LIFTINSTITUUT

PRODUCTS
RvA C 06/

EU-TYPE EXAMINATION CERTIFICATE

Issued by Liftinstituut B.V.
identification number Notified Body 0400,
commissioned by Decree no. 2016-0000038870

Certificate no.	:	NL13-400-1002-047-10 Revision no.: 1
Description of the product	:	Progressive safety gear also used as Ascending Safety Device (ASD) and as Unintended Car Movement Protection Means (UCMP)
Trademark, type	:	Zorlu, Z-03 B-PSG & Z-03-T PSG
Name and address of the manufacturer and certificate holder	:	Zorlu Asansör San.ve Tic.LTD.ŞTİ Kazim Karabekir Mah.Dogu Cad. No 17/A Umraniye - Istanbul, Turkey
Certificate issued on the following requirements	:	Lifts Directive 2014/33/EU
Certificate based on the following standard	:	Parts of: EN 81-1:1998 + A3:2009, EN 81-20:2014, EN 81-50:2014
Date of EU-type examination	:	May 2012 - March 2013, February – July 2017
Additional document with this certificate	:	Report belonging to the EU-type examination certificate no.: NL13-400-1002-047-10REV.1
Additional remarks	:	Max. nominal speed (2/2+2/2)(3/3+3/3)(5/5+5/5) 1.60 m/s Max. tripping speed (2/2+2/2)(3/3+3/3)(5/5+5/5) 2.15 m/s

Downwards operation		permissible P+Q	Brake force up (Q)
(2/2+2/2)	(mach)	320 - 2263 kg	4875 -20964 N
(3/3+3/3)	(drawn)	331 - 1893 kg	5295 -20754 N
(5/5+5/5)	(mach)	1292- 3514 kg	20676-38240 N
(5/5+5/5)	(drawn)	1016 - 2892 kg	16250-30538 N

Max. nominal speed (5/5+5/5)(5/5+5/5+5/5) 1.00 m/s
Max. tripping speed (5/5+5/5)(5/5+5/5+5/5) 1.50 m/s

Downwards operation		permissible P+Q	Brake force up (Q)
(5/5+5/5)	(mach)	1534- 3777 kg	24549-40952 N
(5/5+5/5+5/5)	(drawn)	1517- 3820 kg	24269-37595 N

Max. nominal speed (4/4+4/4) 2.50 m/s
Max. tripping speed 4/4+4/4) 3.20 m/s

Downwards operation		permissible P+Q	Brake force up (Q)
(4/4+4/4)	(mach)	641 - 2855 kg	10250-30540 N

Key parameters for use as UCMP:
Max distance travelled before engagement : 15 mm

Conclusion	:	The safety component meets the requirements of the Lifts Directive 2014/33/EU taking into account any additional remarks mentioned above.

Amsterdam

Date : 20-07-2017
Valid until : 20-07-2022

ing. J.L. van Vliet
Managing Director

Certification decision by

Report EU-type examination

Report belonging to EU-type examination certificate no.	:	NL13-400-1002-047-10
Date of issue of original certificate	:	March 07, 2013
Concerns	:	Safety component
No. and date of revision	:	1; 20-07-2017
Requirements	:	Lifts Directive 2014/33/EU Standards: EN 81-1:1998 + A3:2009, EN81-20:2014, EN81-50:2014
Project no.	:	P170027

1. General specifications

Name and address manufacturer	:	Zorlu Asansör San.ve Tic.LTD.ŞTİ Kazim Karabekir Mah.Dogu Cad. No 17/A Umraniye - Istanbul, Turkey
Description of safety component	:	Progressive safety gear also used as Ascending Safety Device (ASD) and as Unintended Car Movement Protection Means (UCMP)
Type	:	Z-03 B-PSG & Z-03-T PSG
Address of examined component	:	Zorlu Asansör San.ve Tic.LTD.ŞTİ Kazim Karabekir Mah.Dogu Cad. No 17/A Umraniye - Istanbul, Turkey
Data of examination	:	May 2012 - March 2013, February – July 2017
Examination performed by	:	W.Visser

2. Description safety component

The Z-03 B-PSG is a bi-directional progressive safety gear. It is designed for lifts with drawn or machined guide rails of 9 and 16 mm and with a nominal speed up to 2,5 m/s or with a maximum tripping speed of 3,20 m/s of the overspeed governor. The Z-03 B-PSG safety gear can be featured with a 2/2+2/2, 3/3+3/3, 4/4+4/4, 5/5+5/5 or 5/5+5/5+5/5 leaf disc spring set.
The Z-03-T B-PSG is a tandem set of 2 x Z-03 B-PSG safety gears. It is incorporated in a metal housing of 8mm plating. Both safety gear sets are connected by 2 U-profiles and 32 x M16 bolts). In this case the allowed loads and created forces can be doubled.
The contact provided checks if the progressive safety gear is in the ready position. The safety gear is operated by an overspeed governor. The contact of the safety

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gear will automatically reset when the safety gear is back in its ready position. The contact can be used up to 220 V and 3 A AC.
The bi-directional progressive safety gear that holds the car pressed against the rails, is mainly made of two parts: brake wedge and ductile iron brake shoe, both inside a welded steel housing. The brake wedge, pulled up by the actuating rods, shifts in an upward or downward direction over a slanted surface, which tapers 8° upwards and makes contact with the rail. This same movement is transmitted to the other brake wedge by a connecting rod. The system is identical upwards and downwards, only the setting differs.
The ductile iron brake shoe in the safety gear block is located on the other side of the rail and is 1-1,5 mm away from the rail.
From the moment of the contact to the rails of the brake wedge by slanted motion, the PSG housing moving horizontally over the lower and upper axles (part no.: 27) assures the contact of the ductile iron brake shoe to the rail. The brake wedge continues its movement until it touches the stop screw (setting) which is sealed. Throughout this movement, the two rows of disc springs are compressed therefore the friction force of the ductile iron brake shoe to the rail is gradually increasing.
The friction forces between the guide rail and the brake wedge and brake shoe will absorb in a pre-determined distance, the kinetic energy formed during the acceleration of the car. Spring-loaded brake brass shoe assures a sliding stop of the system opposite to a sudden stop.
The spring force behind the brake brass shoe is factory adjusted depending on the '' P+Q" value for downwards operation and the "Q" value for upwards operation. The setting is done by adjusting the bolt that limits the movement of the brake wedge. This equals the adjustment distance "a". In order to avoid any intervention and/or maladjustment of the brake brass shoe and spring adjustments, the nuts and heads are fixed with strong glue; the heads are marked with two dots and sealed with paint.

2/2+2/2 MACHINED

Spring set			2/2 + 2/2		
Guide rail			Machined, oiled		
Max nominal speed			1,60 m/s		
Max tripping speed			2,15 m/s		
P + Q		a-size	320 - 2263 kg		8,6 - 6,5
Q	Brakeforce	a-size	300 - 1300 kg	4875 - 20964 N	8,6 - 7,5

3/3+3/3 DRAWN

Spring set			3/3 + 3/3		
Guide rail			Drawn, oiled		
Max nominal speed			1,60 m/s		
Max tripping speed			2,15 m/s		
P + Q		a-size	331 - 1893 kg		8,0 - 6,5
Q	Brakeforce	a-size	300 - 1300 kg	5295 – 20754 N	8,5 - 7,4

4/4+4/4 MACHINED

Spring set	4/4 + 4/4
Guide rail	Machined, dry
Max nominal speed	2,50 m/s
Max tripping speed	3,20 m/s

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P + Q		a-size	641 - 2855 kg		8,5 - 6,5
Q	Brakeforce	a-size	600 - 1800 kg	10250 – 30540 N	8,5 - 7,3

5/5+5/5 MACHINED

Spring set			5/5 + 5/5		
Guide rail			Machined, oiled		
Max nominal speed			1,00 m/s		
Max tripping speed			1,50 m/s		
P + Q		a-size	1534 - 3777 kg		8,1 - 6,5
Q	Brakeforce	a-size	1600 - 2600 kg	24549 – 40952 N	8,1 - 7,3

5/5+5/5 MACHINED

Spring set			5/5 + 5/5		
Guide rail			Machined, oiled		
Max nominal speed			1,60 m/s		
Max tripping speed			2,15 m/s		
P + Q		a-size	1292 - 3514 kg		8,2 - 6,5
Q	Brakeforce	a-size	1200 - 2400 kg	20676 – 38240 N	8,2 - 7,3

5/5+5/5 DRAWN

Spring set			5/5 + 5/5		
Guide rail			Drawn, oiled		
Max nominal speed			1,60 m/s		
Max tripping speed			2,15 m/s		
P + Q		a-size	1016 - 2892 kg		8,2 - 6,5
Q	Brakeforce	a-size	900 - 1900 kg	16250 – 30538 N	8,2 - 7,2

5/5+5/5+5/5 DRAWN

Spring set			5/5 + 5/5 + 5/5		
Guide rail			Drawn, oiled		
Max nominal speed			1,00 m/s		
Max tripping speed			1,50 m/s		
P + Q		a-size	1517 - 3820 kg		7,8 - 6,5
Q	Brakeforce	a-size	1600 - 2600 kg	24269 – 37595 N	7,8 - 7,1

Z-03-T B-PSG

Double Safety gear set	2 x Z-03 B-PSG
Required minimum actuating force	320 N
Required minimum tension pully force	640 N

3. Examinations and tests

The examination covered a check whether compliance with the Lift Directive 2014/33/EU is met, if possible based on the harmonized product standards EN81-1:1998+A3:2009, EN81-20:2014 and EN81-50:2014.

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The examination included:

- Examination of the technical file (See annex 2):
- Examination of the representative model in order to establish conformity with the technical file.
- Inspections and tests to check compliance with the requirements.

According to annex F.3.3.2. of EN 81-1+A3 and clause 5.3.3 of EN 81-50 several tests were made. For the test a special test-tower was designed.

To use the safety gear as a stopping element the tests described in EN81-1/2 + A3, annex F8 and EN81-50 clause 5.8 are performed. For this the results of the tests with minimum and maximum P+Q that were performed earlier are used to calculate the applicable range of the braking force. Additional testing has been done for minimum P+Q at very slow speed.

No additional tests according to F.7 of EN 81-1+A3 or clause 5.7 of EN 81-50 were needed.

4. Results

4.1. Calculations

The calculations were checked and found in order.

4.2. Measurements

The tests were performed by dropping the guided mass until the safety device activation rope was pulling at the mechanism. It is checked that the force of the activation rope did not pull too hard to have significant influence on the measurements.
Furthermore the maximum travelled vertical distance before engagement of the safety gear elements has been measured.
The graphs show the adjustment for 9 mm guide rails. The adjustment value should be added with 7 mm to get the value for 16 mm guide rails.

After the final examination the product and the technical file were found in accordance with the requirements. The functional tests passed without remarks. The load tests passed without remarks and did not lead to permanent deformations or loss of stability.

5. Conditions

On the EU-type examination certificate the following conditions apply:

- The safety gear shall be used for 9 or 16 mm machined or drawn guide rails only.

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- The lubrication means (if any) shall be of quality HLP 32 – HLP 46.
- The safety gear shall be adjusted according to the tables in chapter 2 and the annex 1b of this report. For the breaking force multiply the load by 16.
- Maximum distance travelled before engagement is 15mm.
- The user manual shall be provided with the component.
- After release of the safety gear, it shall require the intervention of a competent maintenance person to return the lift in to service.

6. Conclusions

Based upon the results of the EU-type examination Liftinstituut B.V. issues an EU-type examination certificate.

The EU-type examination certificate is only valid for products which are in conformity with the same specifications as the type certified product. The certificate is issued based on the requirements that are valid at the date of issue. In case of changes of the product specifications, changes in the requirements or changes in the state of the art the certificate holder shall request Liftinstituut B.V. to reconsider the validity of the certificate.

7. CE marking and EU Declaration of conformity

Every safety component that is placed on the market in complete conformity with the examined type must be provided with a CE marking according to article 18 of the Lift directive 2014/33/EU under consideration that conformity with eventually other applicable Directives is proven. Also every safety component must be accompanied by an EU declaration of conformity according to annex II of the Directive in which the name, address and Notified Body identification number of Liftinstituut B.V. must be included as well as the number of the EU-type examination certificate.

An EU type-certified safety component shall be random checked e.g. according to annex IX of the Lift directive 2014/33/EU before these safety components may be CE-marked and may be placed on the market. For further information see regulation 2.0.1 'Regulations for product certification' on www.liftinstituut.com.

Prepared by:

W.Visser
Product Specialist Certification
Liftinstituut B.V.

Certification decision by:

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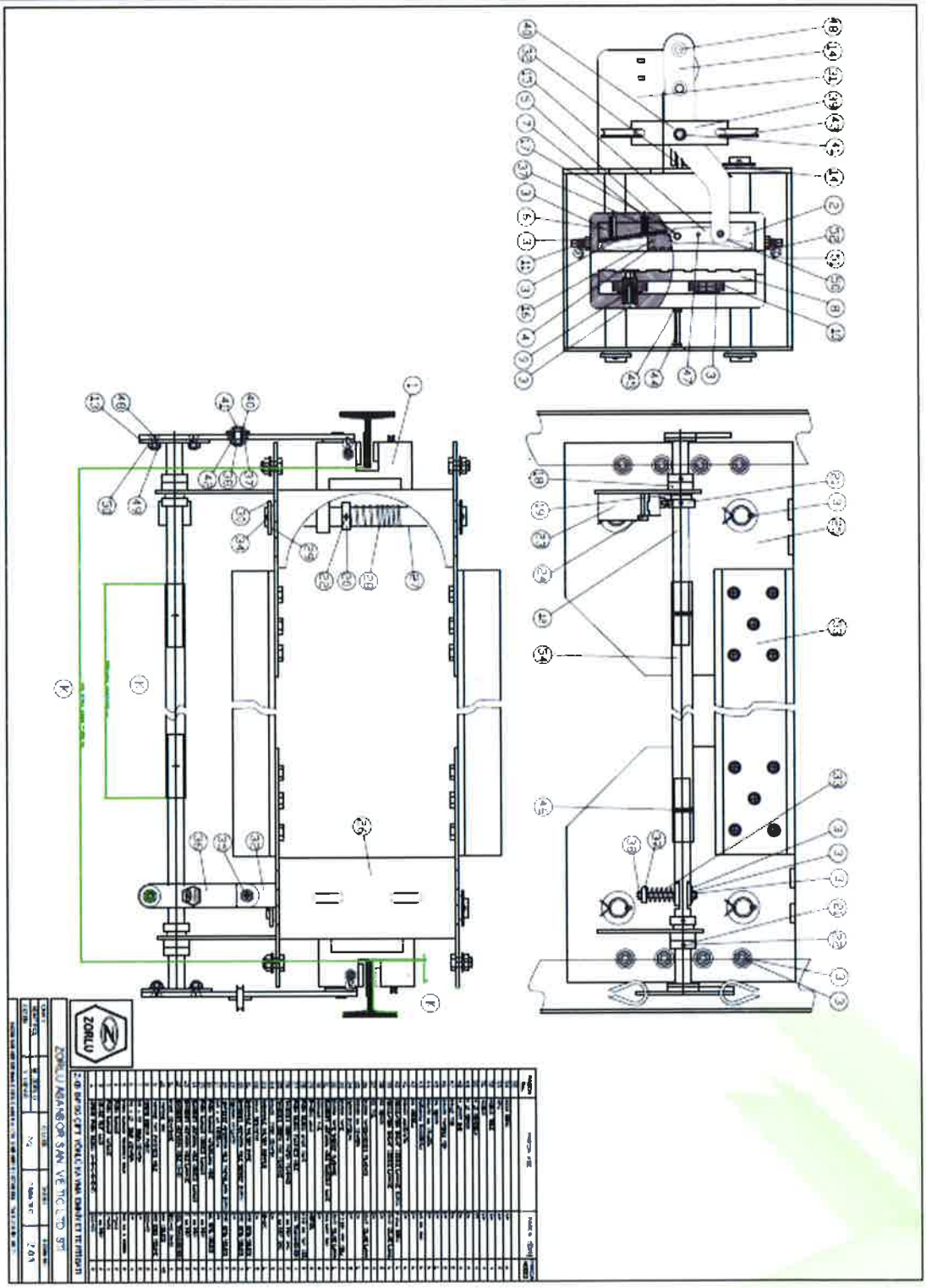
Annexes

Annex 1a : General overview drawing of Z-03 B-PSG



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Annex 1b : Picture of Z-03-T B-PSG

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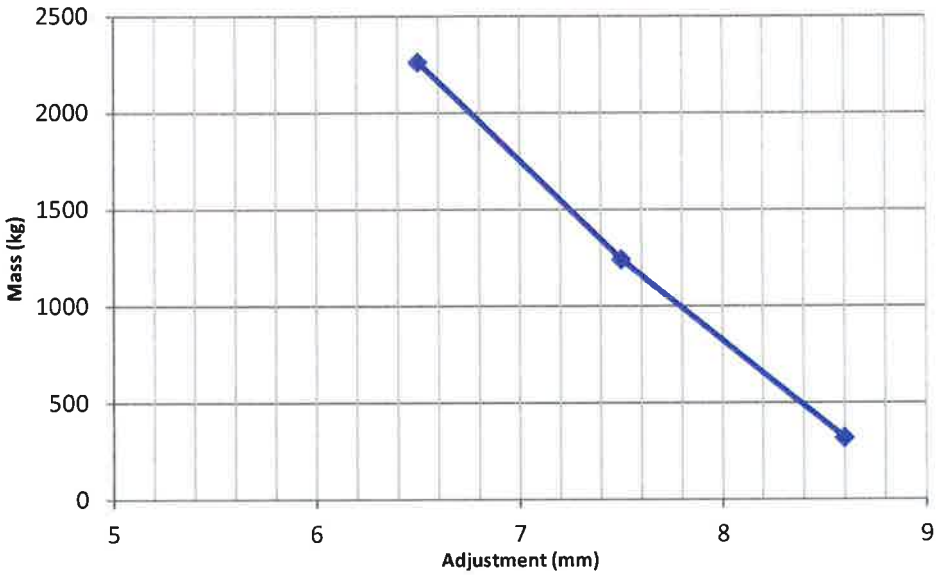
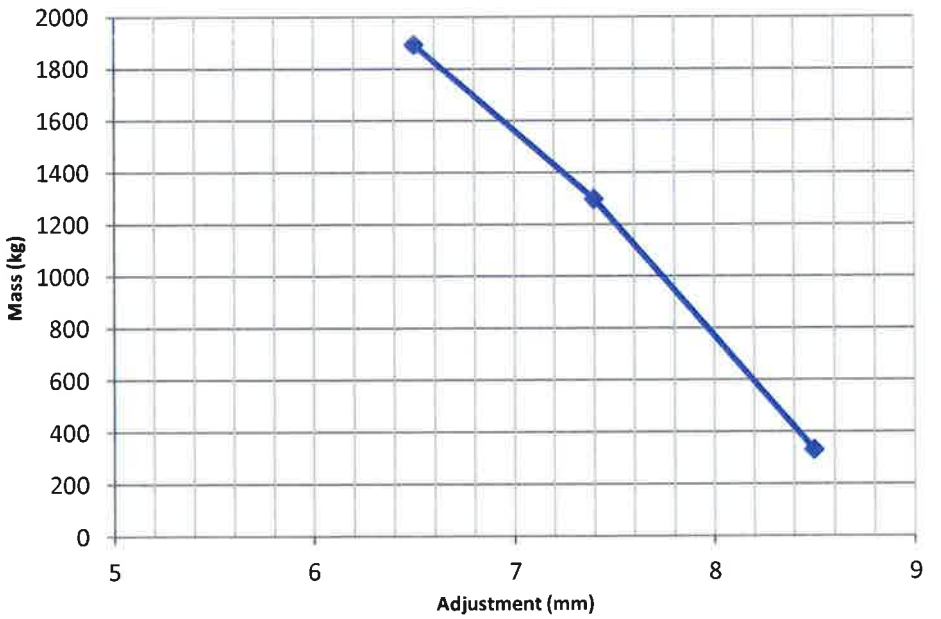
Annex 1c : Adjustment tables for Z-03 B-PSG (for 16 mm add 7 mm)

2/2+2/2 machined, Vn=1,6 m/s



3/3+3/3 machined, Vn=1,6 m/s



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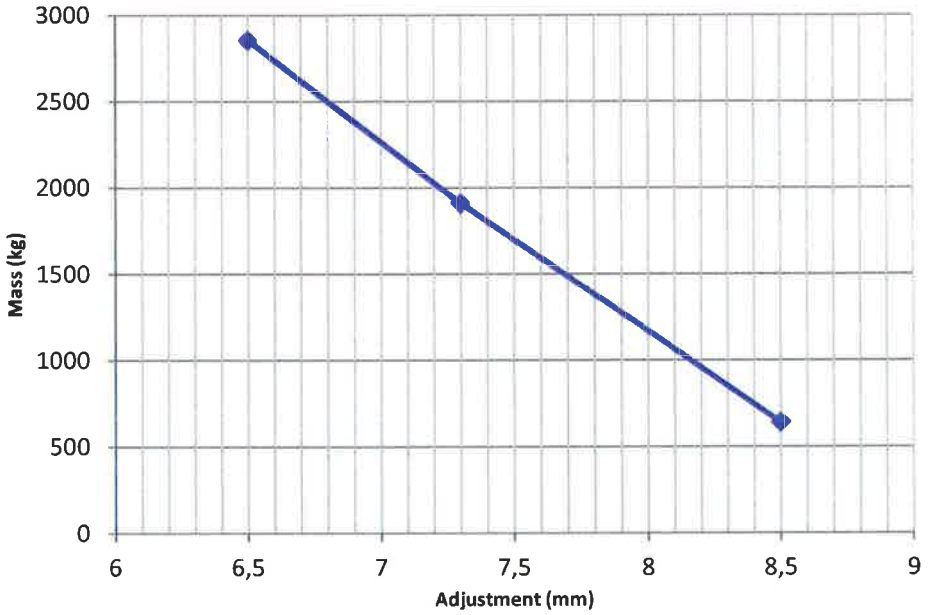
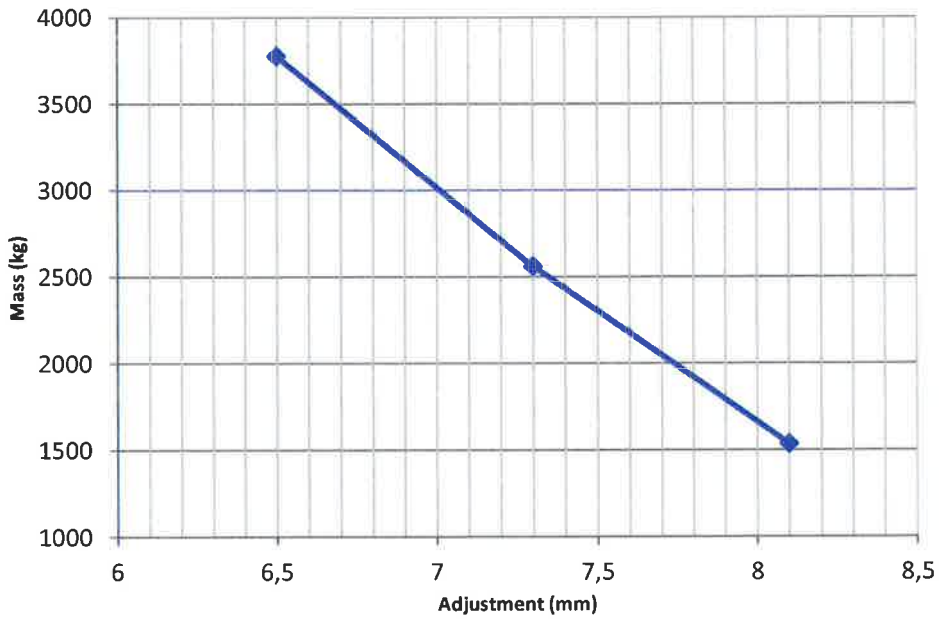
4/4 + 4/4 machined, dry, Vn=2,5 m/s



5/5 + 5/5 machined, Vn=1,0 m/s



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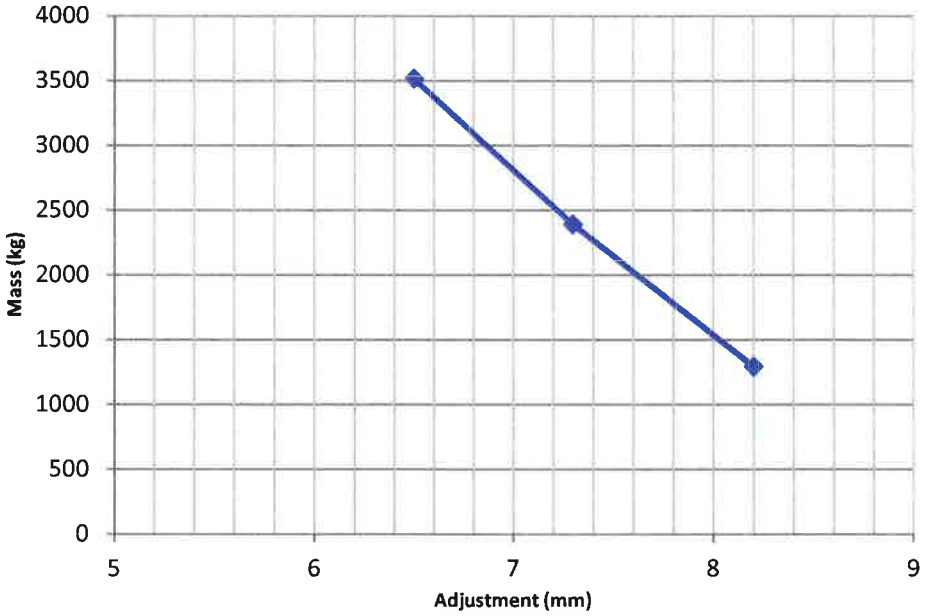
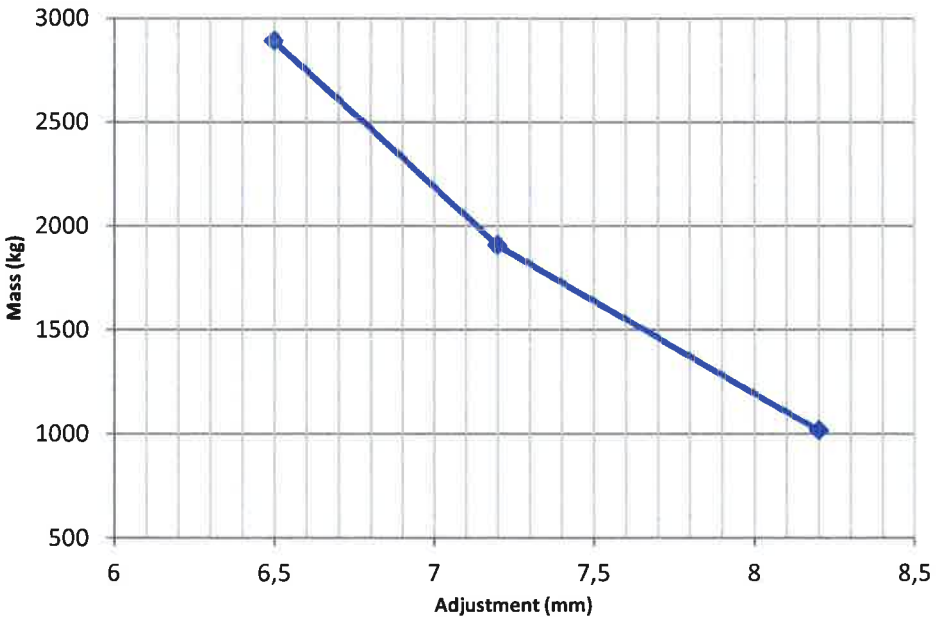
5/5 + 5/5 machined, Vn=1,6 m/s



5/5 + 5/5 drawn, Vn=1,6 m/s



L I F T I N S T I T U U T B . V . - S A F E T Y A N D Q U A L I T Y M A N A G E M E N T

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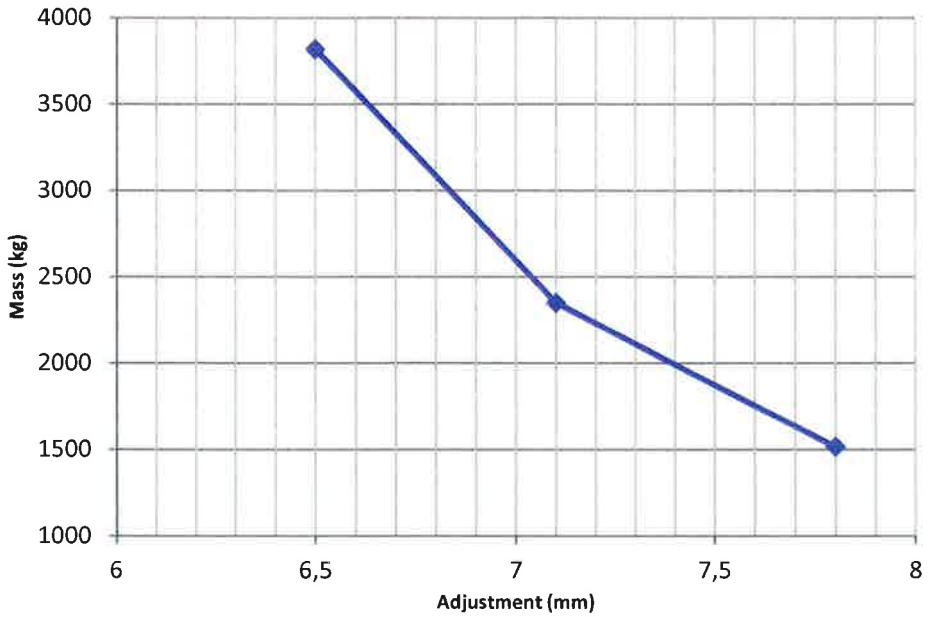
5/5 + 5/5 + 5/5 drawn, Vn=1,0 m/s



Annex 2 Documents of the Technical File which were subject of the examination

title	document number	date
Operation & Maintenance manual	Version 2	04-07-2017
Calculations	Version 1	29-06-2012
Tables and Diagrams	Version 2	12-11-2012
Drawings	Version 2	12-11-2012

Annex 3. Reviewed deviations from the standards

EN xx-x par.	Requirement	Accepted design
x.x.x		

Annex 4 Revision overview

REVISIONS OF THE CERTIFICATE AND THE REPORT

Rev.:	Date	Summary of revision
-	07-03-2013	Original
1	20-07-2017	Include double SG and update to 2014/33/EU, EN 81-20/50

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