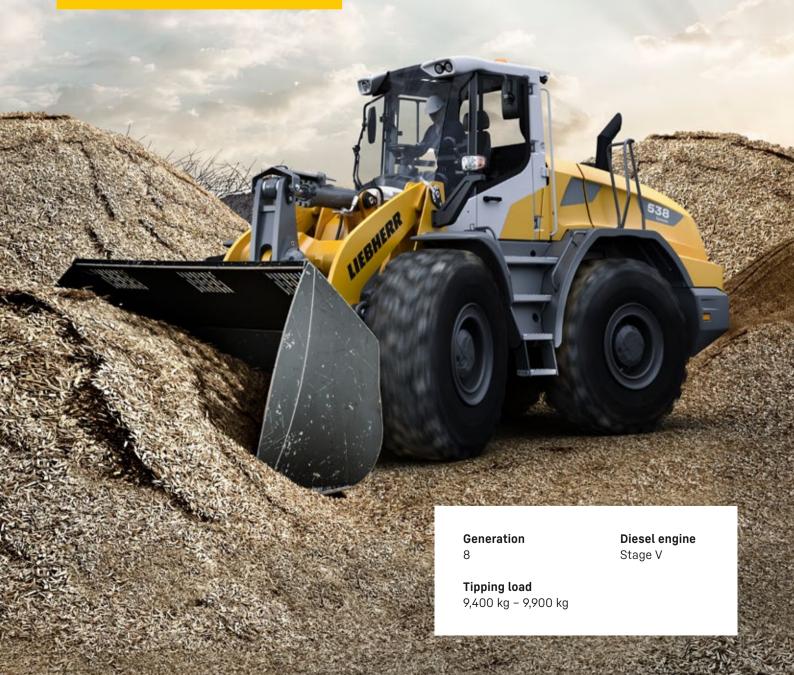
L 538 Speeder

LIEBHERR

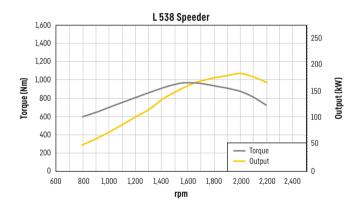
Wheel loader



Technical data

Diesel engine

Diesel engine S068HB551 Water-cooled turbocharged in-series engine with cooled exhaust gas recirculation Cylinder inline 6			I
exhaust gas recirculation Cylinder inline Fuel injection process Output to kW/HP 181/246 180 9249 ~ SAE J1349 at RPM Rated output to ISO 14396/ECE-R.120 kW/HP Nominal speed at RPM Max. torque to Nm ISO 14396 at RPM ISO 150 blasement litres Bore / Stroke mm Stage V Harmful emissions values Emission control Air cleaner system Deprating voltage V Battery Ah Alternator V/A Electrical system Openating voltage Electrical system Openating voltage Electrical system Openating voltage V Electrical system Openating voltage V 24 Alternator Air Cleaner System Openating voltage V 24 Alternator Electrical system Openating voltage V 24 Alternator	Diesel engine		6068HB551
Fuel injection process Output to	Design		
Output to ISO 9249 ~ SAE J1349 kW / HP at RPM 181/246 2,000 Rated output to ISO 14396 / ECE-R.120 kW / HP Nominal speed 168/228 Nominal speed at RPM ISO 14396 2,200 Max. torque to ISO 14396 nm ISO 14396 770 Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacement Islacem	Cylinder inline		6
ISO 9249 ~ SAE J1349 at RPM Rated output to ISO 14396 / ECE-R.120 kW/HP Nominal speed at RPM Max. torque to Nm ISO 14396 at RPM Displacement litres Bore/ Stroke mm Stage V Harmful emissions values Emission control Air cleaner system Electrical system Operating voltage PAR PM Atternator Air RPM 2,000 168/228 2,200 1,600 1,600 1,600 1,600 1,600 2,70 2,80 2,80 2,80 2,70 3,80 4,80 4,80 2,70 4,80 2,70 4,80 2,70 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80 4,80	Fuel injection process		Electronic Common Rail high-pressure injection
Rated output to ISO 14396/ECE-R.120 kW/HP Nominal speed at RPM Ax. torque to Nm 970 So 14396 at RPM Ideo 150 lsqlacement litres Bore / Stroke mm Stage V Harmful emissions values Emission control Air cleaner system Operating voltage V 24 Battery Ah Alternator V/A 224/100	Output to	kW/HP	181/246
ISO 14396/ECE-R.120 kW/HP 168/228 Nominal speed at RPM 2,200 Max. torque to Nm 1SO 14396 at RPM 1,6600 Displacement litres Bore / Stroke mm Stage V Harmful emissions values Emission control Air cleaner system Electrical system Operating voltage V Battery Ah Alternator V/A 2000 970 1,6600 6.8 B06/127 According to regulation (EU) 2016/1628 SCR technology and closed diesel particle filter system Dry type filter with main and safety element, pre-cleaner, service indicator on the Liebherr display	ISO 9249 ~ SAE J1349	at RPM	2,000
Nominal speed at RPM Max. torque to Nm 970 1,600 4396 at RPM 1,600 50 50 50 50 50 50 50 50 50 50 50 50 5	Rated output to		
Max. torque to ISO 14396 Nm at RPM 1,600 970 1,600 Displacement Bore / Stroke Bore / Stroke Bore / Stroke Marmful emissions values According to regulation (EU) 2016/1628 Emission control Air cleaner system According to regulation (EU) 2016/1628 Electrical system Operating voltage Dry type filter with main and safety element, pre-cleaner, service indicator on the Liebherr display Electrical system Operating voltage V 24 Battery Alternator V/A	ISO 14396/ECE-R.120	kW/HP	168/228
ISO 14396 at RPM 1,600 Displacement litres 6.8 Bore / Stroke mm 1006/127 Stage V	Nominal speed	at RPM	2,200
Displacement litres 6.8 Bore / Stroke mm Stage V Harmful emissions values Emission control SCR technology and closed diesel particle filter system Dry type filter with main and safety element, pre-cleaner, service indicator on the Liebherr display Electrical system Operating voltage V 24 Battery Ah Alternator V/A 24/100	Max. torque to	Nm	970
Bore / Stroke mm Stage V Harmful emissions values	ISO 14396	at RPM	1,600
Stage V Harmful emissions values According to regulation (EU) 2016/1628 Emission control SCR technology and closed diesel particle filter system Air cleaner system Dry type filter with main and safety element, pre-cleaner, service indicator on the Liebherr display Electrical system Operating voltage Operating voltage V Abattery Ah Alternator V/A 24/100	Displacement	litres	6.8
Harmful emissions values Emission control Air cleaner system Dry type filter with main and safety element, pre-cleaner, service indicator on the Liebherr display Electrical system Operating voltage V Battery Ah Alternator V/A According to regulation (EU) 2016/1628 SCR technology and closed diesel particle filter system Dry type filter with main and safety element, pre-cleaner, service indicator on the Liebherr display 24 24 24 24 24 24 24 24 24 2	Bore / Stroke	mm	106/127
Emission control Air cleaner system Dry type filter with main and safety element, pre-cleaner, service indicator on the Liebherr display Electrical system Operating voltage V Battery Ah 2 x 135 Alternator V/A SCR technology and closed diesel particle filter system Dry type filter with main and safety element, pre-cleaner, service indicator on the Liebherr display 24 24 24 24 200	Stage V		
Air cleaner system Dry type filter with main and safety element, pre-cleaner, service indicator on the Liebherr display Electrical system Operating voltage V 24 Battery Ah 2 x 135 Alternator V/A 24/100	Harmful emissions values		According to regulation (EU) 2016/1628
Electrical system Operating voltage Battery Ah 2 x 135 Alternator V/A Veryice indicator on the Liebherr display 24 24 24/100	Emission control		SCR technology and closed diesel particle filter system
Operating voltage V 24 Battery Ah 2 x 135 Alternator V/A 24/100	Air cleaner system		
Battery Ah 2 x 135 Alternator V/A 24/100	Electrical system		
Alternator V/A 24/100	Operating voltage	V	24
.,	Battery	Ah	2 x 135
Starter V/kW 24/7.8	Alternator	V/A	24/100
	Starter	V/kW	24/7.8



Driveline

Continuous hydrostatic driveline				
Design	Swash plate type variable flow pump and two variable axial piston motors in closed loop circuit and axle transfer case. Direction of travel is reversed by changing the flow-direction of the variable-displacement pump			
Filtration	Suction return line filter for closed circuit			
Control	By travel and inching pedal. The inching pedal makes it possible to control the tractive and thrust forces steplessly at full engine speed. The Liebherr control lever is used to control forward and reverse travel			
Travel speed range	$\begin{array}{cccccccccccccccccccccccccccccccccccc$			



is Diakes	
	Self-locking of the hydrostatic driveline (acting on all four wheels) and additional pump-accumulator brake system with wet multi-disc brakes located in the differ- ential housing (two separate brake circuits)
Parking brake	Electro-hydraulically actuated spring-loaded disc brake system on the front axle

The braking system meets the requirements of the ISO 3450.

- Axles

Four-wheel drive		
Front axle		Fixed
Rear axle		Centre pivot, with 10° oscillating angle to each side
Height of obstacles which		
can be driven over	mm	470
		with all four wheels remaining in contact with the ground
Differentials		Automatic limited-slip differentials with 45% locking
		action in both axles
Reduction gear		Planetary final drive in wheel hubs
Track width		1,900 mm with all types of tyres

\bigcirc Steering

Design	"Load-sensing" swash plate type variable flow pump with pressure cut-off and flow control. Central pivot with two double-acting steering cylinders
Angle of articulation	40° to each side
Emergency steering	Electro-hydraulic emergency steering system

Attachment hydraulics

	,	~~
Design		"Load-sensing" variable axial piston pump with output and flow control, and pressure cut-off in the control block
Cooling		Hydraulic oil cooling using thermostatically controlled fan and oil cooler
Filtration		Return line filter in the hydraulic reservoir
Control		Liebherr control lever, electro-hydraulically operated
Lifting function		Lifting, neutral, lowering Auto lifting and lowering using Liebherr control lever, float position using Liebherr control lever
Tilt function		Tilt back, neutral, dump Automatic bucket return-to-dig for tilting in and out using Liebherr control lever
Max. flow	l/min.	200
Max. pressure	bar	350

Attachment

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Geometry	- 1	Powerful, optimised z-bar kinematics with one tilt cylinder, optional hydraulic quick coupler
Bearings	8	Sealed
Cycle time at nominal load	Z	ZK
Lifting	s 5	5.5
Dumping	s 1	1.9
Lowering (empty)	s 4	4.9



Design		Elastic mounted, noise-proof cab ROPS roll over protection per EN ISO 3471/EN 474-1 FOPS falling objects protection per EN ISO 3449/ EN 474-1, Cat. II Driver's cab door with 105° opening angle and opening window with 5° gap opener or 170° opening, right side sliding side window, front windscreen made of laminated safety glass, green tinted as standard, side panels with single-pane safety glass ESG, green tinted, heated rear window ESG. Continuously adjustable steering column
Liebherr operator's seat		6 way adjustable, vibration-damped operator's seat "Comfort" with seat, depth and incline adjustment as standard (air-cushioned with seat heating adjustable to operator's weight), Liebherr control lever mounted into the operator's seat as standard
Cab heating andventilation		2-level air control, cooling water heating, defroster and air conditioning via manual nozzle position or electronic valve control for head and front area, as well as electronic fresh / recirculated air control, electrically heated rear window, filter system with pre-filter, fresh air filter and recirculated air filter, easily replaced, air condition/automatic air conditioning system with new improved cooling output optional
Vibration emissions		
Vibrations in the hand/arm	m/s ²	≤ 2.5
Vibrations through the whole body	m/s²	≤ 0.5

${\mathfrak D}$ Sound level

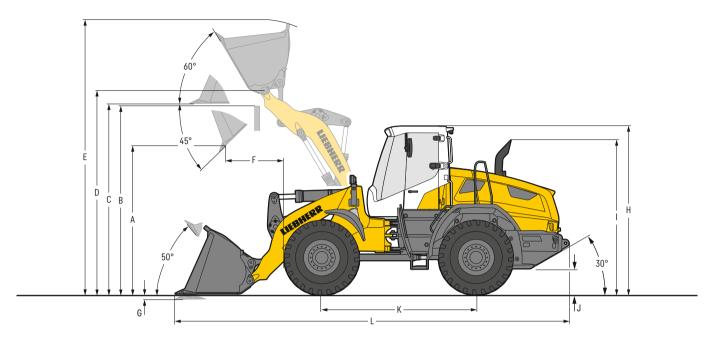
°		
Sound pressure level to ISO 6396		
L _{pA} (inside cab)	dB(A)	69
Sound power level to 2000/14/EG		
L _{WA} (surround noise)	dB(A)	104

Capacities

-	
Fuel tank (plastic design)	205
Fuel tank	
(steel version, optional)	300
DEF tank	20
Engine oil	
(inclusive filter change)	23.5
Transmission	2.5
Coolant	26.5
Front axle / wheel hubs	19/3.5
Rear axle / wheel hubs	19/3.5
Hydraulic tank	95
Hydraulic system, total	180

Dimensions

Loading bucket



Loading bucket

Geometry		ZK	ZK-QH
Cutting tools		T	T
Lift arm length	mm	2,650	2,650
Bucket capacity according to ISO 7546**	m³	2.6	2.4
Specific material density	t/m³	1.8	1.8
Bucket width	mm	2,720	2,520
A Dumping height at max. lift height and 45° discharge	mm	2,960	2,830
B Dump-over height	mm	3,540	3,540
C Max. height of bucket bottom	mm	3,720	3,720
D Max. height of bucket pivot point	mm	3,980	3,980
E Max. operating height	mm	5,270	5,390
F Reach at max. lift height and 45° discharge	mm	1,085	1,210
G Digging depth	mm	100	100
H Height above operator's cab ¹⁾	mm	3,250	3,250
I Height above exhaust	mm	2,950	2,950
J Ground clearance	mm	430	430
K Wheelbase	mm	3,025	3,025
L Overall length	mm	7,630	7,810
Turning circle radius over outside bucket edge	mm	6,140	6,100
Breakout force (SAE)	kN	125	115
Tipping load, straight*	kg	11,500	10,700
Tipping load, fully articulated*	kg	9,900	9,400
Operating weight*	kg	14,850	15,200
Tyre size		20.5	225 L3

^{*} The figures shown include the above tyres, all lubricants, a full fuel tank, the ROPS / FOPS cab and the operator. Different tyres and optional equipment will change the operating weight and tipping load. (Tipping load, fully articulated according to ISO 14397-1)

*** Actual bucket capacity may be approx. 10% larger than the calculation according to ISO 7546 standard. The degree to which the bucket can be filled depends on the material – see page 11.

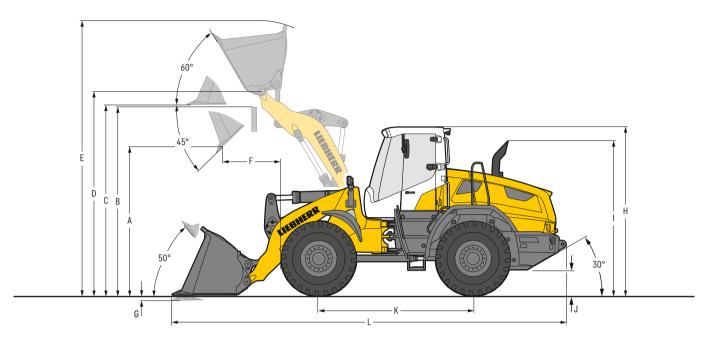
1) With the optional "comfort safety door (can be opened 180°)", the "H" value increases by 130 mm when door is open.

ZK = Z-bar linkage ZK-QH = Z-bar linkage incl. quick hitch

= Welded-on tooth holder with add-on teeth

Dimensions

High lift arm/standard bucket



Loading bucket

Geometry		ZK	ZK-QH
Cutting tools		T	T
Lift arm length	mm	3,000	3,000
Bucket capacity according to ISO 7546**	m³	2.4	2.2
Specific material density	t/m³	1.6	1.6
Bucket width	mm	2,520	2,520
A Dumping height at max. lift height and 45° discharge	mm	3,500	3,415
B Dump-over height	mm	4,070	4,070
C Max. height of bucket bottom	mm	4,260	4,260
D Max. height of bucket pivot point	mm	4,520	4,520
E Max. operating height	mm	5,820	5,870
F Reach at max. lift height and 45° discharge	mm	935	1,010
G Digging depth	mm	120	120
H Height above operator's cab ¹⁾	mm	3,250	3,250
I Height above exhaust	mm	2,950	2,950
J Ground clearance	mm	430	430
K Wheelbase	mm	3,025	3,025
L Overall length	mm	8,080	8,200
Turning circle radius over outside bucket edge	mm	6,260	6,300
Breakout force (SAE)	kN	130	120
Tipping load, straight*	kg	9,600	8,900
Tipping load, fully articulated*	kg	8,200	7,600
Operating weight*	kg	14,960	15,360
Tyre size		20.5	R25 L3

^{*} The figures shown include the above tyres, all lubricants, a full fuel tank, the ROPS/FOPS cab and the operator. Different tyres and optional equipment will change the operating weight and tipping load. (Tipping load, fully articulated according to ISO 14397-1)

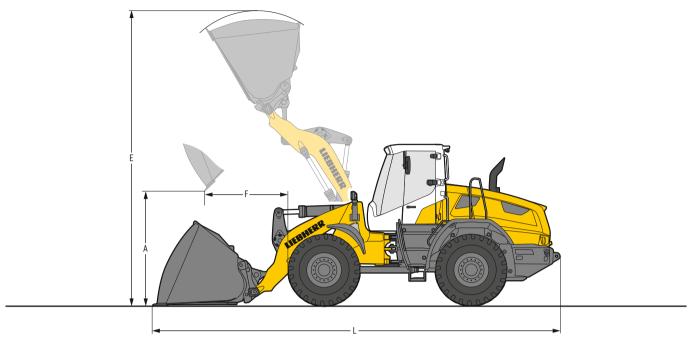
** Actual bucket capacity may be approx. 10% larger than the calculation according to ISO 7546 standard. The degree to which the bucket can be filled depends on the material – see page 11.

1) With the optional "comfort safety door (can be opened 180°)", the "H" value increases by 130 mm when door is open.

ZK = Z-bar linkage ZK-QH = Z-bar linkage incl. quick hitch

= Welded-on tooth holder with add-on teeth

Light material bucket





F Heavy material density

Geometry		ZK	ZK-QH
Cutting tools		BOCE	BOCE
Bucket capacity	m³	4.0	4.0
Specific material density	t/m³	1.05	1.0
Bucket width	mm	2,700	2,700
A Dumping height at max. lift height	mm	2,595	2,520
E Max. operating height	mm	5,510	5,610
F Reach at maximum lift height	mm	1,420	1,490
L Overall length	mm	7,970	8,080
Tipping load, straight*	kg	10,900	10,300
Tipping load, fully articulated*	kg	9,300	8,900
Operating weight*	kg	15,100	15,520
Tyre size		20.5	R25 L3



Light material density

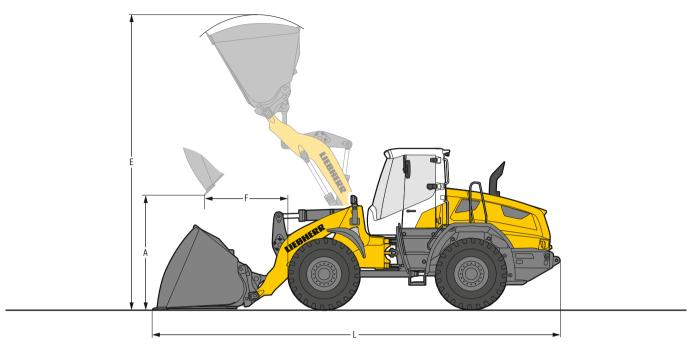
,	
Geometry	ZK-QH
Cutting tools	BOCE
Bucket capacity m ³	6.5
Specific material density t/m³	0.5
Bucket width mm	2,700
A Dumping height at max. lift height mm	2,190
E Max. operating height mm	6,080
F Reach at maximum lift height mm	1,830
L Overall length mm	8,550
Tipping load, straight* kg	9,800
Tipping load, fully articulated* kg	8,400
Operating weight* kg	15,920
Tyre size	20.5R25 L3
ping load, fully articulated* kg erating weight* kg	8,400 15,920

^{*} The figures shown include the above tyres, all lubricants, a full fuel tank, the ROPS / FOPS cab and the operator. Different tyres and optional equipment will change the operating weight and tipping load. (Tipping load, fully articulated according to ISO 14397-1)

ZK = Z-bar linkage ZK-QH = Z-bar linkage incl. quick hitch

BOCE = Bolt-on cutting edge

High lift arm/light material bucket





F Heavy material density

Geometry		ZK	ZK-QH
Cutting tools		BOCE	BOCE
Bucket capacity	m³	4.0	4.0
Specific material density	t/m³	0.85	0.8
Bucket width	mm	2,700	2,700
A Dumping height at max. lift height	mm	3,135	3,060
E Max. operating height	mm	6,060	6,160
F Reach at maximum lift height	mm	1,275	1,340
L Overall length	mm	8,420	8,530
Tipping load, straight*	kg	9,000	8,500
Tipping load, fully articulated*	kg	7,700	7,200
Operating weight*	kg	15,300	15,730
Tyre size		20.5R25	5 L3



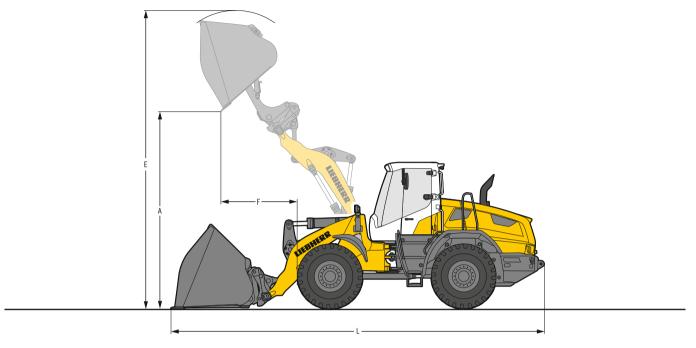
Light material density

Geometry	ZK-QH
Cutting tools	BOCE
Bucket capacity	n ³ 5.5
Specific material density t/s	n³ 0.5
Bucket width m	m 2,700
A Dumping height at max. lift height m	m 2,850
E Max. operating height m	m 6,440
F Reach at maximum lift height m	m 1,555
L Overall length m	m 8,830
	kg 8,100
Tipping load, fully articulated*	6 ,800
Operating weight*	rg 15,970
Tyre size	20.5R25 L3

^{*} The figures shown include the above tyres, all lubricants, a full fuel tank, the ROPS/FOPS cab and the operator. Different tyres and optional equipment will change the operating weight and tipping load. (Tipping load, fully articulated according to ISO 14397-1)

ZK = Z-bar linkage ZK-QH = Z-bar linkage incl. quick hitch BOCE = Bolt-on cutting edge

High-Dump bucket





$ot \mathbb{E}$ Heavy material density

Geometry		ZK	ZK-QH
Cutting tools		BOCE	BOCE
Bucket capacity	m³	3.5	3.5
Specific material density	t/m³	1.1	1.05
Bucket width	mm	2,700	2,700
A Dumping height at max. lift height	mm	4,550	4,680
E Max. operating height	mm	6,360	6,550
F Reach at maximum lift height	mm	1,430	1,470
L Overall length	mm	8,060	8,140
Tipping load, straight*	kg	10,100	9,600
Tipping load, fully articulated*	kg	8,600	8,100
Operating weight*	kg	15,750	16,100
Tyre size		20.5R2	5 L3



Light material density

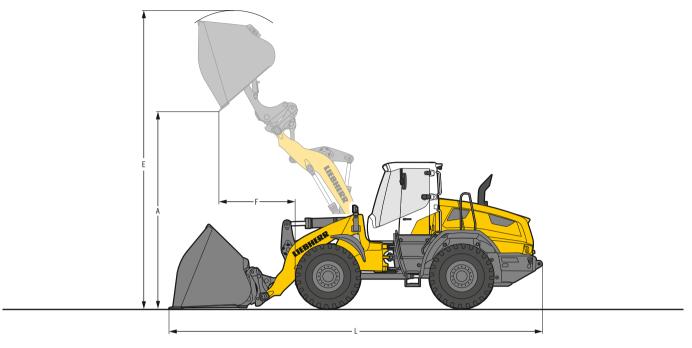
•	•	
Geometry		ZK-QH
Cutting tools		BOCE
Bucket capacity	m ³	6.0
Specific material density	t/m³	0.5
Bucket width	mm	2,700
A Dumping height at max. lift height	mm	4,385
E Max. operating height	mm	6,910
F Reach at maximum lift height	mm	1,750
L Overall length	mm	8,510
Tipping load, straight*	kg	9,500
Tipping load, fully articulated*	kg	8,000
Operating weight*	kg	16,250
Tyre size		20.5R25 L3

^{*} The figures shown include the above tyres, all lubricants, a full fuel tank, the ROPS / FOPS cab and the operator. Different tyres and optional equipment will change the operating weight and tipping load. (Tipping load, fully articulated according to ISO 14397-1)

ZK = Z-bar linkage ZK-QH = Z-bar linkage incl. quick hitch

BOCE = Bolt-on cutting edge

High lift arm/high dump bucket





$ot \mathbb{E}$ Heavy material density

Geometry		ZK	ZK-QH
Cutting tools		BOCE	BOCE
Bucket capacity	m³	3.5	3.5
Specific material density	t/m³	0.85	0.8
Bucket width	mm	2,700	2,700
A Dumping height at max. lift height	mm	5,090	5,220
E Max. operating height	mm	6,900	7,090
F Reach at maximum lift height	mm	1,285	1,325
L Overall length	mm	8,490	8,580
Tipping load, straight*	kg	8,300	7,800
Tipping load, fully articulated*	kg	7,000	6,500
Operating weight*	kg	15,950	16,300
Tyre size		20.5	R25 L3



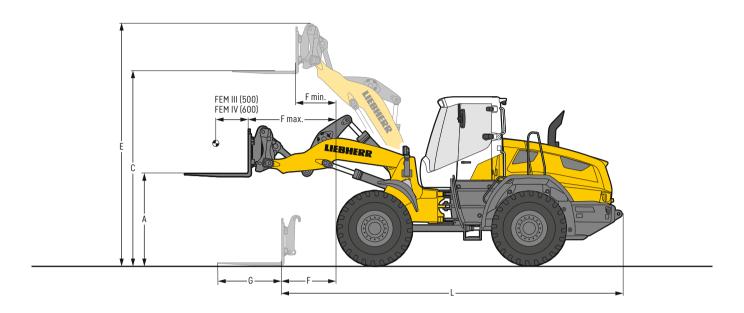
Light material density

•	•	
Geometry		ZK-QH
Cutting tools		BOCE
Bucket capacity	m ³	5.0
Specific material density	t/m³	0.5
Bucket width	mm	2,700
A Dumping height at max. lift height	mm	5,000
E Max. operating height	mm	7,300
F Reach at maximum lift height	mm	1,510
L Overall length	mm	8,825
Tipping load, straight*	kg	7,800
Tipping load, fully articulated*	kg	6,500
Operating weight*	kg	16,350
Tyre size		20.5R25 L3

^{*} The figures shown include the above tyres, all lubricants, a full fuel tank, the ROPS / FOPS cab and the operator. Different tyres and optional equipment will change the operating weight and tipping load. (Tipping load, fully articulated according to ISO 14397-1)

ZK = Z-bar linkage ZK-QH = Z-bar linkage incl. quick hitch BOCE = Bolt-on cutting edge

Fork carrier and fork



oxdiv Fork carrier and fork

	STD	HL	STD	HL
Fork	FEM III	FEM III	FEM IV	FEM IV
Geometry	ZK-QC	ZK-QC	ZK-QC	ZK-QC
Lift arm length mm	2,650	3,000	2,650	3,000
A Lifting height at max. reach mm	1,780	1,780	1,740	1,740
C Max. lifting height mm	3,780	4,310	3,740	4,270
E Max. operating height mm	4,705	5,250	4,740	5,285
F Reach at loading position mm	1,070	1,510	1,090	1,530
F max. Max. reach mm	1,710	2,050	1,690	2,030
F min. Reach at max. lifting height mm	790	650	770	630
G Fork length mm	1,200	1,200	1,500	1,500
L Length – basic machine mm	6,670	7,120	6,700	7,140
Tipping load, straight* kg	8,300	7,150	7,900	6,800
Tipping load, fully articulated* kg	7,190	6,150	6,780	5,780
Recommended payload for uneven ground				
= 60% of tipping load, articulated ¹⁾ kg	4,300	3,650	4,000	3,450
Recommended payload for smooth surfaces				
= 80% of tipping load, articulated1) kg	5,000	4,900	5,400	4,600
Operating weight* kg	14,680	14,870	14,920	15,130
Tyre size	20.5	R25 L3	20.5R	25 L3

^{*} The figures shown include the above tyres, all lubricants, a full fuel tank, the ROPS/FOPS cab and the operator. Different tyres and optional equipment will change the operating weight and tipping load. (Tipping load, fully articulated according to ISO 14397-1)

1) According to EN 474-3

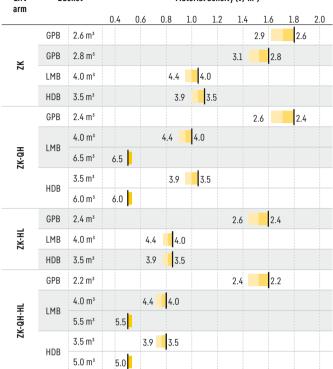
STD = Standard lift arm length HL = High Lift

ZK-QH = Z-bar linkage incl. quick hitch

Bucket selection



Material density (t/m³)



Bucket filling factor



Lift arm

ZK	Z-bar linkage, standard lift arm length
ZK-QH	Z-bar linkage with quick hitch, standard lift arm length
ZK-HL	Z-bar linkage, High Lift
ZK-QH-HL	Z-bar linkage, with quick hitch, High Lift

Bucket

GPB	General purpose bucket (Excavation bucket)
LMB	Light material bucket
HDB	High-dump bucket

Tipping load



What is tipping load?

Load at centre of gravity of working equipment, so that the wheel loader just begins to tip over the front axle.

This is the most unfavourable static-load position for the wheel loader. Lifting arms horizontal, wheel loader fully articulated at centre pivot.

Pay load.

The pay load must not exceed 50% of the tipping load when articulated.

This is equivalent to a static stability-margin factor of 2.0.

Bucket capacity.

Bucket capacity =

The bucket volume is determined from the pay load.

Tipping load, articulated Pay load = Pay load (t)
Specific bulk weight of material (t/m³)

Bulk material densities and bucket filling factors

		t/m³	%
Gravel	moist	1.9	105
	dry	1.6	105
	crushed stone	1.5	100
Sand	dry	1.5	105
	wet	1.9	110
Gravel and Sand	dry	1.7	105
	wet	2.0	100
Sand/Clay		1.6	110
Clay	natural	1.6	110
	dry	1.4	110
Clay / Gravel	dry	1.4	110
	wet	1.6	100

		t/m³	%
Earth	dry	1.3	115
	wet excavated	1.6	110
Topsoil		1.1	110
Basalt		1.95	100
Granite		1.8	95
Sandstone		1.6	100
Slate		1.75	100
Bauxite		1.4	100
Limestone		1.6	100
Gypsum	broken	1.8	100
Coke		0.5	110
Slag	broken	1.8	100

		t/m³	%
Glass waste	broken	1.4	100
	solid	1.0	100
Compost	dry	0.8	105
	wet	1.0	110
Wood chips / Saw dust			110
Paper	shredded/loose	0.6	110
	recovered paper / cardboard	1.0	110
Coal	heavy material density	1.2	110
	light material density	0.9	110
Waste	domestic waste	0.5	100
	bulky waste	1.0	100

Tyres



Cam Iyi	Size and tread code		Change of operating weight	Width over tyres	Change in vertical dimensions*	Use
			kg	mm	mm	
L 538 Speede	er					
Bridgestone	20.5R25 VJT	L3	17	2,480	8	Bulk material (firm ground conditions)
Continental	20.5R25 EM-Master	L3	156	2,480	26	Bulk material (firm ground conditions)
Goodyear	20.5R25 TL-3A+	L3	156	2,500	11	Sand, Gravel, Earthworks, Clay (all ground conditions)
Goodyear	20.5R25 RT-3B	L3	11	2,490	16	Gravel (all ground conditions)
Michelin	20.5R25 XTLA	L2	- 121	2,510	- 7	Gravel, Earthworks, Clay (all ground conditions)
Michelin	20.5R25 XHA2	L3	0	2,480	0	Sand, Gravel (all ground conditions)
Michelin	620/70R26 CereXBib 2		- 364	2,620	11	Green area (agricultural tractor)
Michelin	620/75R26 MegaXBib		- 318	2,600	68	Green area (agricultural tractor)
Michelin	750/65R26 MegaXBib		- 22	2,850	81	Green area (agricultural tractor)
Mitas	750/65R26 SFT		- 62	2,880	76	Green area (agricultural tractor)
Nokian	20.5R25 Hakkapeliitta	L2	- 114	2,490	6	Winter tyres, Gravel, Asphalt (all ground conditions)
Trelleborg	620/75R26 TM2000		- 153	2,640	72	Green area (agricultural tractor)

^{*} The stated values are theoretical and may deviate in practice.

Before operating the vehicle with tyre foam filling or tyre protection chains, please discuss this with the Liebherr-Werk Bischofshofen GmbH.

The Liebherr wheel loaders

Wheel loader



		L 538 Speeder
Tipping load	kg	9,900
Bucket capacity	m³	2.6
Operating weight	kg	14,850
Engine output	kW/HP	168/228

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Equipment



Equipment	L 538
1st hydraulic additional function on the front incl. lines	+
1st and 2nd hydraulic additional function on the front incl. lines	+
Working hydraulics lockout	•
Continuous mode, additional function	+
Pressure relief for hydraulic additional function	•
Stroke limit damping	+
Fork carrier and pallet forks	+
High-dump bucket	+
Automatic lift arm position and lowering programmable	•
Lift arms 2,650 mm	•
Lift arms 3,000 mm	+
Hydraulic quick hitch	+
Hydraulic quick hitch LIKUFIX	+
Hydraulic quick change device preparation LIKUFIX	+
Sweeper mode	+
Adjustable tipping speed	•
Tilt cylinder protection	+
Light material bucket	+
Pipe break protection (lift and tilt cylinders)	+
Automatic return high dump bucket	+
Bucket tilt assistant	+
Bucket bearing seal (standard)	•
Bucket return-to-dig (automatic and programmable)	•
Bucket return-to-dig via button	+
Float position	•
Visualisation of the equipment position	•

Equipment

Operator's cab	L 538
2-in-1 steering	+
Adapter plate for additional fastening on the multi-function rail	•
Adaptive working lighting	+
Exterior mirror, electrical adjustable, with heating	+
Exterior mirrors, folding and heated	+
Folding exterior mirror	•
Hinged window (left)	+
Access assistance to facilitate cleaning windscreen	•
Operation with multi-lever control	+
Operating hour meter (mechanic)	+
Electronical theft protection with code	+
Electronical theft protection with key	+
Automatic driver identification	+
Manual driver identification	+
"Comfort" operator's seat with "Comfort integrated" pneumatic suspension Grammer (with seat heating and 3-point belt)	+
"Comfort" operator's seat with "Comfort integrated" pneumatic suspension Grammer (with seat heating and 4-point belt)	+
"Comfort" operator's seat with "Comfort integrated" pneumatic suspension Grammer	_
(with seat heating)	•
"Premium" operator's seat with low frequency suspension -	١.
with seat air conditioning, seat heating and head rest - Grammer	+
Particle filter F7	+
Fire extinguisher in cab 2 kg Radio unit installation (preparation)	+
V _{max} speed limit adjustable via button on control unit	
Speed limit & fixed speed	+
Seat belt warning device (visual) – green warning flashlight on cab	+
Rear window heated electrically	•
Button-operated horn via right button	+
Interior mirror left	•
Joystick steering	+
Joystick steering only	+
Floor mat	•
Clothes hook	•
Air conditioning system	+
Automatic air conditioning system	+
Comfort safety door (open through 180°)	+
Head rest	+
Cool box	+
Steering column height-adjustable	+
Steering column folding	•
LiDAT hardware	•
Liebherr control lever with mini-joystick	+
Liebherr control lever with buttons	•
Multifunctional rail, right	•

Radio "Standard" + Preparation for radio installation + Amber beacon swiveling LED + Headlights activation (on the cab) for reverse travel + Soundproof ROPS / FOPS cab Wipe and wash system Windscreen wiper single-sweep function with button + Headlights rear, triple design, LED + Headlights rear, single design, halogen + Headlights rear, double design, LED + Headlights rear, double design, halogen +	Operator's cab	L 538
Radio "Comfort" (DAB+/USB/AUX/BLUETOOTH/handsfree set) Radio "Standard" Preparation for radio installation Amber beacon swiveling LED Headlights activation (on the cab) for reverse travel Soundproof ROPS/FOPS cab Wipe and wash system Windscreen wiper single-sweep function with button Headlights rear, triple design, LED Headlights rear, single design, halogen Headlights rear, single design, LED Headlights rear, double design, LED Headlights rear, double design, LED Headlights front, double design, LED Headlights front, double design, LED Headlights front, double design, LED Headlights of ont, double design, LED Headlights rear, double design, LED Headlights front of unit of reverse travel (on the cab) Sliding window right Slipcover for operator seat Beacon activation in reverse travel Sunblind front Power socket 12 V USB charging port First aid kit Preparation for protective ventilation device	Emergency steering pump	•
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Preparation for radio installation Amber beacon swiveling LED Headlights activation (on the cab) for reverse travel Soundproof ROPS / FOPS cab Wipe and wash system Windscreen wiper single-sweep function with button Headlights rear, triple design, LED Headlights rear, single design, halogen Headlights rear, double design, LED Headlights rear, double design, LED Headlights rout, double design, halogen Headlights front, double design, LED Headlights front, double design, LED Headlights activation for reverse travel (on the cab) Sliding window right Slipcover for operator seat Beacon activation in reverse travel Sunblind front Power socket 12 V USB charging port First aid kit Preparation for protective ventilation device		+
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i ichaiannii ini aast iittatiin ackice		
Wide angle mirror +		+
Cigarette lighter	ů –	

Safety	L 538
Active personnel detection at the rear	+
Main battery switch (lockable)	+
Roof camera for front area monitoring	+
Standard parking brake	•
Custom paintwork	+
Back-up alarm (acoustical)	+
Reversing alarm LED warning flashlight (visual)	
(adjustable to 0 - constant - reverse travel)	+
Rear space monitoring with camera	•
Skyview 360°	+

• = Standard + = Option - = not available

Further information can be found in the brochure "Assistance systems for wheel loaders" or you can find here:



Here you can download our wheel loader brochures:



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The Liebherr Group



Global and independent: more than 70 years of success

Liebherr was founded in 1949 when, with the development of the world's first mobile tower crane, Hans Liebherr laid the foundations for a family business now employing nearly 50,000 people and comprising over 140 companies across every continent.

The parent company is Liebherr-International AG in Bulle, Switzerland, whose associates are exclusively members of the Liebherr family.

Leaders and pioneers

Liebherr is a pioneer and its forward-looking approach has seen it make important contributions to technology history over a wide variety of industries. Employees throughout the world continue to share the courage of the founder, sharing a passion to produce innovative products and a determination to provide world-leading equipment and machinery.

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The company is one of the world's biggest construction equipment manufacturers and provides high-quality, user-oriented products and services to sectors including: earthmoving, material handling, deep foundations, mining, mobile and crawler cranes, tower cranes, concrete production and distribution, maritime cranes, aerospace and transportation, gear technology and automation, refrigeration and freezing, components and hotels.

Customised care

Liebherr solutions are characterised by precision, implementation and longevity. The company is committed to technological excellence and to providing customers with solutions that match their needs exactly. That customer focus does not end with delivery of a product but continues through a comprehensive range of back-up and support services.

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