

产 品 规 格 书

PRODUCT SPECIFICATION

产品名称 : _____ 圆柱马达 _____

客户名称 : _____

客户项目 : _____

公司型号 : _____ 3A-03208B _____

CUSTOMER APPROVED 客户确认	CHECKED 核 对	INSPECTION 审 查	APPROVAL 批 准	DATE 日 期
APPROVED 本司确认	DRAWN 编 制	CHECKED 审 核	APPROVAL 批 准	DATE 日 期
	刘华	代小丽	杨勇	2018. 6. 21

MATERIAL or METHODS Specifications

ISSUE: 0
NUMBER:

MODEL: KPD3A-03208-05-05D-0

ISSUE/ 版本	REASON FOR CHANGE/ 更改原因	DR. / 拟制	APPR. / 审核	DATE/ 日期
0	RELEASE FOR DESIGN/产品设计	刘华	代小丽	2017.6.21

MATERIAL or METHODS Specifications

ISSUE: 0
NUMBER:

MODEL: KPD3A-03208-05-05D-0

1. OPERATING SCOPE/适用范围

THIS SPECIFICATION APPLIES TO KPD3A-03208B STANDARD VIBRATOR MOTOR.

本产品说明书适用于 KPD3A-03208B 标准振动马达。

2. OPERATING CONDITIONS/使用条件

NO.	ITEMS/项目	SPECIFICATIONS/规定
2-1	RATED VOLTAGE/ 额定电压	3.0V DC
2-2	OPERATING VOLTAGE/ 使用电压范围	2.4~3.6 V DC
2-3	RATED LOAD / 额定负荷	COUNTERWEIGHT (ACCORDING TO SPECIFICATION OF MOTOR HOUSING CONFIGURATION) /摆轮 (按电机外型结构图规定)
2-4	ROTATION/ 旋转方向	CW 面对摆轮顺时针旋转
2-5	MOTOR POSITION / 马达位置	ALL POSITION / 轴向水平全方位
2-6	OPERATING ENVIRONMENT/ 使用环境	TEMPERATURE/温度: -30~70°C HUMIDITY/湿度: 65%~90% RH
2-7	STORAGE ENVIRONMENT/ 贮藏环境	TEMPERATURE/温度: -40~80°C HUMIDITY/湿度: 65% RH

3. MEASURING CONDITIONS/测试条件

NO	ITEMS/项目	SPECIFICATIONS/规格
3-1	TEMPERATURE/温度	25±2°C
3-2	RELATIVE HUMIDITY/相对湿度	45~85%RH
3-2	MOTOR POSITION/电机状态	MOTOR SHAFT HORIZONTAL (LOCK THE MOTOR IN A TEST FIXTURE) /输出轴水平 (电机固定在测试夹具中)

ALL DATA ARE BASED ON THE MEASURING CONDITIONS: TEMPERATURE, 20°C; HUMIDITY, 65%RH. IF ANY DISAGREEMENT OCCURS, SUCH TEST CONDITIONS ARE AVAILABLE: TEMPERATURE, 5~35°C; HUMIDITY, 45~85%RH.

所有数据的测试条件为: 温度 20°C, 相对湿度 65%RH。如果有任何不一致出现, 在以下条件中测试也是可以的: 温度 5~35°C, 湿度 45~85%RH。

MATERIAL or METHODS Specifications

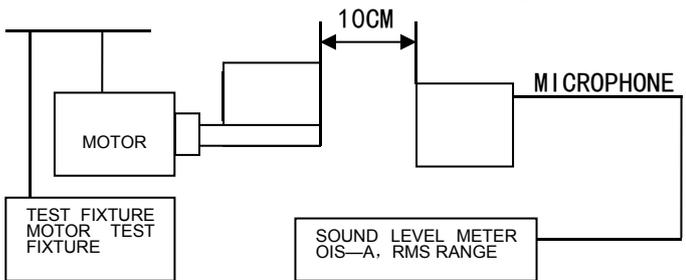
ISSUE: 0
NUMBER:

MODEL: KPD3A-03208-05-05D-0

4. APPEARANCE SPECIFICATION/外观性能要求

NO.	ITEMS/项目	SPECIFICATIONS/规定	CONDITION REMARK/条件、备注
4-1	CONFIGURATION/ 外观尺寸	AS SPECIFIED IN OUTLINE DRAWING/ 按外形图规定	
4-2	APPEARANCE/ 外观	THERE SHALL BE NO EVIDENCE OF MECHANICAL DAMAGE, AND SHALL BE NO INADEQUATE CORROSION, AND SO ON./没有机械的损害痕迹, 并且也没有腐蚀痕迹, 等.	VISUAL EXAMINATION : (ALLOWABLE EXTENT IN BASED ON BOUNDARY SAMPLE). /目视检查(允许范围和限度见样品)。
4-3	WEIGHT/重量	0.7±0.2g (APPROX)	

5.1 MECHANICAL PERFORMANCE AND CHARACTERISTICS/机械性能和特性 (AT ITEM 3 MEASURING CONDITION/按第3项的测试条件测试)

NO.	ITEMS/项目	SPECIFICATIONS/规定	CONDITION REMARK/条件、备注
5-1	RATED SPEED /额定转速	30000±5000rpm	AT RATED VOLTAGE AND RATED LOAD (COUNTERWEIGHT) /在额定电压下, 额定负荷下(摆轮重)
5-2	RATED CURRENT/额定电流	90mA (MAX)	
5-3	SHAFT LOCK CURRENT/ 堵转电流	120mA (MAX)	AT RATED VOLTAGE AND SHAFT LOCK. /在额定电压下输出轴堵转
5-4	STARTING VOLTAGE / 启动电压	2.4V DC	AT RATED VOLTAGE (COUNTERWEIGHT) ANY POSITION OF ROTOR. /在额定负荷下转子的任一位置
5-5	INSULATION RESISTANCE / 绝缘强度	10MΩ (MIN)	AT DC 100V BETWEEN THE LEAD WIRES OR REED AND MOTOT HOUSING. /在导线(或簧片)和马达机身之间加100V的直流电压
5-6	ARMATURE RESISTANCE/转子 阻值	30±20%Ω	AT 20°C
5-7	MECHANICAL NOISE/机械噪音	50db-A (MAX) MEASURED AT RATED VOLTAGE AND RATED LOAD (COUNTERWEIGHT) 在额定电压, 额定负荷(摆轮)下测试 BACKGROUND NOISE 30 dB-A (MAX)/背景噪音最大为 30 dB-A LOCK THE MOTOR IN A TEST FIXTURE (SHAFT HORIZONTAL) 电机固定在测试夹具中(输出轴水平) SUSPENSORY METHOD/悬吊方式	 <p style="text-align: center;">10CM</p> <p style="text-align: center;">MOTOR</p> <p style="text-align: center;">TEST FIXTURE MOTOR TEST FIXTURE</p> <p style="text-align: center;">MICROPHONE</p> <p style="text-align: center;">SOUND LEVEL METER OIS-A, RMS RANGE</p>

MATERIAL or METHODS Specifications

ISSUE: 0
NUMBER:

MODEL: KPD3A-03208-05-05D-0

6. RELIABILITY TEST / 可靠性试验

NO	ITEMS/项目	SPECIFICATIONS/规定	REQUIREMENTS/判定特性
6-1	LIFE TEST/ 寿命试验	VOLTAGE/电压: 3.0V DC LOAD/负荷: COUNTERWEIGHT (摆轮重) TEMPERATURE/温度: 25°C±2°C HUMIDITY/湿度: 65±5%RH TEST MODEL/试验形式: 0.5S ON(C.W)、0.5S OFF TEST TIME/试验时间: 30,000CYCLES	AFTER THE TEST, MOTOR SHALL BE APPROVED AS SPECIFIED IN ITEM7-1. 试验后, 应满足 7-1 项。
6-2	SHOCK TEST/ 振动试验	1. Displacement/全振幅: 1.5mm(p-p) 2. Frequency/频率: 10~55Hz 3. Period/周期: 1min 范围内 (10~55~10Hz) 4. Direction/方向: x、y、z Time/时间: 2h/方向	AFTER THE TEST MOTORS SHALL BE APPROVED AS SPECIFIED IN ITEM 7-1. 试验后, 应满足 7-1 项要求。
6-3	LOW TEMP EXPOSURE TEST/ 低温存放试验	TEMPERATURE /温度: -40°C±2°C TIME /时间: 96 HOURS	AFTER 2HOURS EXPOSURE IN ORDINARY TEMPERATURE AND HUMIDITY, MOTORS SHALL BE APPROVED AS SPECIFIED IN ITEM 7-1. 在常温常湿中放置 2 小时后, 测试应满足 7-1 项要求。
6-4	HIGH TEMP EXPOSURE TEST/ 高温存放试验	TEMPERATURE /温度: 80°C±2°C TIME/时间: 96 HOURS	
6-5	HUMIDITY EXPOSURE TEST/ 湿度存放试验	TEMPERATURE /温度: 40°C±2°C HUMIDITY /湿度: 90~95%RH TIME /时间: 96 HOURS	
6-6	THERMAL SHOCK/ 热循环	Temperature (°C) Test cycle/试验循环周期数: 15cycles	AFTER 24 HOURS EXPOSURE IN ORDINARY TEMPERATURE AND HUMIDITY, MOTORS SHALL BE APPROVED AS SPECIFIED IN ITEM 7-1. 常温常湿中放置 24 小时后, 测试应满足 7-1 项要求。

MATERIAL or METHODS Specifications

ISSUE: 0
NUMBER:

MODEL: KPD3A-03208-05-05D-0

6-7	DROP TEST/ 跌落试验	<p>SET THE MOTOR ON THE HEAVY BLOCK ABOUT 100g WEIGHT (INCLUDE THE NOTOR) AND DROP THE MOTOR ON THE CONCRETE FLOOR. /产品放在大约100g(包括产品)重的物体上自由落下到水泥地板上。</p> <p>HEIGHT/高度: 1.5m</p> <p>DIRCCTION/方向: $\pm X$, $\pm Y$, $\pm Z$</p> <p>TIMES/次数: THREE DROPS PER PLANE FOR A TOTAL OF 18 DROPS/每一平面下落3次, 共18次。</p>	<p>AFTER THE TEST MOTORS SHALL BE APPROVED AS SPECIFIED IN ITEM 7-1.</p> <p>试验后, 应满足7-1项要求</p>
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7. REQUIREMENTS/判断特性

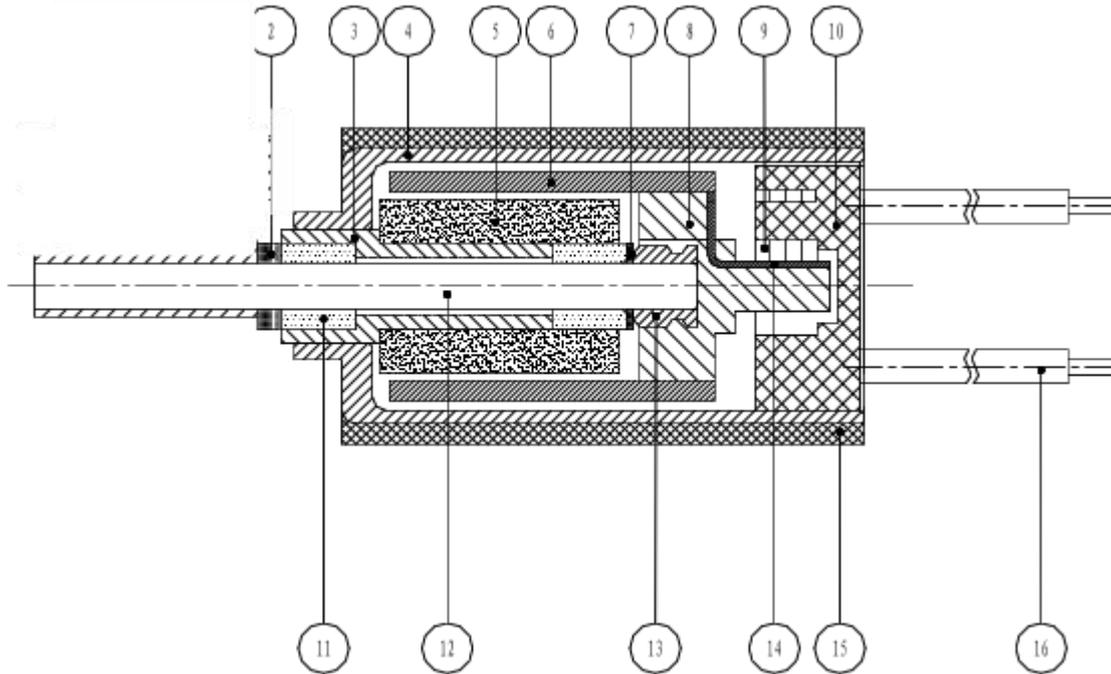
NO	ITEMS/项目	REQUIREMENTS/判定特性
7-1	TABLE A	<ol style="list-style-type: none"> 1. LOAD SPRRD VARIES WITHIN $\pm 50\%$ FROM INITIAL. /负载转速的变化应在初始值的$\pm 50\%$内; 2. LOAD CURRENT VARIES WITHIN $\pm 30\%$ FROM INITIAL. /负载电流的变化应在初始值的$\pm 30\%$内; 3. TELRMINAL RESISTANCE VARIES WITHIN $\pm 30\%$ FROM INITIAL. /端子间的电阻变化应在初始值的$\pm 30\%$内; 4. STARTING VOLTAGE IS 2.4V MAX. /启动电压的最大值为2.4V。

MATERIAL or METHODS Specifications

ISSUE: 0
NUMBER:

MODEL : KPD3A-03208-05-05D-0

8. 电机结构图/Motor configuratoin drawing



N0	名称/Name	材质名称/Material name	N0	名称/Name	材质名称/Material name
			9	电刷/Brush	SP- 1/MX215
2	止拔垫片/S-Wwasher	聚酯薄膜/Polyester film	10	端盖/ Bbase	PBT
3	轴承套/B housing	SUM24L	11	含油轴承/Bearing	铜基粉末//Copper powder
4	机壳/Housing	SPCE+Ni plating	12	轴/Shaft	SUS420J2
5	磁铁/Magnet	钕、铁、硼/Nd 、Fe、B	13	固定环/lettring	铍青铜/Beryllium bronze
6	线圈/coil	铜/Copper	14	换向片/segment	Cu、Ni、Ag
7	垫片/T-washer	聚酯薄膜/Polyester	15	胶套/Rubber	硅胶/Silicon rubber

MATERIAL or METHODS Specifications

ISSUE: 0
NUMBER:

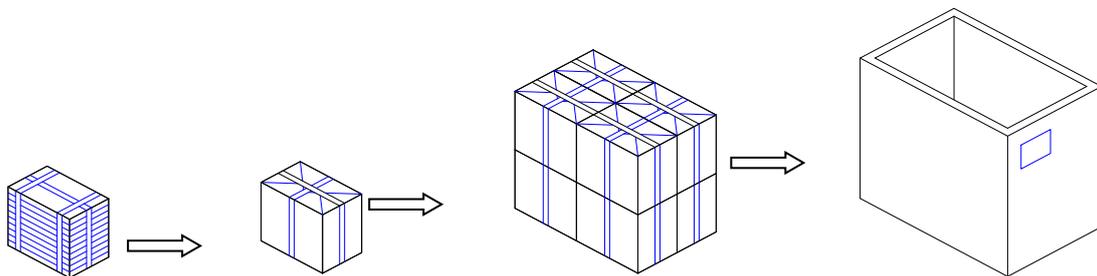
MODEL: KPD3A-03208-05-05D-0

		film			
8	塑料/Plastic	PBT	16	导线/Lead wire	PVC、铜Copper

9. PACKAGE REQUIRE/包装要求 (建议包装方式, 厂家可根据本公司自己的包装方式进行)

CONTENT AND PROCESS/工作内容和程序

1. 50 VIBRATORS IN EACH PS TRAY. /每个包装盒里放 50 个马达。
2. EVERY 20 CAPSULES AS A GROUP, PUT A PLASTIC COVER ON THE GROUP AND WRAP IT IN TAPE. /每 20 个包装盒上盖一个空包装盒, 用胶带捆做一捆。
3. PUT THE WRAPPED GROUP INTO A INBOX. /捆好后装入内包装箱。
4. EVERY 8 INBOXES ARE PUT INTO AN OUTER CASE BY THE WAYS STIPULATED AS THE DRAWING. /每 8 袋包装盒按图中的叠放方式放入一个外包装箱。
5. QUANTITY AND BATCH NUMBER ARE WRITTEN ON THE SURFACE OF THE OUTER CASE. /数量、生产批号均写在外包装箱上。



10. MATTERS TO BE PAID ATTENTION TO WHEN USING NOTOR/使用时注意事项

1. PLEASE LAY THE NOTORS CAREFULLY IN TRANSPORTATION TO AVOID ANY SERIOUS DAMAGE TO THE MOTOR BODY OR ITS ELECTRIC FUNCTION BECAUSE OF COLLISION. /电机在运输过程中应小心轻放, 避免严重碰撞敲击引起的电机机身和性能受损。
2. PLEASE USE THE MOTOR ACCORDING TO THE INSTRUCTION OF THIS PRODUCT SPECIFICATION, OR ELSE, IT WILL BE BAD FOR MOTOR' S LIFE. /必须按照规格书的标准使用, 否则会影响电机寿命。
3. MAKE ARRANGEMENT TO LIMIT THE STORAGE PERIOD TO 6 MONTHS OR LESS. PLEASE FO NOT STORE MOTOR IN HIGH TEMPERATURE, LOW TEMPERATUEE. HIGH HUMIDITY ENVIRONMENT. CONDENSATION OF ATMOSPHERE MUST BE AVOIDED IN MOTER USAGE OR OPENING THE PACKAGING OF THE MOTOR. /请在 6 个月内使用, 请不要在高温、低温、高湿环境下存储。在使用和打开马达外包装时请避免水气凝结。
4. FOR PROPER OPERATION, STORAGE AND OPERATING ENVIRONMENT MUST NOT CONTAIN CORROSIVE GASES. FOR EXAMPLE H2S. SO2. NO2. CL2. ETC. IN ADDITION STORAGE ENVIRONMENT MUST NOT HAVE MATERIALS THAT EMIT CORROSIVE GASES ESPECIALLY FROM SILICON, CYANIC. FORMALIN AND PHENOL GROUP. IN THE MECHANISM OR THE SET. EXISTENCE OF CORROSIVE GASES MAY CAUSE NO ROTATION IN MOTOR. /马达应适当的操作、储存和运转环境中

MATERIAL or METHODS Specifications

ISSUE: 0
NUMBER:

MODEL: KPD3A-03208-05-05D-0

- 均不可存在腐蚀性气体。例如：H₂S、SO₂、NO₂、CL₂等。另外存储环境中不可有诸如硅、氟、甲醛水和苯酚等能放射出腐蚀性气体的物质，在电机的机械构造或装置中，如果存在腐蚀性气体，那么这会引起马达不运转。
- 5、PLEASE DON'T STALL THE SHAFT FOR A LONG TIME AFTER POWERING, AND NOT TO TOUCH THE WEIGHT WHEN MOTOR IS ROTATING. /请通电后不要长时间堵住机轴，并且马达转动时不要触碰振子。
- 6、THERE SHOULD BE NO SUNDRIES (SUCH AS GRAIN, FIBRE, HAIR, SMALL TAPE, GLUE ETC.) IN THE SHAFT END PLAY. /马达轴向间隙处不应有杂物（如颗粒、纤维物、头发、胶带、胶水等）

11. MECHANICAL DRAWING/机械图



技术要求:

1. 额定电压 : DC 3.0V
2. 额定电流 : 90 AM Max
3. 额定转数 : 30000±5000 RPM Max
4. 启动电压 : DC 2.4V Max
5. 端子阻抗 : 30Ω ± 20%
6. 旋转方向 : CW
7. 自由公差: ±0.2mm