ΑΝΩΝΥΜΗ ΕΤΑΙΡΕΙΑ ΒΙΟΜΗΧΑΝΙΚΗΣ ΕΡΕΥΝΑΣ, ΤΕΧΝΟΛΟΓΙΚΗΣ ΑΝΑΠΤΥΞΗΣ
& ΕΡΓΑΣΤΗΡΙΑΚΩΝ ΔΟΚΙΜΩΝ, ΠΙΣΤΟΠΟΙΗΣΗΣ ΚΑΙ ΠΟΙΟΤΗΤΑΣ
MATERIALS INDUSTRIAL RESEARCH & TECHNOLOGY CENTER S.A.

EBETAM MIRTEC

CERTIFICATE

EU Type – Examination

According to Directive 2014/33/EU, (Module B, annex IV - A)

Certificate No: LF/KSA/A-C-0294/22

ΕΣΥΔ Product Certification No.of Certificate 27

Identification No of Certification body:	MIRTEC s.a CE 0437
Name & Address of the Certificate Holder:	**NIDEC MOTOR CORPORATION** 8050 W. Florissant Ave. St. Louis, Mo. 63136, USA
Name & Address of the Manufacturer:	**KINETEK DESHENG MOTOR CO. LTD.** 82 Jizhou Shiliang Road, Lunjiao, Shunde District, Foshan City, Guangdong, China
Date of Submission for EU Type-Examination:	**09/10/2022**
Product of Safety Component:	**Brake as ascending safety device (ASD) to prevent uncontrolled upward movement of the car and as unintended car movement protection (UCMP) means**
Type:	**DB1-515-1400**
Applicable Standards:	2014/33/EU, annex I, EN81-50:2020 5.7 & 5.8 EN81-20:2020 5.6.6 & 5.6.7, 5.9.2.2.2
Examination Period:	October-December 2022
Date & No of examination report:	LF/KSA/A-R-0294/22, 07/12/2022
Place of testing:	Kinetek DeSheng Motor Co. Ltd. 82 Jizhou Shiliang Road, Lunjiao, Shunde District, Foshan City, Guangdong, China.
Date & No of laboratory Report:	LF/KSA/A-TR-0294/22, 13/10/2022
Documents annexed: *to the Certification*:	Product description, Calculation book, Drawings, Installation & maintenance instructions, Material list
Field of application:	ANNEX 1, ANNEX 2

Validation conditions / Additional instructions:

The production of the brake falls under random inspections from the certification body.
For all changes on the materials, drawings and production-assembly methods the certificate holder must inform the certification body.
The Certificate holder issues a declaration of conformity according to the basic requirements of the relative directive and places the CE marking with his own responsibility. The product must be accompanied by installation & maintenance instructions adjustment.
The brake should have a label with the necessary information (name of manufacturer, type examination certificate number, field of application, serial number, date etc).

Result of the examination - Declaration:

Here with we certify that the type of the product mentioned above, meets the requirements of the Directive 2014/33/EU.

Only the products detailed in the test report have been subjected to tests.

Date of issue: **07.12.2022**

For MIRTEC S.A.

I. DIMITRIADIS
Lead Auditor, Inspector of Lifts

EBETAM·MIRTEC·EBETAM·MIRTEC 0437 Notified Body

Certification department for lifts

C. SPILIOTOPOULOS
Inspector of Lifts

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Product Certification
No.of Certificate 27

ANNEX 1

Part of the EU-Type examination LF/KSA/A-C-0294/22

Technical characteristics			
Model	DB1-515-1400	Type of stopping element	Synchronous motor brake
Acting position	On the sheave directly	Action method	Acting when power supply loss
Material of friction element	Synthetic material (Asbestos free)	Type of elastic element	Compression spring
Number of friction surfaces	2	Number of springs	2 x 16
Air gap	0.30 - 0.60 mm		
Brake torque	2×1400 Nm		
Spring type	φ4×φ18.5×50		
Diameter of brake drum	515 mm		

A. Brake as ascending safety device (ASD) to prevent uncontrolled upward movement of the car

Field of application	
Brake torque	2 × 1400 Nm
Range of rated load	800-1632 kg
Range of weight of car	640-3264 kg
Range of system mass	2024-8186 kg
Max. rated rotational speed	239 rpm
Max. tripping rotational speed	308 rpm
Range of balance coefficient	0.4 - 0.5
Traction ratio	2:1
Notes	The range of the system mass and weight of car and rated load are determined according to the type-examination sample with the suspension ratio of 2:1, the values of other actual suspension ratios can be obtained by the following formulas: 1) The applicable system mass=type-examination system mass × actual suspension ratio ÷ suspension ratio in type-examination; 2) The applicable weight of car=type-examination weight of car × actual suspension ratio ÷ suspension ratio in type-examination; 3) The applicable rated load=type-examination rated load ×actual suspension ratio ÷ suspension ratio in type-examination.

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The maximum tripping speed of the lift and the nominal speed of the lift are being calculated based on the maximum tripping rotational speed and the nominal rotational speed of the traction sheave. Taking into account for this calculation the traction sheave diameter and the car suspension.

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

D= diameter of the traction sheave (m)
π = 3,14
n = rotational speed (min^{-1})
i = ratio of car suspension
V = lift speed (m/sec)

Remarks

- The permissible braking moments must be applied to the lift system in such a way that during the stopping phase, the braking element shall not allow a retardation of the car in excess of 1g for upwards movement with empty car.
- The installation conditions and connection requirements are described in the operating instructions.

Conditions

- The braking element also functions as a brake for normal operation. In the scope of this type examination, it was found out that there is built-in redundancy. For meeting the requirements to be used also as ascending safety device (ASD) to prevent uncontrolled upward movement of the car, must also has self-monitoring of correct operation.
- Self-monitoring could include verification of correct lifting or dropping of the mechanism or verification of the breaking force. This must apply on both brakes individually. If a failure is detected, car and landing doors shall be closed and the normal start of the lift shall be prevented.
- The braking element must impact directly on the traction sheave or on the same shaft in the immediate vicinity of the traction sheave. If the braking element does not impact on the traction sheave or on the same shaft in the immediate vicinity of the traction sheave, a deviation from the norm exists.
- The tests of the type examination sample performed with the suspension ratio of 2:1 and the range of the system mass, weight of car and rated load referred to the table are determined according this ratio. For use for other suspension ratio, the values of other actual suspension ratios can be obtained by the formulas referred to the notes in the table.

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ANNEX 2

Part of the EU-Type examination LF/KSA/A-C-0294/22

B. Brake as unintended car movement protection (UCMP) means

Field of application

Brake torque	2 × 1400 Nm
Range of rated load	800-1632 kg
Range of weight of car	640-3264 kg
Range of system mass	2024-8186 kg
Range of balance coefficient	0.4-0.5
Traction ratio	2:1
Notes	The range of the system mass and weight of car and rated load are determined according to the type-examination sample with the suspension ratio of 2:1, the values of other actual suspension ratios can be obtained by the following formulas: 1) The applicable system mass=type-examination system mass × actual suspension ratio ÷ suspension ratio in type-examination; 2) The applicable weight of car=type-examination weight of car × actual suspension ratio ÷ suspension ratio in type-examination; 3) The applicable rated load=type-examination rated load ×actual suspension ratio ÷ suspension ratio in type-examination.

Test results

Brake torque	2 × 1400 Nm	
Rated voltage	DC 110V	DC 200V
T10	55 ms	47 ms
T50	132 ms	126 ms
T90	210 ms	206 ms

T_X: Corresponds to the values of the test results when the brake has established the X% of the average nominal torque from the moment of the drop of the braking power. X=10%, 50%, 90%.

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Requirements

- The safety component as a braking element is only a part of a protection system against the unintended car movement. The complete system, apart from the braking element, also consists of a detecting element and a triggering element. These components are subjected to their own type examination too. Only the correct combination of the three parts can create a system which fulfills the requirements for protection against UCM in accordance with EN 81-20 paragraph 5.6.7.
- The machine brake used in this system is an electro-mechanical brake according to 5.9.2.2.2 of the standard EN 81-20 and is considered to have built-in redundancy. The brake also is self-monitored, so it meets the point 5.6.7.3.
- The brake is acting on the sheave directly or in the immediate vicinity of the sheave. So it meets the point 5.6.7.4.
- The brake is activated by the loss of the power supply so it meets the point 5.6.7.12.
- The average retardation ≤ 1gn so it meets the point 5.6.7.6.

Conditions

- The tests have been made with the parameters and configuration that listed in this certificate. If these parameters or configuration have been changed, the tests must be done again and the certificate is no valid anymore.
- Self-monitoring, through the verification of correct lifting or dropping of the mechanism and verification of the breaking force, applied on both brakes individually. If a failure is detected, car and landing doors shall be closed and the normal start of the lift shall be prevented.
- The braking element must impact directly on the traction sheave or on the same shaft in the immediate vicinity of the traction sheave. If the braking element does not impact on the traction sheave or on the same shaft in the immediate vicinity of the traction sheave, a deviation from the norm exists.
- The installation conditions and connection requirements are described in the operating instructions.
- The tests of the type examination sample performed with the suspension ratio of 2:1 and the range of the system mass, weight of car and rated load referred to the table are determined according this ratio. For use for other suspension ratio, the values of other actual suspension ratios can be obtained by the formulas referred to the notes in the table.

Certification department of: MIRTEC S.A.

C. SPILIOTOPOULOS

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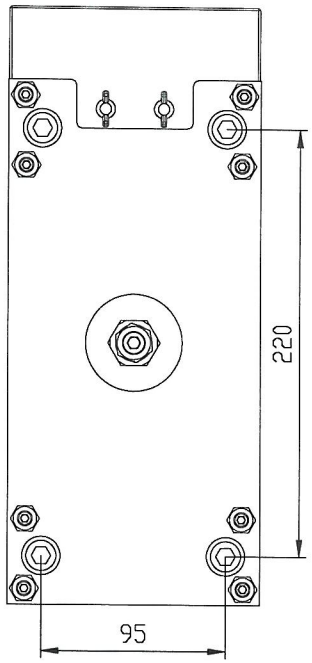

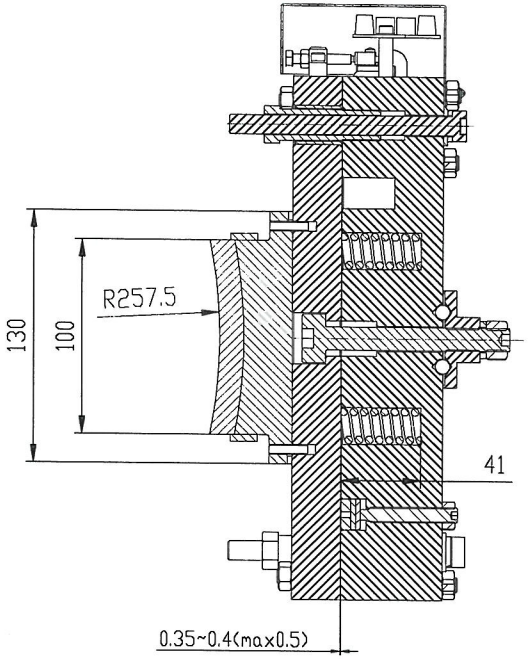

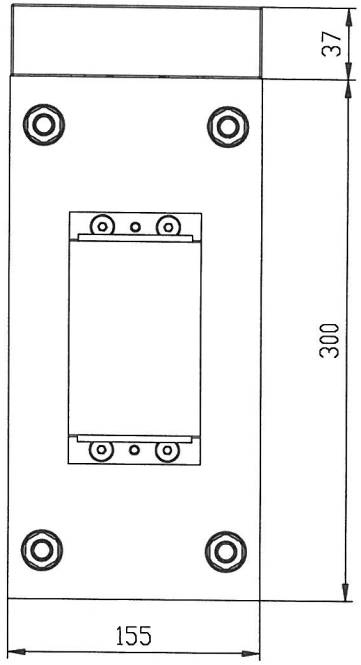

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校对 CHK BY		批准 APPR BY	Luckie		
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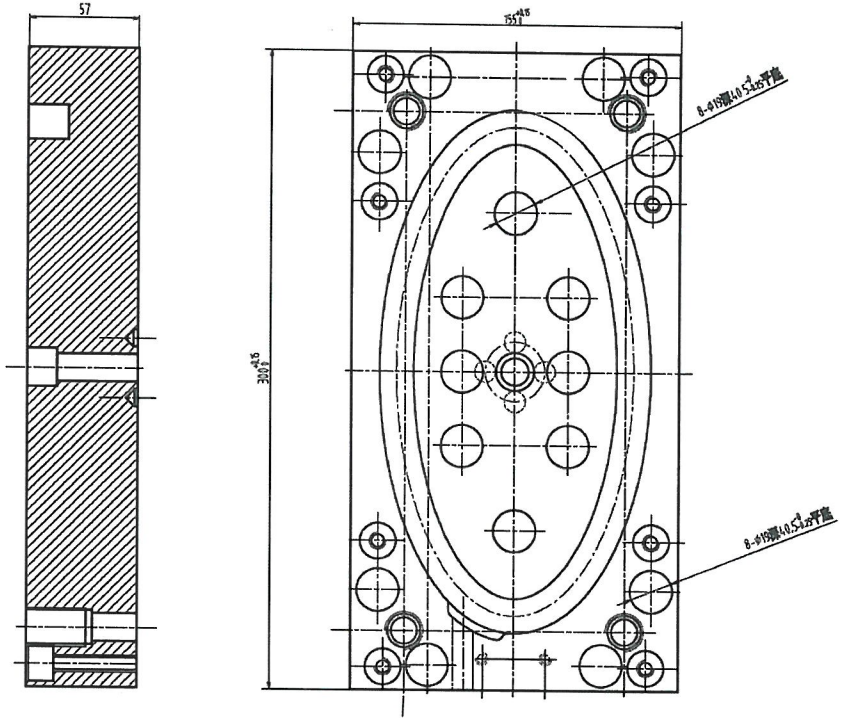

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Armature

图号 DRW #	DSZ1-15KN-1A	版本 REV. A
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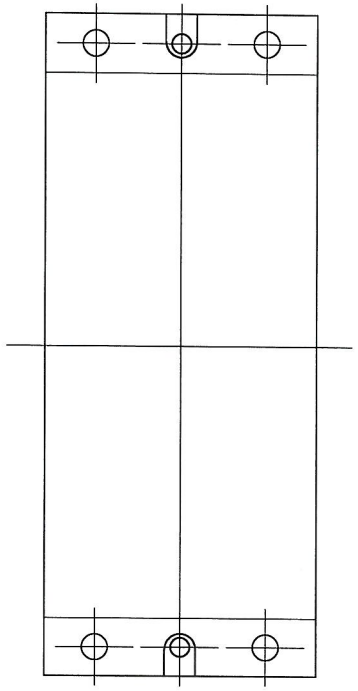

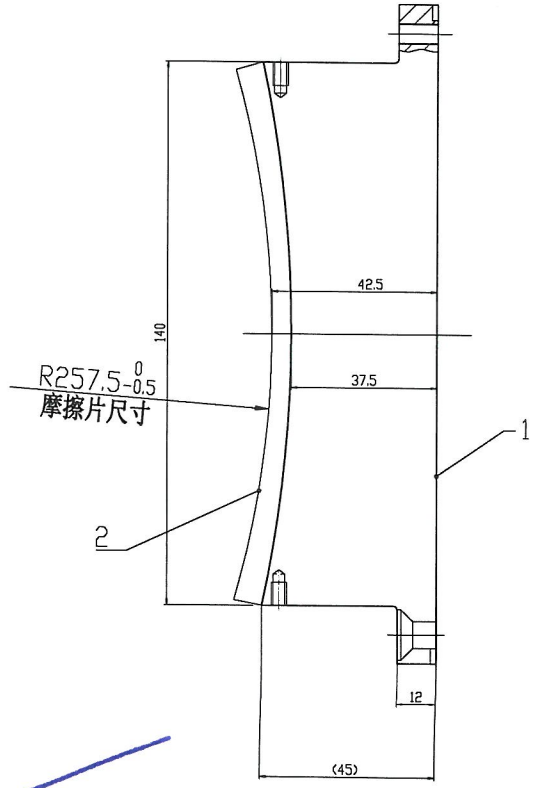

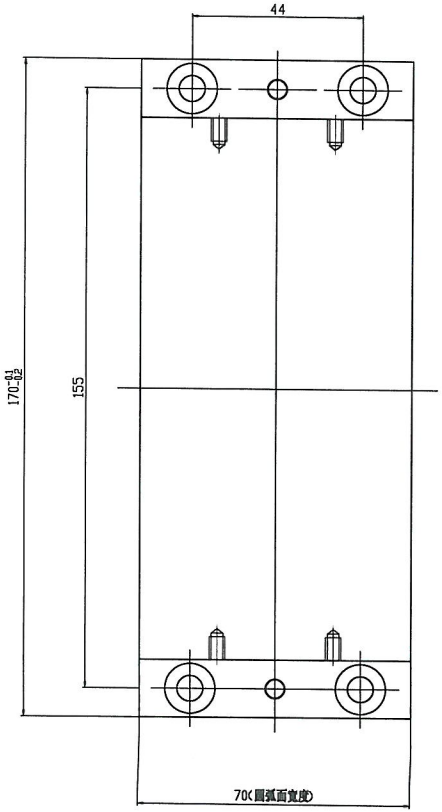

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Bottom plate Assembly

图号 DRW N	DSZ15000N-3G		版本 REV A
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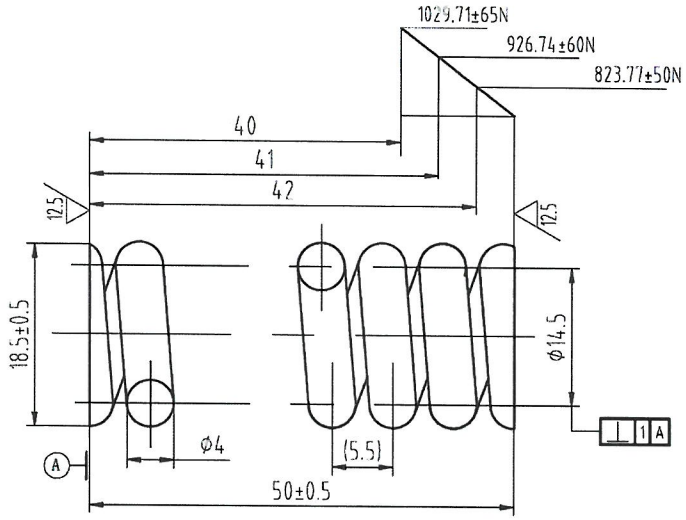

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