



Sputnik



Gas Range



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 Training and Operations Support
 Technical Support

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EN

Built-in Ovens
GAS Ovens
GENERAL MANUAL
 “SPUTNIK GAS OVENS”

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1 INTRODUCTION

1.1 PURPOSE OF THIS MANUAL

The purpose of this Manual is to provide information of new “SPUTNIK GAS OVNES”

1.2 WARNINGS



All work with open appliances must be done with the mains supply disconnected.

Work on electrical equipment should only be carried out by qualified personnel.

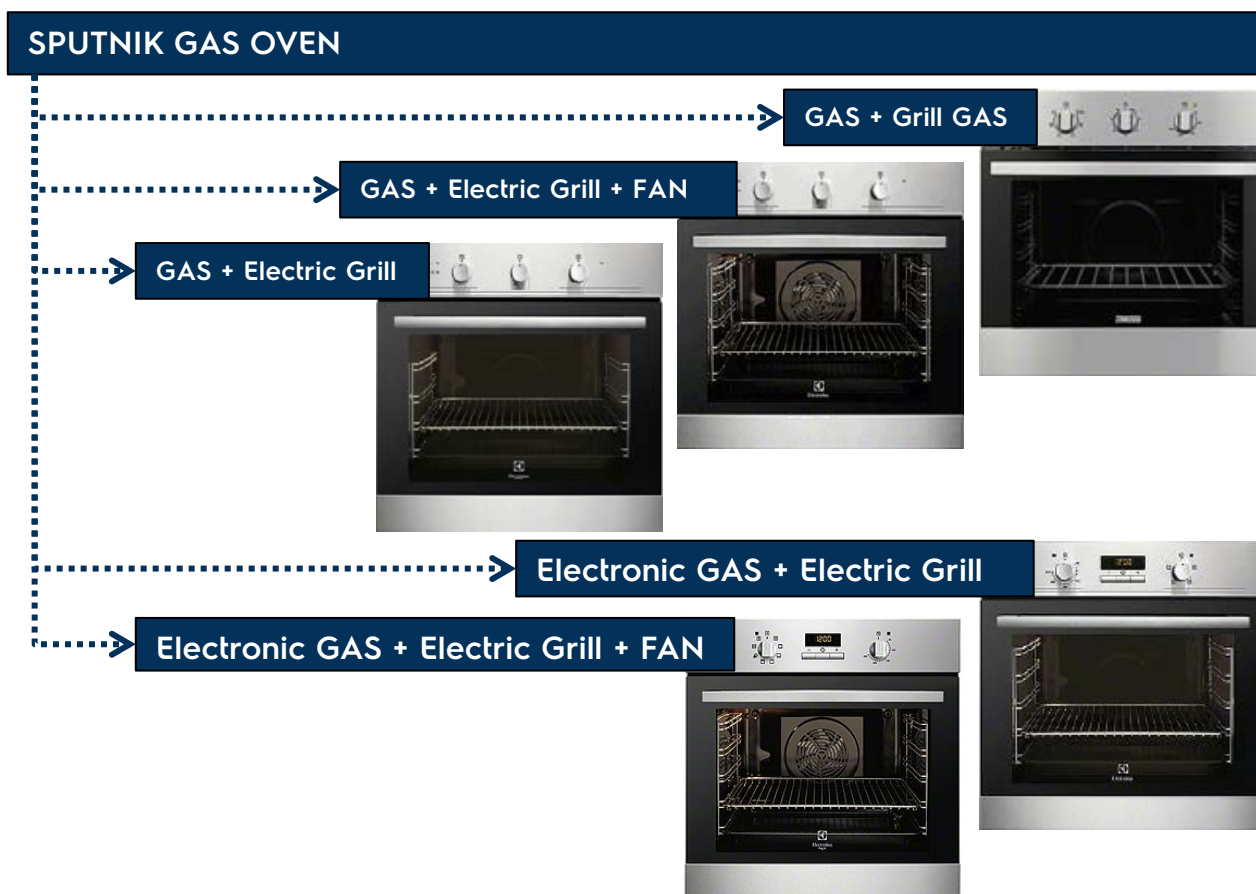
Before working on a device, check the efficiency of the system casing using appropriate equipment. As an example, refer to the indications described / illustrated in the portal Electrolux Learning Gateway (<http://electrolux.edvantage.net>).

After the work, carry out electrical safety tests and ensure that the all safety devices are working properly.

In the case of manipulation / replacement of the PCB, use the ESD kit (Code 405 50 63-95/4) to prevent electrostatic discharge damage the circuit board see SB No. 599 72 08-09

2 GENERAL DESCRIPTION

Scope of this project is to transfer the current Access platform to Sputnik platform and to deliver wide range of sub-projects



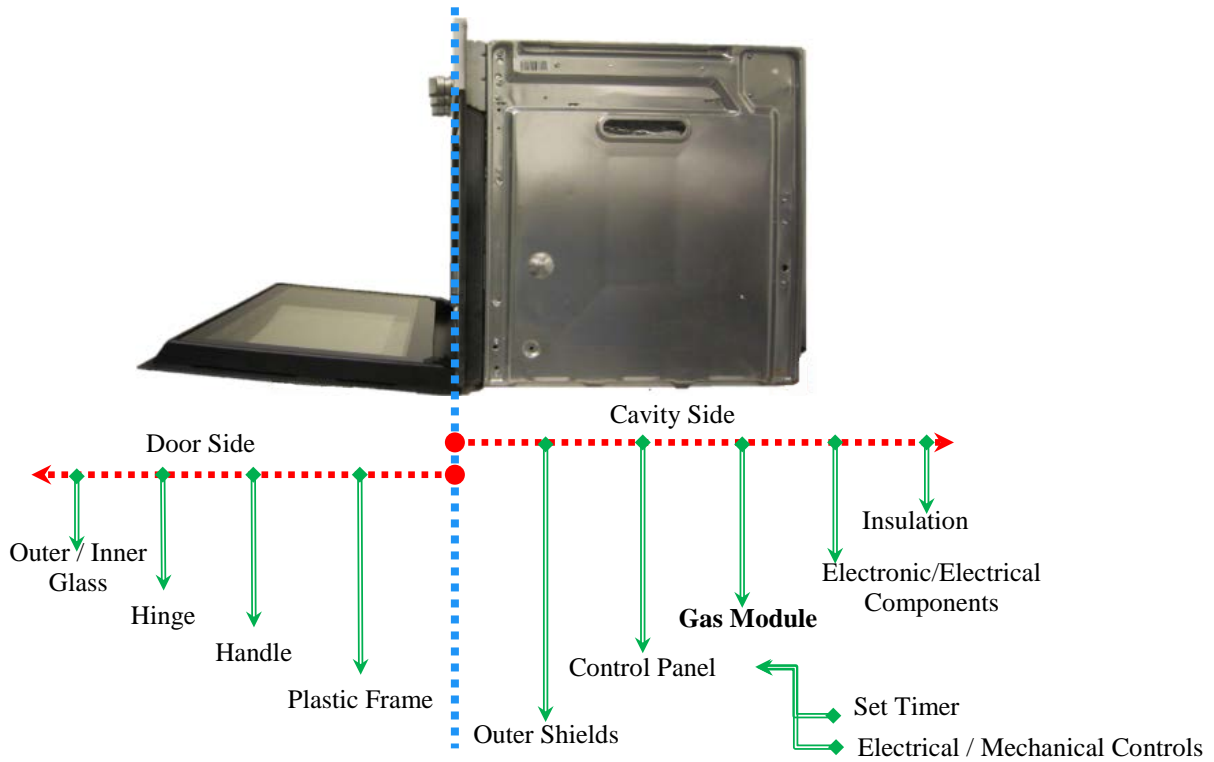
2.1 SPUTNIK GAS OVEN BENEFITS

1. XXL cavity
2. 25% larger baking tray
3. Symmetric control panel layout
4. Centrally positioned oven fan
5. 5 cooking levels
6. 40W halo light
7. Full glass inner door
8. Full range of accessories

2.2 TECHNICAL FEATURES

Check the User Manual under the chapter Technical Features

2.3 SPUTNIK GAS OVEN GENERAL STRUCTURE

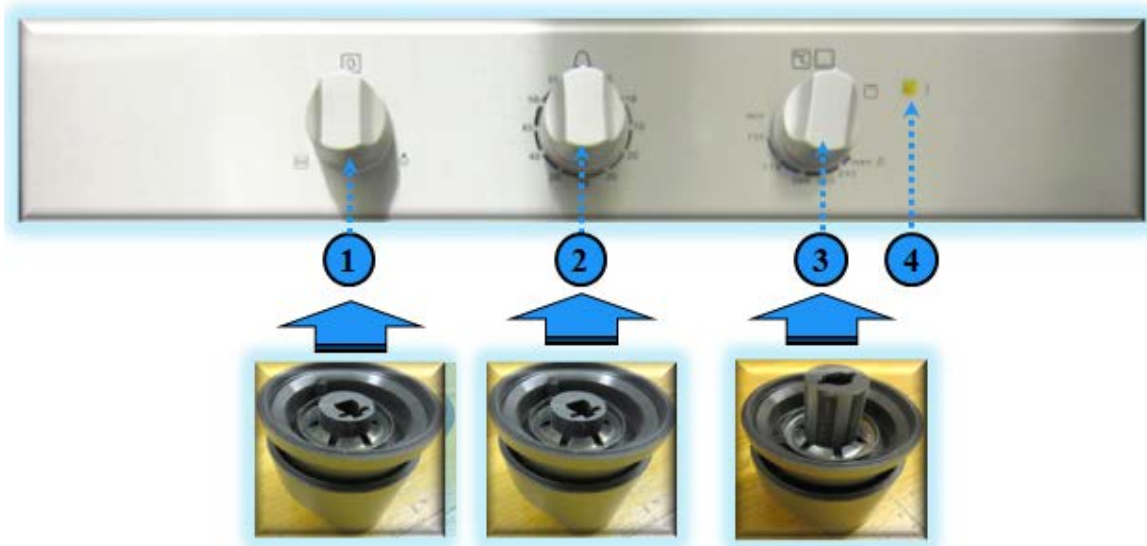


3 SPUTNIK GAS OVENS

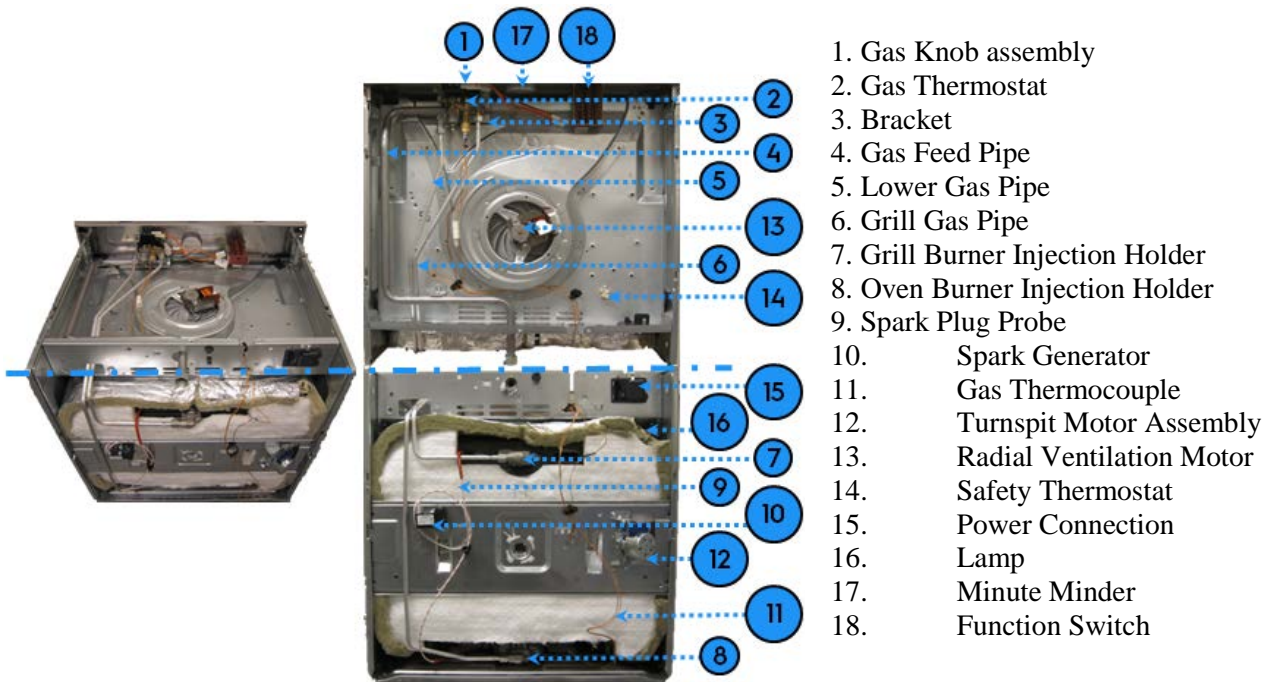
3.1 GENERAL GAS OVENS

3.1.1 CONTROL PANEL

1. Oven Functions Knob
2. Minute Minder Knob
3. Gas Control Knob
4. Power Indicator



3.1.2 LAY OUT

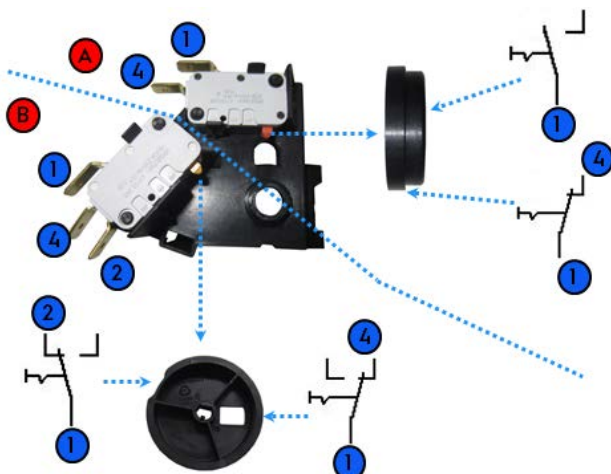
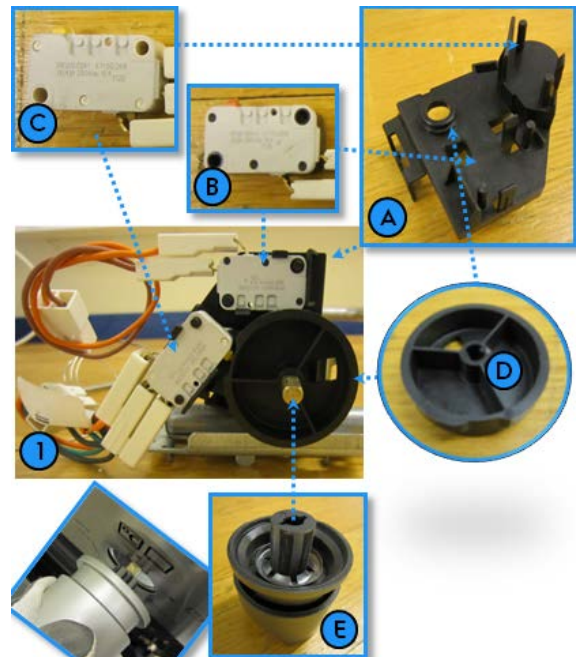


3.1.3 GAS COMPONENTS

1. Gas Control Knob Assembly

Provides the required ignition to the gas and allows controlling the intensity of the flame

- A. Bracket to accommodate the Micro Switches and the Knob Shaft
- B. Micro switch with red button to increase the intensity of the flame
- C. Micro Switch with yellow button to provide the spark
- D. Switch Cam , works as cam profile to ignite the gas and to increase the intensity of the flame
- E. Spring Loaded Knob is inserted to the Shaft to a smooth control for the user

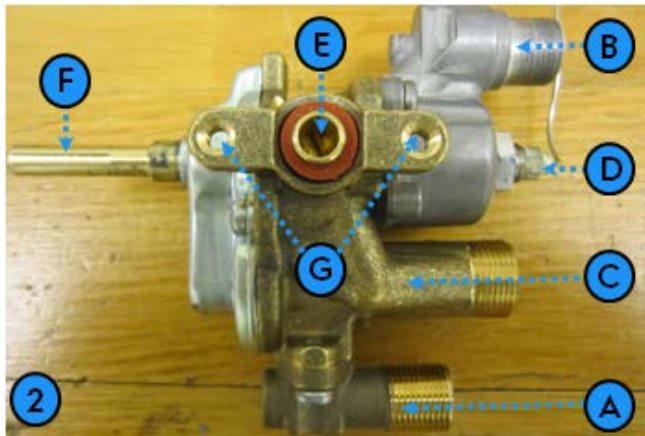


Zone A

- 1. Spark Generator
- 4. Phase L

Zone B

- 1. Phase L
- 2. Open 2
- 4. Cooling fan



2. Gas Thermostat

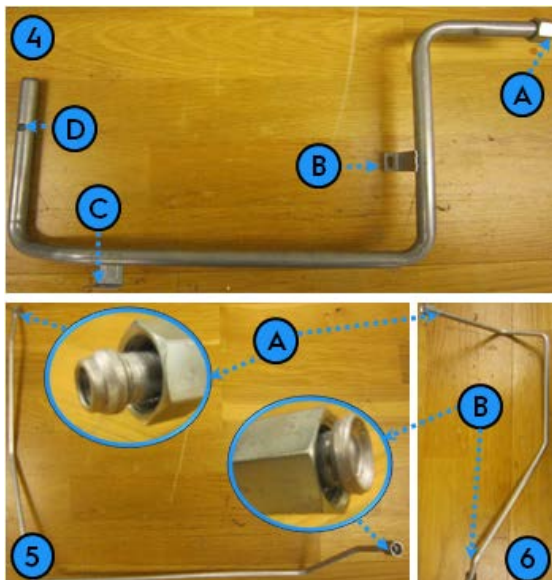
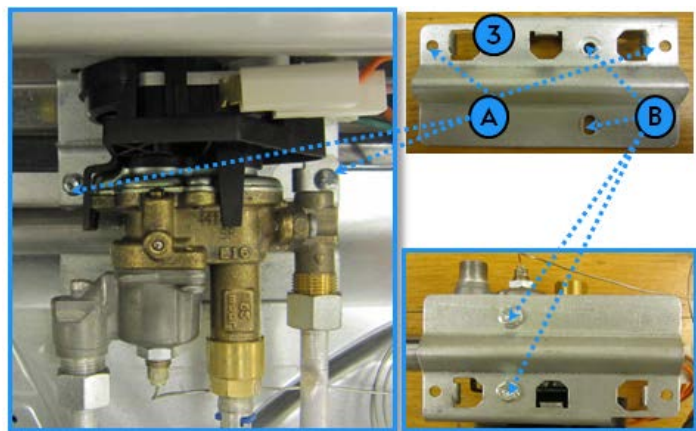
Distributes Gas to the Lower and Upper Burners

- A. Gas to the Grill Burner (*this outlet is made dummy for Gas + Electric Grill*)
- B. Gas to the Oven Burner
- C. Burner Temperature Detection Probe
- D. Oven Temperature Detector
- E. Inlet for Gas
- F. Knob Shaft
- G. Holes for Support Bracket

3. Bracket Gas Thermostat

Supports the complete assemble of Gas Thermostat and connect the Gas Feed Pipe to the Gas Thermostat

- A. 2 Screws for Gas Thermostat fixation
- B. 2 Screws for Feed Pipe fixation to the Gas Thermostat



4. Gas Feed Pipe

Gas is supplied to the system by this pipe from the main connection

- A. L-Bow is connected at this end
- B. Screwed to the component carrier
- C. Screwed to the U – Chassis
- D. Hole for gas transfer to the Gas Thermostat

5. Lower Gas Pipe

Gas is delivered to the Oven Burner

- A. End with embossing connected to the Gas Thermostat
- B. End with depression connected to the Nozzle

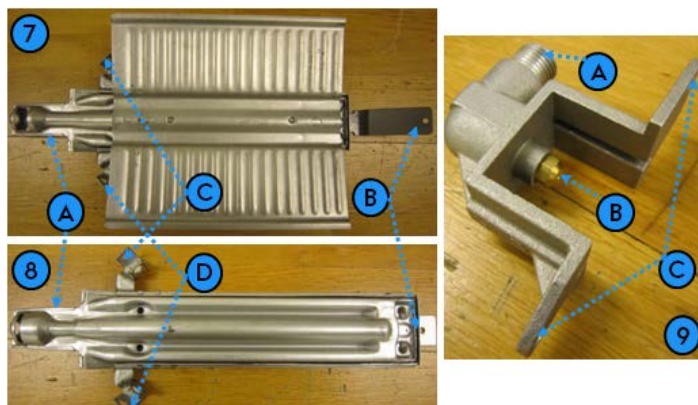
6. Grill Gas Pipe

7. **Grill Burner**

8. **Oven Burner**

Assembled in the upper side of the oven which gives a grill performance

- A. Flange of the Burner which gets inserted in to the Injector Holder
- B. Provision for fastening to Oven
- C. Holder for Spark Plug
- D. Holder for Gas Thermostat



9. **Injection Holder**

- A. Thread for fixing the Gas Pipe Nut
- B. Gas Injector threaded clock wise in to the Injunction Holder
- C. Flange with 2 Fastening Holes to fix with Oven Cavity

Injector Over Burner

II2H3+	II2H3B/P	Gas Type	Nominal Gas Power (KW)	Nominal Gas Power (g/h)	Reduced gas Power (KW)	By-pass Needle (1/100mm)	Injector Mark (1/100mm)	Spare part no. Injector
X	X	G20 (2H) 20mbar **	2,7	-	0,7	Reg.	112	3544004 93/4
X		G30 (3+) 28-30 mbar	-	196	0,7	43	80	3544000 53/6
X		G31 (3+) 37mbar	-	193	0,7	43	80	3544000 53/6
	X	G30/G31 (3B/P) 30/30mbar	-	196	0,7	43	80	3544000 53/6
	X	G20 (2H) 13mbar (only for Russia)	2,7	-	0,7	Reg.	130	3424750 2/3

Injector Grill Burner

II2H3+	Gas Type	Nominal Gas Power (KW)	Nominal Gas Power (g/h)	Reduced gas Power (KW)	By-pass Needle (1/100mm)	Injector Mark (1/100mm)	Spare part no. Injector
X	G20 (2H) 20mbar**	1,6	-	-	Reg.	90	354401388 /5
X	G30 (3+) 28-30 mbar	-	109	-	43	60	354400081 /7
X	G31 (3+) 37mbar	-	107	-	43	60	354400081 /7

** Factory settings

Gas type

II Appliances category (Appliance for several gas families)

2H Gas-family 2 (Natural gas)

3+ Gas-family 3 (Liquid gas)

II2H3+

Original: G20 (2H) 20mbar

Replacement: G30/G31 (3+) 28-30/37mbar with add. Injectors

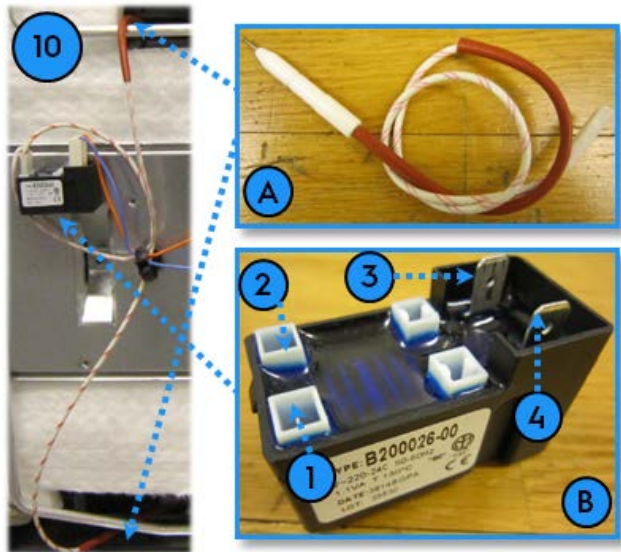
II2H3B/P

Original: G20 (2H) 20mbar

Replacement: G30/G31 (3B/P) 30/30mbar with add. Injectors

G20 (2H) 13mbar with add. Injectors

Gas Type		Test Gas		Test Pressure mbar		
				Nominal Pressure	Limit Pressure	
				P n	P min.	P max.
Gas-Family 1 Town Gas	Group A	Norm test gas	G10	8	6	15
		Limit gas	G112			
Gas-Family 2 Natural Gas	Group E (H)	Norm test gas	G20	20	17	25
		Limit gas	G21 G222 G23 G231			
		Norm test gas	G25			
	Limit gas	G26				
Gas-Family 3 Liquid Petrol gas	Group B/P B	Norm test gas	G30	28- 30/50	20- 25/42,5	35/57,5
		Limit gas	G31 G32			
	Group P	Norm test gas and Limit gas	G31	37/50	25/42,5	45/57,5
		Limit gas	G32			



10. Spark Generator Assembly

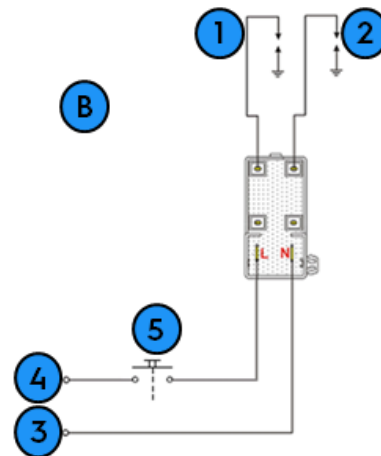
The spark generator receives the signal when the user turns the knob and the Micro Switch is triggered by the Switch cam. The spark generator intern provides the power to the Spark Plug to produce the spark and ignite the gas

A. Spark Plug

B. Spark Generator

- 1. Oven-burner
- 2. Grill-burner
- 3. N
- 4. L
- 5. Push Button

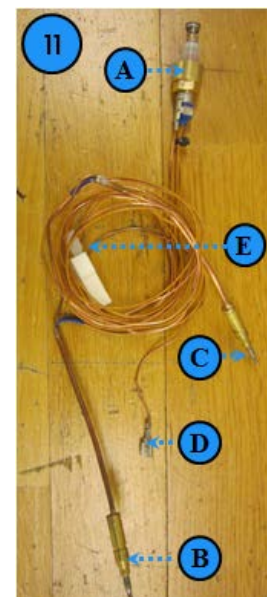
Voltage: 220V -240V
 Frequency: 50Hz – 60Hz
 Adsorb Power: 1,1VA
 Impulsive Voltage: >10kV
 Typical spark frequency: 2,5Hz – 4Hz



11. Gas Thermocouple

Detects the temperature at the burner and provides the signals to the Gas Valve

- A. Connected to the Gas Thermostat
- B. Plugged to the Oven Burner
- C. Plugged to the Upper Burner (*this is not presented for Gas + Electric Grill*)
- D. Earth connection
- E. Connector to plug in Upper burner Temperature Detection Probe



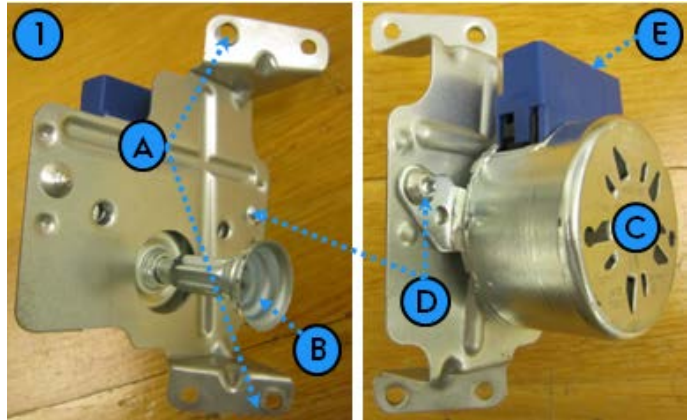
3.1.4 ELECTRIC / MECHANICAL / STRUCTURAL PARTS

Refer the Sputnik Document 599 74 68-69 for any extra information

1. Turnspit Motor

Provided rotatory motion for the food source need to get the even cooking performance

- A. Slots for fastening the Turnspit Motor to the Back Plate
- B. Slot for Turnspit shaft
- C. Turnspit Motor
- D. Screws for fixing the motor to the Bracket
- E. Electrical Connections



Voltage: 220V – 240V

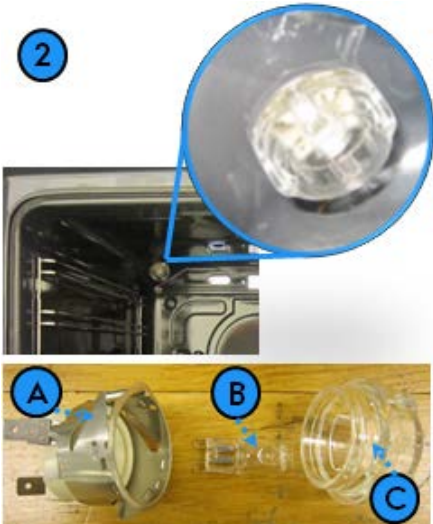
Frequency: 50Hz – 60Hz

Power: 4W

Resistor: 9,68 kOhm

Speed: 1,8 – 2,2 1/min

2



2. Illumination

Provides the light inside the Oven Cavity

- A. Oven Light Holder , snapped to the Oven Cavity and required electric connections are given
- B. Oven Lamp
- C. Oven Lamp cover

3. Cooling Structure

The Radial Cooling fan and the cooling Structure provides the cooling effect to the Oven components out of the Cavity

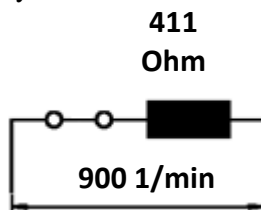
- A. Radial Fan Motor Assembly

Voltage: 230V AV 50Hz

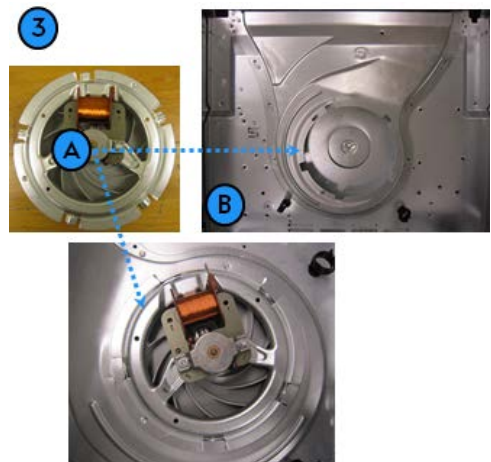
Power: 9W

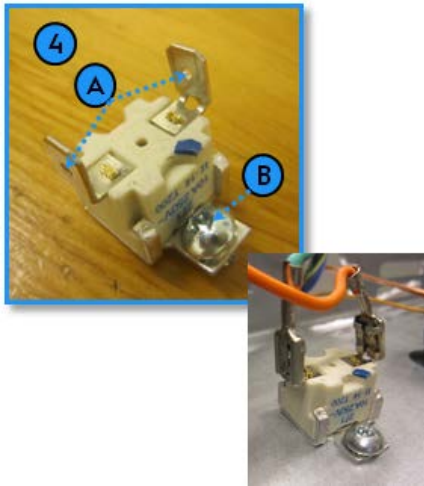
Resistor: 411 Ohm

Speed: 900 1/min



- B. Cooling structure clinched to the Component Carrier





4. Safety Thermostat (not for Electronic Gas models)

In case of over-temperature the safety thermostat switches off the appliance. The thermostat has normally closed contacts when it comes to temperature opens the contacts, and is connected in series with the power supply (L) and electronics. The working temperature is depends on different appliances. For differentiation, the thermostats are identified with different colour points (e.g. 2x green or 1x orange etc.).

- A. Terminals for harness connection
- B. Screw slot to fix to the component carrier

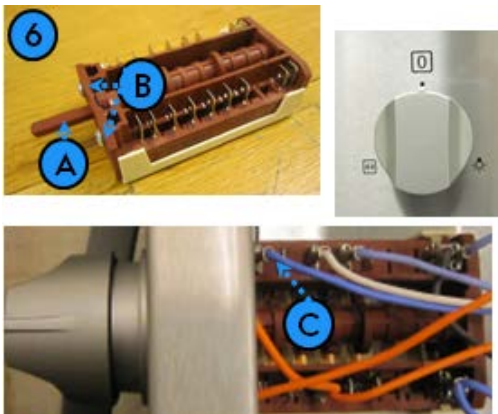
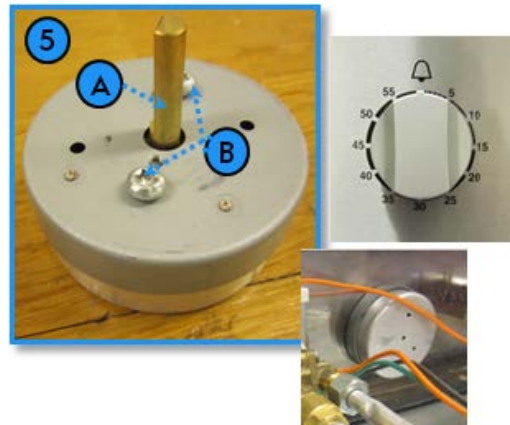
Normal condition: closed when the system will be to warm, the safety-thermostat switches the cooling fan on.

For the thermostat value reffer to the Gas oven Typology Chapters.

5. Minute Minder

A minute minder is a mechanical countdown timer which alerts you when you need to remove your food from the oven

- A. Shaft for Knob fixation
- B. 2 Screws for assembling on the Panel



6. Oven Function Switch

A function switch allows the customer to select the required program manually

- A. Shaft for Knob fixation
- B. 2 Screws for assembling on the Panel
- C. Terminals for harness connection

7. Power Connection

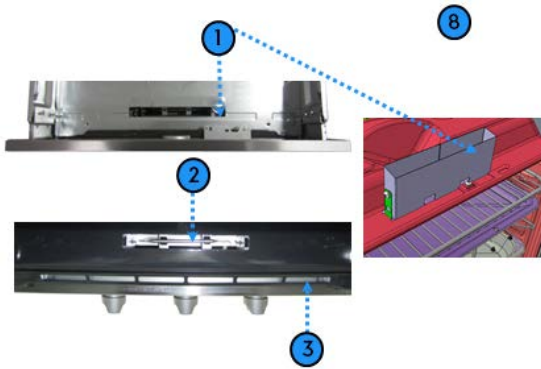
Power cable is connected to the respective nodes and the Oven harness is connected to this internally. Power is supplied to the Oven from this junction



8. Exhaust Chimney

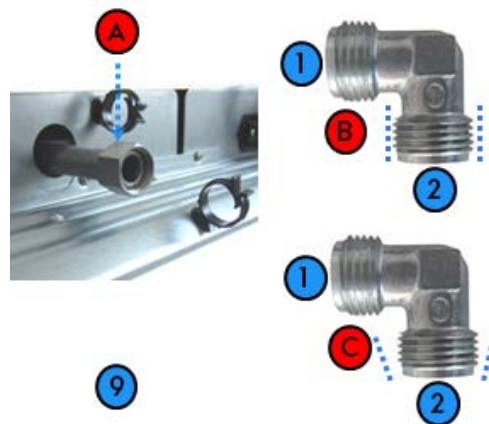
The Hot air from the cavity to the channel is circulated from the Chimney

1. Exhaust Chimney
2. Thermostat Capillar (only for Gas and grill gas models, not for the Electronic Gas Models)
3. Exhaust Vent



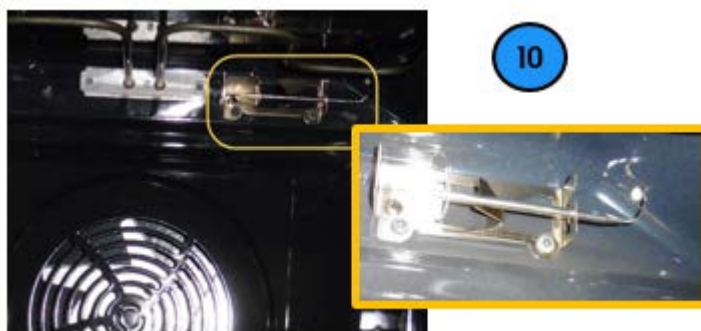
9. Gas connection

- A. Main gas connection Spanner SW22
- B. "G $\frac{1}{2}$ " Cylindric thread 354324901/9
 1. CYLINDRIC ISO 228 G 1 $\frac{1}{2}$ GASKET MUST BE INSERTED
 2. CYLINDRIC ISO 228 G 1 $\frac{1}{2}$ GASKET MUST BE INSERTED
- C. "R $\frac{1}{2}$ " Cylindric thread 354324903/4
 1. CYLINDRIC ISO 228 G 1 $\frac{1}{2}$ GASKET MUST BE INSERTED
 2. CONICAL ISO 10226 (ISO 7) R 1 $\frac{1}{2}$ GAS TIGHTNESS MADE ON THREADS (NO GASKET)



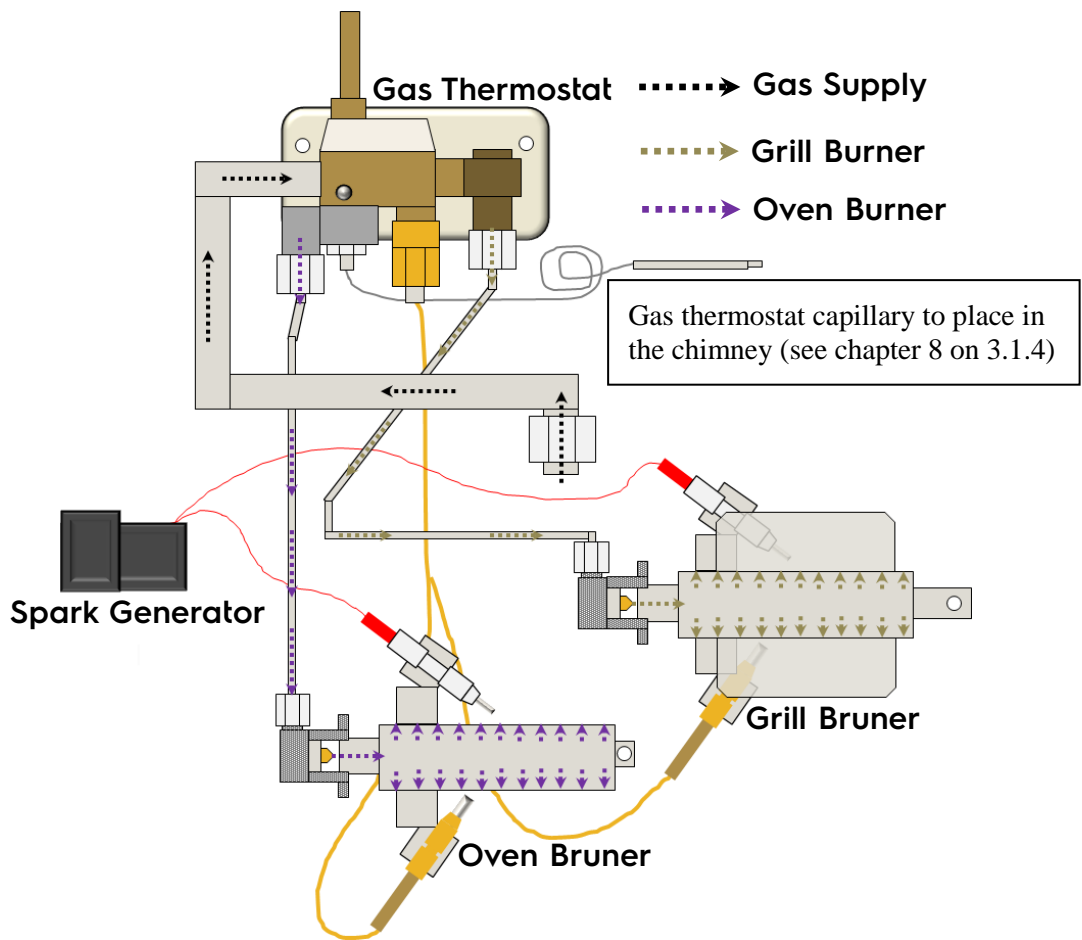
Country code	Country	Gas Categorie			Conic thread	Cylindric thread
		I	II	III		
AL	Albania	-	II2H3B/P	-		X
AT	Austria	-	II2H3B/P	-	X	
BE	Belgium	-	II2E+3+	-	X	
BG	Bulgaria	-	II2H3B/P	-		X
CY	Cyprus	I3B/P	-	-	X	
HR	Croatia	-	II2H3B/P	-		X
DK	Denmark	-	II2H3B/P	III1a2h3B/P	X	
EY	Egypt	-	II2H3+	-	X	
EE	Estonia	-	II2H3B/P	-		X
FI	Finland	-	II2H3B/P	-		X
FR	France	-	II2E+3+	III1c2E+3+		X
DE	Germany	-	II2E3B/P II2ELL3B/P	-	X	
GR	Greece	-	II2H3+	-	X	
IE	Ireland	-	II2H3+	-	X	
IS	Island	I3B/P	?	?	X	
IT	Italy	-	II2H3+	III1a2H3+		X
LV	Latvia	I2H	-	-		X
LT	Lithuania	-	II2H3B/P	-		X
LU	Luxembourg	I2E	-	-	X	
MK	Macedonia	-	II2H3B/P	-		X
MT	Malta	I3B/P	-	-		
NO	Norway	-	II2H3B/P	-	X	
NL	Netherlands	-	II2H3B/P	-	X	
PL	Poland	-	II2ELS3B/P	-	X	
PT	Portugal	-	II2H3+	-		X
UK	United Kingdom	-	II2H3+	-	X	
CZ	Czech Republic	-	II2H3B/P	-		X
RO	Romania	-	II2H3B/P	-		X
RU	Russia	-	II2H3B/P	-		X
SK	Slovakia	-	II2H3B/P	-		X
SI	Slovenian	-	II2H3B/P	-		X
ES	Spain	-	II2H3+	-		X
SE	Sweden	-	II2H3B/P	III1ab2H3B/P	X	
CH - IT	Switzerland	-	II2H3+	-	X	
CH - DE	Switzerland	-	II2H3B/P	-	X	
TR	Turkey	-	II2H3B/P	-		X
HU	Hungary	-	II2HS3B/P	-	X	

10. Electric Thermostat Capiller position (where available)



The Electrical Thermostat Capiller is placed on the rear wall (top right) inside the cavity. It is present in all Gas ovens but Grill Gas ovens.

3.1.5 GAS CIRCUIT (GAS GRILL MODELS)



Gas from the main supply is delivered to the Gas Thermostat and distributed to the Grill Burner and Oven Burner. Spark generator ignites the gas and gas thermostat

3.1.6 FUNCTIONAL DESCRIPTION

Refer to User Manual from the chapter Daily Use

3.1.7 SPARK PLUG & GAS THERMOCOUPLE POSITION

Burners	Gas Thermocouple	Spark Plug
Grill Burner		
Oven Burner (not for Gas Electronic Models)		
General check after the service		
<p>Check that both the plugs are pushed in to the brackets till the last extend (<i>tight fit</i>) and assure they are not coming out due to any small vibrations in the oven</p>		

3.1.8 ACCESSIBILITY

3.1.8.1 Dismounting Outer Shilled

1. U – Chassis : Removing chassis is not defined since it's not available as spares and more over changing chassis is replacing the complete oven

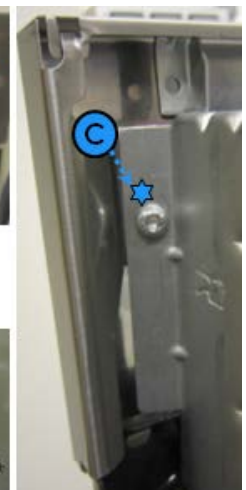
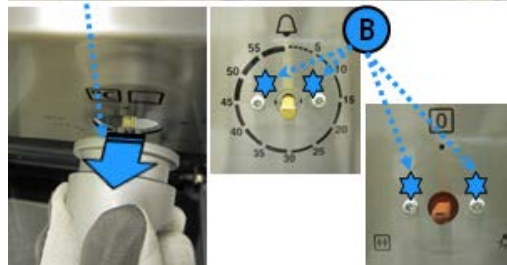
Accessing Internal Components

2. Upper Protection Cover : Remove the 6 * screws to open
3. Back Protection Cover : Remove the 4 * screws to open



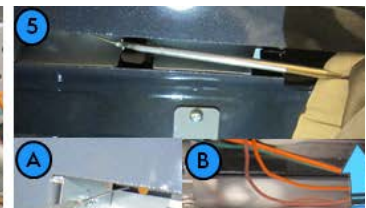
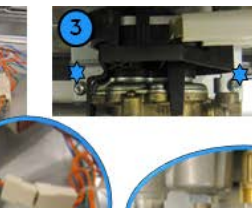
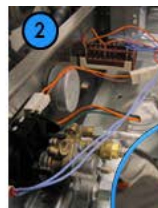
3.1.8.2 Dismounting Control Panel

1. Control Panel
 - A. Pull the Knobs using nominal force and extract from the Control Panel
 ! Make a note of Spring Loaded Knob to be replaced to the Gas Control
 - B. Unscrew 2 Screws to access Minute Minder and Unscrew 2 Screws to access Function Switch
 - C. Unscrew 2 Screws Left & Right side of the panel and lift the Control panel



3.1.8.3 Dismount Gas Valve Assembly

1. Pull the Gas Knob from the control Panel
2. Disconnect the Harness plugs of the Micro Switch from the main Harness
3. Unscrew 2 Screws of the Gas Valve Bracket
4. Unscrew the Bolts of Gas Pipes and Gas Thermostat
5. Disconnect the capillary tube in the front top side of the oven
 - A. Push the capillary tube through the oven top wall
 - B. Pull the capillary tube out of the component carrier



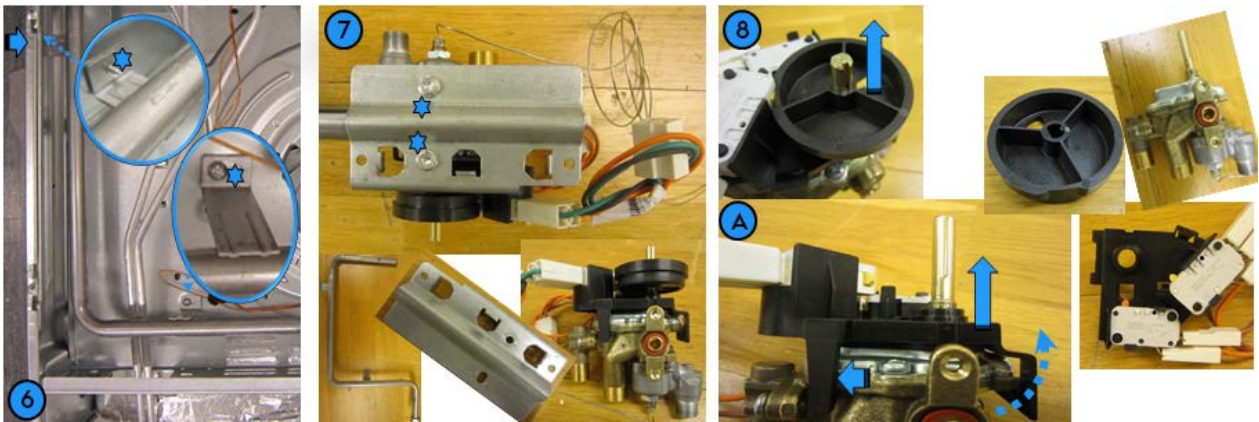
6. Unscrew 2 screws , one on the right side of U-chassis and one on component carrier to release Gas Feed Pipe

7. Unscrew 2 screws in the back of the Gas Thermostat Bracket and release all the parts in the subassembly

! Take care of the red gasket between the Gas thermostat and the Gas Feed Pipe

8. Pull out the Switch Wheel

A. Unsnap the Bracket from the Gas Thermostat and release all the parts in the subassembly

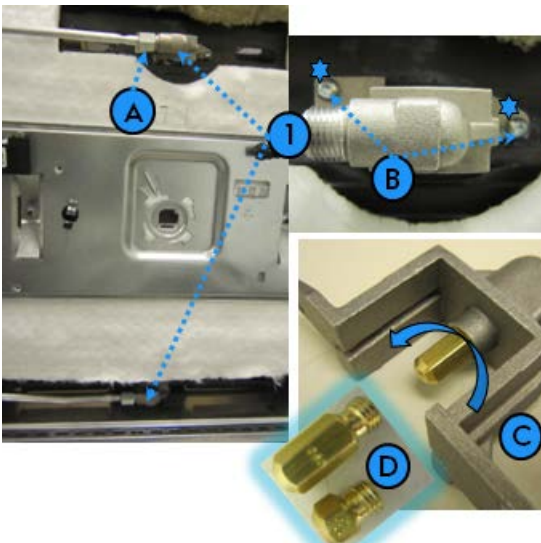
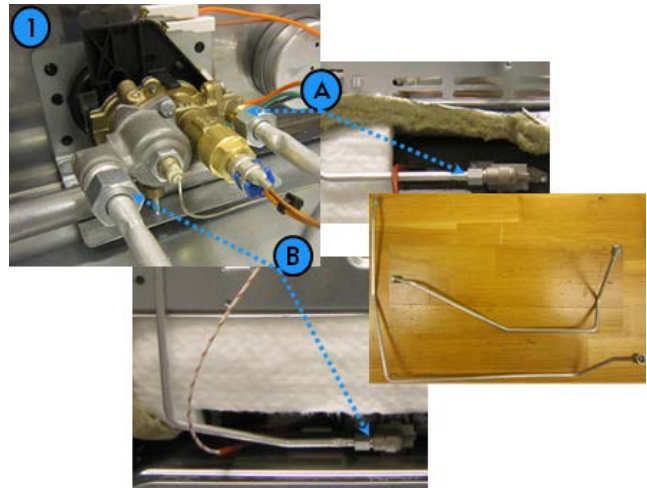


3.1.8.4 Dismount Gas Tubes

1. Gas Pipes

A. Unscrew the Bolts to dismount the Grill Burner Gas Pipe

B. Unscrew the Bolts to dismount the Oven Burner Gas Pipe



3.1.8.5 Dismount Injection Holder / Injector

1. Injection Holder top & bottom

A. Unscrew the Bolt of Gas Pipe

B. Unscrew the 2 Screws

C. Unscrew the Injector clock for any service

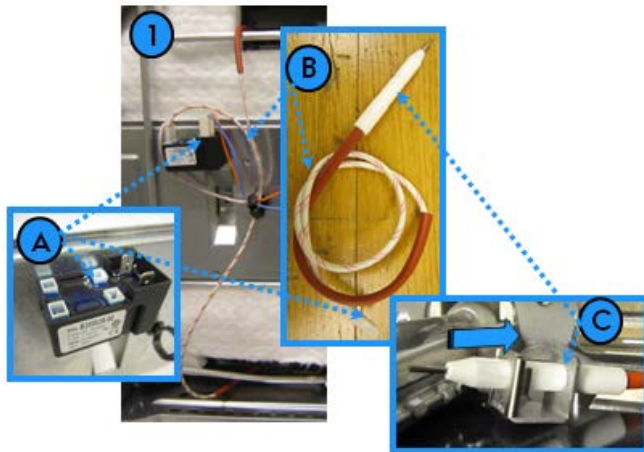
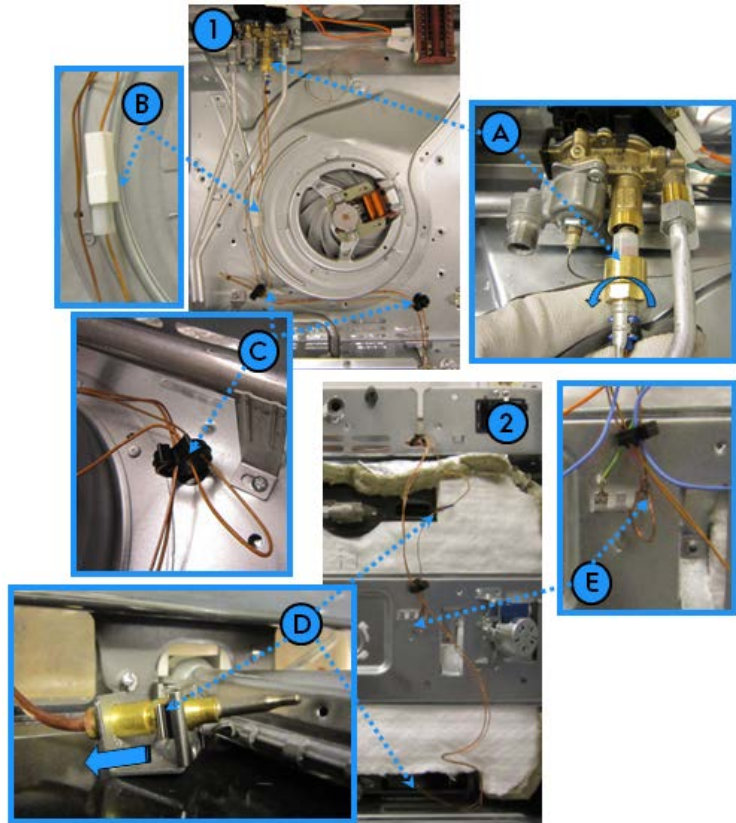
D. Size of the Injector is different for top and bottom Burners

3.1.8.6 Dismounting Gas Burners

Dismounting Gas Burners covered in the User Manual < Page 14. Gas Grill Injector Replacement >
Position of the Plugs Check chapter 3.1.7 in this document

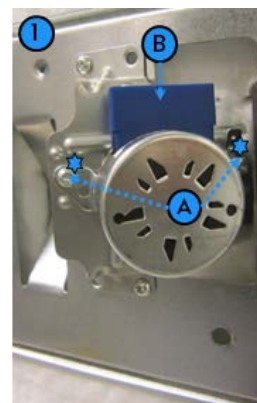
3.1.8.7 Dismounting Gas Thermocouple Assembly

1. Top view of Gas Thermocouple assembly
2. Rear View of Gas Thermocouple assembly
 - A. Unscrew the Gas Thermocouple and free the cable
 - B. Unplug the connector and remove the Top Gas Thermocouple if you have to service only the top one
 - C. Remove the cable from the cable holders
 - ! Pack the extra lengths after the service in to the holders
 - D. Pull the Gas Thermocouple in direction shown
 - ! After the service position it back as per the chapter 3.1.7
 - E. Disconnect the Earth Connector



3.1.8.8 Dismounting Spark Generator Assembly

1. Spark Generator Assembly
 - A. Disconnect the plugs of Spark Generator Cable from the Spark Generator
 - B. Spark Plug Cable
 - C. Pull the Spark Plug in the direction shown



3.1.8.9 Dismount of Turnspit motor

1. Turnspit motor
 - A. Unscrew the 2 screws
 - B. Remove the wiring harness

Dismount of Cooling Fan, Safety Thermostat & Lamp refer the Sputnik Document 599 74 68-69

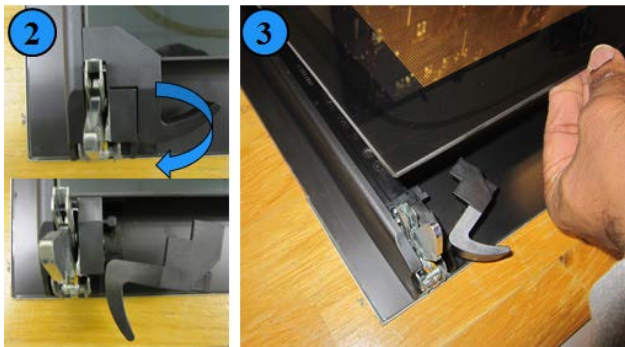
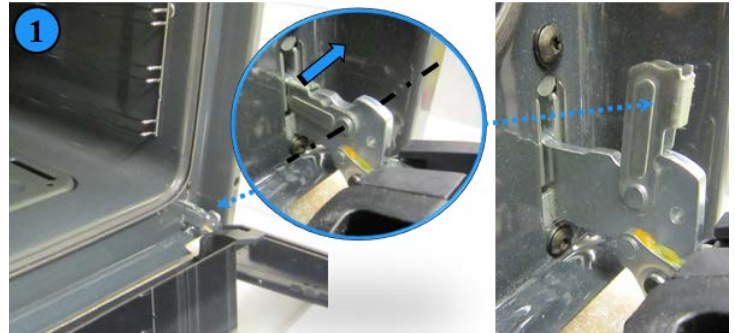
3.1.8.10 Dismount of Door

Door structure contains inner and outer glass, plastic frame and Hinge. The two glasses provide heat protection and the gap between them provides a proper air berating for the oven. Hinge provided the kinematic link to the Cavity Structure.

1. Outer Glass
2. Inner Glass
3. Hinge
4. Plastic Frame
5. Handle

Dismounting Door

1. Turn the Locking Lever keeping the door in open position. After opening the Locking Lever rotate the door to the close position and lift the door out for the Cavity structure.



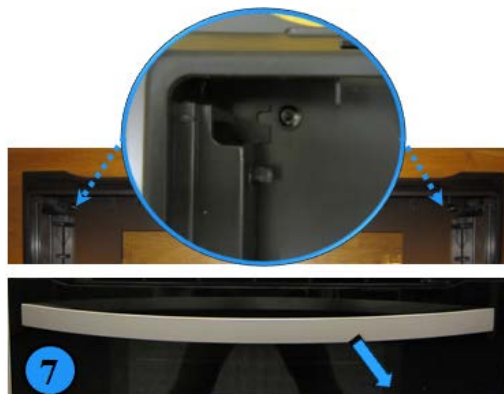
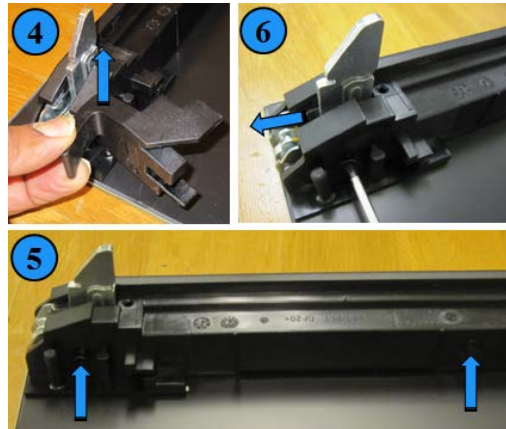
Dismounting Glass

2. After keeping the door facing the front glass on a soft and clean surface, rotate the Glass Lock to 90°
3. Lift the glass in the bottom side and drag towards you and life the glass.

! The black colour painting has to be in the inner side when you assemble back

Dismounting Hinge

4. Lift the Glass Lock and take it out to access the Hinge screw
5. Unscrew two locations to access the Hinge
6. Pull the Hinge out from the Plastic Frame



Dismounting Door Handle

7. Unscrew the left and right screws on the front glass and remove the handle

! If the Plastic Frame is damaged, the complete Outer glass with the Plastic Frame has to be replaced

Assemble the spares in the reverse method defined

in the dismounting of the components.

3.1.9 TROUBLE SHOOTING (FOR GAS ELECTRONIC MODELS SEE ALSO CHECK SEQUENCE IN CHAPTER 3.5.4)

Problem	Possible cause	Remedy
The oven does not heat up.	The oven is deactivated.	Activate the oven.
	The fuse is released.	Make sure that the fuse is the cause of the malfunction. If the fuse releases again and again, contact a qualified electrician.
The oven does not operate.	The automatic ignition does not work.	Ignite the burner manually with a long match. Hold the flame near the hole in the bottom of the oven cavity. At the same time push the knob for the gas control and turn it counter clockwise to the maximum temperature. When the flame comes on, keep the knob for the gas control pushed for 15 seconds or less to let the thermocouple warm up. If not, the gas flow is interrupted.
The lamp does not operate.	The lamp is defective.	Replace the lamp.
Steam and condensation settle on the food and in the cavity of the oven.	You left the dish in the oven for too long.	Do not leave the dishes in the oven for longer than 15 - 20 minutes after the cooking process ends.
The flame extinguishes immediately after ignition.	Thermocouple is not heated up sufficiently.	After lighting the flame, keep the knob for the gas control pushed for 15 seconds or less.
Gas Burners are not working	Wrong Installation	Check the inclination of the Oven by level gauge and making it horizontal
	No proper Ventilation	Create proper ducts for air circulation
	Cooling fan not functioning	Check the Wiring Replace the Fan Motor

3.2 GAS + GRILLGAS

Refer chapter 3.1 of General Gas oven chapter and other general chapters.

3.2.1 ELECTRIC / MECHANICAL / STRUCTURAL PARTS

All the components are same as general Gas Oven except the specification of the thermostat

Oven burner + Grill burner

Colour: blue

Opening temperature: T=60°C

Closing temperature: T=80°C

Max. working Temperature: T=250°C

3.3 GAS + ELECTRIC GRILL + FAN

3.3.1 THE DIFFERENCE BETWEEN THE GAS + GRILL GAS AND GAS + ELECTRIC GRILL + FAN

1. Control Panel
 - A. Grill Lap
 - B. Extra Oven functions
2. Gas Thermostat
 - A. Gas burner outlet is made dummy
3. Oven function switch with Oven Thermostat
4. Horizontal Cooling fan

Voltage: 230V AV 50Hz

Power: 11W

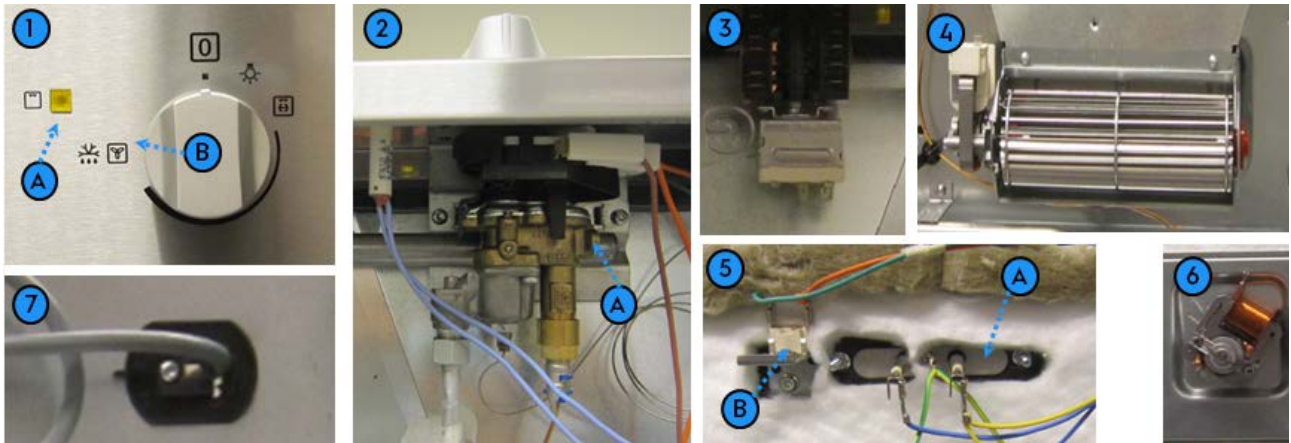
Resistor: 484 Ohm

Speed: 910 1/min → 35m³h

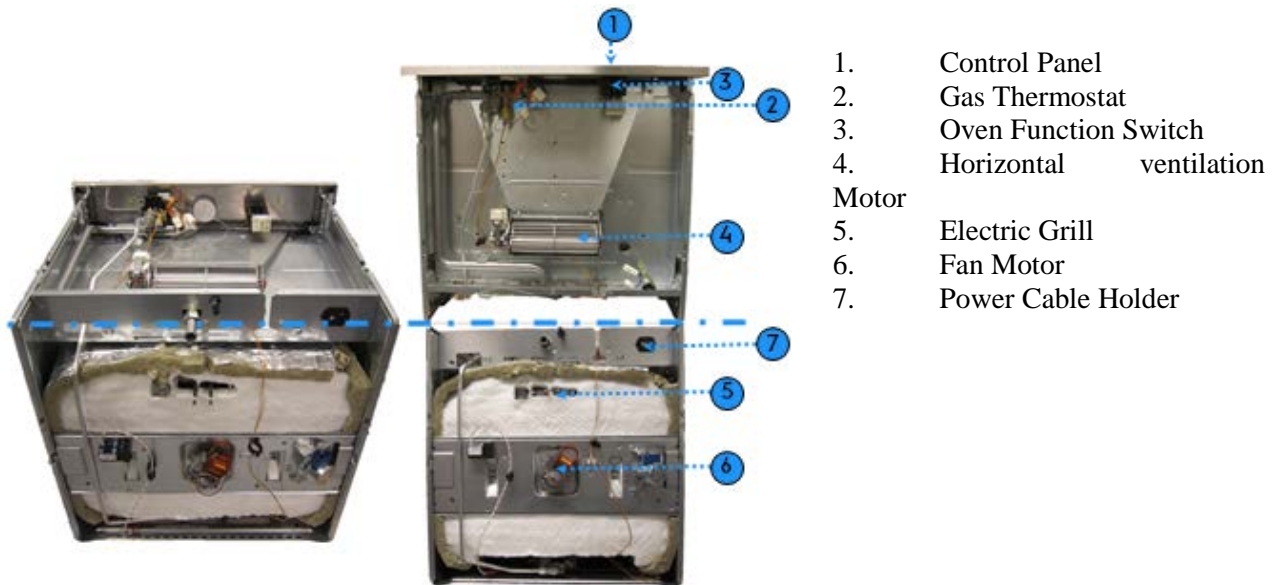
**484
Ohm**



5. Oven Rear Top
 - A. Electrical Grill Element
 - B. Safety Thermostat position
6. Fan Motor
7. Power Cable

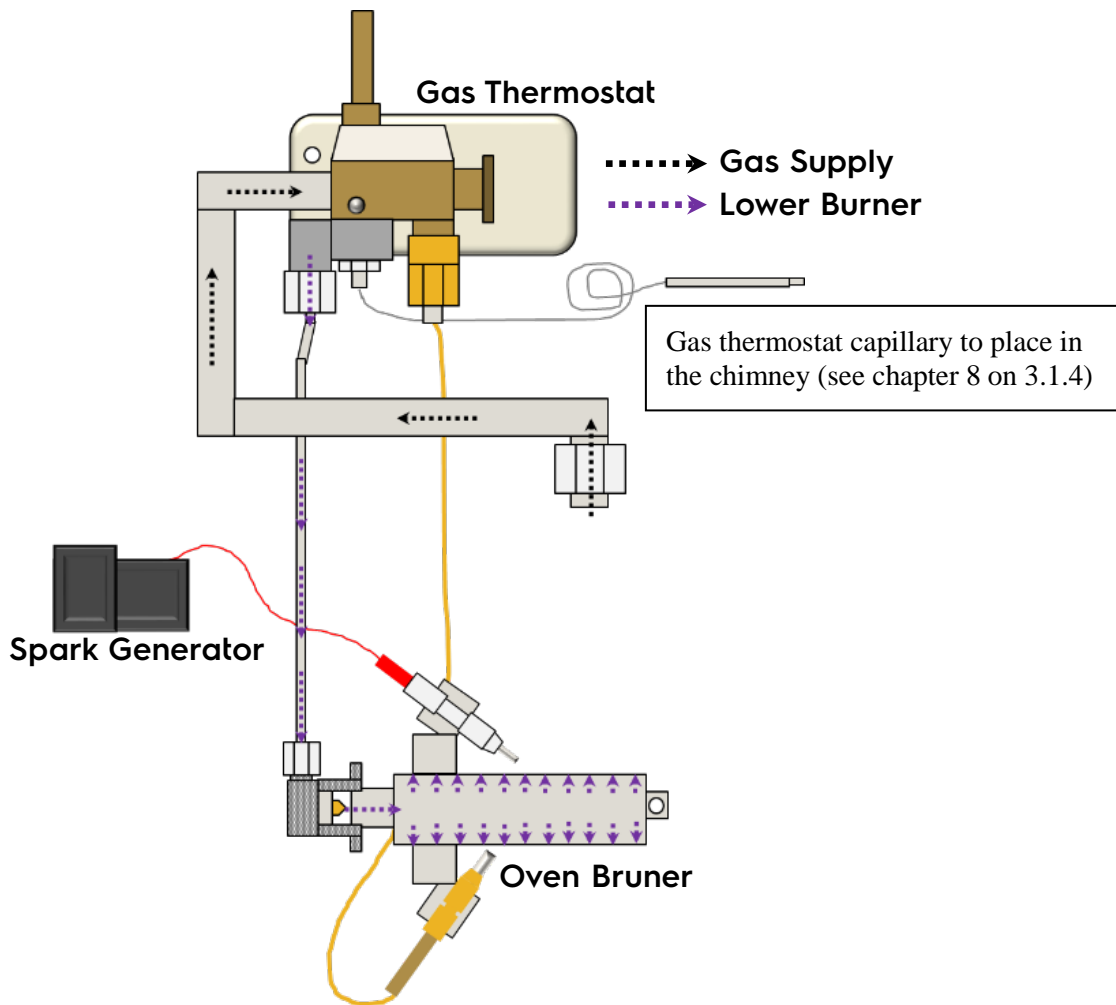


3.3.2 LAY OUT



1. Control Panel
2. Gas Thermostat
3. Oven Function Switch
4. Horizontal ventilation Motor
5. Electric Grill
6. Fan Motor
7. Power Cable Holder

3.3.3 GAS CIRCUIT (ELECTROMECHANICAL GAS+ELECTRIC GRILLS MODELS)



Gas from the main supply is delivered to the Gas Thermostat and delivered to Oven Burner. Spark generator ignites the gas and gas thermostat

For all other information of Gas+Electric Grill+Fan refer to Gas+GrillGas.

3.3.4 ELECTRIC / MECHANICAL / STRUCTURAL PARTS

All the components are same as Gas Oven except the specification of the thermostat

Oven burner + Electric grill

Colour: red
Opening temperature: $T=85^{\circ}\text{C}$
Closing temperature: $T=95^{\circ}\text{C}$
Max. working Temperature: $T=300^{\circ}\text{C}$

3.4 GAS + ELECTRIC GRILL

Fan is not present in the Gas+Electrical Grill; all other functionalities are similar as Gas+Electric Grill+Fan

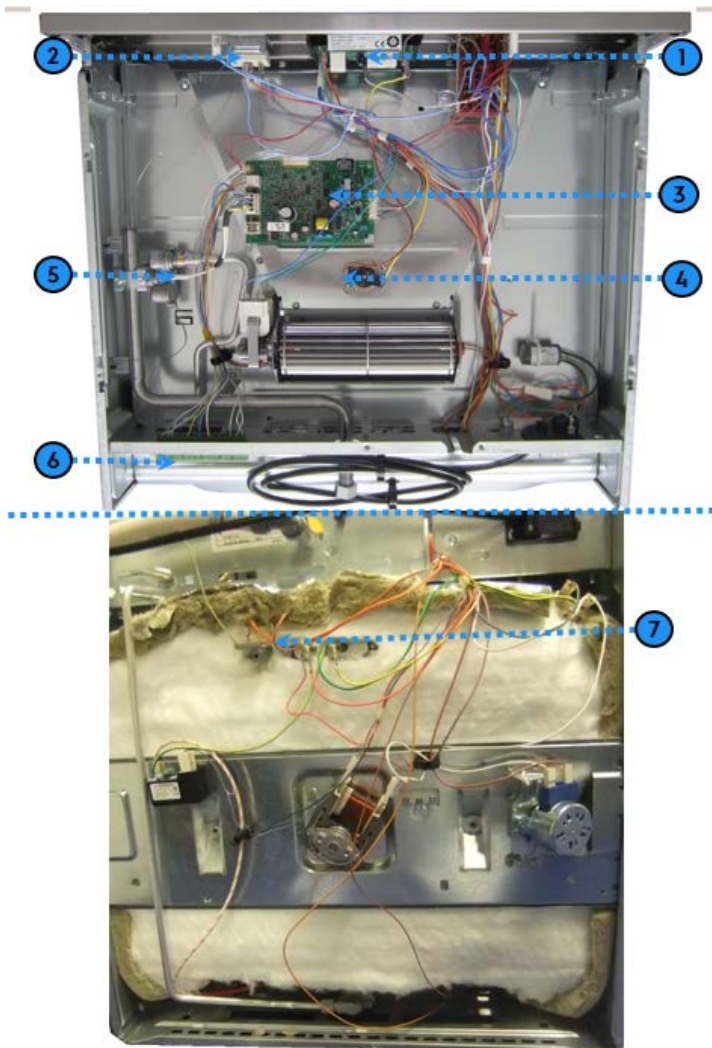
3.5 ELECTRONICS GAS + ELECTRIC GRILL

3.5.1 CONTROL PANEL

1. Oven Functions Knob
2. Set - Timer
3. Gas Control Knob
4. Power Indicator
5. Alarm Signal Lamp Indicator



3.5.2 LAY OUT



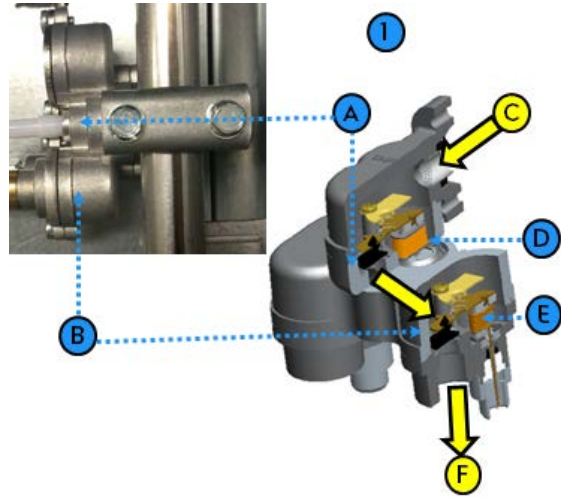
1. Set-Timer
2. Regulator-thermostat
3. Electronic TC-1000
4. Safety thermostat n°1
5. TDV-10 valves for gas control
6. CrissCross connect. for factory test
7. Safety thermostat n°2

All other components in the Rear side of the Oven; refer the capter 3.2.2 Gas + Electric Grill + Fan

3.5.3 GAS COMPONENTS

1. TDV-10 valves

- A. GEV (General Electric Valve) valve is the gas inlet for purpose of double safety. Valve is always powered by TC-1000.
- B. TEV (Thermo Electric Valve) valve is the outlet of the TDV-10 valve to control the gas flow for one gas burner. Valve is powered by TC-1000 during ignition time
After flame recognition is powered by the thermocouple.
- C. Gas Inlet
- D. GEV solenoid Resistor 49+/-3 Ohm
- E. TEV solenoid Resistor 19+/-0,5 mOhm
- F. Gas Outlet

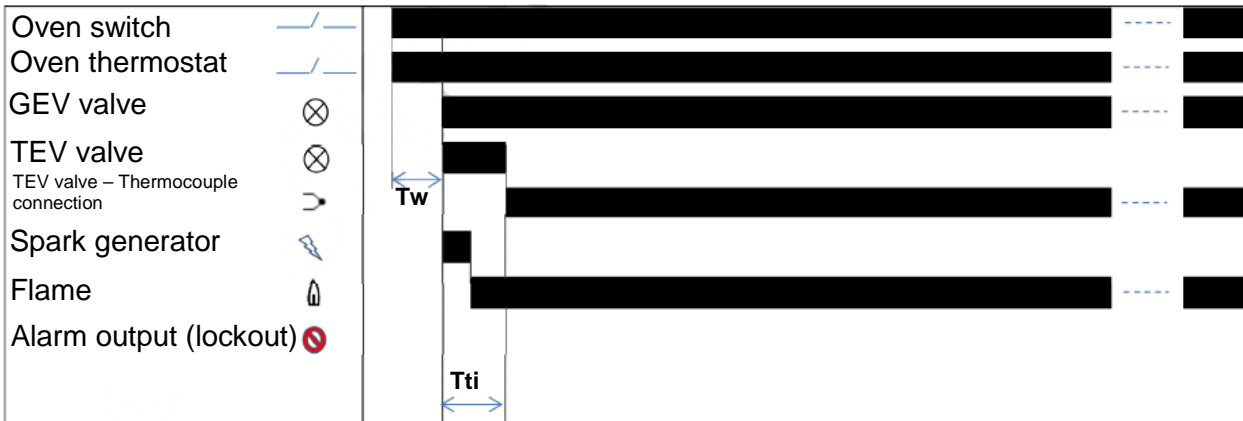


GEV and TEV have the same structure and same function with the lever closing and opening principle

2. Spark Generator Assembly

For assembly details Reffer to chapter 10 in 3.1.3

2.1 CASE OF SUCCESSFUL IGNITION



Tw = Waiting time: 6 ± 1 sec.

→ is the time between power activation to the system and start of the ignition trial.

Tti = Trail of ignition time: 13 ± 2 sec.

→ is the time for ignition trial.

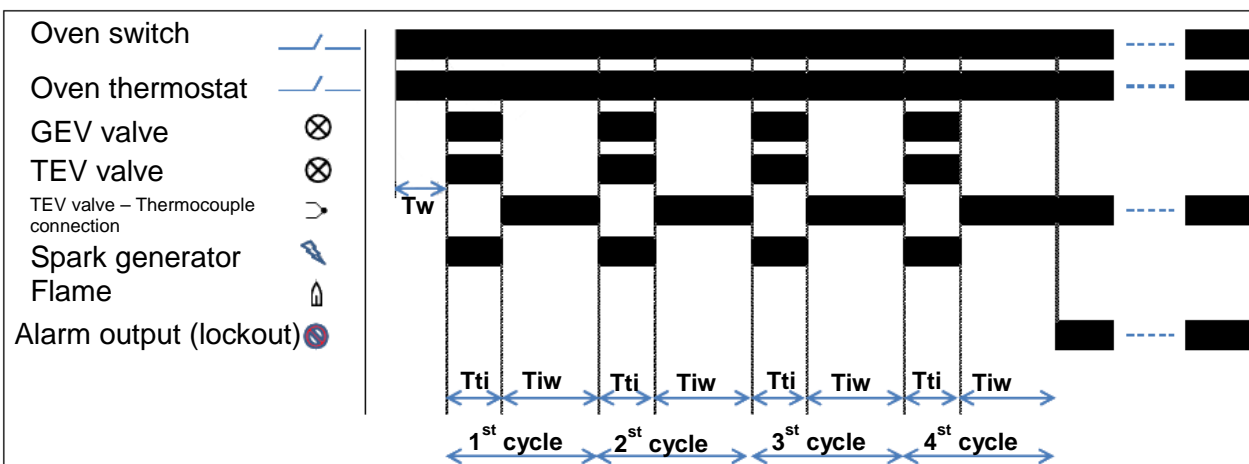
Tiw = Inter-waiting time: 40 ± 5 sec.

→ is the time between an ignition trial and the next one.

Td = Delay time: < 60 sec.

→ is the time the electronic board needs to detect the flame failure and close the GEV valve.

2.2 CASE OF IGNITION FAILURE

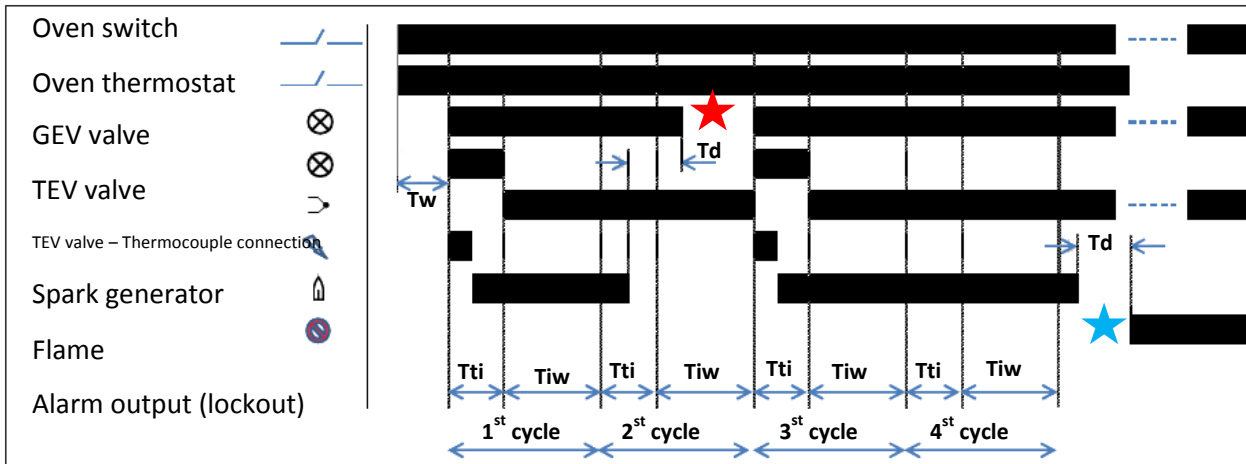


If the flame isn't lit in the first trial for ignition period, after the inter-waiting time (T_{iw}) another ignition cycle will start, up to 4 cycles.

After the 4 cycles (around 3 minutes) the system will reach **lockout state**. → Electronic locked the gas valve permanent and Alarm signal lamp is on.

Lockout will be cancelled only in case of de-activation.

2.3 CASE OF FLAME FAILURE W/WO. RE-IGNITION



The TC-1000 will act differently depending, if the flame fails **during** or **after** the 4 cycles of the ignition sequence.

★ → If flame fails **during** the ignition sequence, a re-ignition attempt will be carried out.

★ → If flame fails **after** the ignition sequence, the TC-1000 will not run any re-ignition attempt

3.5.4 ELECTRIC / MECHANICAL / STRUCTURAL PARTS



1. Electronic TC-1000

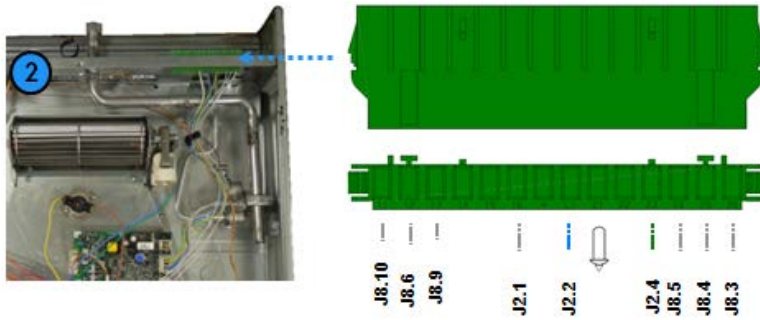
- Power supply 120V or 230V AC
- Operating up to 105°C
- RoHS conform

- A. J1 Power supply
- B. J4 Open (Thermocouple burner 2) (not used)
- C. J2 Gas valve wiring connection
- D. J3 Thermocouple burner 1
- E. J7 Alarm signal lamp
- F. J8 Factory test

Operation:

1. Provides burner control functionalities → from the oven switch / electric-thermostat.
2. Opening and closing the gas valves for gas control during the cooking process.
3. Activating spark generator for a limited time at ignition start.
4. Monitoring the flame presence through a thermocouple.

2. CrissCross Connection (green)



The green CrissCross connector is needed for testing the oven on end of line test.

It will test the opening and closing of the valve in order to check the gas tightness of the system and, finally, simulate the lockout of the oven in a fast way.



3. Set-Timer

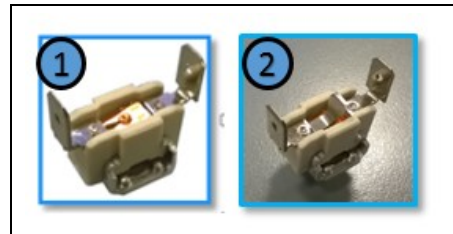
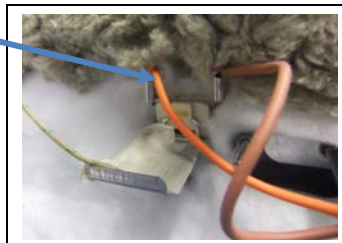
- A. 3- touch “minus, clock, plus”
- B. Air ventilator L
- C. Phase L
- D. Relay air ventilator
- E. Neutral N
- F. Relay hot air ventilator
- G. Safety thermostat L
- H. Oven function selector L
- I. Buzzer
- J. amber
- K. White

4. Safety-Thermostat

Pictures Production till mid 2016 (1) and after mid 2016 (2)

Safety-Thermostat n°2 for electronic oven

Position of Thermostat n°2: near electric grill



Normal condition: closed

When the system will be too warm, the safety-thermostats switch the power supply...

When the system will be too hot the safety thermostat will open up to switch off the power supply to every electric connected component but the cooling fan and Set Timer works.

Electronic Oven burner + Electric grill

Opening temperature: $T=210^{\circ}\text{C}$

Closing temperature: $T=---$

Max. working Temperature: $T=250^{\circ}\text{C}$

! To close the thermostat press the lever with pin

Safety-Thermostat n°1

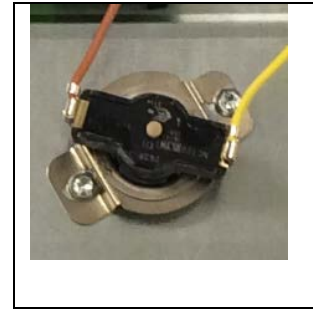
Position: above upper cooling fan duct.

Working principle is the same as Thermostat n°2

Opening Temperature is 120°C and Max Working Temperature is 175°C.

! To close the thermostat push the pin

!! If safety thermostat n°2 or Safety thermostat n°1 will open, then service must check the appliance (understand the cause of abnormal heating up, check that components are not damaged and, if everything is ok, close the circuit and reactivate the appliance)



3.5.5 SPARK PLUG & GAS THERMOCOUPLE POSITION

Burners	Gas Thermocouple	Spark Plug
Oven Burner (only for Electronic Gas models)		
General check after the service		
<p>Check that both the plugs are pushed in to the brackets till the last extend (<i>tight fit</i>) and assure they are not coming out due to any small vibrations in the oven</p>		

3.5.6 TROUBLE SHOOTING

Problem	Possible cause	Remedy
The oven does not heat up.	The oven is deactivated.	Activate the oven.
	The fuse is released.	Make sure that the fuse is the cause of the malfunction. If the fuse releases again and again, contact a qualified electrician.
	Safety thermostat is open (please indicate in the service report if safety thermostat 1 or 2 is open)	If any component inside oven is clearly damaged, replace it. Check if cooling fan or gas control knob (temperature thermostat) are working properly: damage of one of them (or deformed top panel blocking the cooling fan) is a typical way for safety thermostat intervention. Check if oven installation inside furniture is properly done according to user manual (openings for air ventilation).
	Gas control knob (for the temperature) is broken.	Check that contact of the gas control knob is open even when rotated counter clockwise at maximum temperature and replace the thermostat
	The display shows "12.00", due to power cut	Reset the clock
The oven does not operate.	The automatic ignition does not work (no spark).	Ignite the burner manually with a long match. Hold the flame near the hole in the bottom of the oven cavity. 1) rotate the oven function knob to gas oven function 2) rotate the gas control knob (for the temperature) counter clockwise to the maximum temperature. After 6 sec gas (Tw, see par. 2) gas valve should allow gas flow. If the flame comes on → a) check if the spark generator is properly connected b) check voltage on spark generator fastons during Tti (time for ignition trial): if around 220Vac, replace the spark generator otherwise replace the TC-1000 c) check if the spark plug: - is properly connected to spark generator - is properly fixed in the bracket otherwise replace it (ceramic cracked, wire trapped...) If the flame does not come on, it means the gas flow is interrupted (TC-1000 will turn on the alarm signal lamp indicator at the end of the 4 th ignition cycles, see par. 2.2 – Case of ignition failure) → a) check if main gas tap in the house is open b) check if the TC-1000 is properly connected otherwise replace the TC-1000
		Sparks are not able to ignite the flame
	The gas valve is not working properly	Check proper insertion of the valve wiring connector into the connector on the TC-1000

		<p>Check proper insertion of valves wiring into TEV and GEV valves.</p> <p>Check resistance on GEV valve: if not around 49Ohm, replace the valve.</p> <p>Check voltage on valve connectors: according to figure 1 and table 1.</p>
The flame extinguishes few seconds after ignition.	Thermocouple is not heated up sufficiently.	Check if the thermocouple head is pushed into the brackets till the last extend (<i>tight fit</i>) and assure it's not coming out due to any small vibrations in the oven
	Thermocouple is damaged	Replace thermocouple
	Thermocouple is not properly connected to the electronic TC-1000	Check proper insertion of the thermocouple connector into the connector on the TC-1000 otherwise replace the TC-1000
Gas Burner is not working	No proper Ventilation	Create proper ducts for air circulation
	Cooling fan not functioning	Check the Wiring Replace the Fan Motor
The lamp does not operate.	The lamp is defective.	Replace the lamp.
Steam and condensation settle On the food and in the cavity of the oven.	You left the dish in the oven for too long.	Do not leave the dishes in the oven for longer than 15 - 20 minutes after the cooking process ends.

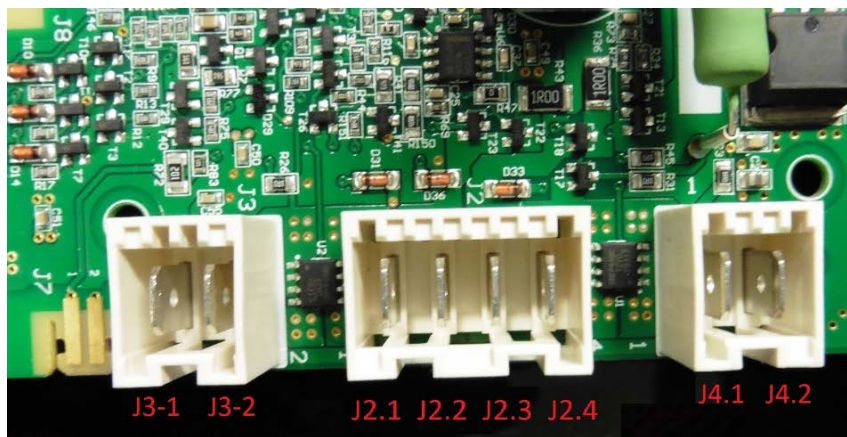


Figure 1: connectors

TC-1000 connectors	Typical Voltage		
J2.1 – J2.4	GEV valve disconnected :	Approx. 15VDC	If not, replace TC-1000
	GEV valve connected :	Approx. 650-750mVDC	If not, replace TDV-10 valve
J2.2 – J2.4	TEV valve disconnected :	Approx. 14VDC	If not, replace TC-1000
	TEV valve connected :	Approx. 6mVDC	If not, replace TDV-10 valve

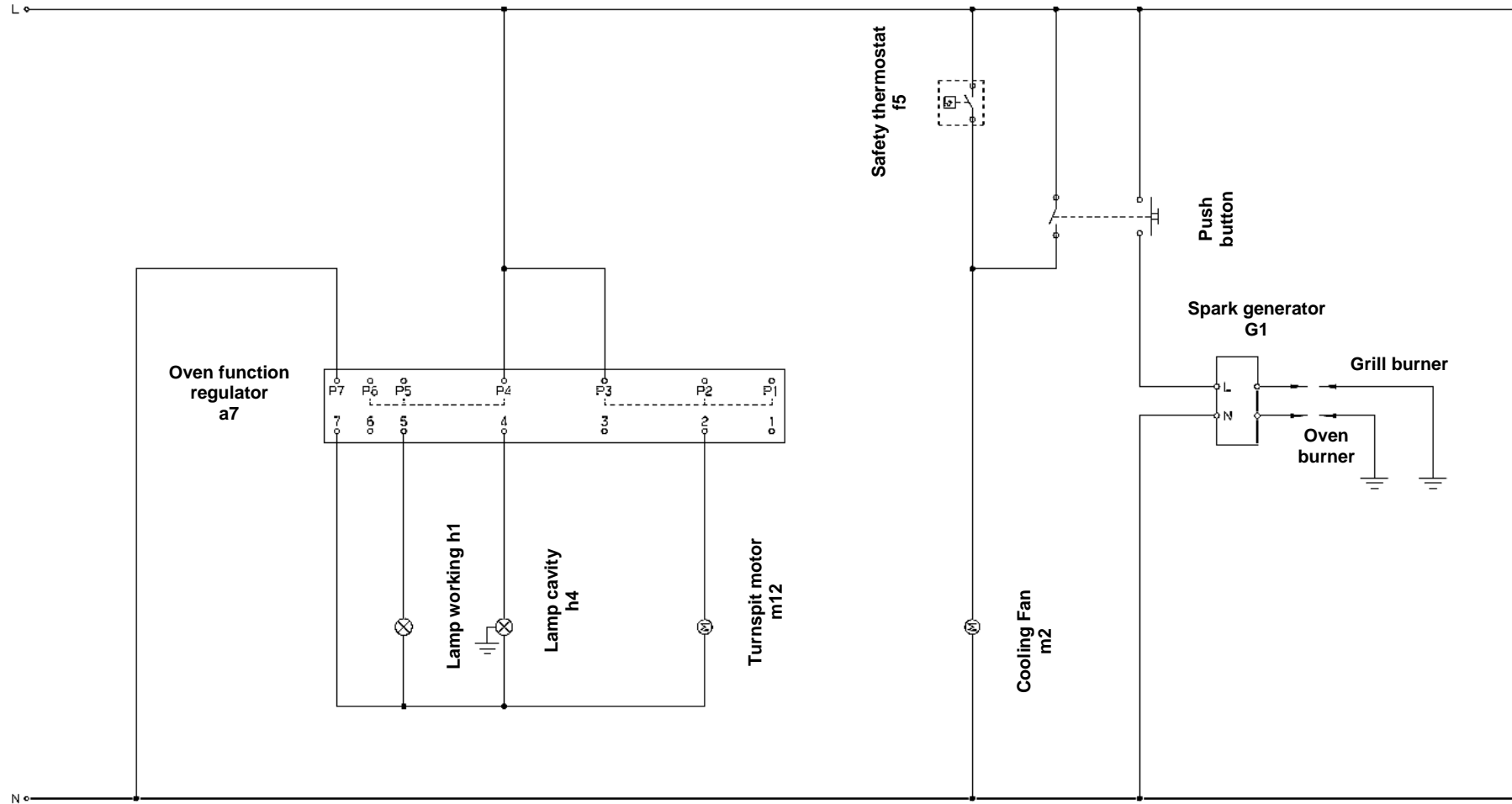
Table 1: Check of typical voltages

3.6 ELECTRONICS GAS + ELECTRIC GRILL + FAN

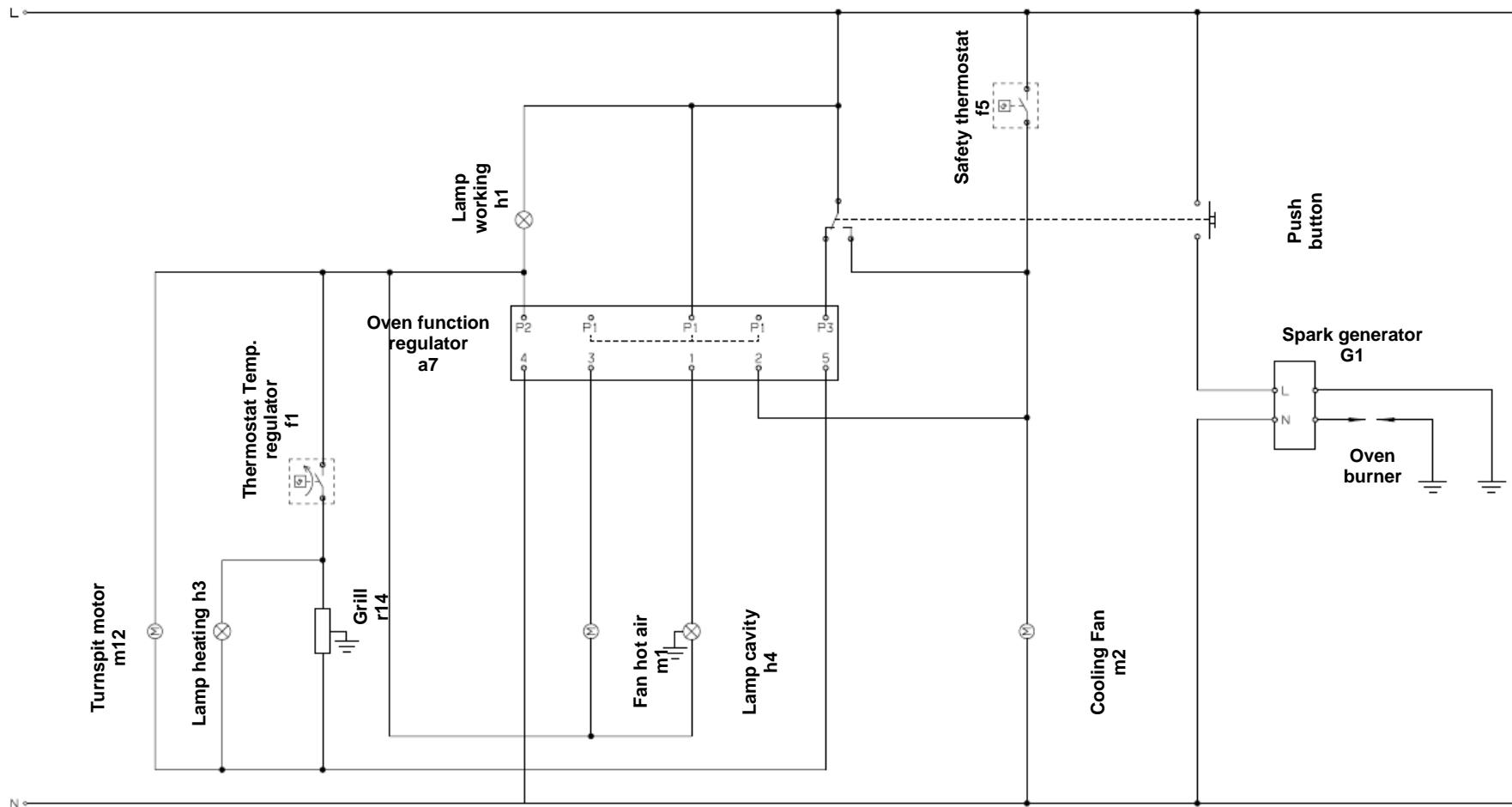
Fan is present in the Electronic Gas+Electrical Grill + Fan; all other functionalities are similar as Gas+Electric Grill

4 WIRING DIAGRAM

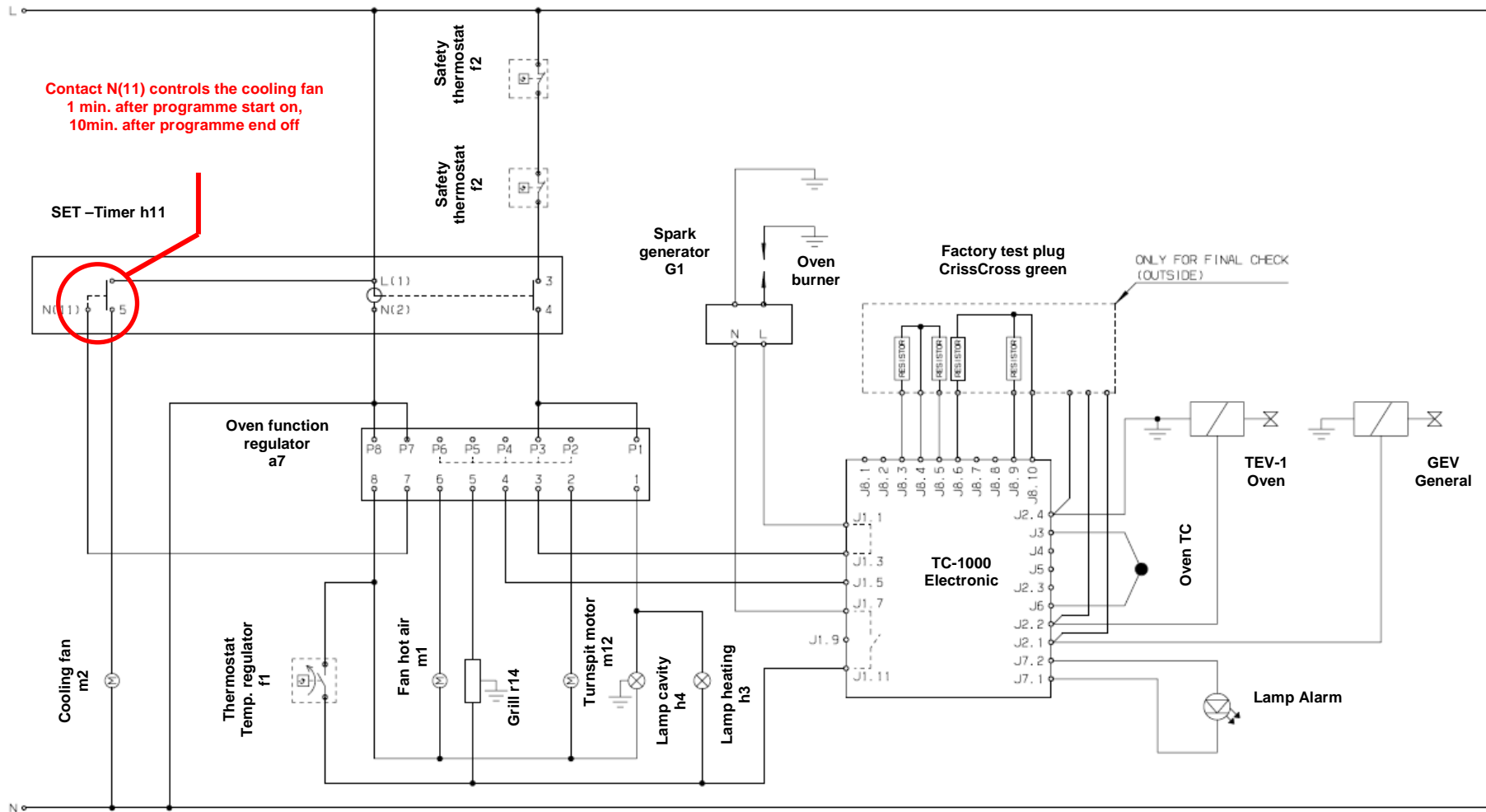
4.1 OVEN BURNER + GRILL BURNER



4.2 OVEN BURNER + ELECTRIC GRILL



4.3 (ELECTRONIC) OVEN BURNER + ELECTRIC GRILL + FAN



5 RIVISION

Revision	Date	Description	Author	Approved by - on
00	02/2015	Document Creation	BSP	Cris Tridello
01	09/2015	<ul style="list-style-type: none"> • Chapter 3.13 upgraded with ; Topic 1 :with knob zones Topic 9 : Injectors table Topic10 : Spark generator technical spec's • Chapter 3.1.4 upgraded with ; Topic 1: Turnspit motor technical spec's Topic 3: Radial fan technical spec's Topic 4 : Safety Thermostat technical spec's Topic 8 : Exhaust chimney added newly Topic 9 : Gas Connection added newly • Chapter 3.2.1 ; Horizontal cooling fan technical specs added • Chapter 3.4 ; Electronics Gas + Electric Grill added • Wiring Diagram added 	BSP	
02	01/2018	<ul style="list-style-type: none"> • Chapter 3.5.6 added 	BSP	Fabio Spano