



EC TYPE-EXAMINATION CERTIFICATE

According to Annex V, Part A of 95/16/EC Directive

Certificate No.: ABFV 491/5

Certification Body of the Notified Body: TÜV SÜD Industrie Service GmbH
Westendstr. 199
80686 Munich – Germany
Identification No. 0036

Certificate Holder: INVENTIO AG
Seestrasse 55
6052 Hergiswil – Switzerland

Manufacturer of the Test Sample: Schindler Drive Systems
Poligono "Empresarium"
Albardin, 58
50720 La Cartuja Baja - Zaragoza – Spain
(Manufacturer of Serial Production - see Enclosure)

Product: Progressive safety gear and braking device as part of the protection device against overspeed for car moving in upwards direction

Type: SA GED 20
ID-Nr.: 59344600

Directive: 95/16/EC

Reference Standards: EN 81-20:2014
EN 81-50:2014
EN 81-1:1998+A3:2009
EN 81-2:1998+A3:2009

Test report: ABFV 491/5 of 2015-08-05

Outcome: The safety component conforms to the essential health and safety requirements of the mentioned Directive as long as the requirements of the annex of this certificate are kept.

Date of Issue: 2015-08-07

Werner Rau

Werner Rau
Certification Body "lifts and cranes"



**Annex to the EC type-examination certificate
no. ABFV 491/5 dated 2015-08-07**



Industrie Service

1 Scope of application

1.1 General

All following application possibilities refer to a brand-new pair of safety gear, depending on manufacturing method, condition running surface of guide rail and tripping speeds. The safety device can fulfil two security features according 1.2 and 1.3.

Guide rails to be used

Minimum running surface width 25 mm

Blade width 9 – 16 mm

1.2 Using as a progressive safety gear (working in down direction) - Permissible total mass of car plus rated load and rated speed

Guide rail manufactured by	Condition of the running surface	Max. rated speed [m/s]	Max. tripping speed [m/s]	Total mass [kg] min. – max.
drawn	dry	1.73 – 1.88	2.16	1542 – 2405
	dry	2.10 – 2.29	2.63	1542
	oiled*	1.73 – 1.88	2.16	1288 – 2686
	oiled*	2.10 – 2.29	2.63	1288
machined	dry	1.73 – 1.88	2.16	1492 – 3008
	dry	2.10 – 2.29	2.63	1492
	oiled*	1.73 – 1.88	2.16	1446 – 3196
	oiled*	2.10 – 2.29	2.63	1446
	oiled*	1.94 – 2.11	2.43	1866 – 3516
	dry	2.72 – 3.04	3.50	1310 – 3410
	oiled*	2.72 – 3.04	3.50	1205 – 3627

*HLP – oils according DIN 51524, part 2

1.3 Using as a brake device – Part of protection device against overspeed for car moving in upwards direction (working in up direction) - Permissible brake forces

Guide rail manufactured by	Condition of the running surface	Max. tripping speed [m/s]	Brake force [N] min. – max.
drawn	dry	2.21	8139 – 11857
	oiled*	2.21	8115 – 8370
machined	dry	2.21	6024 – 15526
	oiled*	2.21	6024 – 14923
	oiled*	2.43	8765 – 13945

*HLP – oils according DIN 51524, part 2

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

2 Conditions

- 2.1 The above mentioned safety component represents only part of a protection device against overspeed for car moving in upwards direction. Only in combination with a detecting and triggering component (two separate components also possible), which must be subjected to an own type examination, can the system created fulfil the requirements of the protection device.
- 2.2 The forces acting on the guide rails must be safely absorbed.
- 2.3 The dimension configuration of the lift system must be designed as regards the total mass and brake forces in such a way, that the permissible value of deceleration according norm EN 81-20 does not exceed (e.g. empty lift car travelling in upwards direction is not decelerated by more than 1 g_n).
- 2.4 For identification and information about the principal construction and operation and for demarcation of the examined and approved sample the identification drawing M _ _ 253850 with certification stamp dated 2009-03-31 has to be enclosed to the EC type-examination certificate and its annex.
- 2.5 The EC type-examination certificate may only be used in connection with the pertinent annex and the enclosure (list of the manufacturers serial production). This enclosure shall be updated and re-edited following information of the certificate holder.

3 Remarks

- 3.1 Due to the characteristics, the braking force for the progressive 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 scope of application thus also is permanently related to the permissible braking force.
- 3.2 Pursuant to the standard EN 81-50:2014, paragraph 5.3.4, the total mass of the progressive safety gear determined for adjustment purposes may be 7.5 % higher or lower.
- 3.3 The progressive safety gear based on permissible total mass according table point 1.2 of this type examination certificate can also be used till maximum permissible tripping speed by the counterweight.
- 3.4 This EC type-examination certificate is based modelled after and /or harmonized standards as following:
 - EN 81-1:1998 + A3:2009 (D), Anhang F.3 and F.7
 - EN 81-2:1998 + A3:2009 (D), Anhang F.3
 - EN 81-20:2014 (D), Punkt 5.6.2.1.1.2 and 5.6.6.11
 - EN 81-50:2014 (D), Punkt 5.3 and 5.7
- 3.5 Changes resp. extensions of the upper mentioned standards or a further development of the state of the art may make a revision of this EC type-examination certificate necessary

**Enclosure of EC type-examination certificate
no. ABFV 491/5 dated 2015-08-07**



Industrie Service

Manufacturer serial production – production sites (Stated: 2018-03-14):

Company Address	Schindler Drive Systems Poligono "Empresarium" Albardin 58 50720 La Cartuja Baja - Zaragoza – Spain
Company Address	Schindler (China) Elevator Co. Ltd. No. 818 Jin Men Road 215004 Suzhou – P.R. China
Company Address	Schindler (China) Elevator Co., Ltd. No. 555 Xing Shun Road, Jiading District, 201800 Shanghai – P.R. China
Company Address	Elevadores Atlas Schindler S. A. R. Angelina Ricci Vezozzo, 3400 86087 Londrina – Brasil
Company Address	Hebei Dongfang Fuda Machinery Factory No. 112, Guangming East Avenue, Langfang City Hebei Province 065000 – P.R.China
Company Address	Schindler India Pvt. Ltd. Plot no-D234, Near Warale Village Chakan MIDC Phase-II Taluka – Khed 410501 Pune, Maharashtra – India

- ENDE DOKUMENT -

Base: Application letter of SCHINDLER Elevator Ltd. dated 2018-03-12

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

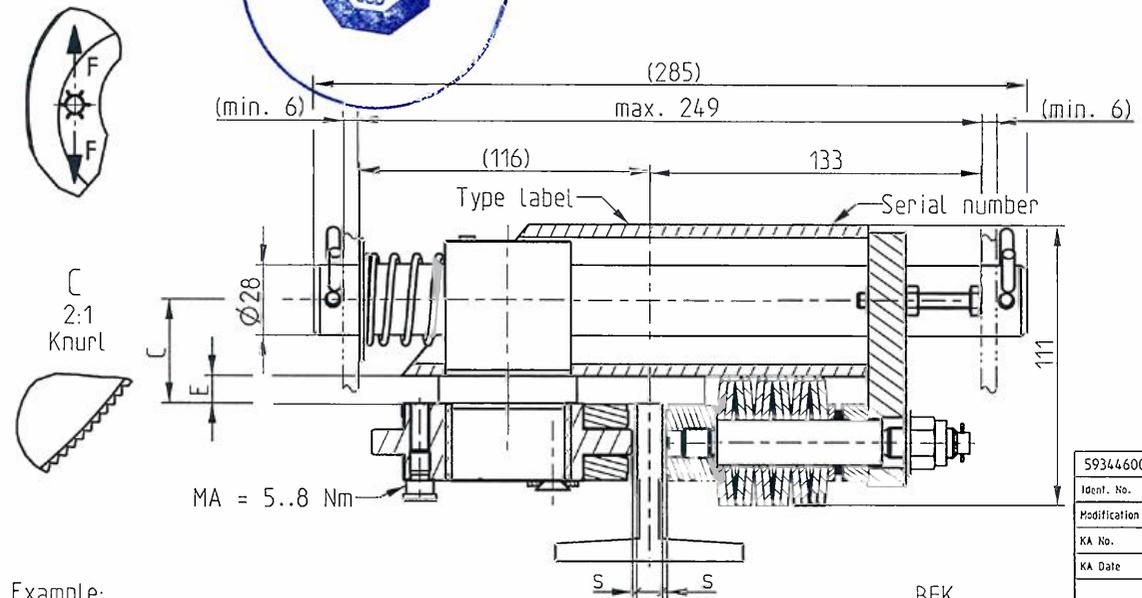
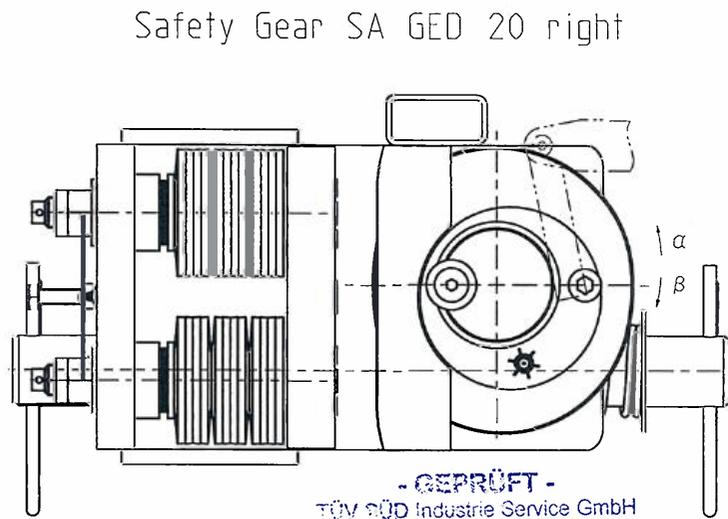
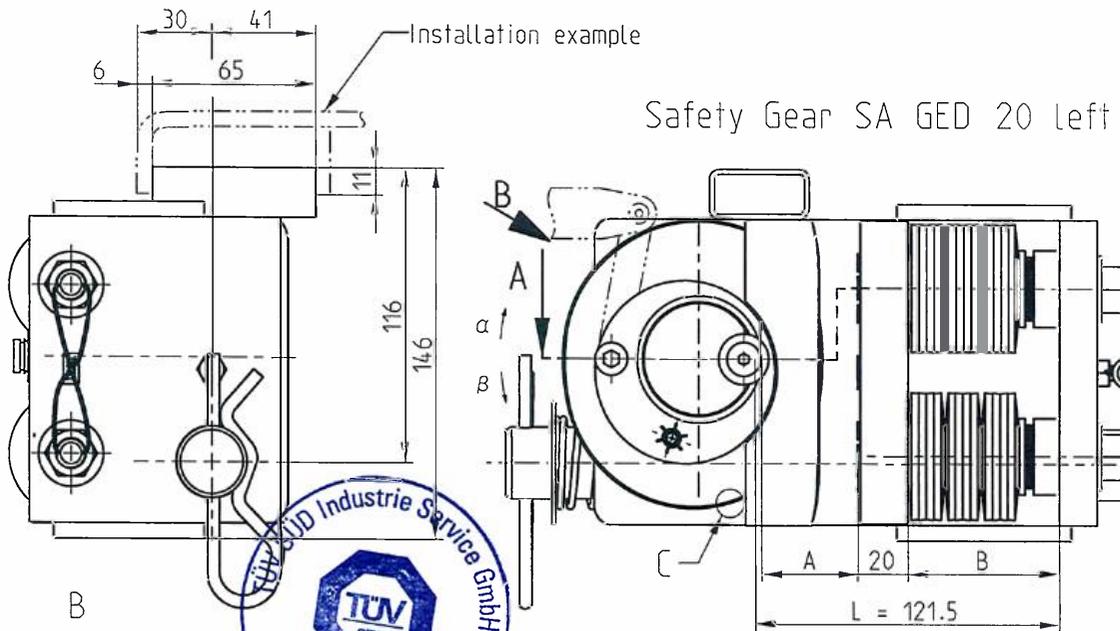
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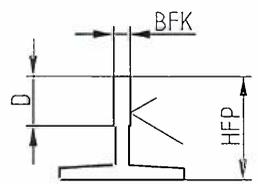
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Pro/E.



Example:

T127	16	88.9	47.0	54.5	40.75	50.8	10.75	2
T89	16	62.0	47.0	54.5	40.75	33.4	10.75	2
T75-3	10	62.0	41.0	60.5	40.75	30.0	10.75	2
Type	BFK	HFP	A	B	C	D	E	s



- GEPRÜFT -
 TÜV SÜD Industrie Service GmbH
 Zentralbereich Fördertechnik Sonderbauten
 Abteilung Aufzüge und Sicherheitsbauteile
 Westendstr. 199, D-80686 München
 Der Sachverständige

Notes: **31. März 2009**

- The safety gear SA GED 20 works in up direction and down direction.
- Actuating force $F = 60 \text{ N}$ for 1 pair SA GED 20 (without retaining spring) according to detail B
- α rotating angle for up direction
- $\alpha \sim 35^\circ$ contact of the braking elements with the guide rail
- $\alpha \sim 150^\circ$ brake position (maximum rotation angle)
- β rotating angle for down direction
- $\beta \sim 35^\circ$ contact of the braking elements with the guide rail
- $\beta \sim 95^\circ$ brake position (maximum rotation angle)
- Drawn version SA GED 20/AS with BFK10
- ISO7465 for surface, manufacturing, and material quality

59344600								20.451
Ident. No.	Semi finished product / raw material	Semi fin. Ident. No.	Item	Code surface	Heat treatment	Draw / BOM / Model		Weight Kg.
Modification			Ae6	Draw Ver.	Retained BOM			
KA No.			158150	6	Retained BOM			
KA Date			2008-09-12	Model Ver.	Retained BOM			
				4	Release Level	Released		
Group: SAFETY					Remark		Date	Name
Dimensioned Drawing SA GED 20					Scale	Replaces / Ae:	Prepared	2008-04-17 schoopch
SA GED 20					1:1		Reviewed	2008-04-17 imfeldma
					Page	1/1	Norms checked	2008-04-17 imfeldma
							Released	2008-04-23 gensicka
INVENTIO AG CH-6052 Hergiswil				Classification	Lead Office	Lang.		
				11540	EB3	M_253850		EN
				Format A3				