

Test of CNC Formosa

1 Steppers motors

The machine move because have steppers motors.
Steppers motos are differents than other electric motors

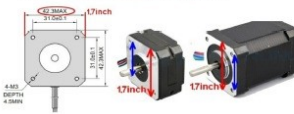
Stepper motor is a brushless DC electric motor that divides a full rotation into a number of equal steps.

Theirs motors can move machine in very accurate position without any feedback sensor with open-loop controller, as long as the motor is carefully sized to the application in respect to torque and speed.

The power and size of steppers motors

Steppers motors

what mean stepper motor Nema 14, Nema 17, Nema 23 ?
NEMA mean National Electrical Manufacturers Association
For example 17 of Nema 17 mean 1.7 inch



NEMA is a standard for size and position of fixing hole.
You can change a Nema17 in a machine with Nema17 other brand
For fixing it's Ok it's match, but

The power ?
The power it's write in datasheet manufacturer.
The torque unit is write in N*m

In the majority of cases, Nema 23 stepper motors have more torque than Nema 17 but it's not always true. Depend of the length of stepper motor.
Go in the web site of Taiwan stepper motor manufacturer SUMFU
<http://www.sumfu.com/step>
Find a bipolar Nema17 stepper motor have more torque than bipolar Nema23
Write for each motors (nema 17 and nema23) the reference and torque
Write for each motors the current rate and how many step the motor can do for one turn.
Send your home-works by e-mail to makerslide-machines@gmail.com

Nema 馬達如何運作 google 可搜尋資訊 如
Homework 欄內提供的中文網站,有說明.供參考.

2 Test the movement of stepper motors

The conventional choice for X axis is for the movement more long the machine can do.
Y axis the perpendicular movement of X axis in the same plan and Z the movement of tool (spindle for milling cnc).
For CNC Formosa we don't follow this convention and have reason.
SEE FOR MORE INFORMATIONS
<http://www.makerslide-machines.com/zh/machines/>



Now, connect your computer to the smoothieboard controller with pronterface and test the X Y and Z movement like the video in Qr Code

 If all works perfect is no good, with this way you can't learn, so next step you need do mistake in the machine to learn how overcome the problems.

- 1.一般供工廠生產用的 CNC 除了價錢昂貴外,就是大多是 X 軸長過 Y 軸,他們有專用的軟體.
- 2.我們 DIY 的小型個人用 CNC 架構,因為使用開放軟體所以必須配合軟體設定 X 軸軌道比 Y 軸軌道短.
3. Z 軸就一定是垂直的.
- 4.可操作 Pronterface 介面 驅動 x, y, z 三軸,如果發生錯誤才有機會學習克服方法,初學者操作不正確是正常.
- 5.掃一下 QCode 看相關資訊.