



TYPE-EXAMINATION REPORT

Report No. 2013AF0667

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Product category Safety protection devices

Product form Lift driving machine

Product name Lift traction machine

Model/Type WYT-U

Applicant Shenyang Bluelight Drive Technology Co.,Ltd.

Manufacturer Shenyang Bluelight Drive Technology Co.,Ltd.

SHENZHEN INSTITUTE OF SPECIAL EQUIPMENT INSPECTION AND TEST
GUANGDONG STATION OF ELEVATOR QUALITY SUPERVISION AND TEST



Explanation

1. The Laboratory is a legal inspection body for elevator type examinations authorized by General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China, with certificate number TS7610038-2017.
2. The Laboratory has obtained the authorization from the China National Accreditation Service for Conformity Assessment (CNAS) , with the certificate number L0916.
3. The report, if without the appropriate seal for inspection stamped by the Laboratory, shall be invalid.
4. The report, if without the signatures by specific inspector(s), reviser(s) and approver(s), shall be invalid.
5. Any incomplete copy of the report shall be invalid.
6. Any altered version of the report shall be invalid.
7. The inspection department and the inspector(s) shall undertake the technical responsibility for the inspection results concerning the regulated inspection items.
8. The inspection results shall only apply to the inspected samples.

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TYPE-EXAMINATION
REPORT

Product name	Lift traction machine			
Model/Type	WYT-U			
General technical data	Line speed of the traction sheave	5.0m/s	Rated output torsion	1570N.m
	Motor rated power	32.7kW	Allowable radial load of the traction sheave shaft	7000kg
	Anti-hazard classification	/	Type of protection	/
Applicant name	Shenyang Bluelight Drive Technology Co.,Ltd.			
Applicant address	No.37 Shiji Road,Hunnan New Distrct,Shenyang,China			
Manufacturer name	Shenyang Bluelight Drive Technology Co.,Ltd.			
Manufacturer address	No.37 Shiji Road,Hunnan New Distrct,Shenyang,China			
Product No.	13A1877MM	Date of manufacture	2013-10	
Datelanded	2013-10	Sample No.	20130539	
Date of inspection	2013-11-6	Sample condition	Normal	
Type of inspection	Type-Examination	Inspection item	All suitable item	
Place of inspection	Shenzhen Institute Of Special Equipment Inspection And Test			
Condition of inspection	Ambient temperature : 24°C Humidity: 70% Voltage: 380V			
Standard for inspection	<i>Regulation for Type Tests of Elevators (2012)</i> <i>GB 7588-2003 Safety rules for the construction and installation of electric lifts</i> <i>EN81-1:1998 Safety rules for the construction and installation of lifts-part 1:Electric lifts</i>			
Conclusion	<p>By the Type-Examination, the product is confirmed to be in accordance with <i>Regulation for Type Tests of Elevators (2012)</i>.</p> <p>The product is confirmed to be in accordance with <i>GB 7588-2003 Safety rules for the construction and installation of electric lifts</i> & <i>EN81-1:1998 Safety rules for the construction and installation of lifts-part 1:Electric lifts</i>.</p>			
Inspected by		Agency approval number: TS7610038-2017		
Reviewed by				
Approved by				
		 (stamp) Date of issued: 2013-11-8		

1. General technical data table

Product name		Lift traction machine		
Apply the environment		Indoor	Construction pattern	Permanent-magnet synchronous without reduction device
Line speed of the traction sheave		5.0m/s	Rated output torsion	1570N.m
Rated speed of lift		2.5m/s	Rated load of lift	2000kg
Allowable radial load of the traction sheave shaft		7000kg	Height of the center	382.5mm
Hand winding device		Yes		
Motor	Type code	WYT—U2.5FS	Construction style	Outer rotor
	Rated power	32.7kW	Rated rotate speed	199r/min
	Rated voltage	380V	Rated current	71.9A
	Rated frequency	49.7Hz	Insulation class	F
	Working form	S5	Protection class	IP41
	Overload protective device	Overheating	Frequency of starter	240F/h
	Explosion-proof sign	/		
	Manufacturer	Shenyang Bluelight Drive Technology Co.,Ltd.		
Reduction device	Reduction style	/	Reduction ratio	/
	Reduce level	/	Width between centres	/
	Crossed axis angle	/	Lubricating oil	/
Traction sheave	Groove quantity	7	Shape of groove	U shape with cut
	Hoist ropes diameter	12mm	Heat treatment requirements	Annealing or aging
	Driving sheave pitch diameter	480mm	Round the rope method	Single wrap
Brake	Type code	BLB	Function position	Machine shaft
	Construction pattern	Electromagnetic drum	Insulation class	F
	Electromagnet rated working voltage	DC110V	Explosion-proof sign	/
	Brake drum diameter	670mm		
Driving system	Variable speed system	Variable voltage variable frequency control (VVVF)		
	Control	Frequency converter		
	Speed feedback	Rotary encoder		

2. Technical documents check and result

No.	Items	Technical requirements	Test results	Comment
1	V2.1 Inspection of calculated data	The calculation of rated output torque should be correct	Information Complete	Pass
2		The turning force calculation of hand-barring device required to move the car in the upward direction with its rated load should be correct.	Information Complete	Pass
3		The ratio between the pitch diameter of the traction wheel, the winding cylinder or the chain wheel and the nominal diameter of a suspension rope or chain is not less than 40.	Information Complete	Pass
4		The intensity and rigidity of output wheel axle when the radial load is correspondingly used shall satisfy the requirement of safety coefficient for the material.	Information Complete	Pass
5	V2.2 Inspection of part structural data	The protection design of the traction wheel, the winding cylinder or the chain wheel and the protecting device shall satisfy the requirement of Safety Code on Elevator Manufacturing & Installation (eqv. EN81-1:1998) §9.7.	Information Complete	Pass
6		The structures of brake (including a machinery part and an electromagnetic coil) and a manual emergency operation device (if available) should satisfy the requirement of GB 7588§12.4.2.	Information Complete	Pass
7		The structure of hand-barring device shall satisfy the requirement of GB 7588§12.5.	Information Complete	Pass

3. Test items and inspected result

No.	Items	Technical requirements	Test results	Comment
1	V3.1.1 insulation resistor of stator winding	When the insulation resistance of the stator winding is in heat condition or the temperature rise test is finished, it shall not be less than 0.5MΩ; the cold-state insulation resistance is not less than 5 MΩ.	Meet the requirements	Pass
2	V3.1.2 Pressure resisting test	The three-phase leading-out terminal and machine shall earth are applied with double power voltage and 1000 V test voltage; the temperature sensor and the machine shell earth, the three-phase leading-out terminal of the elevator driving host are applied with 500 V test voltage; the test lasting time is 60s, the leakage current is not more than 100mA.	16.53mA	Pass
3	V3.2.1 Brake system model	The brake system shall be provided with an electromechanical brake (frictional type); the band type brake cannot be used; the brake shall keep release state under the continuously charging state.	Meet the requirements	Pass
4		The braked part shall be rigidly connected with the traction wheel, the winding cylinder or the chain wheel in machine manner.	Meet the requirements	Pass
5	V3.2.2 Packet set of brake system	All the brake mechanical part participated in applying brake force to the w\brake wheel (disk) shall be assembled by two groups. The action state of every group of mechanical part shall be monitored; if one group of part cannot take effect, the elevator driving host shall stop running or cannot start.	Meet the requirements	Pass
6	V3.2.3 Brake linear	Pressure of brake gate tile or cushion shall be applied by a directive compression spring or a heavy weight. The brake linear should be noncombustible and excludes asbestos component.	Meet the requirements	Pass
7	V3.2.4 Brake moment	The rated moment of the elevator driving host shall be negotiated with the elevator driving host user according to GB 7588§12.4.2.1, or is 2.5 times of the rated torque.	Meet the requirements	Pass
8		If there is one group of part incapable of taking effect, the rest brake shall be provided with enough brake force to enable the carriage loaded with the rated load to descend at reducing speed, namely, it should be greater than the rated torque	Meet the requirements	Pass
9	V3.2.5 Start and release voltage	Under the condition of satisfying 3.2.4, the lowest suction voltage a of the brake electromagnet are respectively should not exceed 80% of the rated voltage.	52.00V	Pass
		Under the condition of satisfying 3.2.4, the highest release voltage of the brake electromagnet should not exceed 55% of the rated voltage	23.00V	

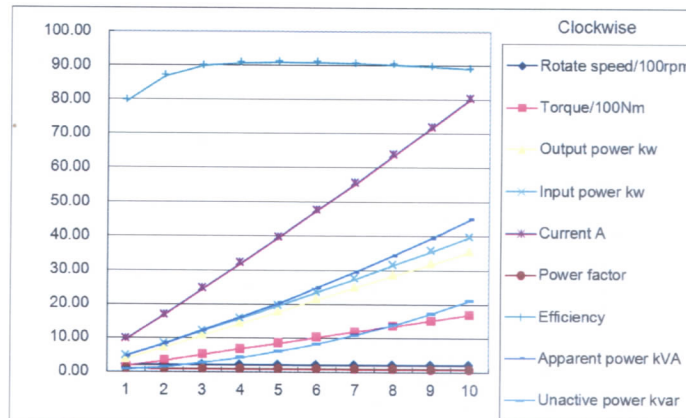
No.	Items	Technical requirements	Test results	Comment																	
10	V3.2.6 Brake responding time	The brake responding time of the brake shall not be more than 0.5s; about the elevator driving host brake of the over-speed protecting device brake element on the carriage, the responding time shall satisfy the design value of the manufacture at the same time.	0.15S	Pass																	
11	V3.2.7 Pressure resisting test of brake coil	For the coil voltage resisting test of the brake, the conductive part applies 1000 V to the ground for 1 min without puncturing phenomenon.	Meet the requirements	Pass																	
12	V3.2.8 Use of belt	By using a belt, one or multiple electric motor is connected to the spare part acted by electromechanical brake. There are at least two belts.	Not applicable	/																	
13	V3.2.9 Reliability test of brake	The brake shall perform the action test for more than 2 millions time, the testing process shall be free from any maintenance; after finishing the test, the V3.2.4-V3.2.6 shall still satisfy the requirement.	Meet the requirements	Pass																	
14	V3.3.1 Temperature rise test	Under the condition of specified working system, the load lasting rate, the starting (brake) time, the following requirements shall be satisfied: (1) The temperature rise of the electric motor stator winding shall not exceed 80 K or 105 K respectively in the process of adopting B grade or F grade insulation	F 62.70K	Pass																	
15		(2) The brake coil temperature rise shall not exceed 80 K or 105 K respectively in the process of adopting B grade or F grade insulation; the brake of which bared surface temperature exceeds 60 DEG C, it shall add a burning-preventing warning mark	F 51.43K 50.90℃	Pass																	
16		(3) The oil temperature of the reduction box shall not exceed 85℃; the allowable temperature of the rolling bearing shall not exceed 95℃; the allowable temperature of the gliding bearing shall not exceed 80 ℃.	Not applicable	/																	
17		(4) The elevator driving host can normally run after the temperature rise test	Meet the requirements	Pass																	
18		V3.3.2 Lift traction machine driving host noise	When the elevator driving host on the checking platform is in idle operation by the rated power supply frequency, the measurement surface average value LPA of the A weight noise sound level shall not exceed the following provisions: <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" rowspan="2"></th> <th colspan="3">m/s Rated speed</th> </tr> <tr> <th>≤2.5</th> <th>>2.5 ≤4</th> <th>>4 ≤8</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Noise dB(A) L_{PA}</td> <td>Gear-free drive host</td> <td>62</td> <td>65</td> <td>68</td> </tr> <tr> <td>Gear drive host</td> <td>70</td> <td>80</td> <td>-</td> </tr> </tbody> </table> For the elevator drive host of which rated speed is more than 8 m/s, the noise shall not be more than the threshold given by the manufacturer of the elevator driving host; when the enterprise not gives the threshold index, the threshold index of the 8 m/s elevator driving host is judged			m/s Rated speed			≤2.5	>2.5 ≤4	>4 ≤8	Noise dB(A) L _{PA}	Gear-free drive host	62	65	68	Gear drive host	70	80	-	58.00dB(A)
		m/s Rated speed																			
		≤2.5	>2.5 ≤4	>4 ≤8																	
Noise dB(A) L _{PA}	Gear-free drive host	62	65	68																	
	Gear drive host	70	80	-																	
19	V3.3.3 Brake noise	For the independent detection of the brake noise, the measurement surface average value LPA of the A weight sound level noise shall not exceed the following provisions: <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>≤700</th> <th>>700 ≤1500</th> <th>>1500</th> </tr> </thead> <tbody> <tr> <td>Rated torque N·m</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Noise dB(A) L_{PA}</td> <td>70</td> <td>75</td> <td>80</td> </tr> </tbody> </table>		≤700	>700 ≤1500	>1500	Rated torque N·m				Noise dB(A) L _{PA}	70	75	80	58.00dB(A)	Pass					
	≤700	>700 ≤1500	>1500																		
Rated torque N·m																					
Noise dB(A) L _{PA}	70	75	80																		

No.	Items	Technical requirements	Test results	Comment
20	V3.3.4 Idle vibration speed of elevator driving host	The vibration of the traction type elevator driving host shall satisfy the following requirements: (1) When the gear-free elevator driving host is in idle operation by the rated power supply frequency, the maximum value of the vibration speed effective value of the detecting part shall be not more than 0.5 mm/s	Meet the requirements	Pass
21		(2) The maximum value of the torque vibrating speed effective value at the traction wheel of the gear elevator driving host shall not be more than 4.5 mm/s	Not applicable	/
22	V3.3.5 Normal jumping of rope groove face of traction wheel	The normal jumping of the groove face of the traction wheel rope groove is 1/2000 of the pitch diameter of the traction wheel	0.10mm	Pass
23	V3.3.6 Difference of pitch diameters of every rope groove of the traction wheel	The difference between the pitch diameters of every two grooves of the traction wheel rope grooves shall not be more than 0.10 mm.	0.04mm	Pass
24	V3.3.7 Manual emergency operation device	If the manual emergency operation device is provided, the manual emergency operation device shall be arranged in such manner: loose the brake and keep it in loose state by a lasting force; keep the hand-wheel smooth and free from spoke	Meet the requirements	Pass
25		About the dismountable hand-wheel, a specified electrical safety device shall act at least when the elevator driving host is mounted on the hand-wheel.	Meet the requirements	Pass
26	3.3.8 Hardness of rope groove of traction wheel	The traction wheel rope groove face adopts the material matched with the wear resisting performance of the traction rope, the groove face of the traction wheel shall uniform, the hardness difference is not more than 15 HB.	2HB	Pass
27	V3.3.9 Oil leakage of reduction box	The box cutting face and the eye cover of the gear elevator driving host shall be tightly connected without oil leakage. When the elevator is in normal work, the oil leakage of the extending end of the reduction box shaft shall not exceed 25cm ²	Not applicable	/
28	V3.3.10 Overall unit efficiency	The efficiency measurement value of the driving host shall not be less than the provided efficiency index value	Meet the requirements	Pass
29	V3.3.1.1 Protection of encoder	The encoder for the elevator driving host (if provided) shall be possessed of anti-interference shield and mechanical protection	Meet the requirements	Pass
30	V3.3.1.2 Appearance	The oil paint layer of the appearance shall be uniform; the exposed rotating part shall be coated with yellow paint; the paint film must be bonded firmly and provided with enough adhering force and elasticity; the manual lock loosening spanner of the elevator driving host brake shall be red.	Meet the requirements	Pass
31	V3.4 Nameplate of elevator driving host	The product nameplate shall be located at the obvious position, the nameplate should be permanent and should at least notify the following contents: (1) Product name, model; (2) rated speed of elevator driving host (or elevator rated speed); (3) rated power; (4) rated voltage; (5) rated current; (6) rated frequency; (7) rated output torque (or rated load weight); (8) protection grade; (9) factory No; (10) manufacture name and trademark; (11) date of production	Meet the requirements	Pass
32	V3.5 Speed	The driving motor is applied with the required rated voltage and rated frequency and in idle operation; the linear speed at the pitch diameter of the output wheel shall not exceed 105% and not less than 92% of the rated speed of the elevator driving host	5.05m/s 101.00%	Pass

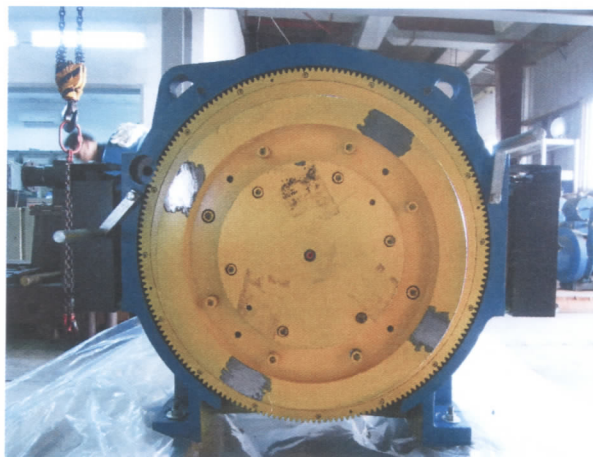
No.	Items	Technical requirements	Test results	Comment
33	V 3.6 Special environment using requirement	<p>When the outdoor type or anti-explosive elevator is used, the elevator driving host is used under the special conditions of outdoor, anti-explosion, severe contamination, high temperature, severe cold, inflammable and high elevation (1000m above); according to the using condition, the following measures shall be in accordance with the enterprise design provision and performed with the risk elevation:</p> <p>(1) Anti-rust measure of structure; (2) outer shell protecting grade; (3) environment temperature protection or guarantee measure; (4) material selection; (5) accumulated water protecting measure; (6) anti-pollution measure; (7) lead selection and layout; (8) waterproof or sealing measure of important part; (9) power leakage protection measure; (10) anti-explosive measures for the brake and the electric motor; (11) measure for preventing machine spark because of the wire rope or the chain will isolate the device surface of the rope groove or the chain wheel for loose; (12) obvious anti-explosive mark; (13) other measures according to the using environment requirement.</p>	Not applicable	/

4 Efficiency test data and graphs

Anti-clockwise									
No.	Rotate speed	Torque	Output power	Input power	Current	Power factor	Efficiency	Apparent power	Unactive power
	rpm	Nm	kW	kW	A		%	KVA	kVar
1	198.54	177.21	3.684	4.628	9.644	0.989	79.620	4.680	0.701
2	198.43	341.29	7.092	8.155	16.860	0.985	86.960	8.281	1.436
3	198.54	516.27	10.734	11.943	24.539	0.977	89.870	12.223	2.600
4	198.51	684.19	14.223	15.677	32.071	0.968	90.720	16.199	4.077
5	198.58	851.07	17.699	19.463	39.673	0.957	90.930	20.340	5.907
6	198.59	1026.90	21.356	23.479	47.718	0.944	90.960	24.867	8.190
7	198.53	1194.90	24.842	27.422	55.655	0.930	90.590	29.485	10.837
8	198.55	1366.20	28.405	31.488	63.794	0.916	90.210	34.393	13.832
9	198.71	1532.40	31.887	35.565	71.962	0.900	89.660	39.522	17.236
10	198.54	1701.10	35.369	39.717	80.344	0.884	89.050	44.944	21.035



5 Sample photo



6 Main instruments

Item	Main test instrument	Number
1	Dynamometer instrument	AE/XS/1401
2	Speed meter	AM/DT/0206
3	Sound meter	AS/XS/0202
4	Microhm meter	AE/DT/0212

-----Empty in the following-----



TYPE-EXAMINATION CERTIFICATE

Certificate No. TSX F390-038-13 0071

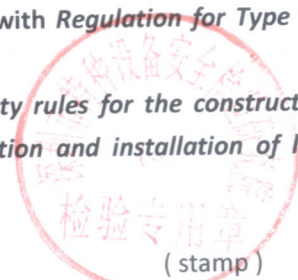
Page 1 of 2

Applicant name : Shenyang Bluelight Drive Technology Co.,Ltd.
Applicant address : No.37 Shiji Road,Hunnan New Distrct,Shenyang,China
Manufacturer name : Shenyang Bluelight Drive Technology Co.,Ltd.
Manufacturer address : No.37 Shiji Road,Hunnan New Distrct,Shenyang,China
Product form : Lift driving machine
Product name : Lift traction machine
Model/Type : WYT—U
Any additional information: see the appendix F390-038-13 0071
Inspection Report No. 2013AF0667

The certificate covers the following different size products of the same type mentioned above :
see the appendix F390-038-13 0071

By the Type-Examination, the product is confirmed to be in accordance with *Regulation for Type Tests of Elevators (2012)*.

The product is confirmed to be in accordance with *GB 7588-2003 Safety rules for the construction and installation of electric lifts & EN81-1:1998 Safety rules for the construction and installation of lifts-part 1:Electric lifts.*



(stamp)

Date of issued: 2013-11-8

**SHENZHEN INSTITUTE OF SPECIAL EQUIPMENT INSPECTION AND TEST
GUANGDONG STATION OF ELEVATOR QUALITY SUPERVISION AND TEST**

- Note: 1. This certificate is to confirm the equipment model, responsible for whether the prototype is qualified.
2. The certificate holder is responsible for guaranteeing that the product is in accordance with the specification of code and ensuring the consistence of the product and the type test sample.

Appendix: F390-038-13 0071

Product configuration table

Machine type		Motor type	Brake type	Max motor rated power	Max. line speed of the traction sheave
WYT-U		WYT-U2.5FS	BLB	32.7kW	5.0m/s
Construction pattern		Permanent-magnet synchronous without reduction device		Apply the environment	Indoor
Motor	Construction pattern	Outer rotor	Brake	Construction pattern	Electromagnetic drum
	Height of the centre	382.5mm		Function position	Machine shaft
Reduction device	Reduction style	/	Traction sheave	Supporting style	One-side support
	Width between centres	/		Shape of groove	U shape with cut
	Crossed axis angle	/		Method of wrapping rope	Single wrap
Certificate covers		For the product type WYT-U of the traction machine whose motor rated power ≤ 32.7 kW and line speed of the traction sheave ≤ 5.0 m/s.			

Covering principle of lift traction machine:

For traction machines whose driving mode, whole construction pattern, pattern of the reduction device, center distance and axes intersection angle, height of output shaft axis(only for the machines without reduction device), construction pattern of the motor, quantity and construction pattern and acting position of the brake, applicative anti-explosion pattern are the same to the test sample, the certificate covers products whose motor rated power, line speed of the traction sheave (designed line speed of the traction sheave, drum or sprocket pitch diameter) and anti-explosion grade are no more than the test sample. Certificates whose applicative work environment is outdoor cover indoor.

Lift rated speed is determined by the following formula:

Lift rated speed = Line speed of the traction sheave / Traction rate

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