

# The crawler excavator. **R 924** COMPACT

Operating Weight: 52,690 - 58,643 lb  
Engine Output: 121 kW / 164 HP  
Bucket Capacity: 0.46 - 1.57 yd<sup>3</sup>



# LIEBHERR

# R 924 COMPACT

Operating Weight: 52,690 - 58,643 lb  
Engine Output: 121 kW / 164 HP  
Bucket Capacity: 0.46 - 1.57 yd<sup>3</sup>



## Performance

The Liebherr R 924 Compact combines the excellent performance of our standard excavator with the reduced swing of a compact machine. Even when operating conditions are limited, the R 924 Compact exceeds the highest demands.

## Reliability

Liebherr Crawler Excavators are designed with longevity in mind. Liebherr manufactured components and industry leading features ensure the highest level of dependability and long service life.

## Comfort

The R 924 Compact cab has been ergonomically designed to maintain a spacious cab; providing maximum comfort to the operator.

## Economy

New features such as the quick system, LIKUFIX, Tool Control and the central lubrication system allow users to configure the machine for a wide range of applications. These features also promote optimal efficiency minimizing fuel consumption, service and maintenance costs.





**Liebherr attachments and solutions for every job**

- Attachments for every material and application
- LIKUFIX: a quick-change system that combined with an automatic coupling system allows the operator to quickly change attachments and also secure all hydraulic connections from the cab in matter of seconds
- Mechanic and hydraulic Liebherr quick-change adapter



# Performance

The Liebherr R 924 Compact combines the excellent performance characteristics of a standard excavator with the reduced dimensions of a compact machine. The R 924 Compact delivers multi-functionality, performance and maximum productivity. Innovative features such as the modular quick-change system and standard central lubrication system, shorten tooling and servicing times.

## Outstanding Productivity

### Outstanding Lift Capacities

Impressive lift capabilities are achieved through the low center of gravity and well thought-out attachment geometry. The R 924 Compact delivers the best lifting capability in its class.

### High excavation and load performance

The R 924 Compact is ideal for working in the most confined conditions due to its minimal tail swing without compromising stability. Combined with high hydraulic performance - typical for Liebherr hydraulic excavators - the results are short cycle times and high digging and loading performances.

### Liebherr diesel power

Liebherr designs and manufactures its own four cylinder diesel engine specifically for its construction machinery, which guarantees a large capacity and long operational life. Liebherr's diesel engine exhibits its full performance even in the low rpm range, resulting in the machine's economic performance; while still making the R 924 Compact the most powerful excavator in its class.

## Solid footing

### Stability

Weight concentration in the undercarriage contributes to strong digging forces and excellent stability under all ground conditions.

### Large ground clearance

Large ground clearance ensures protection of the undercarriage components as well as easy traveling even under difficult ground conditions.



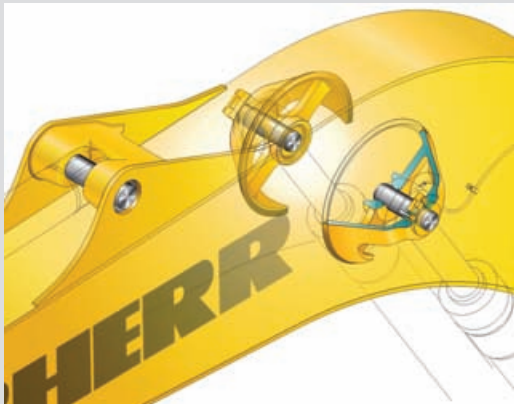
### Key technologies made by Liebherr

- Power train optimized perfectly to the construction of the minimal tail-swing excavator
- Outstanding performance characteristics for productivity unique in its class
- In-house production of engines, hydraulic pumps, transfer gears, traction drives and electronic components



### Sturdy Undercarriage

- The combination of high tensile strength steel plates and steel castings minimizes stress tension.
- A dozer blade, e.g. for grading jobs, is optional available



#### Robust equipment design

- Unique hoist assembly positioning design: The R 924 Compact is the only machine in its class fitted with two separate bolts
- High-strength design with cast sockets
- Long-term benefit: Cast steel components at the pivot points



# Reliability

The R 924 Compact is a powerful and reliable machine ideal for areas where working space is limited. The design is the result of the know-how and expertise Liebherr has gained through 50 years of manufacturing hydraulic excavators. The R 924 Compact is built with Liebherr manufactured components and technology that meet high quality standards and guarantee maximum reliability.

## Quality down to the last detail

### Liebherr Components

Liebherr manufactured components in the drive system such as the diesel engine, travel and swing gearboxes, hydraulic pumps, motors and cylinders; all precisely matched to one another assuring high reliability and long service life of the R 924 Compact.

### Pre-finish

Excellent finish throughout the R 924 Compact; every individual component is entirely painted or surface treated to protect against corrosion.

## Integrated Electronics

### Automatic Control

The integrated on-board electronic system allows the operator to concentrate on the job at hand. The system is designed to continuously monitor pre-determined data to maintain optimal engine control; the result is an easy to read analysis shown on the display.

### Data Storage

The on-board computer has the ability to store all machine data. The data can be easily recalled and transmitted to a service center.



### Liebherr hydraulic cylinders

- Cylinder sizes matched to each model
- High-quality coating of piston rod
- Special gasket packages for piston rod and piston
- Sealed special bushings for pin mountings
- End-cushion at each end



### Cleanly arranged upper

- All hoses have been clearly routed and secured along the boom and stick for easy access.
- Transverse-mounted control valve for optimal accessibility



**Intelligent detailed solutions**

- Radiators are easily accessible from ground level for cleaning
- Easy cleaning of the hinged air conditioner condenser
- Laterally positioned intake slots to increase radiator life





# Comfort

The R 924 Compact features the largest and most comfortable operator cab of all minimal tail-swing excavators on the market. Emphasis was placed on the ergonomic design of the cab, positioning of controls, and access to the cab to ensure operator comfort.

## The operator takes center stage

### Workspace

The R 924 Compact has a spacious and comfortable operator cab. The cab provides operators with generous leg and elbow room and has lots of storage space for a cooler and other personal items.

### Air-conditioning standard

The air-conditioning sensors constantly monitor the temperature settings. The ventilation panels can be open and closed electronically at the press of a button. The re-heat function dehumidifies the cab in seconds.

## Ergonomics for effective operation

### Straightforward arrangements

Design and positioning of the seat, controls and displays are perfectly coordinated within a total ergonomic concept. The operator has an unobstructed panoramic view of the entire work area due to the oversized windows, including a roof window. The seat and foot pedals are fully adjustable to ensure maximum operator comfort over a long work day.

### Intelligent joystick controls

The ergonomically optimized joysticks provide relaxed working conditions. The travel function of the excavator is easy and precise due to hydraulically cushioned foot pedals.



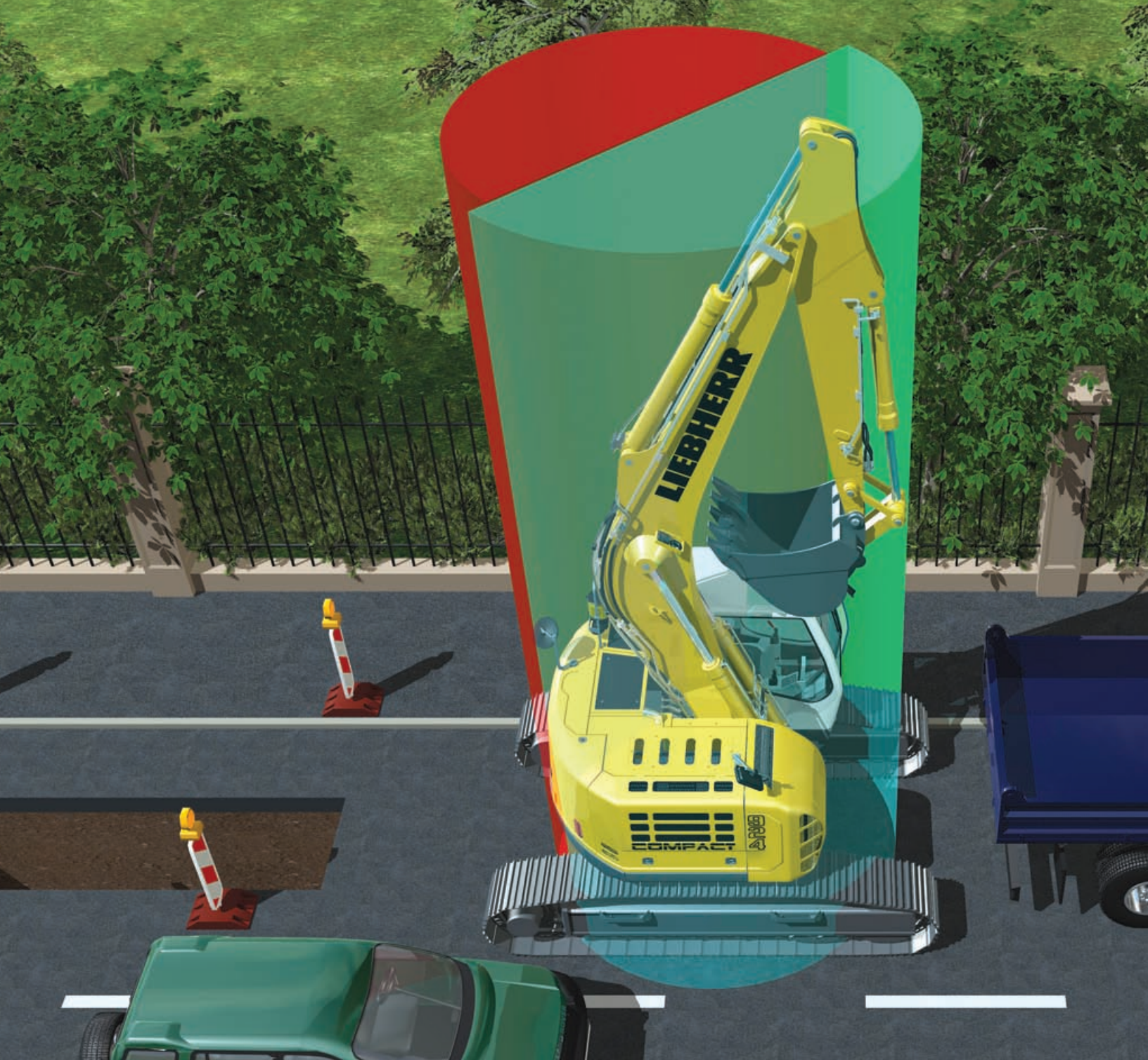
### Everything in its right place

- Comfortable entry with ergonomically positioned hand grips
- Large platform, treated with anti-slip coating
- Optimal arrangement of mirrors for unobstructed view of the surrounding area



### Maintenance benefits

- All service points are centrally integrated and easily accessible via service hood
- All routine servicing work can be performed from the ground
- Easy access for routine cleaning of cooling elements



#### Liebherr Tool-Control

- After changing a hydraulic tool, the operator can select the correct pressure and flow settings from the Tool Control menu
- Stores up to 10 accessory tool settings (pressure and oil flow)
- Displays the type of accessory tool



# Economy

The R 924 Compact is synonymous with multi-functionality, performance and maximum possible productivity. Innovative features such as the modular quick-change system and the standard central lubrication system shorten maintenance and service times.

## One excavator - unlimited applications

### Multi-purpose machine

The R 924 Compact is a multi-purpose machine, which can be utilized in a wide variety of applications. The compact design makes the machine perfectly suited for jobsites confined to a tight space - such as, inner cities and narrow roads. Moreover, the machine can perform all the traditional jobs of a standard excavator - such as digging and utility construction, demolition and material handling work.

### Compact attachment dimensions

The attachment geometry, specifically developed for the R 924 Compact delivers effective operation at loading height due to the boom pivot point located behind the operator station. The total clearance circle is less than 6' 3".

## Technology for performance

### Well oiled

Regular greasing of the Liebherr R 924 Compact is performed by the standard semi-automatic lubrication system. The Liebherr central lubrication system provides a reduction in service time as well as ensuring that the machine is well lubricated at all times.

### Electronic engine speed sensing

This regulating system provides an efficient conversion of the engine output in hydraulic performance - ensuring better utilization of engine power. The result: increased output, decreased fuel consumption, and protection of the diesel engine.

### Hydrostatic fan drive

- Thermostatically regulated fan speed via engine oil and coolant temperature
- Accelerated warm-up period
- Assurance of steady fluid quality due to constant temperature
- Increased longevity of drive components
- Fan utilizes only the minimum required power; reducing fuel consumption



### Quick spare parts service

- Over 80,000 line items are ready for the global spare part requirements

# Technical Data



## Engine

Rating per ISO 9249	121 kW (164 hp) at 1800 RPM
Model	Liebherr D 924 TI-E
Type	4 cylinder in-line
Bore/Stroke	4.8/5.6 in
Displacement	405 in <sup>3</sup>
Engine operation	4-stroke diesel direct injection turbo-charged after-cooled reduced emissions
Cooling	water-cooled and integrated motor oil cooler
Air cleaner	dry-type air cleaner with pre-cleaner, primary and safety elements
Fuel tank	95 gal
Engine idling	sensor controlled
Electrical system	
Voltage	24 V
Batteries	2 x 110 Ah/12 V
Starter	three phase current 24 V/7 hp
Alternator	24 V/80 A



## Hydraulic System

Hydraulic pump	LSC control system (Liebherr-Synchron-Comfort), regulation with Liebherr variable flow, swash plate double pump
Max. flow	2 x 56 gpm
Max. pressure	5,076 PSI
Pump regulation	electro-hydraulic with electronic engine speed sensing regulation, pressure compensation, flow compensation, automatic oil flow optimizer, swing circuit with priority and torque control
Hydraulic tank	37 gal
Hydraulic system	max. 93 gal
Hydraulic oil filter	1 full flow filter in return line with integrated fine filter area (5 µm) and an additional leakage filter
Hydraulic oil cooler	compact cooler, consisting of a water cooler, sandwiched with hydraulic oil cooler and after-cooler cores and hydrostatically driven fan
MODE selection	adjustment of machine performance and the hydraulics via a mode selector to match application
ECO	for economical and environmentally friendly operation
POWER	for maximum digging power and heavy duty jobs
LIFT	for lifting
FINE	for precision work and lifting
Super-Finish	adjustable working speed for grading
RPM adjustment	stepless adjustment of engine output via the rpm at each selected mode
Liebherr Tool Control	ten preadjustable pump flows and pressures for add on tools



## Hydraulic Controls

Power distribution	via control valve with integrated safety valves, simultaneous and independent operation of travel drive, swing drive and work attachment
Control type	
Attachment and swing	proportional via joystick levers
Travel	– proportional via foot pedals or removable hand levers – speed pre-selection
Additional functions	via foot pedals or joystick toggle switch



## Swing Drive

Drive	Liebherr swash plate motor with integrated control valve and torque control
Transmission	compact planetary reduction gear
Swing ring	Liebherr sealed single race ball bearing swing ring, internal teeth
Swing speed	0–9 RPM stepless
Swing torque	16,630 lb
Holding brake	wet multi-disc (spring applied, pressure released)
Option	pedal controlled positioning brake



## Operator's Cab

Cab	built from deep drawn components, resiliently mounted, sound insulated, tinted windows, front window stores overhead, door with sliding window
Operator's seat	shock absorbing suspension, adjustable to operator's weight, 6-way adjustable seat
Joysticks	integrated into adjustable seat consoles
Monitoring	menu driven query of current operating conditions via the LCD display. Automatic monitoring, display, warning (acoustical and optical signal) and saving machine malfunction data, for example, engine overheating, low engine oil pressure or low hydraulic oil level
Air conditioning	standard air conditioning, combined cooler/heater, additional dust filter in fresh air/recirculated
Noise emission	
ISO 6396	$L_{PA}$ (inside cab) = 74 dB(A)
2000/14/EC	$L_{WA}$ (surround noise) = 102 dB(A)



## Undercarriage

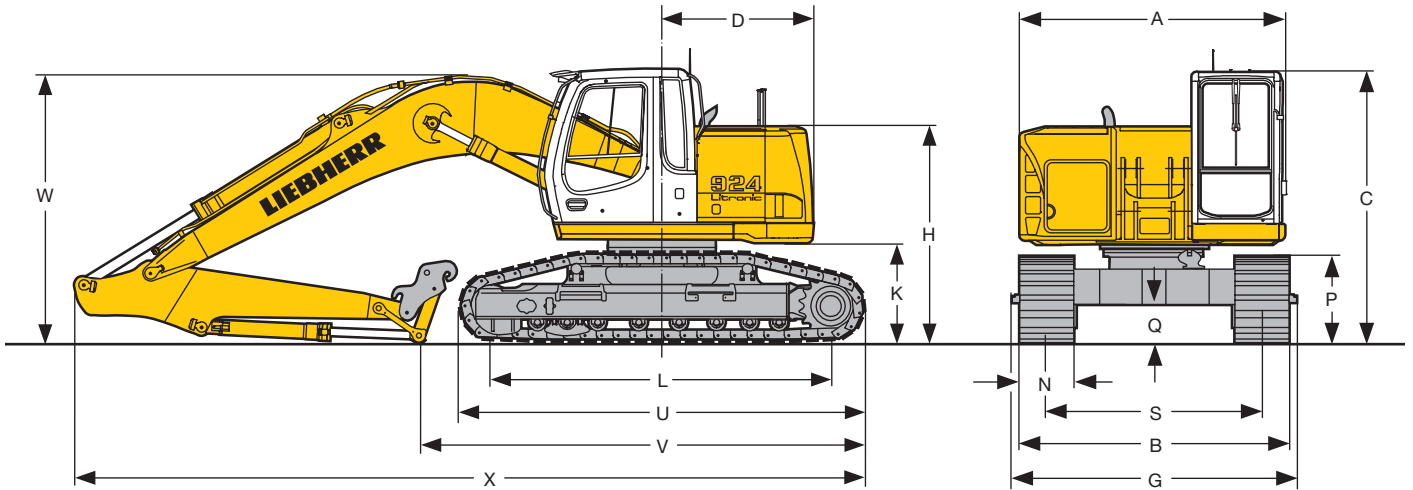
HD-SL	heavy duty, wide gauge
Drive	Liebherr swash plate motors with integrated brake valves on both sides
Transmission	Liebherr planetary reduction gears
Travel speed	low range –1.9 mph high range –3.2 mph
Drawbar pull max.	59,350 lb
Track components	B 60, maintenance-free
Track rollers/Carrier rollers	8/2
Tracks	sealed and greased
Track pads	triple grouser
Digging locks	wet multi-discs (spring applied, pressure released)
Brake valves	integrated into travel motor
Option	blade



## Attachment

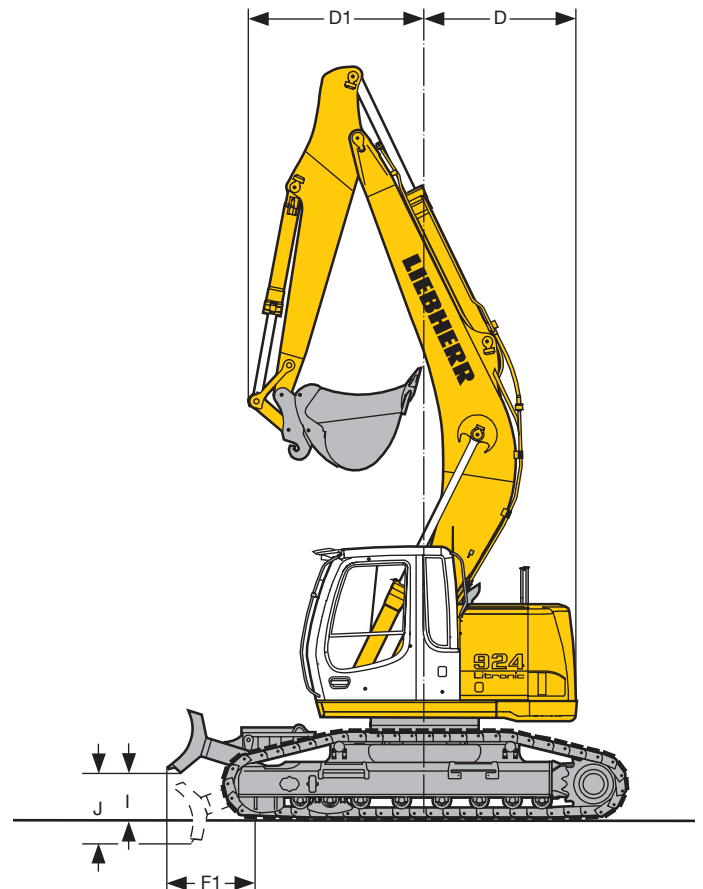
Type	combination of resistant steel plates and cast steel components
Hydraulic cylinders	Liebherr cylinders with special seal-system, shock absorption
Pivots	sealed, low maintenance
Lubrication	lubrication semi automatic
Hydraulic connections	pipes and hoses equipped with SAE split-flange connections
Bucket	standard equipped with 26,500 lb safety hook for lifting

# Dimensions



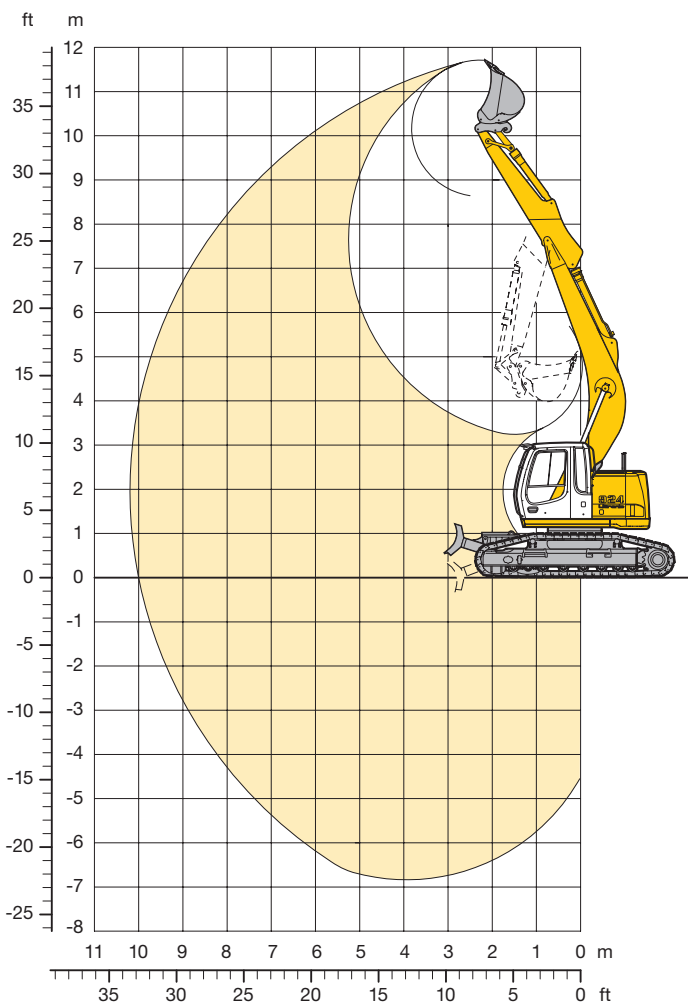
		ft in
A	Upper – overall width	9' 9"
C	Basic machine – height overall	10'
C	with protective grid up FOPS	10' 8"
D	Tail reach	5' 7"
D1	without quick change adapter with bucket	6' 3"
D1	with quick change adapter and bucket	6' 5"
F1		3' 2"
H	Height – engine cover	7'12"
I	Dozer blade raised	1' 9"
J	Dozer blade down	2' 7"
K	Clearance under counterweight	3' 8"
L	Center idler to center sprocket	12' 4"
P	Track height	3' 3"
Q	Ground clearance	1' 7"
S	Track gauge	7'10"
U	Track length	14'11"
U1		16' 6"
N	Pad width	1'12" 2' 6"
B	Track outside width	9'10" 10' 4"
G	Undercarriage width overall	10' 4" 10' 4"
V	Rear of track to link/lever pin for stick length	8' 2" 16' 5"
W	Attachment height folded	10'
X	Complete machine length overall	29' 2"

<b>Gooseneck Boom 18'8"</b>		
Stick Length		8'2"
V		ft in 16'5"
W		ft in 10'
X		ft in 29'2"
D1	without quick change adapter with bucket	ft in 6'3"
D1	with quick change adapter and bucket	ft in 6'5"



# Backhoe Attachment

with Gooseneck Boom 18'8"



## Digging Envelope with Quick Change Adapter

Stick length	ft in	9' 8"
Max. digging depth	ft in	22' 4"
Max. reach at ground level	ft in	32' 10"
Max. dump height	ft in	28' 5"
Max. teeth height	ft in	38' 5"

## Digging Forces without Quick Change Adapter

Digging force ISO	lb	23,155
	lb	23,149
Breakout force ISO	lb	31,698
	lb	31,747

## with Quick Change Adapter

Digging force ISO	lb	21,806
	lb	21,826
Breakout force ISO	lb	26,303
	lb	26,235

Max. breakout force  
without quick change adapter with ripper bucket 158 kN (35,494 lb)

## Operating Weight and Ground Pressure

Operating weight includes basic machine with gooseneck boom 18'8", stick 9'8", quick change adapter 48 and bucket 92 yd<sup>3</sup>.

Undercarriage HD-SL	without blade			with blade			
	in	20"	24"	30"	20"	24"	30"
Pad width	in	20"	24"	30"	20"	24"	30"
Weight	lb	53,407	54,013	54,928	57,133	57,739	58,654
Ground pressure	PSI	8.53	7.25	5.83	9.10	7.68	6.26

## Buckets

		without Quick Change Adapter					with Quick Change Adapter			
		in	24"	41"	49"	55"	55"	41"	49"	55"
Cutting width SAE	in	24"	41"	49"	55"	55"	41"	49"	55"	55"
Capacity ISO 7451	yd <sup>3</sup>	0.46	0.92	1.18	1.37	1.57	0.92	1.18	1.31	1.57
Max. possible material weight	lb/yd <sup>3</sup>	3,034	3,034	3,034	3,034	3,034	3,034	3,034	3,034	2,528
Weight with Liebherr teeth Z 13 <sup>2)</sup>	lb	1,543	1,312	1,510	1,609	1,786	1,356	1,543	1,576	1,863

<sup>1)</sup> Ripper bucket with teeth size Z 16 P

<sup>2)</sup> Bucket with Liebherr teeth Z 13 (for applications up to surface class 5, heavy soils)

# Lift Capacities

with Gooseneck Boom 18'8"

## Stick 9'8"

Height (ft)	Under-carriage	Radius of load from centerline of machine (ft)			
		10	15	20	25
35	Outriggers raised				
	Blade down				
30	Outriggers raised		9,480x ( 9,480x)		
	Blade down		9,480x ( 9,480x)		
25	Outriggers raised		11,023x (11,023x)	9,480x ( 9,480x)	
	Blade down		11,023x (11,023x)	9,480x ( 9,480x)	
20	Outriggers raised		11,905x (11,905x)	11,244 (11,244x)	7,496 ( 7,937x)
	Blade down		11,905x (11,905x)	11,244x (11,244x)	7,937x ( 7,937x)
15	Outriggers raised	16,314x (16,314x)	14,551x (14,551x)	10,582 (12,566x)	7,496 (11,023x)
	Blade down	16,314x (16,314x)	14,551x (14,551x)	11,464 (12,566x)	7,937 (11,023x)
10	Outriggers raised	28,660x (28,660x)	15,653 (15,653x)	10,141 (14,330x)	7,055 (11,905 )
	Blade down	28,660x (28,660x)	16,755 (16,755x)	10,803 (14,330x)	7,716 (12,125x)
5	Outriggers raised	14,551x (14,551x)	14,330 (14,330x)	9,480 (15,873x)	6,834 (11,464 )
	Blade down	14,551x (14,551x)	15,432 (15,432x)	10,141 (15,873x)	7,275 (12,346 )
0	Outriggers raised	16,314x (16,314x)	13,448 (13,448x)	9,039 (15,653 )	6,614 (11,244 )
	Blade down	16,314x (16,314x)	14,551 (14,551x)	9,700 (16,755 )	7,055 (12,125 )
- 5	Outriggers raised	22,267x (22,267x)	13,228 (13,228x)	8,598 (15,432x)	6,393 (11,023 )
	Blade down	22,267x (22,267x)	14,330 (14,330x)	9,480 (16,535x)	7,055 (11,905 )
- 10	Outriggers raised	25,794 (28,440x)	13,228 (13,228x)	8,598 (14,991x)	
	Blade down	27,999 (28,440x)	14,330 (14,330x)	9,480 (14,991x)	
- 15	Outriggers raised	21,164x (21,164x)	13,669 (13,669x)	9,039 (10,803x)	
	Blade down	21,164x (21,164x)	14,771 (14,771x)	9,700 (10,803x)	

The lift capacities on the load hook of the Liebherr quick change adapter 48 without attachment are stated in lbs and can be lifted 360° on firm, level supporting surface. Capacities quoted in brackets are valid for the undercarriage when in longitudinal position. Capacities are valid for 2' wide triple grouser pads. Indicated loads are based on ISO 10567 standard and do not exceed 75 % of tipping or 87 % of hydraulic capacity (indicated via x). Maximum load for the quick change adapter's load hook is 26,455 lb. Without quick change adapter the lift capacities will increase by 518 lb, without bucket cylinder, link and lever they increase by an additional 606 lb. Lifting capacity of the excavator is limited by machine stability, hydraulic capacity and maximum permissible load of the load hook.

# Equipment



## Undercarriage

	S	O
Pads 24"	•	
Track chain tensioner (grease/hydraulic)	•	
Two-stage travel motors	•	
Idler protection	•	
Lifetime lubricated track rollers	•	
Track guide at each track frame	•	
Tracks sealed and greased	•	
Pads 20"		•
Pads 30"		•
Track guides at sprocket and in center	•	
Track guide continuous		•
Sprocket with dirt ejector		•
Reinforced base-plate center-piece		•



## Uppercarriage

	S	O
Maintenance free swing brake lock	•	
Non slip surfaces	•	
Handrails	•	
Main switch for electric circuit	•	
Engine hood with lift cylinder	•	
Sound insulation	•	
Maintenance-free HD-batteries	•	
Tool kit	•	
Counterweight	•	
Rear view mirror on counterweight	•	
Rear view mirror right	•	
Dust protection for radiator and oil cooler	•	
Radiator guard for cooling fan	•	
Electric fuel tank filler pump		•
Foot pedal swing positioning brake		•
Custom colors		•



## Hydraulics

	S	O
Hydraulic tank shut-off valve	•	
Pressure compensation	•	
Pressure test ports	•	
Pressure storage for controlled lowering of attachments with engine turned off	•	
Filter with integrated fine filter area (5 µm)	•	
Leakage filter	•	
Electronic pump regulation	•	
Flow compensation	•	
Stepless work mode selector	•	
Additional hydraulic circuits		•
Filter for secondary circuit		•
Bio-degradable hydr. oil		•
Liebherr Tool Control		•



## Engine

	S	O
Turbo charger	•	
Direct injection	•	
After-cooled	•	
Sensor controlled engine idling	•	
Air filter with pre-cleaner main- and safety element	•	
Fuel water separator	•	
Laminated radiator	•	
Cold starting aid		•



## Operator's Cab

	S	O
Tinted windows	•	
Roof hatch	•	
Door with sliding window	•	
Rain hood over front window opening	•	
Wiper/washer	•	
6-way adjustable seat	•	
Seat and consoles independently adjustable	•	
Storage tray	•	
Dome light	•	
Inside rear mirror	•	
Coat hook	•	
Cigarette lighter and ashtray	•	
Displays for engine operating condition	•	
Mechanical hour meters, readable from outside the cab	•	
Outside rear mirror	•	
Sun visor	•	
Removable customized floor mat	•	
Air conditioning	•	
Hydraulic joystick	•	
Preparation for radio installation	•	
Seat belt	•	
Safety lever for hydraulic disconnect	•	
Emergency exit rear window	•	
2 front headlights	•	
Air pressure operator seat with heating and head-rest		•
Extinguisher		•
Roof window wiper		•
Electric cooler		•
Bullet proof window (fixed installation – cannot be opened)		•
Stereo radio		•
Beacon		•
Auxiliary heating		•
Socket 12 V		•
FOPS protection		•
Electronic theft protection		•
Additional flood lights rear		•



## Attachment

	S	O
Flood lights on boom right	•	
Sealed pivots	•	
Safety lift hook on buckets	•	
SAE-dbl flange connection for all hi-pressure lines	•	
Semi-automatic lubrication for attachment and swing ring	•	
Cylinders with shock absorber	•	
Hydraulic rotor protection	•	
2nd flood lights on boom left		•
Liebherr automatic lubrication system for attachment and swing ring		•
Hydr. lines for clam operation on stick		•
Liebherr line of clams		•
Likufix		•
Safety check valves on hoist cylinder		•
Safety check valves on stick cylinder		•
Manual quick change tool adapter		•
Hydraulic quick change tool adapter		•
Custom colors		•
Special buckets and other tools		•
Overload warning device		•
Locking of connections for clam operation		•
Extra hydraulic controls including piping		•

S = Standard, O = Option

**Options and/or special attachments, supplied by vendors other than Liebherr, are only to be installed with the knowledge and approval of Liebherr to retain warranty.**

**Liebherr Construction Equipment Co.**  
 4100 Chestnut Avenue, Newport News, VA 23607, USA  
 ☎ (757) 2 45 52 51, Fax (757) 928 87 01  
 www.liebherr.com, E-Mail: info.ice@liebherr.com