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CNAS L0916

Report No. 2022AF1002

Type -Examination Report of Special Equipment （LIFT）

Product category	Lift Safety Protection Device
Equipment Type	Lift Ascending Car Overspeed Protection Means (speed reducing element)
Product name	Traction machine brake
Model/Type	EMK9K
Manufacturer	Suzhou Mona Drive Equipment Co.Ltd.
Applicant	Suzhou Mona Drive Equipment Co.Ltd.

深圳市质量安全检验检测研究院 检验检测专用章 (1)

SHENZHEN INSTITUTE OF QUALITY & SAFETY INSPECTION AND RESEARCH

GUANGDONG STATION OF ELEVATOR QUALITY SUPERUISION AND TEST

Notes

1.This report is obtained based in the type-examination compliance with *Regulation for Type Tests of Elevators (TSG T7007-2022)*

2.This report must be printed or filled out in fountain pens/sign pens with neat and clear handwriting, no alternation.

3.The report is invalid if not signed by signature, and it is also invalid without approval number of the type testing body, special seal for report and paging seal.

4. There will be two versions of the report: electronic and printed formats. They are equal in authorities.

5.Any discrepancy about the report from applicant should be raised within 15 working days after receiving the report.

6. The report is responsible for the tested sample only.

Name of Institution: Shenzhen Institute of Quality & Safety Inspection and Research

Address of Institution: Agricultural Science and Technology Building, No. 1085, south of ChaGuang Road, XiLi street, NanShan District, Shenzhen, Guangdong Province ,China

Office Address of Type Test Body: TeJian Building,1032 HongGang Road, Luohu District, Shenzhen, Guangdong Province ,China

Approval No. TS7610038-2025

Postcode: 518029

Branch Name of Type Test Body: LongHua QingHu Branch of Shenzhen Institute of Quality & Safety Inspection and Research

Branch Address of Type Test Body: 50 QingCui Road, QingHu, LongHua Block, LongHua District, Shenzhen, Guangdong Province ,China

Postcode: 518109

Phone: 0755 28079821 0755 28079351

Website : www.sise.org.cn Email: szlift@siqs.org.cn

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TYPE-EXAMINATION REPORT of SPECIAL EQUIPMENT (LIFT)

Equipment Name	Lift Ascending Car Overspeed Protection Means (speed reducing element)		
Product Name	Traction machine brake	Product Model	EMK9K
Product No.	020220901/120220901	Manufacture Date	Sep-2022
Name of Applicant	Suzhou Mona Drive Equipment Co.Ltd.	unified social credit identifier	913205090551626724
Registered Address of Applicant	No.66 Changfengdang Road,Lili Town,Wujiang District,Suzhou city,215200 P.R.China		
Manufacturer	Suzhou Mona Drive Equipment Co.Ltd.	unified social credit identifier	913205090551626724
Manufacturing Address	No.66 Changfengdang Road,Lili Town,Wujiang District,Suzhou city,215200 P.R.China		
Manufacturing Address	No.66 Changfengdang Road,Lili Town,Wujiang District,Suzhou city,215200 P.R.China		
Type of Examination	Consistency Verification	Inspection Date	27-Sep-2022
Sample No.	20220913	Sample Status	Normal
Inspection Place	LongHua QingHu Branch of Shenzhen Institute of Quality & Safety Inspection and Research		
Inspection Condition	Temperature: 30 ℃；Humidity: 55 %RH		
Standard for Inspection	《Regulation for Type Test of Lifts》（TSG T7007-2022） GB/T 7588.1-2020 Safety rules for the construction and installation of lifts—Part1:Passenger and goods passenger lifts GB/T 7588.2-2020 Safety rules for the construction and installation of lifts—Part2: Design rules, calculations, examinations and tests of lift components EN 81-20:2020 Safety rules for the construction and installation of lifts - Lifts for the transport of persons and goods - Part 20: Passenger and goods passenger lifts EN 81-50:2020 Safety rules for the construction and installation of lifts -Examinations and tests - Part 50: Design rules, calculations, examinations and tests of lift components		
Conclusion	Passed		
Note	Document ID No. XPSQ2022070043AENBG		

Inspected by:	Date: 28-Sep-2022	Agency Approval Number: TS7610038-2025
Reviewed by:	Date: 28-Sep-2022	
Approved by:	Date: 28-Sep-2022	(Stamp) Issued Date: 28-Sep-2022

1. Sample configuration and technical data

Equipment Name		Lift ascending car overspeed protection means (speed reducing element)		
Product Name		Traction Machine Brake	Model/Type	EMK9K
No-load system mass range		928 kg-3775 kg	Mechanism spark-proof measure	Not applicable
Type of action Part		Traction Machine Brake	Rated load range	320 kg-1150 kg
Range of Balance Factor		0.4-0.5	Car-side Mass Range	400 kg-1600 kg
Tripping Speed Range of braked part		1.16 m/s-6.46 m/s	Suspension Ratio	2：1
Using of Balance Chain or Rope		Not applicable	Using of Balance Chain or Rope	Yes
Overspeed Monitoring device	Name	Overspeed governor	Model	/
	Rated speed range	0.50 m/s-2.50 m/s	Triggering speed range	0.58 m/s-3.23 m/s
Traction machine brake	Type	EMK9K	Structure Type	Straightly driving electromagnetic drum
	Action part	Traction Sheave	Quantity	2
	Friction element material	Non-asbestos friction pad	Triggering Mode	Electric Trigger
	Elastic element type	Cylindrical helical compression spring		
Note 1: “Car-side Mass Range” means the sum of no-load car mass and the extra mass of in the car side; Extra mass refers to the total of the mass of trailing cable, suspension cable and possibly that of the compensation cable or chain.				

2. Technical documents check and results

No.	Item No.	Items	Results	Conclusions
1	Q5.1	Certificate and related technical documents	Completed	Passed
2	Q5.2	Technical data	Completed	Passed
3	Q5.3	Main design drawing	Completed	Passed

3. Sample check and test

1. Test item and results

No.	item code and name	item contents and requirements	Results	Conclusion
1	Q6.1 Action Part	Speed reducing element shall act: (1) to the car; or (2) to the counterweight; or (3) on the rope system(suspension or compensating); or (4) traction sheave (e.g.on the traction sheave directly or on the same shaft in the immediate vicinity of the sheave) Note: Instantaneous safety gear cannot be used as speed reducing element of Ascending Car Overspeed Protection Means.	Action part: (4)	Passed
2	Q6.2 Stopping test	Stopping test should be performed to Q6.2.4 on the entire elevator or simulation such as test bed. The stopping test must meet the following requirements: 2.1 When speed monitoring element acts, speed reducing element shall cause the car to stop, or at least reduce its speed to that for which the counterweight buffer is designed.	Meet the requirements	Passed
		2.2 The means shall not allow the retardation of the empty car in excess of 1 g_n during the stop phase.	Max. deceleration: 0.536 g_n	Passed
		2.3 After its release, the means shall be in condition to operate.	Meet the requirements	Passed
		2.4 After tests, there shall be no fracture, deformation and other changes(for example, cracks , deformation or wear of the gripping elements, appearance of the rubbing surface)	Meet the requirements	Passed
		2.5 For Lift Ascending Car Overspeed Protection Means (speed reducing element) which apply to different weights, the type-test agency shall experiment 4 times respectively with both maximum weight and minimum weight. If it requires adjustment, the agency shall verify the availability of the formula or table provided by the applicant through appropriate approaches (if there is no better way, the median of the two weights can be used for testing), one-time verification is allowed; if adjustment is no required, verification is not necessary. 2.6 For Lift Ascending Car Overspeed Protection Means (speed reducing element) which apply to different speeds, the type-test agency shall experiment 4 times respectively with both maximum speed and minimum speed. If it requires adjustment, the agency shall verify the availability of the formula or table provided by the applicant through appropriate approaches (if there is no better way, the median of the two speeds can be used for testing), one-time verification is allowed; if adjustment is no required, verification is not necessary. 2.7 For Lift Ascending Car Overspeed Protection Means (speed reducing element) which apply to both different weights and different speeds, the type-test agency shall experiment 4 times respectively with maximum weight, maximum speed and minimum weight, minimum speed. If it requires adjustment, the agency shall verify the availability of the formula or table provided by the applicant through appropriate approaches (if there is no better way, the median of the two weights can be used for testing). The verification must perform once at minimum speed and once at maximum speed respectively. if adjustment is no required, verification is not necessary.	Meet the requirements	Passed

No.	item code and name	item contents and requirements	Results	Conclusion
3	Q6.3 External Energy	If the means requires external energy to operate, the absence of energy shall cause the lift to stop and keep it stopped. This does not apply for guided compressed springs.	Meet the requirements	Passed
4	Q6.4 Electric Safety Device	The means shall operate an electric safety device if it is engaged. Note Q-4: When counterweight overspeed governor-safety gear system is adopted, the electrical safety device can be installed on the counterweight overspeed governor. When traction machine brake is taken as speed reducing element of ascending car overspeed protection means, the electrical safety device can be installed on the speed monitoring element.	Meet the requirements	Passed
5	Q6.5 Explosion-proof	In explosion-proof lift，protection measures must be applied， such as heat-conducting and no spark materials usde in the surface of safety gear，rope gripper , wheal ripper contacted with rope and rail,	Not applicable	/
6	Q6.6 Triggering Mode	If speed reducing element is applied to different trigger modes, it shall take 4 times of trigger action tests of trigger mechanism respectively for other trigger modes. Each test shall have normal and reliable action.	Not applicable	/
7	Q6.7 Reset Mode	If speed reducing element is applied to different reset modes, it shall take 4 times of reset action tests of reset mechanism complementally for other reset modes. Each test shall have normal and reliable action.	Not applicable	/
8	Q6.8 Triggering Force	When mechanical-trigger speed reducing element is acted by triggering, the required trigger force shall be no more than the value given by the test applicant. The test shall be carried out three times, each test shall meet the requirement.	Not applicable	/
9	Q6.9 Triggering Distance	When mechanical-trigger speed reducing element is acted by triggering, the required trigger distance shall be no more than the value given by the test applicant. The test shall be carried out three times, each test shall meet the requirement.	Not applicable	/
10	Q6.10 Nameplate	There should be nameplate on the lift ascending car overspeed protection device, with the information below: (1)Product name, model; (2)Name of manufacturer and manufacturing address; (3)Type -examination certificate No. (4)Allowed system mass range; (5)Allowed rated load system mass range; (6)Triggering speed range; (7)Product No. (8)Manufacture data.	Meet the requirements	Passed
11	GB/T 7588.2-2020 5.7.3.3 b)	The hardness of the gripping element shall be compared with the original values quoted by the applicant	Meet the requirements	Passed

No.	item code and name	item contents and requirements	Results	Conclusion
12	GB/T 7588.1-2020 5.6.6.2	The means shall be capable of performing as required in 5.6.6.1 without assistance from any lift component that, during normal operation, controls the speed or retardation, or stops the car, unless there is built-in redundancy and correct operation is self-monitored. Note: The brake conforming to 5.9.2.2.2 is built-in redundancy. If drive machine brake is used, self-monitoring includes the verification of the correct lifting (or dropping) of each group of mechanism and/or the verification of the braking force under the action of each group of mechanism. The self-monitoring shall meet one of the following requirements: a) The braking force self-monitoring period is not greater than 24h; b) The period of braking force self-monitoring is greater than 24h, and the correct lifting (or releasing) of the mechanical device is verified, and the period of braking force self-monitoring does not exceed the design value of the manufacturer; c) Only the correct lifting (or dropping) of the mechanical device is performed, the braking force shall be detected during the regular maintenance of the brake according to the cycle determined by the manufacturer. When performing self-monitoring according to b) or c), if the moving iron core of the drive machine brake electromagnet adopts a plunger type structure and there is a possibility of jamming, the lift shall also be provided with other braking devices (such as electrical braking), When the main drive brake is inoperative, the empty car parked at any landing shall be kept stationary, or at least the car speed shall be reduced to the design range of the counterweight buffer. If a failure is detected, the next normal start of the lift shall be prevented. Self monitoring is subject to type examination. A mechanical linkage to the car, whether or not such linkage is used for any other purpose, may be used to assist in this performance.	Meet the requirements	Passed
13	GB/T 7588.1-2020 5.6.6.6-8	The release of the means shall not require access to the well. After the release of the means the return of the lift to normal operation shall require the intervention of a competent maintenance person. After its release, the means shall be in a condition to operate.	Meet the requirements	Passed

2. Test Data and Chart

2.1 Test 4 times with the rated speed 0.50 m/s, rated load 320 kg, system mass 928 kg.

Test No.	The maximum tripping speed (m/s)	The average deceleration (gn)	The maximum deceleration (gn)	The braking distance(mm)
1	0.641	0.185	0.246	113
2	0.636	0.195	0.280	106
3	0.652	0.197	0.264	110
4	0.628	0.192	0.287	105

2.2 Test once with the rated speed 0.50 m/s, rated load 750 kg, system mass 2350 kg.

Test No.	The maximum tripping speed (m/s)	The average deceleration (gn)	The maximum deceleration (gn)	The braking distance(mm)
1	0.603	0.235	0.347	79

2.3 Test once with the rated speed 2.50 m/s, rated load 750 kg, system mass 2350 kg.

Test No.	The maximum tripping speed (m/s)	The average deceleration (gn)	The maximum deceleration (gn)	The braking distance(mm)
1	3.428	0.326	0.519	1837

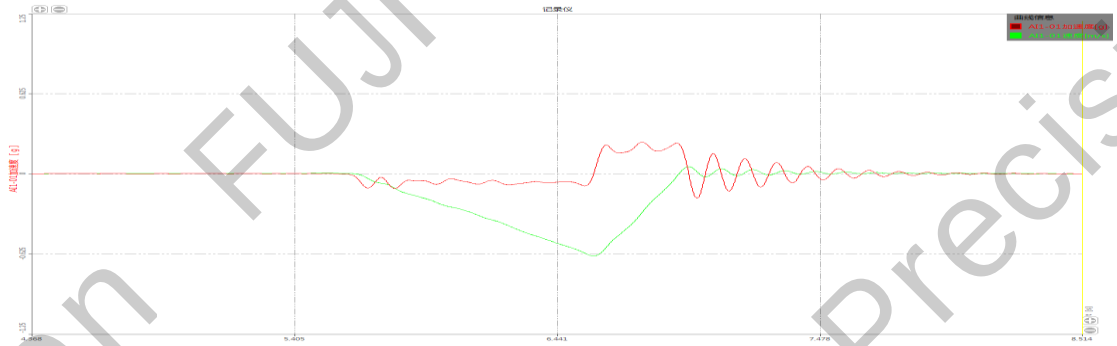
2.4 Test 4 times with the rated speed 2.50 m/s, rated load 1150 kg, system mass 3775 kg.

Test No.	The maximum tripping speed (m/s)	The average deceleration (gn)	The maximum deceleration (gn)	The braking distance(mm)
1	3.487	0.294	0.446	2108
2	3.503	0.300	0.512	2085
3	3.578	0.299	0.505	2182
4	3.636	0.291	0.536	2316

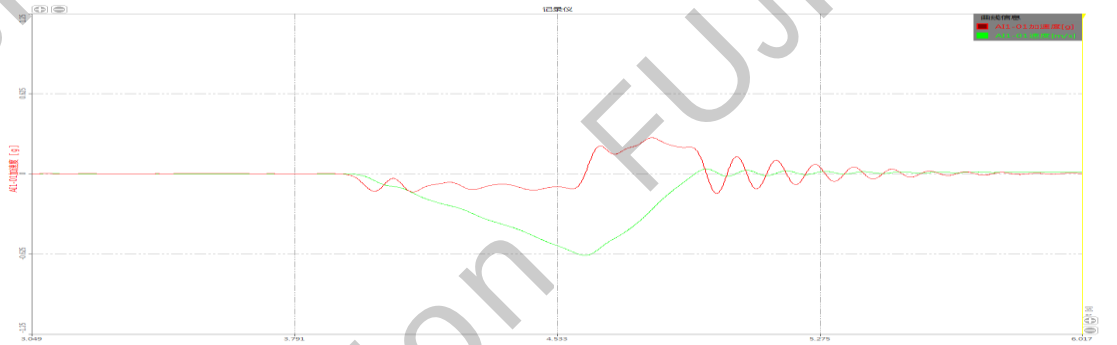
2.5 Stopping Test Curves

（1） Test 4 times with the rated speed 0.50 m/s, rated load 320 kg, system mass 928 kg.

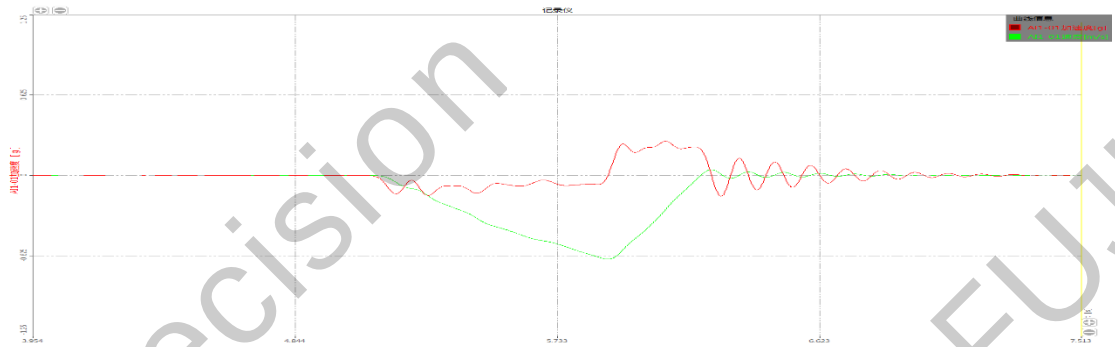
The 1st test



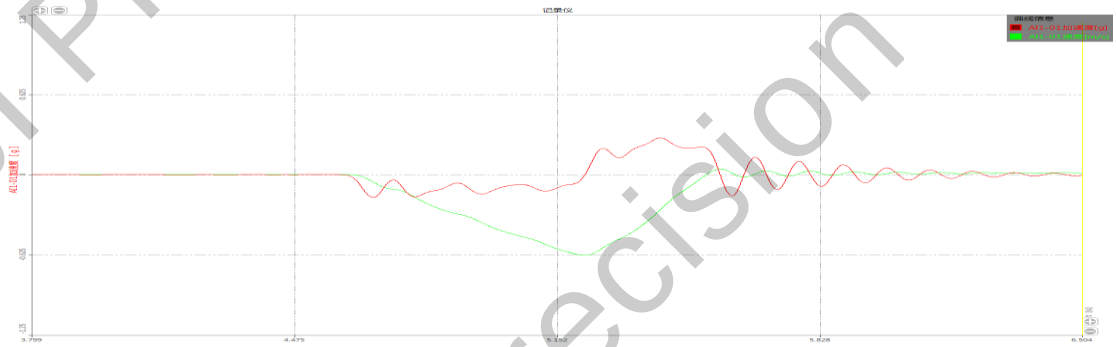
The 2nd test



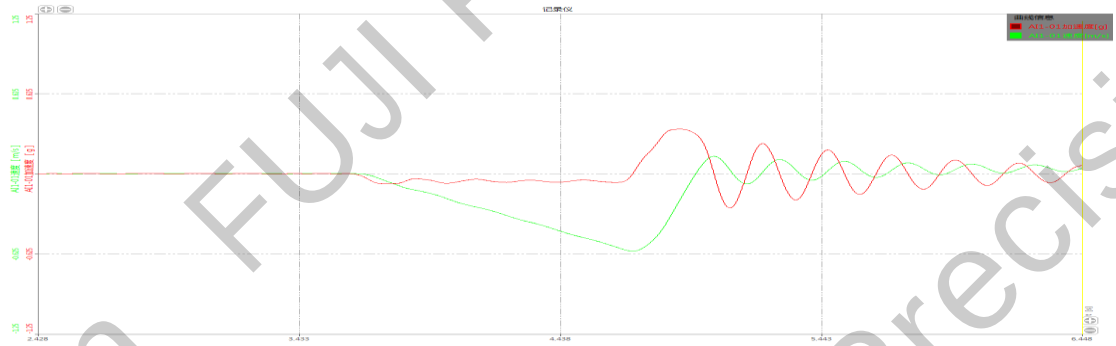
The 3rd test



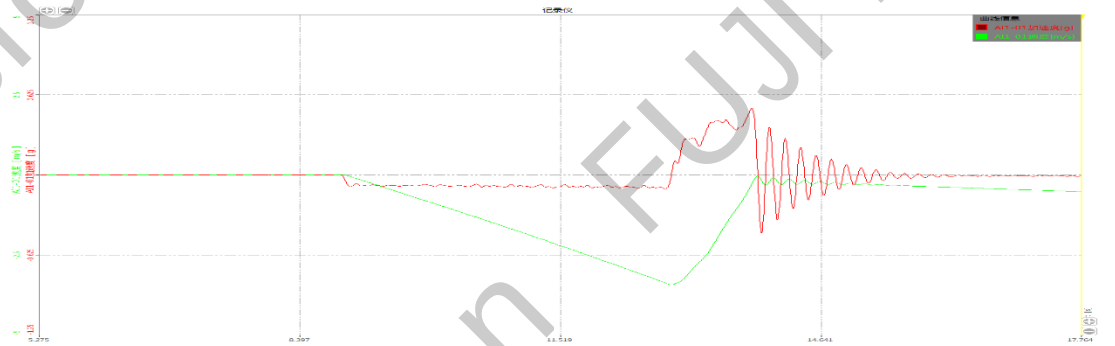
The 4th test



（2）Test once with the rated speed 0.50 m/s, rated load 750 kg, system mass 2350 kg.

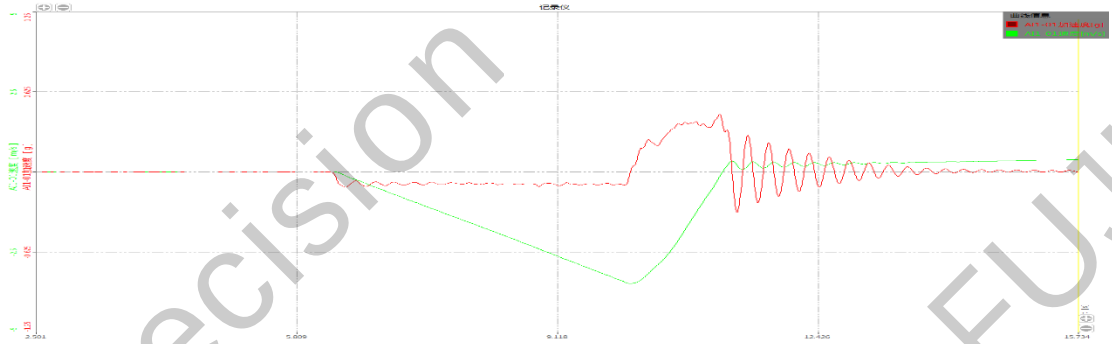


（3）Test once with the rated speed 2.50m/s, rated load 750 kg, system mass 2350 kg.



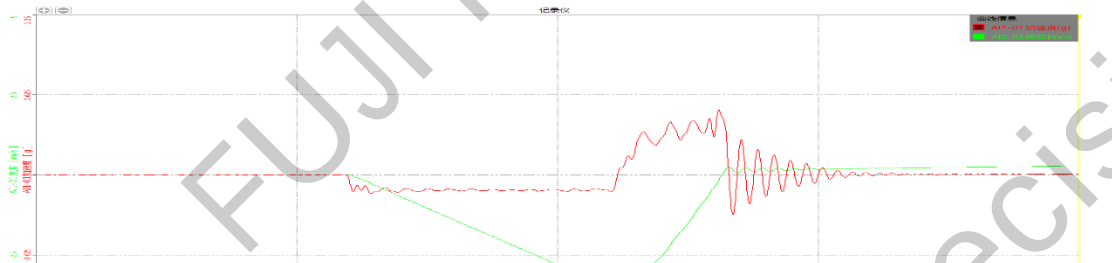
（4）Test 4 times with the rated speed 2.50 m/s, rated load 1150 kg, system mass 3775 kg.

The 1st test

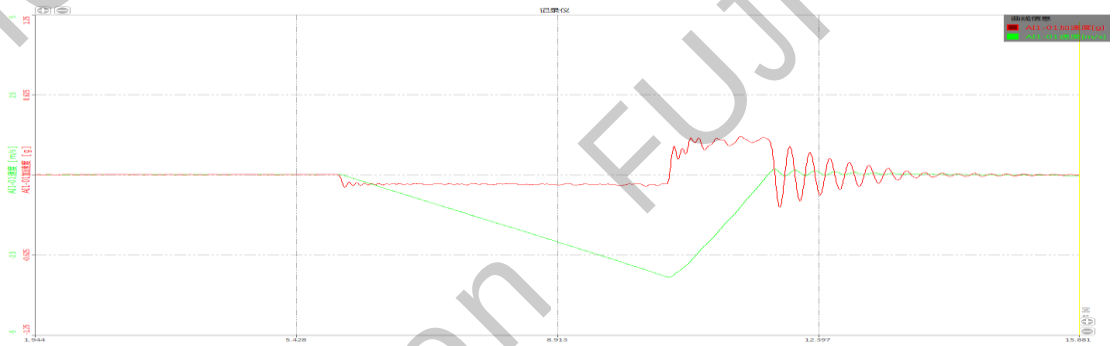


The 2nd test

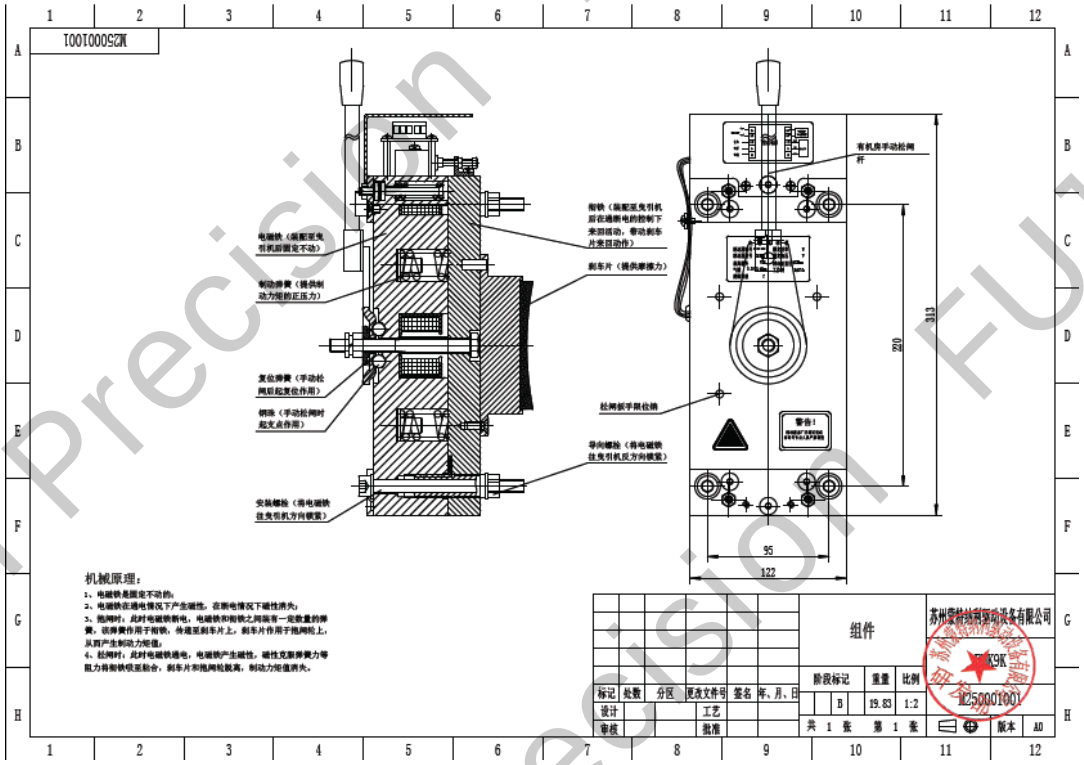
The 3rd test

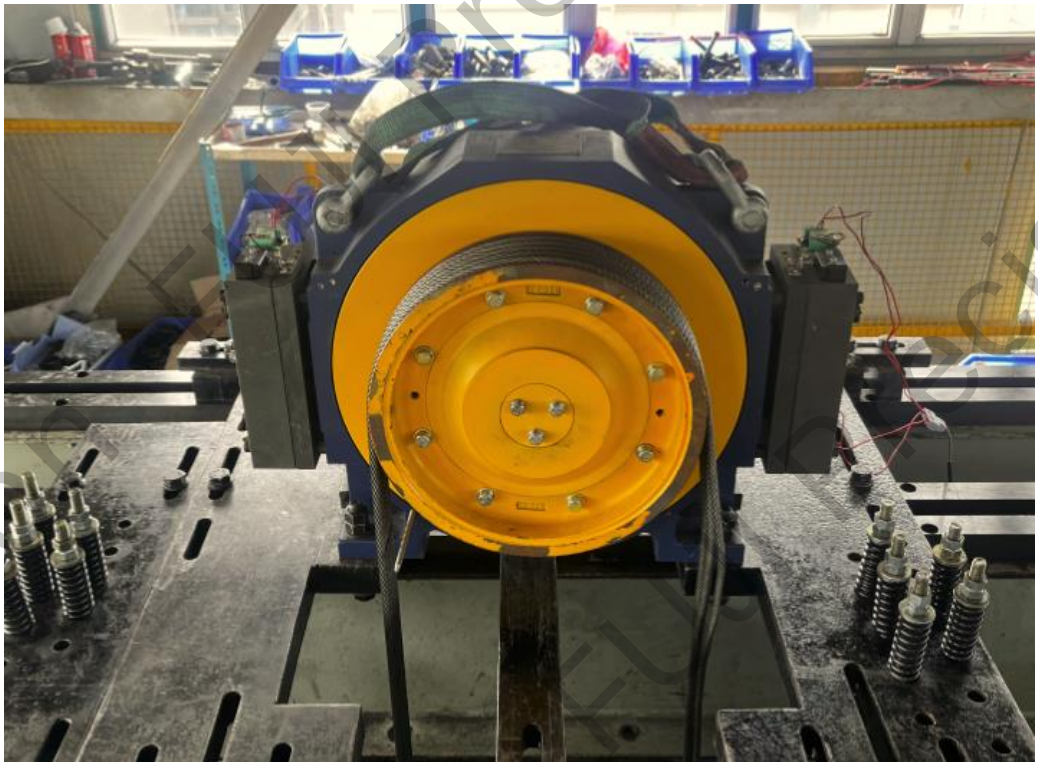


The 4th test



3. Sample Photo and drawing





4 .Additional Information

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4. Changes of The Type-Examination Report

If the name or address of the applicant (or oversea manufacturer) has any change, please submit a change request with related supporting evidence to the previous type-test agency. After confirmation, the agency will indicate the change on the change record page.

The change record see the attached page (If any).

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