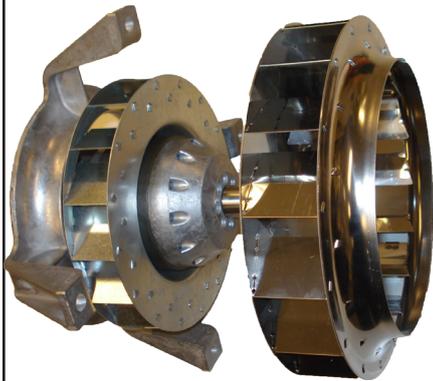


# SERVICE INSTRUCTION

## BLOWER MULTISSERIE



Applied in:  
Deli Multisserie  
Bakery Multisserie



Contents service kit 9190179s:

9190127	1x	Blower (as shown)
9192264	1x	Lipseal
9192043	1x	Spacer shaft transit
9191050	3x	Bolt M5x18
9192034	1x	Capacitor 6uF
2005836	2x	Receptacle 2,8mm
2005755	2x	Ringterminal 4mm blue
2005933	2x	Ringterminal 4mm red
9298600	1x	Puller
9124063	1x	This instruction

**The next pages are taken from the service manual Multisserie, which can also be found on the Fri-Jado website.**

### - 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.

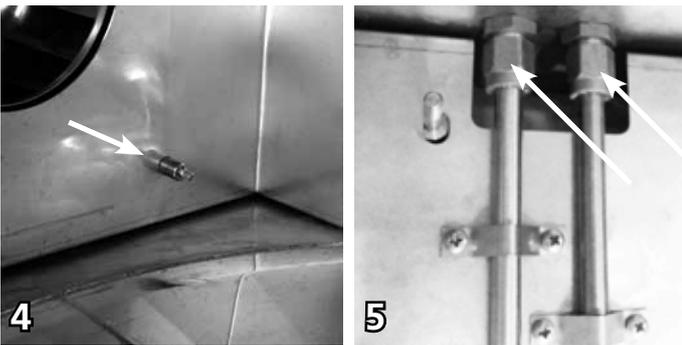
### ACCESS TO THE HEATER COMPARTMENT



*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*



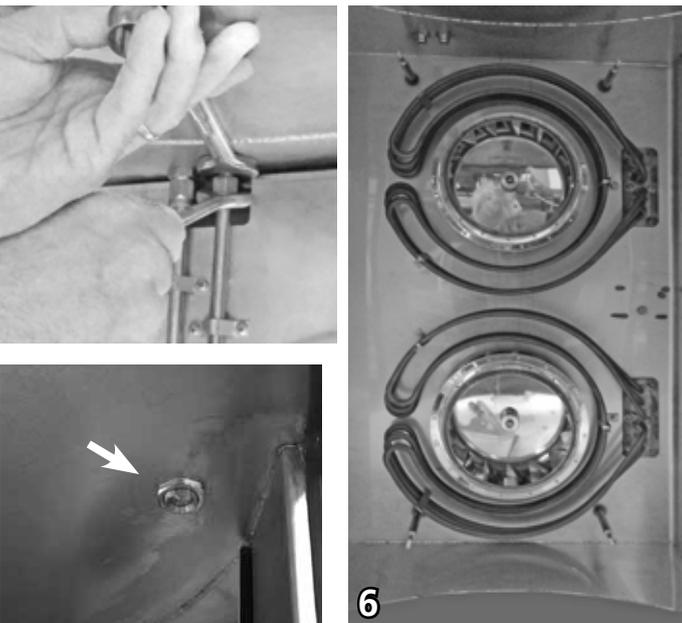
3. Remove the filter holder [275] (4 capnuts M6) [837]

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.

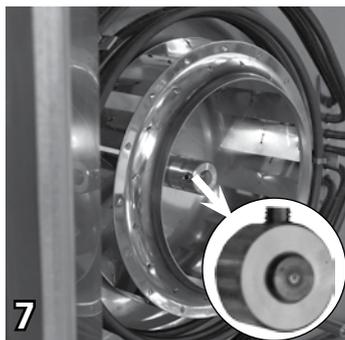
6. Take out the fan plate [277].

*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 THE SHAFT SEAL



7

9191244



8

Provide access to the blowers according to the procedure above.

7. Loosen the socket set-screw from the blower blade at least 3 turns. (metric 4mm)
8. Pull the blade from the shaft. Maybe with help of a ball joint puller. See chapter "TIPS" in case of difficulties.

**Note that the blower motor and fan blade need to stay together!**

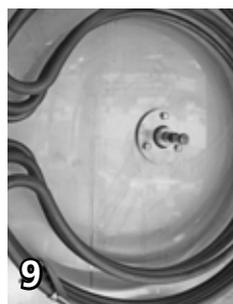
9. Unscrew 3 bolts M5 and remove the pressure plate [252].

**See note !!**

10. Remove the seal ring [253].

*Note that older units can have a different shaft seal. In that case, just remove the seal and the adjusting ring.*

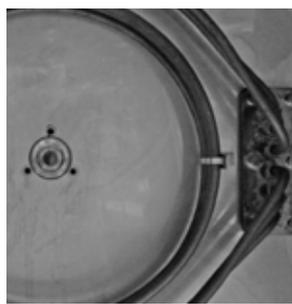
Reverse the procedure to assemble.



9



10

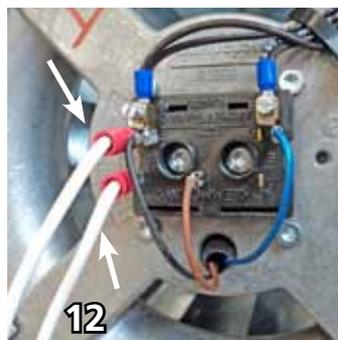


*Note that these bolts can be stuck in the aluminium spacer [254]. They will break in that case! Try to loosen them by heating the area up with a hot air gun. Be careful with a gas fired torch!! To jerk the bolt head with a hammer might help too. Clean the thread (M5)!*

## DISASSEMBLING THE BLOWERS



11



12

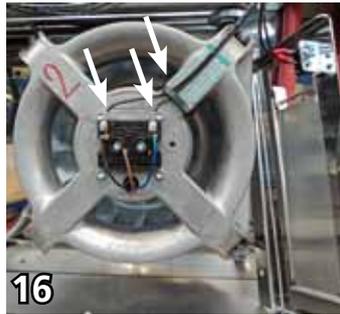
Disconnect the power supply first!

Remove the blower blade and shaft seal according prior procedure.

11. Open the service doors at the back. [551] [4 screws].
12. Disconnect the 2 capacitors [51] from the ventilator motors.
13. Take the hose with the grommet out of the transit hole.
14. Remove the vertical air suction channel. [268] (2 nuts M6 en 2x nut/bolt M5)
15. Unscrew the vane switch assembly [290] (2x M5 serrated bolt)

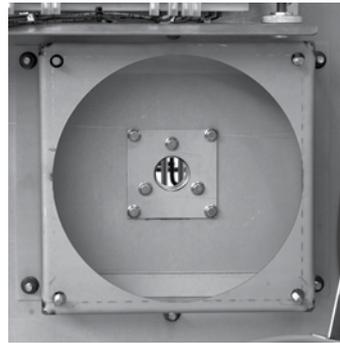
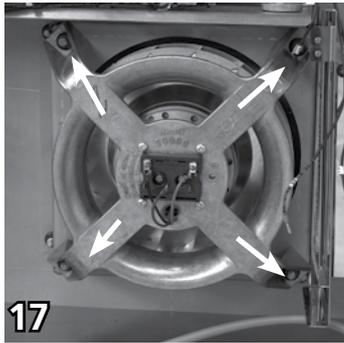
13  
14

15



16. Disconnect the wiring from the 2 screw terminals on the blower motor(s) and cut the cable tie.

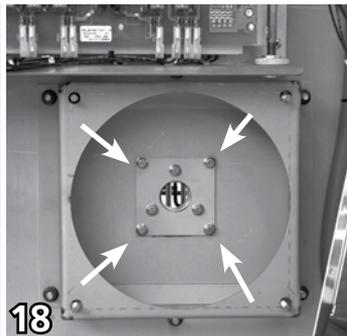
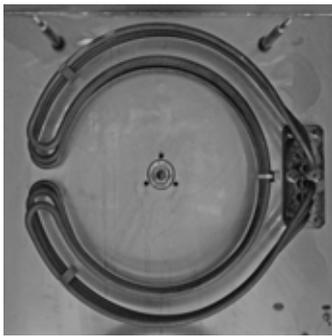
17. Remove the 4 nuts (M6 serrated) from the aluminium motor-housing and carefully take out the blower [50]. Repeat this if necessary with the other blower.



Refer to the concerning chapter to assemble the blowers.

**Keep blower motor and fan blade together!!**

### DISASSEMBLING THE SHAFT TRANSIT SPACER.



Remove the blowers and shaft seals according prior procedure.

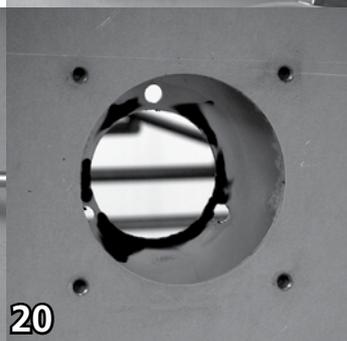
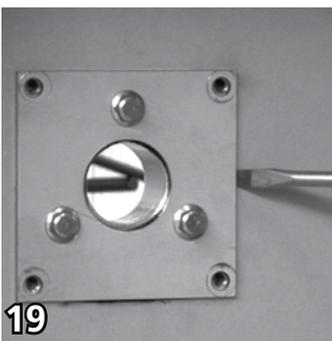
On the backside.

18. Remove the 4 bolts (M5x10) on the corners of the mounting plate. [255].

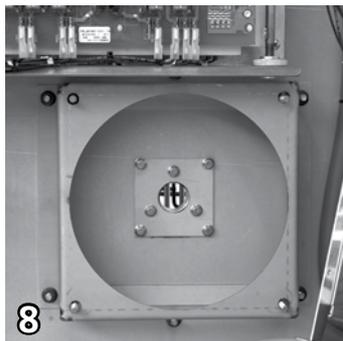
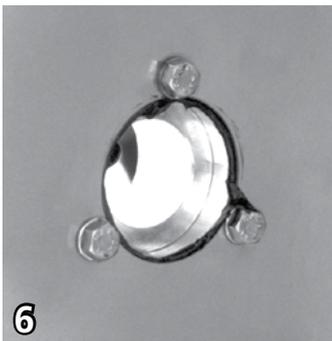
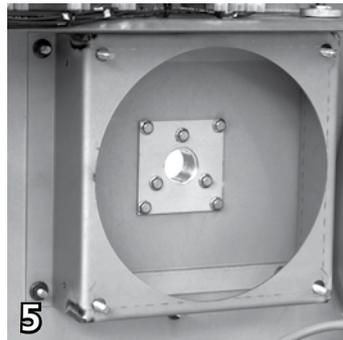
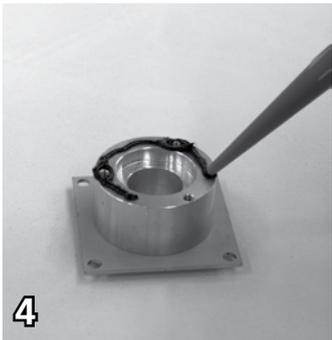
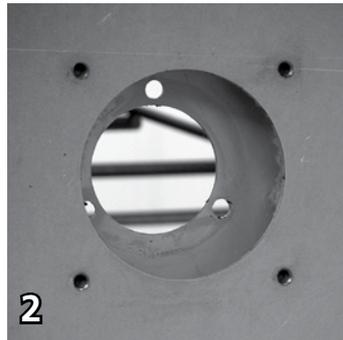
19. Stab loose the mounting plate with a screw driver (or the like). (The spacer [254] is sealed at the front side with sealant and can possibly stick)

20. Pull the mountingplate with the spacer out of the hole.

21. Remove the mounting plate from the spacer (3 bolts M5x12).

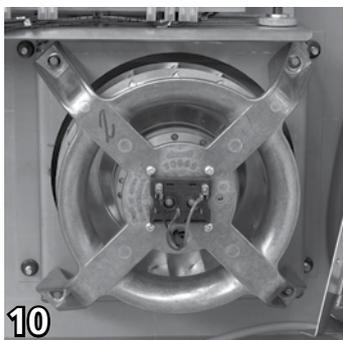
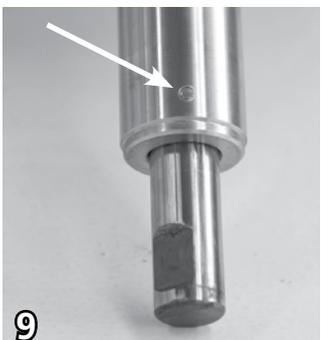


## ASSEMBLING THE SHAFT TRANSIT SPACER.

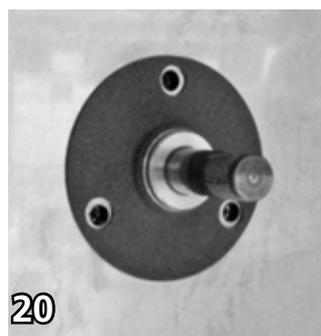
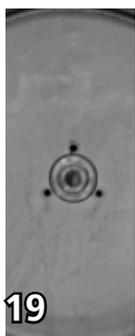
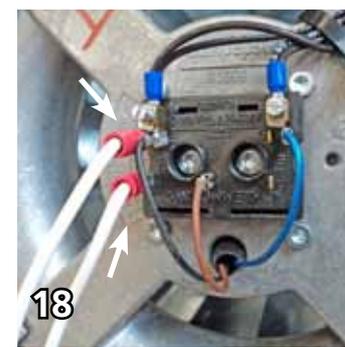
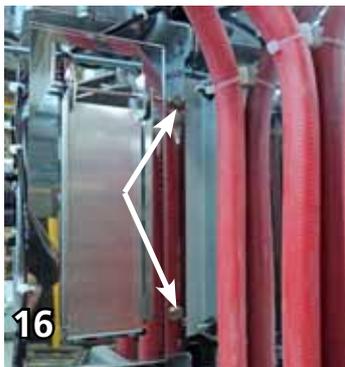
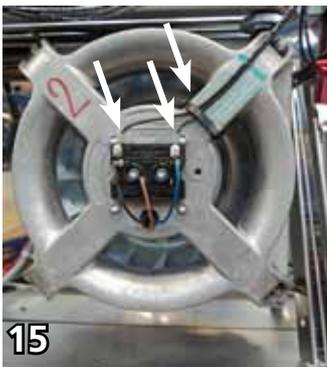
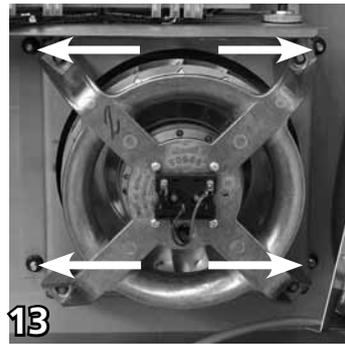
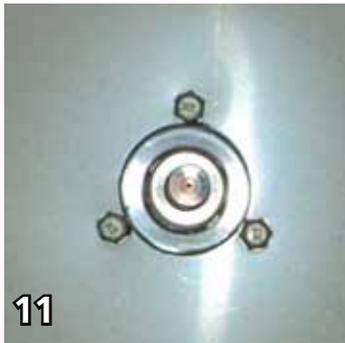
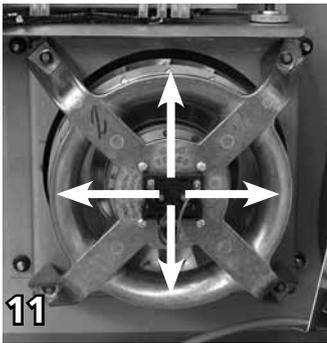


1. Clean and degrease the "old" spacer [254] or take a new one.
2. Clean and degrease the contact-surface from the spacer on the inner oven wall.
3. Mount the mounting plate half-fastened on the spacer (3 bolts M5x10 serrated).
4. Put a layer of heat resistant sealant (340°C) on the contact-surface.
5. Push the spacer on its place (1 bolt centre-up !) against the inner oven-wall and mount the 4 bolts half-fastened (M5x10 serrated).
6. Mount the 3 bolts on the inside and fasten them (M5x18).
7. Remove the redundant sealant with a cloth or the like.
8. Now fasten the 7 bolts at the rear.

## ASSEMBLING THE BLOWERS



9. Carefully clean the blower shaft. File away the damaging on the blower shaft caused by the socket set-screw of the adjusting ring in. (this only applies when the old shaft seal was from a previous model)
10. Put the blower motor on its position and place the nuts. Not tight!! (M6 serrated black).



11. Put the blower in that position that the shaft comes through the centre of the hole of the spacer.

Note that occasionally it might be necessary to drill up the mounting holes of the blower to 9,5mm.

12. Fasten the 4 nuts. **Torque 8 Nm.**

13. Check the 4 nuts of the construction profile [267], with the same torque. In case these nuts moved, then repeat point 12.

14. Check if the shaft is still coming through the centre of the hole of the spacer.

15. Connect the wiring to the screw terminals of the blower motor and mount a new cable tie.

16. Mount the vane switch assembly [290]. (2x bolt M5x10 serrated)

17. Mount the vertical air suction channel and put back the grommet with the hose. (2 nuts M6 en 2x nut/bolt M5)

18. Connect the capacitor wiring to the blower motor.

On the inside:

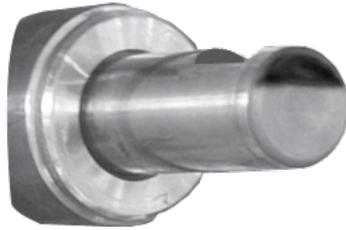
19. Remove the 3 bolts (M5x18), if applicable.

20. Push a new seal [253] over the blower shaft and check if the 3 holes enable free access to the mounting holes. If not, then the blower shaft position is not good. Refer to point 11.

21. Mount the seal with the pressure plate [252] and 3 bolts M5x18 [824].

**Torque 6Nm.**

## ASSEMBLING THE BLOWERS (CONTINUED)



18. Mark the position of the flat surface on the shaft, on the shaft head.

19. Place the blade in such a way that the socket set-screw is positioned square to the flat surface on the shaft.

**Keep blower motor and fan blade together!!**

20. Slowly fasten the set-screw while the centre of the flat surface is searched by moving the ventilator blade with short left/right movements. Slide the ventilator blade as far as possible to the back on the shaft.

21. Fasten the screw.

22. Place the fan plate [277].

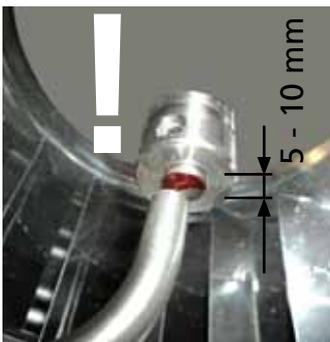
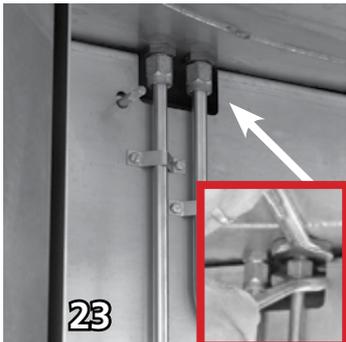
23. Fasten the swivels of the waterinjection-joints [227] while holding the joint with a 17 and 19mm wrench. Take care of the distance of the pipes to the ventilator shaft!! 5-10mm.

24. Place the 4 spacers [276] and mount the filter support [275] (4 nuts M6).

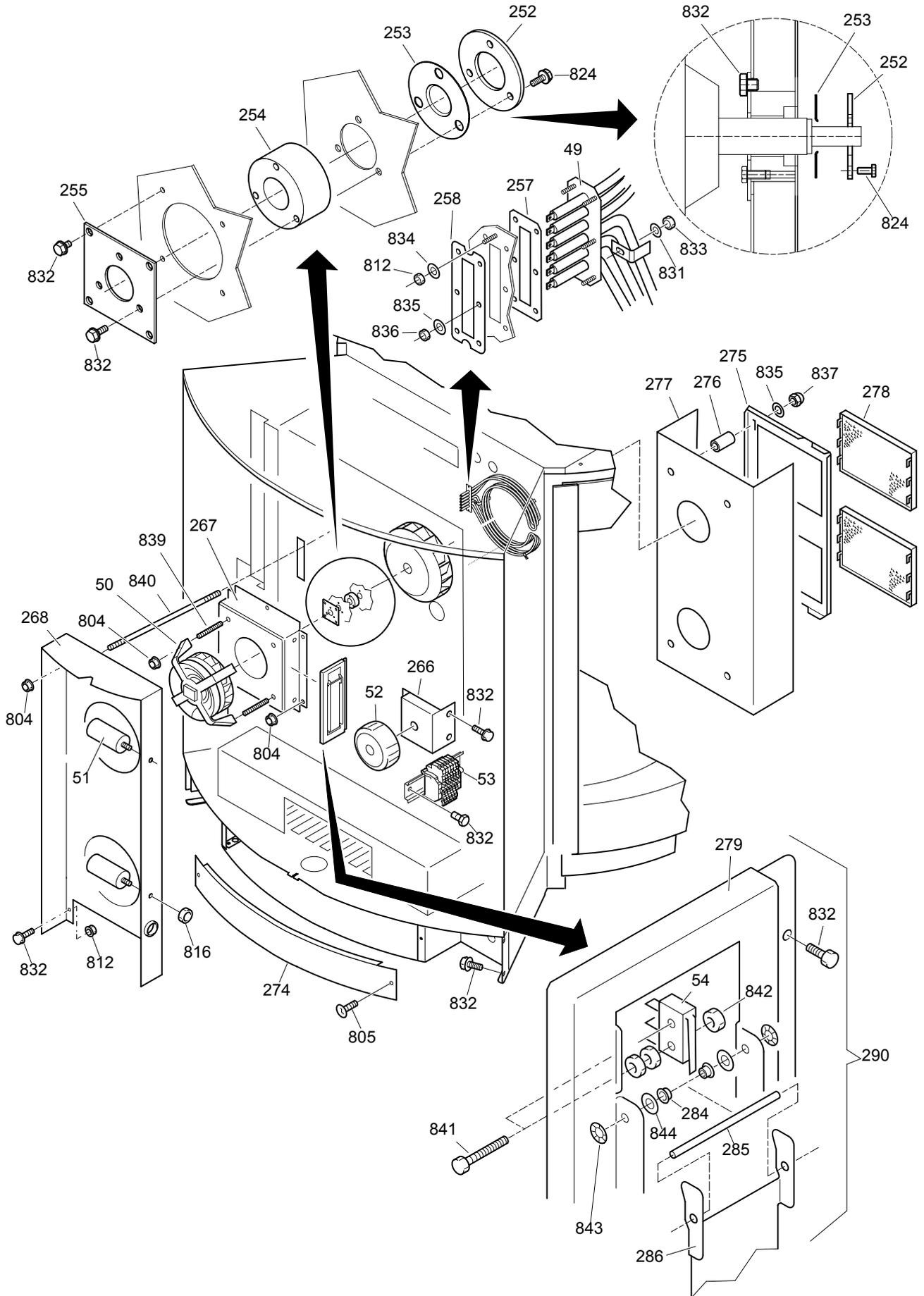
25. Place the fat filters [278].

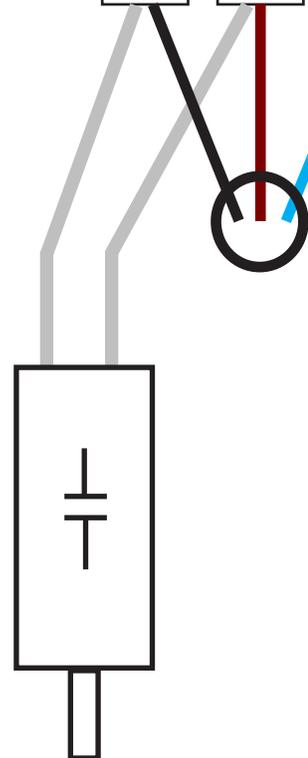
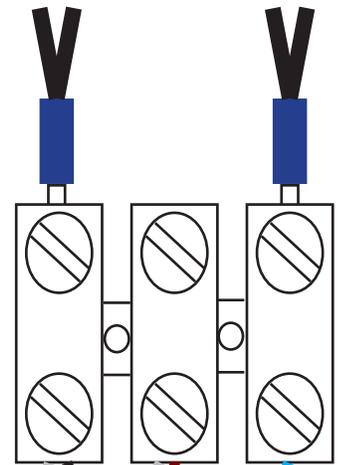
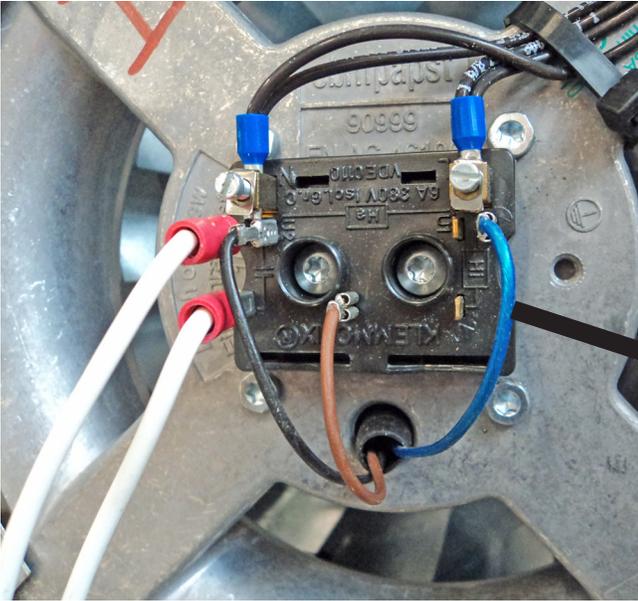
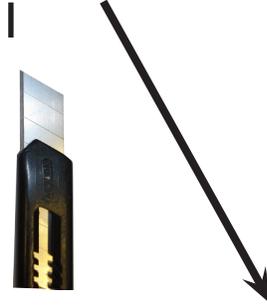
*Mount the nut from the soap mister [450] if applicable.*

26. Put in the chicken racks and/or meatbaskets.



BLOWERS AND HEATING

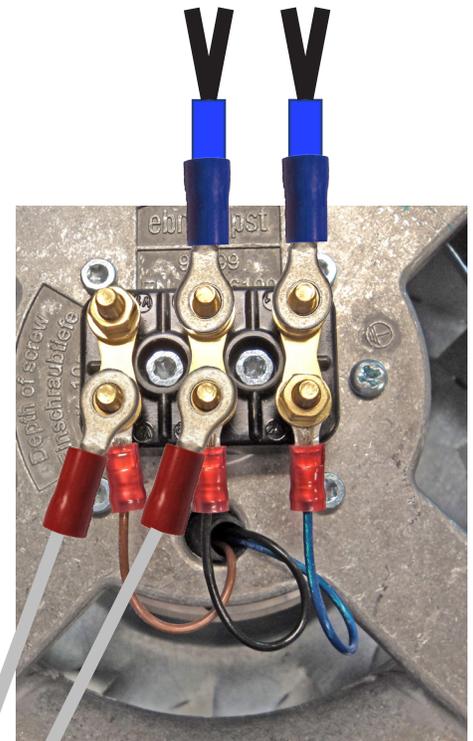
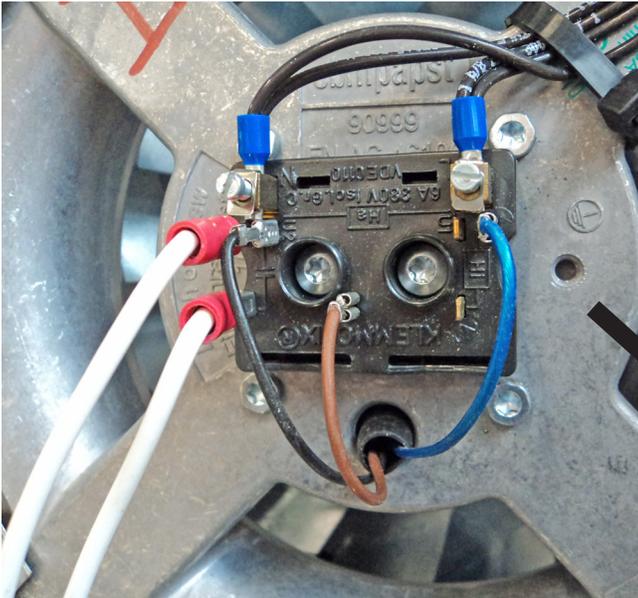




- Disconnect all wires from the motor connection block.
  - Cut 3 terminals from the plastic terminal block.
  - Connect all wires according to the diagram.
- 
- Débranchez tous les câbles du bloc de raccordement du moteur.
  - Couper trois bornes du bloc de connexion en plastique.
  - Connecter tous les câbles selon le schéma.

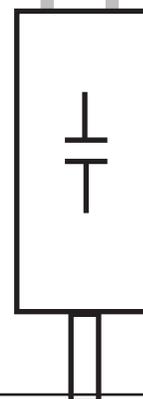
## CONVERSION TO NEW MOTOR CONNECTION BLOCK

In case the new blower has this connection block, then see below how to connect.



- Cut the receptacles from the capacitor and mount ring-terminals instead.
- Pinch the ferrules and connect ringterminals to them OR cut the ferrules from the (black) wires, strip and mount ringterminals.
- Connect all wires according the overview.

- Couper les cosse femelle du condensateur et monter anneau terminals.
- Pincez les embouts et connecter anneau terminals à eux ou couper les embouts de l'(noir) câbles, dépouiller et monter anneau terminals
- Connecter tous les câbles selon le schéma.



The next chapter is  
for USA (208V) models only!

MEASURING ON THE BLOWER CIRCUIT

**Working principle.**

A transformer is used to be able to switch the 2 blowers on low speed (165Volt) or high speed (208Volt). Since the transformer has a large inrush current, a slow start was necessary. This is accomplished with the 22 Ω resistor and the Solid state relay on output X7.

**Blowers "Power ON" sequence**

When the transformer is switched on, the SSR on X7 puts power on the transformer, through the resistor during 0,5 seconds. During this time, 50 Volt can be measured over the resistor (with a suitable meter). After that, X6 is switched on and now the full power is put on the transformer.

**Blowers "low speed" sequence.**

In case the blowers are set on low speed in the cooking program, the blowers will start up in high speed as explained above. After 10 seconds, X6 opens, X4 closes (X5 opens) followed by the power ON sequence.

**Passive measurements (resistance and capacitance)**

Disconnect the mains supply first!

**The Blowers.**

- The overview shows how the coils are connected to the terminal block on the back of the blowers.
- It also shows the connections between the terminals on the terminal block itself.

**Measuring the blower coils.**

Disconnect the feedwires on the screw terminals first!

- |             |      |                         |
|-------------|------|-------------------------|
| Main coil:  | 33 Ω | Between Black and Blue  |
| Start coil: | 45 Ω | Between Brown and Blue  |
| Both coils: | 78 Ω | Between Black and Brown |

Insulation test: ∞ MΩ between a terminal and ground.

0,62 Ω can be expected when measuring on the screw terminals (black and blue) in case they are not disconnected. This is because of the transformer coils.

**The Resistor.**

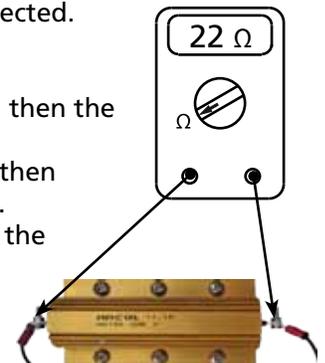
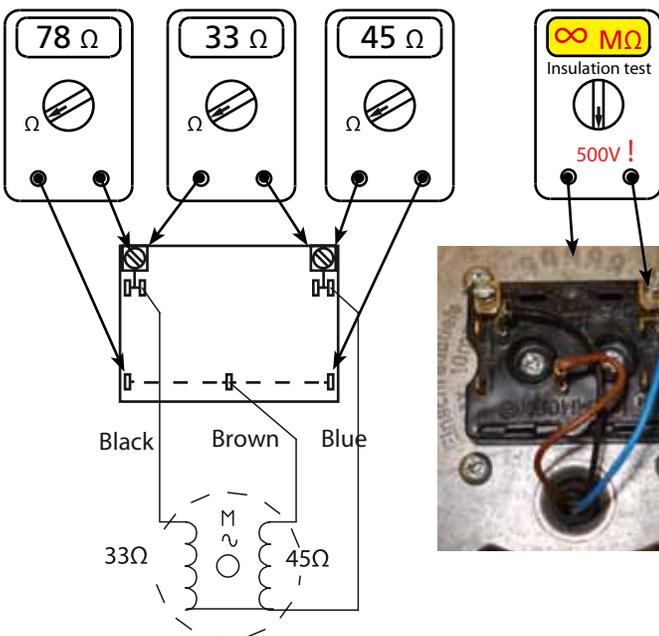
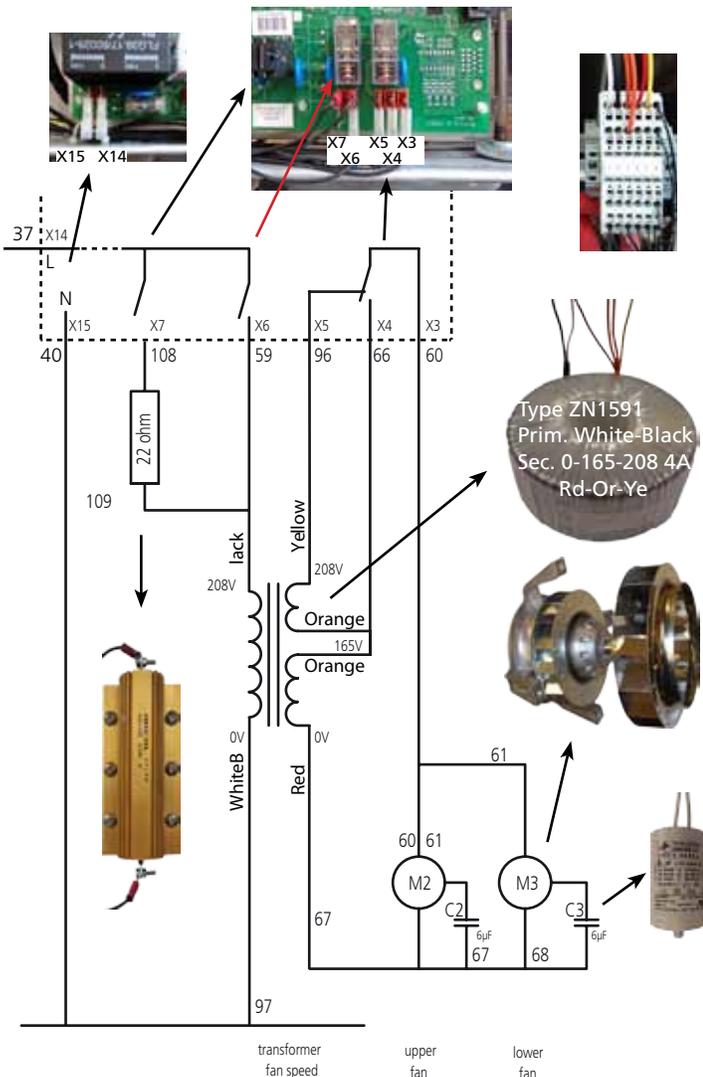
It does not need to be disconnected. The resistance is 22 Ω.

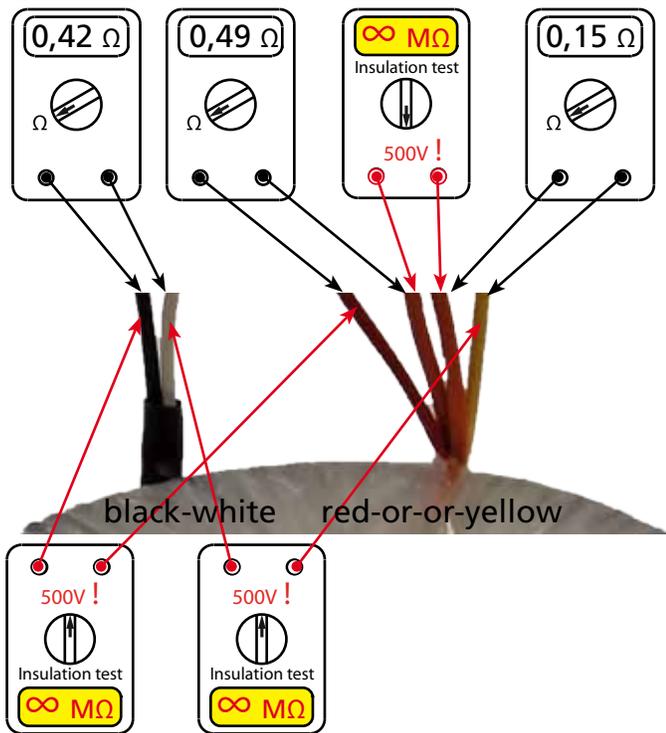
In case the resistance is higher, then the resistor is broken.

In case the resistance is lower, then disconnect and measure again.

In case it is still lower, then the resistor is broken.

In case it is ok, then the I/O board is broken.





**The speed transformer.**

**General.**

This transformer has big copper wires and therefore the resistance is very low. For this reason it is difficult to measure the right value because of deviations in the multimeter and contact resistances of the test probes.

Therefore it is recommended to define this measurement error as good as possible with the following instruction.

**Prevention of measurement errors!**

- Put both test probes on the same terminal or in this case the same wire.
- Write down the reading. For example 0,22 Ω.
- Subtract this value from the next measurements. For example, the reading of the primary coil is 0,64 Ω. The real value is 0,64 - 0,22 = 0,42 Ω.

Tip: Insulation testers (Megger) often have a very good resistance meter.

**Measuring the transformer coils. (see overview)**

Disconnect the wires from the terminal block first.

The transformer has 3 separated coils. 1 Primary coil and 2 secondary coils.

**Resistance:**

- Primary coil (black - white): 0,42 Ω
- Secondary coil (Yellow-Or): 0,15 Ω
- Secondary coil (Or - Red): 0,49 Ω

**Insulation:**

- Prim.-sec.1 (Black-Red): ∞ Ω
- Prim.-sec.2 (White- Yellow) ∞ Ω
- Sec.1-sec.2 (Orange-Orange) ∞ Ω

**The 6µF capacitors**

**General**

Even with a capacitance meter it is impossible to determine for sure if the capacitor is ok or not, because it can be leaking when it is connected to mains power. A quick optical check often tells more. Search for leaking oil and / or bulges (lumps).

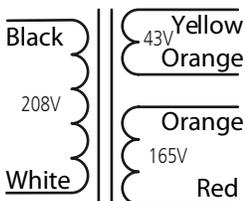
**Measuring with an insulation tester in 500V position. Work under safe conditions according local legislation!**

The value will not reach ∞ Ω, but will go up and down a little. When it is above 50MΩ it will be ok. Disconnect the test leads while the value is at the highest position. The capacitor is now charged with ± 500VDC!! Leave it for a few seconds and then put the wires together. A loud spark must arise. If not, the capacitor is leaking (losing its charge). It is also possible to charge the capacitor by shortly con-

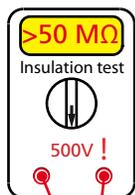
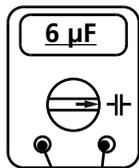
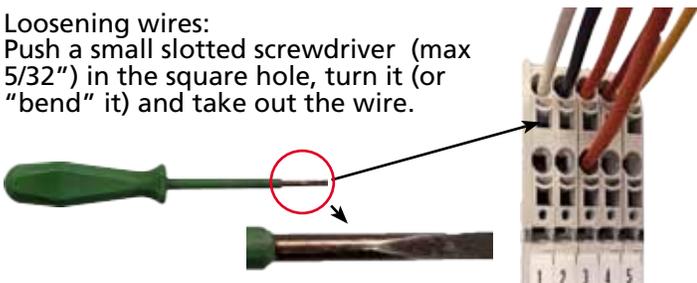
Define the measurement error.



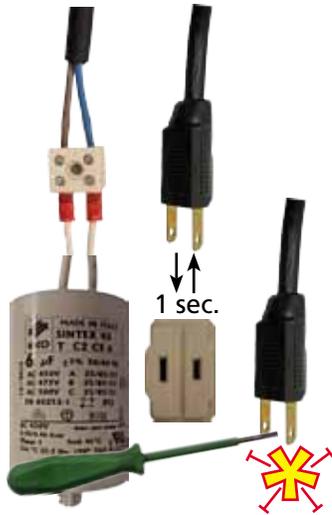
Electrical diagram speed transformer



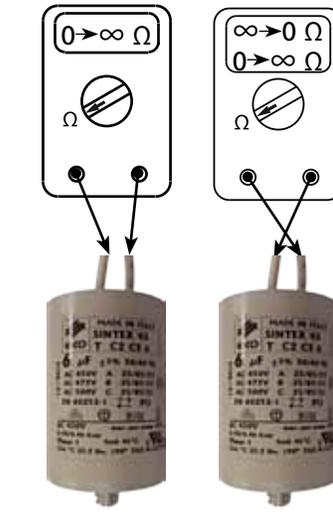
Loosening wires: Push a small slotted screwdriver (max 5/32") in the square hole, turn it (or "bend" it) and take out the wire.



Charging with a test cable



Checking with an Ω meter



necting it to the mains supply (208V~). The same spark must arise. Do this a few times. The capacitor will not be charged when the leads are disconnected during the “zero crossing” of the mains sinus. It is ok when a spark arises once.

**Measuring with an Ω meter.**

Be sure that the capacitor is empty!

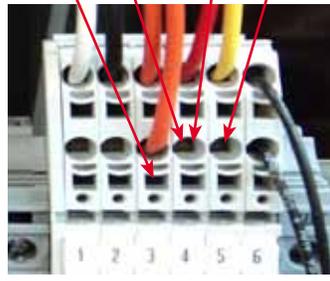
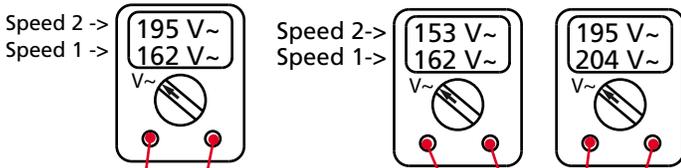
The value will go up until ∞ Ω is reached. Exchange the test leads. The value will go down, through “0” and up again. If not, the capacitor is broken. If ok, it is still not sure if the capacitor is ok. It might leak when it is connected to the mains power!

**Active measurements.**

*You are about to measure on a 3 phase 208V~ circuit!! You need to be qualified for this! Always work according local legislations!*

For measuring on the transformer terminal block:

- Use short test probes or-
  - Unscrew the terminal block and turn it outwards or-
  - Turn out the glass panel.
- Switch on the unit .



**Voltagages that can be expected in normal situation.**

All voltagages are related to a line voltage of 208V~

**Blowers in high speed (speed 2 in cooking program):**

- On the screw terminals of the blowers: 195V~
- On the terminal block
- Between Red (4) and Yellow (5): 195V~
- Between Red (4) and Orange (3): 153V~.

**Blowers in low speed (speed 1 in cooking program):**

- On the screw terminals of the blowers: 162V~
- On the terminal block
- Between Red (4) and Yellow (5): 204V~
- Between Red (4) and Orange (3): 162V~.

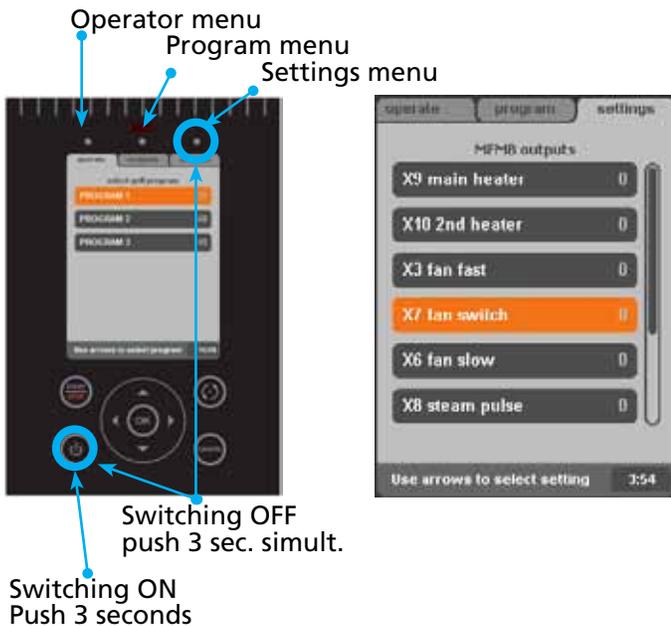
**Trouble shooting with help of the I/O test facility (in case the fuses blew).**

**Do this test only when the above resistances are ok!!!**

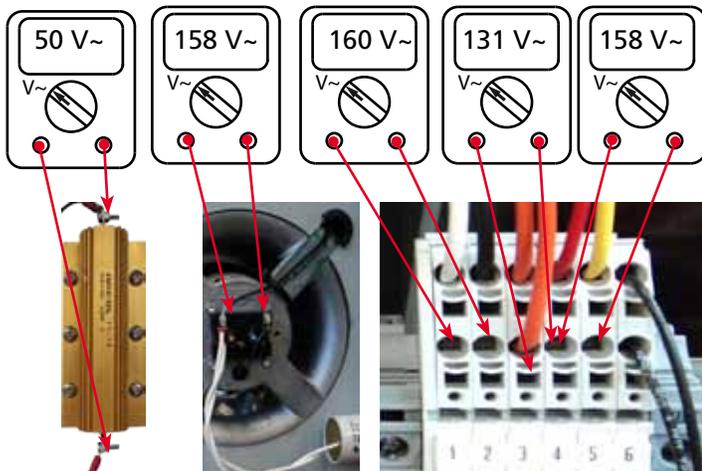
- Open the settings menu
- Choose service and give in the pin code 4878
- Select “I/O test” and choose MFMB outputs.

3 keys are available to test the blower outputs. The “X” numbers relate to the corresponding outputs on the circuit boards.

- X3 is the relay that switches high and low speed. “1” is low speed. (mentioned wrong on the screen!)
- X6 Switches full power on the transformer. **Do not use this one. It will blow the fuses!!**
- X7 Switches 160V~ on the transformer (through the 22 Ω resistor)



## Output X7 active



**The duration of following test should only last for 3 seconds. In this time, the voltage over the resistor has to be measured!!**

Therefore:

- Connect the Volt meter to the Resistor terminals with crocodile clamps or something like that and keep the meter in the neighbourhood.
- Activate output X7, read out the meter and deactivate the output as quick as possible. (activate the output by selecting it, push "OK" to activate and push "OK" again to deactivate.)

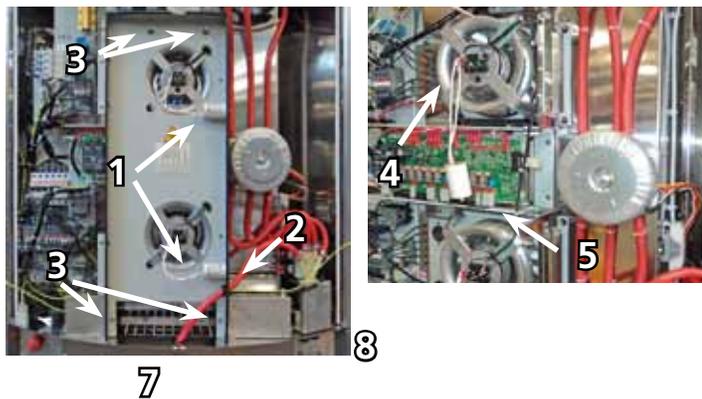
Note that you can use the emergency switch to quickly switch OFF in case you loose control.

-->In case the reading is higher than 60V~ there is a short circuit (insulation error) in the transformer or the blowers and the resistor will overheat!!

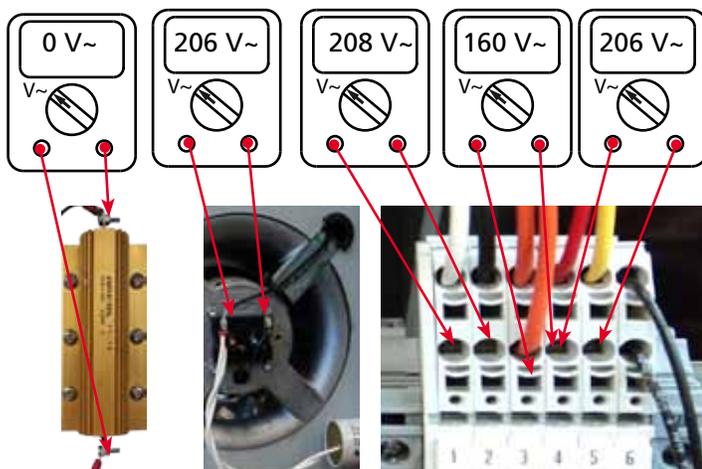
Proceed as follows.

1. Disconnect the 2 capacitors and unscrew them from the blower suction channel. (Metric 13)
2. Remove the grommet and take out the hose.
3. Unscrew 2 nuts (metric 10) and 2 bolts (with nut, metric 8) and remove the blower suction channel
4. Connect the 2 capacitors.
5. Disconnect both blowers. Therefore disconnect wire 60 from terminal X3.
6. Do the above test again and activate output X7. **Not longer than 3 seconds!! Wait 60 seconds in between measurements to let the resistor cool down**

- In case the voltage over the resistor is now  $\pm 50V\sim$ , the short circuit is in one of the blowers.
- In case the voltage is still high, the short circuit is in the transformer.



## Blowers in full speed



-->In case the reading is OK (50V~):

Output X7 can now be activated continuously.

Proceed as follows.

Measure the voltages.

- Over the resistor 50V~
  - On the screw terminals of the blowers: 158V~
- On the terminal block
- Between White (1) and Black (2): 160V~
  - Between Red (4) and Yellow (5): 158V~
  - Between Red (4) and Orange (3): 131V~.

In case the above is ok, then do the same measurements again with full power on the blowers.

Therefore start up a cooking program with fan speed 2.

Measure the voltages.

- Over the resistor 0V~
  - On the screw terminals of the blowers: 206V~
- On the terminal block
- Between White (1) and Black (2): 208V~
  - Between Red (4) and Yellow (5): 206V~
  - Between Red (4) and Orange (3): 160V~.

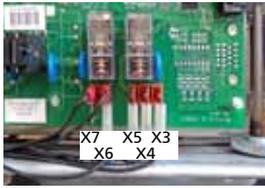
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The next chapter is  
for EUR (400/230V) models only!

MEASURING ON THE BLOWERS



**Working principle.**

A transformer is used to be able to switch the 2 blowers on low speed (165Volt) or high speed (220Volt).

**Blowers "Power ON" sequence.**

The blowers are switched on by the relays on output X6.

**Blowers "low speed" sequence.**

In case the blowers are set on low speed in the cooking program, the blowers will start up in high speed as explained above. After 10 seconds, X6 opens, X5 opens and X4 closes followed by "Power ON" (X6 on).

**Passive measurements (resistance and capacitance)**

Disconnect the mains supply first!

**The Blowers.**

- The overview shows how the coils are connected to the terminal block on the back of the blowers.
- It also shows the connections between the contacts on the terminal block itself.

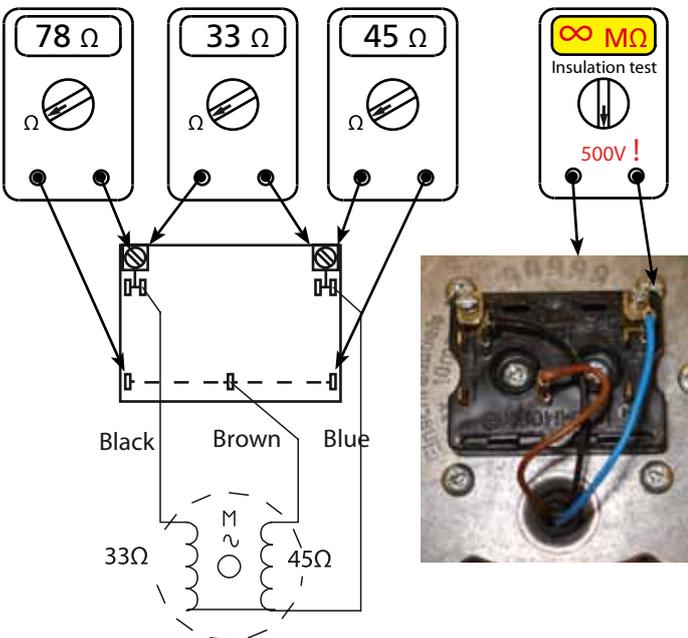
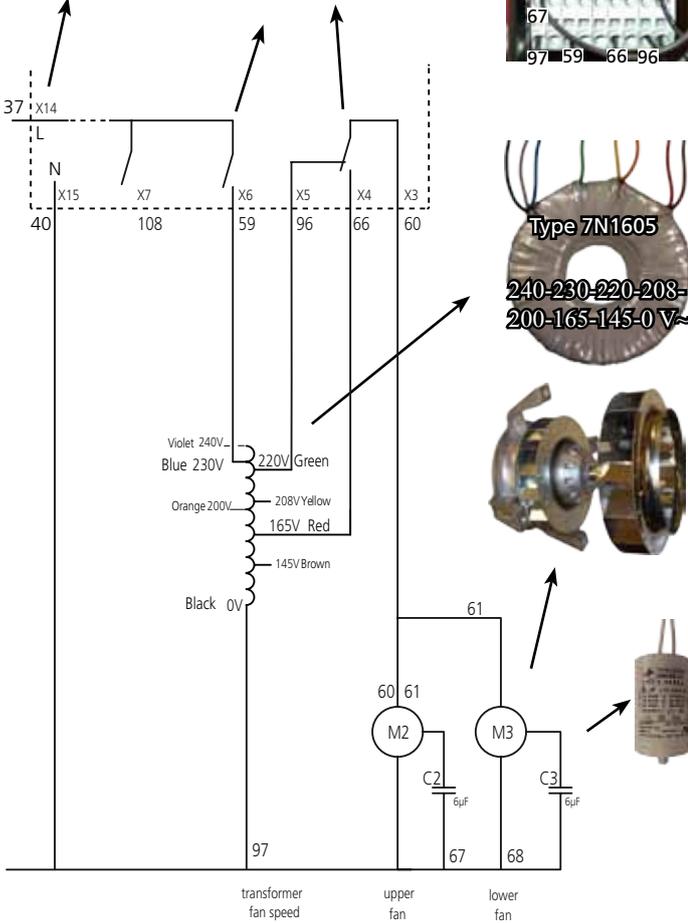
**Measuring the blower coils.**

Disconnect the feedwires on the screw terminals first!

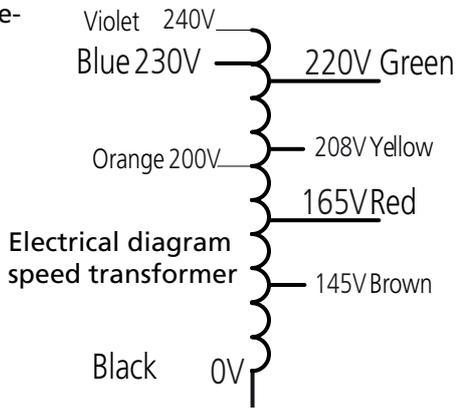
- Main coil: 33 Ω. Between Black and Blue
- Start coil: 45 Ω. Between Brown and Blue
- Both coils: 78 Ω. Between Black and Brown

Insulation test: ∞ MΩ between a terminal and ground.

2,42 Ω can be expected when measuring on the screw terminals (black and blue) in case they are NOT disconnected. This is because of the transformer coils.



Define the measurement error.



**The speed transformer.**

General.

This transformer has big copper wires and therefore the resistance is very low. For this reason it is difficult to measure the right value because of deviations in the multimeter and contact resistances of the test probes.

Therefore it is recommended to define this measurement error as good as possible with the following instruction.

**Defining the measurement error!**

- Put both test probes on the same terminal or in this case the same wire.
- Write down the reading. For example 0,22 Ω.
- Subtract this value from the next measurements. For example, the reading of the total coil (Black-Violet) is 2,95 Ω. The real value is 2,95 - 0,22 = 2,73 Ω.

Tip: Insulation testers (Megger) often have a very good resistance meter.

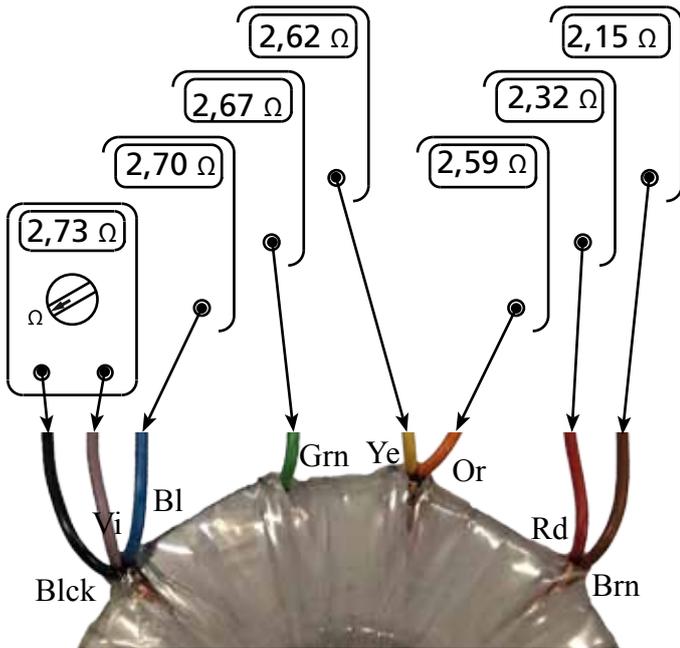
**Measuring the transformer coils. (see overview)**

Disconnect the wires from the terminal block first!

The transformer has 6 coils which are all put in series. Therefore, insulation test is not possible.

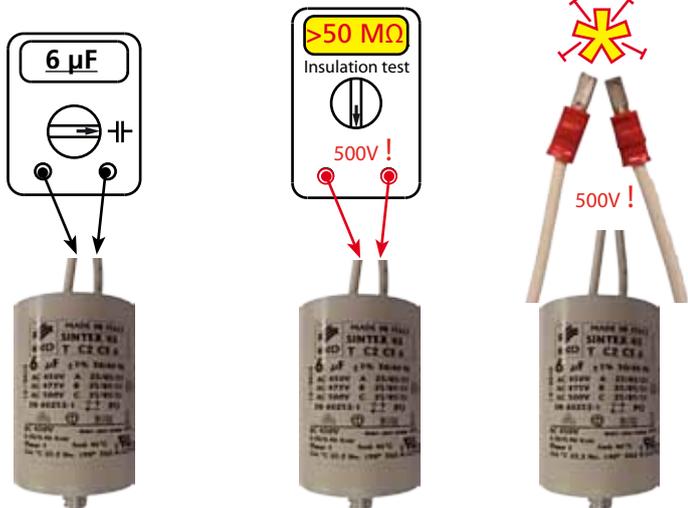
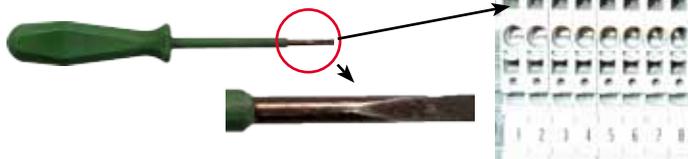
Resistances measured against the black (0V) wire.

Violet:	2,73 Ω (240V~ in)	
Blue:	2,70 Ω (230V~ in)	Used
Green:	2,67 Ω (220V~ out)	Used
Yellow:	2,62 Ω (208V~ out)	
Orange:	2,59 Ω (200V~ in)	
Red:	2,32 Ω (165V~ out)	Used
Brown:	2,15 Ω (145V~ out)	



Loosening wires:

Push a small slotted screwdriver (max 4mm) in the square hole, while moving it to the center of the terminal block, and take out the wire.



**The 6µF capacitors**

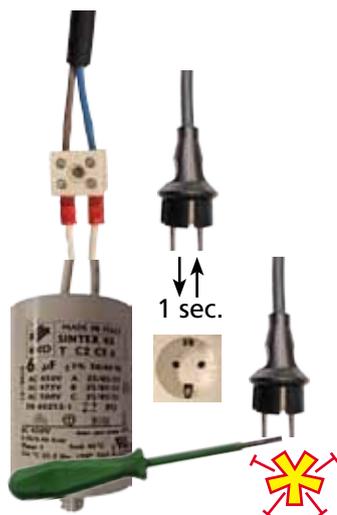
General

Even with a capacitance meter it is impossible to determine for sure if the capacitor is ok or not, because it can be leaking when it is connected to mains power. A quick optical check often tells more. Search for leaking oil and / or bulges (lumps).

**Measuring with an insulation tester in 500V position. Work under safe conditions according local legislation!**

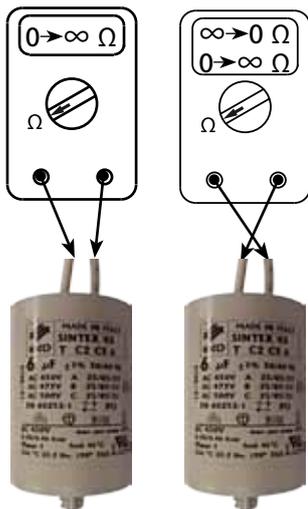
The value will not reach ∞ Ω, but will go up and down a little. When it is above 50MΩ it will be ok. Disconnect the test leads while the value is at the highest position. The capacitor is now charged with ± 500VDC!! Leave it for a few seconds and then put the wires together. A loud spark must arise. If not, the capacitor is leaking (losing its charge). It is also possible to charge the capacitor by shortly con

Charging with a test cable



Speed 2->  
Speed 1->

Checking with Ω meter



necting it to the mains supply (208V~). The same spark must arise. Do this a few times. The capacitor will not be charged when the leads are disconnected during the "zero crossing" of the mains sinus. It is ok when a spark arises once.

Measuring with an Ω meter.

Be sure that the capacitor is empty!

The value will go up until ∞ Ω is reached.

Exchange the test leads. The value will go down, through "0" and up again.

If not, the capacitor is broken.

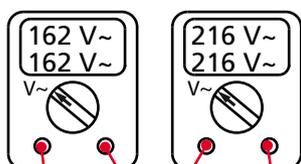
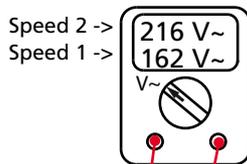
If ok, it is still not sure if the capacitor is ok. It might leak when it is connected to the mains power!

Active measurements.

**You are about to measure on a 3 phase 230V~ circuit!! You need to be qualified for this! Always work according local legislations!**

For measuring on the transformer terminal block:

- Use short test probes or-
  - Unscrew the terminal block and turn it outwards or-
  - Turn out the glass panel.
- Switch on the unit .



Voltages and Current that can be expected in normal situation.

All voltages are related to a line voltage of 230V~

**Blowers in high speed (speed 2 in cooking program):**

- On the screw terminals of the blowers: 216V~
- On the terminal block
- Between Black (1) and Blue (3): 229V~
- Between Black (1) and Red (6): 162V~
- Between Black (1) and Green (8): 216V~
- Current in wire 60 (2 blowers) 1,7A~

**Blowers in low speed (speed 1 in cooking program):**

- On the screw terminals of the blowers: 162V~
- On the terminal block
- Between Black (1) and Blue (3): 229V~
- Between Black (1) and Red (6): 162V~
- Between Black (1) and Green (8): 216V~.

**Trouble shooting with help of the I/O test facility.**

- Open the settings menu
- Choose service and give in the pin code 4878
- Select "I/O test" and choose MFMB outputs.

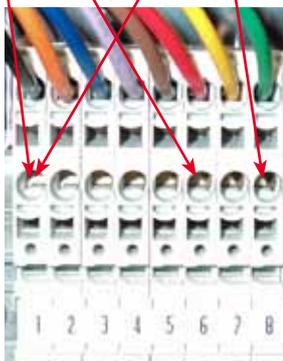
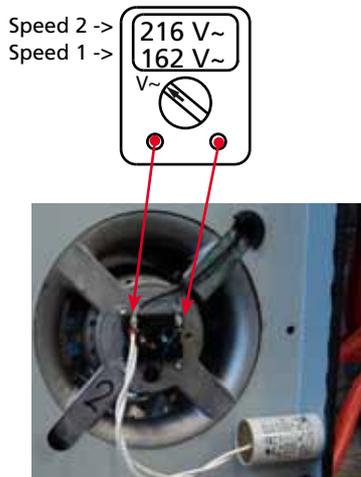
3 keys are available to test the blower outputs. The "X" numbers relate to the corresponding outputs on the circuit boards.

X3 is the relay that switches high and low speed. "1" is low speed.

X6 Switches power on the transformer.

X7 Not connected

Note that the text untill sw version 3.77 is not correct.

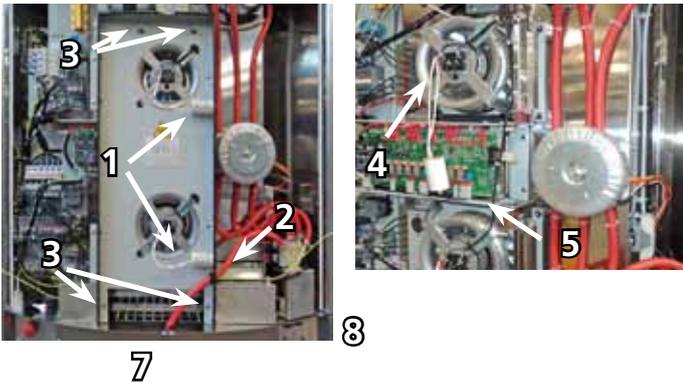


Operator menu  
Program menu  
Settings menu



Switching OFF  
push 3 sec. simult.

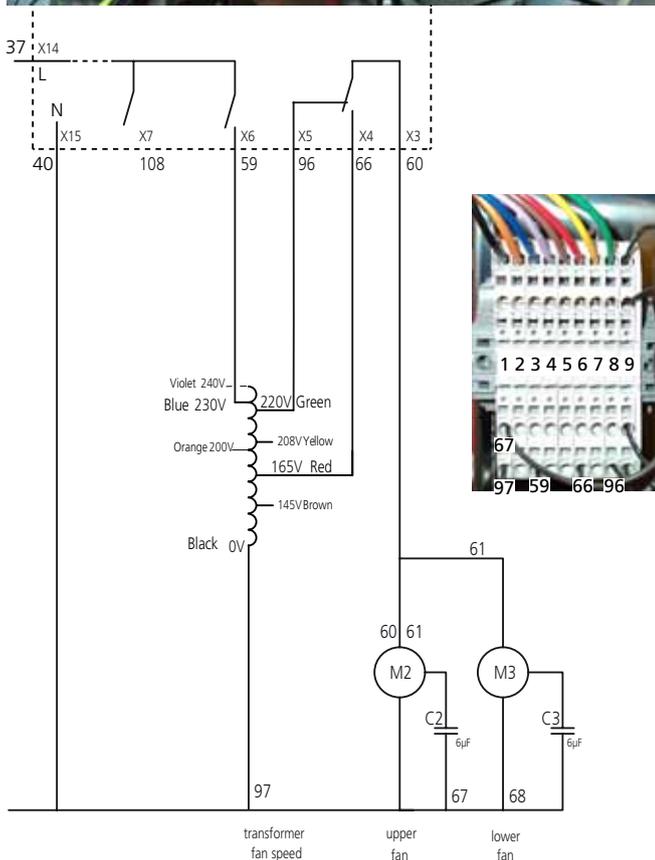
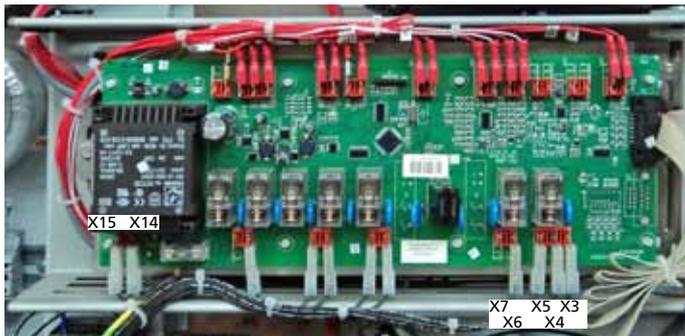
Switching ON  
Push 3 seconds



- In case there fuses were blown before, first check the wiring to and from the transformer and blowers. Also check discoloration of the transformer.
- Select X6 and push OK

**In case the fuses F1 or F2 still blow, switch off the mains supply and proceed as follows.**

1. Disconnect the 2 capacitors and unscrew them from the blower suction channel. (Metric 13)
2. Remove the grommet and take out the hose.
3. Unscrew 2 nuts (metric 10) and 2 bolts (with nut, metric 8) and remove the blower suction channel
4. Connect the 2 capacitors.
5. Disconnect both blowers. Therefore disconnect wire 60 from terminal X3.
6. Switch ON the mains supply and activate output X6.
7. In case the fuses still blow, the transformer is broken or the wires to and from the transformer maybe shorted.
8. In case the fuses stay, then check the voltages according the previous page, in the high speed table.
9. In case these voltage differ, the transformer is broken.
10. In case the voltages are OK, one or both blowers have a short circuit, or the wires to the blowers may be shorted.
11. Switch OFF the mains supply (power) and disconnect the wires 61 and 68 from the screw terminals of the lower blower and insulate them.
12. Re-connect wire 60 to terminal X3 on the pcb.
13. Switch on the power and activate output X6.
14. In case the upper blower is running normally, the lower blower is broken.
15. Check the running blower by measuring the current. This is 0,85A
16. In case the blower is not running, the capacitor might be broken. The current will than be 1,7A.
16. Switch off the power and exchange the broken blower.
17. Re-connect all wires on the blowers, activate output X6 and check the transformer voltages and blower current.



*Note that in case an insulation tester was available, a broken blower would have been detected already with the resistance values. See page 48.*

