Crawler Excavator

R 916
Litronic®

Operating Weight:	**24,400 – 24,800 kg**
Engine Output:	**115 kW / 156 HP**
Bucket Capacity:	**0.80 – 1.20 m³**

LIEBHERR

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Performance

Liebherr crawler excavators feature state-of-the-art technology and high-quality workmanship. The most important components of the drive system are all produced by Liebherr and are perfectly coordinated with one another. The engine assures an effective power delivery, a high degree of efficiency, long life expectancy and complies with the emission standard Stage IIIA / Tier 3.

Reliability

High demand for performance and quality is consequently converted into landmark solutions to achieve the highest level of dependability and reliability. Liebherr has over 50 years experience in the production of hydraulic excavators and has an unparalleled competence in design and know-how.

Comfort

In the operator's station, the operator can look forward to a comfortable workstation that is designed according to the most up-to-date ergonomically know-how. The standard climate control provides a pleasant working environment in all weather conditions.

Liebherr crawler excavators are particularly service-friendly: Maintenance work is simply and quickly accomplished due to well accessible service points.

Economy

Liebherr crawler excavators stand for maximum productivity. The sensitive excavator controls assure optimal efficiency in the interaction of excavator hydraulics and electronics. A wide selection of attachments and buckets with various dimensions provide the correct choice for every application.

Experience progress
R 916

More Productivity

- Innovative hydraulic system “positive control” for faster working cycles and increased productivity
- Two pump circuits which are either separated or grouped together according to the actual demand result into an optimum energy utilization and less consumption
- The fast and precise supply of the hydraulic flow allow high precision of the machine and smooth superimposed movements
- Operating working pressure of 365 bar for higher digging and breakout forces
- The on-demand hydrostatic fan drive consumes only the needed power to reduce fuel consumption

More Uptime

- Robust structures and forged components for optimal stress-flow
- Centralized lubrication points for reduced maintenance time and less downtime
- The innovative maintenance concept allows daily check-ups from ground level for more safety and comfort
- A wide variety of different stick sizes assure a maximum of versatility suitable for every job side

Higher Stability

- The powerful travel drive assures optimal traction of the undercarriage and best travel performances
- Robust structures thanks to the X-shaped profile assure higher stability and increased service life
- Integrated lashing eyes for an easy and safe transport (2x each in the front and rear)

Liebherr System Technology

- Key-components such as engine, hydraulic pumps and motors, swing and travel gear boxes or electronic elements are developed and produced by Liebherr
- Manufacturing centers for components located in Germany and Switzerland assure a higher quality

More Operator Comfort

- The automatic air conditioning creates a pleasant operator environment
- Ergonomically designed seat assures comfortable working conditions
- The easily readable color-touch display optimizes the configuration of the machine and the selection of working modes

Less Operating Costs

- Electronic engine speed sensing control and maximum output at low engine speed for less fuel consumption
- Conform with Stage IIIA / Tier 3 emission standard and environmental friendly
- Developed and produced by Liebherr in Switzerland

Technical Data

Engine

Rating per ISO 9249	115 kW (156 HP) at 1,800 RPM
Model	Liebherr D 934 S conform with stage IIIA/Tier 3 emission standard. For applications at altitude higher than 3,000 m please contact your local dealer
Type	4 cylinder in-line
Bore/Stroke	122/136 mm
Displacement	6.36 l
Engine operation	4-stroke diesel unit pump system turbo-charged after-cooled and fuel cooled reduced emissions
Cooling	water-cooled and integrated engine oil cooler
Air cleaner	dry-type air cleaner with pre-cleaner, primary and safety elements
Fuel tank	380 l
Electrical system	
Voltage	24 V
Batteries	2 x 135 Ah/12 V
Starter	24 V/6.6 kW
Alternator	28 V/80 A
Engine idling	sensor-controlled

Hydraulic System

Hydraulic system	Positive Control Classic. Dual circuit hydraulic system for independent and need-based quantity allotment via the hydraulic pumps
Hydraulic pump	Liebherr variable displacement pump built in transversal plate style, in parallel arrangement with integrated transfer box
Max. flow	2 x 214 l/min.
Max. pressure	365 bar
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. 2 independent circuits with hydraulic pump summation for individual equipment movements
Hydraulic tank	290 l
Hydraulic system	max. 500 l
Hydraulic oil filter	1 full flow filter (20 µm) in return line with integrated fine filter area (5 µm)
Hydraulic oil cooler	compact cooler, consisting of a water cooler, sandwiched with hydraulic oil cooler, fuel cooler and after-cooler cores and hydrostatically driven fan
MODE selection	adjustment of engine and hydraulic performance via a mode pre-selector to match application, e.g. for especially economical and environmentally friendly operation or for maximum digging performance and heavy-duty jobs
Super-Finish	adjustable working speed for precision work
RPM adjustment	stepless adjustment of engine output via RPM at each selected mode
Tool Control	ten preadjustable pump flows and pressures for add-on tools (option)

Hydraulic Controls

The control of movements steered by joysticks demand are regulated by a hydraulic valve block.

Power distribution	via control valve with integrated safety valves
Servo circuit	
Attachment and swing	proportional via joystick levers
Travel	proportional via foot pedals or removable hand levers and speed pre-selection
Additional functions	via foot pedals or joystick toggle switch

Swing Drive

Drive by	Liebherr swash plate motor
Transmission	Liebherr compact planetary reduction gear
Swing ring	Liebherr, sealed single race ball bearing swing ring, internal teeth, lubrication via a grease distributor and a grease nipple
Swing speed	0 – 11 RPM stepless
Swing torque	71.1 kNm
Holding brake	wet multi-disc (spring applied, pressure released)

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, 4-way adjustable seat
Control system	integrated into the adjustable console panel in the operator's seat
Monitoring	menu driven query of current operating conditions via the color touch 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	automatic air conditioning, combined cooler/heater, additional dust filter in fresh air/recirculated
Noise emission	
ISO 6396	L_{pA} (inside cab) = 72 dB(A)
2000/14/EC	L_{WA} (surround noise) = 102 dB(A)

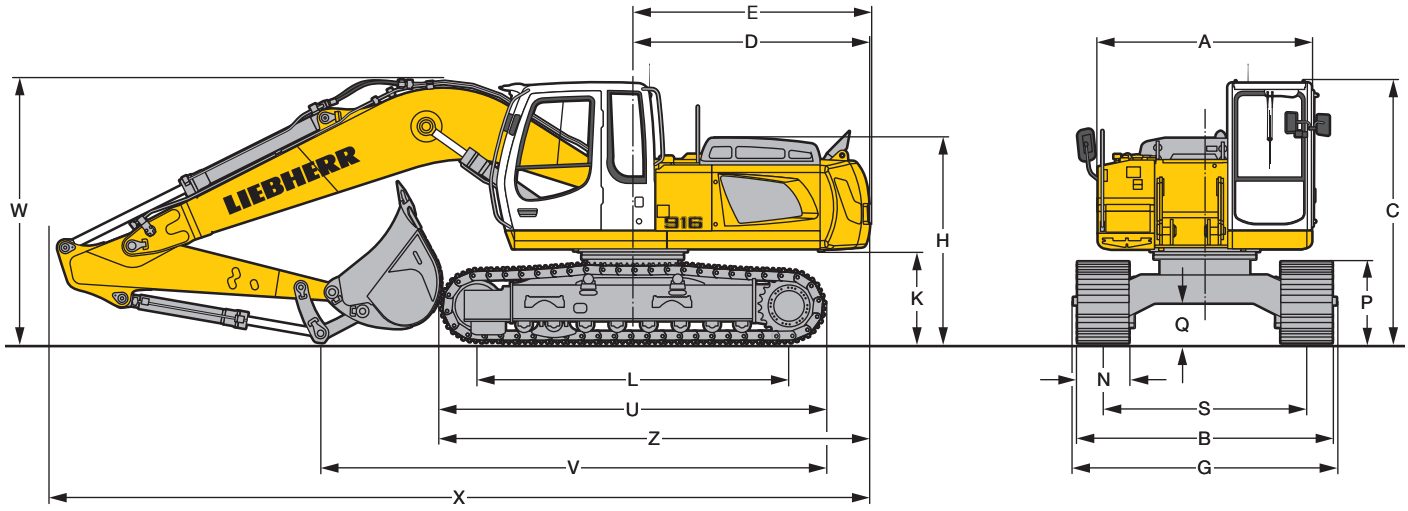
Undercarriage

LC	gauge 2,380 mm
Drive	Liebherr swash plate motors with integrated brake valves on both sides
Transmission	Liebherr planetary reduction gears
Travel speed	low range – 3.7 km/h high range – 6.1 km/h
Net drawbar pull on crawler	190 kN
Track components	B 60, maintenance-free, for 600 mm and 750 mm pad width
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
Lashing eyes	integrated

Attachment

Type	combination of resistant steel plates and forged components
Hydraulic cylinders	Liebherr cylinders with special seal-system and shock absorbers
Pivots	sealed, low maintenance
Lubrication	easy accessible centralized lubrication points for boom and stick
Hydraulic connections	pipes and hoses equipped with SAE splitflange connections
Bucket	fitted as standard with 12 t lifting hook and Liebherr tooth system

Dimensions



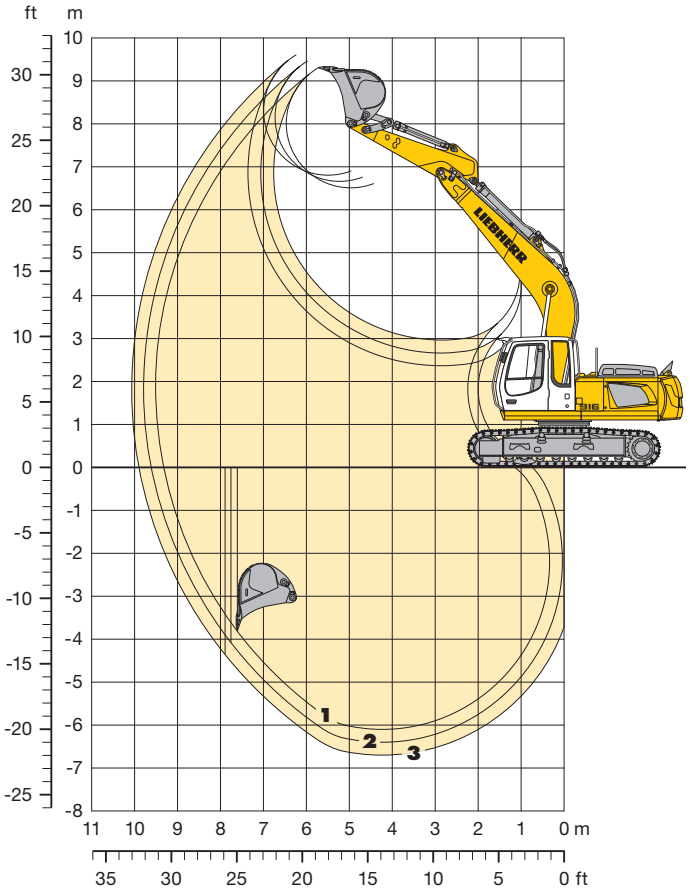
		mm
A		2,500
C		3,050
D		2,770
E		2,790
H		2,405
K		1,095
L		3,648
P		950
Q		465
S		2,380
U		4,505
Z		5,025
N	600	750
B	2,980	3,130
G	2,920	3,120*

	Stick Length	**Mono Boom 5.70 m**
	m	mm
V	2.40	5,900
	2.70	5,600
	3.00	5,300
W	2.40	3,100
	2.70	3,150
	3.00	3,200
X	2.40	9,600
	2.70	9,600
	3.00	9,600

E = Tail radius
* = Width with removable steps

Backhoe Bucket

with Mono Boom 5.70 m



Digging Envelope		1	2	3
Stick length	m	2.40	2.70	3.00
Max. digging depth	m	6.10	6.40	6.70
Max. reach at ground level	m	9.35	9.60	9.90
Max. dump height	m	6.50	6.65	6.80
Max. teeth height	m	9.30	9.45	9.60
Max. vertical digging depth	m	3.80	4.05	4.35

Digging Forces without Quick Coupler		1	2	3
Digging force ISO	kN	123	114	106
	t	12.5	11.6	10.8
Breakout force ISO	kN	157	157	157
	t	16.0	16.0	16.0
with Quick Coupler				
Digging force ISO	kN	116	108	100
	t	11.8	11.0	10.2
Breakout force ISO	kN	133	133	133
	t	13.6	13.6	13.6

Max. breakout force with ripper bucket 197 kN (20.1 t)

Operating Weight and Ground Pressure

Operating weight includes basic machine with mono boom 5.70 m, stick 2.70 m and bucket 1.20 m³ (1,050 kg).

Undercarriage		LC	
Pad width	mm	600	750
Weight	kg	24,400	24,800
Ground pressure	kg/cm²	0.52	0.42

Buckets Machine stability per ISO 10567* (75% of tipping capacity)

Cutting width mm	Capacity ISO 7451 m³	Weight kg	LC-Undercarriage Stick length (m) 2.40	2.70	3.00
1,050[1)]	0.80	830	□	□	□
1,250[1)]	1.00	950	□	□	□
1,250[1)]	1.20	1,050	□	□	△
1,050[2)]	0.80	820	□	□	□
1,250[2)]	1.00	940	□	□	△
1,250[2)]	1.20	1,060	△	△	■

* Indicated loads are based on ISO 10567 max. stick length, lifted 360° on firm

[1)] Bucket without quick coupler

[2)] Bucket with quick coupler

Other buckets available on request

Max. material weight □ = ≤ 1.8 t/m³, △ = ≤ 1.5 t/m³, ■ = ≤ 1.2 t/m³

Lift Capacities

with Mono Boom 5.70 m

Stick 2.40 m

m	Undercarriage	3.0 m		4.5 m		6.0 m		7.5 m				m
7.5	LC									4.5*	4.5*	5.6
6.0	LC					5.6	5.7*			4.2*	4.2*	6.8
4.5	LC			7.4*	7.4*	5.4	6.2*	3.8	4.5*	3.7	4.1*	7.5
3.0	LC			7.7	9.1*	5.1	6.9*	3.7	5.6	3.4	4.2*	7.9
1.5	LC			7.2	10.3*	4.8	7.5*	3.5	5.5	3.2	4.5*	8.0
0	LC			6.9	10.6*	4.7	7.5	3.5	5.4	3.3	5.1	7.8
-1.5	LC	11.8*	11.8*	6.9	10.1*	4.6	7.4			3.6	5.7	7.3
-3.0	LC	11.5*	11.5*	7.0	8.7*	4.7	6.4*			4.4	5.9*	6.3
-4.5	LC			5.7*	5.7*					5.2*	5.2*	4.8

Stick 2.70 m

m	Undercarriage	3.0 m		4.5 m		6.0 m		7.5 m				m
7.5	LC									3.9*	3.9*	6.0
6.0	LC					5.4*	5.4*			3.6*	3.6*	7.1
4.5	LC			7.0*	7.0*	5.4	5.9*	3.8	5.4*	3.5	3.5*	7.8
3.0	LC			7.8	8.7*	5.1	6.6*	3.7	5.6*	3.2	3.6*	8.2
1.5	LC			7.2	10.1*	4.8	7.3*	3.5	5.5	3.0	3.9*	8.3
0	LC	6.0*	6.0*	6.9	10.6*	4.6	7.5	3.4	5.4	3.1	4.4*	8.1
-1.5	LC	11.3*	11.3*	6.9	10.2*	4.6	7.4	3.4	5.4	3.4	5.3*	7.6
-3.0	LC	12.3*	12.3*	7.0	9.1*	4.6	6.7*			4.0	5.7*	6.7
-4.5	LC	8.8*	8.8*	6.5*	6.5*					5.3*	5.3*	5.2

Stick 3.00 m

m	Undercarriage	3.0 m		4.5 m		6.0 m		7.5 m				m
7.5	LC					4.7*	4.7*			3.4*	3.4*	6.3
6.0	LC					5.1*	5.1*			3.2*	3.2*	7.5
4.5	LC					5.5	5.6*	3.8	5.1*	3.1*	3.1*	8.1
3.0	LC			7.9	8.3*	5.2	6.4*	3.7	5.5*	3.0	3.2*	8.5
1.5	LC			7.3	9.8*	4.9	7.2*	3.5	5.5	2.9	3.4*	8.6
0	LC	6.7*	6.7*	6.9	10.5*	4.6	7.5	3.4	5.4	2.9	3.8*	8.4
-1.5	LC	10.8*	10.8*	6.8	10.3*	4.5	7.3	3.4	5.3	3.2	4.5*	7.9
-3.0	LC	13.0*	13.0*	6.9	9.4*	4.6	6.9*			3.7	5.5*	7.0
-4.5	LC	9.8*	9.8*	7.1	7.2*					5.2	5.3*	5.7

Height **Can be slewed though 360°** **In longitudinal position of undercarriage** **Max. reach** *** Limited by hydr. capacity**

The load values are quoted in tons (t) at stick end (without bucket), and may be swung 360° on firm and even ground. Adjacent values are valid for the undercarriage when in the longitudinal position. Capacities are valid for 600 mm 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 *). With quick coupler the lift capacities will decrease by 350 kg. Without bucket cylinder, link and lever the lift capacities increase by an additional 370 kg. Lifting capacity of the excavator is limited by machine stability and hydraulic capacity.
According to European Standard, EN 474-5: In the European Union excavators have to be equipped with an overload warning device, a load diagram and automatic safety check valves on hoist cylinders and stick cylinder(s), when they are used for lifting operations which require the use of lifting accessories.

Standard Equipment

Undercarriage

- Lashing eyes
- Lifetime lubricated track rollers
- Single piece track guide at each track frame
- Sprocket with dirt ejector
- Track pads B 60 600 mm triple grouser
- Tracks sealed and greased
- Two-stage travel motors

Uppercarriage

- Easy accessible lubrication points
- Engine hood with lift help and mechanical lock
- Handrails, non slip surfaces
- Lockable tool box
- Maintenance-free HD-batteries
- Maintenance-free swing brake lock
- Sound insulation
- Tool kit

Hydraulics

- Electronic pump regulation
- Filter with integrated fine filter area (5 µm)
- Hydraulic control logic
- Hydraulic tank shut-off valve
- Positive Control Classic
- Pressure storage for controlled lowering of attachment with engine turned off
- Pressure test ports
- Regeneration Plus function on hydraulic circuit
- Stepless work mode selector

Engine

- After-cooled
- Conform with stage IIIA/Tier 3 emission standard
- Dry-type air cleaner w/pre-cleaner, main and safety element
- Sensor controlled engine idling
- Turbo charger
- Unit pump system injection

Operator's Cab

- All tinted windows
- Automatic air conditioning
- Cigarette lighter and ashtray
- Closed storage space
- Cloth hook
- Dome light
- Door with sliding window
- Emergency exit through rear window
- Load bearing sectional profile structure, covered with deep-drawn panels
- Mechanical hour meters, readable from outside the cab
- MP3 radio with USB and SD-Card support
- Multifunction display
- Rain hood over front window opening
- Removable foot mat
- Right window made of one piece (without post)
- Roof window, right window and windshield with safety glass
- Seat and consoles independently adjustable (4-way adjustable seat)
- Seat belt
- Seat with mechanical suspension
- Storage tray
- Sun roller blind
- Two flood lights under rain hood
- Wiper/washer

Attachment

- 12 t lifting hook with safety link on bucket or on optional quick-coupler
- Cylinders with shock absorbers
- Easy accessible centralized lubrication points for boom and stick
- Work light on boom

Individual Options

Undercarriage

- 3 piece track guide at each track frame
- Reinforced cover plate and reinforced base plate for center section
- Track pads B 60 750 mm triple grouser*
- Wide ascent for 750 mm track pads

Uppercarriage

- Rear mirror on counterweight and right side
- Rear view monitoring system with camera
- Tank re-fueling pump
- Winter kit**

Hydraulics

- Additional high pressure hydraulic circuits for hammer and/or shear
- Additional medium pressure hydraulic circuits
- Return filter for hammer
- Tool Control

Engine

- Air pre-filter
- External engine cold starting aid
- Fuel pre-heating system

Operator's Cab

- 2 additional halogen flood lights (front)
- 2 additional halogen flood lights (rear)
- Acoustic travel alarm
- Air suspension operator seat with heating and head-rest
- Extinguisher
- FGPS Protection
- FOPS Protection
- GPS system
- Warning beacon

Attachment

- Additional bottom protection for stick
- Additional work light on boom
- Fully-automatic central lubrication system (except link and tilt geometry)
- Hydraulic lines for additional tools
- Liebherr line of buckets
- Mechanical and hydraulic quick coupler
- Overload warning device
- Pipe fracture safety valves for hoist cylinders

* = not suitable for hard rock or forestry application, ** = for more details please contact your local dealer

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

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 38,000 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

Printed in Germany by Typodruck RG-BK-RP LFR/SP 11626185-1-03.13_enGB_LEX-LAF-LSI-LAS-LTH-SLC-LMG

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