

# USE AND MAINTENANCE MANUAL

Translation of the original instructions

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## GAS FRYER

### EASY 700

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*Dear Customer,*

*thank you for choosing us. We are certain that this appliance will satisfy your needs and live up to your expectations.*

*We kindly ask you to read this Use and Maintenance Manual carefully in order to be able to use the appliance to its full potential. For any further information regarding use and maintenance, please do not hesitate to contact us. We will be delighted to answer any questions you may have.*

## **Introduction**

### **Warning on the ownership of information**

- *In order to foster its policy of continual development and updating of the product, the Manufacturer reserves the right to make any modifications necessary to improve its basic features without having to give notice and without being under any obligation to do so. If the modifications do not change any safety aspects, the Manufacturer is not obliged to give notice of them in this document attached to the appliance.*
- *The Manufacturer also reserves ownership of this document and strictly forbids its reproduction or disclosure to third parties without prior authorization.*
- *Any illustrations or drawings in this document are merely simplified representations of the appliance; on the basis of any improvements and modifications made, they may not correspond to the actual appliance.*

### **Updating procedure**

- *Updating and/or drafting of a new version of the above-mentioned document will only be carried out if the functional or safety aspects of the appliance are modified.*

### **Original version**

- *This document was originally issued in Italian. In the event of any controversy arising due to the translation of the same, even if carried out by the Manufacturer, the reference text will be the Italian version alone.*

- Reproduction of this document, either in total or in part, is forbidden without prior written consent by the Manufacturer, who reserves the right to modify it without any obligation to give notice, unless this represents a safety risk.
- Drafted by: VEGA srl

<b>1</b>	<b>General information</b>	<b>5</b>
1.1	<i>Purpose and description of the manual</i>	6
1.2	<i>Correct manual storage</i>	7
1.3	<i>Identification data</i>	8
1.4	<i>Requests for assistance</i>	10
<b>2</b>	<b>Technical information</b>	<b>11</b>
2.1	<i>General description of the appliance</i>	12
<b>3</b>	<b>Safety information</b>	<b>15</b>
3.1	<i>Safety</i>	16
<b>4</b>	<b>Information for correct use</b>	<b>19</b>
4.1	<i>First use</i>	20
4.2	<i>Tank filling and emptying</i>	21
4.3	<i>Complete map of the controls for FLG</i>	22
4.4	<i>Burner start and turning off</i>	22
4.5	<i>Safety thermostat</i>	24
4.6	<i>Complete map of the controls for FRG</i>	25
4.7	<i>Recommendations for use</i>	27
4.8	<i>What to do in the event of long periods of inactivity</i>	27
<b>5</b>	<b>Maintenance information</b>	<b>29</b>
5.1	<i>Maintenance recommendations</i>	30
5.2	<i>Ordinary cleaning</i>	30
5.3	<i>Useful tips for stainless steel care</i>	32
5.4	<i>Troubleshooting</i>	34
<b>6</b>	<b>Instructions for qualified fitters</b>	<b>35</b>
6.1	<i>General information</i>	36
6.2	<i>Storage</i>	36
6.3	<i>Packaging</i>	36
6.4	<i>Technical specifications</i>	37
6.5	<i>Positioning and installation</i>	41
6.6	<i>Gas Connection</i>	45
6.7	<i>Mains Electricity Connection</i>	46
6.8	<i>Inspection and start-up</i>	47
6.9	<i>Adjustments</i>	50
6.10	<i>Adjustment for operation with different gases</i>	51
6.11	<i>Maintenance to be carried out by a fitter or qualified technician</i>	55
<b>7</b>	<b>Tables and annexes</b>	<b>57</b>

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# **1 GENERAL INFORMATION**

## 1-1 Purpose and description of the manual

This manual is an integral part of the appliance and aims to provide all the information necessary to:

- make operators fully aware of any safety issues;
- guarantee correct installation;
- ensure full understanding of its operating principles and correct, safe use;
- carry out any maintenance correctly and safely;
- dispose of the appliance safely and in compliance with applicable legislation concerning health and safety and environmental protection.

Correct operation of the appliance is guaranteed only if these regulations are complied with.

The Manufacturer declines any responsibility for: damage resulting from poor maintenance, incorrect use, tampering with or any use which does not comply with the terms and conditions indicated in this manual.

The Manufacturer reserves the right to modify any drawings, texts and technical specifications without prior notice or responsibility and without any obligation to update this manual each time.

In the event of problems in understanding this manual, please contact the Manufacturer.

This manual is divided into the following sections:

- Section **1** contains information regarding consultation of this manual and the data necessary to correctly identify the manufacturer and appliance.
- Section **2** contains general information, essential for knowing all about the appliance and its main parts, its permitted uses, its technical specifications, etc.
- Section **3** is dedicated to user safety.
- Section **4** addresses the user and contains instructions for correct use of the appliance.
- Section **5** is intended for qualified fitters and concerns correct installation of the appliance.
- Section **6** contains information about maintenance, describing operations the user needs to carry out and those which must be carried out by a fitter or authorized technician. It also contains a chapter dedicated to troubleshooting, identifying the cause of problems and possible solutions.
- Section **7**, if present, contains tables and annexes.

### 1.1.1 Symbol used

During machine use, it is possible to face situations for which special considerations and adequate close examinations are needed.

The following "graphic safety symbols" are used in this manual. They aim to highlight risks or important information:



#### **DANGER**

**Draws attention to actions which, if not correctly carried out, may cause serious injury or death or may be a health risk for people and the environment.**



#### **WARNING**

**Draws attention to operations, procedures or actions which, if not carefully carried out, may cause serious damage to the appliance or product.**



#### **IMPORTANT**

**Draws attention to technical information or practical recommendations that ensure efficient and economical use of the appliance. Failure to comply with this information may void the warranty.**

### 1.1.2 Abbreviations used

Ref.	Description
Ann.	Annex
Chap.	Chapter
Fig.	Figure
Max.	Maximum
Min.	Minimum
Mod.	Model
Page	Page
Par.	Paragraph
Ref.	Reference
Tab.	Table
U.m.	Unit of measurement

Tab. 1 Abbreviations used

## 1-2 Correct manual storage

This manual must be handled with care and clean hands and it should never be placed on dirty surfaces. It should be stored in a cool, dry place.

No part of the manual should be removed, torn out or arbitrarily changed.



#### **DANGER**

**This manual is an integral part of the appliance and must be kept until final disposal of the same.**

### 1-3 Identification data

Check that the instruction manual corresponds to the appliance being referred to.

In the event of any request for information or technical assistance, it will be necessary to specify the model and type of appliance, as well as its serial number.

#### 1.3.1 Appliance type and model

The appliance type and model are indicated on the identification plate.

#### 1.3.2 Manufacturer

CASTA s.r.l.

Via F.lli Lumière, 11 (Z.I. Villa Selva) - 47122 FORLI' (FC) - ITALY

Tel. +39 0543 782920 - Fax +39 0543 782925

<http://www.casta.com> E-mail: [casta@casta.com](mailto:casta@casta.com)

VAT no. 03497370407



**1.3.3 Identification plate**

The identification plate shown is applied directly to the appliance.  
It includes all appliance and manufacturer identification data and the CE mark of conformity.



		CASTA SRL Via F.lli Lumiere, 11 - Z.I. Villa Selva 47122 Forlì (FC) ITALY Tel. +390543782920 - Fax +390543782925					
CE 	Tipo/Type <input type="checkbox"/>	<b>CAT.</b>	G2.350	G20	G30	G31	G110
Mod: _____ Art: _____ Nr: _____	Pmbar m3/h Kg/h						
	Pmbar m3/h Kg/h						
E QnKW _____ m3/h _____ kg/h _____ m3/h _____	Pmbar m3/h Kg/h						
PREDISPOSTO A GAS: _____							

Fig. 1 Identification plate



Fig. 2 Plate position

**1.3.4 Identification plates of the main components**

The plates of all the commercial components not produced by the Manufacturer are applied directly to the relevant components, where their respective manufacturers originally placed them.

**1.3.5 CE mark of conformity**

The CE mark applied on the identification plate confirms that the appliance complies with the safety requirements specified in the following directives:

Directive 2006/95/EC (Low voltage)

Directive 2004/108/EC (Electromagnetic compatibility)

Regulation 2004/1935/EC (Materials intended to come into contact with food)

## 1-4 Requests for assistance

- As stated in the sales terms and conditions, the appliance is covered by a warranty. If during the validity period of the same any faults or breakages covered by the warranty should occur, the Manufacturer will repair or replace faulty parts after carrying out the necessary checks.
- Any modifications carried out by the user without express written authorization by the Manufacturer shall void the warranty and relieve the Manufacturer of any responsibility for damage caused by the faulty appliance. This also applies when non-original spare parts are used.
- For all of the above reasons, in the event of an emergency, we recommend contacting the Manufacturer's Technical Assistance Department directly.

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VAT no. 03497370407



### IMPORTANT

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**For any type of service request it is necessary to specify the data on the identification plate and the type of fault.**

---

## **2 TECHNICAL INFORMATION**

## 2-1 General description of the appliance

### 2.1.1 Intended uses

The appliance has been designed and manufactured for the professional catering sector.

The appliance is suitable for frying in oil (or fat), chips and battered vegetables (either fresh or deep-frozen), breaded cutlets, fish fillets.

The appliance function is to cook the food located inside baskets immersed in hot oil (or fat); the heating is provided by burners with stabilised flame, which are installed in the front side of the cooking tank.

In order to use the appliance safely, it is essential to install it according to the laws, regulations and specifications applicable in the country where the appliance is to be installed.

### 2.1.2 Improper use

Improper use means any use of the appliance following criteria that do not comply with the instructions in this manual and that, as a result, may endanger safety.

The Manufacturer shall not be held responsible for any damage caused by improper use of the appliance.



#### **DANGER**

---

**Do not use the appliance other than for the use intended by the Manufacturer.  
Improper use is forbidden.**

---



#### **DANGER**

---

**Do not tamper with the seals applied by the fitter to the gas supply system.**

---

### 2.1.3 Main appliance parts

The picture and descriptions show the appliance fitted with all possible accessories. Depending on the model chosen, your appliance may be different.

- A. Cooking tank
- B. Basket support
- C. Control panel
- D. Opening door
- E. Adjustable feet
- F. Tank discharging tap (inside the appliance)
- G. Fume extraction grille
- H. Residue-collecting basket
- I. Burner ignition valve (for FRG fryers only)

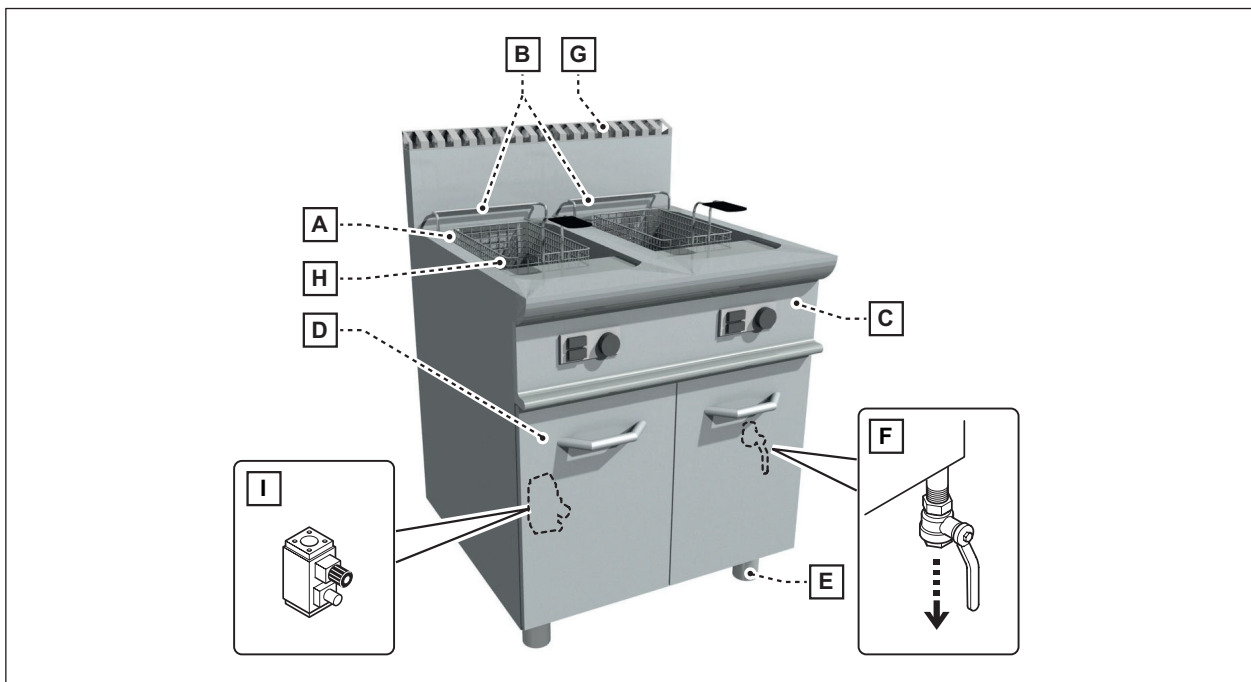


Fig. 3 Main appliance parts

### 2.1.4 Structural features

The main structure of the appliance is made in stainless steel 18/10 and stands on four height-adjustable feet.

The structural features of the main elements that make up the appliance are described below:

- Upper top with large spillover area;
- Stainless steel anti-corrosion tank with a cold area to allow the cooking residues to settle without getting burnt;
- Cool-grip knobs.
- Thermostatic solenoid valve with pilot flame and thermocouple to adjust cooking automatically and ensuring the immediate interruption of gas flow in case of burner failures or accidental turning off.

### 2.1.5 Accessories supplied

The following accessories are supplied with the appliance:

1. Oil-collecting tray with filter
2. Small basket for "1/2 tank"
3. Big basket for "entire tank"
4. Tank cover

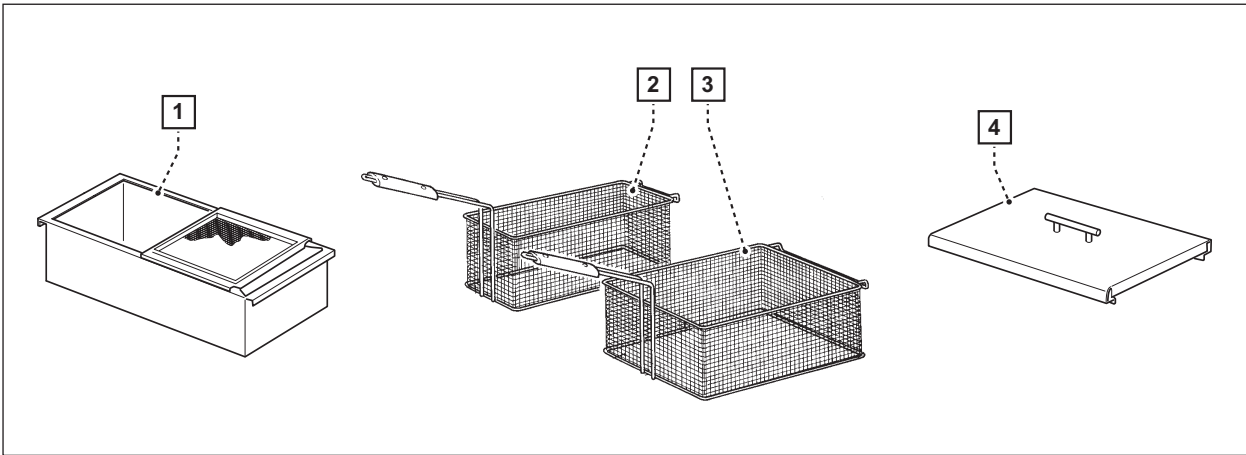


Fig. 4 Accessories supplied

All baskets are made of stainless steel and are fitted with a heat-resistant handle.  
The various combinations of baskets can be chosen by the user.

## **3 SAFETY INFORMATION**

### 3-1 Safety

- Use the appliance only for the purposes intended by the Manufacturer.
- Improper use of the appliance may result in a risk to the health and safety of people, as well as economic damage.
- As the appliance is used to prepare food for human consumption, special attention should be paid to everything related to hygiene and to keeping the appliance and surrounding area clean at all times.
- The appliance must be used by personnel trained on the appliance characteristics and functioning. Please refer to this manual. In case of more than one operator, consider handing out a copy of this manual to each one of them.
- Any maintenance operations requiring technical know-how or specific skills must be carried out exclusively by qualified personnel, properly trained in the specific field.
- To maintain hygiene and protect food from contamination, clean elements that come into direct or indirect contact with food and the surrounding areas thoroughly. Carry out these operations using only detergent products for food use and do not use flammable materials or materials containing substances that are harmful to people's health.
- In the event of long periods of inactivity, besides disconnecting all the power supplies, clean all internal and external parts of the appliance and the surrounding area thoroughly.

#### 3.1.1 Safe use of the appliance

Since this appliance has been designed exclusively for professional use, it must only be used by qualified personnel.

- **Do not turn the burners on in case there is no oil in the cooking tank.**
- Before filling the cooking tank it is necessary to ensure that the discharging tap is closed.
- Always ensure that the oil level is between the **maximum** and the **minimum level** (indicated by the relief marks on the inside of the tank, see *Fig. 5 Tank maximum/minimum filling level*).
- Add oil whenever it drops below the **minimum level**.
- If oil is used for too long, there may be a risk of fire, therefore it is necessary to replace it completely with new one.
- Before starting the frying, it is necessary to remove humidity as much as possible from products in order to avoid excessive hot oil squirting and overflowing due to the formation of foam.
- The introduction of an excessive amount of product in the hot oil may cause the production of too much foam.
- Do not put the food directly in the cooking tank but use the suitable baskets.

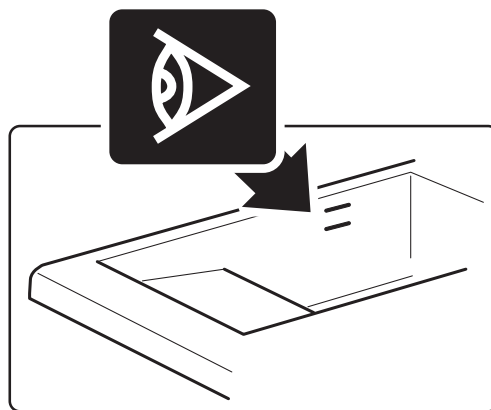


Fig. 5 Tank maximum/minimum filling level



- Never leave the appliance unsupervised when it is on.
- Do not leave any flammable objects, such as paper, plastic, rags, polystyrene, etc., near the appliance when it is on as they may start a fire.
- Keep the work area clean: do not leave any objects lying around the room as they might make it unsafe for personnel to move around.
- Do not obstruct air intake or heat extraction openings.
- Do not tamper with the seals applied by the fitter to the gas supply system.

**DANGER**

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**In event of fire, NEVER use water to extinguish it. RISK OF EXPLOSION!**

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**WARNING**

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**It is strictly forbidden to modify or carry out any type of intervention on the appliance, except those related to routine maintenance.**

**Any modification not explicitly approved by the Manufacturer will automatically void the warranty and the appliance conformity to the directives.**

---

### 3.1.2 Safety instructions in the event of malfunctioning

In an emergency:

- Turn the gas supply off.
- Turn the electricity off.
- Contact the Manufacturer's Customer Care Service or a specialized technician.

**DANGER**

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**Turn off the appliance if any faults or malfunctioning occur.**

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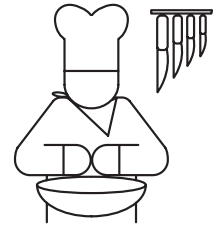
### 3.1.3 Appliance disposal

The appliance has been manufactured using recyclable raw materials and does not contain any harmful or toxic substances.

All materials must be disposed of in compliance with the regulations applicable in the country of use of the appliance.

**Always comply with environmental protection regulations.**

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## 4 INFORMATION FOR CORRECT USE

#### 4-1 First use

Clean the appliance thoroughly when using it for the first time.

Remove all packing materials from the appliance and carefully clean the tank and the baskets removing the industrial protective grease as described below.

- fill the tank until the edge with water and normal cleaner, start the heating and bring to the boil for a few minutes;
- discharge water through the relevant tap and rinse the tank with plenty of clean water;
- close the tap and pour frying oil until the **minimum level** at least and not beyond the **maximum level**.

Then, clean the appliance using hot water and a sponge. Stainless steel parts must be cleaned with a non-abrasive detergent specifically designed for cleaning such surfaces. (see par. *Useful tips for stainless steel care* on page 32 ).

After cleaning the appliance, rinse thoroughly with clean water and dry with a cloth.

Do not use water jets to clean the appliance.

Before putting the basket with the food to be fried inside the tank, wait for the oil to reach the correct temperature.



#### **WARNING**

---

**It is strictly forbidden to start the appliance when there is no oil in the cooking tank.**

**Always ensure that the oil level is between the maximum and the minimum level indicated by the relief marks on the inside of the tank (See Fig. 5 Tank maximum/minimum filling level).**

---

## 4-2 Tank filling and emptying

To fill the tank proceed as shown.

- Close the discharging tap;
- Pour oil in the tank until reaching the maximum level indicated by the relief mark.

To empty the tank proceed as shown.



### **WARNING**

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**This operation must be carried out once the oil has sufficiently cooled down.**

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- Ensure that the oil-collecting tray with filter is located under the discharging tap.
- Open the discharging tap.



### **IMPORTANT**

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**It is recommended to store oil in a fresh place, after having filtered it.**

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### 4-3 Complete map of the controls for FLG

The pictures show the control panel configuration with all available accessories.

A. Turn off button

B. Pilot button

C. Temperature setting knob

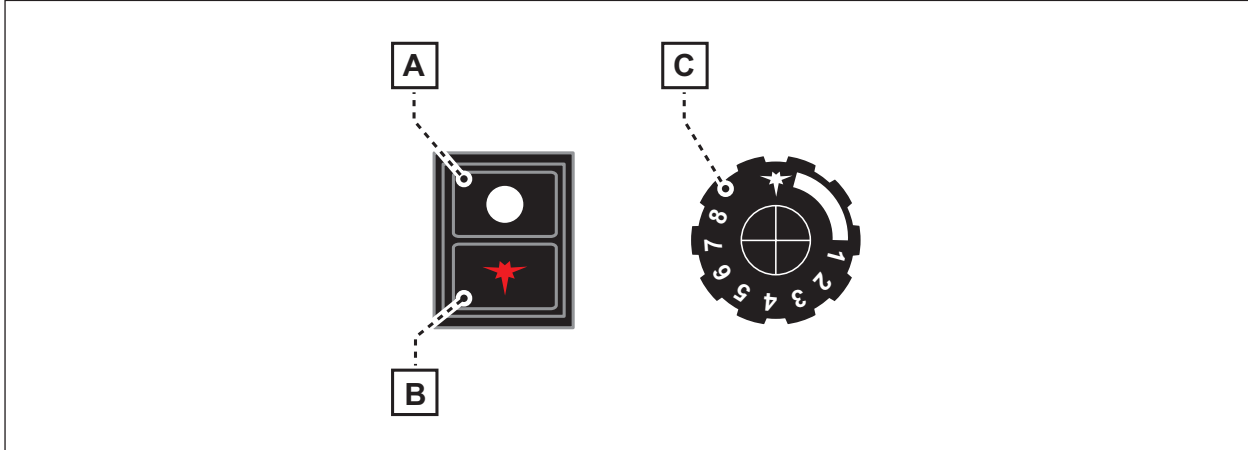


Fig. 6 Map of the controls

### 4-4 Burner start and turning off

The burner is controlled by a tap with a built-in safety valve.

#### 4.4.1 Pilot burner ignition

- Open the gas tap upstream of the appliance;
- Turn the temperature setting knob **(C)**;
- Open the appliance door;
- Press and hold the pilot button **(B)** until ignition and at the same time press the ignition switch for about 20 seconds until all air in the piping comes out and the pilot burner turns on;
- When the pilot burner is turned on (this can be checked by opening the appliance door), it is possible to turn the main burner on.

#### 4.4.2 Main burner ignition and temperature setting

- The burner is turned on by moving the knob to position 1;
- Temperature can be set by moving the knob from position 1 to position 8 considering the relevant temperatures in *Tab. 2 Oil temperature data*.

Knob reference	Oil temperature
★	Pilot*
1	110 °C
2	121 °C
3	133 °C
4	146 °C
5	158 °C
6	171 °C
7	183 °C
8	195 °C

Tab. 2 Oil temperature data



### WARNING

Comply with the data indicated in the table, AVOID OIL OVERHEATING.

#### 4.4.3 Main burner turning off

- Turn the knob taking the pointer marked with ★ on the reference mark.

#### 4.4.4 Total turning off

- Turn the main burner off, then press the turn off button marked with ○;
- The button remains automatically in this position for about 90 seconds and during this time it is not possible to turn the appliance on again.

## 4-5 Safety thermostat

The appliance is equipped with a safety thermostat (**G**), fitted to the internal side of the control panel; this device is triggered in case of thermostatic valve failure and shuts down the appliance if the maximum allowed temperature is exceeded.

### 4.5.1 Safety thermostat reset

In case of safety thermostat activation, proceed as indicated.

- Leave the oil cool down as long as needed;
- Open the door to access the safety thermostat;
- Press the reset button (**H**);
- Ensure that the oil level is between the maximum and the minimum level;
- Enable the burner and pilot flame ignition procedure and close the door: in case the safety thermostat is triggered again, contact the **Customer Care Service**.

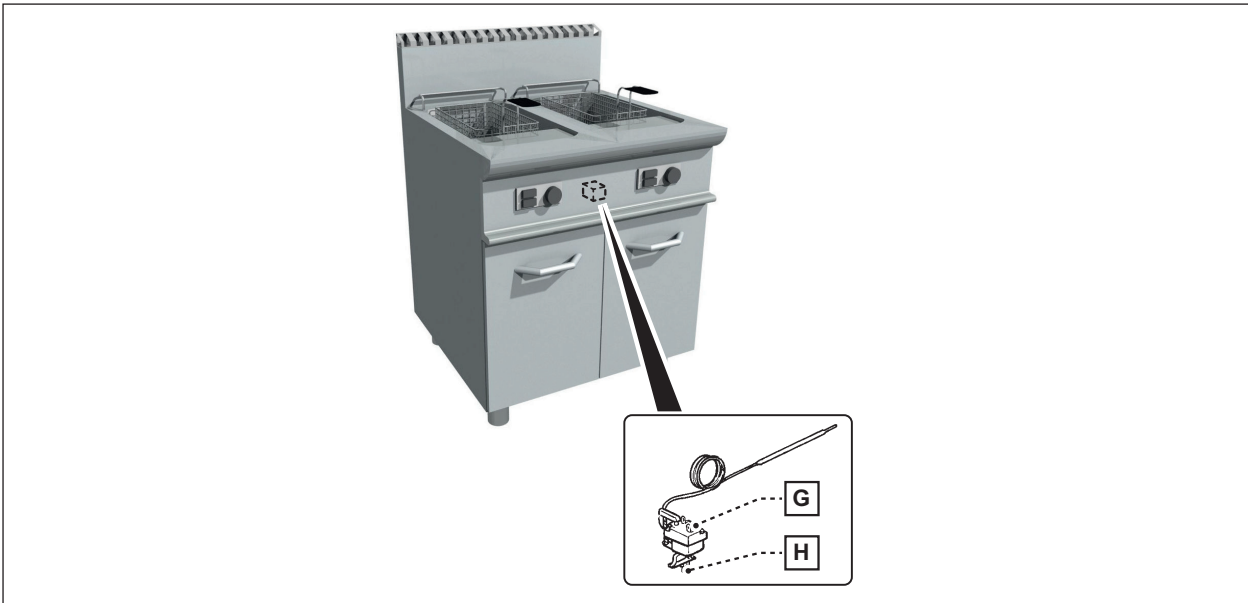


Fig. 7 Safety thermostat



#### 4-6 Complete map of the controls for FRG

The pictures show the control panel configuration with all available accessories.

- A. Adjustment knob
- B. Orange warning light
- C. White warning light
- D. Main burner knob

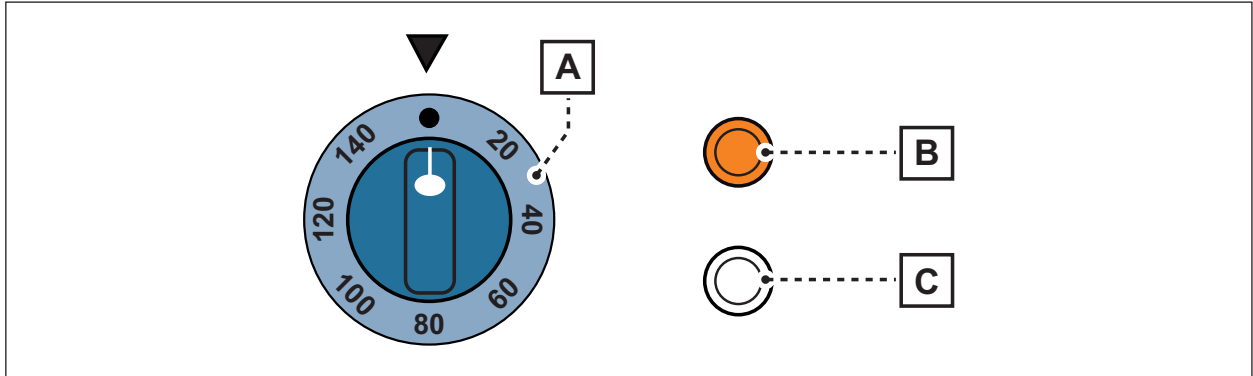


Fig. 8 Panel controls

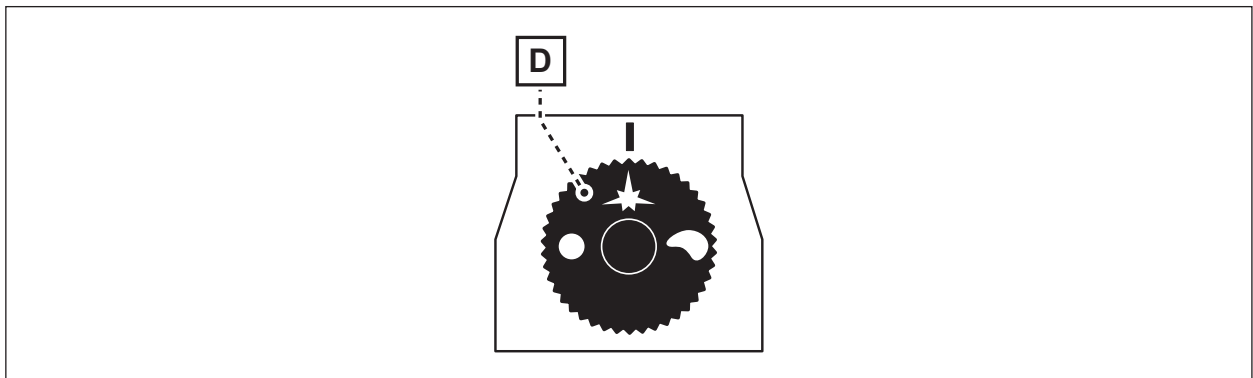




Fig. 9 Controls of the burner ignition valve located inside the doors

#### 4.6.1 Pilot burner ignition

- Open the gas tap upstream of the appliance;
- Open the appliance door;
- Turn the knob **(D)** of the valve located inside the appliance, to the  pilot position.
- Press and hold the button until the pilot burner turns on.

#### 4.6.2 Main burner ignition and temperature setting

- Check, with appliance door open, if the pilot burner is turned on
- Start the main burner by turning the knob **(D)** of the valve located inside the appliance, to the  burner position and move knob **(A)** to position 1.
- Temperature can be set by moving knob **(A)** from position **20** to position **140** considering the relevant temperatures in *Tab. 3 Oil temperature data*.

Knob reference	Oil temperature
●	OFF
20	20°C
40	40°C
60	60°C
80	80°C
100	100°C
120	120°C
140	140°C

Tab. 3 Oil temperature data

#### 4.6.3 Burner turning off

- To turn the burner off, turn the adjustment knob **(A)** to position ● position.

#### 4.6.4 Pilot flame turning off

- To turn the pilot flame off, turn the valve knob **(D)** to position ● position.

## 4-7 Recommendations for use



### IMPORTANT

All cooking must be carried out ensuring that the oil level is between the maximum and the minimum level.



### WARNING

Do not put the food directly in the cooking tank but use the suitable baskets.



### WARNING

Do not put large or not drained food inside the tank in order to avoid hot oil squirting or overflowing from the tank.



### WARNING

The old oil has a lower flash point and its foam tends to overflow.  
The introduction of an excessive amount of wet food causes the formation of foam that may overflow.

- Before putting the basket with the food to be fried inside the tank, wait for the oil to reach the correct temperature.
- If using solid fat, as an alternative to oil, it is necessary to melt it at the minimum temperature allowed.
- Let oil temperature drop between one frying and the next.
- Always add new oil to the one being used until reaching the maximum level indicated on the tank.
- Filter oil every day, removing any food residues.
- Reduce any excess humidity of the food to be fried, drying it thoroughly.
- When the food is ready, lift the basket so as to strain the oil, slightly shake it and pour everything in a container or on a dish with suitable size.
- Do not add salt to food during frying.
- Cover the appliance when it is not used.

## 4-8 What to do in the event of long periods of inactivity

If the appliance is not to be used for a certain period of time, it is necessary to:

- close the gas cut-off tap;
- disconnect the electricity supply;
- clean and dry the appliance;
- after cleaning and drying the appliance, protect it with a film of a suitable product (for example, Vaseline oil spray or a similar product);

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## **5 MAINTENANCE INFORMATION**

## 5-1 Maintenance recommendations

Keeping the appliance working to maximum efficiency, also thanks to scheduled maintenance recommended by the Manufacturer, will guarantee optimal performance, a longer lifespan and maintenance of all the safety requirements.

After **each use** or whenever necessary, clean the external parts of the appliance and surrounding area. At least **twice a year**, have an authorized technician check the appliance; **it would be advisable to enter a maintenance contract.**



### **DANGER**

**Before cleaning, turn the appliance off and disconnect the electricity supply (disconnect the power supply cable) and gas supply (turn off the gas tap, fitted upstream of the same); wait for the oil to cool down and empty the cooking tanks.**

**Cleaning must be carried out once the appliance has cooled down.**

## 5-2 Ordinary cleaning

Thorough daily cleaning of the appliance after use ensures perfect operation and a long lifespan. Clean using a damp cloth, water and soap or detergents and avoid abrasive or acidic products; these must not be used even to clean the floor near the appliance as the vapours may deposit on and deteriorate the steel.

Rinse thoroughly with clean water and dry. Never use direct water jets so as not to cause infiltrations that may be harmful to the appliance.

Description	Products
For washing and cleaning	Room temperature drinking water
For cleaning and drying	A non-abrasive cloth that does not leave any residues
Recommended detergent products	Detergents containing:
	- caustic potash at 5% (max)
	- caustic soda at 5%
Products for eliminating unpleasant smells	Rinse-aid products containing:
	- citric acid
	- acetic acid

Tab. 4 Table of cleaning products

### 5.2.1 Recommendations for cleaning the oil-collecting tank

Ensure, at regular intervals, that the oil level does not reach the oil-collecting container edge and that the filter is free from any residue.

Empty and clean the filter at regular intervals.



### IMPORTANT

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**A pull-out handle on the upper edge of the tray makes it easier to grab it.**

---

### 5.2.2 Main causes of deterioration or corrosion of stainless steel

This list shows the main causes of deterioration or corrosion of stainless steel.

- Use of abrasive or acid detergents, especially with a chlorinated base, such as hydrochloric acid or sodium hypochlorite (bleach); therefore, before purchasing a detergent product, ensure it does not cause steel corrosion;
- Stagnation of ferrous deposits (such as those produced by the rust present in the water that runs through the pipes, especially after a certain period of inactivity); such stagnation must thus be avoided. Also avoid using iron wool to remove food residues that are hard to eliminate; instead, use scourers or spatulas made of stainless steel or softer materials but, in any case, non-ferrous materials;
- Stagnation of acidic substances, such as vinegar, lemon juice, sauces, salt, etc. Do not allow such substances to stay in contact with the steel parts of the appliance for long periods. The evaporation of saline solutions on the surfaces is particularly harmful for them.

See also par. *Useful tips for stainless steel care* on page 32.

### 5-3 Useful tips for stainless steel care

Stainless steel is defined as such because it owes its resistance to corrosion to a thin oxide protective film which forms at a molecular level on its surface; it is created by the oxygen absorbed by exposure to the air of the metal itself. It is clear therefore, that anything that prevents the formation of this film and its permanence on the surface, such as foreign materials on it, food or salt residues, etc. reduce the resistance of stainless steel to corrosion.

Its resistance and duration, however, is also directly related to good maintenance during use and in choosing suitable materials and products for such maintenance.



#### IMPORTANT

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**Before using any detergent product for cleaning stainless steel, as well as for the floor underneath or near the appliances, ask your usual detergent supplier about the most suitable product to ensure this product cannot cause corrosion.**

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**Daily cleaning:** clean the surfaces thoroughly and frequently using a damp cloth. You can also use water and soap or common detergents that do not contain abrasive or coloured substances. Wipe only in the direction of the satin finish. Rinse with plenty of clean water and dry thoroughly.

**Food stains or hardened leftovers:** Wash any food stains using hot water before they harden. If they have already hardened, use water and soap or non-abrasive detergents, using a wooden spatula or soft stainless steel scourer. Rinse with plenty of water and dry well.

**Limescale deposits:** Limescale on pots, containers, etc. must be removed using descaling agents.

**Scratches on the surfaces:** If scratches or lines are detected on the surfaces, smooth them using very fine stainless steel wool or synthetic fibre abrasive felt pads, wiping in the direction of the satin finish. Rinse well and dry.

**Elimination of possible fading** of the steel caused by food stains or burns or heat stains: Use smooth stainless steel wool or synthetic fibre abrasive felt pads, wiping in the direction of the satin finish. Rinse well and dry. Take care not to scratch the surface.

**Rust:** If rust stains are detected, contact manufacturers of industrial detergents for a product capable of removing the stains. For this purpose, you can also use industrial products for removing limescale. After use and after rinsing with clean water, it may be necessary to use an alkaline detergent to neutralize the acid compounds still on the surface.



#### IMPORTANT

---

**After cleaning the stainless steel, especially the external surfaces of the appliance, and once they are completely dry, protect them with products commonly found on the market.**

**Besides eliminating marks or rings, they also restore the shine to the steel and prevent the infiltration of humidity and dirt, which cause corrosion.**

---



**5.3.1 Products that must not be used on stainless steel**

- Never use chlorinated products, for example bleach, hydrochloric acid or any other solutions deriving from the same. These products quickly attack stainless steel, causing irreversible corrosion.
- To clean the floors underneath and near the appliances, never use the products mentioned above, since vapours or drops that may fall on the steel produce similar corrosive effects to those described above.
- Never use iron scouring pads or leave them on the surfaces, since small deposits may remain on it and lead to the formation of rust; use a soft stainless steel wool or synthetic fibre abrasive felt pads, always wiping in the direction of the satin finish and taking care not to scratch the surfaces, then rinse and dry.



Fig. 10 Steel scouring pad



Fig. 11 Abrasive sponge



Fig. 12 Acidic substances

**5.3.2 Some useful tips**

- The pipes that supply water for use in pots, sinks, kitchens, washing machines, etc. inevitably surrender some rust, especially when taps are turned on after a period of inactivity or in case of new systems. Take care to prevent these oxides or ferrous deposits from coming into contact with the stainless steel for a long period of time, since they produce corrosion. It is always advisable to use galvanized pipes and to let the water run until it is perfectly clean.
- Avoid letting saline solutions evaporate, dry or stay in contact with stainless steel surfaces. For pots, never use coarse kitchen salt, which stays on the bottom and due to its weight cannot circulate and dissolve completely; this undissolved salt can cause corrosion. Therefore, it is advisable to crush it and add it to the pots when the water is boiling; if this is not possible and the salt is coarse, dissolve it in a separate container first. Avoid putting salt in pots of cold water or without water.
- When pots, washing machine compartments, bain-marie recipients, sinks, etc. are not used, they should preferably remain uncovered in order to keep the passivation film protecting the stainless steel stable and prevent it from coming into contact with possible aggressive agents.

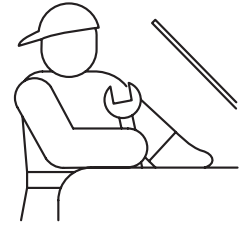
## 5-4 Troubleshooting

Prior to start-up, the appliance has been tested by **qualified personnel**. The information contained in the following table is intended to help find and fix possible failures and faults that may occur during use.

Some of these problems can be solved by the user, whilst all others **require specific technical know-how and skills and must therefore be solved by qualified and expert personnel**.

Problem	Likely cause	What should the user do	What should authorized personnel do
The pilot flame does not come on	Load loss in the main gas pipe	Contact the gas supply company.	-
	Pilot hole obstructed	Contact a qualified technician.	Clean the pilot hole.
	Damaged thermostatic solenoid valve	Contact a qualified technician.	Replace the thermostatic solenoid valve.
After moving the knob from the ★ (Pilot) position to a temperature setting position, the pilot flame goes off	The knob has not been kept for long enough in the ★ (Pilot) position to allow for thermocouple heating	Repeat the ignition procedure for longer.	-
	Thermocouple damaged	Contact a qualified technician.	Replace the thermocouple.
	Damaged thermostatic solenoid valve.	Contact a qualified technician.	Replace the thermostatic solenoid valve.
The pilot stays on, but the burner cannot be turned on	Load loss in the gas pipe	Contact the gas supply company.	-
	Nozzle obstructed	Contact a qualified technician.	Clean the burner nozzle.
	Damaged thermostatic solenoid valve	Contact a qualified technician.	Replace the thermostatic solenoid valve.
	Damaged temperature setting thermostat	Contact a qualified technician.	Replace the temperature setting thermostat.
	Burner holes are obstructed	Contact a qualified technician.	Clean the burner.
Smell of gas	Leak from the gas piping	Contact a qualified technician.	Check sealing.

Tab. 5 Problems associated with gas



## **6 INSTRUCTIONS FOR QUALIFIED FITTERS**

## 6-1 General information

The system and installation of the appliance must comply with existing UNI-CIG 8723 regulations and Italian Ministerial Decree dated 12 April 1996.

Appliance installation and maintenance **must be carried out by qualified and authorized personnel**, who must comply with the safety regulations applicable in the country where the appliance is to be installed.

## 6-2 Storage

If the appliance is stored in a warehouse at temperatures below 0°C, bring it to a temperature of at least +10°C before use.

## 6-3 Packaging

The appliance is usually packaged and shipped with all parts already assembled; therefore, when delivered, assembly is not necessary. The stainless steel parts and all framework panels are protected by an adhesive, scratch-resistant film.

The appliance is packaged inside a special wooden frame and placed on a pallet.

The packed appliance must be handled with care and kept in the correct position, according to the symbols present on the packaging.

During unpacking, ensure the appliance is in order and has all its components. When removing the scratch-resistant film, take care not to leave pieces of adhesive film on the panels.

It is advisable not to remove the packaging until the appliance is to be used so as to guarantee preservation of the same.

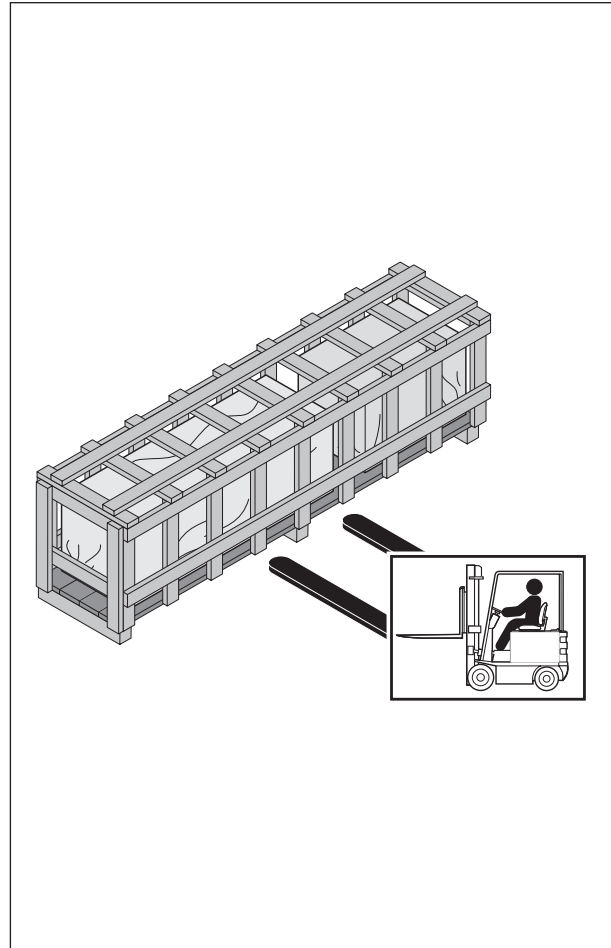


Fig. 13 Packaging



### WARNING

**Do not use cutters or any other sharp tools when unpacking. They may scratch the appliance surfaces irreparably.**



### WARNING

**Packaging materials must be disposed of in compliance with the regulations applicable in the country where the appliance is to be installed. The various types of material must be separated and taken to special collection centres.**

**Always comply with environmental protection regulations.**

## 6-4 Technical specifications

### 6.4.1 Composition and power of the appliance

Model	Description	Cooking tanks	Power (kW)
E7/FLG1V13	Gas fryer with internal heat exchangers	one 13-litre tank	11,2
E7/FLG1V17	Gas fryer with internal heat exchangers	one 17-litre tank	16,5
E7/FLG2V8	Gas fryer with internal heat exchangers	two 8-litre tanks	11,6
E7/FLG2V13	Gas fryer with internal heat exchangers	two 13-litre tanks	22,4
E7/FLG2V17	Gas fryer with internal heat exchangers	two 17-litre tanks	33

Tab. 6 FLG technical specifications

Model	Description	Cooking tanks	Power (kW)
E7/FRG1V13	Gas fryer with clean tank	one 13-litre tank	12
E7/FRG1V17	Gas fryer with clean tank	one 17-litre tank	16
E7/FRG2V13	Gas fryer with clean tank	two 13-litre tanks	22,4
E7/FRG2V17	Gas fryer with clean tank	two 17-litre tanks	32

Tab. 7 FRG technical specifications

6.4.2 Dimensions

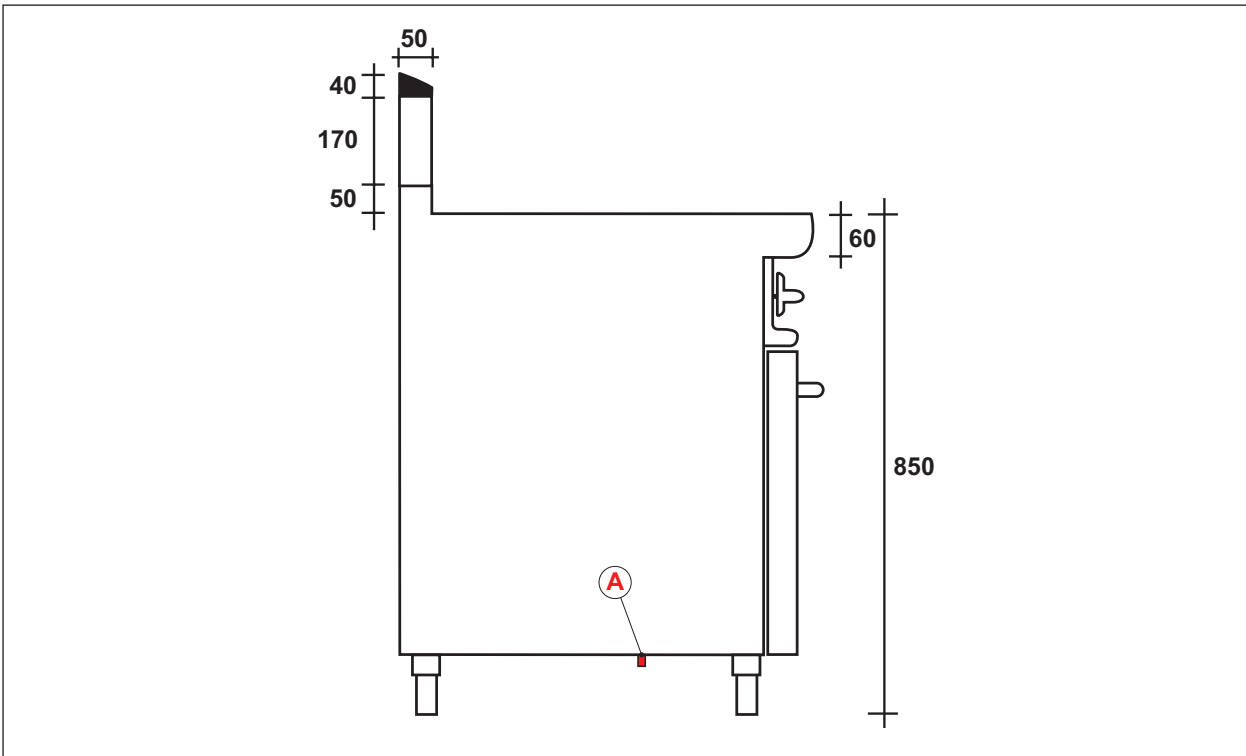


Fig. 14 Gas fryer dimensions

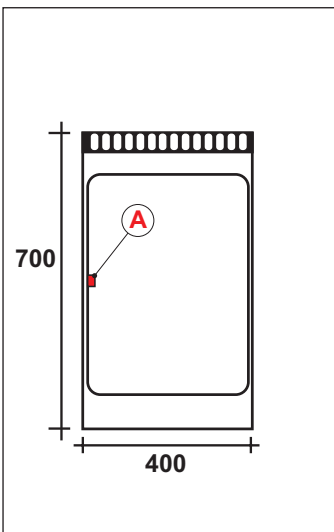


Fig. 15 One tank

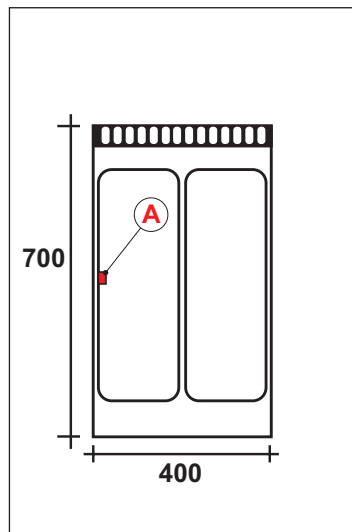


Fig. 16 Two small tanks

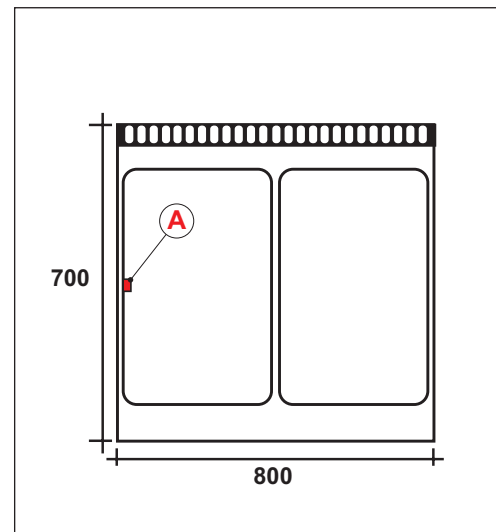


Fig. 17 Two tanks

A. Gas supply  $\varnothing$  3/4"

**6.4.3 Burner and nozzle specifications and adjustments depending on the type of gas used**

All data relating to the power and consumption of the appliance, indicated in the following table, have been obtained using standardised gases (see *Tab. 14 Families of standardised gases*).

<b>Nominal thermal capacity</b>	<b>12,0 kW</b>
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Tab. 8 Thermal capacity

<b>Gas - Pressure (mbar)</b>	<b>Marking no.</b>
G30 28..30	120
G30 50	105
G31 37	120
G31 50	105
G20 20	185
G25 25	195
G25 20	205
G20 25	180
G25.1 25	205

Tab. 9 Injector

<b>Gas - Pressure (mbar)</b>	<b>Marking no.</b>
G30 28..30	16,2
G30 50	16,2
G31 37	16,2
G31 50	16,2
G20 20	27,2
G25 25	27,2
G25 20	27,2
G20 25	27,2
G25.1 25	38R

Tab. 10 Pilot burner nozzle

<b>Gas - Pressure (mbar)</b>	<b>Consumption</b>
G30	0,946 kg/h
G31	0,932 kg/h
G20	1,270 m3/h
G25	1,477 m3/h
G25.1	1,474 m3/h

Tab. 11 Consumption

Gas - Pressure (mbar)	Distance (mm)
G30 28..30	4,0
G30 50	4,0
G31 37	4,0
G31 50	4,0
G20 20	4,0
G25 25	4,0
G25 20	4,0
G20 25	4,0
G25.1 25	4,0

Tab. 12 Primary air adjustment

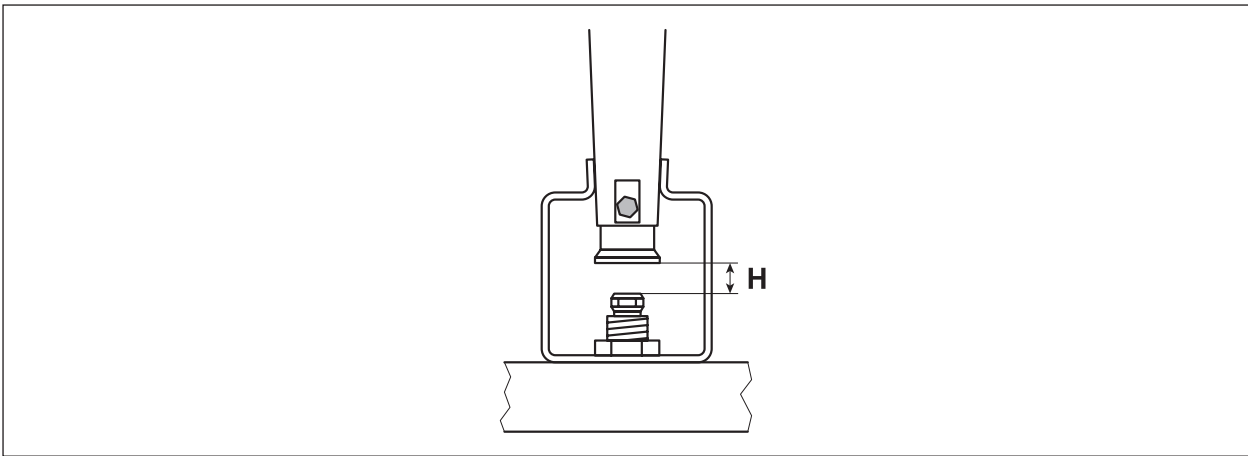


Fig. 18 Gas burner primary air adjustments for FLG fryers

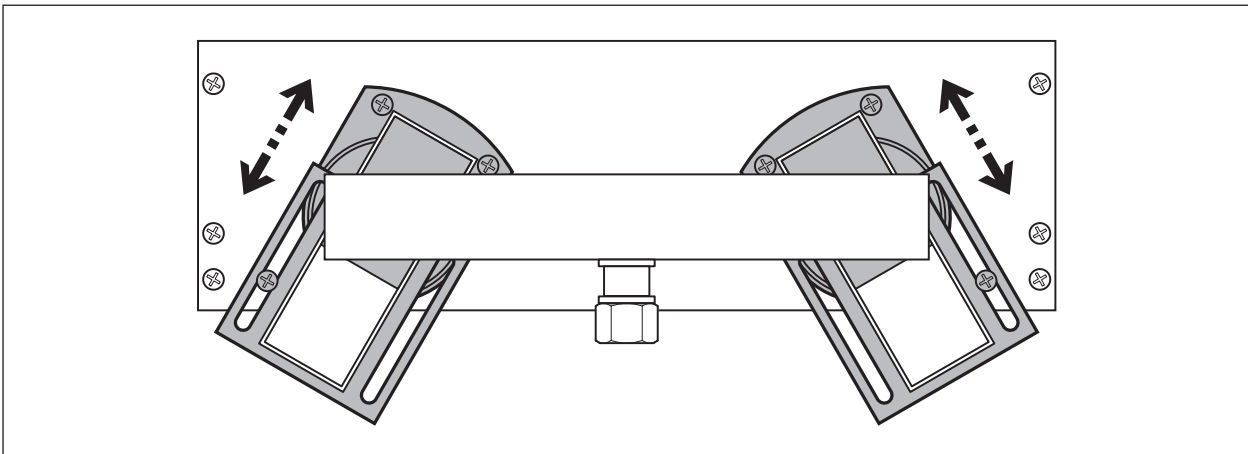


Fig. 19 Gas burner primary air adjustments for FRG fryers



## 6-5 Positioning and installation

The installation area must be equipped with all necessary power supply, ventilation, air intake and extraction connections, it must be properly illuminated and must comply with all health and safety requirements, in compliance with applicable laws, in order to avoid food contamination.

Ensure that the floor or support surface is flat and solid so that the base of the appliance is level and stable.



### **WARNING**

**The Manufacturer shall not be held responsible for any damage to people or objects caused by installation errors or by an inappropriate use of the appliance.**

**Any fault caused by wrong installation shall automatically void the warranty.**

The system and installation of the appliance must comply with existing UNI-CIG 8723 regulations and Italian Ministerial Decree dated 12 April 1996.

Appliance installation and maintenance **must be carried out by qualified and authorized personnel**, who must comply with the safety regulations applicable in the country where the appliance is to be installed.

### 6.5.1 Positioning of the appliance



#### **DANGER**

The appliance must be installed at least 200 mm from flammable walls. This distance may be lower when the walls are fireproof or protected by heat insulating material.  
The appliance is not suitable for built-in systems.



#### **WARNING**

Ensure that, once installed, the appliance can easily be reached by technical service personnel in the event of any fault occurring.

- Remove the appliance from its packaging and position it where it is to be used;
- Adjust the feet so that the appliance is level;
- Remove the transparent adhesive protective film from the surfaces, detaching it slowly to avoid leaving glue residues on the appliance.
- Connect the appliance to the gas distribution network (chap. *Gas Connection* on page 45).
- Connect the appliance to the premises electric network (chap. *Mains Electricity Connection* on page 46).

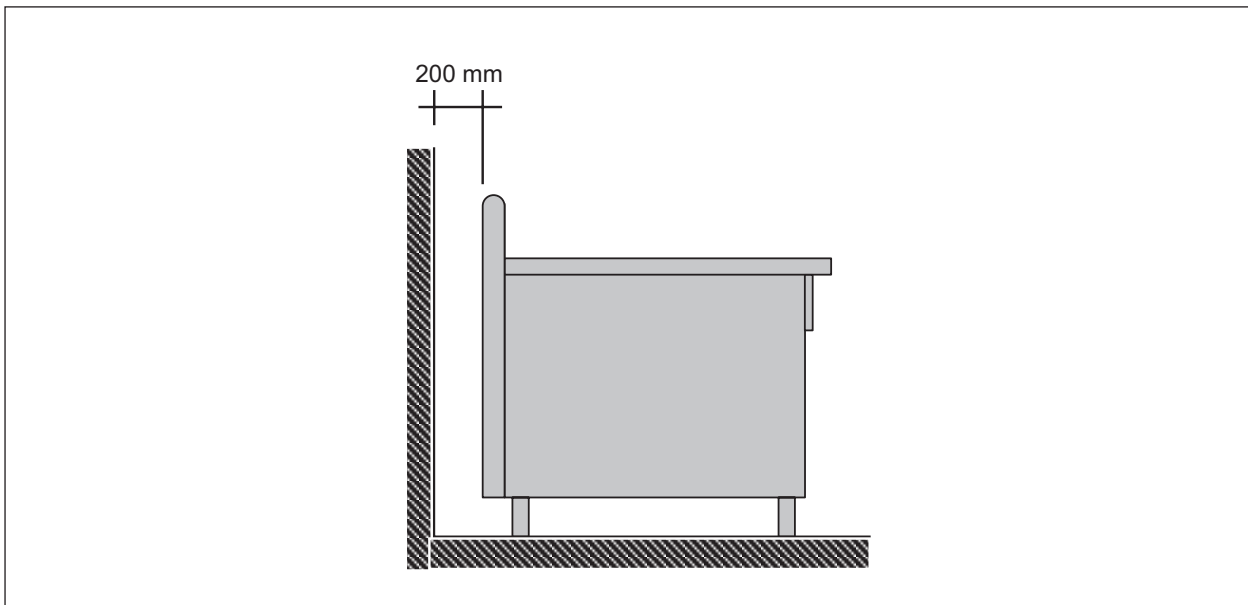


Fig. 20 Minimum distance from flammable walls

**6.5.2 Ventilation of the installation premises and fume extraction**

The premises where the appliance is installed must have air intakes to ensure the correct functioning of the appliance and proper air exchange.

Air intakes must be of a suitable size, must be protected by grilles and must be placed in such a way that they cannot be obstructed.

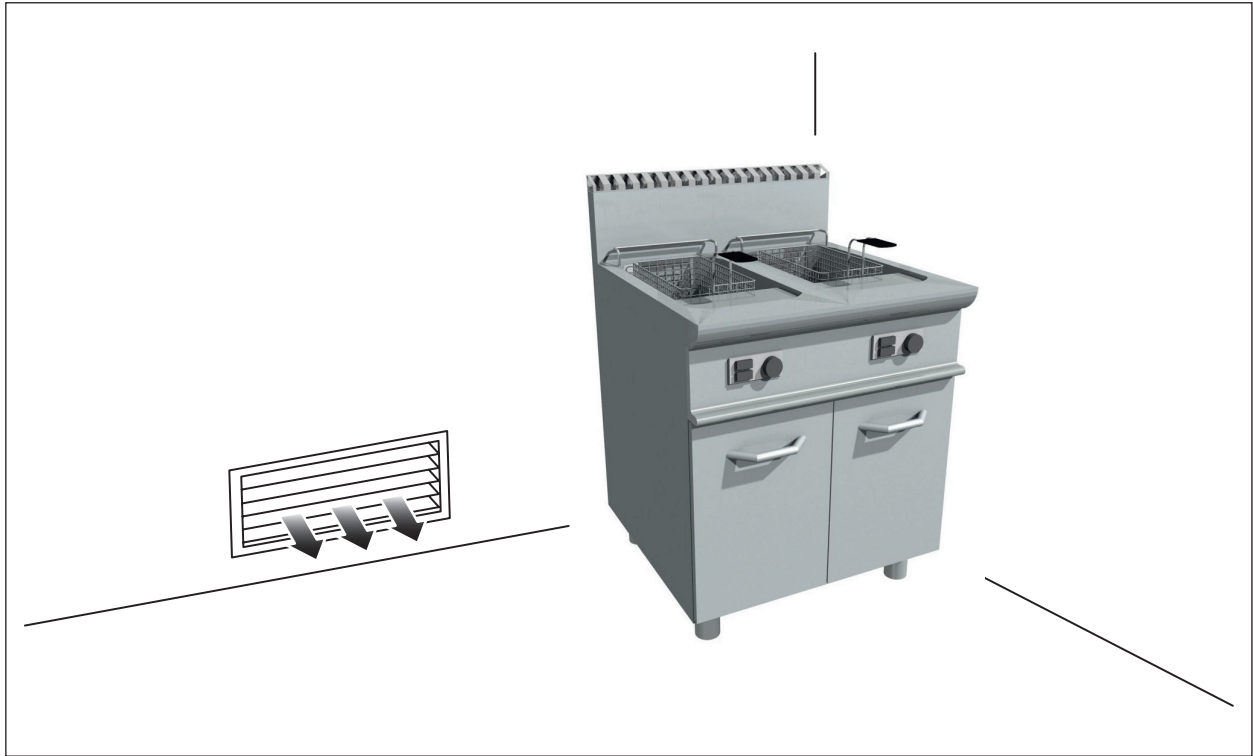


Fig. 21 Ventilation of the installation premises

In compliance with applicable legislation on installation, the appliance can be defined as **Type A**: an appliance not intended for connection to a chimney/flue or to a device for the extraction of combustion products to the outside of the premises where the appliance is installed. The extraction of comburent air and combustion products is carried out in the installation premises.

To guarantee the complete extraction of steam produced during cooking and gases produced during the combustion process, the appliance must be installed in well-ventilated premises (possibly under a mechanical extraction hood), in compliance with applicable regulations.

If a mechanical extraction hood is installed, it is necessary to follow the regulations for the installation below.:

- Gas supply to the appliance must be interrupted if the power of the forced extraction system falls under the established safety value; the gas supply must only be restored manually.
- The final part of the appliance extraction duct must be about **1.8 m** from the appliance support surface; the outlet of the combustion product extraction duct must be placed within the basic perimeter of the hood (see *Fig. 23 Fume extraction through extraction hood*).
- The power of the mechanical extraction system must not be lower than required.

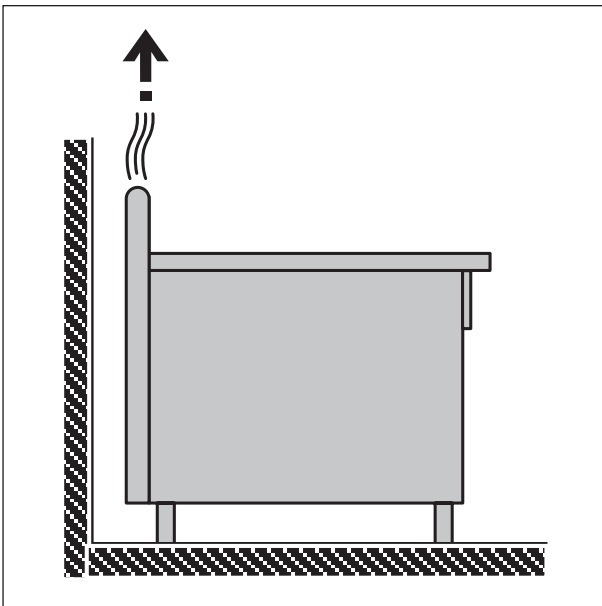


Fig. 22 Fume extraction

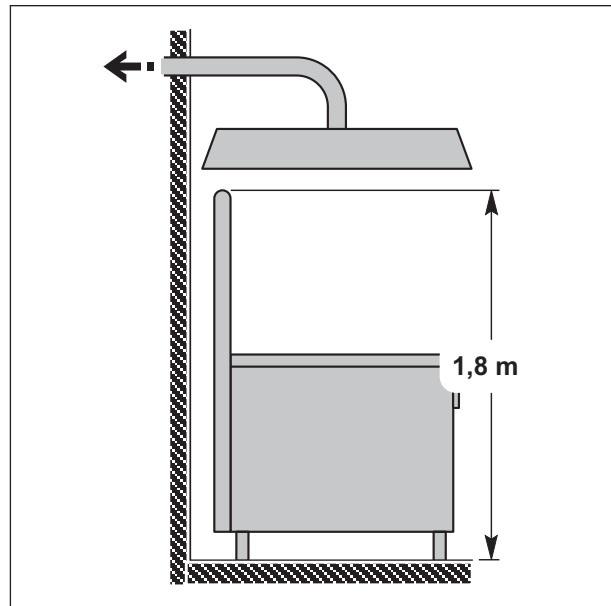


Fig. 23 Fume extraction through extraction hood

## 6-6 Gas Connection

Before connecting the appliance, make sure that the data on the identification plate corresponds to that of the gas supply network. If the gas indicated on the plate is not the same available in the premises, follow the instructions in chap. *Adjustment for operation with different gases* on page 51.

- Connection to the gas supply network must always be carried out using rigid or flexible metal piping with proportionate cross-section, inserting a sealing gasket suitable for gas use.
- Connections between the 3/4"G piping from the appliance and the gas pipes should preferably be carried out using a three-piece metal joint, in order to facilitate connection and dismantling if necessary.
- Seal the joint threads using TFE tape (tetrafluoroethylene) or other materials declared by their manufacturers as being suitable for LPG too.
- Always insert a cut-off tap between the appliance and the gas supply pipes, in a position that makes it easy to handle and turn off after use.
- During connection between the gas piping and the appliance, make sure you do not cause any kind of stress to the appliance itself.
- Gaskets must be metallic or of other elastic materials that cannot be altered by the gas distributed.
- Copper piping junctions must be realized using mechanical couplings without gaskets or putty.
- After connection to the gas supply, check the absence of any leaks in the joints and connections using water and soap or a suitable leak detection product.

### 6.6.1 Characteristics and requirements of the gas supply network

The appliance is started at the nominal capacity of the gas used with the nozzles indicated in par. *Burner and nozzle specifications and adjustments depending on the type of gas used* on page 39.

Depending on the gas used, the supply pressure must fall within the following values; **do not connect the appliance if the pressure values are different.**

GAS	Nominal pressure (mbar)	Minimum pressure (mbar)	Maximum pressure (mbar)
G20 (methane)	20	17	25
G30 (LPG)	30	28	50
G31 (LPG)	37	28	50

Tab. 13 Intended supply pressures

The appliance is delivered for use with natural gas, G20 (methane gas) at a pressure of 20 mbar; check the category of the country in which it is to be installed *Tab. 15 Gas category and pressure*.

If the gas indicated on the plate is not the same available in the premises, follow the instructions in chap. *Adjustment for operation with different gases* on page 51.

## 6-7 Mains Electricity Connection



### WARNING

**All electrical operations necessary to install the appliance and the supply cable must be carried out by qualified electricians or technicians in compliance with applicable regulations.**

- The appliance is designed to operate at the voltage indicated on the identification plate; before connection of the appliance to power mains, check that the voltage of the mains supply in the premises complies with the data indicated on the identification plate.
- The supply cable can only be installed by the Manufacturer or by a qualified operator.
- The supply cable must be made of rubber, with a quality level equal to at least H07RN-F and with conductors with a cross-section suitable for the maximum load to be carried.
- The supply cable must not be exposed to direct sources of heat; once installation and connection are complete, the supply cable should be placed in such a way that no part of it reaches a temperature that is 50°C higher than room temperature.
- The electrical safety of this appliance is guaranteed only when it is correctly connected to an efficient earthing system; it is necessary to check this essential safety requirement and if in doubt, ask qualified personnel to carry out a thorough check of the system.



### IMPORTANT

**Connect the appliance to an efficient earthing system!**

**The Manufacturer cannot be held responsible for any damage caused if the system is not earthed.**

- An efficient omnipolar circuit breaker with a contact opening of at least 3 mm must be installed in the electrical supply system, fitted upstream of the appliance; automatic circuit-breaker switches can be used for this purpose.
- The omnipolar circuit breaker should be close to the appliance and easily accessible once installation is complete.
- The yellow-green earth cable must not be interrupted by the switch.



### IMPORTANT

**It is advisable to insert an integrated circuit-breaker switch with fuses.**

#### 6.7.1 Connection of the power supply cable

Connect the power supply cable (supplied) in compliance with applicable regulations; the power supply cable must be blocked using a cable clamp mounted on the appliance in order to prevent the risk of breakage.



### WARNING

**The earth cable must be longer (about 2 cm more) than the other conductor cables.**

**In the event of strong traction of the cable or breakage of the cable clamp, the earth cable must be disconnected after the other conductors.**

## 6-8 Inspection and start-up



### IMPORTANT

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**Before start-up, the system should be tested in order to assess the operating conditions of each component and detect any possible failures. At this stage it is important to check that all safety and hygiene conditions are strictly complied with.**

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#### 6.8.1 Checking the gas system

Carry out the following checks:

- check that the gas supplied through the network corresponds to the gas needed for the start-up of the appliance and make any necessary modifications (see chap. *Adjustment for operation with different gases* on page 51);
- turn on the gas supply tap and check the seal of the connections; to do this, brush soapy water over all the joints. Any leaks will be highlighted by foam bubbles;



### DANGER

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**Never use naked flames to check for leaks.**

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- check you have removed all the plastic protective film from the panels, taking care not to leave traces of glue on the steel surface; if necessary, remove the glue using suitable solvents;
- check correct ignition and combustion of every burner;
- check the correct functioning of the pilot flames and that the nozzles are correct;
- check the proper functioning of the safety thermocouple.

### 6.8.2 Checking the supply pressure

The connection pressure is measured when the appliance is running using a pressure gauge as follows:

- Remove the front panel after removing all the knobs;
- Remove the screw and sealing ring from the manometric pressure socket;
- Connect the pressure gauge and check the pressure. If the pressure falls within the nominal values indicated (see par. *Characteristics and requirements of the gas supply network* on page 45) the appliance can be used; otherwise contact the gas supply company;
- After checking the pressure, remove the pressure gauge and refit the screw and corresponding sealing ring. Using red paint, seal the pressure control screw, then refit the front panel and knobs.



### IMPORTANT

**The Manufacturer shall not be held responsible for any damage to people or objects caused by installation errors.**

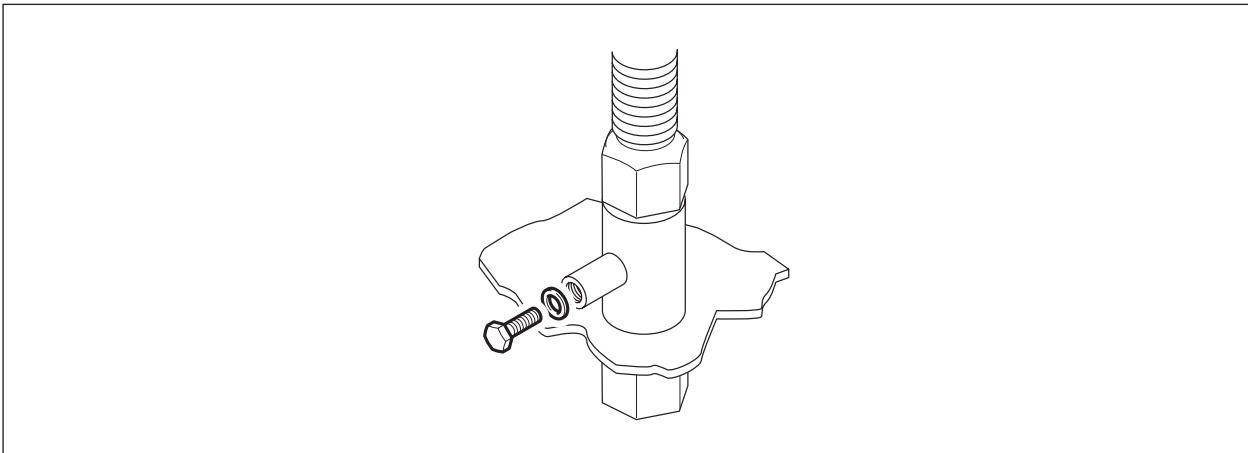


Fig. 24 Manometric pressure socket



### **6.8.3 Checking the extraction of combustion products**

Carry out the following checks:

- check that the exhaust gases come out correctly from the special ducts;
- check that nothing obstructs air intake or heat extraction openings;
- check that any combustion product extraction system (extraction hoods or other) permits extraction of at least 1 cubic meter of fumes per kW of power absorbed by the connected appliances.

### **6.8.4 Checking ventilation of the installation premises**

Carry out the following checks:

- check that the area where the appliance is installed is well-ventilated during operation, with air flow for gas combustion as well as for air exchange (ventilation);
- air intake openings must be placed in the lower part of the external walls, preferably opposite the wall where the extraction of combustion gases is situated;
- air intake openings must be built in such a way that they cannot be obstructed.

### **6.8.5 Checking the electrical system**

Turn the appliance on according to the instructions for use, check the correct functioning of the control panel warning lights and control devices, testing various temperature values.

### **6.8.6 Instructions for users**

After testing, if necessary, train users so that they acquire all the necessary skills to start-up the appliance in safe conditions, as provided for by applicable regulations.



## **IMPORTANT**

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**While explaining, always refer to this Use and Maintenance Manual.**

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## 6-9 Adjustments

### 6.9.1 Primary air adjustment

Primary air must be adjusted as explained in par. *Burner and nozzle specifications and adjustments depending on the type of gas used* on page 39 . Primary air is adjusted correctly if flame stability is guaranteed. In other words, there is no flame gap when the burner is cold and there is no blow-back (ignition of the gas at the nozzle) when the burner is hot.

### 6.9.2 Pilot flame adjustment

Adjust and check that the flame wraps around the thermocouple and that its appearance is correct.

For further explanation, we provide a brief description of the characteristics and behaviour of the gas on the basis of the gas-air ratio. Below we illustrate the characteristics of a flame, when air adjustment in the burner is excessive, lacking or correct.

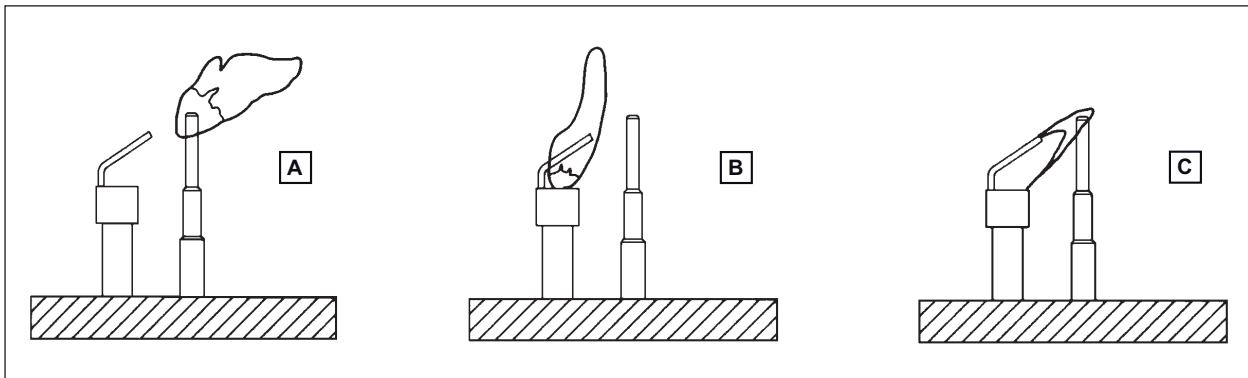


Fig. 25 Pilot flame adjustment

- A. **Too much air in flame - Light blue flame.** The flame tends to separate (blowing) or to return (blow-back) with possible ignition at the nozzle. Usually, with methane and liquefied gases, flames tend to blow.
- B. **Too little air in flame - Flame with yellow peak.** Production of harmful carbon monoxide with a subsequent depositing of black soot on the bottom of pans. Very poor burner performance.
- C. **Correct flame - Blue or dark blue flame.** Maximum burner performance; if this does not occur, check that the nozzles fitted are the correct ones - for this purpose, see par. *Burner and nozzle specifications and adjustments depending on the type of gas used* on page 39.



## DANGER

**Carbon monoxide is an odourless, colourless and toxic gas and is lethal even at very low concentrations.**

## 6-10 Adjustment for operation with different gases

Conversion to another type of gas must be carried out by authorized and qualified fitters.

For example, to switch from natural gases to liquid gases, the nozzles of pilot and main burners must be replaced. The correct nozzles are indicated in par. *Burner and nozzle specifications and adjustments depending on the type of gas used* on page 39.



### IMPORTANT

All the nozzles necessary for adjustment are supplied in a bag with the appliance; the main burner injectors are marked in hundredths of mm, whereas the pilot ones are marked with their reference number.



### IMPORTANT

Each time the appliance is adjusted to operate with a different type of gas or at a different pressure value, the indications of the new adjustment must replace the previous ones (apply the gas setting plate).

#### 6.10.1 Replacing the main burner nozzles for FLG fryers

To carry out this operation proceed as follows:

- Turn off the gas supply tap;
- Access the burner;
- Unscrew the nozzle (D) from its support and replace it with the nozzle suitable for the type of gas used (see par. *Burner and nozzle specifications and adjustments depending on the type of gas used* on page 39);
- Adjust the primary air operating on the adjustment bushing (C) (for primary air distance "H" see par. *Burner and nozzle specifications and adjustments depending on the type of gas used* on page 39);
- Refit all the parts removed so that the appliance can be used.

- A. Main burner
- B. Fixing screw for air adjustment
- C. Air adjustment bushing
- D. Main burner nozzle
- E. Gas ramp
- F. Nut

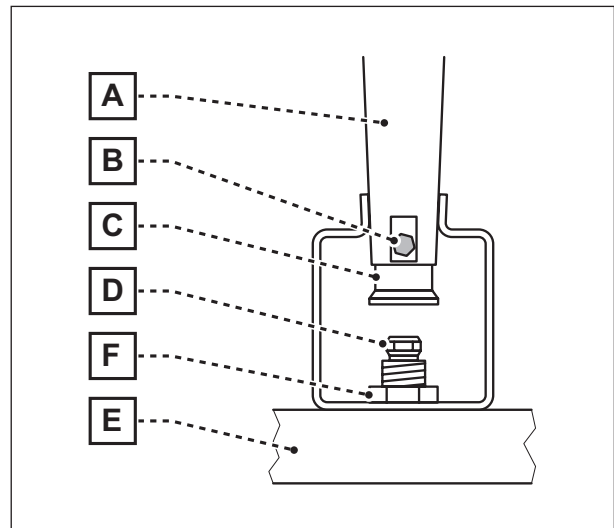


Fig. 26 FLG fryer nozzle main parts

### 6.10.2 Replacing the main burner nozzles for FRG fryers

To carry out this operation proceed as follows:

- Turn off the gas supply tap.
- Unscrew the screws **(C)** and remove the cover **(A)**.
- Unscrew the nozzle **(D)** from its support and replace it with the nozzle suitable for the type of gas used (see *Burner and nozzle specifications and adjustments depending on the type of gas used* on page 39).
- Refit the cover **(A)**.
- Adjust the primary air operating on the adjustment screws **(B)** (for primary air distance "H" see *Burner and nozzle specifications and adjustments depending on the type of gas used* on page 39).
- Refit all the parts removed so that the appliance can be used.

A. Cover

B. Fixing screw for air adjustment

C. Fixing screws

D. Main burner nozzle

E. Gas inlet

F. Nut

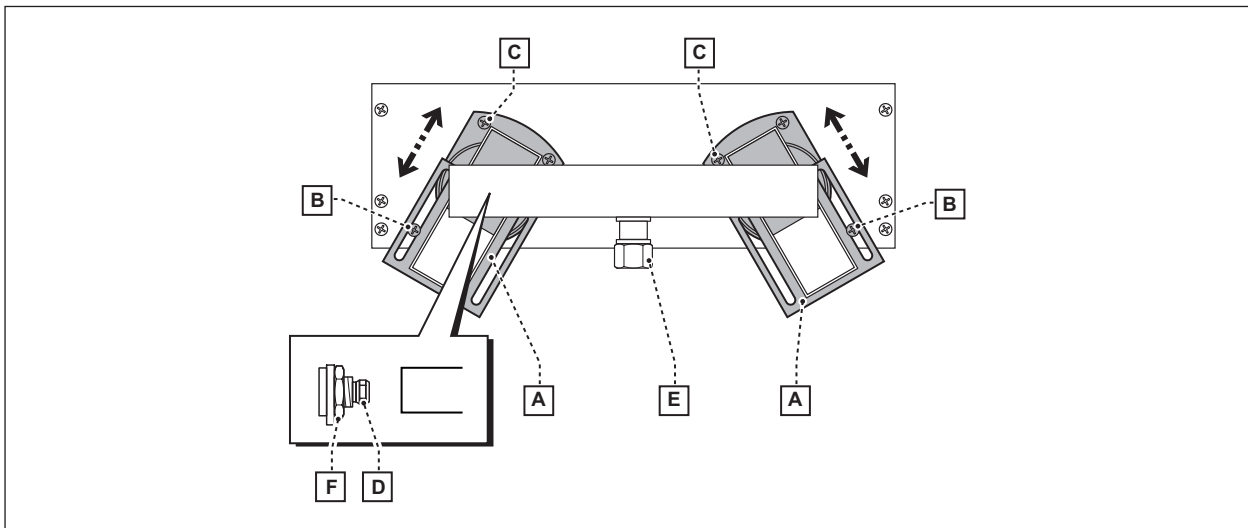


Fig. 27 FRG fryer nozzle main parts

### 6.10.3 Replacing the pilot nozzle

- Turn off the gas supply tap;
- Access the burner;
- Unscrew the nozzle (**F**) and replace it with the nozzle suitable for the type of gas used (see *Burner and nozzle specifications and adjustments depending on the type of gas used* on page 39);
- Refit all the parts removed so that the appliance can be used;
- No air adjustment is required.

- A. Pilot blowpipe
- B. Burner body
- C. Thermocouple
- D. Ignition electrode
- E. Fixing screw
- F. Nozzle
- G. Pilot bracket

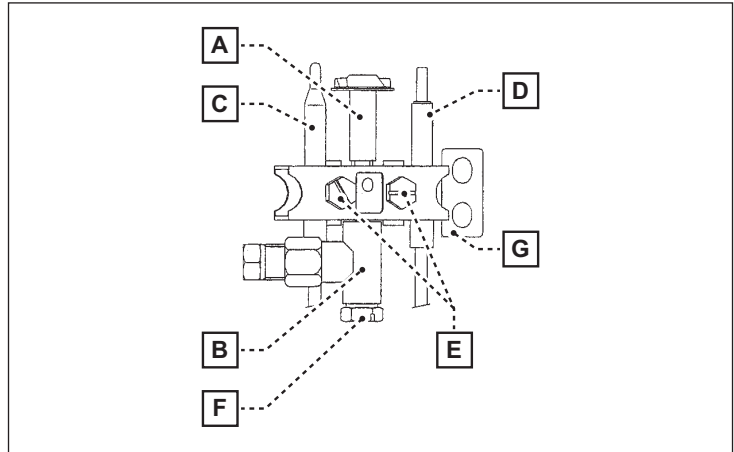


Fig. 28 Pilot nozzle main parts

#### 6.10.4 Replacing the ignition spark plug

To carry out this operation proceed as follows:

- Turn off the gas supply tap;
- Access the burner;
- Unscrew the two screws (**E**);
- Remove the spark ignition plug (**D**), disconnect the cable and refit the new spark ignition plug;
- Refit all the parts removed so that the appliance can be used.

- A. Pilot blowpipe
- B. Burner body
- C. Thermocouple
- D. Ignition electrode
- E. Fixing screw
- F. Nozzle
- G. Pilot bracket

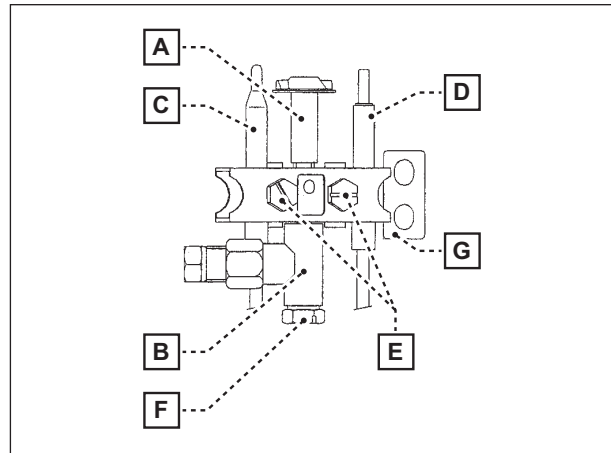


Fig. 29 Pilot nozzle main parts

#### 6.10.5 Thermocouple replacement

To carry out this operation proceed as follows.

- Turn off the gas supply tap;
- Access the burner;
- Unscrew the two screws (**E**);
- Remove the thermocouple (**C**) from the support and disconnect it from the safety thermostat circuit;
- Install the new thermocouple, repeating the above sequence in reverse order;
- Refit all the parts removed so that the appliance can be used.

## 6-11 Maintenance to be carried out by a fitter or qualified technician

The following maintenance operations must be carried out **at least once a year**:

- Check the efficiency of the thermostatic solenoid valve and of the safety thermostat;
- Check the pressure and sealing of the system;
- Check safety thermocouple efficiency;
- Check the efficiency of the fume extraction system (if any);
- Check safety thermostat efficiency;
- Check combustion;
- Check the minimum adjustment screw to ensure it is sealed; sealing must be intact.



### **DANGER**

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**Before carrying out any repair or maintenance operation on the appliance, turn off the gas supply tap.**

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#### 6.11.1 Burner cleaning

Clean the burners as follows:

- Unscrew the burner fixing screws and remove it from its seat;
- Clean the gas outlet holes by means of a drill (for instance, a twist drill) or a similar tool;
- Once cleaned, refit the pieces in reverse order;
- Check the combustion gas extraction duct and the anti-draught device (if present).

### 6.11.2 Replacing the safety thermostat

To carry out this operation proceed as follows.

- Turn off the gas supply tap;
- Pull off the knobs;
- Unscrew the fixing screws and remove the panel;
- Remove the thermostat **(B)** from the support;
- Disconnect the thermostat from the thermocouple circuit and refit the new thermostat following the same procedure in reverse order;
- Refit all the parts removed so that the appliance can be used.

### 6.11.3 Replacing the operating thermostat

To carry out this operation proceed as follows.

- Turn off the gas supply tap;
- Pull off the knobs;
- Unscrew the fixing screws and remove the panel;
- Disconnect the thermostat **(A)** from the thermocouple circuit and refit the new thermostat following the same procedure in reverse order;
- Refit all the parts removed so that the appliance can be used.

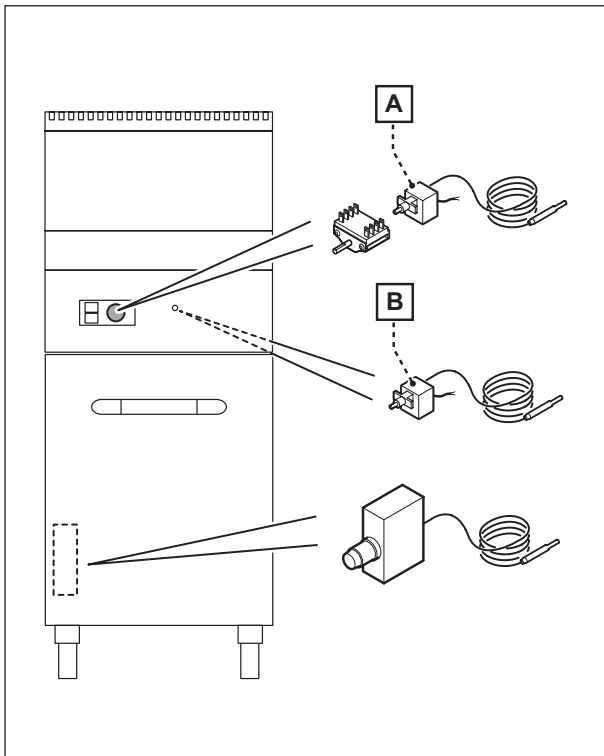


Fig. 30 Thermostat position on FLG fryers

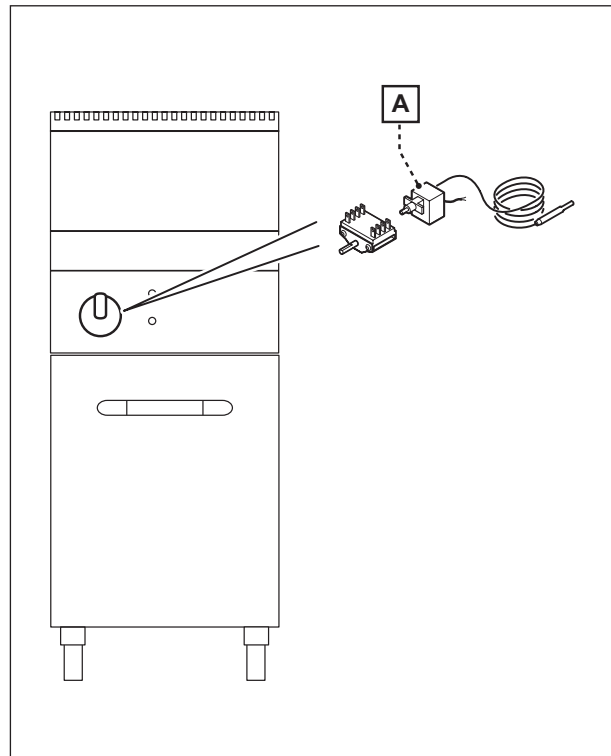


Fig. 31 Thermostat position on FRG fryers



## **7 TABLES AND ANNEXES**

Family	Gas type	Gas symbol	Inferior calorific value (Hi) Kcal/cu. m	Inferior calorific value (Hi) MJ/cu. m	Inferior calorific value (Hi) kW/cu. m	Calibration and testing pressure mbar	Calibration and testing pressure mmWC
2nd family	Natural gas (group H)	G 20 (methane gas)	8.570	35,9	9,97	18	180
3rd family	Liquefied petroleum gases (LPG)	G 30 (butane)	29.330 (Kcal/m <sup>3</sup> )	122,7 (MJ/m <sup>3</sup> )	34,1(kW/m <sup>3</sup> )	30	300
			11.000 (Kcal/kg)	45,6(MJ/kg)	12,67(kW/kg)		
		G 31 (propane)	22.190 (Kcal/m <sup>3</sup> )	92,91 (MJ/m <sup>3</sup> )	25,8 (kW/m <sup>3</sup> )	37	370
			11.000 (Kcal/kg)	46,4(MJ/kg)	12,88(kW/kg)		

Tab. 14 Families of standardised gases

Country	Appliance category	Gas	Nominal pressure (mbar)
AUSTRIA	I12H3B/P	G20	20
		G30 / G31	50
BELGIUM	I12E+3+	G20 / G25	20/25
		G30 / G31	28 - 30/37
CYPRUS	I3B/P	G30 / G31	30
	I3+	G30 / G31	28 - 30/37
CZECH REPUBLIC	I12H3B/P	G20	20
		G30 / G31	30
DENMARK	I12H3B/P	G20	20
		G30 / G31	30
ESTONIA	I12H3+	G20	20
		G30 / G31	28 - 30/37
ESTONIA	I12H3B/P	G20	20
		G30 / G31	30
FINLAND	I12H3B/P	G20	20
		G30 / G31	30
FRANCE	I12H3+	G20 / G25	20/25
		G30 / G31	28 - 30/37
GERMANY	I12ELL3B/P	G20	20
		G25	20
		G30 / G31	50
GREAT BRITAIN	I12H3+	G20	20
		G30 / G31	28 - 30/37
GREECE	I12H3+	G20	20
		G30 / G31	28 - 30/37
HUNGARY	I12H53B/P	G20	25
		G30 / G31	30
		G25.1	25
ICELAND	I3B/P	G30 / G31	30
IRELAND	I12H3+	G20	20
		G30 / G31	28 - 30/37
ITALY	I12H3+	G20	20
		G30 / G31	28 - 30/37
LATVIA	I12H3+	G20	20
		G30 / G31	28 - 30/37
LATVIA	I12H3B/P	G20	20
		G30 / G31	30
LITHUANIA	I12H3B/P	G20	20
		G30 / G31	30
LITHUANIA	I12H3+	G20	20
		G30 / G31	28 - 30/37
LUXEMBOURG	I2E	G20	20
MALTA	I3B/P	G30 / G31	30
NETHERLANDS	I12L3B/P	G25	25
		G30 / G31	30
NORWAY	I12H3B/P	G20	20
		G30 / G31	30
POLAND	I2E	G20	20
PORTUGAL	I12H3+	G20	20
		G30 / G31	28 - 30/37
SLOVAKIA	I12H3B/P	G20	20
		G30 / G31	30
SLOVENIA	I12H3B/P	G20	20
		G30 / G31	30
SPAIN	I12H3+	G20	20
		G30 / G31	28 - 30/37
SWEDEN	I12H3B/P	G20	20
		G30 / G31	30
SWITZERLAND	I12H3B/P	G20	20
		G30 / G31	50
SWITZERLAND	I12H3+	G20	20
		G30 / G31	28 - 30/37
TURKEY	I12H3B/P	G20	20
		G30 / G31	30

Tab. 15 Gas category and pressure

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