver to allow him to concentrate on what is important – the handling capacity.

Maintainability

The service-based machine design guarantees short servicing times, thus minimising maintenance costs due to the time it saves. 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. This means that service work can be completed even more quickly and efficiently.

Material Handling Machines Overview

Superbly Designed

Attachment for Maximum Reliability

- Liebherr multi-tine grabs
- Liebherr quick coupling systems
- Liebherr hydraulic cylinders
- FEM-enhanced components
- Pipe fracture safety valves for hoist and stick cylinders
- Overload warning device
- Working range limiters
- Load holding valve on stabilization cylinder
- Regeneration system for hoist and stick cylinder
- Safety equipment
- Hydraulic lines internally routed in stick

Ergonomic Operator's Work Station for Maximum Comfort

- Hydraulic cab elevation with emergency lowering
- Front guard, adjustable
- Operator's seat Comfort
- Automatic air-conditioning system
- 7" large colour touchscreen display
- Direct access keys
- Adjustable armrests
- Resonant, ergonomic joysticks
- Joystick control
- Proportional control with mini-joystick
- Tool Control for working tools
- Large windows
- Easy radio control
- Windows made from impact-resistant laminated safety glass
- LED headlights
- Rear and side area monitoring





Clever Technology for Maximum Performance and Economy

- Liebherr diesel engine
- ERC system from machine class LH 40
- Load-sensing-control
- Liebherr-Power Efficiency (LPE)
- MODE selection (Sensitive, ECO, Power, Power-Plus)
- Preheating system for fuel, coolant, engine oil and hydraulic oil
- Sensor-controlled automatic idling system
- Automatic engine shut-down
- Close-mesh protective grid in front of cooler intake
- Closed hydraulic circuit for the swing mechanism from machine class LH 30

Elaborate Maintenance Concept for Maximum Productivity

- Fully automatic central lubrication system for uppercarriage and attachment, undercarriage and working tool
- Large, wide-opening service doors
- Easily accessible maintenance points
- Hydraulic shut-off lock
- Magnetic rod in the hydraulic system
- Liebherr hydraulic oil
- Retractable air-conditioning condenser
- Cab air filter can be replaced quickly and conveniently from outside
- Two lockable storage boxes
- Long change intervals of motor oil (up to 2,000 h) and hydraulic oil (up to 8,000 h)

Technical Data

LH 22 M Industry Litronic

Reach	11 m		12 m	
Operating weight*	ca. 21,000–21,800 kg		ca. 22,600–23,100 kg	
Engine output	100 kW/136 HP		105 kW/143 HP	
System performance	-		-	
Emission stage	Stage IIIB	Stage IIIA/Tier 3	Stage IIIB	
Multi-tine grab capacity	0.40–0.60 m ³		0.40–0.60 m ³	

LH 24 M Industry Litronic

LH 26 M Industry Litronic

Reach	13 m		14 m	
Operating weight*	ca. 24,200–24,700 kg		ca. 26,500–29,100	
Engine output	110 kW / 150 HP		140 kW/190 HP	
System performance	-		-	
Emission stage	Stage IIIB	Stage IIIA/Tier 3	Stage IV/Tier 4f	Stage IIIA
Multi-tine grab capacity	0.40–0.60 m ³		0.40–0.60 m ³	

LH 30 M Industry Litronic

LH 35 M Industry Litronic

Reach	15 m		16 m	
Operating weight*	ca. 30,700–31,900 kg		ca. 36,400–38,700 kg	
Engine output	140 kW/190 HP		155 kW/211 HP	
System performance	-		221 kW	
Emission stage	Stage IV/Tier 4f		Stage IV/Tier 4f	Stage IIIA
Multi-tine grab capacity	0.40–0.60 m ³		0.60–1.10 m ³	

LH 40 M Industry Litronic

LH 50 M Industry Litronic¹

Reach	18 m		20 m	
Operating weight*	ca. 40,000–45,400		ca. 57,000–69,400 kg	
Engine output	155 kW/211 HP		180 kW/244 HP	
System performance	246 kW		288 kW	
Emission stage	Stage IV/Tier 4f	Stage IIIA	Stage IIIB/Tier 4i	
Multi-tine grab capacity	0.80–1.10 m ³		0.80–1.40 m ³	

LH 60 M Industry Litronic¹

LH 80 M Industry Litronic¹

Reach	22 m		28 m	
Operating weight*	ca. 73,600–90,100 kg		ca. 130,000–160,000 kg	
Engine output	230 kW/313 HP		400 kW/543 HP	
System performance	385 kW		661 kW	
Emission stage	Stage IIIB/Tier 4i		Stage IV/Tier 4f	Stage IIIA
Multi-tine grab capacity	1.10–1.70 m ³		1.70–3.00 m ³	

LH 150 M Industry Litronic¹

LH 22 C Industry Litronic

Reach	10 m
Operating weight*	ca. 21,500–22,100 kg
Engine output	100 kW/136 HP
System performance	-
Emission stage	Stage IIIB Stage IIIA/Tier 3
Multi-tine grab capacity	0.40–0.60 m ³

LH 30 C Industry Litronic

Reach	14 m
Operating weight*	ca. 27,100–30,200 kg
Engine output	140 kW/190 HP
System performance	-
Emission stage	Stage IV/Tier 4f Stage IIIA
Multi-tine grab capacity	0.40–0.60 m ³

LH 40 C Industry Litronic

Reach	16 m
Operating weight*	ca. 37,600–40,900 kg
Engine output	155 kW/211 HP
System performance	221 kW
Emission stage	Stage IV/Tier 4f Stage IIIA
Multi-tine grab capacity	0.60–1.10 m ³

LH 50 C Industry Litronic⁴

Reach	18 m
Operating weight*	ca. 51,600–53,400 kg
Engine output	140 kW/190 HP
System performance	246 kW
Emission stage	Stage IIIB/Tier 4i
Multi-tine grab capacity	0.80–1.10 m ³

LH 60 C Industry Litronic¹

Reach	20 m
Operating weight*	ca. 52,100–69,100 kg
Engine output	180 kW/244 HP
System performance	288 kW
Emission stage	Stage IIIB/Tier 4i
Multi-tine grab capacity	0.80–1.40 m ³

LH 80 C Industry Litronic²

Reach	22 m
Operating weight*	ca. 65,900–108,700 kg
Engine output	230 kW/313 HP
System performance	385 kW
Emission stage	Stage IIIB/Tier 4i
Multi-tine grab capacity	1.10–1.70 m ³

LH 150 C Industry Litronic³

Reach	28 m
Operating weight*	ca. 130,000–175,000 kg
Engine output	400 kW/543 HP
System performance	661 kW
Emission stage	Stage IV/Tier 4f Stage IIIA
Multi-tine grab capacity	1.70–3.00 m ³

* Without working tool

¹ also available as High Rise/² also available as Gantry/³ also available as High Rise and Gantry/⁴ only available as High Rise

Examples of Use





Electric Material Handling Machines



Performance

The new electric-powered material handling machines have been specially developed to satisfy the particular requirements of industrial materials handling. A broad range of equipment and uppercarriages optimised for long reaches makes it possible to cater for all waste and cargo handling requirements.

Economy

Investing in an electric material handling concept pays off in the long term. The ever increasing cost of conventional energy is a burden on operating costs and substantially reduces profit margins. Environmental factors and CO₂ emissions in particular are increasingly important when choosing engines/motors and working methods.

Reliability

With more than 30 years of experience in the construction of electric material handling machines, Liebherr has developed a product range that satisfies all requirements of the market. All of the important components of the electric drive system have been integrated within the existing exterior dimensions of the uppercarriage.

Comfort

To allow the operator to concentrate on his/her work and to utilise the machine's maximum performance, all electric material handling machines feature an ergonomically designed driver's cab with a high level of comfort and good all-round vision. Liebherr electric material handling machines offer the same level of comfort as conventionally-powered material handling machines (construction of control elements, operator's seat, climate control, large glazed surfaces, etc.).

Maintainability

The automatic centralised lubrication can save precious intervention time, while guaranteeing that the material handler is in optimum operating condition. The frequency of the service intervals is optimised to guarantee that each part is functioning optimally and that the maintenance tasks are only performed as necessary.

Electric Material Handling Machines Overview

Large range of attachments

- Designed for all requirements in scrap handling
- Special attachments on request

Cab elevation

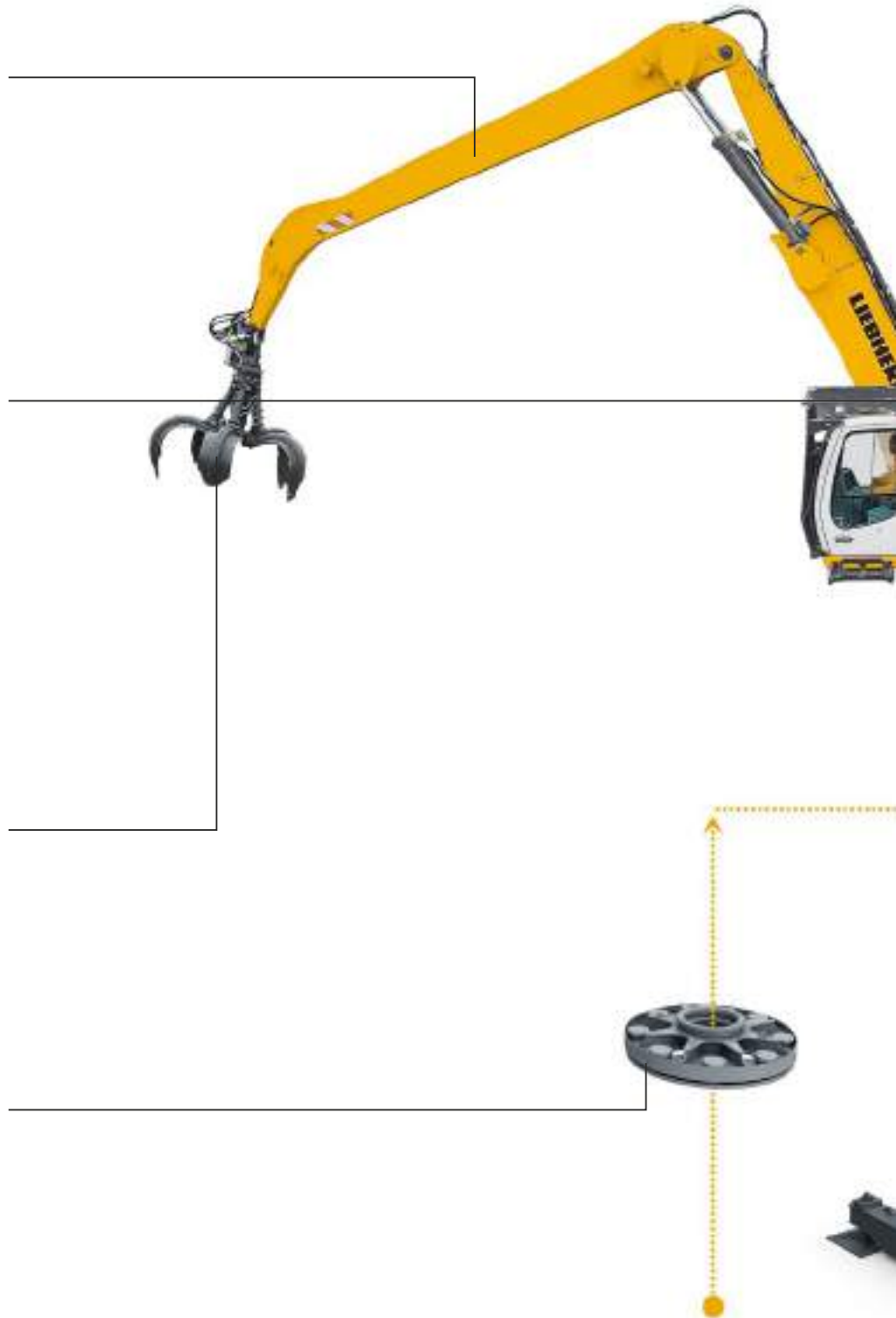
- Wide range of fixed and hydraulically adjustable cab elevations
- Always optimum viewing of the working area and the area around the machine

Large range of working tools

- Multi-Tine grab
- Sorting grab
- Quick-change system

Spring base

- Absorbing of strain and shocks for optimum protection of the machine
- Number of absorbing dampers based on size of machine
- Assembly kit for customer (for concrete, steel)





Integrated switchgear cabinet

- Designed for extreme conditions
- Overpressure system to prevent ingress of dust
- Fastenings with standard padlocks
- Robust construction

Access

- Safe and comfortable access to the working station
- Secure and non-slip access system

Electric motor

- Designed for extreme conditions
- Constant speed independent of the load
- Integrated sensors for maximum availability

Autostable

- Same performance of the machine on removable mounting
- Reduced ground space
- Modular and upgradeable

Technical Data

EP 934 C Handling

Reach	13 to 20 m
Operating weight	39,100 kg
Engine output	160 kW/218 PS
Capacity	0.80–1.10 m ³

EP 944 C Handling

Reach	15 to 22 m
Operating weight	51,900 kg
Engine output	200 kW/272 PS
Capacity	1.10–1.70 m ³

EP 954 C Handling

Reach	16 to 24 m
Operating weight	64,500 kg
Engine output	250 kW/340 PS
Capacity	1.10–1.70 m ³

ER 934 C Handling

Reach	12 to 16 m
Operating weight	38,050 kg
Engine output	160 kW/218 PS
Capacity	0.80–1.10 m ³

ER 944 C Handling

Reach	15 to 18 m
Operating weight	52,050 kg
Engine output	200 kW/272 PS
Capacity	1.10–1.70 m ³

ER 954 C Handling

Reach	15 to 20 m
Operating weight	75,400 kg
Engine output	250 kW/340 PS
Capacity	1.10–1.70 m ³

ER 934 C High Rise

Reach	13 to 20 m
Operating weight	56,200 kg
Engine output	160 kW/218 PS
Capacity	0.80–1.10 m ³

ER 944 C High Rise

Reach	15 to 22 m
Operating weight	73,400 kg
Engine output	200 kW/272 PS
Capacity	1.10–1.70 m ³

ER 954 C High Rise

Reach	16 to 24 m
Operating weight	95,800 kg
Engine output	250 kW/340 PS
Capacity	1.10–1.70 m ³

LH 150 C Industry Litronic¹

Reach	28 m
Operating weight*	ca. 135,000–185,000 kg
Engine output	400 kW
System performance	661 kW
Multi-tine grab capacity	1.70–3.00 m ³

* Without working tool

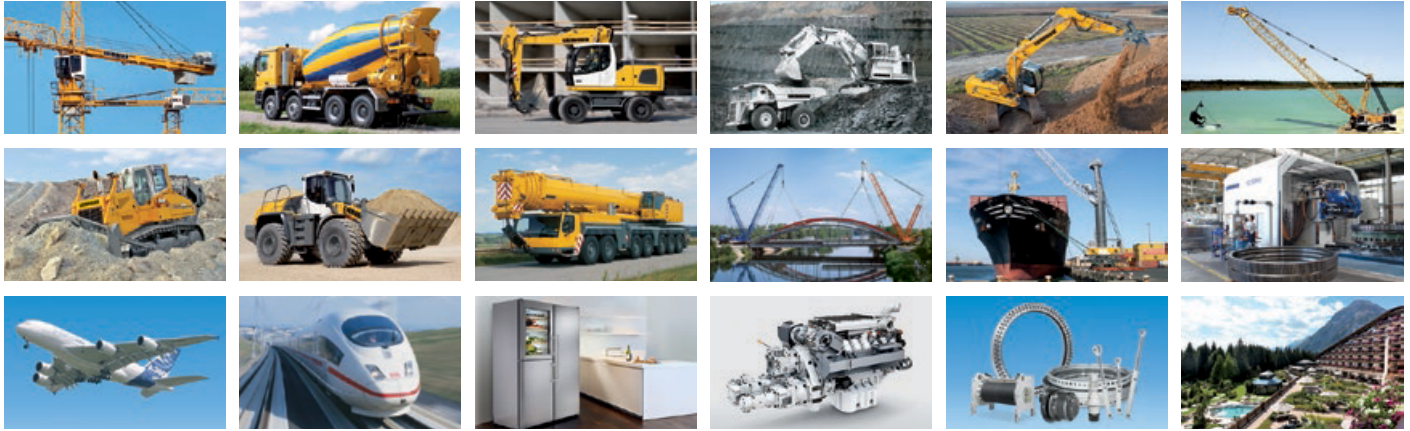
¹ also available as High Rise and Gantry

Examples of Use



A series of 24 horizontal lines for handwritten text.

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 41,000 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