

維 盟 科 技 有 限 公 司

EVOwave Technology Co., Ltd.

規 格 書 / Specification

Description:	Elasticity Type Vibrator
Part No.:	VK1030EXX
Date:	2015.4.14

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規格書內容/ Contents

1. 重要提示 /Importance notes	1/10
2. 更改記錄/Revised record	1/10
3. 適用範圍/General Scope of Application	2/10
4. 使用條件/Operating Conditions	2/10
5. 測定條件/Conditions of Measurement	2/10
6. 電氣性能/Electrical Characteristics	3/10
7. 機械性能/Mechanical Characteristics	4/10
8. 耐久性能/Reliability Test	5/10
9. 要求/Requirements after Reliability Tests	6/10
10. 使用注意事項/Cautions for Use	7/10
11. 包裝/Packaging Description	8/10
12. 外形圖/Outline Drawings	9/10

1. 重要提示 /Importance notes

- 1) 如對電機的性能和/或壽命有任何爭議，僅基於此規格書作出判斷。
If there is any argument on motor performance and/or life, judgment is to be made base on this specification only.
- 2) 客戶方有責任確認該電機能滿足您的使用要求。
Customer has the responsibility to ensure that the motor can satisfy the requirement of your application.
- 3) 如果貴公司未提供技術規格，該檔將詳細敘述與貴公司商定的技術規格。
In the event that an official specification is not present by customer; this document will specify the agreed technical specification .
- 4) 在滿足規格的條件下，我司可以改變零件材料、尺寸及形狀來改善品質，和/或性能，和/或生產效率。
Within the limitation to satisfy this specification, KOTL has the convenience to change the materials, sizes and shapes of components of the motor for the purpose of improving quality, and/or performance, and/or production efficiency.
- 5) 符合維盟科技有限公司最新版《禁用有害物質標準》。
Conform to the Standard of Prohibition in Using Hazardous Substances in new version by Jinlong Machinery & Electronics Co., Ltd
- 6) 收到此規格書後，貴司應於下訂單之前將規格書副本簽回以示貴司已確認。如貴司未能在規定時間內簽回副本，我司將認為貴司已收到並承認該規格書。
After the receipt of this specification, customer should send a signed copy to KOTL before you issued purchase order for the confirmation on acknowledgement. KOTL regard it as the receipt of this specification acknowledged if customer fails to return the confirmation to us within the described period.

2. 更改記錄 Revised record

修改號 Rev. No.	日期 Rev. Date	頁碼 Page No.	修改專案 Revised Item	更改原因 Reason
0	2013.9.29	/	產品頒佈/ Release for Production	

3.適用範圍/General Scope of Application

本說明書適用於扁平式永磁直流電機 VK1030EXX系列。

This specification applies to coin type permanent-magnetic motors DC model VK1030EXX.

4.使用條件/Operating Conditions

項目/Item		規格/Specifications
4-1	額定電壓 Rated voltage	2.0V DC
4-2	使用電壓範圍 Operating voltage	1.7 ~2.3V DC
4-3	旋轉方向 Rotation	CW (clockwise) or CCW (counter clockwise)
4-4	使用環境 Operating environment	-30~70℃,常濕/Ordinary Humidity:65±20%RH
4-5	保存環境 Storage environment	-40~80℃,常濕/Ordinary Humidity:65±20%RH

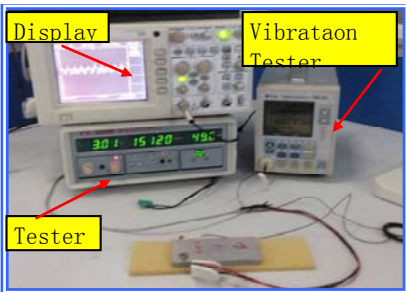
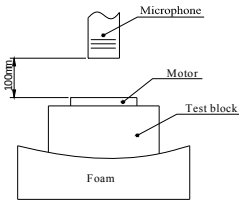
5.測定條件/Conditions of Measurement

項目/Item		規格/Specification
5-1	溫度 Temperature	25±3℃
5-2	濕度 Humidity	65±10% RH
5-3	電源電壓 Power supply	穩壓直流電源 2.0V 。 Constant Power supply 2.0V DC.

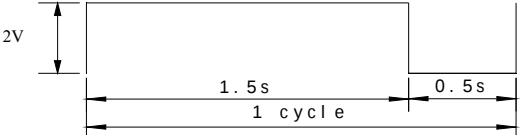
6. 電氣性能/Electrical Characteristics

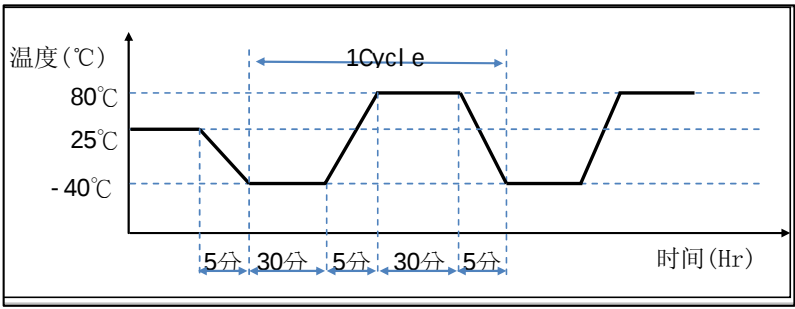
項目/Item		規格/Specification	條件/Condition
6-1	額定轉速 Rated speed	12000±3000rpm	額定電壓下。 At rated voltage.
6-2	額定電流 Rated current	70mA Max	
6-3	起動電流 Starting current	150mA Max	在最小起動電壓下起動。 Motor is rotating at minimum starting voltage.
6-4	起動電壓 Starting voltage	1.1V DC Max	
6-5	絕緣電阻 Insulation resistance	10MΩ Min	在 100V 直流下，導線和機殼間 /At DC 100V between lead wire and case.
6-6	端子阻抗 Terminal resistance	17Ω±15%(單相 single posture) 34Ω±15%(雙相 compose posture)	在 25℃ 下。 At 25℃
6-7	回應時間/ The response time	65Ms Max	轉速的 50%所需的時間/ Reach 50% of the rated speed measurement

7. 機械性能/Mechanical Characteristics

項目/Item		規格/Specification
7-1	底蓋偏轉強度 Bracket Deflection strength	9.8N 以上 9.8N or more.
7-2	測量模具/using dummy set(100g) 设备/equipment:PV-90B 感測器/sensor:VM-83 輸入電壓: 2.0V input voltage : 2.0V 振動量/Vibrations: 0.5G(AVG.)	
7-3	機械噪音 Mechanical noise	小於 50 分貝. A 計權 50dB (A) Max.
	在額定電壓下。At rated voltage. 背景噪音：不大於 28dB. A 計權. Back ground noise 28dB (A) Max.	

8. 耐久性能/ Reliability Tests

項目/Item	規格/Specification	判定標準/Judgment
8-1 壽命 Lifetime	額定電壓/ Rated voltage: 2.0V DC 試驗模式/ Test mode: 1.5s On, 0.5s Off, as one cycle. 迴圈次數/ Test cycle:200,000 cycles 	試驗後，馬達應符合項 11-1 的要求。After the test, motors shall be approved as specified in item11-1.
8-2 低溫放置 Low temperature exposure	溫度/Temperature: -40℃ 時間/Time: 96h	常溫常濕下放置 2h 後，馬達應符合項 11-2 的要求。After 2 hours exposure in ordinary temperature and humidity, motors shall be approved as specified in item11-2.
8-3 高溫放置 High temperature Exposure	溫度/Temperature: +85℃ 時間/Time: 96h	常溫常濕下放置 2h 後，馬達應符合項 11-2 的要求。After 2 hours exposure in ordinary temperature and humidity, motors shall be approved as specified in item 11-2.

項目/Item		規格/Specification	判定標準/Judgment
8-4	濕度放置 High Humidity exposure	溫度/Temperature: +80℃ 濕度/Humidity: 80%RH 放置時間/ Exposure time: 96h 無水氣凝結/ No condensation of moisture	常溫常濕下放置 2h 後，馬達應符合項 11-2 的要求。After 2 hours exposure in ordinary temperature and humidity, Motors shall be approved as specified in item 11-2.
8-5	振動 Vibration	全振幅/Displacement: 1.5mm (p-p) 頻率/Frequency: 10~55Hz 加速度/Acceleration: 22m/s ² 週期/Period: 10 分鐘範圍內 (10~55~10Hz)/ 10 Minutes log sweep (10~55~10Hz) 條件/Condition: 在樣機中，在 3 個垂直的軸方向每個方向做 10 分鐘的測試。Samples shall be applied for a period of 10 minutes in three axial directions.	測試結果應符合項 11-2 的要求。After the test motors shall be approved as specified in item 11-2.
8-6	自然跌落 Free fall	試驗狀態/Test mode: 將馬達固定在約 150 克（包括馬達本身）的物體上，落向水泥地面。Set the motor to a fixture of approx. 100g (include the motor) and drop it onto the concrete floor. 高度/Height: 1.5m 方向/Direction: 6 面 4 稜角 次數/Number of times: 每個方向 3 次/ Each 3 times	測試結果應符合項 11-2 的要求。After the test motors shall be approved as specified in item 11-2.
8-7	Tumble Test / 翻滾測試	安裝在 150g dummy jig 裏，1m 高度上跌落在鐵板上。以 8rpm 數度實行。	測試結果應符合項 11-2 的要求。After the test motors shall be approved as specified in item 11-2.
8-8	熱衝擊 Thermal shock	測試模式/ Test mode: 30 hour at -40℃, 30 hour at +85℃, as one cycle. Transfer time between extreme temperatures: <5 分/5min 迴圈次數/Test cycle: 24 cycles Transfer < 5min  溫度(℃) 80℃ 25℃ -40℃ 1Cycle 5分 30分 5分 30分 5分 时间(Hr)	常溫常濕下放置 2h 後，馬達應符合項 11-2 的要求。After 2 hours exposure in ordinary temperature and humidity, Motors shall be approved as specified in item 11-2.

9.判定基準/ Judgments after Reliability Tes

項目/Item		判定基準／Requirements
9-1	表 A Table A	1)額定轉速/Rated speed: 不低於初始值-30%；不高於初始值+30% No lower than -30% of initial data; No more than +50% of initial data. 2)額定電流/Rated current: 不低於初始值-30%；不高於初始值+30% No lower than -30% of initial data; No more than +50% of initial data. 3)端阻/Terminal resistance: 不大於初始值±15% No more than +15% of initial data; No less than -15% of initial data. 4)起動電壓/Starting voltage: 不大於 1.5V 直流電壓 1.5V DC Max 5)絕緣電阻/Insulation resistance: 大於 10MΩ/ 10MΩ Min
9-2	表 B Table B	1)額定轉速/Rated speed: 不大於初始值±20% No more than +20% of initial data; No less than -20% of initial data. 2)額定電流/Rated current: 不大於初始值±20% No more than +20% of initial data; No less than -20% of initial data. 3)起動電壓/Starting voltage: 不大於 1.5V 直流電壓 1.5V DC Max 4)端阻/Terminal resistance: 不大於初始值±15% No more than +15% of initial data; No less than -15% of initial data.

10. 使用時注意事項/ Cautions for Use

10-1 必須按照規格書標準使用，否則性能和壽命都將受到相當地減少，必須注意電壓的使用範圍。
Unless it is used in accordance with the specifications, the performance and life may be considerably reduced. Due attention should be paid to voltage and range for use.

10-2 建議馬達在六個月內使用，不要在以下環境中使用及保存：

1. 高溫和高濕的場所；
2. 腐蝕性氣體,如： H_2S 、 SO_2 、 NO_2 、 Cl_2 ；
3. 生銹場所。

Advice uses this motor within 6 months as avoiding as possible.

Avoid use or save the motor in the following environment.

1. High temperature and high humidity area
2. Corrosive gas such as H_2S , SO_2 , NO_2 , Cl_2 .
3. Dusty area.

10-3 注意處理馬達的工作環境，避免含鐵質等物體被馬達吸住，否則馬達將會產生雜訊，性能會降低，從而減少產品可靠性。

Due attention must be paid to the handling and working environments because such objects as iron powder if attracted by the motor magnet, will cause noise, characteristic deterioration thus reducing the reliability.

10-4 應確信本產品不會與相關標準、法律、政令相背。

Please confirm enough no problems of standards and laws and ordinances on your cellular phone.

10-5 拿馬達時，要輕拿輕放。

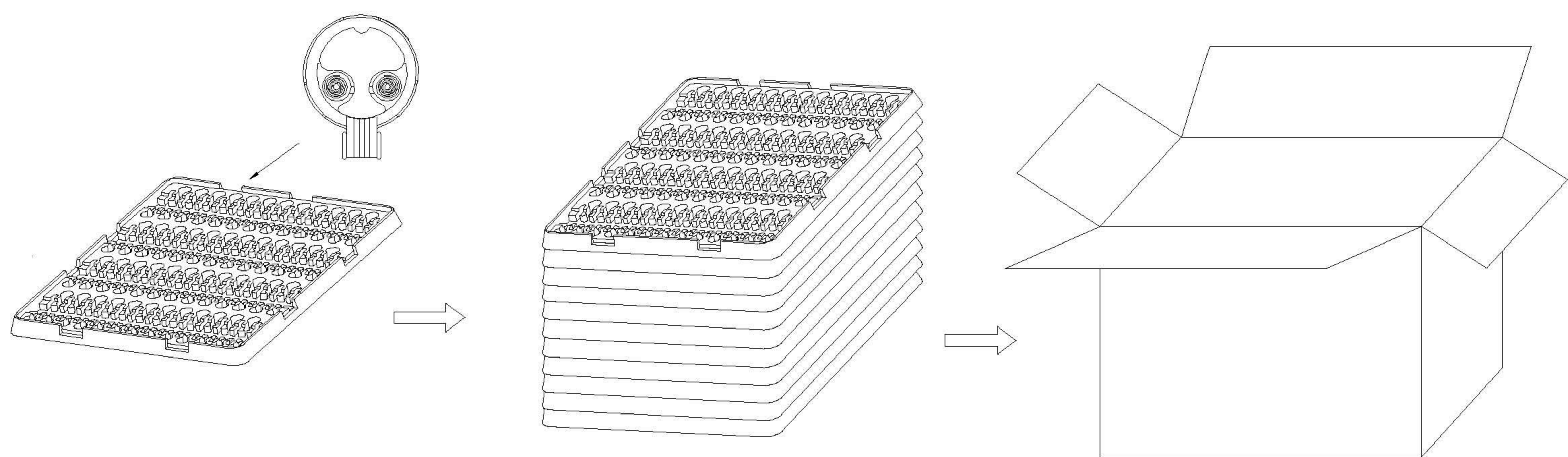
To handle the motor, hold the motor case softly.

10-6 鋼板面或邊緣有少許鏽斑是允許的。

Rust of plate (steel) and similar edge should be OK.

11.包裝/PACKING

扁平系列馬達包裝
Pack drawing of coin type



100PCS(1 tray)×10

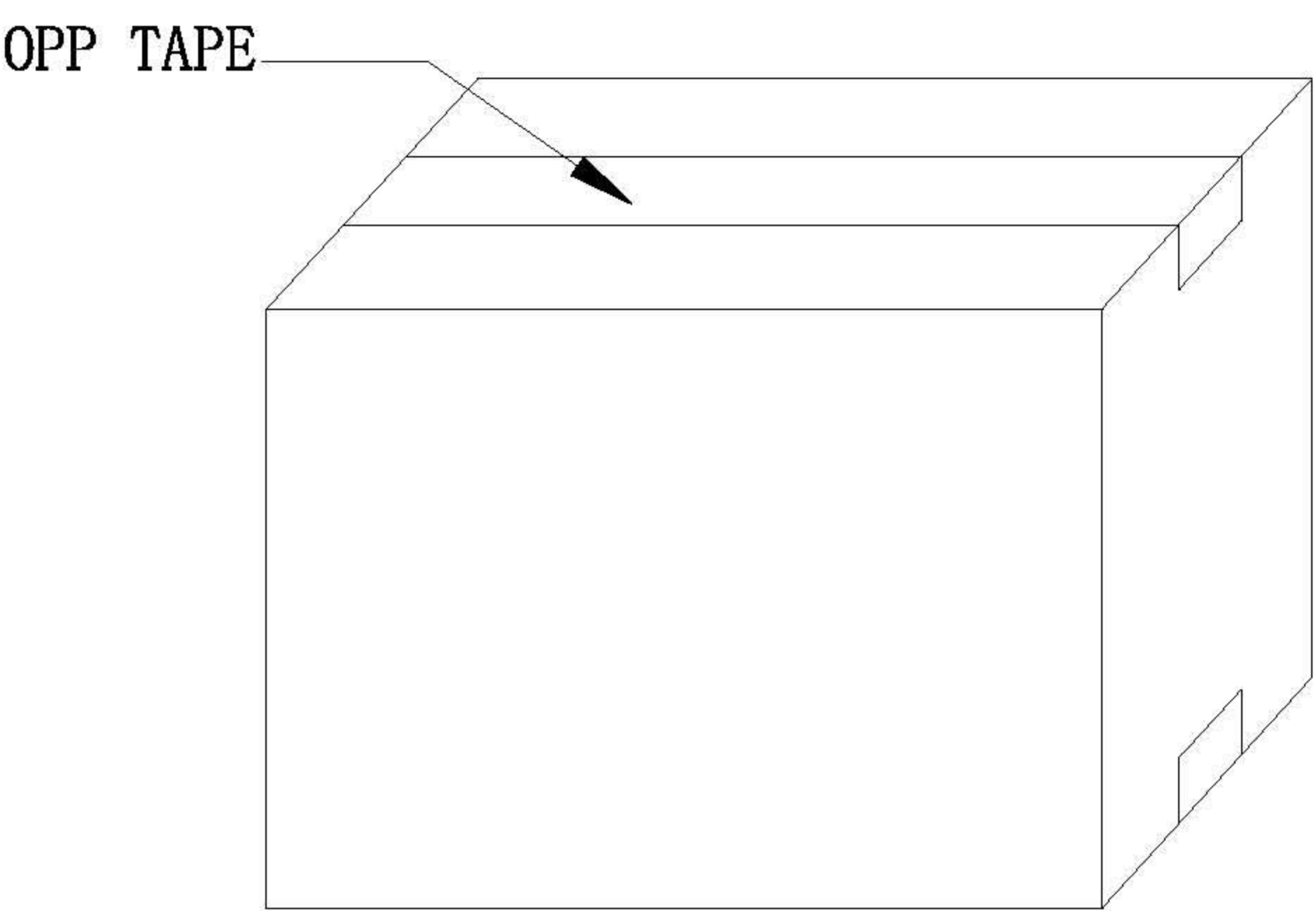
1000PCS(1 bundle)

1 box×2

Remarks:
4000PCS/CTN: 45cm×28cm×20cm
6000PCS/CTN: 45cm×28cm×30cm

包裝試驗要求:
沿外包裝箱±x, ±y和±z方向, 距水泥地面1.5m高度, 各自由
跌落2次, 马达应无机械损伤, 电气
性能仍符合标准要求。

Drop Test with carton:
Drop the carton in the axial directions
of ±x, ±y, ±z onto the concrete floor
from 1.5m height, drop twice each
direction. After drop test, no
mechanical damage to motors, and
the electrical performances remain
unchanged.



12. 外形图/ OUTLINE DRAWINGS

