



深圳市兴华鑫电子科技有限公司

Shenzhen xinghuaxin Electronic Technology Co., Ltd

# 承認書

## SPECIFICATION FOR APPROVAL

客戶 (Customer): \_\_\_\_\_

客戶料號 (Customer P/N): \_\_\_\_\_

興華鑫型號 (Supplier P/N): \_\_\_\_\_

XHXDZ-0720 马达

產品名稱 (Description): \_\_\_\_\_

振动马达 (Vibration motor)

產品規格 (Specification): \_\_\_\_\_

7\*2.0MM

客戶承認欄 (Customer Authorization Signature)	深圳市興華鑫電子科技有限公司 承認欄 (Supplier Audit)		
	審核	檢查	制作
	唐国兴	唐玉来	吴银娟
日期: 2022 年 04 月 19 日			
版次: A			

# 声音让生活更精彩!

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## 产品规格内容

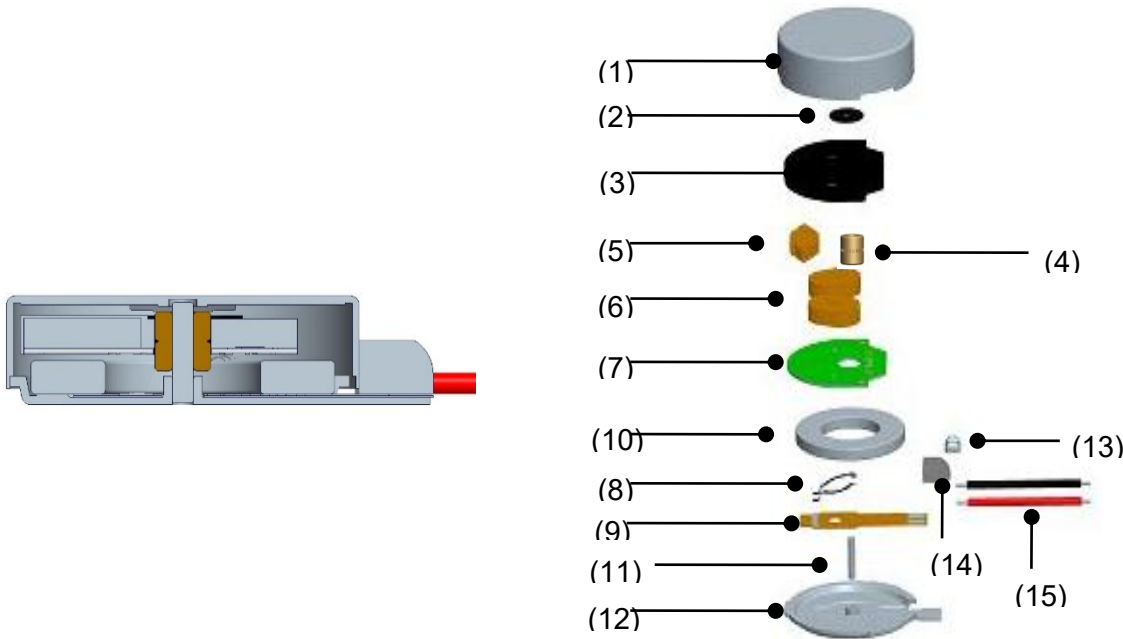
### 1. General/适用范围

此为本公司生产的 XHXDZ-0720 马达型号振动马达规格书，适用于移动通信工具及各种振动器。

This specification is applied to XHXDZ-0720 马达 vibration Motor for a pager, mobile telephone or vibrator.

### 2. Construction form/结构及方式

#### 1) Structure diagram/结构示意图



NO	部品名 Parts name	功能 Function
1	上机壳 Case	保护马达内部元件，屏蔽漏磁/Protect motor internal components, and shield magnetic leakage
2	滑片 Washer Case	降低磨擦系数，减小磨擦噪音/Reduce friction coefficient, reduce friction noise
3	注塑料 PBT	将轴承、线圈、振子及线路板组立成一个整体——转子 Made the bearing, coil, weight and PCB get together---ROTOR
4	轴承 Bearing	含浸润滑油,以减小磨擦力、减噪、提速、耐磨 Lubricating oil to reduce friction, noise and increase speed, prolong life
5	振子 Weight	又称偏心锤，固定于转子上旋转时因偏心而产生不平衡的振感 Fixed on the ROTOR, caused imbalance vibration when rotating
6	线圈 Coil	通电产生电磁力以推动转子旋转/Generate electromagnetic force, drive the rotor to rotate.
7	线路板 PCB	整流换向以使通过线圈的电流准确及时以产生持续推动力 Commutation to make the current through the coil timely in order to produce sustained driving force
8	电刷 Brush	导电至 PCB,与 PCB 构成换向器/Conductive to PCB, brush and PCB get together called commutator
9	柔性线路板 FPCB	固定电刷及导电至电刷/Fixed brush and conductive to brush
10	磁铁 Magnet	固定磁场 /Stationary magnetic field
11	轴 Shaft	轴承旋转中心支点/Bearing pivot
12	下机壳 Bracket	保护马达内部元件，屏蔽漏磁/Protect motor internal components, and shield magnetic leakage
13	锡线 Solder	焊接材料/Welding material
14	胶水 Bond	保护焊接部分/Protect the welded parts
15	导线 Lead Wire	电源连接线/Power connection line

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## 产品规格内容

### 3. Rated specifications/额定规格

编号 No.	项目 Items	规格 Specification	
3-1	额定电压 Rated voltage	DC 3.0V	
3-2	使用电压范围 Working voltage range	DC 2.4 ~ 3.2V	
3-3	最大允许过载时间 Maximum allowed over voltage	3.7V within 50mS	
3-4	使用环境温度 Working temperature Range	-25°C ~ +70°C	
3-5	保存环境温度 Storage Temperature Range	-40°C ~ +85°C	
3-6	额定回转速度 Rated rotation speed	10000 rpm min	额定电压,标准测试条件 Rated voltage, standard measurement conditions
3-7	额定电流 Rated current consumption	90mA Max	
3-8	瞬时启动电压 Starting voltage	2.3 V Max	最小的启动电压 Minimum voltage for starting (ON,OFF test)
3-9	终端电阻 Terminal resistance	31Ω±20%	1 个线圈连接 (one coil contact)
		59Ω±20%	2 个线圈串连(two coil series contact)
		18Ω±20%	2 个线圈并联(two coil parallel contact)
3-10	堵转电流 Holding current	230mA Max	额定电压下,当转子堵住不转时的电流 Measure current at locked Rotor in rated voltage
3-11	绝缘电阻 Insulation resistance	100V, 10 MΩ Min.	
3-12	机械噪声 Acoustic noise	50 dB(A) max.	
3-13	标准测试条件 Standard test condition	见第 5 章节 Section. 5.	
3-14	外观 Appearance	无变形、龟裂及部品的破损. No deformation, cracking and separation of parts	
3-15	Lead wire 剥离强度 Lead wire escaping power	1.0Kgf Min. / 1EA	

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## 产品规格内容

### 4. Reliability/可靠性测试

以下试验项目各自进行完了后，在室温条件输入额定电压测定时，必须满足表 1 要求。

After test with rated input voltage, the evaluation items of table 1 should be satisfied.

Abbreviation - RT : room temperature

编号 No.	试验项目 Items	试验方法 Test condition
1	高温保存试验 High temperature storage test	暴露放置在+80℃的环境中 96 小时,再在常温常湿环境中放置 2 小时测定. Expose to +80℃ for 96 hours and measure after 2Hr at RT.
2	低温保存试验 Low temperature storage test	暴露放置在-30℃的环境中 96 小时,再在常温常湿环境中放置 2 小时测定. Expose to -30℃ for 96 hours and measure after 2Hr at RT.
3	高湿保存试验 Humidity test	暴露放置在+40℃、90%RH 的环境中 96 小时,再在常温常湿环境中放置 2 小时测定 . Expose to +40℃, 90%RH for 96 hours and measure after 2Hr at RT.
4	热冲击试验 Thermal shock test	+70℃/-20℃ 各 1 小时,共 10 cycle,再在常温常湿环境中放置 2 小时测定. +70℃/-20℃, each 1 H , total 10 cycles, and measure after 2Hr at RT.
5	跌落实验 Free-drop test	100g 标准 Jig, 1.5m 高度自由落地, 6 面各 3 次, 共 18 次. 100g dummy Jig,drop samples 1.5M in each side repeat three times, total 18 times.
6	寿命试验 Life test	在常温常湿的环境里, MOTOR 接入电压 3.0V, 1 秒接通,1 秒断开,为一个回转周期,共进行 50,000 个回转周期。 At RT, The motor connect to the voltage of 3.0V, 1 seconds on, 1 second off, 1 cycle, total of 50,000 cycles.

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## 产品规格内容

Table 1. Evaluation items/表 1. 评价项目

编号 No.	项目 Items	规格 Specification
1	额定电流 Rated current	100mA max.
2	转速 (RPM)	初始值±30%以内./Shall not exceed ±30% of the initial value (初始值不确定的按 7,200~18,000RPM) (Initial value uncertain: 7,200~18,000RPM)
3	启动电压 Starting Voltage	2.3V Max.
4	端子电阻 Terminal resistance	27Ω ±20% (one coil contact) 51Ω ±20% (two coil series contact) 13Ω ±20% (two coil parallel contact)
5	其它 Others	外观及结构不能有变形、龟裂、部件脱落等。 Should not be transformation, crack, separation of parts.

※ Free-drop/Vibration/Roller Dummy JIG/跌落, 滚筒, 震动标准 JIG

重量 weight: 150g ± 3%

尺寸 size: 130 x 70 x 14.5

材质 material: PC (Outer) , ABS (Inner)

泡棉: 厚 0.5mm (压缩 50%)

Poron: thick 0.5mm (compress 50%)

- Motor 组装方向: 上机壳朝上贴紧泡棉

Motor assembly direction: Case close to poron

- 中间装有配重块, 用来调整重量.

There is countweight block in the middle of JIG, which use to adjust JIG weight.



- 尺寸 Size : 190 X 70 X 21 mm / 10EA

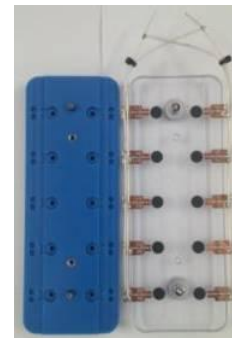
- 材质 Material :

上盖: 透明亚克力

Upper Base: Transparent acrylic

下座: 蓝色聚乙缩醛塑料

Bottom Base: Blue polyacetal plastic



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## 产品规格内容

### 5. Standard Test Condition./标准测试条件

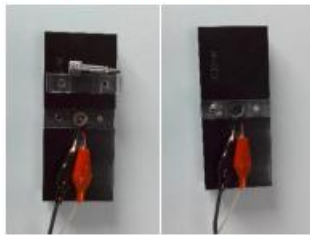
#### 5-1 Measurement of performance/特性测定

全部在常温(25±2 °C)/常湿(60 ±20%RH) 状态下测定.

Measure all the performances at normal temperature (25±2 °C) and humidity(60 ±20%RH)



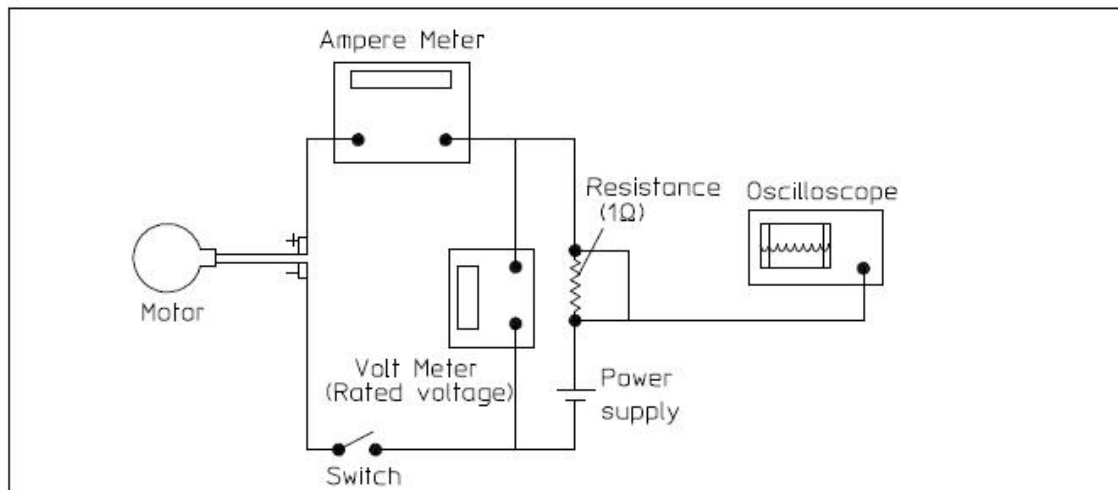
#### ■ 특성 검사 JIG 규격



- Dimension : 45mm × 105mm × 15mm
- Weight : 100 ± 3gf
- Material : Bakelite
- Vibrator 고정 방법 : 한면은 양면 Tape로 고정하고 반대면은 압박 PAD를 이용하여 압축률 30 ~ 50% 범위로 OVERLAP 되도록 한 후 Cover JIG를 Screw 또는 CAM으로 고정함.
- Sponge : 250mm × 200mm × 50mm, 한쪽 면 Embossing 형상일 것



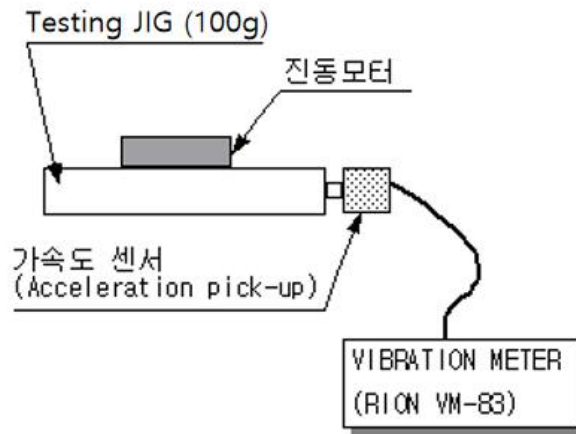
#### 5-2 Schematic measurement equipment configuration/测量设备的等效电路



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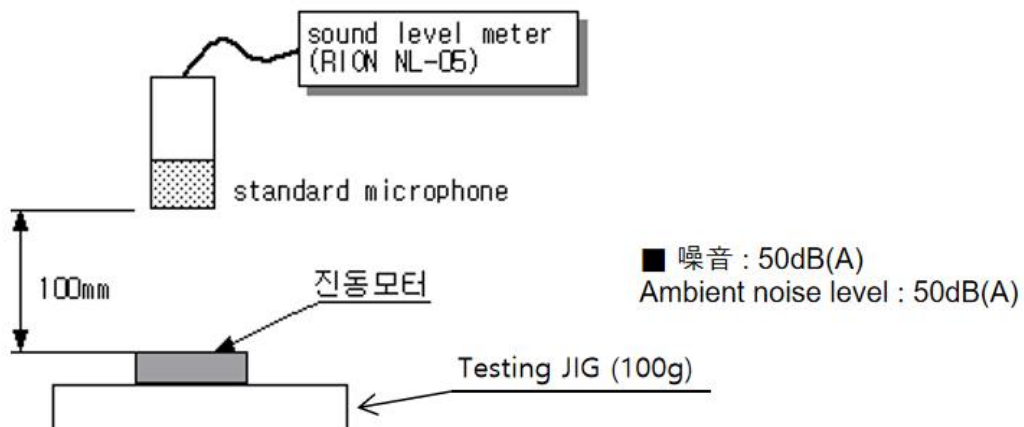
## 产品规格内容

### 5-3 Vibration measurement/振动量测量



■ The amount of vibration for reference only/测定的振动量值仅供参考

### 5-4 Noise measurement/噪音测量



■ Ambient noise level : 50dB(A)/噪音 : 50dB(A)

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## 产品规格内容

### 6. Cautions/注意事项

#### Allowable range for use/使用范围相关

(1) 严格按照规格书的使用条件, 不当的使用电压及电流会损害马达性能及寿命, 请注意.

Unless it is used in accordance with the specifications, the performance and life may be considerably reduced.

Due attention should be paid to the voltage and current ranges for use.

(2) 在马达工作时, 请考虑在电路中设计滤噪电路以减小电路噪音.

Use Noise filter circuit to reduce electrical noise when the motor is rotated

#### Storage/储存保管

(1) 避免置放于高温、高湿或有害气体的环境中.

Avoid storing in high temperature, high humidity or corrosive gas environment.

(2) 保质期

马达内含精密零件含油轴承, 其质保有效期为 9 个月, 若马达长期保存超过 9 个月, 马达初始启动可能不稳定, 但会随着轴承内含的油循环系统正常化而正常.

#### Others/其它

(1) 不要将磁体靠近或接触马达, 这样会极大地恶化马达性能 .

Do not bring a magnetized object near the motor, which causes deterioration.

(2) 注意在传递和工作环境中, 有些粉粒一旦依附在马达磁铁上, 将会产生噪音, 恶化性能, 降低可靠性 .

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.

(3) 请注意, 不要将马达靠近高温超过 90°C, 内含的磁铁会因高温而退磁, 将会恶化马达性能.

Do not heat the motor over 90°C, which causes deterioration.

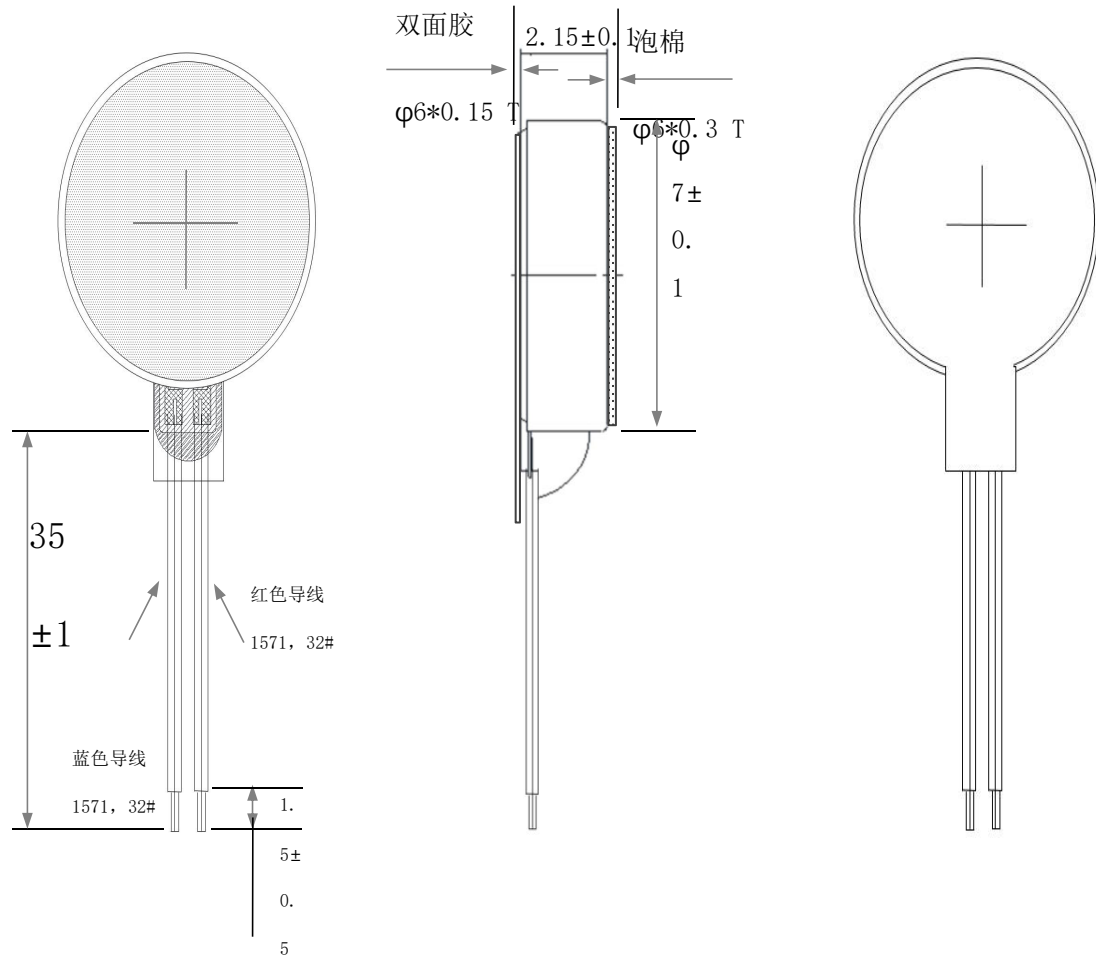
(4) 作用于马达上的力不得超过 1.0 kg.f, 因会影响马达性能或使其变形 .

Do not press the motor with more than 1.0Kg.f, which may cause the decrease of the performance or the deformation of the motor.

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## 产品规格内容

### 7-1.Dimensions/产品图纸



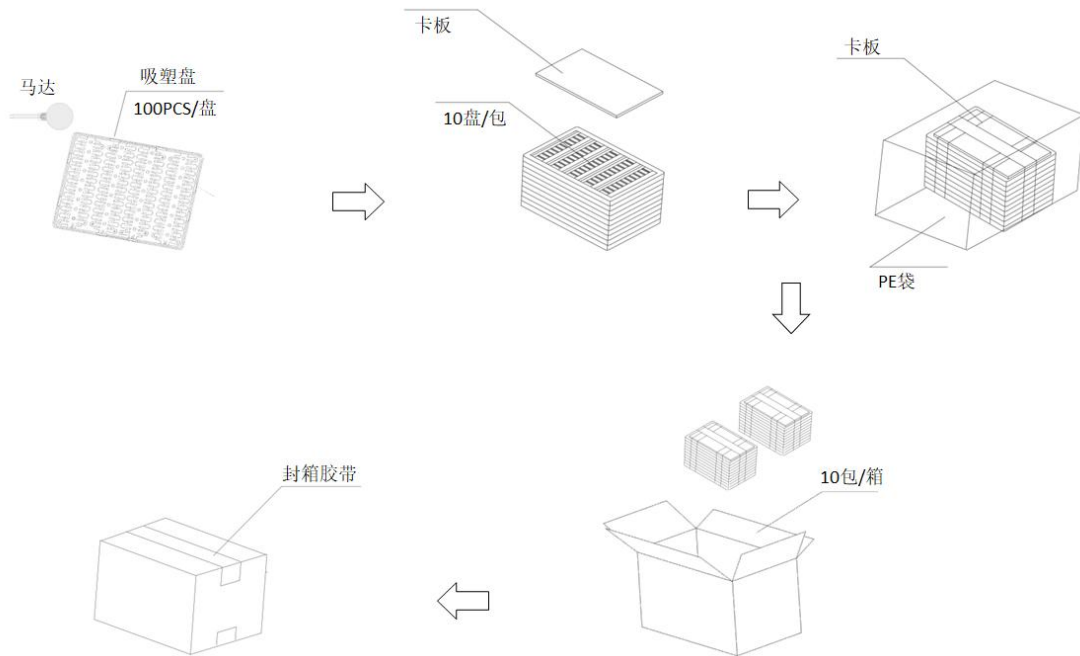
#### 技术参数:

- 1、额定电压: 3.0V
- 2、额定电流: 90MA Max
- 3、额定转速: 10000 rpm min
- 4、起动电压: 2.3V Max
- 5、端子阻抗:  $31 \Omega \pm 20\%$ (单相) ,  $59 \Omega \pm 20\%$ (双相)
- 6、未注公差:  $\pm 0.1$

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## 产品规格内容

### 7-2. Packing specification/包装规格



### 7-2-1.Outter packing specification/外包装规格

数量 quantity	重量 weight	尺寸 Size(mm)
10,000PCS	9 kg	360x 230 x 290

### 7-2-2.Packing sequence/包装顺序

- 1.每个吸塑盒托盘(TRAY)里放 100 个马达,每 10 个托盘为一叠,然后用封装袋(BAG)密封包装好,
- 2.每个密封好的封装袋(BAG)内装 1,000 个马达.
- 3.每个纸箱里装 10 个密封包装袋,,再用封箱胶带封紧.
- 4.在纸箱上表格上记录 MODEL 名、MODEL 数量、制造商、LOT No 等信息.