

# Machine for Industrial Applications

**R 317**  
Litronic®

Operating Weight: 22,200 – 22,900 kg  
Engine Output: 94 kW / 128 HP



# LIEBHERR

# Technical Data



## Engine

Rating per ISO 9249	94 kW (128 HP) at 1800 RPM
Model	Deutz TCD2013 L0V4 according to level IIIA/Tier 3
Type	4 cylinder in-line
Bore/Stroke	108/130 mm
Displacement	4,8 l
Engine operation	4-stroke diesel Common Rail turbo-charged and after-cooler reduced emissions
Harmful emissions values	in accordance with 97/68/EG Stage IIIA
Cooling system	water-cooled and integrated motor oil cooler
Air cleaner	dry-type air cleaner with pre-cleaner and automatic 95 % dust discharge (TopAir); main and safety elements
Fuel tank	280 l
Engine idling	sensor controlled
Electrical system	
Voltage	24 V
Batteries	2 x 92 Ah/12 V
Alternator	three phase current 24 V/55 A
Option	Liebherr particle filter



## Hydraulic System

Hydraulic pump	Liebherr, variable displacement, swashplate pump
Max. flow	297 l/min.
Max. hydr. pressure	350 bar
Hydraulic pump regulation and control	Liebherr-Synchron-Comfort-system (LSC) with electronic engine speed sensing regulation, pressure and flow compensation, load sensing and torque controlled swing drive priority
Hydraulic tank capacity	150 l
Hydraulic system capacity	max. 300 l
Filtration	one main return filter with integrated partial micro filtration (5 µm)
Cooling system	compact cooling system comprising cooling unit for water, hydraulic oil and charge air with stepless, thermostatically controlled fan, fan for cleaning cooling system folds away completely
Engine speed and output tuning	stepless alignment of engine output and hydraulic power via engine speed
E (ECO)	for especially economical and environmentally friendly operation
P (POWER)	for high performance with low fuel consumption
PP (POWER-PLUS)	for top performance and for very tough operations, suitable for continuous operation
Optional additional function	
Tool Control	10 steadily adjustable pump flows and pressures for optional add-on tools selectable from the display
Tool Control Plus	Tool Control with additional functions: – different quantities possible on the forward and return sides – stepless adjustment of power distribution between basic machine and add-ons – stepless alignment of hydraulic controls and sensitivity to suit operating conditions



## Hydraulic Controls

Power distribution	via control valve with integrated safety valves, simultaneous and independent operation of travel drive, swing drive and work
Control type	
Attachment and swing	proportional via joystick levers
Travel	proportional via foot pedal
Additional functions	via switch and/or proportional foot pedals



## Swing Drive

Drive	Liebherr swashplate motor with torque control and integrated brake valve
Transmission	Liebherr compact planetary reduction gear
Swing ring	Liebherr sealed single race ball bearing swing ring, internal teeth
Swing speed	0 – 9,0 RPM stepless
Swing torque	42 kNm
Holding brake	wet disc (spring applied, pressure released)
Option	pedal controlled positioning brake



## Operator's Cab

Cab	largely dimensioned ergonomic cab resiliently mounted, sound insulated, tinted windows, front window stores overhead, door with sliding window, large roof window, sun visors
Operator's seat	shock absorbing suspension, adjustable to operator's weight, 6-way adjustable seat, backward/forward seat adjusting with automatic height adjustment
Joysticks	integrated into adjustable seat consoles
Monitoring	ergonomically arranged, non-glare instrumentation, menu-driven retrieval of current operating conditions via display, automatic monitoring, display, warning (acoustic and visual) and saving of anomalous operating conditions, such as engine overheating and excessively low engine oil pressure or hydraulic oil level
Digital hour meter	visible from outside
Heating system	hot water heat exchanger to provide heated fresh air or circulated air, with additional front window air vents, operating unit in right console
Noise emission	
ISO 6396	$L_{DA}$ (inside cab) = 73 dB(A)
2000/14/EC	$L_{WA}$ (surround noise) = 99 dB(A)
Sound level in correspondence with "Blue Angel" guidelines.	



## Undercarriage

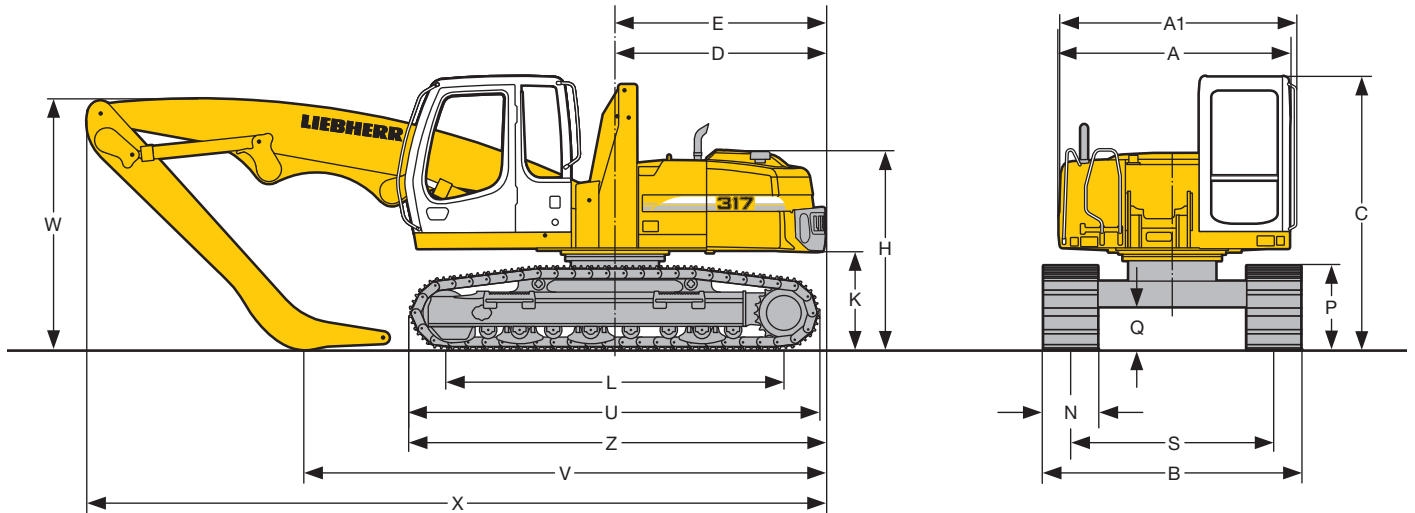
Drive	bent axis hydraulic motors on each side of the undercarriage with brake valves actuated on both sides
Transmission	planetary reduction gears
Travel speed	low range – 2,4 km/h high range – 5,0 km/h
Drawbar pull, max.	175 kN
Track components	B60L, maintenance-free
Track rollers/Carrier rollers	8/2
Track pads	triple grouser
Chain tensioning	hydraulically
Brakes	wet multi discs (spring applied, pressure released)



## Attachment

Type	high-strength steel plates at highly-stressed 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



	mm		
A	2550		
A1	2630		
C	3025		
D	2335		
E	2335		
H	2205		
K	1085		
L	3750		
P	930		
Q	470		
S	2250		
U	4555		
N	500	600	700
B	2750	2850	2950
Z	4620		

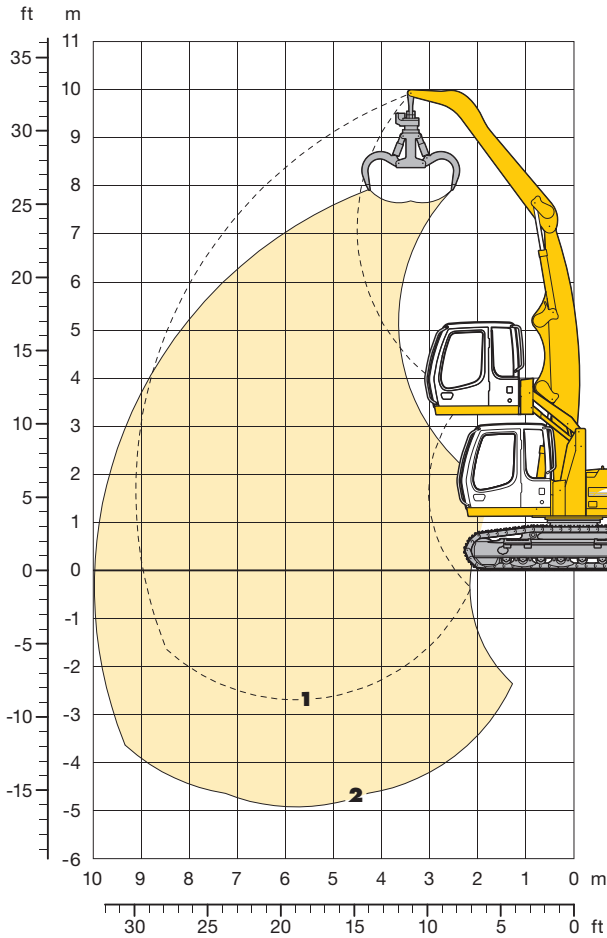
E = Tail radius

<b>Industrial-Type Straight Boom 5,50 m and Industrial Stick 4,00 m</b>		mm
V		5800
W		2900
X		8300

<b>Industrial-Type Straight Boom 4,60 m and Industrial Stick with Tipping Kinematics 3,50 m</b>		mm
V		5000
W		3000
X		7350

# Industrial Attachment

with Industrial-Type Straight Boom 5,50 m



## Attachment Envelope

- 1 with industrial stick 4,00 m
- 2 with industrial stick 4,00 m and grapple model 55

## Operating Weight

Operating weight includes basic machine with hydr. cab elevation, industrial-type straight boom 5,50 m, industrial stick 4,00 m and grapple model 55/0,40 m<sup>3</sup> semi-closed tines.

Undercarriage		LC		
Pad width	mm	500	600	700
Weight	kg	22200	22500	22700
Ground pressure	kg/cm <sup>2</sup>	0,55	0,46	0,40

# Lift Capacities

## Industrial Stick 4,00 m

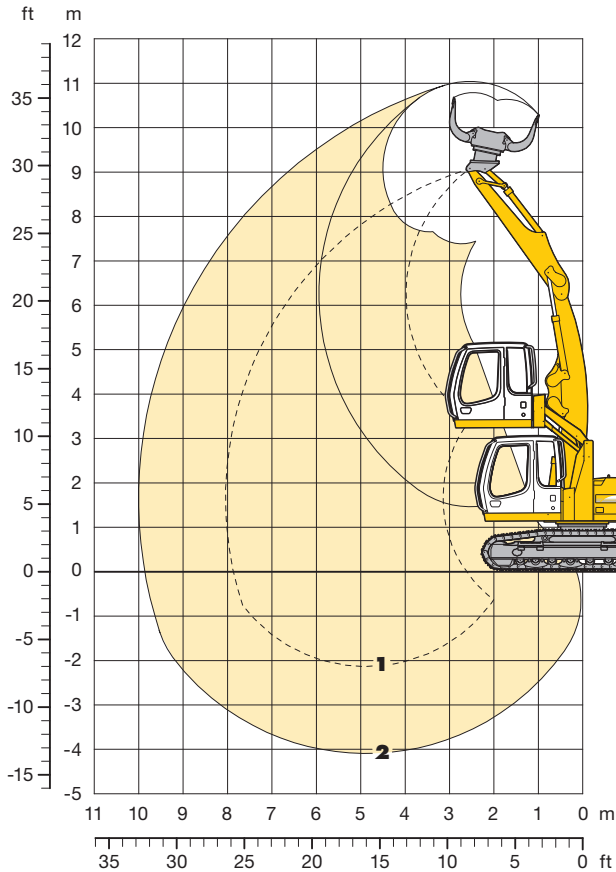
↑ m	Undercarriage	3,0 m		4,5 m		6,0 m		7,5 m		9,0 m		Max. reach		m
9,0	LC			4,8*	4,8*							3,6*	3,6*	5,18
7,5	LC			6,7*	6,7*	4,5	5,0*					3,2*	3,2*	6,90
6,0	LC			7,0*	7,0*	4,5	5,9*	3,1	4,3*			2,8	3,1*	7,97
4,5	LC			6,8	7,6*	4,3	6,1*	3,1	5,1*			2,4	3,1*	8,64
3,0	LC	12,3	12,5*	6,4	8,4*	4,1	6,4*	3,0	5,1*	2,2	3,2*	2,2	3,2*	9,01
1,5	LC			5,9	8,9*	3,9	6,5*	2,9	5,0	2,2	3,8*	2,2	3,4*	9,11
0	LC	7,0*	7,0*	5,5	8,5*	3,7	6,2*	2,8	4,7*			2,2	3,3*	8,96
-1,5	LC	7,1*	7,1*	5,3	7,0*	3,6	5,3*	2,7	3,9*			2,3	2,8*	8,54

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

The lift capacities are stated in metric tonnes (t) on the lifting gear's stick tip without attachment, and can be lifted 360° on firm, level supporting surface. Capacities are valid for 600 mm 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. According to European Standard, EN 474-5: In the European Union excavators have to be equipped with an overload warning device, a load diagram and automatic check valves on the hoist cylinders, when they are used for lifting operations which require the use of lifting accessories.

# Industrial Attachment

with Industrial-Type Straight Boom 4,60 m



## Attachment Envelope

- 1 with industrial stick 3,50 m
- 2 with industrial stick 3,50 m and Liebherr sorting grapple

## Operating Weight

Operating weight includes basic machine with hydr. cab elevation, industrial-type straight boom 4,60 m, industrial stick with tipping kinematics 3,50 m and Liebherr sorting grapple SG 25/0,50 m<sup>3</sup> tines.

Undercarriage		LC		
Pad width	mm	500	600	700
Weight	kg	22300	22600	22800
Ground pressure	kg/cm <sup>2</sup>	0,55	0,47	0,40

# Lift Capacities

## Industrial Stick 3,50 m

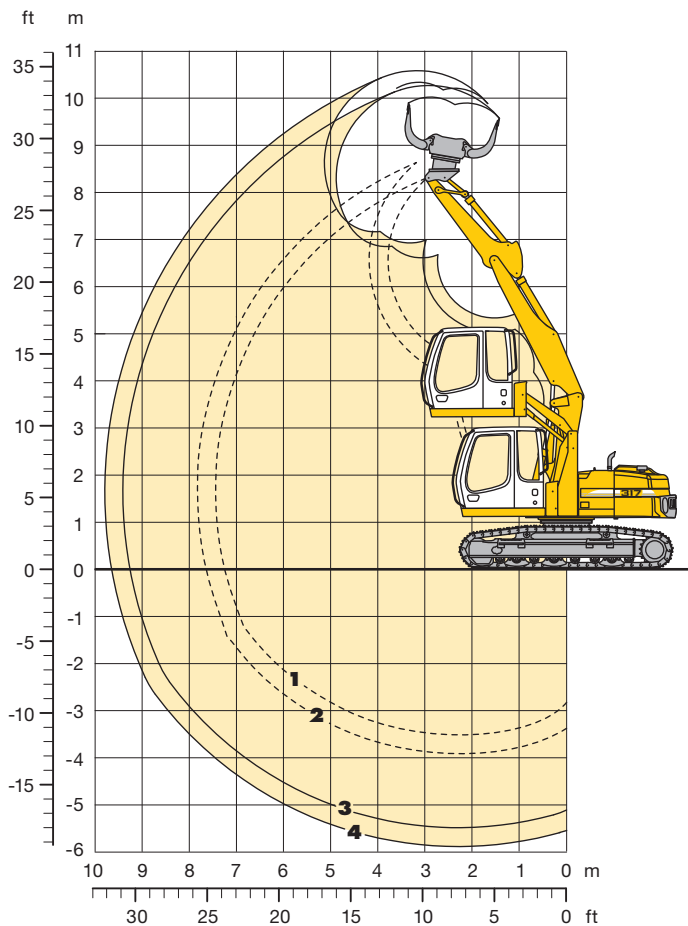
Height m	Undercarriage	3,0 m		4,5 m		6,0 m		7,5 m		9,0 m		m
9,0	LC											5,8* 5,8* 2,76
7,5	LC			6,3* 6,3*								4,0* 4,0* 5,38
6,0	LC			6,8 7,3*	4,3 5,9*							3,5 3,5* 6,71
4,5	LC			6,7 7,6*	4,2 6,2*	2,9 3,4*						2,9 3,4* 7,50
3,0	LC	12,0* 12,0*		6,4 8,4*	4,1 6,4*	2,9 5,0*						2,6 3,4* 7,92
1,5	LC			5,9 8,9*	3,9 6,5*	2,8 4,8*						2,5 3,6* 8,04
0	LC	10,5 10,8*		5,6 8,5*	3,7 6,1*	2,7 4,1*						2,6 3,5* 7,87
-1,5	LC	9,3* 9,3*		5,5 6,8*	3,7 4,7*							3,0 3,5* 6,90

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

The lift capacities are stated in metric tonnes (t) on the lifting gear's stick tip without attachment, and can be lifted 360° on firm, level supporting surface. Capacities are valid for 600 mm 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. According to European Standard, EN 474-5: In the European Union excavators have to be equipped with an overload warning device, a load diagram and automatic check valves on the hoist cylinders, when they are used for lifting operations which require the use of lifting accessories.

# Attachment

with Hydr. Adjustable Boom 3,40 m



## Attachment Envelope

- 1 with Stick 2,25 m
- 2 with Stick 2,65 m
- 3 with Stick 2,25 m and Liebherr sorting grapple
- 4 with Stick 2,65 m and Liebherr sorting grapple

## Operating Weight

Operating weight includes basic machine with hydr. cab elevation, hydr. adjustable boom 3,40 m, stick 2,25 m and Liebherr sorting grapple SG 25/0,50 m<sup>3</sup> tines.

Undercarriage		LC		
Pad width	mm	500	600	700
Weight	kg	22300	22600	22900
Ground pressure	kg/cm <sup>2</sup>	0,55	0,47	0,41

# Lift Capacities

with Hydr. Adjustable Boom 3,40 m

## Stick 2,25 m

↑ m	Undercarriage	3,0 m		4,5 m		6,0 m		7,5 m		9,0 m		m		
7,5	LC											2,7*	2,7*	4,42
6,0	LC			4,6*	4,6*							2,2*	2,2*	5,98
4,5	LC	5,9*	5,9*	5,6*	5,6*	4,3	4,6*					2,1*	2,1*	6,86
3,0	LC	12,0	12,1*	6,6*	8,4*	4,3	6,4*					2,1*	2,1*	7,32
1,5	LC	11,8*	12,1*	6,5*	9,0*	4,2	6,6*					2,2*	2,2*	7,45
0	LC	11,9	13,6*	6,5	9,0*	4,1	6,6*					2,4*	2,4*	7,26
-1,5	LC	11,7	14,4*	6,2	9,2*	3,9	6,0*					2,9*	2,9*	6,64
-3,0	LC	11,5	13,5*	6,0	7,2*							5,6	6,1*	4,69

## Stick 2,65 m

↑ m	Undercarriage	3,0 m		4,5 m		6,0 m		7,5 m		9,0 m		m		
7,5	LC			3,3*	3,3*							2,1*	2,1*	5,05
6,0	LC			3,8*	3,8*	3,1*	3,1*					1,8*	1,8*	6,45
4,5	LC			4,5*	4,5*	4,1*	4,1*					1,7*	1,7*	7,27
3,0	LC	12,0*	12,0*	6,6	8,0*	4,3	5,4*	2,7*	2,7*			1,7*	1,7*	7,71
1,5	LC	11,8	12,2*	6,5	8,8*	4,2	6,5*	2,9	3,4*			1,7*	1,7*	7,83
0	LC	11,8	13,2*	6,5	8,9*	4,1	6,5*	2,8	3,0*			1,9*	1,9*	7,65
-1,5	LC	11,7	14,3*	6,2	9,0*	3,9	6,3*					2,3*	2,3*	7,14
-3,0	LC	11,6	14,5*	6,0	8,3*							3,7*	3,7*	5,52

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

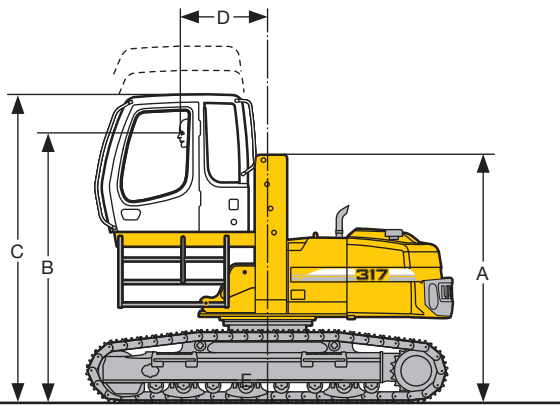
The lift capacities are stated in metric tonnes (t) on the lifting gear's stick tip without attachment, and can be lifted 360° on firm, level supporting surface.

The values apply to 600 mm wide triple grouser pads when the adjusting cylinder is in the optimal position.

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.

According to European Standard, EN 474-5: In the European Union excavators have to be equipped with an overload warning device, a load diagram and automatic check valves on the hoist cylinders, when they are used for lifting operations which require the use of lifting accessories.

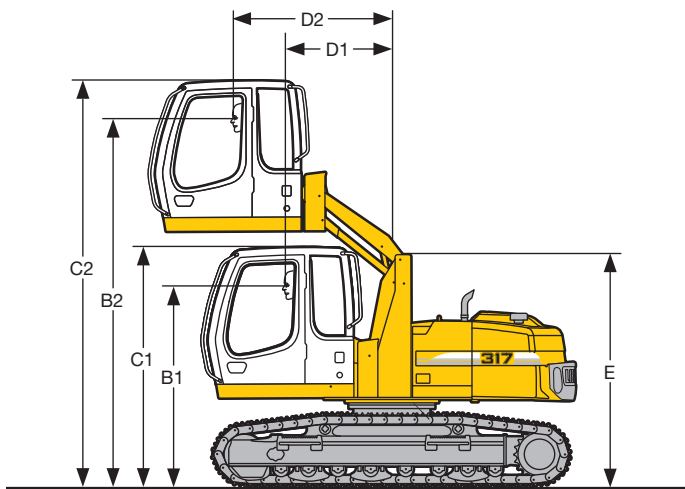
# Choice of Cab Elevations and Cab Protections



## Mechanical Cab Elevation

Height	mm	900	1200	1500
A	mm	3135	3135	3135
B	mm	3400	3700	4000
C	mm	3900	4200	4500
D	mm	1065	1110	1155

A rigid cab elevation has a fixed eye level height. For a lower transport height the shell of the cab can be removed. The overall height is then dimension A.

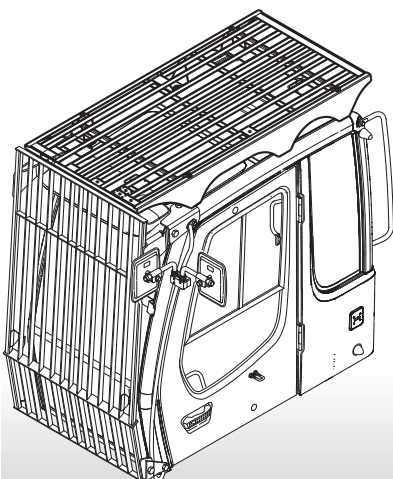


## Hydraulic Cab Elevation

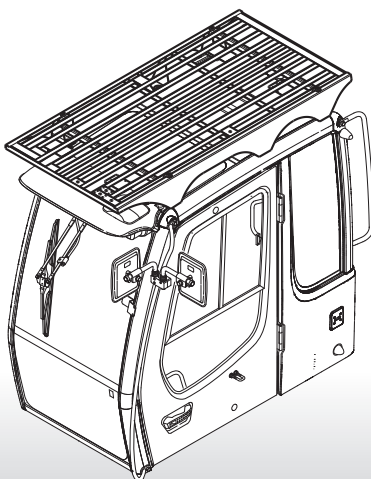
B1		2550 mm
B2		4665 mm
C1		3025 mm
C2		5140 mm
D1		1315 mm
D2		1990 mm
E		2935 mm

The parallelogram cab raiser allows the operator to choose his field of view between dimensions B1 and B2. For a transport height lower than C1 the shell of the cab can be removed. The overall height is then E.

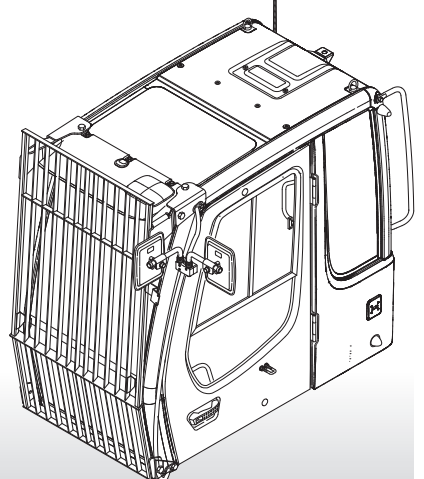
## Grille above and in front



## Grille above

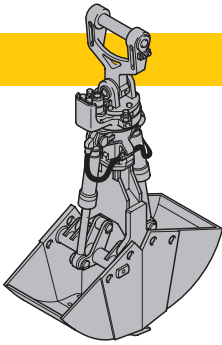


## Grilles in front





# Variety of Tools

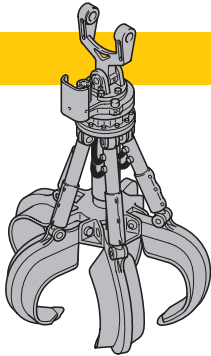


## Shells for Loose Material

### Clamshell Model 10 B

Shells for loose material with cutting edge (without teeth)

Cutting width of shells	mm	1000	1500	1800
Capacity	m <sup>3</sup>	1,00	1,50	1,80
For loose material, specific weight up to	t/m <sup>3</sup>	1,5	1,5	1,5
Weight ca.	kg	1040	1180	1425



## Multiple Tine Grapples

open tines

semi-closed tines

closed tines

### Grapple Model 55

(5 tines)

Capacity m<sup>3</sup>

Weight ca. kg

0,40

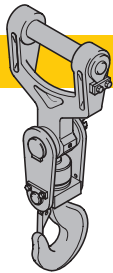
1055

0,40

1130

0,40

1180

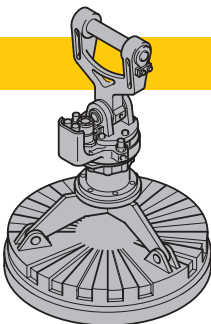


## Crane Hook with Suspension

Max. load t 12,5

Height with suspension mm 930

Weight ca. kg 96



## Magnet Devices/Lifting Magnets

Generator kW 8

8

### Electromagnets with Suspension

Power kW 4,5

6

Diameter of magnet mm 1050

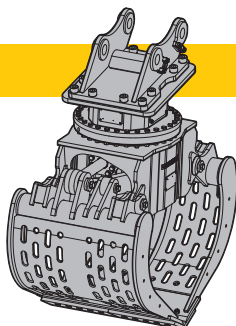
1200

Height with suspension mm 1100

1100

Weight ca. kg 980

1420



## Liebherr Sorting grapple sg 25

with ribbed shells

with perforated shells

with ribbed shells

with perforated shells

Cutting width of shells mm 800

800

1000

1000

Capacity m<sup>3</sup> 0,50

0,55

0,65

0,75

Max. closing force t 6

6

6

6

Weight incl. adapter plate ca. kg 1120

1110

1200

1190

# Equipment



## Undercarriage

Two speed travel motors	•
Flat pads 600 mm	+
Chain guides on idler end	•
Chain guides in center and on sprocket end	+
Life lubricated bottom/top rollers	•
Complete travel drives integrated into side frames	•
Customized colors	+



## Uppercarriage

Electric fuel tank filler pump	+
Maintenance-free swing brake lock	•
Handrails, Non slip surfaces	•
Main switch for electric circuit	•
Engine hood with lift help	•
Pedal controlled positioning swing brake	+
Reverse travel warning system	+
Sound insulation	•
Customized colors	+
Maintenance-free HD-batteries	•
Extended tool kit	+
Lockable tool box	•
Tool kit	•



## Hydraulics

Hydraulic tank shut-off valve	•
Extra hydr. control for hydr. swivel	•
Pressure compensation	•
Hook up for pressure checks	•
Pressure storage for controlled lowering of attachments with engine turned off	•
Filter with partial micro filtration (5 µm)	•
Electronic pump regulation	•
Stepless mode system (ECO)	•
Flow compensation	•
Full flow micro filtration	+
Bio degradable hydraulic oil	+
Tool Control	+
Tool Control Plus	+



## Engine

Turbo charger	•
Common Rail	•
Cold start aid	+
Fold-away fans	•
Fuel/water filter	•
Sensor controlled engine idling	•
Liebherr particle filter	+
Dust package (recycling kit)	+
TopAir	•
Air filter with pre-cleaner main- and safety element	•
Reverse fan	+

• = Standard, + = 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.**



## Operator's Cab

Storage trays left side rear	•
Displays for engine operating condition	•
Mechanical hour meters, readable from outside the cab	•
Roof hatch	•
6-way adjustable seat	•
Airpressure operator seat with heating and head-rest	+
Seat and consoles independently adjustable	•
Extinguisher	+
Removable customized foot mat	•
Dome light	•
Hydraulic cab elevation	+
Mechanical cab elevation	+
Cab heater with defroster	•
Cloth hook	•
Air conditioning	+
Electric cool box	+
Bullet proof window (fixed installation – can not be opened)	+
Stereo radio	+
Stereo radio/CD/MP3	+
Preparation for radio installation	+
Rain hood over front window opening	•
Beacon	+
All tinted windows	•
Door with sliding window	•
Auxiliary heating	+
Sun shade	+
Sun roller blind	•
Wiper/washer	•
Cigarette lighter and ashtray	•
Additional flood lights	+



## Attachment

Flood lights	•
Xenon working lights	+
Hydr. lines for clam operation in stick	•
Industrial-type gooseneck sticks with remote hydraulic pin puller	+
Sealed pivots	•
Safety lift hook	+
Liebherr line of clams	+
Liebherr semi-automatic central lubrication system	•
Liebherr fully-automatic central lubrication system	+
Likufix	+
Safety check valves on hoist cylinder	•
Safety check valves on stick cylinder	•
Hose quick connection	•
Manual/hydraulic quick change tool adapter	+
Customized colors	+
Special buckets and other tools	+
Overload warning device	+
Two way valves for bucket/clam use	+
Locking of connections for clam operation	+
Cylinders with shock absorber	•