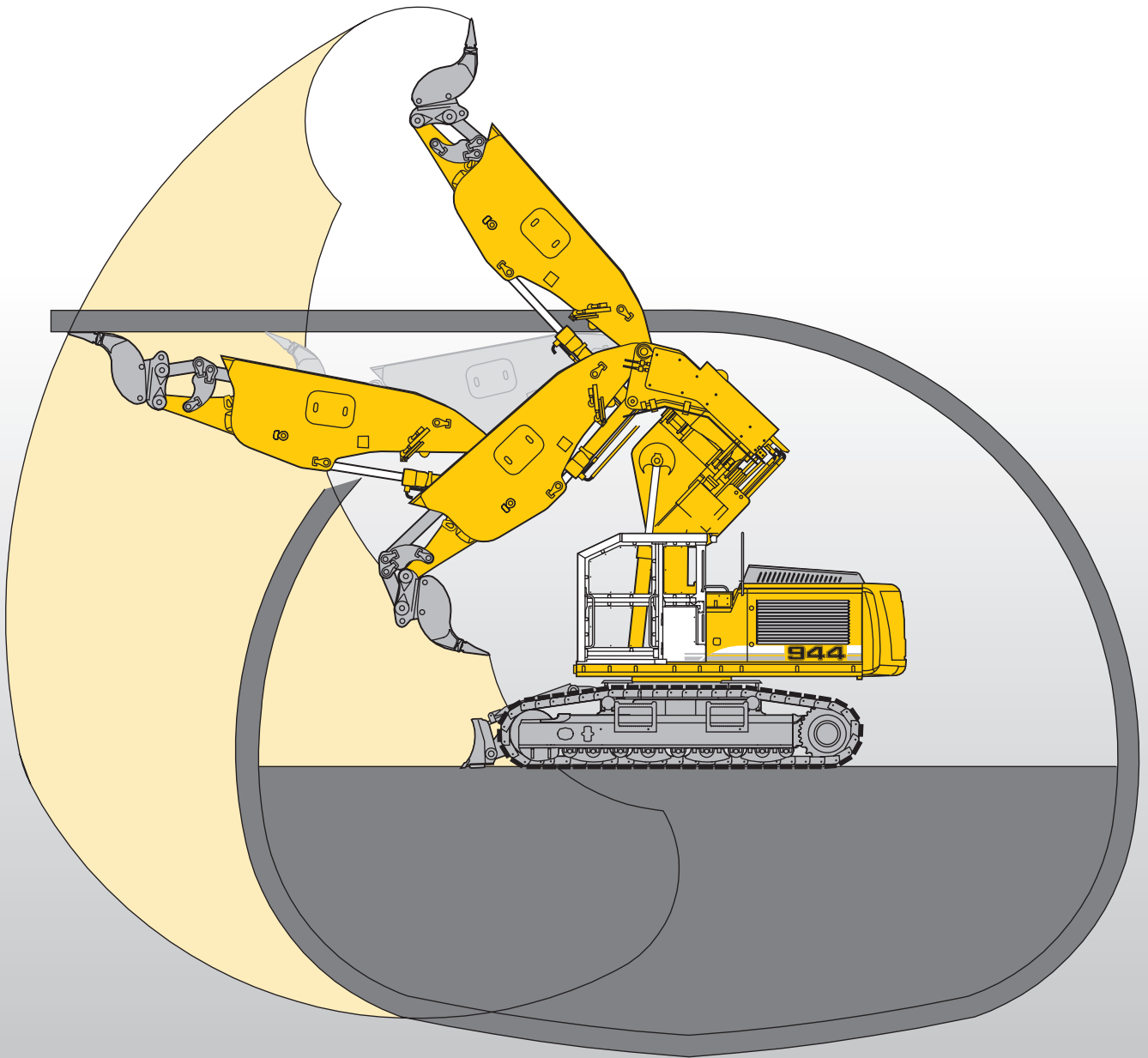


Tunneling Excavator

R 944 C
Litronic®

Operating Weight: 43,490 – 43,950 kg
Engine Output: 190 kW / 258 HP



LIEBHERR

Technical Data



Engine

Rating per ISO 9249	190 kW (258 HP) at 1800 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

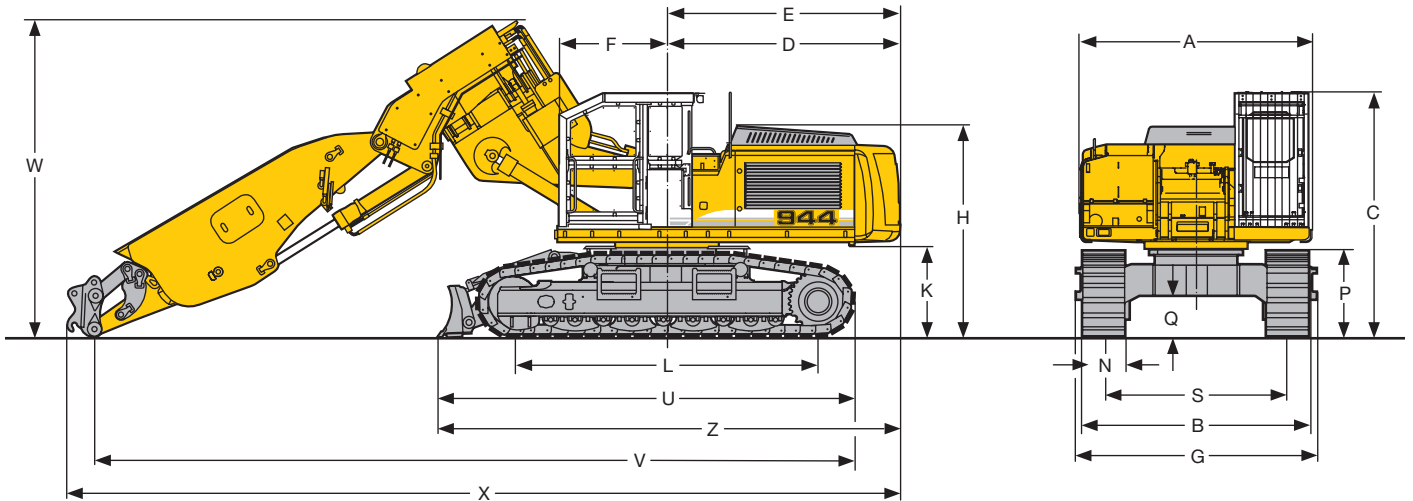
Drive	Liebherr swash plate motors with integrated brake valves on both sides
Transmission	Liebherr planetary reduction gears
Travel speed	low range –2,8 km/h high range –5,1 km/h
Drawbar pull max.	336 kN
Track components	D 7 G, maintenance-free
Track rollers/Carrier rollers	9/2
Tracks	sealed and greased
Track pads	triple 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

Dimensions

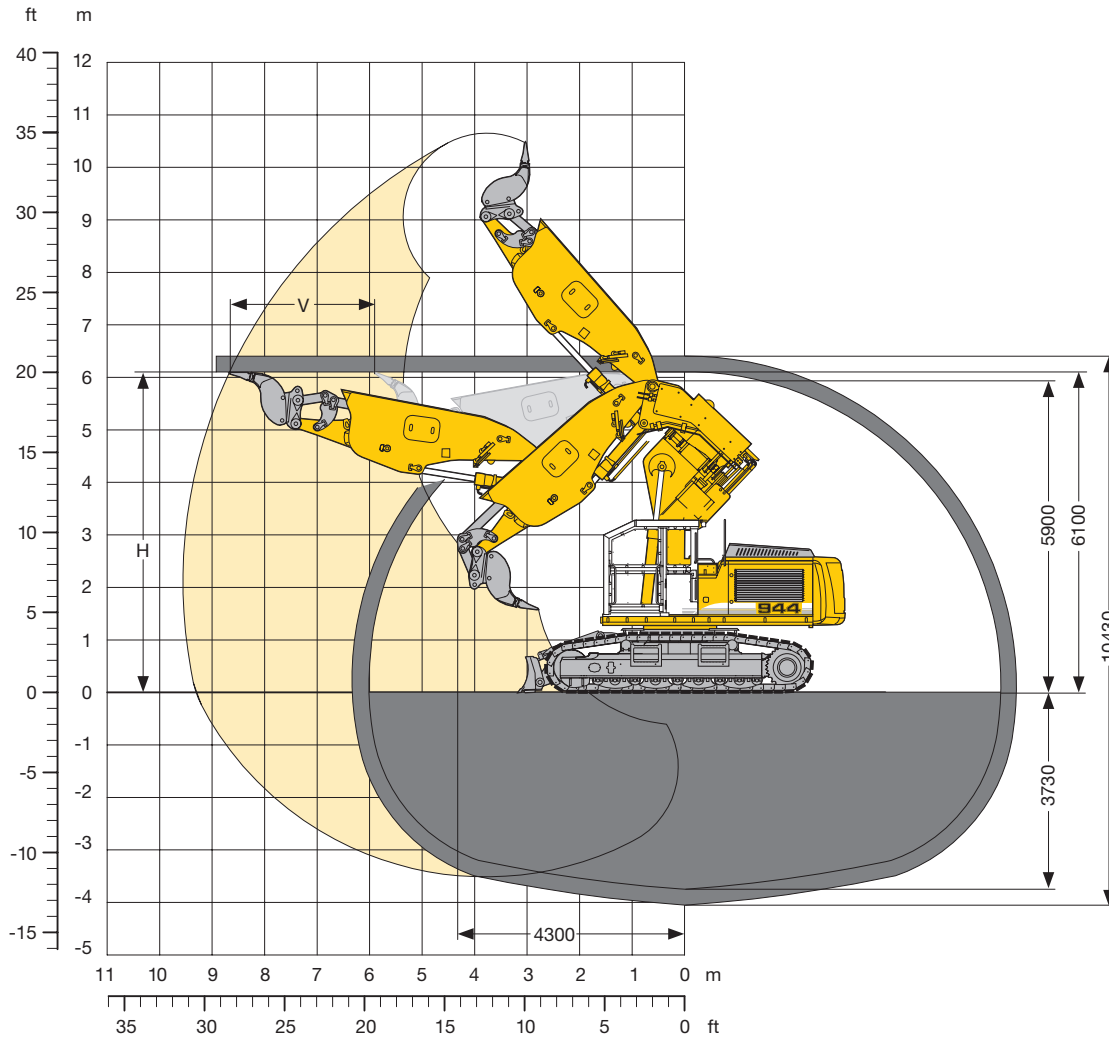


	mm
A	3070
C	3250
D	3075
E	3075
F	1425
H	2815
K	1240
L	4000
P	1165
Q	557

	mm
S	2400
U	5500
Z	6100
N	500 600
B	3020 3020
G	3050 3050
V	10000
W	4200
X	11000

Tunneling Excavator

with 45° Boom Rotator



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

Max. digging force: 129 kN/13,2 t

Max. breakout force: 173 kN/17,6 t

Equipment



Undercarriage

	S	O
Two-stage travel motors	•	
Idler protection	•	
Lifetime lubricated track rollers	•	
Mud guards	•	
4 track guide at each track frame	•	
Tracks sealed and greased	•	
Travel gear protection	•	
Dozer blade with cylinder protection	•	



Uppercarriage

	S	O
Engine hood with lift help and mechanical locking	•	
Handrails, non slip surfaces	•	
Tool kit	•	
Maintenance-free swing brake lock	•	
Maintenance-free HD-batteries	•	
Sound insulation	•	
Alternator 100 A	•	
Upper carriage protection	•	
Back-up alarm	•	
Fire extinguisher (6 kg) in tool box	•	
Electric fuel tank filler pump		•
Foot pedal swing positioning brake		•
Customized colors		•



Hydraulics

	S	O
Electronic pump regulation	•	
Stepless work mode selector	•	
Pressure storage for controlled lowering of attachments with engine turned off	•	
Hydraulic tank shut-off valve	•	
Pressure compensation	•	
Flow compensation	•	
Filter with integrated fine filter area (5 µm)	•	
Pressure test ports	•	
Control kit for emergency towing	•	
Additional hydraulic circuits	•	
Filter for secondary circuit		•
Hydraulic control for rotary drive		•
Reversible fan		•
Swing brake torque reducer		•
Hydraulic safeguard for overhead hammer work		•
Bio-degradable hydr. oil		•



Engine

	S	O
Direct injection	•	
Turbo charger	•	
Dry-type air cleaner w/pre-cleaner, main and safety element	•	
Sensor controlled engine idling	•	
Air pre-cleaner	•	
Liebherr particle filter		•



Operator's Cab

	S	O
Cab for tunneling application	•	
Structural design according to guidelines: FOPS, FGPS	•	
Polycarbonate window (Lexan) at attachment side and rear window	•	
6-way adjustable operator seat	•	
Emergency exit rear window	•	
Fire extinguisher	•	
Display cover	•	
Additional flood lights	•	
Additional lights on cab roof (rear)	•	
Storage room	•	
Totally enclosed cab (additional door and window) with windshield wiper		•



Attachment

	S	O
Cylinders with shock absorber	•	
ReGeneration plus	•	
SAE split flanges on all high pressure lines	•	
Work light on boom	•	
Sealed pivots/Y sealant between bucket and stick	•	
12 t lifting hook with safety link on bucket or on quick-coupler	•	
Automatic lubrication system (except bucket tilt linkage)	•	
Hydraulic lines for additional tools	•	
Mechanical quick change coupler		•
Quick disconnect hose couplers for additional tools		•
Liebherr line of buckets		•
Special application buckets		•
Customized colors		•

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.

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