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Project   LR 1300 138217 (SAMPLE 20.01.2015)

Protocol title: sample (air resister)

Protocol number: 138217

Protocol version: 20/01/2015

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LIEBHERR

en

Load charts

Crawler crane
TLT LR 1300 W

984252314 M95738

Product ID

Product type: Crawler crane
Product designation: TLT LR 1300 W
Serial no.:   984252314 M95738

Document ID

Author: LWN / Technical Publication Department (lwnkad0-Chefredakteur)
Issued: 2011-04-28
Version: Main boom + luffing jib + derrick

Manufacturer:

Liebherr-Werk Nenzing GmbH
P.O. Box 10
A – 6710 Nenzing/Austria

LWN//Main boom + luffing jib + derrick/2011-04-28/en
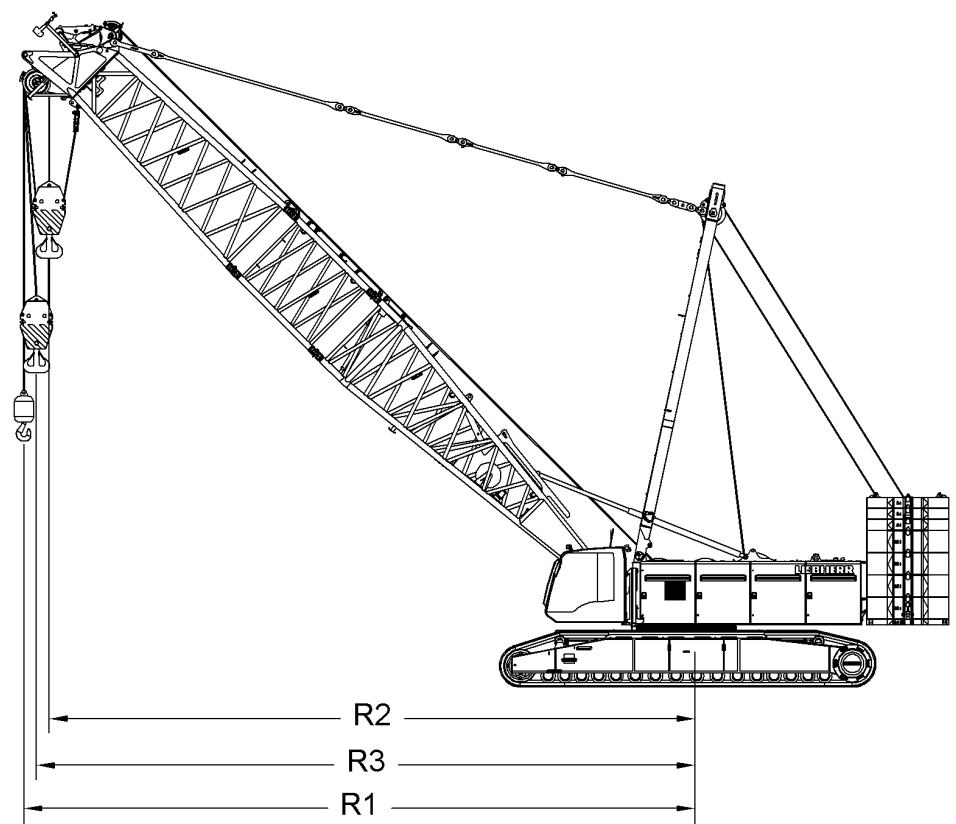
1 All boom configurations

1.1 Standards

Lifting capacities are calculated as specified in:
– EN 13000
– EN 13001-1
– EN 13001-2

1.2 Radius

'Radius' means the radius measured between middle of swing ring and hook or pulley block. Different reevings with same boom angle give different radii.

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R1	Radius with hoist rope reeved in once
R2	Radius with hoist rope reeved in twice
R3	Radius with hoist rope reeved in 3 to n times

1.3 Lifting capacity

Lifting capacities apply exclusively on horizontal (1% maximum inclination), firm ground with sufficient load-bearing capacity.

Load chart values shown on gray background are limited by structure of machine. Load chart values shown on white background are limited by toppling of machine.

The lifting capacity is made up of the mass of the following components:
– Suspended hoist rope
– Empty hook
– Rigging
– Load

1.4 Maximum lifting capacity

Following tables show maximum permitted lifting capacities and corresponding reevings. Efficiency factor of rope drive is taken into account.

Reeving	1	2	3	4	5
Lifting capacity	15.1 t	30.1 t	45.0 t	59.7 t	74.2 t

Reeving	6	7	8	9	10
Lifting capacity	88.6 t	102.9 t	117.0 t	131.0 t	144.8 t

Reeving	11	12	13	14	15
Lifting capacity	158.5 t	172.1 t	185.5 t	198.8 t	212.0 t

Reeving	16	17	18	19	20
Lifting capacity	225.0 t	237.9 t	250.7 t	263.3 t	275.8 t

Reeving	21	22
Lifting capacity	288.2 t	300.5 t

Refer to load chart for permitted lifting capacity.

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1.5 Load wind surface

Load wind surface identified in lifting capacity calculation is 1.2 m²/t. If load wind surface is larger: Contact Liebherr after sales service to enquire about reduced load chart values relating to load surfaces and flow resistance coefficients.

1.6 Additional mass

Any additional mass on the boom (e.g. cat walks, rope guiding rollers, jib backstay straps) increases the load moment and changes the lifting capacity display.

1.7 Traveling with a load

When moving with a load, higher stability factors apply as specified in EN 13000 (tilting angle method) and ISO 4305 tables 1 and 2.

Reduce lifting capacity to following values (use smaller value):
− 10%
− 1 t (2 t if derrick attached)

Maximum permitted speed is 0.4 m/s (0.2 m/s if derrick attached) on horizontal, firm ground with sufficient load-bearing capacity. Reduce dynamic effects. Swaying of load is not permitted.
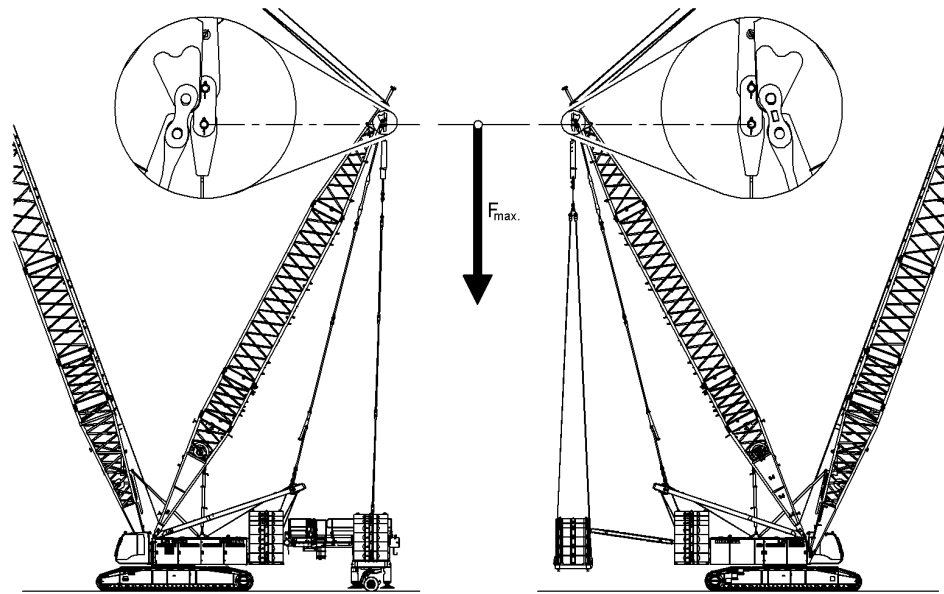
1.8 Derrick

In derrick operation, it is mainly the structure (strength) of the machine that is used.

The total mass of the suspended counterweight consists of the mass of the following components:
− Counterweight frame
− Ballast slabs
− Pendant ropes
− Crossbar
− Derrick hoist cylinder

The total mass of the wheeled counterweight carriage consists of the mass of the following components:
− Wheeled counterweight carriage
− Ballast slabs
− Pendant straps
− Crossbar
− Derrick hoist cylinder

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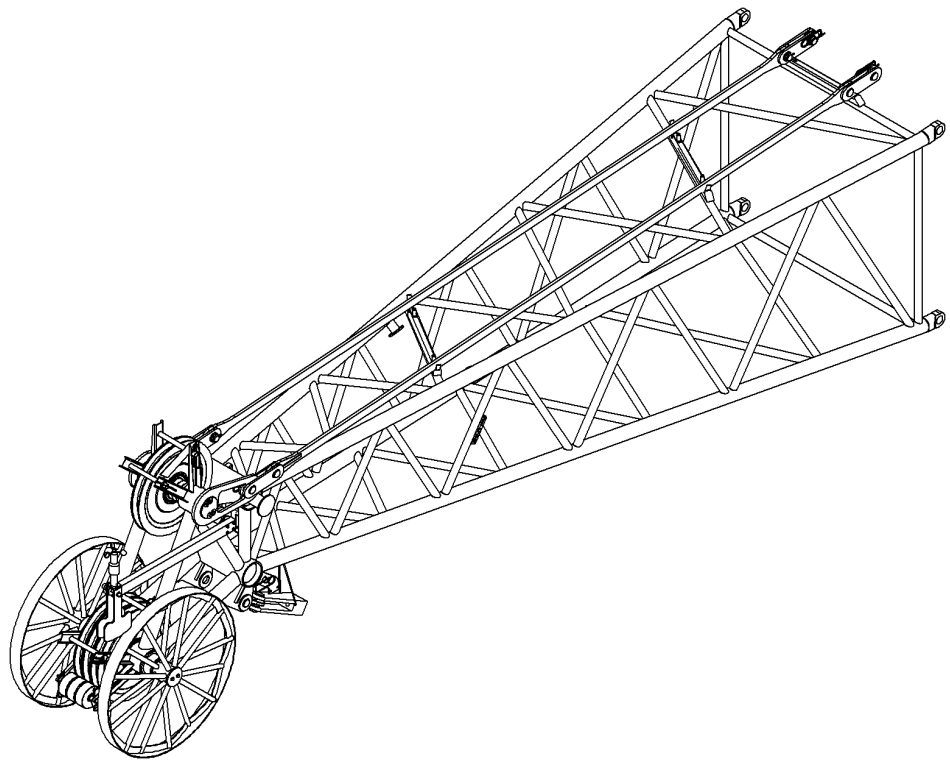The maximum permitted total mass "Fmax" of the suspended counterweight or wheeled counterweight carriage is 120 t.

2 Main boom + luffing jib + derrick

2.1 Boom heads
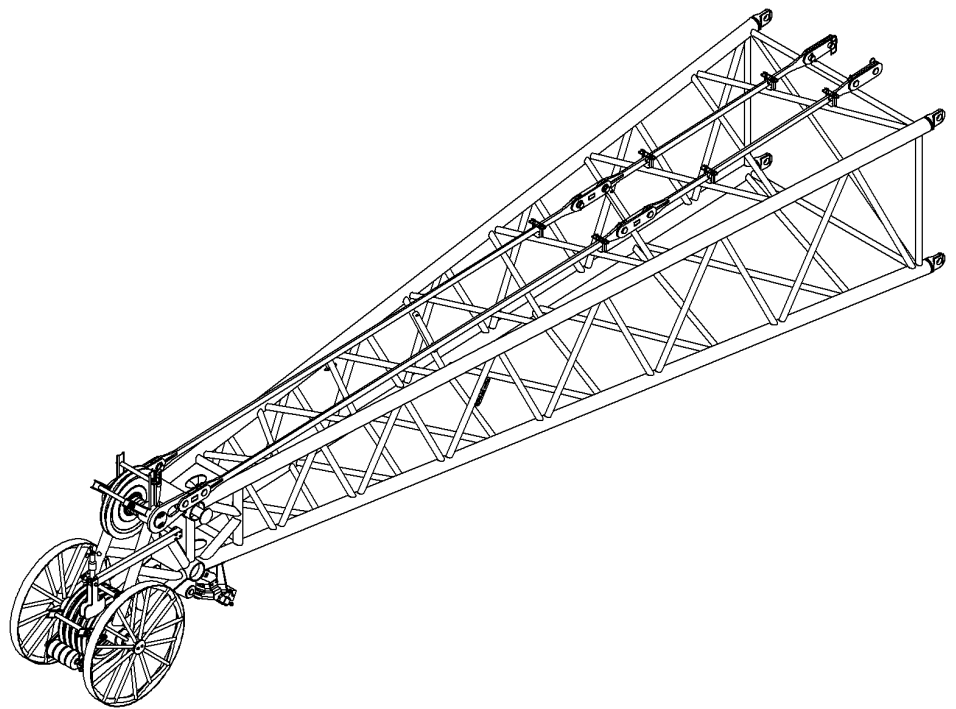
Jib head section 2316-1, dimensions 2316.20, maximum reeving 8

Jib head section 1916-1, dimensions 1916.22, maximum reeving 6

2.2 Load position lifting capacity calculation

The lifting capacity calculation for the boom head section requires an empty hook with a 2.5 t dead weight to hang from the jib head section.

2.3 Reducing load in windy conditions

Lifting capacities are calculated with following wind speeds:

Boom length	Maximum permitted wind speed
All combinations	10 m/s

In the event of higher wind speeds: Reduce lifting capacity in accordance with following table. This table shows minimum values. The machine operator is responsible for reducing the lifting capacity.

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Jib length Jib 2316	20 m to 32 m	35 m to 50 m	53 m to 68 m	71 m to 113 m
Main boom length	**44 m to 86 m**			
Wind speed	**Reduction of lifting capacity by**			
10 m/s	0%	0%	0%	0%
12 m/s [A)]	20%	30%	60%	100%
14 m/s [A) B)]	30%	50%	100%	
16 m/s [A) B)]	50%	80%		
Over 16 m/s	100% = Operation prohibited			

Jib length Jib 1916	20 m to 32 m	35 m to 44 m	47 m to 56 m	59 m to 68 m	71 m to 95 m
Main boom length	**All combinations**				
Wind speed	**Reduction of lifting capacity by**				
10 m/s	0%	0%	0%	0%	0%
12 m/s [A)]	20%	20%	30%	40%	100%
14 m/s [A) B)]	30%	40%	60%	80%	
16 m/s [A) B)]	50%	60%	80%	100%	
Over 16 m/s	100% = Operation prohibited				

[A)] Minimum reduction 2 t.

[B)] Increase SWLmin. value by 10% when operating with suspended counter-weight. In the load chart, the SWLmin. value is shown in brackets under 'Load chart value'. The SWLmin. value is the load chart value required to lift the suspended counterweight from the ground.

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Project data

Project name	LR 1300 138217 (SAMPLE 20.01.2015)
Country	Spain
Standard	CE
Unit:	Metric [SI]

Jobsite data

Name of jobsite:	BRASIL 86 + 56
Unit:	Metric [SI]
Comments	

Simulation:

<u>Crane data</u>

Type	LR 1300 W
Operating modeMain boom with luffing jib and derrick boom with special counterweight	
Serial number	138217
LML ID no.	a9938136
LML mod. no.	95738
Load chart ID no.	9842523
Load chart modification no.	95738

Main boom
Length	86	m
Cross section	2821-1	
Main boom head	2821-1	

Jib
Length	56	m
Cross section	2316-2	
Type of luffing jib head	2316-1	

Counterweight:
Carbody counterweight	52.6	t
Counterweight	124.0	t

Reeving	2
Position of load	Jib
Tipping edge	2 - Wide track

CAUTION:
LIEBHERR HEREWITH EXPRESSLY POINTS OUT THAT THE CRANE-PLANNER IS ONLY A PLANNING TOOL WHICH IS INTENDED TO ASSIST YOU WITH THE CALCULATION OF THE GROUND PRESSURE THEORETICALLY EMANATING FROM A CRANE AND/OR WITH THE THEORETICAL PLANNING OF CRANE AND/OR LIFTING OPERATIONS.
THE CRANE-PLANNER DOES NOT CONSTITUTE AN OPERATING TOOL INTENDED TO BE USED IN THE COURSE OF A CRANE☐S EFFECTIVE OPERATION AND SHALL NOT REPLACE ANY SAFETY FUNCTIONS OF A CRANE. PLEASE MIND THAT ANY AND ALL VALUES CALCULATED VIA THE CRANE-PLANNER WILL BE I) ONLY THEORETICALLY CALCULATED AND IDEALISED, II) WILL CORRELATE WITH ACTUAL VALUES ONLY UNDER VERY SPECIFIC IDEAL CONDITIONS AND III) CAN CONSIDERABLY DEVIATE FROM ACTUAL VALUES ARISING IN PRACTICE!

Start position

Number	Position X [m]	Position Y [m]	Rotation of undercarriage [°]	Rotation of upper-carriage [°]	Angle of main boom [°]	Luffing jib angle [°]	Counterweight carrier radius [m]	Load height [m]	Hook height [m]
-	0.00	0.00	0	0	88	78	---	0.00	0.00

Status according to LML:

Load	[ ]
	0.00 t
Crane utilization	0 %
Max. load on luffing jib	21.28 t
Current load	0.00 t
Hook rope rigging mass	0.00 t
Radius of luffing jib	17.86 m
Sheave height	143.69 m
Hook height	0.00 m
Utilization derrick	-- %
Min. load on luffing jib	0 t
Special counterweight type	Suspended counterweight
Derrick counterweight	0.00 t
COG X:	-2.00 m
COG Z:	12.35 m
Collision status	No collision

Compact ground
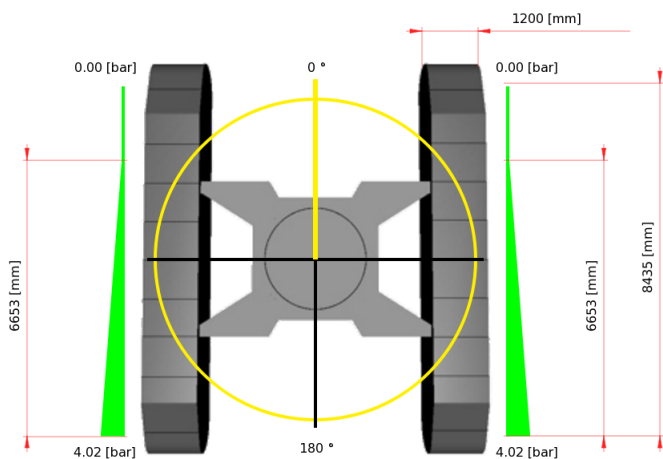
Ground pressure 4.64 bar at uppercarriage position 29°, 151°, 209°, 331°
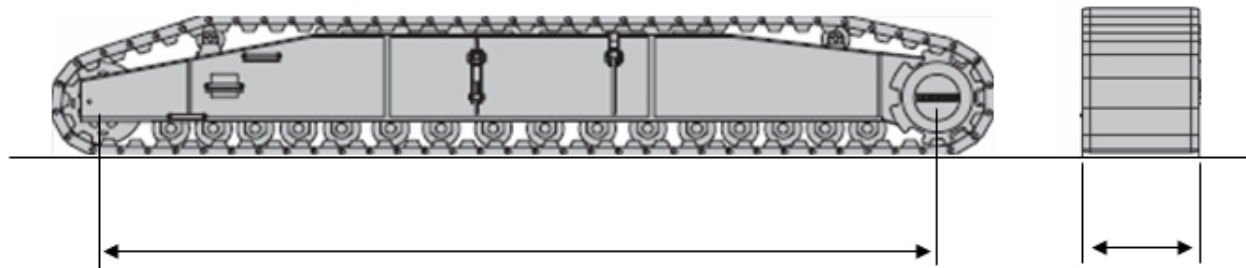
Solid ground
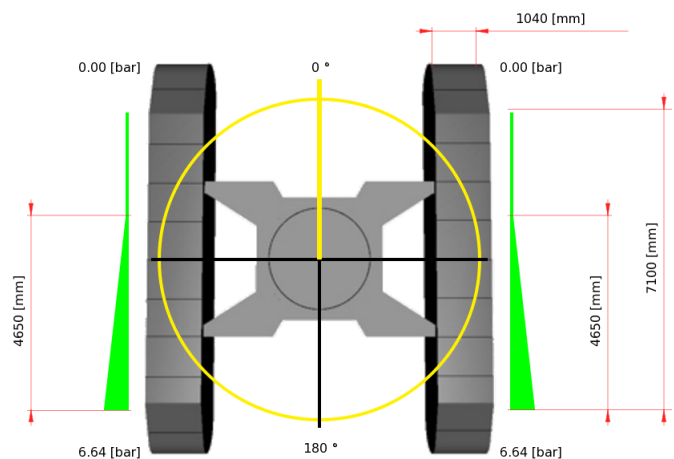
Ground pressure 7.40 bar at uppercarriage position 22°, 158°, 202°, 338°

Information on ground pressure

Compact ground

Ground pressure calculation for compact ground is based on the crawler surface from centre idler to centre tumbler and the total chain width.

Solid ground

Ground pressure calculation for solid ground is based on the crawler surface from the centre of the first roller to the centre of the last roller and the total chain width without the sloped edges