

## *iMach<sup>III</sup> P3 CNC Control Pendant*



## PREFACE

Any machine tool, including computer controlled machine tool, is potentially dangerous. VistaCNC LLC accepts no responsibility for any damage or injury caused by its use. It is your responsibility to insure that you understand the machine you are using and the procedures for safety operations.

If you are in any doubt you must seek guidance from a professionally qualified expert rather than risk injury to yourself or to others.

Information in this document is subject to change without notice. The manufacturer does not make any representations or warranties (implied or otherwise) regarding the accuracy and completeness of this document and shall in no event be liable for any loss of profit or any other commercial damage, including but not limited to special, incidental, consequential, or other damages.

## **WARNING**

E-STOP switch button in iMach<sup>III</sup> P3 CNC Control Pendant only provides  
Emergency STOP signal to Mach3 CNC application.

For further protection in CNC operation, other emergency protection methods  
may be needed.

## FEATURES

- Plug n' Play USB connection and controls.
- Step, Velocity and Continuous mode jogging through MPG.
- Feed rate, Spindle speed, and Slow Jog rate change through MPG.
- E-Stop button with flash LEDs indicator.
- Program Cycle Start and Feed Hold button with LED indicator.
- Spindle control button with LED indicator.
- 6 Axis selections.
- Axis Referencing and zeroing control.
- 2 custom control functions.

## PLUGIN


- Download the latest iMach3-P3 v4 Plugin from [www.vistacnc.com](http://www.vistacnc.com) download page.
- Move the plugin file to Mach3 Plugins directory.
- Start Mach3 application.
- Click Config from menu, select Config Plugins, and enable iMach3-P3-Pendant.
- Close Mach3 application and restart Mach3 application.

## CONNECTION

Directly plug the USB end of the cable into any USB port on the PC.

## FUNCTIONS and OPERATIONS

### 1. Axis selection

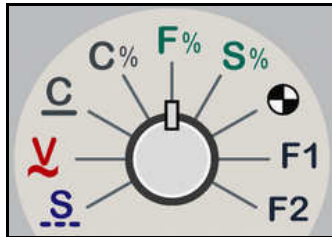
Single click the side button  to select an axis to jog. Steady-on LED indicates the selected axis.

LED X and LED Y are ON at the same time when Axis B is selected. LED Z and LED A are ON at the same time when Axis C is selected.

### NOTE:

Single clicking a button requires pressing and releasing the button once within 0.5 to 1 second. The action is similar to single clicking a button on Mach3 screen.

## 2. MPG (Manual Pulse Generator) mode selection and Control button operation



Select MPG mode in Jog Mode selection:

Single clicking the stop button  will open or close the TAB window.

### 2.1 Step mode : One step per MPG click (detent).

Pressing and holding the side button in Step mode will temporarily change MPG mode to Velocity mode.

Double clicking the stop button in step mode will cyclically select the step size based on step size setup in PlugIn Configuration Window. See Pendant PlugIn Configuration section for more information.

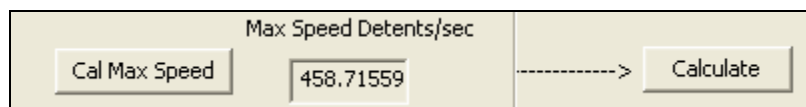
Step size can also be set up directly on Mach3 screen. See Mach3 manual for more information.


#### NOTE:

Double clicking a button requires pressing and releasing the button twice within 0.5 to 1 second. The action is similar to double clicking a button on Mach3 screen.


### 2.2 Velocity mode : Axis moves at 0 to 100% of maximum axis speed based on how fast the MPG wheel is turned.


Speed change sensitivity can be adjusted on Mach3 screen. Select Function Cfg's in main menu, then Calibrate MPG.




**2.3 Continuous mode** : Axis moves at Slow Jog Rate. The axis movement is independent to the speed at which the MPG is turned.

Pressing and holding the side button in Continuous mode will temporarily change MPG mode to Slow Jog Rate mode.

**2.4 Slow Jog Rate mode** : Changes the speed used in Continuous mode. The rate is displayed in Slow Jog Rate DRO (Digital Read Outs) on Mach3 Screen.

**2.5 Feed Rate mode** : Changes feed rate overridden (FRO) rate from 1% to 250 %. FRO rate can be changed when axes are moving.

**2.6 Spindle Speed mode** : Changes spindle speed overridden rate from 1% to 250 %. Spindle speed can be changed when the spindle is running.

**2.7 Reference buttons** :

Double clicking the stop button will zero the currently selected axis.

Pressing and holding the side button, and double clicking the stop button will reference the currently selected axis.

#### NOTE:

*Referencing currently selected axis will set the origin of the axis in Machine Coordinate. The action depends on how the home switch is defined and configured. See Mach3 manual for more information.*

*Zeroing the currently selected axis will set the current position of the axis to zero by changing the axis offset in current Work Coordinate.*


**2.8 Function buttons**  :

Double clicking the stop button will execute predefined Mach3 OEM button, Custom Button, or Custom Macro. The operation can be setup in PlugIn Configuration Table.


While pressing and holding the side button, double clicking the stop button will execute predefined Mach3 OEM button, Custom Button, or Custom Macro. The operation can be setup in PlugIn Configuration Table.

### 3. Control Operation




**3.1 SPINDLE ON / OFF** push button : While pressing and holding the side button, single clicking this button will turn ON the Spindle if the Spindle is OFF, or turn OFF the Spindle if the Spindle is ON.

When Spindle is on, LED embedded in the Spindle button flashes at ½ second rate.

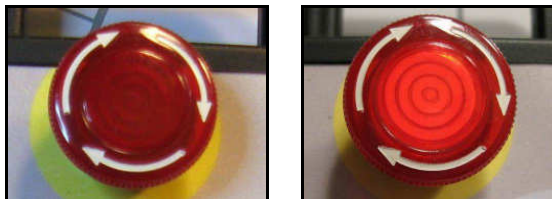
**3.2 START / HOLD** push button : While pressing and holding the side button, single clicking this button will cycle start the program if the program is not running or is in Feed Hold, or will feed hold the program if the program is running.

When program enters Cycle Start state, LED embedded in the button will flash at ½ second rate.

When program enters Feed Hold state, the LED will, in every second, flash twice in the first half second and stop flashing in the next half second.

**3.3 STOP / REWIND** push button : While pressing and holding the side button, single clicking this button will stop the program if the program is running, or will rewind the program if the line of the program is not zero, or will stop any axis movement.

### 4. E-Stop switch button



- Push E-STOP switch button down to send out E-Stop signal to Mach3 application and it turns to activate Emergency Mode in Mach3 application.

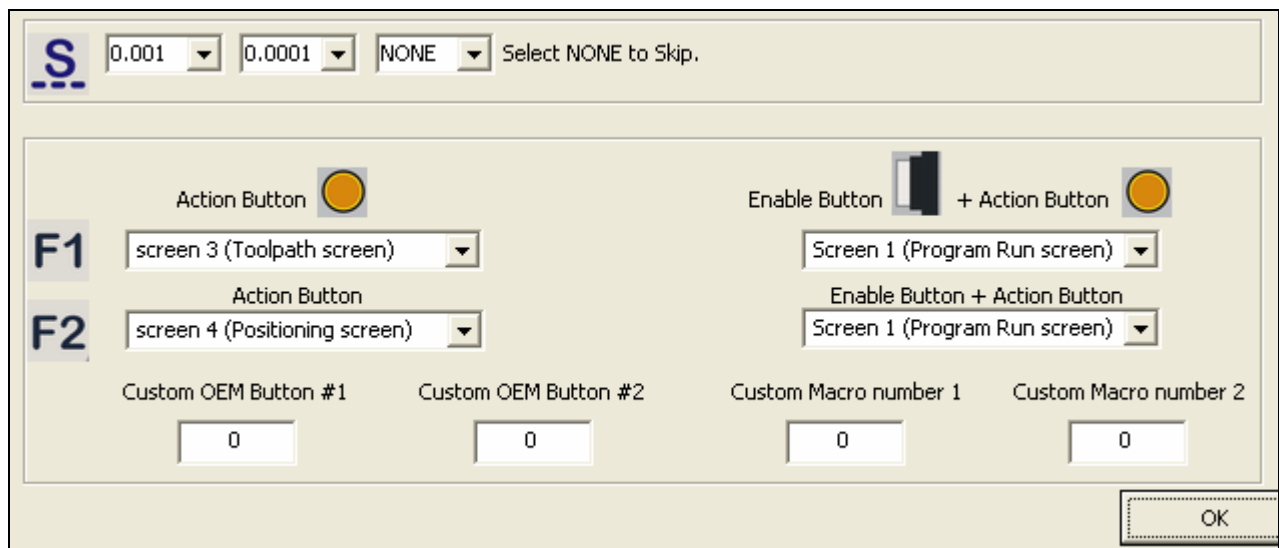
- The button will be locked down when pressed. Twist the switch to reset it on.
- When the button is pressed down and locked, the embedded LED will flash at ¼ second rate.
- When Mach3 application is in Reset mode, the LED will flash at ½ second rate.

### PENDANT PLUGIN CONFIGURATION

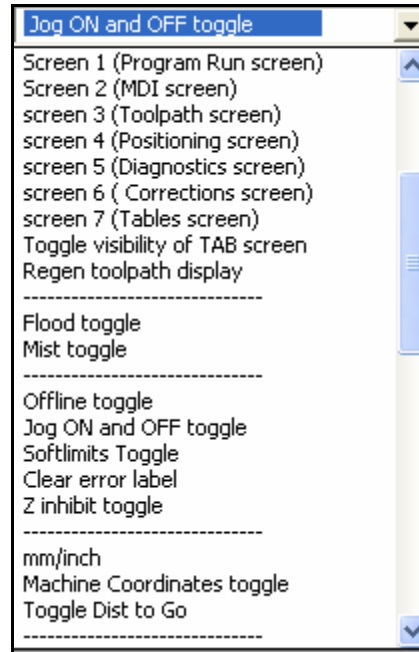
In Mach3 menu, select Config, then Config PlugIns



In PlugIns menu, click CONFIG



- **S**: Select predefined step size in each dropdown window. Select NONE to skip that window in cyclic step selection. Step size in the first window is used as the default step size.
- **F1 F2** Select one of 62 functions in the dropdown window:



Custom OEM button: Input any valid Mach3 OEM button number. See Mach3 manual for complete Mach3 OEM button number list.

Custom Macro Number: Input any Custom Macro Number. See Mach3 manual for more information about Mach3 Macro.

## SPECIFICATIONS

- Work with Mach3 R2.63 and above.
- 100 steps (clicks) per Rev MPG.
- MPG MTBF > 10000 hour.
- Shipped with 10' High Speed USB cable. Extendable to 15' with extension cable, or to 45' with USB hub cables.
- Size (over all) 6.1"(L) x 3.1"(W) X 2.7"(H)