



## EC type-examination certificate

<b>Certificate no.:</b>	ABFV 491/4
<b>Notified body:</b>	TÜV SÜD Industrie Service GmbH Westendstr. 199 80686 München - Germany
<b>Applicant/ Certificate holder:</b>	Inventio AG Seestrasse 55 6052 Hergiswil - Switzerland
<b>Date of application:</b>	2012-01-23
<b>Manufacturer of the test sample:</b>	Schindler Drive Systems Poligono "Empresarium" Albardin, 58 50720 La Cartuja Baja – Zaragoza – Spain
<b>Product:</b>	Progressive safety gear with braking device as part of the protection device against overspeed for car moving in up- wards direction
<b>Type:</b>	SA GED 20
<b>Test laboratory:</b>	TÜV SÜD Industrie Service GmbH Prüflaboratorium für Produkte der Fördertechnik Prüfbereich Aufzüge und Sicherheitsbauteile Westendstr. 199 80686 München - Germany
<b>Date and number of the test report:</b>	2012-01-24 ABFV 491/4
<b>EC-Directive:</b>	95 / 16 / EC
<b>Result:</b>	The safety component conforms to the essential safety requirements of the Directive for the respective scope of application stated on page 1 - 2 of the annex to this EC type-examination certificate.
<b>Date of issue:</b>	2012-01-25

Certification body for lifts and safety components  
Identification number: 0036

*C. Rührmeyer*  
Christian Rührmeyer





Industrie Service

**Enclosure of EC type-examination certificate  
no. ABFV 491/4 dated 2012-01-25**

**Authorised manufacturers – production sites (stated: 2012-01-25):**

**Schindler Drive Systems**

Poligono „Empresarium“  
Albardin, 58  
50720 La Cartuja Baja – Zaragoza - Spain

**Suzhou Schindler Elevator Co. Ltd.**

818 Jin Men Road  
Suzhou 215004 - China

**Elevadores Atlas Schindler S. A.**

R. Angelina Ricci Vezozzo, 3400  
86087 – Londrina – PR - Brasil

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Base: Request of Co. Schindler Aufzüge AG dated 2012-01-23

**Annex to the EC type-examination certificate  
no. ABFV 491/4 dated 2012-01-25**

**1 Scope of application**

1.1 Progressive safety gear (acting downwards)

Permissible total mass of car and rated load or counterweight in using one pair of safety gears, depends on maximum tripping speed of the overspeed governor

<b>Max. tripping speed (m/s)</b>	<b>Manufactured by and condition</b>	<b>Total mass (kg) min. - max.</b>
2,16	drawn/dry	1542 - 2405
2,63	drawn/dry	1542
2,16	drawn/oiled*	1288 - 2686
2,63	drawn/oiled*	1288
2,16	machined/dry	1492 - 3008
2,63	machined/dry	1492
2,16	machined/oiled*	1446 - 3196
2,63	machined/oiled*	1446
2,43	machined/oiled*	1866 - 3516
3,50	machined/dry	1310 - 3410
3,50	machined/oiled*	1205 - 3627

\*HLP-oils according to DIN 51524, part 2 or oils with comparable characteristics

For the intermediate values of the maximum tripping speed of 2,16 - 2,63 m/s the corresponding maximum total mass can be determined through linear interpolation in the range of 2405 - 1542, 2686 - 1288, 3008 - 1492 and 3196 - 1446 kg.

1.2 Braking device (acting upwards)

Permissible brake force when using the braking devices in twos, depends on the manufacture and condition of the guide rail running surface

<b>Max. tripping speed (m/s)</b>	<b>Manufactured by and condition</b>	<b>Brakeforce (N) min. - max.</b>
2,21	drawn/dry	8139 - 11857
2,21	drawn/oiled*	8115 - 8370
2,21	machined/dry	6024 - 15526
2,21	machined/oiled*	6024 - 14923
2,43	machined/oiled*	8765 - 13945

\*HLP-oils according to DIN 51524, part 2 or oils with comparable characteristics

1.3 Maximum tripping speed of overspeed governor and range of maximum rated speed

<b>Max. tripping speed (m/s)</b>	2,16	2,21	2,43	2,63	3,50
<b>Max. rated speed (m/s)</b>	1,73 - 1,88	1,77 - 1,92	1,94 - 2,11	2,10 - 2,29	2,72 - 3,04

**Note:** The English text is a translation of the German original. In case of any discrepancy, the German version is valid only.



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- 1.4 Guide rails to be used
- 1.4.1 Minimum running surface width 25 mm
- 1.4.2 Blade width 9 - 16 mm

## 2 Conditions

- 2.1 Since the braking device represents only the decelerating element of the protection device against over speed for the car moving in upwards direction, the speed monitoring element for upwards direction must be an over speed governor which also retracts the braking device as per EN 81-1, section 9.9.
- 2.2 The forces acting in upwards direction on the guide rails must be safely absorbed (e. g. without shifting the guide rails in upwards direction).

## 3 Remarks

- 3.1 Due to the characteristics, the braking force for the safety gear acting downwards and the braking force for the brake device acting upwards are permanently related to each other. They cannot be adjusted separately in principle. The permissible total mass stated in 1.1 thus also is permanently related to the permissible braking force as defined in 1.2.
- 3.2 The permissible brake forces must be applied to the lift system in such a manner, that the empty car moving in upwards direction is not decelerated by more than  $1g_n$ .
- 3.3 Pursuant to the standard EN 81, annex F, paragraph 3, section 3.4. a) 2) the total mass of the progressive safety gear determined for adjustment purposes may be 7,5 % higher or lower.
- 3.4 For the purposes of identification and information concerning the fundamental method of construction, the approval drawing no. M\_\_253850 with last alteration 'Ae6' and certification stamp dated 2009-03-31 have to be attached to the EC type-examination certificate ABFV 491/4 and its annex.
- 3.5 The environment and connection conditions of the safety gear are described and depicted in additional documents (e. g. the assembly instructions).
- 3.6 The EC type-examination certificate may only be used in connection with the pertinent annex and the list of the authorized manufacturers (according to enclosure). This enclosure shall be updated and re-edited following information of the certificate holder.

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