



# Electrolux

## MODULE SERVICE MANUAL

### Food Preparation

© ELECTROLUX HOME PRODUCTS  
Consumer Service - EMEA  
Quality & Continuous Improvement - Technical Support

Gas HOB

## Electronics on Gas

Safe Assist II



EN

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# 1 PURPOSE OF THIS MANUAL

The purpose of this Service Manual is to provide Service Engineers who are already familiar with the repair procedures of electrical & Gas Hob's

The manual deals with the following topics:

- MEM's Board Assembly / Service
- Error codes and troubleshooting
- Gas setting and flame levels adjustment
- Gas regulator replacements

## Document Revisions

Rev.	Date	Description	Author
00	11/2018	Document creation	BSP

## 2 SAFETY







- All the work to be performed inside the appliance requires specific skills and knowledge and may only be carried out by qualified and authorised Service Engineers
- Before you access internal components, take the plug out of the socket to disconnect the power supply.
- Some of the components in the mechanical part could cause injuries, so wear suitable protection and proceed with caution.

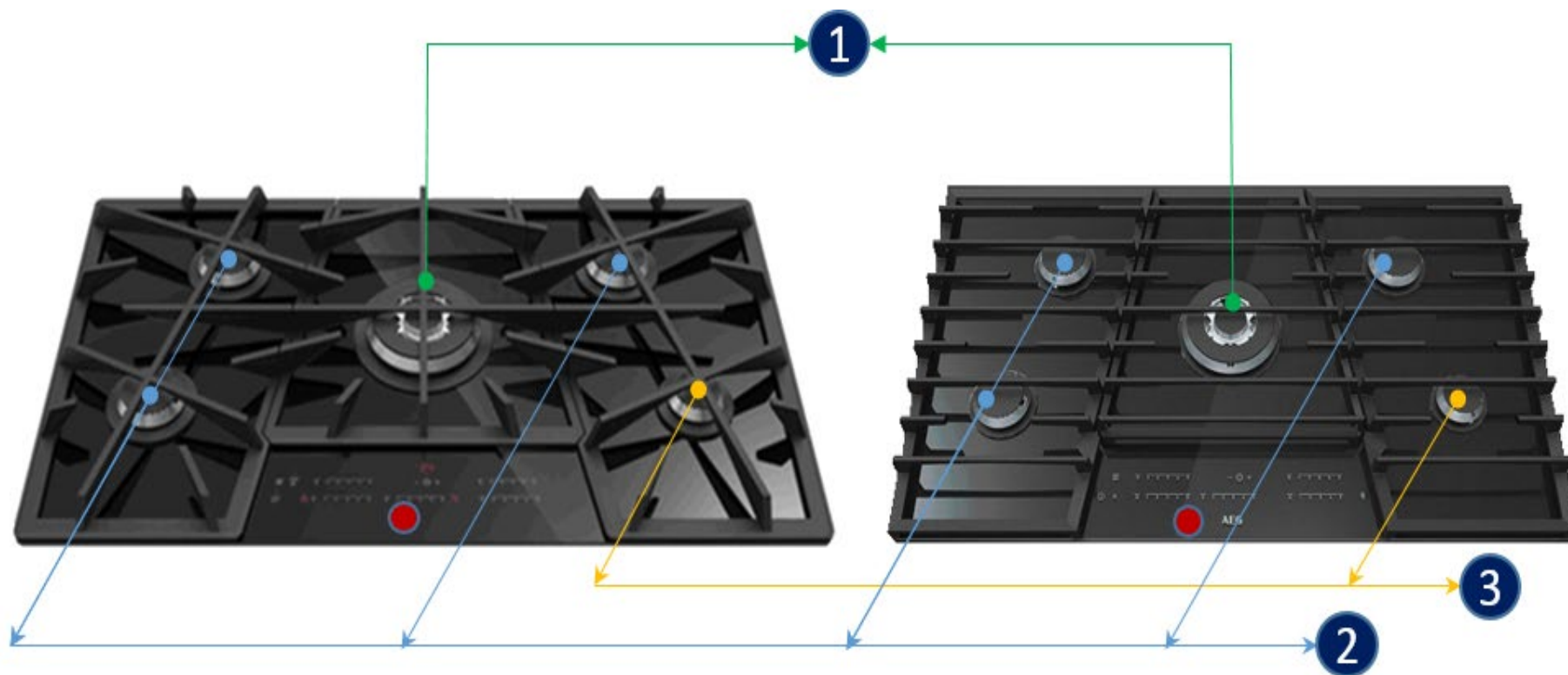
### 3 SAFE ASSIST II EOG

#### 3.1 Variants

“EoG” → Electronic on Gas hob

	
	
User Interface	Pelican
Power board	Brahma
Options	On/Off, Child lock, Pause, H <sup>2</sup> H, Minutes minder, residual heat indicator, auto switch-off, instant ignition, re-ignition, perfect power setting
Size of gas hob	90cm and 75cm
Burner	New Multi Crown, Semi rapid, Auxiliary

## 3.2 Appliance Configuration



1. Multi Crown WOK Burner 3500W / 128mm
2. Semi Rapid Burner 1900W / 80mm
3. Auxiliary Burner 1000W / 65mm
4. User Interface Pelican

Brand	Size cm	Type	PNC	Gas Original		Gas Conversion Nozzle Kit	country
				Gas Category	Gas Supply	Gas Supply	
<b>AEG</b>	90	HVB95450IB	949750914 00	II2H3B/P	G20 (2H) 13mbar	G30/G31 (3B/P) 30/30mbar G20 (2H) 20mbar	BY, KZ, RU
			949750911 00	II2H3+	G20 (2H) 20mbar	G30/G31 (3+) 28-30/37mbar	IE, UK
			949750910 00	II2H+3+ III1c2E+3+	G20/G25 (2E+) 20/25mbar G20 (2H) 20mbar	G30/G31 (3+) 28-30/37mbar G130 (1c) 8mbar	ES, FR, IT, PT
	75		949770079 00	112H3B/P	G20 (2H) 13mbar	G30/G31 (3B/P) 30/30mbar G20 (2H) 20mbar	BY, KZ, RU
			949770077 00	II2H3B/P II2L3B/P	G25 3 (2EK) 25mbar G25 (2L) 25mbar	G30/G31 (3B/P) 30/30mbar G20 (2H) 20mbar	NL
			949770076 00	II2E3+	G20 (2H) 20mbar	G30/G31 (3+) 28-30/37mbar	IE, UK
			949770075 00	II2E+3+ II2H3+ III1c2E+3+	G20/G25 (2E+) 20/25mbar G20 (2H) 20mbar	G30/G31 (3+) 28-30/37mbar G30/G31 (3B/P) 30/30mbar	FR, HR, IT
<b>Electrolux</b>	90	KGV7539IK	949750909 00	112H3B/P	G20 (2H) 13mbar	G30/G31 (3B/P) 30/30mbar G20 (2H) 20mbar	BY, KZ, RU
			949750908 00	II2E+3+ II2H3+	G20/G25 (2E+) 20/25mbar G20 (2H) 20mbar	G30/G31 (3+) 28-30/37mbar	FR, IT
	75		949770074 00	112H3B/P	G20 (2H) 13mbar	G30/G31 (3B/P) 30/30mbar G20 (2H) 20mbar	BY, KZ, RU, UA
			949770073 00	II2E+3+ II2H3+ II2H3B/P	G20/G25 (2E+) 20/25mbar G20 (2H) 20mbar	G30/G31 (3+) 28-30/37mbar G30/G31 (3B/P) 30/30mbar	HR, FR, IT, RO, TR

### 3.3 Disassembling the Ceran glass

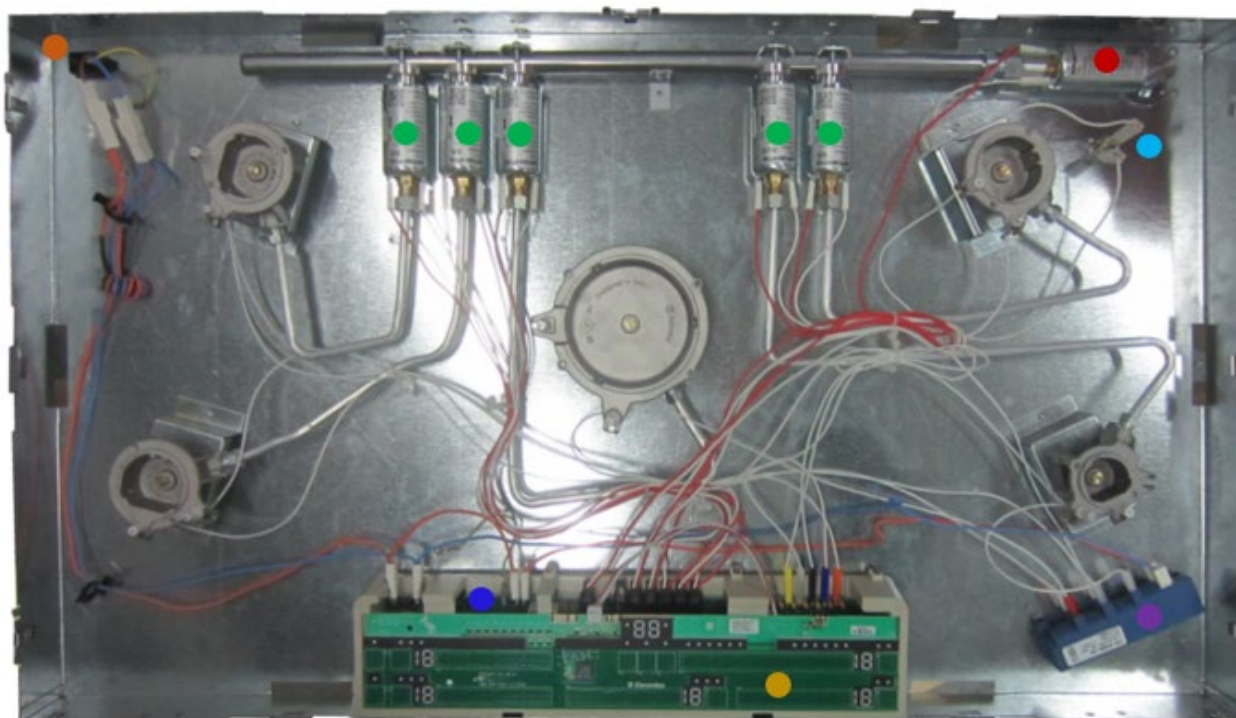


1. Remove the cast iron and the burners
2. **Unscrew 12 screws for the burners**
3. **Unlatch 6 springs (Spare part no. 14006735501/0)**

! Be sure the hob is in cold condition

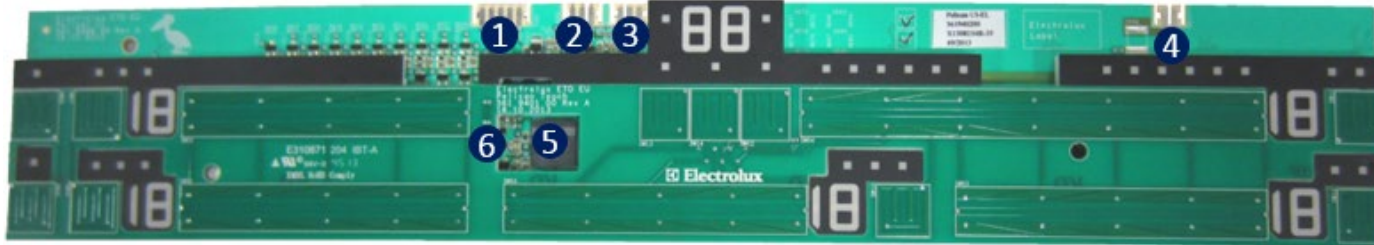


### 3.4 Gas hob structure



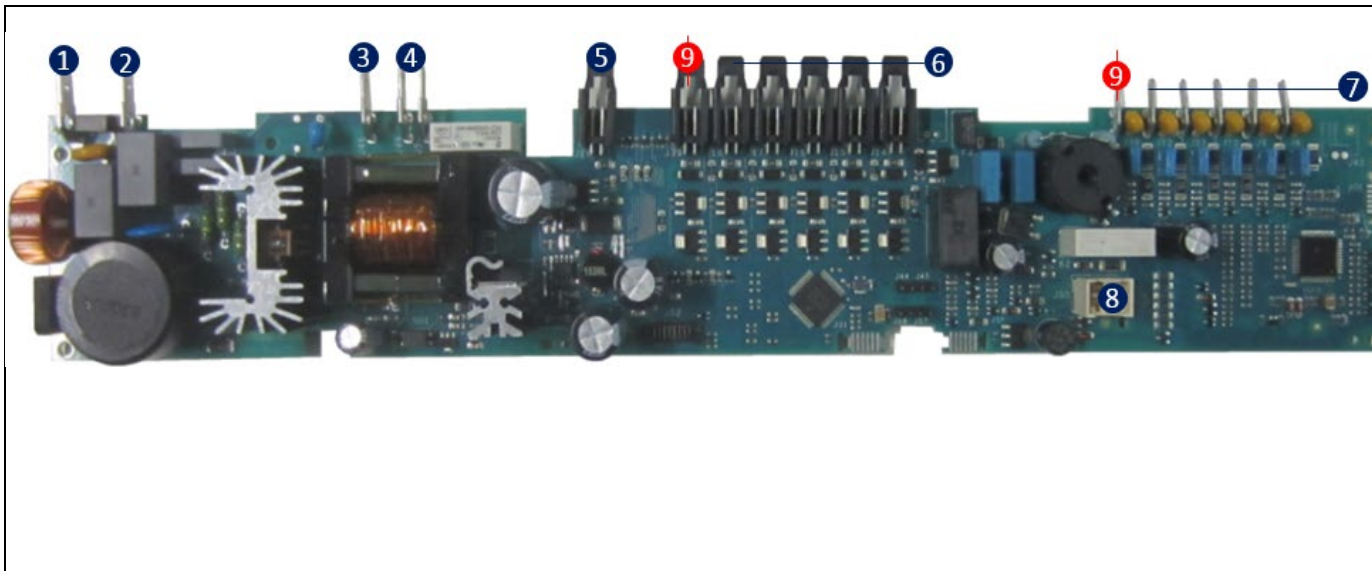
- Main gas Valve
- Safety Temperature Limiter
- Spark generator
- User Interface "Pelican"
- Power board "Brahma"
- Burner gas Valve
- Main Power Supply

### 3.5 User Interface PCB “Pelican”



1. Programming (factory)
2. Power module 5V/14V DC
3. SideKick MACS 3-pol
4. PE Ground (not used)
5. Buzzer
6. Hob2Hood

### 3.6 Power module PCB “Brahma”



1. Neutral N
2. Load L
3. Ground G
4. N Spark generator
5. Main Gas Valve
6. Burner gas valve (right to left) (Front left, Rear Left, Middle, Rear right, Front Right)
7. Flame sensor ionization (right to left) (Front left, Rear Left, Middle, Rear right, Front Right)
8. User Interface “Pelican”
9. Empty

The gas burner settings (level1 to 5) are stored in the power module

### 3.7 Spark Generator



1. Load L
2. Neutral N
3. Front right burner
4. Middle burner
5. Rear left burner
6. Front left burner
7. Rear right burner

### 3.8 Gas Regulator



1. Cover
2. Coil
3. Gas outlet to the zone
4. Gas regulator (The movable pin of the gas regulator, controls the gas flow (open and close) for the zone gas burner via voltage)
5. Spring
6. Iron core with gas inlet from the main pipe

### 3.9 Multi Crown Burner



1. Inner Cap
2. External cap
3. Aluminium Crown
4. Crown Support
5. Burner Bowl
6. Electrode
7. Flame Sensor Ionization

Gas type	Max. power	Min. Power
G20 20mbar	3,5 kW	1,75kW
G20 13mbar	3,5 kW	1,75kW
G30 29mbar	3,5 kW	1,8 kW
G20 25mbar	3,5 kW	1,75kW

## 4 USER INTERFACE PELICAN



1. On/Off
2. Pause
3. Lock / Child Lock
4. Hob 2 Hood
5. Minute Minder (Display)

Display of cooking zone:

0 - Burner is deactivated

1 - 5 - Burner operating levels

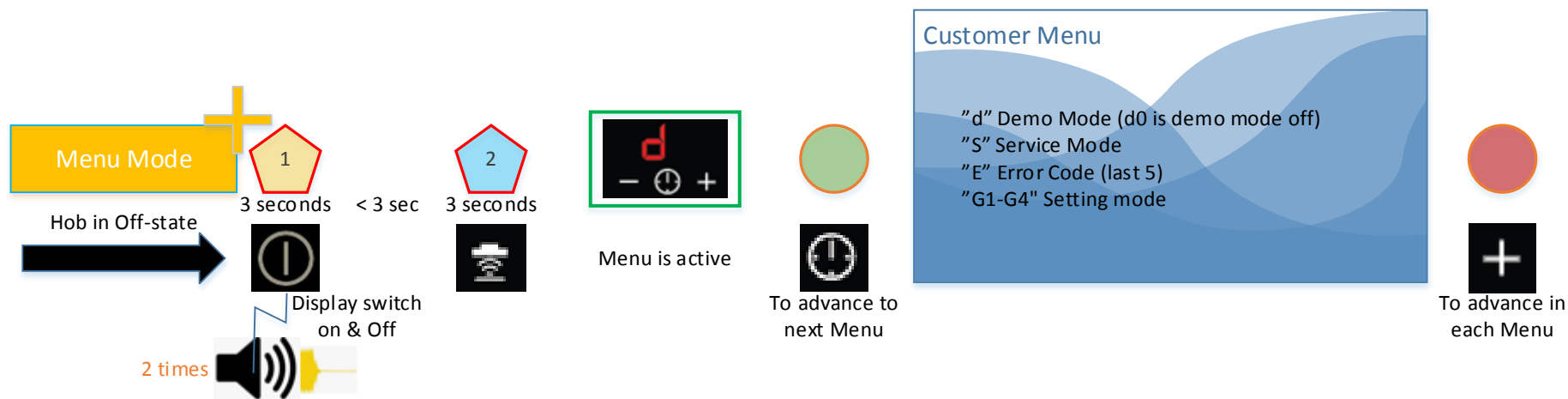
F - Fault

H - A cooking zone is still hot

L - Lock / child safety device operates

1 - Pause operates (all active burners are set to 1 when pause operates)

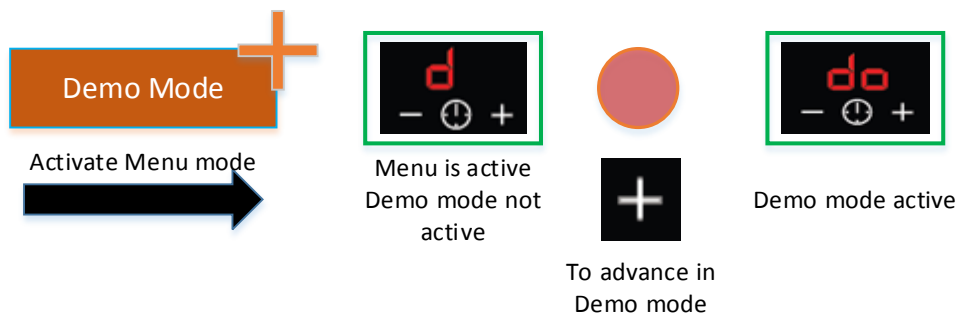
## 4.1 Menu Mode



### Menu mode deactivation:

The menu mode is automatically deactivated in 20sec. if no keys touched or If Hob is switched off

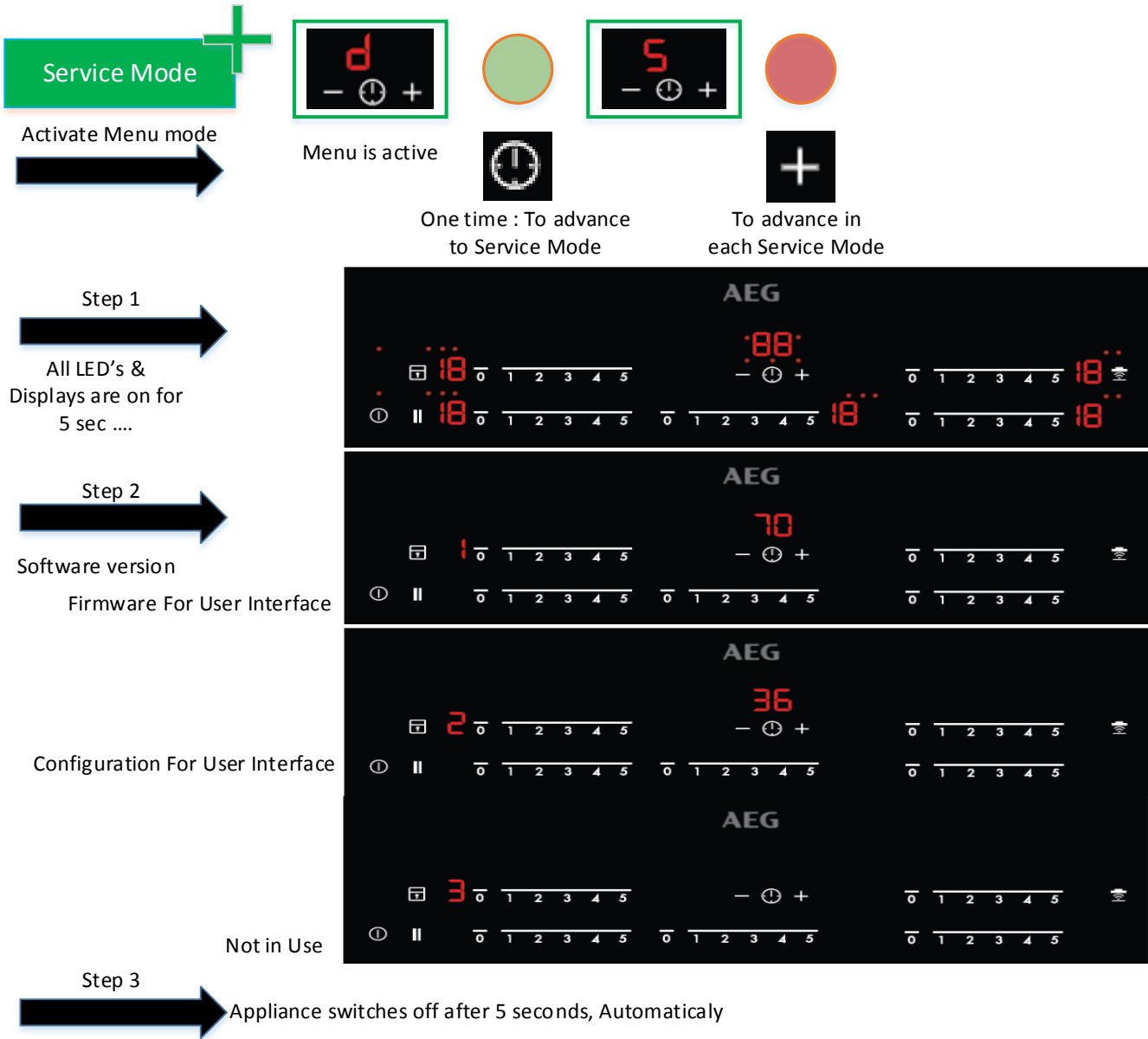
## 4.2 Demo Mode



### Attention!

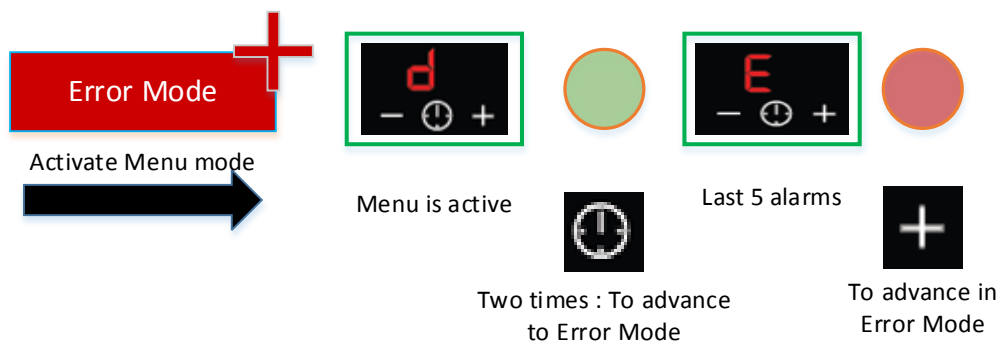
Demo Mode is active till it's deactivated, despite of power failure or disconnected from power

### 4.3 Service Mode





## 4.4 Error Mode

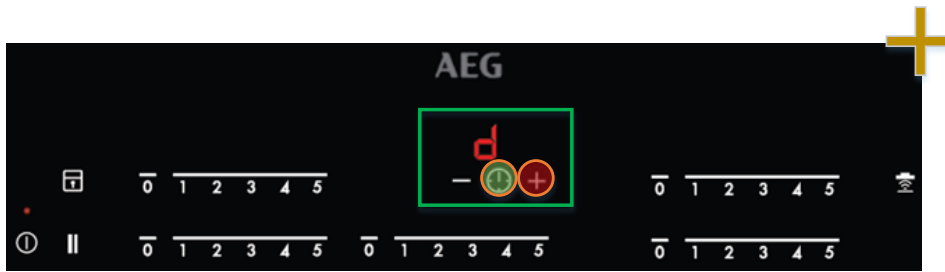
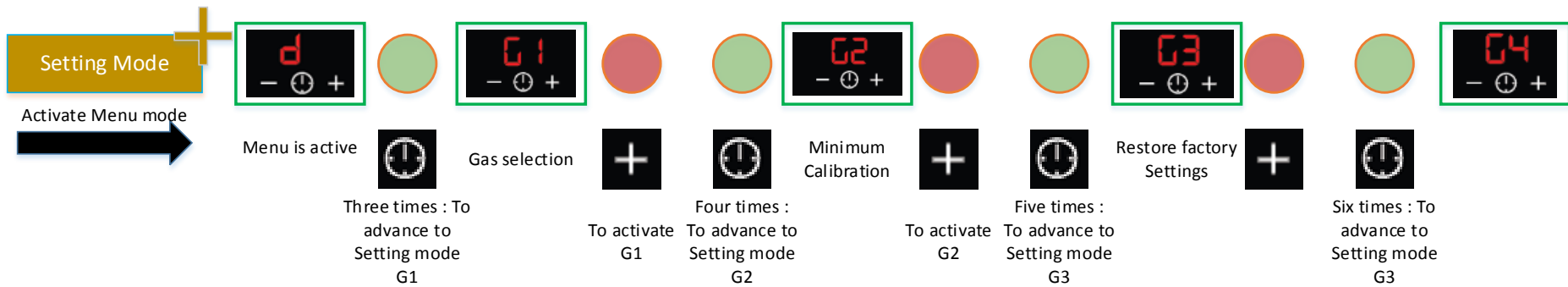


In 5 second-steps, the last five alarms (latest alarm first) are shown on the displays.

The alarm appears on the display for the concerned cooking zone.

When the displays are shown „E “only, no alarm is in the error memory.

## 4.5 Settings Mode



Operation	Display	When performed
Gas Selection	G1	<p>At first installation or when changing gas supply, if the type of gas is not the one currently selected in the appliance</p> <p>After setting proper gas, push "Minute Minder" key to confirm.</p> <p>Press on/off key to exit the procedure.</p> <p>After G1 procedure (change of gas setting), check by visual inspection the proper flame regulation level by level. If flame does not decrease as desired, use G2 or G4 procedure to adjust valves levels inside the power board. Please note that level 5 is done with the valve gas burner in full open position, flame limitation is given by the injector.</p>
		<p>Example:</p> <p>0 = Natural gas</p> <p>1 = Liquid gas</p> <p>2 = Not available</p> <p>Refer to UM for correct assignment to gases</p>

Minimum Calibration	G2	In first installation or in case of flame level not correct, or after G1 procedure if flame levels is not correct (too low or too high by visual inspection). Press "Minute Minder" key to confirm value and select next burner. Press on/off key to exit the procedure and save latest values.	
Restore Factory Settings	G3	To delete the user's calibration and return to values loaded in factory. Show "d" on the right display. Touch "Minute Minder" key once.	0 = Success d = failure
All Levels Calibration	G4	Similar to minimum calibration, but acting on all the power levels from lev 1 to lev 4 (lev 5 is always maximum). Needed if service replaces a valve or the entire power board. Remark: this procedure can take some minutes to be fully completed	

## 5 ERROR CODE

Alarm Code	Alarm Description	Possible Cause	Troubleshooting
E0	Wrong configuration for power board (POB)	Levels are not calibrated on POB	Replace the Power Board
E4	NTC Alarm	POB is reading a temperature over 105°C	Wait for temperature to go down to 90°C
E6	Main electro valve circuit, Zone electro valve circuit, Voltage reference, Watchdog, Microcontroller, Eeprom anomaly	Temporary condition or POB failure	Execute burner unlock procedure. If unsuccessful, replace the POB
	Lockout for voltage of fires amplifier, Feedback, A/D incorrect		
	Parasite flame at start-up phase	Parasite flame condition lasts more than 10sec	
	Zone high temperature alarm	Reading from the two NTC's differ from each other of more than 10°C	
	High power alarm	Shunt level over reference value for more than 1 min. Temporary condition or POB failure	
	Klixon intervention	Temperature is higher than threshold	Let the appliance cool down and execute burner unlock procedure. If unsuccessful repeat. If the alarm still exists, replace the POB
E7	Communication error in the logical core	Temporary condition or POB failure	Replace the POB if the alarm persists. (unlock procedure not needed)
	Frequency or resonate incorrect		

	Voltage of fires amplifier incorrect		
	More than 5 burner unlocks in 15min	Burner unlock procedure more than 5 times within 15 minutes	Wait 15 minutes, otherwise unplug and plug the hob
E9	Too low key reference value	Miss alignment of UI and the Glass	Check Chapter 5.1
B blinking on faulty zones	Parasite flame / flame amplifier anomaly	Wrong wiring of ionization electrode POB failure	Should be self-cancelled after some time. Check wings or replace the POB
F blinking on faulty zones	Burner is lockout state	If displayed on all zones, it can be an issue on the gas line (gas not reaching the hob) Check Chapter 5.2	Check the gas supply, execute burner unlock procedure
		Ionization electrode is dirty or reached by flame	Clean and dry the metal part of the ionization electrode or check if it is in correct position and execute burner unlock procedure.  Remark: do the same check also if the customer complaints for frequent unexpected (no air draught on the burner) re-ignition
		Ground is missing	Check wiring and execute burner unlock procedure
No error code displayed (indication on the zone power level: the value is blinking between the required level and 1. Goes to 1 after 1 minute)	NTC Warning	POB is reading a temperature between 95°C and 104°C	Wait for temperature to go under 90°C

**Attention!**

After power board change and first time switch on hob, you will see message 'E0'.

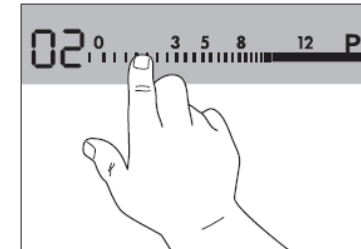
You need to set the hob with setting mode G2 or G4, then, after first calibration and values saving, error message will disappear.

## 5.1 User interface with Slider installation tips + key operation

- Direct access of the cooking levels
  - If the customer has, difficulties directly hitting a cooking level recommend him to:
    - Touch the level; Check the display.
    - Correct the level if necessary by shifting (without lifting) the finger left or right.

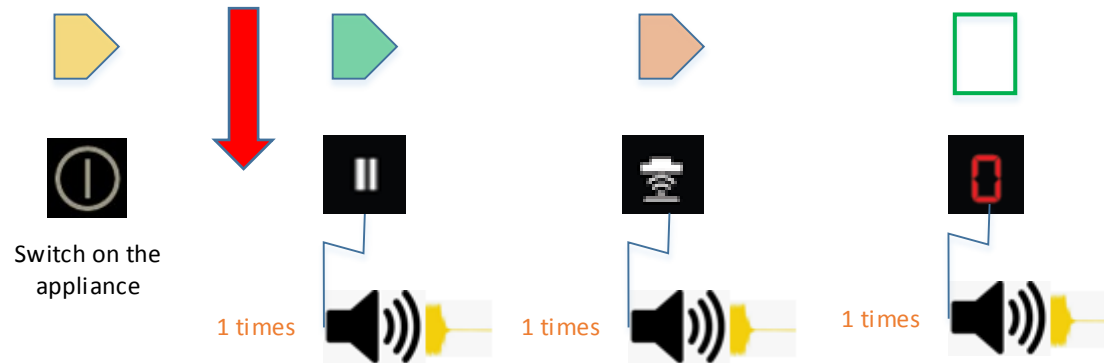
Problems besides the above tips:

- Check build in position of the user interface and correct if necessary.
- The LED should be central above the main switch.
- If some keys or cooking levels are difficult to operate or unstable.
  - Disconnect the appliance from the mains for 30 sec. and try again.
  - If the problem exists, probably the user interface is either pressed too less or not equal to the ceramic glass
    - Check if there is a cable between user interface and carrier
    - Check if the carrier of the user interface is correct positioned and all spring elements present
    - Appliances with carrier; exchange the carrier



## 5.2 F Appears on the display

! After switch on the appliance, wait the animation (bars moving in the display) is finished and 0 appears, before touch "pause" key

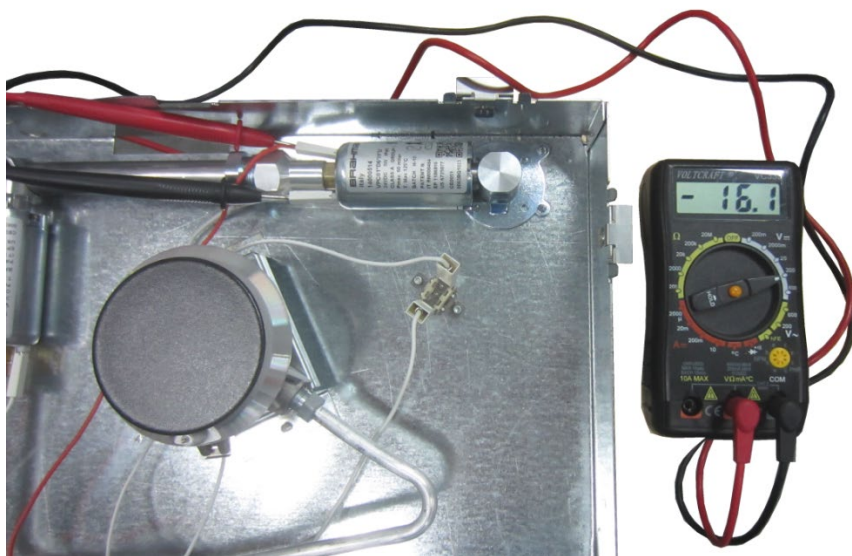


No flame available after three attempts of re-ignition, F appears on the display!

Scenarios: After a new installation, Missing gas, Gas supplied but no flame, incorrect position of burner cup!

## 6 SERVICE CHECKS - GAS REGULATOR

### 6.1 Main Gas Regulator



The voltage is always applied to the main gas regulator, while the appliance is switched on.

Resistor of valve:	$64 \pm 10 \%$ Ohm
Appliance switched on:	Main gas regulator 16,0 - 16,5V DC
Appliance switched off:	Main gas regulator 0V

## 6.2 Burner gas regulator

### Measurement voltage



Resistor of valve:	64 ± 10 % Ohm
During ignition:	approx. 17,0V DC
Level 1:	approx. 8,1V DC
Level 2:	approx. 8,7V DC
Level 3:	approx. 9,8V DC
Level 4:	approx. 10,2V DC
Level 5:	approx. 13,7V DC

The gas regulation are controlled via adjustment of voltage!

The voltage is always applied to the burner gas regulator, while the flame is burning.

**!** While measuring voltage: *This check must be done without glass in position, to access the valve connectors: to avoid risk of electric shock, personal protective equipment for example "insulated gloves" must be used.*

### Measurement resistor





### 6.3 Assembling on the production line



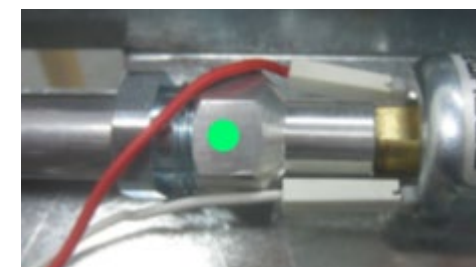
Tightening torque = 10 - 12 Nm

Pipe - zone valve



Tightening torque = 1,2 - 2 Nm

Main pipe - zone valves



Tightening torque = 10 - 12 Nm

Main pipe - main valve (! gasket needed)

**Attention:** During the screwing process,

- Block the nut ● in order to avoid a rotation of the main gas valve!
- Block the brass flat area ● to avoid a rotation of the gas valve!

## 6.4 Replacement of gas regulator

After replacement of any regulator, gas leakage must be checked

To properly check gas leakage, gas leak detector must be used (electronic or soapy solution) applied to every gas connection.

This check must be done without glass in position, to have every connection inspectable by eyes: to avoid risk of electric shock, personal protective equipment for example “insulated gloves” must be used.

In order to open the gas valve (regulator), hob must be powered and burner must be operated.

It's suggested to disconnect the power supply to the spark generator, to avoid annoying sparks close to injector which must be blocked.

When burner operates, 3 ignition attempts will be performed, each lasting around 4 sec.

In case more attempts are necessary, perform unlock procedure and repeat burner operation.

Remark: main regulator is open as soon as hob is switched on (regardless the burner is operating or not)

More to come in this space; how to check the regulators after service

## 6.5 Burner gas regulator

For technological reason, the burner gas regulator can only to regulate the gas flow downward!

Level 5



Level 1



If the selected level is higher than the previous one, the flame will go for the first to maximum level and then decrease to desired level!

Level 1



Level 5

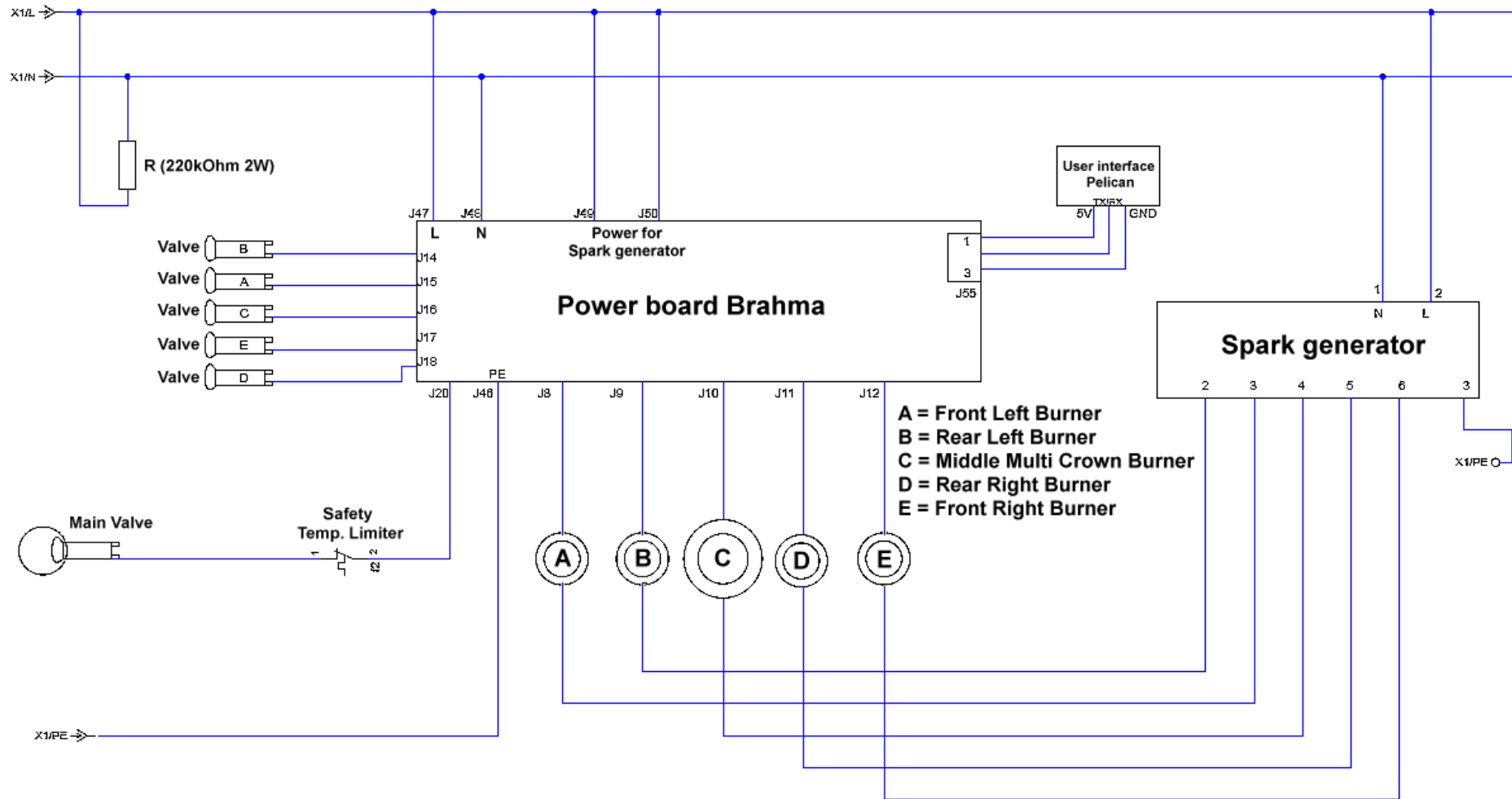


Level 3



# 7 EOG HARNESS

## 7.1 Circuit diagram



## 7.2 Wiring diagram

