

**Technical instruction  
Manual for use and maintenance**



## **GAS COOKER & ELECTRIC CONVECTION OVEN**

**MODEL**

**ELGAS**

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These appliances comply with requirements of E.E. 73/23/CEE EN 60335-1 EN 60335-2-42

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**PROFESSIONAL ELECTRIC & GAS MACHINES FOR RESTAURANT – PATISseries – SNACK BAR**  
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## 1. PART I – INSTALLATION

We will present the essential data, technical characteristics and our advice for the correct installation, use and maintenance of the appliances described. Let us remind you that the appliances are professional use and that all procedures of installing, connecting to the distribution network and positioning of the appliance in operation should be carried out by properly qualified personnel and that all safety measures applicable in the country of installation should be observed.

**The manufacturer cannot be held responsible for any possible damage to property, human beings or animals that might be caused by misuse of the appliance or by using the appliance for purposes other than those recommended for or not foreseen in this manual.**

### Technical Characteristics

Model	Dimensions (cm)	Power kW		Ovens Capacity
EL-GAS	80X70X86cm	OVEN 3.5kW	BURNERS 24kW	3 tray position 60x40x7cm

#### Electrical Supply

EL-GAS 230V AC / 400V 3N AC 50Hz

#### IP Grating

IP 20

#### Appliance's Safety

Complies to EN 60335-1 & 60335-2-36 & 90/396

CE marking

### GAS Technical Characteristics

Model	Frame	Burners	Power	G30	G20	Calories
EL-GAS	Inox	Cast Iron	2x4.5kW & 2x7.5kW	1,89Kg/h	2,99m3/h	24.252kcal

**Table Figure 1:**

	Unit	Big	Medium
Normal Thermal energy provided	KW	7.5	4.5
Reduced thermal energy provided	KW	2	1
G 30 Main air regulation at 28...30 mbar	Mm	APERTA	APERTA
G 20 Main air regulation at 20 mbar	Mm	11	APERTA
G 30 Main air regulation at 50 mbar	Mm	16	APERTA
G 25 Main air regulation at 25 mbar	Mm	11	APERTA
G 25 Main air regulation at 20 mbar	Mm	11	APERTA
G 30 Main burner nozzle at 28...30 mbar	Mm	1.25(1.60)	1.20
G 20 Main burner nozzle at 20 mbar	Mm	1.90(2.30)	1.60
G 30 Main burner nozzle at 50 mbar	Mm	1.10	0.95
G 25 Main burner nozzle at 25 mbar	Mm	2.00	1.65
G 25 Main burner nozzle at 20 mbar	Mm	2.10	1.70
G 30 Pilot burner nozzle (28...30 mbar and 50 mbar)	No	20	20
G 20 Pilot burner nozzle at 20 mbar	No	Registered	Registered
G 25 Pilot burner nozzle at 20 mbar & 25 mbar	No	Registered	Registered
G 30 by-pass valve (28...30 mbar and 50 mbar)	Mm	55	40
G 20 by-pass valve at 20 mbar	Mm	Registered	Registered
G 25 by-pass valve at 20 mbar & 25 mbar	Mm	Registered	Registered

**Main Parts**

- Body AISI 430 stainless steel
- Front AISI 430 stainless steel
- Chamber AISI 430 stainless steel
- AISI 430 stainless steel doors
- Heat insulated handles
- Iron plate
- Glass – wool chamber insulation
- Cast Iron Burners
- Cast Iron Grid for Burners
- Gas Safety switches
- Thermocouple
- Pilot
- Basin for burner

**Electric Parts**

- Heating Elements
- Thermostat 0-300°C with indicating lamps
- Lighting switch with indicating lamp
- Fire resistant wiring
- Terminals' fasteners
- Gland for supply cord
- Earth terminal
- Potential equivalent terminal, marked P.A.
- Six polar polyamide connector strip for supply cord

## 1. GENERAL INFORMATION

- ⇒ This technical manual includes instructions for the installation, operation, care and maintenance of electric ovens manufactured by **NORTH**. Please, read carefully and keep it for future reference. This manual should be referred to both by installing or service technicians and the operators of the equipment.
- ⇒ After you remove the packing make sure that no damage was caused during shipping. If in doubt, we recommend that an authorized technician examine the appliance before you proceed with the installation.
- ⇒ The appliance requires electrical connection. Before proceeding, make sure that main voltage meets the requirements of the appliance. This information is available on a label, on the right side of the appliance, as you face it. **In case of incongruence or if in doubt, do not connect the apparatus. Ask for the equipment to be checked by specialized personnel.**
- ⇒ **NORTH** ovens equipment are commercial grade appliances and should, there for, be used by personnel who are specially trained in their use.
- ⇒ All procedures concerning installation and connection of the appliance must be carried out exclusively by specialized technicians according to specifications valid in the country where installation is taking place.
- ⇒ Before any routine cleaning, disconnect from electricity mains. The same procedure must be followed in case of malfunction of the appliance, while waiting for the service technician.
- ⇒ Any repairs must be exclusively carried out by authorized personnel using **original spare parts only**.
- ⇒ The manufacturer cannot be held responsible for damage caused to persons, animals or property due to misuse, tampering, unauthorized modification, or uses other than ones mentioned and / or considered in this manual.

## **2.TECHNICAL INSTRUCTIONS**

### **INSTALLATION AND SERVICE INSTRUCTIONS**

NORTH EQUIPMENT ARE PROFESSIONAL EQUIPMENT.  
ALL ASSEMBLY AND CONNECTION PROCEDURES,  
TESTING AND REQUIRED REPAIRS  
MUST BE CARRIED OUT  
BY SPECIALIZED AND AUTHORIZED PERSONNEL ONLY.

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NORTH ENTERPRISES CANNOT BE HELD RESPONSIBLE  
FOR ANY NEGATIVE CONSEQUENCES IN CASE OF  
INTERVENTIONS BY NON-SPECIALIZED TECHNICAL PERSONNEL  
OR DUE TO NONCOMPLIANCE WITH FACTORY INSTRUCTIONS.

## 2.1 INSTALLATION OF THE APPLIANCE

After making sure the appliance is intact, place it in position so that it is stable and there is adequate operating space around it.

**Attention !** To avoid accidents, keep all packing materials (cardboard, plastic bags, metal items, etc) away from children.

**Important !** Install the oven on a flat non-flammable surface, away from flammable walls.

## 2.2 ELECTRICAL CONNECTION

Remove the right cover of the appliance.

- Enter a suitable supply cord through the gland.
- Depending on the available power supply connect the cables.

<b>a. Single phase power supply</b>	
Remove the provided bridges and short circuit L1, L2. Connect the phase to L1 or L2, the neutral to N1 or N2 and earth to earth terminal.	<b>HO7RNF - 3x6</b>

<b>b. Three phases power supply</b>	
Connect the phases to L1, L2, L3 Connect the earth neutral to N1 or N2 Connect the earth	<b>HO7RNF - 5x4</b>

Connect P.A. terminal to water piping using a 10 mm<sup>2</sup> wire.

**IT IS STRONGLY RECOMMENDED TO USE A QUALIFIED ELECTRICIAN FOR ALL ELECTRICAL CONNECTIONS.**

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## 2.3 GAS OPERATION

The appliance operates under normal power with the nozzles mentioned above (see Table of Figure 1). Supply pressure must correspond to the value mentioned in the relevant data table.

### 2.3.1 PRESSURE CONTROL

In order to measure the supply pressure, you need a liquid manometer with a minimum sub-division of 0,1 mbar (eg a U-shaped pressure gauge).

Follow this procedure:

- Remove the appliance to regulate the opening to be found behind.
- Unscrew the screw shutting the pressure valve.

- Connect the manometer and measure the pressure.
- Remove manometer, re-screw the screw and make sure there are no leaks.

### **2.3.2 REGULATION FOR OPERATION WITH VARIOUS GASES**

Both the packaging and the appliance carry the regulation data for suitable gases. If regulation is necessary for another type of gas, you should:

- a) make sure which type of gas and pressure correspond to the values mentioned in the relevant data table.
- b) Choose the right nozzle for the specific type of gas and the pressure available in place, keep in mind that pressure should never exceed 50 mbar and replace nozzle, if necessary.

### **2.3.3 MAIN BURNER REGULATION**

- Replace nozzle by unscrewing it and screwing the one appropriate for the type of gas.
- Regulate main air supply through the regulating ring, adjusting distance A as seen on the Table of Figure 1.
- In order to regulate the flow of the main air supply, unscrew place ring in desirable position and screw the screw back on until shut.
- To make sure the regulation of the main air supply is the right one, see that no flames break away from the burner when it is cold and there is no flame going back into the nozzle when the burner is hot.

### **2.3.4 REGULATION OF THE PILOT BURNER**

In order to regulate the nozzle of the pilot burner, it is necessary to remove the base wall so that you can gain better access to the pilot.

- The nozzle of the pilot burner has a bore regulated for gas G30. In order to adjust it for the use of G20, unscrew the connection that keeps the nozzle in place.
- Using a small screwdriver unscrew the nozzle anti-clockwise until the flame is properly regulated.
- Return any parts you may have removed into their previous position.
- No regulation of main air supply is necessary for the pilot burner. In order to regulate the flame, light the pilot burner and make sure the flame is of a regular shape and reaches the thermal couple. If flame is not regular, check the regulation again.

### **2.3.5 OPERATION CONTROL**

- Check that the appliance is level on the supporting surface.
- Make sure there is a good clean air inflow.
- Make sure there are no leaks or loss of gas.
- Set the appliance in operation.
- Check flame stability of both the main and the pilot burner.
- Make sure non-combusted gases have an appropriate outlet.

### **2.3.6 INTERVENTIONS, REPAIRS AND REPLACEMENTS (for authorized technicians only)**

Even if the appliance is used correctly, some problems may arise for various reasons. The table that follows mentions some possible problems and some suggestions to put them right.

### **! CAUTION !**

- Before any intervention for maintenance, repairs or simple cleaning of the appliance, you must shut the gas supply gate valve at the top of the appliance.
- At the end of any intervention for maintenance or repairs to some parts the appliance related to gas, check for air-tightness and make sure there are no leaks or losses.

## 2.4 POSSIBLE PROBLEM

Even if the appliance is used correctly, some problems may arise for various reasons. The table that follows mentions some possible problems and some possible causes.

**In case of problem we control first if the electrical supply to the machine is right or not.**

POSSIBLE PROBLEM	POSSIBLE CAUSES
Machine is not operating	Check if there is damages to 1)all heating elements 2)the edge of cord connected with the thermostat or connector strip.
Heating element is not operating	Check if there is to 1)the heating element 2)the edge of supply cord connected with heating element.
Light is not operating	Check if there is damages to 1)Lamp 2)switch on-off
Non normal temperature	Possible temperature deviation of thermostat.

PROBLEM	POSSIBLE EXPLANATION
Gas smell	Possible gas loss: Check external pipes and connections
Smell of non-burned gas	Check that combustion is proper / Check that gas consumptions is not excessive / Check that hot fume circuit is not obstructed / Check that air-extractor and area ventilation are operating property
The pilot burner does not light	Check that the electrode is property placed. There may be a leak in the gas supply pipe or a problem with the nozzle
The pilot burner goes out	Check that the flame is large enough to heat the thermal couple
“Explosions” in the burners	Check gas pressure. Make sure the pilot burner flame is not too far from the main burner
The main burner does not light	Check there is a leak in the gas supply pipe or any problem with the nozzle / The burner parts may be improperly placed / Check the position of the pilot burner

## **2.5 REPLACEMENT OF ELECTRICAL ELEMENTS**

To replace the upper heating element remove the right side cover of the appliance. Release the wires and remove the heating element holding screws inside chamber. For the lower heating element remove the grill plate.

The lighting lamp is replaced from the inside of the chamber after removing lamp's lid. For the thermostats, indicating lamps and lighting switches remove the right side cover of the appliance.

## **CUT OFF THE POWER SUPPLY BEFORE COVER REMOVAL.**

## **2.6 GATE VALVE**

- The valve that regulates the gas inflow offers thermal safety, which makes sure that the gas flow is interrupted if the flame goes out.

## **2.7 REGULATION OF MINIMUM BURNING**

- The (by-pass) valve nozzle has 1,20mm bore and has to be fully screwed for gas G30. In case of regulation for other gases (G20), the by-pass has to be unscrewed (by turning the screw anti-clockwise until a clear and regular flame appears). In order to regulate the by-pass, light the burner at the minimum setting, remove the handle from the valve and regulate the screw marked with an arrow, until a clear and regular flame appears. The regulation must be fully screwed when changing from methane to G.P.L. or must be open in the opposite case.

## **2.8 INTERVENTIONS AND REPAIRS**

- If intervention is necessary in the gate valve, all you have to do is to remove the handle and the front wall.
- In order to replace the gate valve you need to unscrew the connections in the following order:  
First, the connections of the thermal couple and the pilot burner, then the connection of the gas outlet and, finally, the connection of the gas inflow.
- Replacing other parts, such as the pilot burner, the thermal couple and the ignition source is simple, once the base wall is removed.

## **2.9 TRAINING**

The personnel who are to install and connect the appliance must train the users appropriately so that they can handle the operation and safety measures of the appliance.

### **ATTENTION !!!**

- Check that main voltage in your working area is suitable for the settings on the label and that the appliance is properly earthed.
- Before any service activity takes place or any parts are replaced on the appliance, make sure that power supply is turned off.

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### **3.OPERATION INSTRUCTIONS**

#### **INSTRUCTIONS TO PERSONNEL FOR OPERATION AND CARE**

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### **3.1 TURNING ON THE APPLIANCE**

After making sure the appliance has been correctly connected to electricity, you can start using it.

- Depending on the heating requirement select the upper or lower heating element and set thermostat (0-300°C). The thermostats with the corresponding heating elements will control the chamber's temperature
- During operation indicating lamp is on.

### **3.2 OPERATION – GENERAL PRECAUTIONS**

We would like to remind you that these appliances are designed exclusively for professional use and must be operated by specialized personnel.

In order to set the appliance into operation, observe meticulously everything included in these pages as well as ordinary safety measures:

- Make sure there is no gas leak.
- Check that the flame is regular by going from maximum to minimum settings.
- Check that the burner lights properly along its full length.
- Check that the pilot burner operates properly.
- Make sure there is a good inflow of clean air.

### **3.3 LIGHTING**

- When cooker is off, the gate valve handle is vertical and the round indication is at the top.
- Press the handle slightly and turn it anti-clockwise until you bring it to the flame indication.
- While you keep the handle pressed, light the appliance using the piezoelectric ignition device. The flame of the pilot burner will light (the first time you light it, you must persist because the pipes are full of air and it might take some time before the burners light).
- Once the pilot burner is lit, keep the handle pressed for a few seconds until thermal safety couple warms well.
- Turn the handle anti-clockwise until you bring it to the position of the highest flame and make sure the burner is fully lit.
- The next position is that of the medium flame; you can choose this setting once the oven has reached the desirable temperature.

### **3.4 MAINTENANCE**

- Turn off the heating elements before any cleaning or maintenance procedures. Let the appliance cool and make sure it has been unplugged from the main supply.
- Never use running water to clean the appliance
- Before you carry out any maintenance work, you must shut the gas supply gate valve found at the top of the appliance.
- The user should sign a maintenance contract with technical personnel; this contract should foresee at least one full check-up annually.
- We specifically recommend regular checking to make sure the pilot burner the ignition source and the flame regulator are clean.
- The gate valve must be checked at least once a year and, if necessary, the specific protective oil should be replaced.
- If all instructions of this manual are observed, NORTH appliances will be of perfect service for a long time.

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