



**Franke Finland Oy**  
**User's and**  
**Maintenance manual**  
Rev. 16.05.2005

**Serial number** \_\_\_\_\_



**DC 2200**

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## **SAFETY INSTRUCTIONS**

### **WARNINGS**



**Chamber walls are hot.**



**The goods and racks are hot to handle.**



**Be aware of the 230 V voltage.**

## 1.0 GENERAL OF THE DRYING CABINET

**DC-2200      SINGLE DOOR**  
**DC-2200 X    DOUBLE DOOR (PASS-THROUGH)**

The DC-2200 and DC-2200 X drying cabinets are designed especially for drying of anaesthetic equipment and hoses, surgical instruments, glassware, bowls, dishes, bottles etc.

The chamber size is dimensioned for 8 shelves. Deko-2000 washer-disinfector's shelves fit directly on the rails and any Deko's spray racks get air blow through their tubes.

The micro-processor provides the possibility of having a selection of 5 different programmes suited for various items.  
 (See point 5.0 Programming).

## 2.0 INSTALLATION INSTRUCTIONS

### 1. Installation

Position the drying cabinet. Adjust it vertically and horizontally by adjusting the four feet.

The flap for outcoming water is in the middle of the bottom of the drying cabinet (for possible drip water from the goods).

### 2. Electrical installation

Electrical installation is semi-fixed.

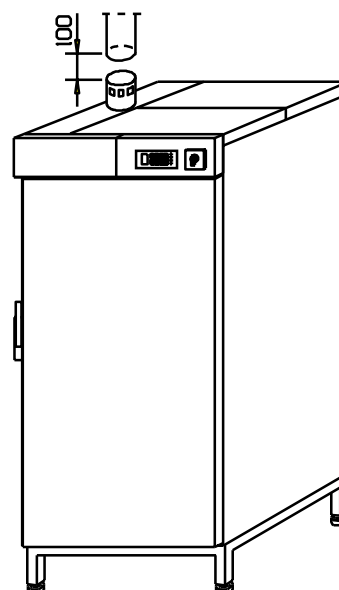
Installation is allowed to be made only by the authorized professional worker in accordance with the valid directions.

### 3. Ventilation

Connection to the ventilation system (drawing)  
 Distance between the outlet and ventilation duct must be about 100 mm.

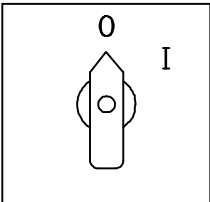
**Do not connect the ducts together !**

The door can be either left or right-handed  
 - removable lower hinge  
 - removable axis of hinge

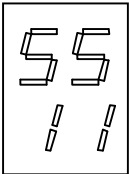


### 3.0 OPERATION INSTRUCTION

#### CONTROL PANEL



$^{\circ}\text{C}$   
 Prog



1

2

3




4


5

+

-

0



$^{\circ}\text{C}$

Prog

1


—


5


+

-

0







**MAIN SWITCH**

**TEMPERATURE**

**REMAINING DRYING TIME**

**PROGRAMME SELECTION BUTTONS**

**PROGRAMMING BUTTONS**

**CANCELLATION OF PROGRAMME START WITHIN 5 SECS**

**CYCLE RUNNING (YELLOW)**  
 Door can be opened during an ongoing drying cycle - heating will stop.

**MALFUNCTION (FLASHING RED SIGNAL)**  
 Turn the main switch to O-position and thereafter back to position I again. Start a new programme. In case of further malfunction call for maintenance.

**CYCLE COMPLETED (GREEN)**  
 Door must be closed the indicator to come on.

## **HOW TO USE DRYING CABINET**

1. **TURN MAIN SWITCH TO POSITION I.**
2. **OPEN DOOR AND PLACE GOODS IN.**  
AN-hose cassettes into the rails at the top in front.  
**CLOSE DOOR.**
3. **SELECT PROGRAM 1-5.**  
Start program by pushing the program button. Yellow indicator will come on. PROG indicator shows the remaining drying time. The door can be opened during a cycle, but heating will be interrupted. By pushing the button + during the cycle PROG indicator shows the program going on P1 ... P5.
4. **GREEN SIGNAL - PROGRAM COMPLETED, THE DOOR CAN BE OPENED**

Indicator lights up only when the door is closed.



**NOTE ! CHAMBER WALLS ARE HOT !**

5. **WHEN THE CABINET IS NOT BEING USED PLEASE SWITCH OFF BY THE MAIN SWITCH.**

In pass-through models (with double doors) yellow signal lights at "clean side" during the cycle. When the cycle ends yellow signal at "clean side" switches to green and at "unclean side" both yellow and green are lit at the same time. After opening the door at "clean side" the yellow indicator switches off and at "unclean side" only the green light is on.

## 4.0 PROGRAMS

Prog. no	SPECIFICATION	SYMBOL	ADJUSTMENT RATE
1.	Fan	F	1
	Temperature	C	85 °C
	Time	t	30 min
2.	Fan	F	1
	Temperature	C	85 °C
	Time	t	35 min
3.	Fan	F	1
	Temperature	C	85 °C
	Time	t	40 min
4.	Empty	(can be programmed)	
5.	Empty	(can be programmed)	

### Adjustments

Specification	Symbol	Rate	Note
Fan	F	1	one speed
Temperature	C	20 - 90 °C	
Time	t	10-99 min	
		or -- all the time	

## 5.0 PROGRAMMING

	F
I	I

1. Press buttons **0** and **3** for 5 sec's. Release button 3 first and then button 0. F/I appears on display.

I	F
	I

2. Select the program button to be reprogrammed.
3. Select fan speed by buttons **+** and **-** : 1 (only one speed available), (if 0 selected, the function of button ignored) Confirm settings by pressing the button **0**.

I	C
5	5

### Temperature selection C.

When selecting the drying temperature (range 20-90 °C) use buttons **+** and **-**, and confirm by pressing the **0**. (See picture; program 1, 55 °C)

I	t
I	0

### Drying time selection t.

When selecting the drying time (range 10-99 min) use buttons **+** and **-**. Confirm setting by pressing the button **0**. (See picture; program 1, 10 min)

4. After restoring the last program phase you can start to program any program button you want.  
Press the button **0** to get into operating mode and temperature will appear on display.

**\*\*** Error on the programming procedure:  
Switch off the main power and start the programming from the beginning (or restore the program to be changed by 0 button and reprogram the button.)



## 6.0 MAINTENANCE

**CAUTION !! NO WATER ALLOWED ON THE TOP OF THE DRYING CABINET.**

### 1. Daily

Use non-aggressive washing agent and soft wash cloth, for flushing use wet wash cloth, wipe and dry.

### 2. Air filter

Cleaning interval in normal use 3 months.

Power connection plug must be disconnected before cleaning or replacing the air filter. (Turn the main switch to position 0).

Unscrew the safety screw from the separate front plate on the control panel and take off the air filters (2 pcs) on the rails of the front plate. See the drawing on the page 8.

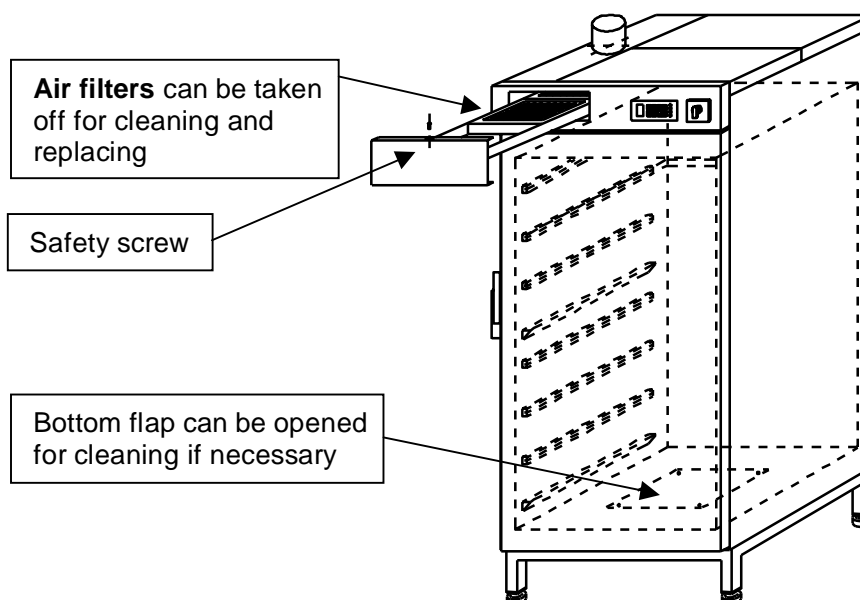
Wash the air filters with pure water. Use non-aggressive agent when necessary.

Cleaned air filter operates as a new one.

If the air filter is damaged or does not work properly after washing - replace the air filter with a new one.

When installing the air filters back on to the rails check the direction of the air flow (arrow pointing downwards). Wet air filter will dry during the drying cycle.

Put the rails into the chamber and tighten the front plate back to the control panel by the locking screw.



## 6.1 programme button check mode (only for checking)

8	8
8	8

1. Press buttons **0**, **-** and **+** simultaneously for 5 sec's. 88/88 appears on display.

2. Press the program button to be checked. On display you can see (when button 4 pressed e.g.)

4	F
	I

4F/1 = sub display  
 4 = button 4 (1-5)  
 F = fan  
 1 = speed

Press button +

4	C
6	0

4C/60 appears on display  
 4 = button 4  
 C = temperature  
 60 = selected temperature (range 20-90 °C)

Press button +

4	t
3	0

4t/30 appears on display  
 4 = button 4  
 t = drying time  
 30 = selected time (range 10-99 min)

8	8
8	8

Press button + until 88/88 appears. Now you can check the program button you want. When, for example, 2F/0 appears there is no program restored.

3. After the programme checking you can start operating mode by switching off and on the main power and the drying cabinet is ready to use.

## 6.2. Malfunction indication code Er 10

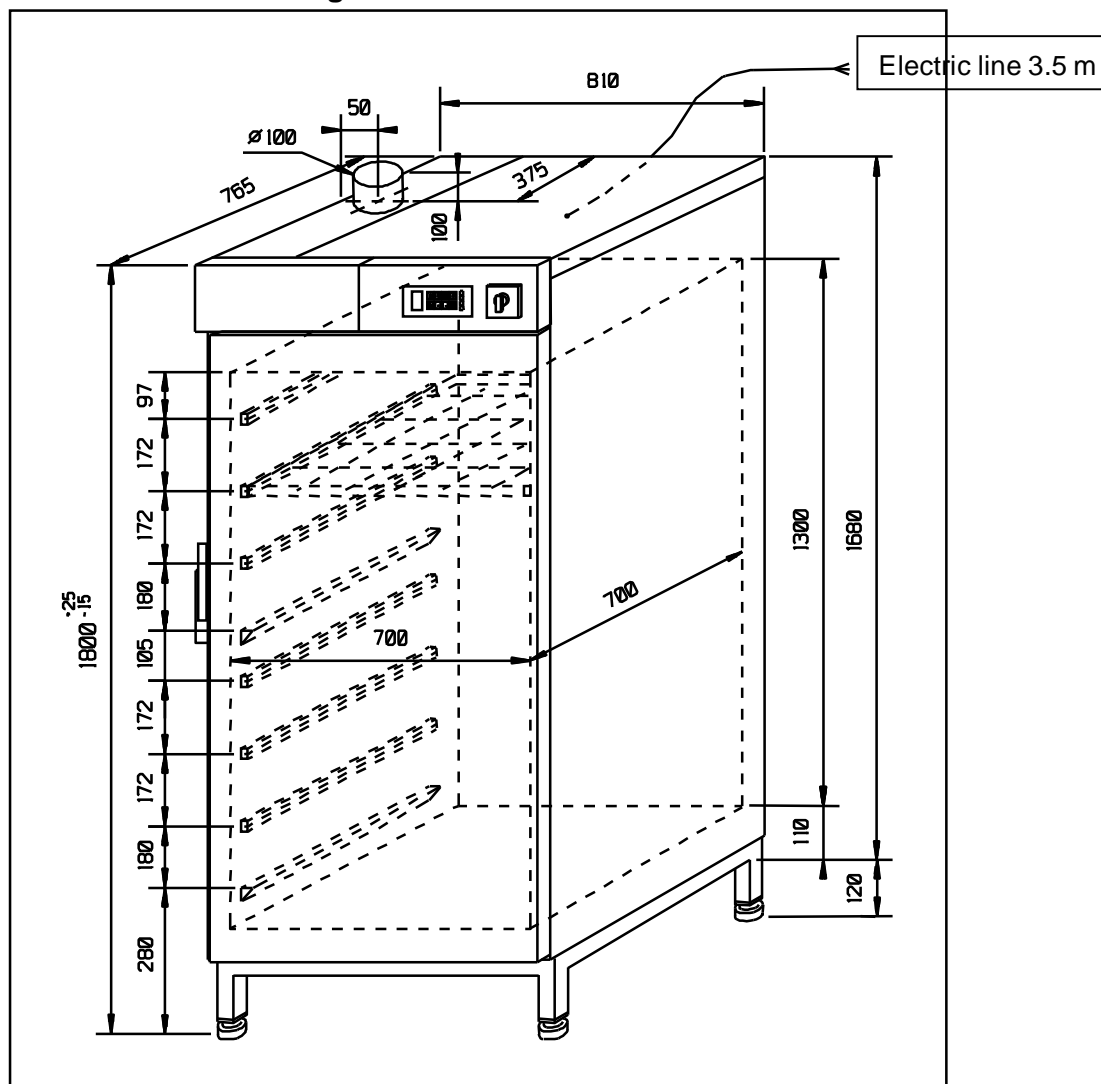
If a fault occurs all the drying cabinet functions will stop and on the digital display panel will show Er + no. and also a red signal lamp will flash on the panel.

The system can be reset by switching the cabinet mains power switch off and on again. **CALL FOR AN ENGINEER.**

Er No	Fault	Reason / Action required
<b>Er10</b>	Overheating protector has gone off position.	Find the reason why this happened - does the fan rotate
<b>Er4 or Er5</b>	Temperature sensor in the drying chamber does not function.	Check the connections; change the temperature sensor

## 7.0 TECHNICAL SPECIFICATIONS

### 7.1 Dimensional drawing



#### 7.1.2 Technical data

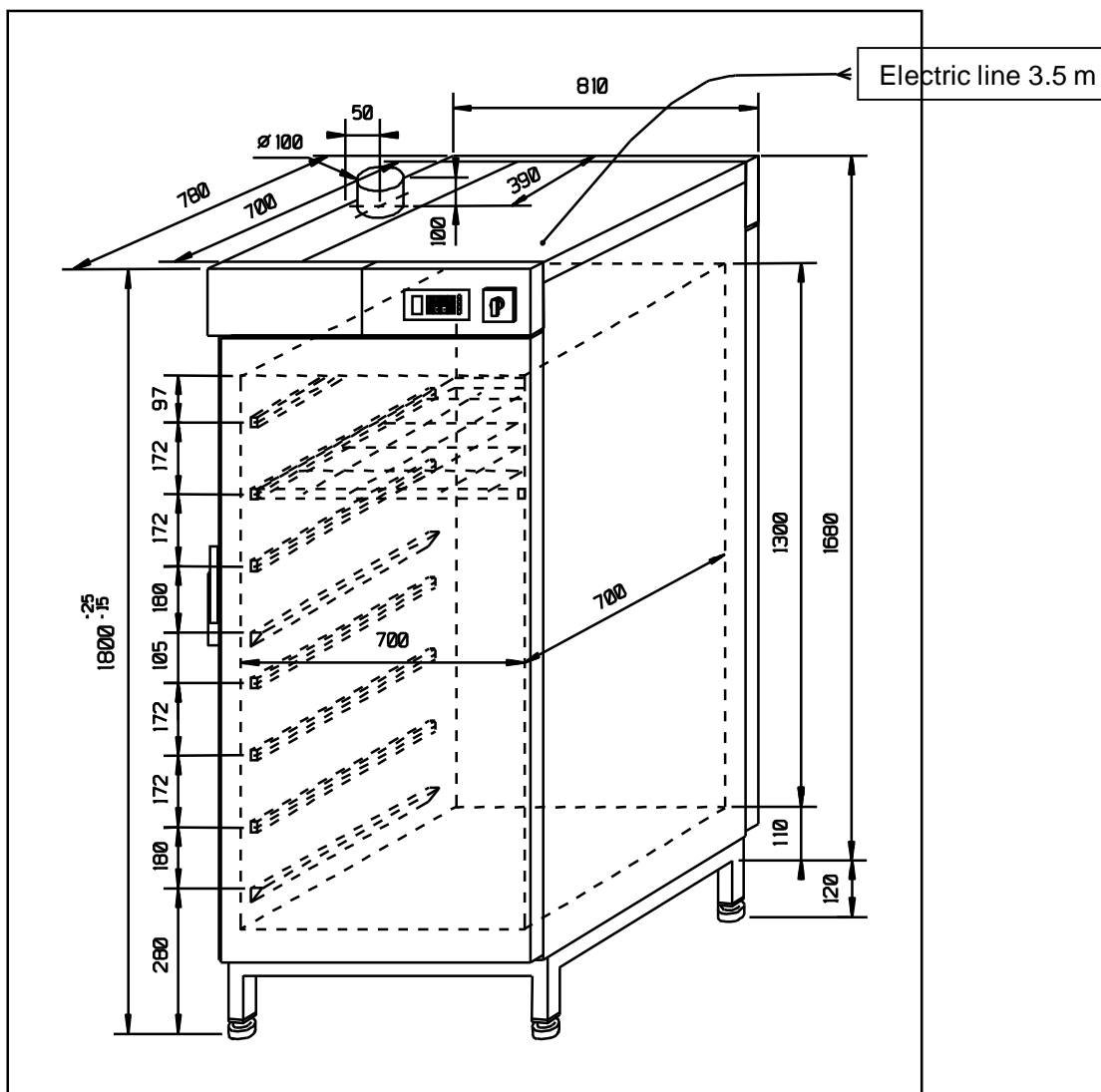
**1.**  
 Voltage 230 V/400 V, 3-phase, 50 Hz  
 Power rating 5,6 kW (heating 5,2 kW)  
 Fuses 16 A

**Common for all:**  
 Exhaust air 100 m<sup>3</sup>/h  
 Number of hoses 12 pcs  
 Weight 165 kg

**2.**  
 Voltage 230 V, single phase, 50 Hz  
 Power rating 3,6 kW (heating 3,3 kW)  
 Fuses 16 A

**3.**  
 Voltage 200 V, 3-phase, 60 Hz **Japan**  
 Power rating 4 kW  
 Fuses 20 A

## 7.2 Dimensional drawing (pass-through model)



### 7.2.2 Technical data

#### 1.

Voltage 230 V/400 V, 3-phase, 50 Hz  
 Power rating 5,6 kW (heating 4,8 kW)  
 Fuses 16 A

#### Common for all:

Exhaust air 100 m<sup>3</sup>/h  
 Number of hoses 12 pcs  
 Weight 165 kg

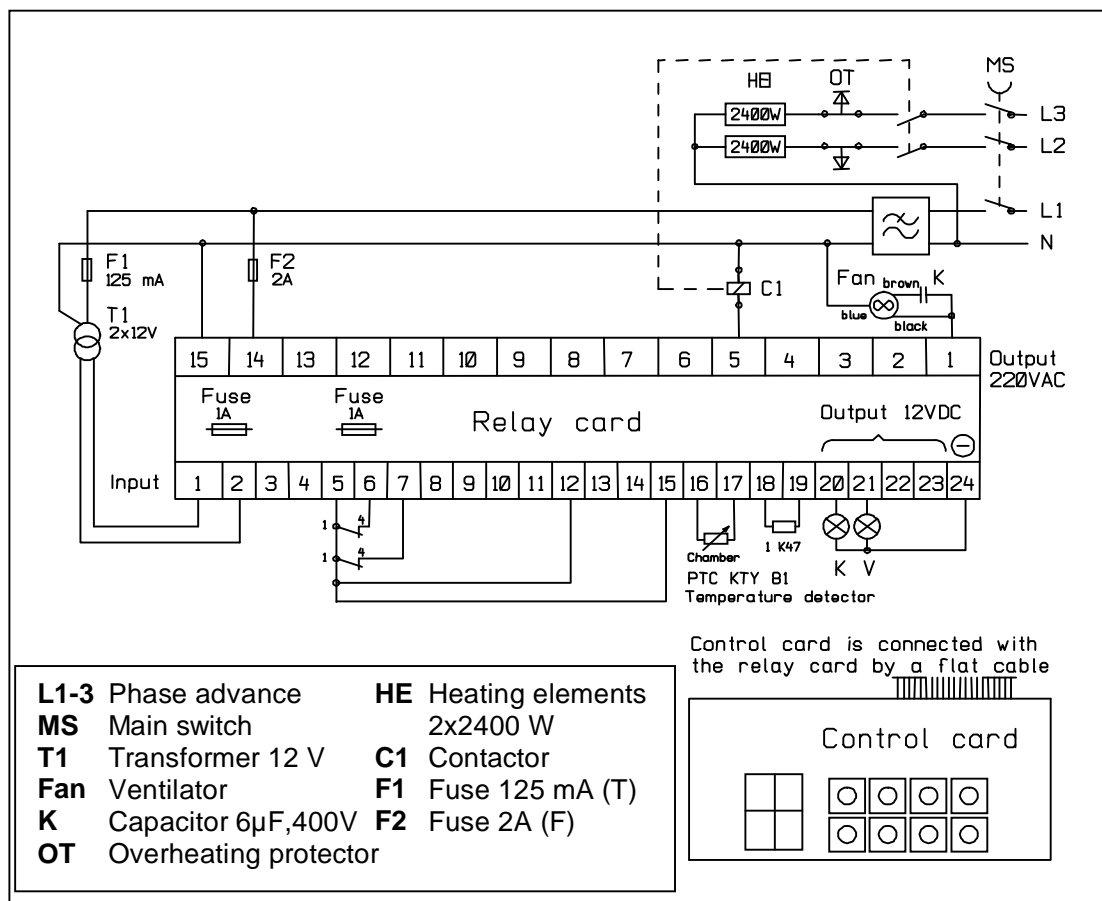
#### 2.

Voltage 230 V, single phase, 50 Hz  
 Power rating 3,6 kW (heating 3,3 kW)  
 Fuses 16 A

#### 3.

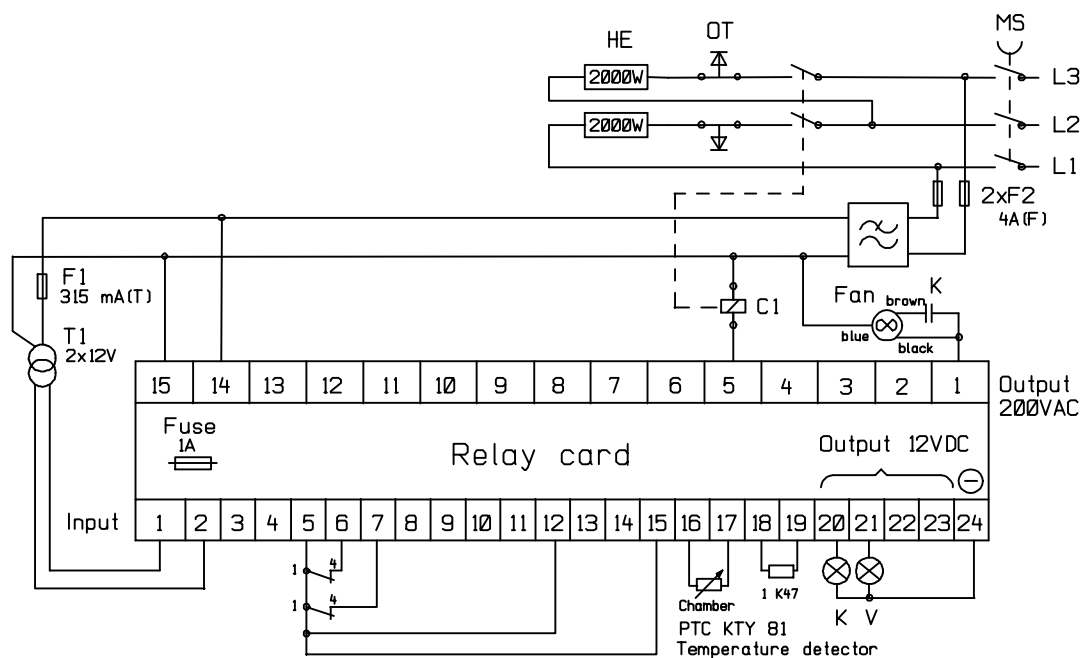
Voltage 200 V, 3-phase, 60 Hz **Japan**  
 Power rating 4 kW  
 Fuses 20 A

### 7.3 Circuit diagram

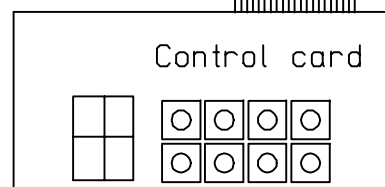


Output	Input
1. Ventilator power 1	5. Common for all incoming
5. Heating contactor	6. Front door
20. Yellow in operation indicator by clean side (pass-through model)	7. Back door (pass-through model)
21. Green cycle completed indicator by clean side (pass-through model)	15. Pass-through model identifier
24. 12VDC minus terminal	16. Thermal sensor in chamber
	17. Thermal sensor in chamber

### 7.3 Circuit diagram / Japan models



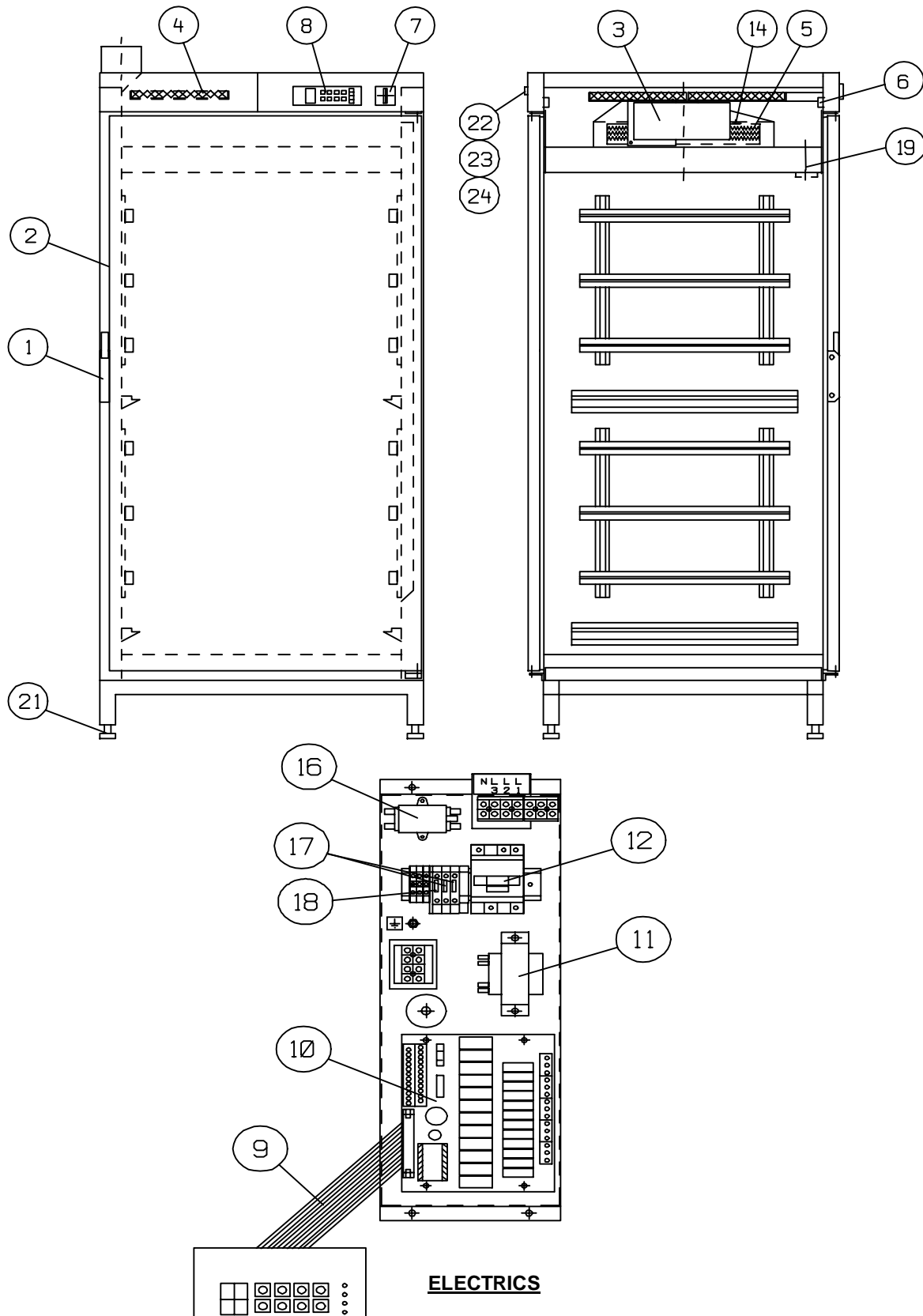
Control card is connected with the relay card by a flat cable



<b>L1-3</b> Phase advance	<b>HE</b> Heating elements
<b>MS</b> Main switch	2x2000 W
<b>T1</b> Transformer 12 V	<b>C1</b> Contactor
<b>Fan</b> Ventilator	<b>F1</b> Fuse 315 mA (T)
<b>K</b> Capacitor 6μF,400V	<b>F2</b> Fuse 4 A (F) (2 pcs)
<b>OT</b> Overheating protector	

Output	Input
1. Ventilator power 1	5. Common for all incoming
5. Heating contactor	6. Front door
20. Yellow in operation indicator by clean side (pass-through model)	7. Back door (pass-through model)
21. Green cycle completed indicator by clean side (pass-through model)	15. Pass-through model identifier
24. 12VDC minus terminal	16. Thermal sensor in chamber
	17. Thermal sensor in chamber

## 7.4 Spare Parts Drawing



## 7.5 Spare Parts List

No.	Code	Description	NOTE
1.	<b>N23664A</b>	Lock	
2.	<b>N23546</b>	Silicon sealing	
3.	<b>N22715A</b>	Fan G2E 160-AD01-21, 230 VAC	
4.	<b>N23485</b>	Air filter, 2 pcs	
5.	<b>N22763</b>	Heating element 220 V 1630/750 W, 2 pcs	
		Heating element 200 V 2 x 2000 W	only in Japan
6.	<b>N22467</b>	Microswitch 1066776	
7.	<b>N22514</b>	Main switch 16A PR12	
8.	<b>N22415A</b>	Process card	
9.	<b>N22844</b>	Flat cable 70 cm	
10.	<b>N22416A</b>	Relay card	
11.	<b>N22680</b>	Transformer 230 V/12 V 0.5A/12 V 0.5A	
12.	<b>N22618A</b>	Contactors	
14.	<b>N22712</b>	Overheating trip 16 A/250 V T150, 2 pcs (automatic reset when switched off)	
16.	<b>N28009</b>	Filter	
17.	<b>N22670</b>	Fuse 5x20 2A (F)	
	<b>N22671</b>	Fuse 5x20 4A (F) (2 pcs)	only in Japan
18.	<b>N23703</b>	Fuse 5x20 125 mA (T)	
	<b>N22646</b>	Fuse 5x20 315 mA (T)	only in Japan
19.	<b>N22710</b>	Temperature sensor PTC 90°	
21.	<b>N23327</b>	Adjustable foot M24, 4 pcs	
22.	<b>N22614</b>	Signal lamp 12 V	Double door models
23.	<b>N22801</b>	Lens, green	-“-
24.	<b>N22800</b>	Lens, orange	-“-



## 8.0 DECLARATION OF CONFORMITY

Manufacturer: FRANKE FINLAND OY

Address: Vartiokuva 1, 76850 Naarajärvi, FINLAND

Hereby declares that: **DC-2200**

complies with the following Directives:

- Machinery Directive (89/392/EEC, 91/368/EEC, 93/44/EEC)
- Low voltage Directive (73/23/EEC)
- EMC Directive (89/336/EEC, 92/31/EEC)

and that the following harmonized standards have been applied:

- EN 50081-1 Electromagnetic compatibility. Generic emission standard
- EN 50082-1 Electromagnetic compatibility. Generic immunity standard

(Signature)  
Antero Asikainen, Managing Director

## 9.0 GUARANTEE CONDITIONS

Dear Deko Customer,

The Deko machines are manufactured with great care, prior to delivery they must pass an extensive quality control. If your machine shows any material or manufacturing defect, you will have a legitimate claim against the company from which you bought your Deko machine.

In addition, we assume the warranty for new machines as follows:

1. Within the warranty period we shall repair any faults with your Deko machine, free of charge, if caused by a material or manufacturing defect. Replaced defective parts will be returned to us.
2. Should a defect occur in your Deko machines standard accessories (delivery) included within the warranty period of 12 months max. 18 months from manufacturing date, please inform the company from which you bought your machine, or the responsible Deko sales branch.
3. The warranty period starts with the delivery of the new Deko machine to the end user.  
Observance of the warranty period is established by presentation of the fulfilled warranty card.
4. Faulty machines are repaired free of charge at our discretion. Replaced parts will become our property.
5. Repair work at the installation location, within the 12 months from the date of delivery we shall carry out the warranty work without charging for transport and travel costs. At a later date, these will have to be reimbursed.
6. A warranty claim is not valid for defects caused by tampering or repair work carried out by unauthorized persons. This also applies to the fitting of additional accessories, which were not designed for our machines.
7. If a machine, which has been repaired within the warranty period, develops the same fault within 3 months after the repair, the fault will be repaired free of charge, if the cause for this defect is inexperienced repair work, or a material or manufacturing defect of the replaced spare parts, or of the replaced machine. Otherwise the warranty period will not be extended by warranty work.
8. Additional or different claims, especially those for damages caused outside the machine are invalid, unless a liability is enforced by law.

If you call, we require the following information from you:

- type of machine and its serial number
- date of purchase ( see invoice/receipt )
- type of defect / description
- your complete address
- time when you can be contacted

# Franke Finland Oy

## Guarantee certificate

<b>Model:</b>		<b>Serial number:</b>	
<b>Installed &amp; commissioned:</b>			
The guarantee is valid for 1 year after installation and commissioning.			
<b>Installer:</b>			
<b>Inspections:</b>		<b>Inspector / Date</b>	
Leakage test			
Test drive			
Electrical test			
Washing pressure test			
General inspection			
<p><b>This product complies with the Medical Device Directive</b></p> <p><b>This product is equipped with CE-mark</b></p> <p>Franke Finland Oy Naarajärvi Factory 76850 Naarajärvi FINLAND</p> <p>Phone +358 15 34 111 Fax +358 15 3411 560</p>			