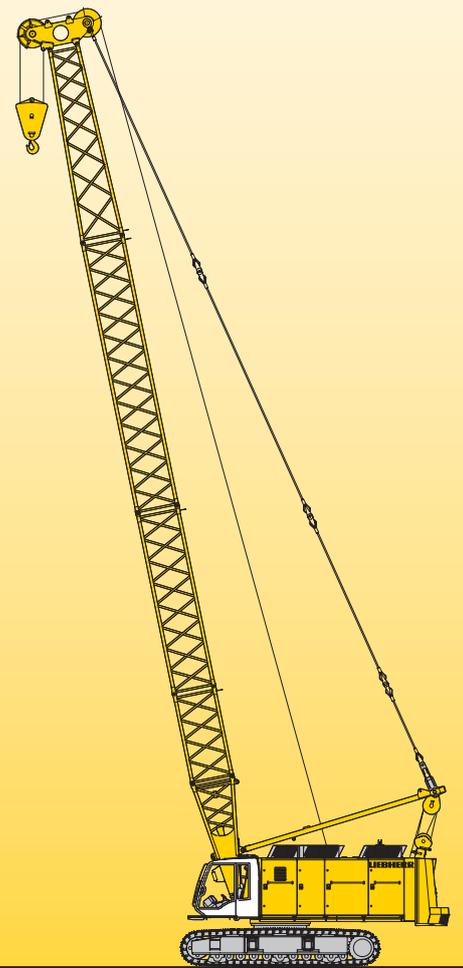


Technical data
Hydraulic crawler crane

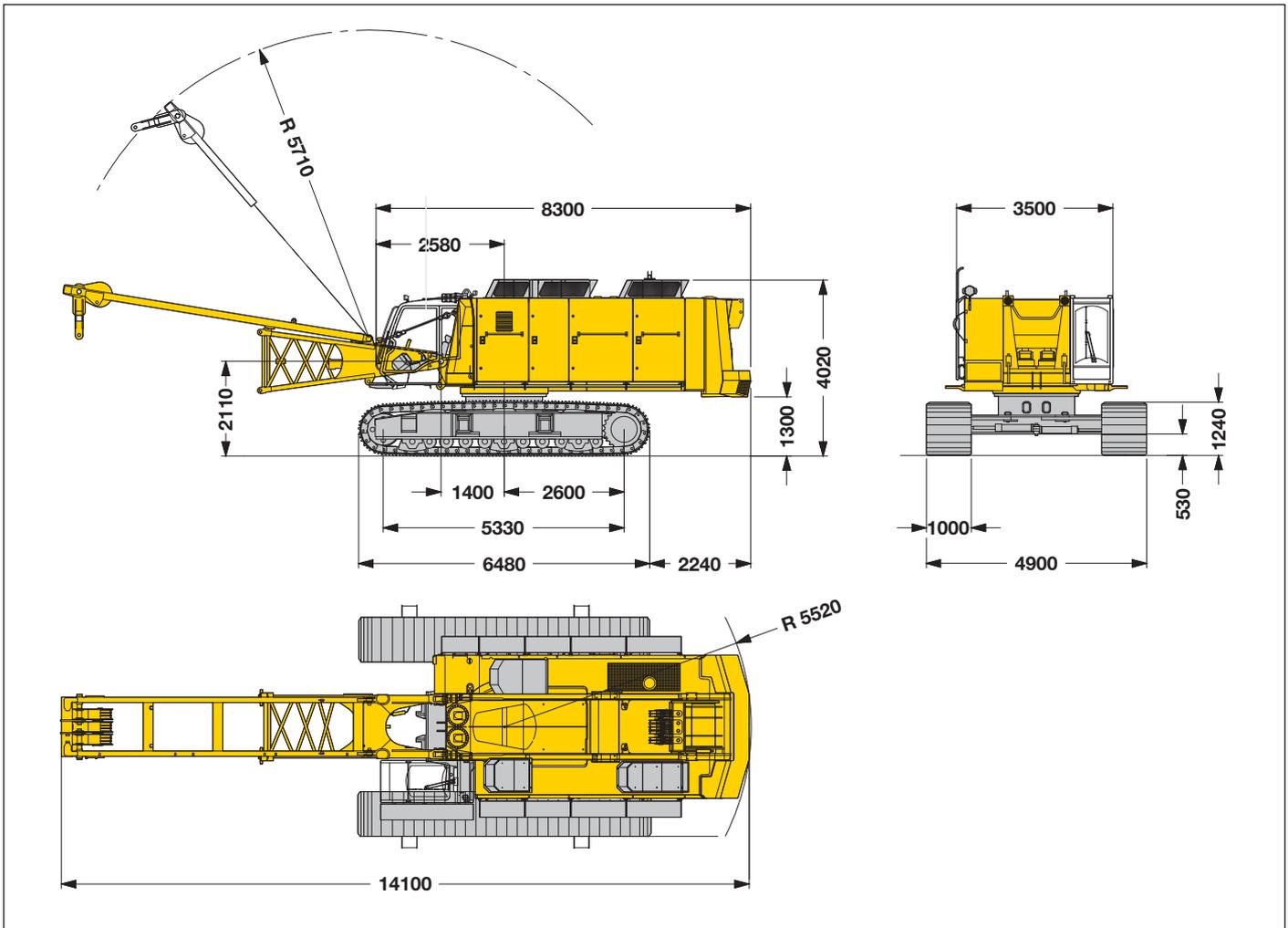
HS 875 HD
Litronic®



LIEBHERR

Dimensions

Basic machine with undercarriage



Operating weight

The operating weight includes the basic machine with HD undercarriage, 2 main winches 250 kN with speed change gear and 11 m boom, consisting of A-frame, boom foot (4 m), boom head section (6.4 m), boom head (0.6 m) and 19.6 t basic counterweight + 4.5 t add. counterweight.

Total weight _____ approx. 93 t

Ground pressure

Ground bearing pressure _____ 0.87 kg/cm²

Equipment

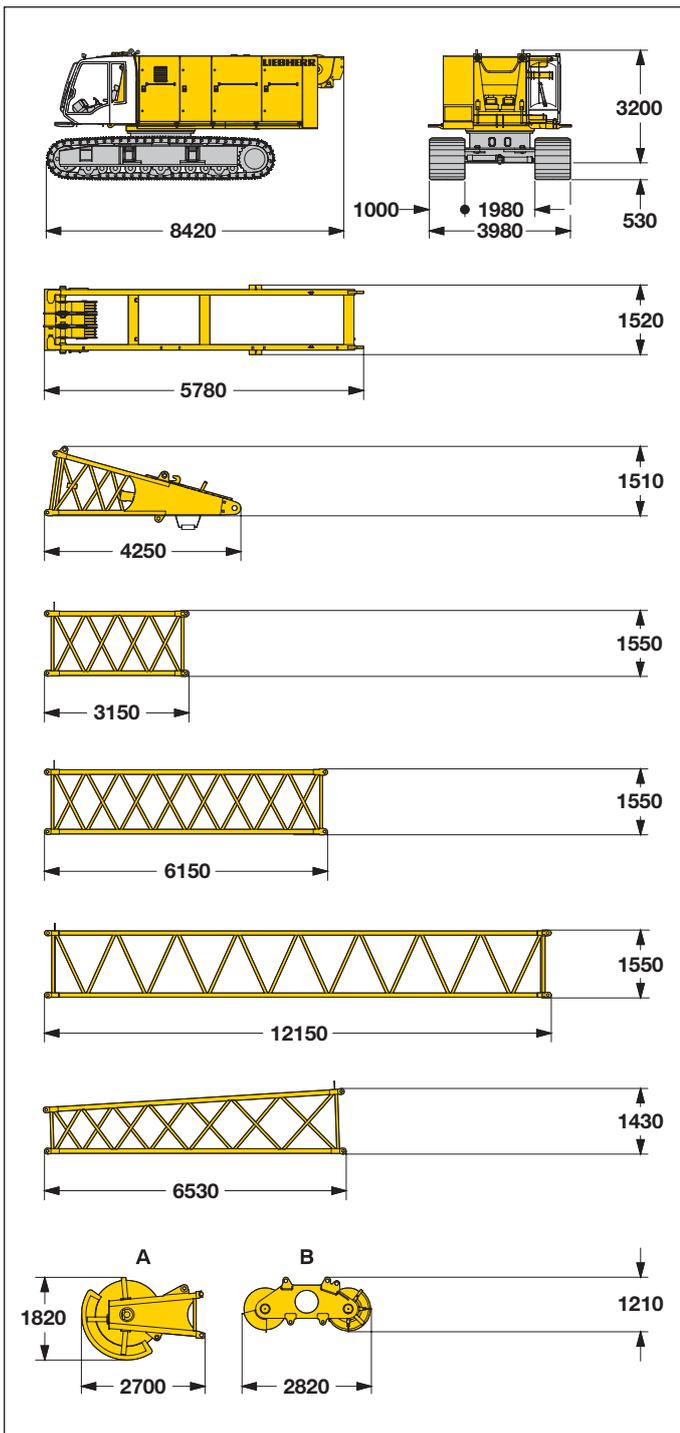
Main boom max. length _____ 50 m
 Universal boom head with interchangeable rope pulleys.
 Modular designed equipment for operation as crane, with dragline or clamshell.
 For dragline operation, a rotating fairlead is fitted into the boom foot. This minimizes the rope angle to drum, which results in lower rope wear.

Remarks

1. The lifting capacities stated are valid for lifting operation only (corresponding with crane classification according to F.E.M. 1.001. crane group A1).
2. Crane standing on firm, horizontal ground.
3. The weight of the lifting device (hoisting ropes, hook block, shackle etc.) must be deducted from the gross lifting capacity to obtain a net lifting value.
4. Additional equipment on boom (e.g. boom walkways, auxiliary jib) must be deducted to get the net lifting capacity.
5. For max. wind speed please refer to lift chart in operator's cab or manual.
6. Working radii are measured from center of swing and under load.
7. The lifting capacities are valid for 360 degrees of swing.
8. Calculation of stability under load is based on DIN 15019 / part 2 / chart 1 and ISO 4305 Table 1 + 2, tipping angle 4°.
9. The structures are calculated according to F.E.M. 1.001 - 1998 (EN 13001-1; EN 13001-2).

Transport dimensions and weights

Basic machine and boom (No. 1313.xx)



*) Including pendant ropes

Basic machine

with HD undercarriage, 2 x 250 kN winches with change gear box, without counterweight, boom foot and A-frame

3-web grousers	1000 mm
Width	3980 mm
Weight	63600 kg

A-frame

Width	600 mm
Weight	2195 kg

Boom foot (No. 1313.xx)

Width	1470 mm
Weight	2070 kg

Boom section (No. 1313.xx) 3 m

Width	1430 mm
Weight*	725 kg

Boom section (No. 1313.xx) 6 m

Width	1430 mm
Weight*	1125 kg

Boom section (No. 1313.xx) 12 m

Width	1430 mm
Weight*	1955 kg

Boom head section (No. 1313.xx) 6.4 m

Width	1430 mm
Weight*	1050 kg

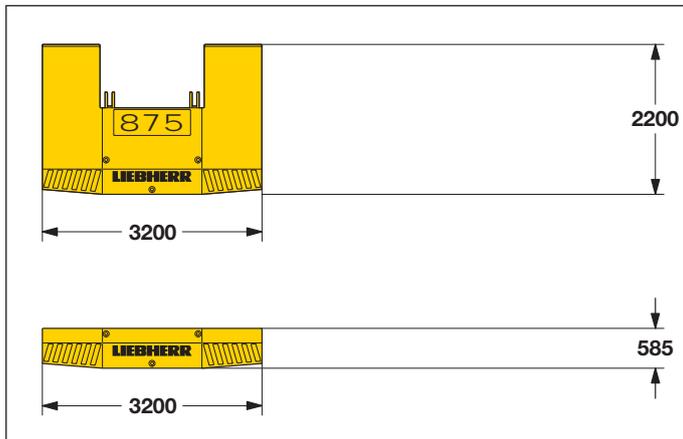
Boom head ¹⁾ (No. 1313.xx) — B — A

Width	850 mm	850 mm
Weight*	1840 kg	1800 kg

1) Steel sheaves

Transport dimensions and weights

Counterweight



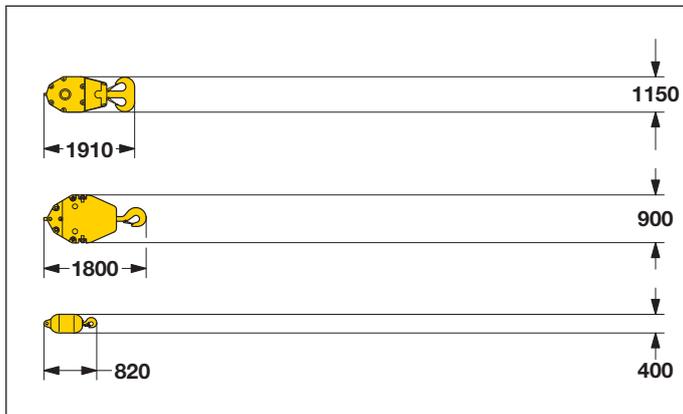
Basic counterweight **1x**

Width	820 mm
Weight	19600 kg

Additional counterweight **1x**

Width	670 mm
Weight	4500 kg

Hooks



100 t hook block - 2 sheaves

Width	320 mm
Weight*	1200 kg

50 t hook block - 1 sheave

Width	300 mm
Weight*	750 kg

25 t single hook

Width	400 mm
Weight*	400 kg

Technical description



Engine

Power rating according to ISO 9249, 450 kW (603 hp) at 1900 rpm
Engine type _____ Liebherr D 9508 A7
Fuel tank _____ 920 l capacity with continuous level
_____ indicator and reserve warning
Engine complies with NRMM exhaust certification EPA/CARB Tier 3 and 97/68 EC Stage III.
Option:
Power rating according to ISO 3046 IFN, 670 kW (898 hp) at 1900 rpm
Engine type _____ MAN D 2842 LE
Fuel tank _____ 920 l capacity with continuous level
_____ indicator and reserve warning
Engine complies with NRMM exhaust certification EPA / CARB Tier 2.



Hydraulic system

The main 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. The use of synthetic environmentally friendly oils is possible. 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



Boom winch

Line pull _____ max. 2x 70 kN
Rope diameter _____ 20 mm
Boom up _____ 84 sec. from 15° to 82°



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 – 3.5 rpm continuously variable, selector for 3 speed ranges to increase swing precision.
Option:
Second swing drive



Noise emission

Noise emissions correspond with 2000/14/EC directive on noise emission by equipment used outdoors.



Main winches

Winch options:
Line pull (nom. load) _____ 200 kN _____ 250 kN _____ 300 kN
Rope diameter _____ 30 mm _____ 34 mm _____ 36 mm
Drum diameter _____ 630 mm _____ 750 mm _____ 820 mm
Rope speed _____ 0-86 m/min – 0-69 m/min – 0-55 m/min
With change gear box _____ 0-123 m/min – 0-119 m/min
Rope capacity 1st layer - 40.5 m _____ 38.9 m _____ 38.6 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:
Crane winch (main winch) 160 kN with multi-disc holding brake
Auxiliary winch _____ 70 kN in boom foot
Tagline winch _____ 30 kN with free fall



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.
3-web grousers _____ 1000 mm
Drive speed _____ 0 – 1.15 km/h
Option:
• 2-speed hydraulic motor for higher travel speed

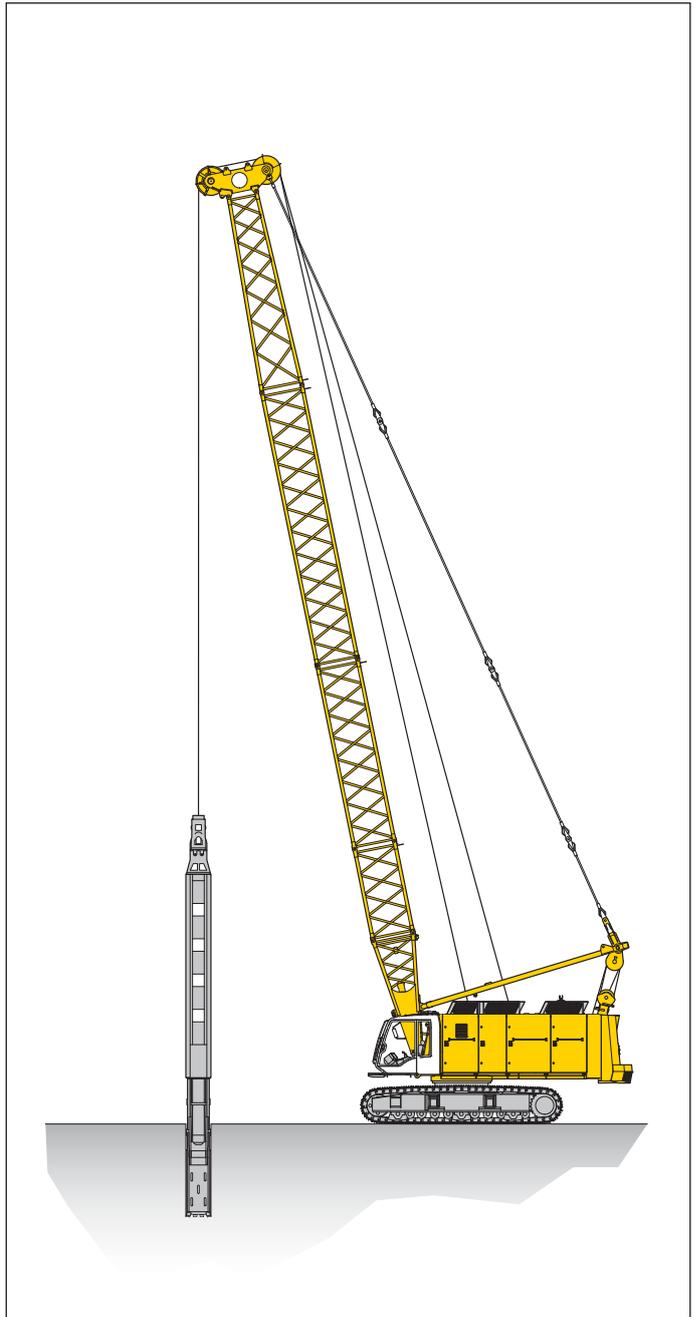
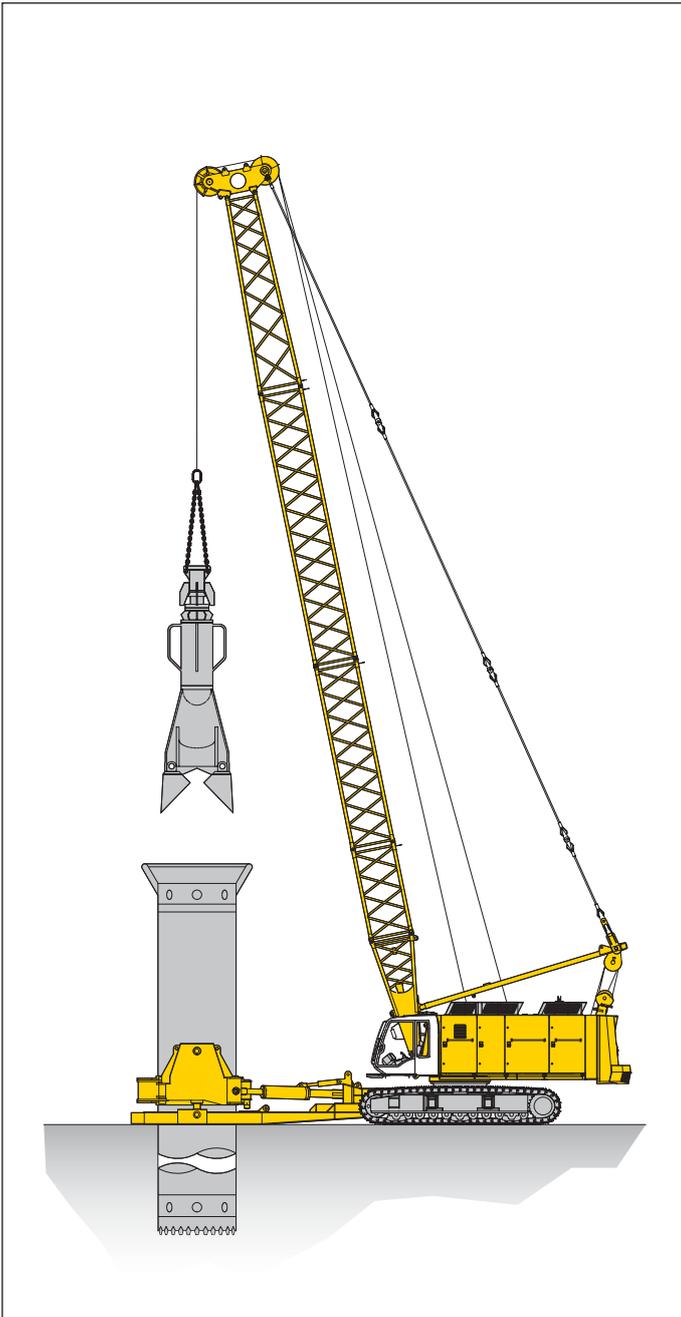


Control

The control system – developed and manufactured by Liebherr – is designed to withstand extreme temperature changes and the rough heavy duty tasks common in the construction industry. Complete machine operating data are shown on a high resolution display. The crane is equipped with proportional control for all movements, which can be carried out simultaneously.
Dragline operation: A special "Interlock" control system is an option available. It is designed for power lifting of the dragline bucket without using the drag winch brake.
On request, Liebherr also offers special custom designed control systems for free fall winches.
Operation:
Left joy stick for boom winch and swing, right two directional levers for winch I and II. Crawler control is actuated with the two central foot pedals. Additionally, hand levers can be attached to the pedals.
Options:
• Special demolition control system
• MDE: Machine data recording
• PDE: Process data recording
• GSM modem

Equipment (main boom No. 1313.xx and 24.1 t counterweight)

Casing oscillator and slurry wall grab



Casing oscillator*

Winch options	2 x 250 kN	2 x 300 kN
Line speed 1st gear (m/min)	0-69	0-55
Line speed 2nd gear (m/min)	0-123	0-119
Drilling diameter	2500 mm	2500 mm

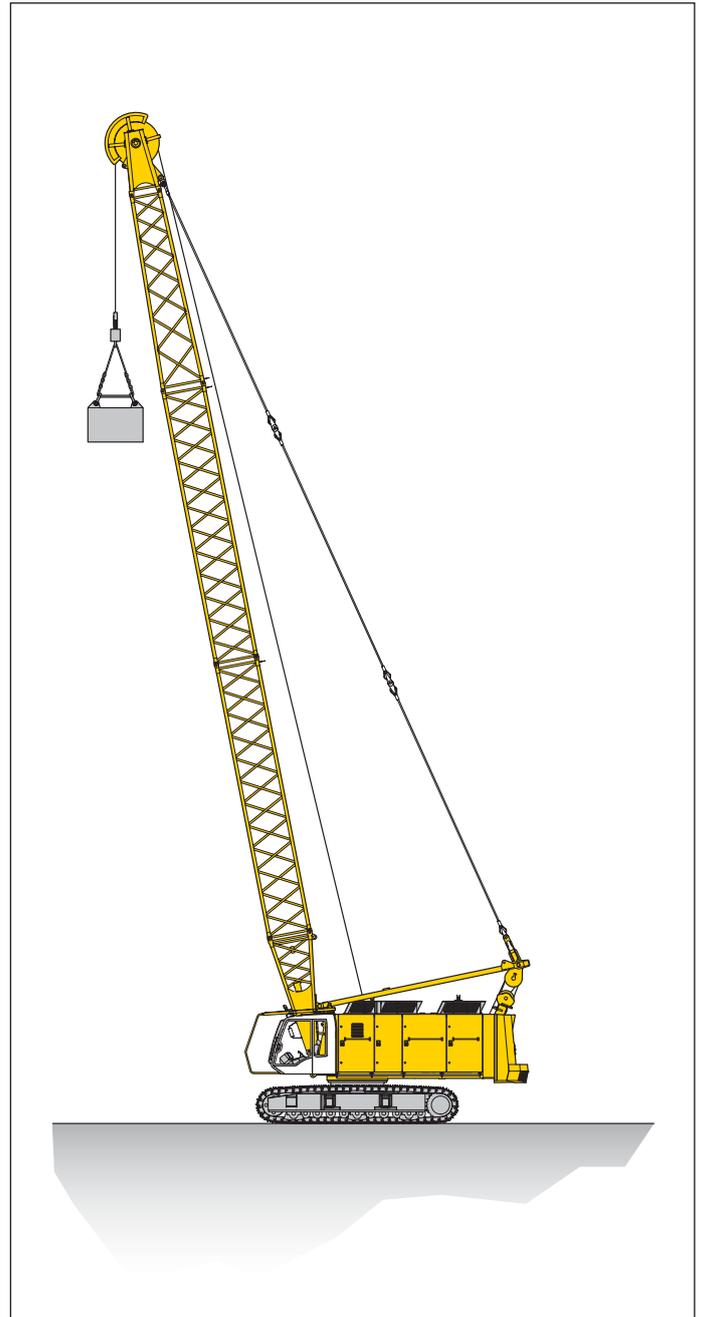
Slurry wall grab*

Winch options	2 x 250 kN	2 x 300 kN
Line speed 1st gear (m/min)	0-69	0-55
Line speed 2nd gear (m/min)	0-123	0-119
Max. chisel weight	16 t	25 t

*) Load chart for duty cycle operation see page 8

Equipment (main boom No. 1313.xx and 24.1 t counterweight)

Dynamic soil compaction



Capacities in metric tons for boom lengths (21 m - 33 m)

Radius (m)	Boom length				
	21 m	24 m	27 m	30 m	33 m
	t	t	t	t	t
8	25	25	20	20	19
9	20	19	19	18	17

Max. capacities in metric tons 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 shall not exceed 25 m.

Load chart for duty cycle operation (main boom No. 1313.xx)

24.1 t counterweight

Capacities in metric tons for boom lengths (12 m - 33 m) - with 300 kN winches

Radius	Boom length (m)								Radius
	12	15	18	21	24	27	30	33	
(m)	t	t	t	t	t	t	t	t	(m)
5	46.2								5
6	46.2	46.0	43.5	38.1	32.7	28.8	25.8	23.4	6
7	43.6	42.0	39.6	35.2	31.2	28.5	25.8	23.4	7
8	35.9	34.5	33.2	31.9	29.6	27.1	25.0	23.3	8
9	30.3	29.6	29.0	28.3	27.1	26.1	23.8	22.2	9
10	27.0	26.5	26.0	25.3	24.7	23.7	23.0	21.2	10
12	22.3	21.8	21.3	20.8	20.4	19.8	19.3	18.5	12
14		18.4	18.1	17.6	17.3	16.8	16.3	15.8	14
16			15.4	15.2	14.9	14.4	14.0	13.6	16
18			12.9	12.9	12.9	12.6	12.2	11.8	18
20				11.0	11.1	11.0	10.7	10.3	20
22					9.5	9.5	9.4	9.0	22
24						8.1	8.1	7.8	24
26						6.9	6.9	6.8	26
28							6.0	5.9	28
30								5.1	30
32								4.3	32

TLT 10532870 M00000 Vorab3

Maximum capacity in duty cycle operation with standard ropes

Line pull	kN	200	250	300
Rope diameter	mm	30	34	36
Minimum breaking load	kN	846	1046	1186
Line pull - 1-rope duty cycle operation	t	20	25	30
Line pull - 2-rope duty cycle operation ¹⁾	t	30.3	37.9	46.2

- 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.
- 2) Max. capacities in metric tons do not exceed 75% of tipping load. Crane standing on firm, horizontal ground.

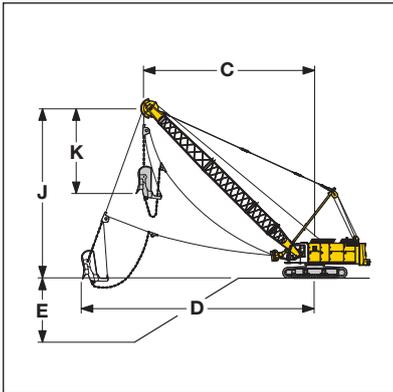
Capacities in duty cycle operation are for reference only and are not programmed in the LMI system.

All loads and counterweight configurations are max. values and must not be exceeded.

Weight of additional equipment on boom (e.g. walkways, hose drums etc.) must be deducted to get the net capacity.

Dragline equipment (main boom No. 1313.xx)

24.1 t counterweight



Capacities in metric tons for boom lengths (15 m - 30 m) counterweight 24.1 t

alpha	Boom length (m)																	
	15			18			21			24			27			30		
	C (m)	J (m)	t	C (m)	J (m)	t	C (m)	J (m)	t	C (m)	J (m)	t	C (m)	J (m)	t	C (m)	J (m)	t
45	12.7	12.7	20.7	14.8	14.8	17.1	16.9	16.9	14.1	19.0	19.1	11.9	21.1	21.2	10.1	23.3	23.3	8.5
40	13.5	11.7	19.2	15.8	13.7	15.6	18.1	15.6	12.8	20.4	17.5	10.7	22.7	19.4	9.0	25.0	21.4	7.5
35	14.3	10.7	17.9	16.8	12.4	14.4	19.3	14.1	11.7	21.7	15.9	9.8	24.2	17.6	8.0	26.6	19.3	6.6
30	15.0	9.6	16.7	17.6	11.1	13.4	20.2	12.6	10.8	22.8	14.1	8.8	25.4	15.6	7.2	28.0	17.1	5.9
25	15.6	8.4	15.7	18.4	9.7	12.4	21.1	11.0	9.8	23.8	12.2	8.1	26.5	13.5	6.6	29.2	14.8	5.4

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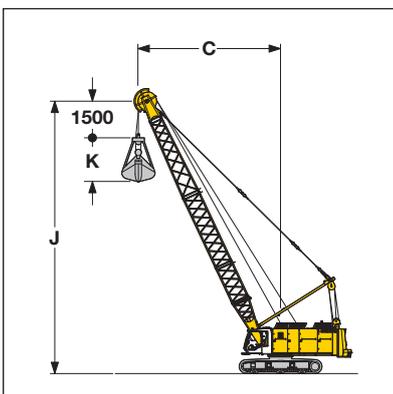
Max. capacities in metric tons do not exceed 75% of tipping load.
Capacities in duty cycle operation are for reference only and are not programmed in the LMI system.
The size of the bucket has to be determined according to local conditions.

Digging diagram

- C = Radius / dumping radius
- D = Max. digging radius = approx. $C + 1/3$ to $1/2 J - K$
- E = Digging depth = approx. 40 - 50% of C
- J = Height to centre rope pulley boom head
- K = Length of dragline bucket (according to manufacturer's specification)

Clamshell equipment (main boom No. 1313.xx)

24.1 t counterweight



Capacities in metric tons for boom lengths (15 m - 30 m) counterweight 24.1 t

alpha	Boom length (m)																	
	15			18			21			24			27			30		
	C (m)	J (m)	t	C (m)	J (m)	t	C (m)	J (m)	t	C (m)	J (m)	t	C (m)	J (m)	t	C (m)	J (m)	t
65	8.4	15.7	30.9	9.7	18.4	26.0	10.9	21.1	22.0	12.2	23.8	18.9	13.5	26.6	16.4	14.7	29.3	14.3
60	9.5	15.1	26.6	11.0	17.7	21.8	12.5	20.3	18.2	14.0	22.9	15.5	15.5	25.5	13.4	17.0	28.1	11.7
55	10.7	14.4	22.9	12.4	16.8	18.7	14.1	19.3	15.5	15.8	21.8	13.2	17.5	24.2	11.3	19.3	26.7	9.8
50	11.7	13.6	20.2	13.6	15.9	16.4	15.5	18.2	13.6	17.5	20.5	11.5	19.4	22.8	9.8	21.3	25.1	8.4
45	12.7	12.7	18.1	14.8	14.8	14.6	16.9	16.9	12.1	19.0	19.1	10.2	21.1	21.2	8.6	23.3	23.3	7.3
40	13.5	11.7	16.5	15.8	13.7	13.3	18.1	15.6	10.9	20.4	17.5	9.2	22.7	19.4	7.7	25.0	21.4	6.5
35	14.3	10.7	15.2	16.8	12.4	12.3	19.3	14.1	10.0	21.7	15.9	8.4	24.2	17.6	7.0	26.6	19.3	5.9
30	15.0	9.6	14.3	17.6	11.1	11.4	20.2	12.6	9.3	22.8	14.1	7.8	25.4	15.6	6.5	28.0	17.1	5.4
25	15.6	8.4	13.5	18.4	9.7	10.8	21.1	11.0	8.8	23.8	12.2	7.3	26.5	13.5	6.0	29.2	14.8	5.0

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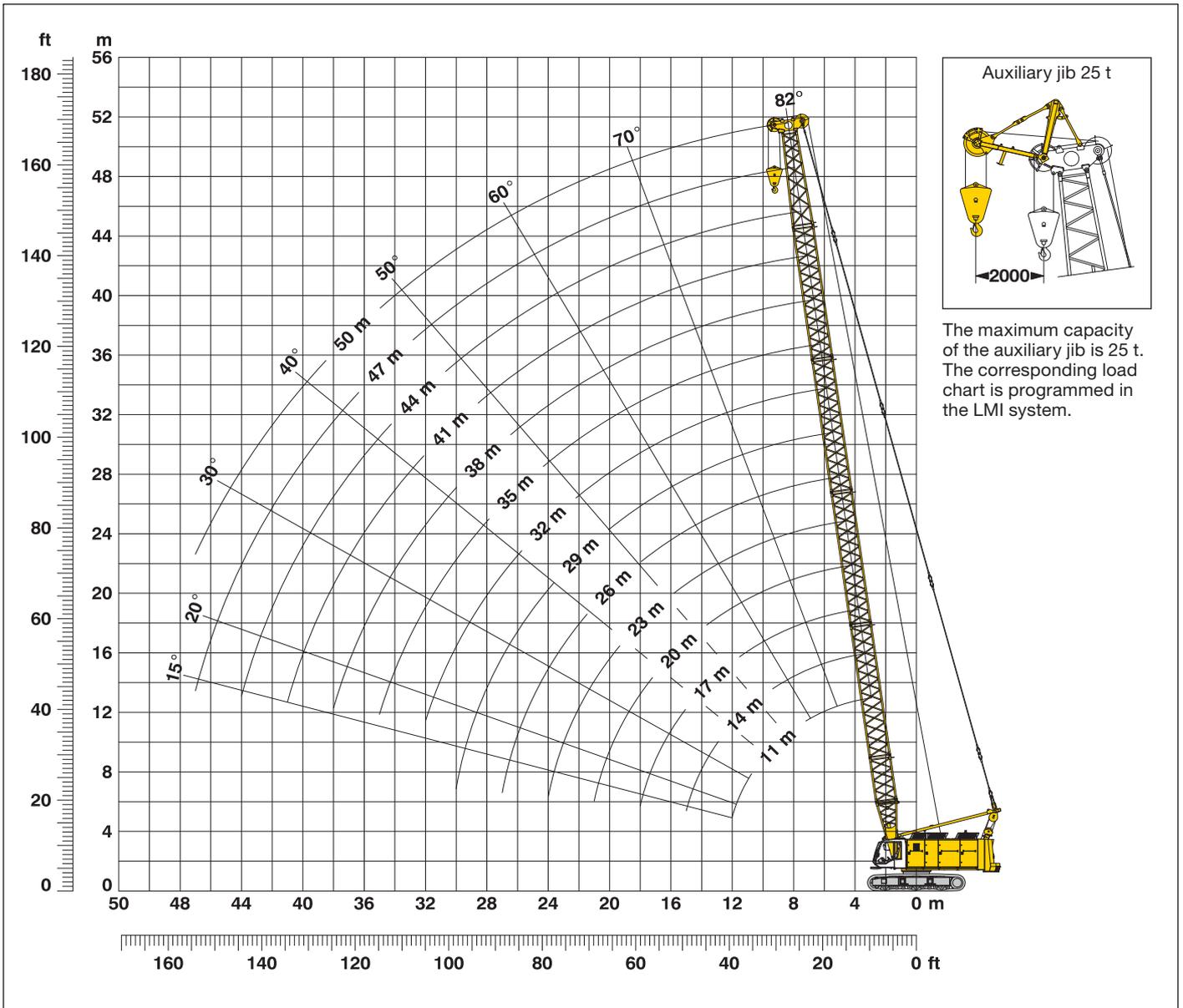
Max. capacities in metric tons do not exceed 66.7% of tipping load.
Capacities in duty cycle operation are for reference only and are not programmed in the LMI system.

Working diagram

- C = Radius / dumping radius
- J = Height of boom head sheave centre above ground level
- K = Length of clamshell (depending on type and capacity of bucket)

Working range - main boom 82° - 15°

24.1 t counterweight



Main boom configuration (No. 1313.xx)

Configuration for boom lengths (11 m - 50 m)

Component	Length	Amount of boom extensions													
		11	14	17	20	23	26	29	32	35	38	41	44	47	50
Boom foot	4.0 m	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Boom section	3.0 m		1		1		1		1		1		1		1
Boom section	6.0 m			1	1			1	1			1	1		
Boom section	12.0 m					1	1	1	1	2	2	2	2	3	3
Boom head section	6.4 m	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Boom head	0.6 m	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Boom length (m)		11	14	17	20	23	26	29	32	35	38	41	44	47	50

Load chart for lift crane operation (main boom No. 1313.xx)

24.1 t counterweight

Capacities in metric tons for boom lengths (11 m - 50 m) - with 300 kN winches

Radius	Boom length (m)														Radius
	11	14	17	20	23	26	29	32	35	38	41	44	47	50	
(m)	t	t	t	t	t	t	t	t	t	t	t	t	t	t	(m)
3.8	100.0														3.8
4	100.0														4
5	89.0	88.0	85.7												5
6	65.7	65.8	65.8	64.3	62.8	61.3									6
7	51.8	51.8	51.9	51.8	51.0	49.9	48.9	47.8							7
8	42.5	42.6	42.6	42.5	42.5	42.0	41.1	40.2	39.3	38.4	37.2				8
9	35.9	36.0	36.0	35.9	35.8	35.7	35.3	34.6	33.8	33.1	32.3	31.5	29.2		9
10	30.9	31.0	31.0	30.9	30.9	30.7	30.6	30.2	29.6	28.9	28.2	27.5	26.8	25.5	10
12	23.8	24.0	24.1	24.0	23.9	23.8	23.7	23.5	23.4	23.0	22.5	21.9	21.3	20.7	12
14		19.5	19.6	19.5	19.4	19.3	19.2	19.0	18.9	18.7	18.3	17.8	17.3	16.8	14
16			16.2	16.1	16.1	16.0	15.8	15.7	15.5	15.4	15.2	14.8	14.4	13.9	16
18			13.6	13.6	13.6	13.5	13.3	13.2	13.0	12.8	12.7	12.5	12.1	11.7	18
20				11.6	11.6	11.5	11.4	11.2	11.1	10.9	10.7	10.5	10.3	9.9	20
22					10.0	9.9	9.8	9.6	9.5	9.3	9.2	9.0	8.8	8.5	22
24					8.7	8.6	8.5	8.3	8.2	8.0	7.9	7.7	7.5	7.3	24
26						7.5	7.4	7.3	7.2	7.0	6.8	6.6	6.4	6.2	26
28							6.5	6.3	6.2	6.1	5.9	5.7	5.5	5.3	28
30							5.7	5.6	5.5	5.3	5.1	4.9	4.7	4.5	30
32								4.8	4.8	4.6	4.4	4.2	4.1	3.9	32
34									4.2	4.0	3.8	3.6	3.5	3.3	34
36										3.4	3.3	3.1	2.9	2.7	36
38										3.0	2.8	2.6	2.5	2.3	38
40											2.2	2.2	2.0	1.8	40
42												1.8	1.7	1.5	42
44													1.4	1.3	44

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Above load chart is for reference only. For actual lift duty please refer to load chart in operator's cab or manual.

