

Load test on Lifting device 5711-110 XL-lyft / XL-2500

(3 appendices)

1. Summary

RISE have on commission by Lundmark Safety Technologies AB performed load test on Lifting device art.no. 5711-110 XL-lyft / XL-2500, called XL-lyft further in the report, see figure 1 and appendix 1 for the XL-lyft. Testing was carried out in RISE facilities in Skellefteå on the large test beam. The test item was provided by Lundmark Safety Technologies AB.

The XL-lyft is marked with working load limit of 2 500kg and is tested to manage 1,5 times the work load which is 3 750kg (36 825N). The XL-lyft manage this load without any permanent deformations.

Table 1. Loads in lifting test.

Test no.	Lifting method	Load (kg)	Load (N)	Comments
1	Lifting strings	3 750	36 825	No visible deformations
		7 000	68 740	The XL-lyft gets a very small s-shape. Test is aborting.
2	Lifting hooks	3 750	36 825	No visible deformations
		7 000	68 740	The XL-lyft gets a very small s-shape. Test is aborting.
3	Lifting hooks	3 750	36 825	Lifting in 20° angle from the test beam, gets a small s-shapes, see fig 5 in appendix. Test is aborting.

Measurement uncertainty is a measure of the correspondence between the measurement value and the true value of the measurement variable. The measurement uncertainty has been calculated with a 95% confidence interval.

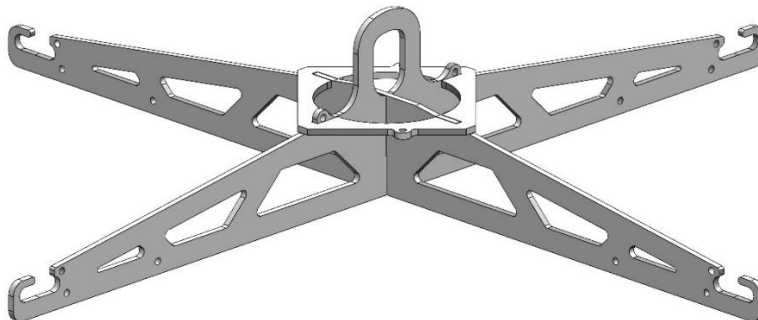


Figure 1. XL-lyft.

RISE Research Institutes of Sweden AB

Postal address
 Box 857
 501 15 BORÅS
 SWEDEN

Office location
 Laboratorgränd 2C
 931 77 Skellefteå
 SWEDEN

Phone / Fax / E-mail
 +46 10-516 50 00
 +46 33-13 55 02
 info@ri.se

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2. Lifting test

2.1 Test samples

One XL-lyft that is marked for working load limit of 2 500kg was tested for safety load, 1,5 times marking load. The XL-lyft was also tested for higher load.

The XL-lyft is compliance to the Machinery Directive 2006/42/EC clause 4.1.2.3 Mechanical strength

2.2. Test procedure

The XL-lyft was mounted to a hydraulic cylinder with a coupling link and a master link. 1,5m Lifting strings were mounted in the four corners of the XL-lyft and also fastened in the test beam, test 1 below.

The XL-lyft was also tested with four lifting hooks attached to the special holes in the XL-lyft, the lifting string were attached in those hooks, test 2 below.

1. XL-lyft was tested with lifting strings to a load of 5 500kg with stop at 3 750kg for examination and evaluation. After 5 500kg the XL-lyft was unloaded and examined for permanent deformation.
2. XL-lyft was tested with lifting hooks to a load of 6 400kg After 6 400kg the XL-lyft was unloaded and examined for permanent deformation.
3. XL-lyft was tested with the lifting hooks attached in a 20° angle to the test beam. See pfigure 4 in appendix 3. A load of 3 750kg was applied, the XL-lyft was unloaded and examined for permanent deformation.

2.3. Test equipment and environment conditions

Test date: 2023-06-08
Measure system: HBM MX840B
Load speed: 14mm/ min
Load cell: Omegadyne LC412-75K, our item no. 47h02
Gravitation: 9,82 N/kg
Temperature: 22 °C
Humidity: 30-35% RF.

3. Result

See result in summary and in appendix 2.

RISE Research Institutes of Sweden AB
Department Building and Real Estate - Wood Construction Technology

Performed by

Examined by

Urban Häggström

Rickard Falkman

Appendices

1. Drawing of XL-lyft
2. Load and time diagram
3. Pictures

Appendix 1

A-A (1 : 2)

Krokar efter fräsning av skarpa kanter.

REV	Beskrivning	Av	Gick	Datum
A	Underlag för tillverkning	jlå		2022-11-03
B	Spår ändrat från 14mm till 12mm.	jlå		2022-11-21
C	Lagt till ytterligare hål för bilvälskrokar.	jlå		2023-02-27
D	Tjocklek ändrad T=12, justering av hål och material	Mha	SLU	2023-05-17

Loserisköres enligt DXF: 5711-110 Pos X					
3	Påh	700 AC	t=12,0mm	2,8	
2	Påh	700 AC	t=12,0 mm	10,7	
1	Påh	700 AC	t=12,0 mm	11,7	
Pos. Ant.	Ämne	Material	Diagn (mm)	Längd (mm)	Yter (kg)
SS-ISO 2768-mK-EN ISO 13920-AE	38-5711	Metall	5711-110	2023-05-17	Ver (kg)
mha	jlå		Lyftösk	A2	1:10 1:2
CIDEMA X-Lyft XL					
5711-110					

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Appendix 2

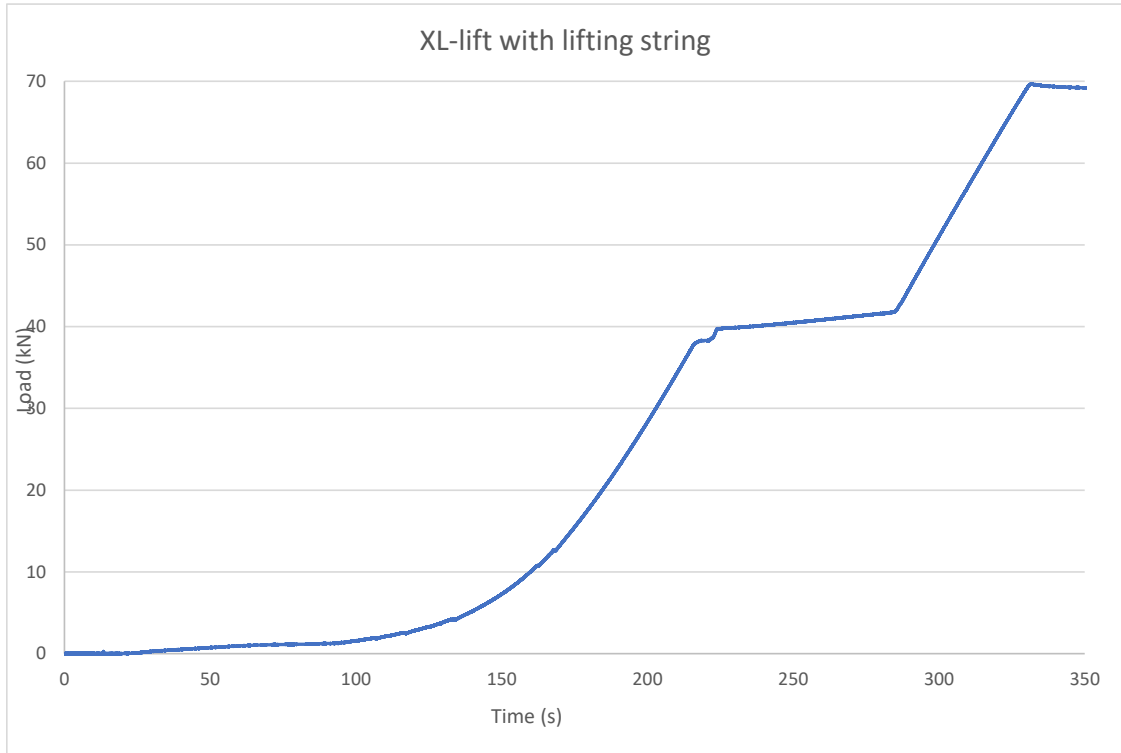


Diagram 1. Load/time graph, XL-lyft with lifting strings.

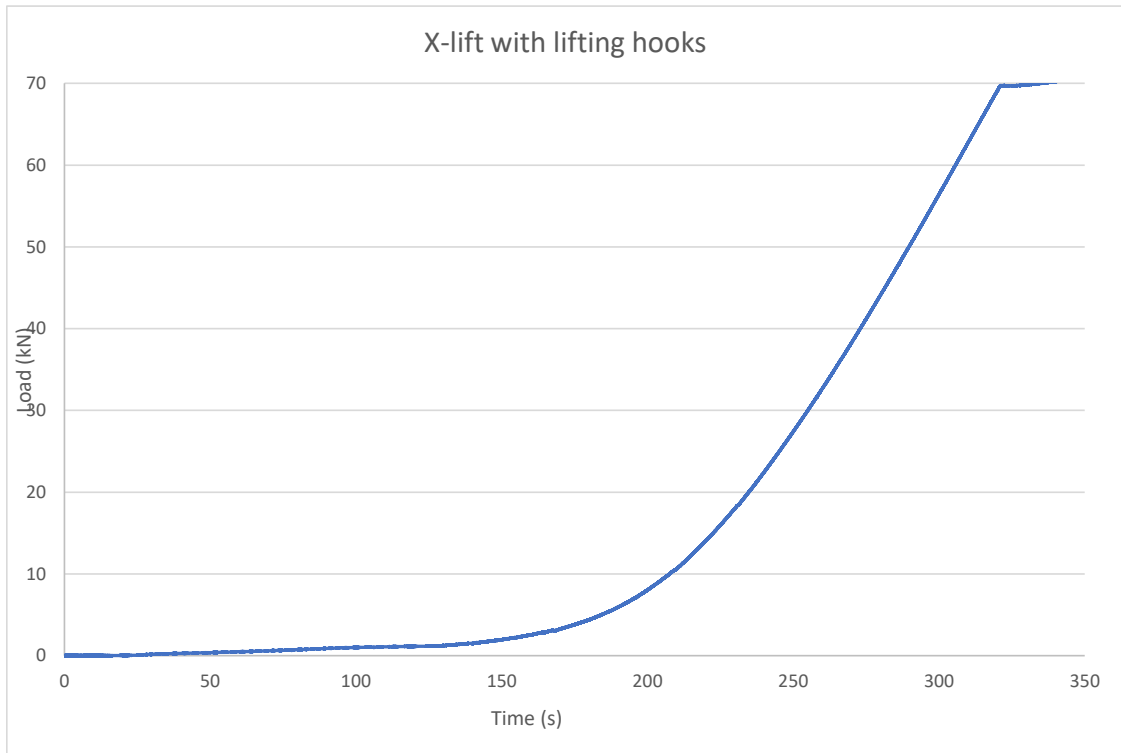


Diagram 2. Load/time graph, XL-lyft with lifting hooks.

Appendix 3

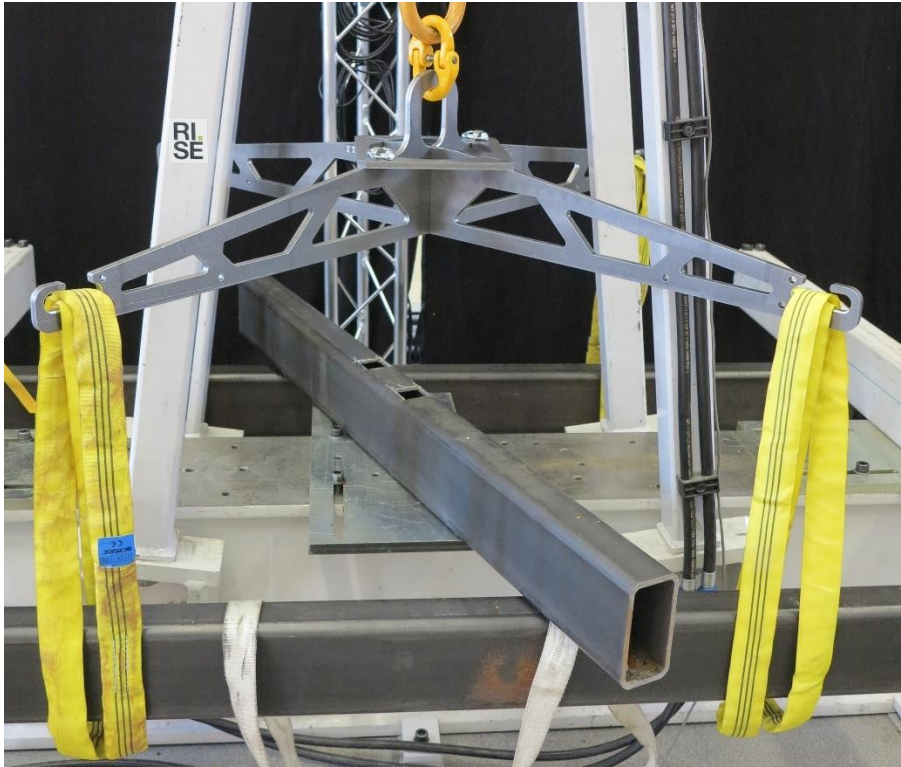


Figure 2. Test set up with lifting strings.

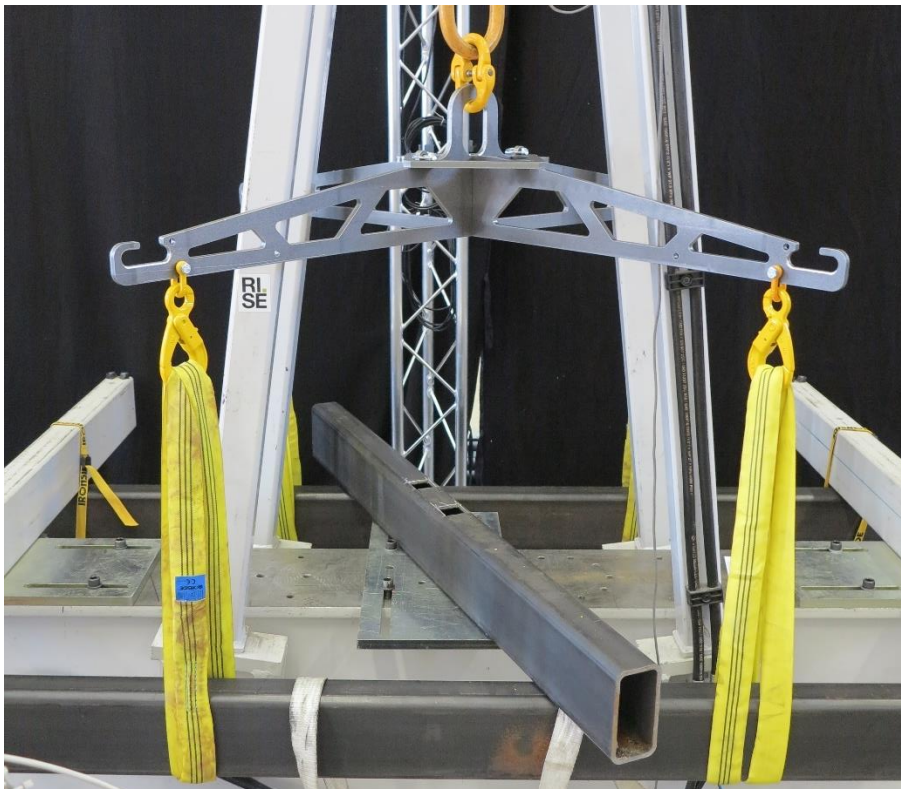


Figure 3. Test set up with lifting hooks.

Appendix 3

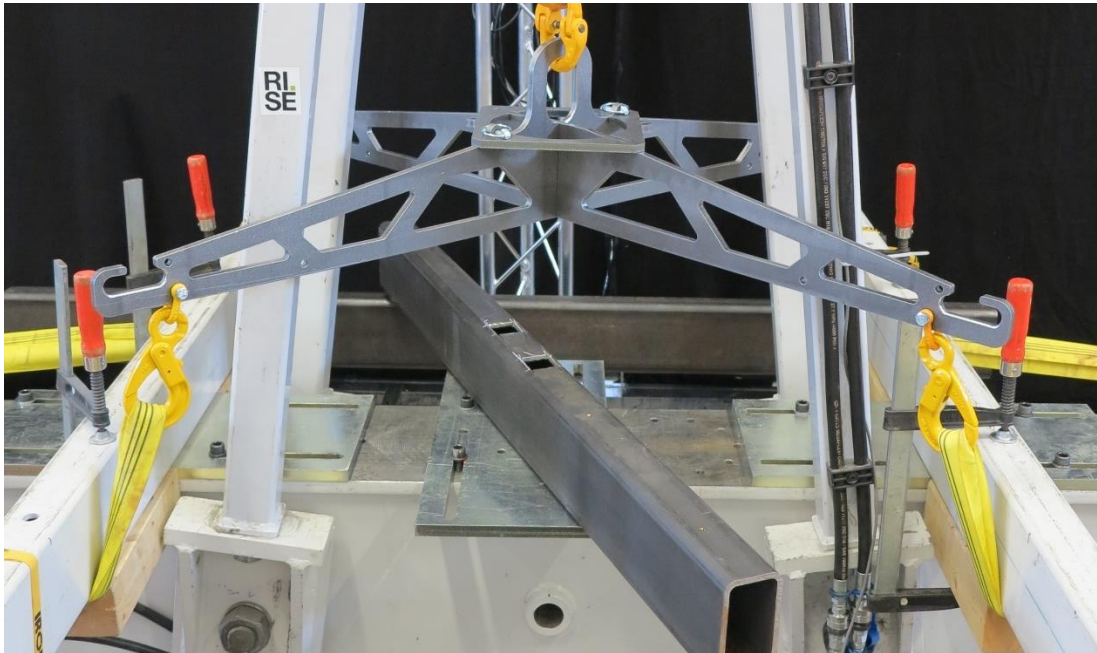


Figure 4. Test set up 20° lifting angle with lifting hooks.

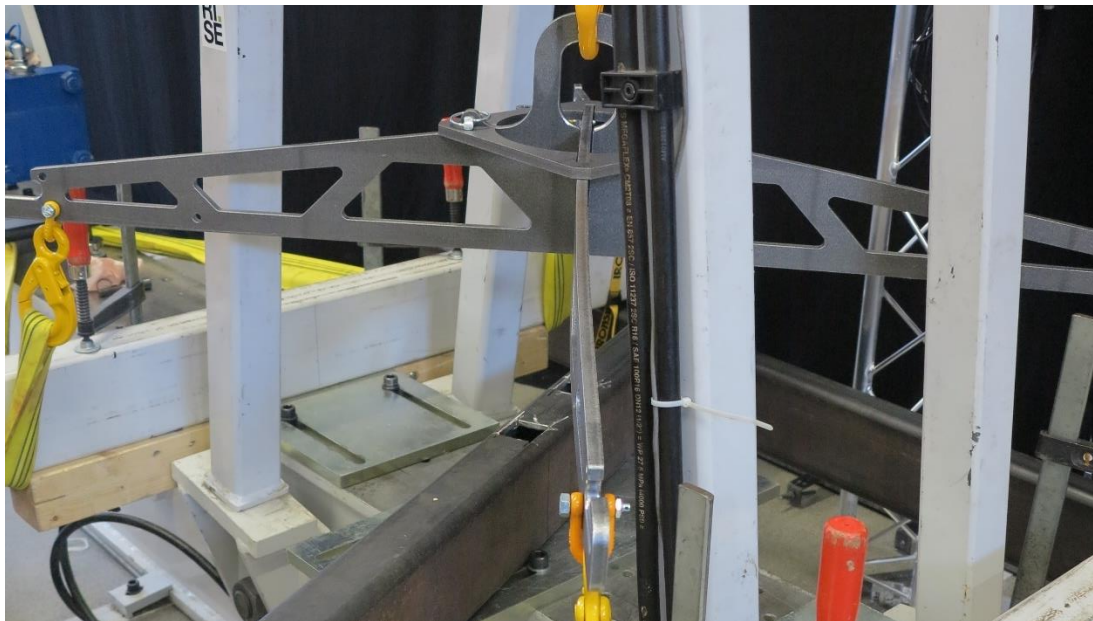


Figure 5. Deformation at 20° lifting angle when lifting with 3 750kg.

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Signerande parter

Urban Haggström (UH)

RISE Research Institutes of Sweden AB

Org. nr 556464-6874

urban.haggstrom@ri.se

+46 10 516 62 46

Signerade 2023-06-12 09:02:44 CEST (+0200)

Rickard Falkman (RF)

rickard.falkman@ri.se

Signerade 2023-06-12 09:08:34 CEST (+0200)

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