



I mounted the VFD above the lathe to help prevent contamination of the drive with shavings and finish over spray. If you have young people in your shop, it might be a good idea to mount the VFD in an enclosure. Be sure to vent the box if you do mount the VFD inside. You can see the bottom of the disconnect above the VFD in this photo.



My disconnect. It is something I had lying around. If you would prefer, a simple cord and plug would work. My system is on 240 VAC. The blower, shown below, is on 120. I brought 4 wires, 2 hot, neutral and ground into the disconnect. **NEVER USE THE GROUND FOR A NEUTRAL!** That has the possibility of putting a live voltage on the case of everything grounded in the house. Not a good idea.

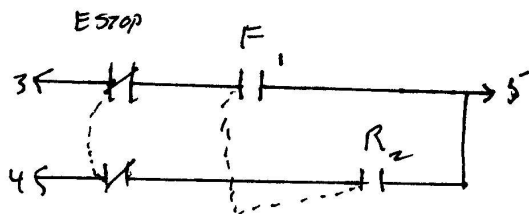
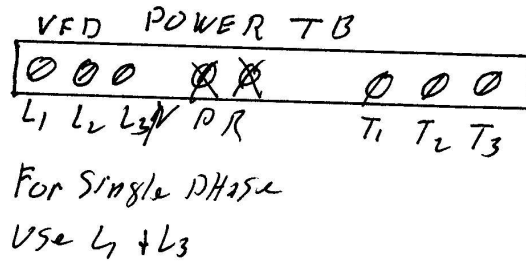
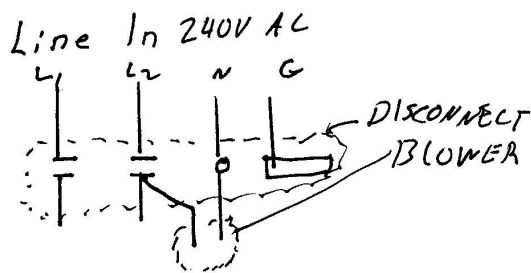


center. I am a  
LAW in science, Murphey's Law.

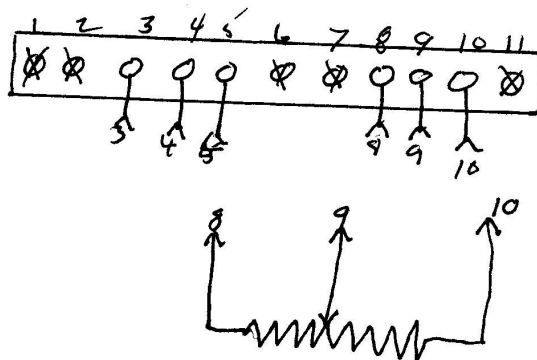
This is the layout and wiring of the controls. The 10K pot is on top, the Forward/Stop/Reverse switch is centered and the E-Stop switch is on the bottom. Once more all from my junk box. The E-Stop would not strictly be needed, but if I need to stop quickly for some reason, all I have to do is slap the Red button and run. Otherwise I would have to find the direction switch and turn it to the firm believer in the only absolute



The motor and blower. I use the blower to insure good air flow when the motor is turning slow. The motor will tend to heat up by itself without additional vent. They make motors with an extra large fan for use with VFDs but instead of \$50, the same motor will run over \$200. A simple furnace blower and some dryer ducting work well for the air flow.



	F	S	R	
1	X	○	○	X = MADE/Closed
2	○	○	X	○ = OFF/Open



This is the wiring for the VFD I bought. Be sure to run a ground to the VFD and then to the motor itself. The blower will run as soon as the disconnect is turned on. This is for a 240VAC system. If you are running 120 and can not get 240, there are VFDs for that voltage also.

The current requirements for that voltage are way high. I bought a 2hp VFD for a 1HP motor. That allows the VFD to operate well within its safe limits. It can be set to protect the motor very easily. The changes to the parameters I made are; F10 to 001, allows external controls for quicker speed, start/stop changes; F11 to 001 for pot speed control; F14 to 001 for coast to stop; F18 to set full current rating of motor. This is a calculation you will have to do from the Full Load Amp rating on your motor.

Using my scrap pile and some searching on line, I have some \$200 in the mods. The 1 hp motor was from Surplus Center at \$49 +ship and the VFD from Galco KBE2-2202-4 under \$130 + ship. Additional parts needed will be a 5 or 10k pot linear taper, selector switch with 2 maintained contact switches - center off (for forward/stop/reverse), E-stop switch that holds in stop position, box for controls, disconnect and assorted wiring. Hope this gives you a starting point. If you have any questions, I have this post on Subscription and I'll answer any Pms. If you have a question, probably others will also, so a quick post here might be best.

Charles