

LIEBHERR R944C Litronic



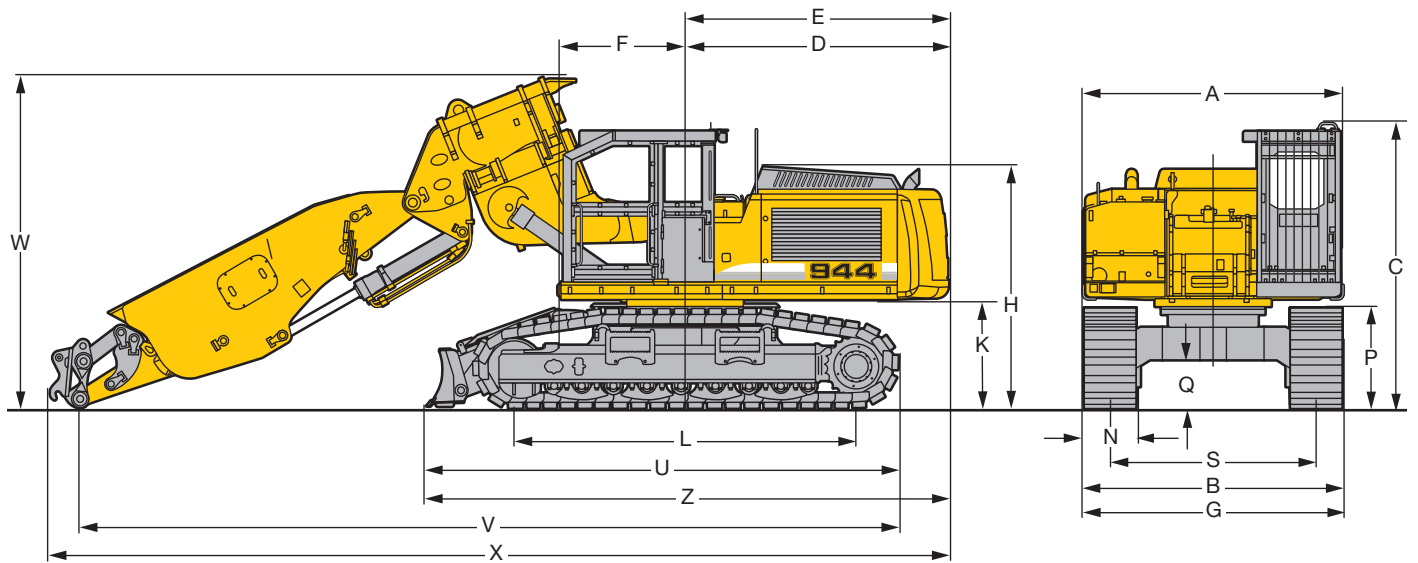
UNCOMPROMISING TUNNEL HEADING MACHINE

Tunnel construction is one of the toughest operating environments for an excavator to be used in. The operation of a tunnel excavator becomes efficient when the machine, despite the harsh conditions, can cut out the required tunnel profile as rapidly as possible but in an economical fashion.

This means that a tunnel excavator must produce a high hydraulic capacity and, above all, be provided with operational fittings which are tailored to the particular application.

Liebherr tunnel excavators meet all the high demands imposed in tunnel construction in every respect, with both the basic machine and the attachment precisely matched to this particular type of work, and consistently designed to achieve real economical performance.

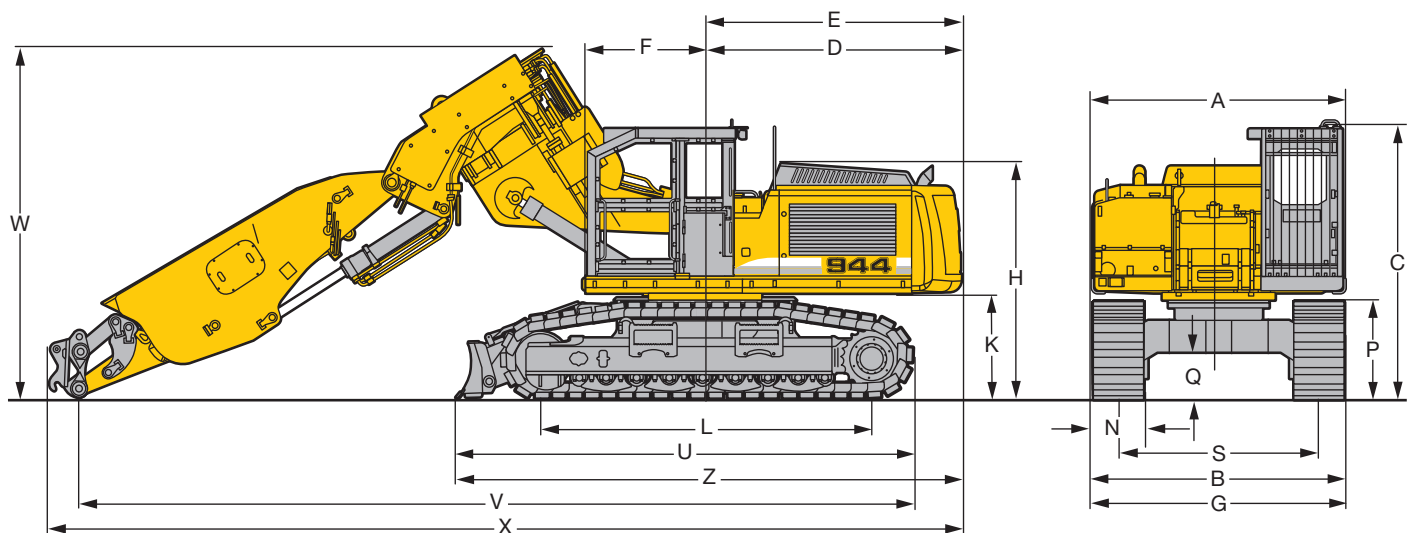
Dimensions



R 944 C

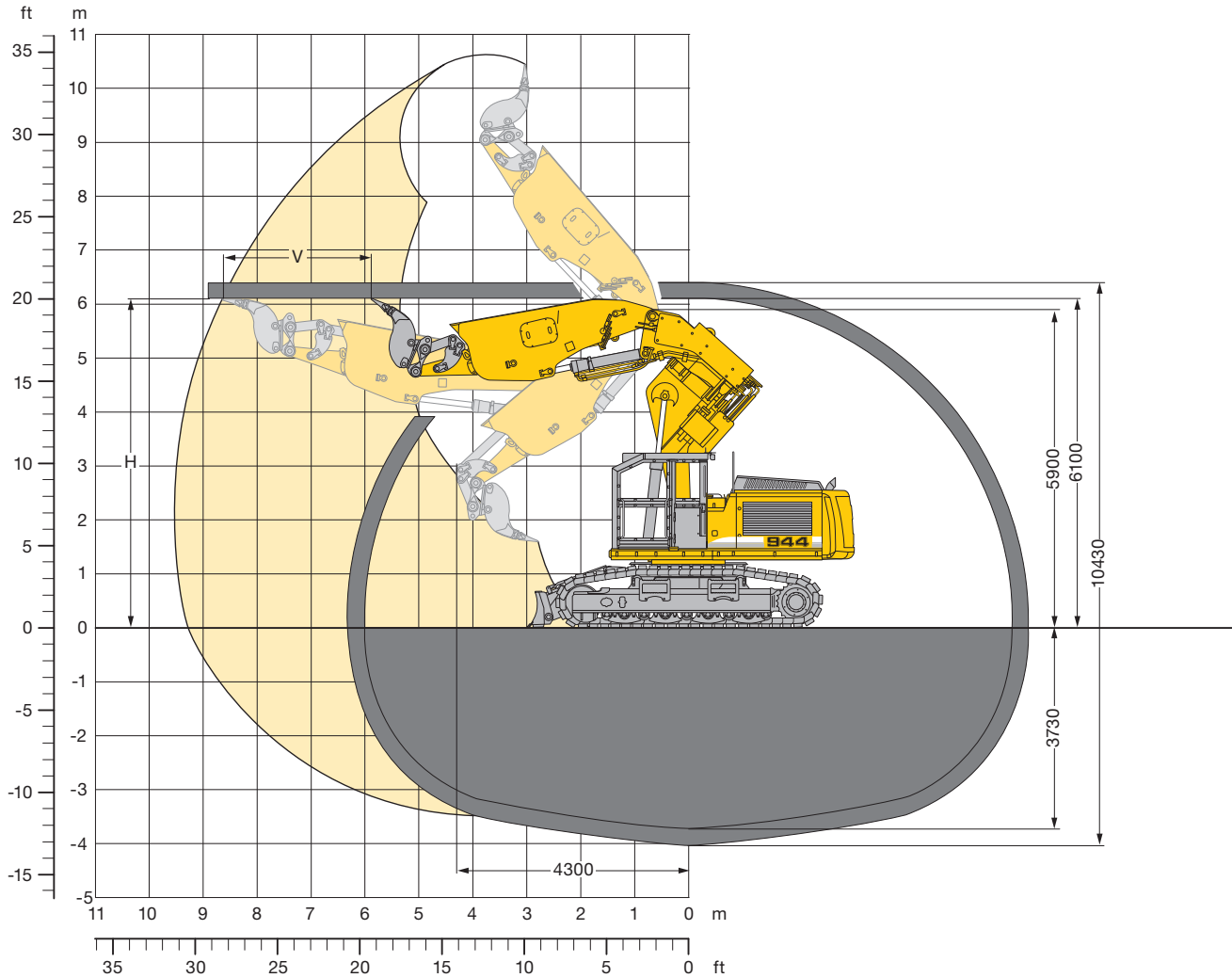
	mm
A	3,035
C	3,340
D	3,075
E	3,075
F	1,465
H	2,815
K	1,240
L	4,000
P	1,170
Q	555
S	2,400
U	5,500
Z	6,090
N	500 600
B	3,020 3,020
G	3,050 3,050

Boom 3.70 m with 2 x 45° Rotator and Stick 4.50 m		mm
V		10,000
W		4,200
X		11,000



Tunneling Excavator

with Boom 3.70 m, 2 x 45° Rotator and Stick 4.50 m



R 944 C

Digging Envelope

Basic boom bolted in position II of upper carriage

Tunnel height H m	Advance V m
6.10	2.70
6.50	2.60
7.00	2.40
7.50	2.20
8.00	2.00

Operating Weight and Ground Pressure

Operating weight includes basic machine with boom 3.70 m, 2 x 45° rotator, stick 4.50 m, quick coupler 48 and bucket 0.16 m³ (700 kg).

Undercarriage	HD-S	
Pad width	mm	500 600
Weight	kg	43,800 44,200
Ground pressure	kg/cm ²	1.01 0.85

Digging Forces without Quick Coupler

Max. digging force ISO	kN	171
	t	17.4
Max. breakout force ISO	kN	191
	t	19.5

Technical Data



Engine

Rating per ISO 9249	190 kW (258 HP) at 1,800 RPM
Model	Liebherr D 936 L
Type	6 cylinder in-line
Bore/Stroke	122/150 mm
Displacement	10.5 l
Engine operation	4-stroke diesel unit pump system 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	580 l
Electrical system	
Voltage	24 V
Batteries	2 x 170 Ah/12 V
Starter	24 V/6.6 kW
Alternator	three phase current 28 V/100 A
Engine idling	sensor controlled



Hydraulic System

Hydraulic pump for attachment and travel drive	Liebherr variable flow, swash plate double pump
Max. flow	2 x 245 l/min. (+ 60 l/min. for milling cutter operation)
Max. pressure	350 bar
Pump regulation	electro-hydraulic with electronic engine speed sensing regulation, pressure compensation, flow compensation, automatic oil flow optimizer
Hydraulic pump for swing drive	reversible, variable flow, swash plate pump, closed-loop circuit
Max. flow	149 l/min.
Max. pressure	350 bar
Hydraulic tank	340 l
Hydraulic system	550 l
Hydraulic oil filter	1 full flow filter 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 and fuel 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 especially economical and environmentally friendly operation
POWER	for maximum digging power and heavy duty jobs
LIFT	for lifting
FINE	for precision work and lifting through very sensitive movements
RPM adjustment	stepless adjustment of engine output via the rpm at each selected mode



Hydraulic Controls

Power distribution	via monoblock control valve with integrated safety valves
Flow summation	to boom and stick
Closed-loop circuit	for uppercarriage swing drive
Servo circuit	
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 for milling cutter/hammer, 2 x 45° rotator and dozer blade



Swing Drive

Drive by	Liebherr swash plate motor with integrated brake valves
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 – 8.2 RPM stepless
Swing torque	84 kNm
Holding brake	wet multi-disc (spring applied, pressure released)
Option	pedal controlled positioning brake



Operator's Cab

Cab	according to guidelines for tunnel application: FOPS, FGPS plus Lexan windows on attachment side
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



Undercarriage

Drive	Liebherr swash plate motors with integrated brake valves on both sides
Transmission	Liebherr planetary reduction gears
Travel speed	low range – 2.8 km/h high range – 5.1 km/h
Drawbar pull max.	336 kN
Track components	D 7 G, maintenance-free
Track rollers/Carrier rollers	9/2
Tracks	sealed and greased
Track pads	double grouser
Digging locks	wet multi-discs (spring applied, pressure released)
Brake valves	integrated into travel motor



Attachment

Type	combination of resistant steel plates and cast steel components
Hydraulic cylinders	Liebherr cylinders with special seal-system, shock absorbed
Pivots	sealed, low maintenance
Lubrication	fully automatic Liebherr central lubrication system (except bucket tilt linkage)
Hydraulic connections	pipes and hoses equipped with SAE split-flange connections
Basic boom	with 2 x 45° rotator
Stick	4.50 m with integrated bucket tilt cylinder
Bucket	HD ripper bucket with cutting width 700 mm