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Version 1.0

Repair instructions

RiOn

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Attachment:

- **Parts list**
- **Exploded drawing**
- **Schema**

1 Power cord

If the power cord shows damage (mechanical damage etc.) unplug the tool, remove the handle and replace the damaged power cord.

2 Switch

Check mains switch: - Position 0: Switch must not make connection
- Position 1: Switch must make connection

If it is necessary to replace the switch, solder the switch only in position 0.

3 Motor

Check the motor for noise, abnormal noises mostly show damage on the collector or bad bearings.

Check the carbon brushes of the motor and replace them if necessary. Always replace both carbon brushes at once.

When taking out the carbon brushes at the first time the lobe in the carbon brush channel must be pressed out.

Clean the tool with compressed air.

4 Heating element

Unplug the tool!

Remove heater tube and mica tube and check the heating elements resistance.

The heating element must not show fouling in the channels or mechanical damage.

Please check also the phototransistor. It must not be discoloured or soiled. (see also phototransistor)

Fit in heating element, mica tube and heater tube. Check if the heating is working or not.

5 Heating

Potentiometer in position
0: Tool must not heat
1: Tool starts to heat up
10: Tool heats up on its maximum

6 Phototransistor

Phototransistor must not be discoloured or soiled.

When replacing the phototransistor pay attention to the polarity. The flat side of the phototransistor must be matched into the flat side of the clamp.

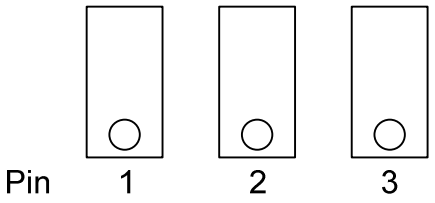
7 Temperature limit switch

Check the temperature limit switch (Clixon) of connection.

8 Potentiometer

Desolder the potentiometer connections and measure the potentiometer:

Resistance Pin 1 - Pin 3: 10k Ohm
Resistance Pin 1 - Pin 2: 0 – 10k Ohm
Resistance Pin 2 - Pin 3: 0 – 10k Ohm



Check the whole resistance range!

If the measured values differ more than +/- 10 % from the above mentioned values, replace the potentiometer.

9 Replacing of the electronic circuit board

Find out the type and the voltage of the electronic circuit board, before replacing the electronic circuit board.

Replace the control as shown in the block diagram.

Assemble the tool, connect the tool to the mains and check if the tool heats properly.

10 Test specification for RiOn

10.1 Insulation test

- Mains switch of the test tool on position 1
- Build a testing voltage of 4000V for 1 second between the pins and heater tube, there must not occur a flashover or a puncture.
- Function check of the high voltage tester
(short-circuit the spikes => signal lights and horn)

10.2 Operation test

- Mains switch on 0, poti on position 0 and connect the tool to the mains (mains or transformer)
- Mains switch on 1, ➔ motor is rotating, check the power consumption of the motor

-Check the smoothness of the motor (bearing, collector) and of the turbine (vibrations, foreign material)
- Potentiometer in position 0: ➔ Tool must not heat
1: ➔ Tool starts to heat up
10: ➔ Tool heats up on its maximum

-Check the max. amps at full heater power (type plate)
-Fit the cover cap onto the heater tube: ➔ the electronics should adjust down, after removing the cover cap the heater power must heat at full power.

10.3 Completeness check

-Air filter must be clean
-Check the inscription at the handle: type, voltage, electricity and power (must agree with the above mentioned values!)
-Warnings must be printed onto the handle
-Check the cable mechanical and electronic (plug-type is different it depends on the country, cable diameter depends on the nominal current)
-Stand support (rubber) must be assembled; all screws must be tightened.
-Company logo (BAK) must be stuck onto the handle
-Check of cleanness and possible damage

10.4 Additional test of repaired tools

If the tool does not attain its maximal temperature, the mica tube may be missing.