

Technical data
Hydraulic crawler crane

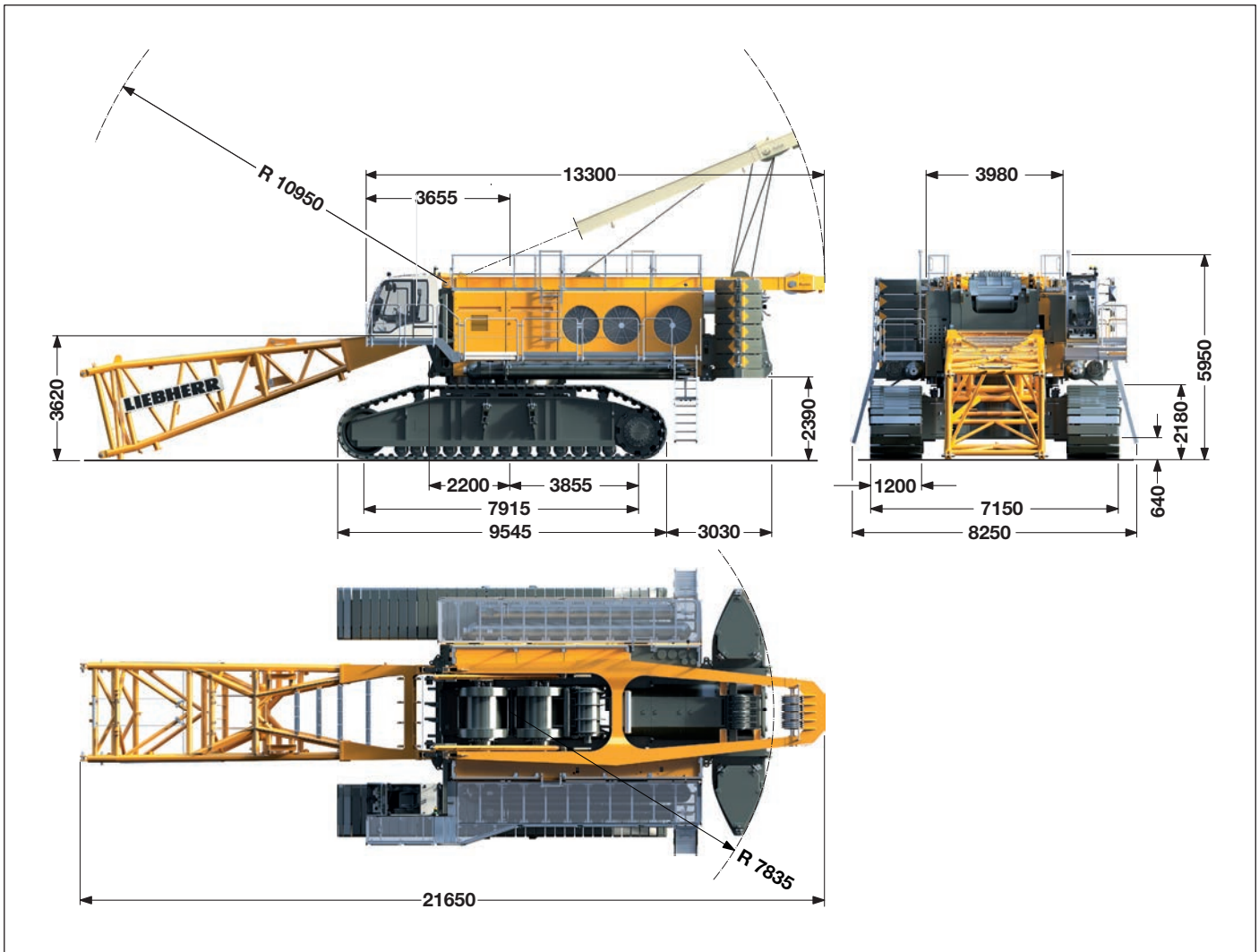
HS 8300 HD
Litronic®



LIEBHERR

Dimensions

Basic machine with undercarriage



Operating weight

The operating weight includes the basic machine with HD undercarriage, 2 main winches 500 kN including wire ropes (250 m) and 20 m main boom, consisting of A-frame, boom foot (10 m) and boom head (10 m), 78.7 t basic counterweight, 1200 mm track pads and 50 t hook block.

Total weight _____ approx. 352 t

Ground pressure

Ground bearing pressure _____ 1.85 kg/cm²

Equipment

Main boom (No. 2724.32) max. length _____ 68 m
Modular designed equipment for operation as crane, with dragline or clamshell.

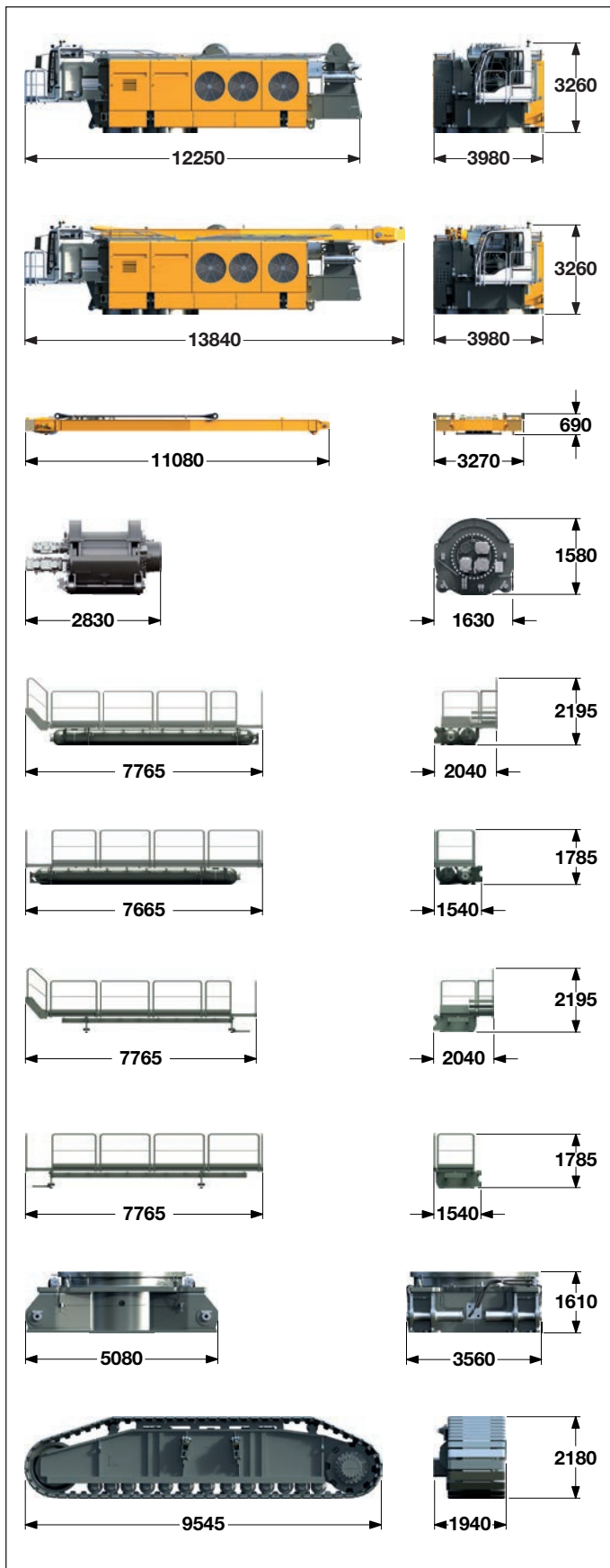
For dragline operation, a rotating fairlead is fitted into the boom foot. This minimizes the rope angle to drum, which results in lower rope wear.

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 centre 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 ISO 4305 Table 1 + 2, tipping angle 4°.
9. The structures are calculated according to F.E.M. 1.001 - 1998 (EN 13001-2 / 2004).

Transport dimensions and weights

Basic machine with HD undercarriage



Basic machine

without HD undercarriage, boom, boom backstops, A-frame, main winches (2x 500 kN), walkways and counterweight.

Weight 68950 kg

Basic machine

with A-frame, boom backstops, main winches (2x 500 kN) without wire ropes (250 m), without walkways, HD undercarriage, boom and counterweight.

Weight 99900 kg

A-frame

Weight 7400 kg

Main winches **2x**

Weight winch I without wire ropes 12000 kg

Weight winch II without wire ropes 12000 kg

Walkway with Pactronic® (left) **option**

Weight 6550 kg

Walkway with Pactronic® (right) **option**

Weight 6450 kg

Standard walkway (left)

Weight 670 kg

Standard walkway (right)

Weight 630 kg

Centre section of undercarriage

Weight 36250 kg

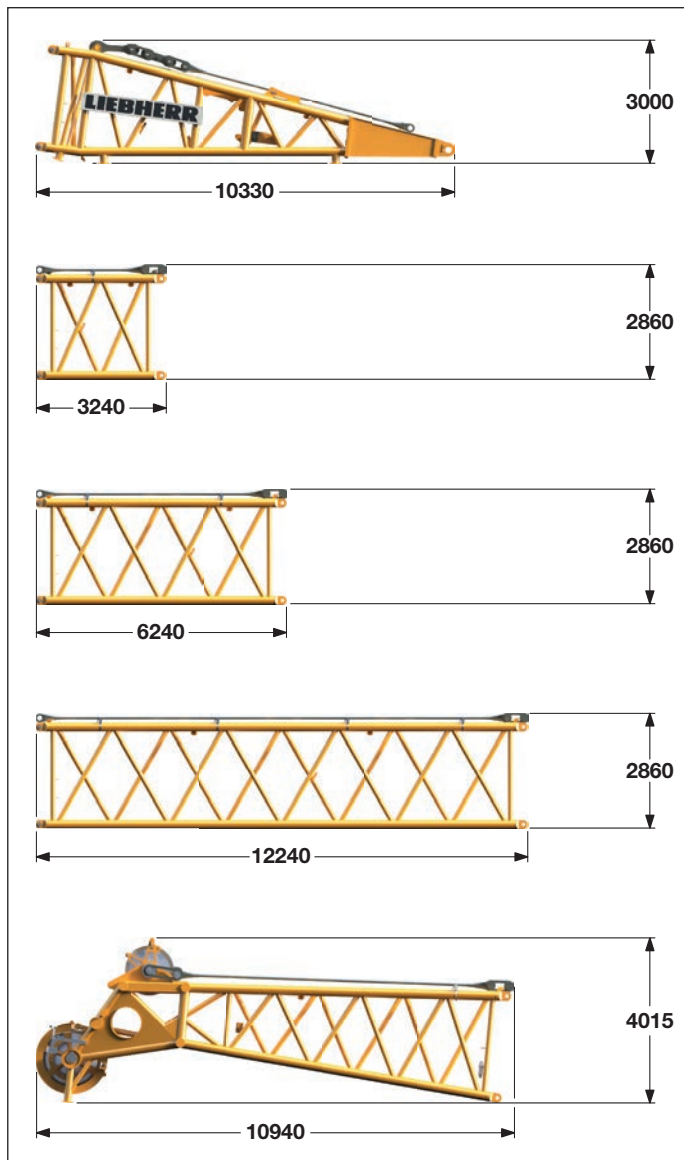
Crawlers **2x**

Weight of crawler left 48300 kg

Weight of crawler right 48300 kg

Transport dimensions and weights

Main boom (No. 2724.32)



Boom foot (No. 2724.32)

Width	3090 mm
Weight*	10300 kg

Boom section (No. 2724.32) 3 m

Width	2940 mm
Weight*	2500 kg

Boom section (No. 2724.32) 6 m

Width	2940 mm
Weight*	3600 kg

Boom section (No. 2724.32) 12 m

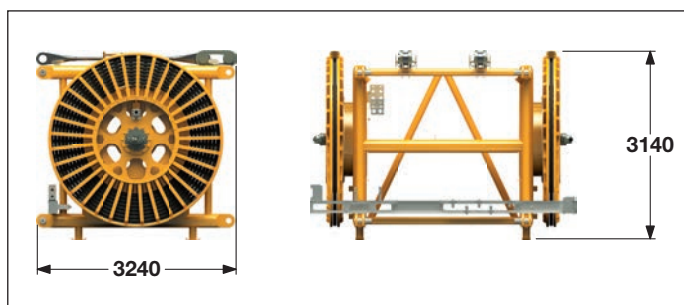
Width	2940 mm
Weight*	6300 kg

Boom head** (No. 2724.32)

Width	2940 mm
Weight*	10100 kg

*) Including pendant ropes, without auxiliary equipment
 **) Steel sheaves

Boom section with hydraulics

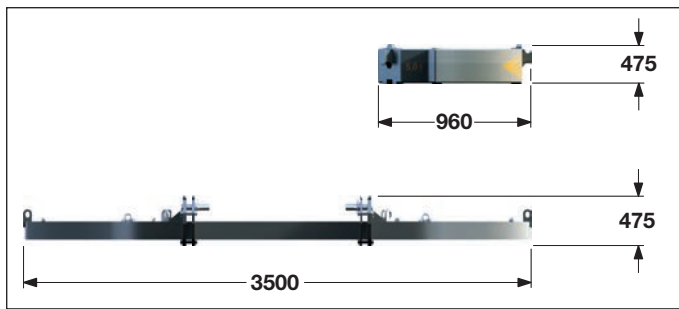


Boom section with hydraulics 3 m

Width	4300 mm
Weight	7700 kg

Transport dimensions and weights

Counterweight



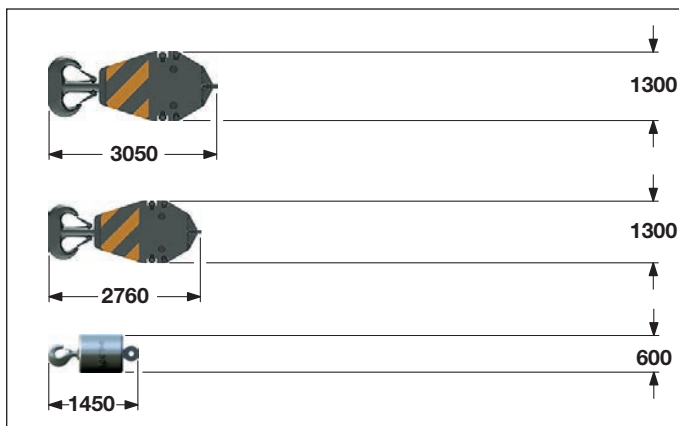
Counterweight **12 x**

Width	850 mm
Weight	5000 kg

Counterweight **1 x**

Width	1050 mm
Weight	18700 kg

Hooks



300 t hook block - 4 sheaves

Width	840 mm
Weight	4000 kg

150 t hook block - 1 sheave

Width	630 mm
Weight	3000 kg

50 t single hook

Width	600 mm
Weight	1600 kg

Hydraulic crawler crane HS 8300 HD Hybrid

Powerful, energy-efficient hybrid drive

The new HS 8300 HD is fitted with the Pactronic® system developed by Liebherr. This innovative hybrid drive based on hydraulics offers both economic and ecological advantages. Storing and subsequent regenerating of surplus power allows to increase turnover and to significantly lower fuel consumption. The proven technology of the hydraulic accumulator ensures low maintenance requirements and maximum reliability. The decreased energy consumption considerably lowers emissions and thus improves environmental compatibility.

Pactronic® - Lowering mode

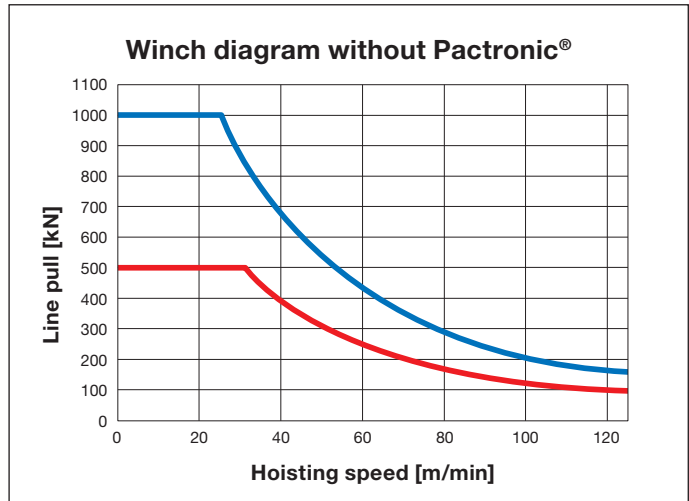
- A secondary energy source is added to the drive system.
- The accumulator is charged by regenerating the reverse power while lowering the load.
- The additional surplus power of the primary energy source is used for charging.

Pactronic® - Hoisting mode

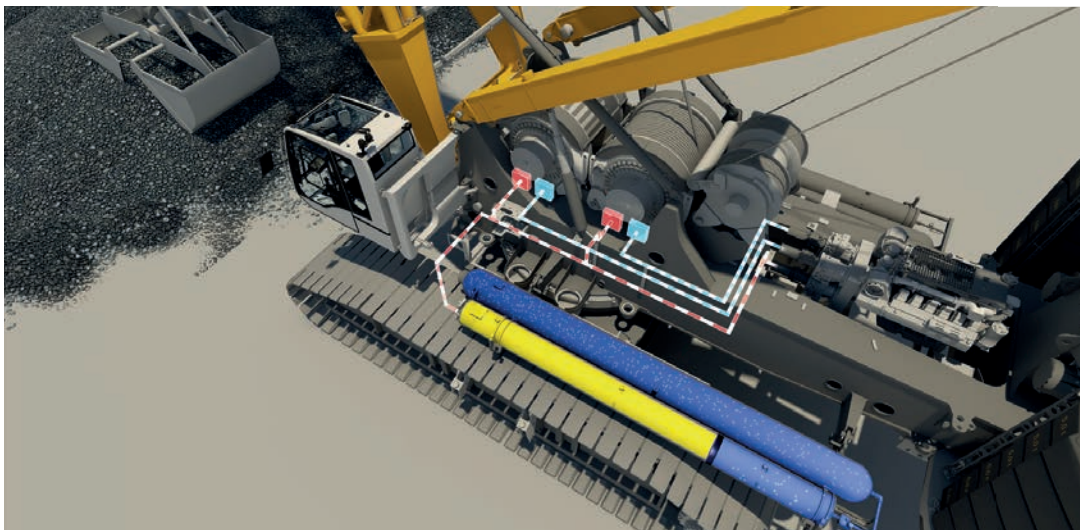
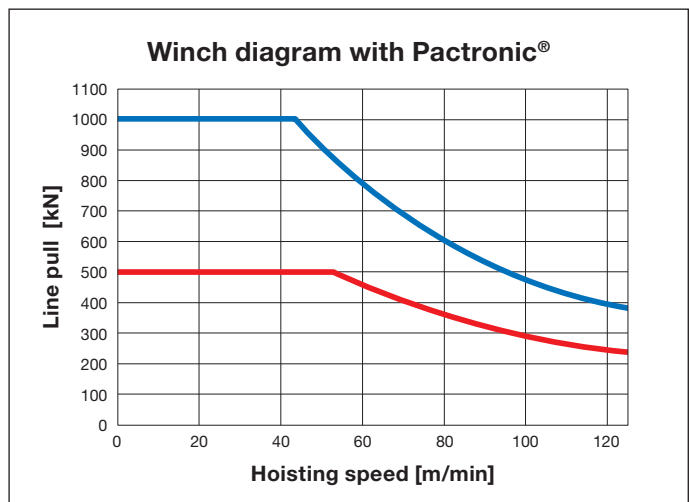
- Stored energy is transferred to the system when the crane requires peak power for hoisting.
- The total hoisting power is the sum of the conventional hydrostatic power and the secondary energy from the accumulator.

Key advantages of Pactronic®

- 725 kW diesel engine combined with Pactronic® allows to achieve a system power comparable to a conventional drive system with 1,250 kW
- Effective hoisting power of 800 kW
- Reduced fuel consumption resulting in less CO₂ emission
- Lower noise emission
- Increased hoisting power
- Increased lowering power
- Higher turnover with identical prime mover



- 2-winch operation
- 1-winch operation



Machine class — 300 t
 Engine power Tier 4i
 according to
 EPA/CARB — 725 kW
 System power with
 Pactronic® — 1250 kW
 Winches — 500 kN
 Boom - crane — 68 m
 Boom - clamshell — 68 m

Technical description



Engine

Power rating according to ISO 9249, 725 kW (972 hp) at 1700 rpm

Engine type _____ Liebherr D 9512 A7

Fuel tank _____ 1170 l capacity with continuous level
_____ indicator and reserve warning

The diesel engine runs with optimum fuel efficiency.

Power rating according to ISO 9249, 725 kW (972 hp) at 1700 rpm

Modell _____ Liebherr D 9512 A7 SCR

Kraftstofftank _____ 1170 l capacity with continuous level
_____ indicator and reserve warning

Engine complies with NRMM exhaust certification EPA / CARB Tier 4i.



Main winches

Winch options:

Line pull (nom. load) _____ 500 kN

Rope diameter _____ 46 mm

Drum diameter _____ 1100 mm

Rope speed _____ 0-125 m/min

Rope capacity 1st layer _____ 69.1 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.



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.

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. 400 bar

Oil tank capacity _____ 2800 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.

Track pads _____ 1200 mm

Drive speed _____ 0 – 1.4 km/h



Boom winch

Line pull _____ max. 150 kN

Rope diameter _____ 24 mm

Boom up _____ 130 sec. from 15° to 84°



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 0-3.6 rpm continuously variable, selector for 3 speed ranges to increase swing precision.

Standard:

4 swing drives



Control

The core of the Liebherr hydraulic crawler cranes 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
- GSM/GPRS telematics module
- Special demolition control system



Noise emission

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

Equipment (78.7 t counterweight)

Orange-peel grab



Orange-peel grab

Winch options ————— 2 x 500 kN
Line speed 1st layer ————— 0-125 m/min

Load chart for duty cycle operation (main boom No. 2724.32)

78.7 t counterweight

Capacities in metric tonnes for boom lengths (20 m - 68 m)																	Counterweight 78.7 t	
Radius (m)	Boom length (m)																Radius (m)	
	20	23	26	29	32	35	38	41	44	47	50	53	56	59	62	65		68
5.4	260.0																	5.4
6	260.0	242.9	222.2															6
7	252.4	242.9	222.2	203.6	187.6	172.8												7
8	200.1	200.3	200.5	197.4	187.6	172.8	159.6	147.4	136.8									8
9	165.2	165.4	165.5	165.4	165.3	162.1	157.4	147.4	136.8	126.6	117.5	108.9						9
10	140.3	140.4	140.4	140.3	140.3	140.1	139.9	136.1	132.5	126.6	117.5	108.9	101.4	94.0	87.3			10
12	107.7	107.8	107.8	107.6	107.5	107.3	107.1	106.9	106.6	106.3	103.7	101.1	97.6	94.0	87.3	81.4	77.0	12
14	86.4	86.4	86.4	86.2	86.1	85.9	85.6	85.3	85.0	84.8	84.4	84.1	82.9	80.9	78.8	76.9	74.0	14
16	71.6	71.6	71.6	71.3	71.3	71.0	70.7	70.4	70.1	69.8	69.5	69.1	68.7	68.4	67.4	65.6	64.0	16
18	60.6	60.6	60.6	60.4	60.4	60.1	59.8	59.4	59.2	58.8	58.4	58.1	57.7	57.3	57.0	56.6	55.2	18
20	52.2	52.2	52.3	52.0	52.0	51.7	51.4	51.0	50.8	50.4	50.0	49.6	49.3	48.9	48.5	48.1	47.7	20
22		45.5	45.6	45.4	45.4	45.1	44.8	44.4	44.1	43.7	43.4	43.0	42.6	42.2	41.8	41.4	41.0	22
24		39.5	40.2	40.0	40.0	39.7	39.4	39.0	38.8	38.4	38.0	37.6	37.2	36.8	36.4	35.9	35.5	24
26			35.7	35.5	35.5	35.2	35.0	34.6	34.3	33.9	33.5	33.1	32.7	32.3	31.9	31.4	31.0	26
28				31.7	31.8	31.5	31.2	30.8	30.6	30.1	29.8	29.3	29.0	28.5	28.1	27.7	27.3	28
30					28.5	28.2	28.0	27.6	27.4	26.9	26.6	26.1	25.8	25.3	24.9	24.4	24.1	30
32					25.5	25.4	25.2	24.8	24.6	24.2	23.8	23.3	23.0	22.6	22.1	21.7	21.3	32
34						23.0	22.8	22.4	22.2	21.8	21.4	20.9	20.6	20.1	19.7	19.2	18.9	34
36							20.6	20.2	20.1	19.6	19.3	18.8	18.5	18.0	17.6	17.1	16.7	36
38								18.3	18.2	17.7	17.4	16.9	16.6	16.1	15.7	15.2	14.8	38
40								15.6	16.4	16.0	15.7	15.2	14.9	14.4	14.0	13.5	13.2	40
42									14.6	14.5	14.2	13.7	13.4	12.9	12.5	12.0	11.6	42
44										13.0	12.8	12.3	12.0	11.5	11.1	10.6	10.3	44
46											9.8	11.4	11.0	10.8	10.3	9.9	9.4	46
48												9.4	9.7	9.6	9.1	8.7	8.2	48
50													7.9	8.5	8.1	7.7	7.0	50
55															4.4	4.6	4.3	55

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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.

Equipment (78.7 t counterweight)

Dragline bucket

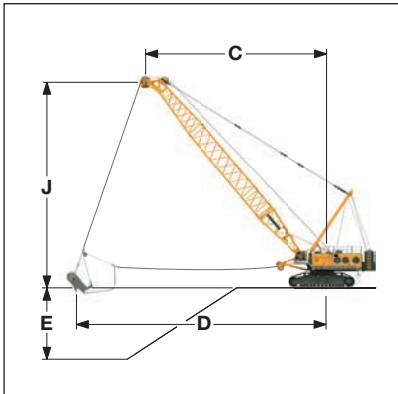


Dragline bucket

Winch options ————— 2 x 500 kN
Line speed 1st layer ————— 0-125 m/min

Dragline equipment (Main boom No. 2724.32)

78.7 t counterweight



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

Max. capacities in metric tonnes 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.

Capacities in metric tonnes for boom lengths (20 m - 50 m)																			Counterweight 78.7 t		
alpha	Boom length (m)																				
	20			26			32			38			44			47			50		
	C	J		C	J		C	J		C	J		C	J		C	J		C	J	t
	(m)	(m)	(t)	(m)	(m)	(t)	(m)	(m)	(t)	(m)	(m)	(t)	(m)	(m)	(t)	(m)	(m)	(t)	(m)	(m)	(t)
60	13.8	20.3	75.8	16.8	25.5	75.8	19.8	30.7	60.1	22.8	35.8	48.4	25.8	41.0	37.8	27.3	43.6	33.5	28.8	46.2	29.6
55	15.2	19.2	75.8	18.6	24.2	65.7	22.1	29.1	51.4	25.5	34.0	39.5	28.9	38.9	30.5	30.7	41.4	26.7	32.4	43.8	23.4
50	16.5	18.1	75.8	20.4	22.7	57.9	24.2	27.3	44.8	28.1	31.9	32.3	31.9	36.5	24.7	33.9	38.8	21.4	35.8	41.1	18.5
45	17.7	16.8	70.5	22.0	21.1	52.0	26.2	25.3	35.6	30.4	29.6	26.7	34.7	33.8	20.1	36.8	35.9	17.2	38.9	38.0	14.4
40	18.8	15.5	64.6	23.4	19.3	40.5	28.0	23.2	29.8	32.6	27.0	22.2	37.2	30.9	16.4	39.5	32.8	13.8	41.8	34.8	10.5
35	19.8	14.0	51.2	24.7	17.5	33.9	29.6	20.9	25.2	34.5	24.4	18.4	39.5	27.8	13.3	41.9	29.5	10.9	44.4	31.2	7.4
30	20.6	12.5	39.6	25.8	15.5	28.8	31.0	18.5	21.2	36.2	21.5	15.2	41.4	24.5	10.6	44.0	26.0	8.3	46.6	27.5	4.9
25	21.4	10.9	33.5	26.8	13.4	24.4	32.2	16.0	17.8	37.7	18.5	12.4	43.1	21.0	8.2	45.8	22.3	6.2	48.5	23.6	3.1

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Maximum capacity in duty cycle operation with standard ropes

Line pull (1st layer)	500 kN
Rope diameter	46 mm
Minimum breaking load	1760 kN
Line pull - 1-rope duty cycle operation	50 t
Line pull - 2-rope duty cycle operation ¹⁾	75.8 t

- 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 tonnes 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.

Equipment (78.7 t counterweight)

Clamshell

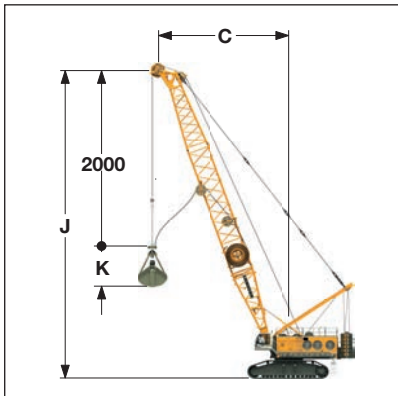


Clamshell

Winch options ————— 2 x 500 kN
Line speed 1st layer ————— 0-125 m/min

Clamshell equipment (main boom No. 2724.32)

78.7 t counterweight



Working diagram

- C = Radius / dumping radius
- J = Height of boom head sheave centre above ground level
- K = Length of clamshell (according to manufacturer's specification)

Max. capacities in metric tonnes 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.

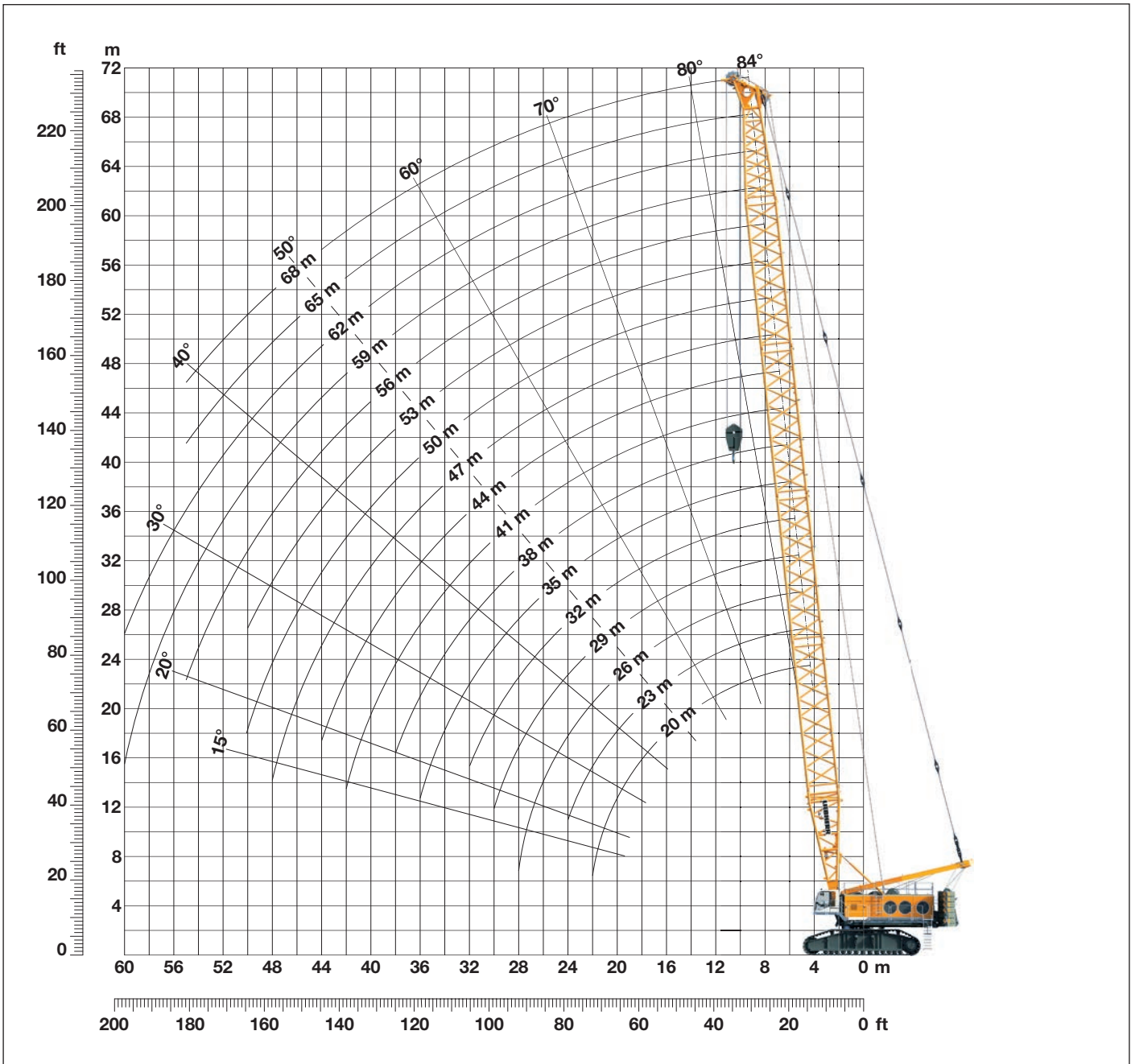
Capacities in metric tonnes for boom lengths (20 m - 50 m)																			Counterweight 78.7 t		
alpha	Boom length (m)																				
	20			26			32			38			44			47			50		
	C	J		C	J		C	J		C	J		C	J		C	J		C	J	
	(m)	(m)	(t)	(m)	(m)	(t)	(m)	(m)	(t)	(m)	(m)	(t)	(m)	(m)	(t)	(m)	(m)	(t)	(m)	(m)	(t)
65	12.3	21.2	75.8	14.8	26.6	75.8	17.3	32.0	63.6	19.9	37.5	51.9	22.4	42.9	43.0	23.7	45.6	39.2	24.9	48.3	35.8
60	13.8	20.3	75.8	16.8	25.5	67.0	19.8	30.7	52.9	22.8	35.8	42.6	25.8	41.0	34.8	27.3	43.6	31.5	28.8	46.2	28.5
55	15.2	19.2	75.8	18.6	24.2	57.8	22.1	29.1	45.2	25.5	34.0	36.0	28.9	38.9	29.0	30.7	41.4	26.0	32.4	43.8	23.3
50	16.5	18.1	68.5	20.4	22.7	51.0	24.2	27.3	39.5	28.1	31.9	31.1	31.9	36.5	24.7	33.9	38.8	21.4	35.8	41.1	18.5
45	17.7	16.8	62.0	22.0	21.1	45.8	26.2	25.3	35.1	30.4	29.6	26.7	34.7	33.8	20.1	36.8	35.9	17.2	38.9	38.0	14.4
40	18.8	15.5	56.9	23.4	19.3	40.5	28.0	23.2	29.8	32.6	27.0	22.2	37.2	30.9	16.4	39.5	32.8	13.8	41.8	34.8	10.5
35	19.8	14.0	51.2	24.7	17.5	33.9	29.6	20.9	25.2	34.5	24.4	18.4	39.5	27.8	13.3	41.9	29.5	10.9	44.4	31.2	7.4
30	20.6	12.5	39.6	25.8	15.5	28.8	31.0	18.5	21.2	36.2	21.5	15.2	41.4	24.5	10.6	44.0	26.0	8.3	46.6	27.5	4.9
25	21.4	10.9	33.5	26.8	13.4	24.4	32.2	16.0	17.8	37.7	18.5	12.4	43.1	21.0	8.2	45.8	22.3	6.2	48.5	23.6	3.1

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Working range - main boom (No. 2724.32)

78.7 t counterweight

84° - 15°



Main boom configuration (Table 1 - No. 2724.32)

Configuration for boom lengths (20 m - 68 m)

	Length	Amount of boom extensions																		
		10.0 m	12.0 m	15.0 m	18.0 m	21.0 m	24.0 m	27.0 m	30.0 m	33.0 m	36.0 m	39.0 m	42.0 m	45.0 m	48.0 m	51.0 m	54.0 m	57.0 m	60.0 m	
Boom foot	10.0 m	1	1	1	1	1	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		1		1	
Boom section	6.0 m			1	1			1	1			1	1			1	1			1
Boom section	12.0 m					1	1	1	1	2	2	2	2	3	3	3	3	4		
Boom head	10.0 m	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Boom length (m)		20	23	26	29	32	35	38	41	44	47	50	53	56	59	62	65	68		

Load chart for lift crane operation (main boom No. 2724.32)

78.7 t counterweight

Capacities in metric tonnes for boom lengths (20 m - 68 m) - with 500 kN winches and 78.7 t counterweight

Radius (m)	Boom length (m)																Radius (m)	
	20	23	26	29	32	35	38	41	44	47	50	53	56	59	62	65		68
5.4	300.0																	5.4
6	299.8	299.6	286.5															6
7	258.9	249.0	239.8	230.9	222.7	216.5												7
8	218.4	211.0	204.1	197.4	191.1	185.0	179.2	173.7	168.3									8
9	188.4	182.6	177.2	171.9	167.0	162.1	157.4	152.8	148.5	144.3	140.2	136.3						9
10	165.3	160.7	156.3	151.9	147.9	143.8	139.9	136.1	132.4	128.9	125.4	122.0	118.7	115.6	112.1			10
12	129.0	128.8	125.8	122.6	119.7	116.7	113.8	110.9	108.2	105.5	102.8	100.2	97.6	95.1	92.7	90.3	87.9	12
14	103.2	103.2	103.1	102.0	99.9	97.5	95.2	92.9	90.7	88.5	86.3	84.2	82.1	80.0	78.0	76.0	74.0	14
16	85.3	85.3	85.2	84.9	84.8	83.2	81.3	79.3	77.5	75.6	73.8	71.9	70.2	68.4	66.6	64.9	63.2	16
18	72.1	72.1	72.1	71.7	71.6	71.2	70.4	68.7	67.2	65.5	63.9	62.2	60.7	59.1	57.6	56.0	54.5	18
20	61.8	61.9	62.0	61.6	61.5	61.1	60.7	60.1	58.9	57.4	55.9	54.4	53.1	51.6	50.2	48.8	47.4	20
22	38.8	53.8	53.9	53.6	53.5	53.1	52.7	52.1	51.8	50.6	49.3	47.9	46.7	45.4	44.1	42.7	41.5	22
24		46.0	47.4	47.1	47.1	46.6	46.2	45.6	45.3	44.7	43.8	42.5	41.4	40.1	38.9	38.2	37.0	24
26			41.9	41.6	41.7	41.2	40.8	40.3	39.9	39.3	38.8	38.3	37.3	36.1	35.0	33.8	32.7	26
28			32.7	37.0	37.5	37.1	36.7	36.1	35.8	35.3	34.7	34.1	33.3	32.2	31.1	30.0	29.0	28
30				32.9	33.6	33.1	32.8	32.3	31.9	31.4	30.9	30.3	29.8	28.8	27.7	26.6	25.7	30
32					30.1	29.7	29.4	28.9	28.6	28.0	27.5	26.9	26.4	25.8	24.8	23.7	22.8	32
34						26.7	26.5	25.9	25.6	25.1	24.6	24.0	23.5	22.9	22.1	21.1	20.2	34
36						23.7	23.8	23.3	23.1	22.5	22.0	21.4	20.9	20.3	19.7	18.7	17.9	36
38							21.4	21.0	20.7	20.2	19.7	19.1	18.6	18.0	17.4	16.6	15.8	38
40								18.9	18.7	18.1	17.6	17.0	16.6	16.0	15.4	14.7	13.9	40
42								16.8	16.8	16.2	15.8	15.2	14.7	14.1	13.6	12.9	12.2	42
44									15.0	14.5	14.1	13.5	13.1	12.4	11.9	11.2	10.6	44
46										13.0	12.5	11.9	11.5	10.9	10.4	9.7	9.2	46
48										11.2	11.1	10.5	10.2	9.5	9.0	8.3	7.8	48
50											9.8	9.2	8.9	8.2	7.7	7.0	6.6	50
55													6.0	5.4	4.9	4.3	3.8	55
60														2.9	2.6			60

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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.

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