SERVICE MANUAL

Bake Star intelligent

MODELS

BS3i
BS5i
BS8i
BS10i

Model BS5i

- 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.

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Versions		
Version	Issue date dd/mm/yy	Remarks
0705	01/05/2007	First release BSi with i-control
0808	01/08/2008	A few errors removed from the partslist.
1301	31/01/2013	Extension with service procedures Extension with electrical tests Expansion of the exploded views. Fasteners included. Included exploded view of extraction hoods. Included exploded view of stands. Included exploded view of drive-in trolley. Included exploded view of stacking kit.
1306	12/06/2013	Parts added on pages 51 (stacking) and 60 (loctite)

INDEX

This manual covers the Bake Star intelligent series bake-off ovens. The Bake Star intelligent comes in various sizes with 3, 5 8 or 10 baking levels for standard 40x60 cm baking trays. The ovens are also available in stacked versions of 3+3 3+5 and 5+5.
Special versions with lower connectionpower are available for the 5, 8 and 10 layer version.

- BS3i – Bake-off oven with 3 levels
- BS5i – Bake-off oven with 5 levels
- BS3i – Bake-off oven with 8 levels
- BS10i – Bake-off oven with 10 levels

All of the information, illustrations and specifications contained in this manual are based on the latest product information available at the time of printing.

TECHNICAL DATA

STANDARD MODELS	BS3i	BS5i	BS8i	BS10i
Power	7880W	12750W	19100W	23300W
Fuses needed with power connec-tion400V 3N~50…60Hz (3 phases with neutral)	3x 16A	3x 20A	3x 32	3x 35
Fuses needed with power connection 230V 3~50…60Hz (3 Phases without neutral)	3x 30A	3x 35A	3x 50A	3x 63A
Standard plug from factory (According to IEC 60309 and CEE-form)	16A 3P+N+E 5 pole	32A 3P+N+E 5 pole	32A 3P+N+E 5 pole	63A 3P+N+E 5 pole
Default cable	5x2,5 mm²	5x4 mm²	5x4 mm²	5x6 mm²
Net weight	108 kg	136 kg	181 kg	212 kg
Gross weight	125 kg	155 kg	203 kg	234 kg
Hight	650 mm	850 mm	1150 mm	1350 mm
Width	910 mm	910 mm	910 mm	910 mm
Depth	740 mm	740 mm	740 mm	740 mm

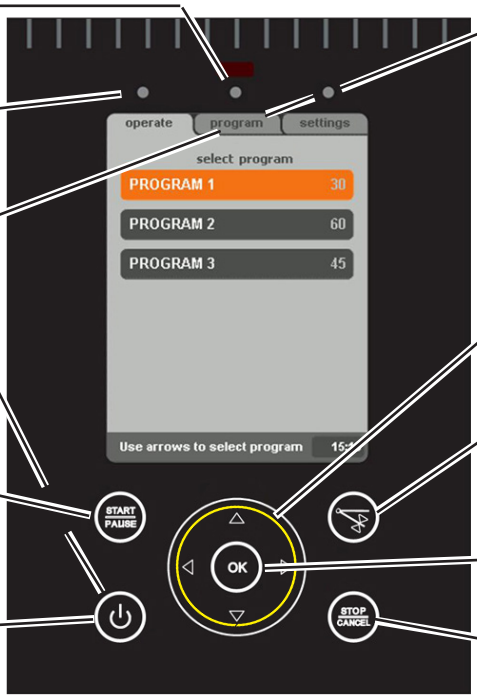
SPECIAL MODELS 200V 3~ 50...60Hz	BS3i	BS5i	BS8i	BS10i
Power	7400W	12000W	17600W	21600W
Maximum current	28A	35A	54A	65A
Default cable	4 mm²	6 mm²	6 mm²	6 mm²

Tools

- Standard set of tools.
- Metric wrenches, sockets and hex socket key wrenches.
- Multi-meter and AC current clamp meter.
- Temperature tester.
- Insulation value tester (Megger).
- Field Service Grounding Kit.
- Puller.

OVERVIEW OF THE CONTROL PANEL

Refer to the service manual "I-control"!



Programming cooking programs

Choosing and running programs

Switching OFF
Press both keys for 3 seconds.

Start / pause of program

Switching ON
Press for 3 seconds
-Press 6 seconds for key test.

-Information
-Parameter settings
-I/O test

Combination of dial and up - down - left - right keys

-Rotor key for positioning rotor
-Door open key in BSi

Confirmation or entering of choice.

Stop / cancel of program

THE I-CONTROL MENU'S

This controller has menu's for:
- The operator. see tab "operate".
- The store (department) manager. see tab "program".
- The service engineer. see tab "settings".

See overview of choices in the menu's below.

Operate	Program (for manager)	Settings (manager and service)
Program 1	Add program	Information --> shows software version and last error
Program 3	Edit program	Manager --> Manager settings, including password
Program	Delete program	Service --> Service settings and I/O test screens
	Test program	
Timer:		
Cleaning		
Manual		

The operator has the following possibilities:
- Running cooking programs or the cleaning program.
- Setting the timer to auto start the unit. (Only if the manager parameter "Auto recipe start" is enabled.)
- Use of the manual program. (Only if the service parameter "manual operation" is enabled.)

The manager controls the "program" menu and the manager settings in the settings menu. In case the manager decided to activate the manager password, the operator does not have access to the program tab and the manager parameters under the settings tab.

The service engineer has access to all menu's. The password for the service settings is 4878. In case the manager has set a manager password, this will be shown in one of the service settings.

THE COOKING PROCES

The cooking program can consist of:
- Preheat function
- Cooking process
- Boost function
- Cook correction

Preheat function.
- Preheat can be enabled in the manager settings menu. This means that in case it is enabled, preheat will be active in all cooking programs. It is disabled by default.
- The BSi units have the possibility to have the preheat choice in each cooking program.

Cooking proces.
- The cooking proces can consist of maximum 9 cooking steps.
- A cooking step ends when the time elapses.
- In BSi, the first step can be programmed as preheat step.
- A "hold" function can be programmed as a last (continuous) step.
- By default the automatic cook correction facility will add or deduct time at the end of the proces for equal results with different load quantity.

The cooking proces step by step.

	Action	Message on the display	Comment
1	Choose program	Summary of Program names	**Start here in case the program has a preheat step.**
2	Press <OK>	Please wait. Do not load oven!	Oven is preheating
3		Preheat ready. Press ok to stop alarm.	The alarm sounds. The preheat temperature is reached.
4	Press <OK>	Please load oven and press Start	The alarm stops. Follow on screen instructions.
5	Open door	Door open	**Start here in case the program has no preheat step**
6	Load products	Door open	
7	Close door	Ready in .... minutes press power for extra time	The program starts after closing.
			In case the program has no preheat step, the right program has to be chosen now.
8	Press <Start>	Ready in .... minutes press power for extra time	It is during the proces already possible to add extra time by pushing <Power>
9		Ready press power for extra time	The alarm sounds
10	Press <OK>	Ready press power for extra time	The alarm stops. It is now possible to open the door and check the products or push <Stop/Cancel> --If the products are not good, then proceed at #11 (adjust the time and push <OK> --If good, then proceed at #15 (unload the oven).
11	Press <Power>	.....minutes	
12	adjust time		
13	Press <OK>	Ready in .... minutes press power for extra time	
14	Press <OK>	Ready press power for extra time	This is the same as #9
15	Open the door and/or push <Stop/cancel>	Summary of Program names	End of program

Boost function.

- This function can be activated during the cooking proces. (in the bottom line of the display it says "Press power for extra time"). See in the above diagram from #11-#14.
- Even after opening and closing the door, it is still possible to give in extra cooking time.

THE AUTOMATIC COOK CORRECTION

The automatic cook correction facility will automaticly add or deduct time to the programmed cooking time in order to have constant cooking quality.

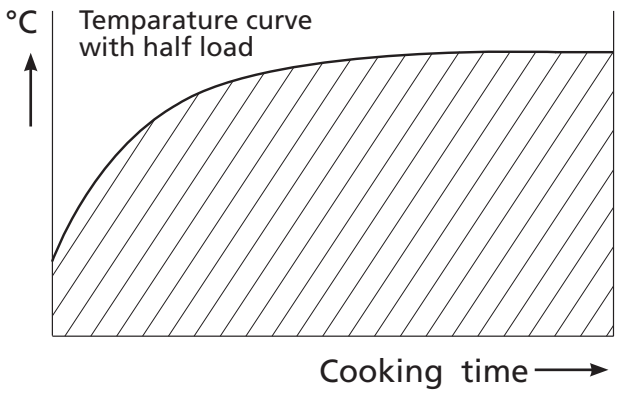
After programming a new program, the first cooking process will be the "learning" process. It is recommended to do the first cook with a half load.

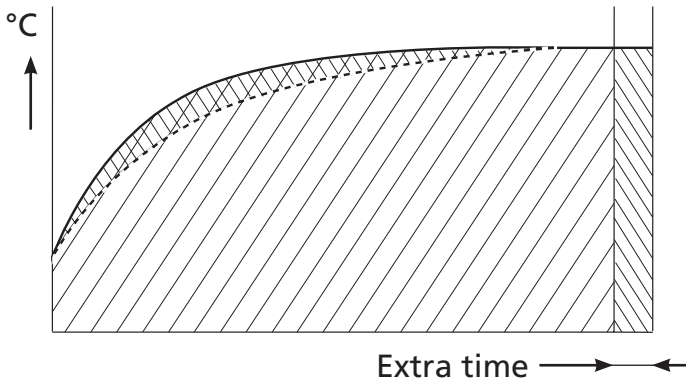
The program calculates the surface from the diagram below the curved line. (temperature * time). The result is the so called heat number. This heat number is stored into the cooking program.

All further cooking programs will try to get the same heat number.

The second diagram shows an example with full load. It takes more time for the unit to reach the programmed cooking temperature. See dashed line. The surface above the dashed line represents the missing part of the heat number. The cook correction will put this missing part behind the normal cooking time. Therefore extra time is added in order to reach the desired heat number.

It is also possible that time is deducted in case a smaller load has been put into the oven.





Time will be added in case of:
A bigger load.
A colder load. (straight from the freezer)
A lower mains voltage.
Somebody opened the door.

Time will be deducted in case of:
A smaller load.
A warmer load. (defrosted)
Higher mains voltage.

Note that:
In case the time or temperature will be changed in the cooking program, the heat number will be adapted with this amount.

The heat number is stored in the cooking program. In case such a program is copied with FIPS (see additional software), the heat number goes with it.

It is possible that in case the program has changed a lot, the cook correction is not able to perform well anymore. In that case the program has to be deleted and reprogrammed with the good parameters.

It is possible to disable this auto cook correction feature in the service parameters. See "parameter listings" -> "auto correct.

PROGRAMMING (ADDING OR EDITING A PROGRAM)

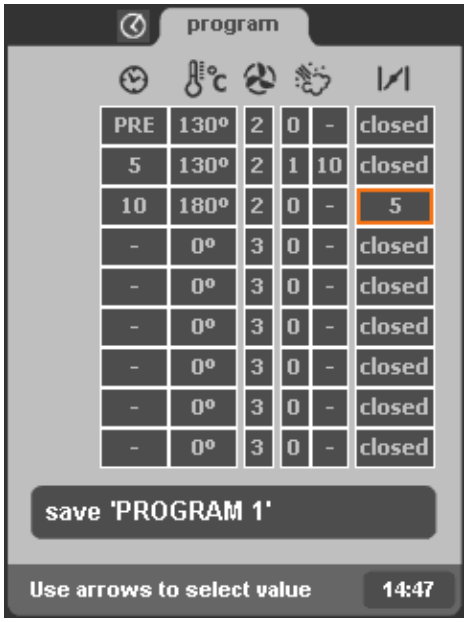
Press <program>.

Select “add program” or “edit program” with the dial.
Confirm with <OK>

Make a name.

Select a character with the dial.
Next character with arrow or OK.
Finally confirm with <OK> twice.

In case of editing, just repeat <OK>.



The following screen will appear.

The screen shows a diagram with 9 lines. These are the 9 possible cooking steps of which a cooking proces can consists of.
The top line will be the first cooking step, or it can be the preheat fase (advised).

The 6 columns represent respectively the time, temperature, fan speed, steam mode, steam quantity and vent position (open or closed).

Method of working:
1. Select a cell to edit with the arrow keys. The cell will turn .
2. Activate the cell with <OK>. The cell will turn .
3. Edit the cell with the dial, or up and down keys. --> XXX
4. Confirm with <OK>. --> XXX
5. Select the next cell. -->
6. Finish programming when all necessary cells are edited, by using the <down> key towards “save program”.
7. Push <OK> to leave the screen.

Additional information about the cooking parameters:
Time.
In the first line (step), time is adjustable from 1 untill 240 minutes and it has also a preheat possibility. “PRE” is shown in that case.
In the second step, there is also a possibility to put the time on “HOLD”. The program will run untill the <Stop> key is being pushed.

Temperature.
The temperature is adjustable from 0 untill 250°C (482°F).

Fan speed.
The Bake Star has 5 speeds 1 - 5 and a special speed "s". This is a very low speed.

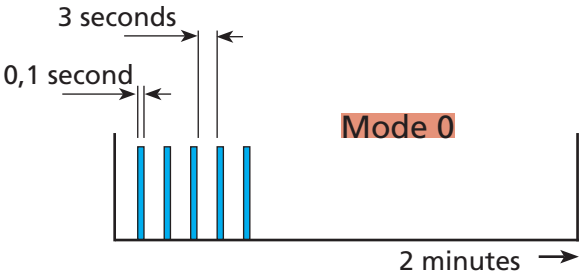
Steam.
The BSi has various steam possibilities. 60 different quantities in 3 modes. It will be explained below.

Vent. (exhaust valve)
This valve can be closed or opened in each step.
The BSi has also a third possibility named "5". This will open the vent the last 5 minutes of the cooking step.

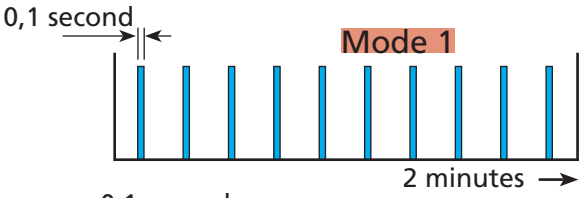
Explanation of the steam system.
Steam is made by dripping water on the blower turbines. The turbines throw the water on the heaters and then it evaporates into steam.
The water quantity is controlled by one or more solenoïd valves. By shortly (0,1 second) opening the solenoïd valve, small amounts of water come through. Shortly opening the solenoïd valve is called a (steam) pulse.

Programming steam in the BSi.
The steam quantity in the cooking program can be adjusted from 1 untill 60 (pulses)in steps of 1. This can be done in 3 different modes.

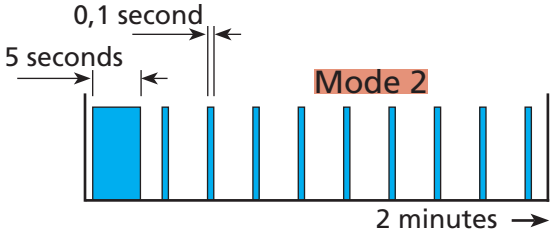
The diagrams show examples of cooking steps of 2 minutes with a steam setting of 5 in the 3 different modes. (5 pulses in mode 0, 1 and 2)



Mode 0.
This mode is meant for Bake off products. Only a small amount of steam is used at the beginning of the baking step.
The 5 pulses come at the beginning of the step with an interval of 3 seconds. The Pulse width and interval are adjustable in the service parameter settings



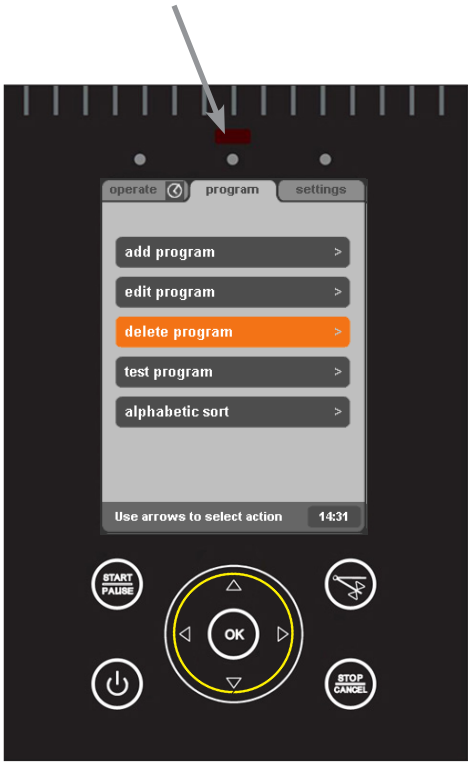
Mode 1.
This mode is used in case a cooking step is needed with a certain humidity during this step.
In this case the 5 pulses come per minute.



Mode 2.
This mode is the same as mode 1. Except for the first pulse. This pulse is much larger.
This mode is used for very delicate products to ensure that the oven cavity is filled up with steam in the first seconds of the cooking process.

PROGRAMMING (DELETE, TEST OR SORT PROGRAM(S))

Press <program>.



Deleting a program.
Choose the "delete program"option.
Choose the program to be deleted with the dial or the up / down keys.
Confirm with <OK>.
Choose "Yes"
Confirm with <OK>
Note that in the service menu, there is a possibily to delete all programs!

Test a program.
Choose the "test program" option.
Choose the program to be tested with the dial or the up / down keys.
Confirm with <OK>.
The program starts as normal, but now there is a possibility to change the program during the cooking proces by pushing <OK>.

Alphabetic sort the programs.
Choose the "alphabetic sort" option.
Choose "Yes"
Confirm with <OK>
Note that in case the program names are numbers, and there are more than 10 cooking programs, these numbers need to have a leading "0". For example 01, 02 ...9, 10, 11. When more then 100 programs it should be like 001, 002.....099, 100, 101. Otherwise it will not sort in the right order.

ENTERING THE SERVICE MENU

Press <settings>.

Select "manager" or "service" with the dial.
Confirm with <OK>

"Manager"contains a limited number of parameters.
"Service" contains system parameters, only to be adjusted by qualified and trained people.

Pass words:
Manager: in case the password setting is "0000", no password will be asked when entering the "program" tab or the manager settings under the "settings"tab. In case it is lost, it can be found in the service parameters.
Service: Password 4878.

DEFAULT PARAMETERS BSI SV 4.30 (SINCE JANUARY 2013)

Refer to the service manual "i-control" for the software description!!

Level 1	Level 2	Level 3			Default	Possibilities
Informa-tion					4.29	software version
Manager						
	Change Pin code				0000	0000 - 9999
	Light				on	on - off
	Temperature				°C	°C - °F
	Set time				Local time	
	Set date				Actual date	
	Set contrast				80	35 - 105
	Time format				24 hr	24 hr - AM/PM
	Date format				DMY	DMY - MDY
	Alarm signal				yes	no - yes
	Preheat mode				no	no - 1x - yes
	Preheat delta				30	-50°C to + 50°C or -90°F to +90°F
	autom. Door open				no	no - timed - yes
	Open for cooling				no	no - yes
	Auto recipe start				yes	no - yes
	Buzzer set				0	0-4
	key beep				yes	no - yes
	water capa-city				3000	50 - 30000
	Lime filter					remaining capacity of lime filter
	Lime filter replaced				no	no - yes
	Clear error				no	no - yes
Service					4878	
	device type				BSI	STGi, Multi, M-Bake, BSi, STOi, ACR, RC8, TDRi
	auto-correct				time	no - time
	set language				englisch	englisch - deutsch - francais - neder-lands - espanol - japanese - danish - italiano
	IrDA interface				no	no - yes
	IP network	IP address			192.168.0.40	192.168.0.10 - 192.168.0.249
		IP netmask			255.255.255.0	none
		IP gateway			192.168.0.250	none
		auto IP / DHCP			off	on
	NAFEM op-tion				no	no - "password"
	alarm delays	alarm	T4		3 sec.	1 - 60
		alarm	T5		5 min.	1 - 60
		auto open	T6		3 sec.	1 - 120

Level 1	Level 2	Level 3			Default	Possibilities
	Pulse timing		t1		5 sec.	0,1 - 120
			T2		3 sec.	1 - 10
			T3		0,1 sec. (Japan 0,2 sec)	0,1 - 1
	fan values	Fan speed right	T9		45 sec.	10 - 90
		Fan speed left	T10		45 sec.	10 - 90
		Fan Pause	T11		3 sec.	1 - 90
		Fan cool speed			3	1 - 5
	fan S times	Fan S speed right	T12		10	10 - 90
		Fan S speed left	T13		10	10 - 90
		Fan S pause	T14		15	10 - 90
		Fan S speed			3	1 - 5
	manual operation				no	yes - no
	correct-factor				3x	1x - 10x
	debug rs232				no	no - yes
	demo mode				no	no - yes
	auto off				60	no or 10 - 240
	pin code				****	read out of the manager pin code
	Sensor offset				0 °C	-5°C - 5°C
	complete cleaning				yes	no - yes
	delete all programs					no - yes
	edit clean prog				special	see table below
	PID factors	P			100	0 - 100
		I			5	0 - 100
		D			100	0 - 500
		iMax			100	10 - 300
		Relay actions:			80	16 - 160
	Energy	Volts			230	1 - 260
		Model			BS-I5	BS-I3 - BS-I5 - BS-I8 - BS-I10
	Pressure				no	no - yes
	I/O test					read the inputs and set the outputs
	Ignore errors				no	no - yes

CLEANING PROGRAM BS-I

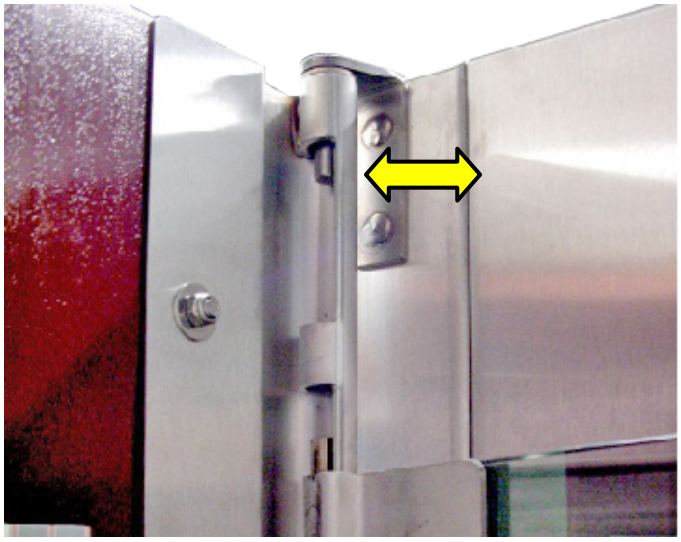
Cleaning program						
step	**time**	**temp**	**blower**	**steam**		**exhaust**
1	5	50	1	1	10	closed
2	30	70	1	1	30	closed
3	5	40	5	3	|	closed
4	5	60	5	0	-	closed
5	-	0	-	0	-	closed
6	-	0	-	0	-	closed
7	-	0	-	0	-	closed
8	-	0	-	0	-	closed
9	-	0	-	0	-	closed

The cleaning program is adjustable in the service menu!

Enter parameter "edit clean prog"

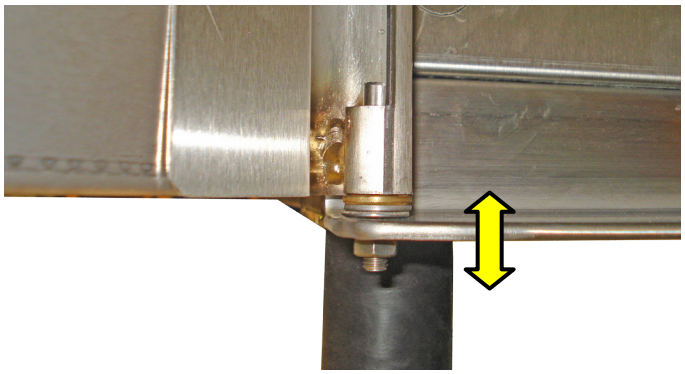
WARNING: Disconnect the electrical power to the machine at the main circuit box. Place a tag on the circuit box indicating the circuit is being serviced.

ADJUSTING THE DOOR



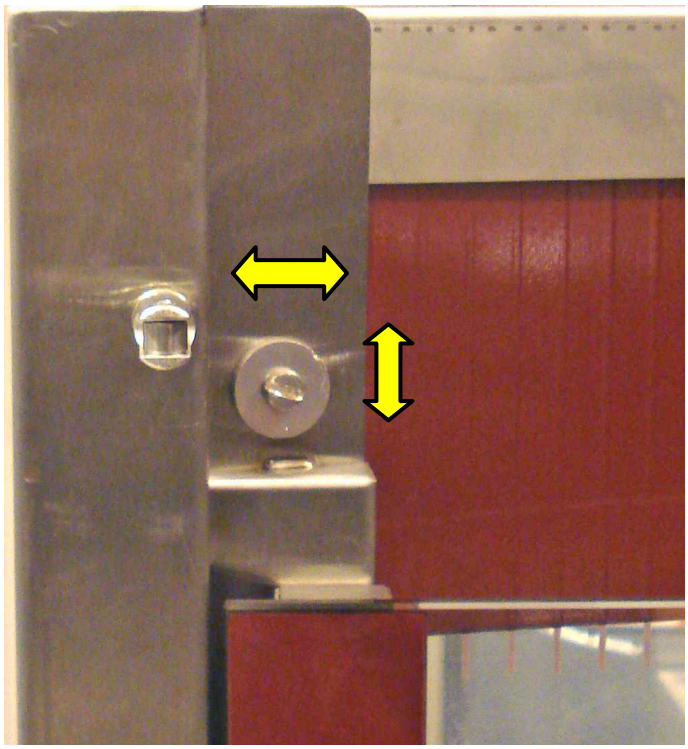
Adjustment of the door.
By means of the upper hinge it is possible to "rotate" the door a few mm, through which both catch forks can be adjusted in height as it were.

The glass of the outside door is glued with double sided tape, to the metal hinge. Therefore it is not adjustable. For the same reason, the glass can only be delivered as an assembly with the hinges.



The lower hinge is not adjustable. The current hinges are locked with a M6 nut at the bottom side.

It is however possible to put an extra washer under the hinge, or remove one.



There is some margin on the holes in the doorpost and the glass to make it possible to align the catch forks. The screws of the door handle go through these holes.

To prevent the bolts from the doorhandle from coming loose, the spacers from the handle are nowadays made out of solid stainless steel and a thick washer is applied under the bolthead.
At the same time the screw thread in the handles is strenghtened.
The screws need to be fixed with thread locker, like Loctite 620

MOUNTING THE DOORLOCK

Mounting the doorlock.

It is important that the plastic housing will be mounted on a distance from the metal front plate of the oven. This is to keep the lock as cool as possible.

Fiber spacers are used for this purpose. It is practical to glue the spacer on the housing with "seconds glue" before mounting the door lock.

Use as less as possible!! The glue must not penetrate into the lock!!!

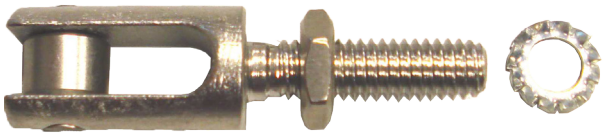
The lock is fixed with screws M4x10.

Use the locking agent "Loctite 620" or similar to prevent the screws from coming loose.

More details can be found in the chapter electrical tests!

It is difficult to reach the lock from behind during (dis)mounting. To ease the job, the shown tool can be made.

The shown numbers are pos. numbers in the exploded views.



The door catch "fork" (see picture) is mounted with a lock washer without the use of a locking agent.

Adjustment of the door lock (catch).

A number of aspects have to be taken into account.

a) The "catch fork" has to go through the middle of the hole into the lock and during motion never touching the plastic housing. The only audible and perceptible may be the metal roll, ticking and rolling against the metal "grabber" from the lock. With the first BS ovens (untill serialnummer 100019498 ,febr. 2003), whereby the frontplate is NOT consisting of one plate in its entirety, this can be a problem. Especially when the oven is moved regularly and the floor is not even (smooth). The door can start "hanging" in such a case.

b) Check the adjustment of the door when the oven is standing (back) on its position. The reason is explained above!

c) The door motion must be "blocked" by the door gasket. Just before the door comes to a stand still, the lock has to catch the door. The fact is that the lock is NOT capable to "block" the closing door without having damage from it.

d) In cold situation, the gasket pushes with less force to the door than in hot position.

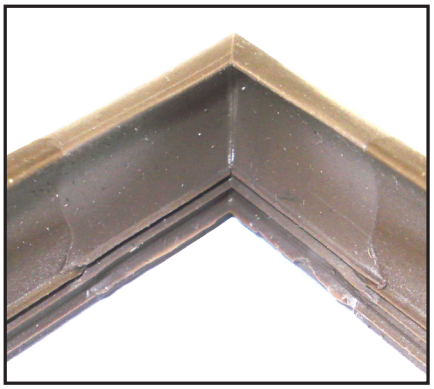
e) A new gasket will have "set" itself after a few weeks, after which the door will close a little easier. It is therefore recommended to adjust the door a little tighter with a new gasket and inform the customer about it.

Some guidelines.

a) When it is possible, in cold situation, to close each lock separately without worth mentioning force, then the adjustment is to light. In this case the door will probably not even open when the switch is being pushed, because the gasket is not pushing hard enough against the door.
b) When it is difficult to close the door at 200°C (only one lock "catches" for example), then the adjustment is too hard.
c) Take care of a proper mounting with the above mentioned distance bushes.
d) In case there are tracks of moisture on the old lock, then probably the sealant in the corner behind the gasket is leaking. Take the gasket (in the corner) out of the rebate and close the holes with sealant.

PLACING THE DOORGASKET

The Bake Star door gasket consists of one piece. Because there is a cavity in the profile, the straight pieces are more flexible than the vulcanized corners. There the gasket is massive.
In principle the gasket is not being glued (sealant) in the gasket channel. Therefore the old gasket can simply be pulled out.
After that, the channel needs to be checked on unevenness's like remainders of the old gasket.
Start in the corners when placing the new gasket. Then divide the gasket as good as possible over the length so that the gasket lies flat in the channel.



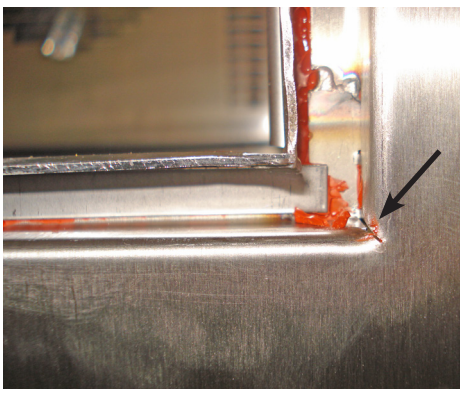
Some guidelines.

a) The gasket needs to be pushed fully to the bottom of the channel. All three little ribs will be disappeared in the channel.

b) In case the gasket goes too deep in the channel, than there are filling strips available to solve this. It is advised to fix the fillingstrips with sealant. Try to keep the front side free of sealant so that the new gasket will not be glued.

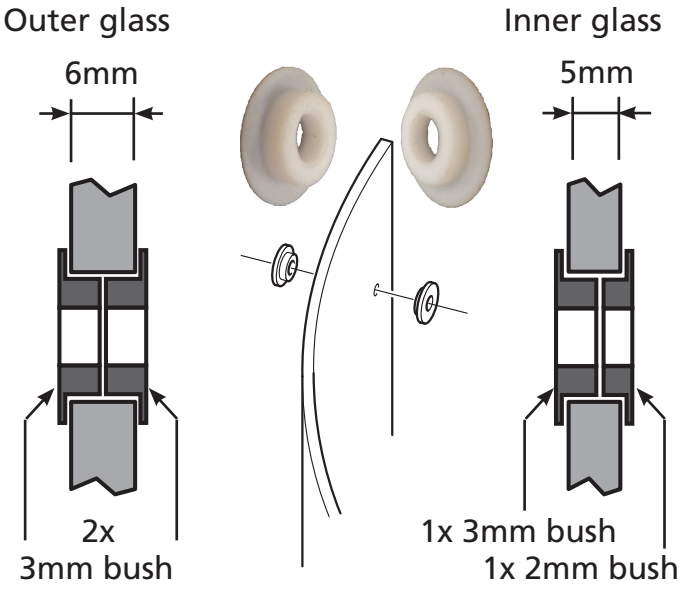
In extreme situations the 3500101 gasket (of the Memory Excellent) can be used. It is 2mm higher. This comes however per meter and has no vulcanized corners.

c) In the corners behind the door gasket there are gaps by reason of sheet metal engineering. These gaps are in the factory closed with sealant, to prevent from steam and water leakage to the inside of the oven. Check and/or repair this seal.



On the picture, the application of a filling strip is shown as well as the gap that came into existence after removing the gasket.

MOUNTING OF THE GLASS



Note!!!!
The BS10 units from serial number 100054521 (week 36 2011) have inner glass of 6mm thickness. These need to be mounted with 3 mm bushes on both sides.

As mentioned before, the hinge and outer glass are glued together with tape. All other strips and posts on the inner and outer glass are screwed.

It is very important that metal parts do not touch the glass. In case it does touch, the glass will burst eventually!!!.

Take care that during mounting a new glass, that no splinter of the old glass remains between the post and the new glass. Also then, the new glass will burst.

Nowadays the glass is clamped in between 2 ptfe flanged bushes. The "bush part" which goes into the hole in the glass, is 2mm or 3mm high. By placing such a flange bush on either side, the hole has to be filled up completely.

The inner glass is 5mm thick. See Note! Therefore a 2mm and a 3mm bush is used in each hole.

The outer glass is 6mm thick. There, two bushes of 3mm will be used in each hole.

At the same time, thick washers are used under the different bolt heads and nuts.

TROUBLE SHOOTING DOOR AND LOCK.

- The door opens and closes normally, but the blowers keep on turning when the door is opened.

  The microswitch came loose or is defect. The CPU does not "see" then, that the door has opened. In case of a BSp or a BSi (2006 model) it is even so that at the end of the baking program it is not possible anymore to control the keyboard because the CPU is waiting for the "door open" signal. Then the customer's only possibility is to pull the plug after which he can bake another session.

  -->Replace the door lock.

- The door does not open.

  The gasket is not pushing hard enough against the door.

  -->Adjust the door lock and/or exchange the gasket. (See below)

  The door lock misses. Do the following test: Firmly pull the door and activate the "door open" key. When the lock misses, than it is broken.

  Replace the door lock and adjust it properly.

  Loose wiring or a defect printed circuit board.

  -->Check the wiring and/or exchange the printed circuit board.

- The door does not close.

  The adjustment of the door is too hard. The gasket pushes too firm.

  Adjust the door.

  The doorlock is defect.

  Replace the doorlock and adjust properly.

  The manual opening feature is adjusted too taut.

  -->Proper adjust the manual opening feature.

- The door opens automatically (during baking).

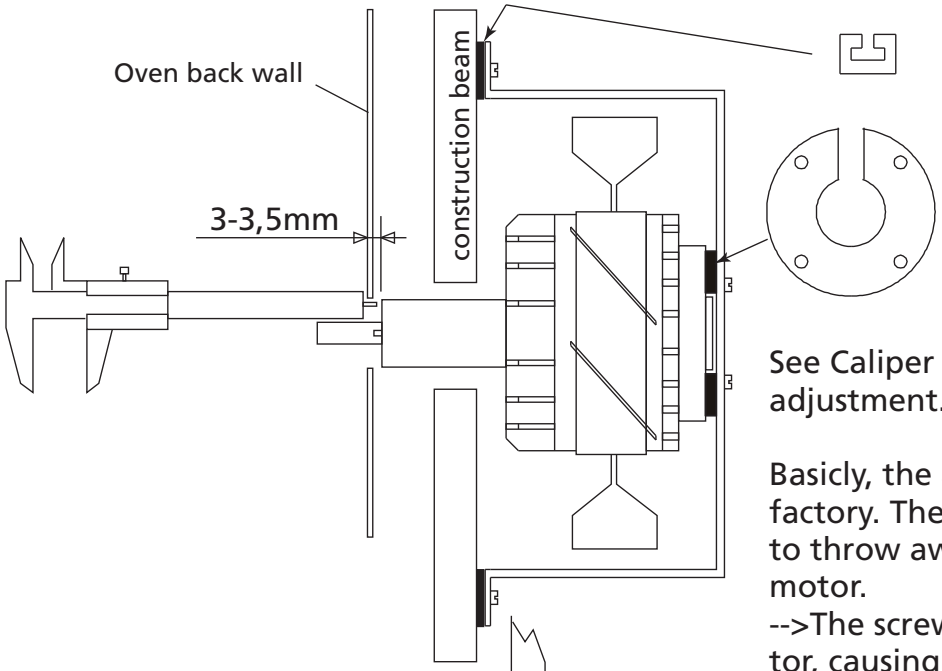
  The manual opening feature is adjusted too taut.

  -->Proper adjust the manual opening feature.

MOUNTING OF THE FANS

The fan motor is mounted with 4 screws M4 on the back.
Important here is that the screw depth into the motor is not more than 5 mm!!

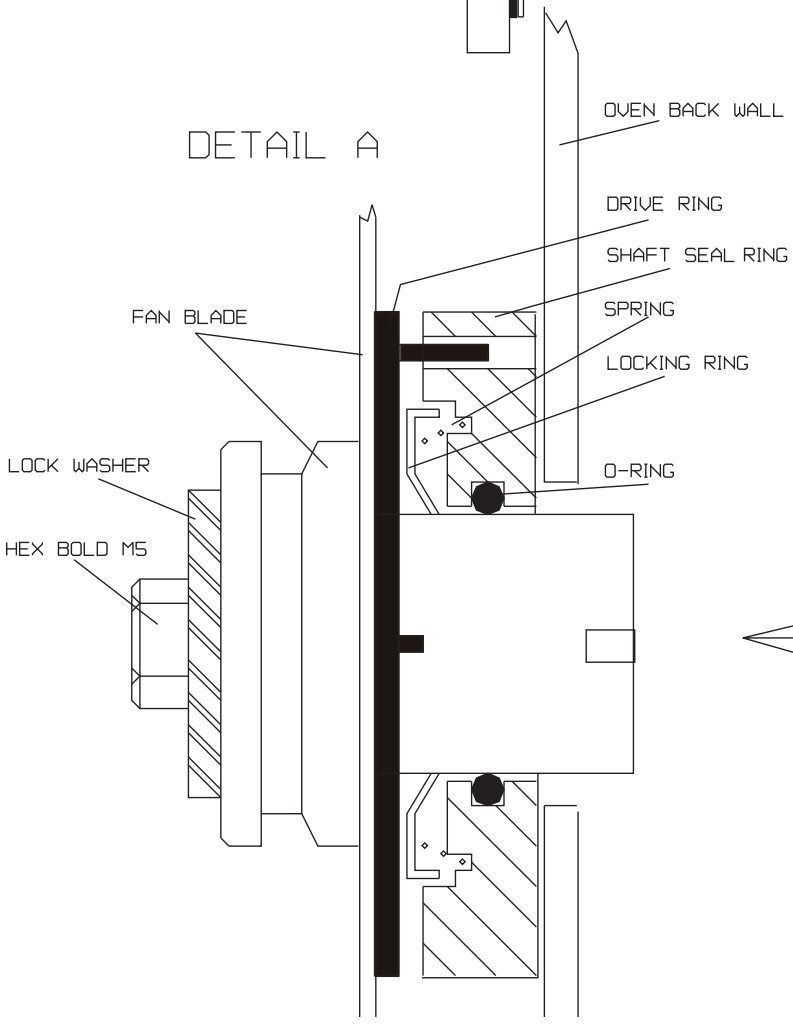
The turbine is mounted with one bolt M5 and a lock washer.

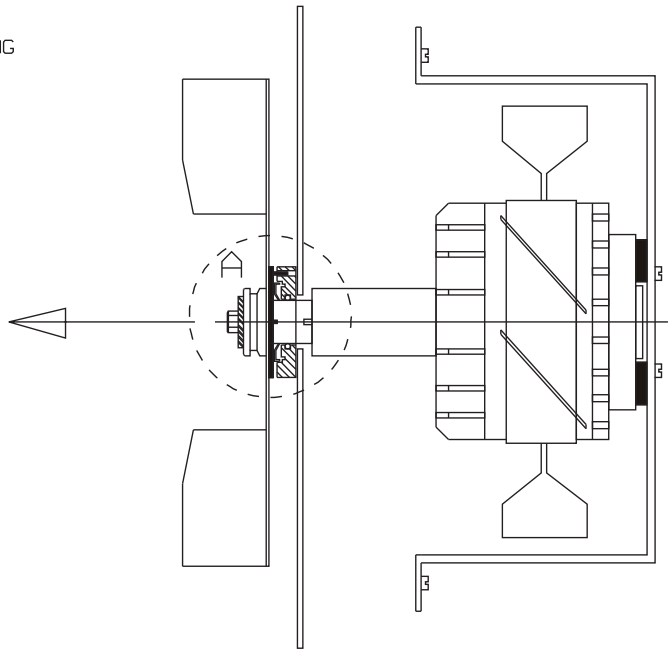


Sometimes, shims are used for the right adjustment of the motor.
Therefore the screw lenght for the mounting of the motor can differ!!

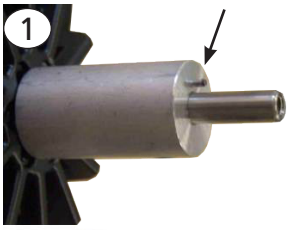
See Caliper measurement for the right adjustment.

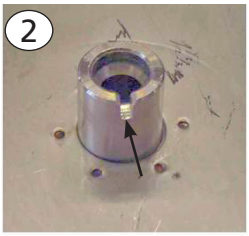
Basicly, the adjustment will be ok from factory. Therefore it is important, not to throw away the shims with an old motor.
-->The screws will go deeper in the motor, causing short circuit.
-->Also the shaft seal can get blocked, causing the blower to stop.

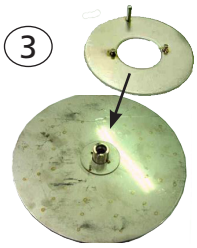


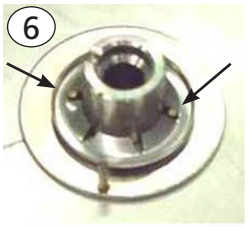


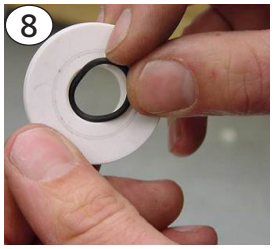
MOUNTING OF THE SHAFT SEAL AND TURBINE

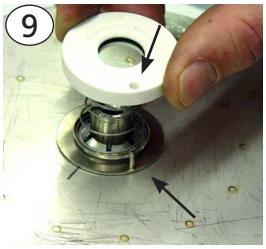


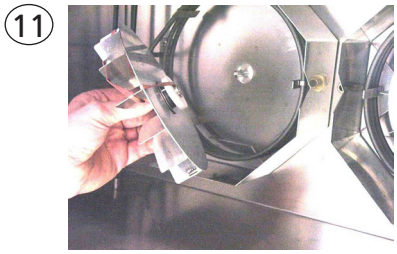


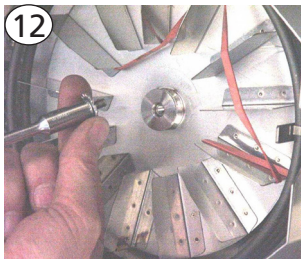


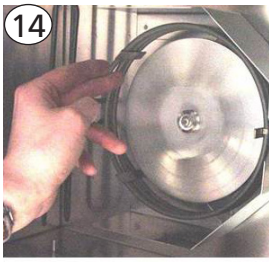


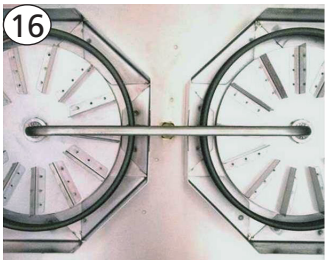










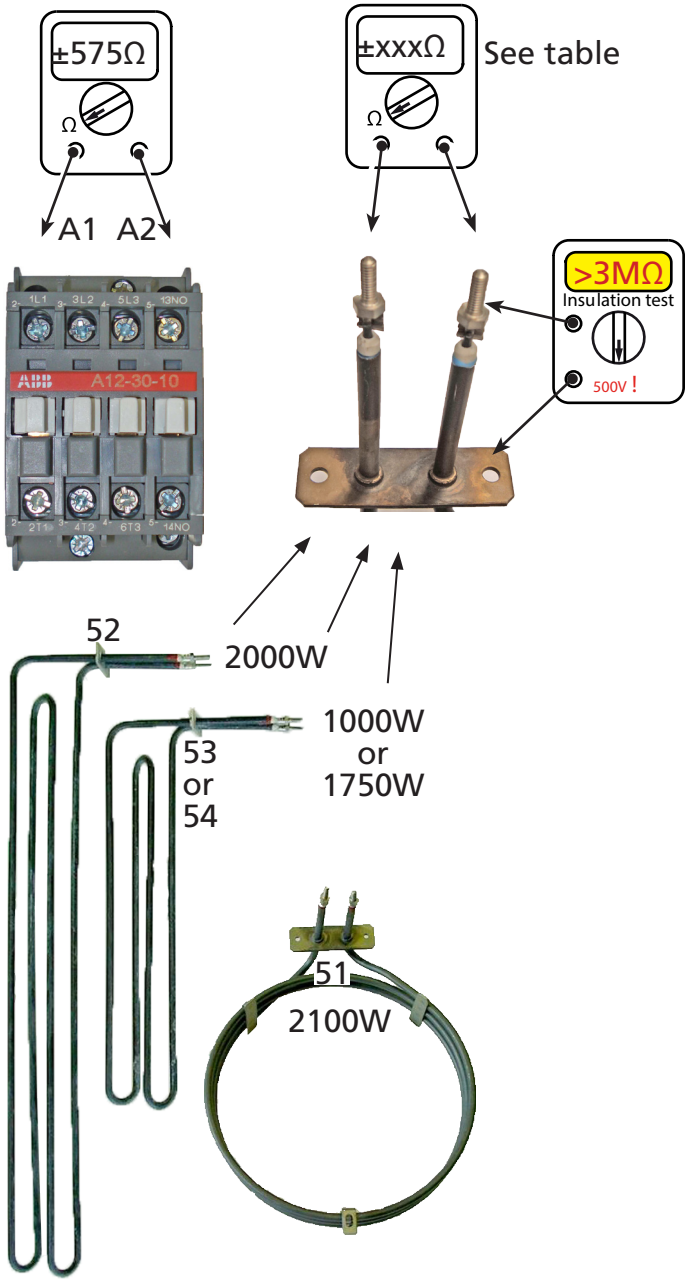


Note that before the turbine can be dismounted, the steam manifold has to be removed first. See necessary tools below.

1) Close up from the blower shaft. Note the small drive pin.
2) Close up from the turbine hub. Note the slot for the small drive pin.
3) Place the drive ring over the hub.
4) Place the locking ring on the hub.
5) Drive the locking ring over the hub with a pipe (or socket) and a hammer.
6) Make sure that the two little pins fall in a slot.
7) Place the spring as showns.
8) Place the O-ring in the ptfe shaft seal ring.
9) Place the shaft seal ring on the spring. Position the small hole in the ring opposite to the drive pin.
10) Push the shaft seal ring over the shaft and hold it with help of an elastic cord or some electric wire for example.
11) Place the assembly on the motor shaft. Make sure that the small drive pin on the motor shaft fits in the slot of the turbine hub.
12) Place the bolt with lock washer. Use a socket driver nr.8. Do not tighten at this moment.
13) Remove the elastic cord.
14) Give the turbine a shove and see (and hear) that it is running smooth.
15) Tighten the screw.
16) Place the water injection manifold and tighten it with a crowfoot wrench or an (adapted)open ring spanner.
17) Make sure that there is 1 to 2 mm space between the screw and the pipe.

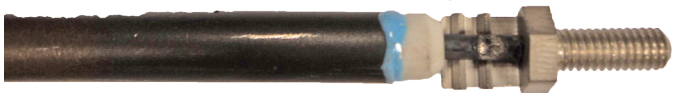
WARNING: Disconnect the electrical power to the machine at the main circuit box. Place a tag on the circuit box indicating the circuit is being serviced.

MEASURING ON THE HEATING SYSTEM



Silicon seal
It feels like rubber.

Ceramic seal
It feels like glass



Working principle.

Depending on the model, Bakestar ovens can have 4 different heaters mounted. Also the number of heaters can differ.
An overview can be found in the exploded views chapter.
These heaters will be activated by a contacter as shown.
BS8 and BS10 models have 2 contactors mounted.

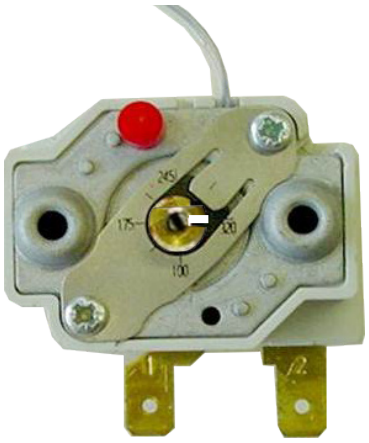
The overview below shows the resistances and currents that can be expected.

Pos	Heaters 230V	Resistance	Current
51	2100W 230V	25,2 Ω	9,1A at 230V
52	2000W 240V	28,8 Ω	8,0A at 230V
53	1000W 230V	52,9 Ω	4,4A at 230V
54	1750W 230V	30,2 Ω	7,6A at 230V
Pos	Heaters 208V	Resistance	Current
51	2100W 208V	20.6 Ω	9,7A at 200V
52	2000W 208V	21,6 Ω	9,3A at 200V
53	1000W 208V	43,3 Ω	4,6A at 200V
54	1750W 208V	24,7 Ω	8,1A at 200V

Note 1:
The shown values are theoretical. Since the tolerance can be up to minus 10%, the measured values will general be a little higher and the currents a little lower.

Note 2:
If heaters have been stored for a longer period, and have a silicon seal, moist can go in and the insulation resistance can go down. Therefore it is good to measure this insulation resistance before mounting it.
In case this Insulation resistance is too low, it could be considered to dry the heater in an oven for 24 hours on 130°C (266°F). The longer the better.

In case the heater has a ceramic seal, moist can't go in and drying has no use.



A Hi-limit thermostat is used to protect the oven against overheating.
It disconnects all heaters and the controller. Therefore it is not possible to switch on the unit anymore untill the themostat has been reset.

The probe needs to be mounted fully into the clamp coupling as shown.

Note1. The thermostat needs to be adjusted to its maximum setting (320°) before mounting it!!

Note 2. The thermostat is shock sensitive. Heavy vibration (during transport), might cause the thermostat switching off!

MEASURING ON THE PT1000 SENSOR

Working principle.

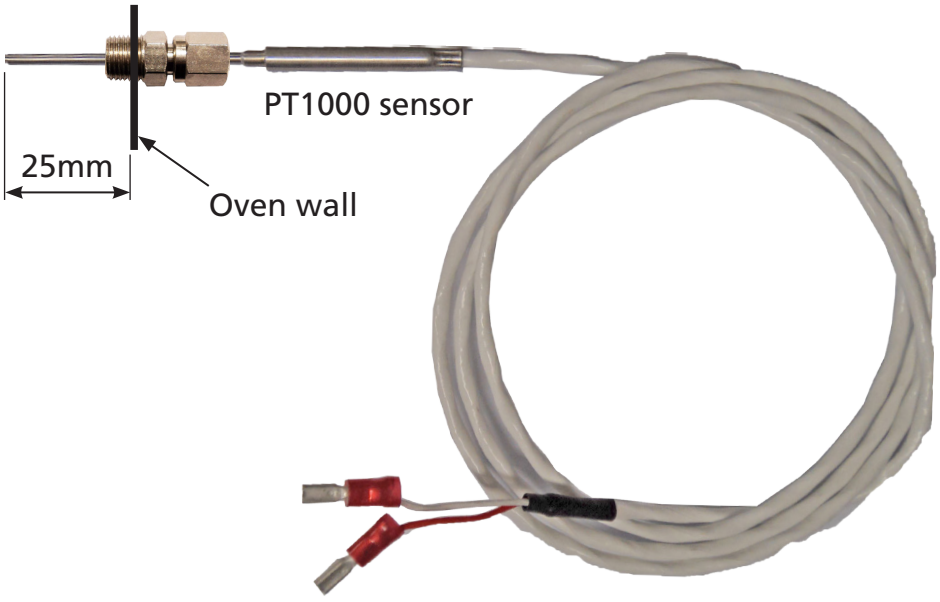
The oven temperature is controlled by a PT1000 sensor, mounted in the top at the back / right side.

See the resistance overview for the PT1000 sensor.

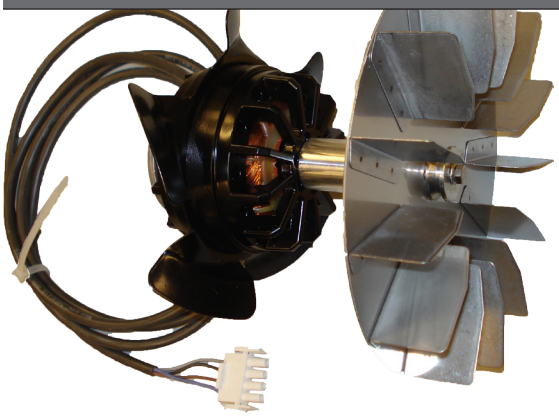
The sensor needs to be mounted 25 mm inside the cooking cavity.

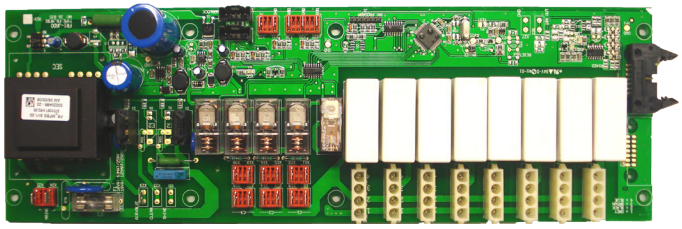
Less than25 mm will result in a higher cooking temperature!

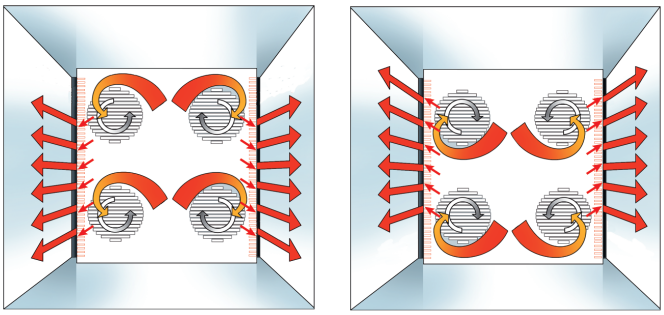
°C	PT1000
-20	921,60
-10	960,90
0	1000,00
10	1039,00
20	1077,90
25	1097,40
30	1116,70
40	1155,40
50	1194,00
60	1232,40
70	1270,00
80	1308,90
90	1347,00
100	1385,00
110	1422,00
120	1460,60
130	1498,20
140	1535,80
150	1573,10
200	1758,43
250	1940,81
300	2120,30

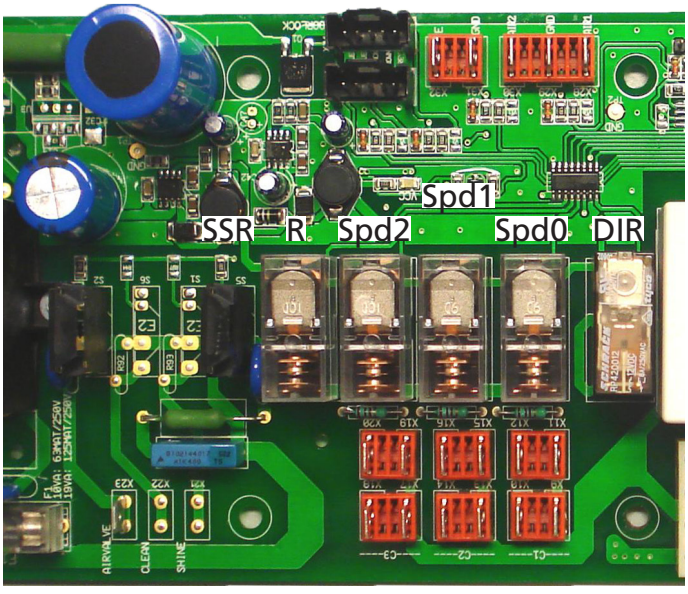


MEASURING ON THE BLOWER SYSTEM









Working principle.

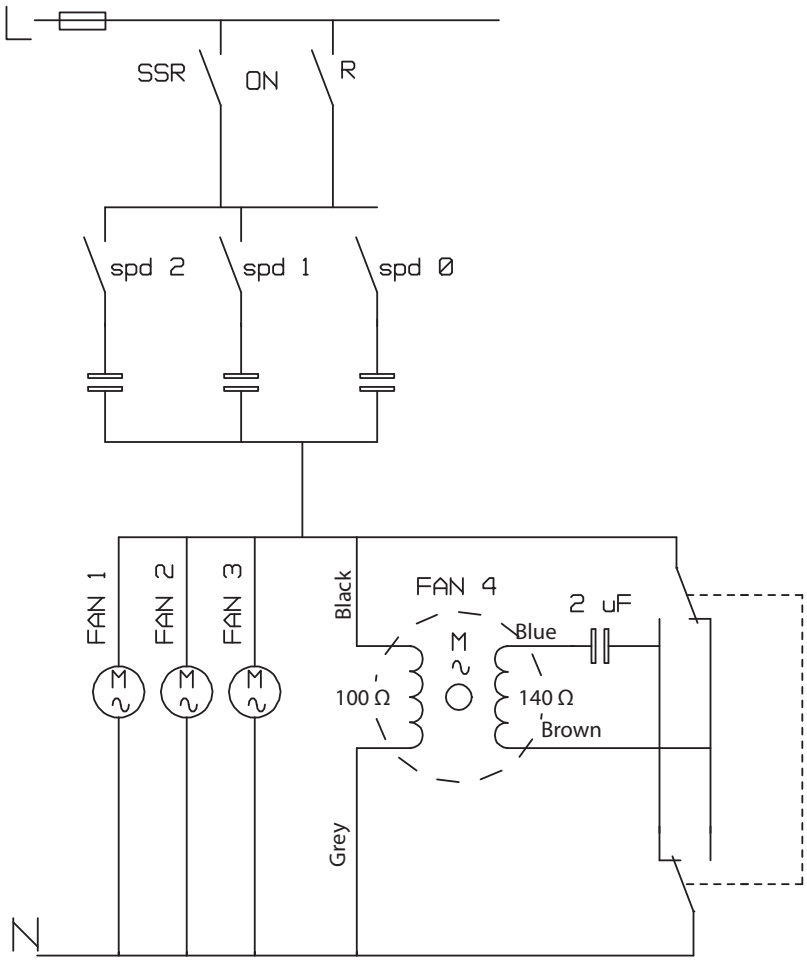
The 4 Bake Star models have a multiple fan system. All blowers are the same.
The BS3, 5, 8 and 10 have respectively 2, 4, 6 and 8 blowers .

The blowers on the left side turn opposite to the ones on the right side.
The blowers are NOT separately controlled. On the fan board, they are hard wired in parrallel together.
8 sockets are available. Nr 1,3, 5 and 7 will turn opposite to the even numbers.
During cooking, the blowers reverse in direction each 45 seconds. This is defined in the service parameters by means of the parameters “Fan speed left” and “Fan speed right”.
Refer to the programming instructions and/or the service manual I-control.

Air flow
When “fan speed left” is active, the blowers rotate as shown on the left picture. It pushes the hot air a little up.
When “fan speed right” is active, the hot air will be pushed a little upwards.
Seen from the top, the air circulation on the baking trays is always as shown. The air speed may however differ.

Blower speeds.
5 blower speeds can be adjusted in the baking program and also a very low “s”speed. This is explained a little further in this manual.
6 relays on the board control the speed and direction of the blowers.
The one on the left side is a Solid State Relay (SSR). Together with the (R) relay, it puts power on the blower circuit.
The 3 Spd relays, can each switch a (big) capacitor in series with the blowers.
The highest speed wil be achieved when all SPD relays are turned on. In this case the biggest capacitor load is put in series with the blowers.
The DIR relay reverses the rotation direction.

See electric diagram below.



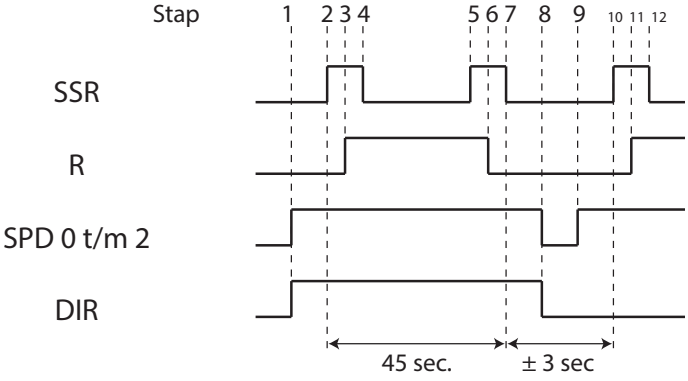
		spd 2	spd 1	spd 0		
BS10	8 Fans	60	30	16	uF	
BS8	6 Fans	46	24	12	uF	
BS5	4 Fans	30	16	8	uF	
BS3	2 Fans	16	8	4	uF	
						Voltage
	Speed 5	1	1	1	—	215
	Speed 4	1	1	0	—	205
	Speed 3	1	0	1	—	190
	Speed 2	1	0	0	—	170
	Speed 1	0	1	1	—	145
	Not used	0	1	0	—	
	Not used	0	0	1	—	
	Speed 0	0	0	0	—	0

The diagram above shows the 4 blowers of a 5 tray oven. One of them is “opened”, showing the coils.

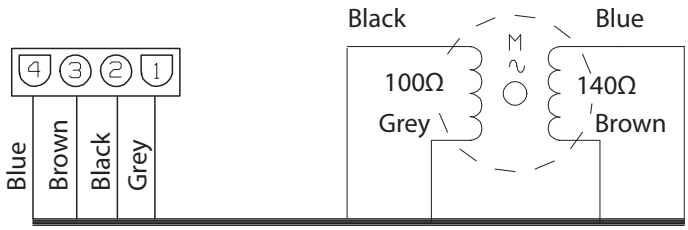
The matrix above shows which Spd relays are switched ON at different fan speeds.
It also shows which voltages can be expected at a 230V connection or 200V in case of a 200V unit (Japan).
Finally it shows what capacitor loads are connected in the different oven models.

The switching sequence.

The Purpose is that all mechanical relays switch powerless. Therefore they are controlled according to the below switching diagram.



1. The 3 Spd relays and the DIR relay are switched in the good position.
2. The SSR switches the power ON
3. The R relay takes over.
4. The SSR relay switches OFF.
5. After 45 seconds, the SSR switches ON.
6. Now the R relay can switch OFF powerless.
7. The SSR switches the power OFF.
8. The DIR and Spd relays can now switch powerless.
9. The above relays get a new position.
   The DIR relay stays OFF --> the direction changed.
10. The sequence repeats from #2.



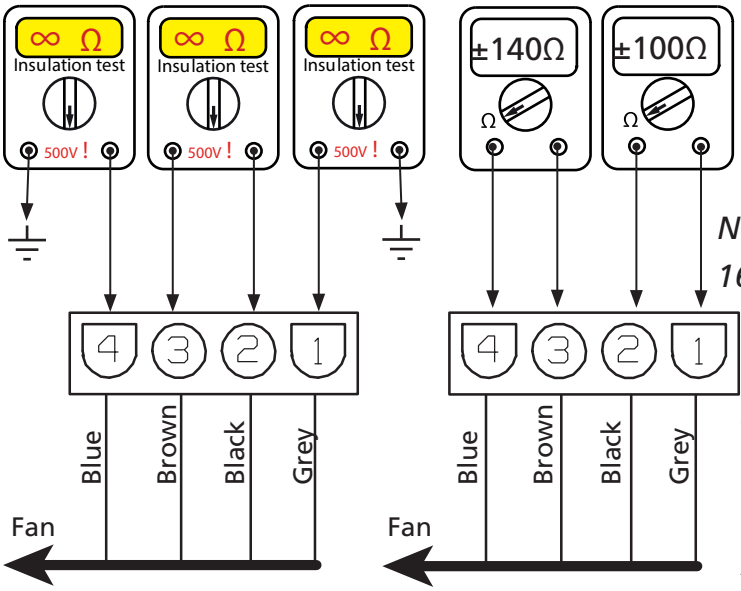
Passive measurements

The blower motor has 2 separate coils. Therefore 4 wires come out. A 4 core cable connects the motor with the plug.

The main coil , 100 Ω, is connected to pin 1 and 2 from the plug. This is the grey and black wire.

The start coil, 140 Ω, is connected to pin 3 and 4. This is the brown and blue wire.

Note that some motors can have a 120Ω and 160Ω coil.

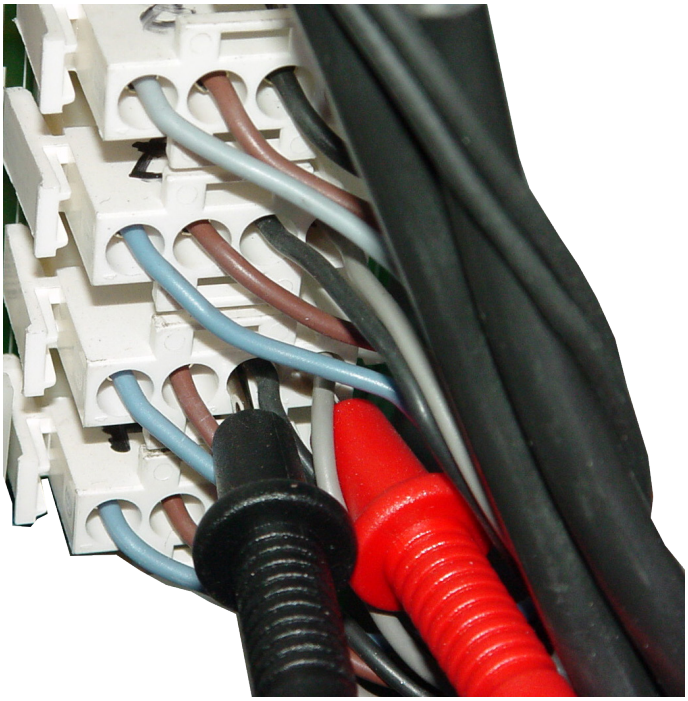


Important is the insulation between the 2 coils and also between the coils and earth.

Active measurements.

Measure between the grey and black wire on one of the blowers. Since they are all connected together, it does not matter which one you measure.

The Voltages have to be measured in all 5 different speeds. The shown values can be expected at a 230V~ supply voltage.



Speed 5	215V~
Speed 4	205V~
Speed 3	190V~
Speed 2	170V~
Speed 1	145V~

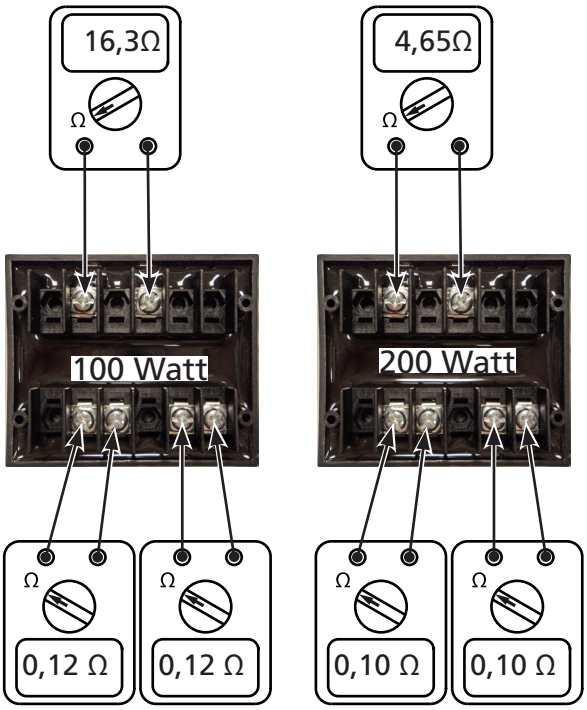
Note 1) In case of a 200V unit (Japan), a transformer is built in to boost up the voltage in order to get the same speed voltages.

Note 2) The blue wires can sometimes almost be grey. Measure the resistance in case of doubt!

Trouble shooting on the blowers

One or more speeds show a higher voltage.	A Spd relay sticks (does not switch OFF)	Determine with help of the above matrix which relay it is. Probably it is black inside.	Replace the board, and upgrade the systemsoftware version if applicable.
One or more speeds show a lower voltage.	One or more speed capacitors is broken.	Determine with help of the above matrix which capacitor it is. Sometimes it is leaking fluid.	
All speeds show a lower voltage	One or more blowers have short circuit.		
All speeds show a lower voltage, during 45 seconds.	One or more blowers have short circuit between the coils		
During 45 seconds, the voltage is (almost) zero.	Same as above		
One motor will not start up	Broken start coil.		
	Broken start capacitor		

MEASURING ON THE ILLUMINATION TRANSFORMER



Working principle.

Depending on the model, 3 up to 10 lamps can be mounted.

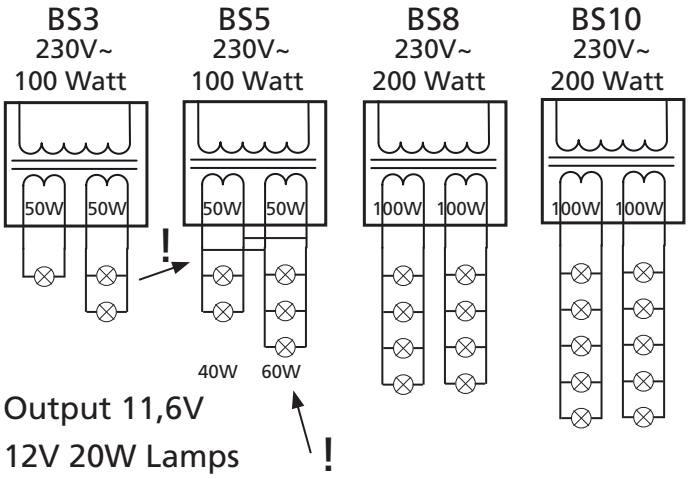
The number of lamps is devided over the 2 secundairy coils of the transformer.

All lamps are 12V- 20Watt halogen.

To increase the lifetime, a 230V --> 11,6V transformer is used.

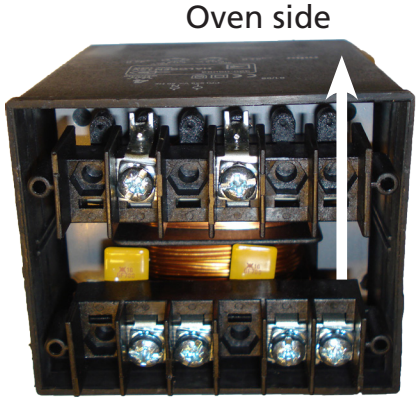
The BS3 and 5 have a 100W transformer.
The BS8 and 10 have a 200W transformer.

The overview shows how to measure the resistances.



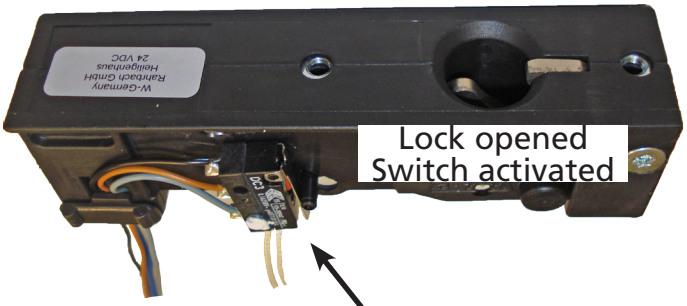
Note!! that in case of the BS5, the secundairy coils of the transformer have a parrallel connection. This is because one of the coils would be overloaded. See diagrams.

The transformer has a thermal protection on both secondairy coils. See the 2 yellow squares in the not-moulded transformer below. It is therefore important to keep that side cool. The opposite side has to be mounted facing the oven side!!

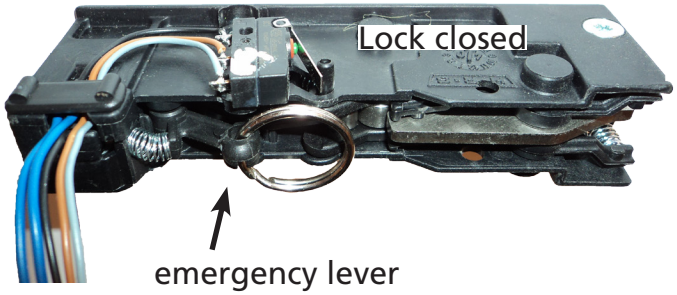


During a very short period in 2007, an electronic transformer has been used. It is impossible to measure by resistance if this transformer is ok or not. A minimum load of 35Watt has to be connected, before the 11,5 Volt can be measured.

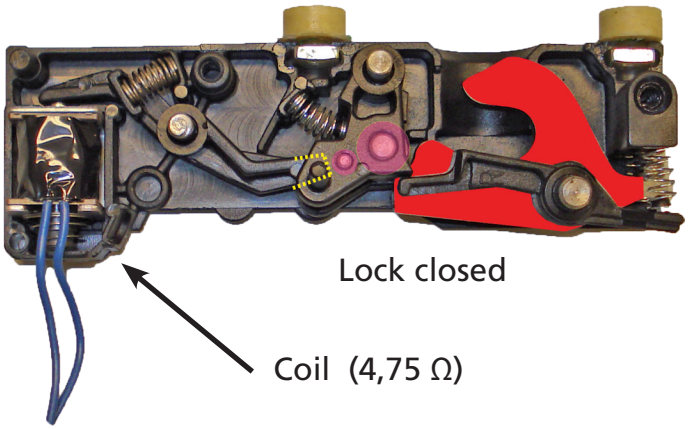
THE ELECTRIC DOORLOCK



Microswitch

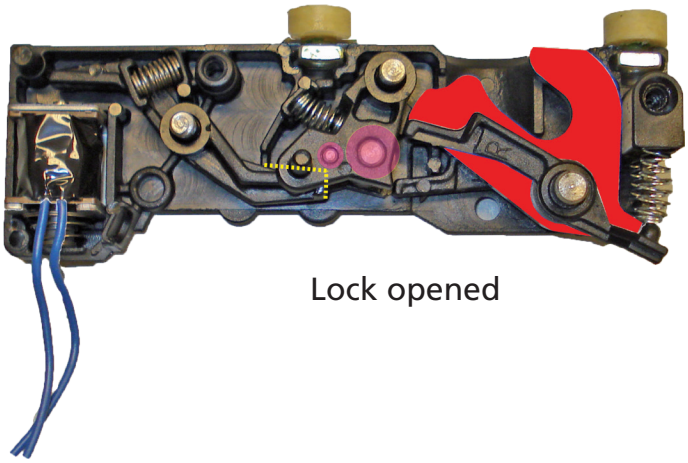


emergency lever

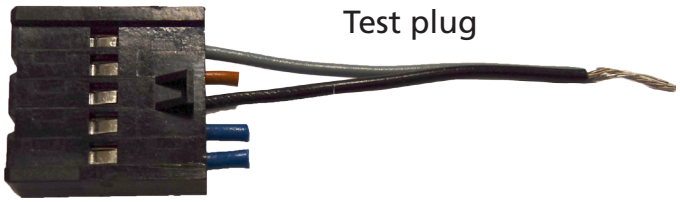


Lock closed

Coil (4,75 Ω)



Lock opened



Test plug

The electric door lock consists of the following parts:

a) An electro-magnetic coil to open the door.

b) A micro switch to detect the open/close position of the door and feedback a signal to the processor..

c) A black plastic housing with mechanical parts including an emergency (manual) opening lever.

d) The door catch "fork".

Working principle.

The electro-magnetic coil is designed for 24VDC. This voltage however, may only be applied for a few seconds, otherwise the coil will burn out. For this reason, the coil is activated by discharging a capacitor. As soon as the capacitor (4700uF) is empty, the current is dropped down to zero.

The capacitor needs some time to recharge. Pushing the door switch in short periods after the other has therefore no use. It will result in soft "clicks" without opening the door. In 5 seconds, the capacitor will be charged. The coil is connected with the blue wires.

The micro switch gives the "door open" or "door closed" signal. The connection is as follows:

When the door is closed, black is connected with grey. The switch is NOT activated in this case.

When the door is opened, black is disconnected from the grey wire.

The brown wire signal is not used on the board.

Tip:

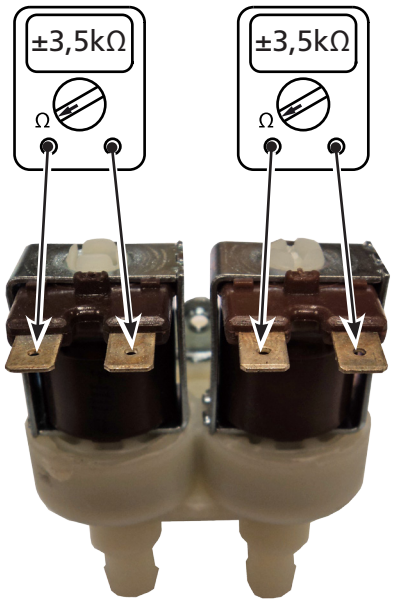
For test purposes, an old plug from the doorlock can be used.

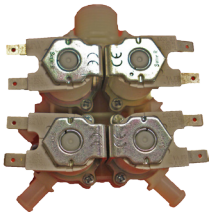
Cut the blue wires and the brown wire.

Strip the black and grey wire and connect them together.

When this plug is pushed into the socket of the board, it gives the "door closed" signal.

MEASURING ON THE STEAM AND WATER SYSTEM





BS3 BS8 BS10

Depending on the model, the Bake Star can have a single valve, double, triple or quadruple.

All valves have waterflow reducers mounted inside. These reducers control the waterflow for the steam production. An opened valve will give ± 0,5Ltr/minute (0,13 gallon/minute).

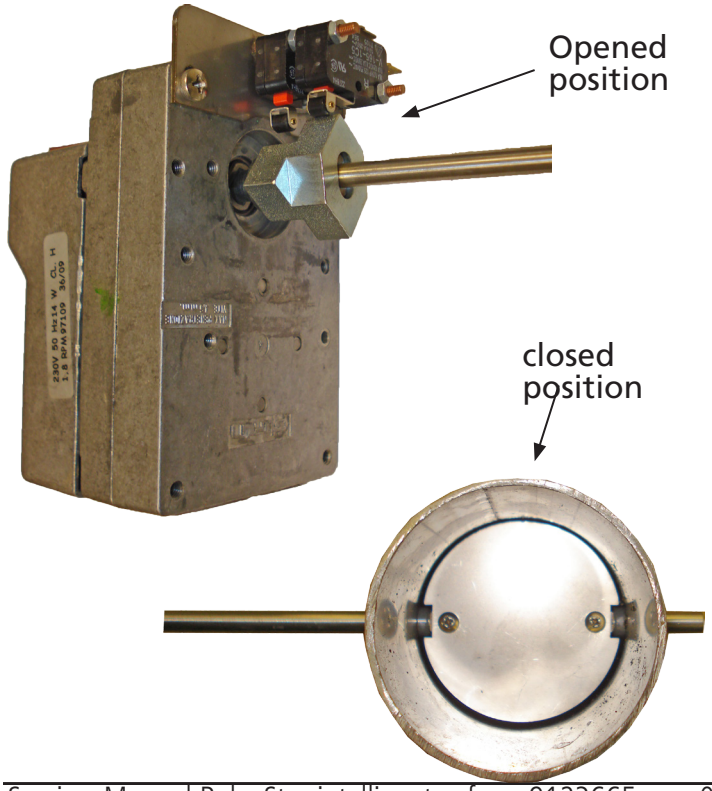
The valves are pulsating controlled, meaning that they are opened many times for a short period (0,1 - 0,6 seconds). See chapter programming and also the steam parameter settings.

Refer to the programming instructions and/or the service manual I-control

The valves are indirect controlled. This means that the water pressure is needed for the closing or opening of the valve. Therefore a minimum pressure of 0,5 bar is necessary for a proper functioning.

From 2011, the water reducers are factory mounted inside the valve. Loose reducers however are still mentioned in the exploded views but there is limited stock and finally Fri-Jado will not deliver them anymore.

MEASURING ON THE VENT MOTOR



Working principle.

Two end switches are mounted on the block of the motor which give a signal when the opened or closed position is reached.
These switches are directly connected to the I/O board and therefore it has a low voltage.

The motor itself is 230 Volt.
The resistance is ± 160 Ω.

Note that it is good to know for test purposes that the valve will be opened when the door is opened, and closed when the door is closed.

OVERVIEW OF ERROR CODES.

The below error codes can occur from Systemsoftware version V4.xx. It is always advised to upgrade to the highest available software version which can be found on the Fri-Jado web-site.
Refer to the service manual I-control, also available on the Fri-Jado web-site, for error codes in older software versions.

Temp Sensor Open ==> The sensor gives a value higher than 315°C. (600°F) =>2200Ω
- Temperature in oven higher than 315°.
  - Heater contactor malfunction.
  - Controller failure.
- Sensor is broken.
- Sensor wiring loose.

Temp Sensor Shorted ==> The sensor gives a value lower than 0°C. (32°F) => 1000Ω
- Temperature in oven lower then 0°C.
- Sensor is broken.
- Sensor wiring loose.

Powerboard Fails ==> Malfunction of Power & I/O board (# 9192202).
- Ribbon cable loose or damaged.
- Board defect.

Heater Stays On ==> Oven too hot.
- Heater contactor malfunction.
- Broken Power & I/O board.

Air Valve defect ==> Missing feed back signal from air valve position switches.
- Position switch(es) loose.
- Position switch(es) defect.
- Position switch(es) wrong adjusted.
- Camshaft loose (does not rotate).
- Airvalve motor broken.
- Airvalve blocked.
- Loose wiring of switches or motor.

Lime Filter Full ==> The lime filter needs to be replaced.
In case of doubt, or no filter has been installed, then please check the setting of the “water capacity” parameter in the manager menu.
Refer to the list in chapter “Programming instructions”.

TROUBLE SHOOTING BY SYMPTOM.

Almost any problem can be caused by defect controller boards and therefore this will not be mentioned each time.

Symptom	Possible cause	Caused by
Unit will not switch on.	Mains breaker open	Check mains connections and associated wiring. Also inspect mains fuses.
	Hi limit thermostat triggered	Hi limit thermostat triggered due to transport (hi vibrations). Defective hi-limit thermostat. Defective temperature sensor.
	Wiring problem	Check wiring, plugs and sockets inside and outside of unit.
	Control boards defective	Mains power surge. (fuse blown)
Unit does not heat up.	Contactor does not switch on	Defective contactor. Defective temperature sensor. Wiring problem. Unit is put in “DEMO Mode” Wrong cooking program.
Door does not close well. Refer to the alinea “trouble shooting door and lock” in the chapter “service procedures”	Doorlock not aligned correctly	Doorlock loose. Door suspension loose. Door handle loose.
	Doorlock defective	Door adjustment wrong. Mounting of doorlock wrong.
	Door lock too tight.	Door (catches) not adjusted correctly.
Bad cooking results, uneven cooking	Air circulation problem	Fanblade loose
		Blower(s) defect (coil or bearing)
		Capacitor(s) of blowers defect
		Filters blocked
		Fan speed or direction wrong.
		Broken fan board (broken relay)
	Too much or too less heat	Contactor hangs
		Sensor defect (wrong value)
	Too much steam	Solenoid valve defect
		Dirt in solenoid valve
	No or too little steam	Dirt in solenoid valve
		Waterpressure too low
		Tubes calcified
		Leaking hose
		No heating
	Door does not close well	Broken door lock
		Broken (leaking) doorgasket
		Door adjustment wrong
Product not cooked, cooking takes more time	Short of heat	Heating element defect
		Contactor defect
		Sensor defect
		Wire loose
	Cooking program wrong	Wrong programming
		Wrong product

Symptom	Possible cause	Caused by
Oven does not switch off	The oven has not cooled down sufficiently	Wait until the oven cools down below 80°C with closed door cooling and 50°C with open door cooling
Oven cavity fills up	Drain grid clogged	Wrong installation of sewage
		Wrong use of oven.
		Cleaning instructions neglected.
Less or no lighting	One or more lamps defect	
	No power on the lamps.	Transformer defect
	No power on transformer	Lighting switched off in manager menu
Bad cleaning result	No steam	Defect or clogged solenoid valve
		Water tap closed
	No detergent	Instructions neglected.
	Wrong detergent	
Leakage of steam at the door	Door catches not tight enough.	Door not right adjusted.
	Doorgasket damaged	Gasket deteriorated. Gasket damaged.
	Overpressure in cooking cavity.	Exhaust (vent) clogged
Deterioration of doorgasket	Wrong detergent	Cleaning instructions neglected
	Daily cleaning not ok.	
Controls malfunction	Leakage of steam through blower shaft.	Worn out shaft seal.
	Excessive leakage of steam at door.	Deteriorated or damaged door gasket
	Controller overheated.	Cooling air flow blocked
	Fuses blown	Power surge

TROUBLE SHOOTING BY PART / FUNCTION.

Almost any problem can be caused by defect controller boards and therefore this will not be mentioned each time.

Description of part / function	Symptoms	Possible cause	Action
Controller	Key board fails.	Loose flatcable.	Check both key foil cables. See I/O test in service menu for function check.
		Broken key foil or bad contact.	Replace key foil and/or clean contacts.
		Moist on key foil	Clean and search cause.
	No display.	Cable loose or bad contact between CPU and LCD.	Check
		Back light wiring loose or bad contact (white and pink wire)	Check
		Ribbon cable to Power& I/O board loose or defect.	Check
		Broken fuse on Power&I/O board.	Check fuse and/or replace. 125mA slow acting (5x20)
		Broken display or cpu.	
		Broken Power&I/O board	
	Display shows strange things or the controller is acting strange.	Cable loose or bad contact between CPU and LCD.	
		Broken display.	
		Temperature too high.	Check cooling air flow and blower. Clean grids.
		Moist on pcb boards.	Clean and search cause.
	Unit does not switch on	No mains power on Power&I/O board.	Measure voltage and make sure power is supplied.
		Broken fuse on Power&I/O board.	See if leds are blinking. Check if no.
		Broken Power&I/O board	See if leds are blinking. Replace if no and fuse is ok.
		Broken CPU board	See if leds are blinking on Power&I/O board. Replace if yes.
	Outputs of Power&I/O board fail.	Mains wires interchanged on terminals X14 and X15	Put wire 9 on X14 and wire 19 on X15
		Broken Power&I/O board.	Replace
		Wrong “device type” setting in service menu	Refer to parameter list in chapter programming instructions
	Inputs of Power&I/O board fail.	Broken Power&I/O board.	
		Wrong “device type” setting in service menu	Refer to parameter list in chapter programming instructions

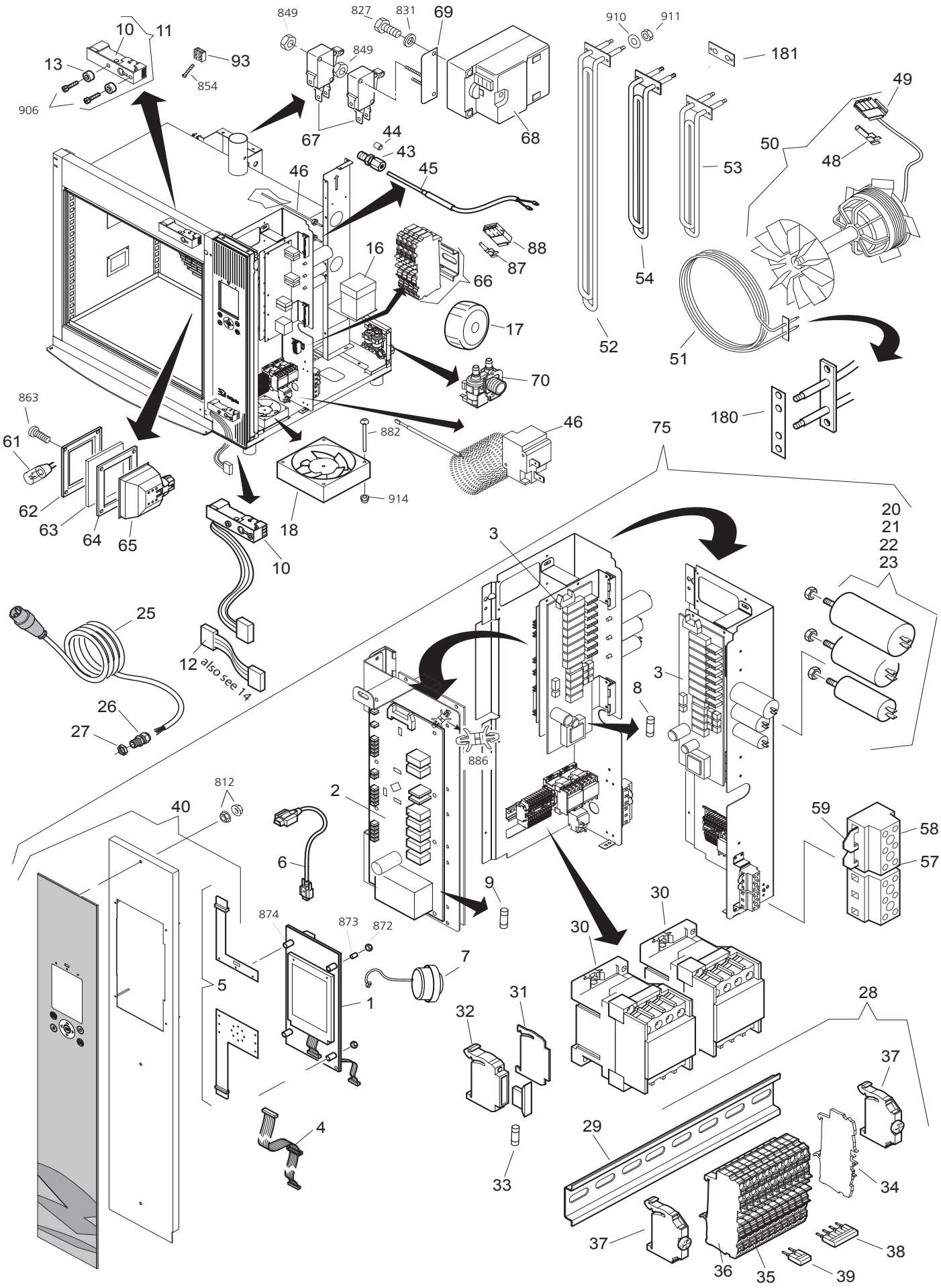
Description of part / function	Symptoms	Possible cause	Action
Controller (continued)	Outputs of Fan board fail.	Mains wires interchanged on terminals X24 and X25	Put wire 9 on X24 and wire 20 on X25
		Broken Power&I/O board, black and/or sticking relay contacts.	Replace and **update system software if applicable**.
		Wrong "device type" setting in service menu	Refer to parameter list in chapter programming instructions
	Inputs of Fan board fail.	Broken Power&I/O board.	Replace
		Wrong "device type" setting in service menu	Refer to parameter list in chapter programming instructions
Cooling air flow	Controller overheated (see above)	Cooling air flow blocked.	Check cooling air flow. Clean grids.
		Cooling fan broken or wiring loose.	Check blower and wiring.
	Moist on PCB's	Cooling fan broken or wiring loose and therefore no overpressure in electronics compartment	Check blower and wiring.
		Wrong mounting of cooling fan causing underpresure in electronics compartment.	Turn the fan upside down. Arrow on fan should point upwards.
Security / Hi-limit (thermostat)	Unable to switch ON the unit.	Sticking contact(s) of contactor(s).	Check these items.
		Broken temperature sensor	Reset the security thermostat and replace the sensor
		Heavy vibration caused by transport.	Reset the security thermostat
		Broken thermostat	Replace
Gaskets and seals	Controller not stable. Programs act strange. Controller switches off during program. Visibility of LCD gets worse.	Moist on pcb's	Check blower shaft seals, and door gasket
	Varying cooking results	Loss of steam and heat.	
	Condensation on outside of unit.	Doorgasket damaged or deteriorated.	

Description of part / function	Symptoms	Possible cause	Action
Heating *Heaters and contactors*	Unit does not reach the adjusted temperature. Cooking takes more time. Uneven cooking	Heating element defect. Wire loose	Check heating element and wiring.
		Contactor contacts fail to make contact.	Replace contactor
		Contactor fails.	Check wiring and board. Refer to chapter "electrical tests.
	Product overcooked, Uneven cooking	Contactor hangs (contacts stick together)	Replace contactor
	Uneven cooking	Contacts fail to make contact	Replace contactor
		Contactor fails.	Check wiring and board. Refer to chapter "electrical tests.
Hot air flow *Blowers*	Bad cooking result Uneven cooking Vibrating and/or squeaking noise. Blower rotates too slow. Refer to the alinea "trouble shooting on the blowers" in the chapter "electrical tests"	Blower(s) blocked by object.	Remove object.
		Blower(s) defect.	Check coil resistance. Check coil insulation. Check bearing. Exchange blower.
		Capacitor(s) defect.	
		Wiring or blower contactor problem.	
	Blowers operate normal for 45 seconds and then stop for 45 seconds. Refer to the alinea "trouble shooting on the blowers" in the chapter "electrical tests"	Broken blower	Unplug a blower during the time that the blowers stop and check if the other blowers start up. If yes, then the broken blower is unplugged. If no, then try with another blower. It is of course also possible to measure each blower with an insulation tester (on 500V=).
		Very occasional the (only) double pole relay on the fan board is broken.	Replace Fan board and **upgrade systemsoftware if applicable**.
	Blower speed is not ok Refer to the alinea "trouble shooting on the blowers" in the chapter "electrical tests"	Relais on Fan board broken	Check voltage over the blowers (grey and black wire) while running and cross reference with the table in this manual. If found incorrect, replace Fan board, Capacitor(s) or blower.
		"speed"capacitors of blowers broken.	
		Blower broken	

Description of part / function	Symptoms	Possible cause	Action
Steam *Watervalve with reducers. (pos 22)*	Product too wet.	Solenoid valve malfuction caused by dirt.	Replace valve and find cause of dirt in water supply. Let the tap run water at least 10 ltrs (3 gallon) into a light colored bucket. Check if any sediment settles on the bottom.
		Wrong steam settings in service menu.	Check and adjust settings
		Broken solenoid valve or controller malfunction.	Check valve. See I/O test in service menu
	Product too dry.	See above at too wet	See above at too wet
		Steam manifold(s) blocked with scale. (lime)	Replace manifold(s) and advise the application of a lime filter.
			Replace manifold(s) and give instructions to exchange the filter cartridge in time.
			Replace manifold(s), measure the water hardness and put the right water capacity in the manager menu settings.
		Water tap closed, or pressure < 2 Bar	Check water supply
Sensor	Temperature read-out on LCD is not stable.	Sensor defect. Wire loose.	Check sensor and wiring. See also input test in service menu
	Product over cooked.	Sensor defect. (resistance too low)	Check sensor and wiring. See also input test in service menu
	Cooking takes more time	Sensor defect. (resistance too high).	Check sensor and wiring. See also input test in service menu
	Bad cooking results	Sensor defect although it measures good.	Replace sensor in case blowers, heaters and contactors are all right.
Illumination and display effect	Less display effect	One or more lamps defect, transformer defect or wiring loose.	Check possibilities. See I/O test in service menu.
		Scale on inside of inner door	See 3 possibilities at “steam” function, product too dry, related to scale.
		Condensation on inside of inner door	This is normal at cooking temperatures below 100°C (212°F). No action required in case cooking program is OK.

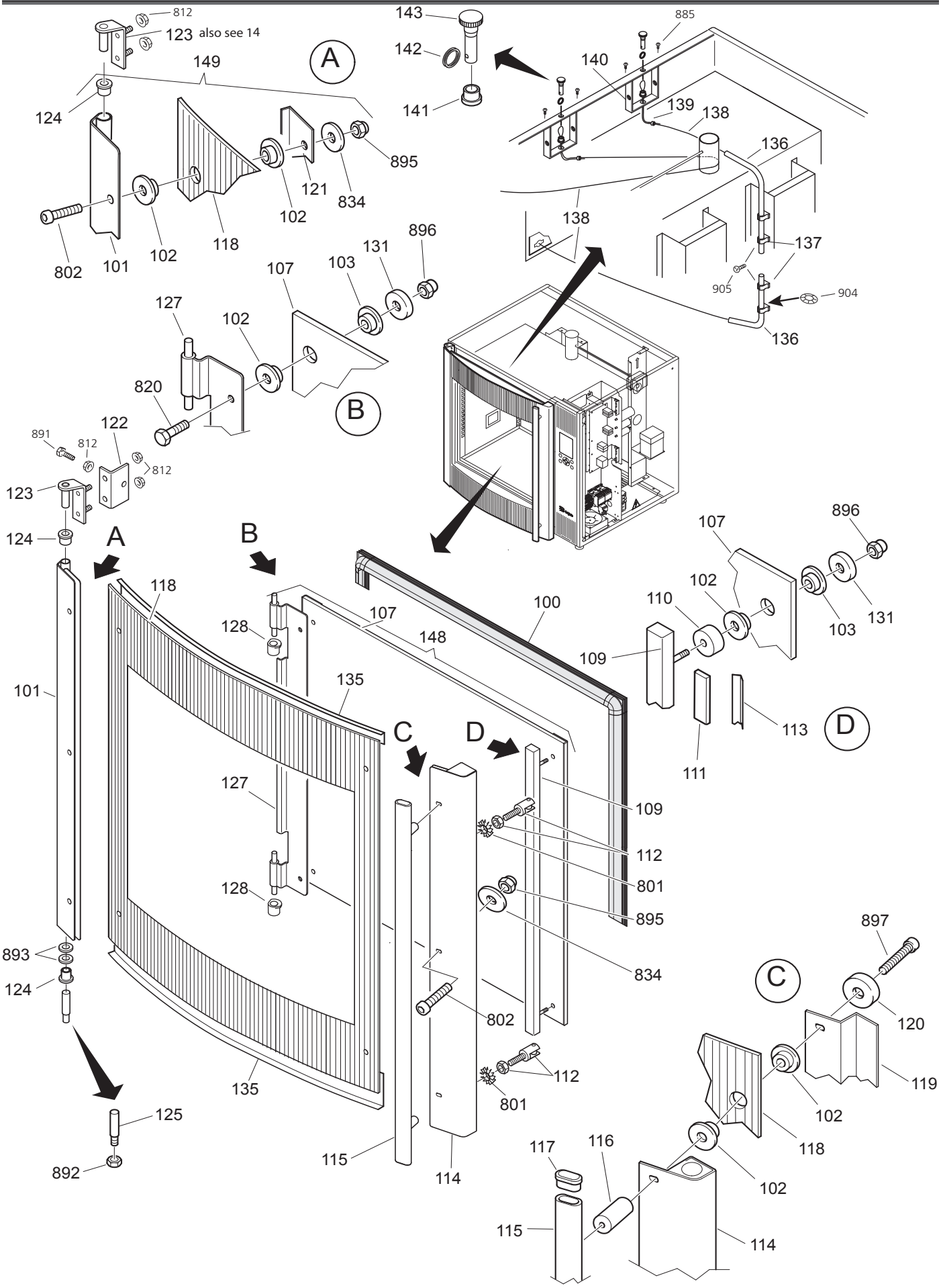
Description of part / function	Symptoms	Possible cause	Action
Door switch.	Blowers do not start up and heaters stay off and/or the message “door open” appears while door is closed	Door switch (on doorlock) defect or wiring loose.	Check door switch and/or wiring. See I/O test in service menu.
	Blowers and heaters stay on while door is opened.	Door switch broken or came loose from door-lock.	Check door switch and/or wiring. See I/O test in service menu.
Door	Door is leaking	Door gasket is damaged or deteriorated.	Replace doorgasket.
		Door adjustment not ok	
	Door does not close smoothly	Door adjustment not ok	
	Door does not close or open	Door adjustment not ok	
		Defect doorlock	Replace lock and / or catch

ELECTRICAL PARTS



Pos	Mdl.	part nr.	Description	Qty
1		9172317	CPU board + LCD, i-control	1
2		9192202	Power & I/O board, i-control	1
3		3702213	Fan board i-control	1
4		9192204	Ribboncable with 3 connectors, 1,5mtr.	1
5		9172329	Keyboard foil, set	1
6		9191101	Rs 232 extension cable	1
7		9172362	Buzzer 12V	1
8		9111230	Fuse 63mA slow acting	1
9		9171129	Fuse 125mA slow acting	1
10		3701015	Doorlock, electric	2
11		3701015s	Doorlock service kit	
12		3703052	Extension cable doorlock (left hinged door only)	1
13		4312690	Spacer, Ø10xø5, H4,7	4
14		3700072	Converting set L/R door	
16		3701026	Electronic transformer, 230-240V / 11,5V / 35-105W till sr nr 100038555	
16	3/5	3701022	Transformer 230 -11,6Vx2, 100W	1
16	8/10	3701023	Transformer 230 -11,6Vx2, 200W	1
17	3/5	9191111	Transformer 230-200V, (200V versions only)	1
17	8/10	9192217	Transformer 230-200V, (200V versions only)	1
18		3500031	Blower, 230V 120x120	1
20	SO	3500646	Capacitor 4 µF	SO
21	SO	3500640	Capacitor 8 µF	SO
22	SO	3500641	Capacitor 16 µF	SO
23	SO	3500661	Capacitor 30 µF	SO
25		7800412	Connecting cable 4x16², 200V version	
25	3	9070028	Connecting cable 5x2,5²	1
25	5/8	9070044	Connecting cable 5x4	1
25	10	3508921	Connecting cable 5x6²	1
26		9172420	Cable gland M32	1
27		3701068	Nut M32, Cable gland	1
28		3702226	Connection terminal ass.	1
29		0166741	DIN rail (per mtr)	0,1
30		3701213	Contactor	1
31		9191250	End cap, fuse holder	1
32		9191218	Fuse holder	1
33		9191197	Fuse 10A, 32x6,3 ceramic slow acting	1
34		9191223	End cap, terminal	1
35		9191240	Terminal, grey	10
36		9191239	Terminal, green	1
37		9191222	End Clamp, din rail	2
38		9191236	Bridge, 4 pole	1
39		9191238	Bridge, 2 pole	2
40	3	3700155	Control panel ass.	1
40	5	3700156	Control panel ass.	1
40	8	3700157	Control panel ass.	1
40	10	3700158	Control panel ass.	1
43		3500046	Temperature sensor holder	2
44		9191157	Hose, ptfe 6x4 mm	4mm
45		3500090	Temperature sensor with receptacles	1
46		3500037	Thermostat 100-320 °C	1
48		0601458	Contact, female mate'n lock	4
49		6501446	Plug, 4p mate'N lock	2-8
50		3500044	Blower	
51	SO	3702051	Heating element, 2100W 208V for 200V 60Hz version	SO
51	SO	3500042	Heating element, 2100W 230V	SO
52	SO	3702050	Heating element, 2000W 208V for 200V 60Hz version	SO
52	SO	3500073	Heating element, 2000W 230V	SO
53	SO	3702052	Heating element, 1000W 208V for 200V 60Hz version	SO
53	SO	3500043	Heating element, 1000W 230V	SO
54	SO	3702053	Heating element, 1750W 208V for 200V 60Hz version	SO
54	SO	3702021	Heating element, 1750W 230V	SO
57		9044564	Mains connecting block, 1,2,3	1
58		9044572	Mains connecting block 4,5,6	1
59		9044580	Bridge, copper	3
61		3701052	Lamp 20W / 12V Halogen	3-10
62		3704536	Cover profile, oven illumination	3
63		3500038	Glass, oven illumination	3
64		3500040	Seal, oven illumination	3
65		3701017	Lampholder	3
66		3702227	Terminal block	1
67		3500109	Endswitch	2
68		3500107	Drive motor (valve)	1
69		3704147	Support for endswitch	1
70	3	3500056	Valve	1
70	5	3701053	Valve, double	1
70	8	3500074	Valve, triple	1
70	10	3500515	Valve, quadruple	1
75	3	3700089	Electric panel complete with all boards and wiring	
75	5	3700090	Electric panel complete with all boards and wiring	
75	8	3700091	Electric panel complete with all boards and wiring	
75	10	3700092	Electric panel complete with all boards and wiring	
87		0601458	Contact, male Mate'N lock	
88		6501444	Socket, 3 pole mate'N lock	
93		2300121	Terminal block, porcelain	

DOOR PARTS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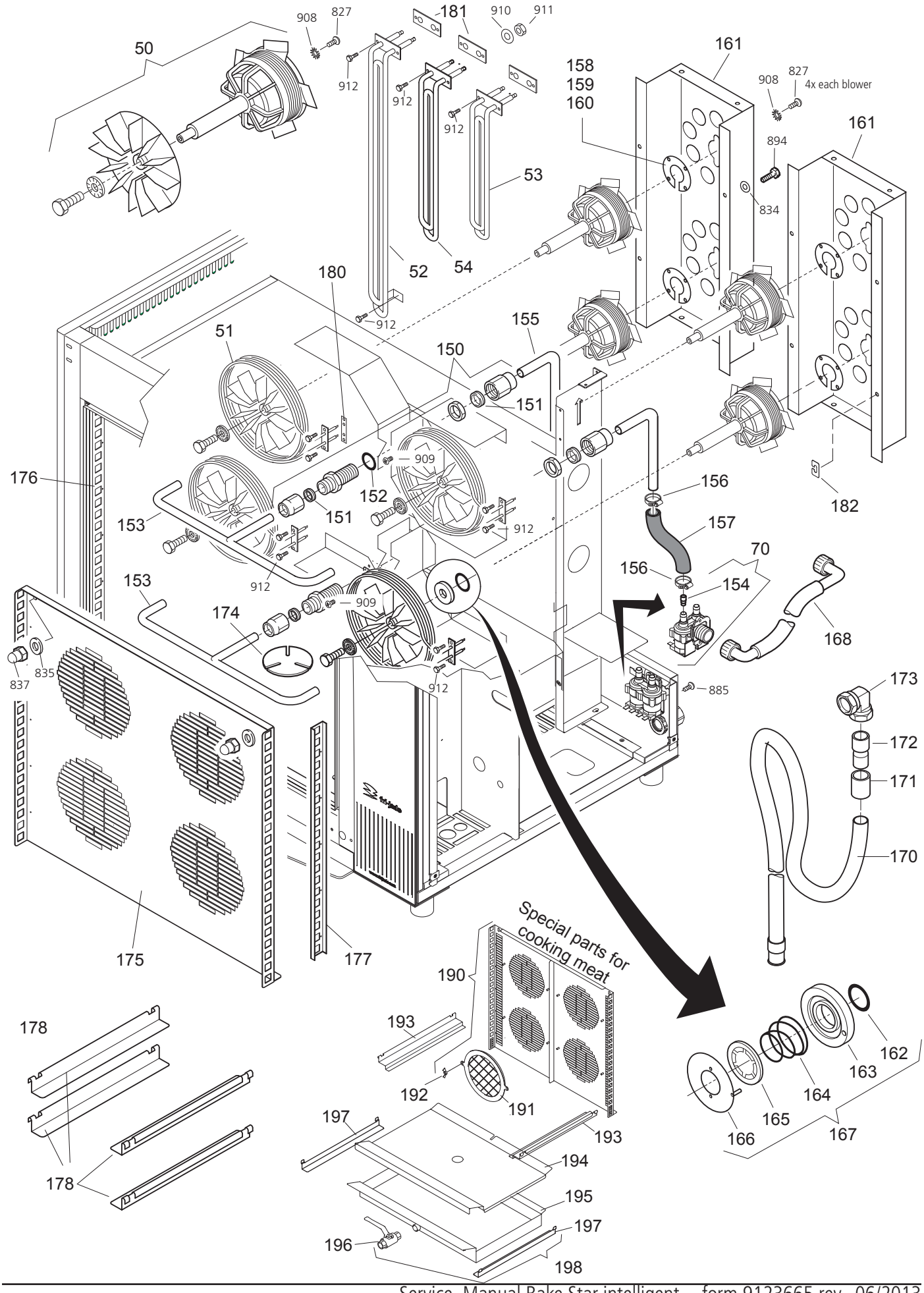
Pos	Mdl.	part nr.	Description	Qty
100	3	3701034	Rubber profile brown	1
100	5	3701031	Rubber profile brown	1
100	8	3701032	Rubber profile brown	1
100	10	3701033	Rubber profile brown	1
100		3701010	Rubber profile per mtr (per mtr)	
101	3	3704241	Hinge outer window	1
101	5	3704037	Hinge outer window	1
101	8	3704141	Hinge outer window	1
101	10	3704142	Hinge outer window	1
102	3/5	3702342	Collar bush 10x5x3,5	12
102	8/10	3702342	Collar bush 10x5x3,5	18
103	3/5	3702341	Collar bush 10x5x2,5	4
103	8/10	3702341	Collar bush 10x5x2,5	6
107	3	3701008	Glass inner	1
107	5	3701001	Glass inner	1
107	8	3701003	Glass inner	1
107	10	3701005	Glass inner	1
109	3	3704426	Holder, magnet	1
109	5	3704427	Holder, magnet	1
109	8	3704428	Holder, magnet	1
109	10	3704429	Holder, magnet	1
110		3703058	Spacer, Ø16x5 H10	2-3
111		9070141	Magnet, 50x19x6 (qty= 5, 9, 15 or 19)	
112		3701016	Door catch	2
113	3	3704430	Filling profile	1
113	5/10	3704431	Filling profile	1
113	8	3704432	Filling profile	2
114	3	3700536	Cover plate, glass outer	1
114	5	3700535	Cover plate, glass outer	1
114	8	3700541	Cover plate, glass outer	1
114	10	3700542	Cover plate, glass outer	1
115	3	3703031	Door handle	1
115	5	3703006	Door handle	1
115	8	3703008	Door handle	1
115	10	3703009	Door handle	1
116		9172300	Spacer, doorhandle	2
117		9171014	Plug, door handle	2
118	3	3701009	Glass outer	1
118	5	3701002	Glass outer	1
118	8	3701004	Glass outer	1
118	10	3701006	Glass outer	1
119	3	3700515	Cover plate, outer glass inside	1
119	5	3700516	Cover plate, outer glass inside	1
119	8	3700517	Cover plate, outer glass inside	1
119	10	3700518	Cover plate, outer glass inside	1
120		9174680	Washer Ø20x5, thick 3mm	2

Pos	Mdl.	part nr.	Description	Qty
121	3	3704240	Cover plate	1
121	5	3704065	Cover plate	1
121	8	3704130	Cover plate	1
121	10	3704140	Cover plate	1
122		3704040	Adjusting plate, hinge	1
123		9170427	Hinge L, (in case of left hinged door (default))	1
123		9170426	Hinge R, (in case of right hinged door.)	
124		9172054	Brass bearing 8 mm	2
125		3703004	Lower hinge	1
127	3	3700487	Hinge inner window	1
127	5	3700407	Hinge inner window	1
127	8	3700437	Hinge inner window	1
127	10	3700467	Hinge inner window	1
128		9172122	Brass bearing 8 mm, cut off	2
131		9194525	Washer M5, ø5xØ16 thick 2mm	4-6
135		3704184	Protection strip, outer glass	2
136		3703057	transit tube, manual door-opening	2
137		3701064	Tube clamp 10mm	8
138		3701066	Steel wire rope 1,25mm SS (per mtr)	3,5
139		2006256	Ring terminal, yellow	4
140		3704434	Bracket	2
141		9082211	Grommet	2
142		3701069	Splitring, 17mm	4
143		3703055	Pull bar, manual opening	2
148	3	3700093s	Inner door, complete assembly	1
148	5	3700094s	Inner door, complete assembly	1
148	8	3700095s	Inner door, complete assembly	1
148	10	3700096s	Inner door, complete assembly	1
149	3	3700085	Outer door, incl hinge and mounting material	1
149	5	3700086s	Outer door, incl hinge and mounting material	1
149	8	3700087s	Outer door, incl hinge and mounting material	1
149	10	3700088s	Outer door, incl hinge and mounting material	1

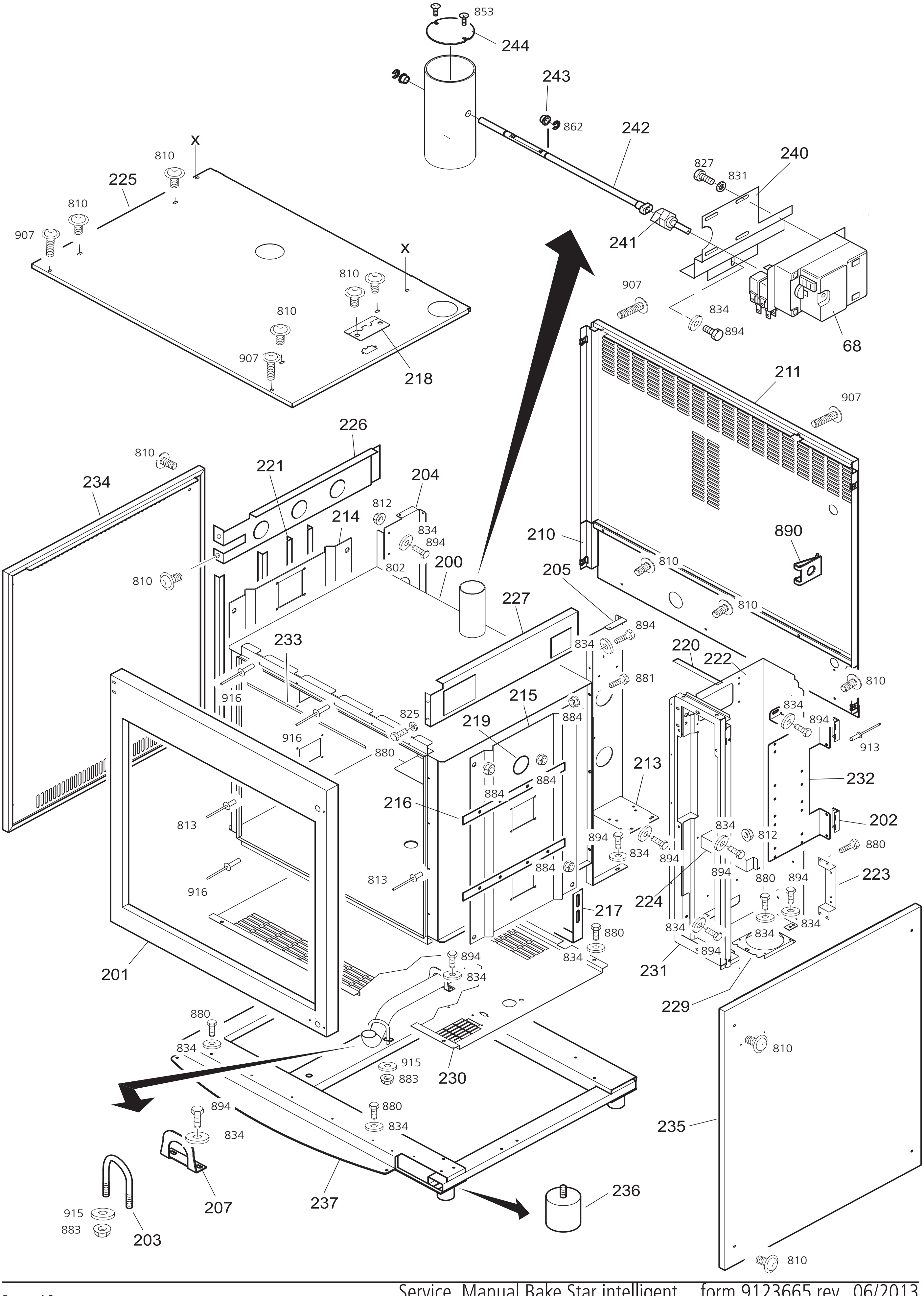
HEAT, STEAM AND DRAIN PARTS



Pos	Mdl.	part nr.	Description	Qty
50		3500044	Blower	
51	SO	3702051	Heating element, 2100W 208V for 200V 60Hz version	
51	SO	3500042	Heating element, 2100W 230V	
52	SO	3702050	Heating element, 2000W 208V for 200V 60Hz version	
52	SO	3500073	Heating element, 2000W 230V	
53	SO	3702052	Heating element, 1000W 208V for 200V 60Hz version	
53	SO	3500043	Heating element, 1000W 230V	
54	SO	3702053	Heating element, 1750W 208V for 200V 60Hz version	
54	SO	3702021	Heating element, 1750W 230V	
70	3	3500056	Valve	1
70	5	3701053	Valve, double	1
70	10	3500515	Valve, quadruple	1
70	8	3500074	Valve, triple	1
150		3500048	Joint, 10mm	1
151		3500144	Clamp ring, 10mm	
152		3500337	Sealring 14x18, copper	1
153		3703032	Tee-piece waterinjection	1
154		3500158	Water reducer (yellow)	
155		3703048	Connection tube, bended	1
156		3500050	Tube clamp, 15-17,2 mm nylon	2
157	10	3500049	Tube Silibar, 9,5x16 (per mtr)	4,6
157	3	3500049	Tube Silibar, 9,5x16 (per mtr)	0,8
157	5	3500049	Tube Silibar, 9,5x16 (per mtr)	1,8
157	8	3500049	Tube Silibar, 9,5x16 (per mtr)	3,1
158		3704497	Shim, 0,5mm	
159		3704493	Shim, 0,8mm	
160		3500305	Shim, 1,25mm	
161	3	3704224	Bracket for blowers	2
161	5/10	3704117	Bracket for blowers	2-4
161	8	3704100	Bracket for blowers	2
162		3500577	O-ring	2-8
163		3500619	Shaft seal ring 41mm ptfe	2-8
164		3500642	Spring	2-8
165		3500630	Lockwasher, starlock SS for 16mm shaft	2-8
166		3500302	Drive ring	2-8
167		3500325	Shaft seal set	
168		3500055	Tube, 1,5m 60Bar 3/4" x 3/4"angled	1
168		3500621	Tube, 3,5m 60Bar 3/4" x 3/4"angled	
169				
170		3500054	Drain tube2,5x19	1

Pos	Mdl.	part nr.	Description	Qty
171		3500608	Tube silicon 25x33, L=6cm (per mtr)	0,06
172		6965363	Reducer, copper 35-28mm	1
173		3500052	Elbow adapter 35mm, clamp	1
174		3704179	Drain plug	1
175	3	3700481	Blower panel	1
175	5	3700401	Blower panel	1
175	8	3700431	Blower panel	1
175	10	3700461	Blower panel	1
176	3	3704215	Tray guide holder left	1
176	5	3704021	Tray guide holder left	1
176	8	3704091	Tray guide holder left	1
176	10	3704111	Tray guide holder left	1
177	3	3704216	Tray guide holder right	1
177	5	3704022	Tray guide holder right	1
177	8	3704092	Tray guide holder right	1
177	10	3704112	Tray guide holder right	1
178		3704023	Tray guide	6
179				
180		3702324	Gasket	2
181		3702364	Gasket	2
182		3704496	Shim, o,5mm	0,5
190	3	3700480	Blower panel, incl filters	
190	5	3700471	Blower panel, incl filters	
190	8	3700472	Blower panel, incl filters	
190	10	3700473	Blower panel, incl filters	
191		9190419	Filter, Bake Star	
192		9073149	Wingnut M6	
193		3608007	Tray guide for GN trays	
194		3704265	Cover, grease drawer	
195		3704212	Grease drawer	
196		3701103	Ball valve 3/4"	
197		3704623	Tray guide for grease drawer	
198		3700479	Grease drawer ass incl tray guides, without cover	
		3504271	Wrench, 10 mm, sheet metal	

SHEET METAL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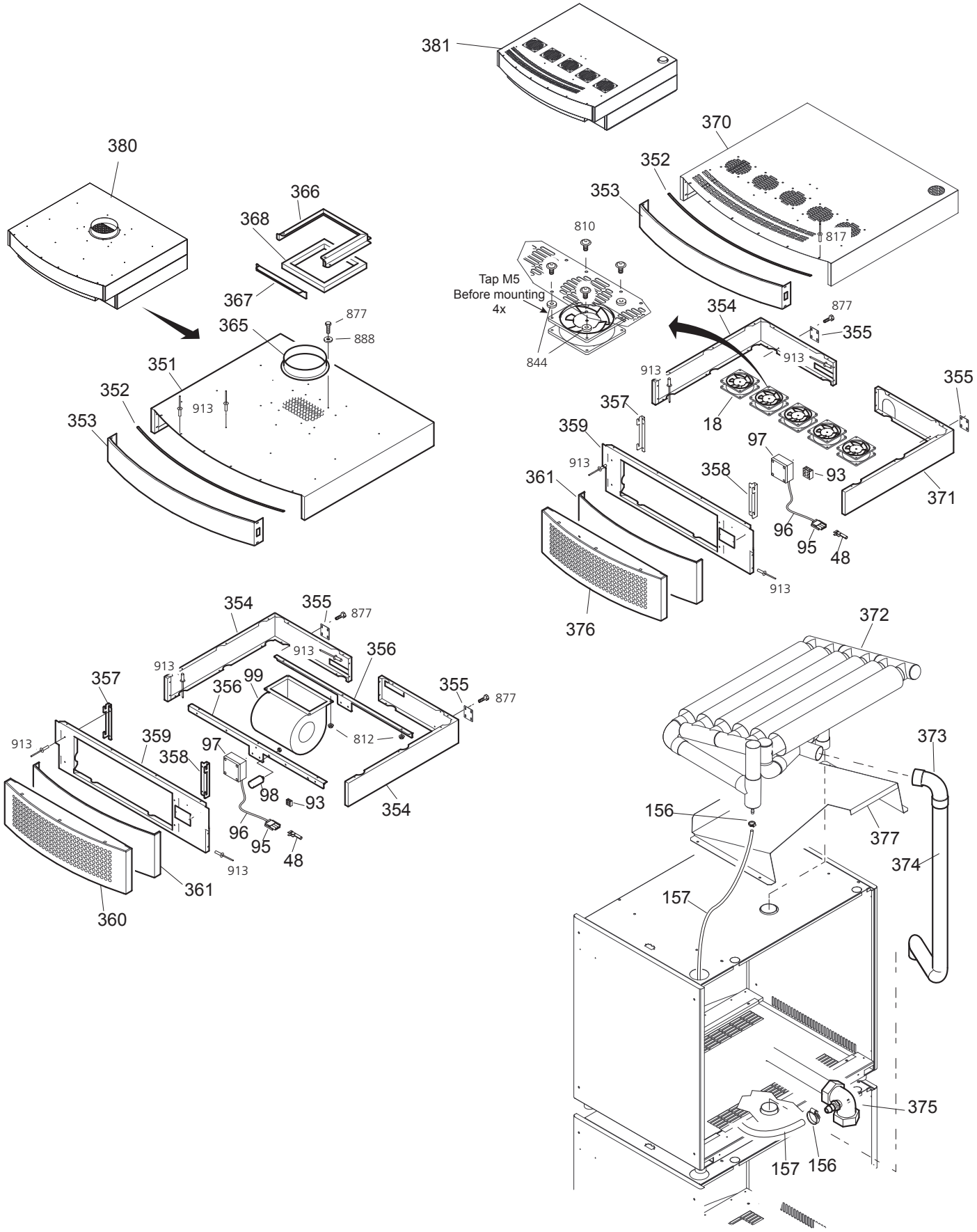
Pos	Mdl.	part nr.	Description	Qty
68		3500107	Drive motor (valve)	1
200	3	3700485	Cooking cavity	1
200	5	3700403	Cooking cavity	1
200	8	3700433	Cooking cavity	1
200	10	3700463	Cooking cavity	1
201	3	3700519	Front plate	1
201	5	3700520	Front plate	1
201	8	3700521	Front plate	1
201	10	3700522	Front plate	1
202		3701212	Hinge	2
203		3703087	U bolt, (from M6 studding)	1
204	3	3704220	Post , cooking cavity L rear	1
204	5	3704011	Post , cooking cavity L rear	1
204	8	3704081	Post , cooking cavity L rear	1
204	10	3704101	Post , cooking cavity L rear	1
205	3	3704242	Post , cooking cavity R rear	1
205	5	3704012	Post , cooking cavity R rear	1
205	8	3704082	Post , cooking cavity R rear	1
205	10	3704102	Post , cooking cavity R rear	1
207		3704015	Bracket, drain pipe	1
210		3704030	Back panel, lower	1
211	3	3704245	Back panel	1
211	5	3704031	Back panel	1
211	8	3704085	Back panel	1
211	10	3704115	Back panel	1
213		3704076	Bracket	1
214	3	3704243	reinforcement plate L side	1
214	5	3704077	reinforcement plate L side	1
214	8	3704095	reinforcement plate L side	1
214	10	3704109	reinforcement plate L side	1
215	3	3704223	reinforcement plate R side	1
215	5	3704078	reinforcement plate R side	1
215	8	3704097	reinforcement plate R side	1
215	10	3704114	reinforcement plate R side	1
216		3704148	Shackle for insulation	2
217		3704149	Shackle for insulation	2
218		3704150	Cover, cable transit	1
219		3704152	Disk for insulation	2
220		3704153	Finishing strip control panel	1
221	3	3704227	Strip for insulation	4
221	5	3704175	Strip for insulation	4
221	8	3704173	Strip for insulation	4
221	10	3704174	Strip for insulation	4
222	3	3704252	Mounting plate electra	1
222	5	3704189	Mounting plate electra	1
222	8	3704190	Mounting plate electra	1
222	10	3704191	Mounting plate electra	1
223		3704192	Bracket , mains terminals	1
224		3704194	Bracket, control panel	1
225		3704401	Top panel	1

Pos	Mdl.	part nr.	Description	Qty
226		3704410	Construction profile L side	1
227		3704411	Construction profile R side	1
229		3704542	Bracket, cooling blower	1
230		3704548	Bottom plate	1
231	3	3704560	Post, control panel	1
231	5	3704563	Post, control panel	1
231	8	3704568	Post, control panel	1
231	10	3704569	Post, control panel	1
232		3704624	Mounting bracket I/O boards	1
233		3704626	Shim 1mm, 7x635mm for doorgasket	1,5
234	3	3706032	Left panel	1
234	5	3706007	Left panel	1
234	8	3706028	Left panel	1
234	10	3706030	Left panel	1
235	3	3706033	Right panel	1
235	5	3706008	Right panel	1
235	8	3706029	Right panel	1
235	10	3706031	Right panel	1
236		9171125	Foot Ø40x50	4
237		3700400	Bottom construction	1
240		3704041	Support	1
241		3500108	Camshaft	1
242		3700448	Valve bar	1
243		9191085	Collar bearing, 6mm synthetic	2
244		3704145	Valve disk	1

HOODS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Tap M5
Before mounting
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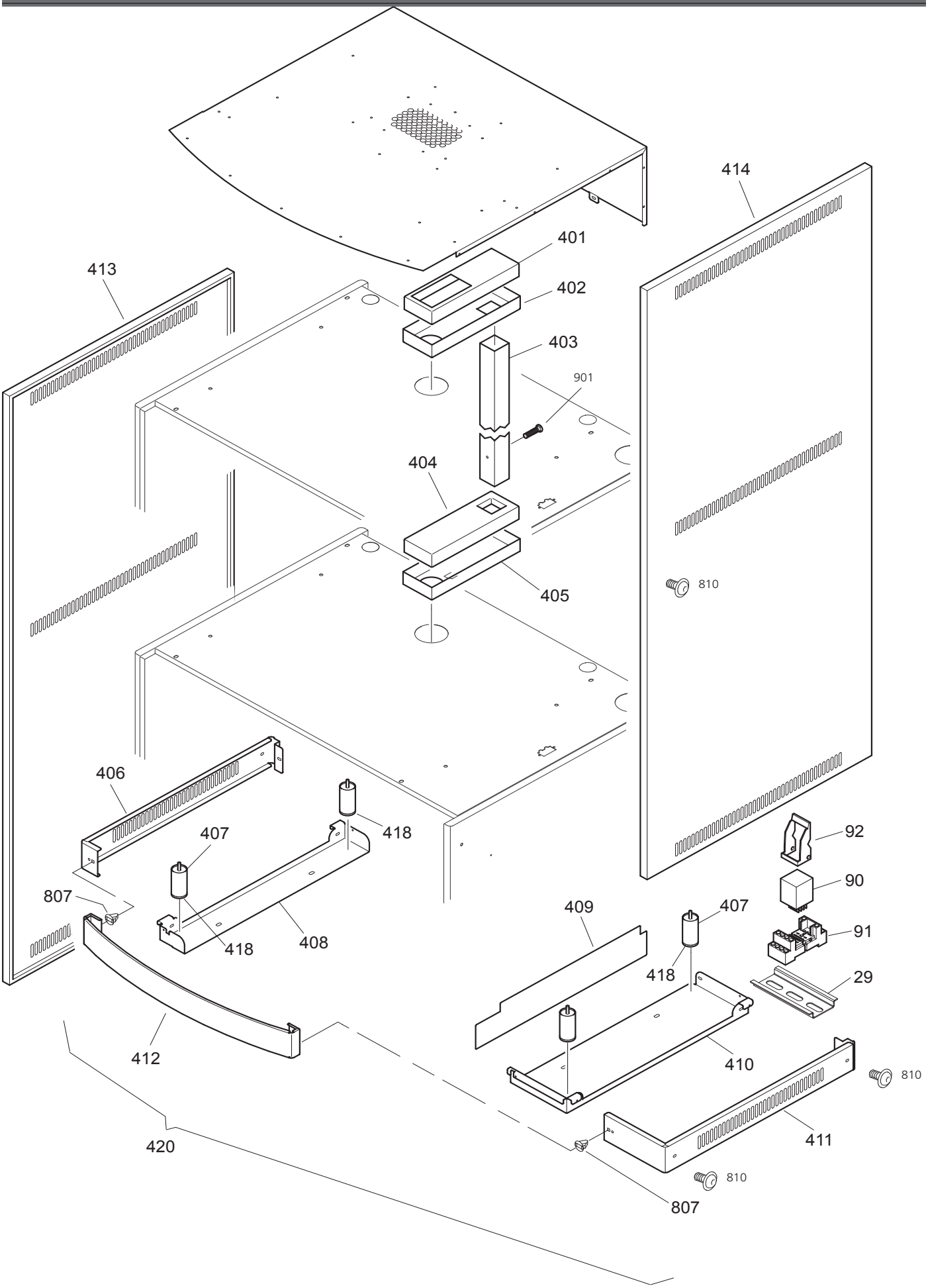
Pos	Mdl.	part nr.	Description	Qty
18		3500031	Blower, 230V 120x120	5,0
48		0601458	Contact, female mate'n lock	3
93		2300121	Terminal block, porcelain	2
95		6501445	Plug, 3p mate'N lock	1
96		7800435	Cable, 3x1,5² per mtr (per mtr)	1,3
97		4650001	Junction box, 87x87	1
98		9222073	Capacitor 2µF	1
99		3701018	Blower 230V, 800m³/h	1
156		3500050	Tube clamp, 15-17,2 mm nylon	2
157		3500049	Tube Silibar, 9,5x16 (per mtr)	1,75
351		3706011	Top plate	1
352		3706043	Construction strip	1
353		3706016	Frontpanel	1
354		3706014	Bottom panel	2
355		3706017	Connection plate	2
356		3704056	Reinforcement profile	2
357		3706039	Hook L, for filterhousing	1
358		3706038	Hook R, for filterhousing	1
359		3706015	Front plate	1
360		3700621	Filterhousing	1
361		3706041	Filtergause	1
365		3500241	Collar ring, 180mm	1
366		3704185	Filter bracket	
367		3704186	Locking bracket	
368		3605021	Filter	
370		3706045	Top plate	1
371		3706046	Bottom panel, condensor hood R side	1
372	3/5	3700477	Condensor for BS3 or 5	1
372	8/10	3700476	Condensor for BS8, 10, 3+5, 5+5	1
373		4238485	Elbow 54mm inside	1
374		3700478	Connection pipe	1
375		3700419	Elbow adapter 35mm with hose pillar	1
376		3700631	Filterhousing	1
377		3704144	Bracket, condensor	1
380		3709525	Hood	
381	3/5	3709509	Condensing Hood for BS3 or 5	
381	8/10	3709524	Condensing Hood for BS8, 10, 3+5, 5+5	

	USED SHORT FORMS
Pos	Position number in drawing
Mdl	Model (3 = BS3 8/10= BS8 and 10 etc.)
Qty	This column shows the quantity that has been used in a unit.
Unit	This column shows how the part can be bought. Per Meter, per Piece, per cartridge etc."
Pcs	Pieces
Mtr	Meter
Dm	Decimeter
Ct	Cartridge
Rl	Roll
Al	Aerosol
Tb	Tube
	USED SHORT FORMS IN FASTENERS
BH	Button Head
BNP	Brass Nickel Plated
CRPH	Cross Recess Pan Head
NP	Nickel Plated
SPH	Slotted Pan Head
SS	Stainless Steel
ZP	Zinc Plated

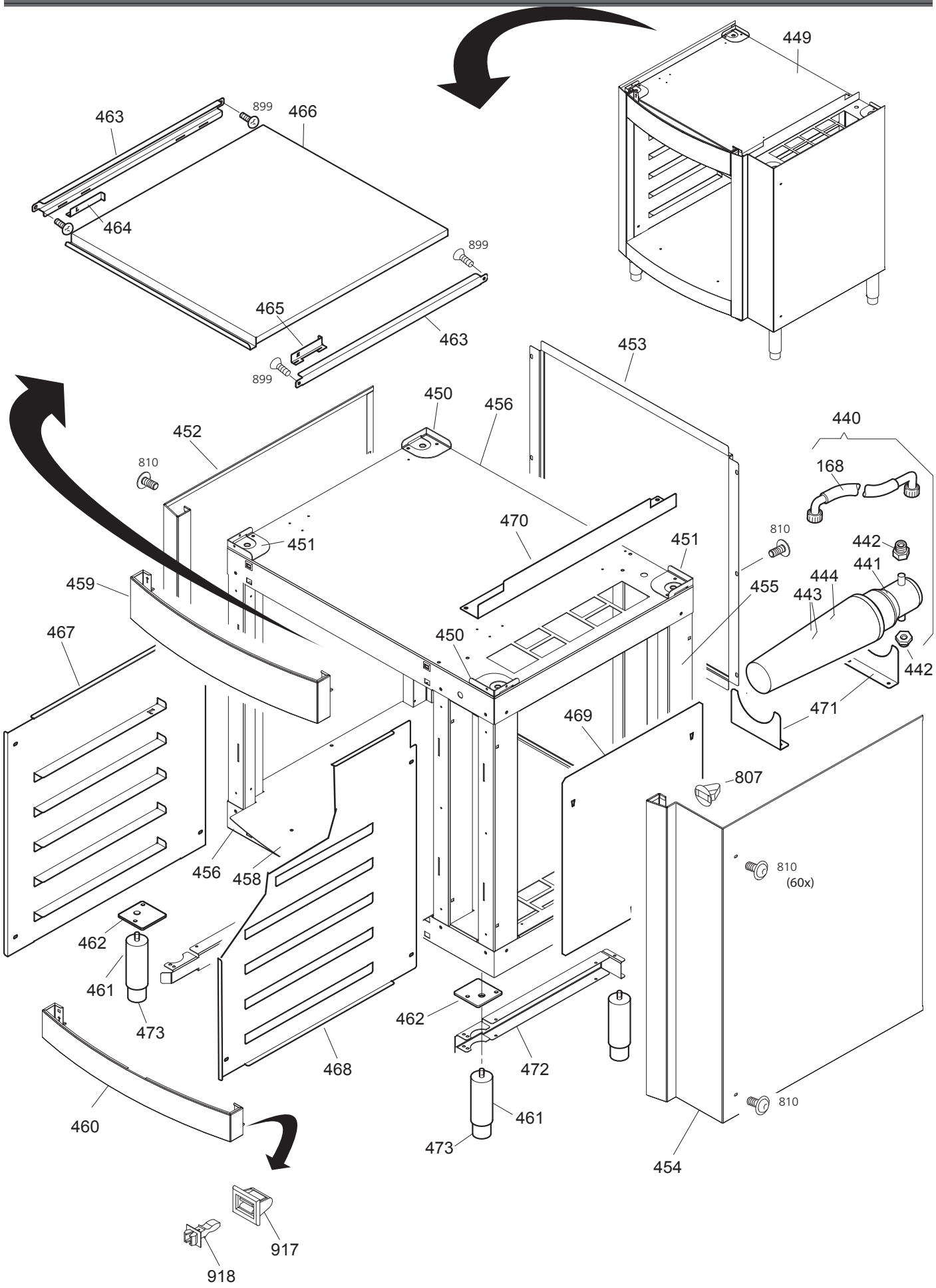
STACKING KIT



Pos	Mdl.	part nr.	Description	Qty
29		0166741	DIN rail	
90		3701214	Relay, 230V	2
91		3701215	Socket for relay	
92		3701216	Clamp for relay	
401		3704136	Cover, vent upper oven	1
402		3704180	Box, vent upper oven	1
403		3703042	Tube 50x50x2, aluminium	1
404		3704177	Cover, vent lower oven	1
405		3704176	Box, vent lower oven	1
406		3704162	Side panel L side	1
407		3700502	Leg	4
408		3704160	Construction profile L side	1
409		3704394	Air guide, cool air	1
410		3704161	Construction profile R side	1
411		3704163	Side panel R side	1
412		3704164	Frontpanel	1
413	3+3	3706048	Side panel L side for BS3+3	
413	5+3	3706034	Side panel L side for BS5+3	
413	5+5	3706036	Side panel L side for BS5+5	
414	3+3	3706049	Side panel R side for BS3+3	
414	5+3	3706035	Side panel R side for BS5+3	
414	5+5	3706037	Side panel R side for BS5+5	
418		8044058	Plug, foot	4
420		3700070	Stacking kit (excl. pos 413-414)	
420	3+3	3700075	Stacking kit (pos 413-414 included)	
420	5+3	3700073	Stacking kit (pos 413-414 included)	
420	5+5	3700074	Stacking kit (pos 413-414 included)	
		3704393	Cover plate (109x209)	
		3704395	Mounting plate for extra cooling fan	

	USED SHORT FORMS
Pos	Position number in drawing
Mdl	Model (3 = BS3 8/10= BS8 and 10 etc.)
Qty	This column shows the quantity that has been used in a unit.
Unit	This column shows how the part can be bought. Per Meter, per Piece, per cartridge etc."
Pcs	Pieces
Mtr	Meter
Dm	Decimeter
Ct	Cartridge
Rl	Roll
Al	Aerosol
Tb	Tube
	USED SHORT FORMS IN FASTENERS
BH	Button Head
BNP	Brass Nickel Plated
CRPH	Cross Recess Pan Head
NP	Nickel Plated
SPH	Slotted Pan Head
SS	Stainless Steel
ZP	Zinc Plated

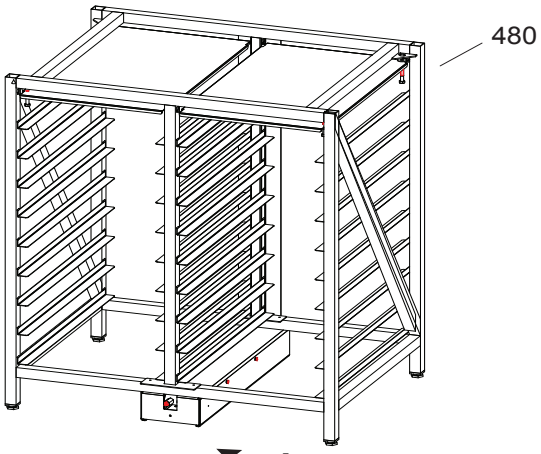
DESIGN STAND

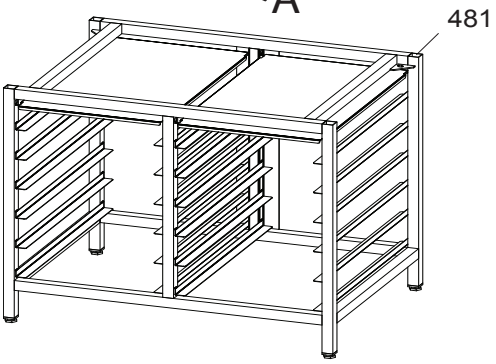


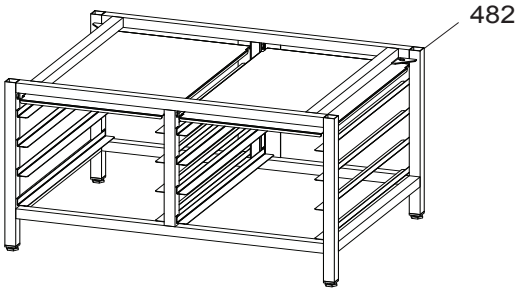
Pos	Mdl.	part nr.	Description	Qty
168		3500055	Tube, 1,5m 60Bar 3/4" x 3/4"angled	1
440		3709802	Descaling filter set	
441		3701081	Filter head	1
442		3701084	Nipple adapter 3/8"- 3/4"	2
443		3701082	Filter housing + cartridge	1
444		3701083	Filter cartridge	
449	10	3709504	Stand for BS10	
449	3/5	3709502	Stand for BS3 or 5	
449	8	3709503	Stand for BS8	
449	3/5+5	3709506	Stand for stacked BS3+5 or 5+5	
450		3704362	Footplate	2
451		3704360	Footplate	2
452	10	3704376	Side panel L side	1
452	3/5	3704354	Side panel L side	1
452	3/5+5	3704380	Side panel L side	1
452	8	3704382	Side panel L side	1
453	10	3704378	Backpanel	1
453	3/5	3704356	Backpanel	1
453	8	3704384	Backpanel	1
454	10	3704377	Side panel R side	1
454	3/5	3704355	Side panel R side	1
454	3/5+5	3704361	Side panel R side	1
454	8	3704383	Side panel R side	1
455	10	3700534	Post	6,0
455	3/5	3700532	Post	6,0
455	3/5+5	3700531	Post	6,0
455	8	3700533	Post	6,0
456	3-10	3704350	Top and bottom plate for stand for 3, 5, 8, 10 tray oven	2
456	3/5+5	3704357	Top plate for stand for stacked ovens.	1
458	10	3704367	Cover plate	1
458	3/5/8	3704352	Cover plate	1
459	5+5	3704454	Frontpanel	1
459	10	3704379	Frontpanel, upper	1
459	3/5/8	3704358	Frontpanel, upper	1
460	3/5/8	3704359	Frontpanel, upper	1
461		3701071	Leg, adjustable, M12	4
462		3704455	Reinforcement plate	4
463		3704363	Drawer guide	2
464		3704321	Drawer lock, L side	1
465		3704322	Drawer lock, R side	1
466		3704366	Drawer	1
467	3/5	3704368	Tray rack L side	1
467	8	3704385	Tray rack L side	1
468	3/5	3704369	Tray rack R side	1
468	8	3704386	Tray rack R side	1
469	3/5	3704485	Air guide, cooling air	1
469	8	3704486	Air guide, cooling air	1
470		3704487	Air guide, cooling air	1
471		3704456	Holder descaling filter	2
472		3704453	Guide for drive-in trolley	2
473		3701070	Cap Ø40x23,5	4

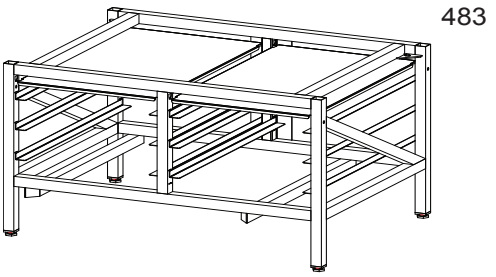
	USED SHORT FORMS
Pos	Position number in drawing
Mdl	Model (3 = BS3 8/10= BS8 and 10 etc.)
Qty	This column shows the quantity that has been used in a unit.
Unit	This column shows how the part can be bought. Per Meter, per Piece, per cartridge etc."
Pcs	Pieces
Mtr	Meter
Dm	Decimeter
Ct	Cartridge
Rl	Roll
Al	Aerosol
Tb	Tube
	USED SHORT FORMS IN FASTENERS
BH	Button Head
BNP	Brass Nickel Plated
CRPH	Cross Recess Pan Head
NP	Nickel Plated
SPH	Slotted Pan Head
SS	Stainless Steel
ZP	Zinc Plated

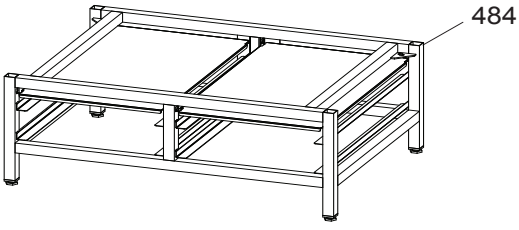
WELDED STAND

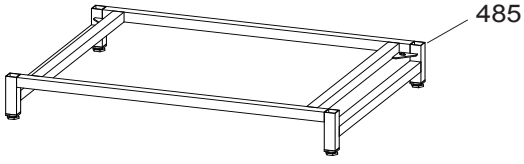


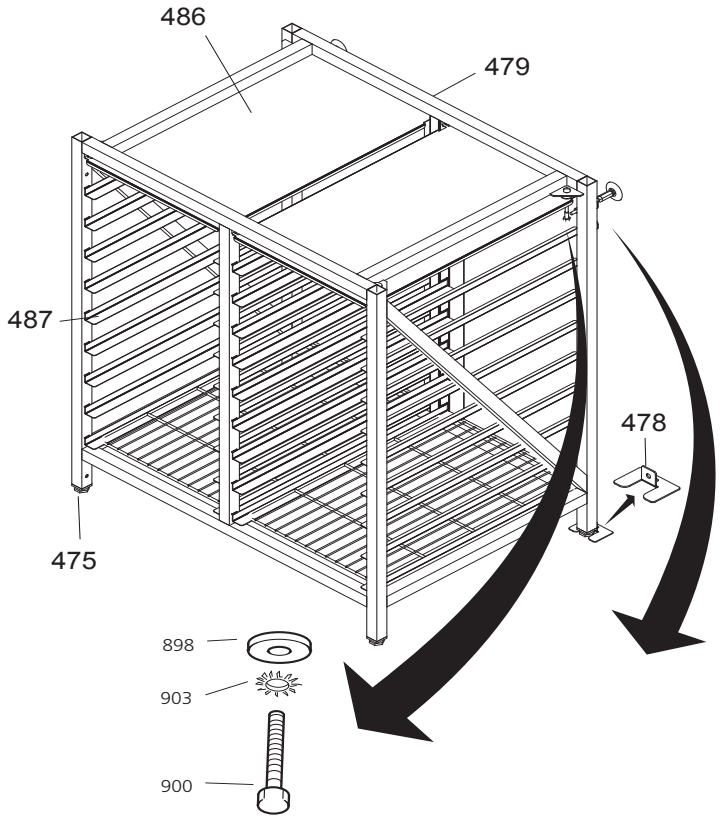


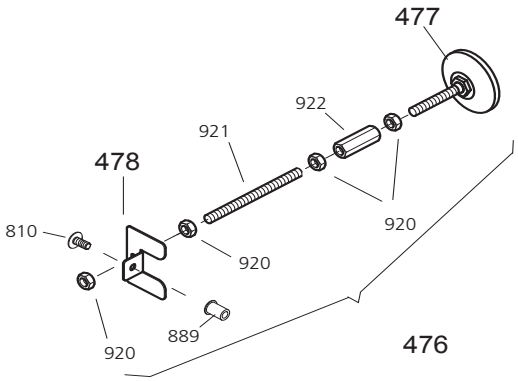


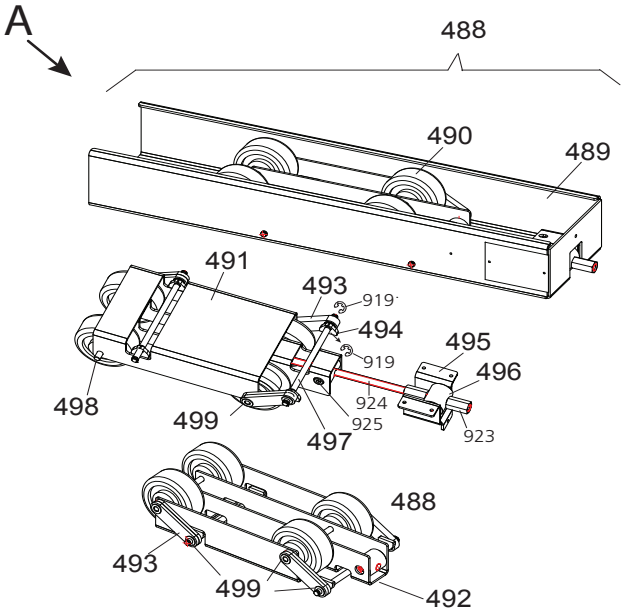








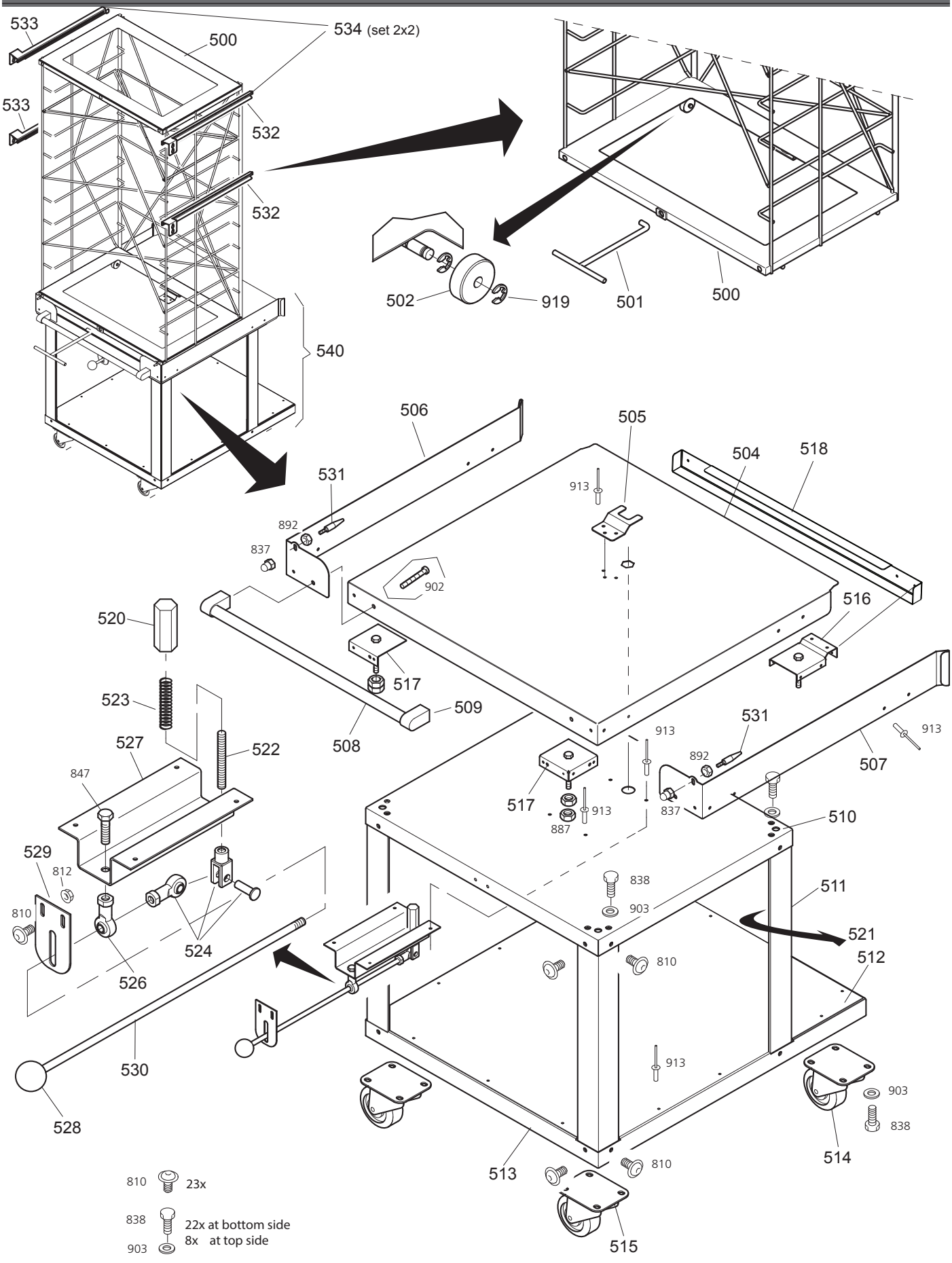




Pos	Mdl.	part nr.	Description	Qty
475		3500277	Adjustable leg	4
476		3700069	Spacer set for stand (2x)	
477		3500148	Adjustable leg	2
478		3706193	mounting plate	2
479		3709526	Stand with 2x9T for BS3 or BS5, complete	
480		3709537	Stand with 2x9T for BS3 or BS5, with Lift'n Roll	
481		3709527	Stand with 2x6T for BS8, complete	
482		3709528	Stand with 2x4T for BS10, complete	
483		3709536	Stand with 2x4T for BS10 with roll-in rack, complete	
484		3709529	Stand with 2x2T for BS5+5 stacked, complete	
485		3700633	Stand 125mm heigh	
486		3706103	Top plate	2
487		3706101	Tray support	8-36
488		3700193	Lift'n Roll unit	
489		3706335	Chassis, SS	1
490		9172125	Castor	4
491		3706323	Wheel suspension, outer, SS	1
492		3706324	Wheel suspension, inner, SS	1
493		3706325	Hinge	8
494		3706326	Hinge shaft support	4
495		3706322	Suspension, pullbar	1
496		3702233	Hinge, pullbar	2
497		3702231	Shaft, 8mm x195	2
498		3702232	Shaft, 8mm x185	2
499		9191102	Collar bearing 8mm, synthetic	16

	USED SHORT FORMS
Pos	Position number in drawing
Mdl	Model (3 = BS3 8/10= BS8 and 10 etc.)
Qty	This column shows the quantity that has been used in a unit.
Unit	This column shows how the part can be bought. Per Meter, per Piece, per cartridge etc."
Pcs	Pieces
Mtr	Meter
Dm	Decimeter
Ct	Cartridge
Rl	Roll
Al	Aerosol
Tb	Tube
	USED SHORT FORMS IN FASTENERS
BH	Button Head
BNP	Brass Nickel Plated
CRPH	Cross Recess Pan Head
NP	Nickel Plated
SPH	Slotted Pan Head
SS	Stainless Steel
ZP	Zinc Plated

DRIVE-IN TROLLEY



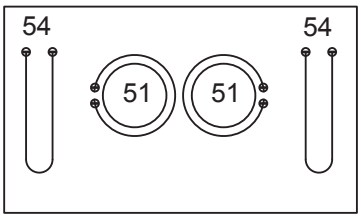
Pos	Mdl.	part nr.	Description	Qty
500		3709520	Drive in rack for BS10, ass.	
501		3700493	Hook	
502		3703080	Wheel, steel Ø35xø8x14	
504		3704464	Top plate, adjustable	1
505		3704480	Locking bracket	1
506		3704467	Guide L side	1
507		3704468	Guide R side	1
508		3703071	Handle, Ø20x1	1
509		9040031	Holder, handle 20mm	2
510		3704461	Top frame	1
511		3704518	Post	4
512		3704462	Cover, bottom	1
513		3704460	Bottom frame	1
514		9172065	Castor, Ø80mm H= 100mm	2
515		9172066	Castor with brake, Ø80mm H= 100mm	2
516		3704470	Adjustingplate	2
517		3704466	Adjustingplate	2
518		3704474	Cover plate	1
520		3703082	Locking pin	1
521		3704519	Cover, post	4
522		3703091	Studding M8	1
523		3701102	Spring	1
524		3701101	Rod-end bearing set	1
526		3701100	Rod-end bearing	1
527		3704517	Bracket, locking system	1
528		6791000	Ball knob M8	1
529		3704482	Guiding plate locking lever	1
530		3703090	Rod 8mm	1
531		6802033	Positioning pin	2
532		3704472	Drive-in guide, for inside oven R side	
533		3704473	Drive-in guide, for inside oven L side	
534		3709521	Drive-in guide set R+L	
540		3709517	Trolley, drive in rack	

	USED SHORT FORMS
Pos	Position number in drawing
Mdl	Model (3 = BS3 8/10= BS8 and 10 etc.)
Qty	This column shows the quantity that has been used in a unit.
Unit	This column shows how the part can be bought. Per Meter, per Piece, per cartridge etc."
Pcs	Pieces
Mtr	Meter
Dm	Decimeter
Ct	Cartridge
Rl	Roll
Al	Aerosol
Tb	Tube
	USED SHORT FORMS IN FASTENERS
BH	Button Head
BNP	Brass Nickel Plated
CRPH	Cross Recess Pan Head
NP	Nickel Plated
SPH	Slotted Pan Head
SS	Stainless Steel
ZP	Zinc Plated

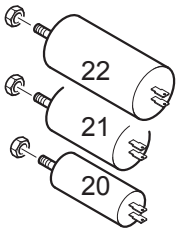
OVERVIEW OF HEATERS AND CAPACITORS

Heaters

Capacitors



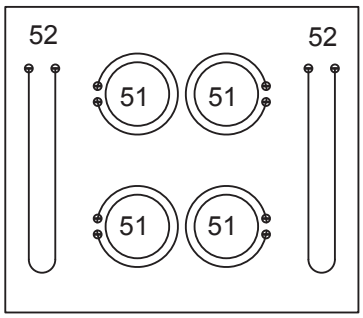
BS3



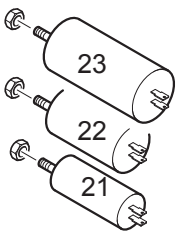
16µF

8µF

4µF



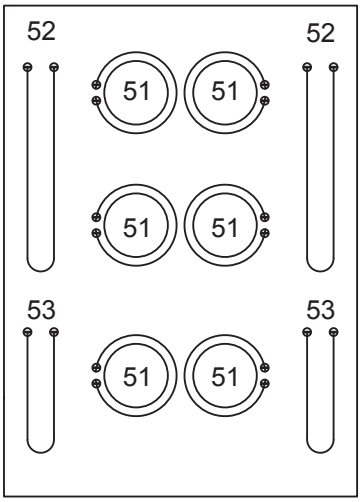
BS5



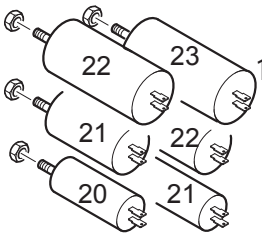
30µF

16µF

8µF



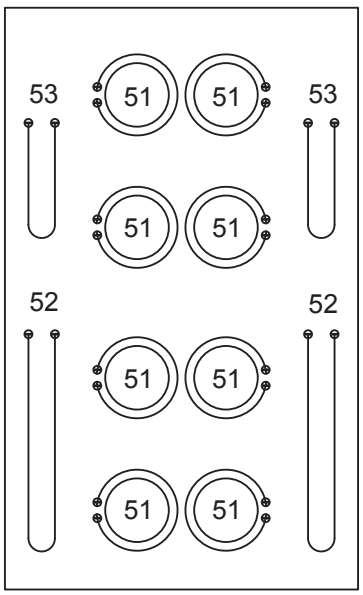
BS8



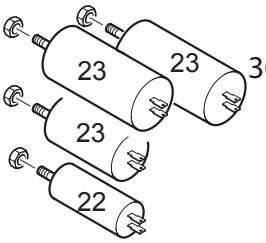
16µF + 30µF

8µF + 16µF

4µF + 8µF



BS10



30µF + 30µF

30µF

16µF

Pos	part nr.	Description
20	3500646	Capacitor 4 µF
21	3500640	Capacitor 8 µF
22	3500641	Capacitor 16 µF
23	3500661	Capacitor 30 µF
51	3702051	Heating element, 2100W 208V for 200V 60Hz version
51	3500042	Heating element, 2100W 230V
52	3702050	Heating element, 2000W 208V for 200V 60Hz version
52	3500073	Heating element, 2000W 230V
53	3702052	Heating element, 1000W 208V for 200V 60Hz version
53	3500043	Heating element, 1000W 230V
54	3702053	Heating element, 1750W 208V for 200V 60Hz version
54	3702021	Heating element, 1750W 230V

FASTENERS

Pos	Mdl.	part nr.	Description	Qty
801		4289559	Lockwasher M6, serrated ZP	
802		4288321	Screw M5x16, SS socket button head.	
807		4313049	Clamp, turn in	
810		4288325	Screw M5x12, SS socket, wide button head	
812		9087570	Nut M5, black serrated	
813		3701027	Rivet 3,2x6,4, SS	
825		0142103	Washer M5	
827		4280208	Screw M4x8, SS Cross recess pan head	
831		0142129	Washer M4, SS	
834		4311110	Washer M5, SS ø5xØ15	
835		0142111	Washer M6, SS	
837		0195910	Capnut M6, BNP	
838		4285076	Bolt M8x16, ZP	
844		0188750	Nylon Washer 4,3x9x1,4	
847		9070688	Bolt M8x12, SS	
849		0142292	Nut M3	
853		0141050	Screw M3x10, SS Cross recess pan head	
854		0141076	Screw M3x20, SS Cross recess pan head	
862		9191041	Circlips, E type for 6mm shaft	
863		4287540	Screw M4x10, BNP	
872		4285010	Nut M3, ZP with lockwasher	
873		3701248	Spacer 7mm, Ø3,2x6 NP	
874		0149296	Spacer 10mm, Ø4,2x8 Nylon	
877		4285135	Bolt M5x10, ZP thread forming	
880		9008178	Bolt M5x8, SS	
881		0141246	Bolt M6x12, SS	
882		0141117	Screw M4x45, SS Cross recess pan head	
883		0142365	Locknut M6, ZP	
884		4285092	Nut M6, black serrated	
885		4288324	Screw M4x8, SS Cross recess pan head	
886		9110028	Spacer, pcb mounting	
887		0141555	Nut M10, SS	
888		6962153	Washer M6, ZP ø6xØ25	
889		6802013	Rivet nut M5, ZP	
890		9172053	Nut, sheet metal M5 black	
891		4288058	Bolt M5x20, ZP	
892		0141521	Nut M6, SS	
893		0146987	Washer M8, SS	
894		0211520	Bolt M5x12, SS	

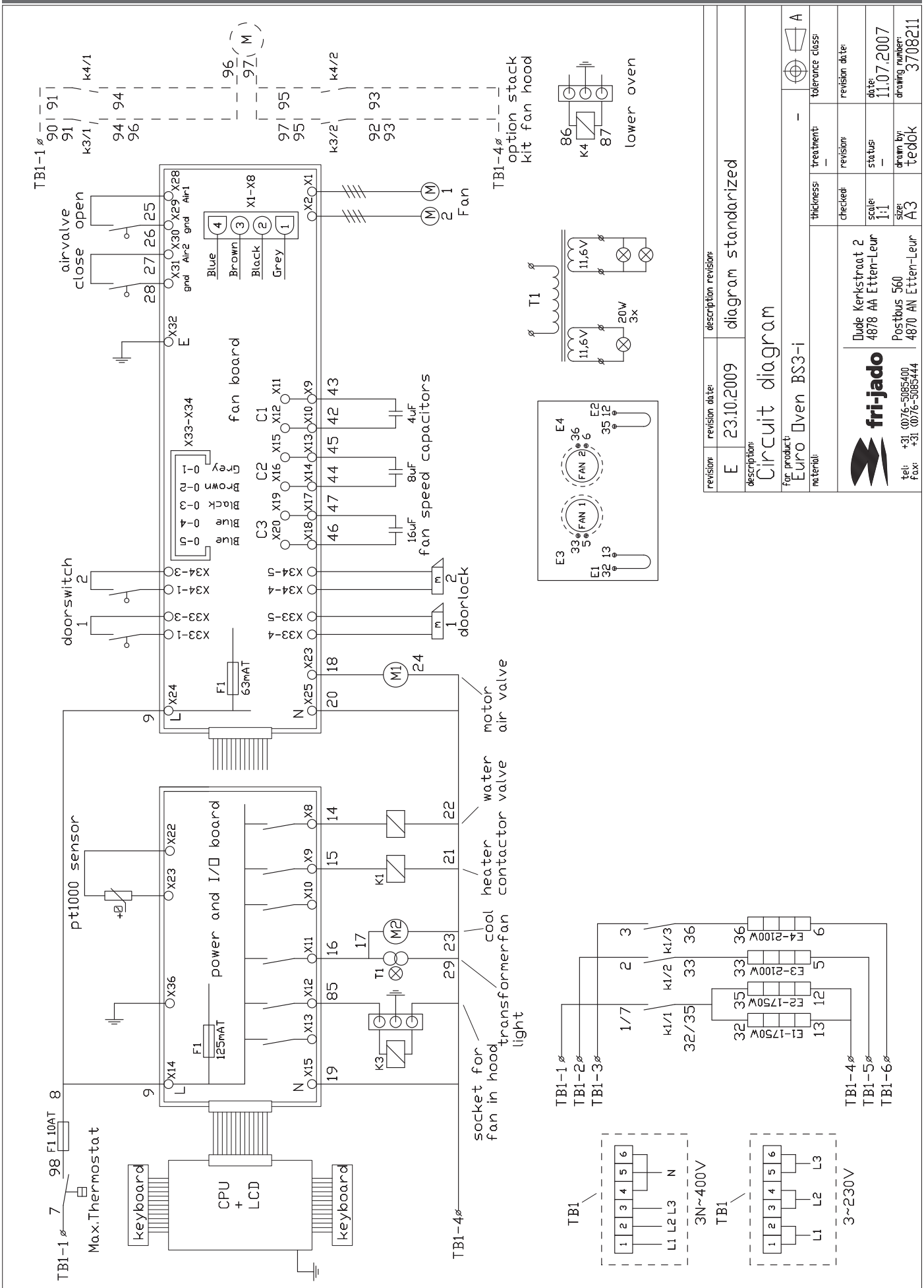
Pos	Mdl.	part nr.	Description	Qty
895		0144359	Locknut M5, SS	
896		4285408	Capnut M5, BNP	
897		4288320	Screw M5x50, SS CRPH	
898		9073987	Washer M8, SS ø8xØ25	
899		0141539	Screw M5x10, SS countersunk	
900		9008869	Bolt M8x50, ZP	
901		0199744	Screw M5x70, ZP SCH	
902		4288319	Screw 6x20, ZP CR thread-forming	
903		4289402	Lockwasher M8, ZP	
904		3701280	Lockwasher, starlock for 10mm shaft	
905		0141393	Screw M4x10, SS countersunk	
906		0141084	Screw M4x10, SS Cross recess pan head	
907		4288327	Screw M5x25, SS Socket pan head	
908		9006930	Lockwasher M4, countersunk SS serrated	
909		0141092	Screw M4x12, SS Cross recess pan head	
910		4287520	Washer M4, Brass	
911		4285020	Nut M4, Brass	
912		4280128	Bolt M4x12, SS	
913		9008217	Rivet 4x8,5	
914		0144347	Locknut M4, ZP	
915		8047381	Washer M6, SS ø6xØ25	
916		4286056	Rivet 3,2x9,9, SS	
917		3701072	Panel clip female	
918		3701073	Panel clip male	
919		6501450	Circlips, E type for 8mm shaft	
920		0141547	Nut M8, SS	
921		3701277	Stud M8x100, SS	
922		2800066	Connection nut M8x23, ZP	
923		4285051	Connection nut M10x30, ZP	
924		3700679	Stud M10x330, ZP	
925		0195596	Bolt M8x10, ZP Socket head	
926		9070793	Connection nut M6x18, ZP	
927		4280556	Stud M6 x1000mm, SS	

MISCELLANEOUS

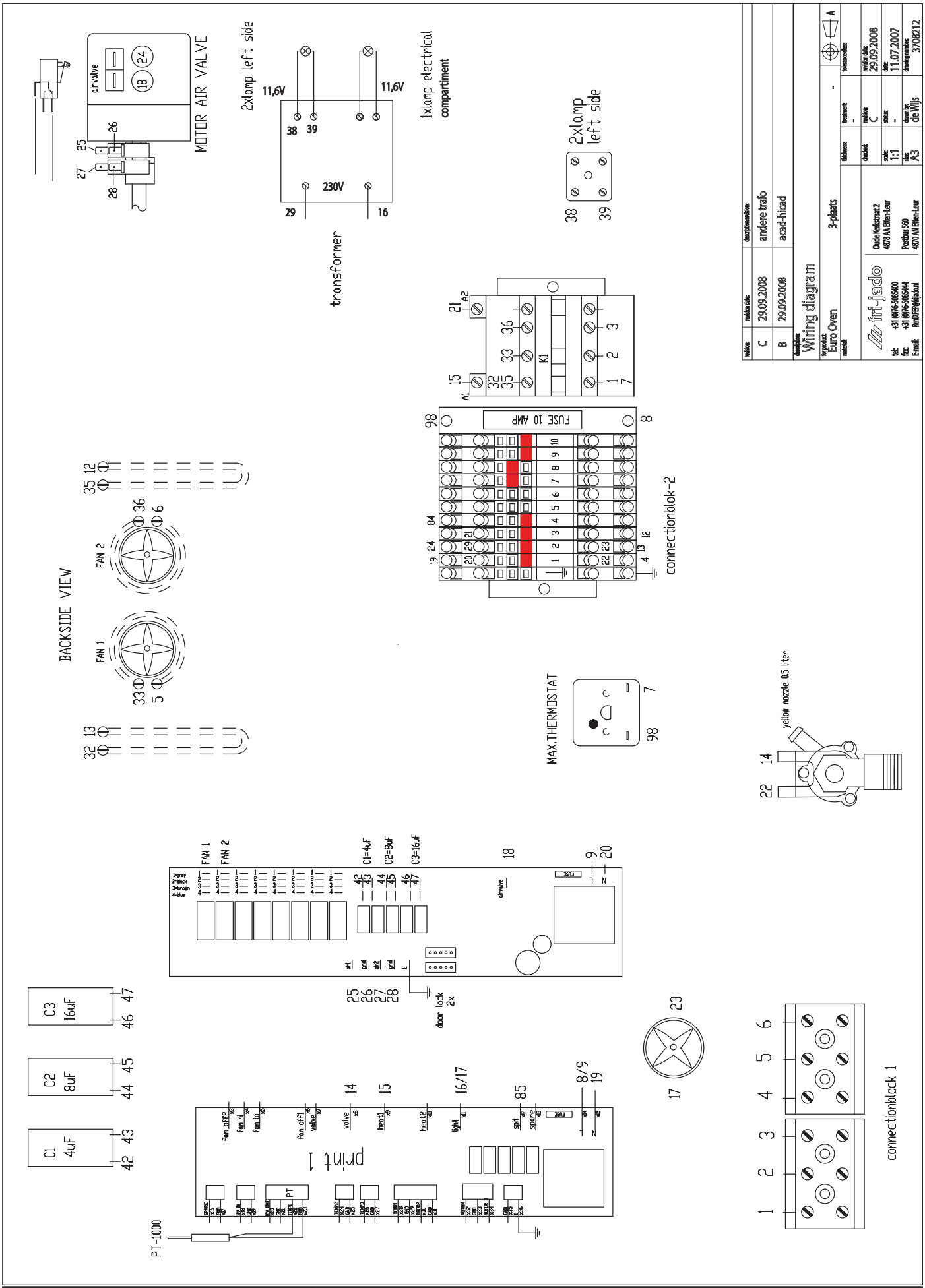
part nr.	Description
3500024	Cover profile, U shaped black, range 0,8-1,5mm (per mtr)
8046490	Cover profile, U shaped, range 1,2mm with rubber gasket.
9171127	Velcro (hook) (200 st.p.rol)
9171128	Velcro (contra) (200 st.p.rol)
9110103	Insulation plate 1800 x 900 x 15 mm
9004718	Insulation plate 1000 x 600 x 22mm
9110098	Rockwool Flexiboard 1000x600x33mm
9123413	Sticker, distance to wall 10cm
8001736	Sticker- This side up
8001734	Sticker- FRAGILE
9123148	Sticker-High temperature
3500105	Sticker- lightning symbol
2005666	Bootlace ferrule, 1,5qmm black
9070840	Grommet, 25,5mm transit
3500188	RC-Netwerk
8031502	Receptacle insulation boot, 6,3x0,9
2006222	Receptacle, female Red piggyback
2005836	Receptacle, red 2,8
4310570	Receptacle, uninsulated Rl=6000 pcs
2006159	Ringterminal M4, uninsulated
2006167	Ringterminal M5, uninsulated
2006264	Ringterminal M6, yellow
9191211	Spiral protecting conduit Ø8mm
2005967	Splice, red
9044645	Wire pin, blue
2005886	Wire pin, yellow
3703049	Wiring set, hood
0166505	Terminal block
4310237	Wire 1,5 mm2 grn/ylw
9079137	Wire AWG 12, black
9070654	Wire AWG14, black
0260155	Wire AWG18, black
0194935	Loctite 620 (green)

	USED SHORT FORMS
Pos	Position number in drawing
Mdl	Model (3 = BS3 8/10= BS8 and 10 etc.)
Qty	This column shows the quantity that has been used in a unit.
Unit	This column shows how the part can be bought. Per Meter, per Piece, per cartridge etc."
Pcs	Pieces
Mtr	Meter
Dm	Decimeter
Ct	Cartridge
Rl	Roll
Al	Aerosol
Tb	Tube
	USED SHORT FORMS IN FASTENERS
BH	Button Head
BNP	Brass Nickel Plated
CRPH	Cross Recess Pan Head
NP	Nickel Plated
SPH	Slotted Pan Head
SS	Stainless Steel
ZP	Zinc Plated

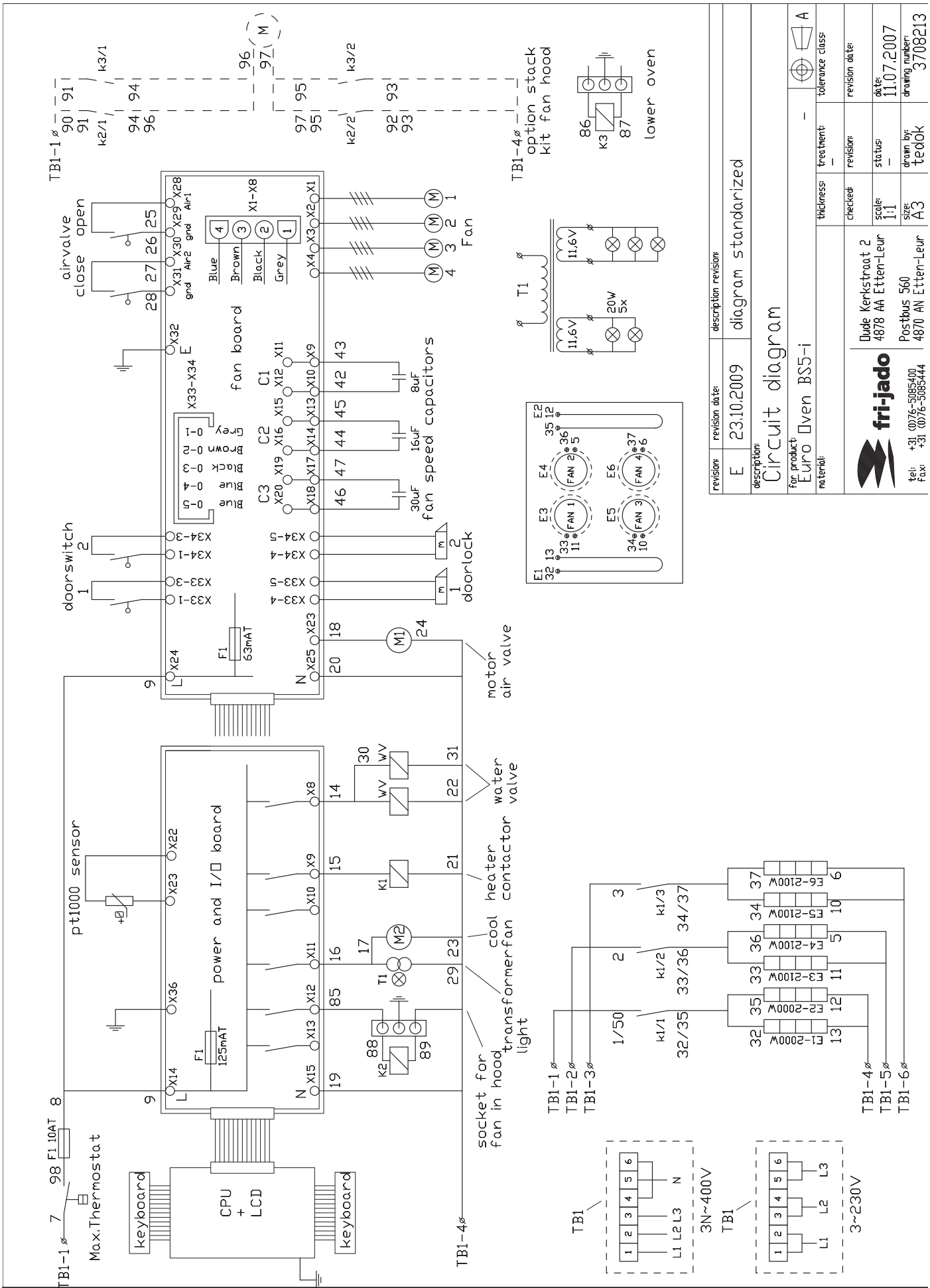
CIRCUIT DIAGRAM BS3-I



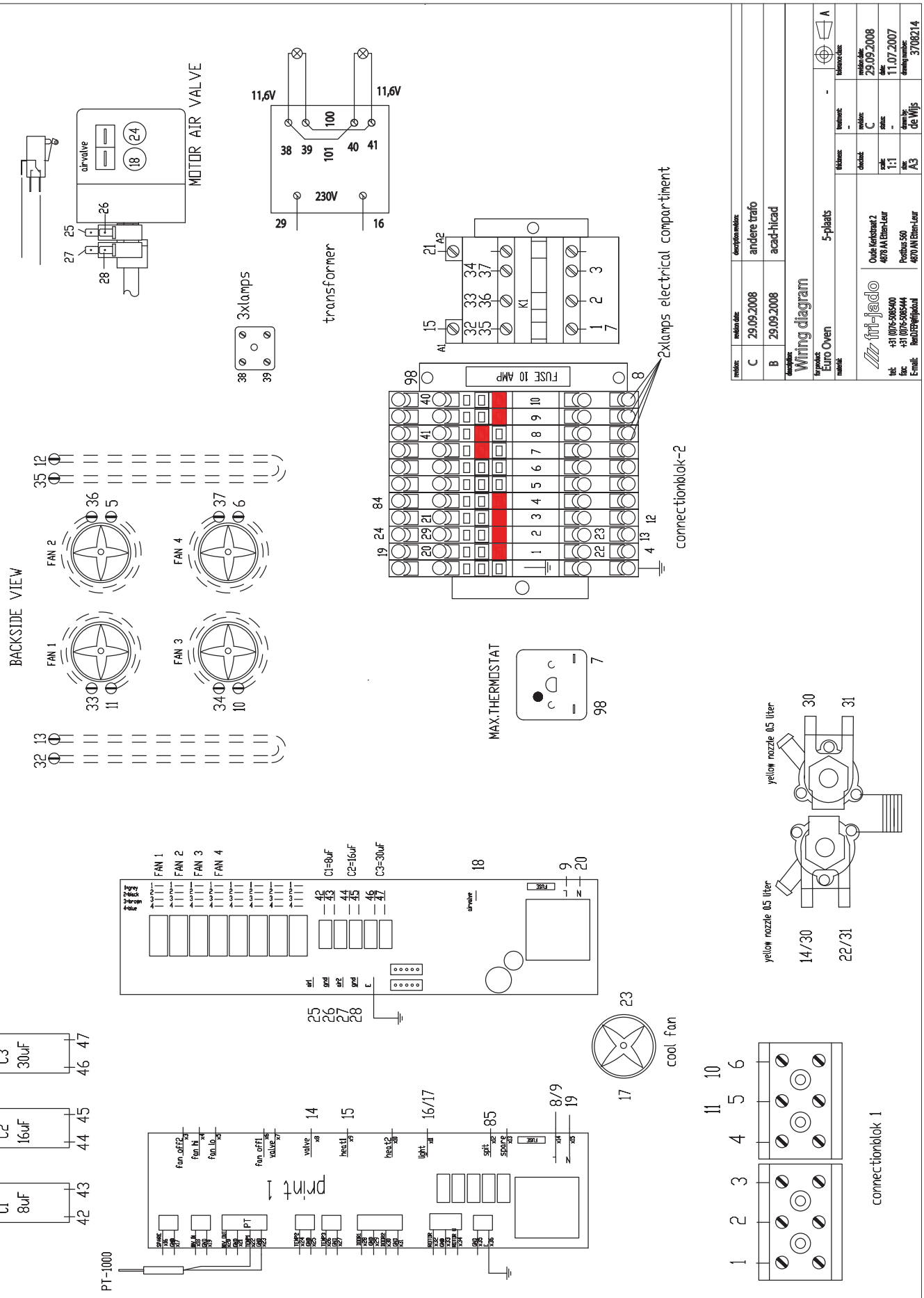
WIRING DIAGRAM BS3-I



CIRCUIT DIAGRAM BS5-I



WIRING DIAGRAM BS5-I



revision:	revision date:	description revision:
C	29.09.2008	andere trafo
B	29.09.2008	acad-hicad

description: Wiring diagram
for product: Euro Oven
material: 5-plaats
thickness: - | treatment: - | tolerance class: -

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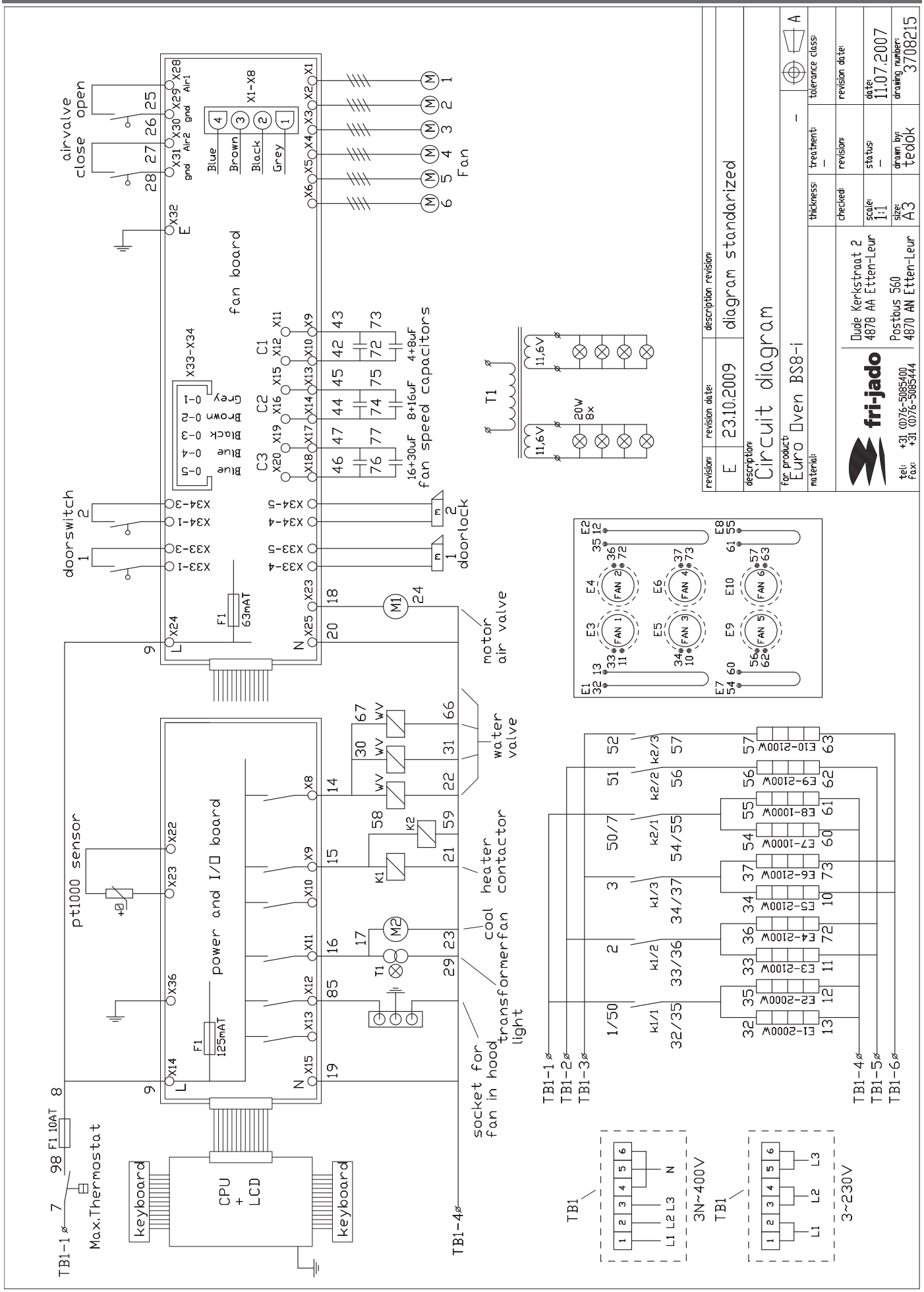
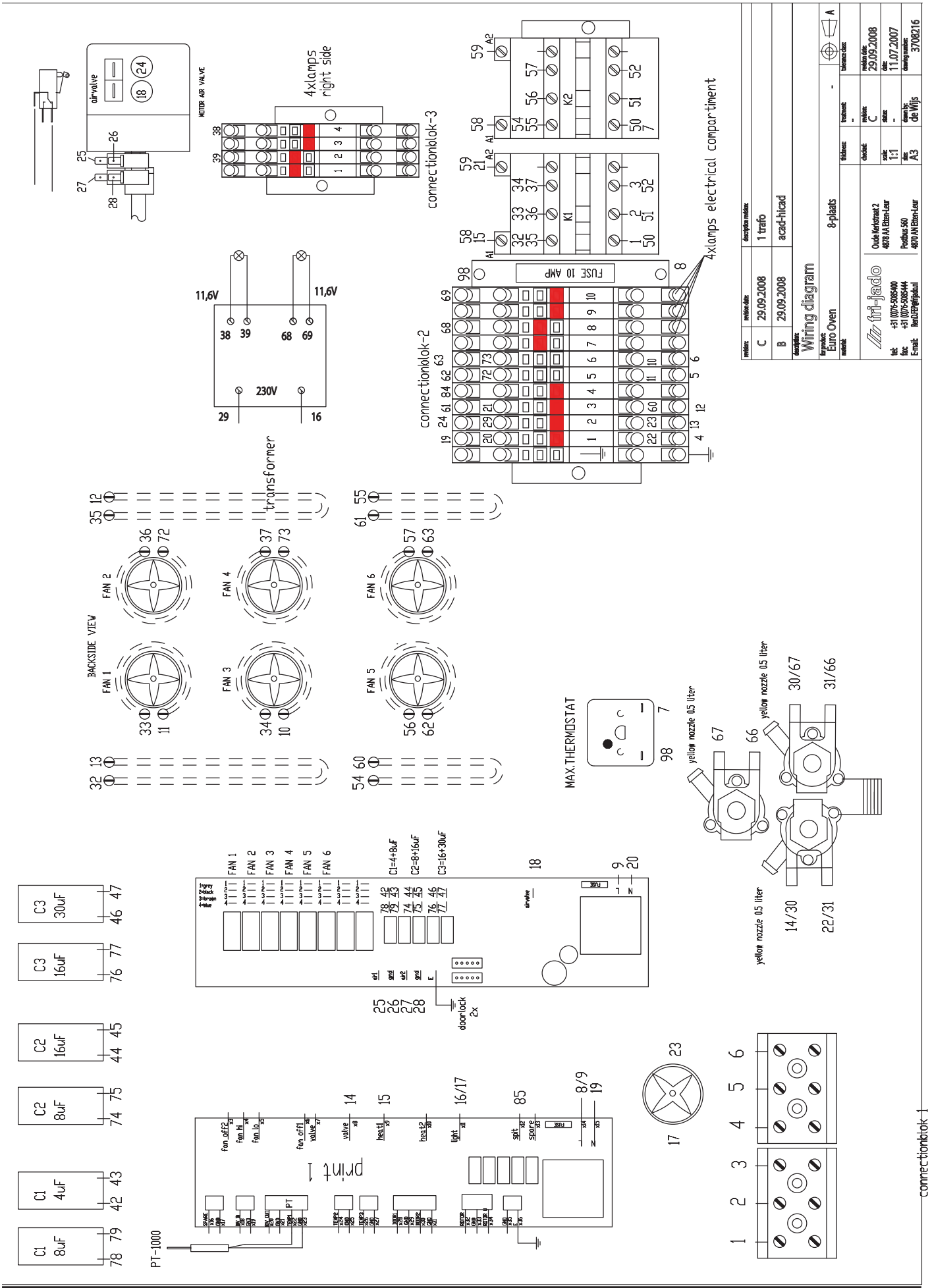
checked: | revision: C | revision date: 29.09.2008
scale: 1:1 | status: - | date: 11.07.2007
size: A3 | drawn by: de Wijs | drawing number: 37068214

CIRCUIT DIAGRAM BS8-I



WIRING DIAGRAM BS8-I



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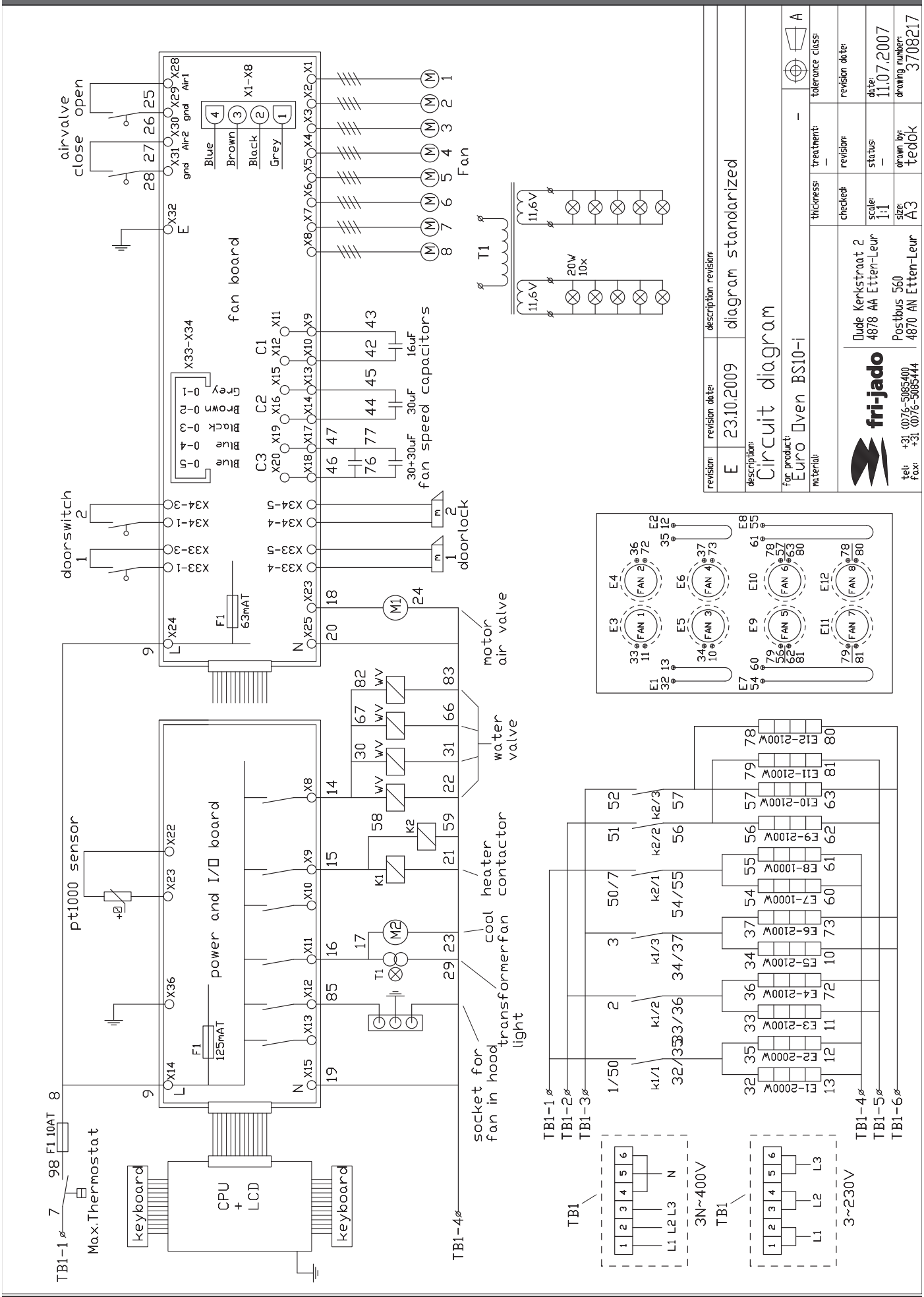

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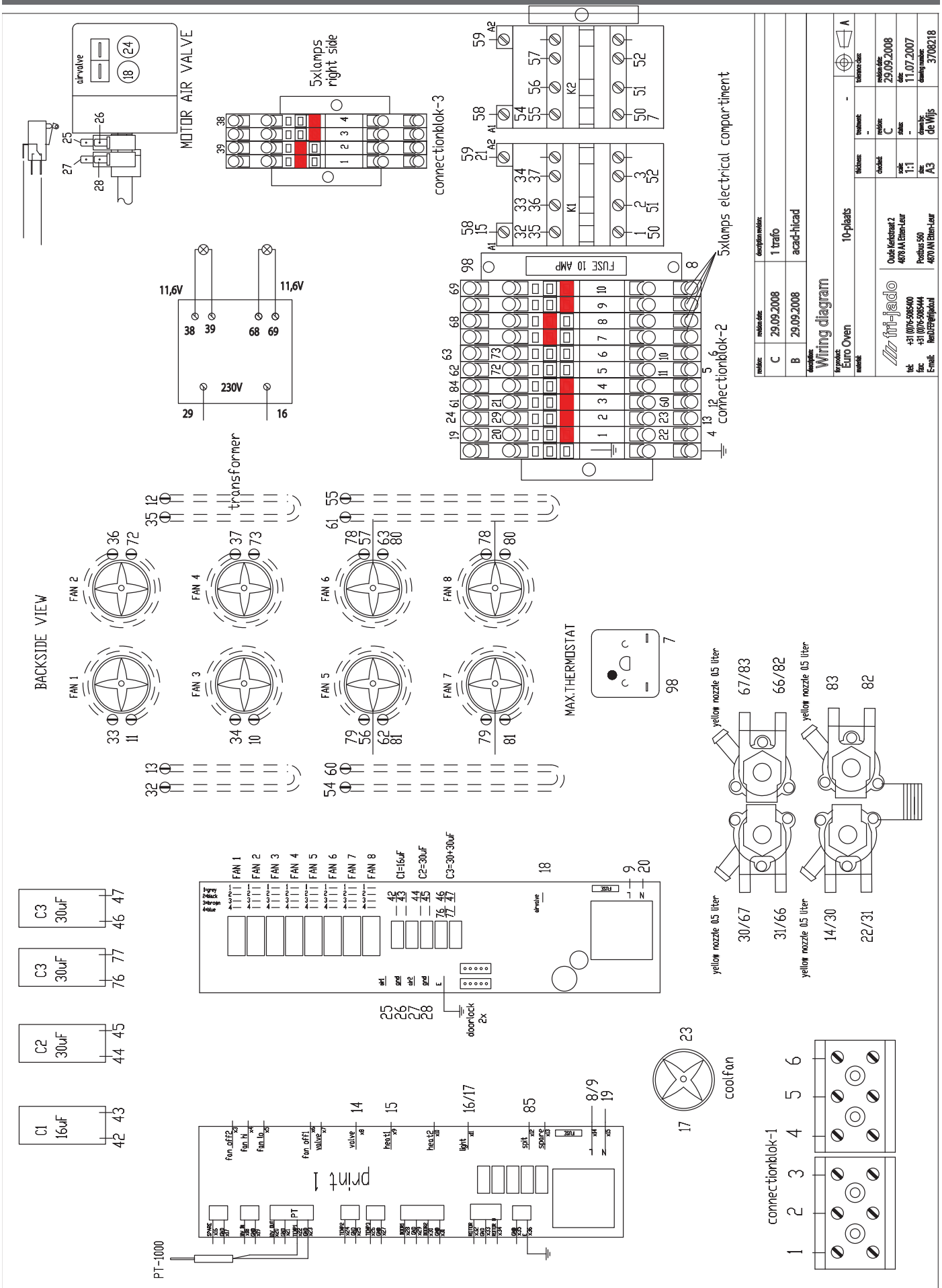
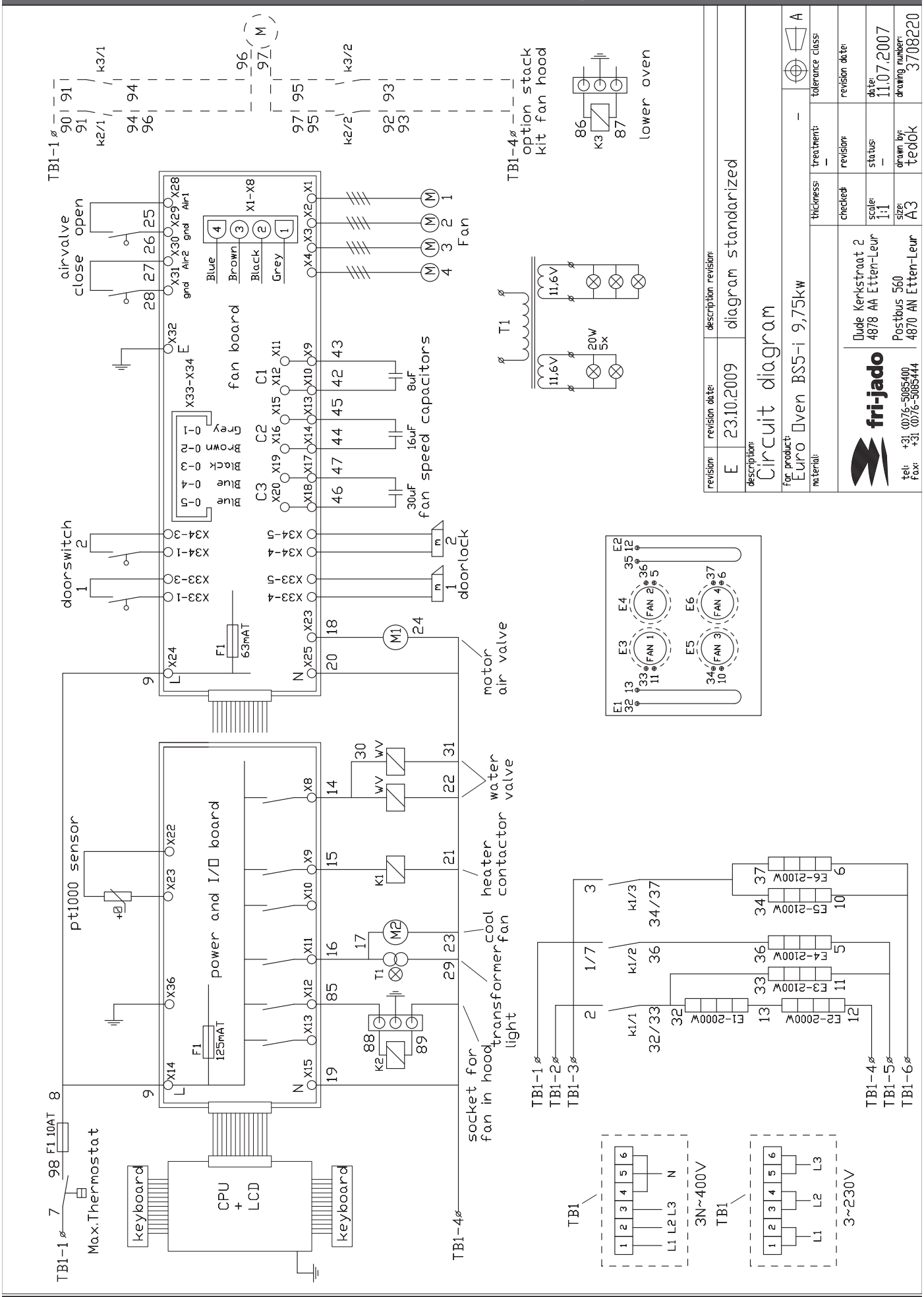
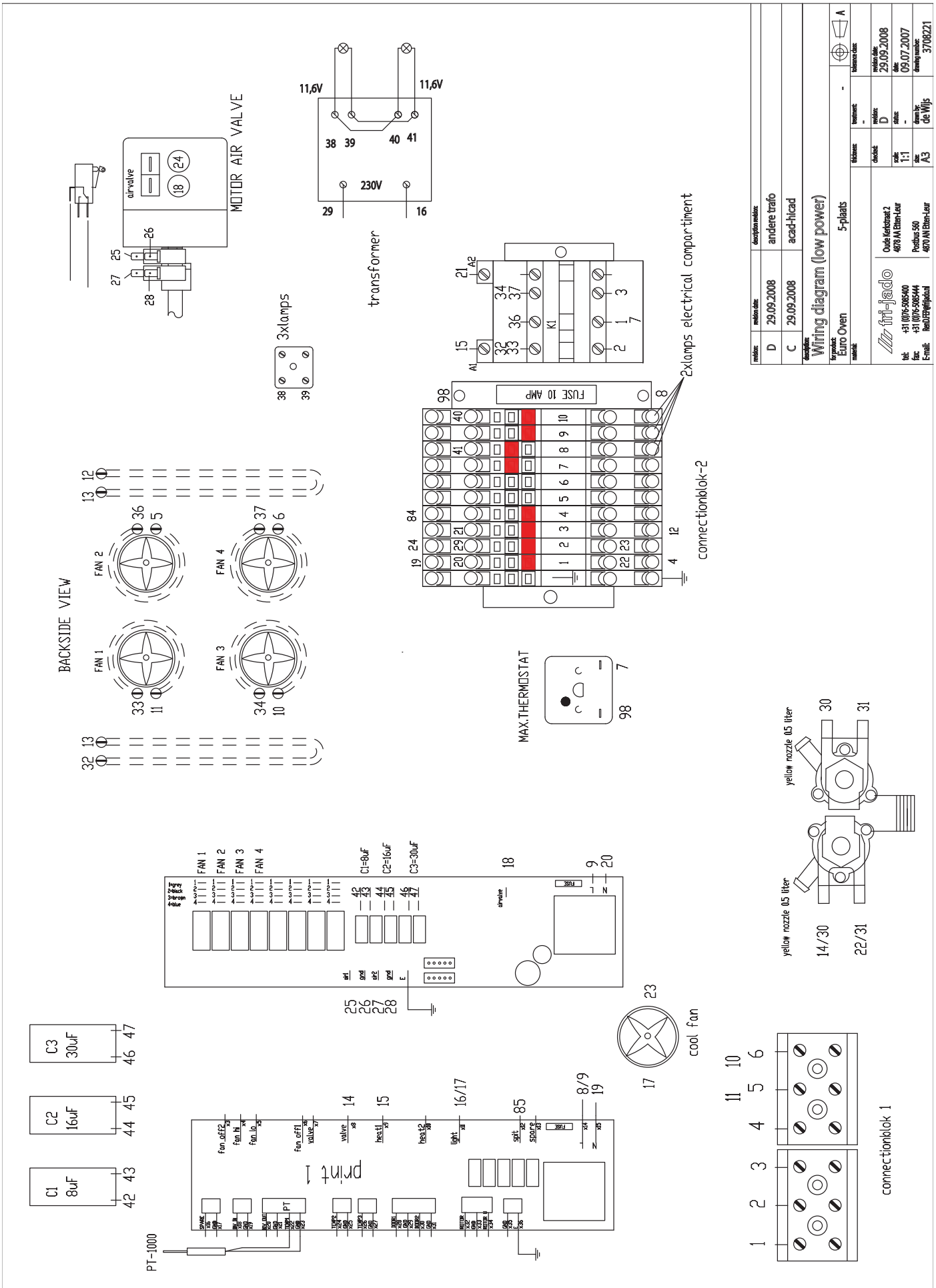


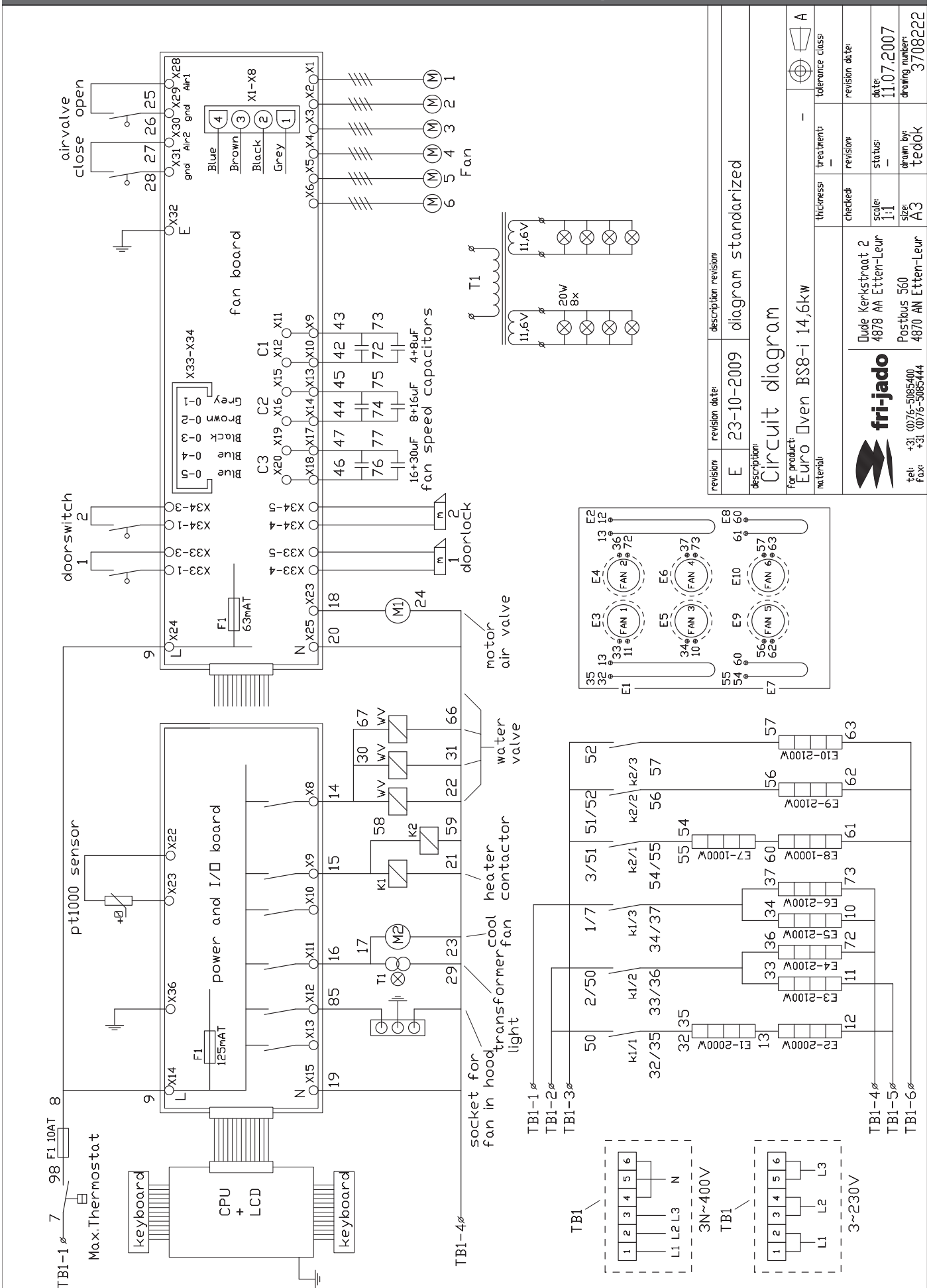
CIRCUIT DIAGRAM BS5-I 9,75KW



WIRING DIAGRAM BS5-I 9,75KW



CIRCUIT DIAGRAM BS8-I 14,6KW



revision:	revision date:	description revision:
E	23-10-2009	diagram standarized

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for product: Euro Oven BS8-i 14,6kw
material: – thickness: – treatment: – tolerance class:
checked: revision: revision date:
scale: 1:1 status: – date: 11.07.2007
size: A3 drawn by: tedok drawing number: 3708222

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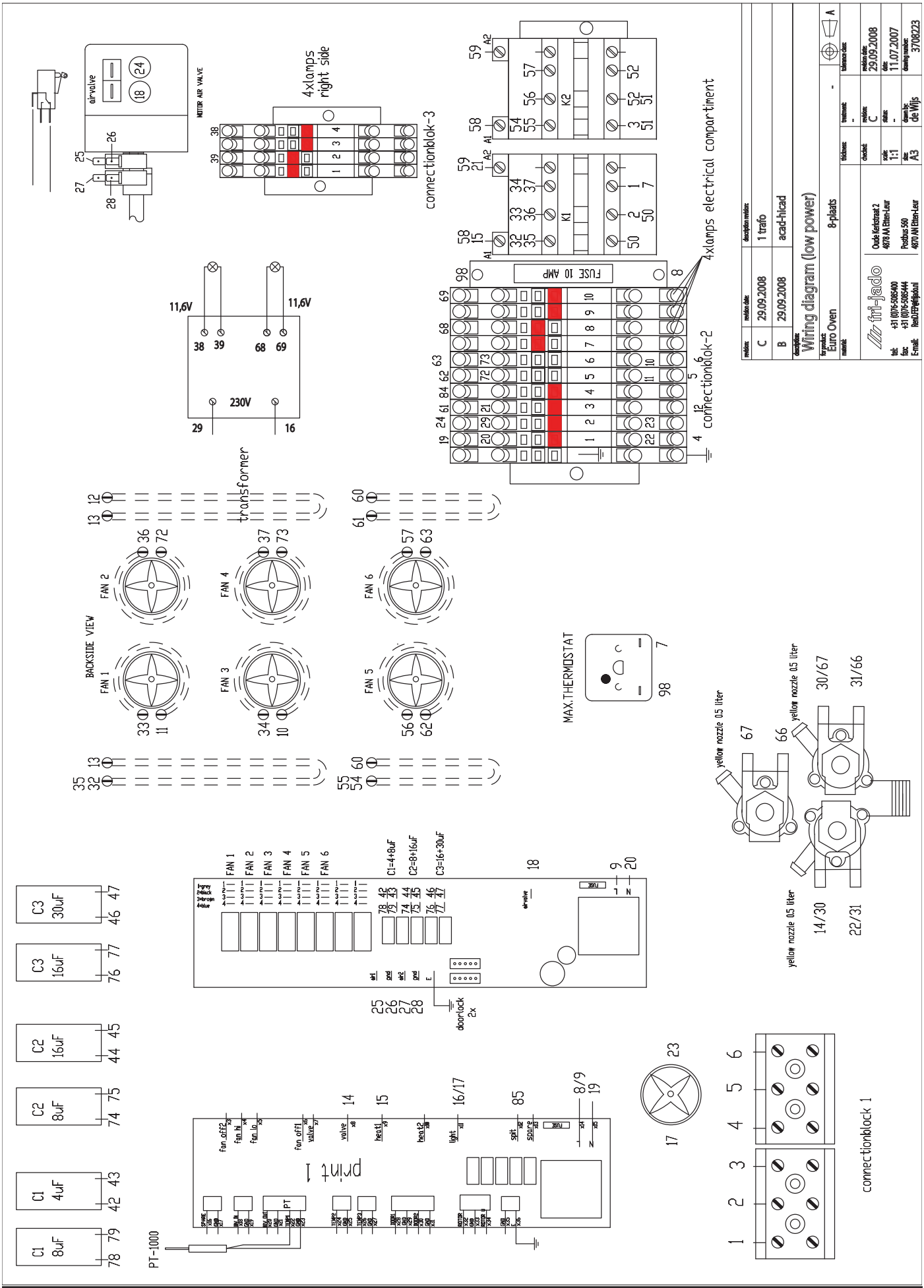
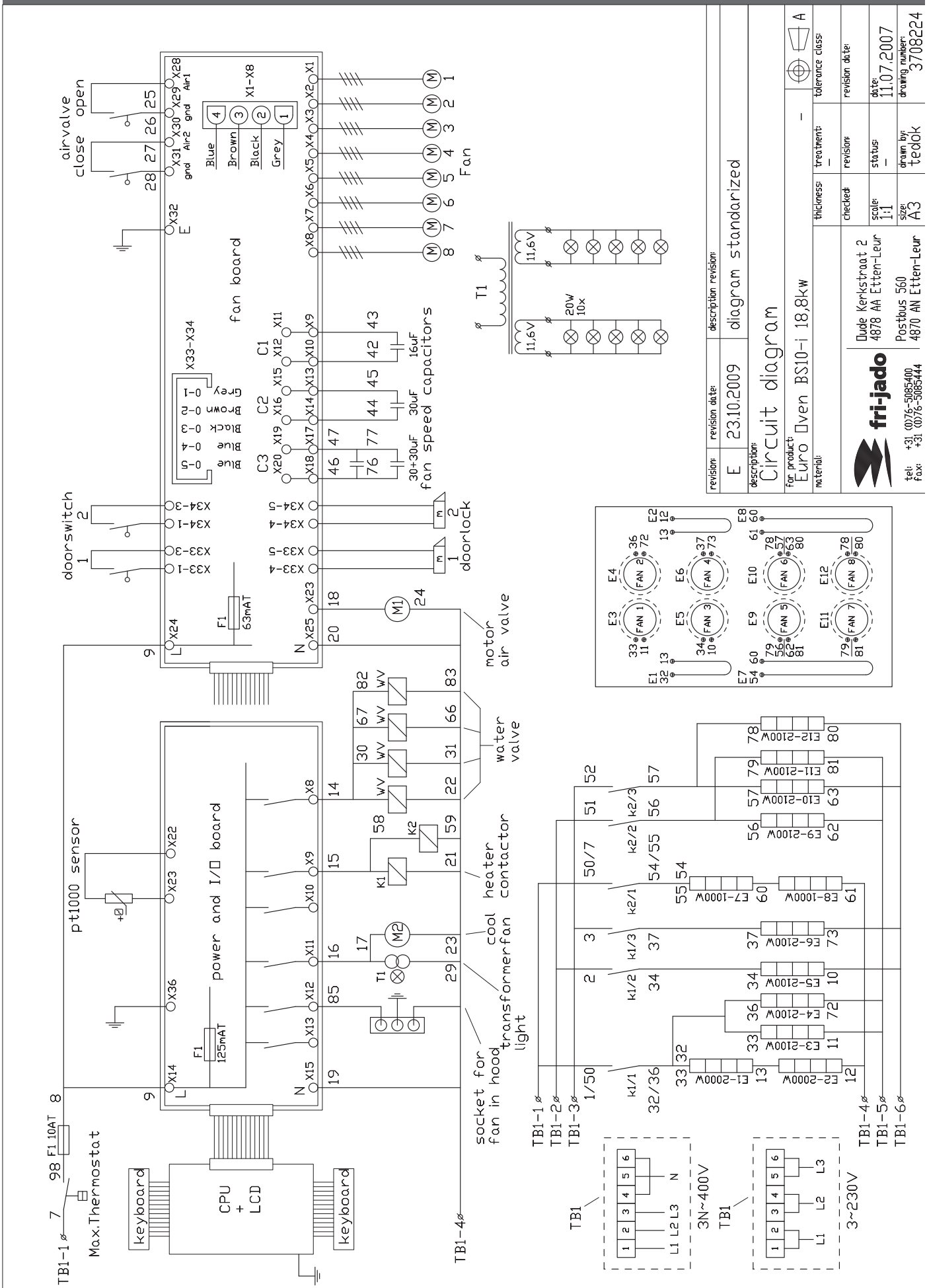
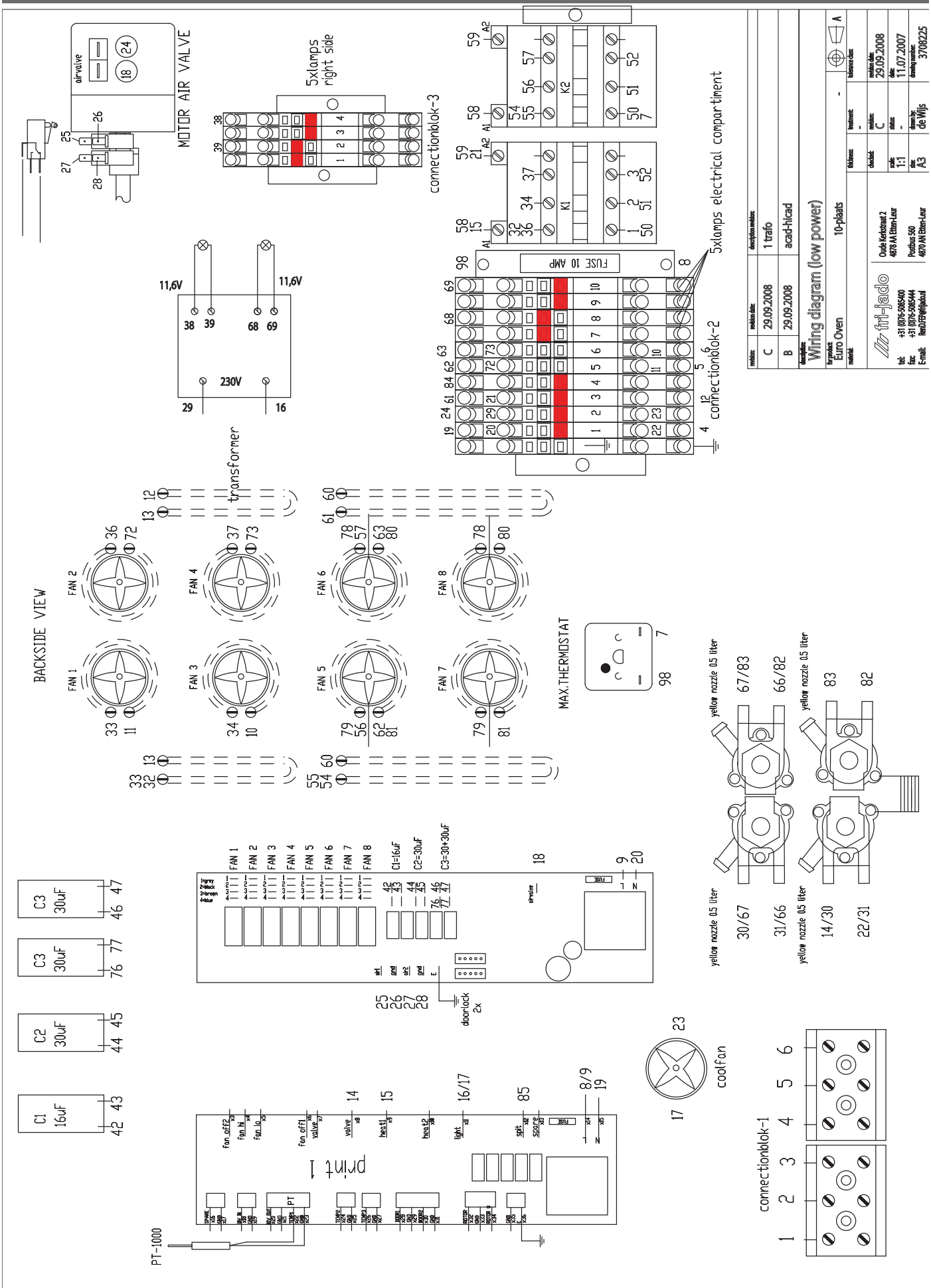
WIRING DIAGRAM BS8-I 14,6KW



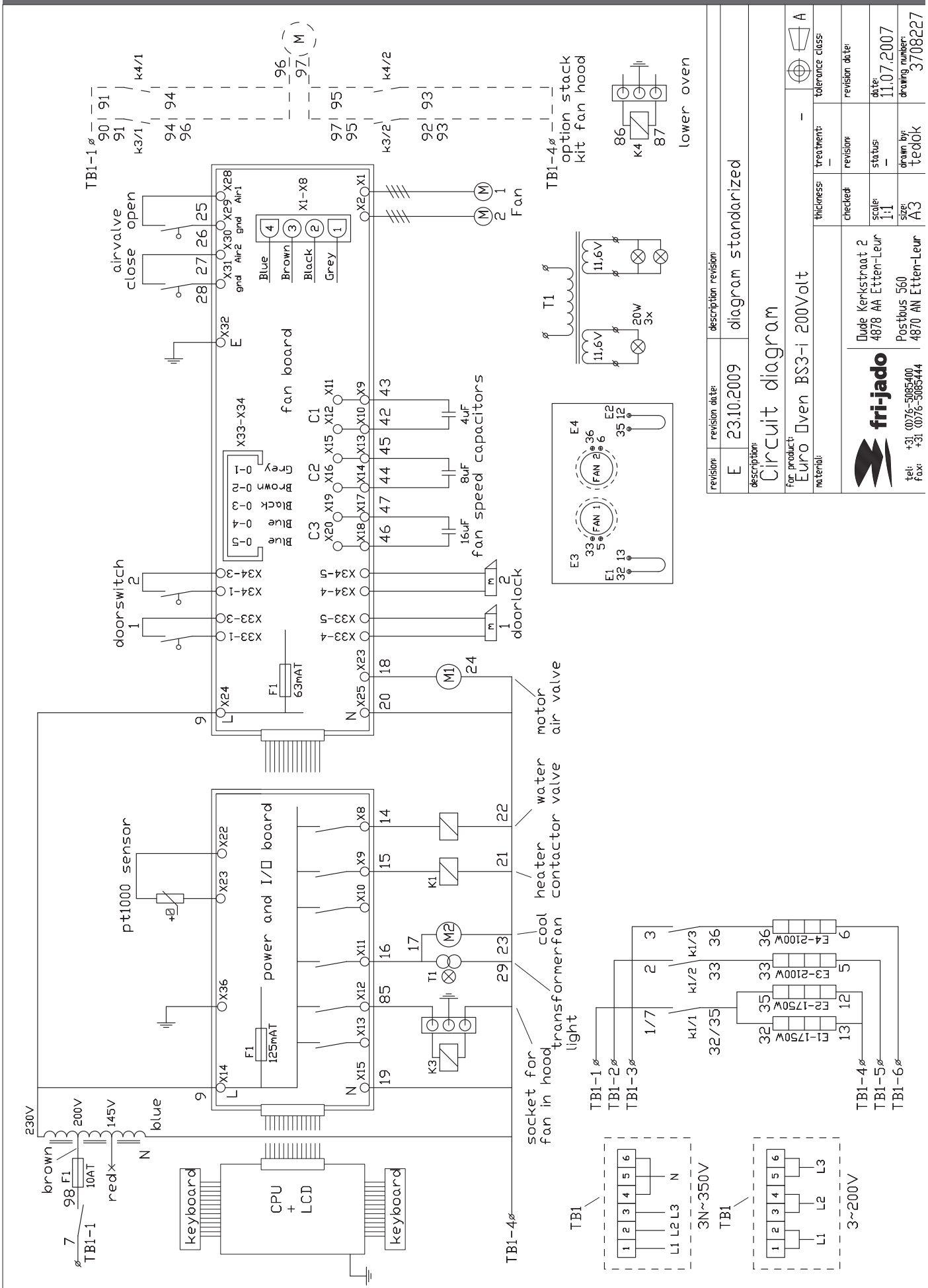
CIRCUIT DIAGRAM BS10-I 18,8KW



WIRING DIAGRAM BS10-I 18,8KW



CIRCUIT DIAGRAM BS3-I 200V 60HZ



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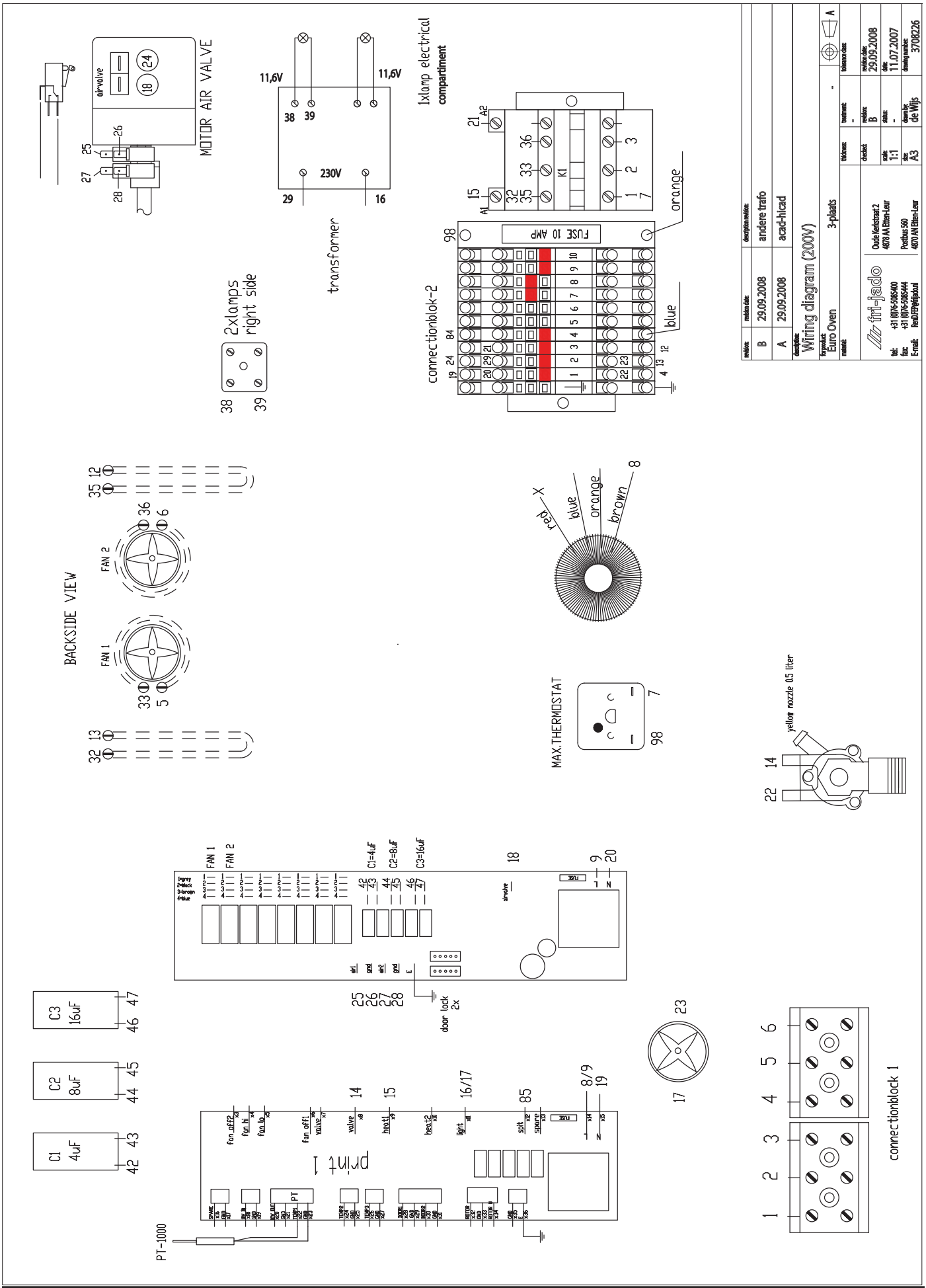
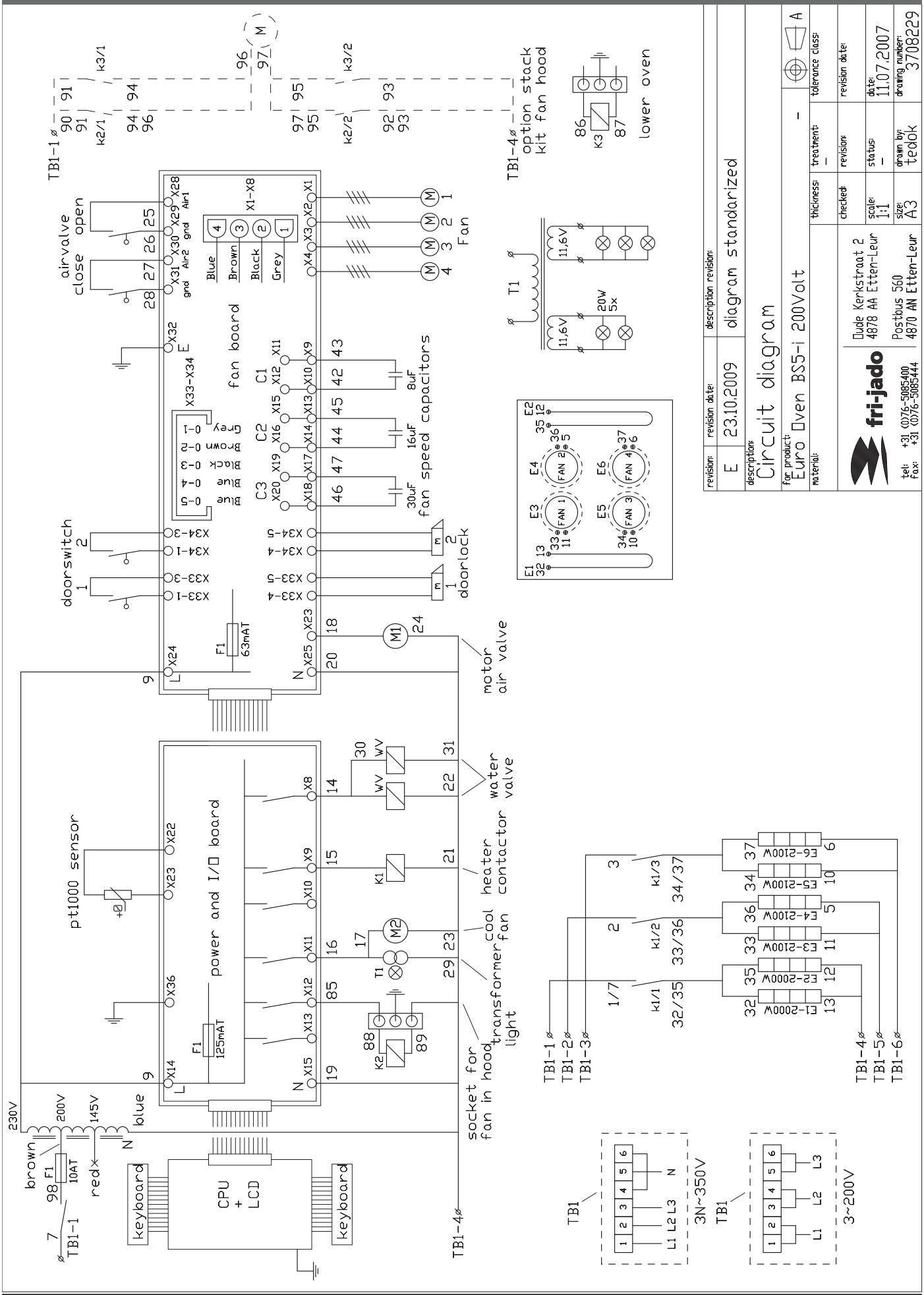
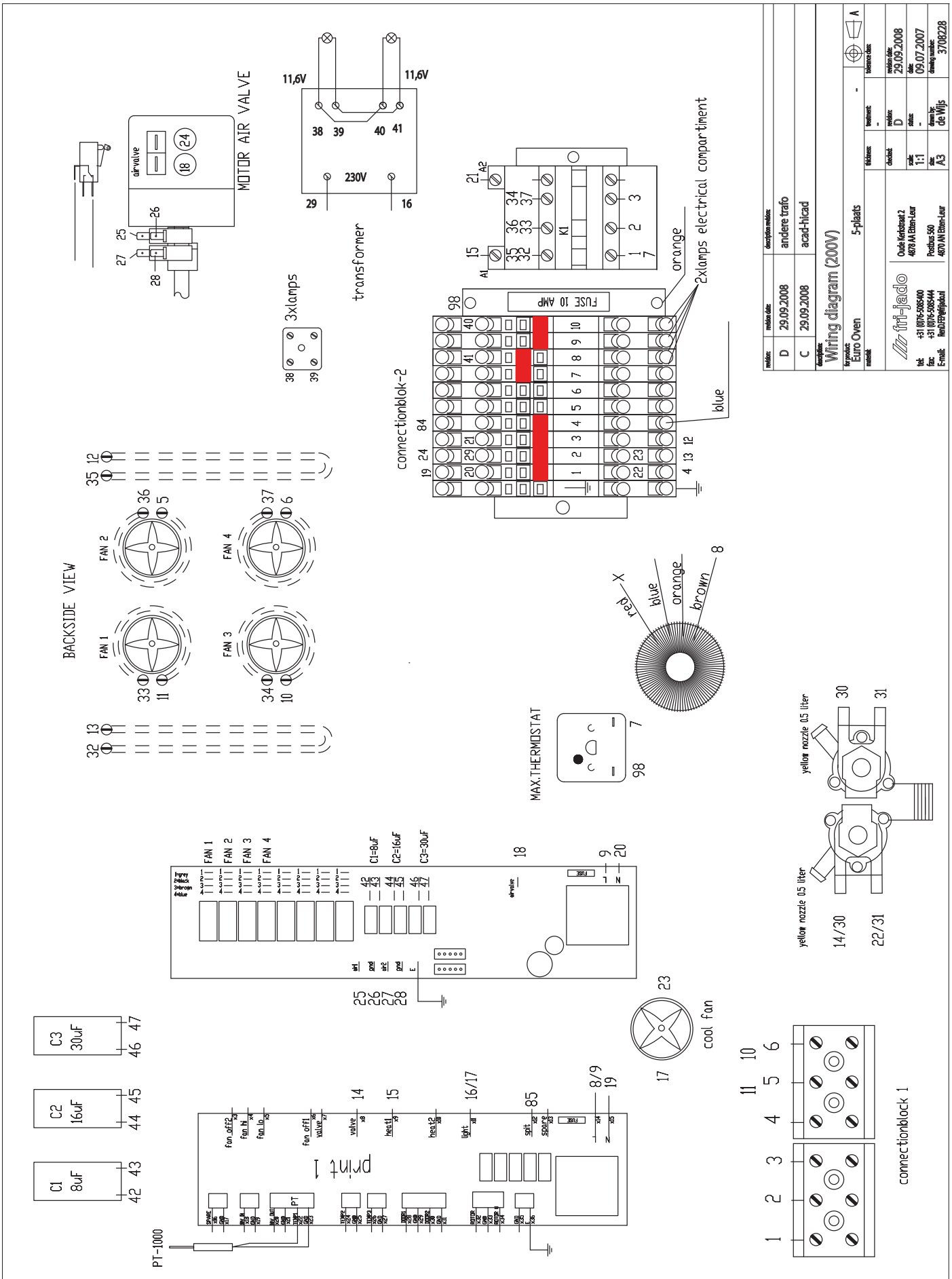


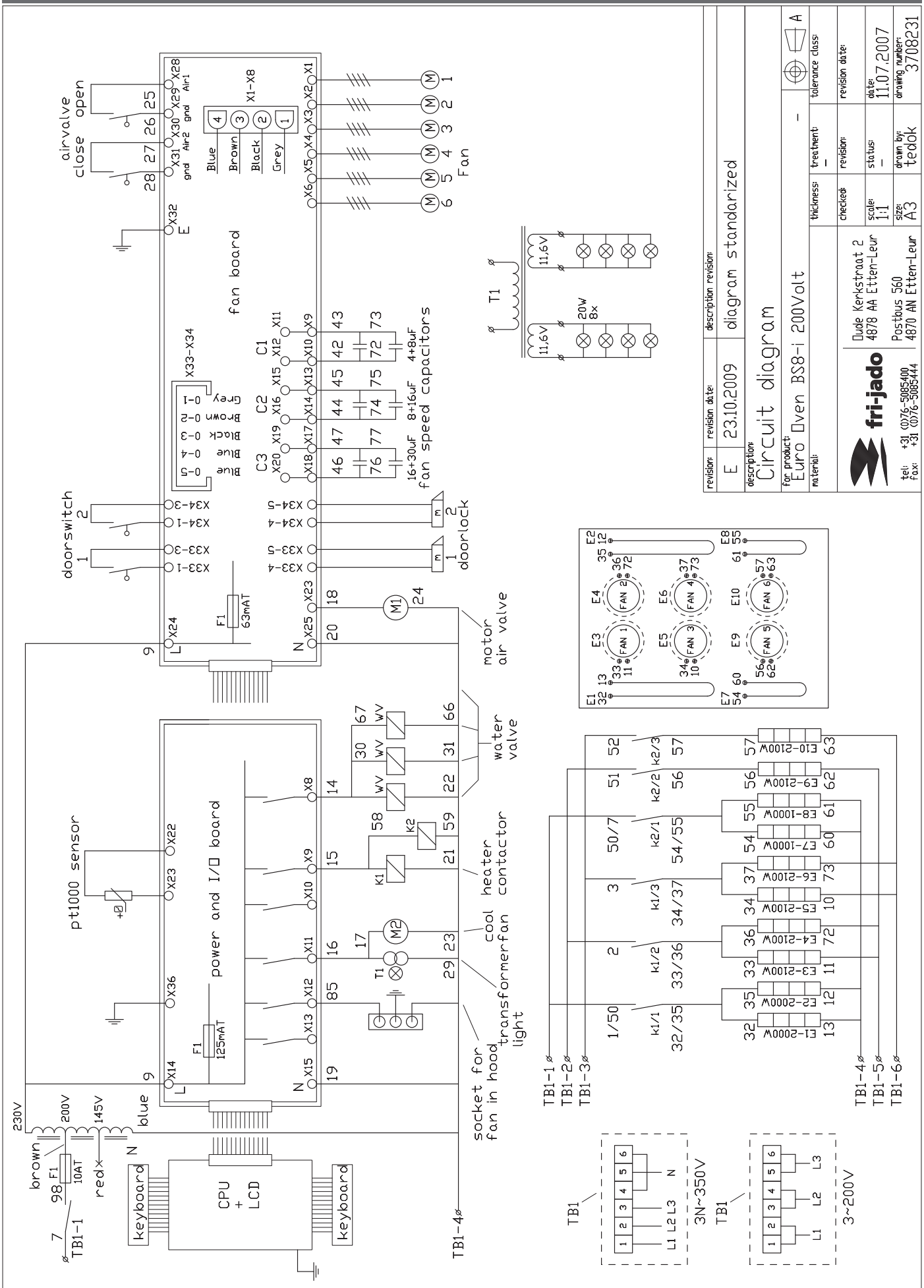
CIRCUIT DIAGRAM BS5-I 200V 60HZ



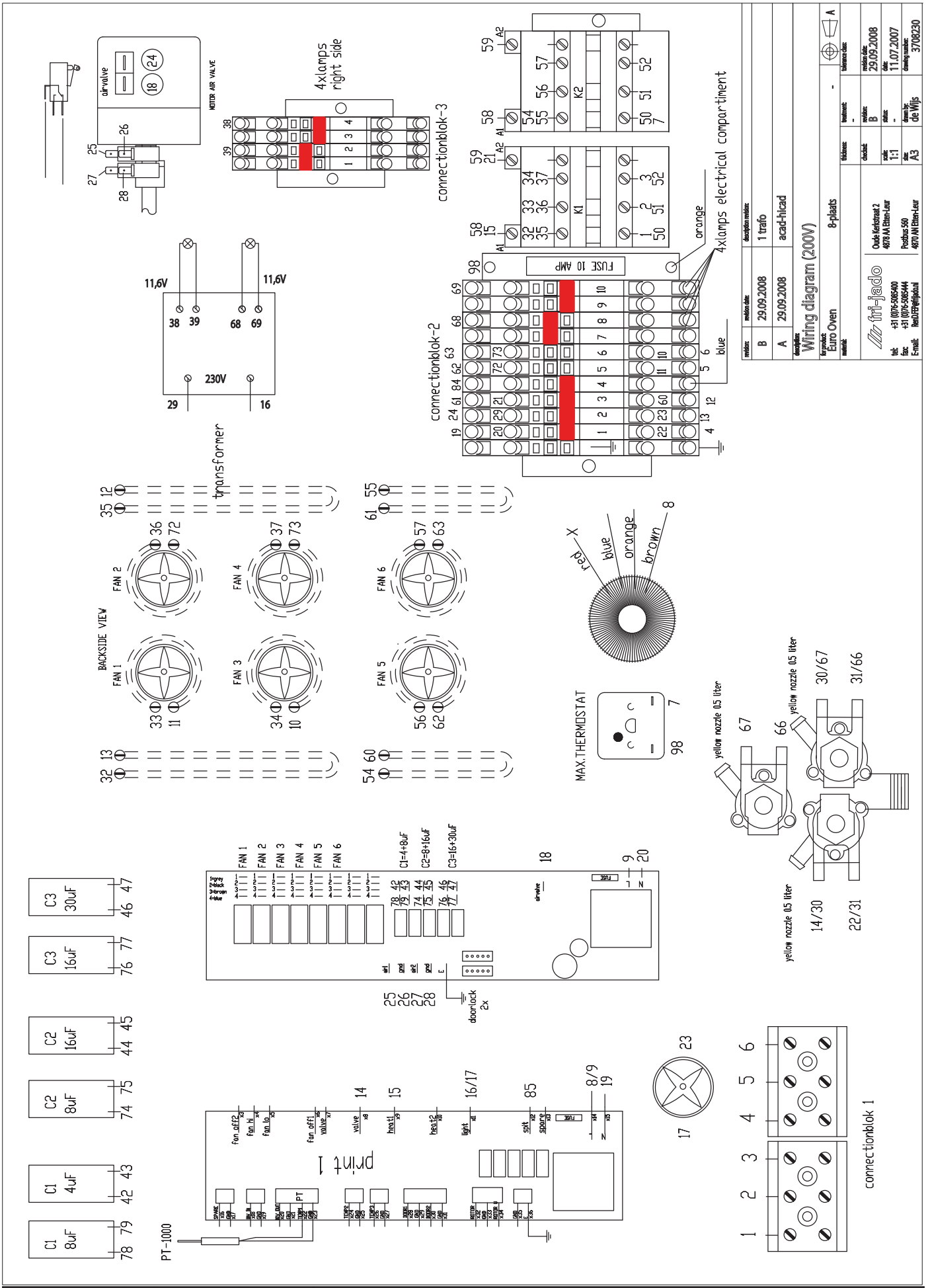
WIRING DIAGRAM BS5-I 200V 60HZ



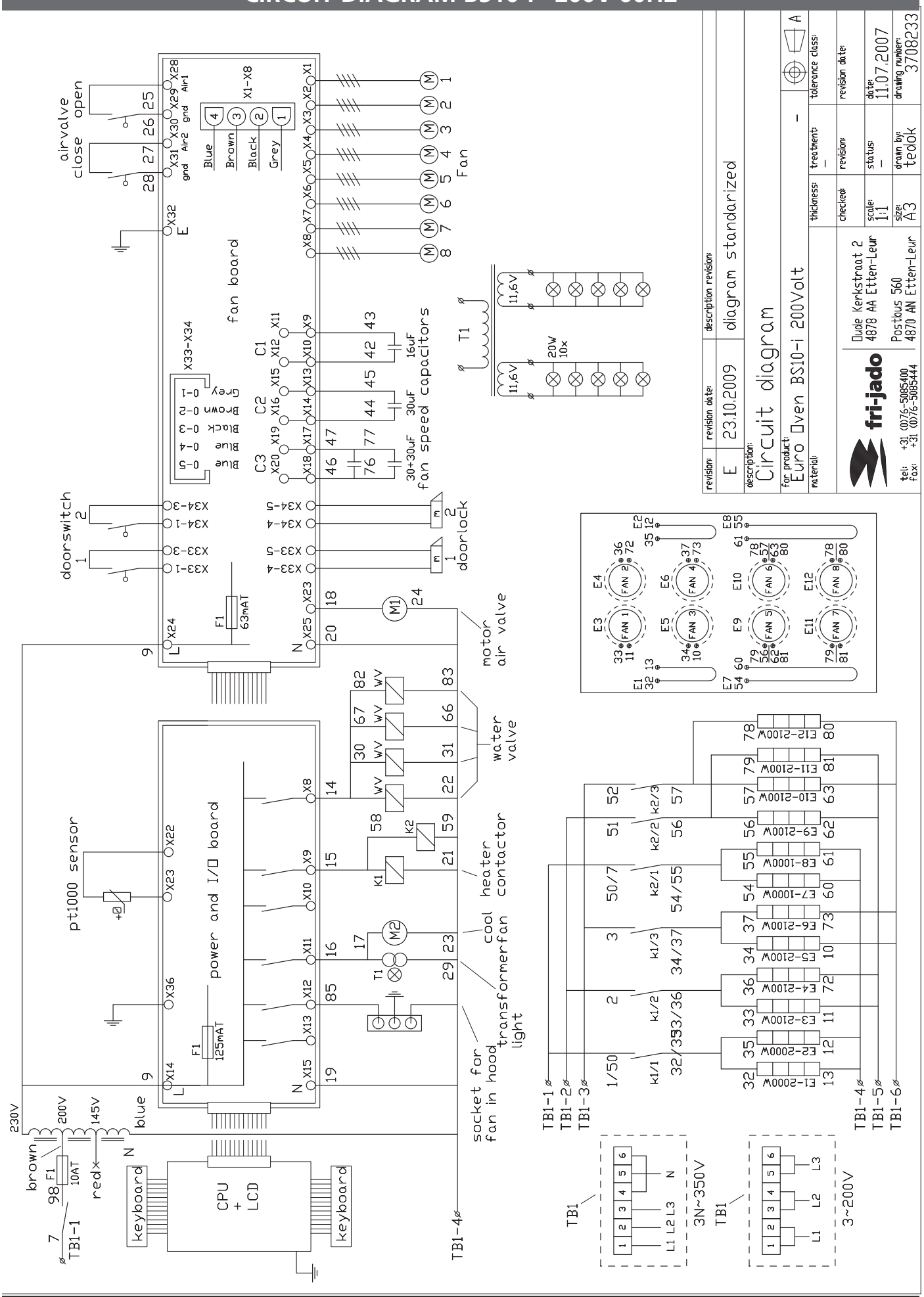
CIRCUIT DIAGRAM BS8-I 200V 60HZ



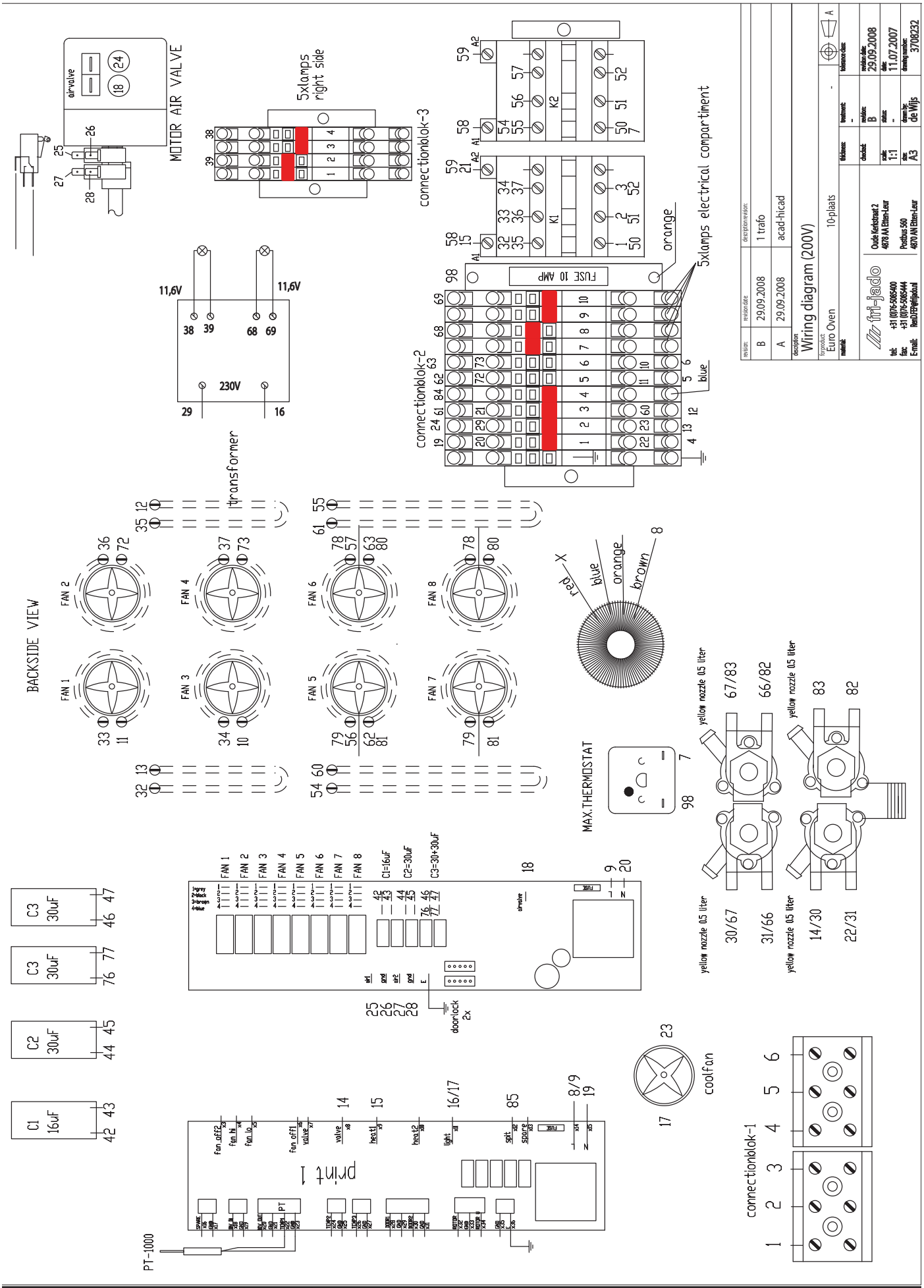
WIRING DIAGRAM BS8-I 200V 60HZ



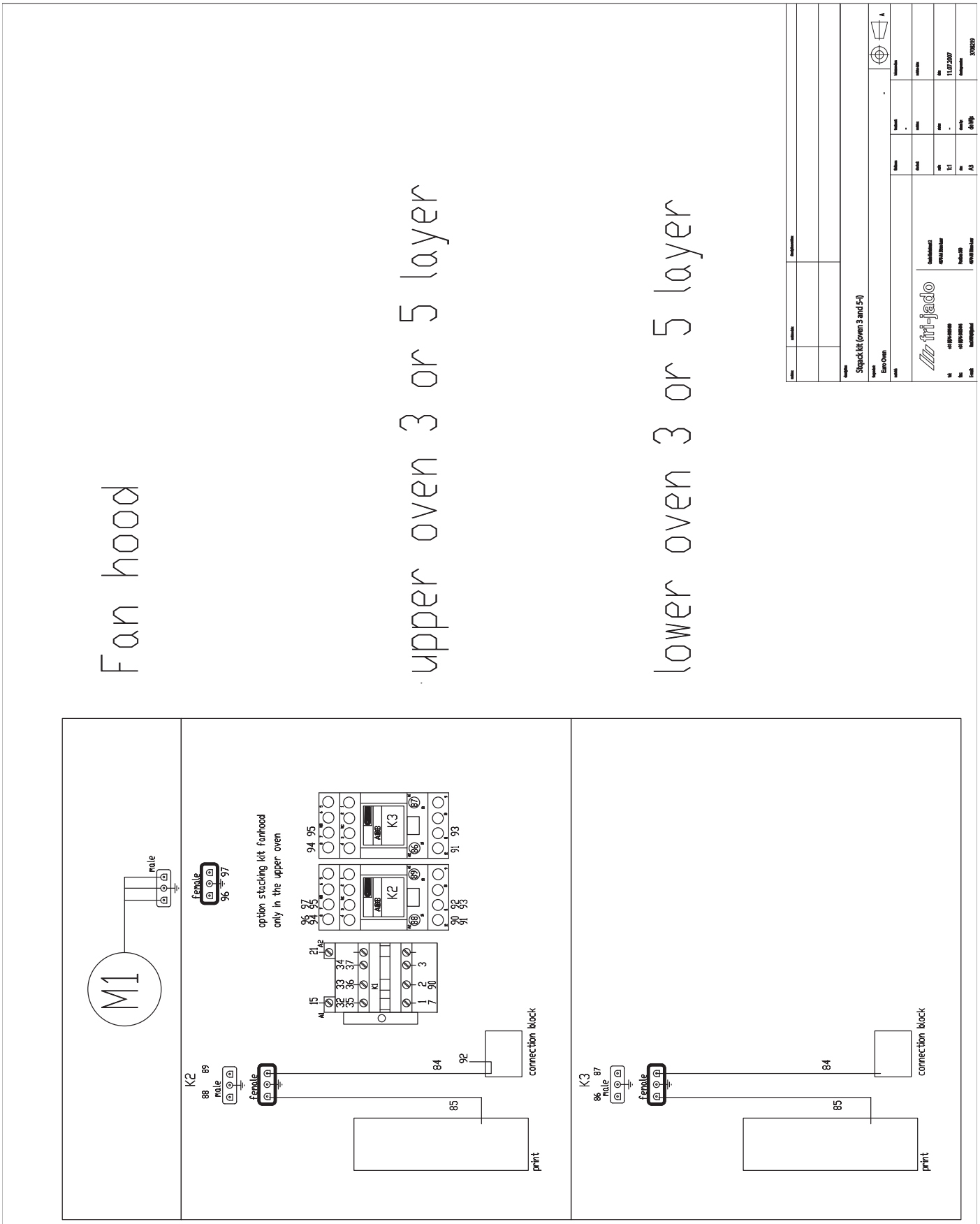
CIRCUIT DIAGRAM BS10-I 200V 60HZ



WIRING DIAGRAM BS10-I 200V 60HZ



ELECTRIC DIAGRAM BSI HOOD IN STACKED UNITS



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