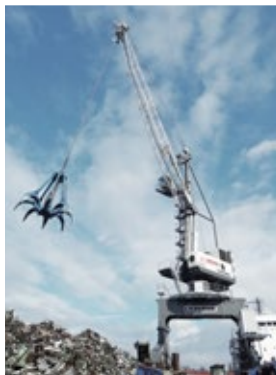


Liebherr Specialist Machines for Scrap Handling



LIEBHERR

Liebherr Specialist Machines for Scrap Handling





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 specialized 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 specialized machines are the perfect machines for operationally effective scrap material handling.



Material Handling Machines

Electric Material Handling Machines

Wheel Loaders

Mobile Harbour Crane



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 and 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 Comfort driver's seat, the intuitive touchscreen colour display and central lubrication systems for the machine and its working tool provide the necessary comfort for the operator 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. 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

Attachment

- High load capacities and long reach thanks to optimised 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
- Pipe fracture safety valves on hoist and stick cylinders and retract stick shut-off for maximum safety during every application
- Quick coupling systems and working tools made by Liebherr for maximum machine capacity utilisation and greater handling performance

Operator's Cab

- Joystick steering without steering column as standard for 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
- Proportional control as standard with 4-way minijoystick for greater precision, high-precision control and functions





Uppercarriage

- Greater fuel efficiency thanks 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

- Optimised hydraulics with closed slewing mechanism circuit for greater fuel efficiency and faster work cycles from machine class LH 30
- Central lubrication system manual or full automatic for more productive working time
- Load-holding valves fitted as standard on all support cylinders for maximum stability in every application
- Less downtime thanks to maintenancefree support cylinders

Technical Data

LH 22 M Industry Litronic

Reach	m	11			12
Operating weight*	kg	approx. 19,200–21,900			approx. 22,700–23,200
Engine output	kW/HP	105/143			110/150
System performance	kW	-			-
Emission stage	Stage	IV/Tier 4f	IIIA (compliant)		IV/Tier 4f
Multi-tine grab capacity	m ³	0.40–0.60			0.40–0.60

LH 24 M Industry Litronic

LH 26 M Industry Litronic

Reach	m	13			14
Operating weight*	kg	approx. 24,200–24,500			approx. 26,500–29,100
Engine output	kW/HP	115/157			140/190
System performance	kW	-			-
Emission stage	Stage	IV/Tier 4f	IIIA (compliant)		V/Tier 4f IIIA (compliant)
Multi-tine grab capacity	m ³	0.40–0.60			0.40–0.60

LH 30 M Industry Litronic

LH 35 M Industry Litronic

Reach	m	15			16
Operating weight*	kg	approx. 30,700–31,900			approx. 36,400–38,700
Engine output	kW/HP	140/190			155/211
System performance	kW	-			220
Emission stage	Stage	V/Tier 4f	IIIA (compliant)		V/Tier 4f IIIA (compliant)
Multi-tine grab capacity	m ³	0.40–0.60			0.40–1.10

LH 40 M Industry Litronic

LH 50 M Industry Litronic¹

Reach	m	18			20
Operating weight*	kg	approx. 40,000–46,900			approx. 55,000–72,600
Engine output	kW/HP	155/211			190/258
System performance	kW	245			334
Emission stage	Stage	V/Tier 4f	IIIA (compliant)		V/Tier 4f IIIA (compliant)
Multi-tine grab capacity	m ³	0.40–1.10			0.80–1.70

LH 60 M Industry Litronic¹

LH 80 M Industry Litronic¹

Reach	m	22			25
Operating weight*	kg	approx. 71,500–91,800			approx. 95,000–110,000
Engine output	kW/HP	230/313			300/408
System performance	kW	437			492
Emission stage	Stage	V/Tier 4f	IIIA (compliant)		V/Tier 4f IIIA (compliant)
Multi-tine grab capacity	m ³	1.10–3.00			1.10–3.00

LH 110 M Industry Litronic¹

LH 150 M Industry Litronic¹

Reach	m	28			
Operating weight*	kg	approx. 130,000–160,000			
Engine output	kW/HP	400/543			
System performance	kW	661			
Emission stage	Stage	V/Tier 4f	IIIA (compliant)		
Multi-tine grab capacity	m ³	1.10–3.00			

LH 22 C Industry Litronic**LH 30 C Industry Litronic**

Reach	m	10		14
Operating weight*	kg	approx. 21,000–22,200		approx. 27,100–30,200
Engine output	kW/HP	105/143		140/190
System performance	kW	-		-
Emission stage	Stage	IV/Tier 4f	IIIA (compliant)	V/Tier 4f IIIA (compliant)
Multi-tine grab capacity	m ³	0.40–0.60		0.40–0.60

LH 40 C Industry Litronic**LH 50 C Industry Litronic³**

Reach	m	16		18
Operating weight*	kg	approx. 37,600–40,900		approx. 53,300–54,900
Engine output	kW/HP	155/211		155/211
System performance	kW	220		245
Emission stage	Stage	V/Tier 4f	IIIA (compliant)	V/Tier 4f IIIA (compliant)
Multi-tine grab capacity	m ³	0.40–1.10		0.40–1.10

LH 60 C Industry Litronic¹**LH 80 C Industry Litronic²**

Reach	m	20		22
Operating weight*	kg	approx. 52,000–75,800		approx. 66,500–112,500
Engine output	kW/HP	190/258		230/313
System performance	kW	334		437
Emission stage	Stage	V/Tier 4f	IIIA (compliant)	V/Tier 4f IIIA (compliant)
Multi-tine grab capacity	m ³	0.80–1.70		1.10–3.00

LH 110 C Industry Litronic¹**LH 150 C Industry Litronic²**

Reach	m	25		28
Operating weight*	kg	approx. 100,000–115,000		approx. 130,000–175,000
Engine output	kW/HP	300/408		400/543
System performance	kW	492		661
Emission stage	Stage	V/Tier 4f	IIIA (compliant)	V/Tier 4f IIIA (compliant)
Multi-tine grab capacity	m ³	1.10–3.00		1.10–3.00

* without working tool

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

Examples of Use





Electric Material Handling Machines



Performance

The new electrically-powered material handling range has been specially developed to deal with the particular requirements of industrial material handling. A large spectrum of equipment and an uppercarriage optimised for long reach work makes it possible to cater for all waste and cargo handling requirements. With all of its major components manufactured in-house and combined with the power of an electric motor, the drive train output maximises the machine's performance in terms of lift capacity, precision and work pace. The scope of this high performing equipment is enhanced considerably thanks to a tracked undercarriage.

Economy

Investing in an electric material handling concept pays dividends in the long term. Continually rising costs from conventional energies are a burden on operating costs and considerably reduce profit margins. Environmental factors and CO₂ emissions, in particular, are growing in importance with the choice of engines/motors and working methods. With the electric drive system, Liebherr offers an economically interesting alternative to conventional machines and, moreover, an eco-friendly solution. Furthermore, the material handling machine is always available because refuelling is unnecessary as are particulate filters and AdBlue.

Reliability

With more than 30 years of experience in designing electric material handling equipment, Liebherr developed the new models EP 934 C, EP 944 C and EP 954 C to comply with every demand from the market. The layout of the machines was completely revised due to the components of the electric drive system, which means the unit is more than just a conversion of a conventional vehicle with diesel drive system. All of the important components of the electric drive system have been integrated within the existing exterior dimensions of the uppercarriage. Liebherr electric material handling machines offer a high level of reliability so that they can consistently fulfil their key functions when deployed in industrial areas. The already long service life of the hydraulic components is further enhanced by the low noise electric drive system. The drive concept, with just one electric motor, ensures that the high voltage is limited to the range of the switch cabinet and drive system and the low voltage functions are capable of being enclosed in one terminal box.

Comfort

To allow the operator to focus fully on his/her work and 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. The new electric material handling machines offer the same level of comfort as conventionally-driven material handling machines (layout of control elements, operator's seat, climate control, large glazed surfaces, etc.). Thanks to low noise generation and the elimination of vibrations, the electric drive system provides greater comfort. For Liebherr, comfort also means easily accessible service and check points for all daily maintenance tasks on the machine in order to keep downtime to a minimum.

Maintainability

The large, wide-opening service hatch allows optimal service access. All daily servicing points can be accessed conveniently and safely resulting in short servicing times for more productivity.

Electric Material Handling Machines Overview

Large range of attachments

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

Large range of working tools

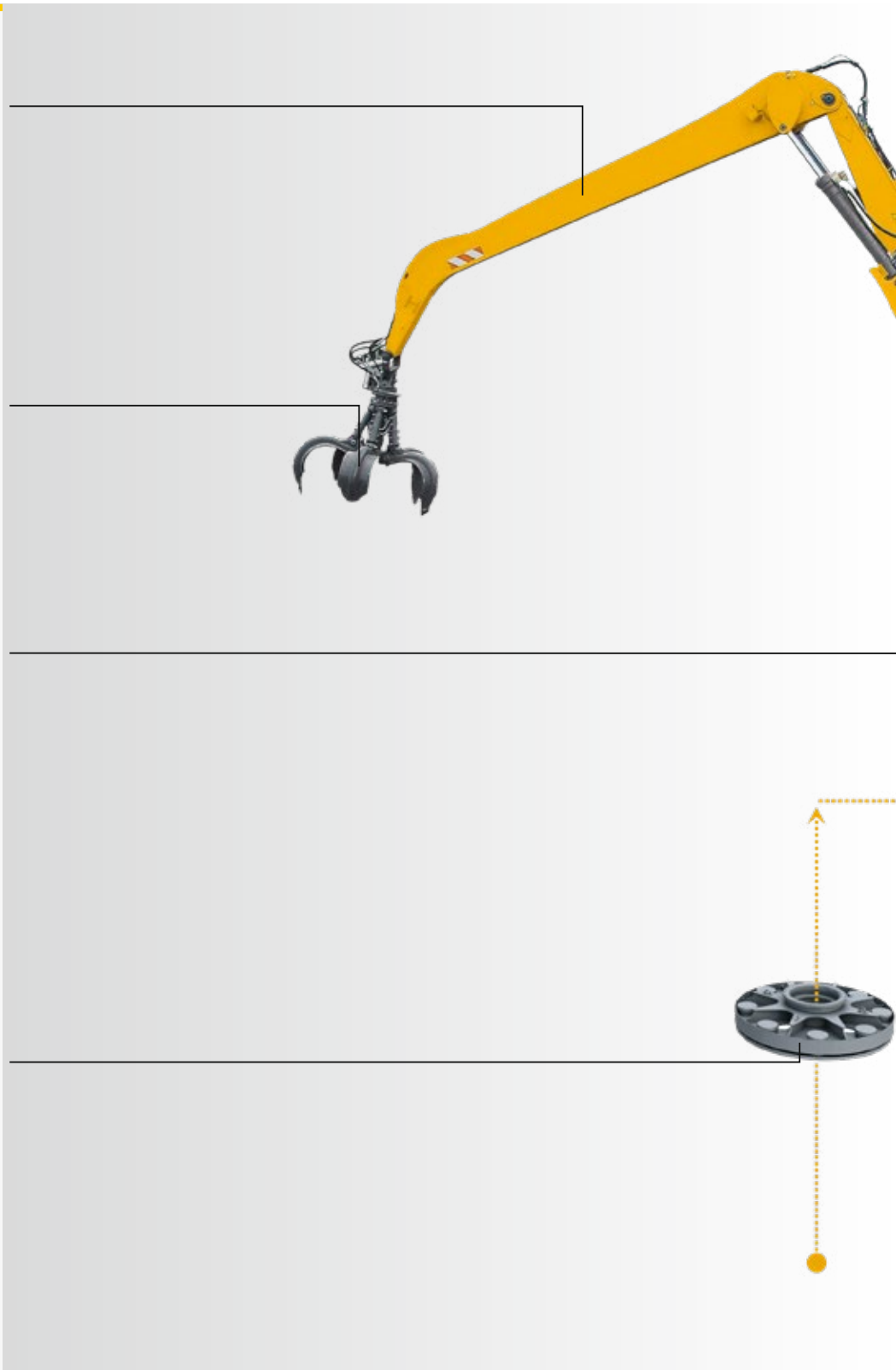
- Multi-Tine grab
- Sorting grapple
- Quick-change system

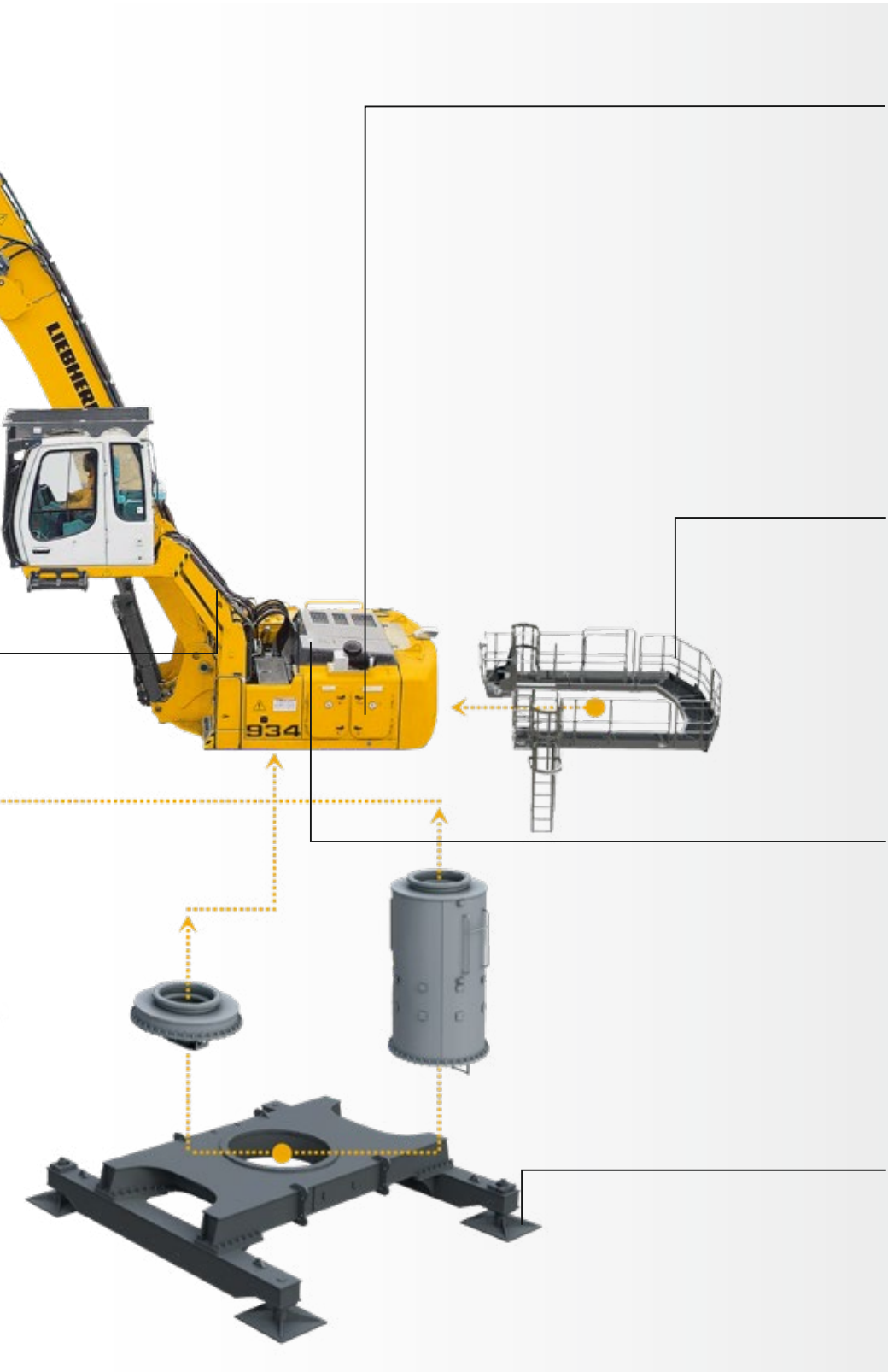
Cab elevation

- Large range of fixed and hydraulically adjustable elevations
- Perfect view of the working area and surrounding area of machine

Spring base

- Absorption of dynamic loads in order to be able to operate the machine safely on one pillar over the long term
- Number of absorbing dampers based on size of machine
- Assembly kit for customer (for concrete, steel)





Integrated switchgear cabinet

- Designed to withstand even extreme environmental conditions
- Overpressure system to prevent ingress of dust
- Fastenings with standard padlocks
- Robust and durable

Access

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

Electric motor

- Designed to withstand even extreme environmental conditions
- Constant speed independent of the load
- Integrated sensors for maximum availability

Freestanding undercarriage with 4-point outrigger

- Consistent machine performance on interchangeable undercarriage
- Reduced ground space
- Modular and upgradeable

Technical Data

EP 934 C Umschlag

Reach	m	13–20	EP 944 C Umschlag	15–22
Operating weight	kg	39,100	EP 944 C Umschlag	51,900
Engine output	kW/HP	160/218	EP 944 C Umschlag	200/272
Capacity	m ³	0.80–1.10	EP 944 C Umschlag	1.10–1.70

EP 954 C Umschlag

Reach	m	16–24	ER 934 C Umschlag	12–16
Operating weight	kg	64,500	ER 934 C Umschlag	38,050
Engine output	kW/HP	250/340	ER 934 C Umschlag	160/218
Capacity	m ³	1.10–1.70	ER 934 C Umschlag	0.80–1.10

ER 944 C Umschlag

Reach	m	15–18	ER 954 C Umschlag	15–20
Operating weight	kg	52,050	ER 954 C Umschlag	75,400
Engine output	kW/HP	200/272	ER 954 C Umschlag	250/340
Capacity	m ³	1.10–1.70	ER 954 C Umschlag	1.10–1.70

ER 934 C High Rise

Reach	m	13–20	ER 944 C High Rise	15–22
Operating weight	kg	56,200	ER 944 C High Rise	73,400
Engine output	kW/HP	160/218	ER 944 C High Rise	200/272
Capacity	m ³	0.80–1.10	ER 944 C High Rise	1.10–1.70

ER 954 C High Rise

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

LH 26 M Industry Litronic

Reach	m	13	LH 26 C Industry Litronic	12
Operating weight*	kg	approx. 26,200–26,500	LH 26 C Industry Litronic	approx. 26,700–27,900
Engine output	kW	90	LH 26 C Industry Litronic	90
System performance	kW	105	LH 26 C Industry Litronic	105
Multi-tine grab capacity	m ³	0.40–0.60	LH 26 C Industry Litronic	0.40–0.60

LH 110 C Industry Litronic¹

Reach	m	25	LH 150 C Industry Litronic ¹	28
Operating weight*	kg	approx. 105,000–125,000	LH 150 C Industry Litronic ¹	approx. 135,000–185,000
Engine output	kW	300	LH 150 C Industry Litronic ¹	400
System performance	kW	492	LH 150 C Industry Litronic ¹	661
Multi-tine grab capacity	m ³	1.10–3.00	LH 150 C Industry Litronic ¹	1.10–3.00

* without working tool

¹ also available as High Rise and Gantry

Examples of Use



Mobile Harbour Crane



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 different business sectors flows 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 specialisation. 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 solutions by Liebherr master the tasks of scrap handling extremely economically. 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 cabin conditions. Vibrations are reduced to an imperceptible minimum. Also, the cabin is soundproofed.

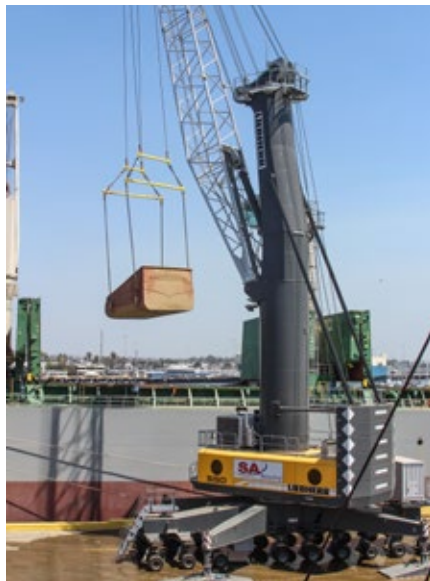
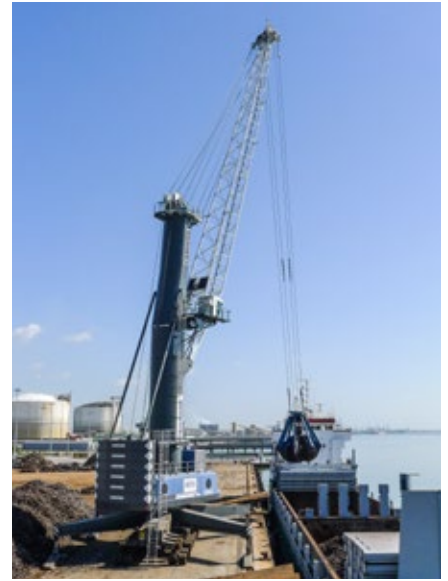
Maintainability

Based on many years of experience, Liebherr provides its customers with effective service and support both now 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	m	10–40	11–48	11–54
Operating weight	kg	241,000	342,000	400,000
Lifting capacity	t	84	124	154
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	m/min	0–115	0–120	0–120

Examples of Use



Wheel Loaders



Performance

With the Liebherr wheel loaders L 526–L 566 XPower® and L 580 XPower®, a choice can be made between industrial lift arm/parallel linkage and Z-bar linkage. The wheel loaders are therefore versatile and universal. The ideal machine is available for specific tasks such as handling and loading steel and bulk materials or feeding a shredder with scrap metal. Such machine versatility ensures maximum efficiency and productivity.

Economy

The innovative drive concepts of the Liebherr wheel loaders reduces fuel consumption by up to 30%. In addition there is minimal tyre wear and hardly any brake wear, at maximum handling capacity and efficiency, thus reducing operating costs and also protecting the environment.

Reliability

Liebherr wheel loaders satisfy Liebherr's exacting standards in even the toughest conditions. They feature many components which are produced in-house and are therefore perfectly tailored to work in synergy. This ensures machine reliability and availability.

Comfort

The modern, ergonomic cabin design provides the operator with maximum comfort enabling him to concentrate on his work without fatigue, which once again means more safety and productivity. The Liebherr control lever allows precise and sensitive control of the machine. This ensures accurate and safe handling. The generous glass surfaces of the cab offer excellent all-round visibility thus ensuring maximum safety for people, the machine and the load.

Maintainability

The Liebherr wheel loaders offer excellent service accessibility. All points for daily maintenance can be reached safely and conveniently. A clear benefit which saves time and money!

Wheel Loaders L 526–L 580 XPower® Overview

Maximum Operator Comfort for Greater Productivity

- Automatic central lubrication system (optional)
- Premium display (Touchscreen)
- Liebherr control lever with mini joystick (optional)
- Joystick steering or 2-in-1 steering (optional)
- Ride control (L 526–L 546 optional / L 550–L 580 as standard)
- Preparation for protective ventilation and dust filtration device (optional)

Highest Level of Performance

- Industrial lift arm/parallel linkage or Z-bar linkage (L 526–L 566 and L 580 optional)
- LIKUFIX quick hitch (L 526–L 546 optional)
- Comprehensive range of special equipment for scrap handling (optional)

Robustness and Quality for Durable Machines

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





Productive and Safe Working

- Soundproof ROPS/FOPS cab
- Windscreen guard (optional)
- Additional working lights, front/rear (optional)
- Adaptive working lighting (optional)
- Roof camera for front area monitoring (with Liebherr camera via Liebherr display) (optional)
- Skyview 360° (optional)
- Active personnel detection at the rear (L 550 – L 580 optional)
- Safe, non-slip ladder access to cabin

Short Service Times for Greater Productivity

- Radiator easy to maintain
- Fluff trap for radiator (optional)
- Large-mesh radiator (optional)
- Reversible fan drive (optional)
- Air pre-cleaner (optional)

Productive and Safe Working

- Anti-slip steps and sturdy handrails
- Rear space monitoring camera via Liebherr display
- Reversing obstruction detector with smart alarm (optional)

Robustness and Quality for Durable Machines

- Crash protection, rear (optional)
- Chassis protection (optional)
- Widening for mudguard (optional)

Technical Data

L 507 Stereo

Tipping load	kg	3,490–3,750	L 509 Stereo	4,200–4,430
Bucket capacity	m ³	0.9–1.6		1.2–2.0
Operating weight	kg	5,550–5,730		6,390–6,465
Engine output (ISO 14396)	kW/HP	50/68		54/73
Emission stage	Stage	V/Tier 4f		V/Tier 4f

L 514 Stereo

Tipping load	kg	4,075–5,750	L 518 Stereo	5,025–6,550
Bucket capacity	m ³	1.4–3.5		1.5–4.0
Operating weight	kg	8,860–9,985		9,190–10,445
Engine output (ISO 14396)	kW/HP	76/103		76/103
Emission stage	Stage	IV/Tier 4f		IV/Tier 4f

L 526

Tipping load	kg	6,510–7,750	L 538	7,720–9,100
Bucket capacity	m ³	2.1–5.5		2.3–6.5
Operating weight	kg	12,620–13,690		13,900–15,000
Engine output (ISO 14396)	kW/HP	100/136		111/151
Emission stage	Stage	IV/Tier 4f		IV/Tier 4f

L 546

Tipping load	kg	8,200–9,750	L 550 XPower®	9,300–11,100
Bucket capacity	m ³	2.5–7.5		3.0–9.0
Operating weight	kg	14,300–15,800		18,700–20,300
Engine output (ISO 14396)	kW/HP	120/163		140/190
Emission stage	Stage	IV/Tier 4f		IV & V/Tier 4f

L 556 XPower®

Tipping load	kg	10,500–12,400	L 566 XPower®	12,100–15,000
Bucket capacity	m ³	3.3–10.0		3.5–12.0
Operating weight	kg	19,500–21,200		24,800–26,900
Engine output (ISO 14396)	kW/HP	165/224		200/272
Emission stage	Stage	IV & V/Tier 4f		IV & V/Tier 4f

L 576 XPower®

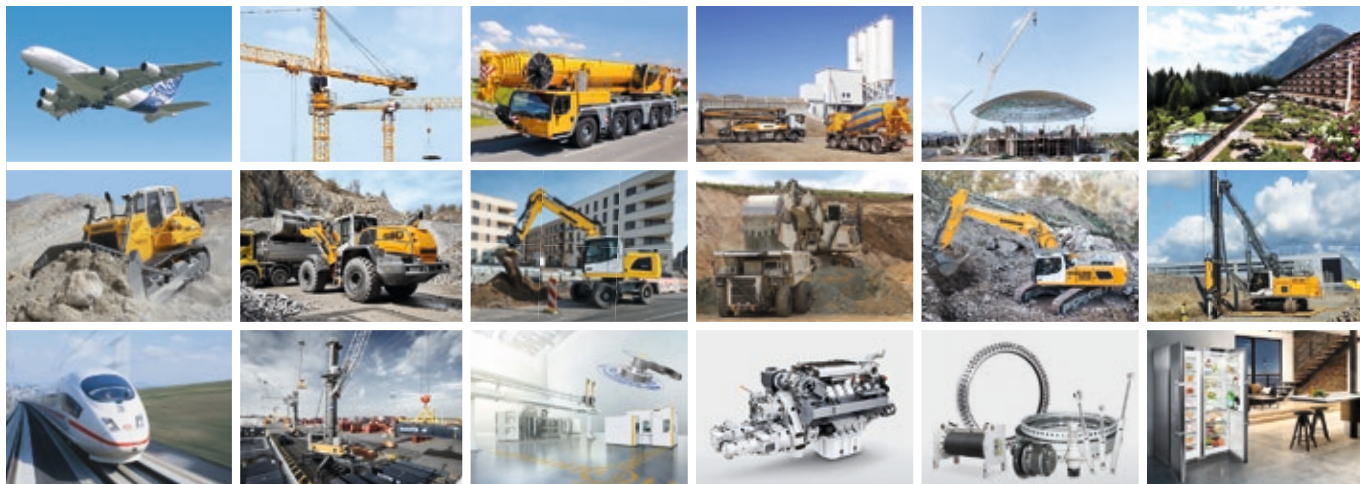
Tipping load	kg	17,400–17,600	L 580 XPower®	14,800–17,750
Bucket capacity	m ³	4.7–5.2		4.5–14.0
Operating weight	kg	25,700–25,800		28,050–30,100
Engine output (ISO 14396)	kW/HP	215/292		230/313
Emission stage	Stage	IV & V/Tier 4f		IV & V/Tier 4f

L 526–L 546 correspond to the data in parallel linkage incl. quick hitch and L 550 XPower®–L 566 XPower® and L 580 XPower® correspond to the data in industrial lift arm incl. quick hitch.

Examples of Use



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 applications.

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 then, the family business has steadily grown to a group of more than 130 companies with nearly 44,000 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