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

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TYPE-EXAMINATION REPORT OF SPECIAL EQUIPMENT （LIFT）

Product category Main lift component

Equipment Type Driving machine

Product name Lift traction machine

Model/Type WYT-L

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 (SHENZHEN)

Notes

1. The report is obtained based in the type-examination compliance with *Regulation for Type Tests of Elevators (TSG T7007-2016)*
2. The 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.

THE INFORMATION OF TYPE TEST ORGANIZATION :

Name: Shenzhen Institute of Special Equipment Inspection and Test

Address：1032 Honggang Road, Luohu District, Shenzhen,Guangdong Province

Approval No. TS7610038-2021

Postcode：518029

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

Branch Address：No.6, Chuangye Road, Shunchenji Industrial Park Nearby, Dahe Road, LongHua New District, Shenzhen,Guangdong Province

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CONTENTS

Conclusive report of the Type-Test ····· Page 1
1. Sample Configuration and Technical Data ····· Page 2
2. Technical Documents Review ····· Page 3
3. Sample Check and Testing ····· Page 3
4. Changes of the Type-Examination Report ····· Page 7

TYPE-EXAMINATION REPORT of SPECIAL EQUIPMENT (LIFT)

Equipment Name	Driving machine		
Product Name	Lift traction machine	Product Model	WYT-L
Main Technical Data	Rated speed of driving machine	4.00 m/s	
	Motor rated power	13.30 kW	
Product No.	/	Manufacture Date	/
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	Initial Type-Examination	Inspection Date	21-Mar-2018
Sample No.	20180202	Sample Status	Normal
Inspection Place	Qinghu branch, Shenzhen Institute of Special Equipment Inspection and Test		
Inspection Condition	Temperature:22℃； Humidity:43%RH； Voltage:380V		
Standard for Inspection	*Regulation for Type Tests of Elevators (TSG T7007-2016)* *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	With the Type-Examination, it is confirmed that the product is compliance with the regulations of *Regulation for Type Test of Lifts (TSG T7007-2016).* The product is in compliance with related regulations of *GB 7588-2003 Safety Rules for the Construction and Installation of Electric Lifts(Including No.1 amending list)* and 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 and 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		

Inspected by	Date: 21-Mar-2018	Agency Approval Number：TS7610038-2021
Reviewed by	Date: 21-Mar-2018	(stamp)
Approved by	Date: 21-Mar-2018	Issued Date: 21-Mar-2018

1. Sample configuration and technical data

Product name		Lift traction machine		Model/Type	WYT-L
Working condition		Indoor		Construction pattern	3 phase AC permanent magnet synchronous structure without reduction device (shaft supported by two point)
Rated speed of driving machine		4.00 m/s		Rated output torsion	530 N·m
Rated speed of lift		2.00 m/s		Rated load of lift	1050 kg
Allowable radial load of the traction sheave shaft		3500 kg		Height of the center (without speed reducer)	225 mm
Explosive-proof grade		Not applicable		Explosive-proof type	Not applicable
Hand winding device		Yes			
Motor	Type code	WYT-L2.0D		Construction pattern	3 phase AC permanent magnet synchronous Inner rotor
	Rated power	13.3 kW		Rated rotate speed	239 r/min
	Rated voltage	380 V		Rated current	29 A
	Rated frequency	39.8 Hz		Insulation grade	F
	Duty cycle	S5		Shell protection grade	IP41
	Overload protection device	Overheating		Frequency of starter	240F/H
	Explosion-proof sign	Not applicable		Name of manufacturer	Shenyang Bluelight Drive Technology Co.,Ltd.
Reduction device	Structure pattern	Not applicable		Reduction radio	Not applicable
	Reduce level	Not applicable		Width between centers	Not applicable mm
	Crossed axis angle	Not applicable		Lubricating oil specification	Not applicable
	Material grade of contacting surface on transmission pair				Not applicable
Driving sheave	Groove quantity	7		Groove shape	U shape with cut
	Hoist ropes diameter	8 mm		Heat treatment for groove surface	/
	Sheave pitch diameter	320 mm		Winding method	Single wrap
Brake	Type code	BLS		Effect position	Traction sheave shaft
	Quantity and construction pattern	Complete electromagnetic disc (Two dividedly installed)		Insulation grade	F
	Rated working voltage for electromagnet	DC110 V		Explosion-proof sign	Not applicable
	Brake drum diameter	278mm			
Driving system	Speed control method	Variable voltage variable frequency control		Speed control device	Frequency converter
	Speed feedback device	Rotary encoder			

2. Technical documents check and results

No.	Project code	Items	Results	Conclusion
1	Y5.1	Certificate and related technical data	Information Complete	Pass
2	Y5.2	Calculation data	Information Complete	Pass
3	Y5.3	Main design drawing	Information Complete	Pass

3. Sample check and test

3.1. Test projects and results

No.	Project code and name	Project contents and requirements	Results	Conclusion
1	Y6.1.1 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 0.5 MΩ; the cold-state insulation resistance is not less than 5 MΩ.	Meet the requirements	Pass
2	Y6.1.2 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.	Meet the requirements	Pass
3	Y6.2.1 Brake system type	The brake system shall be provided with an electromechanical brake (frictional type) and keep release state under the continuously charging state. 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
4		The band type brake cannot be applied in driving machine.	Meet the requirements	Pass
5	Y6.2.2 Packet set of brake system	For driving machine, All the brake mechanical part participated in applying brake force to the brake wheel (disk) shall be assembled by two groups. The action state of every group of mechanical part must be monitored Note: The core in the magnetic coil is regarded as mechanical parts, but the coil itself is not.	Meet the requirements	Pass
6	Y6.2.3 Brake pressure of brake system	Pressure of brake gate tile or cushion shall be applied by a directive compression spring or a heavy weigh. If the brake is released by hand, a continuous force must be exerted to keep it open.	Meet the requirements	Pass
7	Y6.2.4 Braking torque of driving machine	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 driving machine must stop working, and 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

<table>
<tr><th>No.</th><th>Project code and name</th><th>Project contents and requirements</th><th>Results</th><th>Conclusion</th></tr>
<tr><td rowspan="3">9</td><td rowspan="3">Y6.2.5
Start and release voltage of electromagnet brake</td><td>Under the condition of satisfying 3.2.4, the lowest suction voltage of the brake electromagnet should not exceed 80% of the rated voltage.</td><td>62.00 V</td><td>Pass</td></tr>
<tr><td>Under the condition of satisfying 3.2.4,the highest release voltage of the brake electromagnet should not exceed 55% of the rated voltage.</td><td>33.00 V</td><td>Pass</td></tr>
<tr><td>Under the condition of satisfying 3.2.4, the lowest release voltage should not less than 10% of rated voltage.</td><td>32.00 V</td><td>Pass</td></tr>
<tr><td>10</td><td>Y6.2.6
Brake responding time</td><td>The brake responding time of the brake (From the power-off time to the time that rated brake torque is reached or braking position is reached)shall not be more than 0.5s. For the elevator driving machine which also perform the function of the brake element of over-speed protection on the carriage, the responding time shall satisfy the design value of the manufacture at the same time.</td><td>Meet the requirements</td><td>Pass</td></tr>
<tr><td>11</td><td>Y6.2.7
Pressure resisting test of brake coil</td><td>For the coil voltage resisting test of the brake, the conductive part applies 1000 V to the ground for 1 min without puncturing phenomenon.</td><td>Meet the requirements</td><td>Pass</td></tr>
<tr><td>12</td><td>Y6.2.8
Use of belt</td><td>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.</td><td>Not applicable</td><td>/</td></tr>
<tr><td>13</td><td>Y6.2.9
Action test of the brake</td><td>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.</td><td>Meet the requirements</td><td>Pass</td></tr>
<tr><td>14</td><td>Y6.2.10
brake noise test</td><td>The brake noise should be detected independently, the measurement surface average value LPA of the A weight noise sound level shall not exceed the following table:
<table>
<tr><td>Rated torque N·m</td><td>≤700</td><td>＞700 ≤1500</td><td>＞1500</td></tr>
<tr><td>Noise dB(A) LPA</td><td>70</td><td>75</td><td>80</td></tr>
</table>
For the elevator drive host of which rated torque is more than 3000N·m, the noise shall not be more than the threshold given by the manufacturer of the elevator driving host; if the enterprise not gives the threshold index, it can be judged by 80dB(A)</td><td>Meet the requirements</td><td>Pass</td></tr>
<tr><td>15</td><td>Y6.3.1
Normal direction jumping of rope groove face of traction wheel</td><td>The normal direction jumping of the groove face of the traction wheel rope groove is 1/2000 of the pitch diameter of the traction wheel</td><td>0.07 mm</td><td>Pass</td></tr>
<tr><td>16</td><td>Y6.3.2
Difference of pitch diameters of every rope groove of the traction wheel</td><td>The difference between the pitch diameters of every two grooves of the traction wheel rope grooves shall not be more than 0.10 mm.</td><td>0.02 mm</td><td>Pass</td></tr>
<tr><td>17</td><td>Y6.3.3
Hardness of rope groove of traction wheel</td><td>The groove face of the traction wheel shall uniform, the hardness difference is not more than 15 HBW.</td><td>5.00 HBW</td><td>Pass</td></tr>
</table>

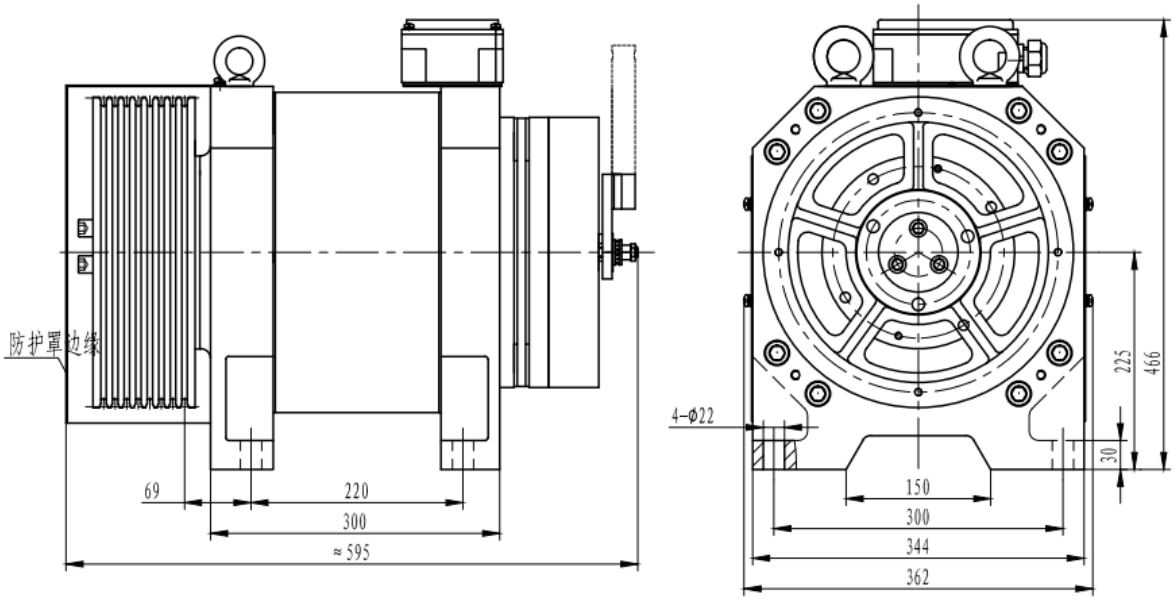
<table>
<tr><th>No.</th><th>Project code and name</th><th>Project contents and requirements</th><th>Results</th><th>Conclusion</th></tr>
<tr><td>18</td><td>Y6.4
Reducer box</td><td>The box cutting face and the eye cover of the gear elevator driving host shall be tightly connected without oil leakage. During the temperature rise test, the oil leakage of the extending end of the reduction box shaft shall not exceed 25cm^2</td><td>Not applicable</td><td>/</td></tr>
<tr><td rowspan="2">19</td><td rowspan="3">Y6.5.1
Temperature rise test</td><td rowspan="2">Under the condition of specified working system, the load lasting rate, the starting (brake) time, when the electric motor coil in the driving machine (if no reducer box)or the oil in the reducer box achieve thermal stability, the following requirements shall be satisfied:
(1) The temperature rise of the electric motor stator winding and the brake coil shall not exceed 80 K or 105 K respectively in the process of adopting B grade or F grade insulation</td><td>Motor stator winding:
F,88.91K</td><td rowspan="2">Pass</td></tr>
<tr><td>Brake coil:
F, 53.18K</td></tr>
<tr><td>20</td><td>(2)The oil temperature of the reduction box shall not exceed 85℃</td><td>Not applicable</td><td>/</td></tr>
<tr><td>21</td><td>(3) The elevator driving machine can normally run after the temperature rise test</td><td>Meet the requirements</td><td>Pass</td></tr>
<tr><td>22</td><td>Y6.5.2
Driving host noise</td><td>When the elevator driving host on the test platform operates at no load under 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>
<tr><th>Project \ Rated speed m/s</th><th></th><th>≤2.5</th><th>＞2.5
≤4</th><th>＞4
≤8</th></tr>
<tr><td rowspan="2">Noise dB(A) LPA</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>
</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.</td><td>57.70 dB(A)</td><td>Pass</td></tr>
<tr><td>23</td><td rowspan="3">Y6.5.3
Idle vibration speed of elevator driving host</td><td>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</td><td>Meet the requirements</td><td>Pass</td></tr>
<tr><td>24</td><td>(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</td><td>Not applicable</td><td>/</td></tr>
<tr><td>25</td><td>(3) For the elevator driving host whose rated speed is over 8m/s，the vibration speed cannot exceed the limit given by the manufacturer; if there is not a given limit, the judgment criteria follows 8m/s elevator driving host.</td><td>Not applicable</td><td>/</td></tr>
</table>

No.	Project code and name	Project contents and requirements	Results	Conclusion
26	Y6.5.4 Speed	For the elevator driving host, when it is running without load at rated voltage and frequency, the linear velocity of the driving wheel must be in the range from 92% of rated speed to 105% rated speed at rated voltage and frequency.	4.03 m/s, 100.75%	Pass
27	Y6.5.5 Appearance	The oil level in the reducer box should be observed easily. Hand winding crank shall be partly or completely yellow. The manual lock loosing spanner of the elevator driving host brake shall be red.	Meet the requirements	Pass
28	Y6.5.6 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 (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) product No. (10)manufacturing date; (11) manufacturer name and manufacturing address; (12) Name or logo of the type-test agency	Meet the requirements	Pass

3.2 Efficiency test data and graphs

No.	Rotate speed	Torque	Output power	Input power	Current	Power factor	Efficiency	Apparent power	Unactive power
	rpm	Nm	kW	kW	A		%	KVA	kVar
1	238.56	56.76	1.418	1.830	3.873	0.977	77.510	1.874	0.404
2	238.37	113.96	2.845	3.319	6.946	0.971	85.720	3.418	0.820
3	238.29	159.86	3.989	4.552	9.444	0.965	87.630	4.716	1.231
4	238.24	212.31	5.297	5.985	12.314	0.957	88.490	6.253	1.809
5	238.11	275.27	6.864	7.750	15.795	0.947	88.560	8.184	2.630
6	238.20	327.61	8.172	9.260	18.721	0.938	88.250	9.874	3.426
7	238.17	372.17	9.282	10.577	21.249	0.930	87.760	11.374	4.183
8	238.13	428.86	10.694	12.290	24.504	0.919	87.020	13.371	5.267
9	238.32	478.89	11.952	13.850	27.418	0.909	86.290	15.232	6.339
10	238.31	537.74	13.420	15.727	30.902	0.898	85.330	17.522	7.725

3.3 Sample Drawing



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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