



# Plug and Play Spindle / VFD Setup Guide

*v2022Q1.1*

**i Info**

If you are using Mach3 CNC controller software, please refer to our [Mach3 CRP800 VFD Setup Guide](#).

## Spindle Controller Connections

### 14-Pin SP/THC Cable



*CNC Controller*



*Spindle Controller*

Connect the 14-pin SP/THC cable to your Spindle Controller and CNC Controller.

### **⚙️ 8.7 HP Plug and Play Spindle / VFD System**

If you are upgrading to the 8.7 HP Plug and Play Spindle / VFD System, ensure you use the new 14-pin cable that came with your 8.7 HP system.

Systems produced after mid-February 2022 include a hardwired SP/THC cable that connects directly to the CNC Controller.

## M23 Spindle Cable



Connect the male end of your M23 spindle cable to your Spindle Controller, aligning the arrow on the cable connector with the arrow on the panel mount connector.

## Power Cable

Plug the power cable from the Spindle Controller into an appropriate receptacle, based on your application below.

### 3 HP and 4 HP Plug and Play Spindle / VFD System

- L6-30 receptacle (200-240VAC single-phase)

### 8.7 HP Plug and Play Spindle / VFD System

- L21-30 receptacle (200-240VAC three-phase)
- If running on single-phase, refer to **power requirements** for this system.

## Spindle Connection

### 3 Avid HP Spindle



Connect the female end of the M23 spindle cable to the spindle, aligning the arrows as in the previous step.

## 4 Avid HP Spindle



*M23 Cable Seated*



*M23 Cable Fully Tightened*

Connect the female end of the M23 spindle cable to the spindle. Ensure the connector is seated before tightening.

### Assembly Note

It may be necessary to rotate the M23 cable to allow it to seat properly. During this process you will feel the connector drop into place when the pins and sockets of the connector align.



## 8.7 Avid HP Spindle



*M23 Cable Seated*



*M23 Cable Fully Tightened*

Connect the female end of the M23 spindle cable to the spindle. Ensure the connector is seated before tightening.

### Assembly Note

It may be necessary to rotate the M23 cable to allow it to seat properly. During this process you will feel the connector drop into place when the pins and sockets of the connector align.

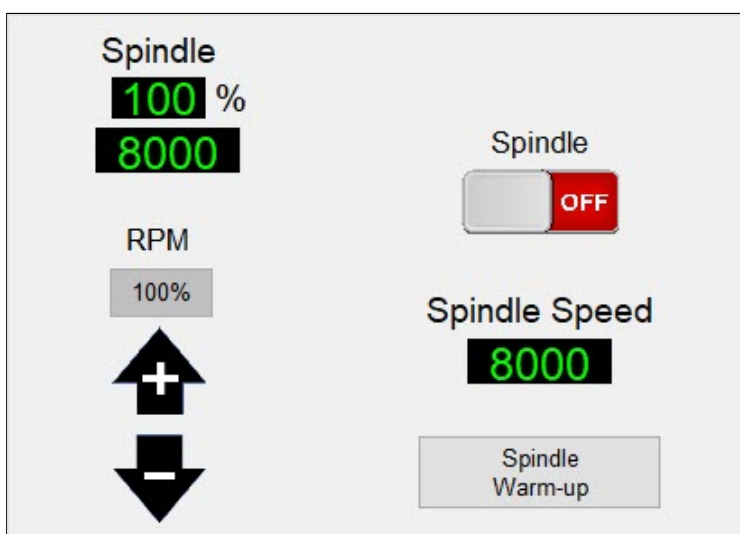
# Mach4 Setup

## **i** Mach4 Version

Use of the 4 HP Avid CNC spindle requires version 2.2.2 or newer of Mach4 and use of the 8.7 HP Avid CNC spindle requires version 2.1.0 or newer of Mach4. If you need to update your installation of Mach4, please visit the [Mach4 downloads](#) page and Contact Us with any questions.

After the physical connections are complete, the next step is to configure Mach4 for your spindle. If you have not configured Mach4 for your machine, follow the steps in the [CNC Software Setup Guide](#).

If you are currently using Mach4, you will need to update your Mach4 configuration using the [Avid CNC Mach4 Configuration](#) menu. When selecting a Cutting Tool, choose "Spindle" (or "Spindle / Plasma" for dual-use machines) and the appropriate Spindle Type.



Once you have configured Mach4 with a Spindle cutting tool, you will see the spindle control functions shown above. For more detail about each of the buttons and DROs, refer to the [Mach4 Users Guide](#). Each spindle type has a pre-defined minimum and maximum speed, as shown in the table below.

Spindle Type	Min Speed (RPM)	Max Speed (RPM)
3 HP Avid CNC spindle	8000	24,000
4 HP Avid CNC spindle	6000	24,000
8.7 HP Avid CNC spindle	1000	24,000

To manually adjust the spindle speed, enter a speed within your spindle's range into the Spindle Speed DRO. If you enter a value too low, it will bump up to the minimum, too high and it will bump down to the maximum.

Once you have input a valid spindle speed, click the Spindle toggle button to turn the spindle on and run it at that speed (Mach4 will need to be enabled to turn the spindle on).

Check that you can adjust speed while the spindle is on by entering various speeds (between your spindle's min and max speeds) into Spindle Speed DRO and hit enter.

If the spindle responds to these speed commands, your VFD and Spindle package is ready for use!

If you experience any trouble while following this guide, please feel free to Contact Us.

