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JINLONG MACHINERY & ELECTRONIC CO., LTD.

¯ C

SPECIFICATION

Ò g	Ò g =0 /Customer	
	Ò g É ' /Part No.	
	Ò g ¯AÔ1®1 Customer Approved Signatures	

· &5F ' /Spec No.	KOTL-B-546	(x!Q Rev. ÖA/6
ñ = /Description	6 !-$#qPœEî/Cylindrical DC motor	
» ' /Part No.	Z6DL2A1030003	
AîAÑDesigned	Ñ h /Checked	© ö /Approved
f ã o	ì Ó ½	3 D X O 7 D Q
2018.07.04	2018.07.04	2018.07.04

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» ' /Model	Z6DL2A1030003

1. F2+X93 $General

\B$ > –F2+X ¾ 61, ?"h.ñ-$#q+e j Z6DL2A1030003 »

This specification applies to cylindrical permanent magnetic motors DC model Z6DL2A1030003

2. ¯+X ' & /Operating condition

N©- /Item		?ô l /Specification	' & g 7# /Condition remark
2-1	NÍ Ê+e » Rated voltage	1.3V DC	
2-2	NÍ ÊCO9§ Rated load	_ € Vibration weight	?ñ F ' . As specified in outline drawing
2-3	ûEœ é A Rotation	CW(clockwise)	
2-4	PœEî }5ž Motor position	˜ é } All position	
2-5	¯+X+e »93 $ Operating voltage	0.7 1.6V DC	
2-6	¯+X)ß ³ Operating environment	-20 60 , h $ ¯Ordinary Humidity:65 f 20%RH	"d"D 5 No condensation of moisture
2-7	ˆ)ß ³ Storage environment	-40 80 , h $ ¯Ordinary Humidity:65 f 20%RH	"d"D 5 No condensation of moisture

3 Ê #{ Ê ' & /Measuring condition

N©- /Item		?ô l /Specification	' & g 7# /Condition remark
3-1	$Y Ö Temperature	20 f 2	
3-2	$¯ Ö Humidity	(63% 67%) RH	
3-3	}5ž Motor position	E¤ A"d £ Motor shaft horizontal	6PœEî * Ê XB P¼ : Lock the motor in a test fixture

7 ö#{B ' & j$Y Ö 20 È$¯ Ö 65%Ä ² +Á 2 È • X$Y Ö 5 35 Ã$¯ Ö 45 85%´ ' & ;#{B ÄPœ Eî#{B & È n5ž é A jE¤ A"d £ Ä /The measurement at 20 & 65%RH is standard. If the judgment is n questionable, recognize measurement at 5 to 35 & relative humidity 45% to 85%Direction of motor is shaf horizontal.

4 Ê j à ?±"r /Mechanical specification

N©- /Item		?ô l /Specification	' & g 7# /Condition remark
4-1	5 ´ Configuration	?ñ F ' . As specified in outline drawing	Outline drawing No: Z6DL2A1030003
4-2	F?ò Appearance	= [9 j à • • ú = F2 ƒ,´#¨<°1y Ä There shall be no evidence of mechanical damage and shall not have inadequate corrosion and so on	- #{ Ä éAè93 $ i ž g ñ F ' Å Visual examination(allowable exter is based on boundary sample)
4-3	E¤ AL$LÉ Shaft end play	0.1mm 0.3mm	
4-4	_ € * Ê Ë Holding strength of vibration weight	49N (5kgf) Min	

5. W7-(© ±/Performance and characteristics

N©- /Item		?ô l /Specification	7# / remark	‘ & /condition
5-1	NÍ ÊEœFO Rated speed	12,000f 15000rpm	XNÍ Ê+e » ¼NÍ ÊCOE- Ä _ € Å ; ,5 0 >B+ Ä Read the data at rated voltage and rated load (vibration weight) after 5S.	#{B i § i3W Ë 1 15N Ä motor is held tightly by a clamp of 15Nforce
5-2	NÍ Ê+e#q Rated current	140 mA 240 mA Max		
5-3	eEœ+e#q Stall current	420 mA Max	XNÍ Ê+e » ¼NÍ ÊCOE- Ä _ € Å ; ,2 0 JÏ µ B+C§ Ø +e#qÄ Read the data at rated voltage and rated load (vibration weight) in 2S.	
5-4	C§ Ø+e » Starting voltage	0.75V DC Max	XNÍ ÊCOE- Ä _ € Å ;+e Ò,´ + ? }5ž Ä At rated load (vibration weight) any position of rotor	
5-5	5 5H+eLk Insulation resistance	1M ¡ Min	X 100V -$#q ; È ,4ï ¼ j #L$ At DC 100V between lead wire and case.	
5-6	1 €Lk Ç Terminal resistance	3.6 ¡ (f 20%)	X 20 ; At 20	
5-7	j à šN# Mechanical noise	? ¾ 50 6CMA AÑ s 50db(A)Max		

XNÍ Ê+e » ÃNÍ ÊCOE- Ä _ € Å ; Ä
At rated voltage and rated load (vibration weight).
6ü Ÿ šN# Ö = W ¾28db.AAÑ s
Back ground noise 28db(A) Max
#{B ˜ Ö B&k
Measuring instruments: B&k
i § GýGÿ Ø00g
Weight of jig:700g

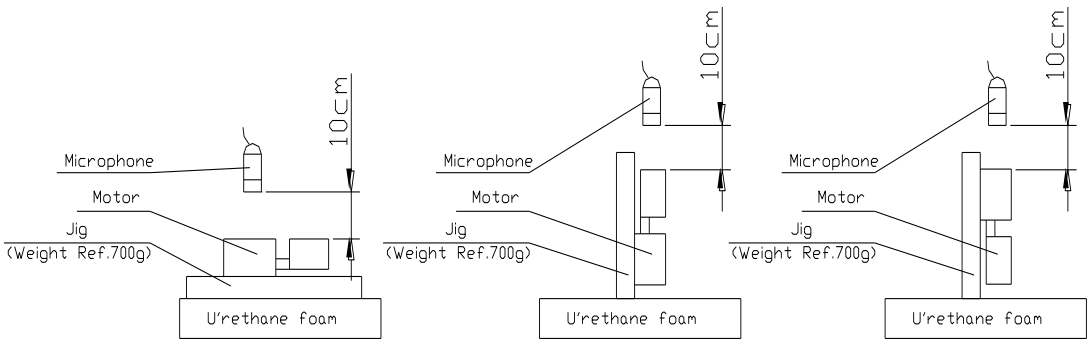
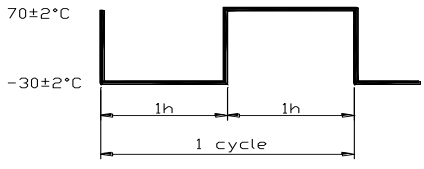


Fig. A Fig. B Fig. C

6 Ê M• W/Reliability

N©- /Item		?ô l /Specification	T Ê 7 ö /Judgment
6-1	/ - Life	+e » /Voltage : 1.3V DC CO9§ /Load : _ € /Vibration weight $Y Ö /Temperature: 20f 2 -( )$¯ Ö /Relative humidity: 60 70%RH 6PœEî * Ê XB P¼ : ÄE¤ A Å /Lock the motor in a test fixture(Shaft horizontal) B P¼ é# 1/Test mode1:F 5 F Eœ8# A10 ? & / 10hrs net running time B P¼ é# 2/Test mode2: 0 Z ˜ O , 0 2 6JÏ , Œ 5 6JÏ ; ¡ 300 Z ˜ O / 1cycle, 2mins ON, 5mins OFF 300 cycles totally	X h$Y h$¯ ; n5ž 2h > ÈPœEî Ä1V 8N©7-1 ,´?±"r Ä After 2 hours exposure in ordinary temperature and humidity, Motors shall be approved as specified in item 7-1
6-2	~$Y n5ž Low temp. Exposure	$Y Ö /Temperature :" 40 f 2 &L$ /Time : 96hrs	X h$Y h$¯ ; n5ž 2h > ÈPœEî Ä1V 8N©7-2 ,´?±"r Ä After 2 hours exposure in ordinary temperature and humidity, Motors shall be approved as specified in item 7-2
6-3	Q $Y n5ž High temp. Exposure	$Y Ö /Temperature : 60 2 &L$ /Time : 96hrs	
6-4	$¯ Ö n5ž Humidity exposure	$Y Ö /Temperature: 40 f 2 $¯ Ö /Humidity: 90 95%RH n5ž &L$ / Exposure time: 96h "d"D 5 /No condensation of moisture	
6-5	_ Ø Vibration	˜ _ u /Displacement : 1.5mm(p-p) NÃ)· /Frequency: 10 55Hz ÐFO Ö/Acceleration: 22m/s² ˜ O /Period: 20min ¼ @10 55 10Hz /20 Minutes log sweep10 55 10Hz é A /Direction: x, y, z &L$ /Time: !ÿ Z é A 2h /Each 2 hours	#{B 5 Ì Ä1V 8N© 7-2 ,´?±"r Ä After the test motors shall be approved as specified in item 7-2
6-6	8 'fCü:m Free fall	B P¼(æ 1/Test state6PœEî * Ê X4Ö75 {Ä 5 PœEî \DÛ Å,´(™ ƒ : È:m A"d# `M' Ä Set the motor to the approximately 75g (include the motor) weight of block drop the motor on the concrete floor. Q Ö /Height :1.5m é A /Direction :f x, f y, f z !Q /Number of times:ÿ Z é A 2 !Q /Twice each	#{B 5 Ì Ä1V 8N© 7-2 ,´?±"r Ä After the test motors shall be approved as specified in item 7-2.
6-7	' â + Heat shock test	B P¼ Ú)ß /Test cycle :20 cycles  	X h$Y h$¯ ; n5ž 2h > ÈPœEî Ä1V 8N©7-2 ,´?±"r Ä After 2 hours exposure in ordinary temperature and humidity, Motors shall be approved as specified in item 7-2.

7. ?±"r /Requirements

N©- /Item		T Ê * ö Ë Requirements
7-1	>˜ A Table A	1) NÍ ÊEœF/Rated speed = ~ ¾ M û l -30%, =Q ¾ M û l +60% Initial data-30% Min, Initial data+60% Max 2) NÍ Ê+e#q/Rated current = W ¾ M û l f 30%/Initial dataf 30% max 3) C§ Ø+e »/Starting voltage 1.1V DC Max
7-2	>˜ B Table B	1) NÍ ÊEœF/Rated speed = W ¾ M û l f30%/Initial data f 30% max 2) NÍ Ê+e#q/Rated current = W ¾ M û l f30%/Initial data f 30% max 3) C§ Ø+e »/Starting voltage 1.1V DC Max

8. ¯+X &# ? »N©/Matters to be paid attention to when using motor

8-1 +e j XF EÃE÷0;] Ä ? óE« n ÈF¯ } UGý.à Î ¢ + EC§,´+e j jDÛ ¼ W7- • Ä (Please lay the motor carefully in transportation to avoid any serious damage to the motor body or its electric function because of co

8-2 B' 9'—?ô l –]?ô Ê,´1\ 2 ‘ (¯+X ‘ &) • ¯+X ¼ ˆ Ø+e j È V l J ¡ ý+e j W 7- Ä(Please use and stora motors according to N0.2 item (Operating Conditions) in specification, or else motor characteristics would be a

8-3 B' X 6 Z 8 µ ¯+X Ä X ¯+X ¼ ƒ 0PœEî F 5>õ &B'F¯ }"d"D
5 Ä (Make arrangement to limit the storage period to 6 months or less. Condensation of atmosphere must be avoided motor usage or opening the packaging of the motor.)

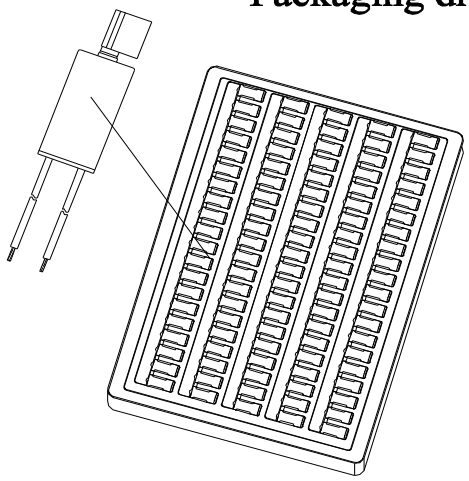
8-4 PœEî ÄF2 ƒ,´ ý Œ Ã Ø ˆ ¼F Eœ)ß ³] w = ˆ X7€<° W"D ƒ Ä » ² Ö H_2S ÃSO_2 ÃNO_2 ÃCL_2 1y Ä F ˆ Ø)ß ³] = 9B(².u Ã"` Ã+bGË"d ¼9 GŠ1y7- n 4 *7€<° W"D ƒ,´(™CX È X+e j,´ j à ´FP F>õ5ž] È ² Ì ˆ X7€<° W"D ƒ ÈFÓ xF J EC§PœEî =F Eœ Ä(For proper operation. storage and operating environment must no contain corrosive gases. For example H_2S SO_2. NO_2. CL_2. etc. In addition storage environment must not have mate that emit corrosive gases especially from silicon. cyanic. formalin and phenol group. In the mechanism to existence of corrosive gases may cause no rotation in motor.)

8-5 B'FJ+e > =?±K¯ &L$ e • jE¤ È¦ DPœEîEœ Ø & =?±@ .à _ € Ä(Please don't stall the shaft for a long ti after powering, and not to touch the weight when motor is rotating.)

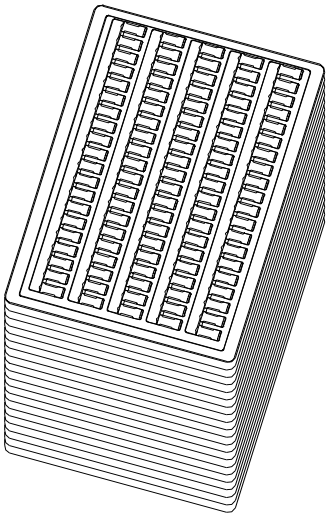
8-6 PœEîE¤ AL$LÉ 4 = Ä 9 r(™ Ä ²NÇ2Â Ã4Ô5$(™ Ã d Ã7& V Ã7&"d1y(There should be no sundries (su as grain, fibre, hair, small tape, glue etc.) in the shaft end play.)

9. 5>õ/Packaging

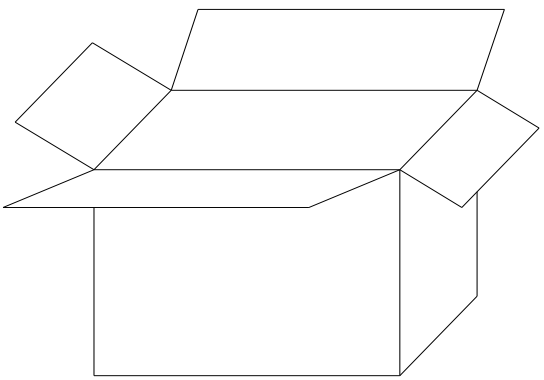
(Z6DL2）圆柱马达包装
Packaging drawing of Z6DL2 cylindrical motor



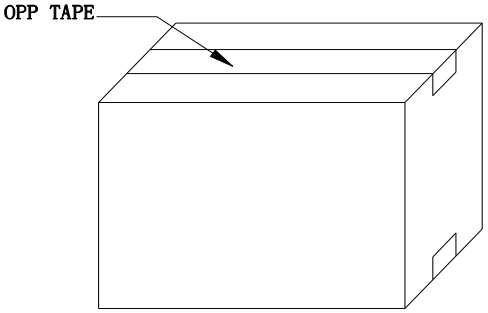
100PCS (1 tray)
吸塑盒 / Plastic Box



2000PCS(1 bundle)×2



Remarks:
4000PCS/CTN:35.5cm×24cm×16cm



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.

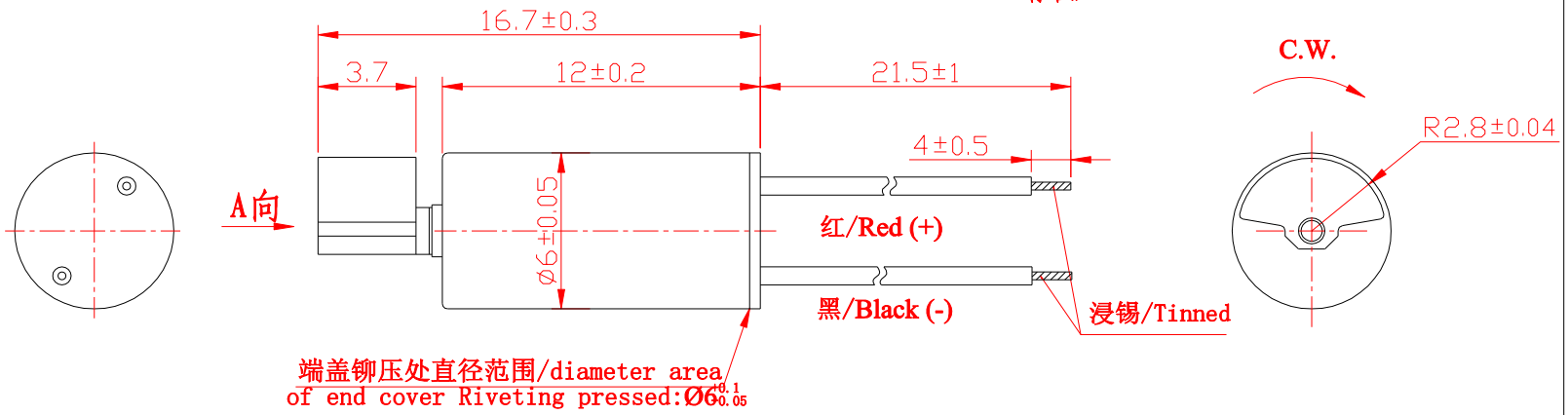
2. Test Methods:
Dropping requirement is 6 faces, 3 arris, 1 angle.
(1) 6 faces: First dropping with two biggest faces, then dropping with another two middle faces, at last dropping with two smallest faces, once per face, total 6 faces.
(2) 3 arris: Choose any 3 arris which make up of the same the angle, 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.

10. F ’ . /Outline Drawing

Z6DL2A1030003

技术要求/Technic requirement
1.额定电压/Rated voltage:1.3V
2.额定电流/Rated current:140mA ~ 240mA Max
3.额定转速/Rated speed:12,000±1500rpm
4.堵转电流/Stall current:420mA Max
5.端子阻抗/Terminal resistance: 3.6Ω(±20%)
6.起动电压/Starting voltage:0.75V Max
7.轴向间隙/Shaft end play:0.1~0.3mm
8.导线规格/Lead wires spe: UL3302 AWG30(双镀锡)
9.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 the counterweight being pressed against body in direction A. (Shaft end play is not included.)
10.未注线性公差为/Unmarked tolerance:±0.1mm
11.符合金龙机电股份有限公司最新版《禁用有害物质标准》



借（通）用件登记
底图总号
签 字
日 期

标记	处数	分区	更改文件号	签名	日期

设计			标准化		
校对					
审核					
工艺			批准		

阶段标记	重量	比例
A/6		5:1
共 页	第 页	

金龙机电股份有限公司

外 形 图

Z6DL2A1030003

2018.07.04 | 说明书/Specification | 编号/NO. KOTL-B-546 | 代码/code: 0 | 7/8

11. iAà … / REVISION HISTORY

¿ ' / NO.	i } /Before revision	i > /After revision	i ê / Reviser	i O / Date