深圳市特种设备安全检验研究院
SHENZHEN INSTITUTE OF SPECIAL EQUIPMENT INSPECTION AND TEST

CMA 20151901432 有效期至2021年8月24日

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Report No. 2021AF0827

Type -Examination Report of Special Equipment （LIFT）

Product category	Lift safety protection device
Equipment Type	Unintended Car Movement Protection（Braking subsystem）
Product name	Traction machine brake
Model/Type	BLB
Manufacturer	Shenyang Bluelight Drive Technology Co.,Ltd.
Applicant	Shenyang Bluelight Drive Technology Co.,Ltd.

深圳市特种设备安全检验研究院 检验检测专用章 （电子）

SHENZHEN INSTITUTE OF SPECIAL EQUIPMENT INSPECTION AND TEST
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 Lifts (2016)(TSG T7007-2016)*

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 organization, 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 Type Test Organization: Shenzhen Institute of Special Equipment Inspection and Test

Inspection And Test

Address of Type Test Organization：1032 Honggang Road，Luohu District，Shenzhen

Approval No. TS7610038-2025

Postcode：518029

Branch Name：LongHua QingHu Branch of Shenzhen Institute of Special Equipment Inspection and Test

Branch Address：50 QingCui Road, QingHu, LongHua Block, LongHua District, Shenzhen,Guangdong Province

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TTYPE-EXAMINATION REPORT of SPECIAL EQUIPMENT (LIFT)

Equipment Name	Unintended Car Movement Protection（Braking subsystem）		
Product Name	Traction machine brake	Product Model	BLB
Product No.	S17A013301/S17A013302	Manufacture Date	Dec-2020
Name of Applicant	Shenyang Bluelight Drive Technology Co.,Ltd.	unified social credit identifier	91210112715754447D
Registered Address of Applicant	No.37 Shiji Road,Hunnan New Distrct,Shenyang,China		
Manufacturer	Shenyang Bluelight Drive Technology Co.,Ltd.		
Manufacturing Address	No.37 Shiji Road,Hunnan New Distrct,Shenyang,China		
Type of Examination	Consistency Verification	Inspection Date	9- Aug -2021
Sample No.	20210783	Sample Status	Normal
Inspection Place	LongHua QingHu Branch of Shenzhen Institute of Special Equipment Inspection and Test		
inspection Condition	Temperature: 27℃； Humidity: 79 %RH		
Standard for Inspection	《Regulation for Type Test of Lifts》（TSG T7007-2016, Including No.1 amending list） GB 7588-2003 Safety Rules for the Construction and Installation of Electric Lifts (Including No.1 amending list) EN 81-20:2014 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 81-50:2014 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：XPSQ2020120042AENBG		

Inspected by: Date: 10- Aug -2021	Agency Approval Number：TS7610038-2025
Reviewed by: Date: 10- Aug -2021	（Stamp）
Approved bvy: Date: 10- Aug -2021	Issued Date: 10- Aug -2021

1. Sample configuration and technical data

Equipment Name		Unintended car movement protection（braking subsystem）		
Product Name		Traction machine brake	Product Model	BLB
application scope	No-load System Mass	1400～12000 kg	Rated Load	450～2500 kg
	The expected average maximum acceleration of the car	2.50 m/s^2	Response time [1]	⩽200 ms
	The expected maximum speed before the car decelerates	1.536 m/s	Expected maximum stopping distance	765 mm
	Test speed of field inspection (m/s)	0.30 m/s	Allowable stopping distance[2] (mm)	≤375 mm
	Drive type of Applicable lifts	Traction Type	Action part	Traction Sheaves
	Type of braking element	Traction machine brake	Organization of trigger device	Electromagnet
	Trigger mode	Braking on de-energizing	Working condition	Indoor
	Balance coefficient	0.4～0.5	Mass of the car	610～6375 kg
	Test suspension ratio	2：1	/	/
The main configuration and parameters of braking system	Structure pattern	Straightly driving electromagnetic drum	Number	2
	Material of friction element	Asbestos-free friction film	Elastic Element Structure	Guided compression coil spring
	Rated Braking Torque	4088 Nm	Gearing Ratio	/
	Braking arm length	/	Diameter of Brake Wheel	Φ610 mm
	Number and Specification of elastic elements	3.5*10.8*40.3 20PC		
The main configuration and parameters of trigger device	Rated operating voltage of electromagnet	DC110 V	Holding voltage of electromagnet	DC110 V
	Rated power of electromagnet	218 W	Insulation class	F
	Other circuits influencing response time	No		
Self-monitoring configuration		Two switches to verify correct operation of mechanical device		

Note 1：“Response time” refers to braking subsystem, it means the time costs from outage of the trigger device to the beginning of deceleration.

2：“Allowable stopping distance ” is used to check the effectiveness of the UCMP in the lift. It is allowable maximum stopping distance the Under the field inspection speed given by applicant. The stopping distance collected from the field inspection shall not exceed this value. However, for braking subsystem, it only means stopping distance for the braking subsystem.

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 _ Traction Sheaves	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
		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 Aug 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 5 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 1400～12000kg braking subsystem. The braking subsystem can make the car stop and maintain the state in every test.	Passed

No.	Project code	Project contents and requirements	Results	Conclusion
3		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 the rated speed and the smaller value of 0.5 m / s.	Expected maximum speed: 1.536m/s the highest speed during the test: 1.544m/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 stopping distance shall not exceed the expected maximum stopping distance. 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.	Maximum Stopping distance in the tests：629mm Maximum deviation of stopping distance：-5.59%	Passed
		3.5 During downward stopping test, The average deceleration of the car should not exceed 1gn. The stopping distance shall not exceed the expected maximum stopping distance of the car. 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.	Maximum Stopping distance in the tests：721mm Maximum deviation of stopping distance：5.45%	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: ： 169ms	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.	Meet the requirement	Passed

No.	Project code	Project contents and requirements	Results	Conclusion
		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	T6.1 Braking Subsystem	If using the brake in the lift driving machine as braking subsystem, operation test in 《Regulation for Type Test of Lifts》（TSG T7007-2016）attachment Y6.2.9 must be conducted, or corresponding report can certify it	Meet the requirement	Passed
5		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	T6.4 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) Name or logo of the type-test agency; (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)	Test speed (m/s)	Traction ratio
	2500	5375	6625	12000	1.536	2:1

a) No-load car ascending

Item	Actual test speed (m/s)	Braking torque（N.m）	Stopping distance (mm)	Response time (s)
1st	1.577	4024	608	0.162
2nd	1.570	4162	601	0.166
3rd	1.547	4173	580	0.169
4th	1.594	4234	625	0.154
5th	1.601	4248	629	0.154
Average	1.578	4168	609	0.161
Maximum deviation (%)	-1.95	-3.46	-4.70	4.97

b) Full load car downward

Item	Actual test speed (m/s)	Braking torque（N.m）	Stopping distance (mm)	Response time (s)
1st	1.627	4275	721	0.164
2nd	1.606	4347	708	0.157
3rd	1.614	4313	713	0.157
4th	1.562	4323	674	0.158
5th	1.553	4325	664	0.161
Average	1.592	4317	696	0.159
Maximum deviation (%)	-2.47	-0.96	-4.60	2.89

（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	1.536	2:1

a) No-load car ascending

Item	Actual test speed (m/s)	Braking torque（N.m）	Stopping distance (mm)	Response time (s)
1st	1.544	2485	169	0.133
2nd	1.585	2504	187	0.131
3rd	1.582	2467	185	0.139
4th	1.565	2521	176	0.135
5th	1.580	2470	178	0.124
Average	1.571	2489	179	0.132
Maximum deviation (%)	-1.73	1.27	-5.59	-6.34

b) Full load car downward

Item	Actual test speed (m/s)	Braking torque（N.m）	Stopping distance (mm)	Response time (s)
1st	1.553	2511	234	0.139
2nd	1.621	2537	240	0.148
3rd	1.572	2552	223	0.151
4th	1.585	2576	222	0.155
5th	1.554	2517	219	0.153
Average	1.577	2539	228	0.149
Maximum deviation (%)	2.79	1.47	5.45	-6.84

（3）Test data for field inspection speed

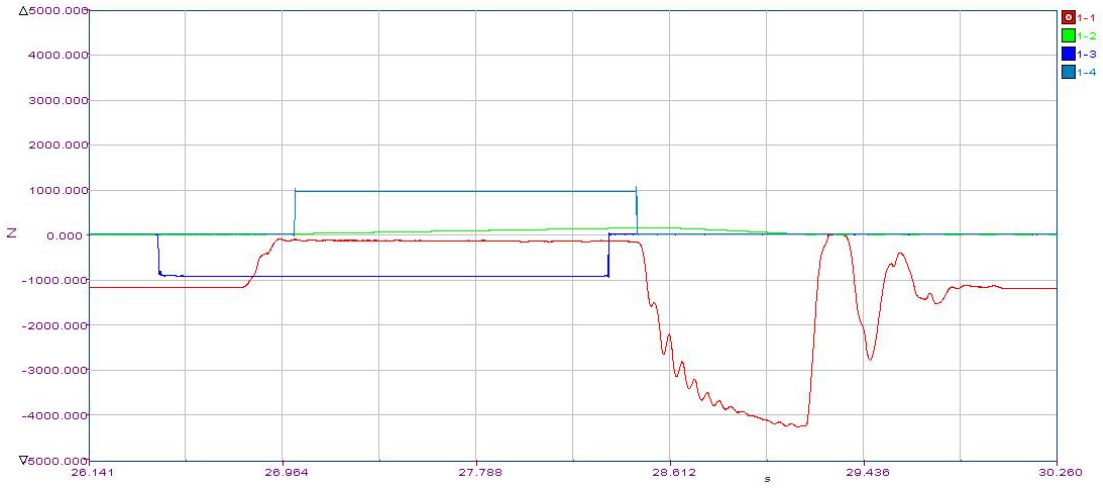
Test parameters	Rated load(kg)	Mass of car side(kg)	Mass of counterweight side (kg)	No-load system mass (kg)	Test speed (m/s)	Traction ratio
	2500	5375	6625	12000	0.300	2:1

No-load car ascending

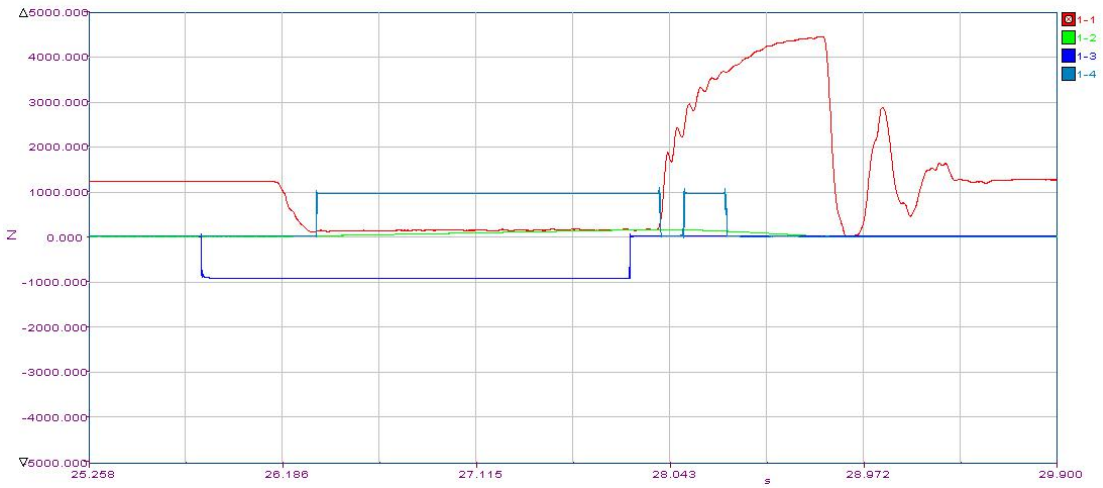
Item	1st	2nd	3rd	Average	Maximum deviation (%)
Actual test speed (m/s)	0.50	0.47	0.52	0.50	-5.45
Stopping distance (mm)	104.00	98.00	112.00	104.67	7.01

2）Chart

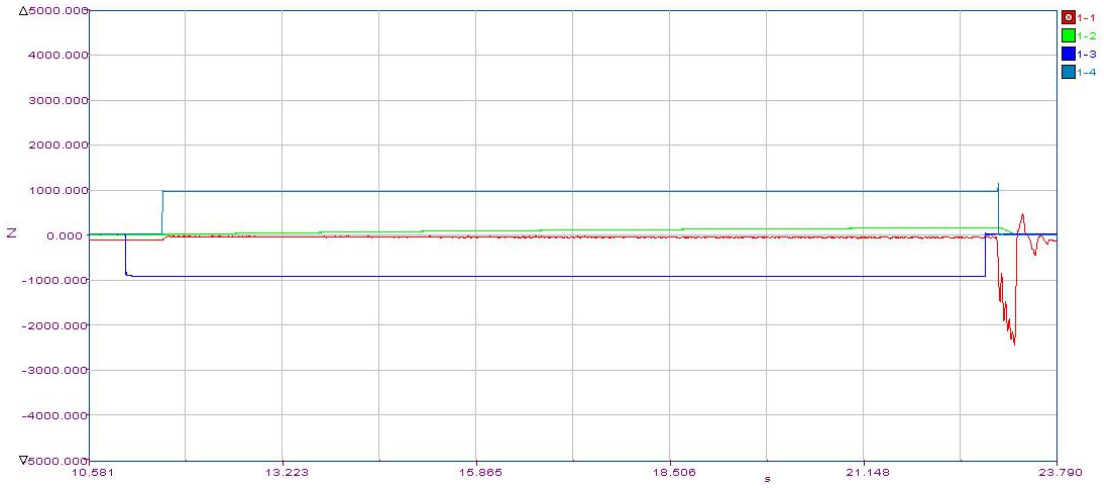
(1) No-load car ascending of maximum quality working condition



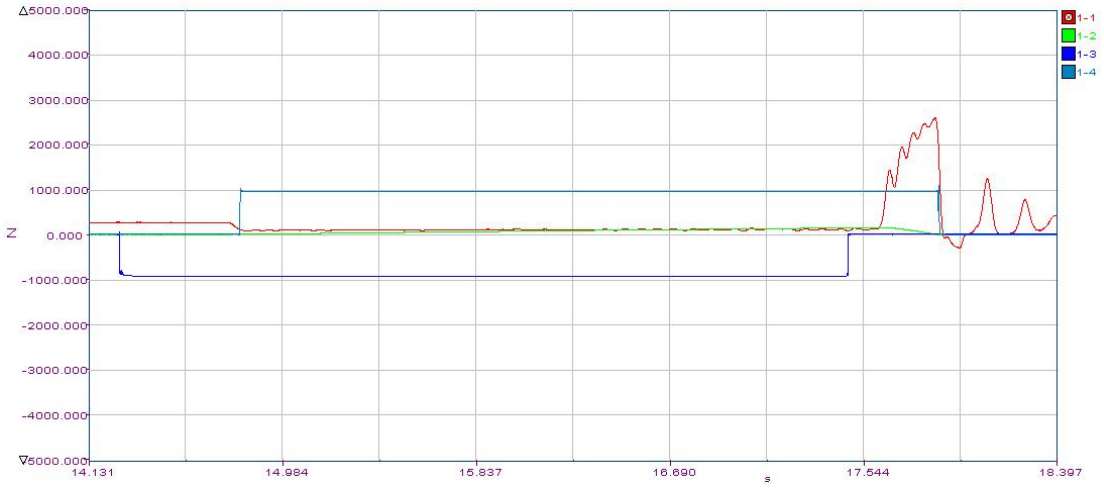
(2) Full load car downward of maximum quality working condition



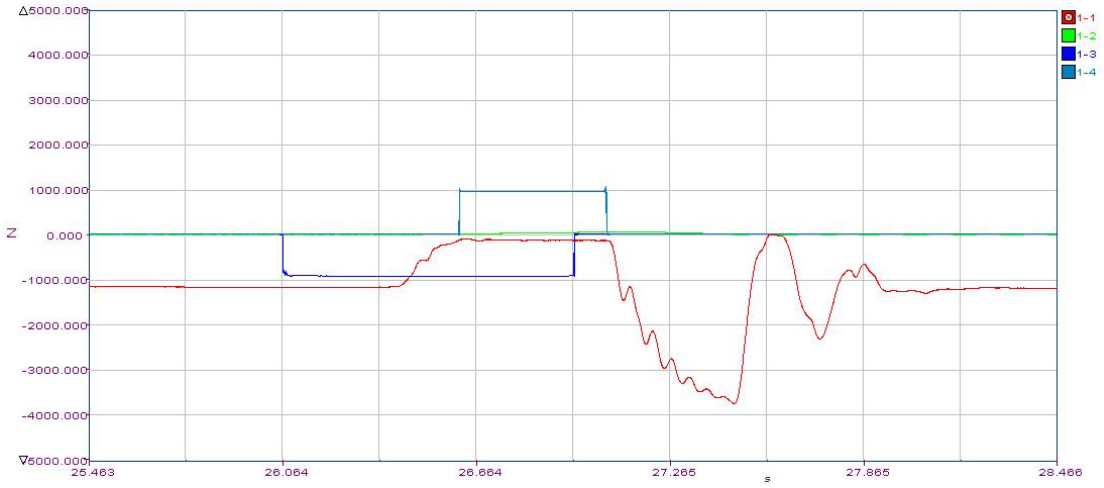
(3) No-load car ascending of minimum quality working condition



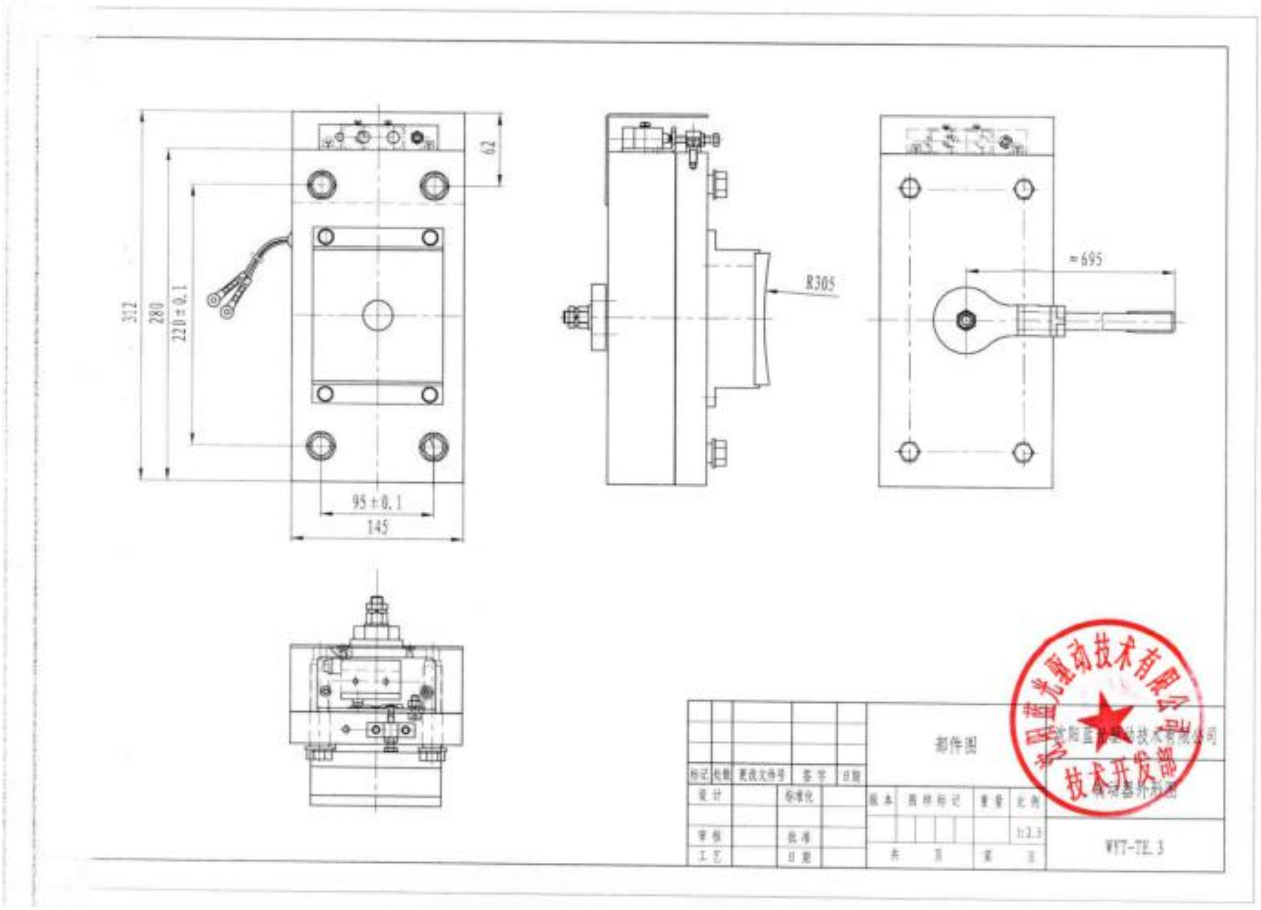
(4) Full load car downward of minimum quality working condition



(5) Field inspection speed condition



3.3 Sample drawing



3.4Sample Photo

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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