Woodworking machinery at its best!

W820 Lathe
Speed Controller & Motor Replacement
Using W821 Specification Parts

If you wish to carry out this conversion you will need to specify a modified W821 Control Box when placing your order. If your existing motor is serviceable, you will need to change only the control box.
The motor may be checked by connecting it to a car battery charger – if the motor turns slowly without any unusual noises or sparking, it should be OK.

Please note that this is a DC motor and under no circumstances must it be connected directly to the mains.

1) Remove the existing speed Controller Box and discard it. No part of this is needed for the conversion.

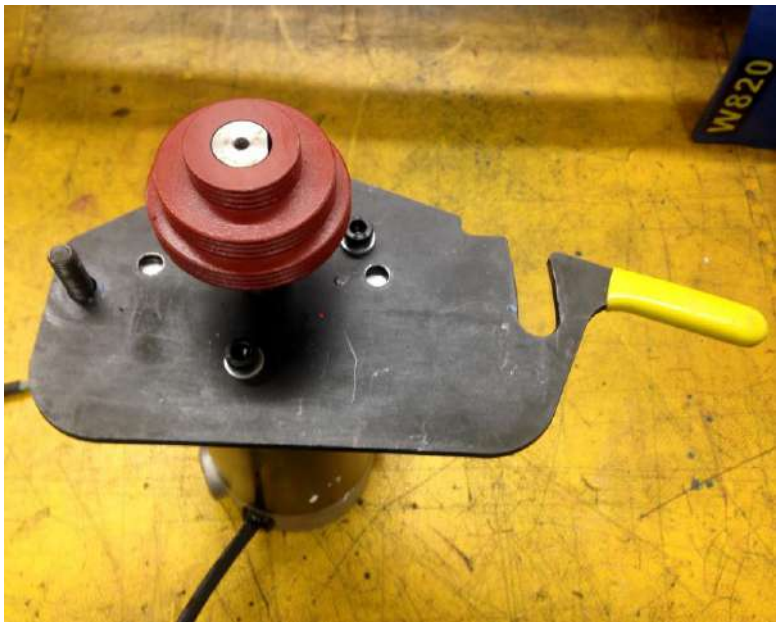
2) If the motor is being replaced, remove that too.

3) Remove the pulley and mounting plate form the motor – discard the motor and pulley.

4) Mark the motor mounting plate with the position of holes corresponding to the three threaded holes in the end of the new motor. Drill three 7mm diameter holes at these points.

5) Mount the motor on the plate with three M6 x 15mm bolts and washers (we can supply these bolts – please ask when ordering the motor). Ensure that the motor cable is pointing to the rear of the lathe and that the motor spindle clears the hole in the centre of the mounting plate.

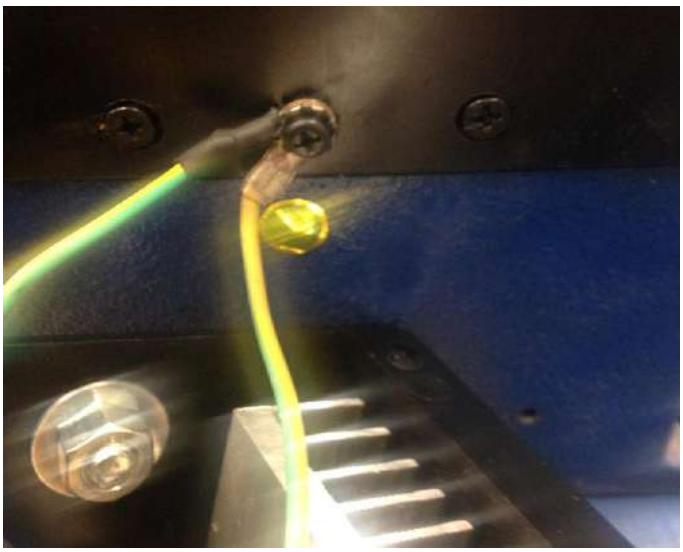
6) Fit the replacement pulley to the motor shaft, ensuring that it is the correct way around.



7) Pass the power cable that protrudes from the rear of the head stock through the top gland of the new control box and connect to the circuit board – the brown wire to the terminal marked AC1 and the blue wire to the terminal marked AC2.

8) Pass the cable from the motor through the lower gland in the new control box and connect to the circuit board – the brown wire to the terminal marked M+ and the blue wire to the terminal marked M -. If the motor runs in reverse when started for the first time, these connections should be reversed.

9) Connect both green/yellow earth wires to the main body of the lathe in the same way they were connected with the original motor and control box.

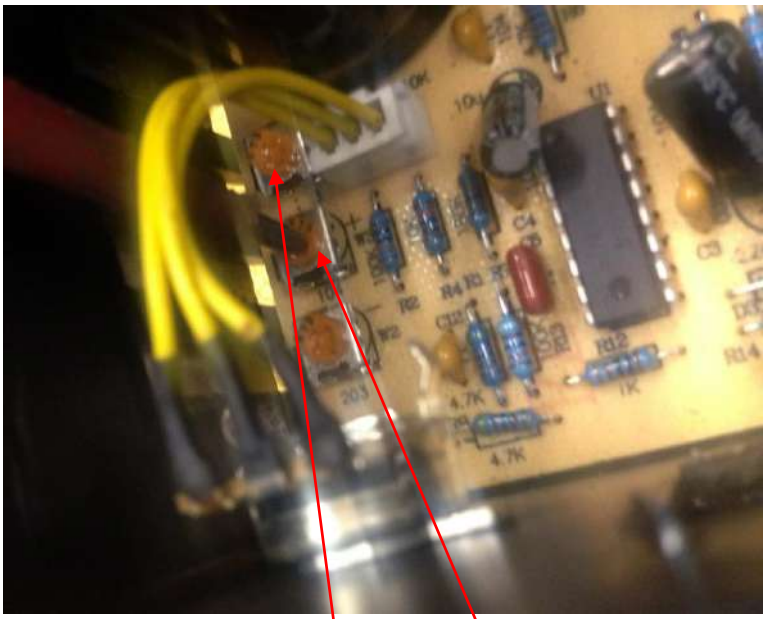


10) The mounting holes in the new control box won't correspond to the mounting holes in the lathe that were used to mount the original control box. You will need to mark the end of the lathe and drill new holes in order to mount the box. Offer up the box to the end of the lathe and mark through the mounting holes. Drill four 5mm holes and bolt securely to the lathe. We can supply nuts and bolts for this upon request.

11) Once all the components are securely fixed in place the machine can be started. The speed ratios will be different from the original motor, they should now be

LOW - 650 to 1450rpm
MEDIUM – 1250 to 2800rpm
HIGH - 1600 to 3800rpm.

If the speed of the machine differs from these ratios it can be adjusted. Put the drive belt onto the lowest speed range on the left hand side of the pulley. Remove the control box from the body of the lathe without disconnecting any of the cables. On the circuit board there are three adjusters (see photo). Start the machine at its lowest speed – using a small electrical screwdriver (taking care not to touch any components on the circuit board) turn the adjuster marked 'L' until the lathe is running at 650rpm. Then turn the lathe up to full speed and turn the adjuster marked 'H' until the lathe is running at 1450rpm. Reduce the speed to its lowest setting and check that it is still running at 650rpm. If not, this process might need to be repeated several times before the speed range is set.



Speed Adjusters

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