

01/2019

Mod: FCT/G25

Production code: IBERICA/CG-80



Diamond
catering equipment

**GAS FRYER / CHURRERA
MODEL : CG-80**



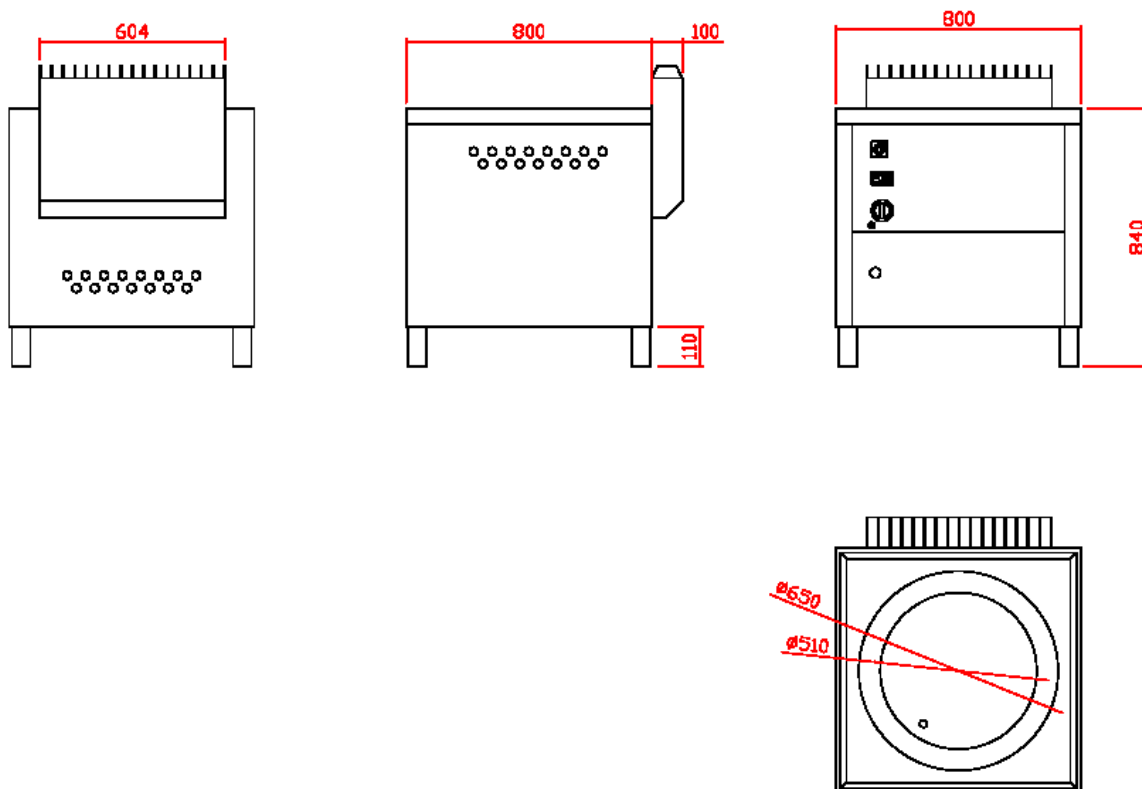
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1. TECHNICAL DATA

1.1. MAIN DIMENSIONS Model: CG-80



2. TECHNICAL INFORMATION

2.1. Specifications chart

MODEL		CG-80
External Dimensions	Width (mm)	800
	Depth (mm)	900
	Height (mm)	850
Nominal Caloric Consumption (Kw.)		25.3
Caloric Consumption burner (Kw)		25
Caloric Consumption pilot (Kw)		0.3
Gas Connection ISO 7-IRK		1/2"
Production type		A ₁
Nominal level frypot (l)		22
Maximum frying capacity (Kg)		5

2.2. Injectors – Gas Consumption chart

MODEL	CG-80 Diameter 1/100 mm
Main burner – Liquid Gas - GLP G30 / 29-30 mbar	250
Main burner – Liquid Gas - GLP G31 / 37 mbar	265
Main burner – Liquid Gas - GLP G30 / 50 mbar	220
Main burner – Liquid Gas - GLP G31 / 50 mbar	230
Pilot burner – Liquid Gas - GPL G30 / G31 (3rd family)	30
Main burner – Methane Gas G20 / 20mbar	415
Main burner – Methane Gas G25 / 25mbar	435
Pilot burner – Methane Gas G20/G25 (2nd family)	51
GAS CONSUMPTION (1)	CG-80
G30 (28-30 mbar)	1.99 Kg/h
G31 (37 mbar)	1.96 Kg/h
G30 (50 mbar)	2.68 Kg/h
G31(50 mbar)	2.64 Kg/h
G20 (20 mbar)	2.53 Nm ³ /h
G25 (25 mbar)	2.96 Nm ³ /h

(1): All consumptions include the pilot.

2.3. Categories, gases and pressures.

COUNTRY	CATEGORY	GAS	SUPPLY PRESSURE
AT, CH, CZ, DK, EE, ES, FI, GB, GR, IE, IT, LT, LV, NO, PT, RO, SE, SI, SK	I2H	G20	20 mbar
DE, LU, PL, RO	I2E		
BE, FR	I2E+	G20	20 (25) mbar
NL	I2L	G25	25 mbar
CY, DK, EE, FR, HU, IT, LT, NL, RO, SE, SI	I3B/P	G30, G31	30 mbar
AT, CH, CY, CZ, DE, FR	I3B/P	G30, G31	50 mbar
BE, CH, CY, CZ, ES, FR, GB, GR, IE, IT, LT, PT, SI	I3+	G30, G31	28-30, 37 mbar
CY, DK, EE, FI, IT, LT, RO, SE, SI, SK	II2H3B/P	G20 / G30, G31	20 mbar / 30 mbar
AT, CH, CY, CZ, SK	II2H3B/P	G20/ G30, G31	20 mbar / 50 mbar
CH, CY, CZ, ES, GB, GR, IE, IT, LT, PT, SI, SK	II2H3+	G20 / G30, G31	20 mbar / 28-30, 37 mbar
NL, RO	II2L3B/P	G25 / G30, G31	25 mbar / 30 mbar
DE, RO	II2E3B/P	G20 / G30, G31	20 mbar / 50 mbar
FR	II2E+3B/P	G20 / G30, G31	20 (25) mbar / 30, 50 mbar
BE, FR	II2E+3+	G20 / G30, G31	20 (25) mbar / 28-30, 37 mbar

(1) Provided with a mouthpiece according to ISO 228-1.

3. INSTALLATION

The fryer must be installed either by the manufacturer's qualified and experienced technicians, by an authorized installer or by the gas supplying company.

Before installing and turning on the fryer, read the instructions in this manual thoroughly and in particular the safety standards.

WARNING: All parts that are protected by the manufacturer may not be manipulated neither by the installer nor the user.

This fryer is designed for professional use and must be used by trained staff. Before connecting the unit, please verify:

- a. that all removable parts are in the correct position. If some part moved during transport, first readjust it.
- b. that the fryer is leveled correctly. If necessary, adjust leg height.

3.1. Place of installation

Install this fryer in a location where adequate combustion and ventilation air are available. Follow the current local norms. The adequate air flow input to the fryer system must be 2m³ per Kcal/hour installed.

Install this fryer individually or together with other NT Gas devices.

A minimum of 150mm should be maintained between the fryer and any combustible material.

WARNING: If the fryer is not installed in a draughty place, unacceptable concentrations of substances harmful to health can occur or even cause death.

3.2. Elimination of combustion residues

Type A1: Combustion residues of this one frypot fryer are eliminated directly through the rectangular outlet located on top of the fryer.

The fryer should not necessarily be connected to an exhaust duct outwards.

DO NOT obstruct the outlet of combustion residues and flow of ventilation air.

Install this fryer preferably under a ventilation hood that conducts combustion products outside the building.

This device needs an AIRFLOW of 395m³/h for a correct combustion and elimination of combustion residues.

3.3. Gas connection

Before connecting the fryer, consult your gas supplier and check whether your gas network supplies the necessary pressure and flow in order to ensure a proper operation of the fryer.

This device is equipped with a gas connection threaded $\frac{1}{2}$ " in accordance with ISO 7-JRK. A seal can be placed on the end if necessary.

The plate next to the gas connection indicates the gas type for which this fryer is configured



Fig. 1

Check the gas pressure at the inlet. Since pressure loss by the gas network is possible, it is advisable to install a pressure regulator or stabilizer to prevent the inlet pressure to the fryer to exceed the pressure indicated on the plate (see Chapter 2 – Technical Information).

Gas appliances should always be installed by authorized personnel. Both rigid and flexible pipes can be used. If rigid pipes are used, the gas valve must be installed as close as possible to the connection of the fryer. In case of flexible hoses, only approved and standardized hoses may be used.

Connect the fryer to the gas network according to the current regulations. Once the installation is completed, check with soapy water or a manometer that the pipes are leak proof.

Never use a flame to verify if there are leaks.

3.4 Start-up

❖ Nominal thermal power control

Thermal power of the device must be verified by an authorized technician according to the indications described in this manual after every maintenance operation, in case of new installation or if the device is converted to a type of gas different than that for which it was configured originally.

Nominal thermal powers for each model are indicated on the chart of Chapter 2. - Technical Information).

❖ Inlet pressure control

Check whether the device is configured for the desired type of gas. Revise the information mentioned on the plate of the device as well as charts of Chapter 2 of this manual. In case the gas type is different, adapt the fryer to the new gas type as shown in chapter 7.

Use a U-shaped manometer with a resolution of minimum 0,1 mbar to measure the gas pressure of the fryer at the gas inlet. If the gas pressure is not between the values indicated on chart 2.3, do not set the unit into operation and inform your gas supplier hereof.

❖ Primary air regulation

This burner is an air forced burner. The air supply to the turbine engine has been pre-arranged at the factory and can therefore not be modified.



Fig. 2

❖ Operation control

Start up the fryer following these instructions:

- a. Verify that the gas circuit is gastight.
- b. Verify the working of the drain valve.
- c. Verify the ignition and quality of the flame.

4. TECHNICAL MAINTENANCE

Maintenance must be performed by a qualified and authorized technician or by the gas supplying company.

It is recommended to carry out semi-annual general controls of the fryer (and draw up a maintenance contract). Verify:

- a. that the gas circuit is gastight. Replace seals if necessary.
- b. the working of the ignition system, the pilot burner and thermocouple of the flame.
- c. the working of the regulation thermostat and the safety thermostat.
- d. the expiry date of the flexible pipe. Replace it if necessary.

5 REPLACEMENT OF COMPONENTS

Only an authorized installer or a qualified technician of the gas company may replace spare parts.

A general review is recommended to be done at least two times a year.

The front panel gives access to the controls of the fryer.

❖ Gas valve

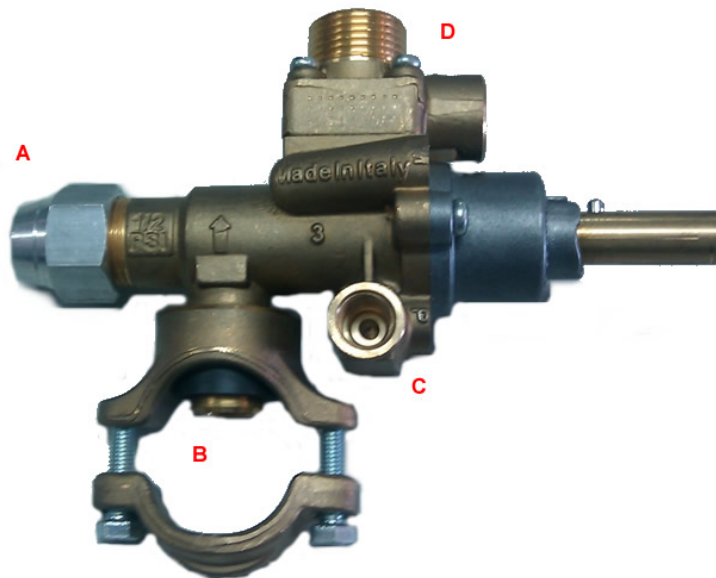


Fig.3

Before replacing the gas valve, release all connections to the valve: (thermocouple) (A), main connection (B), pilot burner (C) and gas outlet (D).

Insert the correct seal on the main connection (B) and tighten all other connections so as to avoid gas escapes. Once completed, couple the new gas valve.

VERY IMPORTANT: DO NOT MANIPULATE OR GREASE THE GAS TAP. IN CASE OF BREAKDOWN OR JAMMING OF THE AXIS, THE ENTIRE VALVE MUST BE REPLACED BY AN AUTHORIZED TECHNICIAN.

Proceed as follows:

- a. Unscrew the stainless steel front panel and release the control button. Remove the front panel.
- b. Unscrew the nut between the thermocouple and gas tap.
- c. Unscrew the nut between the pilot and gas tap.
- d. Unscrew the gas pipe nut and then the elbow that connects the gas pipe with the gas tap.
- e. Unscrew the flange and detach the gas tap from the main connection.
- f. Install the new gas valve on the main connection and tighten the screws, but not more than 2.5 kp/m
- g. Install the thermocouple, pilot and elbow, which are connected to the gas pipeline, on the gas valve.
- h. Make sure the unit is perfectly gastight before operating it again.

❖ **Thermocouple.**

Proceed as follows:

- a. Unscrew the stainless steel front panel and release the control button. Remove the front panel.
- b. Unscrew the nut between the thermocouple and pilot unit.
- c. Unscrew the nut between the thermocouple and thermoelectric safety valve.
- d. Install the new thermocouple on the gas tap. Tighten the screws, but not more than 0,4 kp/m.

❖ **Engine**

To access the engine, remove the front panel of the fryer:

- a. Remove the electrical connection.
- b. Unscrew the pilot burner unit and take it out.
- c. Replace the engine and install the components again.

❖ **Pressure switch**

To access the pressure switch, remove the front panel of the fryer:

- a. Remove the electrical connection.
- b. Unscrew the pressure switch and silicone supply pipe
- c. Replace the pressure switch and install the components again.

❖ **Main burner**

To access the main burner, remove the front panel of the fryer:

- a. Unscrew gas connection "G" from the injector holder.
- b. Unscrew the pilot burner unit and remove. Replace the burner and install the components again.

❖ Safety thermostat

To access the safety thermostat, remove the front panel of the fryer.

- a. Take the sensor out of the housing and disconnect the electrical connection from the pilot.
- b. Install the new thermostat and connect the electrical connection to the pilot again.

❖ Electronic regulation thermostat

VERY IMPORTANT: NEVER MANIPULATE THE ELECTRONIC THERMOSTAT. THE THERMOSTAT HAS BEEN CONFIGURED AT THE FACTORY AND IS PROTECTED WITH A SECURITY CODE.

- a. Remove the clamps that fasten the thermostat to the front.
- b. Remove the wires from the thermostat.
- c. Install the new thermostat in the same place.

❖ Electronic regulation thermostat sensor

Before starting with this operation, drain the oil from the frypot at room temperature and subsequently carry out following steps:

- a. Unscrew the sensor and remove it from the frypot.
- b. Remove the wire's connection of the sensor and thermostat and install the new sensor in its place. Pay attention to the polarity of the sensor.

❖ Pilot burner, thermocouple and spark plug unit (Fig. 5)



Fig. 5

Follow these steps to replace components of the pilot burner unit:

- a. Replacement of the thermocouple: unscrew the nut located behind the chassis and remove it. Unscrew the nut that connects the thermocouple to the valve.
- b. Replacement of the spark plug: unscrew the nut located behind the chassis and remove it. Unscrew the nut that connects the wire with the plug and replace it.
- c. Replacement of the pilot burner: unscrew the nuts that connect the chassis of the unit and the nut of the pipe connected to the back of the pilot burner. Attention: All nuts of the thermocouple and spark plug must be unscrewed first.
- d. To replace the pilot mouthpiece, replace the chassis entirely.

6. GAS CONVERSION

The adaptation of the fryer to another type of gas must always be carried out by qualified personnel or by a technician of the gas supplier.

Always use original manufacturer's parts for gas conversions and repairs.

6.1. REPLACEMENT OF THE MAIN BURNER INJECTOR (Fig. 6)

Follow these steps to replace the main burner injector:

- a. Make sure the device is correctly disconnected.
- b. Unscrew the nut of the gas inlet connected to the elbow inside the burner (A).
- c. Take out the elbow (B) and the coupling with the injector
- d. Unscrew and replace the injector (C) according to injector chart 2.2. Injector sizes on this chart are indicated in hundredth of millimeter.
- e. Screw the elbow and connect the gas inlet again.

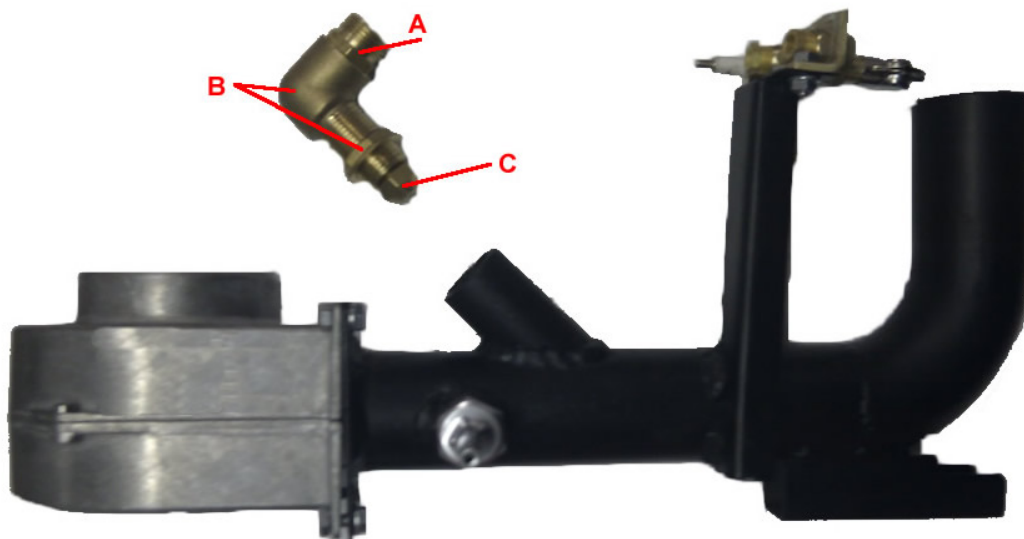


Fig. 6

6.2 REPLACEMENT OF THE PILOT BURNER INJECTOR (Fig. 7)

Follow these steps to replace the pilot burner injector:

- a. Make sure the gas inlet is closed.
- b. Unscrew the copper pipe of the pilot.
- c. Remove the injector.
- d. Make sure the new injector is suitable for the type of gas to be used. The identification number of the injector is mentioned on the injector and is indicated for every gas family on Chart 2.2.
- e. Install the new injector.
- f. Screw the copper pipe of the pilot burner to the chassis of the unit.
- g. Check with a soapy water solution that there are no leaks.

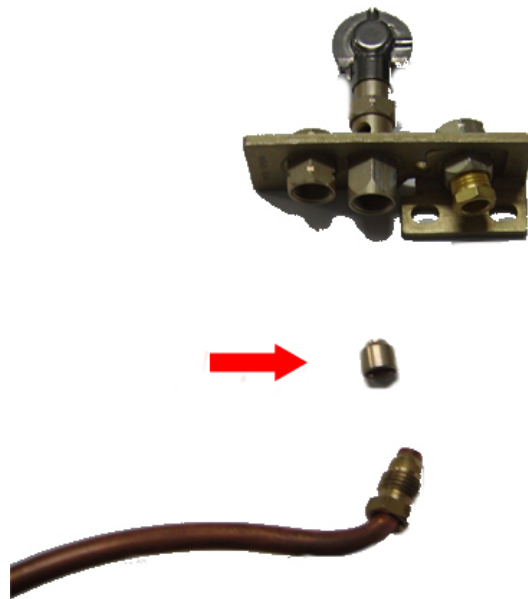


Fig. 7

Once the conversion is completed, immediately **ATTACH the plate with information on the new gas type**. Replacement injectors are supplied together with the corresponding informative plates.

7. PROBLEMS AND SOLUTIONS

During normal operation of the fryer, problems can arise. These problems, as well as the possible causes and solutions are listed below.

❖ Activation of the safety thermostat (Fig. 8)

If temperature increases during normal use and consequently the safety thermostat comes into operation, gas supply is interrupted. To reset the thermostat follow these steps:

- a. Remove the protective plate of the safety thermostat.
- b. Start the thermostat manually by pressing the button located under the plate.

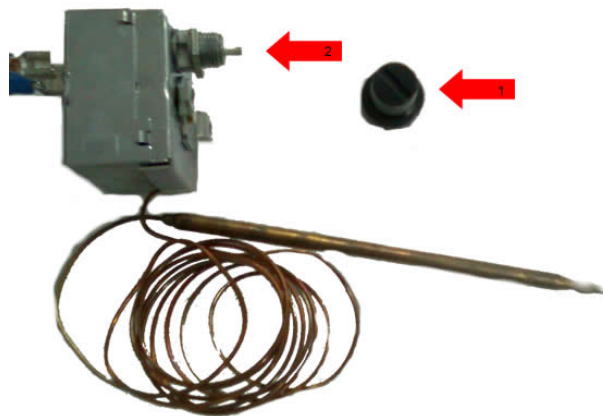


Fig. 8

If this problem occurs again, please contact the manufacturer or a qualified technician. Check the gas tap and if necessary, replace the temperature sensor, valve, thermostat or central temperature control.

❖ The pilot does not ignite.

This can be due to:

1. the spark plug is not set up well or is not connected correctly.
2. the piezoelectric igniter or cable are not well connected.
3. gas pressure is too low.
4. the injector is obstructed.
5. the gas valve is not well connected.

Replace the necessary parts, modify the regulator of the gas pressure or clean up the injector.

❖ Injectors cleanup

Clean the injectors with high air pressure. Never use wires or sharp objects that could vary the diameter of the injectors.

❖ The pilot extinguishes after releasing the ignition button

Possible causes are:

1. the pilot does not heat the thermocouple sufficiently.
2. the gas tap button has not been pressed long enough (at least 15 seconds).
3. there is not enough gas pressure.
4. the thermocouple or solenoid of the valve is damaged.

Replace the necessary pieces, modify the setup of the gas pressure.

❖ The pilot remains on, but the main burner does not ignite.

Possible causes are:

1. pressure loss in the gas duct.
2. the injector is obstructed.
3. the gas valve is broken.

Replace the necessary parts, modify the setup of the gas pressure.

8. USE AND MAINTENANCE

This fryer is designed for professional use and may only be used by qualified and trained personnel.

This is a fryer and may only be used as a fryer.

Do not use this fryer as a boiler or for other applications.

Fill the frypot with cooking oil. When using solid fat, always let it melt before you fill the fryer.

Remove the fried food out of the fryer with a slotted spoon.

The installation of the fryer and its possible conversion to another type of gas may be done only by an authorized technician.

Before using the device, eliminate all industrial protective grease from the frypot and clean it properly as indicated in Chapter 4 of this manual.

Make sure the basket holder is in the correct position after finishing cleaning the frypot.

8.1. SAFETY WARNINGS AND STARTING.

Be careful when using this fryer. In case of incorrect use, the CG80 fryer can cause serious injuries or even lead to death. This fryer CG80 may only be operated and maintained by authorized personnel who must read the safety instructions mentioned in this manual carefully before starting and using the fryer or before doing any maintenance operation.

❖ VERY IMPORTANT WARNINGS FOR THE USERS:

1° This device heats oil up to 200° C and is equipped with a safety system that blocks the device. If the oil still overheats, turn off the fryer immediately and notify the technical service.

2° This fryer may only be used for frying with edible oils or fats. Never use other products

3° Be cautious when filling the fryer with hot oil. Avoid hot oil splashes.

4° It is strictly forbidden to use flammable solvents or cleaners containing flammable solvents.

5° When filling the fryer, do not exceed the minimum and maximum levels indicated on the tank. Always respect these levels.

6° Do not introduce wet food or pour water in hot oil or fat. This can cause hot oil splashing and can bring the oil or fat to a boil.

7° Before filling the frypot with oil, make sure that all air is removed from the vent. To check this, first remove the protection grid.

8° Do not modify or remove the safety systems.

9° Do not cut the safety systems. Do not modify the fryer.

10° Never take the warning signs off of the fryer. Replace the warning signs immediately when they are illegible, damaged or missing.

❖ STARTING

Fill the frypot with cooking oil upto a level between the minimum and maximum marks indicated on the inside of the frypot (see Fig. 9). Never exceed the maximum oil level mark. Add oil if the oil level is below the minimum mark. Do not start the fryer without oil.

Nominal capacity of the frypot = 22 liters.



Fig. 9

❖ Ignition of the pilot burner.

Turn the button to the pilot burner position and keep it pressed during approximately 15 seconds or until the air inside the pipes is vented. Press simultaneously 2 or 3 times the piezoelectric ignition button to generate the ignition spark of the pilot flame.

The pilot flame must remain burning when releasing button "V". Repeat if the ignition does not happen.

❖ Ignition of the main burner.

Proceed as follows:

1. Make sure that all gas and electrical connections are correctly installed.
2. Turn the selector to position 1 to start the electrical and safety system. As soon as the electronic thermostat is activated, select the desired temperature.
3. After effecting previous steps and after filling the frypot with oil, at least until the minimum mark (and never below) and up to the maximum level, light the burner.
4. Press the control button and turn it 10 degrees. While pressing the control button, press simultaneously the ignition button in order that the spark ignites the pilot (REMARK that during the first ignition operation, this process takes more time, because it is necessary to vent first all air located in the gas pipe of the pilot).
5. Open the valve completely and turn the selector to position 2 to warm the oil. While you press the button, turn it to the fire sign.

❖ Temperature setting

Programme the electronic thermostat to 190° C maximum to set the fryer to the desired cooking temperature. Remind that the fryer has an inertia of approximately 10 °C as soon as the programmed temperature is reached.



To reach the desired temperature, regulate the thermostat as follows:

- a) By pressing and releasing button "SET", it is possible to access the menu "State of the machine". The menu contains information about the values of the two intervention points. After visualizing information 'SP1', press key "set" to visualize the value of the intervention point.



- b) The value of the intervention point appears on the display. Press buttons "UP" and "DOWN" within 15 seconds to modify the value of the intervention point. If you press button "SET" or "FNC" again, or if you wait longer than 15 seconds, the last value visualized remains memorized and label "SP1" will appear on the display. As soon as the temperature is reached, the burner will operate the control system automatically, maintaining thus a constant temperature.

8.2. TURNING OFF

To turn off the fryer correctly, proceed as follows:

- a. Turn the selector to position 1 to turn off the burner.
- b. Turn to position "C" to close the gas supply.
- c. As soon as the gas supply is closed, put the selector in position 0 to switch off the electrical power.
- d. At the end of the day, close the main gas valve (installed before the fryer).

8.3 FRYPOT DRAINING

The fryer is equipped with a faucet inside to drain the oil. The faucet can be accessed through the front panel. To avoid fluid spilling, place an appropriate tub (not included in the fryer) under the faucet.

Before draining the oil, turn the selector of the fryer in position OFF and allow the oil to cool to room temperature.

8.4 MAINTENANCE AND CLEAN UP

Clean stainless steel parts daily with soapy temperate water. Rinse thoroughly with water.

Eventually, clean the fryer with stainless steel wool following the direction of the profile of the stainless steel. Never clean stainless steel surfaces with scourers, steel brushes, etc. since the deposited ferritic particles can provoke oxidation points.

Do not use corrosive chemicals, nor abrasives or flammable products to clean the fryer.

If the fryer is not used for a long period of time, lubricate the stainless steel surface with vaseline oil to protect it. Clean the frypot of the fryer from time to time. Fill the frypot with water and detergent and let it boil a few minutes. Rinse the frypot with abundant cold water.

IMPORTANT: Clean the outside of the fryer only with a humid cloth. Do not point high pressure water jets to the device to avoid leaks and/or damages to the security systems.

8.5 TECHNICAL MAINTENANCE

To ensure optimum use and safety, check the fryer periodically, at least once a year.

All controls must be performed by qualified staff or a technician authorized by the manufacturer.

The instructions for maintenance are indicated in chapter 4 - Technical Maintenance.

ELECTRICAL SCHEME

