



Industrie Service

## EC type-examination certificate

**Certificate no.:** ABV 729/1

**Notified body:** TÜV SÜD Industrie Service GmbH  
Zertifizierungsstelle für Aufzüge und Sicherheitsbauteile  
Westendstraße 199, 80686 München - Germany

**Applicant/  
Certificate holder:** WARNER Electric Europe  
7, rue de Champfleür  
BP 20095  
49124 St. Barthélemy D'Anjou - France

**Date of submission:** 2007-11-30

**Manufacturer:** WARNER Electric Europe  
7, rue de Champfleür  
BP 20095  
49124 St. Barthélemy D'Anjou - France

**Product:** Braking device acting on the traction sheave, as part of  
the protection device against overspeed for the car  
moving in upwards direction

**Type:** ERS VAR 09 SZ 800/ \_ \_ \_

**Test laboratory:** TÜV SÜD Industrie Service GmbH  
Abteilung Aufzüge und Sicherheitsbauteile  
Westendstraße 199, 80686 München - Germany


**Date and  
number of test report:** 2008-01-14  
729/1

**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:** 2008-01-15

Zertifizierungsstelle für Aufzüge und Sicherheitsbauteile  
EC-Identification number: 0036

  
Dieter Roas



ZERTIFIKAT ◆ CERTIFICATE ◆ CERTIFICADO ◆ CERTIFIKAT ◆ 認証証書 ◆ CERTIFICATE ◆ ZERTIFIKAT

**Annex to the EC type-examination certificate  
no. ABV 729/1 dated 2008-01-15**

**1. Scope of Application**

- 1.1 Permissible brake moment when the braking device acts on the brake disk while the car is moving upward, depends on the maximum tripping rotary speed

Max. tripping rotary speed [rpm]	Brake Moment [Nm]
250	1005 – 1646
400	847 - 1653

- 1.2 Maximum tripping speed of the overspeed governor and maximum rated speed

The maximum tripping speed and the maximum rated speed must be calculated on the basis of the traction sheave's maximum tripping rotary speed and maximum rated rotary speed as outlined in sections 1.2.1 and 1.2.2 taking into account traction sheave diameter and car suspension.

$$v = \frac{D \times \pi \times n}{60 \times i}$$

$v$  = speed (m/s)  
 $D$  = Diameter of the traction sheave from rope's center to rope's center (m)  
 $\pi$  = 3,14  
 $n$  = Rotary speed (min<sup>-1</sup>)  
 $i$  = Ratio of the car suspension

- |   |               |
|---|---------------|
| 1.2.1 Maximum tripping rotary speeds of the traction sheave | 250 / 400 rpm |
| 1.2.2 Maximum rated rotary speeds of the traction sheave    | 217 / 348 rpm |

**2. Conditions**

- 2.1 Since the braking device represents only a part of the protection device against overspeed for the car moving in upwards direction an overspeed governor as per EN 81-1, paragraph 9.9 must be used to monitor the upward speed and the braking device must be triggered (engaged) via the overspeed governor's electric safety device.

Alternatively, the speed may also be monitored and the braking device engaged by a device other than an overspeed governor as per paragraph 9.9 if the device shows the same safety characteristics and has been type tested.

- 2.2 The movement of each brake circuit (each anchor) is to be monitored separately and directly (e.g. by micro switches). If a brake circuit fails to engage (close) while the lift machine is at standstill, next movement of the lift must be prevented.
- 2.3 In cases where the lift machine moves despite the brake being engaged (closed), the lift machine must be stopped at the next operating sequence at the latest and the next movement of the lift must be prevented (The car may, for example, be prevented from travelling by querying the position of the micro switch which is used to monitor the mechanical movement of the brake circuits, should both brake circuits fail to open).



- 2.4 According to EN 81-1, paragraph 9.10.4 d a braking device must act directly on the traction sheave or on the same shaft on which the traction sheave is situated in the immediate vicinity thereof.

If the braking device does not act in the immediate vicinity of the traction sheave on the same shaft on which the traction sheave is situated, the standard is not complied with. In cases involving shaft failure between the traction sheave and the braking device, safety would no longer be ensured by the latter if the lift car made an uncontrolled upward movement.

Shaft failure in this area must therefore be ruled out by appropriate design and sufficient dimensioning. In order to eliminate or reduce influencing factors which may lead to failure wherever possible, the following requirements must be satisfied:

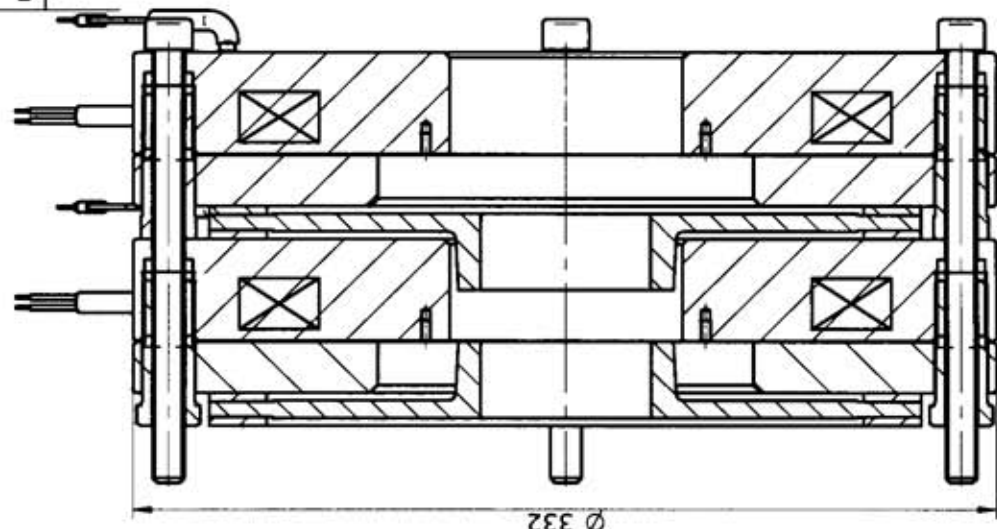
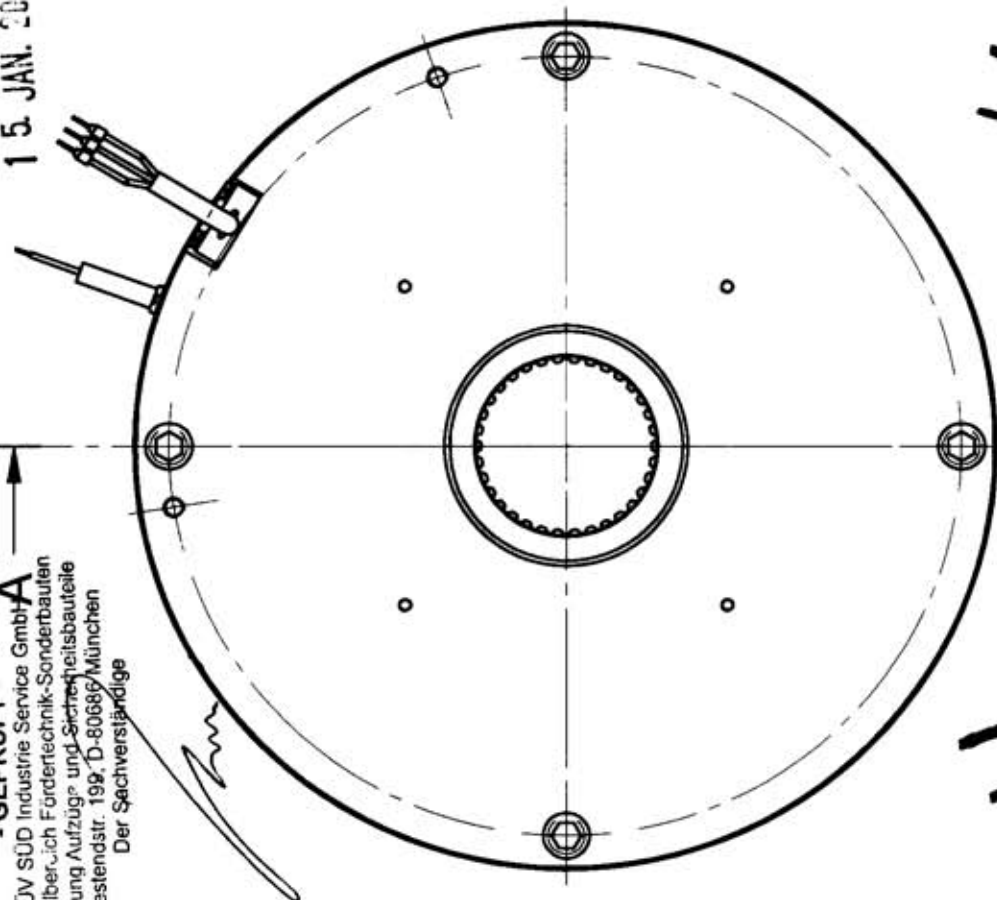
- Minimization of bending length between traction sheave and braking device or traction sheave and the next bearing (the next bearing must form part of the drive unit)
  - As far as possible, prevention of a reduction in load-bearing capacity in the area of reversed bending stress (reduction in load-bearing capacity caused, for example, by stress concentration and cross-sectional reductions)
  - Between traction sheave and braking device the shaft must be continuous (made from one piece)
  - Cross-sectional influences on the shaft are only permitted if they act on the following connections: traction sheave – shaft, braking device – shaft, torque of the transmitting component – shaft (situated between traction sheave and braking device).
- 2.5 The manufacturer of the drive unit must provide calculation evidence that the connection braking device – shaft, traction sheave - shaft and the shaft itself is sufficiently safe. The calculation evidence must be enclosed with the technical documentation of the lift.

### 3. Remarks

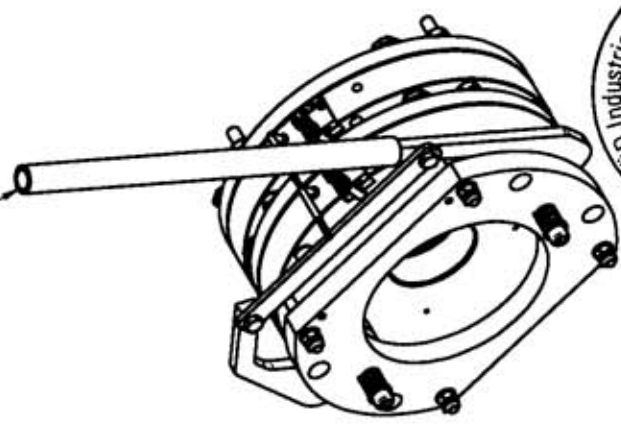
- 3.1 The brake moment effectively adjusted of one brake circuit will be marked at the blank after the type designation ÈRS VAR 09 SZ 800/\_\_\_ .
- 3.2 The permissible braking moments must be applied to the lift system in such a manner that they do not decelerate more than  $1 g_n$ , if the empty car is moving upwards.
- 3.3 In the scope of this type-examination it was found out, that the brake device also functions as a brake for normal operation, is designed as a redundant system and therefore meets the requirements to be used also as a part of the protection device against overspeed for the car moving in upwards direction.  
This type examination only refers to the requirements pertaining to brake devices as per EN 81-1, paragraph 9.10. Checking whether the requirements as per paragraph 12.4 have been complied with is not part of this type examination.
- 3.4 In order to provide identification and information about the design and its functioning drawing No. 1 12 106774, dated 04 January 2004 with last modification dated 30 November 2007 is to be enclosed with the EC type-examination certificate and the Annex thereto. The installation conditions and connection requirements are presented or described in separate documents (e. g. operating instructions).
- 3.5 The EC type-examination certificate may only be used in connection with the pertinent Annex.

15. JAN. 2008

**- GEPRÜFT -**  
 TÜV SUD Industrie Service GmbH  
 Zentralbereich Fertigkeitech.-Sonderbauten  
 Abteilung Aufzüge- und Sicherheitsbauteile  
 Westendstr. 199, D-80689 München  
 Der Sachverständige



Hand lever  
(option)



Les cotes sans indication de tolérances sont des cotes nominales.  
 Untoleranced dimensions are nominal dimensions.

**NOTES**

**TUV DIFFUSION**

Client/customer:		Customer ref.:
M <sub>s</sub> (Nm) :	M <sub>d</sub> (Nm) :	Dimensions in mm :
n <sub>ld</sub> (min-1) :	n <sub>max</sub> (min-1) :	Manual/notice :
U (Vdc) :	P <sub>20°C</sub> (W) :	Mass :
Insulation class (°C) :		Scale :
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FN	LT	REVISION	DATE	By	Ch.
A	Up to date	30.11.07	GFE		
Drawn : G. Ferrand		Date: 07.01.04			
Checked: Bruno Pitto		Date: 07.01.04			

Design.: **Frein électromagnétique**

Type: **ERS VAR09 SZ800 / ---**

N° **1 12 106774**

A3

CAD SE