

## Teknatool International Limited

7D Dallen Place, Rosedale, Auckland, New Zealand  
 Tel: +64 09 477 5600  
 Fax: +64 477 5601  
 Email: [service@teknatool.com](mailto:service@teknatool.com)  
 Website: [www.teknatool.com](http://www.teknatool.com)



## Frequently Asked Questions

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Safe practices 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)

## Troubleshooting a Power Surge on a DVR Galaxi Lathe

If your household fuse has blown out or a breaker in your home has tripped while using your lathe, this could be a sign of a power surge issue causing an electrical short. The lathe would have completely shut down if this has occurred and will not start up again until the fuse or breaker has been reset. If the lathe consistently trips the breaker then this is a sign that one part of the lathe headstock must be replaced.

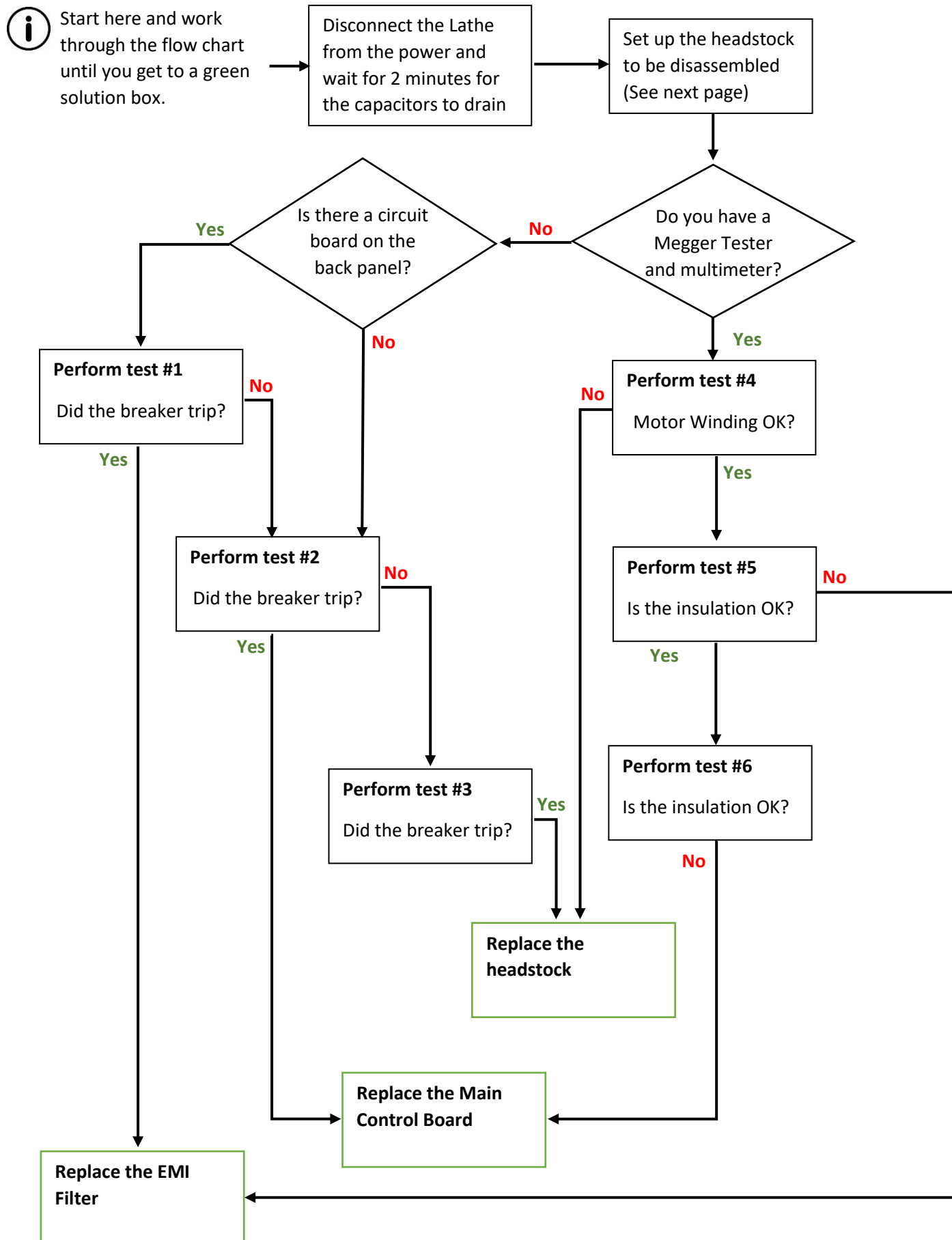
It is recommended that you have a megger tester (or multimeter) available to test for power leakage, however you can diagnose the issue through trial and error if you don't mind setting off your circuit breaker again. Both of these methods are covered in this guide which will aid you in identifying the component causing the short circuit.

**ELECTRICAL WARNING:** Instructions in this guide will expose you to the bare electronic components of your device. Practice electrical safety by isolating your lathe from the power at every point possible while electronics are exposed. Seek the advice of an electrician where possible. Do NOT touch electronics with your bare hands whilst the machine is connected to the power.




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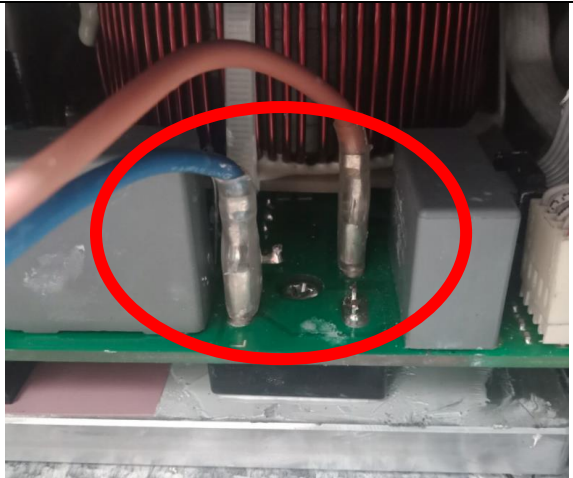

## Troubleshooting Flow Chart





## Setting up

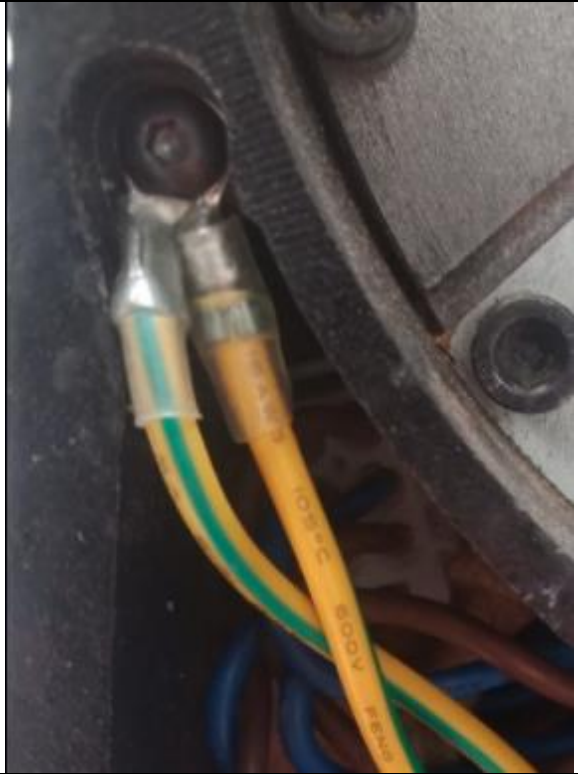
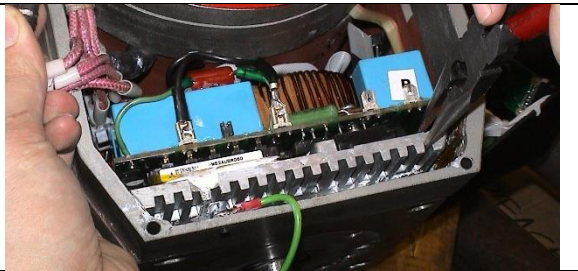
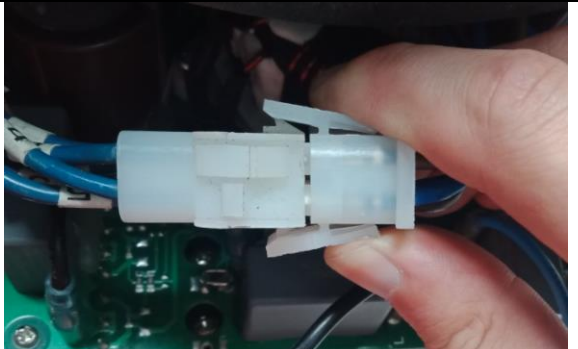
1	Turn off and unplug the lathe from the power socket. Wait for 2 minutes for the capacitors to drain completely.	
2	Disengage the locking handle on the lathe bed and then swivel the headstock to any diagonal position.	
3	Unbolt each heat sink screws exposed underneath the headstock when rotated.  There are four in total, and you will need to rotate the headstock another 90 degrees to access the next one.	
4	Unscrew the 8 screws holding the headstock cover plate on to expose the main control board.	


## Test 1: EMI Short Circuit Test

1	<p>If you do not have an EMI filter circuit on the back of your lathe cover plate, you can skip this test and continue to test #2.</p> <p>Double check that the lathe has been unplugged from the power socket and wait for 2 minutes for the capacitors to drain completely.</p>	
2	<p>Disconnect the two AC power leads that go to the main control board.</p> <p><b>Important:</b> Keep the yellow &amp; green earthing cable secured to the headstock to prevent risk of electrical shock.</p>	
3	<p>Screw the cover plate back onto the headstock tightly with at least one screw to electrically earth it and prevent it from falling off.</p>	

4	Switch the headstock power switch to its <b>ON</b> state.	
5	Carefully plug the power cable into a power socket and then switch the power on.	
6	Carefully switch the power off before unplugging the cable from the power socket.  Take note if the fuse/circuit breaker tripped during this test and refer back to the flow chart.	

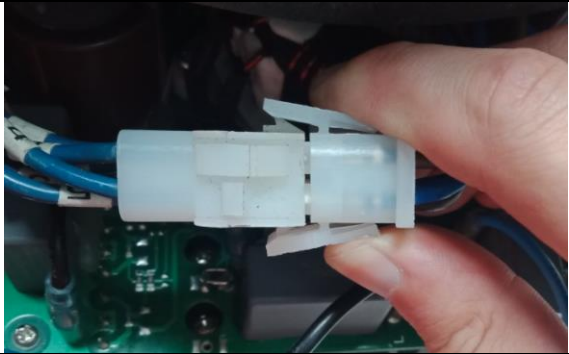
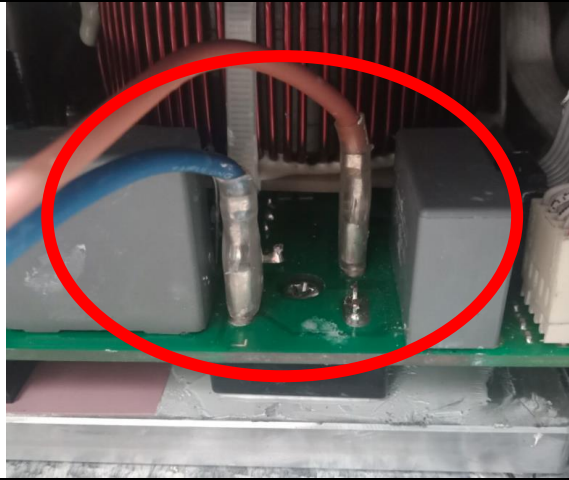

## Test 2: Main Control Board Short Circuit Test

1	Double check that the lathe has been unplugged from the power socket and wait for 2 minutes for the capacitors to drain completely.	
2	<p>Open up the headstock again and reconnect the AC power leads to the Main Control Board terminals. Polarity is not important and either cable and go onto either terminal.</p> <p><b>Important:</b> Check that the green &amp; yellow earthing cables are still secured to the headstock casting</p>	
3	Carefully remove the Main Control Board from the headstock by pulling on the heat sink to access the 6-Pin motor cable.	
4	Disconnect the motor cable by pinching the buckle and separating the connectors.	


5	<p>Switch the headstock power switch to its <b>ON</b> state.</p> <p>Carefully connect the power cable and switch the power on.</p>	
6	<p>Carefully switch the power off then unplug the cable from the power socket.</p> <p>Take note if the fuse/circuit breaker tripped during this test and refer back to the flow chart.</p>	



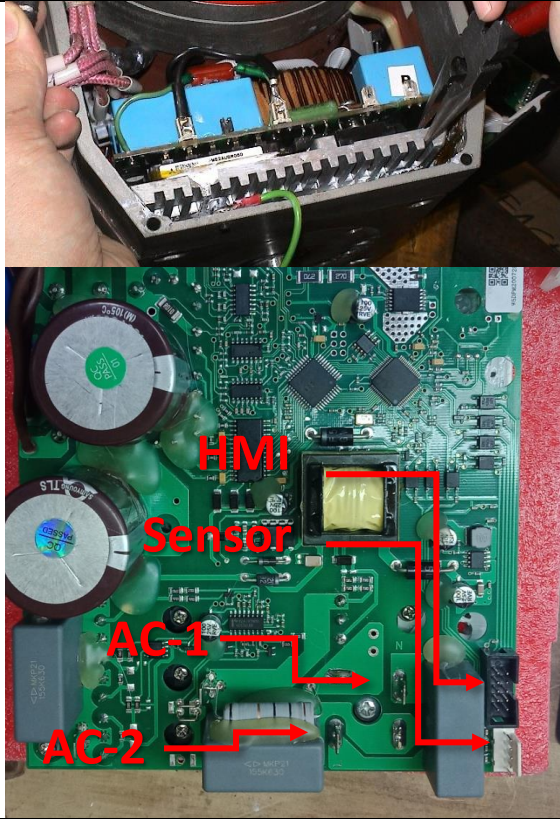
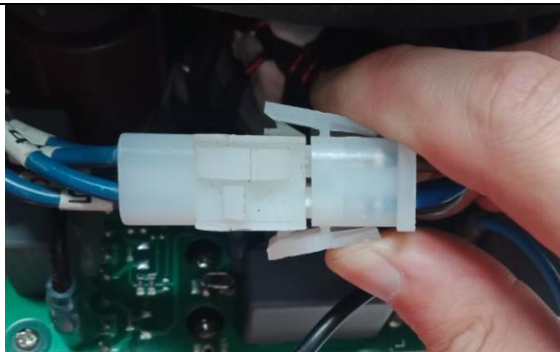
## Test 3: Motor Stator Short Circuit


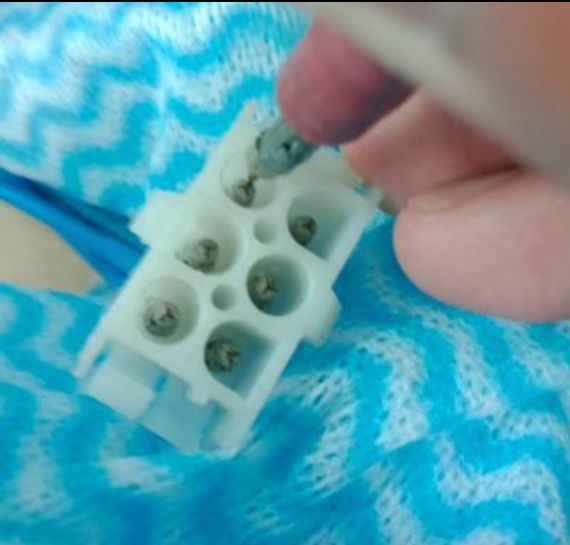

1	Double check that the lathe has been unplugged from the power socket and wait for 2 minutes for the capacitors to drain completely.	
2	Reassemble the headstock by reconnecting the 6-pin motor cables and sliding the main control board back into the headstock.	
3	Attach the AC power leads back to the main board if they are currently disconnected.	
4	Check that the green & yellow earthing cable is secured to the headstock	



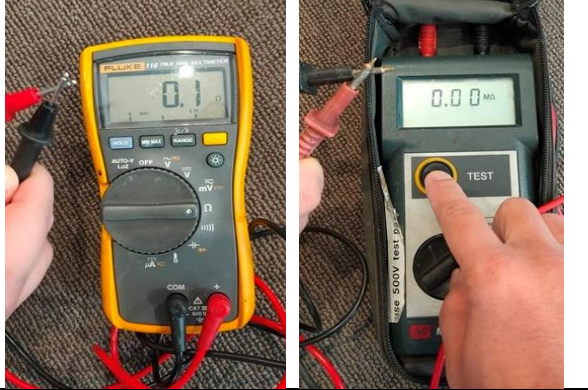
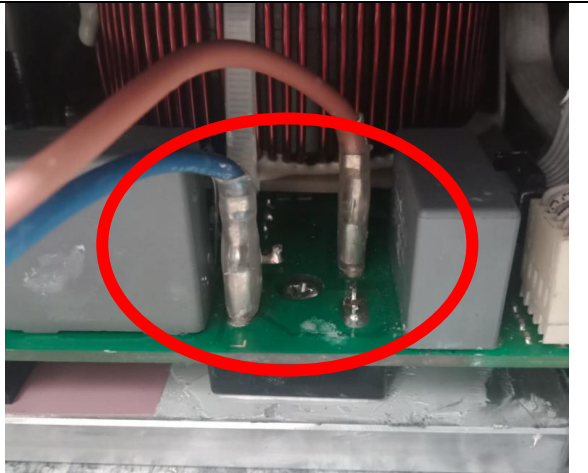
5	<p>Switch the headstock power switch to its <b>ON</b> state.</p> <p>Carefully connect the power cable and switch the power on.</p>	
6	<p>Carefully switch the power off and unplug the cable from the power socket.</p> <p>Take note if the fuse/circuit breaker tripped during this test.</p>	

## Test 4: Motor Winding Insulation Test


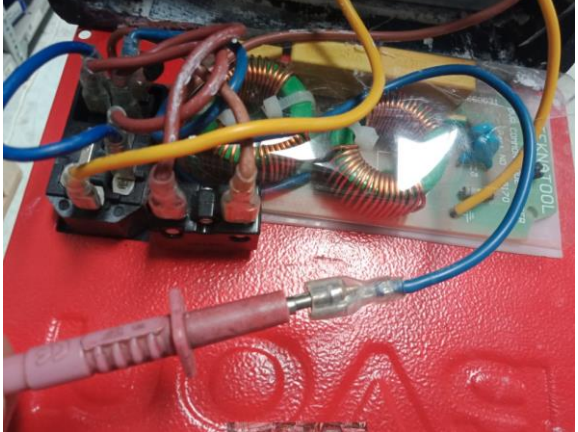

1	Double check that the lathe has been unplugged from the power socket and wait for 2 minutes for the capacitors to drain completely.	
2	Carefully begin to remove the main control board from the headstock. You may have to unplug the AC power leads, grey HMI ribbon, and the sensor cable.	
3	Unplug the 6-pin motor cable by unbuckling the belt and separating the connectors.	

4	Place one of the megger tester probes onto the headstock casting surface where it is not covered by paint. One of the threaded screw holes or the earthing terminal will work.	
5	Touch the other probe onto one of the 6 pins on the motor side of the cable.	
6	Energise the megger tester to begin the insulation test. The resistance between the casting and motor windings should ideally be infinite (reading of >999M Ohms).	
7	<p>Repeat this step for all 6 motor-side pins. Take note if any windings have a low insulation resistance.</p> <p>The motor windings are considered OK if the insulation resistance on each pin is high (Ideally &gt;999M Ohms)</p>	

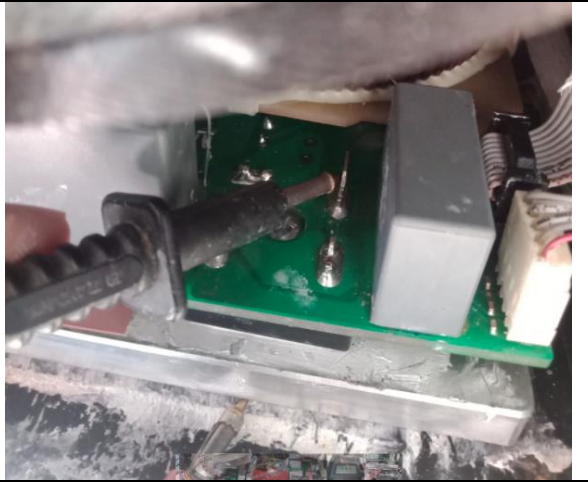
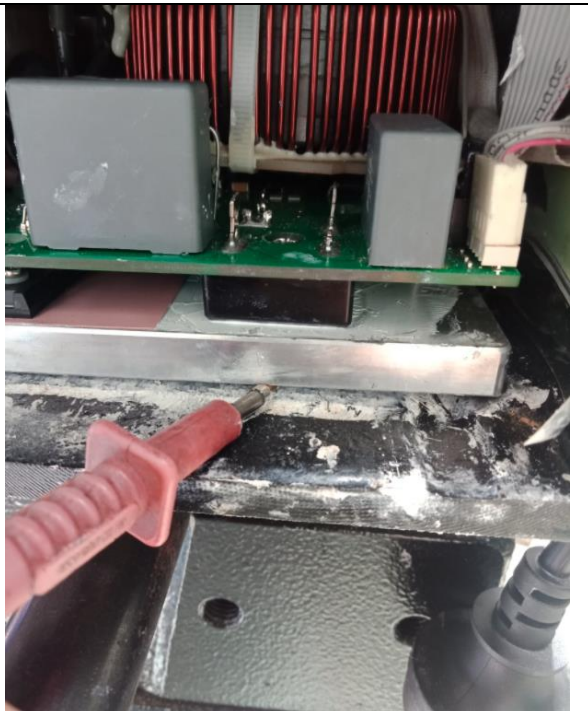
## Test 5: EMI Filter Insulation Test

1	<p>If you do not have an EMI filter circuit on the back of your lathe cover plate, you can skip this test and continue to test #6.</p> <p>Double check that the lathe has been unplugged from the power socket and wait for 2 minutes for the capacitors to drain completely.</p>	
2	<p>Check your megger tester (or multimeter) by touching the two probes together, setting to 250v and energising it (Simply set to resistance mode and touch the probes together for a multimeter).</p> <p>The output should be close to 0 Ohms.</p>	
3	<p>Unplug the two AC power leads from the main control board.</p>	





4	<p>Place one of the megger tester probs in contact with the green &amp; yellow earthing cable coming from the EMI filter.</p>	
5	<p>Contact the other end of the megger tester to the metal connectors on one of the AC power leads from the EMI filter.</p>	
6	<p>Set the megger tester to 250 Volts and energise it.</p> <p>Repeat this step for the other AC power lead.</p> <p>The reading should have jumped to infinite Ohms (&gt;999 Ohms) after 2 seconds. If the value settles at a number much lower than this then the insulation test has failed and the EMI filter will need to be replaced.</p>	

## Test 6: Checking the Main Control Board Insulation

1	Double check that the lathe has been unplugged from the power socket and wait for 2 minutes for the capacitors to drain completely.	
2	Attach one of the Megger Tester probes to any of the AC terminals on the main board without touching any of the other electronics.	
3	Contact the other probe to the main control board heat sink.	



4	<p>Energise the megger tester. The reading should stabilise at infinity (reading of &gt;999M Ohms on a megger tester or OL on a multimeter).</p> <p>If the reading is significantly lower than that, then the main board will require replacement.</p>	
5	<p>If you have a multimeter, you can also check if the AC terminals have shorted internally by setting the multimeter to resistance mode, and touching the two probes to the two AC power terminals.</p> <p>The reading should never be 0 Ohms, otherwise the main control board should be replaced.</p>	

By performing these tests, the source of the short circuit should have.