

# 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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## GENERAL TECHNICAL DATA

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.

- BS3i – Bake-off oven with 3 levels
- BS5i – Bake-off oven with 5 levels
- BS8i – 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

	BS3i	BS5i	BS8i	BS10i
Power	7880W	12750W	19100W	23300W
Fuses needed with power connection 400V 3N~50...60Hz ( 3 phases with zero)	3x 16A	3x 20A	3x 32	3x 35
Fuses needed with power connection 230V 3~50...60Hz (3 Phases without zero)	3x 30A	3x 35A	3x 50A	3x 63A
Default mounted plug Ceeform 5poles	16A	32A	32A	63A
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

### 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.

## CONTROL PANEL

### DISPLAY AND KEYS

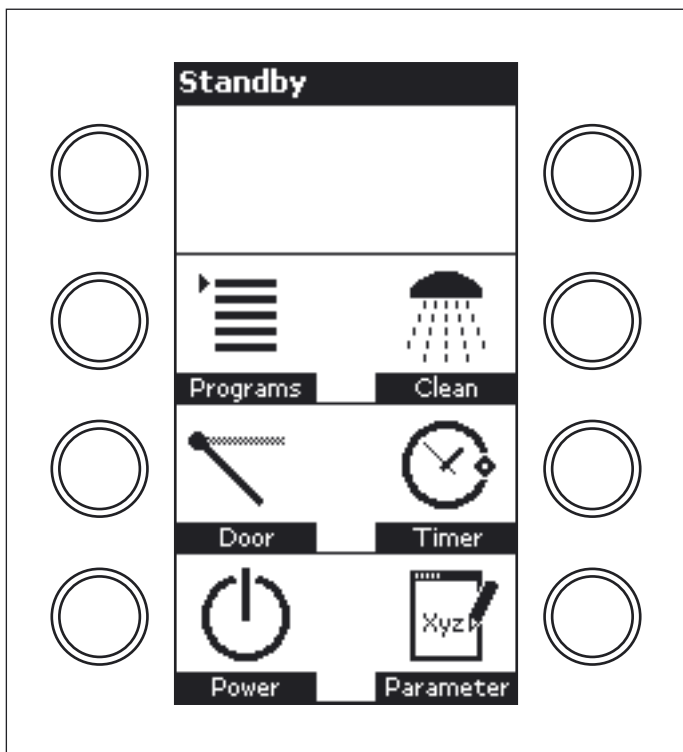


figure 1 - the control panel

The control panel consists of a LCD-screen and eight keys (figure 1). Next to the keys graphic symbols appear in the LCD-screen, representing specific functions. By pressing the key next to the symbol, the function is activated.

During a process, the most important information is displayed in the screen and values for the performed step in the program can be adjusted.

The different functions are explained below. When a password is required, use the controls as a numeric key-pad (figure 2).

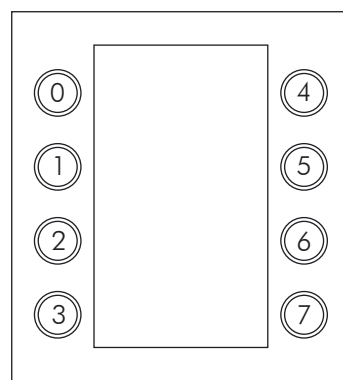


figure 2 - numeric function

### FUNCTIONS

	Main switch		Cleaning		Delete		Fans
	Confirm		Timer		Edit program		Vent valve
	Cancel		Set parameter		Programming (normal)		Edit program name
	Store		Increase value		Programming (quick edit)		Upper/Lower case
	Start		Decrease value		Preparation time		Character/Number
	Pause /Stop		Forward		Temperature		Test tone
	Programs		Back		Steam		
	Open door		Previous setting		Preheating		

## THE PARAMETER MENU

Access to the user parameters is achieved in the following way:

From the "Standby " position push the "parameter" key and enter the code "0000".

In case the password has been changed and lost, you can go into the service menu to put the password back to the default "0000".

### USER PARAMETER SETTINGS

Parameter	Default	Function
Select alarm	1	Choice between several sounds
Clock	Dutch time	Adjust the time
Date	Dutch date	Adjust the date
Year	Dutch date	Adjust the year
Fan speed door	5	Adjust the fanspeed (1-5) when the oven is cooling down with opened door. 5 gives the quickest cooling down, 1 the slowest and the less noise.
Door mode	normal	"Smart": the door will open automatically when the program is finished or when the oven needs to cool down. "Normal": the door will never open automatically
Programs	unlocked	"Unlocked": programming of new programs or editing is enabled "Locked": programming of new programs or editing is disabled
Language	English	Choose between English, Dutch, German, French, Spanish, Danish and Japanese
Password	0000	Change the password, default for entering the parameter menu is "0000".
Edit mode	Quickedit	When using baking programs with only one bakingstep, the "Normal" mode is the most convenient one. When using baking programs with 2 or more bakingsteps, choose "Quickedit".
Volume	120	Adjust the buzzer level from 1-120
Time correction	50%	Adjustable from 0-100%. A higher value results in more correction time, to switch time correction off set to 0%.
Door alarm load	120 sec	During loading products into the oven, the oven will give alarm after 120 seconds if the door is still open.
Door alarm bake	60 sec	When during baking the door is opened, the oven will give an alarm when the door is not closed within 60 seconds.

## SERVICE PARAMETERS

Access to the service parameters is achieved in the following way:

From the "OFF" position, enter the code "0440". Then push "ext. menu". This is key "5".

In case the password has been changed and lost, you can use the password 6705167401. This overrules the other one

Choose the desired parameter with the "arrow" keys and change with "+" or "-".

With the key "Clear UPass" it is possible to put the user password back to the default "0000".

With the key "Chng SPass", it is possible to change the service password.

Parameter	Function	Description
0	Clear bake programs	Press "+" and confirm with "Yes" to delete all baking programs
1	Clear score tap	Erase the score table (not in use)
2	Reset all parameters	Revert all setting to factory default
3	Contrast calibration	Set the contrast
4	Fan time Left	Time in seconds the lower left fan turns to the left
5	Fan time Right	Time in seconds the lower left fan turns to the right
6	Fan 1-time Left	Time in seconds the lower left fan turns to the left in the first bake step
7	Fan 1-time Right	Time in seconds the lower left fan turns to the right in the first bake step
8	Fan S-time Left	In S-mode: running time left
9	Fan S-time Right	In S-mode: running time right
10	Fan S pause	In S-mode: pause between left and right turn
11	Fan S max temp	In S-mode: maximum oven temperature
12	Fan S speed	In S-mode: start up speed
13	Fan off-time	Time in 0.1 sec the fan is powerless during changing of direction
14	Max poweroff temp	Maximum temperature for power-off during cooling down
15	Steam PW	Steam pulse width in milliseconds. Always in steps of 10ms minus 5ms for 50Hz systems
16	Steam pause	Pause in 0.1 sec between steam pulses
17	Stm2 start delay	Steam mode 2 parameters. Time between the closing of the door and the first steam pulse.
18	Stm2 pulse length	Steam mode 2 parameters. Length of the first pulse.
19	Exh Open time	Exhaust valve opening time in sec at the end of the baking step
20	Cool Stm pls	Cooling down parameters for fast cooling procedure with water
21	Cool Stm tmp	Cooling down parameters for fast cooling procedure with water
22	Cool door tm	Cooling down parameters for fast cooling procedure with water
23	Door open delay	Delay for automatically opening of the door after baking process, also the length of the beeper
24	Heater TMIN	Half of a heater on/off cycle
25	Heater PMIN	Minimum on or off time for the heating elements in seconds
26	HOG start	No longer active
27	HOG stop	No longer active
28	Preheat cool	Temperature difference when cooling down during the preheat step
29	Temp P	P action of temperature controller
30	Temp I	I action of temperature controller
31	Temp D	D action of temperature controller

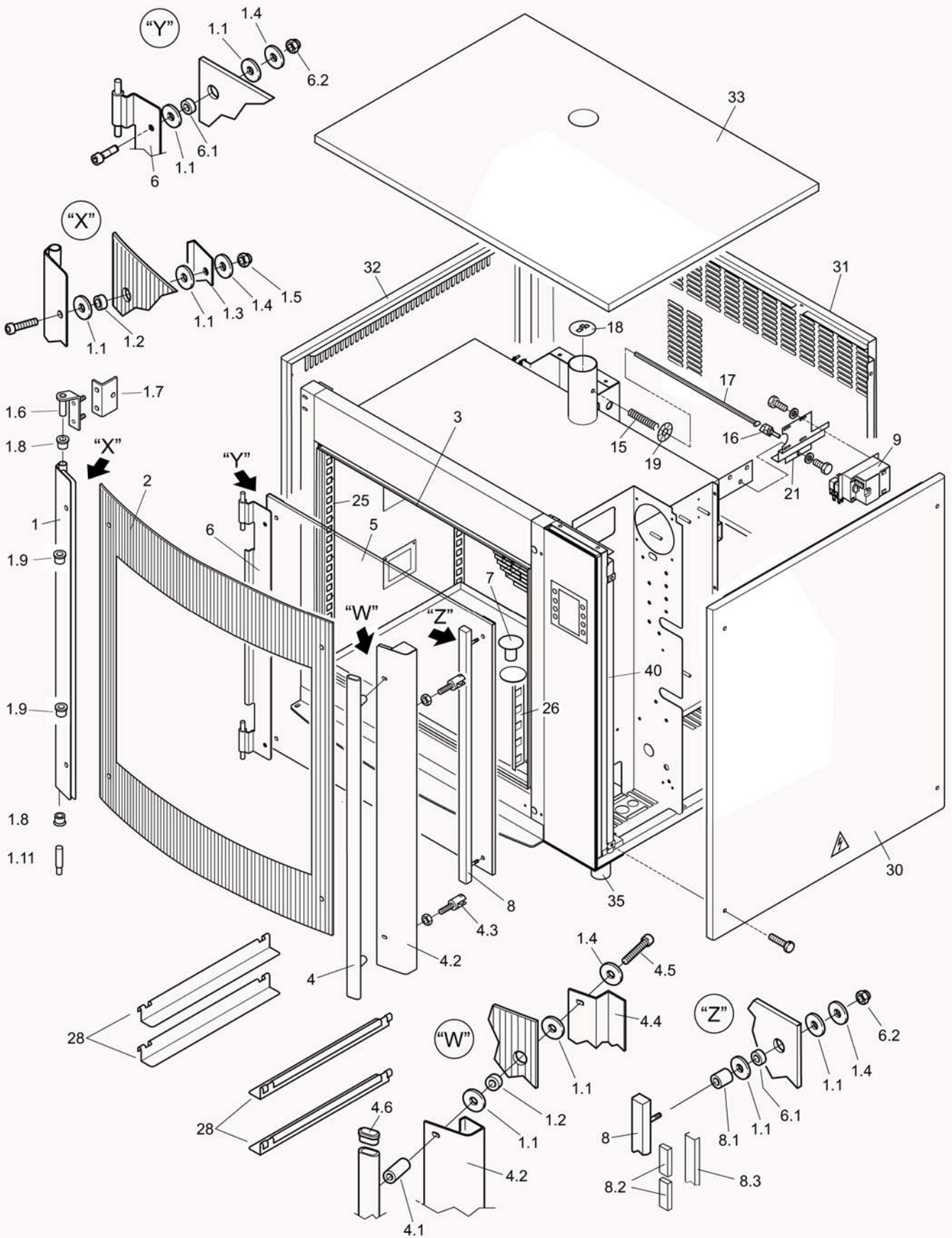
Parameter	Function	Description
32	Temp zone limits	Presets for zone limits 0=large zone around setpoint, 3=small zone around setpoint
33	Temp fan mode	During the first 3 on/off cycles of the heating elements. 0 - normal fan mode 1 - heating elements stay off during fan off period 2 - ventilators remain on. No left right switching
34	Temp delta max	Maximum variation from setpoint
35	Temp inc factor	Gives more overshoot above setpoint
36	Temp dec factor	Gives more overshoot under setpoint
37	Over Heat	Not used
38	Temp corr.	Temperature measuring correction factor (0=off, 8=max), Used to reduce the fluctuation in temperature caused by the fans changing direction
39	Time corr. min	Maximum time correction subtracted
40	Time corr. max	Maximum time correction added
41	Time corr. floor	Amplification function for the bake-correction time. The higher the value the bigger the correction.
42	E-temp alarm	Temperature of the electronics when an alarm sounds. The value is an indication of the temperature. The higher the value the higher the temperature. Set range 600-850
43	Brightness	Set the brightness of the display
44	Net address	Used to set communication between 2 ovens and a Time To Go display in the extraction hood. The master (connected to the extraction hood) uses address "0".
45	Exh. fan on net	Set the control of the extractionhood motor of two stacked ovens via the network from this oven (1=yes, 0=no)
46	Time to go disp.	Set the control of the Time To Go display via the network from this oven (1=yes, 0=no). When both ovens are set to "0" the shortest time is displayed.
47	Debug mode	Switch to debug mode to search for bugs in the software
48	Demo mode	Demo mode that deactivates the heating for demonstrating purposes

**NOTE:** Parameters marked in grey should be changed with specific instructions from Fri-Jado technical staff only!! Changing them without consulting Fri-Jado is at your own risk!!

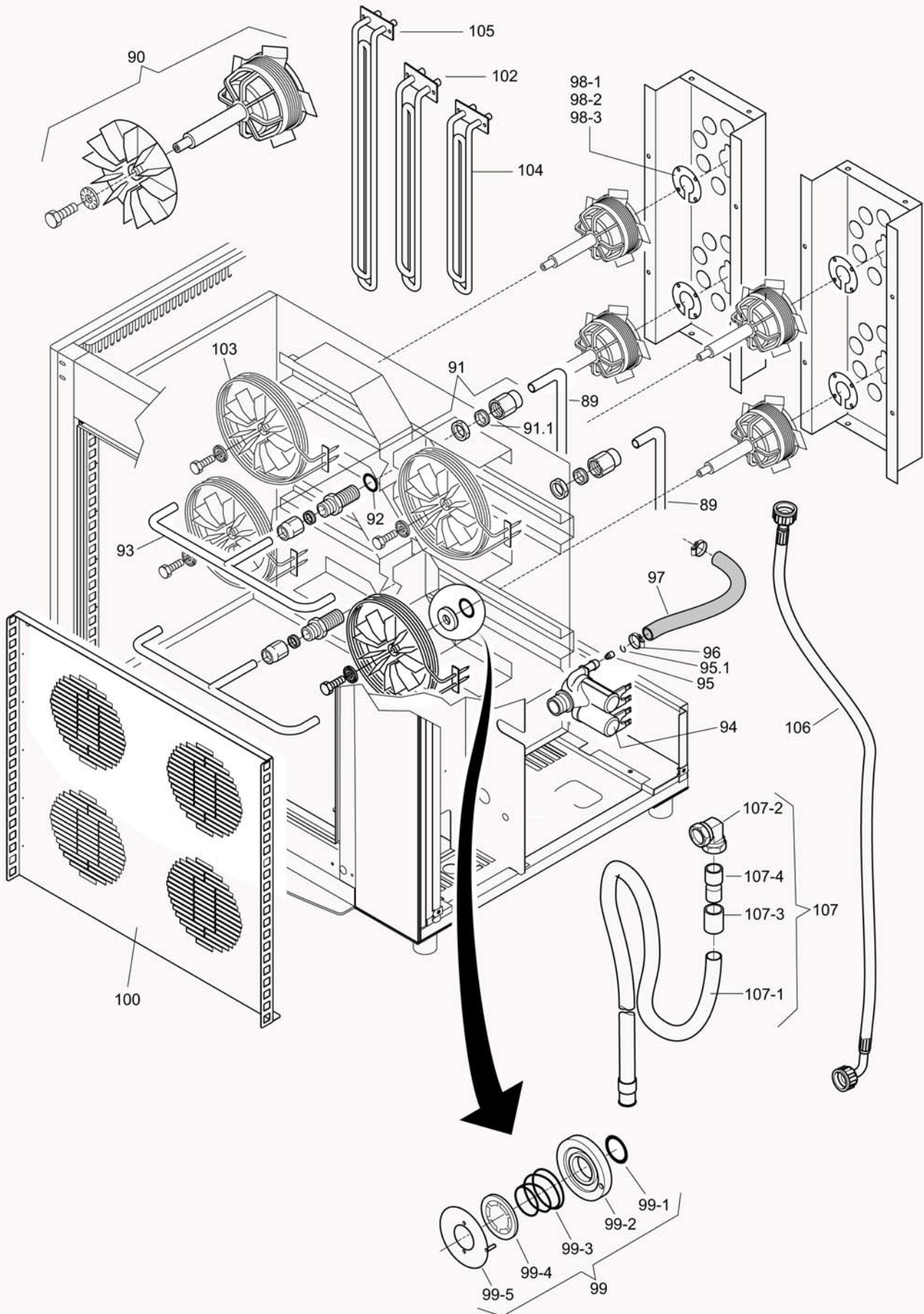


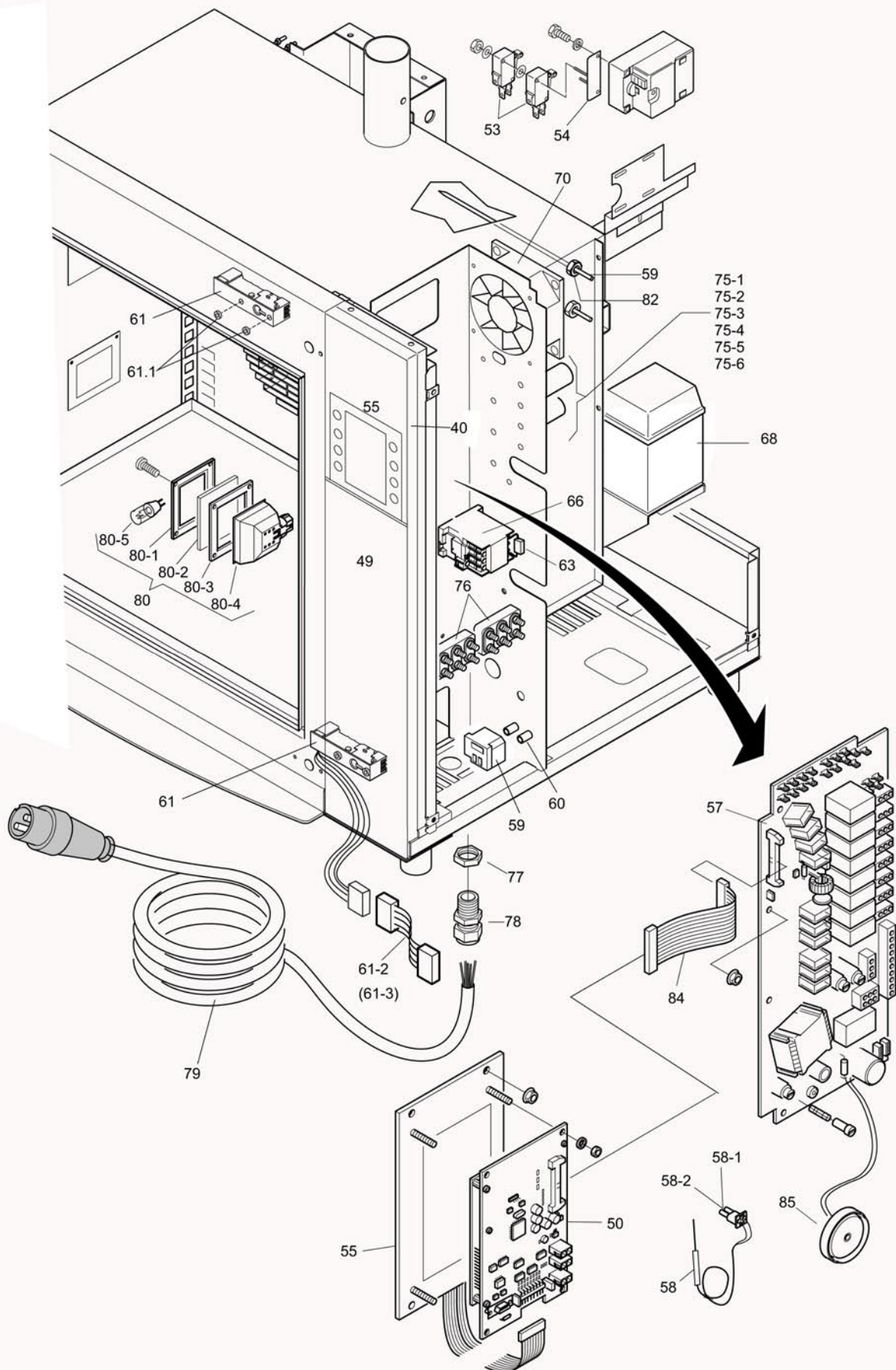
EXPLODED VIEWS & PARTLISTS

Bake Star - exploded view



Bake Star - exploded view 2





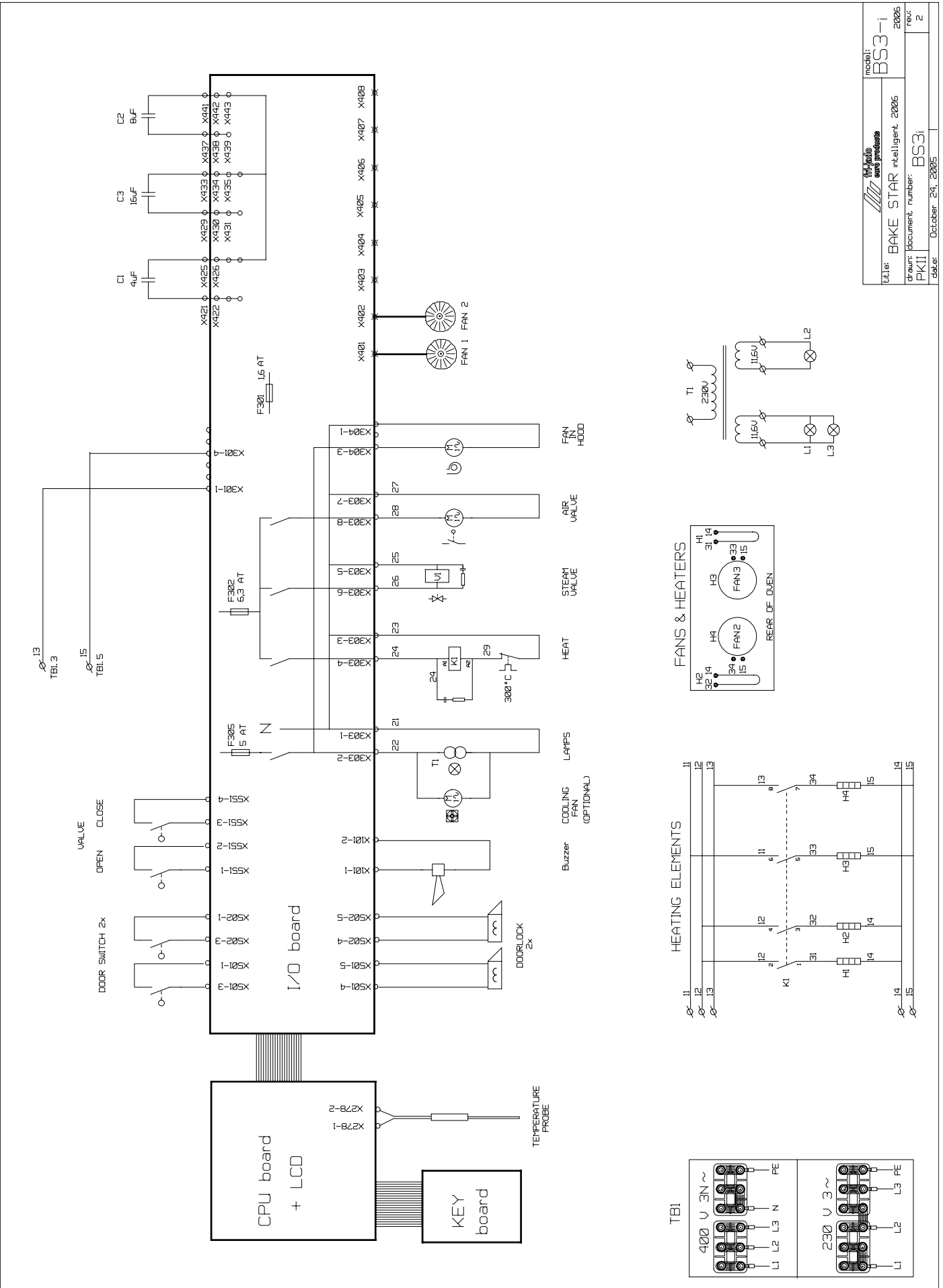
Pos. nr.	Artikel nr.	Description	Pos. nr.	Artikel nr.	Description
1	3704037	Hinge outer window 5L	8	3704059	Holder, magnet 5L
1	3704141	Hinge outer window 8L	8	3704124	Holder, magnet 8L
1	3704142	Hinge outer window 10L	8	3704134	Holder, magnet 10L
1	3704241	Hinge outer window 3L	8	3704234	Holder, magnet 3L
1.1	9174162	Fiber washer 15x7x0,5	8.1	9172081	Distance bush
1.11	3703004	Lower hinge	8.2	9070141	Magnet
1.2	428966	Nylon washer	8.3	3704060	Filling profile 5L
1.3	3704240	Cover	8.3	3704125	Filling profile 8L
1.4	4311110	Washer	8.3	3704135	Filling profile 10L
1.5	144359	Nut, self locking	8.3	3704235	Filling profile 3L
1.6	9170426	Hinge R	9	3500107	Drive motor (valve)
1.6	9170427	Hinge L	15	3500106	Push spring
1.7	3704040	Adjusting plate, hinge	16	3500108	Camshaft
1.8	9172054	Brass bearing 8 mm	17	3700447	Valve bar
1.9	9172122	Brass bearing 8 mm, cut off	18	3700446	Valve
2	3701002	Glass outer 5L	19	4285151	Locking ring (starlock)
2	3701004	Glass outer 8L	21	3704041	Support
2	3701006	Glass outer 10L	25	3704021	Tray guide holder left 5L
2	3701009	Glass outer 4L	25	3704091	Tray guide holder left 8L
3	3701031	Rubber profile brown 5L	25	3704111	Tray guide holder left 10L
3	3701032	Rubber profile brown 8L	25	3704215	Tray guide holder left 4L
3	3701033	Rubber profile brown 10 L	26	3704022	Tray guide holder right 8L
3	3701034	Rubber profile brown 4L	26	3704112	Tray guide holder right 10L
3		Profile brown / per metre	26	3704216	Tray guide holder right 4L
4	3703006	Door handle 5L	26	3704216	Tray guide holder right 5L
4	3703008	Door handle 8L	28	3704023	Tray guide
4	3703009	Door handle 10L	30	3704034	Right panel 5L
4	3703031	Door handle 3L	30	3704094	Right panel 8L
4.1	9174133	Spacing bush	30	3704116	Right panel 10L
4.2	3700438	Cover plate glass outer 5L	30	3704230	Right panel 4L
4.2	3700439	Cover plate glass outer 8L	31	3704031	Back panel 5L
4.2	3700441	Cover plate glass outer 10L	31	3704085	Back panel 8L
4.2	3700490	Cover plate glass outer 3L	31	3704115	Back panel 10L
4.3	3701016	Locking device	31	3704245	Back panel 4L
4.4	3700410	Cover plate glass outer 5L	31.1	3704030	Back panel, lower
4.4	3700440	Cover plate glass outer 8L	32	3704033	Left panel 5L
4.4	3700470	Cover plate glass outer 10L	32	3704093	Left panel 8L
4.4	3700488	Cover plate glass outer 3L	32	3704113	Left panel 10L
4.5	4288320	Screw M5x45	32	3704231	Left panel 4L
4.6	9171014	Plug, door handle	33	3704035	Cover
5	3701001	Glass inner 5L	35	9011260	Foot,adjustable
5	3701003	Glass inner 8L	40	3704233	Support , control panel 3L
5	3701005	Glass inner 10L	40	3704052	Support , control panel 5L
5	3701008	Glass inner 3L	40	3704120	Support , control panel 8L
6	3700407	Hinge inner window 5L	40	3704122	Support , control panel 10L
6	3700437	Hinge inner window 8L	49	3702209	Control panel, under 3L
6	3700467	Hinge inner window 10L	49	3702205	Control panel, under 5L
6	3700487	Hinge inner window 3L	49	3702207	Control panel, under 8L
6.1	9174163	Distance ring, innerglass	49	3702208	Control panel, under 10L
6.2	4285408	Blind nut M5	50	3702210	CPU board + LCD
7	3500452	Drain plug	53	3500109	Endswitch

Pos. nr.	Artikel nr.	Description
54	3704147	Support for endswitch
55	3701090	Key board piëzo
57	3702211	Input / output board
58	3500045	Temperature sensor with connector
58.1	3500509	Connector plug 2 pole Mate N lock
58.2	3500512	Contact female
59	3500037	Thermostat 100-320 °C
60	3500036	Distance sink tube
61	3701015	Doorlock
61.1	9174163	Distance washer
61.2	3703052	Extension cable doorlock
61.3	3700072	Converting set L/R door
63	3500188	RC network
66	3500069	Power relay
67	3500335	Transformer
68	3701022	Transformer 100 VA
68	3701023	Transformer 200 VA
70	3500031	Blower
75.1	3500507	Capacitor 2 uF
75.2	3500646	Capacitor 4 uF
75.3	3500640	Capacitor 8 uF
75.4	3500641	Capacitor 16 uF
75.5	3500661	Capacitor 30 uF
75.6	3500508	Capacitor 45 uF
76	3500071	Connecting block, 3-pol.
77	3500029	Nut, relief strain PG16
77	3500097	Nut, relief strain PG21
78	3500032	Strain relief PG16
78	3500098	Strain relief PG21 (14-18 mm)
79	3508921	Connecting cable 5x6qmm
79	9070028	Connecting cable 5x2,5qmm
79	9070044	Connecting cable 5x4qmm
80.1	3500041	Cover profile oven illumination
80.2	3500038	Glass oven illumination
80.3	3500040	Sealing oven illumination
80.4	3701017	Lampholder oven illumination
80.5	3701052	Lamp 20W / 12V Halogen
82	3500046	Temperature sensor holder
84	3701586	Flatcable
85	3701095	Buzzer (speaker)
90	3500044	Blower
91	3500048	Joint
91.1	3500144	Clamp ring
92	3500337	Sealring 14x18
93	3703032	Tee-piece waterinjection
94	3500056	Valve 4L
94	3500064	Valve (double) 5L
94	3500074	Valve (triple) 8L
94	3500515	Valve (quadruple)
95	3500158	Water reducer (yellow)
95.1	4285155	Retaining ring

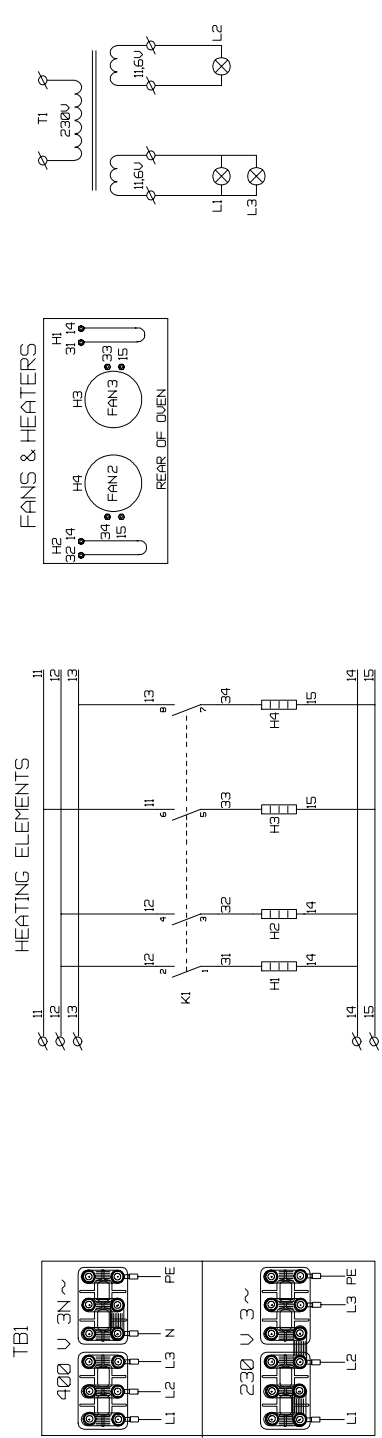
Pos. nr.	Artikel nr.	Description
96	3500050	Clamp, tube
97	3500049	Tube
98-1	3500303	Adjusting ring 1mm
98-2	3500305	Adjusting ring 1.25mm
98-3	3500304	Adjusting ring 1.5mm
99-1	3500577	O-ring
99-2	3500619	Shaft sealing 41mm
99-3	3500642	Spring
99-4	3500630	Locking ring inox
99-5	3500302	Drive ring
100	3700401	Blower panel 5L
100	3700431	Blower panel 8L
100	3700461	Blower panel 10L
100	3700481	Blower panel 4L
102	3702021	Heating element, 1750 W
103	3500042	Heating element, 2100 W
104	3500043	Heating element, 1000 W
105	3500073	Heating element, 2000 W
106	3500055	Tube
107		Drain set complete
107-1	3500054	Drain tube
107-2	3500052	Knee joint 35mm
107-3	3500608	Tube silicon 25x33
107-4	3500053	Reducer 35-28mm
109	3504271	Ringspanner 10

ELECTRICAL DIAGRAMS

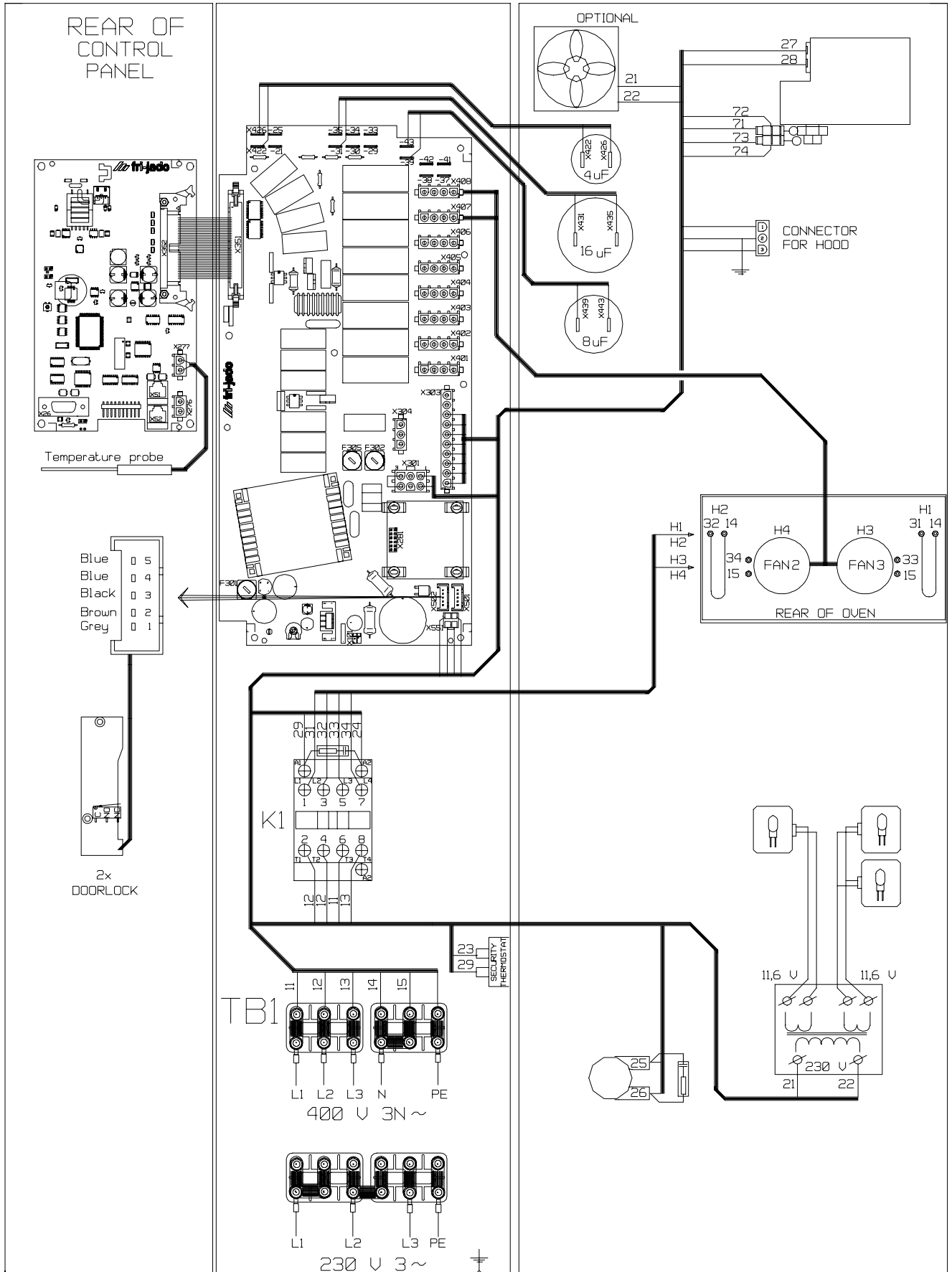
BS3i - circuit diagram



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Doc. number:	2006
Rev.:	2
Doc. number:	BS3i
Date:	October 24, 2005

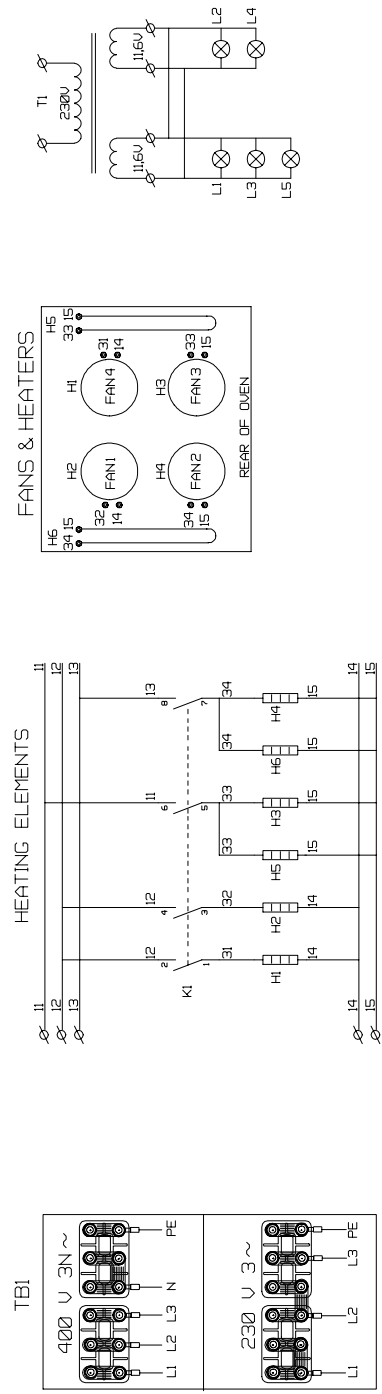
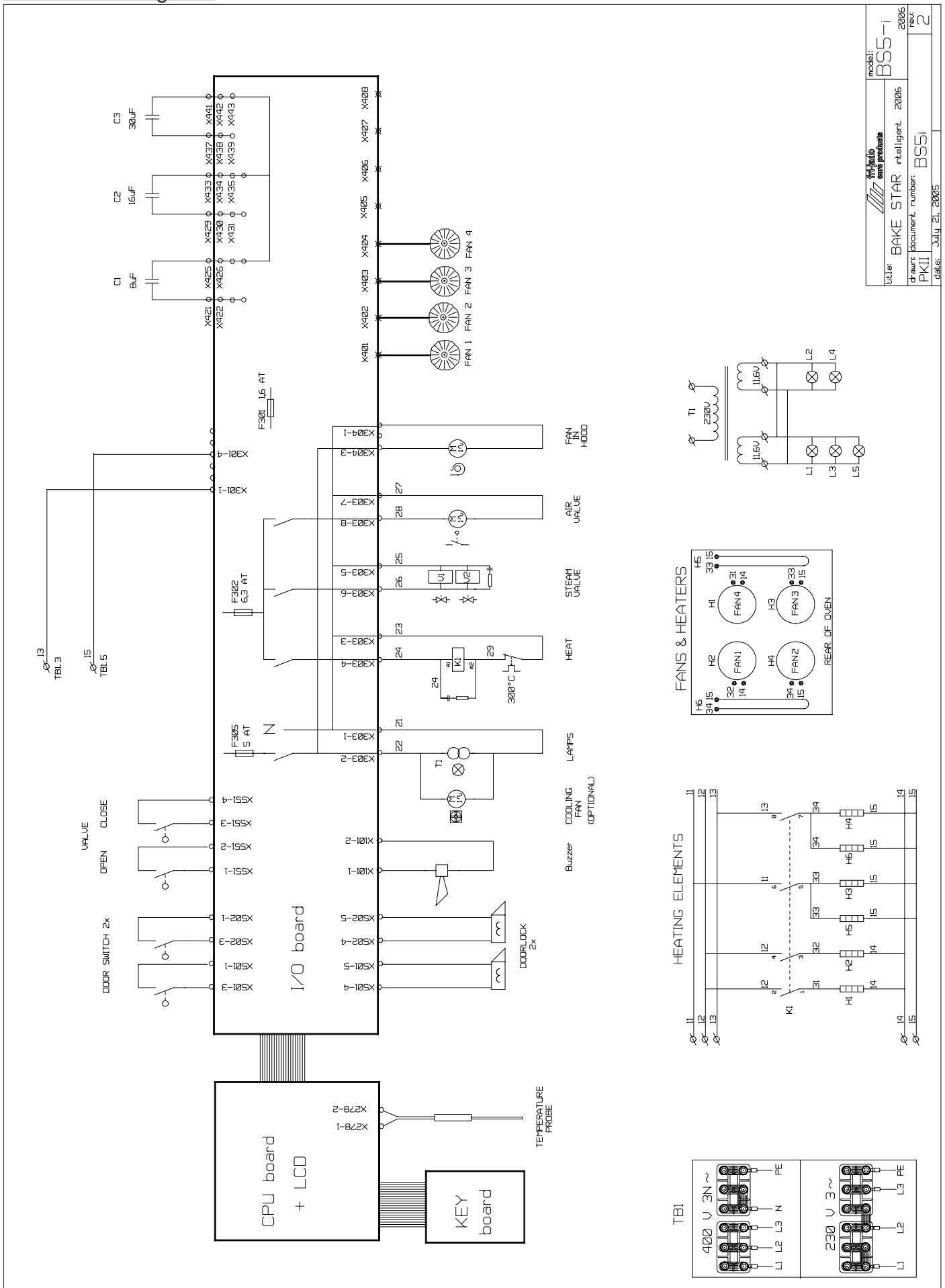


BS3i - wiring diagram



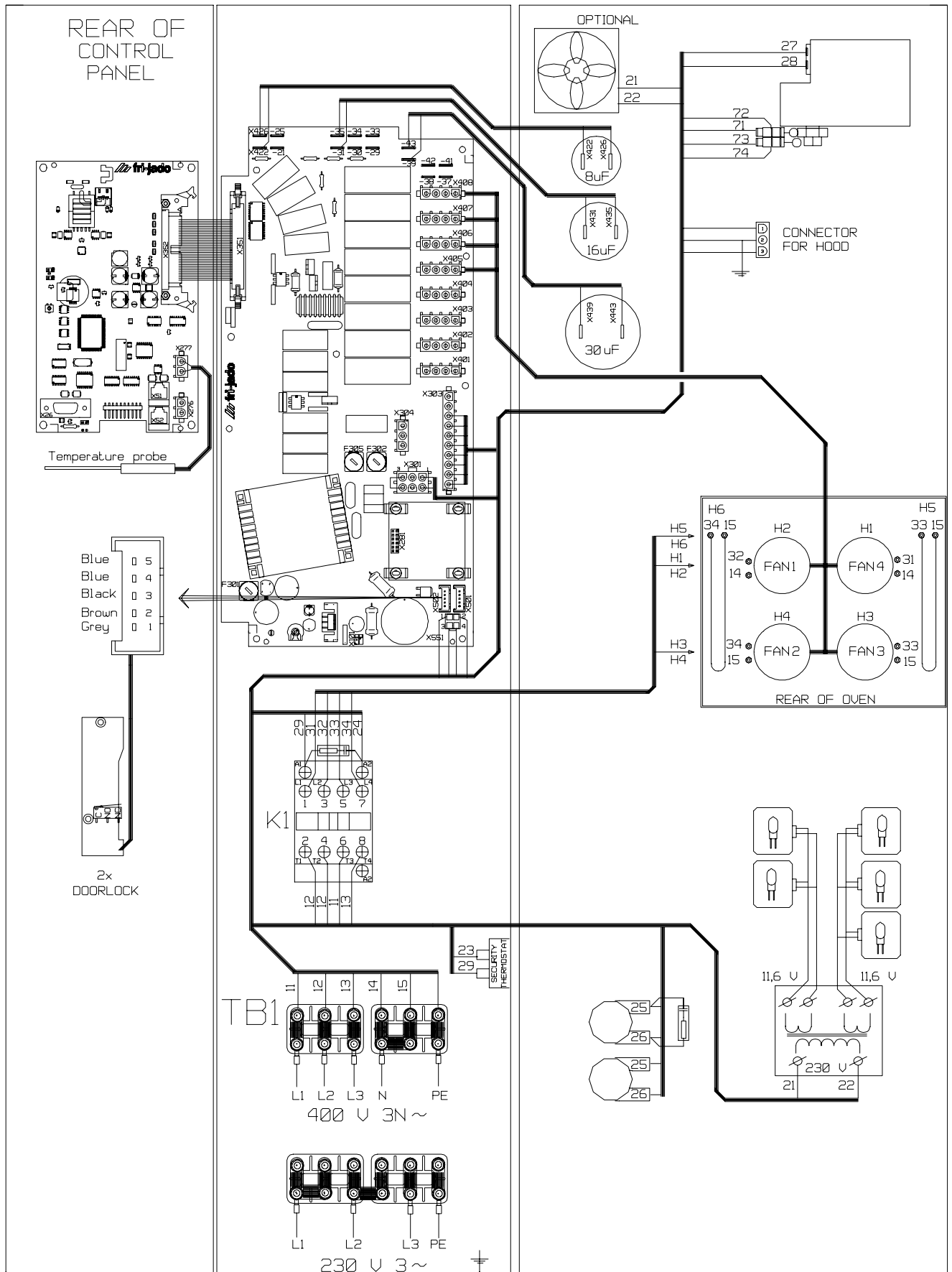
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BS5i - circuit diagram



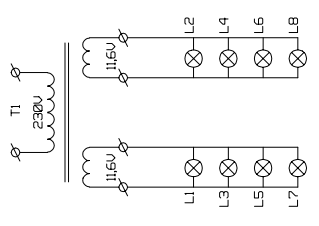
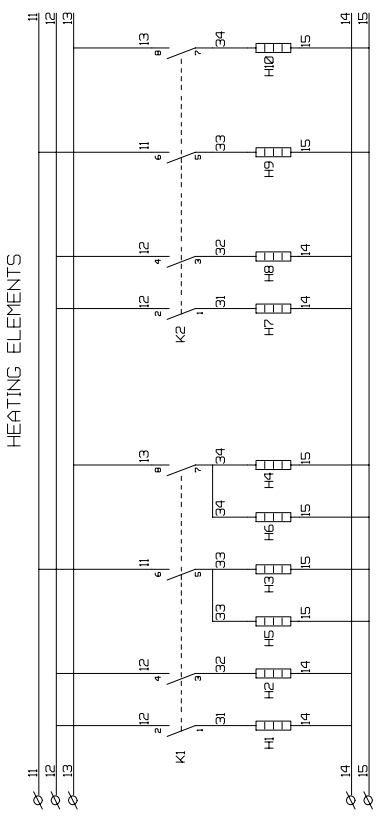
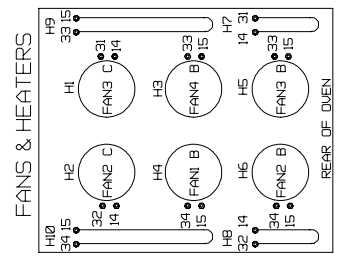
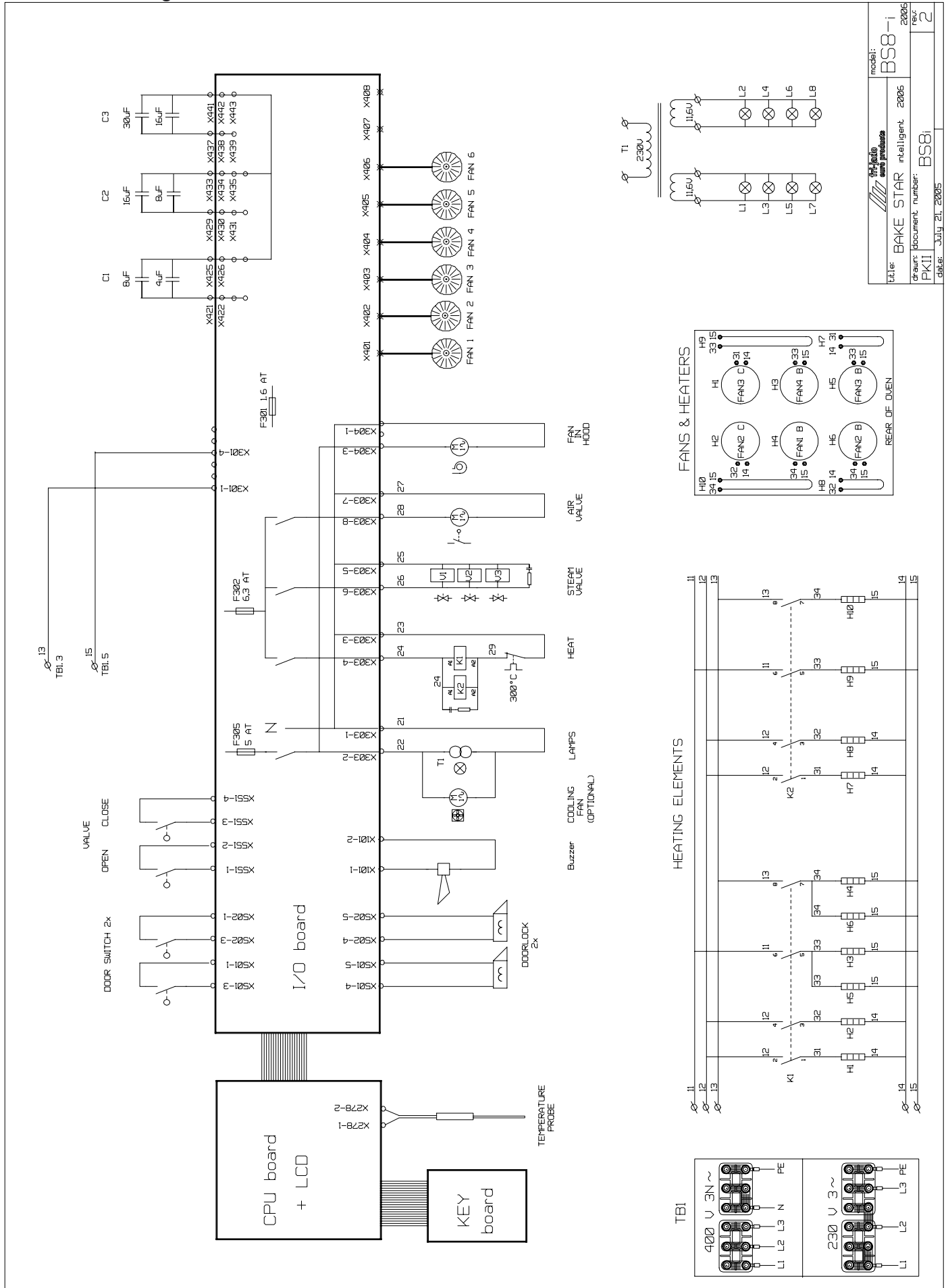
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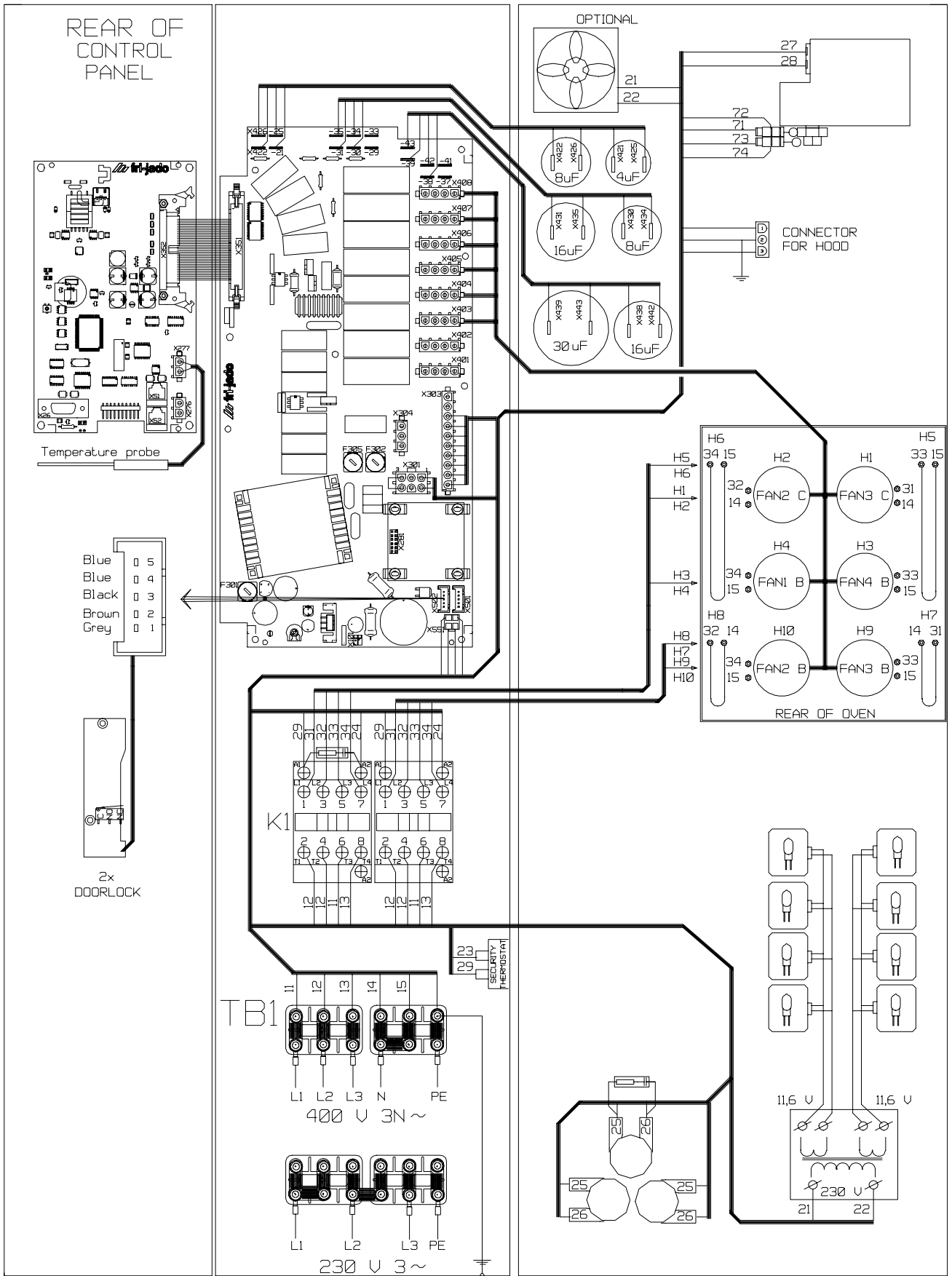


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date: November 02, 2005		

BS8i - circuit diagram

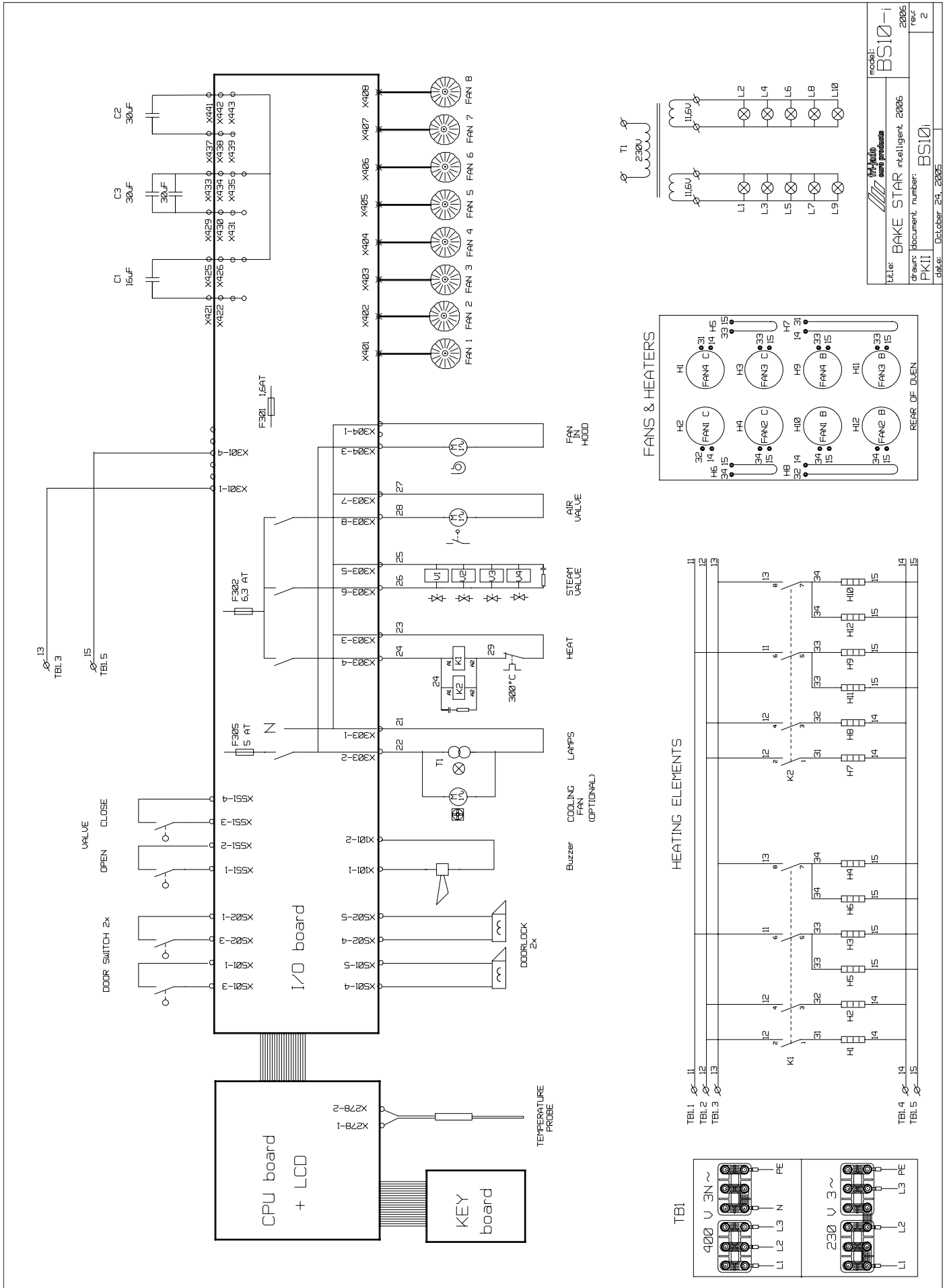


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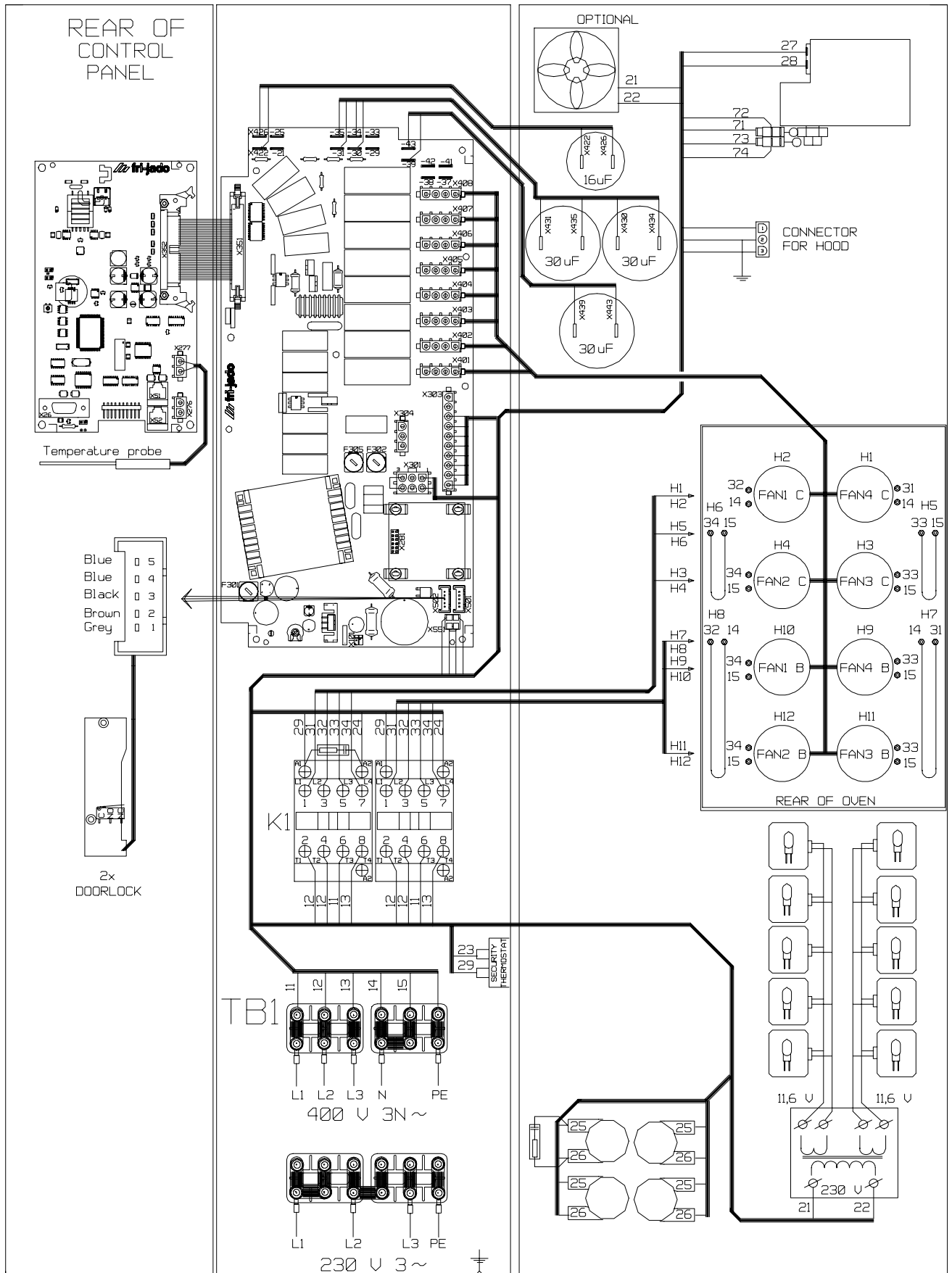


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BS10i - circuit diagram

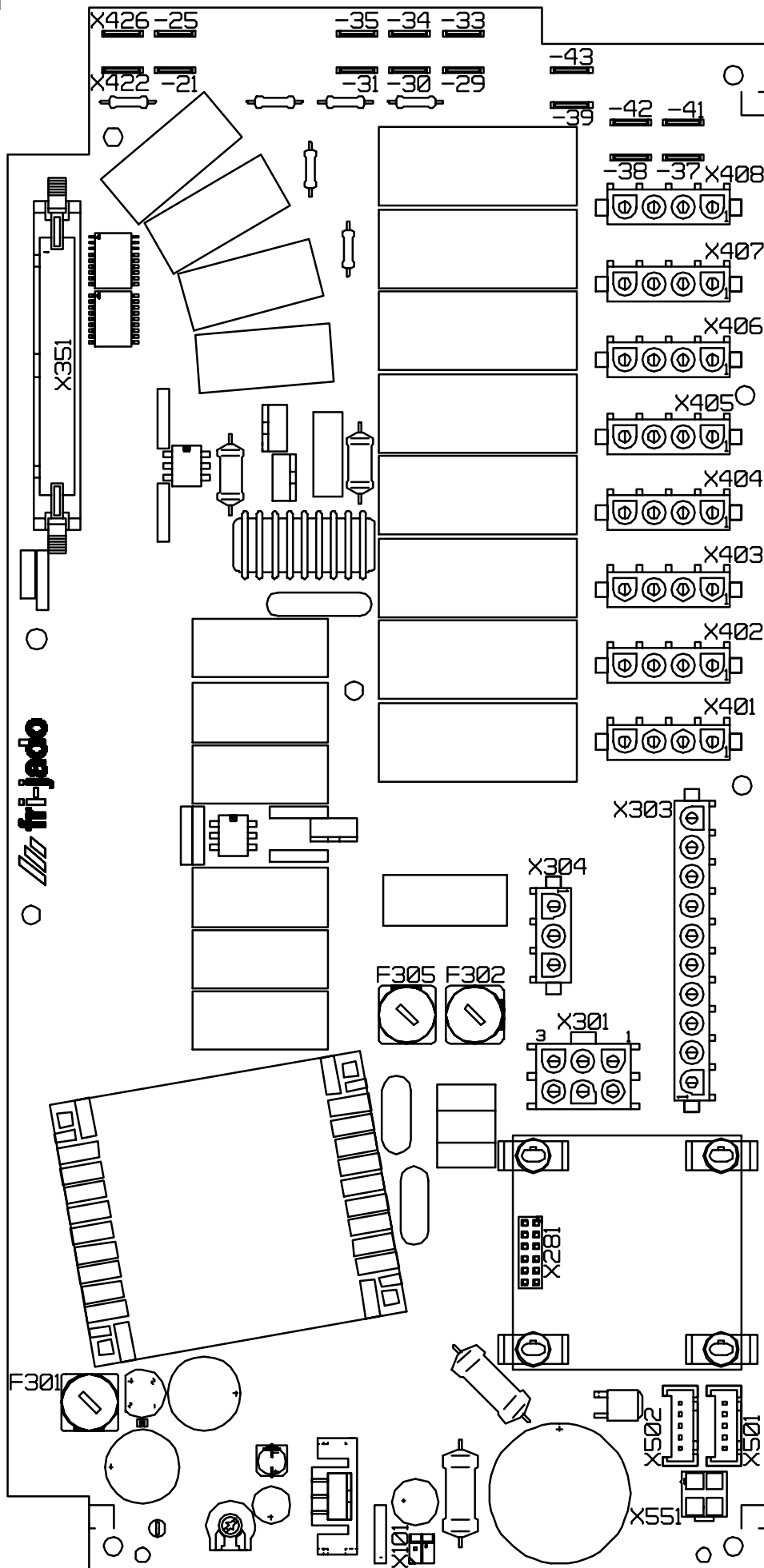


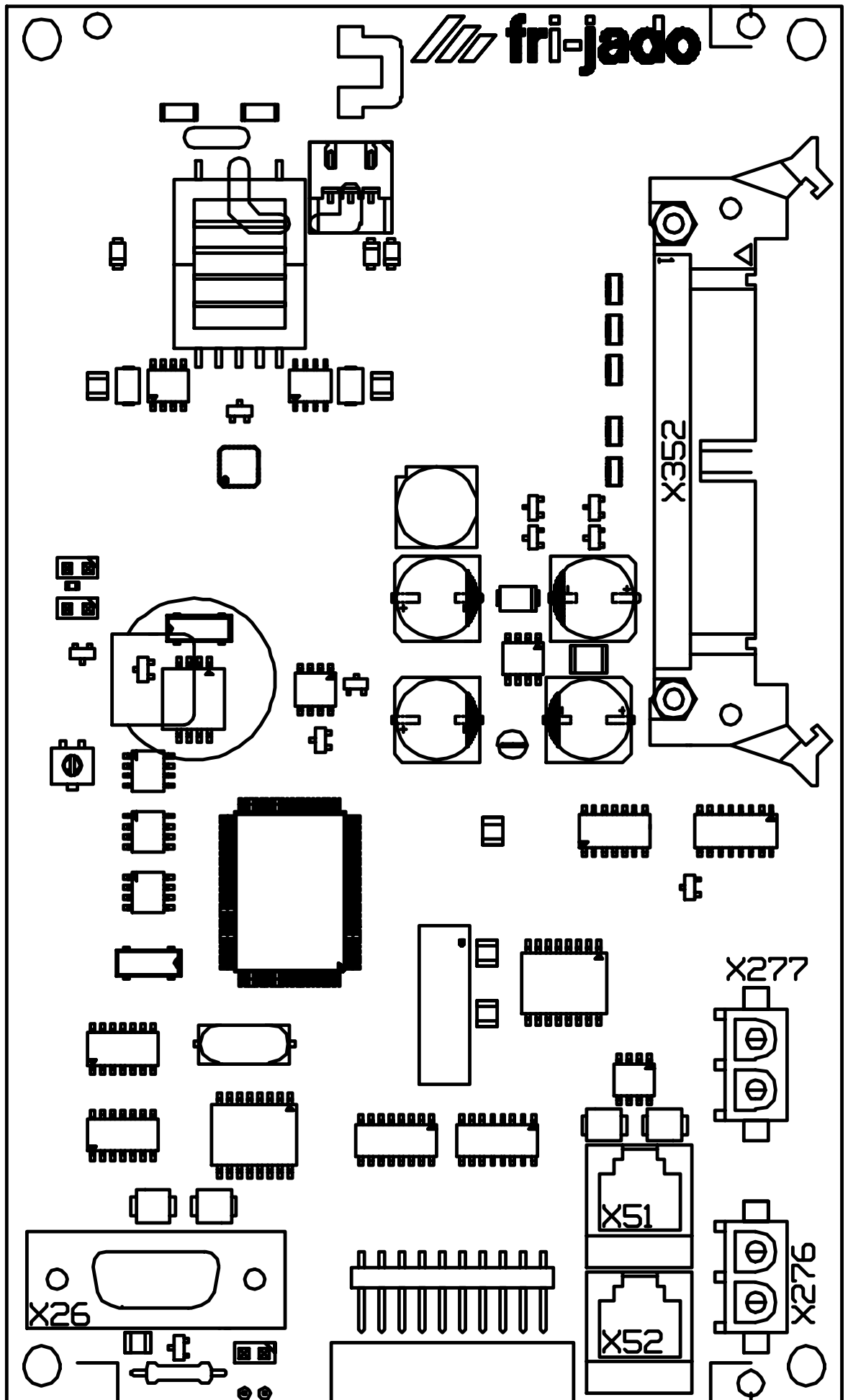
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drawn:	PKII
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date:	October 24, 2005



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drawn: PK11	document number: BS10iK	2006
date: October 24, 2005		rev: 2

BSi - I/O board





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