



**Certificate  
for Major safety components  
(MUSE NV)**

[www.sigmaelevators.com](http://www.sigmaelevators.com)





## Certificate of Registration

QUALITY MANAGEMENT SYSTEM – ISO9001: 2008

This is to certify that:

OTIS Elevator (China) Co., Ltd.  
No. 71 Ninth Avenue  
Economic and Technological  
Development Area  
Tianjin  
300457  
China

奥的斯电梯（中国）有限公司  
中国  
天津  
经济技术开发区  
第九大街 71 号  
邮编：300457

Holds Certificate No: FM 523897

and operates a Quality Management System which complies with the requirements of ISO9001: 2008 for the following scope:

The design, manufacture, sales, installation, modernization and services of elevators and lifting systems, including associated motors and components.

电梯和升降系统的设计、制造、销售、安装、改造和服务，包括相关电机和配件。

For and on behalf of BSI:



Managing Director, BSI (China), Dr. Yi Min Gao

Originally registered: 08/05/2005

Latest issue: 30/11/2011

Expiry date: 17/07/2014



Page: 1 of 13

Only For Overseas Use.

This certificate was issued electronically and remains the property of BSI and is bound by the conditions of contract.  
An electronic certificate can be authenticated [online](http://www.bsi-globals.com/ClientDirectory).  
Printed copies can be validated at [www.bsi-globals.com/ClientDirectory](http://www.bsi-globals.com/ClientDirectory) or telephone +86 10 69157060.  
Further clarifications regarding the scope of this certificate and the applicability of ISO9001:2008 requirements may be obtained by consulting the organization.  
This certificate is valid only if provided original copies are in complete set.

China Headquarters: Floor 20 East Ocean Center, No. 24A Jiangjiaerwai Street, Beijing 100004, P. R. China.  
BSI China is a subsidiary of British Standard Institution.



# 2. Overspeed Governor (XSQ115-02)



ZERTIFIKAT ♦ CERTIFICATE ♦ 記証証書 ♦ CERTIFICADO ♦ CERTIFICAT



TUV  
SUD  
Industrie Service

## EC type-examination certificate

**Certificate no.:** OG 085-2008-CHI

**Notified body:** TÜV SÜD Industrie Service GmbH  
Westendstraße 199  
D-80686 München

**Applicant/  
Certificate holder:** Ningbo Shenling Lift Accessories Co., Ltd.  
195 Nanping Road, Shipu Town,  
Ningbo, P.R.China

**Date of submission:** 2008-03-12

**Manufacturer:** Ningbo Shenling Lift Accessories Co., Ltd.  
195 Nanping Road, Shipu Town,  
Ningbo, P.R.China

**Product, type:** Over speed governor, XSQ115-02

**Testing laboratory:** TÜV SÜD Industrie Service GmbH  
Westendstraße 199  
D-80686 München

**Date and  
number of test report:** 2008-08-20  
OG 085-2008-CHI

**EC-directive:** 95 / 16 / EC Annex IV

**Statement:** The safety component conforms to the directive's safety requirements for the respective scope of application stated in the Annex to this EC type-examination certificate.


**Place and date of issue:** Munich, 2008-06-28

Certification Body for lifts and safety components  
EC Identification Number: 0036




Dieter Roas






TUV  
SUD  
Industrie Service

**Annex to Certificate No. OG 085-2008-CHI dated 2008-08-28**

- 1. Scope of Application**

<b>1.1</b>	Driving rope	Steel wire rope 8 mm
1.1.1	Permissible tripping speed in down direction	1.20 - 3.23 m/s
1.1.2	Permissible rated speed	1.0 - 2.5 m/s
1.1.3	Tensile force in the rope when tripped in down direction	1260 N
- 1.2** Driving rope Steel wire rope 6.3 mm

1.2.1	Permissible tripping speed in down direction	1.20 - 1.40 m/s
1.2.2	Permissible rated speed	0.25 - 1.00 m/s
1.2.3	Tensile force in the rope when tripped in down direction	1680 N
- 2. Remarks**
  - 2.1 The preset tripping speed as well as the adjustment of the switch must be sealed against unauthorised modification.
  - 2.2 The direction of rotation for engaging the safety gear has to be marked at over speed governor.
  - 2.3 Additional to the EC type-examination certificate and this annex the certificate holder has to supply a confirmation that the safety component installed in a lift corresponds with the tested and approved type. In order to provide identification, information about the basic design and its functioning and to show which parts have been tested of the approved type, drawing no. NS115002A001 (XSQ115-02) stamped with "TÜV SÜD 0036" dated "20. Aug 2008" is to be enclosed with the EC type-examination certificate and the annex thereto.
  - 2.4 The EC type-examination certificate OG 085-2008-CHI may only be used in connection with the pertinent annex.



Page 1 of 1  
Our reference/Date: IS-PT-M/CIW\_06/08/2008  
Document: 80828\_Alt\_OG 085-2008-CHI.doc

# 2. Overspeed Governor (XSQ115-13)



ZERTIFIKAT ◆ CERTIFICATE ◆ 認証証書 ◆ CERTIFICADO ◆ CERTIFICAT

## EC type-examination certificate

**Certificate no.:** OG 004-2006-CHI

**Notified body:** TUV SUD Industrie Service GmbH  
Certification Body Lifts and Cranes  
Westendstraße 199  
D-80686 München

**Applicant/  
Certificate holder:** Ningbo Shierling Lift Accessories Co., Ltd.  
195 Nanping Road, Shipu Town,  
Ningbo, P.R.China

**Date of submission:** 2006-10-16

**Manufacturer:** Ningbo Shierling Lift Accessories Co., Ltd.  
195 Nanping Road, Shipu Town,  
Ningbo, P.R.China

**Product, type:** Overspeed governor, XSQ115-13

**Test Laboratory:** EMI-TÜV Bayern Kft.  
Certification Body for lifts and safety components  
H-21008 Szentesútré  
Dózsa György út 26.

**Date and number of test report:** 2006-10-23  
OG 004-2006-CHI

**EC-directive:** 95 / 16 / EC

**Statement:** The safety component conforms to the directive's safety requirements for the respective scope of application stated in the Annex to this EC type-examination certificate.

**Certificate date:** 2006-10-23

Certification Body for lifts and safety components  
EU-Kennnummer: 0036

*P. Thal*  
Authorized Representative: Peter Thal

### Test report

No. OG 004-2006-CHI

**Applicant / Customer:** Ningbo Shierling Lift Accessories Co., Ltd.  
195 Nanping Road, Shipu Town,  
Ningbo, P.R. China

**Manufacturer:** Ningbo Shierling Lift Accessories Co., Ltd.  
195 Nanping Road, Shipu Town,  
Ningbo, P.R. China

**Testing laboratory:** EMI-TÜV Bayern Kft.  
TUV SUD Gruppe  
H-2000 Szentesútré  
Dózsa György út 26.

**Date and number of submission:** 2006-10-09  
890608

**Sample no.:** 06010287

**Test object:** Overspeed governor  
Type XSQ115-13

**Testing order:** Verification of an EC type-examination of an overspeed governor tested by Shanghai Jiao Tong University according annex V A of directive 95/16/EC.

**Checking-basics:** - Directive 95/16/EC of 29th of June 1995  
- Standard DIN EN 81-1:1998 + AC: 1999

**Kind of the examination:** - Examination on correspondence with the checking-basics  
- Function tests

**Place and date of examination:** Ningbo, 2006-10-23

Document: 0103\_TR\_OG\_004-2006-CHI.doc  
Date of issue/author: 2006-10-23/Malakovskiy

Page 1 of 2

### 1. Tests

**1.1 Control of tripping speed and safety switch**

The required number of tests with tripping speed according to the standard were carried out by Shanghai Jiao Tong University Elevator Test Center. They have performed 60 tests with different tripping speeds and the overspeed switch in both directions each.

As the applicant intended to extend the range of application concerning the limit below of tripping speed we made 10 tests and some tests to evaluate the values measured by Shanghai Jiao Tong University Elevator Test Center as well as the equipment for adjusting of Ningbo Shierling. No deviations could be stated.

**1.2 Control of rope friction force**

The force of the spring for producing the rope friction force in both directions was measured by Shanghai Jiao Tong University Elevator Test Center. The values were documented in the Type Test Report of Shanghai Jiao Tong University Elevator Test Center.

**2. Control of drawings and other documents**

The main dimensions of the tested overspeed governor were compared with the drawings. The instruction manual was checked if the assignments are practicable.

**3. Examination result**

It can be stated that all the tests and controls have shown that the overspeed governor type XSQ115-13 fulfills the requirements of the standard and can be used for the following range of application:

Permissible tripping speed down	0.58 – 3.34 m/s
Permissible rated speed	0.50 – 2.50 m/s
Driving rope	steel wire rope
Rope diameter	6 – 8 mm
Range of adjustment for the tensile force in the rope down	1000 – 2000 N

**4. Documents on which the test report is based**

- Drawing No. NS115013A001 dated 2005-08-04 with last change dated 2006-04-10
- Drawing XSQ115-13 Overspeed governor for MRL
- Test record: Tripping speed 0.55 – 0.72 m/s dated 2006-10-23
- Speed Governor Instruction Manual XSQ115-13 (5 pages)
- XSQ115-13 Governor Design Verify Calculation (19 pages)
- Certificates and test reports of Shanghai Jiao Tong University Elevator Test Center
  - Certificate and test report no. TX F310-026-05 0047 dated 2005-08-29
  - Certificate and test report no. TX F310-026-05 0048 dated 2005-08-29
  - Certificate and test report no. TX F310-026-05 0049 dated 2005-08-29

**Expert engineer:** *M. Malakovskiy*

**Malakovskiy**

Document: 0103\_TR\_OG\_004-2006-CHI.doc  
Date of issue/author: 2006-10-23/Malakovskiy

Page 2 of 2

# 3. Safety Gear (PS45A)



## DET NORSKE VERITAS EC TYPE-EXAMINATION CERTIFICATE

CERTIFICATE NO. 80526-2010-CE-KOR-DNV

This Certificate consists of 3 pages

This is to certify that the product  
**Safety Gear**

with type designation(s)  
**PS45A/Progressive**

Manufactured by

**Otis Elevator Korea/SIGMA Elevator Company**  
74,Seongsan-dong,Changwon-City,Gyeongnam,641-714, Korea

has been assessed with respect to  
the conformity assessment procedure described in Annex V. A (Module B) of  
Council Directive 95/16/EC on Lifts, as amended, and found to comply

Further details are given overleaf.

Place and date  
Hovik, 28 June 2010

This Certificate is valid until  
27 June 2015

for DET NORSKE VERITAS

  
Marianne Spæren

Notified Body No.: 0434

Soren Jublin  
Technical Reviewer

Head of Section  
PED, ATEX, Pressure Equipment

Notice: This certificate is subject to terms and conditions overleaf. Any significant changes in design or construction may render this certificate invalid.

Cert No.: 80526-2010-CE-KOR-DNV  
Project No.: PRJG-112266-2008-PRG-KOR

### Jurisdiction

DNV is appointed by the National Office of Building Technology and Administration as Notified Body under the terms of the Norwegian regulation "Forskrift om krav til byggeværk og produktar til byggeværk /TEK", dated 1997-01-22 and Article 9 of Council Directive 95/16/EC.

### Certificate history

Revision	Description	Issue date
0	Original certificate	28, June, 2010

### Product description

The following types are covered by the certificate:

Product Description	Type designation(s)	Ratings
Safety Gear	PS45A/Progressive	Maximum tripping speed : 3.55m/s Min/Max load: 3431/4500kg The minimum width of gripping : 18 mm Guide rail: Dry and Lubricated (ISO Grade 6S or 32) Thickness of guide rail: 16 mm, 15.88 mm Guide rail type :ISO T89/B, T90/B, T114/B, T125/B, T127-1/B, T127-2/B

### Applications/Limitations:

This Certificate only relates to Lifts safety. Other directives, covering other phenomena, also having requirements related to CE marking, might also apply.

### Technical documentation:

The following documentation formed the basis for the assessment:

Document No.	Name/Title	Version/Date
SRJMa623-0068	Technical dossier	1 / 2010-04-08
PIS10117	Test report	2010-06-22

### Applied Standards/Test carried out:

The following standards/specifications have been applied: EN81-1

Cert No.: 80526-2010-CE-KOR-DNV  
Project No.: PRJG-112266-2008-PRG-KOR

### Terms and conditions:

This certificate is subject to the following terms and conditions:  
The producer (see 2001/95/EC for precise definition) is liable for damage caused by defect in his product(s), in accordance with directive 85/374/EEC, as amended, concerning liability of defective products.

The following conditions may render this certificate invalid:


- Changes in the design or construction of the product
- Changes or amendments to the referenced directive
- Changes or amendments in the standards which form the basis for documenting compliance with the essential requirements of the directive

### Marking of product

This Certificate is only concerned with the design of the product. To fully meet with the requirements of the Directive and legally affix the CE mark, the manufacturer must take all necessary measures to ensure the manufacturing process makes sure that the manufactured product complies with the technical documentation and with the requirements of the Directive, and draw up an EC declaration of conformity.

END OF CERTIFICATE

# 3. Safety Gear (PS35A)



## DET NORSKE VERITAS

### EC TYPE-EXAMINATION CERTIFICATE

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Certificate No. 45141-2008-CE-KOR-DNV Rev. 2.0  
This Certificate consists of 3 pages


*This is to certify that the product(s)*  
**Safety Gear**  
*with name and/or type designation(s)*  
**PS35A/Progressive**  
*Manufactured by*  
**Otis Elevator Korea/SIGMA Elevator Company**  
 74, Seongsan-dong, Changwon-City, Gyeongnam, 641-714, Korea


*has been assessed with respect to*  
 the conformity assessment procedure described in Annex V.A ( Module B )  
 of Council Directive 95/16/EC on Lifts, as amended,  
 and found to comply.

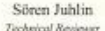
*Further details are given overleaf*

*Place and date:* Hovik, 2011-11-30 *This Certificate is valid until:* 2016-11-30

for  
**Det Norske Veritas AS**


  
 Marianne Spæren  
 Certification Manager NACW0378


  
 Notified Body No.: 0434

  
 Sören Juhlin  
 Technical Reviewer

**Notice:** This Certificate is subject to terms and conditions overleaf. Any significant changes in design or construction may render this Certificate invalid.  
If any person wishes to use a design which is covered by this certificate in any way (and) or in violation of the Det Norske Veritas, then Det Norske Veritas shall not be responsible for any damage. However, the competent authority reserved an express right to the extent the design for the use in question, provided that the assessment certificate issued by DNV is in compliance with the Det Norske Veritas' and under the Det Norske Veritas' as a witness of its activities as director, officer, employee, agent and/or other acting in behalf of Det Norske Veritas.

HEAD OFFICE: Det Norske Veritas AS, Veritasveien 1, 1322 Hovik, Norway. Tel: +47 67 57 9000 Fax: +47 67 57 9011 [www.dnv.com](http://www.dnv.com)  
*This Certificate has been digitally signed. See [www.dnv.com/signatures](http://www.dnv.com/signatures) for more info.*  
 Page 1 of 3





Cert. No. 45141-2008-CE-KOR-DNV  
 Rev. No. 2  
 Project No. PRUC-112206-2008-PRC-KOR

**Jurisdiction**  
 DNV is appointed by the National Office of Building Technology and Administration as Notified Body under the terms of the Norwegian regulation "Forskrift om krav til byggeverk og produkter til byggeverk/TEK", dated 2010-03-26 and Article 9 of Council Directive 95/16/EC

**Certificate history**

Revision	Description	Issue Date
0	Original certificate	2009-01-01
1	Model name & design change	2009-10-16
2	Cold drawn type added	2011-11-23

**Products covered by this Certificate**


Product Description	Type designation(s)	Ratings
Safety gear	PS35A/Progressive	Maximum tripping speed: 2.55m/s Rate load of product (P+Q): 1000-3450Kg The minimum width of gripping: 23 mm Guide rail :Dry and Lubricated (ISO Grade 68 or 32) Thickness of guide rail:9,10,16(15.88) mm Guide rail type : T75/B, T75-3/B, T78/B, T82/B, T89/B, T90/B, T114/B, T127-1/B, T127-2/B
Safety gear	PS35A/Progressive (Cold drawn rail type)	Maximum tripping speed: 2.38m/s Rate load of product (P+Q):1017-1666kg The minimum width of gripping:14mm Guide rail thickness:9,16(15.88) mm Guide rail type: T82/A,T89/A Surface condition of guide rail, Cold drawn


**Applications/Limitations**  
 This certificate only relates to Lift safety. Other directives, covering other phenomena, Also having requirements related to CE Marking, might also apply.

**Applied Standards/Tests carried out**

Product Name	Applied Standard
Safety gear	EN 81-1

HEAD OFFICE: Det Norske Veritas AS, Veritasveien 1, 1322 Hovik, Norway. Tel: +47 67 57 9000 Fax: +47 67 57 9011 [www.dnv.com](http://www.dnv.com)  
 Page 2 of 3





Cert. No. 45141-2008-CE-KOR-DNV  
 Rev. No. 2  
 Project No. PRUC-112206-2008-PRC-KOR

**Technical Documentation:**  
 Technical construction file ETE-LIFT-2009-001 ; 2009.Sep.16 & LIFT-2011-PS11215 ; 2011.Nov.15

**Terms and conditions**

The certificate is subject to the following terms and conditions:

- In case of damages caused by defective products, directive 85/374/EEC, as amended, will apply.
- The Certificate is only valid for the product(s) listed above.
- The Certificate is concerned with the design of the product, only.


The following may render this Certificate invalid:

- Changes in the design or construction of the product(s)
- Changes or amendments to the referenced directive(s)
- Changes or amendments in the standard(s) which form the basis for documenting compliance with the essential requirements of the directive(s)

**Conformity declaration and marking of product**  
 In order to fully meet with the requirements of the Directive and legally affix the CE mark, the manufacturer must take all measures necessary to ensure that the manufactured product complies with the technical documentation and with the requirements of the Directive and finally draws up an EC declaration of conformity.

END OF CERTIFICATE

HEAD OFFICE: Det Norske Veritas AS, Veritasveien 1, 1322 Hovik, Norway. Tel: +47 67 57 9000 Fax: +47 67 57 9011 [www.dnv.com](http://www.dnv.com)  
 Page 3 of 3



# 4. Urethane Buffer (UB165)

TÜV Hannover/Sachsen-Anhalt e.V. • Mitglied der TÜV CERT



**EG-Baumusterprüfbescheinigung**  
**EC type-examination certificate**  
**Attestation d'examen CE de type**

**Bescheinigungs-Nr.:** 08/208/AP 001/300403

**Benannte Stelle:** TÜV CERT-Zertifizierungsstelle des TÜV Hannover/Sachsen-Anhalt e.V. Kenn-Nr. 0032

**Bescheinigungsinhaber:** ACLA Werke GmbH  
Frankfurter Straße 142-190  
D-51065 Köln

**Antragsdatum:** 21.10.98

**Hersteller:** siehe Bescheinigungsinhaber

**Produkt, Typ:** Aufsetzpuffer mit nichtlinearer Kennlinie Gruppe A 300403

**Prüflaboratorium:** Prüflabor Sicherheit technischer Systeme

**Datum und Nummer des Prüfberichtes:** 98/PM31480 vom 21.12.98

**EG-Richtlinie:** Aufzugsrichtlinie 95/16/EG

**Prüfergebnis:** Das Sicherheitsbauteil erfüllt für den im Anhang Seite 1 zu dieser EG-Baumusterprüfbescheinigung angegebenen Anwendungsbereich die grundlegenden Sicherheits- und Gesundheitsanforderungen der Richtlinie

**Ausstellungsdatum:** 21.12.98

TÜV CERT-Zertifizierungsstelle für Maschinen, Aufzugs- und Fördertechnik des TÜV Hannover/Sachsen-Anhalt e.V.


Der Leiter  
  
(Rosin)



DAR-Reg.-Nr.: ZLS-ZE-136/97  
Kenn-Nr. der benannten Stelle: 0032

10000000-100

TÜV Hannover/Sachsen-Anhalt e.V. • Member of TÜV CERT



**EC type-examination certificate**

**Certificate no. :** 08/208/AP 001/300403

**Certifying authority:** TÜV CERT-Certification Agency of TÜV Hannover/Sachsen-Anhalt e.V. Identification no. 0032

**Certificate holder:** ACLA-WERKE GmbH  
Frankfurter Straße 142-190  
D-51065 Köln

**Date of application:** 21.10.98

**Manufacturer:** see certificate holder

**Product, type:** Lift buffer with non-linear characteristic curve group A 300403

**Test laboratory:** Test Laboratory Safety of Technical Systems


**Date and no. of test report:** 98/PM31480 dated 21.12.98

**EC directive:** Lift directive 95/16/EG

**Test result:** The safety component complies with the fundamental safety and health requirements of the directive for the range of application fixed on page 1 of the annex to this EC type-examination certificate.

**Date of issue:** 21.12.98

TÜV CERT-Certification Agency for machines, lift engineering and material handling of TÜV Hannover/Sachsen-Anhalt e.V.

The Manager  
  
(Rosin)

DAR REG. No.: ZLS-ZE-136/97  
Identification no. of the certifying body: 0032

# 4. Urethane Buffer (UB220)

TÜV Hannover/Sachsen-Anhalt e.V. • Mitglied der TÜV CERT



## EG-Baumusterprüfbescheinigung EC type-examination certificate Attestation d'examen CE de type

**Bescheinigungs-Nr.:** 08/208/AP 001/300404

**Benannte Stelle:** TÜV CERT-Zertifizierungsstelle des TÜV Hannover/Sachsen-Anhalt e.V. Kenn-Nr. 0032

**Bescheinigungsinhaber:** ACLA Werke GmbH  
Frankfurter Straße 142-190  
D- 51065 Köln

**Antragsdatum:** 21.10.98

**Hersteller:** siehe Bescheinigungsinhaber

**Produkt, Typ:** Aufsetzpuffer mit nichtlinearer Kennlinie Gruppe A 300404

**Prüflaboratorium:** Prüflabor Sicherheit technischer Systeme

**Datum und Nummer des Prüfberichtes:** 98/PM31480 vom 21.12.98

**EG-Richtlinie:** Aufzugsrichtlinie 95/16/EG

**Prüfergebnis:** Das Sicherheitsbauteil erfüllt für den im Anhang Seite 1 zu dieser EG-Baumusterprüfbescheinigung angegebenen Anwendungsbereich die grundlegenden Sicherheits- und Gesundheitsanforderungen der Richtlinie

**Ausstellungsdatum:** 21.12.98

TÜV CERT-Zertifizierungsstelle  
für Maschinen, Aufzugs- und Fördertechnik  
des TÜV Hannover/Sachsen-Anhalt e.V.

Der Leiter  
  
(Rosin)



DAR-Reg.-Nr.: ZLS-ZE-136/97  
Kenn-Nr. der benannten Stelle:  
0032

TÜV Hannover/Sachsen-Anhalt e.V. • Member of TÜV CERT



## EC type-examination certificate

**Certificate no. :** 08/208/AP 001/300404

**Certifying authority:** TÜV CERT-Certification Agency of TÜV Hannover/Sachsen-Anhalt e.V. Identification no. 0032

**Certificate holder:** ACLA-WERKE GmbH  
Frankfurter Straße 142-190  
D-51065 Köln

**Date of application:** 21.10.98

**Manufacturer:** see certificate holder

**Product, type:** Lift buffer with non-linear characteristic curve group A 300404

**Test laboratory:** Test Laboratory Safety of Technical Systems

**Date and no. of test report:** 98/PM31480 dated 21.12.98

**EC directive:** Lift directive 95/16/EG

**Test result:** The safety component complies with the fundamental safety and health requirements of the directive for the range of application fixed on page 1 of the annex to this EC type-examination certificate.

**Date of issue:** 21.12.98

TÜV CERT-Certification Agency  
for machines, lift engineering and material handling  
of TÜV Hannover/Sachsen-Anhalt e.V.

The Manager  
  
(Rosin)




DAR REG. No.: ZLS-ZE-136/97  
Identification no. of the certifying body:  
0032



# 4. Hydraulic Buffer (YH72B)



ZERTIFIKAT ◆ CERTIFICATE ◆ CERTIFICADO ◆ CERTIFICAT ◆ 認証証書



Industrie Service

## EC type-examination certificate

**Certificate no.:** APV 050

**Notified body:** TÜV SÜD Industrie Service GmbH  
Westendstr. 199  
80686 München - Germany

**Applicant/  
Certificate holder:** Otis Elevator Korea/SIGMA Elevator Company  
74, Seongsan-dong,  
Changwon City, Gyeongnam  
641-714 Southkorea

**Date of application:** 2010-08-27

**Manufacturer of the test sample:** Hebei Dongfang Fuda Machinery Factory  
No. 112, Guangming East Avenue,  
Langfang City  
Hebei Province 065000 - P.R. China

**Product:** Hydraulic buffer (Energy dissipating buffer)

**Type:** YH72B/175 (DAA22550A2)

**Test laboratory:** TÜV SÜD Industrie Service GmbH  
Prüflaboratorium für Produkte der Fördertechnik  
Prüfbereich Aufzüge und Sicherheitsbauteile  
Westendstr. 199  
80686 München - Germany



**Date and  
number of the test report:** 2010-09-08  
APV 050


**EC-Directive:** 95 / 16 / EC

**Result:** The safety component conforms to the essential safety requirements of the Directive for the respective scope of application stated on page 1 of the annex to this EC type-examination certificate.


**Date of issue:** 2010-09-10

Certification body for lifts and safety components  
Identification number: 0036



ZERTIFIKAT ◆ CERTIFICATE ◆ CERTIFICADO ◆ CERTIFICAT ◆ 認証証書



Industrie Service

### Test Record

to the test report no. APV 050

Choose certainty  
Add value.

**Applicant/Certificate holder:** Otis Elevator Korea/SIGMA Elevator Company  
74, Seongsan-dong,  
Changwon City, Gyeongnam, 641-714, Southkorea

**Manufacturer:** Hebei Dongfang Fuda Machinery Factory  
No. 112, Guangming East Avenue,  
Langfang City, Hebei Province 065000, P.R. China

**Test object:** Hydraulic buffer (Energy dissipating buffer)

**Type:** YH72B/175 (DAA22550A2)

**Place of examination:** Changwon (Southkorea), laboratory of Otis/Sigma

**Date of examination:** 2010-08-27

**Participants:**

- Mr. Byoung-Jin Jang (CIR)
- Mr. Sung-Tae Kim (TUV SUD Korea)
- Mr. Peter Tkalec (TUV SUD Industrie Service GmbH)

**Used measurement tools:**

- Device for measuring Masses
- Device for measuring temperatures
- EVA-System for measuring deceleration and speed
- Weighi
- Tape measure

**1. Scope of examination according to EN 81-1:1998+A3:2009 (E), F.5.3.2**


**1.1 Test procedure**

The buffer was tested with the aid of weights, corresponding to the minimum and maximum masses, falling in free fall to reach at the moment of impact the maximum speed called for.

Speed, acceleration and retardation are recorded as a function of time throughout the movement of the weights.

After each test the buffer was held in the completely compressed position for 5 minutes. After lifting the weights the buffer reaches the position of complete return in less than 120 seconds.

The next test was carried out with a delay of more than 30 minutes.



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The test results will be available to the web under test.


Headquarters: Munich  
Türkya Register: March 1999 18 608  
MKT 0706; CE 0180/02/1  
Information pursuant to Section 2(1)  
Or: TÜV SÜD Industrie Service GmbH  
www.tuv-sud.com/apv050

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Board of Management:  
Federal Government: ULLS,  
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Geschäftsfeld Fördertechnik  
Westendstrasse 199  
80686 München  
Germany

ZERTIFIKAT ◆ CERTIFICATE ◆ CERTIFICADO ◆ CERTIFICAT ◆ 認証証書



Industrie Service

Page 2 of 7  
Reference Date: (EN 81-1:2008) 2010-08-27  
Document: PP\_APV\_050\_2010\_08\_27\_0100

### 2. Measured Values

2.1 The oil temperature was 24.3°

2.2 Total mass of car and rated load, impact speed and retardation


Total mass of car and rated load (kg)	Free fall distance (mm)	Impact speed (m/s)	Average retardation (m/s <sup>2</sup> )
3000	180	1.80	9.03
700	185	1.74	7.75

2.3 No retardation of more than 2.5 g and longer than 0.04 s did appear.

2.4 After the tests no permanent deformation of the buffer could be stated.

### 3. Result

The required test procedures according EN 81-1:1998+A3:2009 (E), F.5.3.2 have been carried out. All the tests have shown compliance with the requirements of the standard.

TUV Industrie Service GmbH  
Geschäftsfeld Fördertechnik  
Expert engineer  
  
Peter Tkalec

# 4. Hydraulic Buffer (YH73A)

ZERTIFIKAT ◆ CERTIFICATE ◆ 認証証書 ◆ CERTIFICADO ◆ CERTIFICAT

## EC type-examination certificate

**Certificate no.:** APV 051

**Notified body:** TÜV SÜD Industrie Service GmbH  
Westendstr. 199  
80686 München - Germany

**Applicant/  
Certificate holder:** Otis Elevator Korea/SIGMA Elevator Company  
74, Seongsan-dong,  
Changwon City  
Gyeongnam 641-714 - Southkorea

**Date of application:** 2010-08-27

**Manufacturer of the test sample:** Hebei Dongfang Fuda Machinery Factory  
No. 112, Guangming East Avenue,  
Langfang City  
Hebei Province 065000 - P.R. China

**Product:** Hydraulic buffer (Energy dissipating buffer)

**Type:** YH73A/210 (DAA22550A3)

**Test laboratory:** TÜV SÜD Industrie Service GmbH  
Prüflaboratorium für Produkte der Fördertechnik  
Prüfbereich Aufzüge und Sicherheitsbauteile  
Westendstr. 199  
80686 München - Germany

**Date and number of the test report:** 2010-09-06  
APV 051

**EC-Directive:** 95 / 16 / EC

**Result:** The safety component conforms to the essential safety requirements of the Directive for the respective scope of application stated on page 1 of the annex to this EC type-examination certificate.

**Date of issue:** 2010-09-10

Certification body for lifts and safety components  
Identification number: 0038

**TUV**

**Test Record**  
to the test report no. APV 051

**Applicant/Certificate holder:** Otis Elevator Korea/SIGMA Elevator Company  
74, Seongsan-dong,  
Changwon City, Gyeongnam, 641-714, Southkorea

**Manufacturer:** Hebei Dongfang Fuda Machinery Factory  
No. 112, Guangming East Avenue,  
Langfang City, Hebei Province 065000, P.R. China

**Test object:** Hydraulic buffer (Energy dissipation buffer)

**Type:** YH73A/210 (DAA22550A3)

**Place of examination:** Changwon (Southkorea), laboratory of Otis/Sigma

**Date of examination:** 2010-08-27

**Participants:** - Mr. Byoung-Jin Jang (Otis)  
- Mr. Sung-Tae Kim (TÜV SÜD Korea)  
- Mr. Peter Tkalec (TÜV SÜD Industrie Service GmbH)

**Used measurement tools:** - Device for measuring Masses  
- Device for measuring temperatures  
- EVA-System for measuring deceleration and speed  
- Watch  
- Tape measure

**1. Scope of examination according to EN 81-1:1998+A3:2009 (E), F.5.3.2**

**1.1 Test procedure**

The buffer was tested with the aid of weights, corresponding to the minimum and maximum masses, falling in free fall to reach at the moment of impact the maximum speed called for.

Speed, acceleration and retardation are recorded as a function of time throughout the movement of the weights.

After each test the buffer was held in the completely compressed position for 5 minutes. After lifting the weights the buffer reaches the position of complete return in less than 120 seconds.

The next test was carried out with a delay of more than 30 minutes.

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Geschäftsbereich Fördertechnik  
Westendstraße 199  
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Germany

**2. Measured Values**

2.1 The oil temperature was 24.3°

2.2 Total mass of car and rated load, impact speed and retardation

Total mass of car and rated load (kg)	Free fall distance (mm)	Impact speed (m/s)	Average retardation (m/s <sup>2</sup> )
3000	240	2.05	9.57
700	240	1.99	3.275

2.3 No retardation of more than 2.5 g and longer than 0.04 s did appear.


2.4 After the tests no permanent deformation of the buffer could be stated.

**3. Result**

The required test procedures according EN 81-1:1998+A3:2009 (E), F.5.3.2 have been carried out. All the tests have shown compliance with the requirements of the standard.

Peter Tkalec

# 5. Door Locking device



Choose certainty.  
Add value.

**Test Report**  
No. DL 046-2007-KOR

**Applicant / Customer:** Otis Elevator Korea / SIGMA Elevator Company  
74, Seongsan-dong  
Changwon-city  
Gyeong-nam 641-714  
KOREA

**Manufacturer:** Otis Elevator Korea / SIGMA Elevator Company  
74, Seongsan-dong  
Changwon-city  
Gyeong-nam 641-714  
KOREA

**Testing laboratory:** TÜV SÜD Industrie Service GmbH  
Testing laboratory for Lifts and their Safety Components  
Westendstraße 199  
D-80686 München

**Date of submission:** 2007-08-10

**Product type:** Locking device with hook bolt for horizontally moved, side or center opening single panel landing door with power operation, type SILA1

**Testing order:** Verification of EC type-examination of a ascending car overspeed protection means tested by Korea Testing Laboratory according annex V A of directive 95/16/EC and certified by the Notified Body Det Norske Veritas


**Specifications:**

- Directive 95/16/EC of 29th of June 1995
- Standard DIN EN 81-1:1998 + AC: 1999
- Annex F1 of the Standard DIN EN 81-1

**Kind of examinations:**

- Examination on correspondence with the check-ing-basics

**Place and date of examination:** Seoul, 2007-09-06




Supervisory Board  
Dr. Axel Doppen (Chairman)  
Board of Management  
Dr. Manfred Seipen (Spokesman)  
Dr. Udo Hees

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Headquarters: Munich  
Trade Register: Munich HRB 96 989



Page 3 of 3  
Our reference: TÜV SÜD 15-Korea/06.08.2007  
Document: 79026\_TR\_CL\_046-2007-KOR

**1. Description of the test object**  
Locking device with hook bolt for horizontally moved, side or center opening single panel landing door with power operation, type SILA1

**2. Examinations and tests**  
The examinations and tests were carried out in Korea Testing Laboratory, Ansan, accredited by Korean Agency for Technology and Standards (KATS)

**2.1. Examination of operation**  
It was verified  
- that there is at least 7 mm engagement of the locking elements before the electric safety device operates and  
- that it is not possible from positions normally accessible to persons to operate the lift with a door open or unlocked, after one single action, not forming part of the normal operation.

**2.2. Mechanical tests**

**2.2.1. Endurance test**  
The locking device was submitted to 1150187(Center Opening) and 1060236(Side Opening) complete cycles; one cycle comprised one forward and return movement over the full travel possible in both directions.


**2.2.2. Static test**  
In the locked position of the locking device it was tried to open the door by drawing on the door in opening direction with a force of 1000 N. Applied period:300 s

**2.2.3. Dynamic test**  
The locking device, in the locked position, was submitted to a shock test in the opening direction of the door. The shock was realized by falling of a rigid mass of 4 kg in free fall of a height of 0.5 m.

**2.3. Electrical test**

**2.3.1. Test of ability to break circuit**  
The required tests were carried out under following conditions:  
110 V DC, 2.0 A DC

**2.3.2. Electrical endurance test:**  
1000000 times DC 110 V, 2.0 A



Page 3 of 3  
Our reference: TÜV SÜD 15-Korea/06.08.2007  
Document: 79026\_TR\_CL\_046-2007-KOR

**2.3.3. Test for resistance to leakage currents**

**2.3.4. Examination of clearances and creeping distances:** 7.7 mm for center opening and 7.8 mm for side opening

**2.3.5. Examination of the requirements appropriate to safety contacts and their accessibility**

**3. Documents**  
The presented documents are corresponding to the requests concerning extent and contents.

**4. Scope of application**


- Rated Voltage : 110 VDC
- Rated current : 1 ADC
- Door Type : Centre or side opening single panel door
- Center opening width : 1100 mm
- Side opening width : 1100 mm

The permissible dimensions of doors shall be chosen only within the admissible scope in accordance with the table and the information in the approval drawings

**5. Result**  
It can be confirmed, that the door locking device type SILA1 meets the requests of the specifications for the scope of application.

**6. Documents on which the test report is based**

- Drawing No. 2UF0205 rev 13 stamped with TÜV SÜD 0036 dated 2007-09-10
- Technical dossier of interlock for EC-type examination (SILA1 Landing door lock device)
- Test report of Korea Testing Laboratory no. 2002-008 dated 2002-08-20
- Test report of Korea Testing Laboratory no. ETE-LIFT-2006-002 dated 2007-02-21
- EC Type-examination certificate of Det Norske Veritas (DNV) no. 02-GOT-CL-0016 dated 2005-12-16

**Expert engineer**  
  
Jung W. Seo