

# Technical Description

## Stereo Loader<sup>®</sup>

# L 509

**Bucket capacity** 1,0 – 1,4 m<sup>3</sup>  
**Operating weight** 5,3 t – 5,7 t  
**Engine output** 49 kW / 67 HP



**With a new combination of centre-pivot and rear-wheel steering.**

This new system has the following advantages:

- **Extremely tight turning circle, useful when working in confined spaces.**
- **Increased load capacity when working with the pallet fork.**
- **Wide, convenient steps for easy access to the cab, even when the loader is fully articulated.**

#### **Safety and comfort**

Good visibility of the front attachment throughout its full working range significantly improves operating safety. This Liebherr wheeled loader also owes its increased operating comfort and convenience to an ergonomically designed operator's cabin and the Liebherr oscillating frame articulation.

#### **Parallelogram attachment geometry or Z-bar loader linkage**

This new wheeled loader is even more versatile, since it offers a choice of parallelogram linkage or Z-bar loader linkage. An integrated quick change coupler is standard.

#### **Easy servcability**

Ideal access to the diagonally installed diesel engine and all major assemblies.

# LIEBHERR

The Better Machine.



## Engine

Deutz BF4L 1011 diesel engine, turbo charged			
Power output	49 kW/67 HP	at 2500 rpm	
DIN/ISO 3046-1	230 Nm	at 1600 rpm	
Max. torque	2,73 litres		
Displacement	91/105 mm		
Bore/stroke	Dry air filter with main and safety element		
Air cleaner system	Electrical system		
	Operating voltage	12 V	
	Battery	88 Ah/12 V	
	Alternator	14 V/60 A	
	Starter	2,2 kW	



## Travel Drive

Stepless hydrostatic travel drive	
Design	Swash plate type variable flow pump and a variable axial piston motor in a closed loop circuit
Filtering system	Suction-side filter for closed circuit
Control	Control of travel drive with travel and inching pedal. Stepless control of tractive force and travel speed via the inching pedal, independent of the engine RPM. The Liebherr joystick controls forward and reverse travel
Travel speed range	speed range 1 _____ - 6,0 km/h speed range 2 _____ - 20,0 km/h Forward and reverse with tyre size 365/80R20



## Axles

Four-wheel drive	
Front axle	Fixed
Rear axle	5° oscillating angle to each side. 300 mm oscillating stroke (all wheels remain in contact with the ground)
Differentials	Automatic limited slip differentials with 45 % locking value in both axles
Reduction gear	Planetary final drive in wheel hubs



## Brakes

Service brake	Wear free service brake due to hydrostatic travel drive, applied to all four wheels and additional drum brake system on front axle
Parking brake	Mechanically operated drum brake on front axle
The braking system meets the requirements of the EC guidelines 71/320.	



## Tyres

Available sizes	14.5-20
	365/80R20
	465/70R20
	Tubeless radial or cross ply tires on multi part rims or deep well rims in size
Special tires	Please contact factory for special application tires



## Steering

Design	Hydraulic servo power steering. Central oscillating frame articulation with damper element
Angle of articulation	28° (to each side)
Angle of oscillation	6° (to each side)
Max. pressure	180 bar



## Attachment hydraulics

Gear pump	
Max. flow	82 l/min
Max. pressure	190 bar
Cooling	Hydraulic oil cooling by thermostatically controlled fan and oil cooler
Filtration	Return line filter in the hydraulic reservoir
Control	Servo control with Liebherr joystick
Lift circuit	Lift, neutral, lower Float position via Liebherr joystick
Tilt circuit	Tilt back, neutral, dump



## Attachment

Geometry	Z-bar loader linkage or parallel linkage can be chosen, both with integrated quick coupler
Bearings	sealed



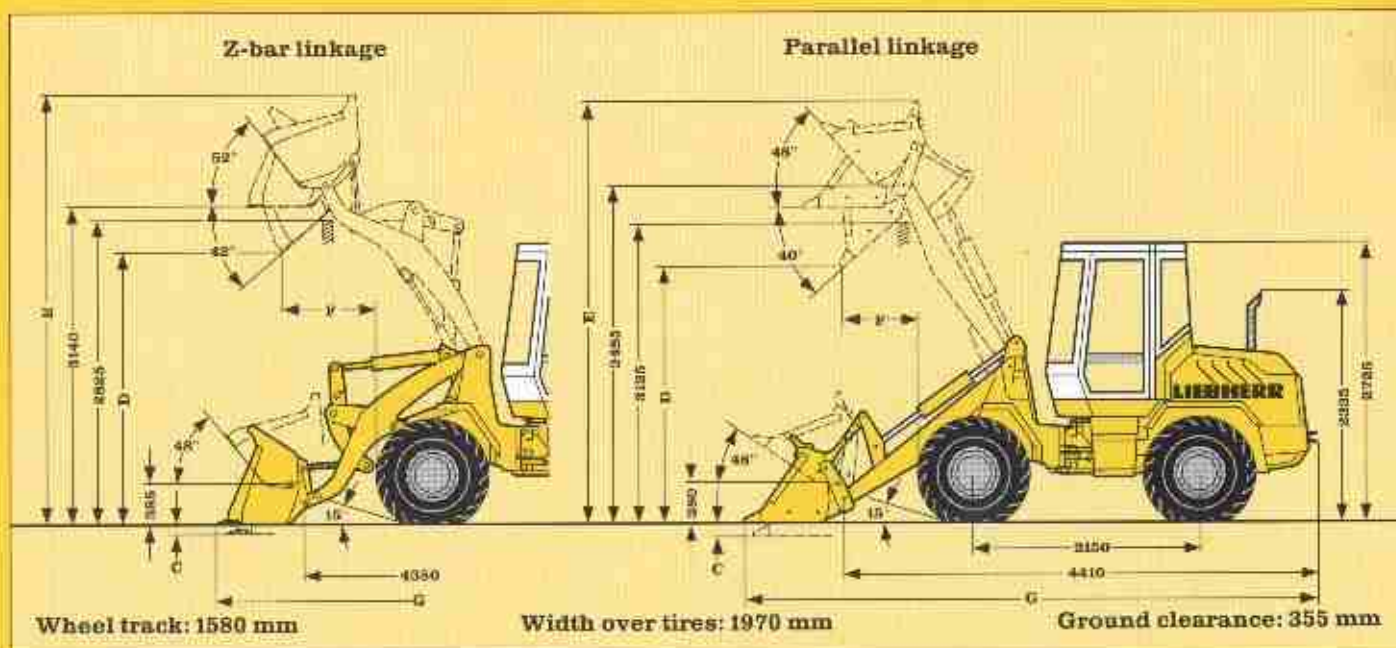
## Operator's cab

Design	The cab is resiliently mounted on the rear section, with built in ROPS/FOPS structure, tinted safety glass windows, 2 doors open out, left door with a sliding window. Adjustable steering column is standard equipment
Operator's seat	ROPS roll over protection per DIN/ISO 3471/SAE J1040C FOPS falling objects protection per DIN/ISO 3449/SAE J 231 6-way adjustable, suspended seat equipped with right hand armrest and seatbelt. Seat is adjustable for operator's weight
Heating and ventilation system	Operator's cab with defroster, fresh air filter, circulation system and engine oil heater
Noise levels (86/662/EWG)	in the operators' cab = 75 dB(A) outside = 96 dB(A)



## Capacities

Fuel tank	70 l
Engine oil (inclusive filter change)	7,5 l
Travel gear	0,5 l
Front axle/wheel hubs	3,4/2,0 l
Rear axle/wheel hubs	4,7/2,0 l
Hydraulic tank	45 l
Hydraulic system, total	61 l



### Standard bucket

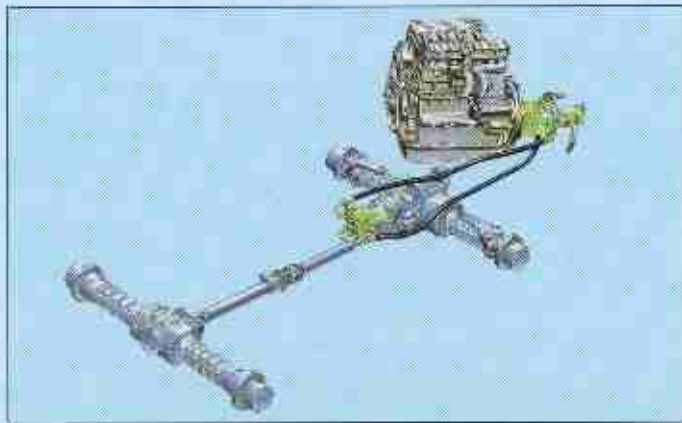
Attachment Bucket		Z-bar linkage Loading Bucket <sup>(1)</sup>	Parallel linkage Loading Bucket <sup>(1)</sup>
Bucket capacity heaped	m <sup>3</sup>	1,0	1,0
Bucket width	mm	2100	2100
specific material weight	t/m <sup>3</sup>	1,8	1,8
D Dump height at max. lift height and 42° discharge	mm	2525	2725
F Reach at max. lift and 42° discharge	mm	800	730
E Max. operating height	mm	3995	4365
G Overall length	mm	5200	5310
C Digging depth	mm	50	45
Turning radius Bucket in transport position	mm	3800	4000
Lifting force (SAE)	kN	54	58
Breakout force (SAE)	kN	56	51
* Tipping load straight (SAE)	kg	4615	4360
full turn	kg	4315	4080
** Operating weight	kg	5510	5355

\* Figures shown include lubricants, full fuel tank, tires size 365/80R20, ROPS/FOPS cab and operator.

\*\* Different tires and optional equipment will change the operating weight and tipping load.

<sup>(1)</sup> weld on tooth adaptors with exchangeable teeth

All figures stated above are also valid for the hydraulic quick change coupler.



### Z-bar Loader Linkage or Parallelogram Linkage

Depending upon job requirements, a Z-bar loader linkage or parallel linkage can be chosen. Integrated hydraulic quick coupler is optional.



### Stepless hydrostatic travel drive

Stepless control of tractive force and travel speed via inching pedal - independent of diesel engine speed. The L 509 always supplies ideal tractive force, speed ranges and travel direction can be selected during operation.



# More Benefits Through Advanced Techno



### Safety and Operator Comfort

The cab increases operator safety and operator comfort: Fully adjustable steering column, Liebherr joystick lever, provide easy access into cab, unobstructed view of front attachments, optimum visibility to the rear over the rounded off engine cover. Control of travel and working hydraulics with only one joystick lever assures increased safety and fatigue free working conditions. The left hand always remains on the steering wheel.

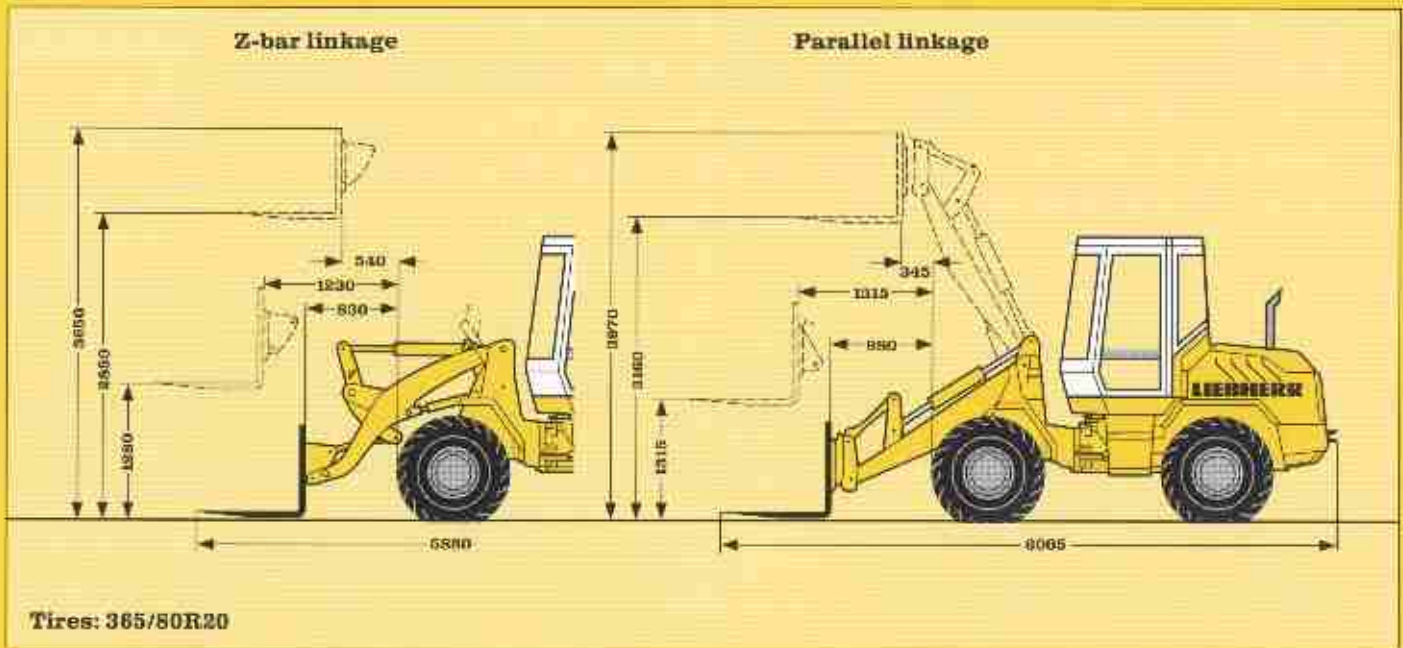
### Off-Road Driving and Maneuverability

The combination of centre pivot and rear wheel steering gives this "stereo loader" an extremely tight turning circle. The combination of oscillating axle and oscillating frame articulation assures increased operator comfort and travel stability by absorbing pinching motions and reducing cab oscillation.

### Comfortable access

This new steering system guarantees easy access to the operator's cab, even if the wheeled loader is in the fully articulated position.



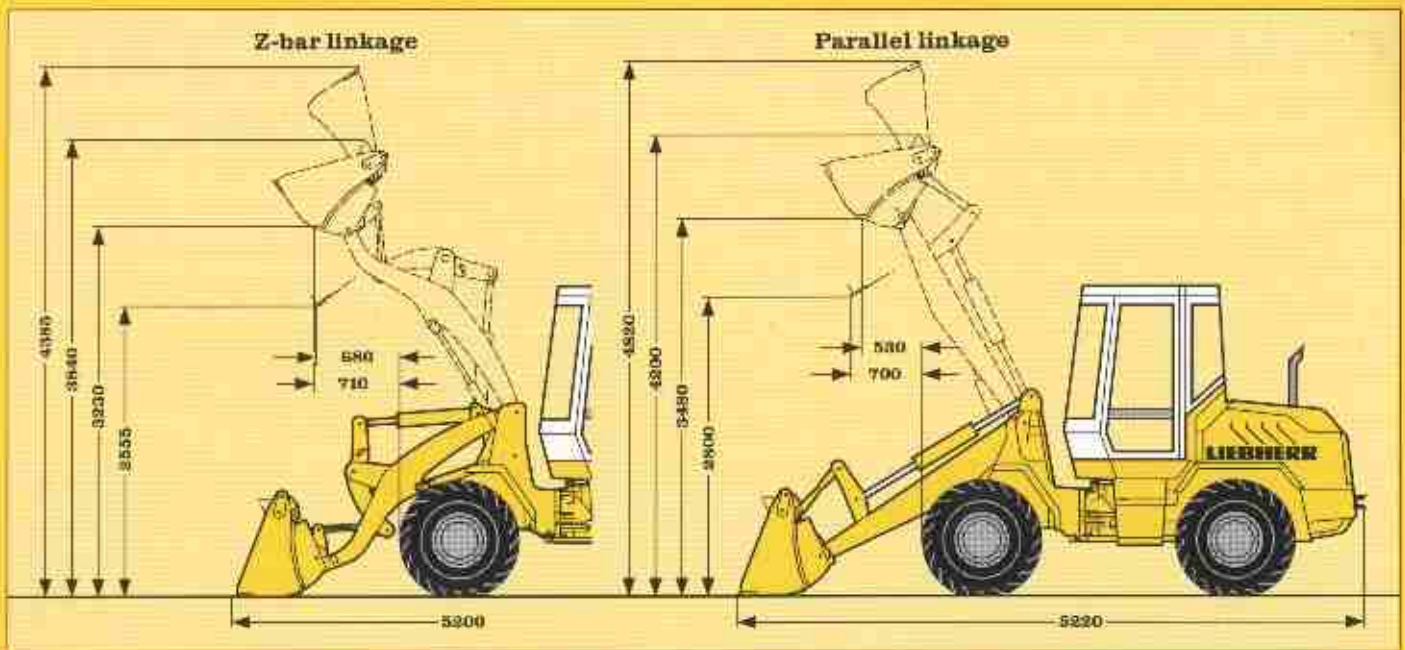


## Pallet Fork

		Z-bar linkage	Parallel linkage
Fork length	mm	1200	1200
Fork carriage width	mm	1165	1165
max. fork spread	mm	1000	1000
Tipping load full turn (DIN 24094)*	kg	3070	2925
Turning radius	mm	3850	4000
Operating weight	kg	5435	5245

\* recommended payload (ISO 8313): for uneven ground = 60 % of tipping load (full turn)  
for smooth surfaces = 80 % of tipping load (full turn)

# Attachment



### 4 in 1 Bucket

		Z-bar linkage	Parallel linkage
Bucket capacity heaped	m <sup>3</sup>	0,9	0,9
Bucket width	mm	2100	2100
spec. material weight	t/m <sup>3</sup>	1,8	1,8
Turning radius			
Bucket in transport position	mm	3800	4000
Lifting force (SAE)	kN	54	56
Breakout force (SAE)	kN	56	51
Tipping load straight (SAE)	kg	4390	4130
full turn	kg	4070	3860
Operating weight	kg	5725	5550

\* Figures shown include lubricants, full fuel tank, tires size 365/80R20, L2, ROPS/FOPS cab and operator

\*\* Different tires and optional equipment will change the operating weight and tipping load  
All figures stated above are also valid for the hydraulic quick change coupler.

## Standard equipment

- Optional parallel or choice of Z-bar linkage
- Mechanical quick change coupler for parallel kinematics
- Hydraulic quick coupler for Z-bar linkage
- Hydraulic servo control
- Soundproofed ROPS/FOPS cab with tinted windows
- Engine oil heater with defroster and ventilation system
- Adjustable steering column
- Wash/wipe system front and rear
- Suspended 6-way adjustable seat with seat belt
- Lockable doors and engine hood
- Limited-slip differentials
- 3rd hydraulic circuit
- Float position
- Towing device
- Tool box with tool kit
- Operator's bag

### Instrument panel with gauges:

- Engine oil temperature
- Fuel
- Hourmeter

### Optical warning lights:

- Engine oil pressure
- Engine overheat
- Parking brake
- Hydraulic oil temperature
- Air filter contamination
- Battery charger

### Acoustical warning device for:

- Engine oil pressure
- Engine overheat
- Hydraulic oil temperature

### Indicator lights:

- Forward travel
- Reverse travel
- Turn indicator
- Preheat
- Travel speed ranges I - II
- High beam headlights

## Optional equipment

- Buckets with and without teeth or with reversible cutting edge
- 4 in 1 bucket
- Pallet carrier and fork
- Side dump bucket
- High dump bucket
- Branch and shrub fork
- Straw fork
- Snow plough
- Road sweeper
- Hydraulic quick change coupler for parallel linkage
- 4th hydraulic circuit
- Hydraulics can be filled with bio-degradable oil
- Air-cushioned operator's seat
- Front/rear working lights
- Radio
- Air conditioning
- Rotary beacon
- Country specific versions

### Other equipment on request

Standard and optional equipment may vary, depending on country.

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With compliments:

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