

Backwards with the Jet Mini! JML 1014VS.

On the JET JML 1014VS, (and I suspect on any other direct current variable speed lathe) the wiring diagram, shows power output to the motor, as plus and minus (+ & -) signs.

I took that to mean that the current is “directional”, you can hold either opinion about which way it “flows”. A search of the web, and a quick look at the (reprinted) navy manual on electronics implied to me that, if the current were to be reversed, so would the motor’s rotation.

Pulling the cover on the power supply, (with power unplugged) you will see that the D.C. power to the motor is connected to the power supply with two spade connectors, the males stick up from the board in one corner. There are large capacitors in there, so be careful, I have no idea for how long power is still in there, and this board puts out 162 volts, quite enough for a rude shock!

Just to check my theory, I tried switching the wires, putting the whole thing back together, plugged in and switched the lathe to “on” (at low speed). Result: The SuperNova chuck unwound from the spindle, and I was just able to catch it! Tighten the chuck, or pull it before you experiment!

At Radio shack they sell a switch labeled “DPDT Heavy Duty Center-Off Toggle Switch”. With contacts rated at 10 amps for 125 VAC or 6 amp at 250 VAC. It has a total of six screw connections, in three pairs, the center two are intended for power in, the ends for power out. It ran under \$5.00. Similar switches are at Lowes, and Hope Depot, for slightly more money.

I wired from the + and – poles on the power supply, to the center pair, cross-wired the corners, took power out to the motor by wiring to one of the end pairs, housed the switch at the end of the lathe (in a ½ inch plastic conduit covered box, ¾ would have worked easier) , and tightened the chuck firmly in place. A careful selection of wire ends lets you do this without modifying the existing wiring. You could hold the switch housing on with rare earth magnets, although I drilled and tapped two holes and fixed the ground wires to one screw.

Result: A ½ horsepower, variable speed, reversible lathe, speeds from 500 or so r.p.m. up to 3900, and the ability to sand almost up to the local standard.

I have tried the lathe for “reverse hollowing” by hand, and for sanding obdurate grain, and both work just as well as on the Powermatic 3520, although the minimum speed is much higher. ½ Horsepower is plenty, although you have to stay gentle, which is always a good idea on any lathe.

You will need the following:

A clear area around the lathe to work in. A wire crimping tool. Wire strippers. Various screwdrivers. Needle nose insulated pliers. Good point-able light, so you can see what you are up to, these are little parts, and will disappear into many backgrounds.

A double pole throw, double pole switch, capable of handling ½ horsepower.

I used the Radio Shack switch listed above, which has an “off” position between the “ons”.

About three feet of “three wire” round 18 gauge round flexible cable. (I used 16 gauge and it is hard to fit through the grommet.) The modern supply will keep you in the right temperature range. If there is a choice get the most flexible.

There should be one white, one black, and one insulated green wire to carry grounding through the circuit.

Several kinds of “connectors”: the motor wire is installed onto two “male spades” at the circuit board, so you need females on the control box end of the cable, and a ring connector to fit around the grounding screw. At the switch you will need six (6) ring connectors four of which must hold two 18 gauge wires. Plus you will need to “female spades” to plug the motor into.

I connected the ground wire to ring connectors and fastened it to a mounting screw which was drilled and tapped into the end of the lathe frame. It could be carried through to the motor by any connection type, that keeps the ground intact, and keeps it out of the way.

Some form of box to hold the switch, I used a rather heavily modified ½ inch plastic conduit “L” pull, to get the screw-on top, I recommend either using a ¾ inch model or finding something else with a bit more space. The switch is crowded, like a rush hour subway, in the ½ inch box.

WHEN WORKING WITH ELECTRICAL PARTS, UNPLUG, WORK AWARE, HAVE ENOUGH LIGHT, AND MAKE EACH CONNECTION AS IF YOUR LIFE DEPENDED ON IT!

If you run into problems, please call me at (303) 972 4716 or e-mail at sandblperry@msn.com and I would be delighted to try to assist.

