

TECHNIQUE

PRECISIO COMBI OVENS

MANUFACTURERS SPECIFICATION

Part D: Maintenance manual

- WARRANTY -

In order to guarantee this equipment, we recommend that you comply with the MANUFACTURER'S INSTRUCTIONS in this manual. However if you can not undertake the required maintenance operations, our installation and service network is available to provide you with a personalized contract.

- WARNING -

- The product delivered to you complies with current standards. If any modifications are made the manufacturer cannot accept any responsibility whatsoever. The manufacturer can not be held responsible in the event of incorrect use of the appliance.
 - Keep your manuals.

TABLE OF CONTENTS

PRECISIO

COMBI OVENS

1. MAINTENANCE	2
1.1 SERVICING THE CONDENSER.....	2
1.2 WORKING ON THE BURNER FAN FILTER.....	2
1.3 WORKING ON THE DETERGENT AND DESCALER PUMPS	2
2. PROGRAMME SETTINGS	5
2.1 SETTING THE SOFTWARE LANGUAGE.....	5
2.2 OVEN SETTINGS.....	6
3. MAINTENANCE PROGRAMMES	7
3.1 ELECTRONIC CARDS	7
4. MAINTENANCE SCREENS	8
4.1 SERVICE MENU.....	8
4.2 ENTRY SCREEN.....	10
4.3 HYDRAULIC OUTPUT ACTIVATION SCREEN.....	11
4.4 ELECTRIC OUTPUT ACTIVATION SCREEN.....	12
5. OPERATING FAULTS.....	13
5.1 ERROR SCREENS.....	13
5.2 ERROR MESSAGES.....	13
6. HYDRAULIC DIAGRAMS.....	16
6.1 6 AND 10 LEVEL OVENS.....	16
6.2 20 LEVEL OVENS	17
7. CHANGING THE EQUIPMENT FROM ONE GAS TO ANOTHER	18
7.1 LIST OF AUTHORISED GASES/PRESSURE ACCORDING TO CATEGORIES AND COUNTRIES.....	18
7.2 CHANGEOVER FROM ONE GAS TO ANOTHER.....	19
7.3 GAS FLOW RATES AND POWERS	20
7.4 CHART OF NOZZLES	20
8. VERIFICATION OF TEMPERATURE SENSORS.....	22
8.1 PROBE PT100 (1 point for the cavity probe, 1 point for the core probe).	22
9. FRONT LINE PARTS	24

1. MAINTENANCE

To ensure the proper, long lasting and safe functioning of your equipment you should have it serviced twice a year by qualified personnel from our company, especially:

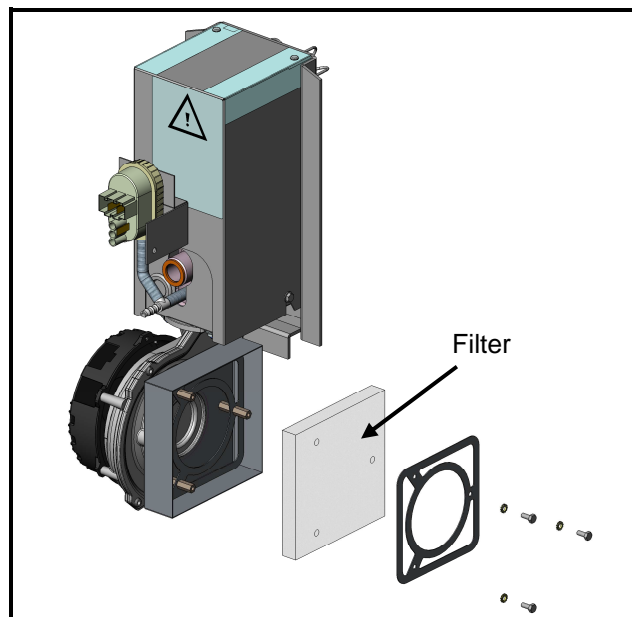
- Cleaning venturis.
- Checking for leaks.
- Checking joints and seals.
- Check the controls, regulation and safety systems.
- Check the hydraulic circuit and condenser.

1.1 SERVICING THE CONDENSER

The water injection nozzle and the temperature sensor should be checked and cleaned regularly.

1.2 WORKING ON THE BURNER FAN FILTER

The filter must be changed at least once per year.



1.3 WORKING ON THE DETERGENT AND DESCALER PUMPS



- ◆ Danger of irritation to the skin and eyes or acid burns. Detergents and descalers will cause irritation and possible burns if in direct contact with the skin or eyes.
 - Do not inhale the mist or spray
 - Avoid direct contact with these products
 - Never open the oven door during the automatic cleaning cycle
 - Wear protective clothing, gloves and hermetic protective goggles in accordance with the safety data sheet.



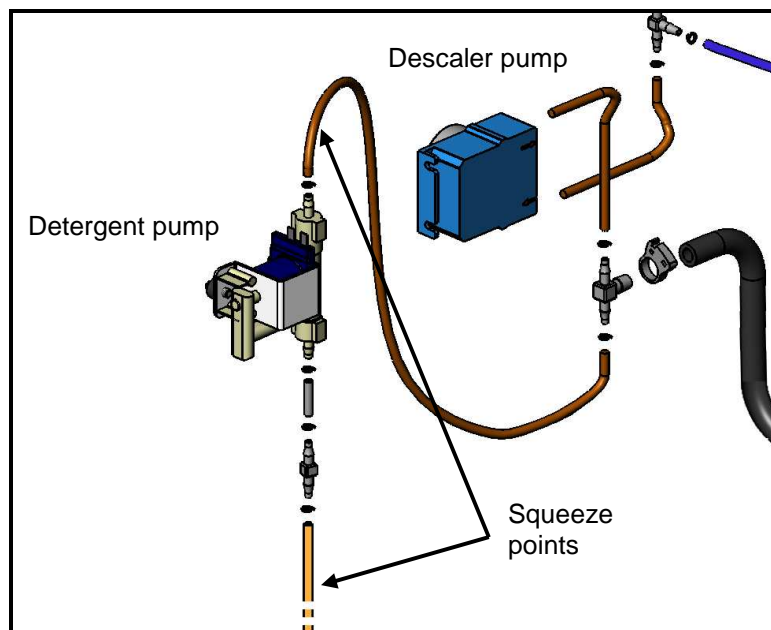
- ◆ Remember the dangers identified on the safety data sheet for each detergent or descaler
 - Harmful if swallowed.
 - Can result in serious burns.
 - Irritates the eyes.
 - Irritates the respiratory tracts.
 - Risk of serious eye lesions.

- ◆ Remember the safety advice provided by the safety data sheet for each detergent or descaler
 - Do not eat or drink when using these products.
 - Do not inhale their vapours.
 - In case of contact with eyes rinse immediately with plenty of water and seek medical advice.
 - Wear appropriate protective clothing, gloves and face and eye protective gear.
 - In the event of an accident or sickness seek immediate medical attention
 - Dispose of the product and its container as hazardous waste.

1.3.1 CLEANING CHEMICAL PUMP

Procedure

Cut the electrical supply to the oven
Squeeze the entry and exit hoses using cable ties



Disconnect the hoses
Replace the pump

1.3.2 DESCALER CHEMICAL PUMP

The pumps internal pipes must be changed at least once per year.

Procedure

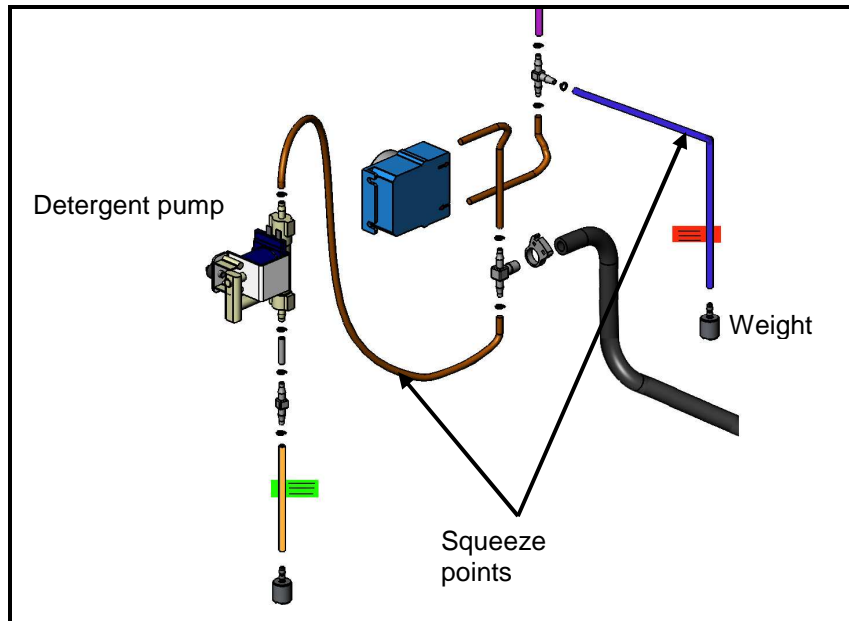
Remove the right hand side panel

Check the boiler level (state 1) (see Maintenance Screens chapter)

Note: Ensure that the temperature of the water in the boiler is less than 60°C. If it isn't drain the boiler and refill it. (see Maintenance Screens chapter)

Cut the electrical supply to the oven

Using cable ties squeeze the descale / detergent supply hoses at the end weight for the descaler and at the pump entry and the Tee for the detergent



Undo the two cover fixing screws from each pump

Remove the covers

Extract the internal pipes from each pump without disconnecting them from the hydraulic circuit

Wait 10 minutes checking the flow to drain (approx 2 litres)

Reconnect the power

Activate the boiler drain (see Maintenance Screens chapter),

Wait about 5 mins

Cut the power to the oven

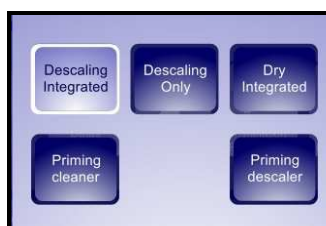
Disconnect the internal pump pipes from the hydraulic circuit and replace them

Relocated the internal pipes and refit the lids

Release both the supply hoses and refit the side panel

Reconnect the power

Bring to the clients attention that the next time a descale is due the « Prime descaler pump » function should be used".



← Prime descaler

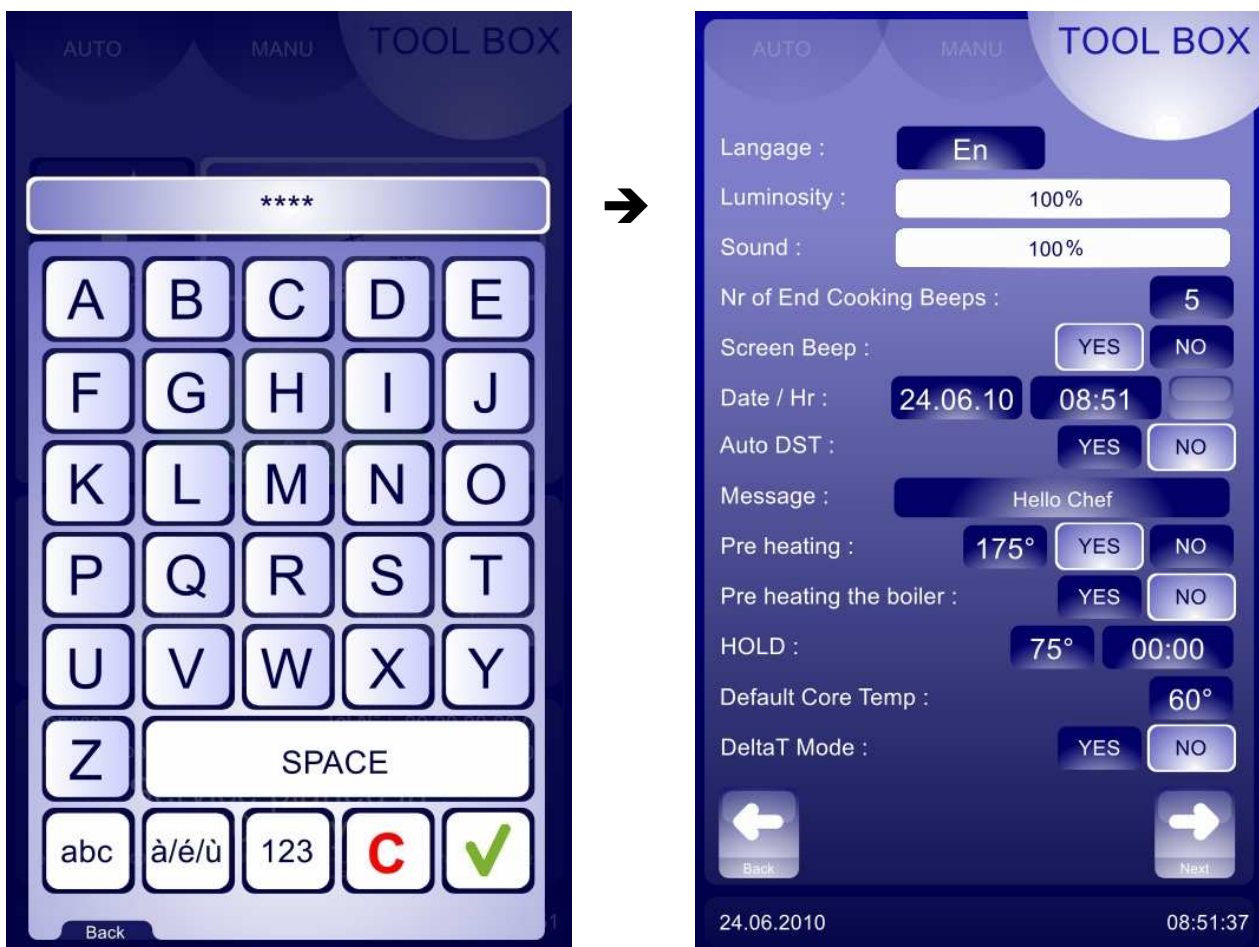
2. PROGRAMME SETTINGS

This is required if a relay card, a facia card is changed or there is an upgrade of the FastPAD software.

Before programming check the software is in the local language and adjust if necessary.

2.1 SETTING THE SOFTWARE LANGUAGE

- Select the "SERVICE" menu
- Select the "Client parameters" screen
- Enter the password **CHEF** Permanent pass word (Upper or lower case)
- Change the language if necessary



2.2 OVEN SETTINGS

- Select the "SERVICE" menu
- Select the "Technician parameters" screen
- Enter the password: **SAVB**
- Reconfigure the oven

AUTO MANU **TOOL BOX**

Brand :

Model :

Energy :

Hz :

Steam :

Techn.Datas instead of HACCP :

Back Next

02.11.2010 11:20:07

→ Commercial identification of the oven
BI : Bonnet international




→ Model: Number of levels and size

3. MAINTENANCE PROGRAMMES

3.1 ELECTRONIC CARDS

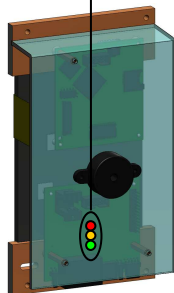
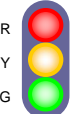
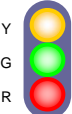




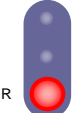
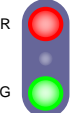
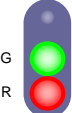
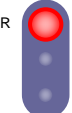
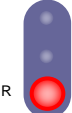
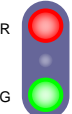
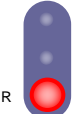
The state of the LEDs represent the communication between the 2 electronic cards and helps with diagnostics in the event of a breakdown.

Significance of the LEDs on the electronic relay card and the graphic facia card:

	LED Red → → → Power on	LED steady LED steady or flashing
	LED yellow/Orange → Emitting	
	LED Green → → → Receiving	

A flashing LED is considered active as is a steady one.

Diagnostic of electronic faults:

	Facia card	Relay card	Diagnostic	Action
			- Both cards are OK	- Functioning normally
			- Supply fault	- Check for 230V~ between terminals 1 and 3 on the relay card - Check fuse F4, - Check the stop start button
			- Connection problem with the graphics card	- Replace the ribbon cable and or - Replace the facia card
			- Relay card non function	- Replace the relay card
			- Facia card non function	- Replace the facia card
			- Ribbon cable non function	- Replace the cable

4. MAINTENANCE SCREENS

Once you are sure the 2 electronic cards are functioning and with information from the client and the error messages displayed activate the diagnostic assistance module which consists of 3 screens.

This will allow you to control the input and output devices and peripherals feeding the cards:

- Screen 1 gives control of temperature, door, water level and gas safety inputs.
- Screen 2 gives control of outputs to ventilation, heating, lighting, safety contactor, electro technical ventilation and the vent outlet.
- Screen 3 gives control of the hydraulics outputs, solenoids, chemical pumps, wash pump, drain valve and wash tank.

4.1 SERVICE MENU



→ Operations
 Data exchange (HACCP, Photos, Recipes, Manual, Consumptions (Energy, water ...)
 Client parameters (Adapts to suit)
 Installation parameters
 Technical/After sales parameters

→ Maintenance information

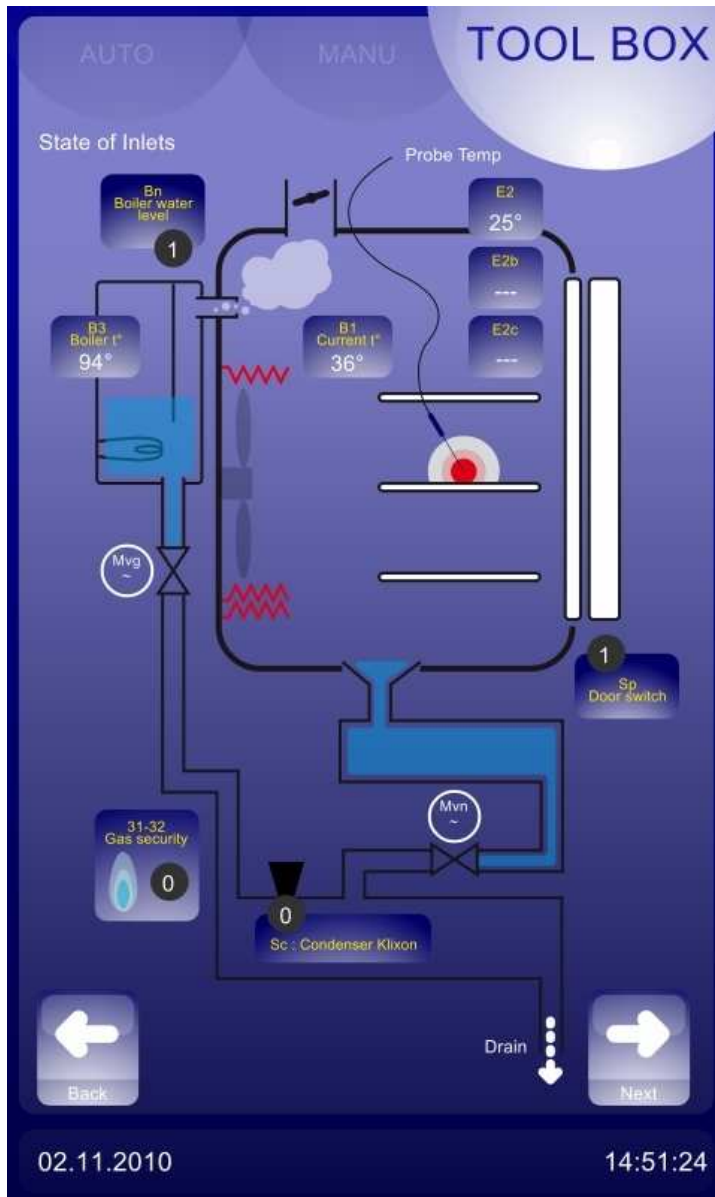
4.1.1 PASSWORD

Allows a technician access to:
- Technical parameters



SAVB : Password «permanent»
(upper or lower case)

4.2 ENTRY SCREEN



Bn: Boiler level indicator:
1 = full
0 = not yet full

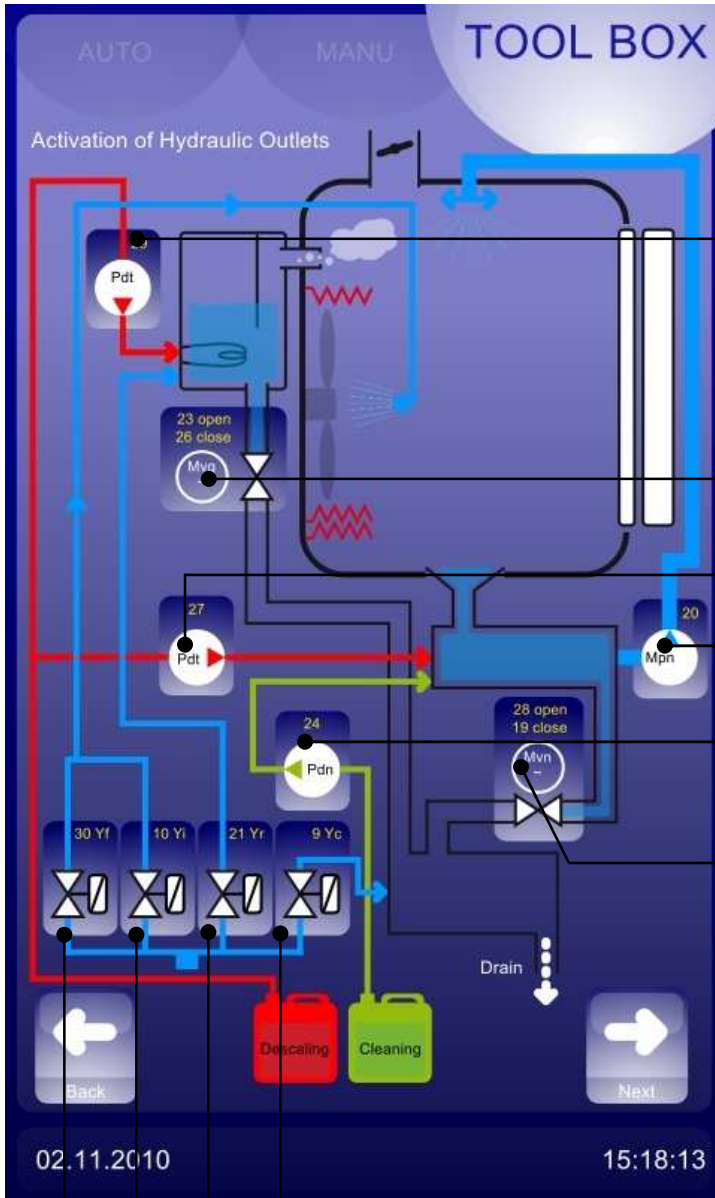
Temperatures : of the boiler B3, the cavity B1, the 3 elements of the core probe E2, E2b, E2c

Door detection:
0 = door open
1 = door closed

Gas safety status:
0 = functioning normally
1 = safety activated,

Condenser klixon state:
0 : open circuit, klixon cold
1 : short circuit, klixon hot

4.3 HYDRAULIC OUTPUT ACTIVATION SCREEN



Activates the boiler descale chemical pump (one press = 0.5s of operation)

Activates the boiler drain valve (one press opens and closes the valve)

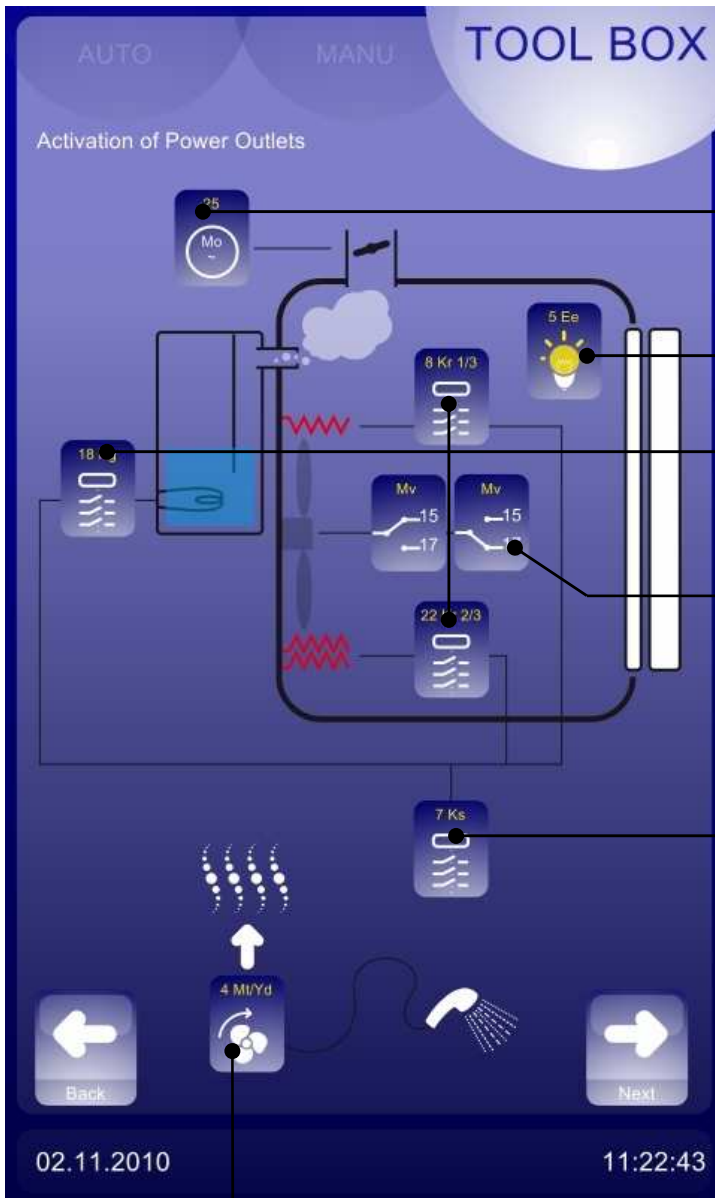
Activates the oven cavity descale chemical pump (one press = 0.5s of operation)
 Activates the wash pump (one press = 0.5s of operation)

Activates the detergent pump (one press = 0.5s of operation)

Activates the oven cavity drain valve (one press opens and closes the valve)

Activates the solenoids:
 One press on each operates the solenoid for 1 minute

4.4 ELECTRIC OUTPUT ACTIVATION SCREEN



Activates the vent motor

Activates the lighting
(one press = on or off)

Activates the contactors:
Heat Kr1/3, Heat Kr2/3, Steam heat Kg
One press = 0.5s

Activates fan clockwise or anticlockwise.
(One press = 0.5s)

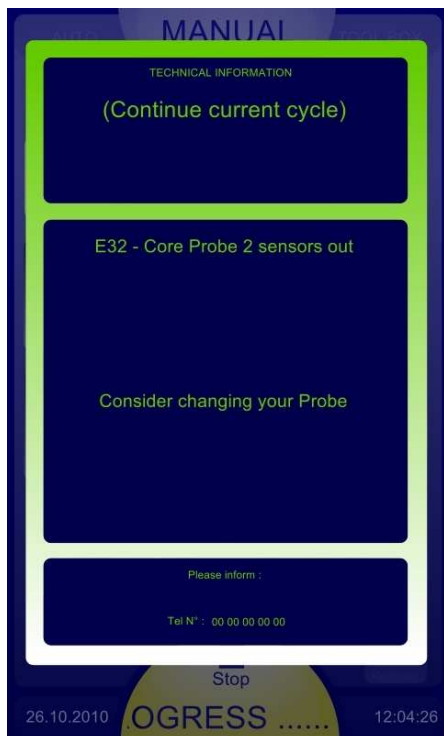
Activates the safety contactor Ks
(One press = 0.5s)

Activates the technical ventilation
(one press = on or off)

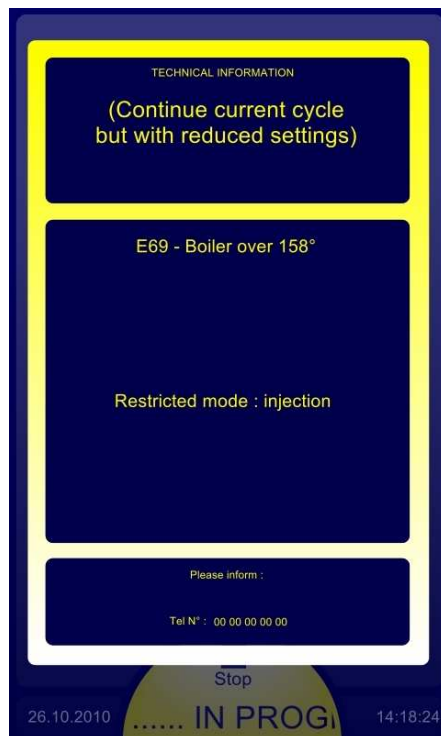
5. OPERATING FAULTS

5.1 ERROR SCREENS

*Green screen:
Information on the cooking*



*Yellow screen:
Alternative operation*



*Red screen:
Cooking stopped*



5.2 ERROR MESSAGES

Message displayed Consequences	Probable causes	What to do?
E69 : Boiler temperature > 160°C The oven switches automatically to injection mode to complete the cycle	The immersion heaters are out of the water Scale build up on temperature probe Fast Pad relay card non function	Check the water level probe (see E74) Check and descale Change the Fast Pad relay card.
E70 : Boiler overheat Cooking stopped	Boiler and safety contactors (KG) and (KS) shorted Fast Pad relay card non function	Check and change Change the Fast Pad relay card.
E71 : Boiler probe non function The oven switches automatically to injection mode to complete the cycle	Probe short circuit or cut Connection to Fast Pad relay card Fast Pad relay card non function	Disconnect from the card (connection B3). Check the PT 100 probe value (on the connection screws). If incorrect change probe Check the connection Change the Fast Pad relay card

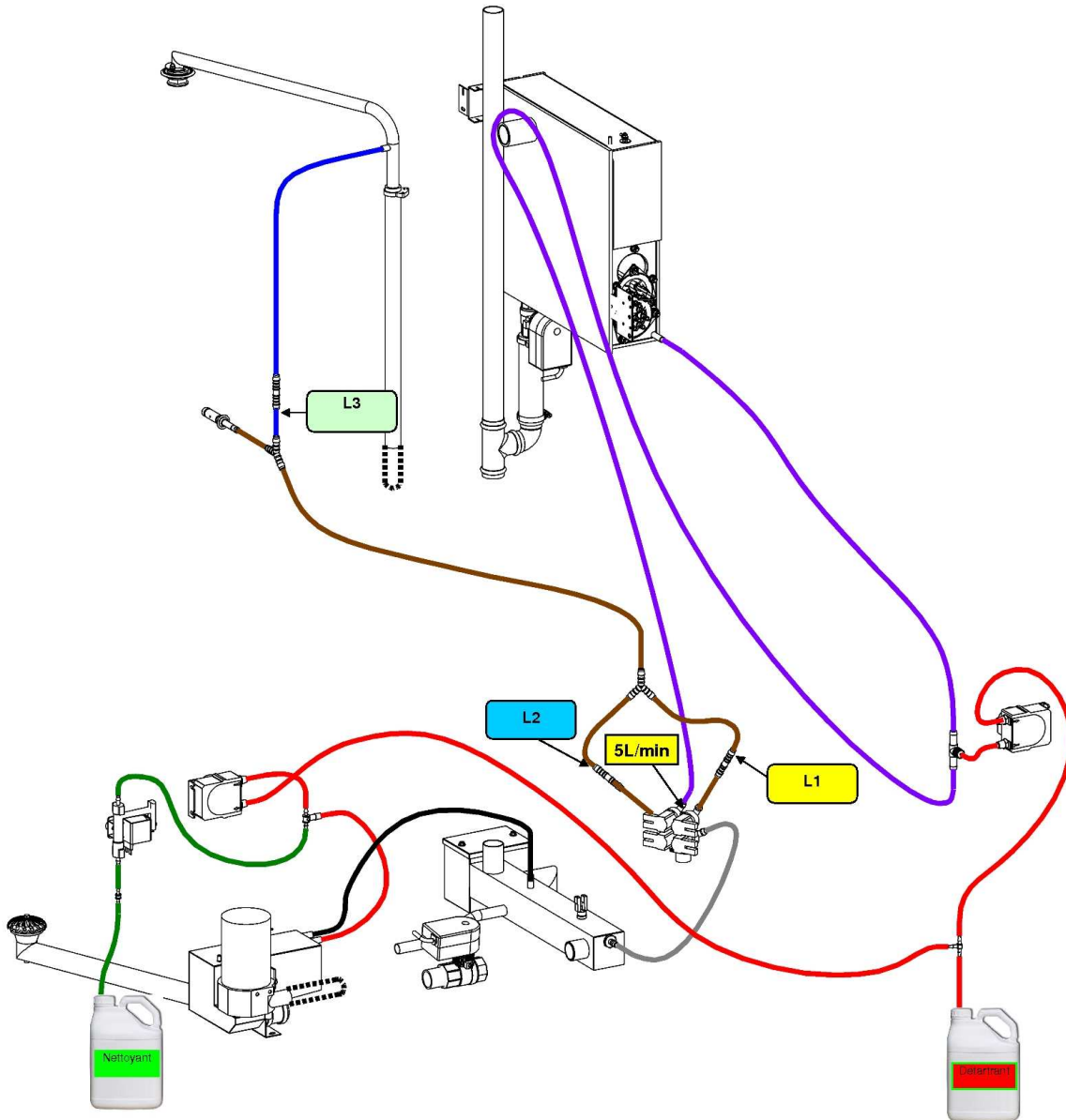
Message displayed Consequences	Probable causes	What to do?
E74 : Water supply to boiler insufficient		
The oven switches automatically to injection mode to complete the cycle	Water supply problem	Check the supply to the fill solenoid (Yr)
	Leak from the boiler	Check the boiler drain valve (Mvg) using the maintenance screen.
	Level control inoperative.	Undertake 2 open and close tests Check the water level probe in the maintenance screen. Disconnect the probe wires at the boiler the screen should display Bn=0. Bridge the probe to earth at the boiler the screen should show Bn=1 .If not check the cable continuity
	Fast Pad relay card non function	Change the Fast Pad relay card
E30 : Electronics overheating: Check air intake		
Control panel overheated	Drawing in hot air.	Installation problem
	Air inlet blocked.	Clean the air inlet (under 6 and 10 level ovens or behind 20 level models)
	Electronics fan blocked or non function	Check the fan.
	Fast Pad relay card non function	Change the Fast Pad relay card
E31 : Electronics overheating: Temperature reduced to 210°C		
Cooking continues automatically at a temperature below 210°C	Same error as E30	Same action as E30
E72 : Electronics at over --°C		
Cooking stopped	Same error as E30	Same action as E30
E53 : Ventilation non function		
Cooking stopped	Motor non function	Sound it out and check running load (Ohm meter), change if necessary
	Fusible 10A blown	Check and change Once if necessary
	Safety stat tripped	Reset the thermostat
	Motor klaxon open	Check
	Motor disconnected	Check and reconnect
	Safety contactor (KS) non function	Check in the maintenance screen
	Fast Pad relay card non function	Change the Fast Pad relay card
E61 : Ambient probe non function		
Cooking stopped	Probe shorted or cut	Disconnect from the card (connection B1). Check the PT 100 probe value (on the connection screws). If incorrect change probe
	Connection to Fast Pad relay card Fast Pad relay card non function	Check the connection. Change the Fast Pad relay card.
E68 : Cavity at + 290°C		
Cooking stopped	Heat contactors shorted	Check the contactors
	Fast Pad relay card non function	Change the Fast Pad relay card

Message displayed Consequences	Probable causes	What to do?
E67 : Gas safety activated		
Cooking stopped	Gas supply closed or abnormal pressure	Check stop cock, dynamic pressure test
	Problem with flame detection circuit	Check the ionisation probe circuit on the maintenance screen. Disconnect the wire from connection 32 on the FastPAD relay card: The screen should show Gas safety=0. Connect to the control phase: Gas safety =1. If not change the FastPAD relay card
	Ionisation flame control problem	Check ionisation probe, ignition and burner ventilation. Change the control box
E73 : Descale pump on permanently		
Cooking stopped	Fast Pad relay card relay shorted or electronic detection non function	Change the Fast Pad relay card
E28 : Core probe not connected		
Connect a probe or chefs decision chef	Probe not connected or non functional	Connect a probe and check in the maintenance screen the values of E2 – E2b – E2c
	The electronics can't see the probe	Change the Fast Pad relay card
E32 : Core probe with 2 points non functional		
Cooking continues	Core probe shorted or 2 sections cut	Disconnect from the card (connection E2). Check the PT 100 probe value (on the connection screws). If incorrect change probe
	Connection to Fast Pad relay card Fast Pad relay card non function	Check the card connection. Check in the maintenance screen the values of E2 – E2b – E2c Change the Fast Pad relay card.
E33 : Core probe non function		
Await a replacement probe or chefs decision	Same error as E32	Same action as E32
E29 or screen blacked out: Failure (message display possible following localisation of the fault)		
Facia inactive (Screen non function)	Blank screen	Check the status of the red LEDs on the FastPAD relay and screen cards
	Fast Pad screen card non function	Change the Fast Pad screen card

6. HYDRAULIC DIAGRAMS

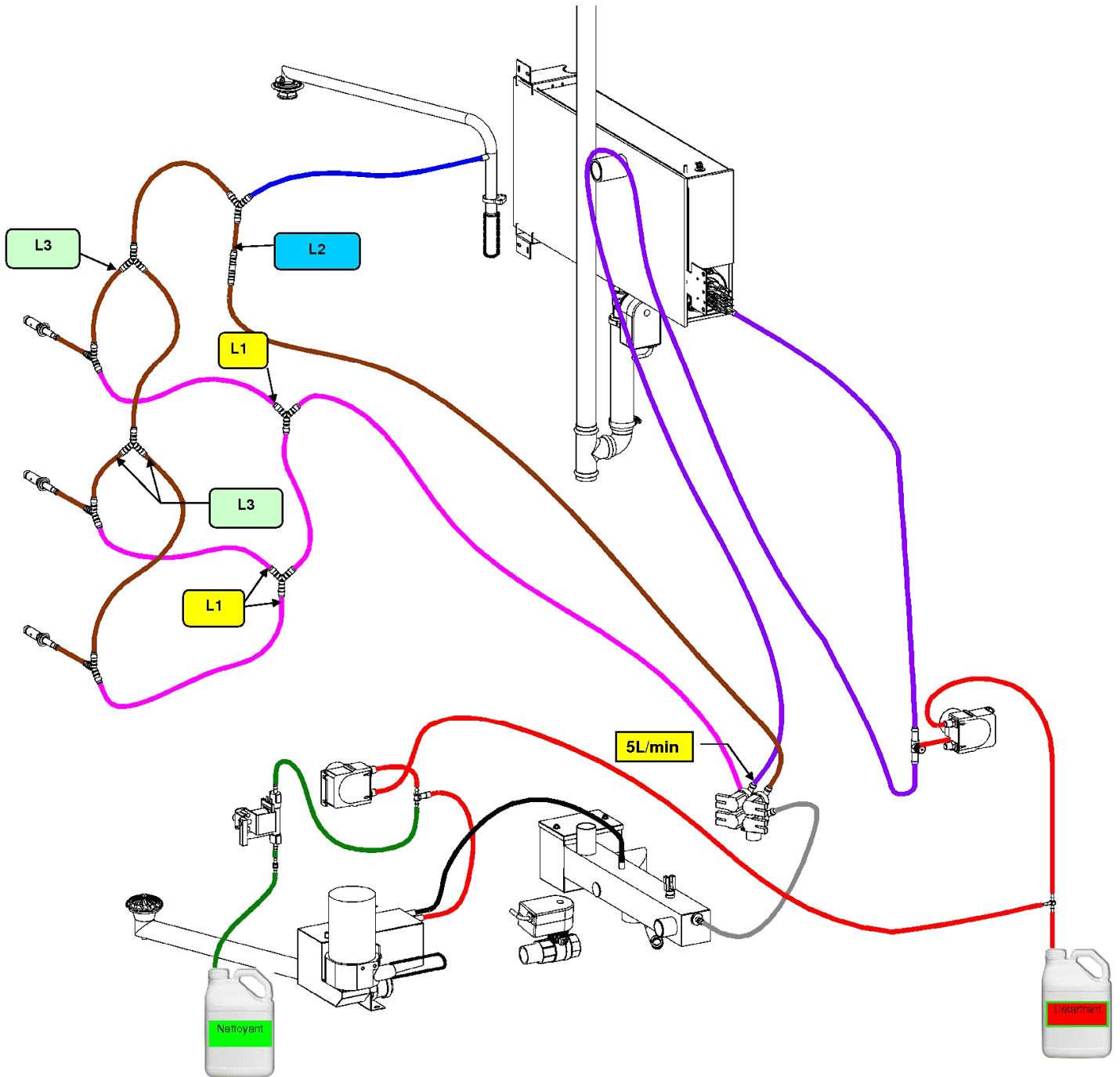
The supply hose to the boiler must be above the level of the steam outlet to avoid the descale chemical damaging the solenoid housing.

6.1 6 AND 10 LEVEL OVENS



	Flow limiter		
	Injection L1	Cooling L2	Cleaning L3
Electric 6 GN 1/1	0.25 l/min	1.2 l/min	2 l/min without jacket
Electric 10 GN 1/1	0.5 l/min	1.2 l/min	2 l/min without jacket
Gas 6 GN 1/1	0.25 l/min	1.2 l/min	2 l/min without jacket
Gas 10 GN 1/1	0.5 l/min	1.2 l/min	2 l/min without jacket
Electric 10 GN 2/1	0.8 l/min	1.2 l/min	2 l/min without jacket
Gas 10 GN 2/1	0.8 l/min	1.2 l/min	2 l/min without jacket

6.2 20 LEVEL OVENS



	Flow limiter		
	Injection L1	Cooling L2	Cleaning L3
Electric 20 GN 1/1	0.25 l/min	1.5 l/min	2 l/min without jacket
Electric 20 GN 2/1	0.5 l/min	1.5 l/min	2 l/min without jacket
Gas 20 GN 1/1	0.5 l/min	1.2 l/min	2 l/min without jacket
Gas 20 GN 2/1	0.5 l/min	1.2 l/min	2 l/min without jacket

7. CHANGING THE EQUIPMENT FROM ONE GAS TO ANOTHER

Generalities:

In the following chapters, the different gases are referenced by their international codification:

G 20	NATURAL GAS Group H, (Methane, Lacq gas).
G 25	NATURAL GAS Group L, (Type Groningue gas).
G 30	BUTANE
G 31	PROPANE

7.1 LIST OF AUTHORISED GASES/PRESSURE ACCORDING TO CATEGORIES AND COUNTRIES

Countries	Category	Gases	Pressures (mbar)
Austria	I _{2H}	G20	20
	I _{3B/P}	G30 and G31	50
	I _{3P}	G31	50
Finland - Denmark Sweden – Norway	I _{2H}	G20	20
	I _{3B/P}	G30 and G31	30
Czech Republic	I _{2H}	G20	20
	I _{3B/P}	G30 and G31	30
	I ₃₊	G30 / G31	28-30 / 37
	I _{3P}	G31	37 et 50
Spain United Kingdom	I _{2H}	G20	20
	I ₃₊	G30 / G31	28-30 / 37
	I _{3P}	G31	37 et 50
Germany Luxemburg	I _{2ELL}	G20	20
		G25	20
	I _{3B/P}	G30 and G31	30
	I _{3P}	G31	50
Switzerland	I _{2H}	G20	20
	I _{3B/P}	G30 and G31	50
	I ₃₊	G30 / G31	28-30 / 37
	I _{3P}	G31	37 et 50
Greece Italy	I _{2H}	G20	20
	I _{3B/P}	G30 and G31	30
	I ₃₊	G30 / G31	28-30 / 37
	I _{3P}	G31	37
Ireland Portugal	I _{2H}	G20	20
	I ₃₊	G30 / G31	28-30 / 37
	I _{3P}	G31	37
Netherlands	I _{2L}	G25	25
	I _{3B/P}	G30 and G31	30
	I _{3P}	G31	50
France	I _{2Esi}	G20	20
		G25	25
	I ₃₊	G30 / G31	28-30 / 37
	I _{3P}	G31	37 et 50
Belgium	I _{2E(s)B}	G20 / G25	20 / 25
	I ₃₊	G30 / G31	28-30 / 37
	I _{3P}	G31	37

7.2 CHANGEOVER FROM ONE GAS TO ANOTHER:

According to the country of installation and the category of the appliance (indicated on the firm plate), the adaptation from one gas to another may require 1 operation:

CI: Change of nozzles (burners)

(See 7.4)

PROCEDURE:

On the firm plate, check:

- The category (ies) of the equipment.
- The gas and pressure for which it is adjusted.

In the following chart, select:

- The country concerned.
- The gas and the category of the appliance (see above).
- The gas and the pressure for which the appliance is going to be adjusted.
- Note and carry out the required operations.
- Replace the adjustment plate (code: 308 875), and mark the new gas used.

Countries concerned	Category and GAS OF ORIGIN (or new gas)			NEW GAS and Category (or gas of origin)			Required operations
	Category	Gas	P (mbar)	Gas	P (mbar)	Category	
Austria	I _{2H}	G20	20	G30 / G31	50	I _{3B/P} / I _{3P}	
	I _{3B/P}	G30	50	G31	50	I _{3P}	CI
Finland - Norway Sweden – Denmark	I _{2H}	G20	20	G30 / G31	30	I _{3B/P}	CI
	I _{3B/P}	G30	30	G31	30	I _{3B/P}	CI
Czech Republic	I _{2H}	G20	20	G30 / G31	28-30/37/50	I ₃₊ / I _{3B/P} / I _{3P}	-
	I _{3B/P} / I ₃₊	G30	28-30	G31	30-37-50	I _{3P}	CI
		G31	37	G31	50	I _{3P}	CI
Spain United Kingdom	I _{2H}	G20	20	G30 / G31	28-30/37/50	I ₃₊ / I _{3P}	-
	I ₃₊	G30	28-30	G31	37-50	I _{3P}	CI
	I _{3P}	G31	37	G31	50	I _{3P}	CI
Germany Luxemburg	I _{2ELL}	G20	20	G25	20		CI
	I _{2ELL}	G25 / G25	20 / 25	G30 / G31	50	I _{3B/P} / I _{3P}	CI
		G30	50	G31	50	I _{3P}	CI
Switzerland	I _{2H}	G20	20	G30 / G31	28-30/37/50	I ₃₊ / I _{3B/P} / I _{3P}	CI
	I ₃₊ / I _{3B/P}	G30	28-30 / 50	G31	37-50	I _{3P}	CI
		G30	28-30	G30	50	I _{3B/P}	-
	I _{3P}	G31	37	G31	50	I _{3P}	-
Greece Italy	I _{2H}	G20	20	G30 / G31	28-30/37	I ₃₊ / I _{3B/P} / I _{3P}	CI
	I ₃₊ / I _{3B/P}	G30	28-30	G31	37	I _{3P}	CI
Ireland Portugal	I _{2H}	G20	20	G30 / G31	28-30/37	I ₃₊ / I _{3P}	CI
	I ₃₊	G30	28-30	G31	37	I _{3P}	CI
Netherlands	I _{2L}	G25	25	G30 / G31	28-30/50	I _{3B/P} / I _{3P}	CI
	I _{3B/P}	G30	30	G31	50	I _{3P}	CI
France	I _{2Esi}	G20	20	G25	25		CI
	I ₃₊	G30	28-30	G31	37/50	I _{3P}	CI
	I _{3P}	G31	37	G31	50	I _{3P}	-
Belgium	I _{2E(s)B}	G20 / G25	20 / 25	G30 / G31	28-30/37	I ₃₊ / I _{3P}	CI
	I ₃₊	G30	28-30	G31	37	I _{3P}	CI

* The category change is only to be carried out under the responsibility of the Company T.G.C.P. or our local agent.



BONNET GRANDE CUISINE

Registered Office:

Rue des Frères Lumière - Z.I Mitry Compans
F-77292 MITRY MORY Cedex

7.3 GAS FLOW RATES AND POWERS

See paragraph 1: **Technical characteristics (installation manual)**

7.4 CHART OF NOZZLES

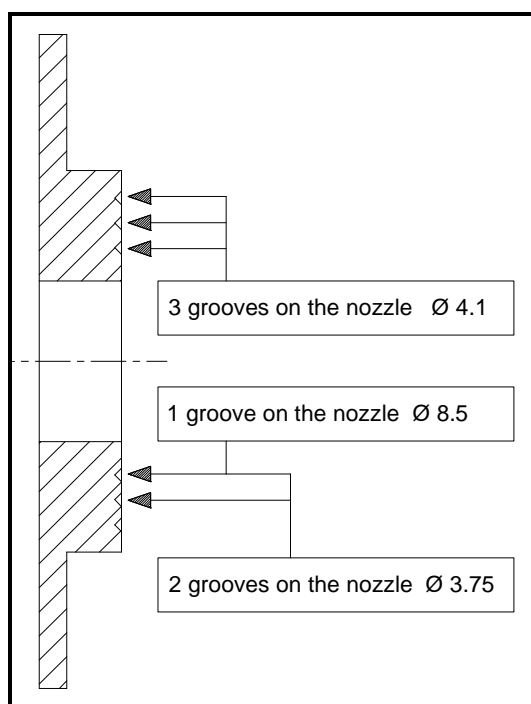
6 and 10 level ovens

	GASES			NOZZLES			
	Designation		Pressure (mbar)	Qty	Ø (1/100 th)	Code	Marking (stamped)
	Family	Type					
Burner	Natural gas	G20	20	1	6.1	368 890	0 groove
		G25	20 or 25	1	8.5	368 891	1 groove
	L.P.G	G31	30 or 37 or 50	1	4.1	368 893	3 grooves
		G30	30 or 50	1	3.75	368 892	2 grooves

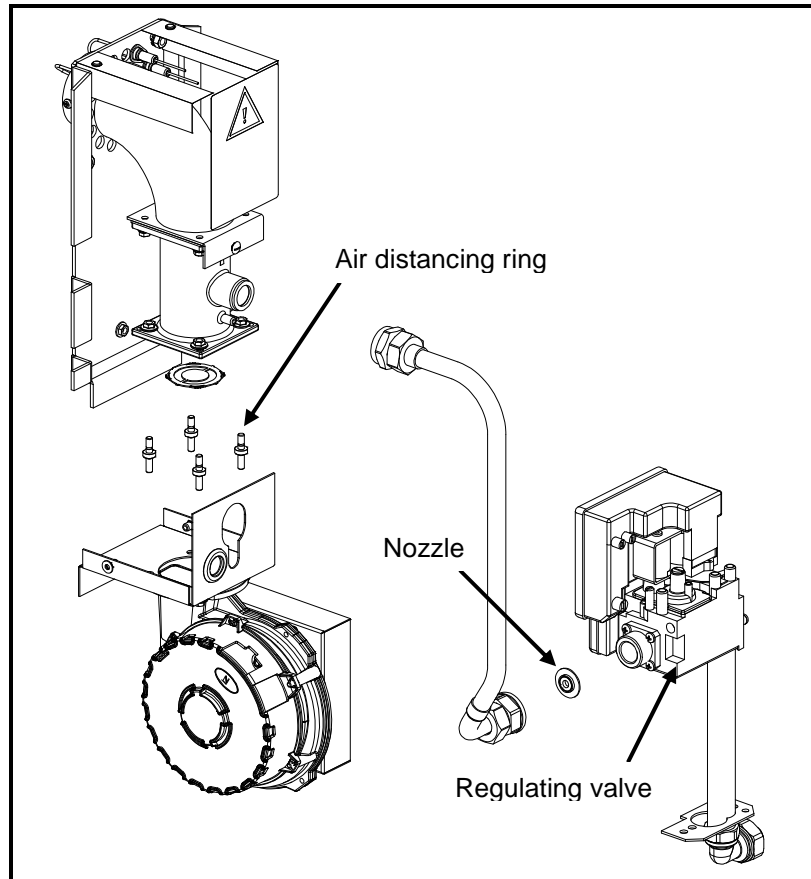
20 level ovens

	GASES			NOZZLES				
	Designation		Pressure (mbar)	Qty dry	Qty steam	Ø (1/100 th)	Code	Marking (stamped)
	Family	Type						
Burner	Natural gas	G20	20	2	1	6.1	368 890	0 groove
		G25	20 or 25	2	1	8.5	368 891	1 groove
	L.P.G	G31	30 or 37 or 50	2	1	4.1	368 893	3 grooves
		G30	30 or 50	2	1	3.75	368 892	2 grooves

Identification of nozzles



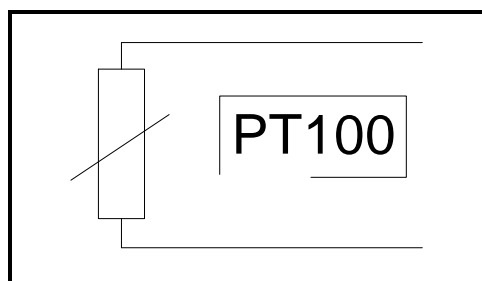
Positioning of the nozzle and the air distancing ring



8. VERIFICATION OF TEMPERATURE SENSORS

8.1 PROBE PT100 (Single point for both the cavity and core probee).

The PT100

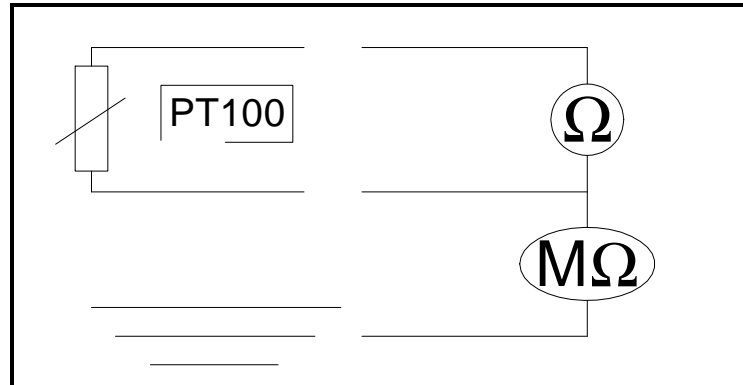


Temperature sensor comprises a resistance sensor with the value of 100 ohms for a temperature of 0° and 138.5 ohms for a temperature of 100°. The variation of the resistance to temperature relationship is linear. The resistance reading is directly proportional to the measured temperature. The sensor is not polarised. The sensor can be extended using copper wire.

Temperature in °C relative to Resistance in Ω for PT100 sensor										
°C	0	1	2	3	4	5	6	7	8	9
0	100.00	100.39	100.78	101.17	101.56	101.95	102.34	102.73	103.12	103.51
10	103.90	104.29	104.68	105.07	105.46	105.85	106.24	106.63	107.02	107.4
20	107.79	108.18	108.57	108.96	109.35	109.73	110.12	110.51	110.90	111.28
30	111.67	112.06	112.45	112.83	113.22	113.61	113.99	114.38	114.77	115.15
40	115.54	115.93	116.31	116.70	117.08	117.47	117.85	118.24	118.62	119.01
50	119.40	119.78	120.16	120.55	120.93	121.32	121.70	122.09	122.47	122.86
60	123.24	123.62	124.01	124.39	124.77	125.16	125.54	125.92	126.31	126.69
70	127.07	127.45	127.84	128.22	128.60	128.98	129.37	129.75	130.13	130.51
80	130.89	131.27	131.66	132.04	132.42	132.80	133.18	133.56	133.94	134.32
90	134.70	135.08	135.46	135.84	136.22	136.60	136.98	137.36	137.74	138.12
100	138.50	138.88	139.26	139.64	140.02	140.39	140.77	141.15	141.53	141.91
110	142.29	142.66	143.04	143.42	143.80	144.17	144.55	144.93	145.31	145.68
120	146.06	146.44	146.81	147.19	147.57	147.94	148.32	148.70	149.07	149.45
130	149.82	150.20	150.57	150.95	151.33	151.70	152.08	152.45	152.83	153.20
140	153.58	153.95	154.32	154.70	155.07	155.45	155.82	156.19	156.57	156.94
150	157.31	157.69	158.06	158.43	158.81	159.18	159.55	159.93	160.30	160.67
160	161.04	161.42	161.79	162.16	162.53	162.90	163.27	163.65	164.02	164.39
170	164.76	165.13	165.50	165.87	166.24	166.61	166.98	167.35	167.72	168.09
180	168.46	168.83	169.20	169.57	169.94	170.31	170.68	171.05	171.42	171.79
190	172.16	172.53	172.90	173.26	173.63	174.00	174.37	174.74	175.10	175.47
200	175.84	176.21	176.57	176.94	177.31	177.68	178.04	178.41	178.78	179.14
210	179.51	179.88	180.24	180.61	180.97	181.34	181.71	182.07	182.44	182.80
220	183.17	183.53	183.90	184.26	184.63	184.99	185.36	185.72	186.09	186.45

How to read the chart:

To find the resistance corresponding to a temperature of 164°C.
Find the intersection of the line 160°C and the column 4°C.
The reading shows 162.53 Ohms.

Check

Check sensor resistance with an ohmmeter set to 200 ohms (less than 107 ohms for 20°).
Check the sensor insulation between one of the leads and the metal part with the ohmmeter set at 20 mega ohms (a value over 15 mega ohms).
Check the continuity between the feed and the metal part of the sensor.

9. FRONT LINE PARTS

Designation	Codes
Drive shaft gasket + wear ring	145587
Complete mounted sensor sub-assembly for oven generator	147060
Complete mounted generator probe (sensor) subassembly for gas oven	147061
Lighting socket sub-assembly + cable	147328
4 way solenoid valve, 3 x 10 L/min + 1 x 5 L/min	147793
Starting electrode	148223
Sub assembly - Gas valve without safety enclosure	148222
Snap-on pushbutton / 2 contact pushbutton	300183 / 300189
Reed switch	300676
Three-pole contactor 230V 50/60 Hz 25A / 32A	300697 / 300698
Three-pole contactor 230V 50/60 Hz 40A / 50A	300699 / 300700
Anti-interference relay	300769
60°C condenser thermostat / Manual resetting 320°C thermostat + nut	301065 / 301066
Pressure switch B1 55/41	301373
PT100 sensor, diameter 4, 350 in length	301456
2 points PT 100 regulating sensor	301471
Gas generator probe	301479
Circular heating element, round flange, 9KW 340 Ø / 9KW 430Ø	302229 / 302232
Circular heating element, round flange, 15KW 500 Ø	302230
6 kW 230V immersion heater with opening for bulb passage	303122
8 kW 230V immersion heater	303127
7.5 kw immersion heater, 380 in length with bulb hole	303129
24 kw immersion heater, 570 in length with bulb hole	303130
17.7 kw immersion heater, 570 in length with bulb hole	303131
Axial fan	304194
16mf motor condenser	304259
Fan motor	304267
Condenser 5 µF for pump	304269
Pump with cylinder blocks 230V 50/60HZ	304275
LN2 fixed centrifugal fan 7000rpm	304276
Peristaltic pump 3 L/h / Internal pump pie work	304279 /
Reducing gear with centre return spring, 85 degrees	305108
Green indicator 230/400V, complete	308334
Halogen bulb	308477
Lighting transformer BT 230V 50HZ 12V	308479
1A fast acting fuse / Fuse 3.15 Amps	309335 / 309407
Encoder	309411
Ribbon cable	309417
Fuse 6.3 x 32 T10 Amps SCHURTER	309506
Led facia card	309515
5 position switch, 8 point connector + 2 wires	309521
3 position switch, 6 point connector	309522
FastPAD 2010 relay card	309578
125 Ma fuse	309612
Safety box 577DBC	310324
Motorised valve 230V 50/60 Hz female ¾ / 1"	314359 / 314360
Pump UP 60-321, rate 150 L/min	314361
10.2 x 15 diameter 2 mm thick metal-asbestos plastic gasket	318033
Heating resistance capacity + immersion heater gasket	366461
Lighting glass sheet gasket	366557
Door stop	366572
Synthetic filter	386087