

iMach^{III} M1 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.

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WARNING

E-STOP button in iMach^{III} M1 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.
- 100 steps high precision MPG.
- Step, Velocity and Continuous mode jogging through MPG.
- Feed rate, Spindle speed, and Slow Jog rate change through MPG.
- Program Cycle Start and Stop control buttons.
- 3 Axis selections.
- 3 custom control functions.



PLUGIN

- Download the latest iMach3-M1 v1.x Plugin from www.vistacnc.com download page.
- Move the plugin file into Mach3 Plugins directory.

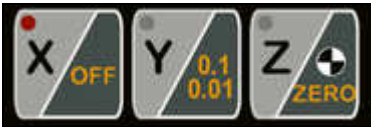
CONNECTION and START

- Directly plug the USB cable into any USB port on the PC.
- Start Mach3 application.

- Click Config from menu, select Config Plugins, and enable iMach3-M1-Pendant.
- Close Mach3 application and restart Mach3 application.

FUNCTIONS and OPERATIONS


1. Axis selection



Press X, Y or Z axis selection button to select an axis to jog.

2. MPG (Manual Pulse Generator) mode selection



- ❖ At any time, pressing and releasing SCR (SCReen) button  within 1 second will open or close the TAB window on Mach3 screen, and pressing and holding SCR button for more than 1 second and releasing the button will change Mach3 screens. Screen selection can be setup in PlugIn configuration table.

2.1 STEP mode

In STEP mode, the selected axis moves 1 step at each MPG click (detent) with the step size currently in the system.

- ❖ ***A fixed MPG feed rate can be setup in PlugIn Configuration table. This feed rate is used only when MPG moves in Step mode.***

2.2 VELOCITY mode

In VELOCITY mode, axis moves at 0 to 100% of maximum axis speed based on how fast the MPG wheel is turned.

- ❖ ***Speed change sensitivity and speed slow down ratio can be setup in PlugIn Configuration table.***

2.3 CONTINUOUS

In CONTINUOUS mode, axis moves at constant speed at Slow Jog Rate. The axis movement is independent to the speed at which the MPG is turned.

- ❖ ***To avoid accidentally moving MPG and axis, steps to delay the start of axis movement can be set in plugin configuration table.***

2.4 CONTINUOUS RATE mode

In C% mode, turning MPG changes the speed used in CONTINUOUS mode. The rate displays in Slow Jog Rate DRO (Digital Read Outs) on Mach3 Screen.

2.5 FEED RATE mode

In F% mode, turning MPG changes feed rate overridden (FRO) rate from 1% to 250 %. FRO rate can be changed when axes are moving.

2.6 SPINDLE SPEED mode

In S% mode, turning MPG changes spindle speed overridden rate from 1% to 250 %. Spindle speed can be changed when the spindle is running.

3. Function Buttons

3.1 ZERO




While pressing and holding the Enable Button , press and release the Zero Button to zero the currently selected axis.

- ❖ ***Zeroing the currently selected axis sets the current position of the axis to zero by changing the axis offset in current Work Coordinate.***

3.2 Step size selection button



While pressing and holding the Enable Button , press and release the Step size button to cyclically select the step size. Selected step size displays on Mach3 Screen. Different step sizes can be set up in PlugIn Configuration table.


3.3 JOG ON/OFF button



While pressing and holding the Enable Button , press and release the JOG ON/OFF to disable or enable jogging.

3.4 F1, F2, and F3 button




While pressing and holding the Enable Button , press and release the F1, F2, or F3 function button to execute predefined Mach3 OEM button, Custom Button, or Custom Macro.


4. Operation Controls



4.1 START / HOLD button :

- While pressing and holding the Enable Button , press and release START/HOLD button to cycle start the program if the program is not running or is in Feed Hold, or feed hold the program if the program is running.
- When program enters Cycle Start state, 3 axis selection LEDs flash one by one.
- When program enters Feed Hold state, all 3 axis selection LEDs flash twice in the first half second and stop flashing in the next half second.


4.2 STOP / REW button

- While pressing and holding the Enable Button , press and release STOP/REW button to stop the program if the program is running, or rewind the program if the line of the program is not zero, or stops any axis movement.

5. E-Stop switch button



5.1 E-Stop switch button

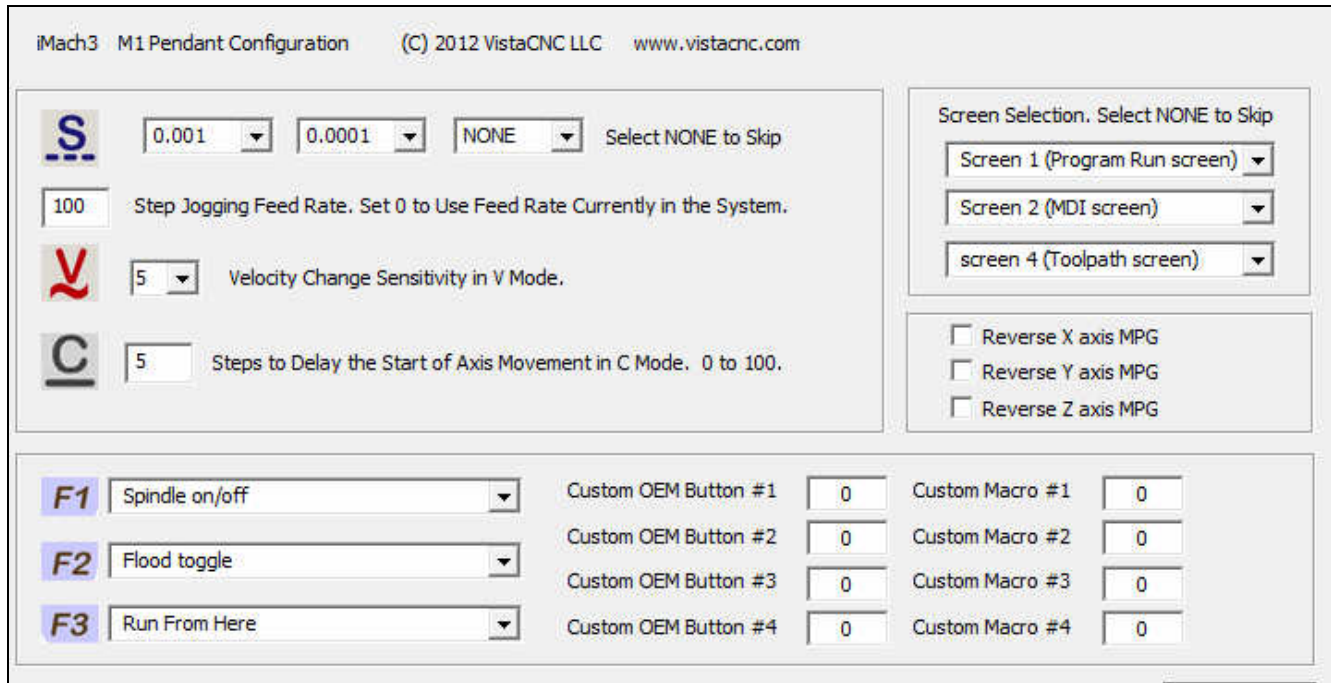
- Press E-STOP switch button to send out E-Stop signal to Mach3 application and activate Emergency Mode in Mach3 application.
- While pressing and holding the Enable Button , press the E-STOP button to exit Emergency mode.
- When in Emergency Mode, all MPG mode selection LEDs flash at ½ second rate.

PENDANT PLUGIN CONFIGURATION

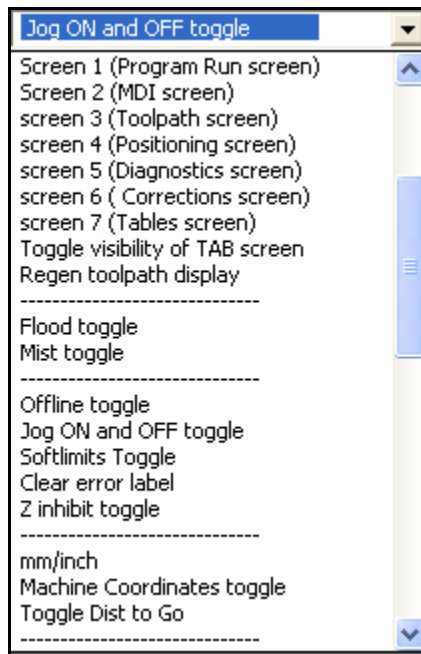
In Mach3 menu, select Config, then Config PlugIns



In PlugIns menu, click CONFIG



- Number in **Step Jogging FeedRate** is the feed rate only used in MPG step jogging. When MPG wheel stops, the feed rate and FeedRate Overridden rate (FRO) automatically changes back to the number which was used before MPG moving. Set 0 to use current FeedRate and FRO rate in the system.
- Numbers in **Speed Change Sensitivity** is used to adjust the sensitivity of V mode. The smaller the number, the less turns are needed to reach maximum axis speed.
- **Steps to Delay Start** is used to set the number of steps to delay to start axis movement. In C mode, axis starts to move only after that many numbers of steps are turned from MPG wheel.
- F1 to F3 buttons each has 62 functions to select:



- 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) 7"(L) x 2.6"(W) X 2.5"(H)