

Technical instruction
Manual for use and maintenance



FRYER

MODELS

FL101 • FL102

These appliances comply with requirements of E.E.C 90/396

SOTIRIOS D. PRODANAS & CO
PROFESSIONAL ELECTRIC & GAS MACHINES FOR RESTAURANT – PATISSERIES – SNACK BAR
OFFICE – FACTORY : National Road Kilkis-Thessaloniki – Tel ++30 23410 41819 – Fax ++30 23410 41539
P.O Box 400 70, P.C : 560 00 www.north.gr - e-mail : info@north.gr

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.

FIGURE 1: Technical Characteristics

Model	Internal Dimensions (cm)	Type	Frame	DESCRIPTION
FL-101	35 x 70 x	A	Inox	1 Burner
FL-102	70 x 70 x	A	Inox	2 Burner

	Unit	FL-101	FL-102
Normal Thermal energy provided	KW		
Reduced thermal energy provided	KW		
Oil Capacity	Lit		
G 30 Consumption	Kg/h		
G 20 Consumption	m³/h		
G 30 Main air regulation at 28...30 mbar	Mm		
G 20 Main air regulation at 20 mbar	Mm		
G 30 Main burner nozzle at 28...300 mbar	Mm		
G 20 Main burner nozzle at 20 mbar	Mm		
G 30 Main burner nozzle at 50 mbar	Mm		
G 30 Pilot burner nozzle (28...30 mbar and 50 mbar)	No		
G 20 Pilot burner nozzle at 20 mbar	No		
G 30 by-pass valve (28...30 mbar and 50 mbar)	Mm		
G 20 by-pass valve at 20 mbar	Mm		

1.1 Standards and Requirements

We would like to remind you that appliances installed in places open to the public should meet specific requirements. Among them there are:

- Specific standards for the type of public place.
- Safety standards against fire and cause of panic in public place.
- General standards for the installation of cooking appliances in refreshment facilities.
- General standards concerning installation using combustible gas and liquid hydrocarbons.

1.2 Packing

Make sure packing is intact before removing the appliance. Open cardboard carefully to ensure no metal stapling, adhesive tape or other packing components litter the environment, as these can prove hazardous.

1.3 Obstacles and Position

- Make sure there is enough space available for the placement of the appliance. Make sure that the surface it stands on is stable and level.
- Remove the protective tape from the external parts of the appliance, making sure no glue or plastic is stuck on the surface. If there are residues of glue, remove them using the right solvent.
- Make sure the appliance is level on the surface available. If necessary, regulate its height accordingly, by adjusting the legs of the appliance.

1.4 Connection

Before connecting the appliance to the network make sure that:

- The gas available it is the one the appliance is regulated for. If it is not, do not proceed with connection. Regulate the appliance for the gas available following instructions under 2.2.
- Burners are manufactured to stand thermal and mechanical stress and are equipped with fixed nozzles. This is why it is necessary to change the nozzles every time you change the type of gas.
- Data concerning the regulation of the appliance are to be found on the label of the right hand wall.
- Connect the appliance to the network using only metal piping, either rigid or flexible.
- Make sure the pressure used is the pressure the appliance is regulated for. In no case should pressure exceed 50 mbar.
- Use the right sealing materials for all connections and check them for leaks.
- It is important for walls adjacent to appliance to be protected from the heat. Use refractory materials or allow at least 200mm between the appliance and any adjacent walls (see figure below).
- Network connection should be made through a gate valve. This valve should be closed when the appliance is not in operation.

1.5 Combustion Products

Appliances should be installed in places appropriate for the removal of fumes according to installation specifications. Our appliances are classified as gas type A. Such appliances must send fumes into appropriate air extractors connected to safe and effective pipes that direct them outdoors.

! CAUTION !

Appliances must always be positioned below 200 mm ON THREE SIDES an air extractor, which directs fumes outdoors.

Appliances with an overall thermal power exceeding 14 Kw must be installed below an air extractor with a switch and pilot for the gas supply system.

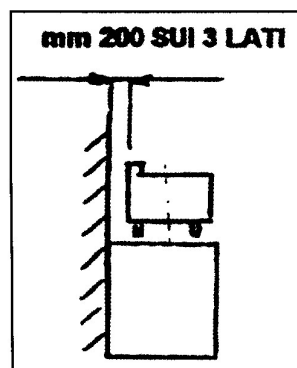
Specifically, the supply circuit electric valve at the top of the appliance must be switched-off.

Make sure there are set by installation standard UNI-CIG 8723, point 4.3 "Removal of combustion products".

Indicatively, the air extractor must guarantee aspiration power equivalent to 35 m³ of air per hour for every Kw of thermal power provided.

Pipes to collect fumes from the appliances and direct them to a single air-extractor point can be provided at your request.

In this case, too, the appliance must be placed under an air-extractor.



2. 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.

2.1 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.

2.2 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, keeping in mind data included on Figure 3 of this manual (keep in mind that pressure should never exceed 50 mbar) and replace nozzle, if necessary.

2.3 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 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.

2.4 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.

2.5 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.

FIGURE 3 Possible Problems

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 properly
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

2.6 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.

3.PART III – For the user

3.1 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.

3.2 Lighting

- When fryer 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.

3.3 Maintenance

- 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.
- The manufacturer cannot be held responsible for any damage caused to property, human beings or animals due to misuse of the appliances or non-observance of the instructions included in this manual.