Report No. 2023AF1091

Type -Examination Report of Special Equipment
（LIFT）

Equipment Category	Lift safety protection device
Equipment Type	Unintended Car Movement Protection
Product name	Traction machine brake
Model/Type	BLB
Manufacturer	SHENYANG BLUELIGHT DRIVE TECHNOLGY CO., LTD.
Applicant	SHENYANG BLUELIGHT DRIVE TECHNOLGY CO., LTD.

SHENZHEN INSTITUTE OF QUALITY & SAFETY INSPECTION AND RESEARCH
GUANGDONG STATION OF ELEVATOR QUALITY SUPERVISION 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

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TYPE-EXAMINATION REPORT of SPECIAL EQUIPMENT (LIFT)

Equipment category	Lift safety protection device	Equipment type	Unintended Car Movement Protection
Product Name	Traction machine brake	Product Model	BLB
Product No.	F2200600101	Manufacture Date	Jun-2023
Name of Applicant	SHENYANG BLUELIGHT DRIVE TECHNOLGY CO., LTD.	unified social credit identifier	91210112715754447D
Registered Address of Applicant	NO.37, XINSHIJI ROAD, HUNNAN NEW DISTRICT, SHENYANG, CHINA		
Manufacturer	SHENYANG BLUELIGHT DRIVE TECHNOLGY CO., LTD.	unified social credit identifier	91210112715754447D
Registered Address of Manufacturer	NO.37, XINSHIJI ROAD, HUNNAN NEW DISTRICT, SHENYANG, CHINA		
Manufacturing Address	NO.37, XINSHIJI ROAD, HUNNAN NEW DISTRICT, SHENYANG, CHINA		
Type of Examination	Initial Type-Examination	Inspection Date	9-Nov-2023
Sample No.	20230739	Sample Status	Normal
Inspection Place	LongHua QingHu Branch of SHENZHEN INSTITUTE OF QUALITY & SAFETY INSPECTION AND RESEARCH		
inspection Condition	Ambient Temperature:24℃； Humidity: 58%RH； Voltage:380V		
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		
instructions	File identification number：XPSQ2023100136AENBG		

Inspected by		Date:	9-Nov-2023
Reviewed by		Date:	9-Nov-2023
Approved by		Date:	9-Nov-2023

Agency Approval Number：TS7610038-2025

（Stamp）

Issued Date: 9-Nov-2023

1. Sample configuration and technical data

Equipment type	Unintended car movement protection				
Product Name	Traction machine brake			Product Model	BLB
Working condition			Indoor		
application scope	No-load System Mass		1400 kg~12000 kg	Rated Load	450 kg~2500 kg
	Balance coefficient		0.4~0.5	Mass of the car	610 kg~5375 kg
	The expected maximum speed before the car decelerates		1.34 m/s	Test suspension ratio	2:1
	Type of braking element		Traction machine brake	Drive type of Applicable lifts	Traction Type
	Action part		Traction Sheave	Trigger mode	Braking on de-energizing
	Response time		≤200 ms	Response time of equipped detection subsystem	Safety circuits containing electronic components or PESSRAL response time(including sensor)：≤59ms
	Test speed of final inspection (m/s)		0.25 m/s	Response time of the device (contactor) for disconnecting the brake power supply	≤68 ms
	When the moving distance of the car does not exceed 0.8m Or 1.0m Or 1.2m,the allowable moving distance correspondin g to the test speed	When not exceed 0.8m	Not applicable		
		When not exceed 1.0m	≤0.064 m (Stopping distance,not including the moving distance during the acceleration；Or ≤0.148m (including the moving distance during Response time of the device (contactor) for disconnecting the brake power supply) ；Or ≤0.163m (including the moving distance during Detection subsystem and Response time of the device (contactor) for disconnecting the brake power supply)		
		When not exceed 1.2m	≤0.093m (Stopping distance,not including the moving distance during the acceleration；Or ≤0.177m (including the moving distance during Response time of the device (contactor) for disconnecting the brake power supply) ；Or ≤0.192 m (including the moving distance during Detection subsystem and Response time of the device (contactor) for disconnecting the brake power supply)		
The main configuration and parameters of braking system	Name		Traction machine brake	Model	BLB
	Structure pattern		Straightly driving electromagnetic drum	Number	2
	Material of friction element		Non-asbestos friction plate	Elastic Element Structure	Cylindrical helical compression spring
	Braking arm length		/	Gearing Ratio	/
	Diameter of Brake Wheel		Brake Wheel Φ610 mm	Number and Specification of elastic	3.5*10.8*40.3 22
	Rated Braking Torque		4385 Nm	Sheave pitch diameter	Φ400 mm
Triggering device (except when the electromechanical working brake is used as a brake part)	Name		Not applicable	Type	Not applicable
	Hardware version		Not applicable	Software version	Not applicable
	Hardware composition		Not applicable	Trigger mode	Not applicable
	Rated power		Not applicable	Work voltage	Not applicable
Self-monitoring configuration			Two switches to verify correct operation of mechanical device		

Note 1: "Response time" refers to braking subsystem, it means the time interval from cutting off the power supply of the trigger device to the start of the deceleration of the car under the action of the braking device.

2: "Mass of the car" 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.

3: When calculating the expected maximum speed before deceleration of the car, the distance between the detection device and the installed landing is 0.11 m .

2. Technical documents check and results

No.	Project code	Items	Results	Conclusions
1	T5.1	Certificate and related technical documents	Completed	Passed
2	T5.2	Main structure parameter	Completed	Passed
3	T5.3	Range of applicable products Main design drawing	Completed	Passed

3. Sample check and test

3.1. Test projects and results

No.	Project code	Project contents and requirements	Results	Conclusion
1	T6.1 Braking Subsystem	The braking part shall act on: The stop parts of the arrest system shall be used in: (1) Car; (2) counterweight; (3) Wire rope system (suspension rope or compensating rope); (4) traction sheaves; (5) There are only two supported traction axles on the axle.	Ac traction (4)	Passed
2		If the braking subsystem requires external energy to drive, the elevator should be stopped and kept in the stopped state without energy. This requirement does not apply to guided compression springs.	Meet the requirement	Passed

No.	Project code	Project contents and requirements	Results	Conclusion
3		3.1 Brake subsystems shall be subjected to a braking test that simulates the expected maximum speed of the application parameters. In the test, the braking subsystem should be able to make the car stop and stay stop state. The stop test may be carried out on a test shaft or on a simulated test rig. The tests shall meet the following requirements: (1) The car should be located at the level layer. The car should be located in the flat position. Adjust the system quality, load capacity, car quality, counterweight, etc. to the set value that equivalent to model the weight of no-load car at the top station and full-load car at the bottom station; at least 10 times of the upward and downward braking test respectively; (2) For the brake subsystem applying for a single quality, only test the application quality; (3) For the subsystem applying for different quality, if the brake subsystem need not to be adjusted, it should test under the maximum quality conditions and the minimum quality conditions; if the brake subsystem is adjustable, there should be additional tests of in-between quality to verify the effectiveness of the adjustment formula or diagram. The in-between quality condition must be tested at least 2 times.	Suitable for 1400 kg~12000 kg braking subsystem. The braking subsystem can make the car stop and maintain the state in every test.	Passed
3	T6.1 Braking Subsystem	3.2 The stopping test shall be carried out to the expected maximum speed. If the expected maximum speed provided is less than 0.5 m / s; The speed at stopping test of full-load car shall be at least 0.5 m / s.	Expected maximum speed: 1.34 m/s the minimum speed during the test: 1.389m/s	Passed
		3.3 In the stopping test, the friction elements are allowed to return to the normal temperature before each test; normal inspection and maintenance are allowed after each test; replacing friction elements is allowed, but a set of friction elements shall be subjected to at least five tests.	Meet the requirement	Passed
		3.4 During upward stopping test, the maximum deceleration of the car shall not exceed 1gn in the stopping test. The sum of the braking distance and the moving distance during the acceleration process shall not be greater than smaller value of 1.2m and the application value. The deviation of stopping distance value of each test under the same working condition shall not exceed ± 20% of the arithmetical mean value of all test stopping distance.	Sum of maximum braking distance and the moving distance during the acceleration process：871mm Maximum deviation of stopping distance：-3.42 %	Passed

No.	Project code	Project contents and requirements	Results	Conclusion
		3.5 During downward stopping test, The average deceleration of the car should not exceed 1gn. The sum of the braking distance and the moving distance during the acceleration process shall not be greater than smaller value of 1.2m and the application value. The stopping distance value of each test under the same working condition shall not exceed ± 20% of the arithmetical mean value of all test stopping distance.	Sum of maximum braking distance and the moving distance during the acceleration process:984mm Maximum deviation of stopping distance：-3.55%	Passed
		3.6 In every stopping test, the response time of the subsystems shall be measured. The measured response time shall not exceed the response time provided by the applicant.	Maximum test response time: ： 87ms	Passed
		3.7 The distance must be in keeping with GB 7588§9.11.5	Not applicable	/
		3.8After the test, the braking elements shall be inspected if there is any damage, deformation and other changes (such as cracks, deformation or wear of the clamping member, friction surfaces).The braking elements shall not have fracture or deformation affecting the function after the test. The mechanical characteristics of the stopping element(s) shall be compared with the original values quoted by the applicant. Other analyses may be carried out in special cases.	Meet the requirement	Passed
3	T6.1 Braking Subsystem	3.9After each test, the release (reset) operation of the braking subsystem should be checked: (1) When the system is triggered, there shall be competent persons to release it or reset the elevator; (2) When the device is released, it is not necessary to approach the car or counterweight. (3) The braking subsystem should be in working condition After release.	Meet the requirement	Passed
4		If using the brake in the lift driving machine as braking subsystem, operation test in 《Regulation for Type Test of Lifts》（TSG T7007-2022）attachment X6.2.9 must be conducted, or corresponding report can certify it	Meet the requirement	Passed

No.	Project code	Project contents and requirements	Results	Conclusion
5		It shall be confirmed whether the relevant calculation of the allowable moving distance at the corresponding test speed provided by the applicant meets the requirements of 9.11.5 in GB 7588. The limit of the allowable moving distance corresponding to the test speed shall be given when the moving distance of the car shall not exceed 0.8m (when it can be reached), 1.0m (When it can be reached) and 1.2m. The allowable stopping distanced provided by the applicant should be verified. The car is moved upwards under the condition of the maximum mass and the car unloading condition. When the car reaches the test speed provided by the applicant for the field inspection, the operation of the braking subsystem in the manner provided by the applicant should be triggered and the total moving distance of the car should be measured and recorded. The test shall be carried out three times, and the moving distance shall not exceed the allowable travel distance provided by the applicant unit and confirmed by the type testing organization.	Meet the requirement	Passed
6	T6.2 Nameplate	There should be nameplate of UCMP or the subsystem located at the obvious position indicating the following: (1) The name and model of the product; (2) manufacturer name and manufacturing address; (3) Type test certificate number; (4) Allowed quality range of the device; (5) Allowed the rated load range; (6) Speed range; (7) Product number; (8) Date of manufacture.	Meet the requirement	Passed

3.2 Test Data and Chart

1）Test Data

（1）Test data of maximum quality working condition						
Test parameters	Rated load(kg)	Mass of car side(kg)	Mass of counterweight side (kg)	No-load system mass (kg)	The expected maximum speed before the car (m/s)	Traction ratio
	2500	5375	6625	12000	1.340	2:1

a) No-load car ascending

Item	Actual test speed (m/s)	Average Deceleration (m/s^2)	Maximum Deceleration (m/s^2)	Stopping distance (mm)	Response time (s)
1st	1.416	2.432	3.218	413	0.082
2nd	1.403	2.506	3.180	407	0.079
3rd	1.419	2.518	3.211	413	0.083
4th	1.429	2.462	3.178	419	0.077
5th	1.414	2.467	3.178	402	0.087
6th	1.423	2.528	3.098	409	0.081
7th	1.386	2.559	3.180	392	0.082
8th	1.419	2.505	3.144	405	0.080
9th	1.418	2.543	3.188	402	0.080
10th	1.389	2.539	3.176	397	0.081
Average	1.412	2.506	3.175	406	0.081
Maximum deviation (%)	-1.81	-2.95	-2.43	-3.42	7.14

b) Full load car downward

Item	Actual test speed (m/s)	Average Deceleration (m/s^2)	Maximum Deceleration (m/s^2)	Stopping distance (mm)	Response time (s)
1st	1.421	2.036	2.812	503	0.077
2nd	1.418	2.038	2.985	498	0.080
3rd	1.431	2.041	2.976	511	0.074
4th	1.419	2.008	2.784	519	0.078
5th	1.421	1.983	2.736	521	0.079
6th	1.406	1.998	2.801	501	0.079
7th	1.417	1.993	2.766	507	0.078
8th	1.413	1.949	2.407	517	0.073
9th	1.401	1.976	2.733	504	0.076
10th	1.389	1.963	2.899	489	0.078
Average	1.414	1.999	2.790	507	0.077
Maximum deviation (%)	-1.74	-2.48	-13.72	-3.55	-5.44

（2） Test data of minimum quality working condition

Test parameters	Rated load(kg)	Mass of car side(kg)	Mass of counterweight side (kg)	No-load system mass (kg)	Test speed (m/s)	Traction ratio
	450	610	790	1400	1.340	2:1

a) No-load car ascending

Item	Actual test speed (m/s)	Average Deceleration (m/s^2)	Maximum Deceleration (m/s^2)	Stopping distance (mm)	Response time (s)
1st	1.414	7.612	9.535	118	0.072
2nd	1.419	7.630	9.782	121	0.072
3rd	1.421	7.623	9.239	128	0.068
4th	1.420	7.610	9.328	120	0.071
5th	1.418	7.744	9.717	114	0.075
6th	1.421	7.717	9.610	116	0.074
7th	1.418	7.534	9.799	115	0.073
8th	1.423	7.465	9.500	125	0.065
9th	1.432	7.339	9.778	128	0.066
10th	1.411	7.443	9.583	118	0.064
Average	1.420	7.572	9.587	120	0.070
Maximum deviation (%)	0.87	-3.07	-3.63	6.40	-8.57

b) Full load car downward

Item	Actual test speed (m/s)	Average Deceleration (m/s^2)	Maximum Deceleration (m/s^2)	Stopping distance (mm)	Response time (s)
1st	1.441	8.243	8.958	143	0.077
2nd	1.403	7.858	8.820	142	0.077
3rd	1.432	7.993	8.912	149	0.076
4th	1.421	7.891	8.995	143	0.082
5th	1.435	8.040	8.933	149	0.073
6th	1.425	8.017	8.945	148	0.072
7th	1.409	8.199	9.229	134	0.078
8th	1.438	8.127	8.870	142	0.073
9th	1.408	8.306	9.183	140	0.076
10th	1.412	8.473	9.150	138	0.076
Average	1.422	8.115	8.999	143	0.076
Maximum deviation (%)	-1.36	4.42	2.42	-6.16	7.89

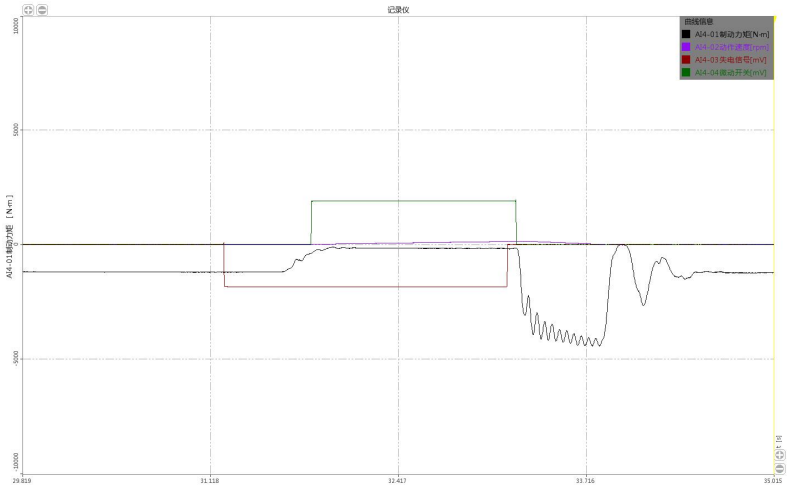
（3）Test data for field inspection speed

Test parameters	Rated load(kg)	Mass of car side(kg)	Mass of counterweight side (kg)	No-load system mass (kg)	Test speed (m/s)	Traction ratio
	2500	5375	6625	12000	0.250	2:1

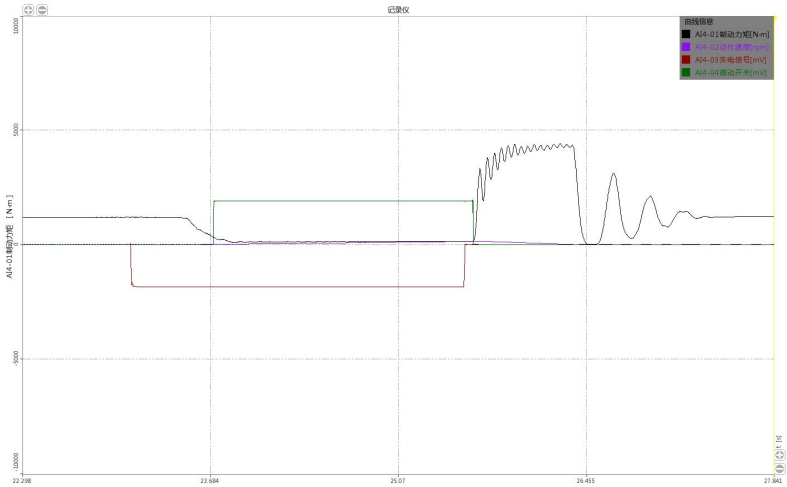
No-load car ascending					
Item	1st	2nd	3rd	Average	Maximum deviation (%)
Actual test speed (m/s)	0.439	0.453	0.436	0.443	2.33
Stopping distance (mm)	60	68	58	62	9.68

2）Chart

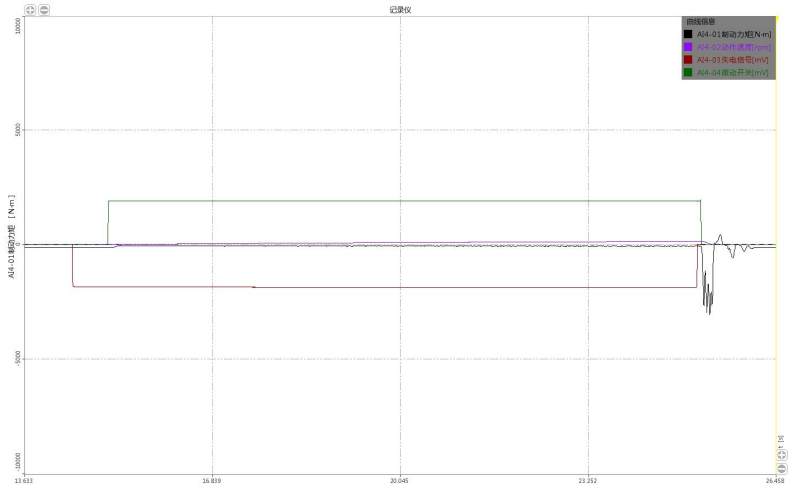
(1) No-load car ascending of maximum quality working condition



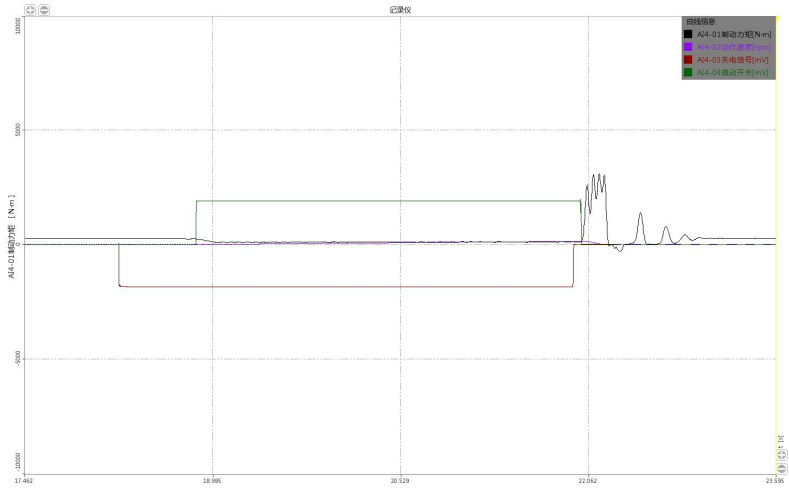
(2) Full load car downward of maximum quality working condition



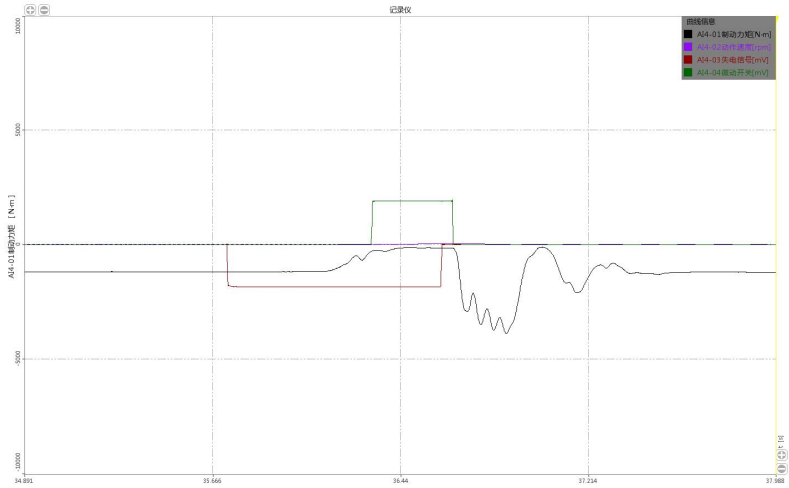
(3) No-load car ascending of minimum quality working condition



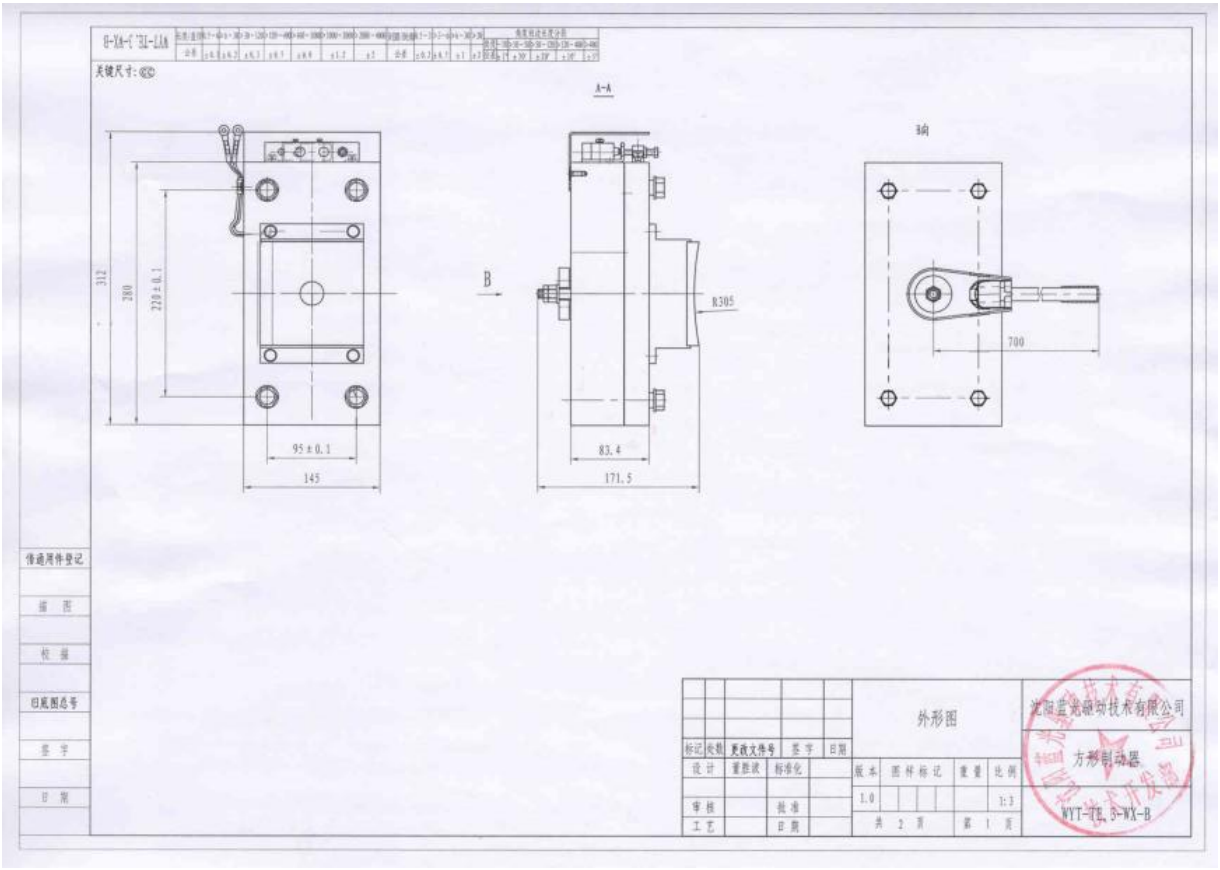
(4) Full load car downward of minimum quality working condition



(5) Field inspection speed condition



3.3 Sample drawing



3.4 Additional Information

No.

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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