



## EC type-examination certificate

**Certificate no.:** ABFV 491/2

**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:** 2007-12-11

**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

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

**Type:** GED 20

**Test laboratory:** TÜV SÜD Industrie Service GmbH  
Abteilung Aufzüge und Sicherheitsbauteile  
Westendstrasse 199  
D-80686 München

**Date and number  
of test report:** 2008-03-17  
491/2

**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:** 2008-03-17

Zertifizierungsstelle für Aufzüge und Sicherheitsbauteile  
EC-Identification number: 0036

*S. Metzger*  
p.p. Siegfried Melzer



**Annex to the EC type-examination certificate  
no. ABFV 491/2 dated 2008-03-17**

**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



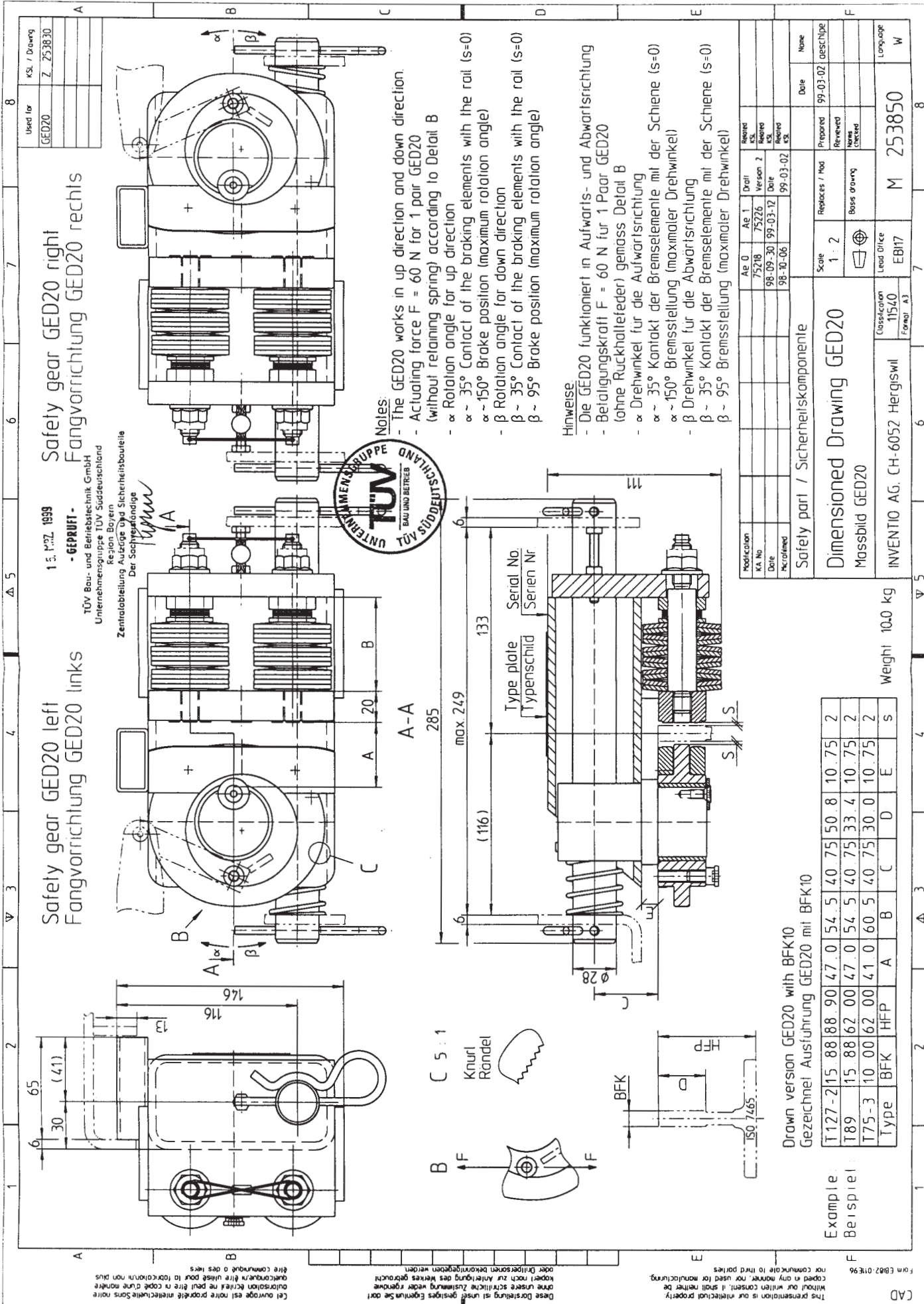
Industrie Service

## **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 253 850 dated 07. September 2007/Ae5 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.



1.5.1999  
**- GEPRÜFT -**  
 TÜV Bau- und Betriebstechnik GmbH  
 Unternehmensgruppe TÜV Süddeutschland  
 Region Bayern  
 Zentralabteilung Auszüge und Sicherheitsbauweise  
 Der Sachverständige  
*10mm*



- Notes**
- The GED20 works in up direction and down direction.
  - Actuating force  $F = 60$  N for 1 pair GED20 (without retaining spring) according to Detail B
  - $\alpha$  Rotation angle for up direction
  - $\alpha \sim 35^\circ$  Contact of the braking elements with the rail (s=0)
  - $\alpha \sim 150^\circ$  Brake position (maximum rotation angle)
  - $\beta$  Rotation angle for down direction
  - $\beta \sim 35^\circ$  Contact of the braking elements with the rail (s=0)
  - $\beta \sim 95^\circ$  Brake position (maximum rotation angle)

**Hinweise**

- Die GED20 funktioniert in Aufwärts- und Abwärtsrichtung
- Betätigungskraft  $F = 60$  N für 1 Paar GED20 (ohne Rückhalter) gemäss Detail B
- $\alpha$  Drehwinkel für die Aufwärtsrichtung
- $\alpha \sim 35^\circ$  Kontakt der Bremsenlemente mit der Schiene (s=0)
- $\alpha \sim 150^\circ$  Bremsstellung (maximaler Drehwinkel)
- $\beta$  Drehwinkel für die Abwärtsrichtung
- $\beta \sim 35^\circ$  Kontakt der Bremsenlemente mit der Schiene (s=0)
- $\beta \sim 95^\circ$  Bremsstellung (maximaler Drehwinkel)

Drawn version GED20 with BFK10  
 Gezeichnet Ausführung GED20 mit BFK10

Type	BFK	HFP	A	B	C	D	E	S			
Example	T127-215	88	88	90	47.0	54.5	40.75	50.8	10.75	2	
Beispiel	T89	15	88	62	00	47.0	54.5	40.75	33.4	10.75	2
	T75-3	10	00	62	00	41.0	60.5	40.75	30.0	10.75	2

Weight 10.0 kg

Modification	KA No.	Date	Revised	Drawn	Version	Prepared	Reviewed	Checked	Date	Note
	75218	98-09-30	KS	75226	2	99-03-12	KS		99-03-02	
		98-10-06	KS							

Safety part / Sicherheitskomponente		Score	Replaces / No.	Revised	Checked	Date	Note
Dimensioned Drawing GED20		1.2				99-03-02	
Massbild GED20							
INVENTIO AG, CH-6052 Hergiswil		Lead Office	EB17				
		Classification	11540				
		Format	A3				
		Material	M	253850			
		Language	W				

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