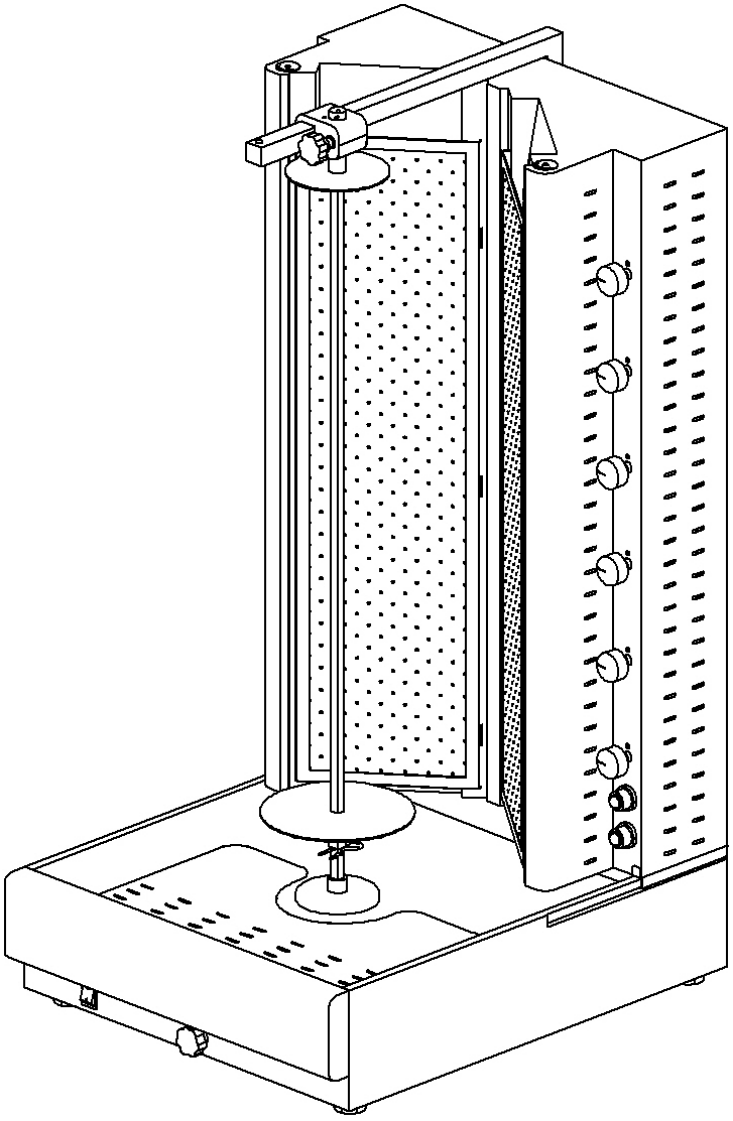
# INSTALLATION & OPERATION

# INSTRUCTIONS



GYROS GAS - LINE V

# DG20V

# ETL CERTIFICATION

**VISVARDIS SA**
CATERING EQUIPMENT

The manufacturing company, has no responsibility if the device broke up because of bad usage or because of not following the operation & installation instructions to the letter.

**Please read very carefully the operation instructions!**

This device has been checked & adjusted for operation with **Nat Gas** (**Gas A**) & Pressure **7 i.w.c. (17.4 mbar)**.

Seal of the authorized agent

# 1. INSTALLATION

**1.1** The purchaser should post in a prominent location instructions to be followed in the event the user smells gas. This information shall be obtained by consulting the local gas supplier.

**FOR YOUR SAFETY**

**Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.**

**⚠ WARNING: Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.**

**⚠ WARNING**

**Electrical Grounding Instructions**

**This appliance is equipped with a three-prong (grounding) plug for your protection against shock hazard and should be plugged directly into a properly grounded three-prong receptacle. Do not cut or remove the grounding prong from this plug.**

**1.2** The appliance area should be kept free and clear from combustibles.

**1.3** The device must be located in a very well ventilated area, under an air-extractor so that the absorption of the gases that are generated during its function to be fully achieved.

**1.4** The device must be located at least 20" inches (=51cm) away from combustible materials (back and both sides) and at least 20" inches (=51cm) (at the back) away from an incombustible wall in order to let the service operate on the unit.

**1.5** The minimum ambient temperature for safe use is 5°C or 41°F.

**1.6** The manual instructions should be retained for future reference.

**1.7** The installation, the connection and the calibration of the device or the transformation of the device for another type of gas, must be done **only** by authorized technicians always according to the local codes, or in the absence of local codes, with the *National Fuel Gas Code, ANSI Z223.1/NFPA 54*, or the *Natural Gas and Propane Installation Code, CSA B149.1*, as applicable, including:

**i.** The appliance and its individual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psi (3.5 kPa).

**ii.** The appliance must be isolated from the gas supply piping system by closing its individual manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psi (3.5 kPa).

**1.8** The appliance, when installed, must be electrically grounded in accordance with local codes, or in the absence of local codes, with the *National Electrical Code, NFPA 70*, or the *Canadian Electrical Code, CSA C22.2*, as applicable.

**1.9** Remove carefully the plastic coverage from all parts of metallic surface of the device ahead, rear & on the sides so as to be clear without plastic residues. For better cleaning use gasoline with oil or petrol.

**1.10** The attachment of the device with the gas supply must be done with the appropriate metallic tube without any junctures, or with a special flexible metallic tube according to the laws & the ordinances, which are valid.

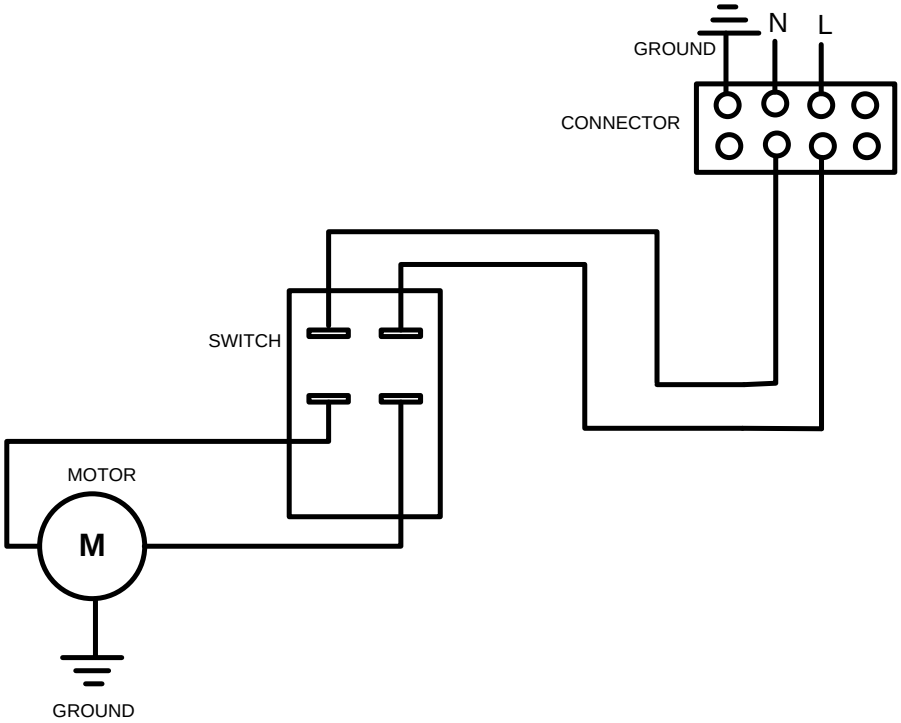
**1.11** It is necessary to install a switch (sluice), between the device and the gas supply which must be closed by the operator when this specific device is not in use.

**1.12** After the completion of all the above, check out all the connections to make sure that there is no leak. For that check, use only a special spray for that purpose.

**⚠ WARNING**
**Never use flame for this test.**

## ELECTRICAL DIAGRAM – 115V

**BASE WITH MOTOR AND ELECTRICAL CONNECTIONS**



### TECHNICAL DATA - TABLE 1

| MODEL | | DG 12V | DG 16V | DG 20V |
|---|---|---|---|---|
| **Total Rate (Btu/hr)** | | | | |
| Nat Gas | | 72000 | 96000 | 115000 |
| LP | | 78000 | 104000 | 130000 |
| **Single Rate (Btu/hr)** | | | | |
| Nat Gas | | 12000 | 12000 | 12000 |
| LP | | 13000 | 13000 | 13000 |
| **Gas Consumption** | | | | |
| Nat Gas ($ft^3/h$) | | 76 | 101 | 126 |
| LP (lb/h) | | 3.55 | 4.74 | 5.93 |
| **Nat Gas (Gas A)** | | | | |
| | Diam. injectors (mm) | 1.5 X 6 | 1.5 X 8 | 1.5 X 10 |
| | | | | |
| **LP (Gas E)** | | | | |
| | Diam. injectors (mm) | 1.0 X 6 | 1.0 X 8 | 1.0 X 10 |
| | | | | |
| **PRESSURE (i.w.c.)** | | | | |
| Nat Gas (Gas A) | | 7 | 7 | 7 |
| LP (Gas E) | | 11 | 11 | 11 |
| | | | | |
| Neccesery air for combustion $ft^3$ | | 34.2 | 45.6 | 55 |

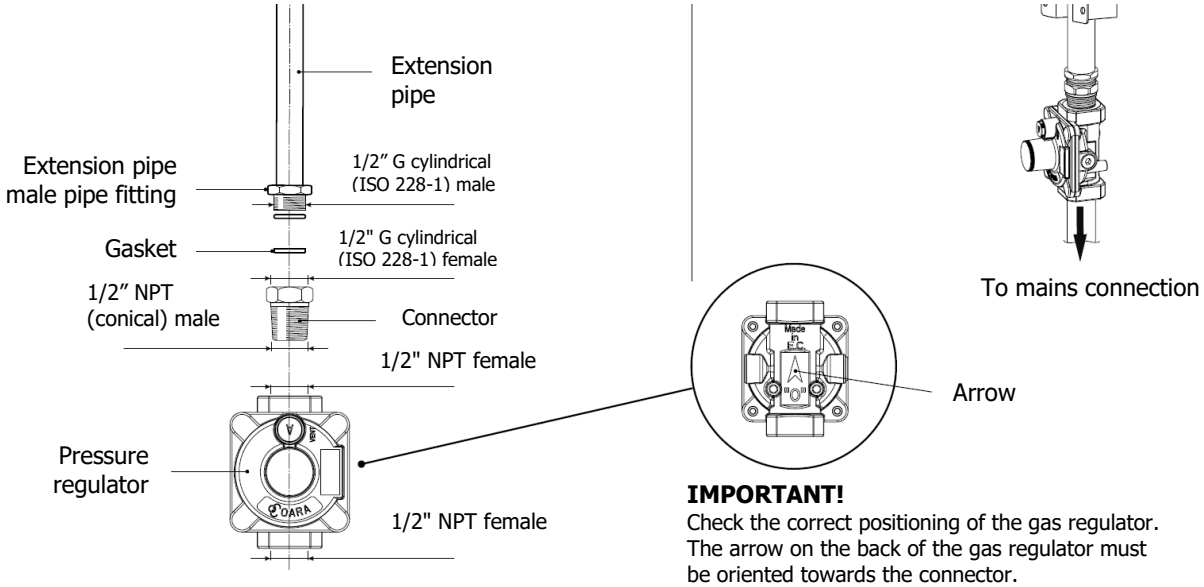
### TECHNICAL CHARACTERISTICS - TABLE 2

| MODEL | DIMENSIONS (mm) | BURNERS | POWER | CONSUMPTION | | RACCORDS GAZ |
|---|---|---|---|---|---|---|
| | (LxPxH) | No | Nat Gas (Btu/hr) | Natl gas ($ft^3/h$) | LP (lb/h) | (inch) |
| **DG 12V** | 570 X 720 X 820 | 6 | 72000 | 76 | 3.55 | $^1/_2$-14 NPT |
| **DG 16V** | 570 X 720 X 980 | 8 | 96000 | 101 | 4.74 | $^1/_2$-14 NPT |
| **DG 20V** | 570 X 720 X 1160 | 10 | 115000 | 126 | 5.93 | $^1/_2$-14 NPT |

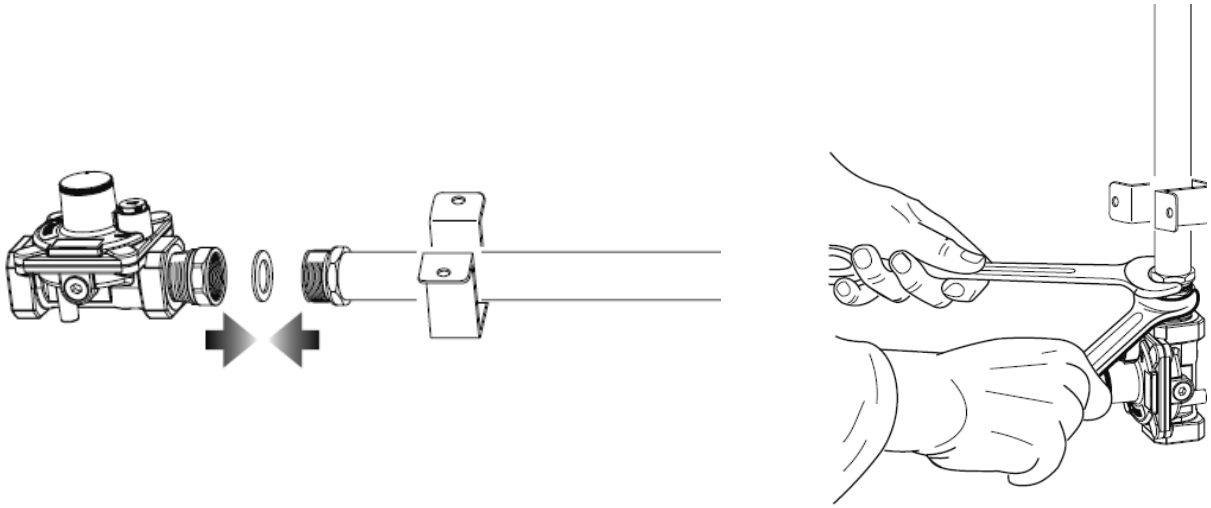
# 2. CONTROL & ADJUSTMENT OF PRESSURE

2.1 This device is regulated and controlled in order to function with Nat Gas (Gas A), with pressure 7 i.w.c. (17.4 mbar).

A regulator should be installed in order to achieve right and strong pressure. In order to install a regulator of pressure follow the instructions below.




**IMPORTANT!**
Check the correct positioning of the gas regulator. The arrow on the back of the gas regulator must be oriented towards the connector.



**IMPORTANT !**
Use two wrenches to tighten the connection.

**Fig. 1: Installation of pressure regulator**

The pressure regulator must have a pressure adjustment range to allow adjustment to the manifold pressure on the appliance rating plate 2.5" to 12" i.w.c.
The proposed pressure regulators are type 96 and 97.

**Fig. 2: Pressure regulator**

**Technical features**

Type 96

| Gas | Inlet Pressure | Outlet Pressure | Capacity Range | Working Temperature | Inlet Connections | Outlet Connections |
|---|---|---|---|---|---|---|
| **Natural Gas LPG** | 1/2 PSI (34.5bar)<br>2 PSI (138 mbar) | min 2.8" w.c. (7mbar)<br>min 12" w.c. (30mbar) | 150 ÷ 65.000 BTU/h | -40 ÷ +96 °C | 1/4" NPT<br>G 1/4 L.H.<br>3/8" NPT<br>G 3/8 L.H. | 1/4" NPT<br>G 1/4 L.H.<br>3/8" NPT<br>G 3/8 L.H. |

Type 97

| Gas | Inlet Pressure | Outlet Pressure | Capacity Range | Working Temperature | Inlet Connections | Outlet Connections |
|---|---|---|---|---|---|---|
| **Natural Gas LPG** | 1/2 PSI (34.5mbar) | min 2.8" w.c. (7mbar)<br>max 12" w.c. (30mbar) | 150 ÷ 120.000 BTU/h | -40 ÷ +96 °C | 3/8" NPT<br>G 3/8 L.H.<br>1/2" NPT<br>G 1/2 L.H. | 3/8" NPT<br>G 3/8 L.H.<br>1/2" NPT<br>G 1/2 L.H. |

Notice!
The pressure regulator installed must be listed by a nationally recognized testing agency.

In order to operate this device with a different gas, it is necessary to regulate the device with the type of gas that is going to be used.

2.2 The pressure that corresponds to different types of gas is shown at **Table 1.**

- 7 i.w.c. (17.4 mbar) for natural gas (Nat Gas (Gas A)).
- 11 i.w.c. (27.4 mbar) for propane (Liquid Propane: LP (Gas E))

See at **Table 1.**

## 2.3 **STAGES OF PRESSURE CONTROL (Fig. 3)**

In order to control the pressure use a manometer with a division at least 0, 1 mbar.

- Unscrew the insulate bolt (2) of the pressure control point (1).
- Connect the manometer at the pressure point (1).
- Check that the pressure of the device is the appropriate for the type of gas you are going to use.
- Remove that manometer.
- Screw the insulate bolt (2) at the pressure control point (1).
- **Check for leak!**

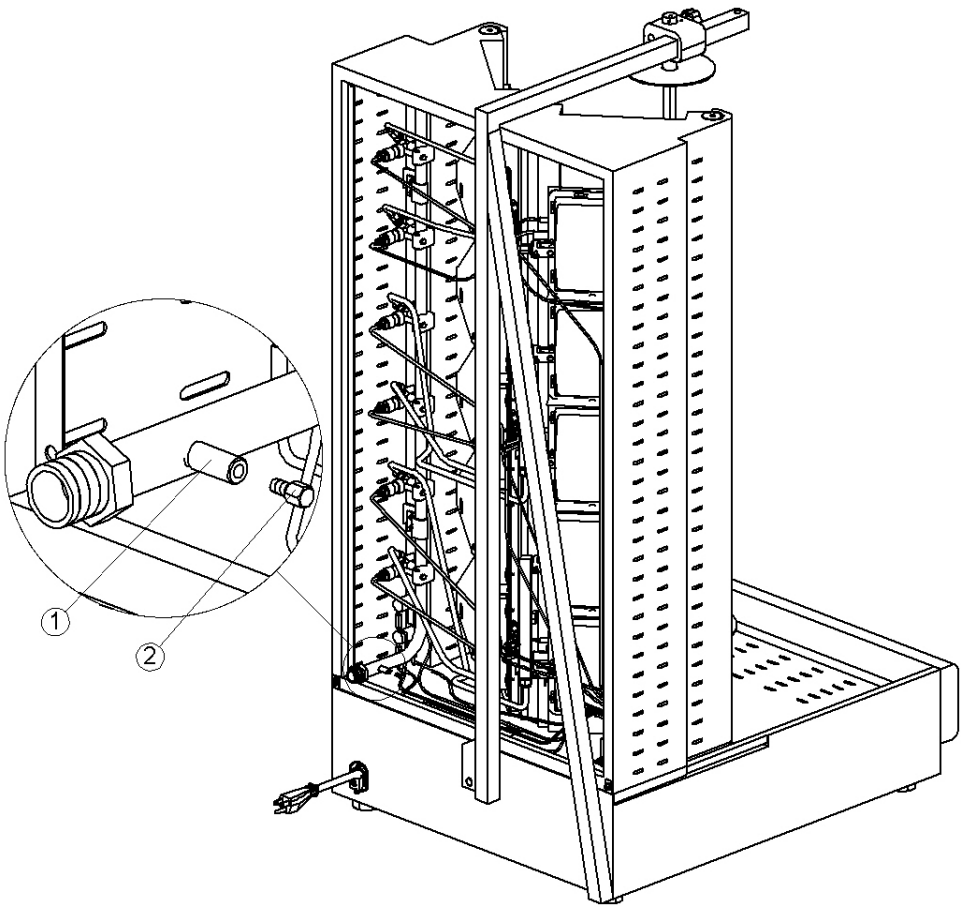



**Fig. 3: Pressure control**

# 3. CONVERSION TO DIFFERENT TYPES OF GAS

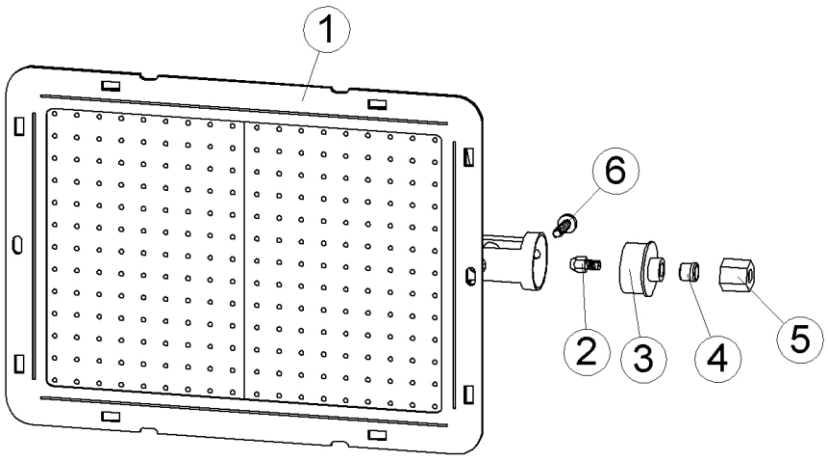
**3.1** In order to achieve main transformation from Nat A to LP E gas you must change the injector of the burner and convert your pressure regulator. The size of the injector, which corresponds to the type of the gas, appears at **Table - 1**.

## 3.2 CHANGING THE MAIN BURNER'S INJECTOR (Fig. 4)

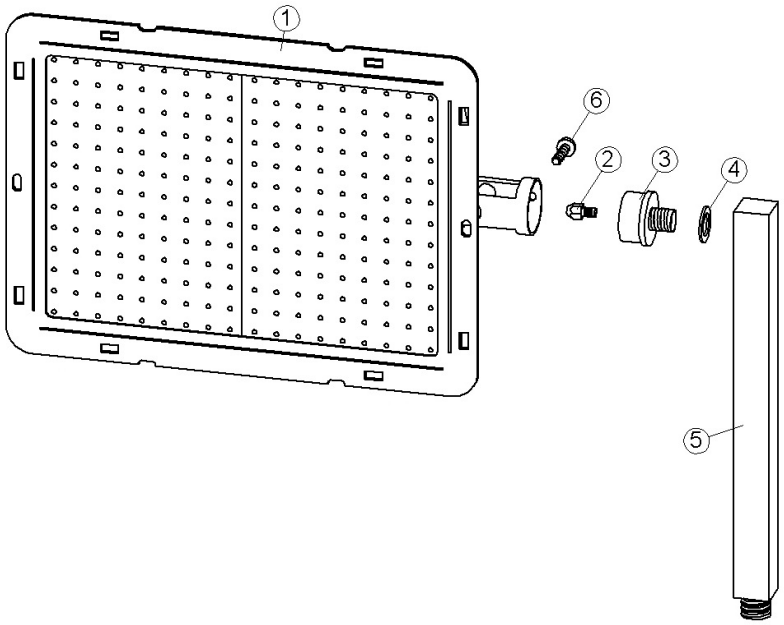
In order to change the injector **(No 2, Fig. 4)**, unbolt it and bolt the appropriate injector. In every appliance you will find in a socket the appropriate injectors for LP gas E.

**ATTENTION !!!**

After changing the injector make a leak check.




| | |
|---|---|
| 1. | BURNER |
| 2. | BURNER'S INJECTOR |
| 3. | INJECTOR HOLDER |
| 4. | BICONINCAL JOINT FOR Ø6 GAS TUBE |
| 5. | FITTING NUT 1/8" FOR BURNER |
| 6. | SELFTAPING SCREW 4,2X13 |

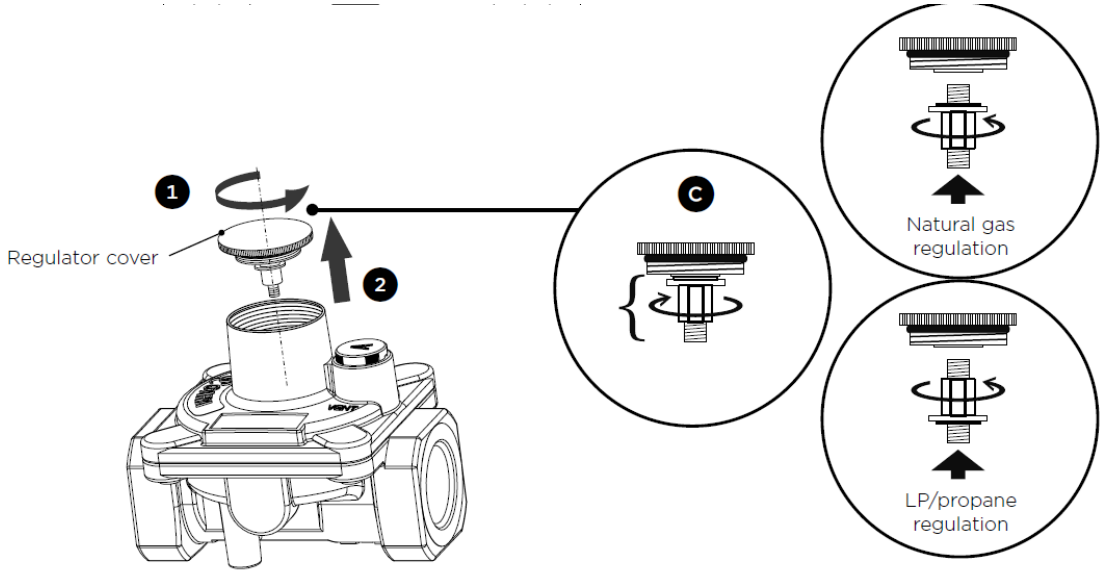



| | |
|---|---|
| 1. | BURNER |
| 2. | BURNER'S INJECTOR |
| 3. | INJECTOR HOLDER |
| 4. | COPPER WASHER 10 X 16 X 1 |
| 5. | 3 EXITS GAS SUPPLY LINK |
| 6. | SELFTAPING SCREW 4,2X13 |

**Fig. 4: Changing burner's injector**

## 3.3 CONVERTING THE PRESSURE REGULATOR TO THE APPROPRIATE TYPE OF GAS

In order to convert your pressure regulator to another type of gas follow the instructions:




**To set the pressure regulator**

① Unscrew the regulator cover.
② Unscrew the **C** component, reverse and screw it according to the LP/PROPANE (or NATURAL GAS) regulation.

**Fig. 5: Converting pressure regulator to other type of gas**

## 3.4 REGULATION OF THE SMALL FLAME (Fig. 6)

Turn on the main burner according to the instructions, turn the knob at the position **MIN** of the little flame **(No 1, Fig. 6)**. Make sure that, at the position **MIN**, burner's flame is still alight, even during rapid turning of the knob from the MAX to the MIN.
In case that at the position MIN, burner's flame dies down, or if the flame is very strong then do the following steps:

- Keep the knob at the position **MIN**
- Pull off the knob of the gas valve and with a small screwdriver regulate the screw of the gas valve, which is located behind the hole **(No 2, Fig. 6)**.

- When you turn the bolt right you reduce the intensity of the flame, & when you turn it left you make the flame stronger.

- Regulate the intensity of the flame at your will. Then put back the black knob of the gas valve at its former position.

## 3.5 FINAL FUNCTION CHECK

- Turn the device on following the instructions on the next pages.

- Check with a special spray if there is a leak.

- Check the intensity of the burner's flame turning the knob of the gas valve from the little to the big flame.

- Make sure that during the ignition the flame is widespread everywhere in the burner and that it has a steady deep blue color.

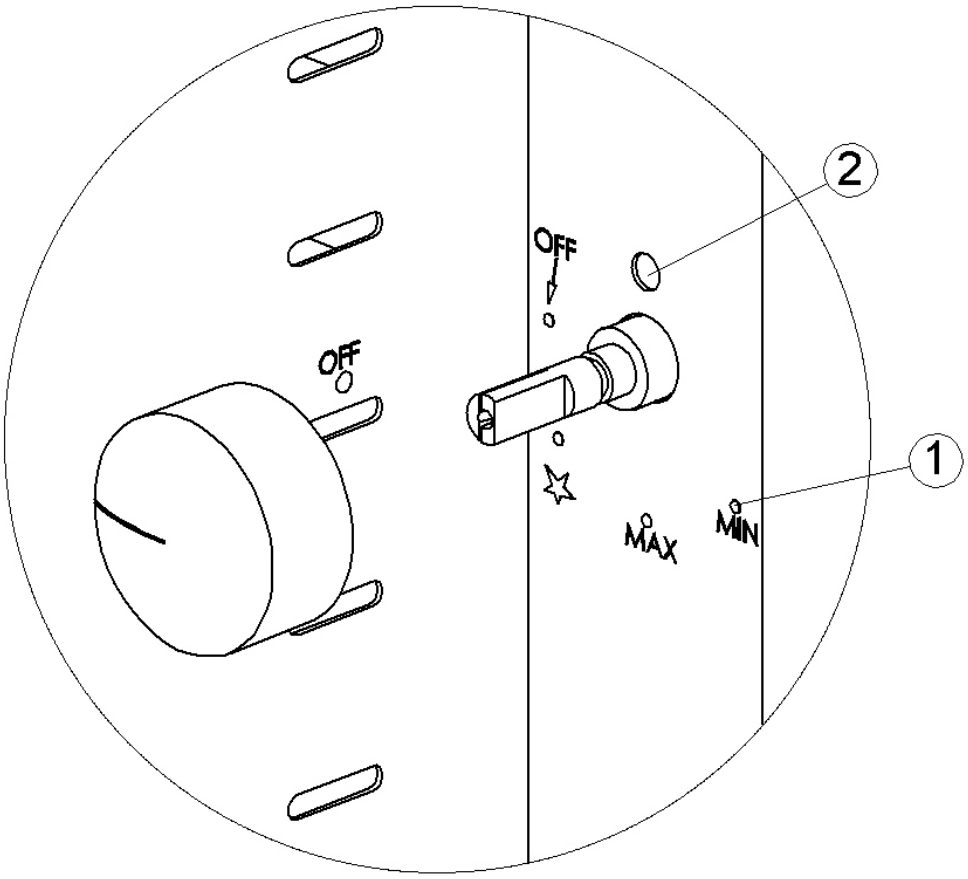



**Fig. 6: Regulation of the intensity of flame**

# 4. OPERATION INSTRUCTIONS

## ATTENTION !!!

- This device is designed only for professional use & must be used exclusively by experienced & well-trained personnel.
- The device must be constantly supervised during its usage.

### 4.1 BEFORE TURNING THE DEVICE ON

We would like to advise you to clean thoroughly the GYROS before to begin to use the machine. See the paragraph **4.9 "Instructions for the cleaning of this device"**.

### 4.2 OPEN UP THE GAS SUPPLY

### 4.3 PROPER WAY TO IGNITE THE BURNERS

The correlation between buttons and burners for both models (DG 12V, DG16V, DG 20V) can be seen in Fig. 7.

For DG 12V
Knob A: ignites burners 1, 2
Knob B: ignites burners 4, 5
Knob C: ignites burner 3
Knob D: ignites burner 6

Button: ignites all burners

For DG 16V
Knob A: ignites burners 1, 2
Knob B: ignites burners 5, 6
Knob C: ignites burners 3, 4
Knob D: ignites burners 7, 8

Button: ignites all burners

For DG 20V
Knob A: ignites burners 1, 2
Knob B: ignites burners 6, 7
Knob C: ignites burners 3, 4
Knob D: ignites burners 8, 9
Knob E: ignites burner 5
Knob F: ignites burner 10

Button a: ignites burners 6, 7, 8, 9, 10
Button b: ignites burners 1, 2, 3, 4, 5

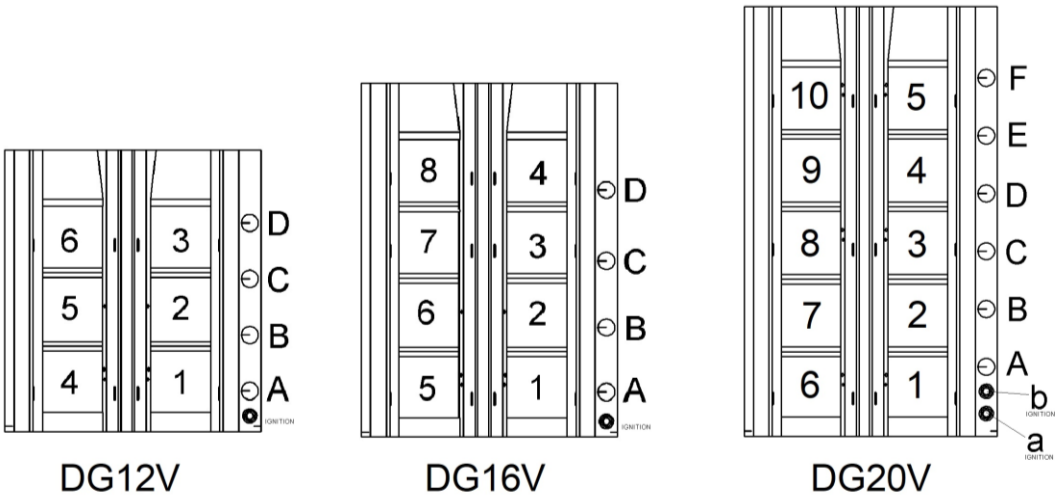



**Fig. 7: Correlation between knobs, buttons and burners**

## 4.4 IGNITION OF THE BURNER (Fig. 8)

It is recommended the burners to be switched on beginning from the bottom to the top and not the other way round for better roasting. In order to switch on a burner press slightly inboard the knob of the gas valve (**No 6, Fig. 8)** and turn anticlockwise (left), until the position that is the reading of MAX. At this position keep well pressed the button while at the same time you are pressing the corresponding button of the lighter **(No 7, Fig. 8)** according of the instructions of paragraph **4.3**.

At the first time of the operation of the device you may have to repeat the previous procedure so as to achieve the vaporization of the air that exists inside the burner.
When the burner ignites keep the button pressed inside for 10 seconds so that the thermocouple to be heated, so that it keeps the flame of the burner on.
In order to reduce the intensity of the burner's flame turn the knob of the gas valve at the position MIN of the little flame.

## 4.5 TURNING THE BURNER OFF

Always, the burners have to be switched off beginning from the top to the bottom.
The burner would stop functioning when you turn the gas valve right (clockwise), until the position that the fire of the burner stops. By this way you stop the gas supply to the burner.

## 4.6 PUTTING THE INOX SPIT (Fig. 9)

The device has to be switched off during the time that you place the spit with the meat on the machine.

You place the spit with the meat inside the bottom support base **(No 5, Fig. 9)** and at the same time you pull up the top round disk (**No 4, Fig. 8)** you place the spit in its place and then you pull down the top round disk.

**ATTENTION !!!**

Before to operate your machine do a **double check** that the spit is well inside its position and none of the top or bottom spit´s supports move.

## 4.7 DISTANCE REGULATION FROM THE BURNERS

In order to regulate the distance of the burners from the spit you have to pull out the movement mechanism **(No 1 Fig. 8)** the main body will move back or in front at the distance you wish.
You can as well regulate the distance of the spit by unscrewing the top fixing handle **(No 3, Fig. 8)** and moving the top disk back or in front to the desired position.

## 4.8 MOTOR´S FUNCTION

In order to begin motor´s function you have to push the button of the motor **(No 2, Fig. 8)** at the position ON.

## 4.9 INSTRUCTIONS FOR THE CLEANUP OF THE DEVICE (Fig. 9)

In no case should you clean the device with a flow of water or with a potent acid.
The use of acid might inflict rust to the metallic surfaces.
The cleanup must be done only when the device is cold and with disconnected the power supply.
It is necessary to clean the device after each operation.
You can clean the device with a sponge using only special products for stainless surfaces.

You can first put off and clean all the movable parts of your machine **(See Fig. 9)**.

Remove the spit **(No 4, Fig. 9)**.
Remove the doors **(No 2, Fig. 9)** if exist.
Remove the burners' protection net **(No 1, Fig. 9)**.
Remove the spit's support mechanism **(No 5 & 6, Fig. 9)**.
Pull out the collector **(No 3, Fig. 9)**.

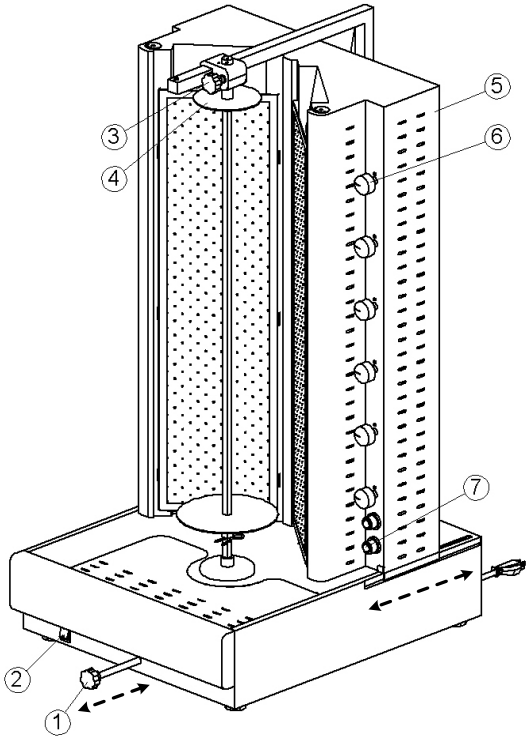
Wash and clean the moveable parts of your appliance and after set them back to their positions.

**WARNING !!!**

Do not direct jets of water, against the appliance to prevent any water entering in the components. No water with or without pressure should be used **underneath** the machine where is the motor and all the electric connections.

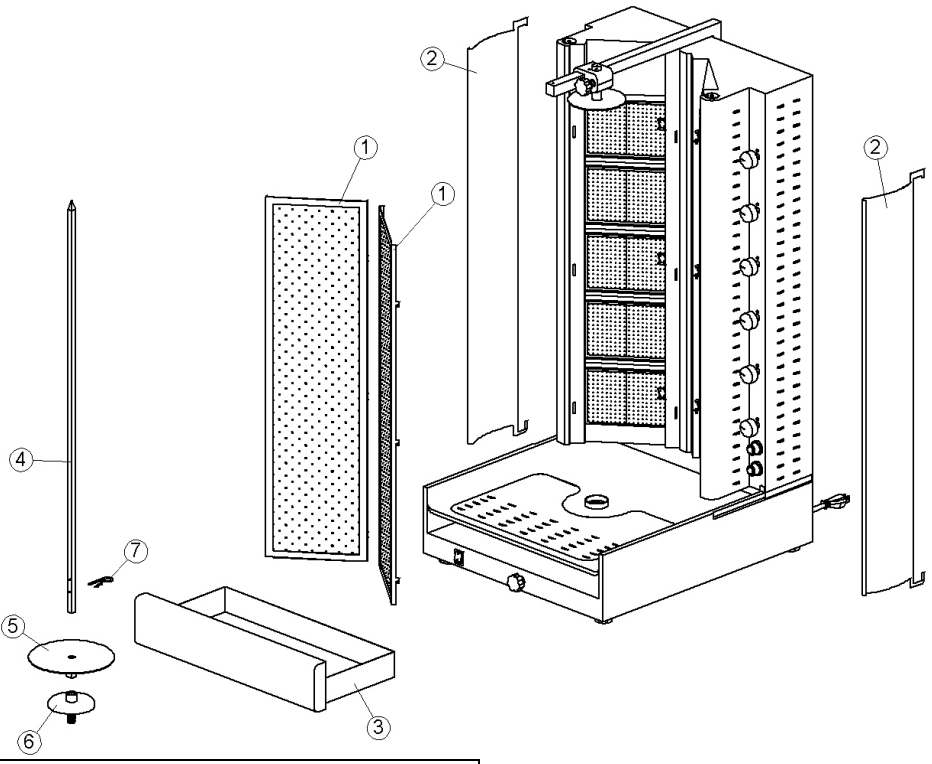
## 4.10 MAINTENANCE

The correct operation of your appliance is guaranteed only if these instructions are followed carefully.
Any repairs or maintenance operations must be performed only by qualified technicians.
We recommend having the appliance controlled at least once a year, for this purpose it is advisable to apply for a service contract.
Keep the thermocouple constantly clean and treat them carefully.




| | |
|---|---|
| 1. | Body Movement Mechanism (front – back) |
| 2. | ON – OFF Button |
| 3. | Top Fixing Handle |
| 4. | Top Round Disk |
| 5. | Main Body of Gyros Gas |
| 6. | Gas Valve Knob |
| 7. | Button for lighter |

**Fig. 8 Description of main parts of DGV**



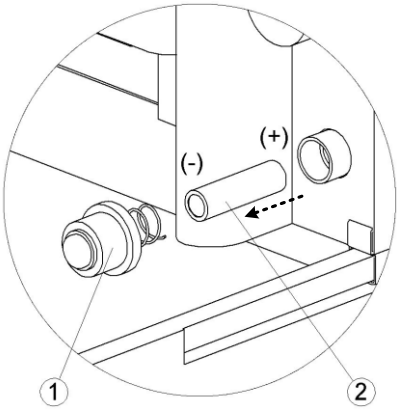

| | DESCRIPTION |
|---|---|
| 1. | BURNER'S PROTECTION NET |
| 2. | DOOR |
| 3. | COLLECTOR |
| 4. | INOX SPIT |
| 5. | LOWER DISK OF INOX SPIT |
| 6. | LOWER SUPPORT MECHANISM OF INOX SPIT |
| 7. | PIN OF INOX SPIT |

**Fig. 9 Removable components of DGV**

## 4.11 INSTRUCTIONS FOR CHANGING THE BATTERY

When the lighter does not ignite then you need to replace the battery. Follow the next simple steps in order to replace the battery (**Fig. 10**).

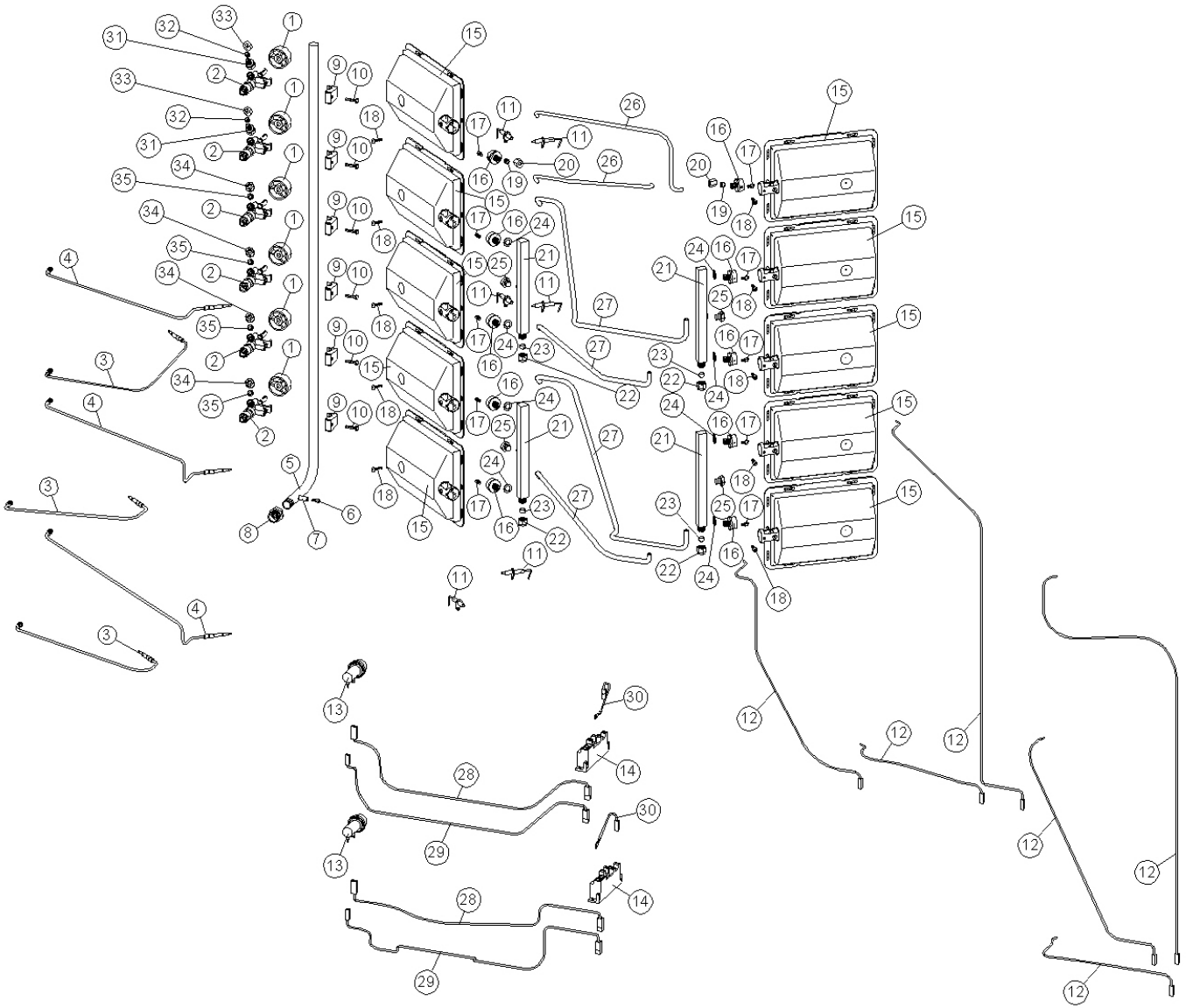
- Unscrew the lighter's knob (**No 1, Fig. 10**).
- Remove the battery (**No 2, Fig. 10**) and replace it with a new one.
- Screw again the lighter's knob back to position




| | |
|---|---|
| 1. | Lighter button |
| 2. | Battery AA |

**Fig. 10: Changing lighter's battery**

# FIG. 11 : EXPLODED VIEW OF GAS PARTS DG 20V



| | |
|---|---|
| 1. | VALVE'S CONTROL KNOB |
| 2. | GAS VALVE |
| 3. | THERMOCOUPLE RIGHT |
| 4. | THERMOCOUPLE LEFT |
| 5. | 3/8" INCH TUBE - MAIN GAS SUPPLY |
| 6. | PRESSURE POINT BOLT |
| 7. | PRESSURE POINT |
| 8. | REDUCTION 1/2" - 3/8" |
| 9. | VALVE'S FIXATION METAL SHEET |
| 10. | VALVE'S FIXATION BOLT 4X20 |
| 11. | IGNITION ELECTRODE |
| 12. | IGNITION ELECTRODE'S CABLE |
| 13. | BUTTON FOR IGNITION |
| 14. | ELECTRONIC SYSTEM FOR IGNITION |
| 15. | BURNER |
| 16. | INJECTOR HOLDER |
| 17. | INJECTOR |
| 18. | SELFTAPING SCREW 4,2X13 |
| 19. | BICONICAL JOINT FOR INJECTOR HOLDER |
| 20. | FITTING NUT 1/8" FOR BURNER |
| 21. | 3 EXITS GAS SUPPLY LINK |
| 22. | NUT FOR T JOINT |
| 23. | BICONICAL JOINT FOR GAS TUBE |
| 24. | INSULATION COPPER WASHER 10X16X1 |
| 25. | SCREW CAP FOR AN EXIT OF GAS SUPPLY LINK |
| 26. | Φ6 TUBE GAS SUPPLY TO LINK |
| 27. | Φ8 TUBE GAS SUPPLY TO LINK |
| 28. | CABLE FOR ELECTRONIC IGNITION AND BUTTON FOR IGNITION L |
| 29. | CABLE FOR ELECTRONIC IGNITION AND BUTTON FOR IGNITION N |
| 30. | CABLE FOR ELECTRONIC IGNITION GROUND |
| 31. | REDUCTION M8 - M6" |
| 32. | BICONICAL JOINT FOR GAS VALVE M6 TUBE |
| 33. | FITTING NUT 1/8" FOR GAS VALVE |
| 34. | NUT FOR T JOINT |
| 35. | BICONICAL JOINT FOR GAS TUBE |