

iMach^{III} Spindle Tach



Features

- Plug n' Play USB connection.
- Self powered through USB.
- Integrated Reflective Object Sensor.
- 1 to 32000 RPM measurement.
- No input signal pin needed.
- No Mach3 application configuration.
- User defined display DRO.
- Ratio settable when Sensor is not pointed to the Spindle.
- Selectable low Spindle speed action.

PlugIn

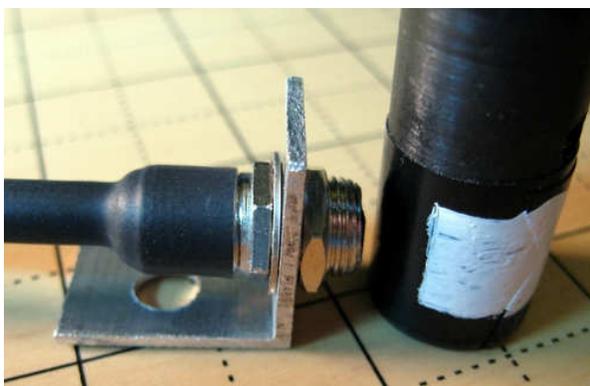
- Download the latest iMach3_Spindle_Tach.dll Plugin from www.vistacnc.com download page.
- Unzip and move the plugin file to Mach3 Plugins directory.
- Start Mach3 application.
- Click Config from menu, select Config Plugins, and enable iMach3_Spindle_Tach.
- Click CONFIG to start configuration. See Configuration section of this manual for detailed instructions.
- Close Mach3 application and restart Mach3 application.

Connection

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

Installation

- The Sensor can be installed in horizontal position when it is pointed to the Spindle axis, or in vertical position when pointed to the flat side of a wheel.



- Distance between the Sensor and the reflector should be 0.05" to 0.15" (1.5 mm to 4 mm).
- Only one dark area and one bright area are needed on the track the sensor pointed to.
- Black paint and white paint are recommended to cover the track areas.
- For RPM less than 3000, black sticker paper can be used as base and aluminum sticker paper as reflect material. (2" x 3" of each paper is included).



- The ratio between dark and bright areas is not essential, and 1 to 1 ratio is recommended.
- The Sensor has 3/8-32 UNEF thread (9.525mm Diameter), and two nuts and one lock washer are included and can be used to fix the sensor with adjustable extrude length.

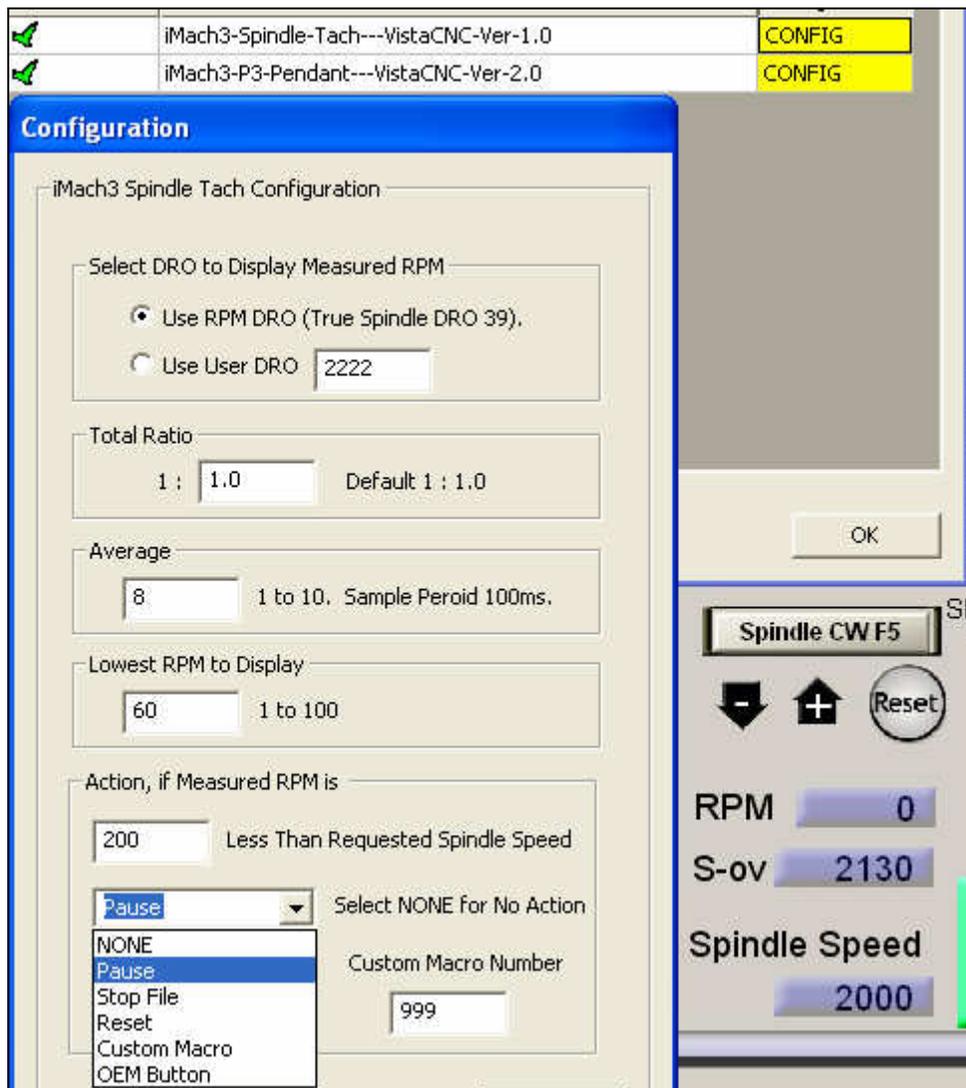


PlugIn Configuration

- In Mach3 menu, select Config, then Config PlugIns



- In Plugins menu, click CONFIG



- Select Use True Spindle DRO if you want to use RPM DRO in Spindle Speed to display the measured RPM number.

NOTE

- In some Mach3 versions (Between 3.042.030 and 3.042.040), the measured RPM could not be displayed in RPM DRO (True Spindle DRO) in Mach3 default Screen.
- A modified screen called 1024_RPM.set within the zipped file can be used to display the measured RPM. Screen 1024_RPM .set is based on 1024.set. The only modification is that the RPM DRO number is changed from 39 to 2222.
- To use 1024_RPM.set, put 1024_RPM.set in Mach3 folder. In Mach3 application, click “view”, select “load screen”. In iMach3 Spindle Tach plugin configuration, select Use User DRO and set DRO to 2222.
- If user DRO is used to display Spindle RPM in a custom screen, select Use User DRO and set DRO number to user DRO number.
- If the sensor is installed to point to a moving part other than Spindle, a calculated ratio can be put into Total Ratio window.
- To get more stable RPM display, 1 to 10 samples can be selected to average the RPM number. Spindle RPM is updated every 100 ms.
- Spindle RPM DRO will display 0 if the Spindle stops or Spindle speed is lower than the number which is put in window “Lowest RPM to Display”. Lower the number, longer the time to update the DRO to 0 if Spindle stops. For example, it takes 60 seconds to get one sample in 1 RPM and takes at least 60 seconds to know if Spindle stops.
- When Spindle is turned on and the measured RPM is less than Requested Spindle Speed with the number which is put in the window “Less Than Requested Spindle Speed”, action selected in drop down menu will be directed to Mach3 application.

NOTE:

- The Spindle Overridden Speed (S-ov) does not affect above action.
- Requested Spindle Speed is displayed in Spindle Speed DRO in Spindle Speed section in the screen.
- See Mach3 manual for complete Mach3 OEM button number list and how to use Mach3 Macro.

Specifications

- Work with Mach3 R2.63 and above.
- 1 - 32000 RPM measurement. Resolution 1 rpm.
- 10 feet long cable from Sensor to USB connector. Up to 15 feet length can be added by using USB extension cables (USB ext cable not included).