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国际互认  
检测  
TESTING  
CNAS L0095

Page 1 of 14 Pages

No.: GJW2021-4703

# TEST REPORT

NAME OF SAMPLE: Valve regulated lead acid battery

CLIENT: JYC POWER CO.,LIMITED

CLASSIFICATION OF TEST: Commission Test

**CVC Testing Technology Co., Ltd.**



# 检测报告

## TEST REPORT

No.: GJW2021-4703

Page 2 of 14 Pages

Name of product: Valve regulated lead acid battery	Trade mark: JYC, EXOR, V-TRUST, KOZAR
Type/Model by: 12V65Ah,12V75Ah,12V100Ah, 12V150Ah,12V200Ah,12V250Ah	Sample identification: 12V250Ah, 1#~3#, 12V200Ah, 4#, 12V150Ah, 5#, 12V100Ah, 6#, 12V75Ah, 7#, 12V65Ah, 8#
Manufacturer by: JYC Battery Manufacturer Co.,Ltd	Commissioned by: JYC POWER CO.,LIMITED
Manufacturer address: Wengcheng Industrial Park,Guandu development Zone,Wengyuan, Shaoguan, Guangdong, P. R. China	Commissioner address: SUITE 913B, 9/F, OCEAN CENTRE, 5 CANTON ROAD, TSIM SHA TSUI, KLN, HONG KONG
Quantity of sample: 8 pcs	Sampled by: —
Sample status: The samples' status is good.	Sampling at (place): —
Means of receiving: Submitted by Manufacturer	Means of sampling: —
Classification of test: Commission Test	Sampling date: —
Receiving date: 2021-08-30	Completing date: 2021-09-23
Tested according to: IEC 60896-21:2004, IEC 60896-22:2004	Test item: 11 items
<p>Test conclusion:</p> <p>The Valve regulated lead acid batteries submitted by JYC POWER CO.,LIMITED. are tested according to IEC 60896-21:2004 Stationary lead-acid batteries - valve regulated types-methods of test and IEC 60896-22:2004 Stationary lead-acid batteries - valve regulated types-requirements.</p> <p>The test results of Internal ignition from external spark sources, Protection against ground short propensity, Content and durability of required markings, Material identification, Valve operation, Flammability rating of materials, Discharge capacity comply with IEC 60896-21:2004 and IEC 60896-22:2004.</p> <p>The test values of the Gas emission, High current tolerance, Short circuit current and d.c. internal resistance, Intercell connector performance are stated in the report.</p>	



Title: Manager

Approved by: Huang Kun

Reviewed by: Zhang Siyao

Tested by: Deng Junzhao

*Huang Kun*

*Zhang Siyao*

*Deng Junzhao*

## Description and illustration of the sample:

The samples' status is good.

Type	Items
12V250Ah	Gas emission, High current tolerance, Short circuit current and d.c. internal resistance, Internal ignition from external spark sources, Protection against ground short propensity, Content and durability of required markings, Material identification, Valve operation, Flammability rating of materials, Intercell connector performance, Discharge capacity
12V65Ah 12V75Ah 12V100Ah 12V150Ah 12V200Ah	Discharge capacity

## Description of the sampling procedure:

/

## Description of the deviation from the standard, if any:

/

## Remarks:

Throughout this report a comma is used as the decimal separator.

**Photos and markings**

12V250Ah



**Photos and markings**

12V65Ah



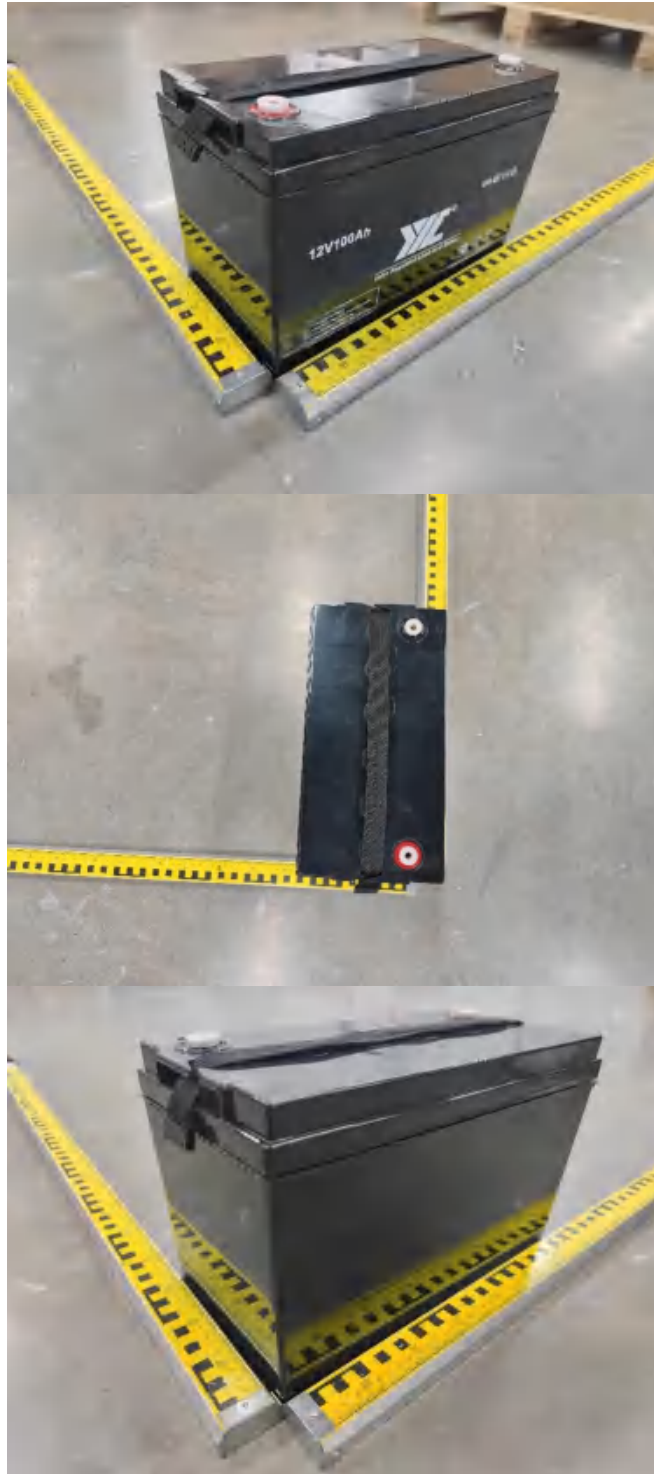
**Photos and markings**

12V75Ah



**Photos and markings**

12V100Ah





**Photos and markings**

12V150Ah





**Photos and markings**

12V200Ah



IEC 60896-21:2004 IEC 60896-22:2004								
Cl.	Requirement – Test		Result				Verdict	
6	Safe operation requirements							
6.1	Gas emission							
	The test methods are according to clause 6.1.1 to 6.1.14 which are stated in the standard IEC 60896-21	No.	12V250Ah					state data
			1#					
	Requirement and application: At the rated float charge voltage; state data for all applications: ml gas per cell, h and Ah at 20°C;	Uflo(V)=2,275 ml /(Ah·h·cell)	The 1 <sup>st</sup>	The 2 <sup>nd</sup>	The 3 <sup>rd</sup>	The 4 <sup>th</sup>		
			0,00071	0,00069	0,00068	0,00069		
	Requirement and application: at 2,40Vpc overcharge voltage conditions; state data for all applications: ml gas per cell, h and Ah at 20°C;	at 2,40Vpc overcharge ml /(Ah·h·cell)	12V250Ah					
			2#					
0,00129								
6.2	High current tolerance							
	The test methods are according to clause 6.2.1 to 6.2.6 which are stated in the standard IEC 60896-21	after 30s of high current flow the samples showed no incipient melting or of no loss of electrical continuity						state data
	Requirement and application: Measure unit voltage, inspect and document the status of the top-lead and terminals of each unit after 30s current flow; Pass for all applications: Show evidence of no incipient melting or of no loss of electrical continuity after 30s of high current flow (value to be stated). After the completion of the specified discharge duration, the test shall stand for 5minutes in open circuit and their voltage measured and reported.	model	12V250Ah					
		current	500A					
		No.	1#	2#	3#			
		(Voltage after the test)	12,29	12,31	12,28			
6.3	Short circuit current and d.c. internal resistance							
	The test methods are according to clause 6.3.1 to 6.3.6 which are stated in the standard IEC 60896-21 Define prospective short-circuit value I <sub>sc</sub> and internal resistance R <sub>i</sub> of all units of a type range	model	12V250Ah					state data
		No.	1#	2#	3#			
	The test methods are according to clause 6.3.1 to 6.3.6 which are stated in the standard IEC 60896-21	Short-circuit: (A)	3850	3840	3850			
		Resistance: (mΩ)	0,0027	0,0028	0,0027			
6.4	Protection against internal ignition from external spark sources							
	The test methods are according to clause 6.4.1 to 6.4.6 which are stated in the standard IEC 60896-21	12V250Ah	1#, 2#, 3#					P
	Requirement and application: induce sparks near representative valve/barrier assemblies during emission Pass for all application: no evidence of rapid combustion or explosion beyond valve/barrier assemblies	No evidence of rapid combustion, no explosion beyond valve/barrier assemblies.						P

IEC 60896-21:2004 IEC 60896-22:2004			
Cl.	Requirement – Test	Result	Verdict
<b>6.5</b>	<b>Protection against ground short propensity</b>		P
	The test methods are according to clause 6.5.1 to 6.5.9 which are stated in the standard IEC 60896-21	12V250Ah 1#, 2#, 3#	
	Requirement and application: Operate units in different orientations and apply d.c. gradient; Pass for all applications: No evidence of ground short and leakage phenomena;	No evidence of ground short, no leakage.	
<b>6.6</b>	<b>Content and durability of required markings</b>		P
	The test shall consist of visual verification of a) the presence and b) the legibility of all the required markings before and after exposure to selected chemicals The test methods are according to clause 6.6.1 to 6.6.4 which are stated in the standard IEC 60896-21 including test with water and aliphatic solvent, test with neutralizing solutions and test with electrolyte	12V250Ah 1#, 2#, 3# The markings are readable after rubbed 15s with water, petroleum, solution of sodium carbonate, and 40% in weight of H <sub>2</sub> SO <sub>4</sub> in water respectively.	
	Requirement and application: 1.Information shall remain readable after exposure to chemicals and remain in place 2 Requested information to be present	The requested information is present.	
<b>6.7</b>	<b>Material identification</b>		P
	The test methods are according to clause 6.7.1 to 6.7.4 which are stated in the standard IEC 60896-21	12V250Ah 1#, 2#, 3#	
	Requirement and application: Inspect case and/or cover for ISO 1043-1 materials symbols. Expose to chemicals. Pass for all applications: ISO symbols present on the outside of the cover or/and case. Symbols shall remain readable after exposure to chemicals and remain in place	The cover and case is ABS material.	
<b>6.8</b>	<b>Valve operation</b>		P
	The test methods are according to clause 6.8.1 to 6.8.3 which are stated in the standard IEC 60896-21	12V250Ah: 1#, 2#, 3# open valve pressure is: 25~35kpa close valve pressure is: 15~25kpa	
	Requirement and application: Overcharge units and detect gas flow from the valve; Pass for all applications: Gas release detected before and after stress temperature impact test.	Gas release is detected before and after stress temperature impact test.	

IEC 60896-21:2004 IEC 60896-22:2004			
Cl.	Requirement – Test	Result	Verdict
<b>6.9</b>	<b>Flammability rating of materials</b>		P
	<p>The test methods are according to clause 6.9.1 to 6.9.4 which are stated in the standard IEC 60896-21</p> <p>Requirement and application Determine flammability rating of case and cover material; State data for all applications: State the flammability rating level for samples of thickness equivalent to that of case and cover.</p>	<p>12V250Ah 1#, 2#, 3#</p> <p>Flammability rating level: V-0</p>	
<b>6.10</b>	<b>Intercell connector performance</b>		P
	<p>The test methods are according to clause 6.10.1 to 6.10.2 which are stated in the standard IEC 60896-21</p> <p>Requirement and application: Measure and report maximum intercell connector temperature reached; State data for all applications: State maximum temperature reached.</p>	<p>Test result:</p> <p>model 12V250Ah Maximum temperature reached: 40°C</p>	
<b>6.11</b>	<b>Discharge capacity</b>		P
	<p>The test methods are according to clause 6.11.1 to 6.11.12 which are stated in the standard IEC 60896-21</p> <p>Requirement and application: Determine actual capacity <math>C_a</math>; <math>C_a</math> to be at least <math>x\%</math> of <math>C_{rt}</math> with all units at all rates shown below ;  10h \ 8h \ 3h \ 1h \ 0,25h \ 1,80Vpc \ 1,75Vpc \ 1,70Vpc \ 1.60Vpc 1.60Vpc \   <math>C_a \geq 95\% C_{rt}</math></p>	<p>See appended table A and B.</p>	

**Table A: 6,11 Discharge capacity**

model	12V250Ah				
C No	C <sub>10</sub> (Ah)	C <sub>8</sub> (Ah)	C <sub>3</sub> (Ah)	C (Ah)	C <sub>0,25</sub> (Ah)
Crt	250	200	187,5	164,3	92,5
Ca					
1#	253,4	258,6	217,6	164,3	107,5
2#	255,3	256,2	214,3	165,2	106,8
3#	256,8	252,3	211,8	162,3	106,7
%of Crt					
1#	101,3	129,3	116,0	119,5	116,2
2#	102,1	128,1	114,3	120,1	115,4
3#	102,7	126,1	112,9	118,0	115,3

**Table B: 6,11 Discharge capacity**

model	12V200Ah	12V150Ah	12V100Ah	12V75Ah	12V65Ah
No	4#	5#	6#	7#	8#
C	C <sub>10</sub>	C <sub>10</sub>	C <sub>10</sub>	C <sub>10</sub>	C <sub>10</sub>
C <sub>rt</sub> (Ah)	200	150	100	75	65
C <sub>a</sub>	208,2	157,6	104,8	76,2	68,1
%of C <sub>rt</sub>	104,1	105,1	104,8	101,6	104,7

## Important

1. The test report is invalid without the official stamp of CVC.
2. Nobody is allowed to photocopy or partly photocopy this test report without written permission of CVC.
3. The test report is invalid without the signatures of Ratifier, Reviewer and Testing engineer.
4. The test report is invalid if altered.
5. Objections to the test report must be submitted to CVC within 15 days.
6. The test report is valid for the tested samples only.
7. As for the Verdict, “-” means “no need for judgement”, “P” means “pass” , “F” means “fail” and “N/A” means “not applicable”.

*The test data and test results given in this test report should only be used for purposes of scientific research, teaching and internal quality control when the CMA symbol is not presented.*

Lab Address: No.3, Tiantai 1st Road, Kaitai Avenue, Science City, Guangzhou, Guangdong, China.

Testing Location: Building D, BASIGO INTELLIGENT, No.179, Guangpu East Road, Huangpu District, Guangzhou, P. R. China.

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(FAX): 020 32293889 E-mail: office@cvc.org.cn

<http://www.cvc.org.cn>



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# TEST REPORT

Report No. ....: HST201910-19597-WT

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Sample Description.....: Valve Regulated Lead Acid Battery

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Model.....: See the Table 1

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Assessment Category.: Entrusted

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Applicant.....: JYC POWER CO., LIMITED

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**Guangdong Huesent Testing & Inspection Technology Co., Ltd.**





**TEST REPORT**

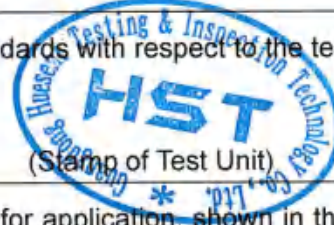
Sample Description	Valve Regulated Lead Acid Battery	Trademark	/
Model	See the Table 1	Specification	See the Table 1
Assessment Category	Entrusted	Sample Quantity	6 pieces
Applicant	JYC POWER CO., LIMITED	Sample Status	The samples are sound, intact and fit for test.
Sample Received Date	2019.10.15	Test Date	2019.10.15-2019.10.27
Manufacturer	JYC Battery Manufacturer Co.,Ltd		
Address	Wengcheng Industrial Park, Guandu development Zone,Wengyuan, Shaoguan, Guangdong,China		
Factory	JYC Battery Manufacturer Co.,Ltd		
Address	Wengcheng Industrial Park, Guandu development Zone,Wengyuan, Shaoguan, Guangdong,China		
Test address	Unit 102,4th Building, HongJi e Valley International Enterprises Port, Tongji West Road, NantouTown, Zhongshan City, Guangdong.		
Test Items	See the report below.		
Test standard	IEC 61056-1:2012 General purpose lead-acid batteries (valve-regulated types) – Part 1: General requirements, functional characteristics – Methods of test IEC 61056-2:2012 General purpose lead-acid batteries (valve-regulated types) – Part 2: Dimensions, terminals and marking		
Test Conclusion	The results conform to the requirements of standards with respect to the test items.  (Stamp of Test Unit)		
Remarks	There are thirty-eight models (See theTable 1) for application, shown in this report, with the difference being the outer sizes and capacity. All of the tests were performed on 12V70AH.		
Tested by : Ben		Sign: Ben	
Reviewed by: John		Sign: John	
Approved by: Louis		Sign: Louis	

Table 1:Models for application			
No.	Models	No.	Models
1	12V1.2AH	20	12V45AH
2	12V2.2AH	21	12V50AH
3	12V3.3AH	22	12V70AH
4	12V3.4AH	23	12V75AH
5	12V3.5AH	24	12V80AH
6	12V5.5AH	25	12V90AH
7	12V6AH	26	12V100AH
8	12V6.5AH	27	12V110AH
9	12V7.2AH	28	12V120AH
10	12V8AH	29	12V150AH
11	12V8.5AH	30	12V180AH
12	12V10AH	31	12V200AH
13	12V15AH	32	12V220AH
14	12V20AH	33	12V230AH
15	12V22AH	34	12V250AH
16	12V28AH	35	BATTERY 12V12Ah Deep Cycle
17	12V34AH	36	BATTERY 12V18Ah Deep Cycle
18	12V35AH	37	BATTERY 12V26Ah Deep Cycle
19	12V42AH	38	BATTERY 12V36Ah Deep Cycle

## TEST RESULT

Items	IEC 61056-1:2012	Result - Remark	Verdict
	7 Test methods		
1	7.2 Capacity $C_a$ (actual capacity at the 20 h discharge rate)		
	The test methods are according to clause 7.2.1 to 7.2.4 which are stated in the standard IEC 61056-1:2012	1#: $C_a = 78.1\text{Ah}$ 2#: $C_a = 77.5\text{Ah}$ 3#: $C_a = 77.8\text{Ah}$	P
	Specific requirements: $C_a$ shall be equal to, or higher than, $C_{20}$ .		
2	7.3 High rate capacity		
	The test methods are according to clause 7.3.1 to 7.3.3 which are stated in the standard IEC 61056-1:2012	4#: 34min 5#: 32min 6#: 33min	P
	Specific requirements: During discharge with $20 \times I_{20}$ , the discharge time shall reach 27 min or more within 5 cycles of charging and discharging.		
3	7.8 Maximum permissible current		
	The test methods are according to clause 7.8.1 to 7.8.7 which are stated in the standard IEC 61056-1:2012	The battery have no distortion or other damage	P
	Specific requirements: Batteries shall be suitable to maintain a current of $I_m = 40 \times I_{20}$ for 300 s and of $I_h = 300 \times I_{20}$ for 5 s, unless otherwise specified by the manufacturer, without distortion or other damage to the battery.		
4	7.9 Charge acceptance after deep discharge		
	The test methods are according to clause 7.9.1 to 7.9.4 which are stated in the standard IEC 61056-1:2012	1#: $C_a = 69.5\text{Ah}$ 2#: $C_a = 69.2\text{Ah}$ 3#: $C_a = 68.8\text{Ah}$	P
	Specific requirements: The resulting capacity in ampere-hours shall be $\geq 0,75 \times C_{20}$ (Ah).		
5	7.10 Gas emission intensity		
	7.10.1 Gas emission intensity with constant voltage	At the rated float charge voltage. Unit of $G_e$ is ml/(hour·Ah·cell) 4#: $G_e = 0,0017$ 5#: $G_e = 0,0016$ 6#: $G_e = 0,0016$	P
	The test methods are according to clause 7.10.1.1 to 7.10.1.7 which are stated in the standard IEC 61056-1:2012		
	Specific requirements: When the gas emission intensity is determined during constant voltage float charging , the value $G_e$ shall not be greater than $0,05 \text{ ml} \times \text{cell}^{-1} \times \text{h}^{-1} \times \text{Ah}^{-1}$ .		



## TEST RESULT

Items	IEC 61056-1:2012	Result - Remark	Verdict
<b>6</b>	<b>Operation of regulating valve and over pressure resistance</b>		
	<p>The test methods are according to clause 7.11.1 to 7.11.2 which are stated in the standard IEC 61056-1:2012</p> <p>Specific requirements: When the test is performed in accordance with 7.11.1, the operating pressure of vent valve shall be 0,98 kPa to 196,1 kPa.</p>	Valve pressure: 20,1kpa~24,0kpa	P
<b>7</b>	<b>7.12 Vibration resistant characteristics</b>		
	<p>The test methods are according to clause 7.12.1 to 7.12.2 which are stated in the standard IEC 61056-1:2012</p> <p>Specific requirements: During the test according to 7.12, terminal voltage shall be not less than nominal voltage. The battery shall be free from cracks and liquid leakage when inspected visually. The deformations shall not exceed the range of dimensions given in Table 1 and Table 2 of IEC 61056-2:2011.</p>	No deformation, damage or leakage U=13.13V	P
<b>8</b>	<b>7.13 Shock resistant characteristics</b>		
	<p>The test methods are according to clause 7.13.1 to 7.13.2 which are stated in the standard IEC 61056-1:2012</p> <p>Specific requirements: During the test according to 7.13, terminal voltage shall be not less than nominal voltage. The battery shall be free from cracks and liquid leakage when inspected visually. The deformations shall not exceed the range of dimensions given in Table 1 and Table 2 of IEC 61056-2:2011.</p>	No deformation, damage or leakage U=13.15V	P

## TEST RESULT

Item	IEC 61056-2:2012	Result - Remark	Verdict
<b>9</b>	<b>4 Dimensions</b>		
	The standardized battery dimensions are listed in the standard IEC 61056-2:2012, tables 1 and 2, together with nominal voltage, configuration, and capacity.	Length: 260mm Width: 169mm Height: 210mm	P
<b>10</b>	<b>5 Terminals</b>		
	Terminal types and dimensions are depicted in the standard IEC 61056-2:2012, Figures 3, 4, 5, 6 and 7.	Compliance	P
	<b>6 Marking</b>		
<b>11</b>	<b>6.1 Marking of polarity</b>		
	The polarity shall be marked by the symbol of "+" on the positive pole and "-" on the negative pole. The case where the battery carries a marking of polarity of both terminals by the color of the lead wire connected to the battery shall be as specified in IEC 60445.	Compliance	P
<b>12</b>	<b>6.2 Marking items</b>		
	<p>The marking contains the minimum information which has to be supplied with the battery.</p> <p>The following information shall be clearly and permanently marked on each battery:</p> <ul style="list-style-type: none"> <li>a) supplier's or manufacturer's name or trade mark;</li> <li>b) type designation or product name;</li> </ul> <p>NOTE The standardized type designation is a mnemonic term to define the batteries covered under this standard.</p> <ul style="list-style-type: none"> <li>c) nominal voltage (<math>n \times 2,0 \text{ V}</math>);</li> <li>d) rated capacity C20;</li> <li>e) polarity;</li> <li>f) date of manufacture, its abbreviation or code;</li> <li>g) safety symbols according to national or international standards;</li> <li>h) recycling symbol (see IEC 61429).</li> </ul>	Compliance	P

Photo(s) of the tested samples

12V70AH:



12V70AH:



--End of Report --

## Report Statement

1. This test report is invalid if altered, additions and deletions.
2. This test report is responsible for tested samples only .
3. Objections to the test report must be submitted to Guangdong Huesent Testing & Inspection Technology Co., Ltd. within 15 days.
4. The test report is invalid without the signatures of tester, reviewer ,approver ,and official stamp of test unit.
5. Without permission of Guangdong Huesent Testing & Inspection Technology Co., Ltd., This report is not permitted to be duplicated in extracts.
6. "P"=Pass=Test item conform to the requirement  
"F"= Fail=Test item not conform to the requirement  
"N"= Not Applicable =Test item Not Applicable to the test object







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CNAS L2885



# TEST REPORT

Report No. ....:	HST201906-09962-WT
Sample Description.....:	Valve Regulated Lead Acid Battery
Model.....:	See the Table 1
Assessment Category.:	Entrusted
Applicant.....:	JYC POWER CO.,LIMITED

Guangdong Huesent Testing & Inspection Technology Co., Ltd.



## TEST REPORT

Sample Description	Valve Regulated Lead Acid Battery	Trademark	/
Model	See the Table 1	Specification	See the Table 1
Assessment Category	Entrusted	Sample Quantity	6 pieces
Applicant	JYC POWER CO.,LIMITED	Sample Status	The samples are sound, intact and fit for test.
Sample Received Date	2019.06.05	Test Date	2019.06.05-2019.06.24
Manufacturer	JYC POWER CO.,LIMITED		
Address	SUTE 913B, 9/F, OCEAN CENTER, 5 CANTON ROAD, TSIM SHA TSUI, KLN, HONG KONG		
Factory	JYC Battery Manufacturer Co.,Ltd		
Address	Wengcheng Industrial Park, Guandu development Zone,Wengyuan, Shaoguan, Guangdong,China		
Test address	Unit 102,4th Building, HongJi e Valley International Enterprises Port, Tongji West Road, NantouTown, Zhongshan City, Guangdong.		
Test Items	See the report below.		
Test standard	IEC 61056-1:2012 General purpose lead-acid batteries (valve-regulated types) – Part 1: General requirements, functional characteristics – Methods of test IEC 61056-2:2012 General purpose lead-acid batteries (valve-regulated types) – Part 2: Dimensions, terminals and marking		
Test Conclusion	The results conform to the requirements of standards with respect to the test items.		
Remarks	There are nineteen models (See theTable 1) for application, shown in this report, with the difference being the outer sizes and capacity. All of the tests were performed on 12V7AH.		
Tested by : Ben		Sign: Ben	
Reviewed by: John		Sign: John	
Approved by: Louis		Sign: Louis	



**Table 1:Models for application**

No.	Models	No.	Models
1	12V1.3AH	11	12V18AH
2	12V2.3AH	12	12V24AH
3	12V3.2AH	13	12V26AH
4	12V4AH	14	12V33AH
5	12V4.5AH	15	12V38AH
6	12V5AH	16	12V40AH
7	12V7AH	17	12V55AH
8	12V9AH	18	12V60AH
9	12V12AH	19	12V65AH
10	12V17AH	-	-



## TEST RESULT

Items	IEC 61056-1:2012	Result - Remark	Verdict
	7 Test methods		
1	7.2 Capacity $C_a$ (actual capacity at the 20 h discharge rate)		
	The test methods are according to clause 7.2.1 to 7.2.4 which are stated in the standard IEC 61056-1:2012	1#: $C_a=7.86\text{Ah}$ 2#: $C_a=7.76\text{Ah}$ 3#: $C_a=7.74\text{Ah}$	P
	Specific requirements: $C_a$ shall be equal to, or higher than, $C_{20}$ .		
2	7.3 High rate capacity		
	The test methods are according to clause 7.3.1 to 7.3.3 which are stated in the standard IEC 61056-1:2012	4#: 37min 5#: 35min 6#: 36min	P
	Specific requirements: During discharge with $20 \times I_{20}$ , the discharge time shall reach 27 min or more within 5 cycles of charging and discharging.		
3	7.8 Maximum permissible current		
	The test methods are according to clause 7.8.1 to 7.8.7 which are stated in the standard IEC 61056-1:2012	The battery have no distortion or other damage	P
	Specific requirements: Batteries shall be suitable to maintain a current of $I_m = 40 \times I_{20}$ for 300 s and of $I_h = 300 \times I_{20}$ for 5 s, unless otherwise specified by the manufacturer, without distortion or other damage to the battery.		
4	7.9 Charge acceptance after deep discharge		
	The test methods are according to clause 7.9.1 to 7.9.4 which are stated in the standard IEC 61056-1:2012	1#: $C_a=7.02\text{Ah}$ 2#: $C_a=6.98\text{Ah}$ 3#: $C_a=6.92\text{Ah}$	P
	Specific requirements: The resulting capacity in ampere-hours shall be $\geq 0,75 \times C_{20}$ (Ah).		
5	7.10 Gas emission intensity		
	7.10.1 Gas emission intensity with constant voltage	At the rated float charge voltage. Unit of $G_e$ is ml/(hour•Ah•cell) 4#: $G_e=0,0016$ 5#: $G_e=0,0016$ 6#: $G_e=0,0017$	P
	The test methods are according to clause 7.10.1.1 to 7.10.1.7 which are stated in the standard IEC 61056-1:2012		
	Specific requirements: When the gas emission intensity is determined during constant voltage float charging , the value $G_e$ shall not be greater than $0,05 \text{ ml} \times \text{cell}^{-1} \times \text{h}^{-1} \times \text{Ah}^{-1}$ .		

## TEST RESULT

Items	IEC 61056-1:2012	Result - Remark	Verdict
6	Operation of regulating valve and over pressure resistance		
	The test methods are according to clause 7.11.1 to 7.11.2 which are stated in the standard IEC 61056-1:2012	Valve pressure: 20,6kpa~24,2kpa	P
	Specific requirements: When the test is performed in accordance with 7.11.1, the operating pressure of vent valve shall be 0,98 kPa to 196,1 kPa.		
7	7.12 Vibration resistant characteristics		
	The test methods are according to clause 7.12.1 to 7.12.2 which are stated in the standard IEC 61056-1:2012	No deformation, damage or leakage U=13.16V	P
	Specific requirements: During the test according to 7.12, terminal voltage shall be not less than nominal voltage. The battery shall be free from cracks and liquid leakage when inspected visually. The deformations shall not exceed the range of dimensions given in Table 1 and Table 2 of IEC 61056-2:2011.		
8	7.13 Shock resistant characteristics		
	The test methods are according to clause 7.13.1 to 7.13.2 which are stated in the standard IEC 61056-1:2012	No deformation, damage or leakage U=13.20V	P
	Specific requirements: During the test according to 7.13, terminal voltage shall be not less than nominal voltage. The battery shall be free from cracks and liquid leakage when inspected visually. The deformations shall not exceed the range of dimensions given in Table 1 and Table 2 of IEC 61056-2:2011.		

## TEST RESULT

Item	IEC 61056-2:2012	Result - Remark	Verdict
<b>9</b>	<b>4 Dimensions</b>		
	The standardized battery dimensions are listed in the standard IEC 61056-2:2012, tables 1 and 2, together with nominal voltage, configuration, and capacity.	Length: 151mm Width: 65mm Height: 100mm	P
<b>10</b>	<b>5 Terminals</b>		
	Terminal types and dimensions are depicted in the standard IEC 61056-2:2012, Figures 3, 4, 5, 6 and 7.	Compliance	P
	<b>6 Marking</b>		
<b>11</b>	<b>6.1 Marking of polarity</b>		
	The polarity shall be marked by the symbol of "+" on the positive pole and "-" on the negative pole. The case where the battery carries a marking of polarity of both terminals by the color of the lead wire connected to the battery shall be as specified in IEC 60445.	Compliance	P
<b>12</b>	<b>6.2 Marking items</b>		
	<p>The marking contains the minimum information which has to be supplied with the battery.</p> <p>The following information shall be clearly and permanently marked on each battery:</p> <p>a) supplier's or manufacturer's name or trade mark;</p> <p>b) type designation or product name;</p> <p>NOTE The standardized type designation is a mnemonic term to define the batteries covered under this standard.</p> <p>c) nominal voltage (<math>n \times 2,0 \text{ V}</math>);</p> <p>d) rated capacity C20;</p> <p>e) polarity;</p> <p>f) date of manufacture, its abbreviation or code;</p> <p>g) safety symbols according to national or international standards;</p> <p>h) recycling symbol (see IEC 61429).</p>	Compliance	P



Photo(s) of the tested samples

12V7AH:



12V7AH:



--End of Report --



## Report Statement

1. This test report is invalid if altered, additions and deletions.
2. This test report is responsible for tested samples only .
3. Objections to the test report must be submitted to Guangdong Huesent Testing & Inspection Technology Co., Ltd. within 15 days.
4. The test report is invalid without the signatures of tester, reviewer ,approver ,and official stamp of test unit.
5. Without permission of Guangdong Huesent Testing & Inspection Technology Co., Ltd., This report is not permitted to be duplicated in extracts.
6. "P"=Pass=Test item conform to the requirement  
"F"= Fail=Test item not conform to the requirement  
"N"= Not Applicable =Test item Not Applicable to the test object

