



Virtus[®]
Group

Service



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pom'chef

KL 3 - KL4

SERVICE MANUAL

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REV.	DATE	MODIFIED SECTIONS
1	23/06/06	1,2,4,5,6
2	13/06/08	5

1) WARNINGS

The machine works with oil at 175°C.

DO NOT OPEN THE MACHINE DURING OPERATION.

Too much water in the oil may cause bubbling or overflowing.

If the heating element is no longer immersed there is danger of oil combustion.

If the machine is not working in proper conditions due to overheating or excessive grade of fumes, do not open it but disconnect the power supply and leave it to cool down.

Maintenance works must only be done with the machine disconnected from the power supply and with oil temperature below 40°C. The machine is not waterproof and therefore must not be cleaned with a jet of water. EUROCHEF declines all liability for improper use of the machine causing injury or damage.

Users of the machine should be aware of the risks of oil fire should the oil level be so low as to leave the element uncovered.

2) TECHNICAL DATA AND OPERATING FEATURES

	Mod. KL4	Mod. KL3
- tank oil capacity:	Lt. 5.5 approx.	Lt. 9,5 approx.
- total power consumption:	3 Kw	4 Kw
- heating electric power:	2.5 Kw	3.5 Kw
- power supply voltage:	230 V – 50 Hz	230 V – 50 Hz
- insulation class	I	I
- dimensions: Width:	cm 58	cm 58
Height:	cm 57	cm 57
Depth:	cm 55	cm 59
- weight when empty:	kg 53	kg 55
- maximum load capacity:	300 g/cycle	300 g/cycle

3) INSTALLATION INSTRUCTIONS

Positioning

The machine must be installed in a dry place, well protected against the weather. Leave enough space (about 15 cm) around the machine to allow air to circulate freely below, above and close to the ventilation slits. Lack

of air circulation may cause damage to the machine or stop it working properly, particularly as regards the anti-smoke and steam system.

Do not place objects on the machine nor use a spacer grill.

The machine does not emit smoke or steam, but an efficient air extractor should be installed in the area to limit the smell of frying.

Electrical connection.

Ensure that the power supply system has a standards earth connection. Check that the voltage, mains frequency and power values available are as indicated on the machine nameplate which carries also the serial number. Connect the power cable to the mains including a bipolar switch with at least 16 A for the KL4 model and at least 25 A for model KL3.

The machine should be connected to the mains by means of a dedicated power line.

The mains connection should be the right size for the feed cable supplied with the fryer which is 3x1,5 mm² for the KL4 model and 3x2,5 mm² for the KL3 model.

Should the feed cable need replacing it must be of the HO7RN-F type.

Drain line

Position the 5 litre can in the immediate vicinity of the machine and connect it to the drain line for the discharge of any liquids from the washing of the frying chamber and this taking care to avoid unnecessary curves which may cause kinks and traps. The cap must be kept closed to prevent odours from escaping.

Inner filter

There is an active carbon filter placed above the cooling unit between the frying chamber and the outside. One carbon charge lasts for about 3500 cycles or 4000 work and substitution should be carried out by a technician.

Connecting the heating element

Check that the connector of the heating element and the temperature probe is properly connected inside the frying chamber.

Using the machine

Fill the tank with oil up to 4 cm below the upper edge and carry out a test fry. Remember that:

- The main switch, situated on the left side of the machine, must only be switched off for maintenance, while if the ON-OFF button on the keypad is used the fume-exhalation system remains in operation;
- The fume treatment system comes into operation as soon as the oil temperature reaches 75°C.
- In case of malfunctions, before looking for any faults, try to reset the machine by switching the power supply completely off.
- Products used should not have a high humidity content in order to avoid the oil boiling over from the basin.
- The oil must have a high smoke point and must be changed regularly to avoid danger (see instructions for use).

Oil temperature

The oil temperature is controlled by the electronic circuit board by means of a probe. In case of overheating the safety thermostat in the heating element box is tripped and cuts off the power supply. To reset operation, after eliminating the problem on the circuit board or the probe, reset the thermostat by pressing the button on the heating element box, normally protected by a screw cap.

4) SETTINGS

CAUTION: The operating parameters of the machine are indicated here below for technical purposes. Except for the frying times the following parameters should never be varied because this might cause serious damages to the machine or injuries to people.

The manufacturer declines all liability for any damage or injury caused by incorrect reprogramming.

On switching-on the machine the caption EUROCHEF-FRYER is displayed for a few seconds. After this the machine stands-by and the caption "MACHINE OFF" is displayed while the ON/OFF led is flashing. During this step the heating is off and all keys supposed to start the cycle are disabled. The only system monitored is the air exhausting one, that is switched on or off depending if the temperature is over or below the 75° Start Set Point.

All Set Points and times may be set through the keyboard.

If, when switching on, the oil temperature is higher than the Start Set Point, then a basket emptying cycle will be carried out.

By pressing the ON key the heating is activated until the oil temperature reaches the default value (175°C). The caption "HEATING" is then displayed.

When the Start Set Point of 75°C is reached, the cooling unit is switched on. As soon as the programmed temperature of 175° is reached the machine switches automatically to the "RUN"-status and the caption "READY FOR USE" is displayed.

During this step the keys 1 to 4 are enabled in order to get the desired frying cycle started according to the frying times previously set.

Every time a cycle is started the remaining time in seconds can be read on the display.

To each of the 4 keys corresponds one of the 4 times of the Time Set.

These are the actual frying times, while the time to complete the cycle (up- and downward travel of the basket, waiting &c.) is always the same.

Setting frying times

Press the key Time Set (Picture C) to enter the mode "Setting Frying Times".

The keys 2 and 3 correspond to the arrows UP and DOWN while the key 1 corresponds to ENTER.

By pressing UP and DOWN choose the time to be modified and by pressing ENTER confirm it.

When the number flashes always use the arrow keys to input the new value.

Press 1 to save it.

If, for example, you wish to set a value of 90 seconds on key 2, press TIME SET.

The 01 programme relative to key 1 appears.

Press key 2 (arrow up) to pass to the key 2.

Press key 1 to display the set value.

120 appears, for example.

Press 1 again, so that the value flashes.

Use key 3 (DOWN) to decrease the value to 90.

Press key 1 to save it.

Press TIME SET to exit.

Counter and cycle counter display:

Keep pressing key 1 for some seconds until it appears the caption "CYCLECOUNTER".

For access to the hour counter press key 2. The value shown corresponds to the hours the machine has been switched on from the time of the last oil change, assuming that the reset key was pressed after the oil change and that it took place when CHANGE OIL appeared.

This display disappears automatically after a few seconds and returns to the machine working display.

Setting of other times and parameters (password 990)

After switching on the machine press TIME SET (or keep it pressed for a few seconds if the machine is already ON).

Use key 2 and 3 to scroll the menu and to set the values. Use key 1 to select and confirm the parameters to be modified.

Seq. no.	Menu	Description	Sub-Menu (default values)
1	Version	The version of the machine software is indicated.	
2	Frying times:	the 4 frying times are modifiable (TIME SET).	Time 1 = 60 seconds Time 2 = 120 seconds Time 2 = 180 seconds Time 4 = 240 seconds
3	Motion times:	correspond to the times that it takes for the basket to get a complete cycle done. They are: T0 (time that the basket needs to sink in the frying chamber) T1 (time that the basket needs to travel upwards and reach the draining position), T2 (waiting time during which the basket is not running to enable the oil to drop off)	9 second tenths 30 second tenths 40 second tenths

		T3 (time necessary to travel from the dropping to the unloading position). T4 (waiting time to enable the produce to come out)	35 second tenths 15 second tenths
4	Heating time at Start	Time the heating remains on at the beginning of each cycle independently from the thermostat.	30 seconds
5	Start Set Point	Temperature at which the extractor and refrigerator compressor are switched on and when the basket "reset" is carried out.	75°C
6	Set Point of Work:	Correspond to the oil temperature. CAUTION: The ideal frying temperature is 175°C. It is possible to carry out small modifications by avoiding, however, to set the temperature over 180°C for safety purposes.	175°C
7	Machine Block Set Point	Oil temperature below that at which the machine stops waiting to be reset.	150°C
8	Temperature Time Out	Maximum time after which, if the default temperature has not been reached, the machine will stop waiting to be reset.	25 minutes
9	Cycle counter	Counts the number of fryings carried out.	0
10	Hour counter	Counts the total number of hours switched.	0
11	Oil: on-off times:	Number of times the temperature goes over 120°C, after which the "change oil" signal appears (press the reset key to eliminate the message)	12 times
12	Oil cycles:	Number of cycles after which the "change oil" signal appears (press the reset key to eliminate the message)	300 cycles
13	Oil: hours:	Number of working hours after which the "change oil" signal appears (press the reset key to eliminate the message)	50 hours
14	Filtre Enabling	Enable (set 1) e disable (set 0) the count for filter substitution	1
15	Filtre cycles:	Number of cycles after which the "change filter" signal appears (if installed) (press the reset key to eliminate the message)	3000 cycles
16	Filtre hours:	Number of cycles after which the "change filter" signal appears (if installed) (press the reset key to eliminate the message)	4000 hours
17	Assistance Enabling command :	Enable (set 1) e disable (set 0) the display reading of the work set point temperature	0
18	DC motor enabling command:	Change the AC motor control (0) and that of the DC motor.	1
19	DC motor speed	Percentage control of the speed of the DC motor	92%
20	Probe 2 enabling command	If enabled (1) controls the air overheating probe	0
21	Probe 2 Set Point	Air temperature at which the probe (if installed) stops the machine	95
22	Partial Set Point:	By enabling this parameter (1) the machine switches on and off the heating as long as the Set Point is reached and this according to Time On and Time Off.	0
23	Time On	Partial time on (see above)	10 seconds
24	Time Off	Partial time off (see above)	10 seconds
25	Language	Default language of display	0 = Italian 1 = English 2 = French 3 = Spanish 4 = German

Selftest and calibration of the machine (password 990)

On switching-on keep key 1 pressed. Always use key 2 and 3 to scroll UP and DOWN and key 1 to ENTER the data.

1. Keypad Test: by pressing key 1 the Test Mode is entered: the display lights on and the LEDs on the card light on one after the other. By pressing 1 again the LEDs all switch on together. When replaced, the printed circuit board can be centred before fixing to the machine.
Press Time Set to exit.
2. Keypad test: by pressing key 1 the Test Mode is entered: By pressing the keys it is possible to read the corresponding code on the display. Press Time Set to exit.
3. Outputs Test: by pressing 1 the Test Mode is entered and the first output activated. By pressing 1 again the other outputs will be activated one after the other. Press Time Set to exit.
4. AC Motor Test: by pressing 1 the Test Mode is entered and by pressing 2 and 3 it is possible to get the motor on- and backwards, thus actuating the corresponding outputs. Press Time Set to exit.
5. DC Motor Test: by pressing key 1 the Test Mode is entered: Using the keys 1 and 2 the motor speed is increased or decreased and using the key 3 it is possible to switch from off to on and viceversa. Press Time Set to exit.
6. Inputs Test: by pressing key 1 the Test Mode is entered: The display shows 4 zeros corresponding to the 4 card inputs. When an input is activated the corresponding bit on the display has to increase from 0 to 1.
7. Eeprom Test: Eeprom is checked.
8. Analog Test: by pressing key 1 the Test Mode is entered: both bit-values (read by the analog inputs - PT100 channels) are displayed.
9. Calibration: by pressing key 1 the Test Mode is entered: Plug-in the connector for the "0°C" calibration and press key 3. Then plug-in the connector for the "200°C" calibration and press key 2. Press Time Set to save the calibration and to exit.
10. Set Default: by pressing 1 the set default of the machine is executed and all default parameters are set (see above).

Press Time Set to exit the menu, to restart the machine and to restore the normal functioning.

5) CORRECTIVE MAINTENANCE

Non-routine maintenance is recommended every 6 months or every 5000 portions.

- Clean the unit with non-foaming degreasing liquids.
- The condenser (radiator) of the cooling unit must be cleaned with a brush or air blown.
To access the condenser open the hatch on the right side by loosening the screw found at the top.
- The heating element box connector may be cleaned with alcohol or another liquid which evaporates easily. In any case wipe carefully before connecting and supplying power.
- To check that the basket is working properly after maintenance on the machine, heat the oil to the operating temperature and carry out a cycle without load. Press any button. The basket moves to the frying position for the time corresponding to the button pressed, then rises to the drain period (3 secs approx.). In this position the rear part of the basket chute – that opens the discharging door – must be at a distance of 20 mm approx. from the same discharging door. Ultimato lo sgocciolamento, il cestello ruota fino al completo scarico, dopodiché il moto si inverte e il cestello va a fermarsi nella posizione iniziale.

6) ERROR MESSAGES

The machine recognizes a number of malfunctions due for example to a failure of any sensor on the motor or in the heating system. Once the malfunction has been recognized the system informs the operator visually by means of an error code on the display and acoustically by means of a two-tone beeper. When in such conditions the machine can get stuck. Before checking the possible cause try to reset the machine by switching OFF and ON again.

FAULT FINDING
for POM'CHEF e DORA fryers

PROBLEM:

POSSIBLE CAUSES:

SOLUTIONS:

<p>Oil overflows from its basin (e.g. it makes foam, or it boils, or its level grows)</p>	<ol style="list-style-type: none"> 1) Oil in the use degrades. When it is old, it becomes too much fluid and it boils. 2) Other possible cause is that the type of oil is not suitable for frying. 3) The problem can also be caused by water in the oil, coming from too wet food, or put inside as ice. 4) Another possibility is that too much product or too much oil has been put in. 	<ol style="list-style-type: none"> 1) Change the oil every time the machine indicates it (in POM'CHEF fryers message -O- flashes on the display) and at least once a week. 2) Use only liquid palm oil or groundnut (peanut) oil, or olive oil. Also sunflower oil can be used, if the above types are not available, but its life is much shorter. 3) Do not use defrost food and do not insert ice together with the product to be fried. 4) Put oil in its basin up to the minimum level mark, and add only when necessary.
<p>Suddenly oil boils noisily, even if the machine is not frying</p>	<p>The problem is due to water in the oil (see point 3 above), that remains under the element and suddenly it boils.</p>	<p>Change the oil and do not put ice inside together with the product. Do not fry wet food, nor defrost food nor covered of ice.</p>
<p>Oil comes out from under the door</p>	<p>Also in this case the matter is that oil boils or it makes foam – see above – or too much product has been inserted.</p>	<p>Check the oil. Make sure that its level is not too high and do not put in more product than the maximum recommended for that model of machine. If oil has over flown from the basin, check that it has not become solid in the discharge hole on the bottom of the frying chamber, clogging it.</p>
<p>The machine smells</p>	<ol style="list-style-type: none"> 1) Using the machine, the fried product leaves oil drops in the delivery hopper and on the machine itself under the hopper, as well as in the tray that collects the product. Other oil together with condensing accumulates in the bottom edge of the door and in its seal. This oil, after a short time, becomes rancid and it makes a strong smell. 2) Another cause can be the not suitable type of oil. Definitely avoid not well-identified vegetable oils, as well as all the oils that degrade at low temperatures (low-smoke 	<ol style="list-style-type: none"> 1) Do not leave in the room residues of fried food, nor oily accessories, like trays and shovels. Wash daily the delivery tray, easily removable by unscrewing a small handle. Eliminate the smell using a degreasing spray made with citrus fruits, like 3M Industrial Cleaner, or using a degreasing-deodorant product. Spray it under the delivery tray and on the door seal from outside, keeping the door closed, particularly on the lower part. 2) Use only liquid palm oil or groundnut (peanut) oil, or olive oil. Also sunflower oil can be used, if the above types are not available, but its life is much shorter.

	<p>point oils). Besides making oily fries, they have a short life, they soon become toxic, too much liquid (after some time they boil) and they smell.</p> <p>3) Oil is exhaust</p> <p>4) In POM'CHEF models, the problem can also be a fault in the cooling unit. This case is easy to see, for the small quantity of water discharged into the tank under the machine. This quantity obviously depends on the used products, but approximately, frying 100 portions of French fries, the tank should be half full.</p> <p>5) POM'CHEF models have inside a small charcoal filter that avoids that the frying chamber is in pressure. After some time – one or two years according to the use – the filter should be changed.</p> <p>6) The loading hatch has to be opened for the time strictly necessary to introduce the food to be fried and it has to be kept close during the use.</p>	<p>3) Change the oil every time the machines indicate it and at least once a week. It is not enough to add new oil; it has to be changed completely. If the old oil has not been completely removed, it soon damages the new one. At last, for a longer life of the oil, fry only good quality, dry and not defrost products.</p> <p>4) Check that condensing water is discharged into the tank and keep its plug closed. If condensing seems to be not much, check if, inside the frying chamber, in the top right-hand side, fresh air is blown. If air is not blown or it comes out warm, there is a problem either in the blower or in the cooling unit. Periodically check that the radiator – condensing component of the cooling unit – in the low left side of the machine, has not been clogged by powder. If this is the case, disconnect the machine from the mains, remove the back- side panel and clean the radiator using a long-handle brush. If compressed air or gas (CO2) for drinks is available, blow it on the radiator. In any case, the cooling unit works properly if there is a free flow of air around the machine. Do not position its close to a wall. Leave at least 15 cm distance. If anyway the cooling unit or the blower does not work, call the after sales assistance.</p> <p>5) Also to change the filter call the after sales assistance, because to change it, the machine has to be opened, and potentially dangerous electric components can be touched.</p>
<p>Vapour comes out from the machine</p>	<p>1) The cooling unit is not properly working</p> <p>2) The product used has a too high content of water</p>	<p>1) Check that the cooling unit works and if necessary clean its radiator. See point 4) above.</p> <p>2) Use only oil of the recommended types and more dry products.</p>
<p>Some chips have fallen into the oil</p>	<p>1) This happens when a portion is put inside while still the previous cycle is being finished. In other words, after</p>	<p>1) After a portion has been delivered in the tray, wait for the “beep” and for the “ready” lamp to be on – in the meantime the display shows again</p>

	<p>the product has been delivered, a further portion has been put inside before the basket has had time enough to go back to the stand-by position.</p> <p>2) If only some chips have fallen into the oil, this may have been happened “throwing” the product by closing violently the loading hatch. This can also damage the spring that keeps the hatch closed.</p>	<p>the temperature – before inserting a further portion. If product has fallen in oil still new, leave it to cool down and remove the product before working again, to avoid that it burns, damaging the oil.</p> <p>2) Close the loading hatch without banging it.</p>
<p>Chips come out oily and not crispy</p>	<p>This happens when the oil has not the correct temperature. When the machines are switched on, it can work only when the oil temperature set point (175°C) has been reached.</p> <p>In the case of heavy work, if temperature drops below 160°C, the machine stops working because of the too low temperature.</p> <p>However may be that, putting inside much product one portion after the other, oil has not time enough to recover the correct temperature and it remains, e.g. around 165°C, not low enough to stop the machine, but not high enough to allow for a proper frying.</p>	<p>Insert portions only when the temperature is above 170°C</p>
<p>Some chips come out cold</p>	<p>May be that some French fries do not cook well because they remain out of the oil.</p>	<p>Every day, before switching on the machine, check the oil level. Do not put inside more product than the quantity recommended for that model of machine. Avoid using too long chips, that may be do not enter in the basket.</p>
<p>Some French fries stick together becoming one only block</p>	<p>If the oil level is correct, the cause may be the product not dry enough, or that has been defrost and frost again.</p>	<p>Check the oil level and use a different product.</p>
<p>The product does not come out</p>	<p>1) One possibility is that some parts of the product stick together. See above.</p> <p>2) Another reason can be that, removing the basket, it has been bent towards the door</p>	<p>1) Try another product.</p> <p>2) Remove the basket and check its shape. If necessary bend it with your hands to make it square. To avoid that it loses its shape, when you remove it, take it with both hands</p>

	<p>and, when it lifts, it hits against the loading hatch, and it stops there.</p> <p>3) May also be that too much product has been put in and its weight does not allow a proper movement of the basket.</p> <p>4) There could be a problem on the microswitch of the basket motor or on its cam. Sometimes a faulty motor gives the problem only from time to time.</p> <p>5) If absolutely the basket does not move, may be a fuse on the electronic board has burnt.</p>	<p>on the chute and not on the right side.</p> <p>3) Put inside a maximum quantity per time of 300 gr for the KL4 model and of 600 gr for KL3 and DORA models.</p> <p>4) Electrical components have to be checked. Call the after sales assistance.</p> <p>5) Check the fuses and, if necessary, replace with one of those that you will find in a small plastics bag next to the electronic board. Pay attention: this has to be made by skilled personnel, because, opening the machine, potentially dangerous electrical components can be touched.</p>
<p>The oil does not heat up</p>	<p>1) The main switch is ON, but the keyboard is OFF</p> <p>2) The main switch is ON but the keyboard is dead</p> <p>3) The keyboard works but the oil does not heat up. May be that the safety thermostat – fitted on the heating box – has opened the circuit, stopping the element.</p> <p>4) Also the safety thermostat is working – his push button remains down – but the oil does not heat up.</p>	<p>1) Push button ON-OFF on the keyboard.</p> <p>2) May be that the fuse that protects the transformer is burst. Replace it with one of those that you will find in a small plastics bag next to the electronic board.</p> <p>3) To reset the thermostat, unscrew its black plastics plug on the heating box and push down the small push button inside. If the oil starts heating, there had been an overheating. Call the after sales assistance, because overheating could create danger of fire in the oil.</p> <p>4) There is a technical problem. Call the assistance.</p>

PHOTO F

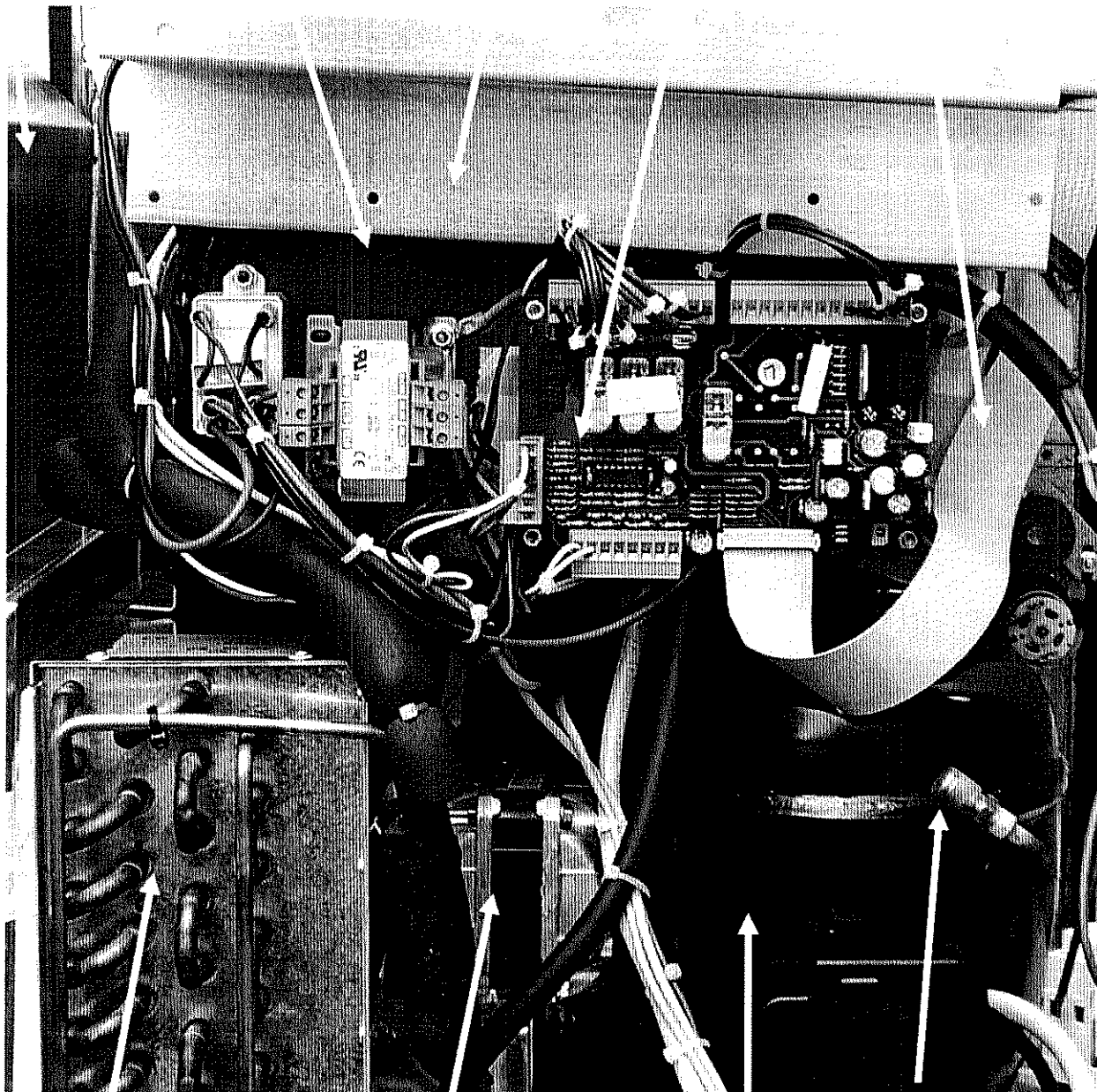
AIR CONVEYOR
4102621

BARREL
COOLING UNIT
VAPORIZER
4102579

FILTER
SUPPORT
4102780

ELECTRONIC
BOARD
4ST2551

FLAT CABLE
4CE2862



RADIATOR
(CONDENSER)

COOLING
UNIT FAN

COMPRESSOR

GAS LOADING
VALVE

PHOTO G

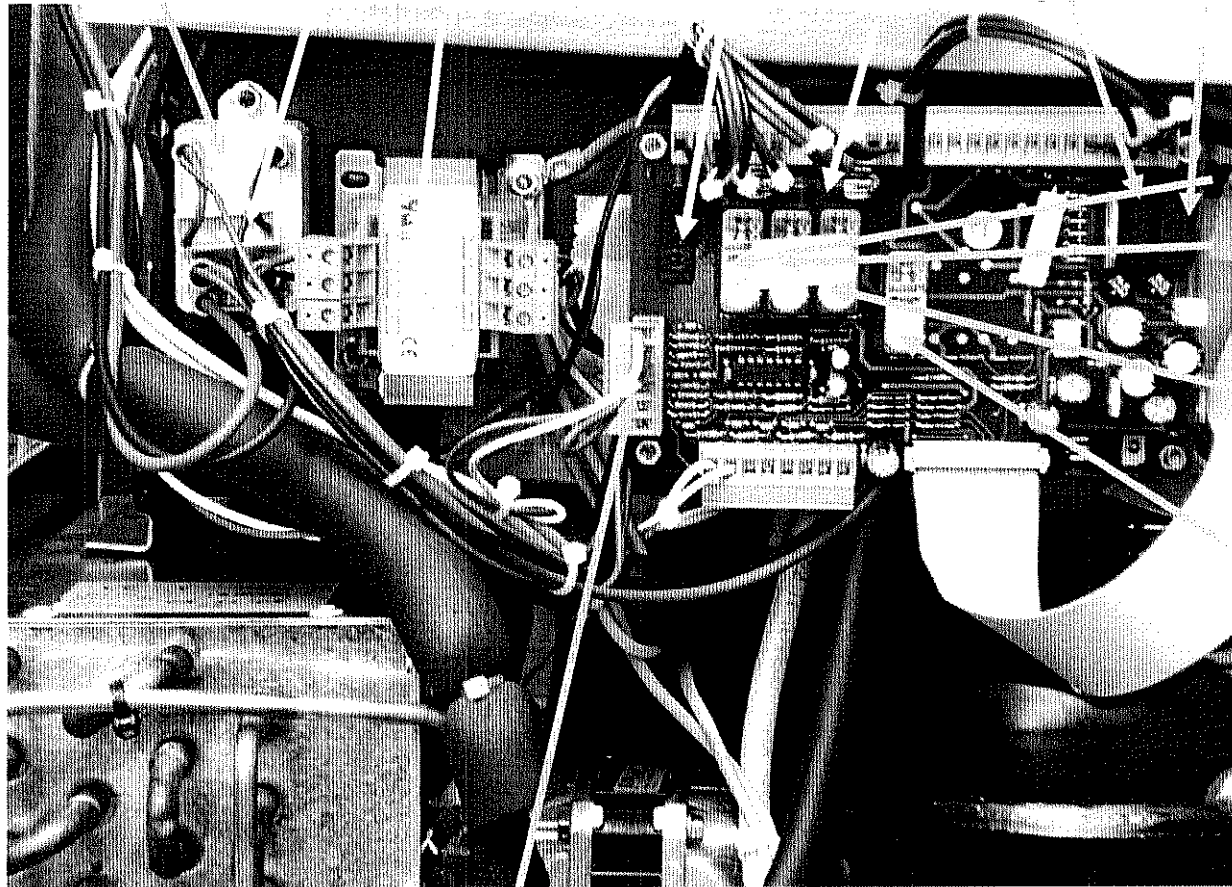
**HEATER
POWER RELAY
4CE2794**

**FILTER
(CAPACITOR)
4CE2607**

**TRANSFORMER
FUSE 4CE0646
TRANSFORMER 2CE3325**

**COMPRESSOR
BLOWER FUSE
4CE1280**

**MOTOR
FUSE 4CE0646** **ELECTRONIC
BOARD FUSE
4CE0646**



**HEATER
PILOT RELAY**

**FREE
RELAY**

**COMPR
AND
BLOWER
RELAY**

**TRIP
SWITCH
RELAY
(OPTIONAL)**

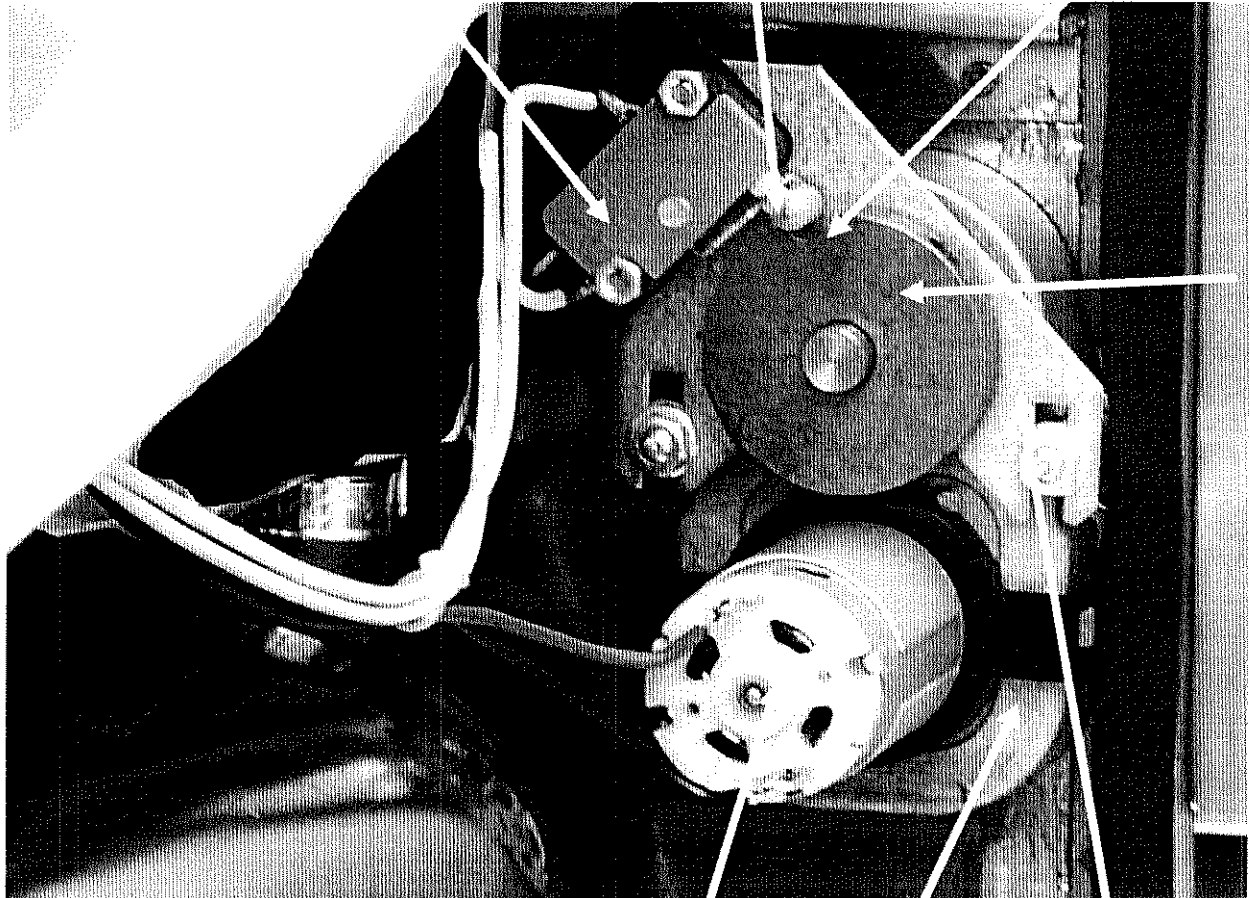
PROBES INLET

PHOTO H

MICROSWITCH 4CE0911

MICROSWITCH WHEEL4CE0911

CAM SLOT



**CAM
4100105**

**MOTOR
4MR2166**

GEARBOX

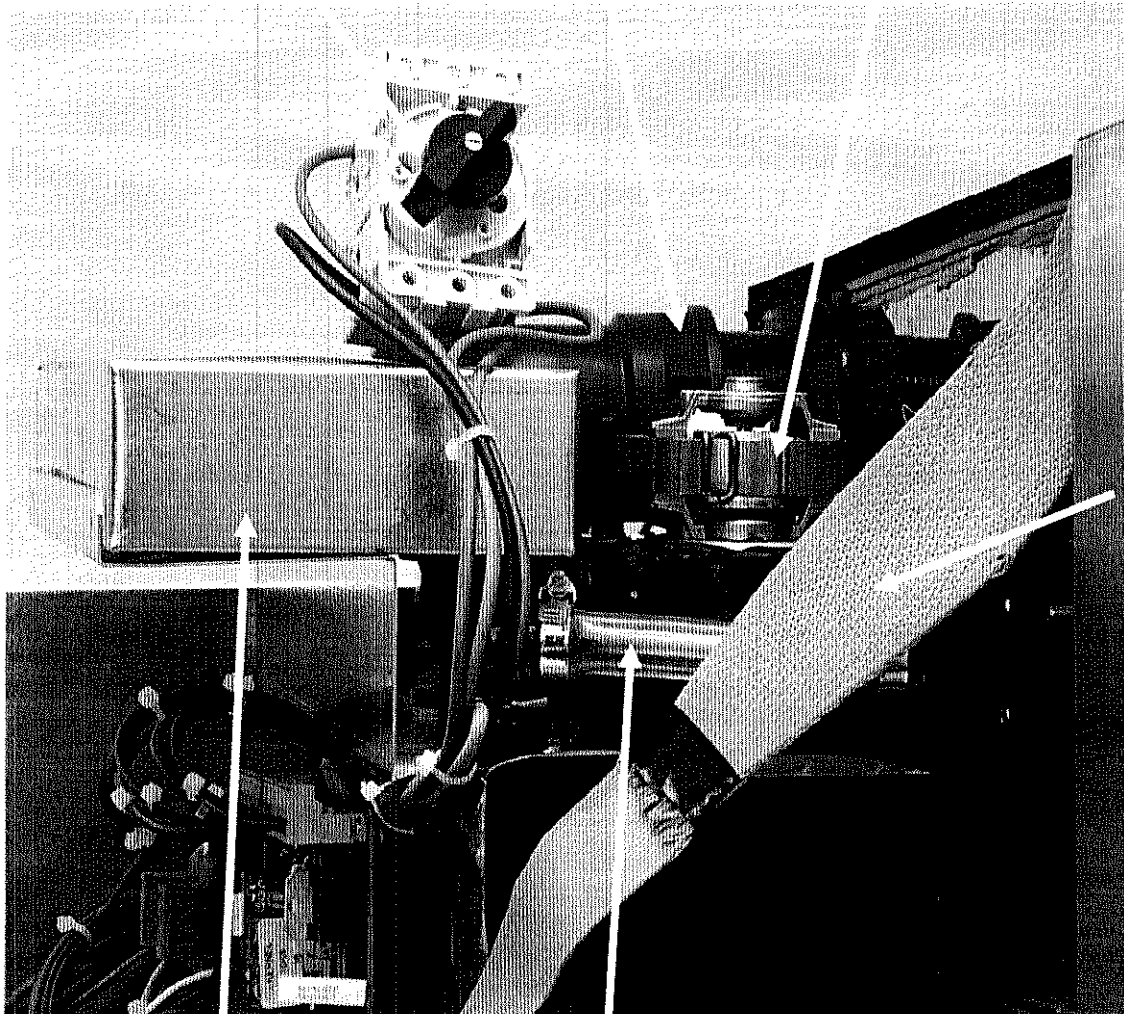
**MICROSWITCH
SUPPORT 4101885**

PHOTO I

**MAIN SWITCH
KL3 4CE1086
KL4 4CE1550**

**AIR INLET
FITTING
4RA2667**

BLOWER 2VE6193



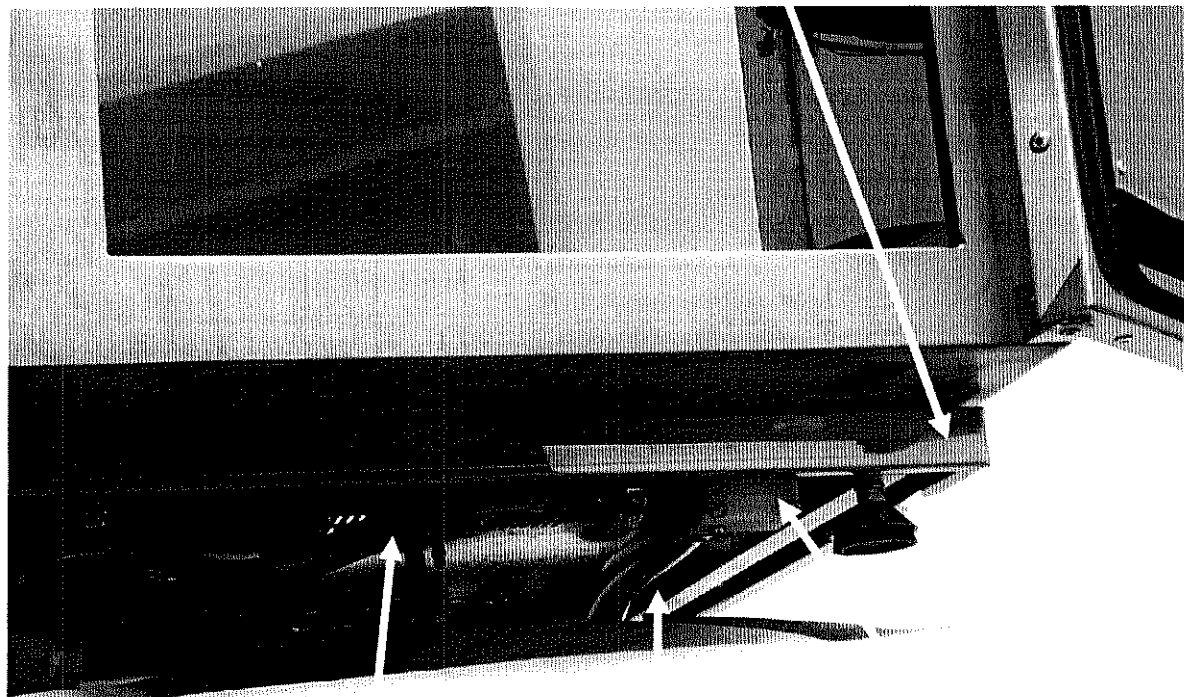
**FLAT
CABLE
PROTEC-
TION**

**INTERNAL FILTER
CARTRIDGE 4102312**

**FILTER CONNECTING PIPE
12X17 2250103**

PHOTO L

BASE 4102578



**FOOT
CAP
4MM0595**

**FOOT
4MM0038**

**DRAIN PIPE
FROM THE BARREL
12X17 2250102**

**CONDENSING WATER
DRAIN PIPE
12X17 2250102**

**DRAIN FITTING
4102814**

