

# Technical Description Hydraulic Excavator

# A 954 B HD

Litronic®

## Machine for Industrial Applications

Operating Weight 138,880 - 151,000 lbs  
Engine Output 302 HP (222 kW)



# LIEBHERR

# Technical Data



## Engine

Rating per ISO 9249	302 HP (222 kW) at 2000 RPM
Model	Liebherr D 926 TI-E
Type	6 cylinder in-line
Bore/Stroke	4.8/5.6 in
Displacement	610 cu.in
Engine operation	4-stroke diesel direct injection turbo-charged and after-cooled reduced emissions
Cooling	water-cooled
Air cleaner	dry-type air cleaner with pre-cleaner, primary and safety elements
Fuel tank	186 gal
Electrical system	
Voltage	24 V
Batteries	2 x 110 Ah/12 V
Alternator	24 V/80 A
Engine idling	sensor controlled



## Hydraulic System

Hydraulic pump for attachment and travel drive	Liebherr variable displacement, swash plate, in line double pump
Max. flow	2 x 93 gpm
Max. hydr. pressure	5075 PSI
Hydraulic pump for swing drive	1 reversible swash plate pump, closed-loop circuit
Max. flow	49 gpm
Max. hydr. pressure	5570 PSI
Pump regulation	electronic engine speed sensing over entire engine RPM range, pressure-compensa- tion, flow compensation, automatic oil flow optimizer
Hydraulic tank capacity	120 gal
Hydraulic system capacity	max. 210 gal
Hydraulic oil filter	2 full flow filter in return line, 1 high pres- sure filter for each main pump
Cooler	compact radiator/cooler – consists of an intercooler, gear oil and hydraulic oil cooler, mounted in front of the radiator
Modes	fixed modes, can also be adjusted by the operator to adjust engine and hydraulic performance to match job conditions
LIFT	for precise lifting tasks
FINE	for precision work at high speed i.e. grading
ECO	for most economic performance at best environmental conditions
POWER	for max. output
R.P.M. adjustment	stepless adjustment of engine output via the r.p.m. at each selected mode



## Hydraulic Controls

Power distribution	via control valves in single block with inte- grated primary and secondary safety valves
Flow summation	to boom and stick
Operating controls	
Attachment and swing	proportional via joystick levers
Travel	proportional via foot pedal
Additional functions	via foot pedals or joystick push buttons



## Swing Drive

Drive	Liebherr swash plate motor with integrated brake valve
Gear	Liebherr planetary reduction gear
Swing ring	Liebherr, sealed single race ball bearing swing ring, internal teeth
Swing speed	0–6.2 RPM
Swing torque	156 kNm
Swing brake	wet discs (spring applied – pressure released)



## Operator's Cab

Cab	built from deep drawn components, resil- iently mounted, sound insulated, tinted windows, front window stores overhead, door with sliding window
Operator's seat	fully adjustable, shockabsorbing suspen- sion, adjustable to operator's weight
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 data, for example, engine overheating, low engine oil pressure or low hydraulic oil level
Heater/Airconditioner	combined hotwater/airconditioner with dust filter for fresh or circulated airflow
Noise emission	
ISO 6396	$L_{pA}$ (inside cab) = 77 dB(A)
2000/14/EC	$L_{wA}$ (surround noise) = 108 dB(A)



## Undercarriage

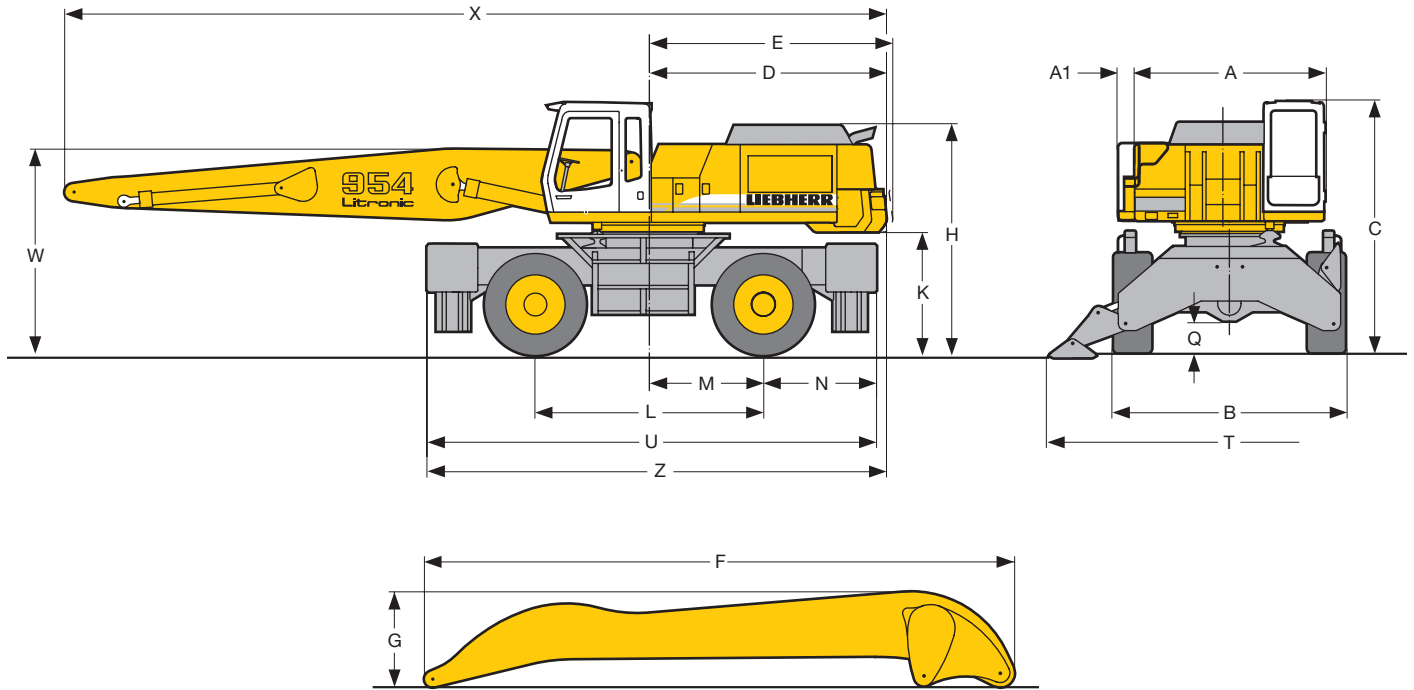
Drive	Liebherr variable flow swashplate motor with automatic brake valves
Travel speed	0–6.2 mph
Axles	198,420 lbs excavator axles; oscillating steering axle with hydraulic lock (in any position)
Brakes	multiple-disc brakes hydraulically actuated digging and parking brake
Stabilization	4-point outriggers



## Attachment

Type	combination of resistant steel plates and cast steel components
Hydraulic cylinders	Liebherr cylinders with special seal system. Shock absorption
Pivots	sealed, low maintenance
Lubrication	centralized in easily accessible locations
Hydraulic connections	pipes and hoses equipped with SAE split- flange connections

# Dimensions



	ft-in
A	9'10"
A1	10"
B	12' 1"
C	13' 0"
D	12' 2"
E	12' 6"
H	11'11"
K	6' 4"
L	11' 9"
M	5'11"
N	5'10"
Q	1' 7"
R	23' 2"
T	18' 8"
U	23' 2"
Z	23' 8"

<b>Industrial-Type Straight Boom</b>		ft-in	28'10"	33' 9"
V		ft-in	10'11"	10'11"
X		ft-in	42' 7"	47' 6"

<b>Industrial-Type Stick</b>		ft-in	23' 0"	26' 3"	31' 2"
F		ft-in	23'11"	27' 2"	32' 2"
G		ft-in	4' 3"	4' 3"	4' 3"

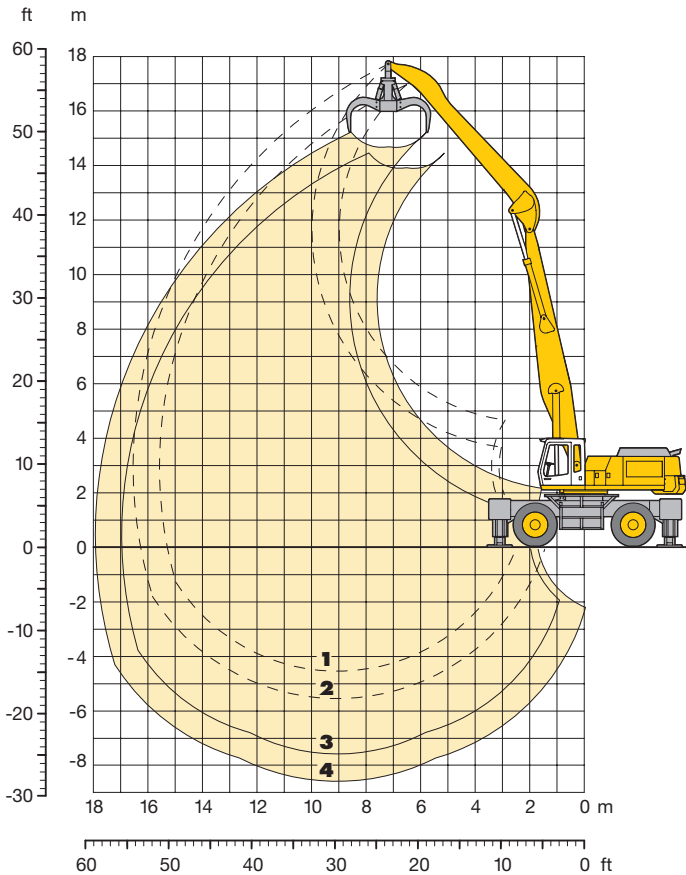
Dimensions are with attachment over steering axle

E = Tail radius

**Solid tires 63", width 24"**

# Industrial Attachment

with Industrial-Type Straight Boom 28'10"



## Attachment Envelope

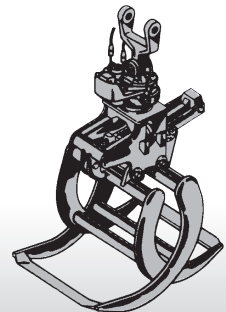
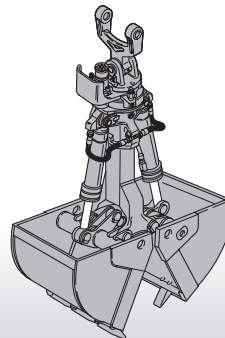
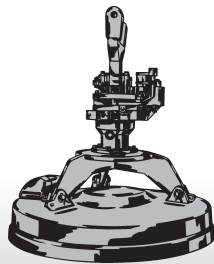
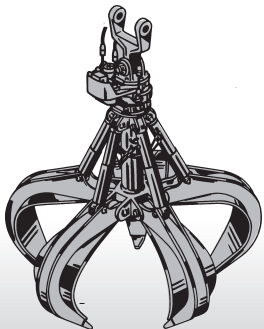
Industrial-type straight boom pinned in rear bearing of boom foot bracket

- 1** with industrial stick 23'0"
- 2** with industrial stick 26'3"
- 3** with industrial stick 23'0" and grapple model 72 B
- 4** with industrial stick 26'3" and grapple model 72 B

## Operating Weight

Operating weight includes basic machine with complete industrial-type attachment:

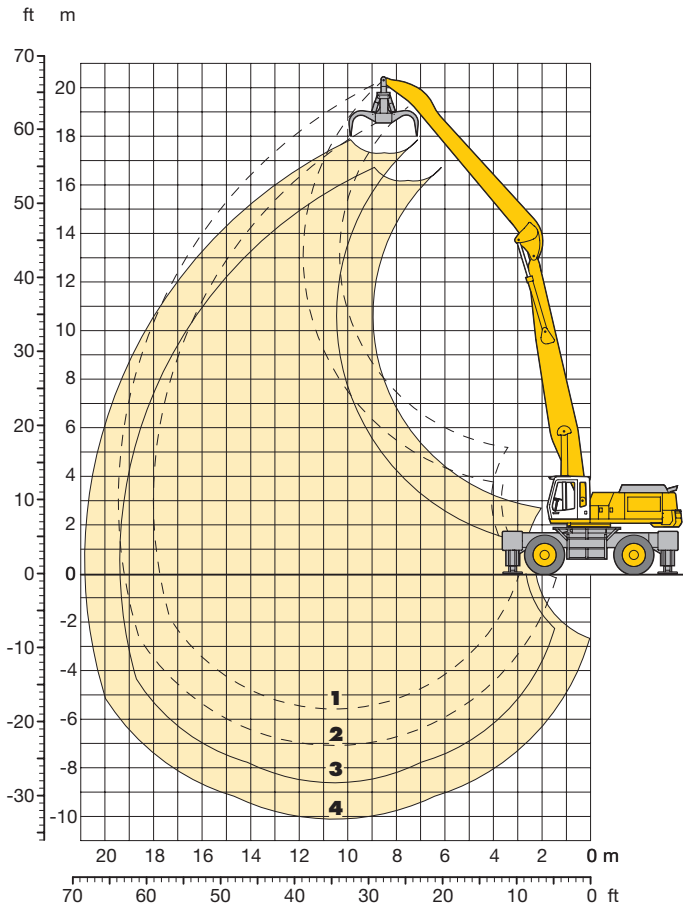
	Weight
Industrial-type straight boom 28'10"	
Industrial stick 23'0"	
Grapple model 72 B/2.30 cuyd with 5 semi-closed tines	138,800 lbs
Industrial-type straight boom 28'10"	
Industrial stick 26'3"	
Grapple model 72 B/2.30 cuyd with 5 semi-closed tines	140,900 lbs





# Industrial Attachment

with Industrial-Type Straight Boom 33'9"



## Attachment Envelope

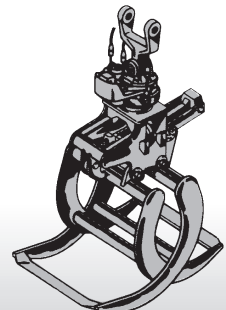
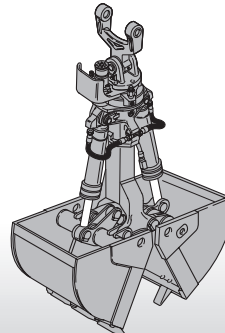
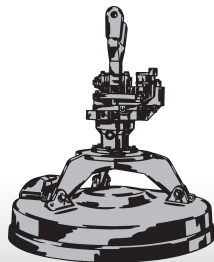
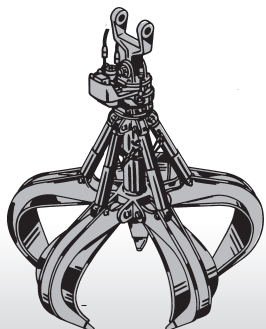
Industrial-type straight boom pinned in rear bearing of boom foot bracket

- 1** with industrial stick 26'3"
- 2** with industrial stick 31'2"
- 3** with industrial stick 26'3" and grapple model 72 B
- 4** with industrial stick 31'2" and grapple model 72 B

## Operating Weight

Operating weight includes basic machine with complete industrial-type attachment:

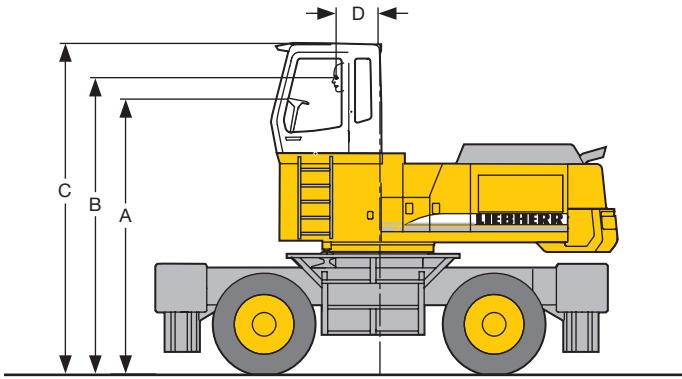
	Weight
Industrial-type straight boom 33'9"	150,400 lbs
Industrial stick 26'3"	
Grapple model 72 B/2.30 cuyd with 5 semi-closed tines	
Hydraulic cab elevation Piston rod protection	
Industrial-type straight boom 33'9"	151,000 lbs
Industrial stick 31'2"	
Grapple model 72 B/2.30 cuyd with 5 semi-closed tines	
Hydraulic cab elevation Piston rod protection	







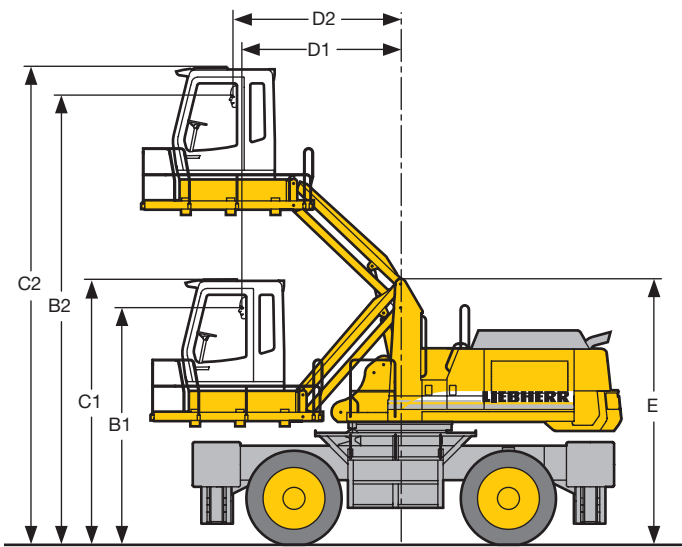
# Choice of Cab Elevations and Cab Protections



## Rigid Cab Elevation

Height	3' 11"	6' 6"
A	14' 0"	16' 8"
B	15' 2"	17' 9"
C	16' 10"	19' 6"
D	2' 2"	2' 2"

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.

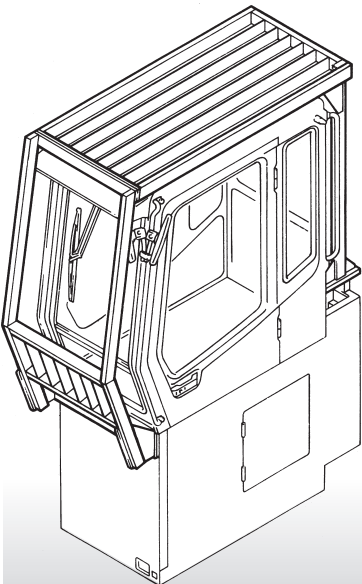


## Hydraulic Cab Elevation Parallelogram + Distance Piece 1' 7"

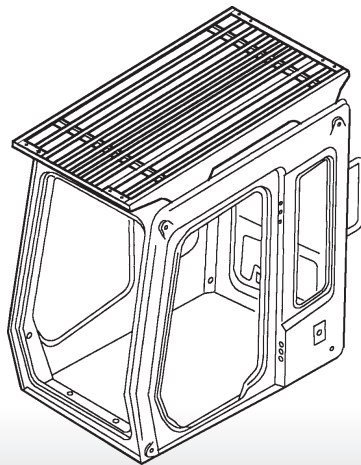
B1	12' 10"
B2	24' 7"
C1	14' 7"
C2	26' 4"
D1	8' 8"
D2	9' 5"
E	14' 8"

The parallelogram cab raiser allows the operator to choose his eye level between dimensions B1 and B2.

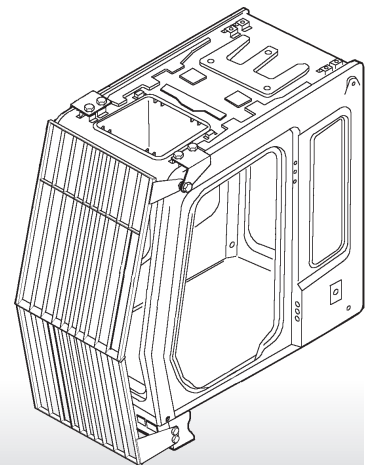
## Cab guard for cab



## Grille above

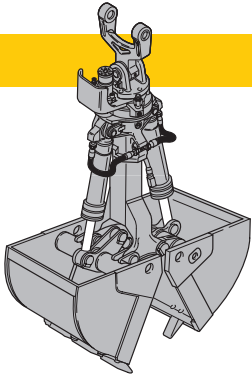


## Grilles in front





# Variety of Tools

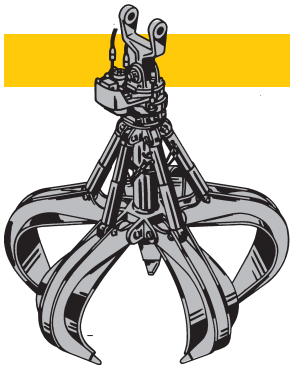


## Shells for Loose Material

### Clamshell Model 22

Shells for loose material with cutting edge (without teeth)

Cutting width of shells	ft-in	4'11"	4'11"
Capacity	sq ft	20.0	23.7
For loose material, specific weight up to lb/cuyd		2500	2000
Total weight	lbs	5048	5158



## Multiple Tine Grapples

open tines

semi-closed tines

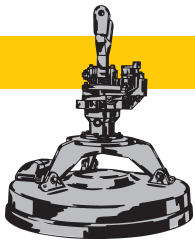
closed tines

		open tines			semi-closed tines			closed tines		
<b>Grapple Model 72 B</b>	Capacity cuyd	2.00	2.30	2.60	2.00	2.30	2.60	2.00	2.30	2.60
(4 tines)	Weight lbs	4254	6878	4332	4695	4783	4888	5268	5400	5490
<b>Grapple Model 72 B</b>	Capacity cuyd	2.00	2.30	2.60	2.00	2.30	2.60	2.00	2.30	2.60
(5 tines)	Weight lbs	5245	5310	5350	5840	5930	5995	6540	6720	6830



## Crane Hook with Suspension

Max. load	lbs	27,500
Height with suspension	ft-in	4'1"
Total weight	lbs	580



## Electro Magnets with Suspension

Magnet information on request

# Equipment



## Undercarriage

	S	O
Two circuit travel brake with accumulator	•	
Travel motor protection		
Outtrigger cylinder rod guards		•
Creeper speed electrically switchable from cab	•	
New tires	•	
Service free parking brake	•	
Independent outtrigger control		•
Choice of tires		•
Auto check valve directly on each stabilizer cylinder	•	
Proportional power steering with mechanical back up	•	
Customized colors		•
Lockable storage box	•	
Lockable storage box additional		•
Two-speed power shift transmission	•	



## Uppercarriage

	S	O
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		•
Pin lock upper/lower	•	
Maintenance-free HD-batteries	•	
Extended tool kit		•
Lockable tool box	•	
Tool kit	•	



## Hydraulics

	S	O
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	•	
Four mixed modes, can also be adjusted	•	
Full flow micro filtration		•
Bio degradable hydraulic oil		•
Pressure compensation		
Flow summation	•	
Additional hydraulic circuits		•



## Engine

	S	O
Turbo charger	•	
Direct injection	•	
Cold start aid		•
Sensor controlled engine idling	•	
Air filter with pre-cleaner main- and safety element	•	



## Operator's Cab

	S	O
Storage tray	•	
Displays for engine operating condition	•	
Mechanical hour meters, readable from outside the cab	•	
Roof hatch		
All-round adjustable roof vent	•	
6-way adjustable seat	•	
Airpressure operator seat with heating and head-rest		•
Seat and consoles independently adjustable	•	
Extinguisher		•
Removable customized foot mat	•	
Dome light	•	
Inside rear mirror	•	
Hydraulic cab elevation		•
Rigid cab elevation		•
Cab heater with defroster		
Cloth hook	•	
Air conditioning	•	
Electric cool box		•
Steering wheel adjustable	•	
Bullet proof window (fixed installation – can not be opened)		•
Stereo radio		•
Preparation for radio installation		•
Rain hood over front window opening	•	
Beacon		•
All tinted windows	•	
Door with sliding window	•	
Optical and acoustical warning if outriggers are not fully retracted		•
Auxiliary heating		•
Sun shade	•	
Sun roller blind		
Electronic drive away lock		•
Wiper/washer	•	
Cigarette lighter and ashtray	•	
Additional flood lights		•



## Attachment

	S	O
Flood lights on boom	•	
Hydr. lines for clam operation on stick	•	
Industrial-type gooseneck sticks with remote hydraulic pin puller		•
Sealed pivots	•	
Safety lift hook	•	
Liebherr line of clams	•	
Safety check valves on hoist cylinder	•	
Safety check valves on stick cylinder	•	
SAE-dbl flange connection for all hi-pressure lines	•	
Hose quick connection	•	
Centralized lube points	•	
Manual 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	•	

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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