

Setting Up RS232 Communications

Every machine tool control from the Mazak Mazatrol, through Okuma, Mori Seiki, Haas and certainly Fadal has the option to send and receive programs via the RS232 port. RS232 is an IEEE standard in electronic communication between computers and has remained unchanged for years. The exact parameters of this standard are beyond the scope of today's Tech Tip, but it is important to have a basic understanding of the protocol when trying to set up a machine to communicate to your PC for file transfers.

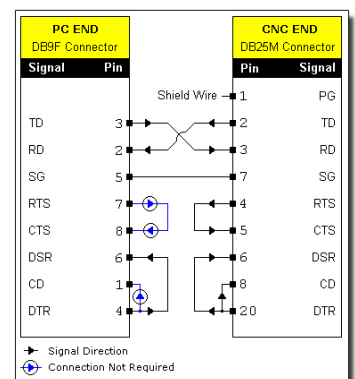
Step #1:

First, you need to have the correct wiring. The photo shows the most common wire configuration. This shows a female 9 pin serial port connector from the PC to a male DB-25 connector (Fadal only are male) which is found on the machine side. All but Fadal machines will have a female 25 pin connector. We offer pre-molded cables or can make one specific for the length you need if you are setting this up for the first time. Everything is in stock.

NOTE:

If you do not have a 9 pin male serial port on your PC, we highly recommend you have one installed. The USB to 9 pin serial adapters do not work well, and not at all in many circumstances, so do yourself a favor and have one installed before beginning.

Figure 1



Step #2:

Now you have the right cabling, but you do not have communication software on your PC to send and receive programs with. We offer a very solid product and actually give you \$5 to take it (\$195 up front, & \$200 credit on account to use next time). It is great for simple sending and receiving, or if you are short on memory and need to DNC (Drip Feed) to the control, it is a solid solution.

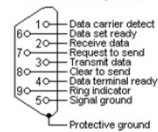
Depending on the CAD/CAM program you are using such as MasterCAM, SurfCAM, FeatureCAM or others, many have their own communications program for sending and receiving, so you may not need a 3rd party add-on for communications.

Step #3:

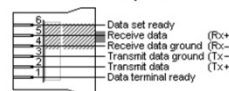
Now you have communications software, the correct cabling and now you need to make sure your Fadal's communications port is working properly. This document takes you through the entire troubleshooting process of communication with your Fadal and the first step is to be sure your Fadal's control is working correctly. You simply short pins 2 & 3 of the 25 pin D-sub connector at the rear of your machine near the coolant pump outlet and run the 1030 board diagnostics as per the troubleshooting document. Photo #2 shows the pinout of this connector so you are sure to short out the right pins for testing.



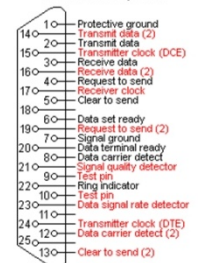
RS232 DB9 pinout



DEC MMJ pinout



RS232 DB25 pinout



Step #4:

Setting communication parameters is a snap and they must be matched between the Fadal control and your PC's new FadalCNC-DNC software. The baud rate is really the only variable you may need to change. On the Fadal control, enter SETP at the ENTER NEXT COMMAND prompt. This will take you into your control parameters. On the first page, in the center is your machine's baud rate setting. Either change it to what you want or note the setting. Press MANUAL to exit parameters. If you have to change it, cycle the machine power to be certain this setting is ready for you to use.

In your communications software, set the baud rate to match, then finish by making sure the data bits are set to 7, 1 stop bit and Even parity. Also double check that XON/XOFF is selected for flow control. Especially important when you DNC or drip feed.

Step #5:

Now all is good. Cabling correct, the Fadal control tested good, you have installed FadalCNC-DNC software for use, you have matched your communications settings, so it's time to send a file. Before you do this, the file you send must have some key components:

- The program must begin with a percent sign (%).
- The next line must be the program number starting with the letter "O" not the number zero. Following, you can have 4 digits such as O2233 (Program description in parentheses).
- The program must end with a percent sign (%).



Step #6:

At the Fadal control, you can either use your space bar to get to the communication options for sending and receiving, or just simply type this at the Fadal control to set it up to receive: TA,1,2 and press ENTER. It is now listening.....

Now go to your communications program, open the file you want to send and press SEND. You will see the program scrolling on the screen generally while it's loading, but if not, the control will tell you that all was received properly when done and you can verify by looking in your program directory for the program number you just uploaded.

That's it. How simple was that!