

## How to Change the DVR Control Board

Date Raised: May 2003

Safe practises should always be employed to ensure the Health and Safety of yourself, employees and customers (if applicable) Refer to product manuals, exploded drawings and our website if further assistance is required, or contact us on [service@teknatool.com](mailto:service@teknatool.com)

Date Amended:

Question: How do I change the control board in my DVR ?

Tools required:

Allen Key 2.5mm  
Allen Key 4mm must have ball end  
Long nose pliers  
Headstock Extraction Lever and Bush (Available from Teknatool) If fully removing the head.  
Phillips Screw Driver  
The New Control Board  
The New Control panel with new interface board  
Electrical safe glue or hot gun. (you may not have access to one, Omit if that's the case or use a electrical safe glue as an alternative)

**PLEASE NOTE THE FOLLOWING PROCEDURE IS TO BE ONLY DONE BY A TEKNATOOL SERVICE AGENT OR A QUALIFIED ELECTRICIAN**

*NOTE: The control board Version No. are dedicated to the interface boards Version No. These version numbers are physically etched on each board. These use a 10 pin ribbon cable to connect the two. Earlier versions used a 26 pin ribbon. If you are unsure please contact Teknatool.*

1. Ensure the lathe is unplugged from mains power and has been for at least 2 minutes. Loosen Lock pin from lathe.
2. By revolving (pushing down on the swivel lever the headstock by 45° 135° 225° and 315° you can access the four M6 screws from underneath of the Headstock (It will overhang exposing the screw head) Using a 4mm Allen key with ball end (otherwise access will not be achieved) un-screw these. These screws are holding the heat sink and control board to the headstock.



Screw exposed by swivelling head stock around

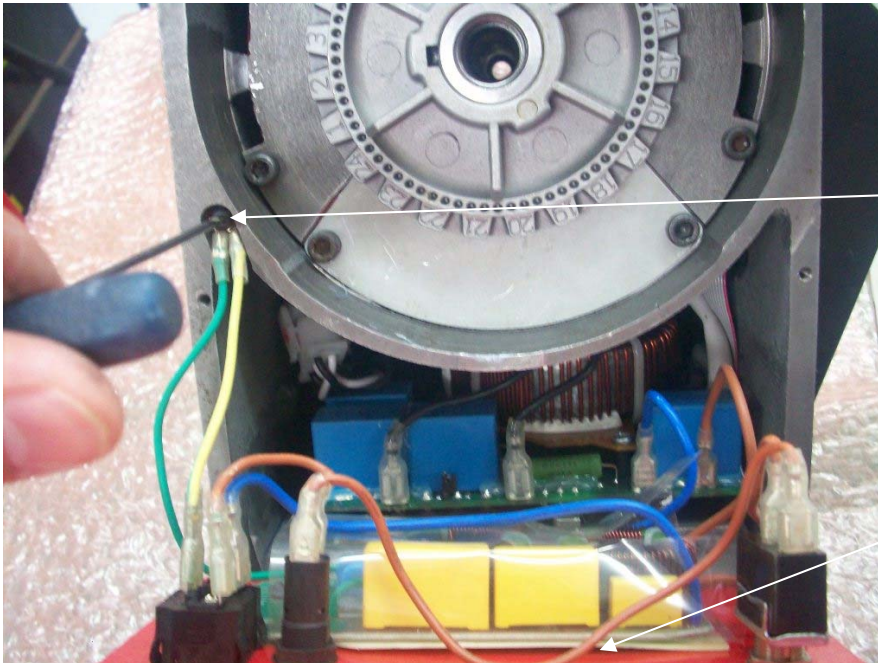
The front two screws may be difficult to access and remove. The slotted hole should allow them to loosen sufficiently so the board can be removed

NOTE - if any of the four cap screws cannot be accessed the Head stock it will have to be lifted about 10-12 mm put a suitable spacer in the gap ( the lathe knock out bar can be used for this ) ensure that it is through both sides this will allow easy access to the screws on the underside.

To lift head or fully remove, the headstock lock bolt needs to be removed. Next the M8 hex bolt and washer will have to be removed from the swivel pin located underneath the main bed behind the swivel pin lever system.

If fully removing the head. Then a 1/2" bar should be put through the spindle and lift each end to bring the Head stock away. Please note the head stock weighs 40kg so you may need two people to lift it.

3. Unfasten the 8 Allan Head Cap Screws with 4mm Allen keys. Move the guard away from the headstock and unfasten the earth connection with 4mm Allen keys. Keeping in mind that the phase and neutral wires are still attached.

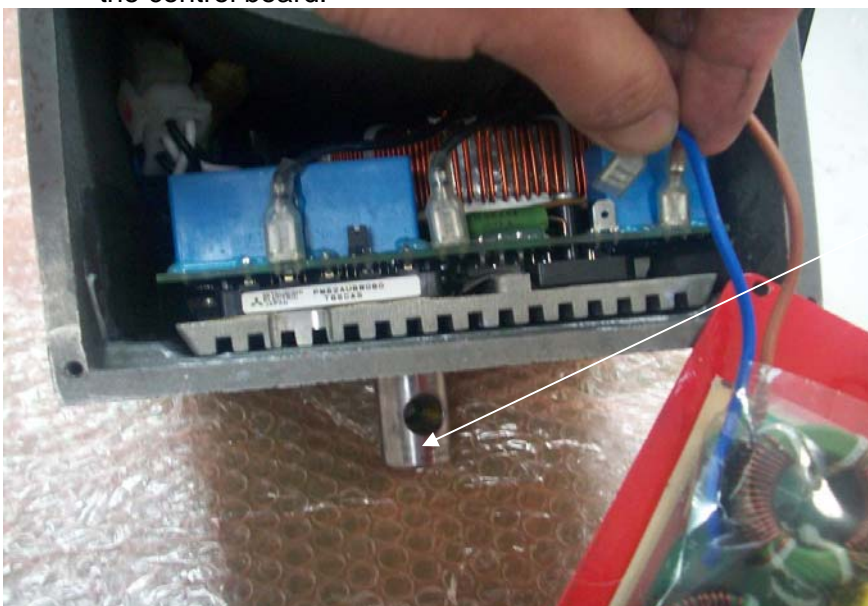


Earth Fastening

Note: This guard may look different

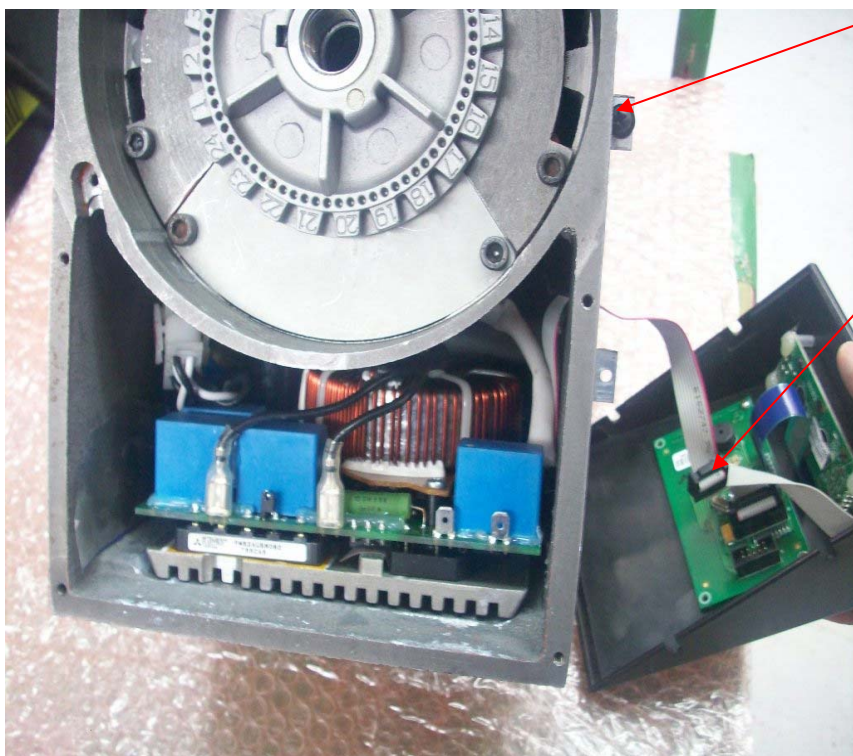
*Please note the above photo shows the Head stock removed from the lathe - this doesn't need to be removed if the 4 X M6 screws were removed.*

4. Carefully remove the Brown Phase wire and the Blue Neutral wire and position the guard away from the control board.

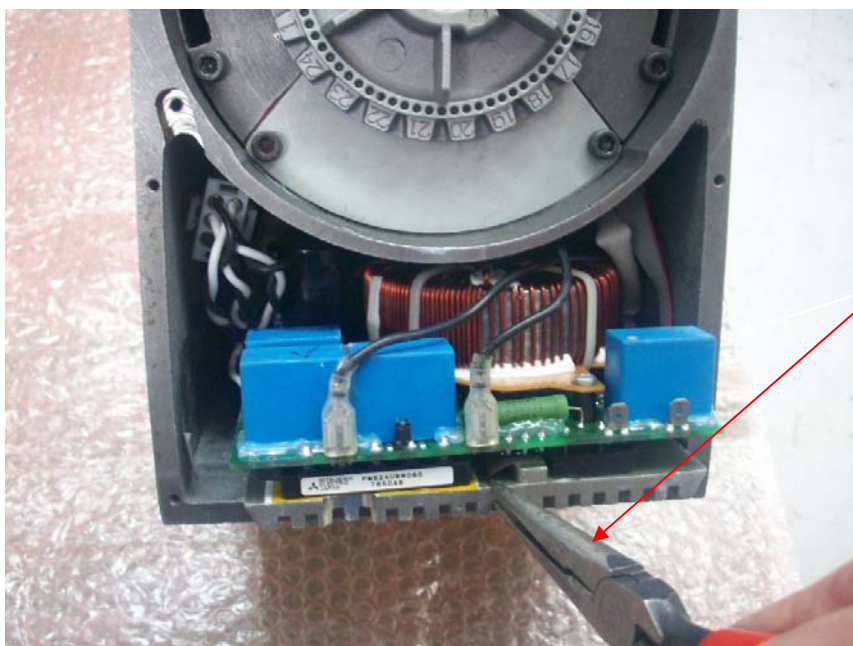


Swivel Pin





Unfasten these a few turns to release the control cover. The ribbon will be connected and will have a blob of glue bonding the plug and receptacle together. The glue can be pulled off and the ribbon plug removed. Feed the ribbon plug back through the hole on the side avoiding any scraping on the ribbon.



Pliers to hold onto the heat sink. Be careful not to touch any components and clamp only onto the aluminum heat sink.

*Please note the above photo shows the Head stock removed from the lathe - these doesn't need to be removed*

5. Carefully locate the stator wiring (6 wires) that connects to the control board. Pull this out giving a clear track for pulling the board out. Be sure to not pull on the wires too much as this may pull the wires from the sockets. There you will see a white male/female plug. This may need to be carefully manoeuvred around the black circular electrolytic capacitors as the control board is pulled out. With some long nose pliers hold onto the aluminium heat sink where no components lie (Be careful not to touch the above control board). Pull the heat sink up about 5mm then pull the heat sink towards you while keeping the 6 wires out of the way. You will need to move the heat sink over the earth fastening

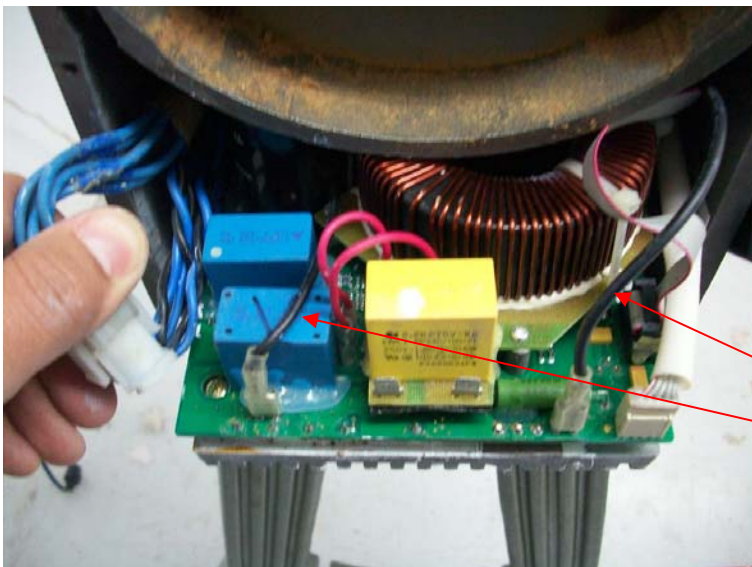
NOTE: You will probably get the white zinc oxide on your fingers, which is not dangerous but can make a mess when it goes everywhere. The purpose of this is to fill and gaps/voids between the underside of the heat sink and the inside base of the headstock to ensure maximum heat dissipation



Disconnect the 6 pin white plugs thus separating the stator wiring from the control board.

Hold the control board partially out and remove the 10 pin ribbon. Again some glue may need to be removed between the plug and receptor.

Also remove the sensor cable. Some glue may also need to be removed.

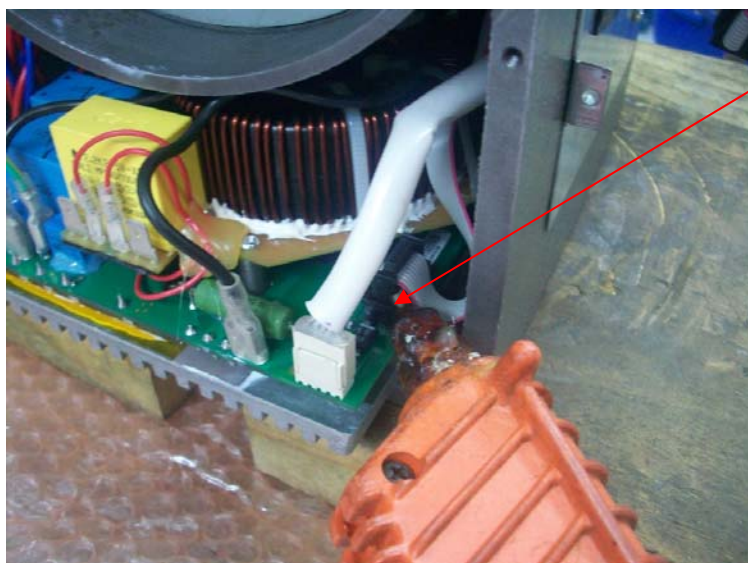


Feed the new control board  $\frac{3}{4}$  of the way in and plug the 6 pin stator wiring plug into the corresponding plug on the control board and also two red wires behind yellow capacitor into two small pins on the control board(no order required) and then Attach the sensor cable and the ribbon cable into their corresponding sockets on the control board.

The two black wires from PFC coil plug into the control board.

**NOTE:** The 10 pin ribbon cable has a different socket on the control board from other cables.

Glue the sides of the receptacles for both the ribbon and sensor lead preventing them from easing there way out with vibration etc later on. (If you don't have any electrical safe glue sufficient glue should still be there to hold it) Be careful not to touch any other components in doing so.







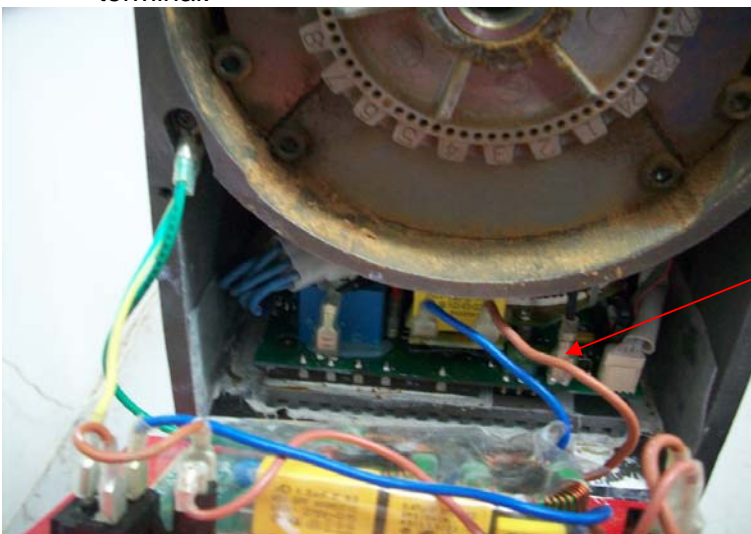
Feed the 10 pins ribbon from the new control panel through the hole on the side of the headstock and feed the control board all the way in and then push the 6 stator wires back in place.

6. Refasten the 4 screws underneath the headstock. Shorter fastenings may have been used at the holes at the end of the headstock. This is done by swiveling the headstock by 45° to expose the holes for the screws.

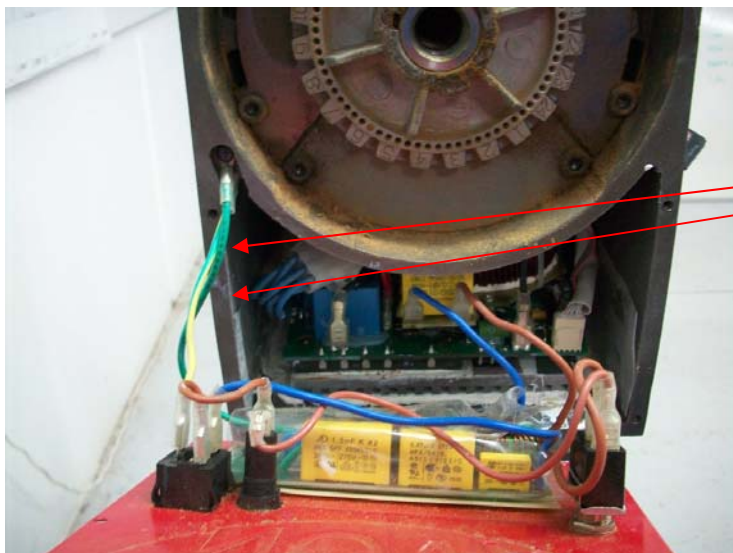


The front screws may be difficult to reach. To help the heat sink has been chamfered to help locate the screw into the thread.

7. Reattached the Brown Phase wire onto the right terminal and the Blue Neutral wire onto the left terminal.



Two power supply wires from the red sheet metal cover attached onto two pins located in front of the yellow capacitor.



The two earth wires must be connected together and be fastened into the inside of the headstock casting.

8. Attach the guard and fasten the 8 Allen head cap screws.



9. Position the control board panel on its bracket and fasten the 4 screws on the sides.



Glue the sides of the socket for the ribbon cable and then

10. Now a Megger Test will need to be done to ascertain the correct resistance from phase/neutral to ground. The reading should be  $\gg 700 \text{ M Ohm}$  - infinite. An Earth bond check should also be done  $\ll 1 \text{ Ohm}$  from each earth point on plug to cast iron chassis e.g. one of the cap screw fastenings on the upper guard. The earth pin is the lower middle pin on the appliance plug.



Power switch must be "on".

11. Connect up the power plug and turn the DVR on. Check that all the buttons on the keypad and functioning. Run the unit and try starting it from different positions of the spindle. Try numbers: 1,3,5,7,9,11,13 in the index window. The index lock should not be engaged. The numbers are just a guide to ensure each winding is firing.



**END**