



LSC INFORMATION

1.4. General description

The **ALE Heavylift Innovation Series Lightweight Service Crane (LSC)** is a lightweight, compact crane, which can be used for lifting payloads up to 60 kN. It's outreach ranges from 2.5 m to 11 m. The LSC has full crane functionality. This includes lifting, luffing/topping, slewing and load moment monitoring/safety. It can be used in offshore and onshore situations and is classified as land based crane, as shipboard/industrial crane (and as offshore crane). Load charts and software settings are available for each of these use cases. The LSC's configurable masts allow the crane to be used in confined spaces.

The LSC is designed and certified for safe operations, under supervision of third party surveyors. Manual lowering is possible in emergency situations.

A great advantage of the LSC is its modular design, with 90% of the structural items weighing up to only 50 kg. It can be completely built by hand by two fitters within one day, with no additional equipment required. A few parts weigh up to 120 kg and are hoisted into place using a hoist on the LSC itself.

Control and monitoring come from a belly mounted wireless control panel.

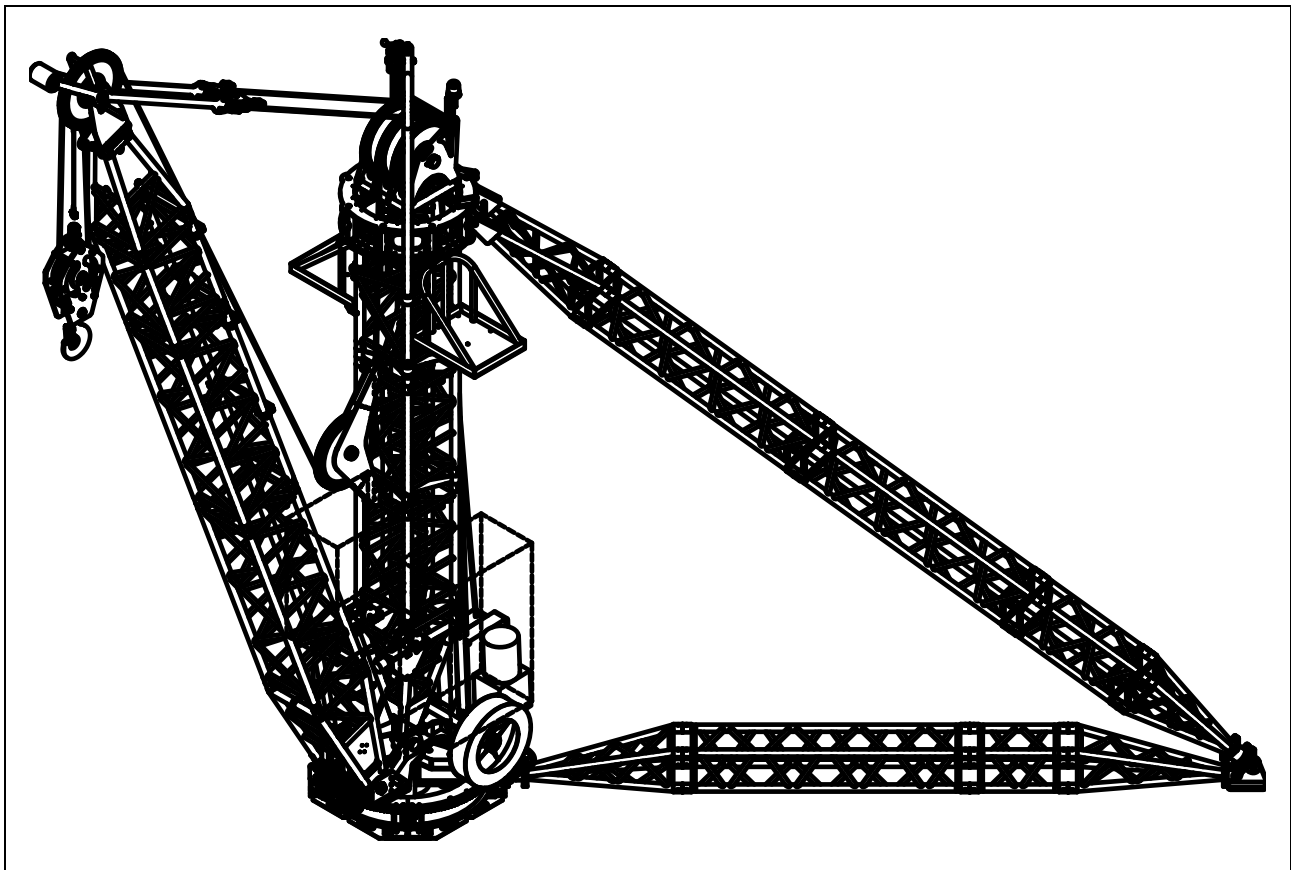


Figure 1-1 LSC overview

Design:

- The base configuration has a single boom of 8.5 / 10.5 or 12.5 m and a back mast of 5 m.
- Lifting of the load and luffing of the boom is done by traction winches.
- The LSC will be held in position by guy wire or braced laces that are mounted to the crown ring of the back mast.

Lightweight Service Crane (LSC)		Part list			010640-001	
Part	Description	Length [mm]	Width [mm]	Height [mm]	Quantity	Weight [kg]



Base
190640-211

1634 1634 211 1 147.0



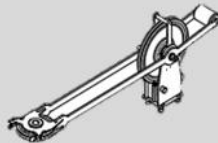
Slewing superstructure
190640-221

858 586 528 1 112.0



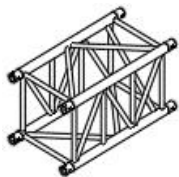
Back mast top
190640-261

790 790 1379 1 230.6



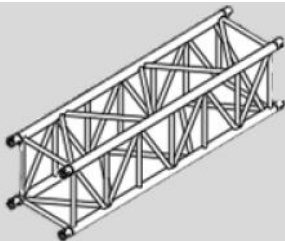
Main mast top
190640-281

2361 461 860 1 79.2



Truss 500 alu 1000
190640-431

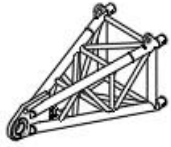
530 530 1000 Var. 22.0



Truss 500 alu 2000mm
190640-432

530 530 2000 Var. 39.0

Lightweight Service Crane (LSC)		Part list			010640-001	
Part	Description	Length [mm]	Width [mm]	Height [mm]	Quantity	Weight [kg]



Truss 500 alu Backmast foot
190640-451

530

530

1180

1

29.0



Alu backmast hing rotating top
190640-453

990

990

268

1

64.0



Sheaveframe
190640-458

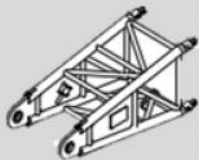
1160

530

1250

1

53.8



Truss 500 alu Mainmast foot
190640-461

530

530

1180

1

34.6



Truss 500 alu mainmast reducer top
190640-462

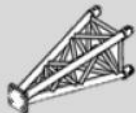
530

530

1000

1

22.0



Truss 299 alu bracing foot
190640-601

357.8

357.8

900

2

12.0



Truss 299 alu bracing top
190640-602

357.8

357.8

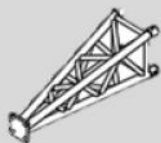
1145

2

15.0

Lightweight Service Crane (LSC)		Part list			010640-001	
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Part	Description	Length [mm]	Width [mm]	Height [mm]	Quantity	Weight [kg]
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Truss 299 alu horizontal bracing
top/foot
190640-603

357.8

357.8

1100

4

14.0



6t Hook

420

140

1124

1

30.0



Truss 299 alu 1000mm
190640-441

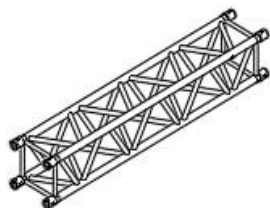
357.8

357.8

1000

Var.

13.7



Truss 299 alu 2000mm
190640-442

357.8

357.8

1000

Var.

22.9



Bracing connection
190640-604

150

150

105

Var.

6.0



Tirak
X3050

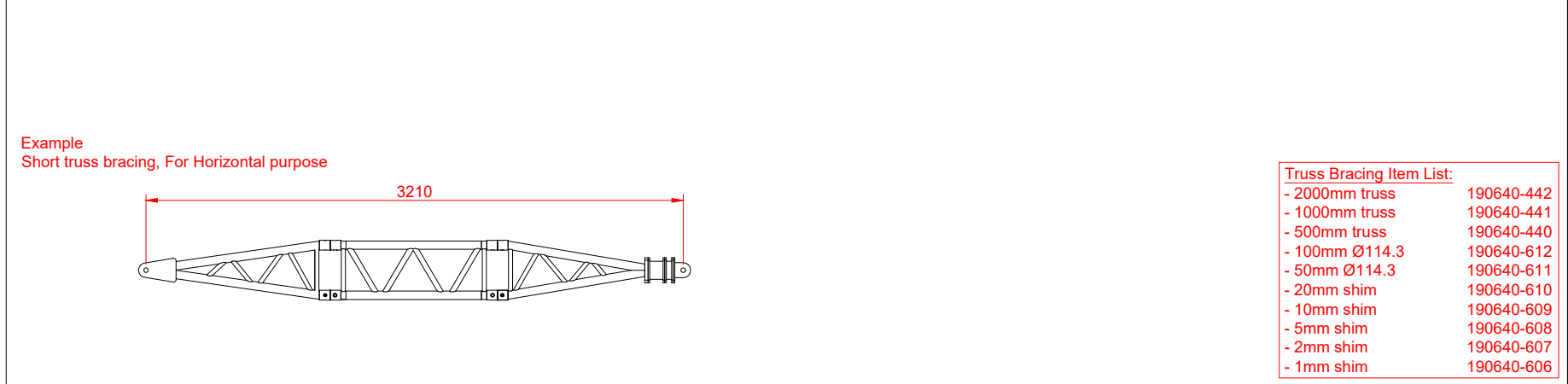
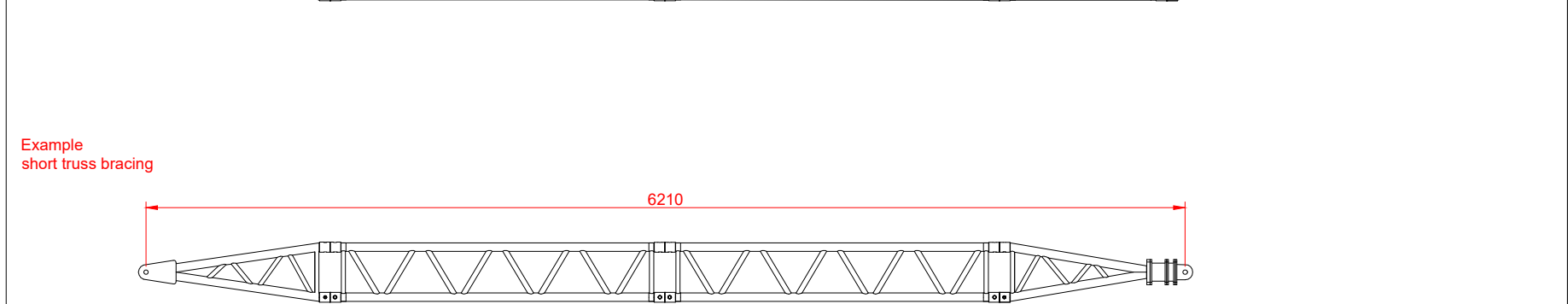
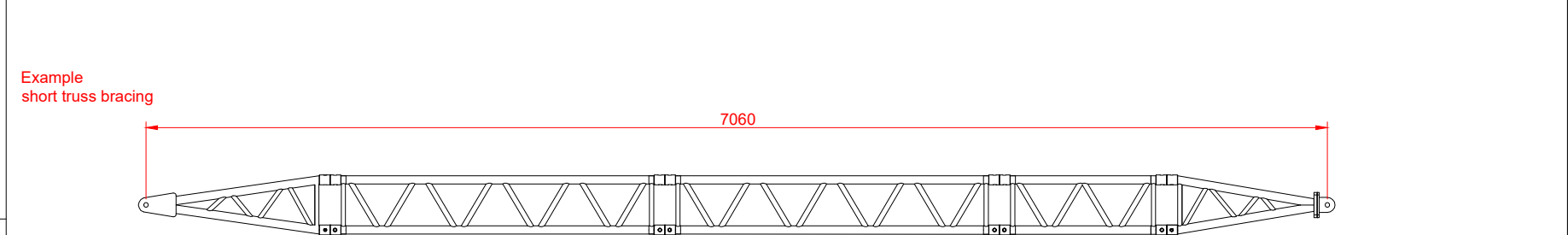
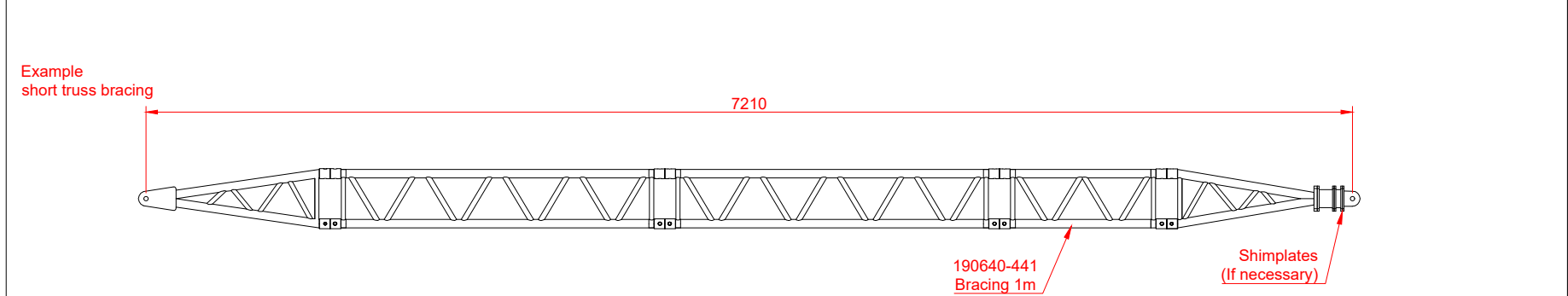
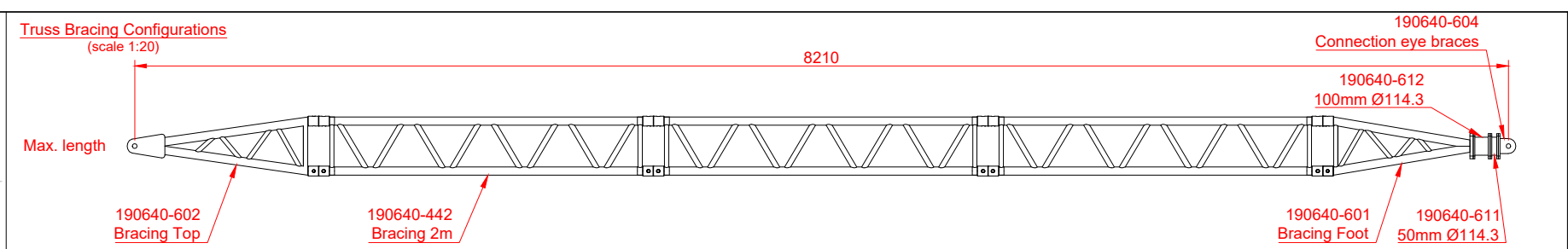
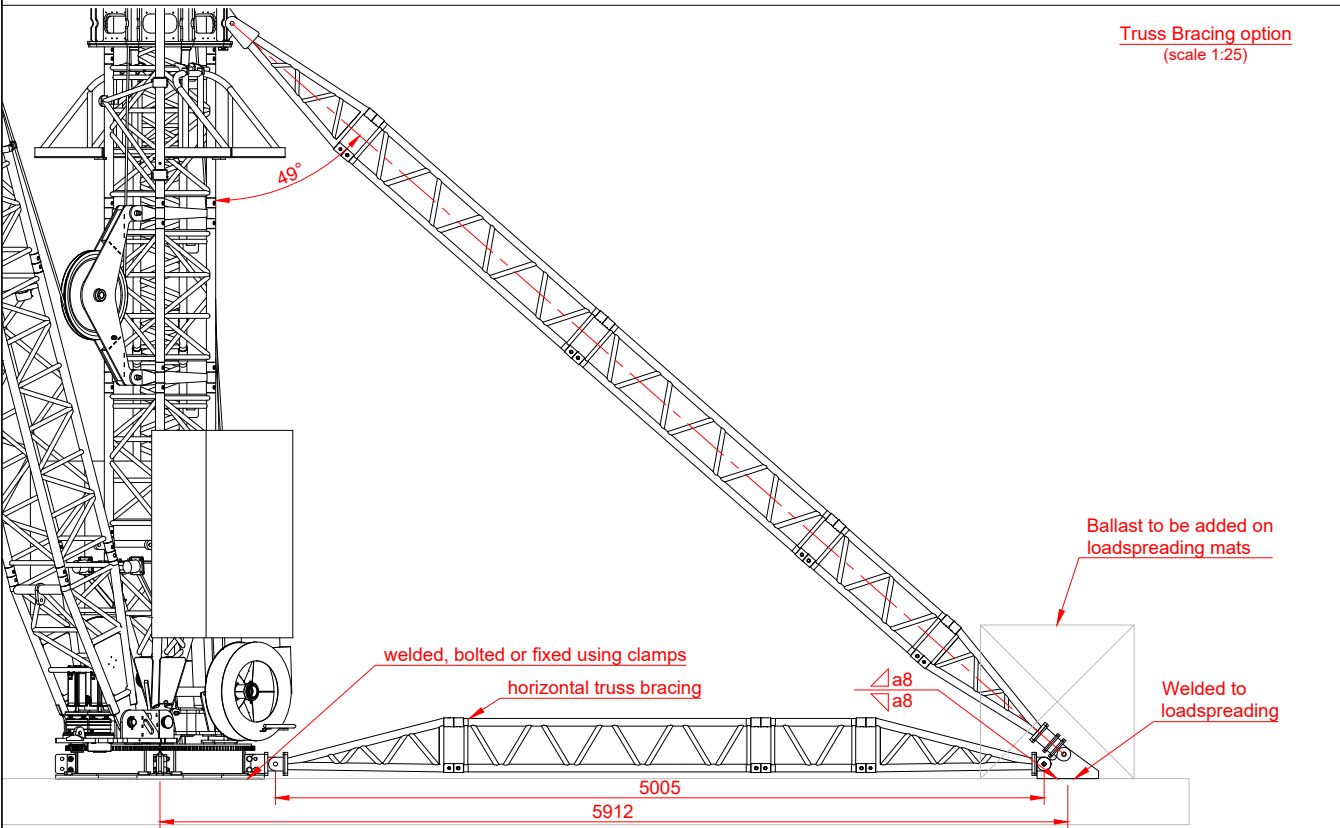
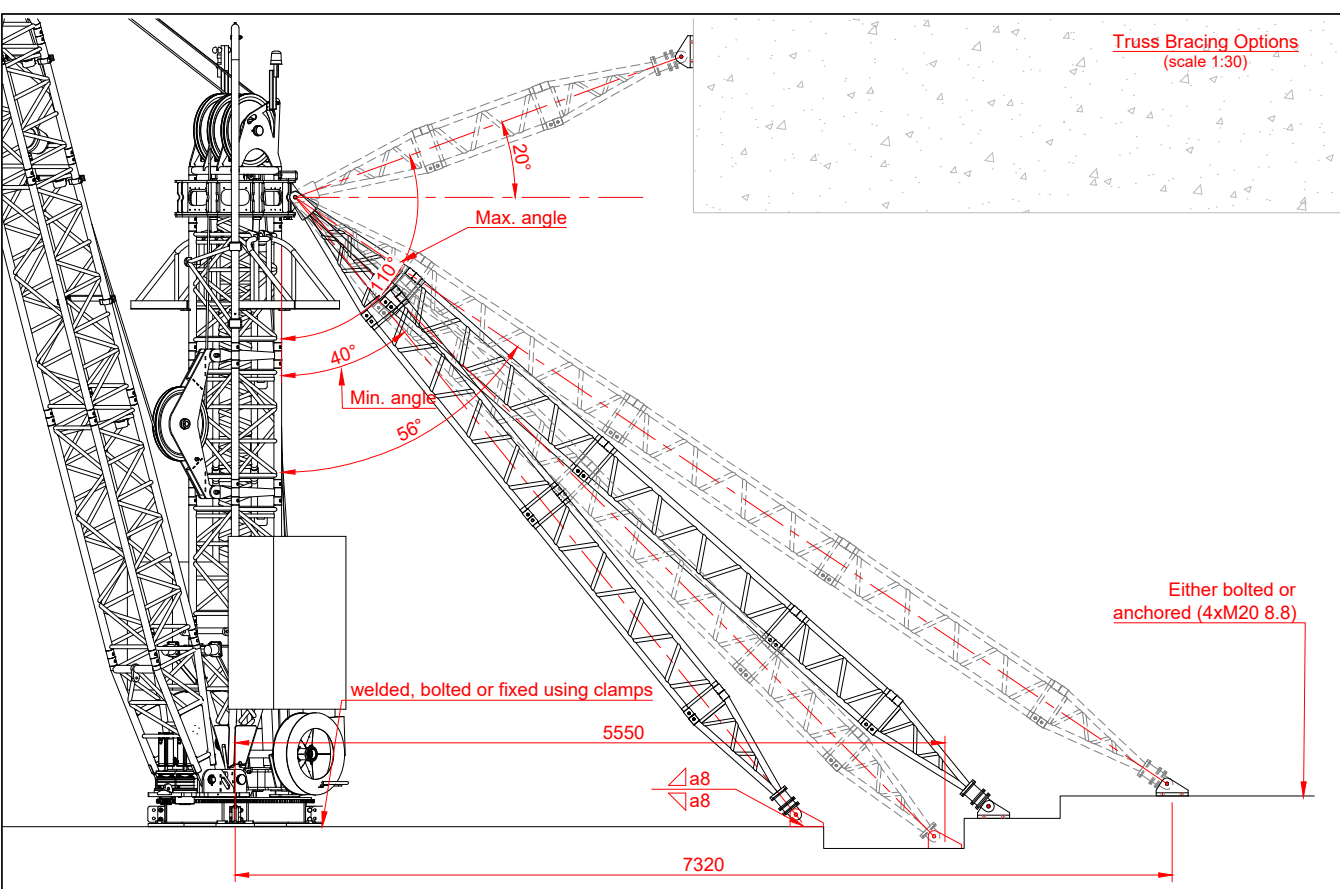
405

375

700

1

117.0



Truss Bracing Item List:	
- 2000mm truss	190640-442
- 1000mm truss	190640-441
- 500mm truss	190640-440
- 100mm Ø114.3	190640-612
- 50mm Ø114.3	190640-611
- 20mm shim	190640-610
- 10mm shim	190640-609
- 5mm shim	190640-608
- 2mm shim	190640-607
- 1mm shim	190640-606

DRAWING NOTES:

-ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED.

-ALL WEIGHTS ARE IN t (METRIC TONNES) UNLESS OTHERWISE STATED.

TECHNICAL NOTES:

- Reference: User Manual RD-MAN-045.
Installation: Paragraph 6.4



Duty chart for LSC (Double hoist rope)

	[m]	[ft]
Backmast length	4.970	16' 4"
Mainmast length	8.575	28' 2"
LCM	7.060	23' 2"

LR		P	
[m]	[ft]	[t]	[lbs]
2.5	8' 2"	5.4	11905
3	9' 10"	5.4	11905
4	13' 1"	5.1	11244
5	16' 4"	4.5	9921
6	19' 8"	4.0	8818
7	22' 11"	3.6	7937

	[m]	[ft]
Backmast length	4.970	16' 4"
Mainmast length	10.575	34' 8"
LCM	7.060	23' 2"

LR		P	
[m]	[ft]	[t]	[lbs]
3	9' 10"	4.4	9700
4	13' 1"	4.4	9700
5	16' 4"	4.4	9700
6	19' 8"	4.3	9480
7	22' 11"	3.9	8598
8	26' 2"	3.5	7716
9	29' 6"	3.2	7055

	[m]	[ft]
Backmast length	5,0	16' 5"
Mainmast length	12,5	41' 0"
LCM	7,1	23' 4"

LR		P	
[m]	[ft]	[t]	[lbs]
3,5	16' 5"	3,2	7055
4	13' 1"	3,1	6834
5	16' 4"	3,1	6834
6	19' 8"	3,1	6834
7	22' 11"	3,1	6834
8	26' 2"	3,1	6834
9	29' 6"	3,1	6834
10	32' 9"	2,7	5952
11	36' 1"	2,2	4850

LEGEND:
LR = Load Radius
P = Payload
LCM = Length Connection Mast
BM = Back Mast
MM = Main Mast

MAIN MAST LENGTH (m)

8.5m / 27' 11"

10.5m / 34' 5"

12.5m / 41'

LCM: 7060
[23'-2"]

BM: 4970
[16'-4"]

MM: 8575
[28'-2"]

OUTREACH

☐ Witnessed ☐ Monitored ☒ Reviewed



M.A. Boersma
23/06/2022
Rotterdam Office
Lloyd's Register Maritiem Nederland BV

LR426.1.2016.09

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- ALL DETAILS ARE PROVISIONAL AND ARE SUBJECT TO CONFIRMATION.

REFERENCES:

- L665-1-001-01-D

NOTES:

- * OTHER CONFIGURATIONS AVAILABLE ON REQUEST
- * CAN BE ASSEMBLED COMPLETELY BY HAND
- * NO ADDITIONAL EQUIPMENT REQUIRED FOR ASSEMBLING
- * ASSEMBLING BY 2 MAN
- * LIGHT WEIGHT MEANS LOW SHIPPING COST
- * OPERATIONAL WIND SPEED: < 13.8m/s (30.8mph)
- * DURING STORM (WIND SPEED: > 13.9m/s (30.9mph)

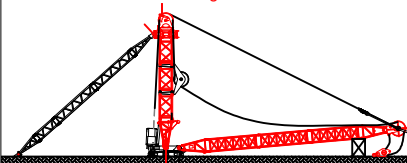
STANDBY PROCEDURE:

*PRE CHECK THE WEATHER FORECAST BEFORE STANDBY PERIOD

- If expected windspeeds < 13.8m/s (30.8mph)
 - no load in hoisting hook block
 - Main mast in parking position
 - All emergency stops active(See manual for detailed standby procedure)

- If expected windspeed > 13.9m/s (30.9mph)
 - No load in hoisting hook block
 - Boom-down the main mast
 - Lower hook block on the ground
 - All emergency stops active(See manual for detailed standby procedure)

STANDBY
During storm



E	18-05-2022	DD	HdH	Crane configuration update
D	29-05-2019	MvdL	RA	Comment added
C	13-02-2019	MvdL	RA	Operational Wind speed added
B	25-09-2018	MvdL	RA	10.5m Mast added
A	31-08-2018	MvdL	RA	First Issue

Duty chart for LSC (Single hoist rope)

	[m]	[ft]
Backmast length	4.970	16' 4"
Mainmast length	8.575	28' 2"
LCM	7.060	23' 2"

LR		P	
[m]	[ft]	[t]	[lbs]
2.5	8' 2"	3.0	6614
3	9' 10"	3.0	6614
4	13' 1"	3.0	6614
5	16' 4"	2.7	5952
6	19' 8"	2.4	5291
7	22' 11"	2.2	4850

LEGEND:
LR = Load Radius
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4	13' 1"	3.0	6614
5	16' 4"	2.8	6173
6	19' 8"	2.6	5732
7	22' 11"	2.4	5291
8	26' 2"	2.2	4850
9	29' 6"	2.0	4409

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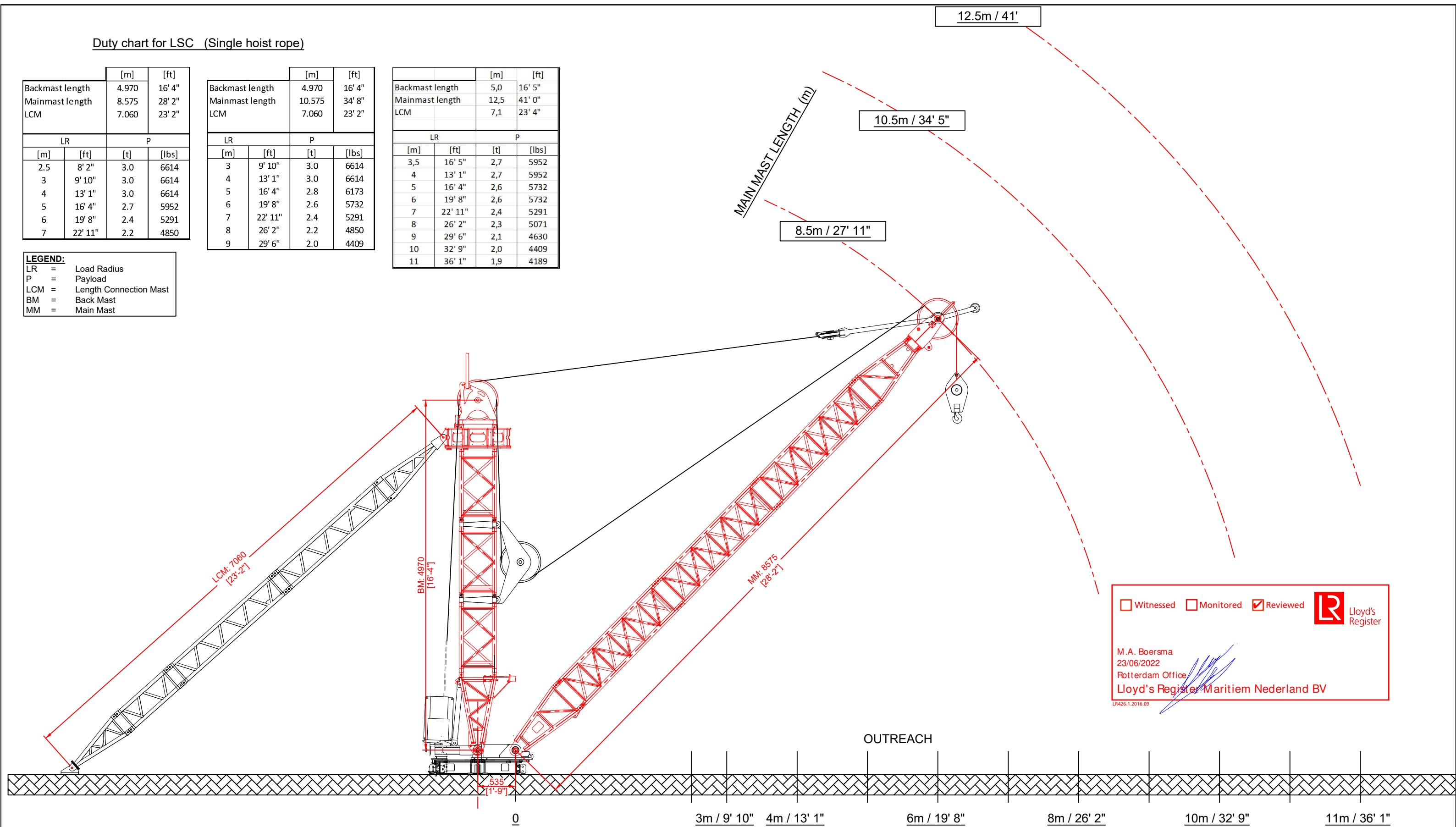
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4	13' 1"	2,7	5952
5	16' 4"	2,6	5732
6	19' 8"	2,6	5732
7	22' 11"	2,4	5291
8	26' 2"	2,3	5071
9	29' 6"	2,1	4630
10	32' 9"	2,0	4409
11	36' 1"	1,9	4189

MAIN MAST LENGTH (m)

8.5m / 27' 11"

10.5m / 34' 5"

12.5m / 41'



☐ Witnessed ☐ Monitored ☒ Reviewed



M.A. Boersma
23/06/2022
Rotterdam Office
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LR426.1.2016.09

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REFERENCES:

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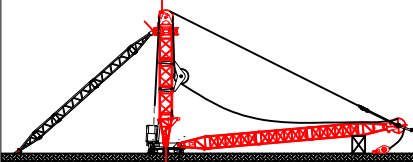
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During storm



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Operation:



LSC on support beams 820' above sidewalk