Dedicated Electronic Handwheel Instructions

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PCB Version : 1.0

Procedure Version: 1.0

Mach 3 Version: Above 1.84

Dedicated Electronic Handwheel Instructions

Welcome to use ModS Mach 3 dedicated electronic handwheel. Such handwheel is connected with computer through RS 232 serial port, and take 5V voltage via USB. No need any other extra drivers.

We do really hope you have ever used Mach3 before and get known about it. If you are the first time to use ModS and you want to try it at once, we kindly suggest you to familiar with Mach 3 by some more time, it will be very helpful for you to use and install ModS electric handwheel.

In additional, a standard computer serial port has been used for ModS Mach3 dedicated electric handwheel. Generally speaking, a desktop computer is usually comes with an external serial port, if no, you can buy a PCI extended SIO. USB analog serial device is not suggested to install, because such a device is easy to cause Mach3 subjected into pause, unless you are familiar with computer and USB analog serial device driver and can manage to solve the problems.

Therefore, if you are intend to run Mach3 by your laptop computer without a serial port (COM port), it is suggested you to consider carefully, so to avoid any waste of time. What's more, for laptop, the author is going to research, it is believe that the electric handwheel can connected with laptop friendly and reliably before long.

1. Function Introduction

● Control each axis motion by rotation.
● Choose controlled axis (X, Y, Z, A) via band switch.
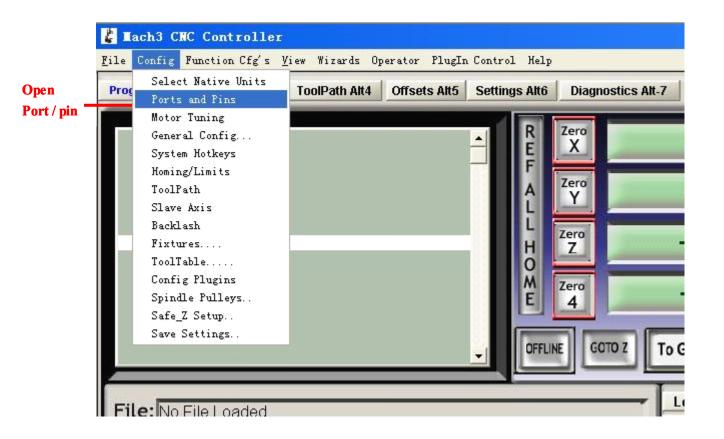● Choose control mode by band switch (STEP and Velocity)

All the manual control supplied by Mach3 is realized by the keyboard. ModS electronic handwheel control the motor motion at each axis through the rotation of rotary encoder. When you use the mode of Velocity, the movement direction of each axis will be controlled by the direction of encoder wheel you rocked, while the moving speed of each axis will be determined by your rocking speed of wheel. Such operation looks like much more approaching to our custom. If you choose to use STEP mode, it means that a precise moving mode will be entered. When you choose 0.01gear, the wheel will turn a grid, and the controller axis will move 0.01 toward the direction you turned. When you choose 0.1gear, the wheel will turn a grid, and the controlled axis will change 0.1. Followed by analogy, 1 gear can control the change of 1.
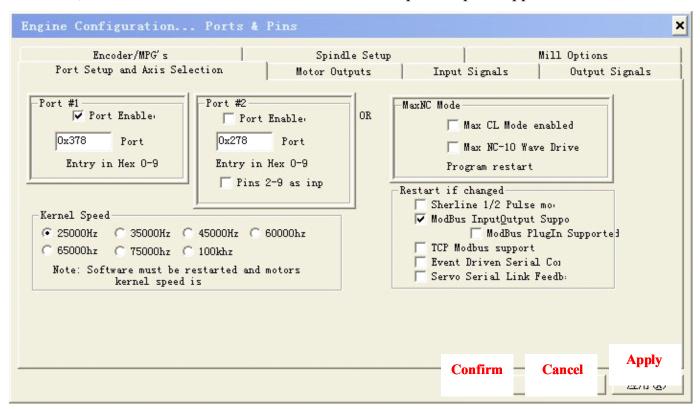
Hanging handle

MPG

2. Installation settings

2.1 This kind of electronic handwheel is communicated through Modbus agreement and Mach3, connected with computer via RS232 and take voltage by USB. As a friendly Modbus interface was supplied by Mach3, there's no need to install any other drivers when using ModS electronic handwheel.

Before use, ModS serial port should be connected with the serial of computer (COM port) and the fixed screw need to be fastened at first. Next connect the USB of ModS with computer and run Mach3 (3.04).
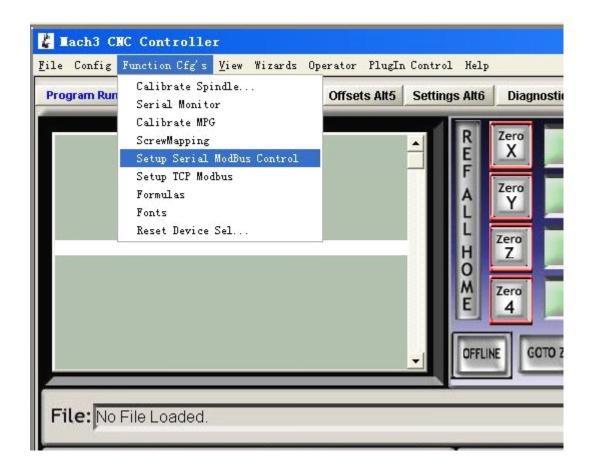
After above operations carried out, the following dialog box will be come out, tick the box before the item of "Modbus Input Output Support".
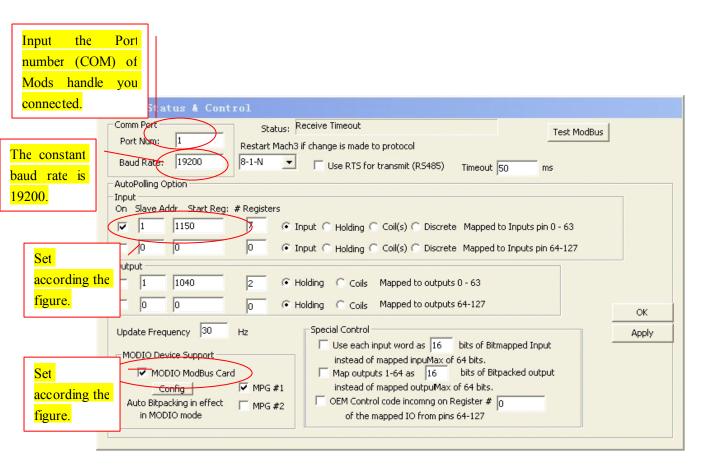

Press "Apply" before quit, so that make sure your settings are saved by Mach3.
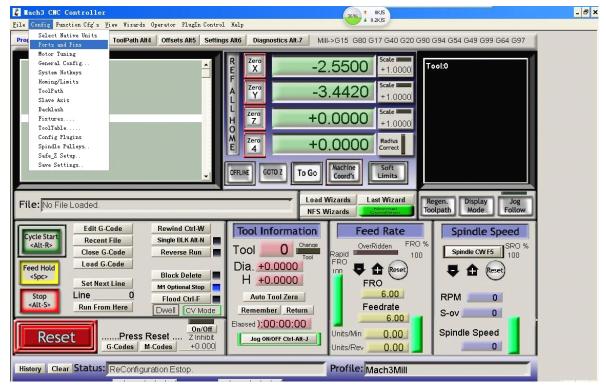
2.2 Modbus control setup

If there are two ports on your computer, please set the port number as 1 or 2.

Input the Port number (COM) of Mods handle you connected.

The constant baud rate is 19200.

Set according the figure.

Set according the figure.

Note: Do not change the buttons of "Config" and "Test ModBus", to avoid any changes.

2.3 Choose "Ports/Pins" again.

Choose Encoder /Electronic handwheel Window

Tick the item of "Enabled" in MPG#1. For others, please input numbers according to the figure, then press "Apply" to save.

The numbers in "Counts/Unit" mainly relate to STEP gear of MODE. For example, if you input 2 in the column of MPG#1, then it comes into force, if you choose 0.01 gear, the number will become 0.01 after turn 2 grids of the wheel. Others followed by analogy.
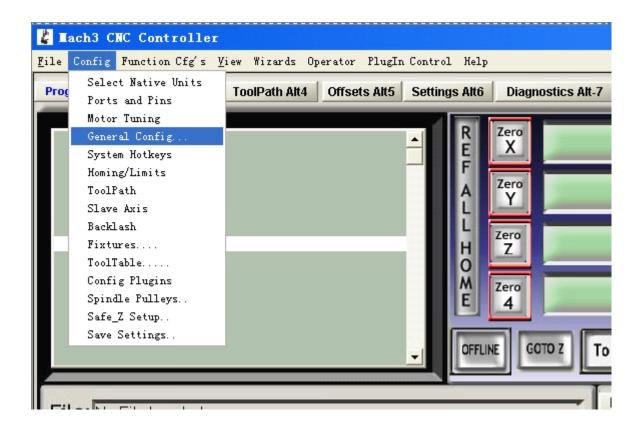
The numbers in Velocity is related to gears of Velocity in MODE, the bigger the number is, the smaller velocity of hand control axis will be.

2.3 Download Micro pump.
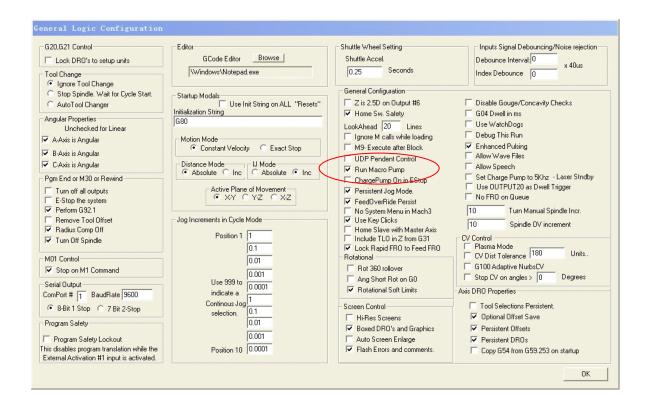

Macropump.m1s
M1S 文件
2 KB

Download the file into file C: \Mach3\macros\Mach3 Mill, please make sure to put it into the right place. If your Mach was installed at file D, please download it into D: \Mach3\macros\Mach3 Mill.

Open "General configure".

Tick the item of " Run Macro Pump" as following.

Mods electronic handwheel can be used after above settings. In order to make sure all the settings are being saved, please restart Mach. If the handwheel can not being used normally, please check whether your settings are right and being saved or not.

You can press TAB key to transfer the analog handwheel interface. The display of Mach will be changed relatively according to rotation of each part of ModS(Shown as figures).

Precautions

1. Please start Mach3 after connected ModS electronic handwheel with computer. If start Mach3 first, the moving axis maybe run some time, in this case, please press emergency stop and reset, it can be back to normal

status.

2. The Mods can be connected with computer all the time if no need to be detached.