

BUCKNER HEAVYLIFT CRANES

Build Package – Liebherr LR1300 SX– CR3309

Contents	
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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 SX 243' 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
Main Boom Length	74m (243')
Luffing Jib Length	N/A
Derrick Length	N/A
Superstructure CWT	229.3K
Carbody CWT	125.7k
Ballast Tray CWT	N/A

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1300SX\LR 1300 SX – 2821 Main Boom 243' (74m)
ST – 229.3k CWT.dwg

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BUCKNER
HEAVYLIFT CRANES

7.5 Main boom 2821

System-relevant information for main boom 2821:

- Configuration of main boom
 - Installation position of rope guide (type A)
 - Mid-point suspensions installation positions
- Lengths of mid-point suspensions
- Overview of main boom 2821 steel pendant straps
- Overview of main boom 2821 CF pendant straps
- Reeving diagrams for one rope across main boom head 2821 (load position1)
- Reeving diagrams for two ropes across main boom head 2821 (load position1)
- Reeving diagrams for one rope across auxiliary jib (36 t (79300 lb)) on main boom head 2821 (load position1)
- Reeving diagrams for two ropes across auxiliary jib (36 t (79300 lb)) and main boom head 2821 (load position 1)
- Reeving diagrams jib luffing winch as auxiliary winch

7.5.1 Configuration of main boom



DANGER

Assembly with excessive main boom length!
Structural failure.

► Check main boom length in load chart for validity.

Main boom length	Configuration of main boom (symbolic)
20 m 66 ft A)	
23 m 75 ft A)	
26 m 85 ft A)	
29 m 95 ft A)	
32 m 105 ft A)	
35 m 115 ft A)	
38 m 125 ft A)	
41 m 135 ft A)	
44 m 144 ft A)	
47 m 154 ft A)	

Main boom length	Configuration of main boom (symbolic)
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. 388: Configuration of main boom 2821

- S - Installation position rope guide (type A)
- X1 - Installation position mid-point suspension 1
- X2 - Installation position mid-point suspension 2

LWNL.R.LR.1300.SX.V02.01/Auslieferung/2014-07-22/en

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LR 1300 SX 243' ST

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

DRAWING NOTES:
Boom and Luffing Jib Config.

LR1300 SX	
Operating Mode	MB
Main Boom Length	74m (243')
Luffing Jib Length	N/A
Derrick Length	N/A
Superstructure CWT	229.3K
Carbody CWT	125.7k
Ballast Tray CWT	N/A

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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

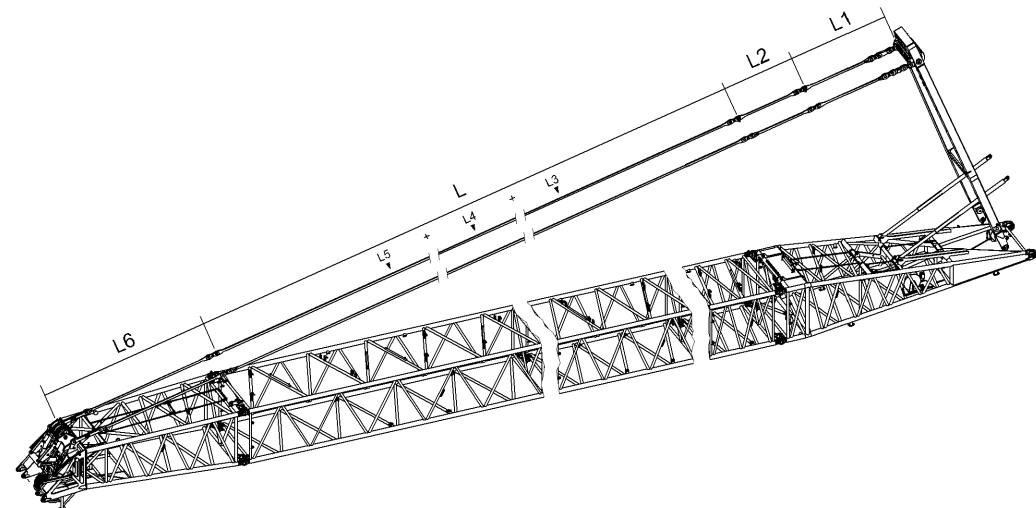


Fig. 2636: Overview of main boom 2821 steel pendant straps

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:	
L 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

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

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

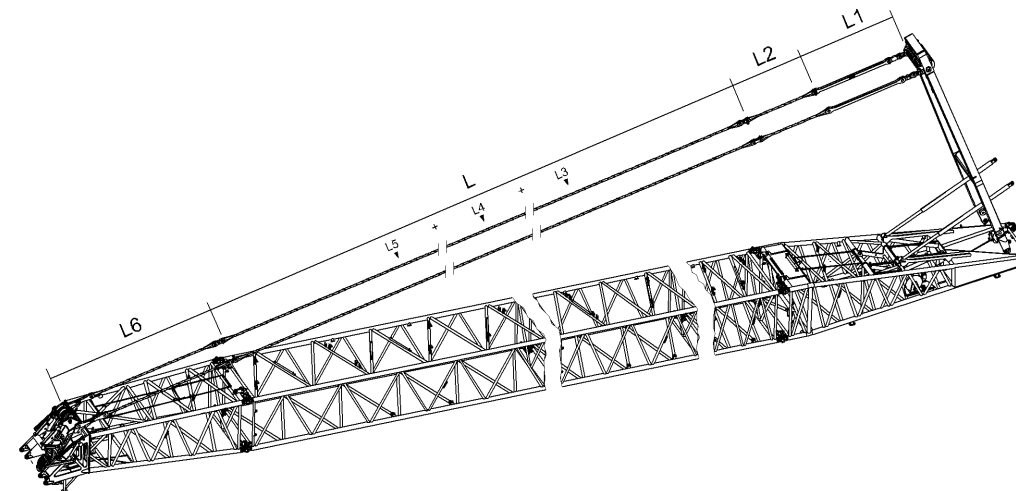


Fig. 2637: Overview of main boom 2821 CF pendant straps

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

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

PROJECT:

LR 1300 SX 243' ST

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

DRAWING NOTES:
Boom Pendant Straps (2)

LR1300 SX	
Operating Mode	MB
Main Boom Length	74m (243')
Luffing Jib Length	N/A
Derrick Length	N/A
Superstructure CWT	229.3K
Carbody CWT	125.7k
Ballast Tray CWT	N/A

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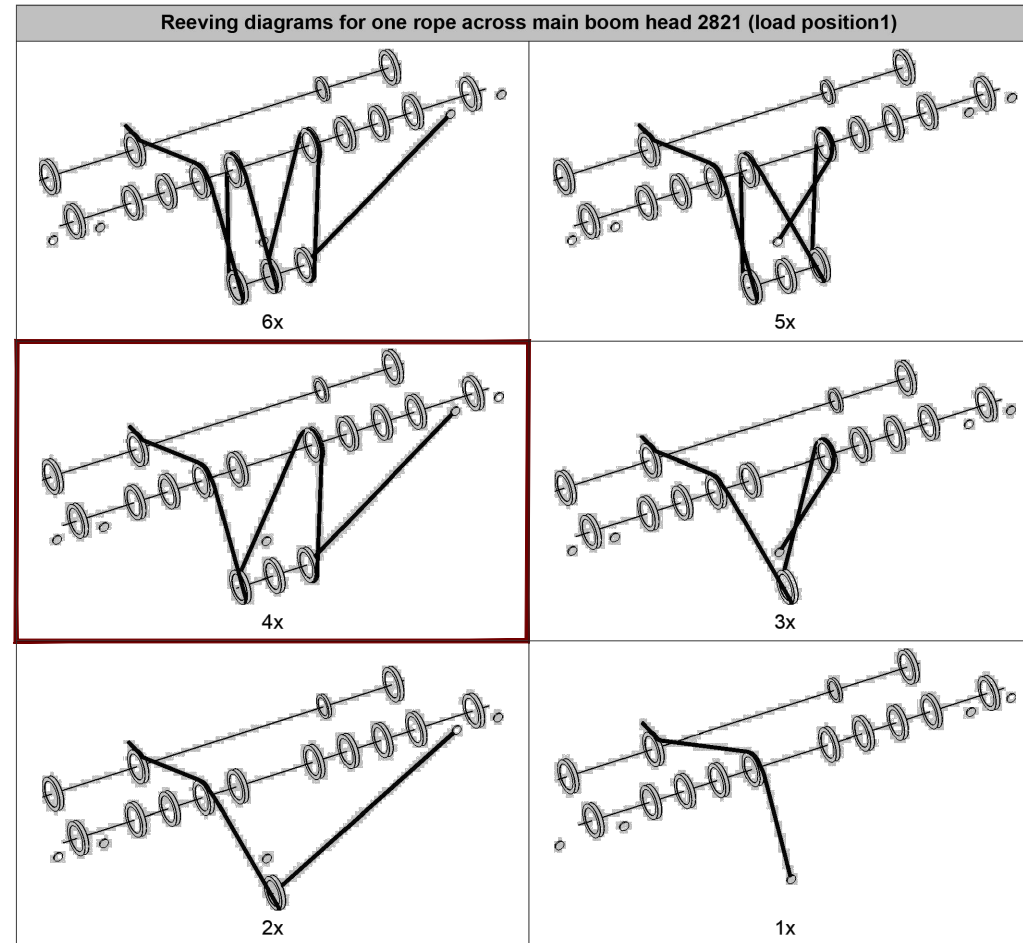
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Assembly and dismantling

Main boom 2821



Tab. 469: Reeving diagrams for one rope across main boom head 2821 (load position 1)

LWN/LR.v03.04/Auslieferung2015-11-30/en

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LR 1300 SX 243' ST

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

DRAWING NOTES:
Main Reeving

LR1300 SX	
Operating Mode	MB
Main Boom Length	74m (243')
Luffing Jib Length	N/A
Derrick Length	N/A
Superstructure CWT	229.3K
Carbody CWT	125.7k
Ballast Tray CWT	N/A

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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
Load capacity	15.2 t 33,510 lb	30.1 t 66,358 lb	45.0 t 99,207 lb	59.7 t 131,614 lb	74.2 t 163,581 lb

Reeving	6	7	8	9	10
Load capacity	88.6 t 195,327 lb	102.9 t 226,852 lb	117.0 t 257,937 lb	131.0 t 288,801 lb	144.8 t 319,225 lb

Reeving	11	12	13	14	15
Load capacity	158.5 t 349,428 lb	172.1 t 379,410 lb	185.5 t 408,951 lb	198.8 t 438,272 lb	212.0 t 467,373 lb

Reeving	16	17	18	19	20
Load capacity	225.0 t 496,033 lb	237.9 t 524,472 lb	250.7 t 552,691 lb	263.3 t 580,469 lb	275.8 t 608,026 lb

LWN/TLT LR 1300 SX 10539958 14 1806/Main boom/2014-07-24/rev

Main Hook Block	
Hook Block 160t (5 Sheave) 28mmØ	
Parts of Line	4
Reeving Cap. (EN 13000)	131 614 lb
Block Wt.	(With 2 weights) 6 173 lb

Rope reeving	1	2	3	4	5	6	7	8	9
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				
90 m 295 ft	550 kg 1,213 lb	950 kg 2,094 lb	1500 kg 3,307 lb	2050 kg 4,519 lb	2650 kg 5,842 lb	3300 kg 7,275 lb			
80 m 262 ft	500 kg 1,102 lb	850 kg 1,874 lb	1350 kg 2,976 lb	1850 kg 4,078 lb	2350 kg 5,181 lb	2900 kg 6,393 lb	3500 kg 7,716 lb		
70 m 230 ft	450 kg 992 lb	750 kg 1,653 lb	1200 kg 2,646 lb	1600 kg 3,527 lb	2100 kg 4,630 lb	2550 kg 5,622 lb	3100 kg 6,834 lb	3600 kg 7,937 lb	
60 m 197 ft	350 kg 772 lb	650 kg 1,433 lb	1000 kg 2,205 lb	1400 kg 3,086 lb	1800 kg 3,968 lb	2200 kg 4,850 lb	2850 kg 5,842 lb	3100 kg 6,834 lb	3600 kg 7,937 lb

PROJECT:
LR 1300 SX 243' 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
Main Boom Length	74m (243')
Luffing Jib Length	N/A
Derrick Length	N/A
Superstructure CWT	229.3K
Carbody CWT	125.7k
Ballast Tray CWT	N/A

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Assembling the basic machine

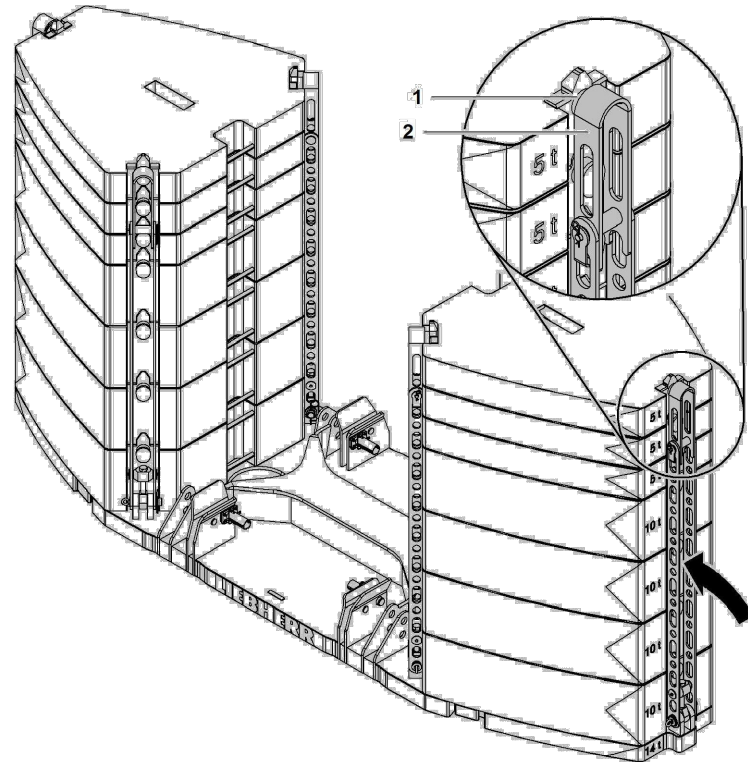


Fig. 3123: Folding up and pinning counterweight tie-downs

- 1 Rigging point
- 2 Counterweight tie-down
- ▶ Fold up counterweight tie-downs 2.
- ▶ Lift counterweight tie-down 2 above rigging point 1 of counterweight slab.
- ▶ Repeat procedure with all counterweight tie-downs 2.

Assembling the basic machine

Number of counterweight slabs 10 t (22,046 lb)	or	Number of counterweight slabs 5 t (11,023 lb)
6	or	10
4	or	14
2	or	18
Possible combination of the counterweight slabs at 114 t (251,323 lb) counterweight weight		
8	or	4
6	or	8
4	or	12
2	or	16
Possible combination of the counterweight slabs at 104 t (229,277 lb) counterweight weight		
8	or	2
6	or	6
4	or	10
2	or	14
Possible combination of the counterweight slabs at 94 t (207,231 lb) counterweight weight		
8	or	0
6	or	4
4	or	8
2	or	12
Possible combination of the counterweight slabs at 74 t (163,140 lb) counterweight weight		
6	or	0
4	or	4

PROJECT:
LR 1300 SX 243' ST

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

DRAWING NOTES:
Counterweight

LR1300 SX	
Operating Mode	MB
Main Boom Length	74m (243')
Luffing Jib Length	N/A
Derrick Length	N/A
Superstructure CWT	229.3K
Carbody CWT	125.7k
Ballast Tray CWT	N/A

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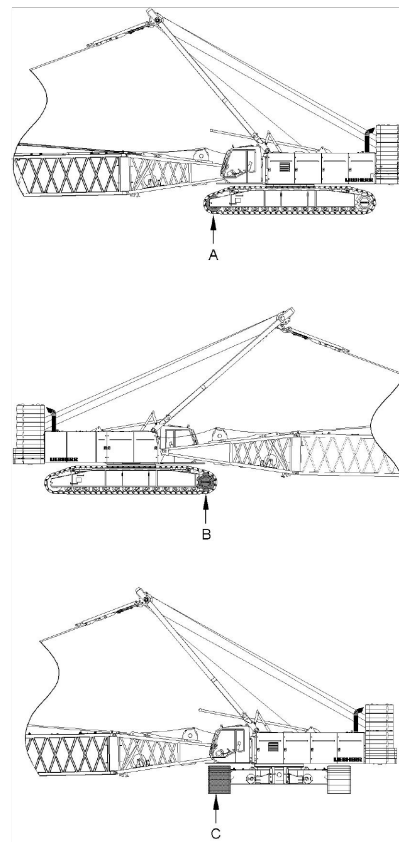
Erectability charts

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**.

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DRAWING NOTES:
Erectability Chart 1

LR1300 SX	
Operating Mode	MB
Main Boom Length	74m (243')
Luffing Jib Length	N/A
Derrick Length	N/A
Superstructure CWT	229.3K
Carbody CWT	125.7k
Ballast Tray CWT	N/A

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Boom configuration: Main boom
Ident. no.: /10539958/141906

Main boom 2821-1 Main boom head 2821-2								
2 - Wide track								
Main boom length [ft]	Rear counterweight [1000 lbs] Carbody counterweight [1000 lbs]							
	0.0 0.0	0.0 125.7	119.0 0.0	163.1 0.0	207.2 125.7	229.3 125.7	251.3 125.7	273.4 125.7
66	ABC	ABC	ABC	ABC	ABC	ABC	ABC	ABC
75	ABC	ABC	ABC	ABC	ABC	ABC	ABC	ABC
85	AB	ABC	ABC	ABC	ABC	ABC	ABC	ABC
95	AB	ABC	ABC	ABC	ABC	ABC	ABC	ABC
105	-	ABC	ABC	ABC	ABC	ABC	ABC	ABC
115	-	ABC	ABC	ABC	ABC	ABC	ABC	ABC
125	-	AB	ABC	ABC	ABC	ABC	ABC	ABC
135	-	AB	ABC	ABC	ABC	ABC	ABC	ABC
144	-	-	ABC	ABC	ABC	ABC	ABC	ABC
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203	-	-	-	-	ABC	ABC	ABC	ABC
213	-	-	-	-	ABC	ABC	ABC	ABC
223	-	-	-	-	ABC	ABC	ABC	ABC
233	-	-	-	-	AB	ABC	ABC	ABC
243	-	-	-	-	AB	AB	ABC	ABC
253	-	-	-	-	-	AB	AB	ABC
262	-	-	-	-	-	-	AB	AB
272	-	-	-	-	-	-	-	AB

Load hook/pulley block always on ground

LR1300SX Erectability charts

PROJECT:
LR 1300 SX 243' ST

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

DRAWING NOTES:
Erectability Chart 2

LR1300 SX	
Operating Mode	MB
Main Boom Length	74m (243')
Luffing Jib Length	N/A
Derrick Length	N/A
Superstructure CWT	229.3K
Carbody CWT	125.7k
Ballast Tray CWT	N/A

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LR1300SX

Load capacities main boom

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]: 229.3
 Carbody counterweight [1000 lbs]: 125.7

Outreach [ft]	Main boom angle [°]	Rope pulley height [ft]	Load capacity [1000 lbs]
243 ft Main boom, Load fall point			
Main boom head			
Main boom head (2821-1)			
26	86	249	291.8
30	85.2	249	291.8
35	84	248	278.3
40	82.8	248	252.7
45	81.6	247	217.5
50	80.4	246	190.0
55	79.2	245	167.7
60	78	244	147.7
65	76.8	243	131.4
70	75.5	242	117.9
75	74.3	240	106.6
80	73.1	239	96.9
85	71.8	237	88.5
90	70.6	235	81.2
95	69.3	233	74.7
100	68	231	69.0
105	66.8	229	63.9
110	65.5	227	59.3
115	64.1	224	55.2
120	62.8	222	51.4
125	61.5	219	48.0
130	60.1	216	44.9
135	58.7	213	42.0
140	57.3	210	39.3
145	55.9	206	36.8
150	54.4	203	34.5
155	53.3	200	32.6
160	51.8	196	30.8
165	50.2	192	28.7
170	48.7	187	27.0
175	47	182	25.3
180	45.4	178	23.8
185	43.7	172	22.3
190	41.9	167	20.9
195	40.1	161	19.6
200	38.2	154	18.4
205	36.2	148	17.2
210	34.1	140	16.1
215	31.8	132	15.0
220	29.5	123	13.9
225	26.9	114	13.0
230	24	103	12.0
235	20.8	90	11.1
240	17	75	10.2

Valid only with preface

29
 Liebherr-Werk Nenzing GmbH, Dr. Hans Liebherr Str. 1, 6710 Nenzing, Austria/Europe

17.9.2015
 Source:a10539989

PROJECT:
 LR 1300 SX 243' ST

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

DRAWING NOTES:
 Load Chart

LR1300 SX	
Operating Mode	MB
Main Boom Length	74m (243')
Luffing Jib Length	N/A
Derrick Length	N/A
Superstructure CWT	229.3K
Carbody CWT	125.7k
Ballast Tray CWT	N/A

FILE: D:\Andy Moore\OneDrive - Buckner Heavylift
 Cranes\Documents -
 Engineering\Drawings\BHL\Buckner\Build Sheets\LR
 1300SX\LR 1300 SX - 2821 Main Boom 243' (74m)
 ST - 229.3k CWT.dwg

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Revisions

All Sheets Same Revision Level

Rev.	Date	Description
000	03.19.2024	Preliminary Planning & Initial Layout
001	03.19.2024	Changed Parts Of Line
002	03.19.2024	Added CWT Sheet
003	-----	-----
004	-----	-----
005	-----	-----
006	-----	-----
007	-----	-----
008	-----	-----
009	-----	-----
010	-----	-----

SHEET: 009 OF 009

