

BUCKNER HEAVYLIFT CRANES

Build Package – Liebherr LR1300 SX – CR3318

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Note: Crane technician MUST verify all information contained in this document matches what is provided by the manufacturer for the specific crane being used. Contact Andy Moore with questions: andym@bucknerheavylift.com Cell: 713 705 5726

PROJECT:
LR 1300 SX164' + 164' ST

LOCATION: -----

BUCKNER CONTACT: Andy Moore, PE
AndyM@BucknerHeavylift.com

LIFT PLAN BY: Andy Moore, PE
AndyM@BucknerHeavylift.com

DRAWING NOTES:
Title Page

LR1300 SX	
Operating Mode	MB + LJ
Main Boom Length	50m (164')
Luffing Jib Length	50m (164')
Derrick Length	N/A
Superstructure CWT	273.4k
Carbody CWT	125.7k
Ballast Tray CWT	N/A

PRELIMINARY

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BUCKNER
HEAVYLIFT CRANES

Assembly and dismantling

Operator's manual

Main boom 2821

Main boom length	Configuration of main boom (symbolic)
50 m 164 ft	
53 m 174 ft	
56 m 184 ft	
59 m 195 ft	
62 m 203 ft	
65 m 213 ft	
68 m 223 ft	
71 m 233 ft	
74 m 243 ft	
77 m 253 ft	
80 m 262 ft	
83 m 272 ft	
86 m 282 ft	
89 m 292 ft	
92 m 302 ft	
95 m 312 ft	
98 m 322 ft	
101 m 332 ft	
104 m 342 ft	

Tab. 515: Configuration of main boom 2821

A) Install rope guide exclusively with boom configuration 4, when reeving load position1 and load position 2.

S - Installation position rope guide (type A)

S* - Installation position rope guide (type A)

Operator's manual

Assembly and dismantling

Luffing jib 2316

7.20 Luffing jib 2316

System-relevant information for luffing jib 2316:

- Configuration of jib
 - Mid-point suspensions installation positions
- Lengths of jib mid-point suspensions
- Configuration of main boom
- Overview of steel pendant straps on luffing jib 2316
- Overview of CF pendant straps on luffing jib 2316
- Reeving diagram A-frame2/A-frame3
- Reeving diagrams for one rope across jib head 2316 (load position1)
- Reeving diagrams for two ropes across jib head 2316 (load position1)
- Reeving diagrams for one rope across main boom head 2821 (load position2)
- Reeving diagrams for one rope across auxiliary jib (30 t (66.000 lb)) on jib head 2316 (load position1)

7.20.1 Configuration of jib



DANGER

Excess length of jib!
Structural breakdown.

- ▶ Check jib length in load chart for validity.

Jib length	Configuration of jib (symbolic)
20 m 66 ft	
23 m 76 ft	
26 m 85 ft	
29 m 95 ft	
32 m 105 ft	
35 m 115 ft	
38 m 125 ft	
41 m 134 ft	
44 m 144 ft	
47 m 154 ft	
50 m 164 ft	

PROJECT:

LR 1300 SX164' + 164' ST

LOCATION: -----

BUCKNER CONTACT:

Andy Moore, PE
AndyM@BucknerHeavyLift.com

LIFT PLAN BY:

Andy Moore, PE
AndyM@BucknerHeavyLift.com

DRAWING NOTES:

Boom and Luffing Jib Config.

LR1300 SX	
Operating Mode	MB + LJ
Main Boom Length	50m (164')
Luffing Jib Length	50m (164')
Derrick Length	N/A
Superstructure CWT	273.4k
Carbody CWT	125.7k
Ballast Tray CWT	N/A

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BUCKNER
HEAVYLIFT CRANES

Assembly and dismantling

Main boom 2821

A) Machine with CF pendant straps with boom configuration main boom 2821 + luffing jib 1916: Do not install any mid-point suspensions with main boom lengths 77 m (253 ft) and 80 m (262 ft).

7.5.3 Overview of main boom 2821 steel pendant straps

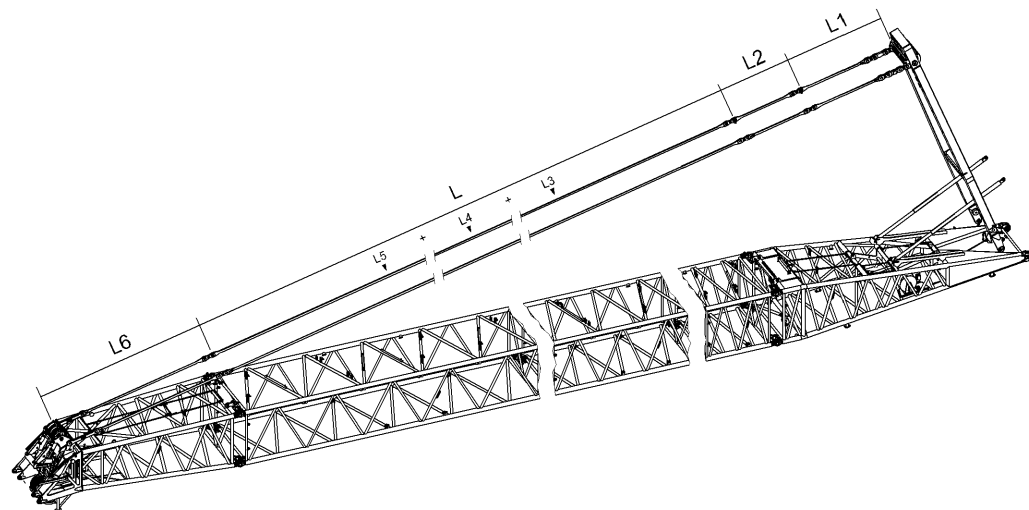


Fig. 2636: Overview of main boom 2821 steel pendant straps

Pendant straps A-frame1 to main boom head 2821

Name	Value
L1 A-frame1 equalizer (For more information see: A-frame1 equalizer, page 65)	3730 mm 12' 3" ft-in
L2 Main boom base section equalizer (For more information see: Equalizer of main boom base section 2821.30, page 165)	2670 mm 8' 9" ft-in
Main boom pendant straps consisting of:	
L3 Main boom pendant strap 3 m (10 ft) (For more information see: Main boom pendant strap 3 m (10 ft), page 166)	Total L3 +
L4 Main boom pendant strap 6 m (20 ft) (For more information see: Main boom pendant strap 6 m (20 ft), page 168)	Total L4 +
L5 Main boom pendant strap 12 m (40 ft) (For more information see: Main boom pendant strap 12 m (40 ft), page 170)	Total L5

Assembly and dismantling

Main boom 2821

Name	Value
L6 Main boom pendant strap on main boom head 2821 (For more information see: Main boom pendant strap on main boom head 2821.24, page 171)	6300 mm 20' 8" ft-in

Tab. 390: Pendant straps A-frame1 to main boom head 2821

Configuration of main boom pendant straps (L):

Required number of main boom pendant straps 3 m (10 ft) (L3) corresponds to number of main boom sections 3 m (10 ft).

Required number of main boom pendant straps 6 m (20 ft) (L4) corresponds to number of main boom sections 6 m (20 ft).

Required number of main boom pendant straps 12 m (40 ft) (L5) corresponds to number of main boom sections 12 m (40 ft).



Note

► For the admissible number of main boom sections 3 m (10 ft), 6 m (20 ft), 12 m (40 ft), refer to the following table: (For more information see: 7.5.1 Configuration of main boom, page 1056)

7.5.4 Overview of main boom 2821 CF pendant straps

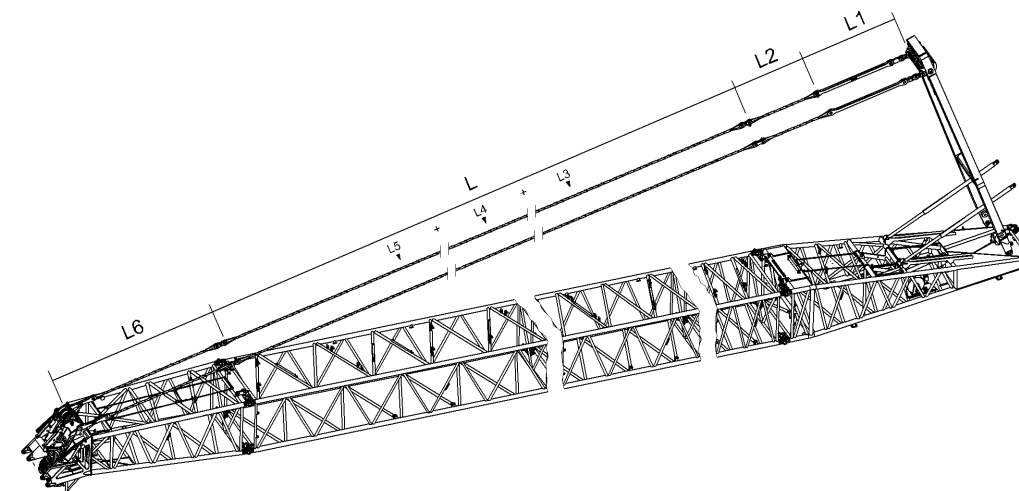


Fig. 2637: Overview of main boom 2821 CF pendant straps

Pendant straps A-frame1 to main boom head 2821

Name	Value
L1 A-frame1 equalizer (For more information see: A-frame1 equalizer, page 66)	3700 mm 12' 2" ft-in

PROJECT:

LR 1300 SX164' + 164' ST

LOCATION: -----

BUCKNER CONTACT:

Andy Moore, PE
AndyM@BucknerHeavylift.com

LIFT PLAN BY:

Andy Moore, PE
AndyM@BucknerHeavylift.com

DRAWING NOTES:

Boom Pendant Straps

LR1300 SX	
Operating Mode	MB + LJ
Main Boom Length	50m (164')
Luffing Jib Length	50m (164')
Derrick Length	N/A
Superstructure CWT	273.4k
Carbody CWT	125.7k
Ballast Tray CWT	N/A



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Assembly and dismantling

Luffing jib 2316



Note

See system-relevant data of main boom for information on main boom configuration (For more information see: 7.5.1 Configuration of main boom, page 1056).

7.14.4 Overview of steel pendant straps on luffing jib 2316

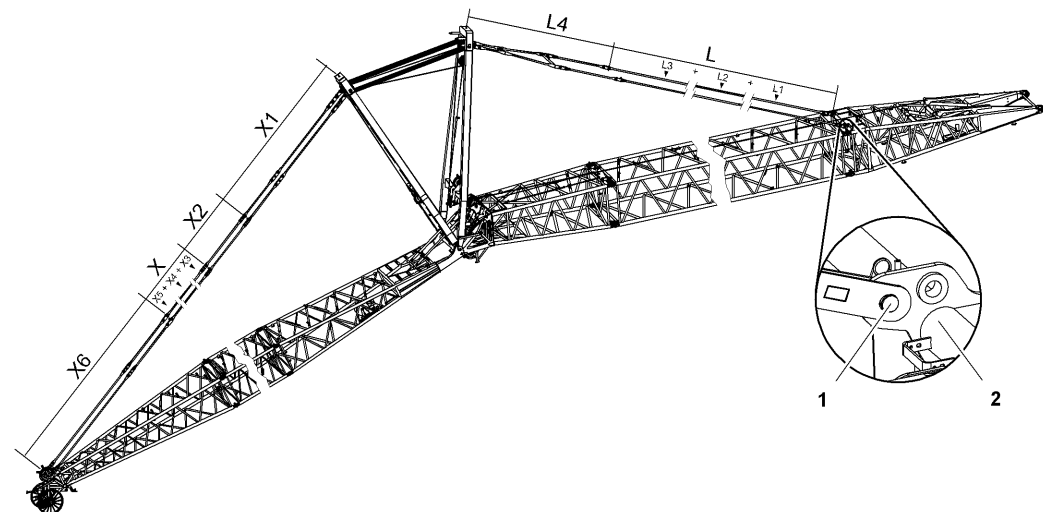


Fig. 3803: Overview of steel pendant straps on luffing jib 2316

- 1 Pin connection point for jib backstay straps
- 2 Main boom base section

Jib backstay straps A-frame2 to main boom base section 2821

Name	Value
Jib backstay straps consisting of:	
L1 Jib backstay strap 3 m (10 ft) (For more information see: Jib backstay strap 3 m (10 ft), page 167)	Total L1 +
L2 Jib backstay strap 6 m (20 ft) (For more information see: Jib backstay strap 6 m (20 ft), page 169)	Total L2 +
L3 Jib backstay strap 12 m (40 ft) (For more information see: Jib backstay strap 12 m (40 ft), page 170)	Total L3
L4 A-frame2 equalizer (jib backstay strap) (For more information see: Equalizer A-frame2 (jib backstay strap), page 276)	8050 mm 26' 5" ft-in

Tab. 440: Jib backstay straps A-frame2 to main boom base section 2821

Configuration of jib backstay straps (L):

Assembly and dismantling

Luffing jib 2316

Required number of jib backstay straps 3 m (10 ft) (L1) corresponds to number of main boom sections 3 m (10 ft).

Required number of jib backstay straps 6 m (20 ft) (L2) corresponds to number of main boom sections 6 m (20 ft).

Required number of jib backstay straps 12 m (40 ft) (L3) corresponds to number of main boom sections 12 m (40 ft).



Note

For the admissible number of main boom sections 3 m (10 ft), 6 m (20 ft), 12 m (40 ft), refer to the load chart.

Pendant straps A-frame3 to jib head 2316

Name	Value
X1 A-frame3 equalizer (jib pendant strap) (For more information see: A-frame3 equalizer (jib pendant strap), page 277)	7850 mm 25' 9" ft-in
X2 Jib pendant strap (For more information see: Jib pendant strap 3 m (10 ft), page 275)	3000 mm 9' 10" ft-in
Jib pendant straps consisting of:	
X3 Jib pendant strap 3 m (10 ft) (For more information see: Jib pendant strap 3 m (10 ft), page 279)	Total X3 +
X4 Jib pendant strap 6 m (20 ft) (For more information see: Jib pendant strap 6 m (20 ft), page 279)	Total X4 +
X5 Jib pendant strap 12 m (40 ft) (For more information see: Jib pendant strap 12 m (40 ft), page 280)	Total X5
X6 Jib pendant strap on jib head 2316 (For more information see: Jib pendant strap on jib head 2316.20, page 281)	9180 mm 30' 1" ft-in

Tab. 441: Pendant straps A-frame3 to jib head 2316

Configuration of jib pendant straps (X):

Required number of jib pendant straps 3 m (10 ft) (X3) corresponds to number of jib sections 3 m (10 ft).

Required number of jib pendant straps 6 m (20 ft) (X4) corresponds to number of jib sections 6 m (20 ft).

Required number of jib pendant straps 12 m (40 ft) (X5) corresponds to number of jib sections 12 m (40 ft).



Note

For the admissible number of jib sections 3 m (10 ft), 6 m (20 ft), 12 m (40 ft), refer to the following table: (For more information see: 7.14.1 Configuration of jib, page 1244)

PROJECT:

LR 1300 SX164' + 164' ST

LOCATION: -----

BUCKNER CONTACT:

Andy Moore, PE
AndyM@BucknerHeavyLift.com

LIFT PLAN BY:

Andy Moore, PE
AndyM@BucknerHeavyLift.com

DRAWING NOTES:

Luffing Jib Pendant Straps

LR1300 SX	
Operating Mode	MB + LJ
Main Boom Length	50m (164')
Luffing Jib Length	50m (164')
Derrick Length	N/A
Superstructure CWT	273.4k
Carbody CWT	125.7k
Ballast Tray CWT	N/A



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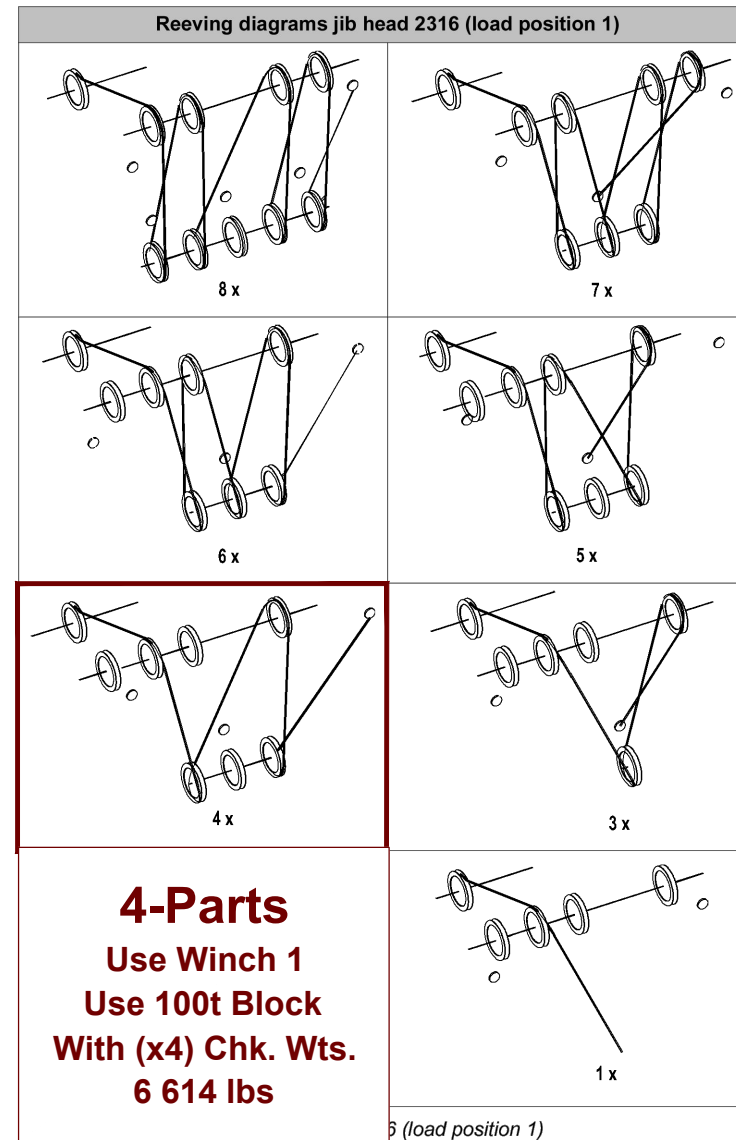
Assembly and dismantling

Luffing jib 2316



DANGER
Inadmissible number of reefings!
Boom damage, machine toppling over.

► Choose correct number of reefings as indicated in load chart.



LWNLR 1300 SX V02.01/Auslieferung/2014-07-22/en

PROJECT:

LR 1300 SX164' + 164' ST

LOCATION: -----

BUCKNER CONTACT:

Andy Moore, PE
AndyM@BucknerHeavyLift.com

LIFT PLAN BY:

Andy Moore, PE
AndyM@BucknerHeavyLift.com

DRAWING NOTES:

Luffing Jib Reeving

LR1300 SX	
Operating Mode	MB + LJ
Main Boom Length	50m (164')
Luffing Jib Length	50m (164')
Derrick Length	N/A
Superstructure CWT	273.4k
Carbody CWT	125.7k
Ballast Tray CWT	N/A

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BUCKNER
HEAVYLIFT CRANES

Rope reeving	1	2	3	4	5	6	7	8	9	10
Total boom length	Dead weight of the hook/pulley block									
190 m 623 ft	1150 kg 2,535 lb	2050 kg 4,519 lb								
180 m 590 ft	1100 kg 2,425 lb	1900 kg 4,189 lb	3000 kg 6,614 lb							
170 m 558 ft	1000 kg 2,205 lb	1800 kg 3,968 lb	2800 kg 6,173 lb							
150 m 492 ft	900 kg 1,984 lb	1600 kg 3,527 lb	2500 kg 5,511 lb							
130 m 426 ft	800 kg 1,764 lb	1400 kg 3,086 lb	2150 kg 4,740 lb							
120 m 393 ft	700 kg 1,543 lb	1300 kg 2,866 lb	2000 kg 4,409 lb	2750 kg 6,063 lb						
110 m 360 ft	650 kg 1,433 lb	1200 kg 2,646 lb	1800 kg 3,968 lb	2500 kg 5,511 lb						
100 m 328 ft	600 kg 1,323 lb	1050 kg 2,315 lb	1650 kg 3,638 lb	2300 kg 5,071 lb	2950 kg 6,504 lb					

Main Block (LJ Head)	
Hook Block 100t (3 Sheave) 28mmØ	
Parts of Line	4
Reeving Cap. (EN 13000)	131 614 lb
Block Wt.	(With x4 Chk Wts.) 6 614 lb

1.30.3 Pulley block (100 t (220,459 lb))

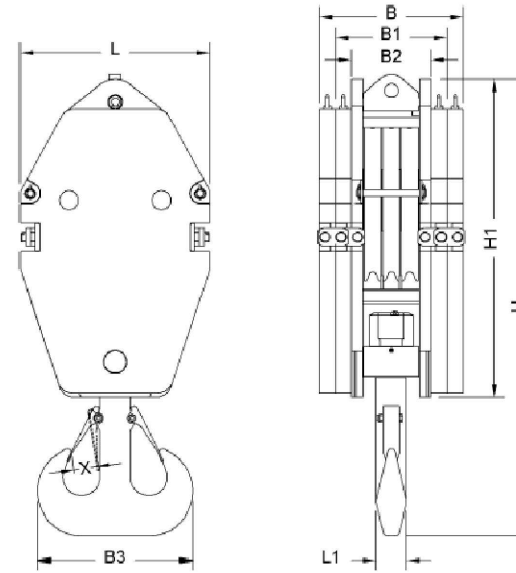


Fig. 453: Pulley block dimensions (100t (220,459 lb))

Name	Value
L Pulley block length	820 mm 2' 8" ft-in
L1 Hook length	132 mm 5.20" in
B Pulley block width with four additional weights	623 mm 2' 1" ft-in
B1 Pulley block width with two additional weights	483 mm 1' 7" ft-in
B2 Width of pulley block without additional weights	343 mm 1' 2" ft-in
B3 Hook width	672 mm 2' 2" ft-in
H Height of pulley block with hook	1994 mm 6' 7" ft-in
H1 Height of pulley block without hook	1380 mm 4' 6" ft-in
X Jaw width	100 mm 3.94" in

Name	Value
Weight with four additional weights	3000 kg 6,614 lb
Weight with two additional weights	2050 kg 4,519 lb
Weight without additional weights	1100 kg 2,425 lb
Maximum reeving	7
Rope Ø	28 mm 1.10" in

Tab. 279: Technical data pulley block (100 t (220,459 lb))

PROJECT:
LR 1300 SX164' + 164' ST

LOCATION: -----

BUCKNER CONTACT: Andy Moore, PE
AndyM@BucknerHeavyLift.com

LIFT PLAN BY: Andy Moore, PE
AndyM@BucknerHeavyLift.com

DRAWING NOTES:
Hook Blocks

LR1300 SX	
Operating Mode	MB + LJ
Main Boom Length	50m (164')
Luffing Jib Length	50m (164')
Derrick Length	N/A
Superstructure CWT	273.4k
Carbody CWT	125.7k
Ballast Tray CWT	N/A



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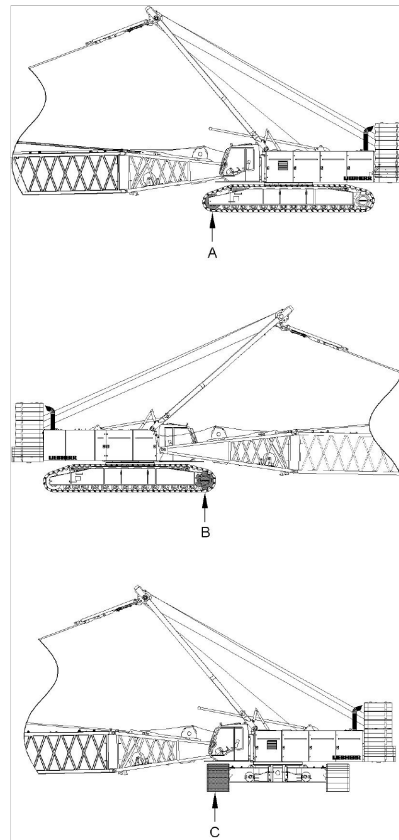
Erectability charts

The erectability charts provide details on the erection capability for all possible boom and ballast configurations.

It should be noted that auxiliary equipment attached to the boom, platforms, as well as ice and snow, can reduce the length of the self-erecting boom.

The load hook/pulley block must always be resting on the ground during erection.

These erectability charts only apply to original LIEBHERR machines and boom components in a new and proper working condition. Any damage, or modification and attachment which has not been approved by LIEBHERR, will affect the erection capabilities described below. Erection is strictly prohibited.



Erectability A: The boom is erectable over the **guide wheel**.
Erectability B: The boom is erectable over the **turas**.
Erectability C: The boom is erectable over the **side**.

PROJECT:
LR 1300 SX164' + 164' ST

LOCATION: -----
 BUCKNER CONTACT: Andy Moore, PE
 AndyM@BucknerHeavylift.com
 LIFT PLAN BY: Andy Moore, PE
 AndyM@BucknerHeavylift.com

DRAWING NOTES:
Erectability Chart 1

LR1300 SX	
Operating Mode	MB + LJ
Main Boom Length	50m (164')
Luffing Jib Length	50m (164')
Derrick Length	N/A
Superstructure CWT	273.4k
Carbody CWT	125.7k
Ballast Tray CWT	N/A

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BUCKNER
HEAVYLIFT CRANES



LR1300SX

Erectability charts

Boom configuration: Main boom + luffing jib
Ident. no.: /10539958/141906

Main boom 2821-1 + Jib 2316-2
Jib head 2316-1
Rear counterweight 273.4 [1000 lbs] + Carbody counterweight 125.7 [1000 lbs]

2 - Wide track

Table with columns for Main boom length [ft] and Jib length [ft], containing ABC/AB values for various configurations.

Load hook/pulley block always on ground

Valid only with preface

25.7.2014

Source:a10539991

18

Liebherr-Werk Nenzing GmbH, Dr. Hans Liebherr Str. 1, 6710 Nenzing, Austria/Europe

PROJECT: LR 1300 SX164' + 164' ST
LOCATION:
BUCKNER CONTACT: Andy Moore, PE
LIFT PLAN BY: Andy Moore, PE

DRAWING NOTES: Erectability Chart 2

Table with LR1300 SX title and specifications: Operating Mode (MB + LJ), Main Boom Length (50m), Luffing Jib Length (50m), etc.



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LR1300SX

Boom configuration: Main boom + luffing jib
 Ident. no.: /10539958/141906

Erectability charts

Main boom 2821-1 + Jib 2316-2 Jib head 2316-1 Rear counterweight 273.4 [1000 lbs] + Carbody counterweight 125.7 [1000 lbs]																																			
3 - Blocked Crawlers																																			
Main boom length [ft]	Jib length [ft]																																		
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Load hook/pulley block always on ground

PROJECT:
LR 1300 SX164' + 164' ST

LOCATION: -----
 BUCKNER CONTACT: Andy Moore, PE
 AndyM@BucknerHeavyLift.com
 LIFT PLAN BY: Andy Moore, PE
 AndyM@BucknerHeavyLift.com

DRAWING NOTES: Erectability Chart 3

LR1300 SX	
Operating Mode	MB + LJ
Main Boom Length	50m (164')
Luffing Jib Length	50m (164')
Derrick Length	N/A
Superstructure CWT	273.4k
Carbody CWT	125.7k
Ballast Tray CWT	N/A



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AndyM@BucknerHeavyLift.com

LIFT PLAN BY: Andy Moore, PE
AndyM@BucknerHeavyLift.com

DRAWING NOTES:
Load Chart

LR1300 SX	
Operating Mode	MB + LJ
Main Boom Length	50m (164')
Luffing Jib Length	50m (164')
Derrick Length	N/A
Superstructure CWT	273.4k
Carbody CWT	125.7k
Ballast Tray CWT	N/A

LR1300SX

Load capacities main boom + luffing jib

Ident. no.: 10539958/141906/ Main boom foot: 2821-1
Slewing range: 360 ° Main boom head: 2821-1
Foot print: 2 - Wide track
Rear counterweight [1000 lbs]: 273.4
Carbody counterweight [1000 lbs]: 125.7

Outreach [ft]	88° Main boom angle			83° Main boom angle			75° Main boom angle			65° Main boom angle			45° Main boom angle		
	Jib angle [°]	Rope pulley height [ft]	Load capacity [1000 lbs]	Jib angle [°]	Rope pulley height [ft]	Load capacity [1000 lbs]	Jib angle [°]	Rope pulley height [ft]	Load capacity [1000 lbs]	Jib angle [°]	Rope pulley height [ft]	Load capacity [1000 lbs]	Jib angle [°]	Rope pulley height [ft]	Load capacity [1000 lbs]
164 ft Main boom, Load fall point 1 - Jib head															
Jib head (2316-1) 164 ft Jib															
50	78.0	334	128.8												
55	76.3	332	128.3												
60	74.5	331	126.3												
65	72.6	330	124.0												
70	70.8	328	119.9												
75	68.9	326	116.8												
78				73.0	328	118.8									
80	67.0	324	113.2	72.4	326	118.7									
85	65.1	322	109.7	70.6	326	113.3									
90	63.2	319	106.6	68.7	324	105.5									
95	61.2	316	104.2	66.8	322	98.7									
100	59.2	314	98.8	64.9	320	92.6									
105	57.1	310	93.0	62.9	318	87.2									
110	55.0	307	87.9	61.0	315	82.4									
115	52.8	303	83.2	58.9	312	78.0									
120	50.5	299	79.0	56.8	308	74.0									
122							65.0	315	64.5						
125	48.2	295	75.1	54.7	305	70.3	63.9	314	62.8						
130	45.8	290	71.6	52.5	301	67.0	61.9	311	59.8						
135	43.3	285	68.3	50.1	297	63.9	59.9	308	57.0						
140	40.6	279	65.3	47.7	292	61.1	57.8	305	54.4						
145	37.8	273	62.0	45.5	288	58.5	55.7	302	52.1						
150	34.8	266	59.0	42.7	282	56.0	53.5	298	49.9						
155	31.6	258	55.6	40.3	277	53.8	51.3	294	47.8						
160	28.0	249	51.9	37.1	270	51.6	49.0	290	45.9						
165	23.9	238	48.1	34.0	262	49.6	46.8	285	44.1						
170	19.0	225	44.2	31.2	256	47.8	44.4	281	42.5						
174										55.0	290	35.0			
175				26.9	245	46.0	41.8	275	40.9	54.4	289	34.6			
180				23.4	236	44.4	38.7	268	39.4	52.9	287	33.4			
185				18.4	222	42.8	36.2	263	38.0	50.7	283	32.2			
190							33.0	255	36.7	48.3	278	31.0			
195							29.6	247	35.4	45.9	274	29.9			
200							25.8	237	34.2	43.4	268	28.9			
205							22.3	228	33.1	40.8	263	27.9			
210							17.0	214	32.0	38.0	256	27.0			
215										35.0	250	26.1			
220										31.8	242	25.2			
225										28.2	233	24.4			
230										24.2	222	23.6			
235										19.4	210	22.8			
260													35.0	216	12.5
260													35.0	216	12.5
265													33.0	211	12.1
270													29.5	202	11.7
275													25.7	192	11.3
280													21.2	180	10.8
285													15.4	165	10.4



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