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**JINLONG MACHINERY & ELECTRONICS CO., LTD.**  
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## 规格书

### *SPECIFICATION*

|                                  |   |  |
|----------------------------------|---|--|
| 客户信息/<br>Customer<br>Information | 客户名称/Customer                             |  |
|                                  | 客户料号/Part No.                             |  |
|                                  | 客户承认签章<br>Customer Approved<br>Signatures |  |

|                   |                             |                   |
|-------------------|-----------------------------|-------------------|
| 文件编号/Spec No.     | KOTL-B-105                  |                   |
| 品名/Description    | 圆柱直流马达/Cylindrical DC motor |                   |
| 型号/Part No.       | Z6DC1B0730091               |                   |
| 设计/Designed       | 审核/Checked                  | 批准/Approved       |
| <b>杨兰</b>         | <b>杨准华</b>                  | <b>彭小华</b>        |
| <b>2013.03.08</b> | <b>2013.03.08</b>           | <b>2013.03.08</b> |

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|              |               |
|--------------|---------------|
| 型号/ Part No. | Z6DC1B0730091 |
|--------------|---------------|

1. 适用范围/ General Scope  
 本说明书适用于圆筒式永磁直流电机 Z6DC1B0730091 型  
 This specification applies to cylindrical permanent-magnetic motors DC model  
 Z6DC1B0730091

2. 使用条件/ Operating Conditions

| 项目/Item |                               | 规格/Specifications                             | 条件·备注/Conditions & Remarks                       |
|---------|-------------------------------|---|--|
| 2-1     | 额定电压<br>Rated voltage         | 3.0V DC                                       |  |
| 2-2     | 额定负荷<br>Rated load            | 振子<br>Counterweight                           | 见 10. 外形图<br>As specified in 10. Outline Drawing |
| 2-3     | 旋转方向<br>Rotation              | C.W/C.C.W<br>(clockwise or counter clockwise) |  |
| 2-4     | 马达位置<br>Motor position        | 全方位<br>All position                           |  |
| 2-5     | 使用电压范围<br>Operating voltage   | 2.2~3.6V DC                                   |  |
| 2-6     | 使用环境<br>Operating environment | -30 ~ 60℃, 常湿 /Ordinary<br>Humidity:65±20%RH  | 无水气凝结<br>No condensation of moisture             |
| 2-7     | 保存环境<br>Storage environment   | -40 ~ 60℃, 常湿 /Ordinary<br>Humidity:65±20%RH  | 无水气凝结<br>No condensation of moisture             |

3. 测定条件/Measuring condition

| 项目/Item |                      | 规格/Specifications              | 条件·备注/Conditions & Remarks                     |
|---------|----------------------|--------------------------------|--|
| 3-1     | 温度<br>Temperature    | 20±2℃                          |  |
| 3-2     | 湿度<br>Humidity       | (63%~67%) RH                   |  |
| 3-3     | 位置<br>Motor position | 轴向水平<br>Motor shaft horizontal | 将马达固定在试验台上<br>Lock the motor in a test fixture |

标准测试条件为温度 20℃, 湿度 65%。如无疑异, 也可在温度 5~35℃、湿度 45~85% 的条件下测试。马达测试时, 放置方向为轴向水平。/The measurement at 20℃ & 65%RH is standard. If the judgment is not questionable, recognize measurement at 5℃ to 35℃ & relative humidity 45% to 85%. Direction of motor is shaft horizontal.

4. 机械要求/ Mechanical specification

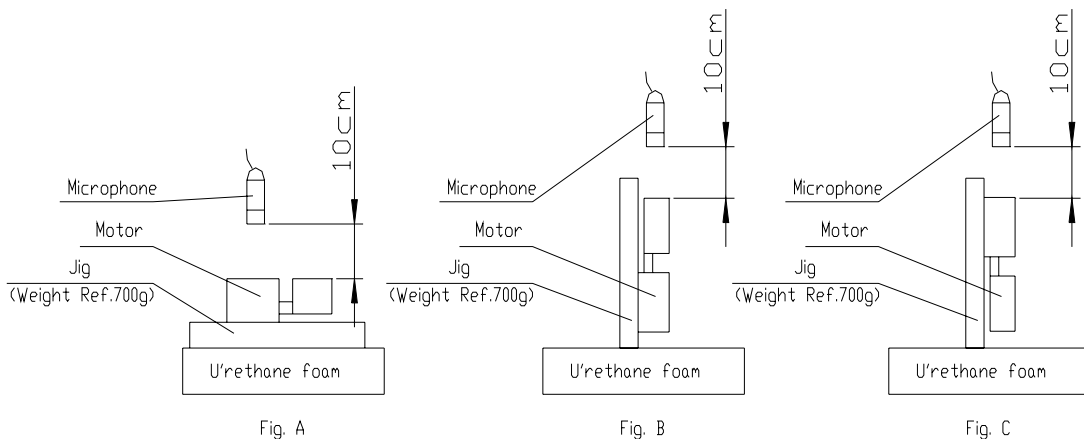
| 项目/Item |  | 规格/Specifications  | 条件·备注/Conditions & Remarks   |
|---------|--|--|--|
| 4-1     | 结构<br>Configuration                              | 见 10. 外形图<br>As specified in 10. Outline Drawing   | Outline drawing No:<br>Z6DC1B0730091   |
| 4-2     | 外观<br>Appearance                                 | 不含有机机械损坏及不适当的浸蚀等。<br>There shall be no evidence of<br>mechanical damage and shall not have<br>inadequate corrosion and so on | 目测 (容许范围根据样品外形)<br>Visual examination(allowable extent<br>is based on boundary sample) |
| 4-3     | 轴向间隙<br>Shaft end play                           | 0.1mm~0.3mm  |  |
| 4-4     | 振子固定力<br>Holding strength<br>of vibration weight | 49N (5kgf) Min   |  |

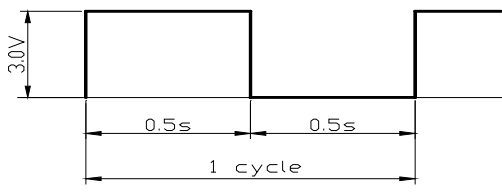
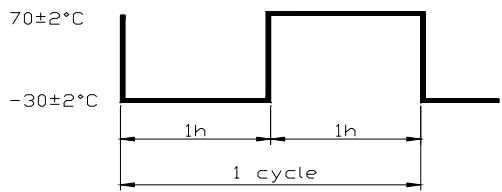
## 5.性能特征/Performance and characteristics

| 项目/Item                              | 规格/Specifications | 条件·备注/Conditions & Remarks   |
|--------------------------------------|-------------------|--|
| 5-1<br>额定转速<br>Rated speed           | 7000±2000rpm      | 在额定电压和额定负载（振子）下。<br>At rated voltage and rated load (vibration weight).    |
| 5-2<br>额定电流<br>Rated current         | 90 mA Max         |  |
| 5-3<br>堵转电流<br>Stall current         | 125 mA Max        | 在额定电压下<br>At rated voltage   |
| 5-4<br>起动电压<br>Starting voltage      | 1.7V DC Max       | 在额定负载（振子）下电枢的任意位置。<br>At rated load (Counterweight) any position of rotor. |
| 5-5<br>绝缘电阻<br>Insulation resistance | 1MΩ Min           | 在 100V 直流下，端子和机壳间<br>At DC 100V between Terminal and case.                 |
| 5-6<br>端子阻抗<br>Terminal resistance   | 30 Ω (±20%)       | 在 20℃ 下<br>At 20℃  |
| 5-7<br>机械噪音<br>Mechanical noise      | 50db(A) Max       |  |

在额定电压、额定负载（振子）下  
背景噪音：不大于 28dB.A 计权  
测试仪器：B&k  
夹具重量：700g  
At rated voltage and rated load (Counterweight).  
Back ground noise 28dB(A) Max  
Measuring instruments: B&k  
Weight of jig:700g

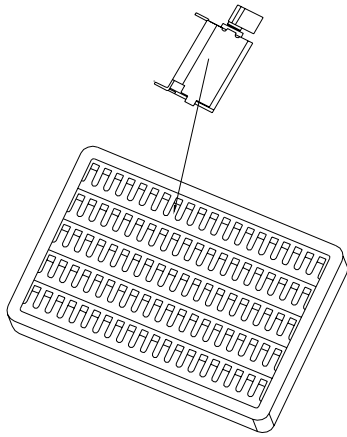
5-7



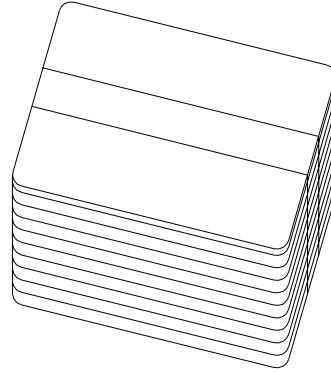
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|--------------------|-----------------------------|---|--|------------------|------------|------------|--|-----|--|-------------------|
| 2013.03.08         |                             | 说明书/Specification   |  | 编号/No KOTL-B-105 |            | 代码/code:0  |  | 5/9 |  |                   |
| 6. 可靠性/Reliability |                             |   |  |                  |            |            |  |     |  |                   |
| 项目/Item            |                             | 规格/Specification  |  |                  |            |            | 判定标准/Judgment  |     |  |                   |
| 6-1                | 寿命<br>Life time             |    |  |                  |            |            | <p>在常温常湿下放置 2h 后，马达应符合项 7-1 的要求。<br/>After 2 hours exposure in ordinary temperature and humidity, Motors shall be approved as specified in item 7-1.</p> |     |  |                   |
|                    |                             | 位置<br>Position  | 电压<br>Volt   | 负荷<br>Load       | 温度<br>Temp | 湿度<br>Humi |  |     |  | 寿命<br>Life        |
|                    |                             | 轴水平<br>Horizon  | Rated<br>额定  | Weight<br>振子     | 20°C       | 65%        |  |     |  | 200,000<br>Cycles |
| 6-2                | 低温放置<br>Low temp exposure   | 温度<br>时间  | /Temperature: -40±2°C<br>/Time: 96h  |                  |            |            |  |     |  |                   |
| 6-3                | 高温放置<br>High temp. Exposure | 温度<br>时间  | /Temperature: 60±2°C<br>/Time: 96h   |                  |            |            |  |     |  |                   |
| 6-4                | 湿度放置<br>Humidity exposure   | 温度<br>湿度<br>放置时间<br>无水气凝结/No condensation of moisture                               | /Temperature: 40±2°C<br>/Humidity: 90~95%RH<br>/Exposure time: 96h   |                  |            |            |  |     |  |                   |
| 6-5                | 振动<br>Vibration             | 频率<br>全振幅<br>加速度<br>周期<br>方向<br>时间  | /Frequency: 10~55~10Hz<br>/Displacement: 1.5mm (p-p)<br>/Acceleration: 22m/s <sup>2</sup><br>/Period: 20min 完成 10~55~10Hz<br>/20 Minutes log sweep 10~55~10Hz<br>/Direction: x, y, z<br>/Time: 每个方向 2h /Each 2 hours                               |                  |            |            |  |     |  |                   |
| 6-6                | 自然跌落<br>Free fall           | 试验状态/Test state:<br>高度<br>方向<br>次数  | 将马达固定在约 75 克（包括马达本身）的物体上，落向水泥地面。<br>Set the motor to the approximately 75g (include the motor) weight of block drop the motor on the concrete floor.<br>/Height: 1.5m<br>/Direction: 6 个面 / 6 faces<br>/Number of times: 每个面 2 次<br>/ Twice 2 each |                  |            |            |  |     |  |                   |
| 6-7                | 热冲击<br>Heat shock test      | 试验循环  | /Test cycle :20 cycles   |                  |            |            |  |     |  |                   |
|                    |                             |  |  |                  |            |            | <p>在常温常湿下放置 2h 后，马达应符合项 7-2 的要求。<br/>After 2 hours exposure in ordinary temperature and humidity, Motors shall be approved as specified in item 7-2.</p> |     |  |                   |



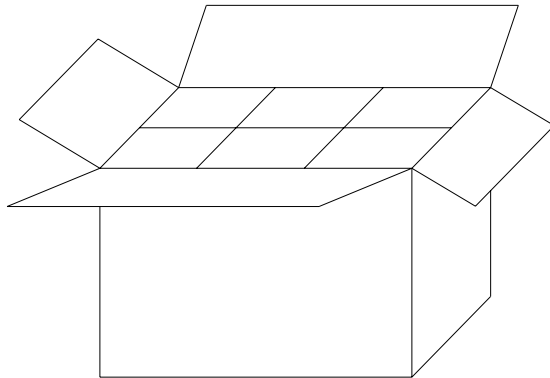
## (Z6DC) 圆柱马达包装 Packaging drawing of Z6DC cylindrical motor



100PCS (1 tray) × 10



1000PCS (1 bundle) × 6



**包装试验要求**

**1. 标准**

- (1) 整箱重量小于等于9kg的, 跌落高度设定为75cm.
- (2) 整箱重量大于9kg但小于等于23kg的, 跌落高度设定为60cm.

**2. 试验方法:**

跌落要求为六面三棱一角.

- (1) 六面: 先从最大两面跌, 然后是中间大小的两面, 最后跌最小的两面, 一共六次.
- (2) 三棱: 指任选三条同一角的棱, 跌落秩序: 最长棱, 中间长度, 最短的, 一共三次.
- (3) 一角: 指上一步三条棱所组成的角, 跌落一次.

**3. 判定基准**

经过跌落试验后, 产品外观、性能无不良.

**Package Test Requirement:**

**1. Criteria**

- (1) The weight of the whole carton less than 9kg, the dropping height is 75cm.
- (2) The weight of the whole carton more than 9kg and less than 23kg, the dropping height is 60cm.

**2. Test Methods:**

Dropping requirement is 6 faces, 3 arris, 1 angle.

- (1) 6 faces: First dropping with two biggest faces, then dropping with another two middle faces, at last dropping with two smallest faces, once per face, total 6 faces.
- (2) 3 arris: Choose any 3 arris which make up of the same the angle, the dropping sequence is the longest arris, middle arris, shortest arris. Total 3 times.
- (3) 1 angle: Point to the angle which is made up with the 3 arris in the above step. Dropping for 1 time.

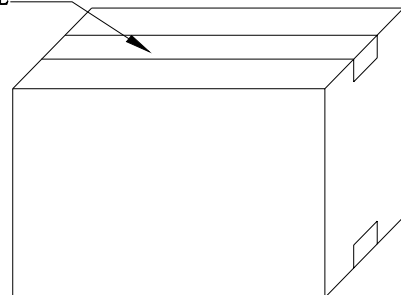
**3. Judgement Criterion**

After drop test, no evidence of damage on the appearance and performance.

**Remarks:**

- 1000PCS/CTN: 24cm × 17.5cm × 27.5cm
- 2000PCS/CTN: 34cm × 24cm × 27.5cm
- 4000PCS/CTN: 47cm × 34cm × 27.5cm
- 6000PCS/CTN: 54cm × 47cm × 27.5cm

OPP TAPE



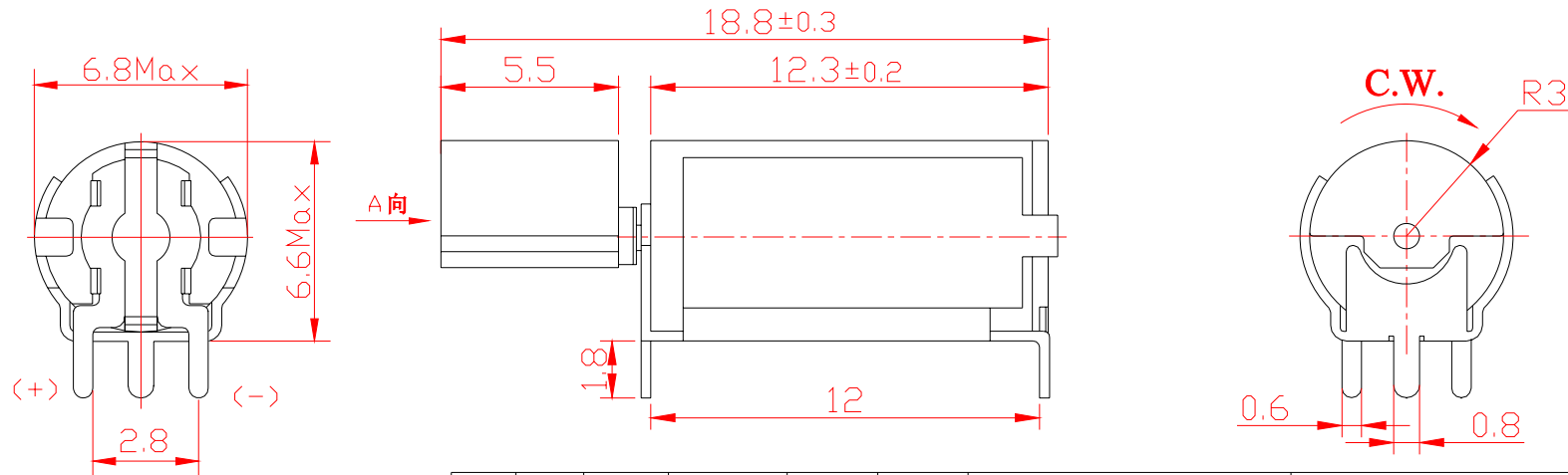
10. 外形图/Outline Drawing

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技术要求/Technic requirement

1. 额定电压/Rated voltage: 3.0V
2. 额定电流/Rated current: 90mA Max
3. 额定转速/Rated speed: 7000 ± 2000rpm
4. 堵转电流/Stall current: 125mA Max
5. 端子阻抗/Terminal resistance: 30Ω (± 20%)
6. 起动电压/Starting voltage: 1.7V Max
7. 轴向间隙/Shaft end play: 0.1~0.3mm
8. 所有尺寸为A向压紧后的尺寸(不包括轴向间隙)  
/Overall length is measured after counterweight being pressed against body in direction A. (Shaft end play is not included.)
9. 未注线性公差为/Unmarked tolerance: ± 0.1mm



借(通)用件登记

底图总号

签字

日期

|    |     |            |       |     |            |                       |     |     |            |  |  |
|----|-----|------------|-------|-----|------------|-----------------------|-----|-----|------------|--|--|
|    |     |            |       |     |            | jinlong-machinery.com |     |     | 金龙机电股份有限公司 |  |  |
|    |     |            |       |     |            |                       |     |     | 外形图        |  |  |
| 标记 | 处数  | 分区         | 更改文件号 | 签名  | 日期         | 阶段标记                  | 重量  | 比例  |            |  |  |
| 设计 | 杨兰  | 2013.03.08 | 标准化   | 郭梦秋 | 2013.03.08 |                       |     | 5:1 |            |  |  |
| 校对 |     |            |       |     |            |                       |     |     |            |  |  |
| 审核 | 杨准华 | 2013.03.08 |       |     |            |                       |     |     |            |  |  |
| 工艺 |     |            | 批准    | 彭小华 | 2013.03.08 | 共 页                   | 第 页 |     |            |  |  |

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说明书/Specification

编号/NO.KOTL-B-105

代码/code:0

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