ZERTIFIKAT ◆ CERTIFICATE ◆ 認証証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

Industrie Service

EU TYPE-EXAMINATION CERTIFICATE

According to Annex IV, Part A of 2014/33/EU Directive

Certificate No.:	EU-BD 881
Certification Body of the Notified Body:	TÜV SÜD Industrie Service GmbH Westendstr. 199 80686 Munich - Germany Identification No. 0036
Certificate Holder:	INTORQ GmbH & Co. KG Wülmser Weg 5 31855 Aerzen - Germany
Manufacturer of the Test Sample: (Manufacturer of Serial Production – see Enclosure)	INTORQ GmbH & Co. KG Wülmser Weg 5 31855 Aerzen - Germany
Product:	Braking device acting on the shaft of the traction sheave, as part of the protection device against overspeed for the car moving in upwards direction and braking element against unintended car movement
Type:	BFK455-28
Directive:	2014/33/EU
Reference Standards:	EN 81-20:2014 EN 81-50:2014 EN 81-1:1998+A3:2009
Test Report:	EU-BD 881 of 2016-03-18
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:	2016-03-18
Date of Validity:	from 2016-04-20

TÜV SÜD Industrie Service GmbH 00 36 Notified Body

Werner Rau
Certification Body "lifts and cranes"

TÜV®

Annex to the EC Type-Examination Certificate
No. EU-BD 881 of 2016-03-18

Industrie Service

1 Scope of application

1.1 Use as braking device – part of the the protection device against overspeed for the car moving in upwards direction – permissible brake torque and tripping rotary speed

1.1.1 Permissible brake torque when the braking device acts on the shaft of the traction sheave while the car is moving upward

Permissible brake torque (Nm)	Maximum tripping rotary speed of the traction sheave (rpm)
2 x 1200 = 2400	455
2 x 1700 = 3400	
2 x 1800 = 3600	
2 x 2065 = 4130	

1.1.2 Maximum tripping speed of the overspeed governor and maximum rated speed of the lift

The maximum tripping speed of the overspeed governor and the maximum rated speed of the lift must be calculated on the basis of the traction sheave's maximum tripping rotary speed as outlined below taking into account traction sheave diameter and car suspension.

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

v = Tripping (rated) speed (m/s)
D_{TS} = Diameter of the traction sheave from rope's center to rope's center (m)
π = 3,14
n = Rotary speed (rpm)
i = Ratio of the car suspension

1.2 Use as braking element – part of the protection device against unintended car movement (acting in up and down direction) – permissible brake torque, tripping rotary speed and characteristics

1.2.1 Nominal brake torque and response times with relation to a brand-new brake element

Nominal brake torque* [Nm]	Maximum tripping rotary speed [rpm]	Maximum response times** [ms] with / without overexcitation			Brake control [parallel or serial]	Overexcitation at [x- fold non-release voltage]
		t_{10}	t_{50}	t_{90}		
2 x 1200 = 2400	255	160 / 197	214 / 252	267 / 306	parallel	2-fold
2 x 1200 = 2400	455	189 / 207	290 / 295	390 / 382	serial	1,43-fold
2 x 1700 = 3400	455	61 / 73	123 / 136	184 / 199	parallel	2-fold
2 x 1800 = 3600	455	59 / 70	110 / 122	160 / 174	parallel	2-fold
2 x 2065 = 4130	255	89 / 108	158 / 177	226 / 247	parallel	2-fold

Explanations:

* **Nominal brake torque:** Brake torque assured for installation operation by the safety component manufacturer.

** **Response times:** t_X time difference between the drop of the braking power until establishing X% of the nominal brake torque, t_{50} optionally calculated $t_{50}= (t_{10}+ t_{90})/2$ or value taken from the examination recording

1.2.2 Assigned execution features

Type of powering / deactivation	continuous current / continuous current end
Nominal air gap	0.45 mm
Damping elements	YES

2 Conditions

2.1 Above mentioned safety component represents only a part at the protection device against overspeed for the car moving in upwards direction and unintended car movement. Only in combination with a detecting and triggering component in accordance with the standard (two separate components also possible), which must be subjected to an own type-examination, can the system created fulfil the requirements for a protection device.

2.2 The installer of a lift must create an examination instruction to fulfil the overall concept, add it to the lift documentation and provide any necessary tools or measuring devices, which allow a safe examination (e. g. with closed shaft doors).

2.3 The manufacturer of the drive unit must provide calculation evidence that the connection traction sheave – shaft – brake disc and the shaft itself is sufficiently safe, if the brake disc is not a direct component of the traction sheave (e. g. casted on). The shaft itself has to be statically supported in two points.

The calculation evidence must be enclosed with the technical documentation of the lift.

2.4 The setting of the brake torque has to be secured against unauthorized adjustment (e. g. sealing lacquer).

2.5 The identification drawing no. 5018294 or 5019746 including stamp dated 2016-03-18 shall be included to the EU type-examination for the identification and information of the general construction and operation and distinctness of the approved type.

2.6 The EU type-examination certificate may only be used in combination with the corresponding annex and enclosure (List of authorized manufacturer of the serial production). The enclosure will be updated immediately after any change by the certification holder.

3 Remarks

3.1 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 and as braking element as part of the protection device against unintended car movement.

3.2 Checking whether the requirements as per section 5.9.2.2 of EN 81-20:2014 (D) have been complied with is not part of this type examination.

3.3 Other requirements of the standard, such as reduction of brake moment respectively brake force due to wear or operational caused changes of traction are not part of this type examination.

3.4 This EU type-examination certificate was issued according to the following standards:

- EN 81-1:1998 + A3:2009 (D), Annex F.7 and F.8
- EN 81-20:2014 (D), part 5.6.6.11, 5.6.7.13
- EN 81-50:2014 (D), part 5.7 and 5.8

3.5 A revision of this EU type-examination certificate is inevitable in case of changes or additions of the above mentioned standards or of changes of state of the art.

Enclosure to the EU Type-Examination Certificate
No. EU-BD 881 of 2016-03-18

Industrie Service

Authorised Manufacturer of Serial Production – Production Sites (valid from: 2016-03-18):

Company INTORQ GmbH & Co. KG
Address Wülmser Weg 5
31855 Aerzen – Germany

Company INTORQ (Shanghai) Co., Ltd.
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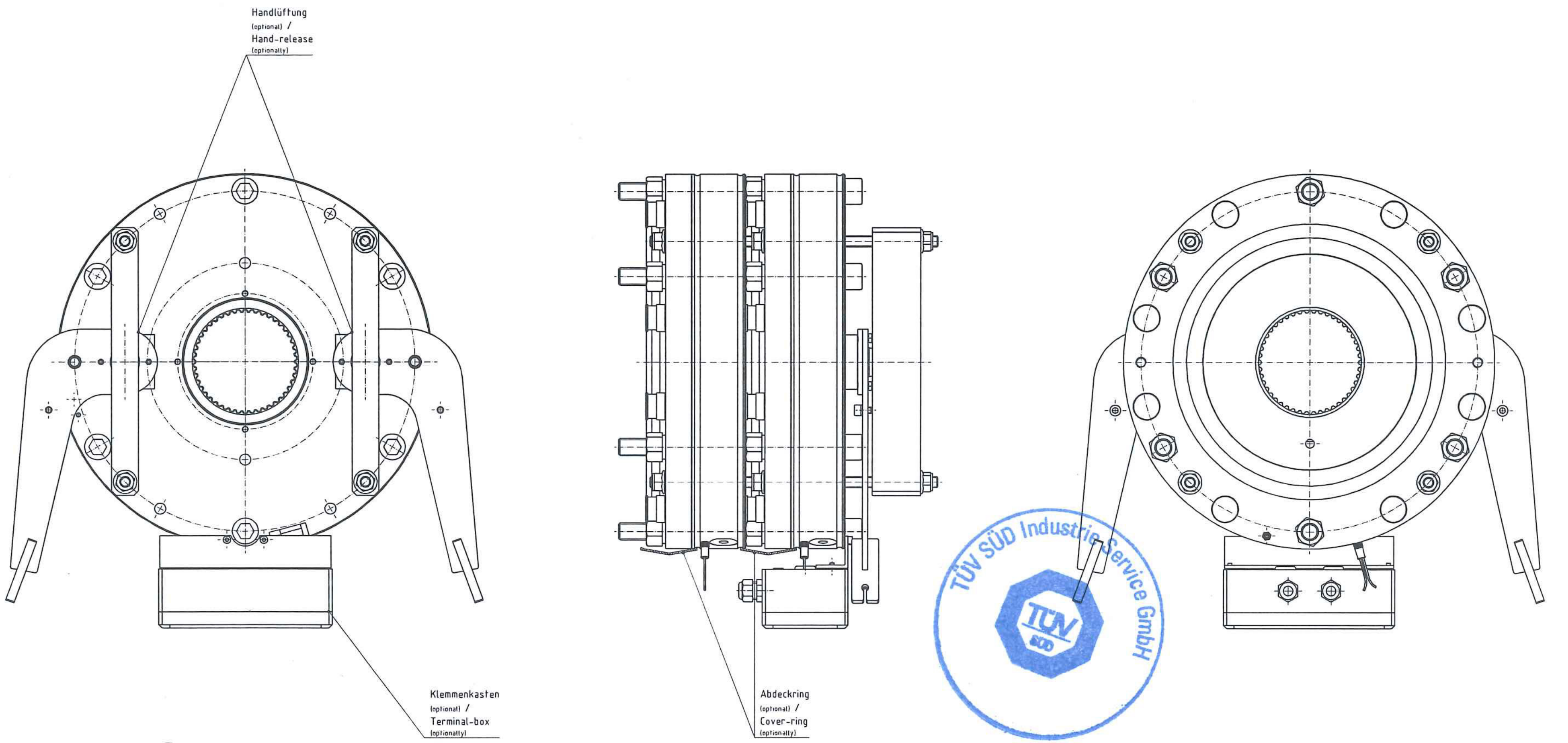

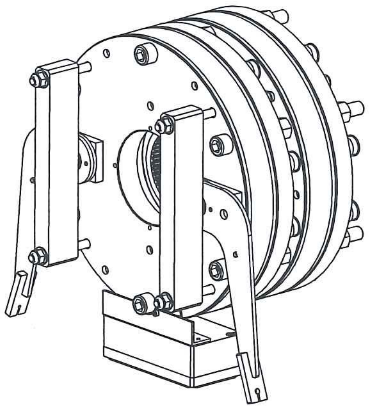

18. MRZ. 2016

GEPRÜFT / APPROVED
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Sachverständige(r) / Expert

Type / type BFK455-28

Typ / type: BFK455	Baugröße / design size: 28	Maßstab / scale: 1:2	Oberflächen / surface: DIN ISO 1302
Version / version: AB	Status / status: 40 released		
Erst. / drn: 12.02.2016	DITTRICH		
Gepr. / chkd: 19.02.2016	QUADFASELW		
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Index / index: 2	Anz. / quan.: -	Änder-Nr. / revision no.: 501676	Datum / date: 17.02.2016	Name / name: STR

Dokumentbeschreibung / document description: Federkraftbremse Spring-op-brake

CAD INTORQ

Dokumentnr. / document no.: 5019746

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Datei / file: 5016285_IAM_000.iam

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