



LJ DEVICE CO., LTD.

力臻股份有限公司

LJ DEVICE CO., LTD.

零件規格書 / 承認書

SPECIFICATION FOR APPROVAL

CUSTOMER : _____

DESCRIPTION : _____ PMDC motor _____

MODEL : _____ QFF-130DHVZ-12290 _____

CUSTOMER PART NO : _____

APPROVED SIGNATURES

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Rev	Date	Description	Designed	Checked	Approved
A	2018/07/24	First issue	LJD	Po-Chen	

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**SPECIFICATION****技術指導書**

VIBRATION MOTOR 振動馬達	MODEL NO.: QFF-130DHVZ-12290	DATE: 2018/07/24
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1. CONSTRUCTION FORM 結構形式:

NO. 序號	ITEM 項目	CONTENTS 內容
1-1	MOTOR CONSTRUCTION 馬達結構	Φ 20.4*15.4*25.0 (mm) Diameter as the PMDC motor 扁型馬達Φ 20.4*15.4*25.0 (mm) 的鐵芯直流馬達
1-2	NUMBER OF PHASES 相數	2-poles (Built-in magnetic ring) 兩極(磁瓦內置)
1-3	RECTIFYING METHOD 換向方式	Precious Metal Brush and commutator 稀有金屬電刷與換向器裝置

2. STANDARD OPERATING CONDITION 標準運行條件:

NO. 序號	ITEM 編號	SPECIFICATION 規格
2-1	RATED VOLTAGE 額定電壓	Motor terminal voltage 12.0VDC 馬達端子電壓 12.0VDC
2-2	RETED LOAD 額定負荷	Counter weight (sheet iron) R9.0*7.2mm 偏心輪(鐵片) R9.0*7.2mm
2-3	ROTATION DIRECTION 回轉方向	CCW (When viewed from output side with +ve voltage applied to +ve terminal) 逆時針方向旋轉(軸突視之, 電壓正極接端子正極)
2-4	MOTOR POSITION 擺放位置	ANY POSITION IS AVAILABLE 任何位置都可以
2-5	VOLTAGE RANGE FOR USE 工作電壓範圍	DC5.0V~12.5V
2-6	WORKING TEMPERATURE RANGE 工作溫度範圍	-20°C~60°C ordinary humidity常規濕度 15%~90%RH (no condensation of moisture/不凝露)
2-7	Storage conditions 貯存環境	-20°C~70°C ordinary humidity常規濕度 15%~75%RH (no condensation of moisture/不凝露)

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3.ENVIRONMENTAL TEST CONDITIONS 環境測試條件

NO. 序號	ITEM 編號	Environmental condition 測試環境條件
3.1	Temperature 溫度	20±2°C
3.2	Humidity 濕度	60±5% RH
3.3	Motor Position 電機體位	Shaft Horizontal 軸伸水準
3.4	Power Supply 電源	Regulated DC power supply 恒定 DC 供給電源

NOTE : All data shall be based on the measurement under the temperature 20±2°C and humidity 60±5% RH, however the range of temperature 5~35°C and humidity 45~85%RH if there is no doubt about the judgment.

注：所有的資料在溫度20±2°C，濕度60±5% RH的條件下測定。在對判定不發生異議時，也可在溫度5~35°C，濕度45~85%RH的環境下測試

4.MECHANICAL CHARACTERISTICS 機構特性:

NO. 序號	ITEM 編號	MEASURING CONDITION 測試條件	SPECIFICATION 製品規格
4.1	Configuration 外觀尺寸	Vernier caliper 遊標卡尺	As specified in outline drawing 參考外形圖
4.2	Weight 重量	Plate balance 0.1g 架盤天平 精度 0.1g	29.3g (Reference) 29.3g (參考)
4.3	Shaft end play 軸向間隙	Vernier caliper or Dial indicator 遊標卡尺或百分表	(0- 0.5) mm

5.ELECTRICAL CHARACTERISTICS 電氣性能:

NO. 序號	ITEM 編號	MEASURING CONDITION 測試條件	SPECIFICATION 製品規格
5.1	No-Load current 空載電流	AT RATED VOLTAGE AND RATED LOAD 額定電壓及負荷下測試	≤ 100mA
5.2	No-Load speed 空載轉速	AT RATED VOLTAGE AND RATED LOAD 額定電壓及負荷下測試	11000rpm ± 12%
5.3	Rated Load 額定負荷	AT RATED VOLTAGE AND RATED LOAD 額定電壓及負荷下測試	Counter weight (sheet iron) R9.0*7.2mm 偏心輪 (鐵片) R9.0*7.2mm
5.4	Rated current 額定電流	AT RATED VOLTAGE AND RATED LOAD 額定電壓及負荷下測試	≤ 450mA



5.5	Rated speed 額定轉速	AT RATED VOLTAGE AND SHAFT LOCK 額定電壓及鎖定電機軸條件下測試	8000rpm. ± 12%
5.6	Starting Voltage 始動電壓	AT RATED LOAD AND STEP VOLTAGE 額定負荷及電壓直投法條件下測試	4.0VDC max
5.7	Insulation resistance 絕緣電阻	At DC 100V, measured between housing case and terminal. 在100V 直流電壓下，電機引線與外殼間	≥ 10MΩ

6. 注意事項CAUTIONS

1) 環境影響ENVIRONMENTAL EFFECT

If has including xi a kind of material and the compound, easy to adsorb in motor's commutator, the electronics brush and other, after the motor in the electrical energy influence, will decompose will be sio₂, sic and other sideline products, these materials will cause the commutator and electronics brush's contact resistance increase rapidly, therefore, motor when and will use together including xi a kind of material and the compound, will want the special attention to create the motor part's damage, especially when the use will enter including xi a kind of viscose and the packing material the motor group your firm department and the product, please note verifies when will use and the hardening, will not produce mist of the volatile, will injure to motor's performance and the life, When selects the cyanide and the sulfide viscose, also wants the special attention to create the motor part's corrosion.

如有含矽類物質及化合物，易吸附於馬達的換向器，電刷及其他部品，經馬達中之電能影響，會分解為sio₂，sic及其他副產品，這些物質都會使換向器與電刷的接觸電阻急速增加，因此，馬達在與含矽類物質及化合物一起使用時，要特別注意造成馬達部件的損傷，尤其在使用含矽類粘膠及密封材料將馬達組入貴公司部品及產品時，請注意查明在使用及硬化時，不會產生揮發性之霧氣，傷害到馬達的性能及壽命，在選用氰化物及硫化物的粘膠時，也要特別注意造成馬達部件的腐蝕。

2) 移動電機MOVE YOURMOTOR

Please deal with the motors gently, you should make use of the outer case as possible as you can.

拿電機時，應輕拿輕放，應盡可能地利用外殼部分

Do not press the product with more than 0.5 kgf or drop it. It can cause the transformation of performance

or external appearance.

請勿將其跌落或加以超過 5 公斤的壓力。否則會引起電機的外部形態和電氣特性的改變

3) 儲存STORAGE

Storage temperature : -20°C~70°C

Storage relative humidity : 15%~75%

Avoids storing in high temperature、high humidity or corrosive gas environment.

儲存溫度：-20°C~70°C

儲存濕度：15%RH~90%RH

避免放置在高溫、潮濕及有腐蝕性氣體的環境中。

4) 使用電機HANDLING OF MOTOR

-to handle and hold the vibration motor case softly.

-do not bring magnetized object near or contact with the surface of motor to avoid of performance being deteriorated.

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

小心拿取、使用。

避免放置在磁性物體附近或接觸其表面，這將影響其功效。

注意操作環境，尤其注意若鐵粉被磁鐵吸附，將出現噪音問題，降低使用壽命

Please do not operate or store the motor near magnet or magnetic devices.

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請勿靠近磁體或有磁場的裝置存放或運行電機

5) 安裝您的電機 MOUNTING YOUR MOTOR:

Some QX motors provide tapped holes in the motor housing for you to use to mount your motor. Please take care not to use screws so long that they can interfere with components inside the motor.

部分全新電機都在電機定子上提供了安裝孔用來安裝您的電機，請注意不要使用過長的螺釘以避免損壞電機內部元件。

Bearing bosses are also used for mounting motors. Please avoid excessive clamping forces on these areas. 軸承固定座也是用來安裝您的電機的，對此安裝區域請避免過度用力。

When mounting your motor, please try not to completely close or around the motor, motor should be set aside space for heat dissipation

在安裝電機時，請儘量不要完全緊貼或包住電機，應為電機留出散熱空間。

It is preferable not to use features on the motor such as ventilation holes for location means. It is possible that these features may change as new or modified tooling is used in the future.

最好不要利用電機表面的特徵來固定電機，例如：通風孔。這樣將可能會改變這些特徵。

Any ventilation holes in the motor should not become blocked in your product without consultation with QX.

如未諮詢我司，裝入貴司產品中的電機上的任何通風孔都不可以堵死。

If adhesives are to be used to mount you motor care must be taken to avoid any adhesive getting into the bearing areas.

如果使用粘合劑安裝電機，必須注意粘合劑不能進入軸承區域。

7) 電機連軸 COUPLING YOUR MOTOR:

If you intend to couple a gear or a fan or some other item to your motor shaft during assembly, always remember that unusual radial and axial loads transmitted to the motor from the coupling during operation of the motor can have serious effects on the life of the bearings. If you have any concerns about this please consult with QX.

裝配過程中，如果電機出軸端欲銜接齒輪、風葉等其它配件，請牢記，如果安裝不當，電機運轉時

一種非正常的徑向或軸向負荷將通過連接載入到電機，這種負荷將對軸承壽命造成嚴重影響。如果

您對此有任何擔心，請諮詢我司。

8) 過負荷 OVERLOADS:

Small high power motors are subject to very fast temperature rises. Take care not to apply excessive voltage to the motor or to operate it at stall or near stall for prolonged periods without first consulting with QX.

體積小、功率高的電機通常溫升高；如未諮詢我司，使用時請注意不能加過高的電壓，不能運行在

堵轉或接近堵轉狀態過長時間。

9) 危險環境 HAZARDOUS ENVIRONMENTS:

The degree of protection against corrosion on QX motors is satisfactory only for normal environments. There are small sections of the housing in which some bare metal is exposed and is susceptible to corrosion. It is advisable not to store or use motors in corrosive environment without consultation with QX.

我司電機在正常環境中的抗腐蝕能力是符合要求的，但機殼上有少許區域存在的裸露金屬對腐蝕比較敏感，因此未經諮詢請不要在腐蝕環境中儲存或使用電機，



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10) 其它說明OTHERS:

The motor may cause slight electronic noise due to the contact between brush and commutator.

當換向器和電刷接觸時，電機會發出輕微的電噪音

The motor has a strong magnet so please be aware that it has a magnetic force on the surface of the bracket.

電機內部有很強力的磁鐵，所以機殼表面也存在磁力

It is allowable to have a few spots on the surface or edge of case.

外殼表面或邊緣有少許斑點是允許的



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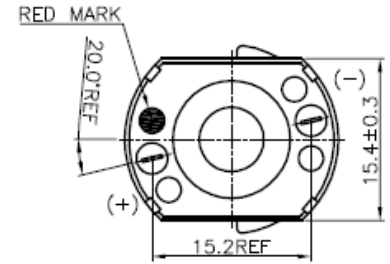
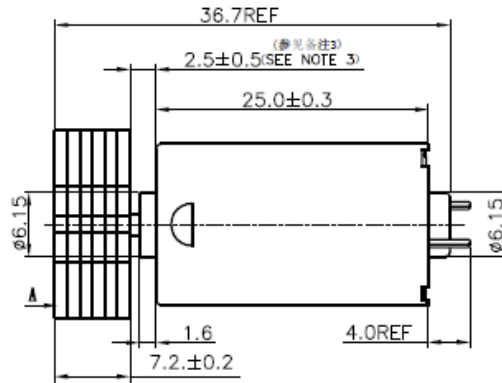
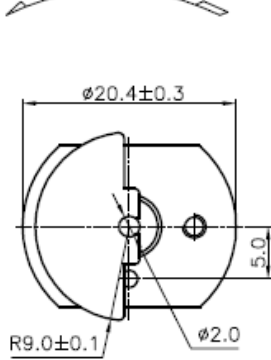
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DIRECTION OF ROTATION

旋轉方向



NOTES:

备注:

- DIRECTION OF ROTATION IS C.C.W. WHEN VIEWED FROM THE OUTPUT SHAFT;
马达逆时针方向旋转, 轴突视之;
- END PLAY: 0.-0.5;
马达虚位: 0-0.5;
- THE DIMENSION IS THE LENGTH WHEN THE SHAFT IS PUSHED INTO "A" DIRECTION.
轴顶向"A"方向的长度;
- DIMENSION IS IN "MM".
以上尺寸以毫米为单位.

SYMBOL	SIGNATURE	DATE
DESIGNED	赖敏聪	24/07-18
CHECKED	曹玉和	24/07-18
TECHNIQUE		
DRAWN		
APPROVED	范圣雯	24/07-18

DC MOTOR
OUTLINE

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