Construction Machine

HS 8130 HD

Litronic®

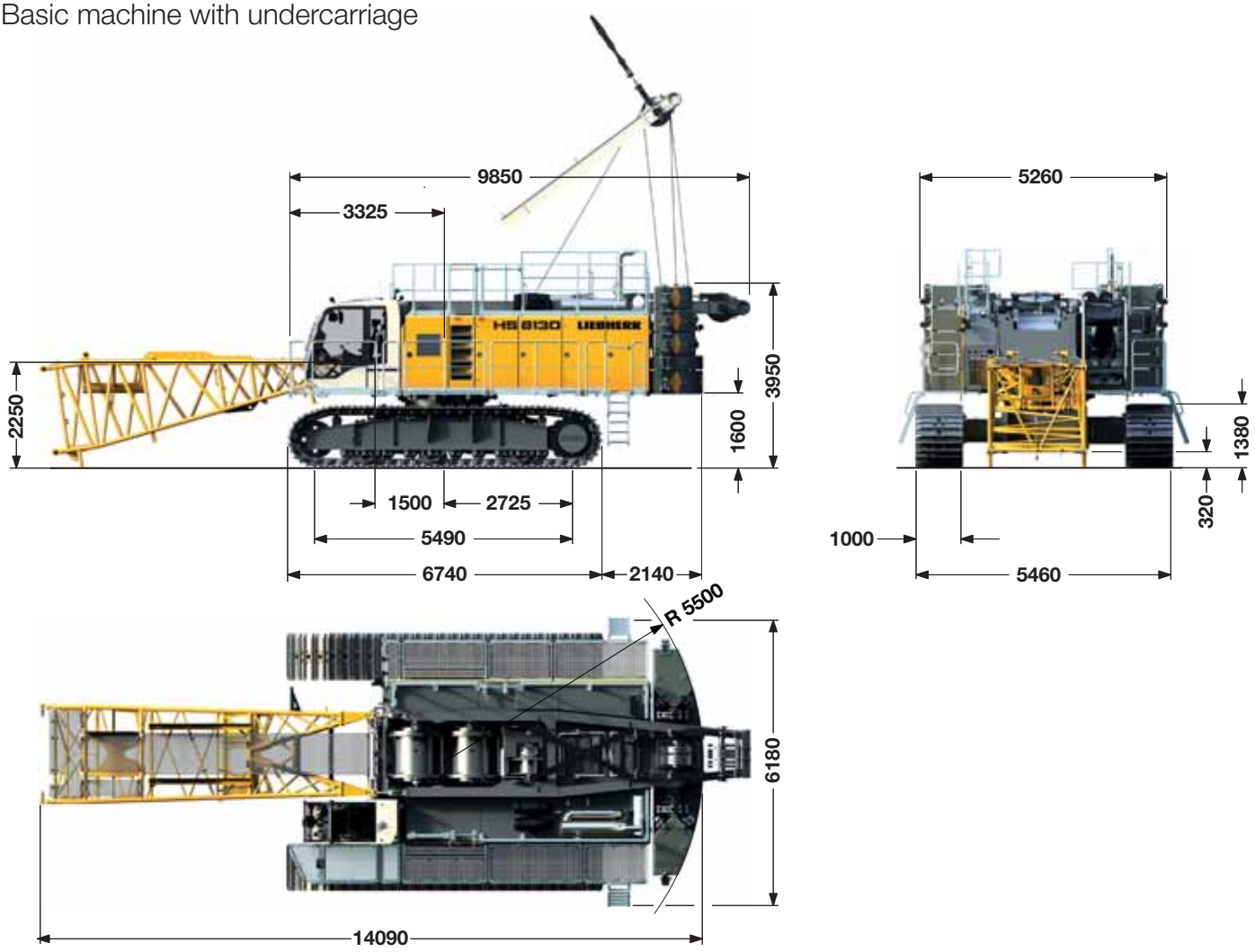
EN

HS 8005.01

LIEBHERR

Dimensions

Basic machine with undercarriage



Operating weight

The operating weight includes the basic machine with HD undercarriage, 2 main winches 350 kN including wire ropes (90 m), and 14 m main boom, consisting of A–frame, boom foot (7 m) and boom head (7 m), 29 t basic counterweight, 1000 mm 2-web grousers and 50 t hook block.

Total weight ——— approx. 116 t

Ground pressure

Ground bearing pressure ——— 1.06 kg/cm²

Equipment

Main boom (No. 2018.33) max. length ——— 53 m

Modular designed equipment for lifting operation, with dragline or clamshell.

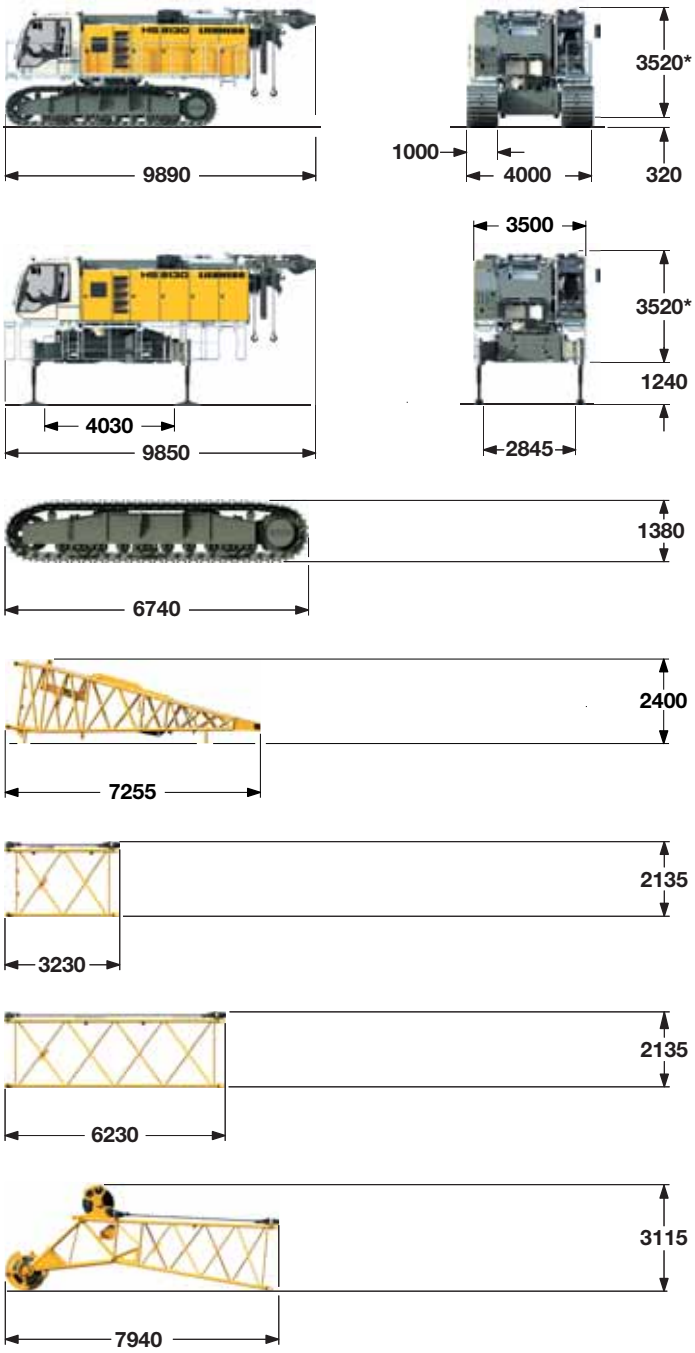
For dragline operation, a rotating fairlead is fitted into the boom foot. This minimizes the rope angle to drum, which results in lower rope wear.

Remarks

1. Liebherr cable excavator HS 8005.01
2. Designed according to EN 474–1 and EN 474–12.
3. Machine standing on firm, horizontal ground.
4. The weight of the lifting device (hoist ropes, hook block, shackle etc.) must be deducted from the gross lifting capacity to obtain a net lifting value.
5. Additional equipment on boom (e.g. boom catwalks, auxiliary jib) must be deducted to get the net lifting capacity.
6. For max. wind speed please refer to lift chart in operator's cab or manual.
7. Working radii are measured from centre of swing and under load.
8. The lifting capacities are valid for 360 degrees of swing.

Transport dimensions and weights

Basic machine and boom (No. 2018.33)



Basic machine	
with HD undercarriage, A-frame, 2x 350 kN winches and self-assembly system for counterweight, without boom foot, and basic counterweight. Machine is ready for operation.	
Width	4000 mm
Weight without hoist rope	78000 kg
Weight of hoist rope (2x 90 m)	6.455 kg/m

Basic machine	
with A-frame, self-assembly system, 2x 350 kN winches without boom foot, basic counterweight and crawlers. Machine is ready for operation.	
Width	3500 mm
Weight without hoist rope	51000 kg
Weight of hoist rope (2x 90 m)	6.455 kg/m

Crawler	**2x**
2-web grousers	1000 mm
Width	1055 mm
Weight	14900 kg

Boom foot (No. 2018.33)	**7 m**
Width	2500 mm
Weight incl. pendant ropes	3215 kg

Boom section (No. 2018.33)	**3 m**
Width	2110 mm
Weight incl. pendant ropes	750 kg

Boom section (No. 2018.33)	**6 m**
Width	2110 mm
Weight incl. pendant ropes	1230 kg

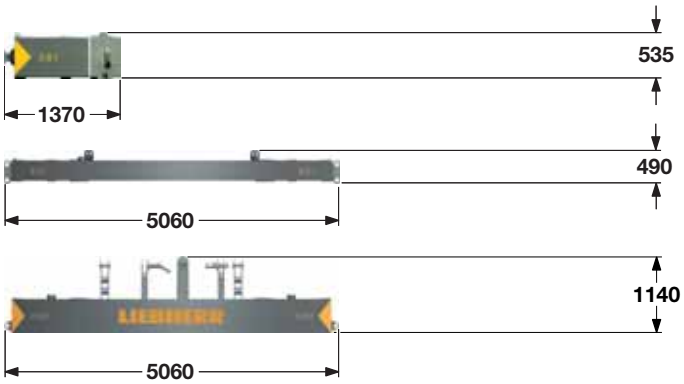
Boom head (No. 2018.33)	**7 m**
Width	2110 mm
Weight incl. pendant ropes	3950 kg

*) 3450 mm with diesel engines for countries with little regulation, compliant with emissions level according to regulation ECE-R.96 H.

Weights can vary with the final configuration of the machine. The figures in this brochure may include options which are not within the standard scope of supply of the machine.

Transport dimensions and weights

Counterweights

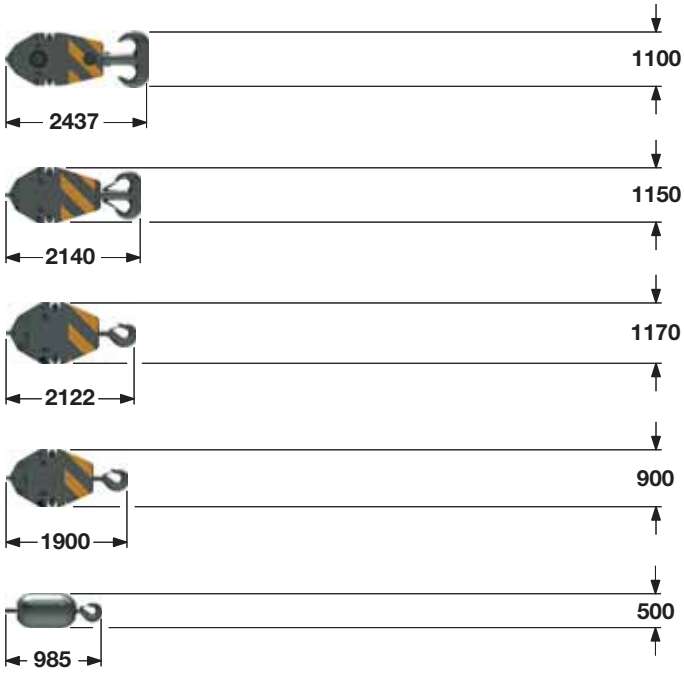


Counterweight (option 6x)	4x
Width	840 mm
Weight	2680 kg

Counterweight	1x
Width	1220 mm
Weight	6300 kg

Counterweight	1x
Width	1220 mm
Weight	12000 kg

Hooks



160 t hook block – 3 sheaves	
Width	420 mm
Weight	2011 kg

100 t hook block – 2 sheaves	
Width	270 mm
Weight	1200 kg

80 t hook block – 1 sheave	
Width	245 mm
Weight	1200 kg

50 t hook block – 1 sheave	
Width	230 mm
Weight	750 kg

35 t single hook	
Width	500 mm
Weight	800 kg

Technical description

Engine

Power rating according to ISO 9249, 505 kW (677 hp) at 1700 rpm
Engine type ——— Liebherr D 9508 A7–04
Fuel tank ——— 770 l capacity with continuous level indicator and reserve warning
AdBlue tank ——— 96 l capacity with continuous level indicator and reserve warning
Engine complies with NRMM exhaust certification EPA CARB Tier 4f and 97/68 EC Stage IV.

ECO-Silent Mode:
For work not requiring high engine power, the diesel engine can be operated in the ECO-Silent Mode (e.g. for inserting reinforcement cages, for dragline or lifting operation).
Due to the ECO-Silent Mode which can be preselected by the operator the engine runs with optimum fuel efficiency. This lowers consumption and reduces noise emission.
Option:
Engine with power reduction to 495 kW (QPME Ready)

Hydraulic system

The pumps are operated by a distributor gearbox. Axial piston displacement pumps work in closed and open circuits supplying oil only when needed (flow control on demand). To minimize peak pressure an automatically working pressure cut-off is integrated. This spares pumps and saves energy. The hydraulic oil is cleaned through electronically controlled pressure and return filters. Possible contamination is signaled in the cabin.
Ready made hydraulic retrofit kits are available to customize requirements e.g. powering casing oscillators, VM vibrators, hydraulic grabs, fixed leaders etc.
Working pressure ——— max. 350 bar
Oil tank capacity ——— 1170 l

Crawlers

The track width of the undercarriage is changed hydraulically. Propulsion through axial piston motor, hydraulically released spring loaded multi–disc brake, maintenance-free crawler tracks, hydraulic chain tensioning device.
2-web grousers ——— 1000 mm
Drive speed ——— 0 – 1.25 km/h
Option:
- Self-assembly system, jack-up system

Noise emission

Noise emissions correspond with 2000/14/EC directive.
Guaranteed sound pressure level L_{PA} in the cabin ——— 75.7 dB(A)

Guaranteed sound power level L_{WA} ——— 110 dB(A)
Vibration transmitted to the hand-arm system of the machine operator ——— < 2.5 m/s²
Vibration transmitted to the whole body of the machine operator ——— < 0.5 m/s²

Main winches

Winch options:
Line pull (nom. load) ——— 350 kN
Rope diameter ——— 36 mm
Drum diameter ——— 830 mm
Rope speed ——— 0-95 m/min
Rope capacity 1st layer ——— 46.9 m
Rope capacity in 4 layers (useable length) ——— 235 m
The winches are outstanding in their compact design and easy assembly. Clutch and braking functions on the free-fall system are provided by a compact designed, low wear and maintenance-free multi–disc brake.
The drag and hoist winches use pressure controlled, variable flow hydraulic motors. This system features sensors that automatically adjust oil flow to provide max. winch speed depending on load.
Option:
Auxiliary winch ——— 70 kN in boom foot
Tagline winch ——— 30 kN with free fall
Tagline winch ——— 70 kN with free fall

Control

The core of the Liebherr machines is the Litronic control system.
Developed and manufactured by Liebherr, this comprehensive system encompasses all control and monitoring functions and is designed to withstand extreme temperature changes and the rough heavy duty tasks common in the construction industry. Complete machine operating data, warnings and failure indications are clearly displayed in the required language on the high resolution monitor in the operator's cab.
Documentation of operating data (PDE) enables optimum diagnosis as well as early detection and prevention of more serious defects.
An electro-hydraulic proportional control allows several movements to be performed simultaneously. This ensures that all categories of loads can be positioned with utmost precision.
Options:
- PDE: Process data recording
- LiTU: Liebherr Telematics Unit
- Piling control / chisel control

Swing

Consists of rollerbearing with external teeth for lower tooth flank pressure, fixed axial piston hydraulic motor, spring loaded and hydraulically released multi–disc holding brake, planetary gearbox and pinion.
Swing speed from 0–3.8 rpm continuously variable, selector for 3 speed ranges to increase swing precision.

Boom winch

Line pull ——— max. 165 kN
Rope diameter ——— 24 mm
Boom up ——— 56 sec. from 15° to 84°

Equipment

Casing oscillator and clamshell

Casing oscillator

Max. drilling diameter	3300 mm

Load chart for grab operation

34.3 t counterweight (main boom No. 2018.33)

Capacities in metric tonnes for boom lengths (20 m – 38 m)

	Boom length (m)							
Radius	**20**	**23**	**26**	**29**	**32**	**35**	**38**	**Radius**
(m)	t	t	t	t	t	t	t	(m)
5.6			52.2					5.6
6	53.0	53.0	51.1	50.0				6
7	53.0	53.0	48.1	46.9	40.1	38.9	33.9	7
8	51.1	50.8	45.5	44.1	37.7	36.5	31.7	8
12	28.5	28.5	28.4	28.4	28.3	27.8	25.2	12
16	19.1	19.0	18.9	18.8	18.7	18.1	17.5	16
20	13.8	13.8	13.7	13.6	13.4	13.0	12.5	20
24		9.3	10.4	10.3	10.2	10.1	9.7	24
26			9.0	8.9	8.7	8.5	8.3	26
30				5.8	5.7	5.5	5.3	30
32					4.5	4.3	4.1	32
34						3.2	3.0	34
36							2.1	36

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Max. capacities in metric tonnes do not exceed 66% of tipping load. Capacities are for reference only and are not programmed in the LMI system.

Max. lifting capacity with mechanical grab is 35 t. For higher lifting capacities a hydraulic grab is required.

Dynamic soil compaction

Load chart for dynamic soil compaction

34.3 t counterweight (main boom No. 2018.33)

Capacities in metric tonnes for boom lengths (20 m – 35 m)

	Boom length (m)					
Radius	**20**	**23**	**26**	**29**	**32**	**35**
(m)	t	t	t	t	t	t
8	34.1	33.9	30.3	29.4	25.1	
9	29.8	29.7	28.7	27.5	23.9	22.8
10		25.5	25.5	25.4	22.4	21.5
11			22.2	22.1	20.9	20.3

Max. capacities in metric tonnes do not exceed 75% of tipping load.
All loads given are max. values and must not be exceeded. They are only permitted in two-rope automatic operation and are valid for work on a surface with max. inclination of 1%. Lifting heights must not exceed 25 m.

Equipment

Slurry wall grab

Maximum capacity in duty cycle operation with standard ropes

Line pull (1st layer)	kN	350
Rope diameter	mm	36
Minimum breaking load	kN	1220
Line pull - 1-rope duty cycle operation	kN	350
Line pull - 2-rope duty cycle operation[1)]	kN	530

1) Lifting a load exceeding the line pull of one winch is only allowed if it can be ensured that each individual winch is not overloaded. When working with a mechanical 2-rope grab the total load to be lifted is limited by the line pull of one winch. Rigging and ropes are part of the load.

Capacities in slurry wall operation are for reference only and are not programmed in the LMI system.
All loads and counterweight configurations are max. values and must not be exceeded.
Weight of additional equipment on boom (e.g. catwalks, hose drums etc.) must be deducted to get the net capacity.

Load chart for slurry wall operation

34.3 t counterweight (main boom No. 2018.33)

Capacities in metric tonnes for boom lengths (14 m – 38 m)

	Boom length (m)									
Radius	**14**	**17**	**20**	**23**	**26**	**29**	**32**	**35**	**38**	**Radius**
(m)	t	t	t	t	t	t	t	t	t	(m)
5.6					52.2					5.6
6			53.0	53.0	51.1	50.0				6
7	53.0	53.0	53.0	53.0	48.1	46.9	40.1	38.9	33.9	7
8	46.5	46.6	46.6	46.6	45.5	44.1	37.7	36.5	31.7	8
9	39.0	39.1	39.1	39.1	39.1	39.0	35.8	34.2	29.8	9
10	33.5	33.6	33.6	33.6	33.5	33.5	33.4	32.2	28.2	10
12	25.8	25.9	26.0	25.9	25.9	25.8	25.7	25.6	25.2	12
14	20.8	20.9	20.9	20.9	20.8	20.7	20.6	20.5	20.4	14
16		17.3	17.3	17.3	17.2	17.1	17.0	16.9	16.8	16
18		14.5	14.6	14.6	14.6	14.5	14.4	14.2	14.1	18
20			12.5	12.5	12.5	12.4	12.3	12.2	12.0	20
22				10.8	10.8	10.7	10.6	10.5	10.4	22
24				9.3	9.4	9.4	9.3	9.1	9.0	24
26					8.3	8.2	8.1	8.0	7.9	26
28						7.2	7.1	6.9	6.7	28
30						5.8	5.7	5.5	5.3	30
32							4.5	4.3	4.1	32
34								3.2	3.0	34
36									2.1	36
38									1.2	38

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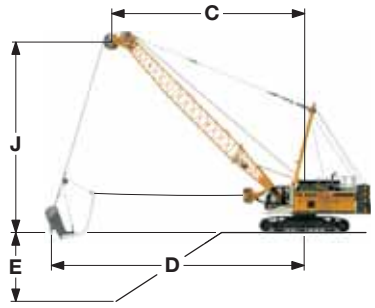
Max. lifting capacity with mechanical grab is 35 t. For higher lifting capacities a hydraulic grab is required.
Stability calculated according to EN 996:1995. Machine standing on firm, horizontal ground.



Digging diagram

C = Radius / dumping radius
D = Max. digging radius = approx. C + 1/3 to 1/2 J
E = Digging depth = approx. 40 - 50% of C
J = Height to centre rope pulley boom head

Load chart for dragline operation

34.3 t counterweight (main boom No. 2018.33)

Capacities in metric tonnes for boom lengths (14 m – 35 m)

	Boom length (m)																		
	14			20			26			29			32			35			
alpha	C	J		C	J		C	J		C	J		C	J		C	J		alpha
	(m)	(m)	**(t)**	(m)	(m)	**(t)**	(m)	(m)	**(t)**	(m)	(m)	**(t)**	(m)	(m)	**(t)**	(m)	(m)	**(t)**	
55	10.7	12.9	**37.8**	14.2	17.8	**25.6**	17.6	22.7	**17.2**	19.4	25.2	**14.5**	21.1	27.7	**12.5**	22.8	30.1	**10.8**	55
50	11.7	12.1	**33.6**	15.5	16.7	**22.6**	19.4	21.3	**14.8**	21.3	23.6	**12.7**	23.2	25.9	**11.0**	25.2	28.2	**9.2**	50
45	12.5	11.2	**30.5**	16.7	15.5	**20.0**	21.0	19.7	**13.3**	23.1	21.8	**11.3**	25.2	23.9	**9.4**	27.4	26.1	**7.4**	45
40	13.3	10.3	**28.0**	17.9	14.1	**18.1**	22.5	18.0	**12.2**	24.8	19.9	**10.0**	27.1	21.8	**7.8**	29.4	23.8	**5.9**	40
35	13.9	9.2	**26.1**	18.9	12.7	**16.4**	23.8	16.1	**11.1**	26.2	17.8	**8.7**	28.7	19.6	**6.6**	31.1	21.3	**4.8**	35
30	14.5	8.2	**24.6**	19.7	11.2	**15.1**	24.9	14.2	**10.0**	27.5	15.7	**7.6**	30.1	17.2	**5.6**	32.7	18.7	**3.9**	30
25	15.0	7.0	**21.8**	20.4	9.6	**13.3**	25.9	12.1	**9.1**	28.6	13.4	**6.8**	31.3	14.6	**4.9**	34.0	15.9	**3.2**	25

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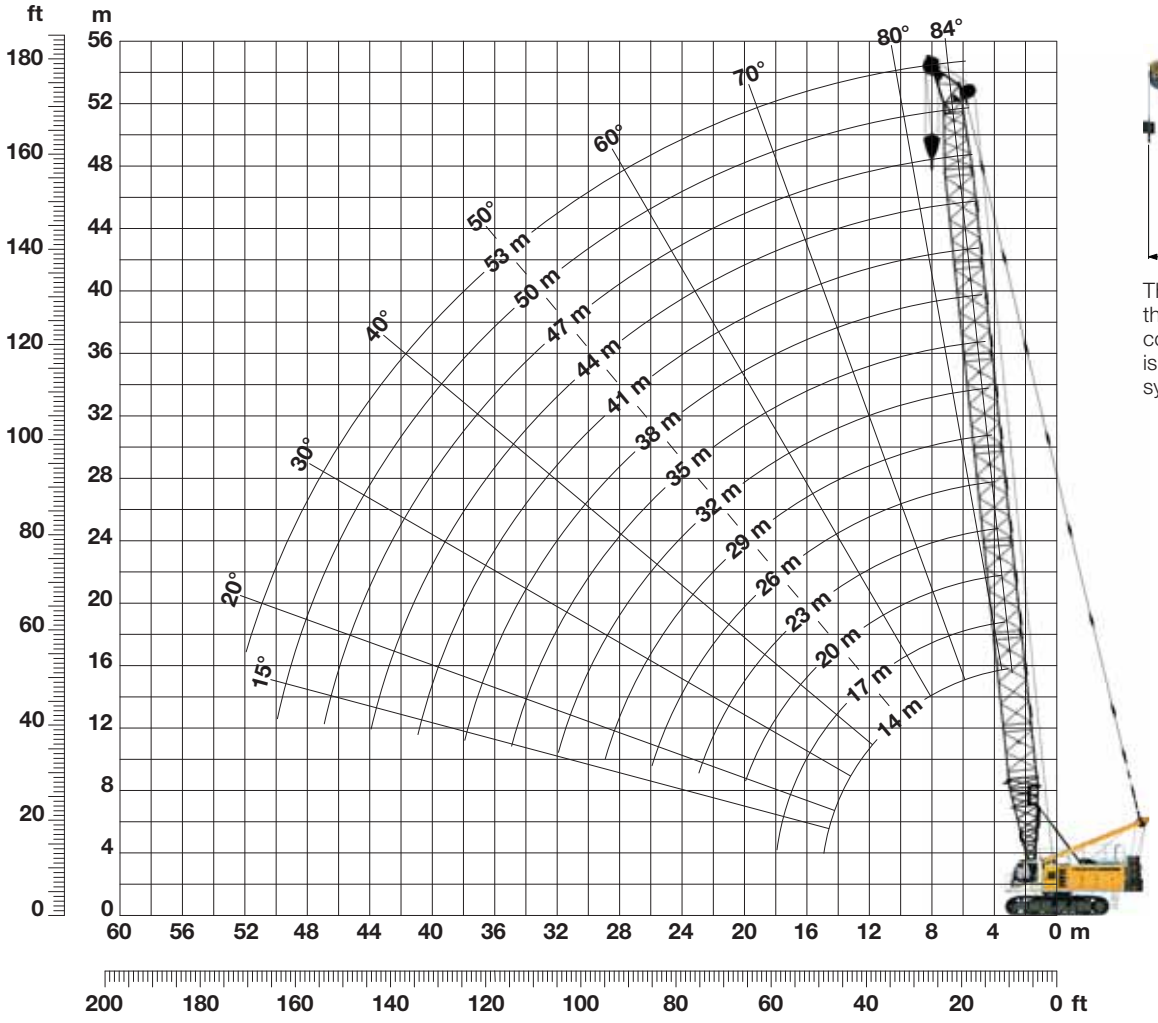
Max. capacities in metric tonnes do not exceed 75% of tipping load. Capacities are for reference only and are not programmed in the LMI system. The size of the bucket has to be determined according to local conditions.

Working range - main boom 84° – 15°



Auxiliary jib 36 t

The maximum capacity of the auxiliary jib is 36 t. The corresponding load chart is programmed in the LMI system.

Main boom configuration

from 14 m to 53 m (Table 1 - No. 2018.33)

	Length	Configuration for boom lengths													
Boom foot	7 m	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Boom section	3 m		1		1		1		1		1		1		1
Boom section	6 m			1	1	2	2	3	3	4	4	5	5	6	6
Boom head	7 m	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Boom length (m)		**14**	**17**	**20**	**23**	**26**	**29**	**32**	**35**	**38**	**41**	**44**	**47**	**50**	**53**
Auxiliary jib applicable		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Load chart for lifting operation

with 29 t counterweight (main boom No. 2018.33)

Capacities in metric tonnes for boom lengths (14 m – 50 m) - with 350 kN winches

	Boom length (m)													
Radius	**14**	**17**	**20**	**23**	**26**	**29**	**32**	**35**	**38**	**41**	**44**	**47**	**50**	**Radius**
(m)	t	t	t	t	t	t	t	t	t	t	t	t	t	(m)
4	130.0													4
5	106.0	100.2	94.9	90.1										5
6	83.0	79.2	75.7	72.5	69.4	66.6	63.9							6
7	67.9	65.2	62.8	60.4	58.1	56.0	54.0	52.1	50.2	48.5				7
8	56.1	55.3	53.4	51.6	49.8	48.2	46.5	45.0	43.5	42.1	40.7	39.4	38.1	8
10	40.2	40.3	40.3	39.5	38.4	37.2	36.1	35.0	34.0	32.9	31.9	31.0	30.0	10
12	30.8	30.9	30.9	30.9	30.8	30.0	29.1	28.3	27.5	26.6	25.9	25.1	24.3	12
14	24.6	24.7	24.8	24.7	24.6	24.5	24.1	23.6	22.9	22.3	21.6	21.0	20.3	14
18		17.1	17.2	17.2	17.1	16.9	16.8	16.6	16.5	16.0	15.5	15.0	14.5	18
20			14.6	14.6	14.5	14.4	14.3	14.1	13.9	13.7	13.3	12.8	12.4	20
24				10.8	10.8	10.7	10.5	10.4	10.2	10.0	9.8	9.6	9.2	24
26					9.4	9.3	9.1	9.0	8.8	8.6	8.4	8.2	7.9	26
30						7.0	6.9	6.8	6.6	6.4	6.2	6.0	5.8	30
32							6.0	5.9	5.7	5.5	5.3	5.1	4.9	32
34								5.1	4.9	4.7	4.6	4.3	4.1	34
38									3.6	3.4	3.3	3.0	2.8	38
40										2.9	2.7	2.5	2.3	40
44											1.7	1.5	1.4	44
46												1.1		46

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Above load charts are for reference only. For actual lift duty please refer to load chart in operator's cab or manual. Load charts for lifting operation are valid with classification according to ISO 4301-1/1986, group A1.

with 34.3 t counterweight (main boom No. 2018.33)

Capacities im metric tonnes for boom lengths (14 m – 53 m) - with 350 kN winches

	Boom length (m)														
Radius	**14**	**17**	**20**	**23**	**26**	**29**	**32**	**35**	**38**	**41**	**44**	**47**	**50**	**53**	**Radius**
(m)	t	t	t	t	t	t	t	t	t	t	t	t	t	t	(m)
5				98.4											5
6	47.3	86.6	82.8	79.3	76.0	72.9	70.0								6
7	74.3	71.4	68.7	66.2	63.7	61.4	59.2	57.2	55.2	53.3					7
8	61.4	60.6	58.5	56.6	54.7	52.9	51.1	49.5	47.9	46.4	44.9	43.5	42.1	40.7	8
10	44.1	44.2	44.3	43.5	42.2	41.0	39.8	38.6	37.5	36.4	35.3	34.3	33.3	32.3	10
12	34.0	34.1	34.1	34.0	33.9	33.1	32.2	31.3	30.4	29.6	28.7	27.9	27.1	26.3	12
14	27.2	27.3	27.4	27.3	27.2	27.1	26.8	26.0	25.3	24.6	23.9	23.4	22.7	22.1	14
18		19.0	19.2	19.1	19.0	18.9	18.7	18.6	18.4	18.0	17.5	16.9	16.4	15.9	18
20			16.4	16.3	16.3	16.1	16.0	15.8	15.6	15.4	15.1	14.6	14.1	13.6	20
24				12.2	12.2	12.1	11.9	11.8	11.6	11.4	11.2	11.0	10.7	10.2	24
26					10.7	10.5	10.4	10.2	10.1	9.9	9.7	9.5	9.3	8.9	26
30						8.1	8.0	7.9	7.7	7.5	7.3	7.1	6.9	6.7	30
32							7.0	6.9	6.7	6.5	6.4	6.1	5.9	5.7	32
34								6.0	5.9	5.7	5.5	5.3	5.1	4.9	34
38									4.5	4.3	4.1	3.9	3.7	3.5	38
40										3.7	3.5	3.3	3.1	2.9	40
44											2.5	2.3	2.1	1.9	44
46												1.8	1.6	1.4	46
48													1.2	1.0	48

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Above load charts are for reference only. For actual lift duty please refer to load chart in operator's cab or manual. Load charts for lifting operation are valid with classification according to ISO 4301-1/1986, group A1.

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