



Industrie Service

EC type-examination certificate

Certificate no.: ABFV 491/3
Notified body: TÜV SÜD Industrie Service GmbH
 Zertifizierungsstelle für Aufzüge und Sicherheitsbauteile
 Westendstrasse 199
 D-80686 München
**Applicant/
 Certificate holder:** Inventio AG
 Seestrasse 55
 CH-6052 Hergiswil
Date of submission: 2008-06-03
**Accredited manufacturer
 of the holding:** Schindler Drive Systems
 Poligono „Empresarium“
 Albardin, 58
 ES-50720 La Cartuja Baja – Zaragoza
 Suzhou Schindler Elevator Co. Ltd.
 818 Jin Men Road
 CN-Suzhou 215004
 Elevadores Atlas Schindler S. A.
 R. Angelina Ricci Vezozzo, 3400
 BR-86087 – Londrina – PR
Product: Progressive safety gear with braking device as part of the
 protection device against overspeed for car moving in up-
 wards direction
Type: SA GED 20
Test laboratory: TÜV SÜD Industrie Service GmbH
 Abteilung Aufzüge und Sicherheitsbauteile
 Westendstrasse 199
 D-80686 München
**Date and number
 of test report:** 2009-03-30
 491/3
EC-Directive: 95 / 16 / EC
Statement: The safety component conforms to the directive's essential
 safety requirements for the respective scope of application
 stated on page 1-2 of the annex to this EC type-
 examination certificate
Certificate date: 2009-03-31

Zertifizierungsstelle für Aufzüge und Sicherheitsbauteile
 EC-Identification number: 0036

S. Melzer

Siegfried Melzer



Annex to the EC type-examination certificate no. ABFV 491/3 dated 2009-03-31

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, manufacture and condition of the guide rail running surface

Max. tripping speed (m/s)	Manufactured by and condition	Total mass (kg) min. - max.
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

*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 Brake 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

Max. tripping speed (m/s)	Manufactured by and condition	Brakeforce (N) min. - max.
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 the maximum rated speed

Max. tripping speed (m/s)	2,16	2,21	2,43	2,63
Max. rated speed (m/s)	1,73 - 1,88	1,77 - 1,92	1,94 - 2,11	2,10 - 2,29

1.4 Guide rails to be used

1.4.1 Minimum running surface width

25 mm

1.4.2 Blade width

9 - 16 mm



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2. Conditions for the brake device

- 2.1 Since the brake device represents only the decelerating element of the protection device against overspeed for the car moving upwards direction against overspeed, the speed monitoring element for upwards direction must be an overspeed governor which also retracts the brake 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

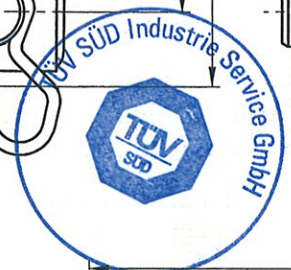
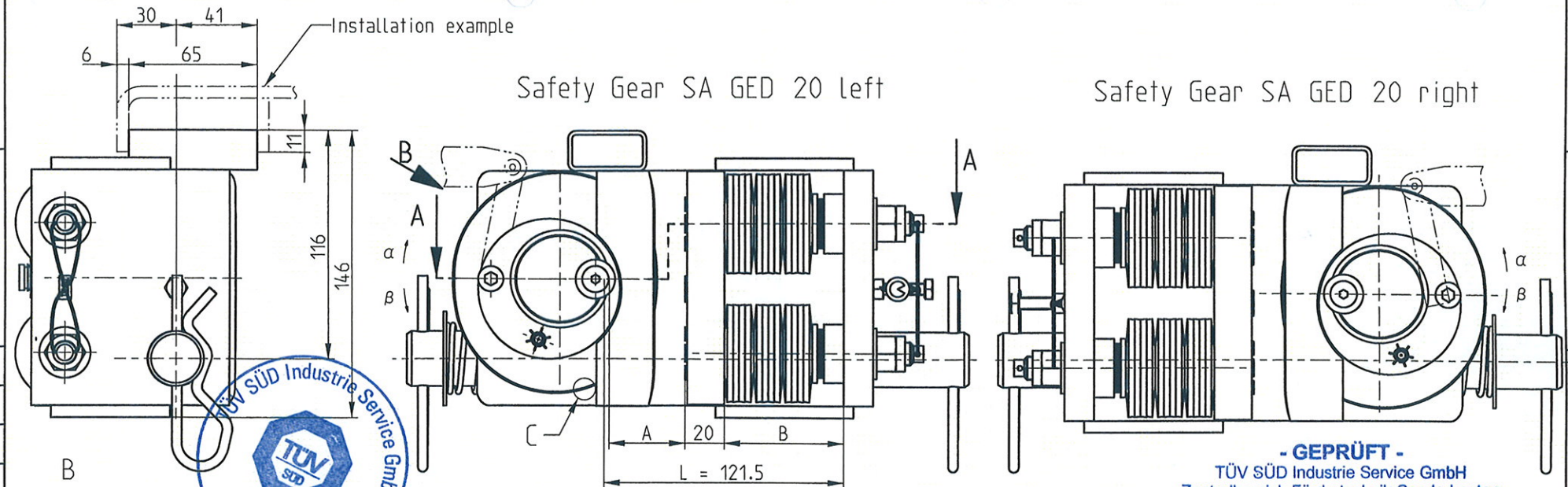
- 3.1 Due to the characteristics, the braking force for the safety gear acting downwards and the braking force for the brake device acting upwards are permanently related to each other. They cannot be adjusted separately in principle. The permissible total mass stated in 1.1 thus also is permanently 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 lift cabin travelling in an upwards direction is not decelerated by more than 1g.
- 3.3 Pursuant to the standard EN 81, annex F, paragraph 3, section 3.4. a) 2) the total mass determined for adjustment purposes may be 7.5 % higher or lower.
- 3.4 In order to provide identification and information about the basic design and its functioning and to show the environmental conditions and connection requirements pertaining to the tested and approved type, and to define which parts have been tested, drawing no. M __ 253850 with revision state Ae6 is to be enclosed with the EC type-examination certificate and the annex thereto.
- 3.5 The EC type-examination certificate may only be used in connection with the pertinent annex.

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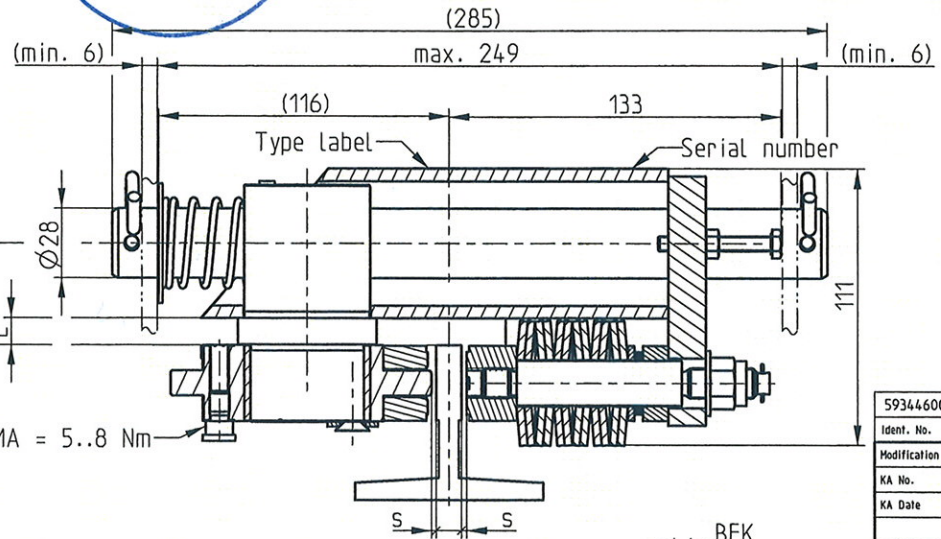
Pro/E.



- GEPRÜFT -
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 Zentralbereich Fördertechnik-Sonderbauten
 Abteilung Aufzüge und Sicherheitsbauteile
 Westendstr. 199, D-80686 München
 Der Sachverständige

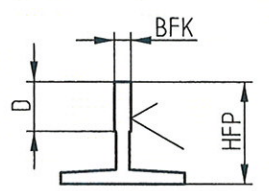
Notes: **3 1. März 2009**

- 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



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



59344600							20.451
Ident. No.	Semi finished product / raw material	Semi fin. Ident. No.	Item	Code surface	Heat treatment	Drwg / BOH / Model	Weight Kg.
Modification			Ae6	Draw Ver.	Related BOH		
KA No.			158/150	6	Related BOH		
KA Date			2008-09-12	Model Ver.	Related BOH		
				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		Norms checked	2008-04-17 imfeldma
				1/1		Released	2008-04-23 gensickma
INVENTIO AG CH-6052 Hergiswil			Classification	Lead Office	M_253850		Lang.
			11540	EB3			EN
			Format A3				