

SERVICE INSTRUCTION

Heating element MULTISserie



Applied in:
Deli Multiserie
Bakery Multiserie
untill 2007



Contents service kit:

One of the following three heating elements

9192091 1x 10kW 208V (USA untill ser nr 100035862)

9192002 1x 10kW 230V (EUR untill ser nr 100035862)

9192212 1x 9kW 230V (France untill ser nr 100035306)

Kit

9192091s

9192002s

9192212s



And

9194506 1x Gasket

0142307 3x Nut M4

0195910 2x Capnut M6, brass nickel plated

0205828 6x receptacle, blue

- NOTICE -

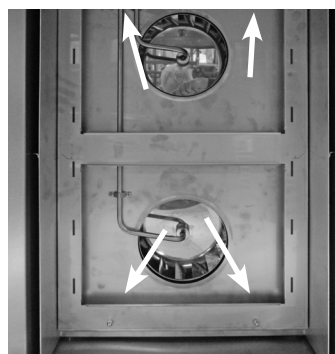
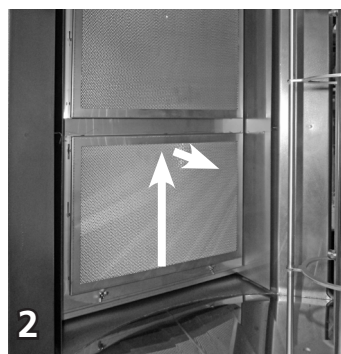
This manual is prepared for the use of trained Service Technicians and should not be used by those not properly qualified. If you have attended a training for this product, you may be qualified to perform all the procedures in this manual.

This manual is not intended to be all encompassing. If you have not attended a training for this product, you should read, in its entirety, the repair procedure you wish to perform to determine if you have the necessary tools, instruments and skills required to perform the procedure. Procedures for which you do not have the necessary tools, instruments and skills should be performed by a trained technician.

Reproduction or other use of this Manual, without the express written consent of Fri-Jado, is prohibited.

WARNING: Disconnect the electrical power to the machine at the main circuit box. Place a tag on the circuit box indicating the circuit is being serviced.

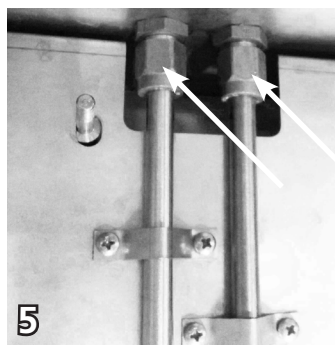
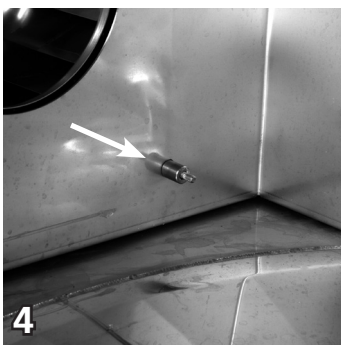
ACCESS TO THE HEATER COMPARTMENT



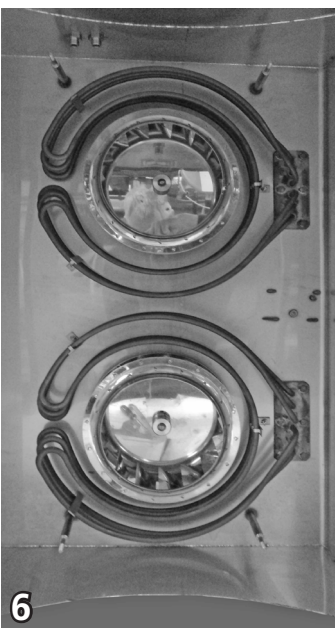
Note: numbers in brackets [] are positions on the exploded views

1. Remove all chicken racks and/or baskets.
2. Remove the fat filters [278]. Lift and take out.

Note that in case this is not possible due to carbon build up behind the filters, continue at point 3



3. Remove the filter holder [275] (4 capnuts M6) [837]
4. Remove the 4 spacers [276].
5. Loosen the upper swivels from the water injection joints [227] with a 17mm wrench. Hold the joint with a 19 mm wrench.
6. Take out the fan plate [277].

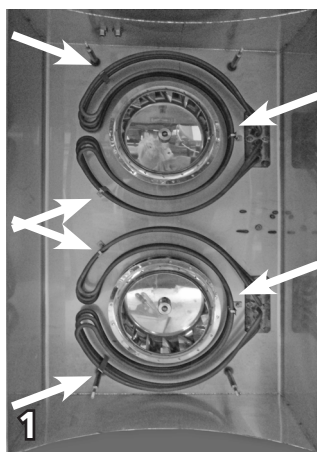


Note: In units manufactured before 2009, it might be necessary to remove the nut from the soap mister [450] and push it above the top plate.

Reverse the procedure to install.



EXCHANGING A HEATING ELEMENT



Gain access to the heater compartment as described in a previous chapter.

On the inside:

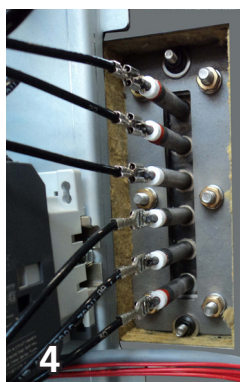
1. Remove 3 nuts M4 + washers.

On the backside:

2. Open the service doors at the back.
3. Remove the transparent safety panel. (if applicable)
4. Check the presence of the numbering on the wiring of the heating elements and make a note of this.

Note that the numbers are laser marked on the wires (see example).

5. Pull the 6 wires from the heating element.



This picture differs from reality

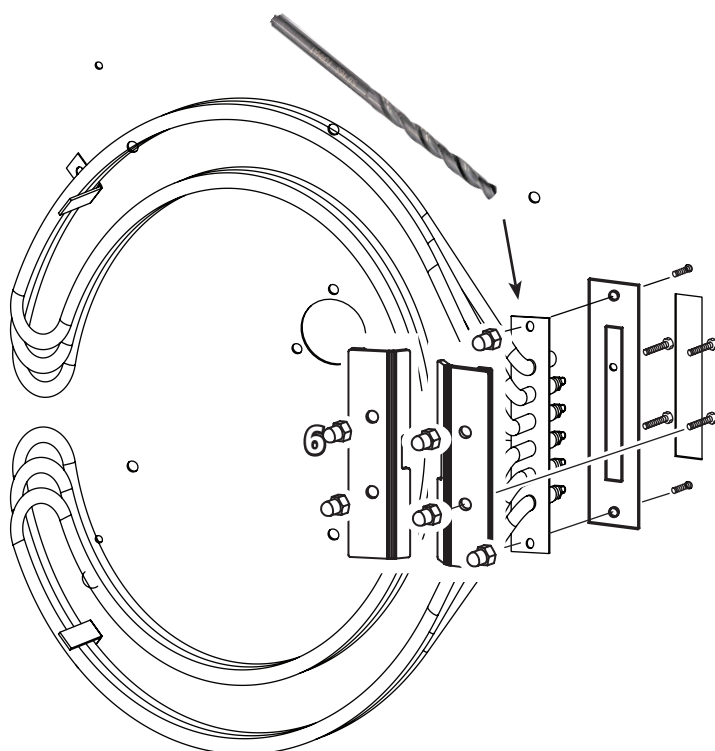
On the inside:

6. Unscrew 6 capnuts M6.
7. Take out the heating element.
8. Take out the gasket.
9. Clean the surface.

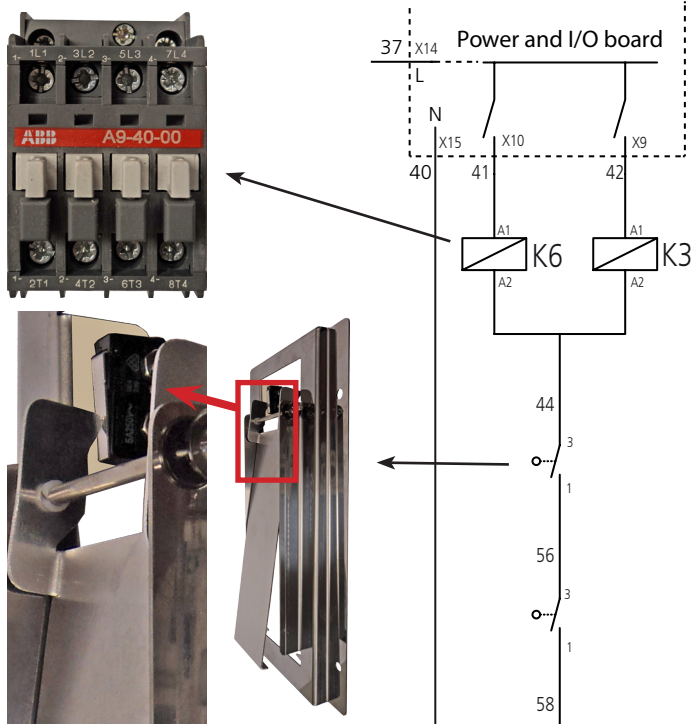
Reverse the procedure to install.

- Take a new gasket!
- Drill up the two holes in the heating element to 6,5mm (1/4").

Example of wire numbers



MEASURING ON THE HEATERS



Working principle.

The temperature is measured by two PT1000 sensors. The upper sensor controls the top heater and the lower sensor controls the lower heater. Therefore, two separate contactors are controlled by the board.

Blower malfunction overhear protection!

- A vane switch is mounted on each blower to detect the minimum rotationspeed.
- Both switches are put in series with the neutral side of the contactors.
- The contacts only close when the blowers speed is high enough.

Passive measurements.

Contactor

Between A1 and A2 $\pm 600\Omega$

Heating element (208V, 10kW -> 3x 3,33kW -> 3x 16A)

The picture shows how the heating elements are connected on the terminals.

- Each element is $\pm 13\Omega$
- The insulation of each element has to be $> 1M\Omega$.

Active measurements

On the contactor coils 208V

On the heater:

208V on each element.

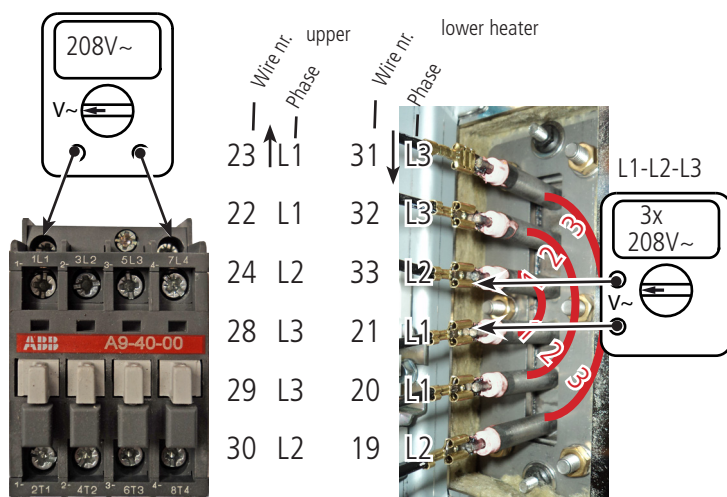
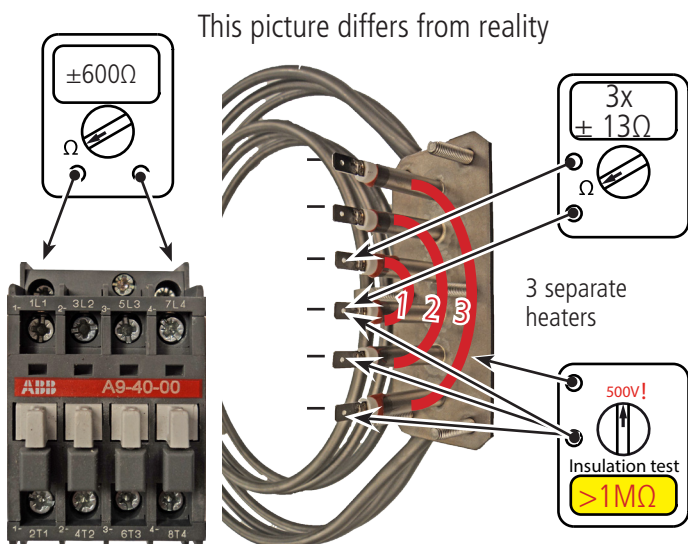
16A on each element.

Trouble shooting.

Start up a cooking program and be sure that the set temperature is higher than the cooking cavity --> "asking for heat".

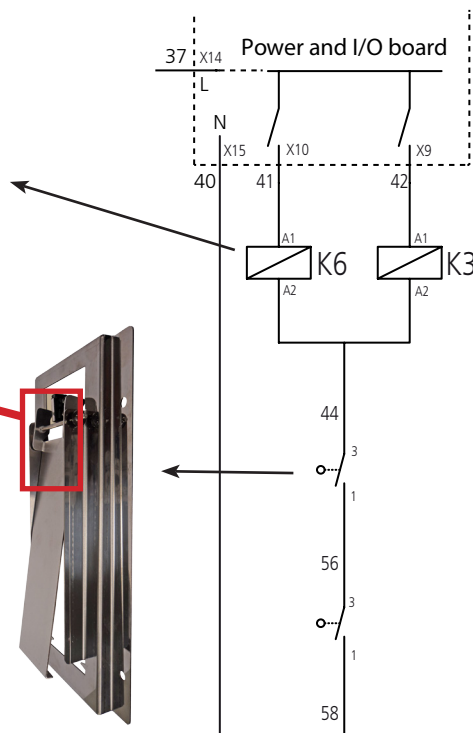
Proceed as follows:

(X9-N means "between X9 and terminal X15 (marked "N")



Measure	Value	If Not ok
X9 - N	208V~	Board failure or N & L exchanged on X14 and X15.
K3(A1) - N	208V~	Wire 42 disconnected
K3(A2) - N	0V~	Open vane switch or loose wire.
K3 = On?		Broken contactor
X10 - N	208V~	Board failure or N & L exchanged on X14 and X15.
K6(A1) - N	208V~	Wire 41 disconnected
K6(A2) - N	0V~	Open vane switch or loose wire.
K6 = ON?		Broken contactor
Stop the cooking program!		

MEASURING ON THE HEATERS



Working principle.

The temperature is measured by two PT1000 sensors. The upper sensor controls the top heater and the lower sensor controls the lower heater. Therefore, two separate contactors are controlled by the board.

Blower malfunction overheat protection!

- A vane switch is mounted on each blower to detect the minimum rotationspeed.
- Both switches are put in series with the neutral side of the contactors.
- The contacts only close when the blowers speed is high enough.

Passive measurements.

Contactor

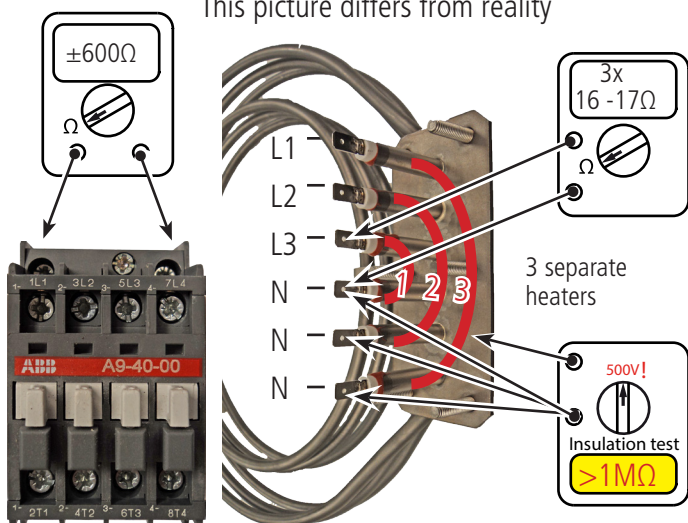
Between A1 and A2 $\pm 600\Omega$

Heating element (10kW -> 3x 3,33kW)

The picture shows how the heating elements are connected on the terminals.

- Each element is $\pm 16,5\Omega$
- The insulation of each element has to be $>1\text{M}\Omega$.

This picture differs from reality



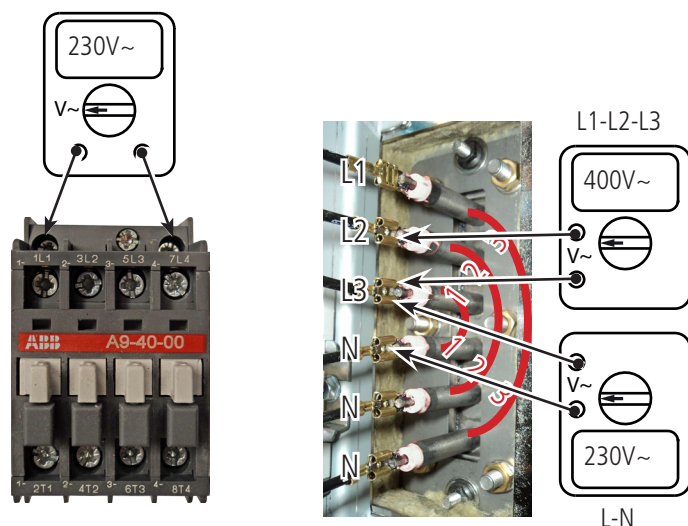
Active measurements

On the contactor coils 230V
On the heater 230V on each element.
On the heater 400V between L1-L2, L1-L3 and L2-L3

Trouble shooting.

Open the MFMB outputs of the I/O test facility
Activate output x6 -> the Blowers start.

Proceed as follows: (X9-N means "between X9 and Neutral")



Activate output X9		
Measure	Value	If Not ok
X9 - N	230V~	Board failure or N & L exchanged on X14 and X15.
K3(A1) - N	230V~	Wire 42 disconnected
K3(A2) - N	0V~	Open vane switch or loose wire.
K3 = On?		Broken contactor
Activate output X10 (switch off X9 !!)		
X10 - N	230V~	Board failure or N & L exchanged on X14 and X15.
K6(A1) - N	230V~	Wire 41 disconnected
K6(A2) - N	0V~	Open vane switch or loose wire.
K6 = ON?		Broken contactor
Switch OFF X10		

