



适用于MACH3系统  
Application system: MACH3

# MACH3无线电子手轮

The MACH3 wireless MPG instructions  
for the MACH3 system

# 说明书



**型号**  
**MODEL**

WHB04B-4:4轴，无线电子手轮  
WHB04B-4:4 axis,wireless handwheel  
WHB04B-6:6轴，无线电子手轮  
WHB04B-6:6 axis,wireless handwheel

## ● 特点 Characteristic

- 采用433MHZ，ISM无线传输技术，发射功率10DBM，接收灵敏度-98DBM
- 具有64个跳频频道，每个频道间隔1MHZ
- 智能无线技术，实现自动跳频，自动节约功耗，自动ID码学习
- 采用跳频传输，抗干扰能力强；
- 跳频传输技术，同一个房间，能支持64套设备，同时使用，相互不受影响
- 100PPR电子手轮功能，支持10个自定义按键
- 显示X，Y，Z，A，B,C轴的机械坐标和工件坐标
- 显示主轴转速值，加工进给速度值
- Radio frequency：433MHZ,ISM,the Tx power is 10DBM and the RX sensitivity is -98DBM
- The RF has 64 channels,the channel gap is 1Mhz
- Using frequency hopping, stable and reliable
- Hopping transmission technology, can support 64 sets of equipment, each other is not affected
- 100PPR manual pulse generator ,support 10 macro function button
- LCD Display: machine coordinates and workpiece coordinates X, Y, Z, A, B, C-axis
- LCD Display: Spindle speed value, processing feed rate value





注意：为了信号的稳定，请将接收器安装在机箱外面（不能安装在机箱内部）  
In order to signal stability of the receiver to be installed outside the chassis

## ● 使用步骤 Using the step

### ① 插入USB接收器，等待驱动自动安装完成。

Insert the USB receiver, wait for the automatic driver installation is completed.

### ② 在MACH3安装目录下有个“PlugIns”文件夹,然后把驱动文件（在光盘里边） ShuttlePro.dll拷贝到此文件夹\Mach3\PlugIns下.

The drivers (in the CD inside) ShuttlePro.dll copied to \Mach3 \ PlugIns.














### ③ 宏代码安装：

将光盘里macro文件夹下的所有文件拷贝到MACH3安装目录..\Mach3\macros\Mach3Mill下.

The all macro files (in the CD inside macro folder ) copied to .. \ Mach3 \ macros \ under Mach3Mill.

### ④ 无线电子手轮，安装上2节AA电池，打开手轮的电源开关，就可以正常使用了。

Wireless MPG, install 2 AA batteries, turn on the power switch, you can normally use.



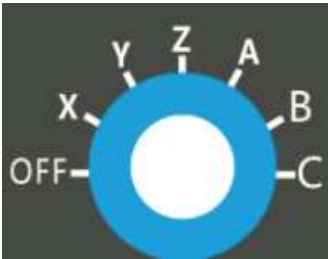
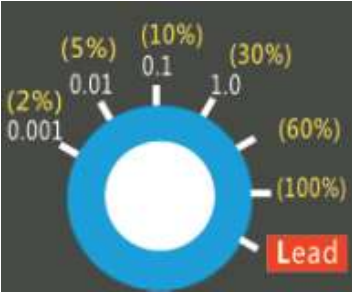
对应图标 Icon	功能 Function
	复位按钮 RESET button
	停止按钮 Stop button
	开始/暂停按钮：当机器停止时，按下按钮机器开始工作；当机器工作时，按下按钮，机器停止工作 Start/Pause button:When machine stops,press the button,machine starts to work;When machine is working, press the button,machine stop working
	宏代码功能1/进给速度+按钮：单独按下按钮,宏代码功能1输出;按下  +  按钮,加工速度增加 Macro-1/Feed+ button:When press the button alone,macro function-1 works; When press the  +  ,Processing speed increase.
	宏代码功能2/进给速度-按钮：单独按下按钮,宏代码功能2输出;按下  +  按钮,加工速度减小 Macro-2/Feed- button:When press the button alone,macro function-2 works; When press the  +  ,Processing speed decreases.

## ○ MACH3手轮按键功能说明 The MACH3 MPG key function

对应图标 Icon	功能 Function
	<p>宏代码功能3/主轴速度+按钮：单独按下按钮,宏代码功能3输出;按下  +  按钮,主轴速度增加</p> <p>Macro-3/Spindle- button:When press the button alone,macro function-3 works; When press the  + ,Spindle speed increases.</p>
	<p>宏代码功能4/主轴速度-按钮：单独按下按钮,宏代码功能4输出;按下  +  按钮,主轴速度减小</p> <p>Macro-4/Spindle- button:When press the button alone,macro function-4 works; When press the  + ,Spindle speed reduction.</p>
	<p>宏代码功能5/机床原点按钮：单独按下按钮,宏代码功能5输出;按下  +  按钮,回机床原点.</p> <p>Macro-5/M-HOME button:When press the button alone,macro function-5 works; When press the  + ,refer all home.</p>
	<p>宏代码功能6/返回安全Z高度按钮：单独按下按钮,宏代码功能6输出;按下  +  按钮,返回安全高度.</p> <p>Macro-6/M-HOME button:When press the button alone,macro function-6 works; When press the  + ,Return to the safe height of the Z axis</p>

对应图标 Icon	功能 Function
	<p>宏代码功能7/工件原点按钮：单独按下按钮,宏代码功能7输出;按下  +  按钮,返回工件原点.</p> <p>Macro-7/W-HOME button:When press the button alone,macro function-7 works; When press the  + ,go to zero work.</p>
	<p>宏代码功能8/主轴开关按钮：单独按下按钮,宏代码功能8输出;按下  +  按钮,主轴开启或者关闭.</p> <p>Macro-8/S-ON/OFF button:When press the button alone,macro function-8 works; When press the  + ,Spindle on or off.</p>
	<p>宏代码功能9/对刀按钮：单独按下按钮,宏代码功能9输出;按下  +  按钮,执行对刀操作.</p> <p>Macro-9/ probe-Z button:When press the button alone,macro function-9 works; When press the  + ,probe Z</p>
	<p>宏代码功能10按钮：按下按钮，宏代码功能10输出</p> <p>Macro-10 button:press the button,macro function-10 works.</p>
	<p>功能按钮:用来实现组合按钮功能</p> <p>Function button:When you press the button, then press the other button to achieve the combination function.</p>

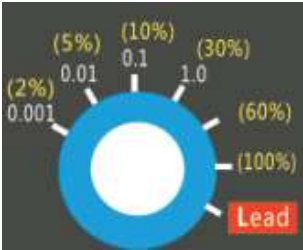
## ● MACH3手轮按键功能说明

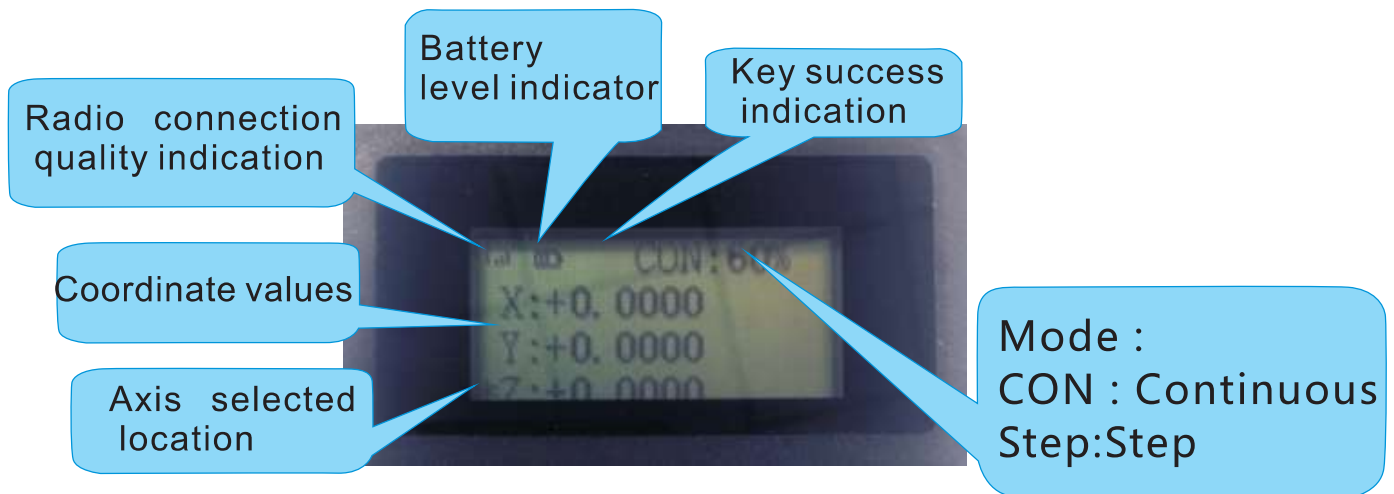
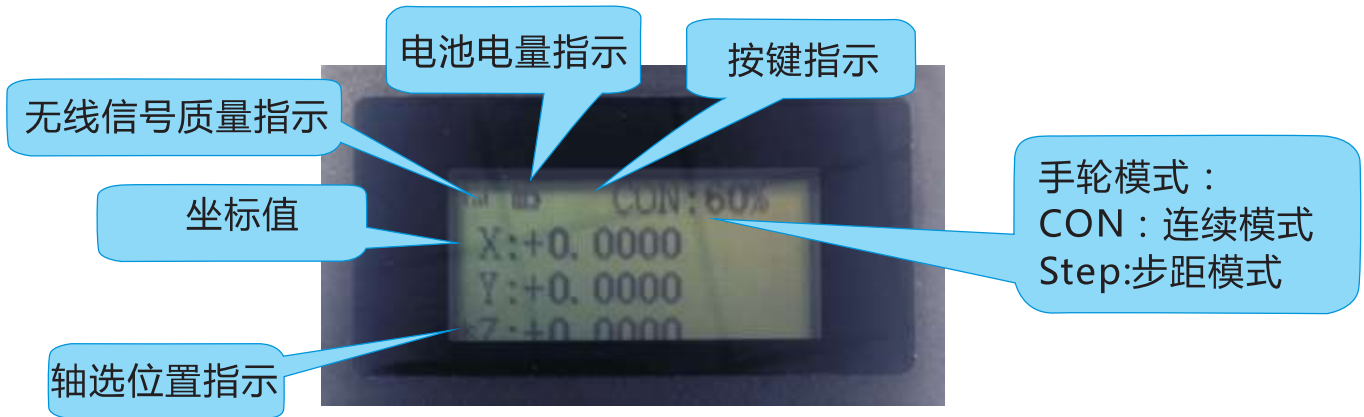
对应图标 Icon	功能 Function
	<p>连续按钮：按下按钮，手轮进入连续模式 MPG button:press the button,Hand wheel into Continuous mode.</p>
	<p>步距按钮：按下按钮，手轮进入步距模式 Step button: press the button,Hand wheel into Step mode</p>
	<p>轴选择波段开关：OFF位置，关闭电子手轮功能。 X,Y,Z,A,B,C:实现对应的X,Y,Z,A,B,C:6个轴选择功能。 Axis selection band switch: OFF position to switch off MPG X, Y, Z, A, B, C: 6 axis selection function.</p>
	<p>倍率开关： 0.001 ( 2% ) :当手轮在步距模式时,单位是0.001;当在连续模式时,手轮速度是2%. 0.01(5%):当手轮在步距模式时,单位是0.01,当在连续模式时,手轮速度是5%. 0.1(10%):当手轮在步距模式时,单位是0.1,当在连续模式时,手轮速度是10%. 1.0(30%):当手轮在步距模式时，单位是1.0,当在连续模式时,手轮速度是30%. 60%:当手轮在连续模式时,手轮速度是60%. 100%:当手轮在连续模式时,手轮速度是100%. Lead:无功能</p>



波段开关对手轮功能起到控制作用，手轮的各种功能，通过波段开关的档位切换，而进行相应切换

to control the various function of the hand wheel through the band switch

对应图标 Icon	功能 Function
	<p>Selection speed :</p> <p>0.001 ( 2% ) :When handwheel in Step mode,move unit 0.001;when in Continuous mode,move speed is 2%</p> <p>0.01(5%):When handwheel in step mode,move unit 0.01;when in Continuous mode,move speed is 5%</p> <p>0.1(10%):When handwheel in step mode,move unit 0.1;when in Continuous mode,move speed is 10%</p> <p>1.0(30%):When handwheel in step mode,move unit 1.0;when in Continuous mode,move speed is 30%</p> <p>60%:When handwheel in Continuous mode, move speed is 60%</p> <p>100%:When handwheel in Continuous mode,move speed is 100%</p>



说明：

按键指示：当按下按键，接收器接收到按键值后，该指示灯闪烁一下，表示按键操作成功。

倍率指示：当按下MPG按键，波段开关选择2%，5%等，对应不同速度；当按下step按键，波段开关选择0.001,0.01等，对应倍率值；当按下Continuous按键，波段开关选择2%，5%等，对应不同速度

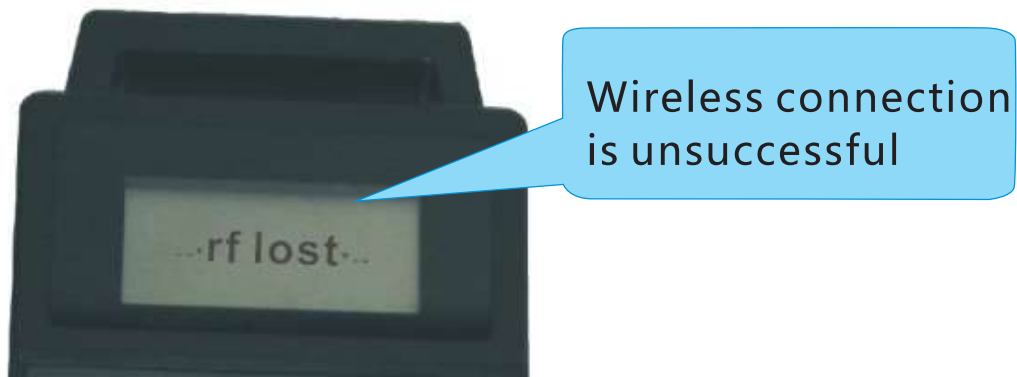
轴选位置指示：轴选开关位置，对应LCD显示轴选。X代表X轴工件坐标,X1表示X轴机械坐标.

Explantion :

Key success indication:When you press the button,the receiver receives the key value,the indicator flashes about,indicating successful key operation.

Speed indicator:When you press MPG button,band switch to select 2%,5%...,LCD display CON and different speed.When you press Step button,band switch to select 0.001,0.01...,LCD display Step and different speed.

Axis selected location:Axis selection switch position,LCD display axis selected. X: X axis workpiece coordinate axis, X1: X axis mechanical coordinate

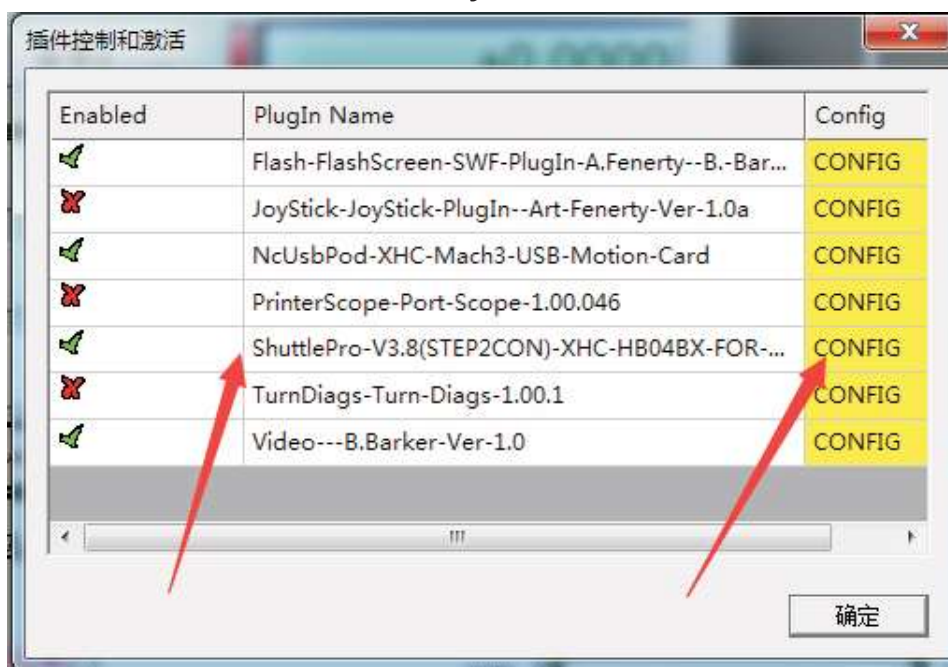


当无线MPG和USB接收器连接不成功（比如USB接收器没有插上电脑），则无线MPG的LCD会如下显示：

When the wireless USB receiver is connected MPG and unsuccessful (eg USB receiver does not plug in the computer), the wireless MPG's LCD will appear as follows:

1.打开软件，在"Config"配置菜单下,选择"Config Plugins"配置插件找到手轮插件"ShuttlePro-VXX-XHC-HB04BX-FOR-MACH3"，点击黄色"CONFIG",会弹出手轮配置窗口，在窗口里面设置宏功能按键，

Open Mach3 and go to the "Config" menu choice and select "Config Plugins". You should see "ShuttlePro-V3xx-XHC-HB04BX-FOR-MACH3", Click the "CONFIG" in yellow and macro button function as you wish.



2.如下图所示，可以直接在macro-1的下拉菜单中选择自带的扩展功能，保存之后即可生效。

如果你自己编写了宏代码文件，你可以根据下面的图示进行设置：  
 第一步:点击Macro-1的下拉菜单按钮，选择Custommacro#1; 点击Macro-2的下拉菜单按钮，选择Custom Macro#2,以此类推，将Macro1-Macro-8设置完成. 点击Macro-9下拉菜单按钮,选择OEM Button#1,将Macro-10选择为OEM Button#2.

第二步:在下面Macro-1对应的Macro number 1输入你需要的M代码，在下面Macro-9对应的OEM Custom Code#1输入你需要的OEM代码.以此类推,将其他按钮设置完成.最后点击OK保存设置.

(你输入的M代码必须已经拷贝到Mach3>Macro>Mach3Mill里面否则无法工作)

# ● 插件说明 Plugin instructions

**Macro-1**

- Custom Macro #1
- Custom Macro #2
- CV feed toggle
- Cycle MPG jogging mode
- Flood on/off
- FeedUp
- FeedDn
- Feedrate reset
- Goto Z's
- Go Home
- Goto Safe\_Z
- Home All
- Home Z (Turn)
- Home X,Home Z
- Ignore Tool Change togg
- Jog Follow
- Jog Toggle
- Jog Step Incr++
- Jog Step Incr--
- Jog increment cycle
- Joystick Toggle
- Jog Step/Conti/MPG
- Lock/Unlock Movement
- Lock/Unlock Shuttle

**1** (Red arrow pointing to Macro-1 dropdown)

**2** (Red arrow pointing to Macro number 1 input field)

**3** (Red arrow pointing to Custom OEM Code #1 input field)

Custom OEM Code #1:

Macro number 1:

2.As shown in the figure below, you can select the extension function of the plug-in directly from the drop-down menu of macro-1, which will take effect after saving.If you write your own macro code file, you can set it according to the following illustrations:

**First step:**Click the Macro-1 drop-down menu button,choice "Custom Macro#1" , Macro-2 choice "Custom Macro#2", And so on.Click Macro-9 drop-down menu button,choice "OEM Custom Code#1" , Macro-10 choice "OEM Custom Code#2" .

**Second step:**In the following "Macro Number" input M code you need.Macro-1 corresponds to Macro number 1. and so on. Macro-9 corresponds to OEM Custom Code#1, Macro-10 corresponds to OEM Custom Code#2.

(The M code you entered must be copied to the Mach3> macro>Mach3Mill folder)



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此使用手册的出版日期为2017年2月。关于此日期后上市的产品驱动程序的变化，  
请登录公司网站查看并更新，或与我们售后联系。