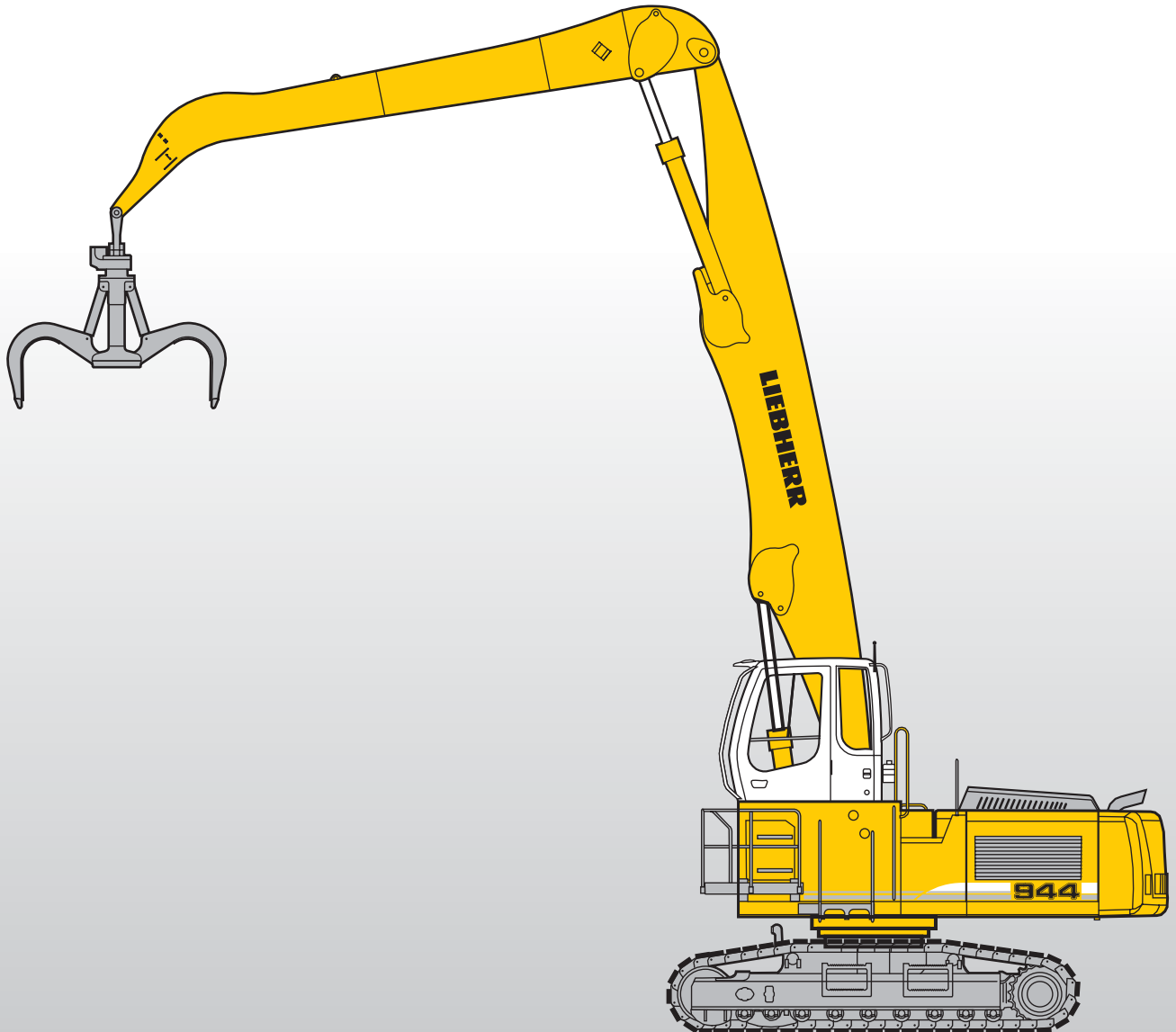


Machine for Industrial Applications

R 944 C

Litronic®

Operating Weight: 101,604 – 103,808 lb
Engine Output: 258 hp / 190 kW



LIEBHERR

Technical Data



Engine

Rating per ISO 9249	258 hp (190 kW) at 1800 rpm
Model	Liebherr D 936 L
Type	6 cylinder in-line
Bore/Stroke	4.8/6.1 in
Displacement	641 in ³
Engine operation	4-stroke diesel unit pump system turbo-charged and 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, automatic dust discharge
Fuel tank	174 gal
Standard	sensor controlled engine idling
Electrical system	
Voltage	24 V
Batteries	2 x 170 Ah/12 V
Starter	24 V/6.6 kW
Alternator	three phase current 28 V/80 A



Hydraulic System

Hydraulic pump for attachment and travel drive	two Liebherr variable flow, swash plate pumps
Max. flow	2 x 80 gpm
Max. pressure	5,075 psi
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	54 gpm
Max. pressure	5,800 psi
Hydraulic tank	121 gal
Hydraulic system	187 gal
Hydraulic oil filter	2 full flow filters in return line with integrated fine filter area (5 µm)
Hydraulic oil cooler	cooler unit, consisting of radiator for engine coolant with after-cooler core, for hydraulic fluid with hydrostatically controlled fan drive
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
RPM adjustment	step less adjustment of engine output via rpm at each selected mode
Liebherr Tool Control	ten pre-adjustable pump flows and pressures for add on tools (option)



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



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
Swing speed	0–8 rpm step less
Swing torque	92,275 lbf ft
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 integrated into adjustable seat consoles
Joysticks	
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
Heating system	standard air conditioning, combined cooler/heater, additional dust filter in fresh air/recirculated
Noise emission	
ISO 6396	L_{pA} (inside cab) = 75 dB(A)
2000/14/EC	L_{WA} (surround noise) = 105 dB(A)



Undercarriage

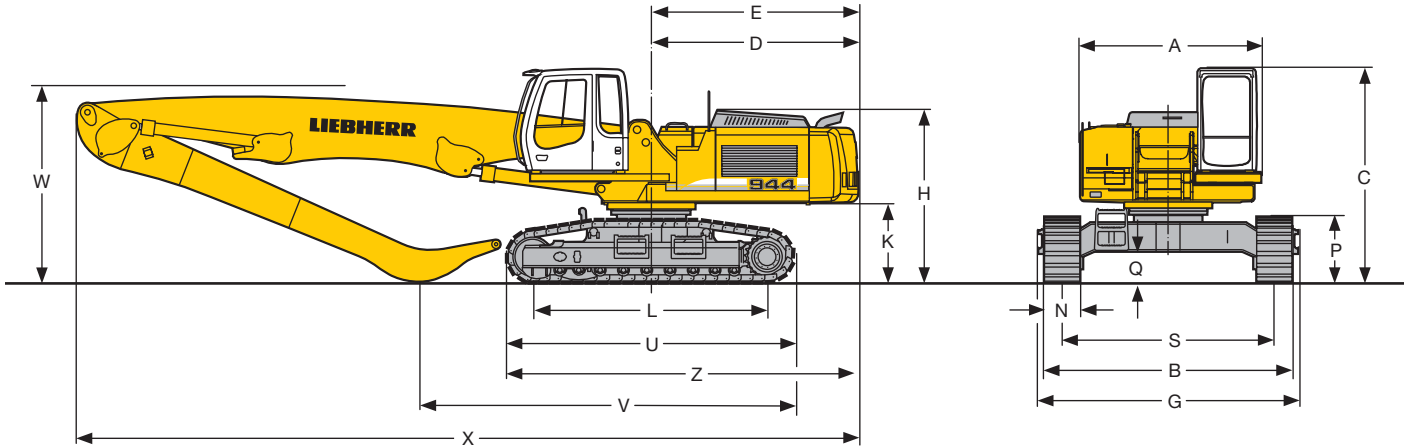
Version EW	special duty, extra wide gauge
Drive	Liebherr swash plate motors with integrated brake valves on both sides
Transmission	Liebherr planetary reduction gears
Travel speed	low range –2.0 mph high range –3.1 mph
Drawbar pull max.	75,533 lbf
Track components	D 7, maintenance-free
Track rollers/Carrier 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	high-strength steel plates at 3 high-stress points for the toughest requirements. Complex and stable mountings of attachment and cylinders. Unrivalled strength, even at high loads
Hydraulic cylinders	Liebherr cylinders with special seal system. Shock absorption
Pivots	sealed, low maintenance
Lubrication	Liebherr semi-automatic central lubrication system

Dimensions



	ft in	
A	Upper – overall width	10' 1"
C	Basic machine – height overall	11' 11"
D	Tail reach	11' 7"
E	Tail swing	11' 7"
H	Height – engine hood	9' 6"
K	Clearance under counterweight	4' 4"
L	Center idler to center sprocket	13' 1"
P	Track height	3' 8"
Q	Ground clearance	21"
S	Track gauge	11' 10"
U	Track length	16' 2"
N	Pad width	20" 24" 30"
B	Track outside width	13' 9" 13' 9" 14' 3"
G	Undercarriage width overall	14' 6" 14' 6" 14' 6"
Z	Length track to counterweight	19' 7"

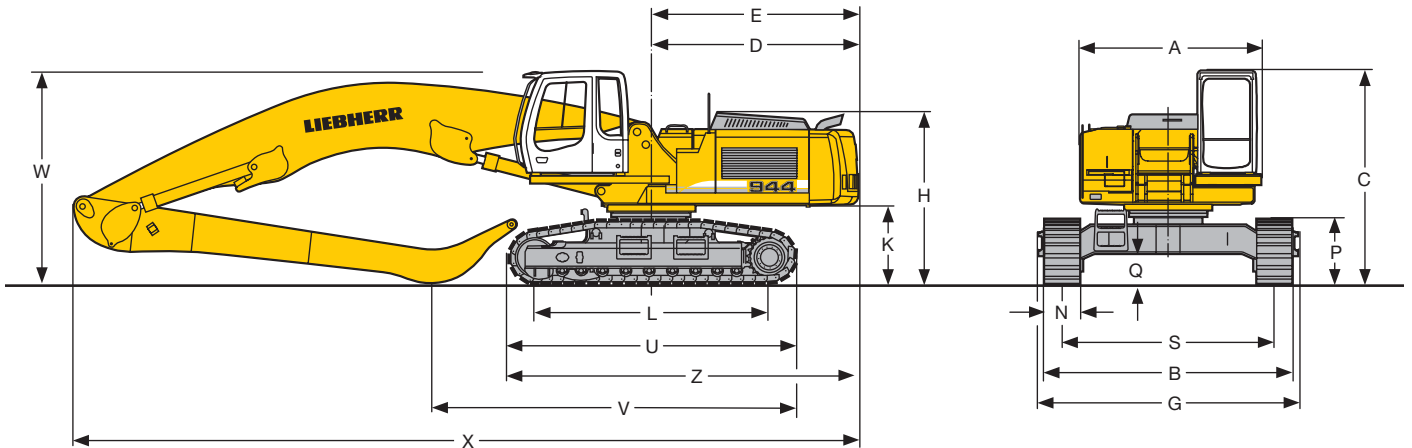
E = Tail radius

Industrial-Type Straight Boom 31'2" and Industrial Stick 23'11"

V	ft in	21' 4"
W	ft in	11'
X	ft in	44' 3"

Industrial-Type Gooseneck Boom 31'2" and Industrial Stick 23'11"

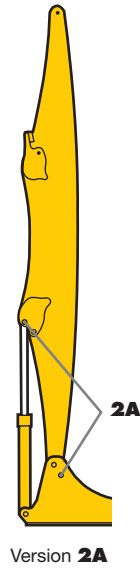
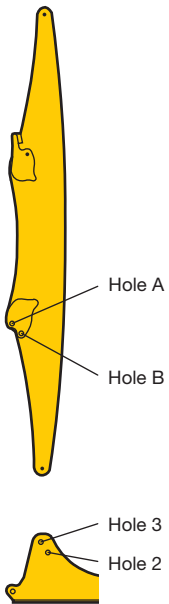
V	ft in	20' 4"
W	ft in	11' 10"
X	ft in	44'



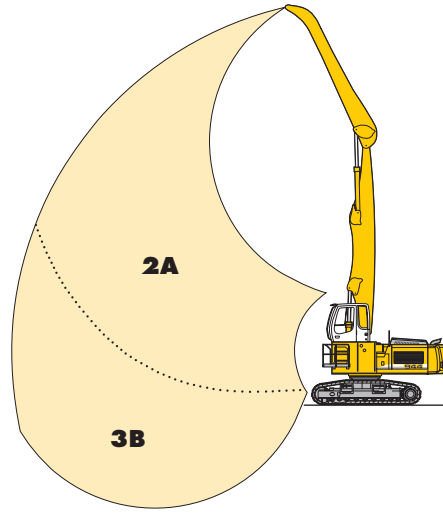
These dimensions are stated with cab carrier. This assembly is only valid for transportation.

VarioLiftPlus

Variable Boom Mounting Positions for Optimised Lift Capacities

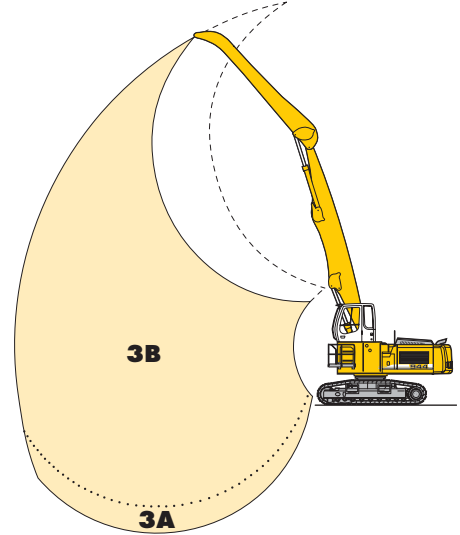


with **the same** working range

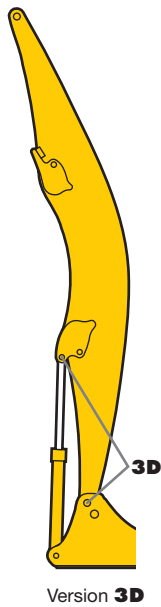
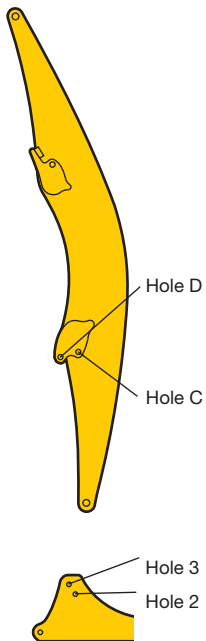


Kinematic variant 2A:
Increased lift capacities above ground level
Kinematic variant 3B:
Increased lift capacities below ground level
and when working at extended reach

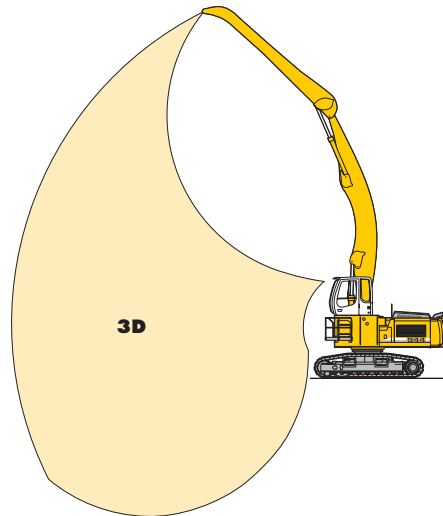
with a **different** working range



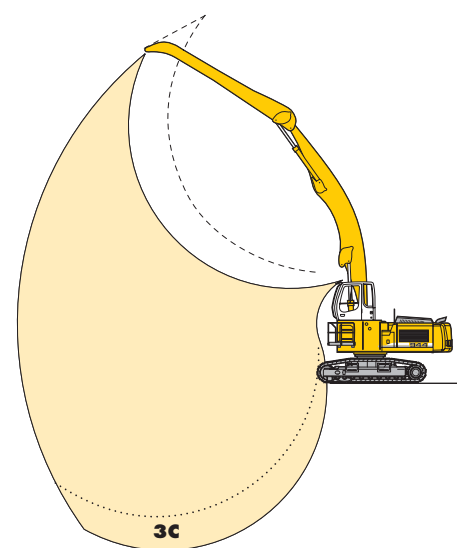
Kinematic variant 3A:
Altered range curve with additional reach
depth, e.g. for unloading from ships



with a **different** working range



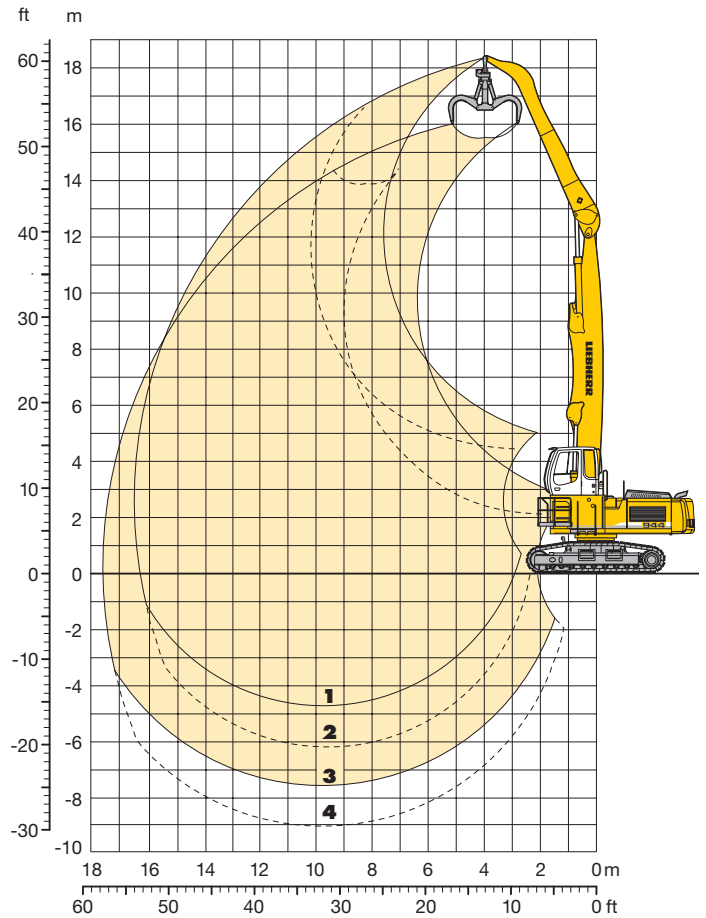
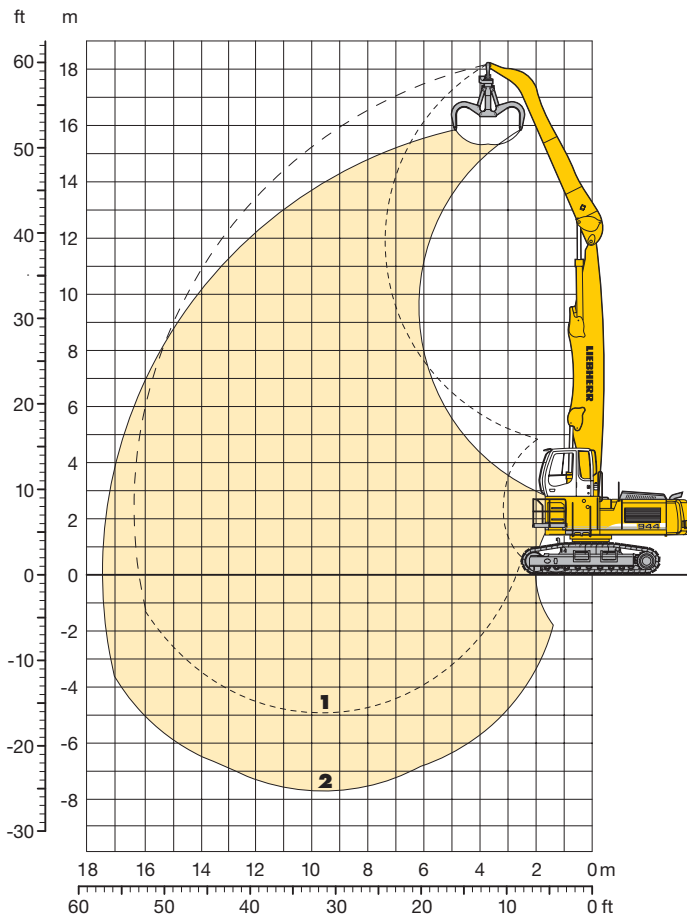
Kinematic variant 3D:
Increased lift capacities below ground level
and when working at extended reach



Kinematic variant 3C:
Altered range curve with additional reach
depth, e.g. for unloading from ships

Industrial Attachment

with Industrial-Type Straight Boom 31'2"



Attachment Envelope

Kinematic variant 2A

- 1** with industrial stick 23'11"
- 2** with industrial stick 23'11" and grapple model 70 C

Attachment Envelope

Kinematic variants 3A/3B

- 1** with industrial stick 23'11" (3B)
- 2** with industrial stick 23'11" (3A)
- 3** with industrial stick 23'11" and grapple model 70 C (3B)
- 4** with industrial stick 23'11" and grapple model 70 C (3A)

Operating Weight and Ground Pressure

Operating weight includes basic machine with rigid cab elevation 3'11" and counterweight 24,244 lb, industrial-type straight boom 31'2", industrial stick 23'11" and grapple model 70 C with 5 semi-closed tines 1.05 yd³.

Undercarriage	EW	
Pad width	in	24" 30"
Weight	lb	101,631 102,954
Ground pressure	psi	12.7 10.2

Lift Capacities

with Industrial-Type Straight Boom 31'2"

Industrial Stick 23'11" (Variant 2A)

ft	Under-carriage	15 ft		20 ft		25 ft		30 ft		35 ft		40 ft		45 ft		50 ft		ft in		
60	EW	27,770*	27,770*															27,770*	27,770*	14'10"
55	EW			27,330*	27,330*	22,922*	22,922*											20,277*	20,277*	26' 7"
50	EW					26,228*	26,228*	22,922*	22,922*									17,632*	17,632*	33'10"
45	EW					25,566*	25,566*	22,481*	22,481*	19,395	20,056*							14,987	15,869	39' 1"
40	EW					25,346*	25,346*	22,260*	22,260*	19,836*	19,836*	15,428	16,089					12,563	13,224	43' 2"
35	EW					25,566*	25,566*	22,260*	22,260*	19,616	19,616*	15,428	16,089	12,122	12,783			11,020	11,461	46' 5"
30	EW					26,007*	26,007*	22,481*	22,481*	19,395	19,836	15,208	16,089	12,122	12,783			9,918	10,359	48'11"
25	EW			31,517*	31,517*	26,668*	26,668*	22,922*	22,922*	18,734	19,836	14,767	15,648	11,902	12,563	9,698	10,138	9,036	9,477	50'10"
20	EW	30,856*	30,856*	33,721*	33,721*	27,770*	27,770*	23,362	23,583*	18,073	18,954	14,326	15,208	11,681	12,342	9,477	10,138	8,375	9,036	52' 2"
15	EW	47,386*	47,386*	35,705*	35,705*	28,652*	28,652*	22,040	23,142	17,191	18,073	13,885	14,546	11,240	11,902	9,257	9,918	7,934	8,596	53' 1"
10	EW	50,251*	50,251*	37,027*	37,027*	27,109	28,652	20,497	21,820	16,310	17,191	13,224	13,885	10,800	11,461	9,036	9,698	7,714	8,375	53' 6"
5	EW	16,530*	16,530*	34,382	36,807	24,905	26,668	19,175	20,497	15,428	16,310	12,563	13,224	10,359	11,020	8,816	9,477	7,714	8,155	53' 5"
0	EW	13,885*	13,885*	31,958	34,162	23,362	24,905	18,073	19,175	14,546	15,428	12,122	12,783	10,138	10,800	8,596	9,257	7,714	8,155	52'11"
- 5	EW	15,428*	15,428*	30,415	30,636*	22,260	23,803	17,412	18,514	14,106	14,987	11,681	12,342	9,918	10,579	8,596	9,036	7,494*	7,494*	51' 9"
- 10	EW			26,007*	26,007*	21,599	22,260*	16,750	18,073	13,665	14,546	11,461	12,122	9,698	10,138*			8,155*	8,155*	47' 7"
- 15	EW					17,632*	17,632*	15,208*	15,208*	12,563*	12,563*							10,138*	10,138*	39' 4"
- 20	EW																			
- 25	EW																			

Industrial Stick 23'11" (Variant 3A)

ft	Under-carriage	15 ft		20 ft		25 ft		30 ft		35 ft		40 ft		45 ft		50 ft		ft in		
60	EW																			
55	EW																			
50	EW									18,514*	18,514*							17,412*	17,412*	35' 1"
45	EW									18,293*	18,293*	14,987	15,648					14,326	14,987	40' 2"
40	EW									18,073*	18,073*	15,208	16,089					11,902	12,563	44' 2"
35	EW									18,073*	18,073*	15,208	16,089	12,122	12,783			10,579	11,020	47' 3"
30	EW									18,514*	18,514*	14,987	16,089	12,122	12,783	9,698	10,138	9,477	9,918	49' 8"
25	EW							21,158*	21,158*	18,514	18,954*	14,767	15,428	11,902	12,563	9,477	10,138	8,596	9,257	51' 6"
20	EW					25,566*	25,566*	22,260*	22,260*	17,852	18,734	14,106	14,987	11,461	12,122	9,477	9,918	8,155	8,596	52'10"
15	EW	44,962*	44,962*	33,942*	33,942*	27,550	27,500*	21,599	22,922	16,971	17,852	13,665	14,326	11,020	11,681	9,257	9,698	7,714	8,375	53' 8"
10	EW	33,721*	33,721*	37,027	37,248*	26,448	27,991	20,056	21,379	15,869	16,971	13,004	13,665	10,579	11,240	8,816	9,477	7,494	8,155	54'
5	EW	13,665*	13,665*	33,501	35,925	24,464	26,007	18,734	20,056	14,987	15,869	12,342	13,004	10,359	11,020	8,596	9,257	7,494	7,934	53'10"
0	EW	12,783*	12,783*	31,076	31,738*	22,701	24,244	17,632	18,954	14,326	15,208	11,902	12,563	9,918	10,579	8,375	9,036	7,494	7,934	53' 4"
- 5	EW	14,987*	14,987*	28,432*	28,432*	21,820	23,362	16,971	18,073	13,665	14,546	11,461	12,122	9,698	10,359	8,375	8,816	7,714	8,155	52' 3"
- 10	EW	18,073*	18,073*	29,313*	29,313*	21,158	22,701	16,530	17,632	13,444	14,326	11,240	11,902	9,477	10,138	8,375	8,816	8,155	8,596	50' 9"
- 15	EW			29,534	31,738*	21,158	22,701	16,310	17,632	13,224	14,106	11,240	11,902	9,698	10,138			9,036	9,698	46' 9"
- 20	EW							16,530	17,632	13,444	14,326							12,342	13,224	36' 7"
- 25	EW																			

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

The lift capacities are stated in pounds (lb) on the lifting gear's stick tip, and can be lifted 360° on firm, level supporting surface. Capacities are valid for 24" 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 *). Lifting capacity of the excavator is limited by machine stability, hydraulic capacity and maximum permissible load of the load hook.

Lift Capacities

with Industrial-Type Straight Boom 31'2"

Industrial Stick 23'11" (Variant 3B)

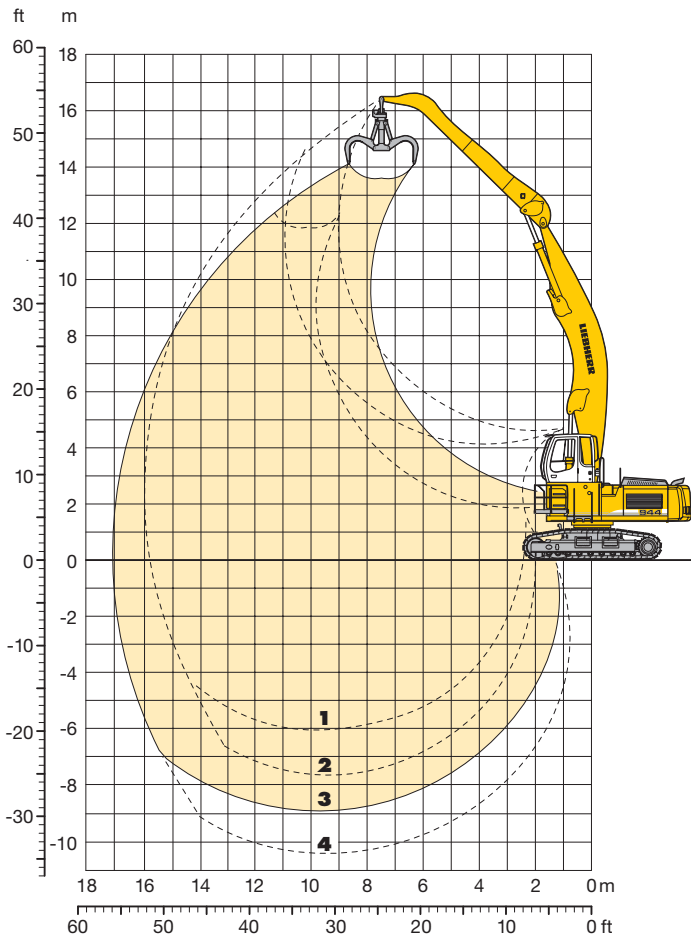
ft	Under-carriage	15 ft		20 ft		25 ft		30 ft		35 ft		40 ft		45 ft		50 ft		ft in				
60	EW																					
55	EW					22,260*	22,260*												19,836*	19,836*	28' 3"	
50	EW					20,718*	20,718*	18,954*	18,954*	17,852*	17,852*								17,412*	17,412*	35' 1"	
45	EW					19,836*	19,836*	18,293*	18,293*	16,971*	16,971*	14,987	15,648						14,326	14,987	40' 2"	
40	EW							18,073*	18,073*	16,750*	16,750*	15,428	15,869*						11,902	12,563	44' 2"	
35	EW					19,836*	19,836*	18,073*	18,073*	16,750*	16,750*	15,428	15,648*	12,122	12,783				10,579	11,020	47' 3"	
30	EW					20,718*	20,718*	18,734*	18,734*	17,191*	17,191*	15,208	15,869*	12,122	12,783	9,698	10,138		9,477	9,918	49' 8"	
25	EW			25,126*	25,126*	22,040*	22,040*	19,616*	19,616*	17,632*	17,632*	14,767	15,428	11,902	12,563	9,698	10,138		8,596	9,257	51' 6"	
20	EW	31,297*	31,297*	28,211*	28,211*	23,803*	23,803*	20,718*	20,718*	17,852	18,514*	14,106	14,987	11,461	12,122	9,477	9,918		8,155	8,596	52' 10"	
15	EW	41,656*	41,656*	31,738*	31,738*	25,787*	25,787*	21,599	22,040*	16,971	17,852	13,665	14,326	11,020	11,681	9,257	9,698		7,714	8,375	53' 8"	
10	EW	33,721*	33,721*	35,264*	35,264*	26,448	27,770*	20,277	21,379	15,869	16,971	13,004	13,665	10,579	11,240	9,036	9,477		7,494	8,155	54'	
5	EW	13,665*	13,665*	33,501	35,925	24,464	26,007	18,734	20,056	14,987	16,089	12,342	13,004	10,359	11,020	8,596	9,257		7,494	7,934	53' 10"	
0	EW	12,783*	12,783*	31,297	31,738	22,922	24,464	17,852	18,954	14,326	15,208	11,902	12,563	9,918	10,579	8,375	9,036		7,494	7,934	53' 4"	
- 5	EW	14,987*	14,987*	28,432*	28,432*	21,820	23,362	16,971	18,073	13,665	14,767	11,461	12,122	9,698	10,359	8,375	8,816		7,714	8,375	51' 9"	
- 10	EW			29,313*	29,313*	21,379	22,922	16,530	17,632	13,444	14,326	11,240	11,902	9,477	10,138				8,816	9,477	47' 3"	
- 15	EW							16,530	17,632	13,224	14,326								11,902	12,783	37' 5"	
- 20	EW																					
- 25	EW																					

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

The lift capacities are stated in pounds (lb) on the lifting gear's stick tip, and can be lifted 360° on firm, level supporting surface. Capacities are valid for 24" 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 *). Lifting capacity of the excavator is limited by machine stability, hydraulic capacity and maximum permissible load of the load hook.

Industrial Attachment

with Industrial-Type Gooseneck Boom 31'2"



Attachment Envelope

Kinematic variants 3C/3D

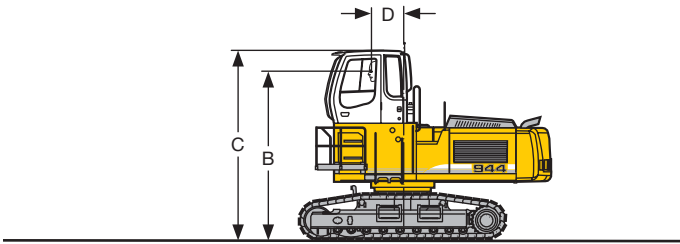
- 1** with industrial stick 23'11" (3D)
- 2** with industrial stick 23'11" (3C)
- 3** with industrial stick 23'11" and grapple model 70 C (3D)
- 4** with industrial stick 23'11" and grapple model 70 C (3C)

Operating Weight and Ground Pressure

Operating weight includes basic machine with rigid cab elevation 3'11" and counterweight 24,244 lb, industrial-type gooseneck boom 31'2", industrial stick 23'11" and grapple model 70 C with 5 semi-closed tines 1.05 yd³.

Undercarriage	EW	
Pad width	in	24" 30"
Weight	lb	102,513 103,836
Ground pressure	psi	12.8 10.4

Choice of Cab Elevation and Cab Protection

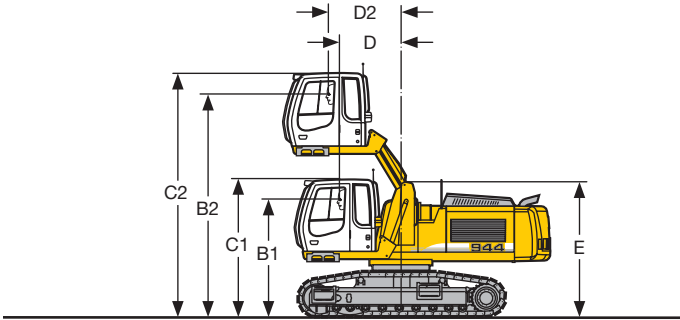


Rigid Cab Elevation

Height	3'11" ft in	6'7" ft in
B	13' 1" ft in	15'9" ft in
C	14' 9" ft in	17'4" ft in
D	2' 2" ft in	2'2" ft in

Weight includes basic machine with pad width 24"
80,467 lb

80,908 lb

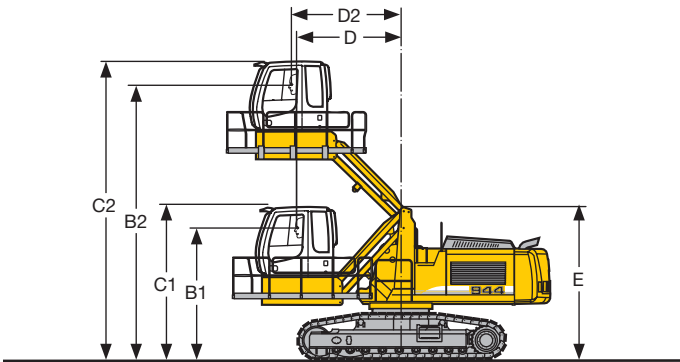


Hydraulic Cab Elevation

B1	9' 2" ft in
B2	17' 4" ft in
C1	10'10" ft in
C2	19' ft in
D1	4' 9" ft in
D2	5' 7" ft in
E	10' 6" ft in

Weight includes basic machine with pad width 24"

82,892 lb



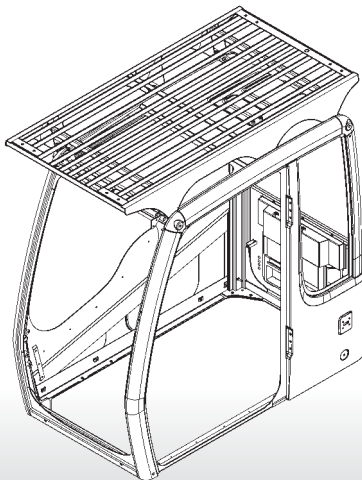
Hydraulic Cab Elevation (Parallelogram) + Intermediate Piece 1'7"

B1	10' 4" ft in
B2	21' 6" ft in
C1	11'11" ft in
C2	23' 2" ft in
D1	8' 2" ft in
D2	8' 2" ft in
E	11'11" ft in

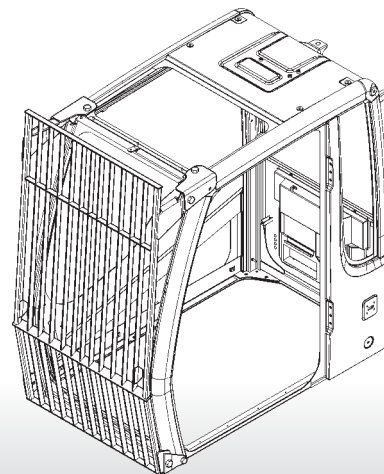
Weight includes basic machine with pad width 24"

83,774 lb

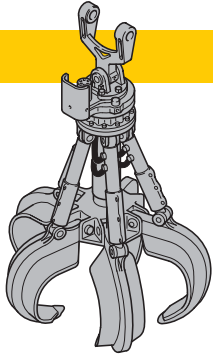
FOPS Guard



Front Guard

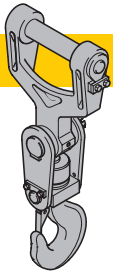


Variety of Tools



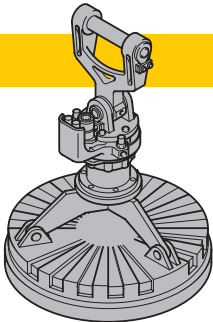
Multiple Tine Grapples

			open tines		semi-closed tines		closed tines	
Grapple Model 69 (4 tines)	Capacity	yd ³	1.05	1.44	1.05	1.44	1.05	1.44
	Weight	lb	2,965	3,075	3,384	3,615	4,188	4,541
Grapple Model 70 C (5 tines)	Capacity	yd ³	1.05	1.44	1.05	1.44	1.05	1.44
	Weight	lb	3,273	3,505	3,758	4,100	4,299	4,398



Crane Hook with Suspension

Max. load	lb	27,557
Height with suspension	ft in	3'
Total weight	lb	211



Electromagnets with Suspension

Magnet information on request

For further information see color brochure "Add-on tools for material-handling technology". To operate a magnet the installation of a generator is required; please contact your Liebherr dealer or the factory for further information.

Equipment



Undercarriage

	S	O
Two-speed travel	•	
Track guides on idler end	•	
Life time lubricated track rollers	•	
Travel drive completely integrated into the undercarriage frame	•	
Tracks sealed and greased	•	
Track guides at sprocket and in center		•
Reinforced base-plate center-piece		•
Conversion kit – Track D 7 to D 7 G		•



Uppercarriage

	S	O
Engine hood with lift cylinder	•	
Lockable tool box	•	
Handrails, non slip surfaces	•	
Tool kit	•	
Maintenance-free swing brake lock	•	
Maintenance-free HD-batteries	•	
Main switch for electric circuit	•	
Sound insulation	•	
Electric fuel tank filler pump		•
Foot pedal swing positioning brake		•
Extended tool kit		•
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	•	
Additional hydraulic circuits		•
Bio-degradable hydr. oil		•
Filter for secondary circuit		•



Engine

	S	O
Unit pump system	•	
Turbo-charged and after-cooled, reduced emissions	•	
Dry-type air cleaner w/pre-cleaner, main and safety element	•	
Sensor controlled engine idling	•	
Engine cold starting aid		•



Operator's Cab

	S	O
Roof hatch	•	
Tinted windows	•	
Right window made of one piece (without post)	•	
Door with sliding window	•	
Rain hood over front window opening	•	
Wiper/washer	•	
Emergency exit rear window	•	
Sun roller blind	•	
Seat and consoles independently adjustable (6-way adjustable seat)	•	
Storage tray	•	
Closed storage space	•	
Coat hook	•	
Removable customized foot mat	•	
Dome light	•	
Inside rear mirror	•	
Cigarette lighter and ashtray	•	
Seat belt	•	
Mechanical hour meters, readable from outside the cab	•	
Displays for engine operating condition	•	
Automatic air conditioning with defroster	•	
Preparation for radio installation	•	
Stereo radio		•
Electric cooler		•
Auxiliary heating		•
Additional flood lights		•
Wiper in lower front window		•
Roof window wiper		•
Bullet proof window (fixed installation – can not be opened)		•
FOPS Protection		•
Air pressure operator seat with heating and head-rest		•
Electronic theft protection		•
Beacon		•
Extinguisher		•



Attachment

	S	O
Flood lights	•	
Hydr. lines for clam operation in stick	•	
Sealed pivots	•	
Liebherr semi-automatic central lubrication system	•	
Safety check valves on hoist cylinder, regenerative	•	
Safety check valves on stick cylinder, regenerative	•	
Hose quick connection	•	
Cylinders with shock absorber	•	
Industrial-type gooseneck sticks with remote hydraulic pin puller		•
Safety lift hook		•
Liebherr line of clams		•
Liebherr fully-automatic central lubrication system		•
Customized colors		•
Overload warning device		•

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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