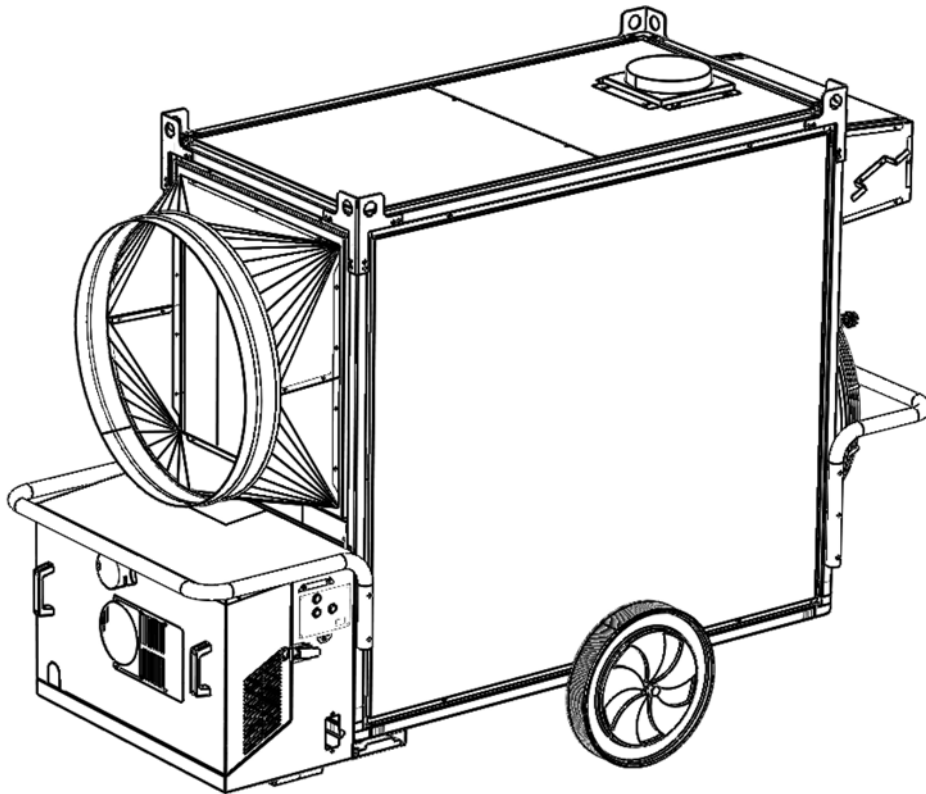




INSTRUCTIONS MANUAL  
MANUEL D'INSTRUCTIONS



**SPACE HEATER**  
**GENERATEUR D'AIR CHAUD**



# JUMBO 400 - JUMBO 600 - JUMBO 800

### **WARNING**

BEFORE USING THE HEATER, READ AND UNDERSTAND ALL INSTRUCTIONS AND FOLLOW THEM CAREFULLY.

THE MANUFACTURER IS NOT RESPONSIBLE FOR DAMAGES TO GOODS OR PERSONS DUE TO IMPROPER USE OF THE UNITS.

### **GENERAL HAZARD WARNING**

FAILURE TO COMPLY WITH THE PRECAUTIONS AND INSTRUCTIONS PROVIDED WITH THIS HEATER, CAN RESULT IN DEATH, SERIOUS INJURY AND PROPERTY LOSS OR DAMAGE FROM HAZARDS OF FIRE, EXPLOSION, BURN, ASPHYXIATION, CARBON MONOXIDE POISONING, AND / OR ELECTRICAL SHOCK.

ONLY PERSONS WHO CAN UNDERSTAND AND FOLLOW THE INSTRUCTIONS SHOULD USE OR SERVICE THIS HEATER.

IF YOU NEED ASSISTANCE OR HEATER INFORMATION SUCH AS AN INSTRUCTION MANUAL, LABEL, ETC., CONTACT THE MANUFACTURER.

### **WARNING: FIRE, BURN, INHALATION AND EXPLOSION HAZARD**

KEEP SOLID COMBUSTIBLES, SUCH AS BUILDING MATERIALS, PAPER OR CARDBOARD, AT SAFE DISTANCE AWAY FROM THE HEATER AS RECOMMENDED BY THE INSTRUCTIONS.

NEVER USE THE HEATER IN SPACES WHICH DO OR MAY CONTAIN VOLATILE OR AIRBORNE COMBUSTIBLES, OR PRODUCTS SUCH AS GASOLINE, SOLVENTS, PAINT THINNER, DUST PARTICLES OR UNKNOWN CHEMICALS.

### **WARNING**

NOT FOR HOME OR RECREATIONAL VEHICLE USE. INSTALLATION OF THIS HEATER IN A HOME OR RECREATIONAL VEHICLE MAY RESULT IN A FIRE OR EXPLOSION, PROPERTY DAMAGE, PERSONAL INJURY OR LOSS OF FIRE.

### **WARNING**

IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE OR MAINTENANCE CAN CAUSE INJURY OR DEATH.

READ THE INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS THOROUGHLY BEFORE INSTALLING OR SERVICING THIS EQUIPMENT.

### **FOR YOUR SAFETY**

IF YOU SMELL GAS:

1. OPEN WINDOWS
2. DO NOT TOUCH ELECTRICAL SWITCHES
3. EXTINGUISH ANY OPEN FLAME
4. IMMEDIATELY CALL YOUR GAS SUPPLIER

### **FOR YOUR SAFETY**

DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPOURS AND LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

**WARNING**

The heater is designed and approved for use as a construction heater in accordance with Standard ANSI Z83,7 CGA 2.14.

CHECK WITH YOUR LOCAL FIRE SAFETY AUTHORITY IF YOU HAVE QUESTIONS ABOUT APPLICATIONS.

Other standards govern the use of fuel gases and heat producing products in specific applications. Your local authority can advise you about these.

**WARNING**

This heater can be washed, provided that:

- A. The heater is disconnected from the electrical supply.
- B. All access panels are securely closed.
- C. Water spray nozzle shall not discharge within 6 feet of the heater.
- D. The heater is not reconnected to electrical supply until thoroughly dried.

Improper cleaning of the heater can cause severe personal injury or property damage due to water and/or cleaning solutions:

- A. In electrical components, connections and wires causing electrical shocks or component failure.
- B. On gas control components causing corrosion which can result in gas leaks and fire or explosion from the leak. The hose assembly must be protected from the traffic, building materials and contact with hot surfaces both during use and while in storage.

**WARNING**

Proper gas supply must be provided to the inlet of the appliance.

Refer to rating plate for proper gas supply pressure.

Gas pressure in excess of maximum inlet pressure specified at the appliance inlet can cause fire or explosions, leading to serious injury, death, building damage or loss of livestock.

Likewise, gas pressure below the minimum inlet pressure specified at the appliance inlet may cause improper combustion, leading to asphyxiation, carbon monoxide poisoning and therefore serious injury or death to humans and livestock.

Position heater properly before use.

For either indoor or outdoor use adequate ventilation must be provided.

Minimum clearance from combustible materials and propane containers: 10 ft.

Do not operate heater with panels removed.

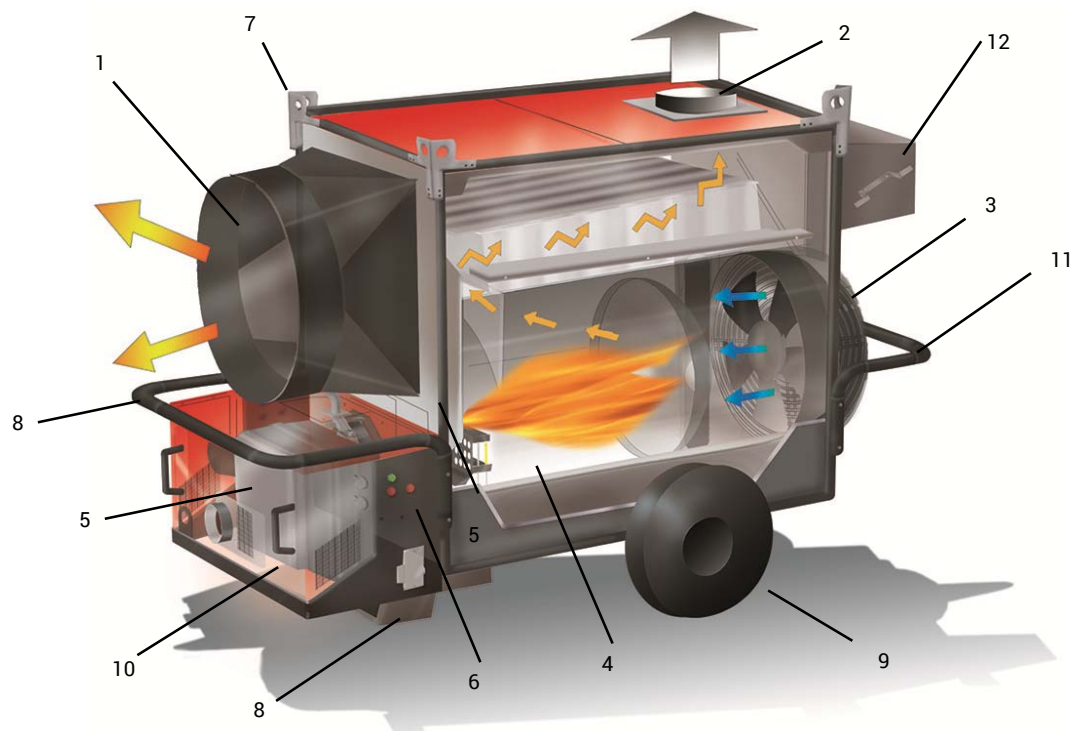
Not for use with ductwork.

To avoid injury from moving parts, disconnect all electrical power to equipment before opening doors or removing panels.

**WARNING**

RETAIN THIS INSTRUCTION FOR FUTURE REFERENCE..

## CONTROL BOARD - SCHÉMA DE FONCTIONNEMENT



1 HOT AIR OUTFLOW  
SORTIE AIR CHAUD

2 CHIMNEY  
CHEMINEE

3 COOLING FAN  
VENTILATEUR REFROIDISSEMENT

4 COMBUSTION CHAMBER  
CHAMBRE DE COMBUSTION

5 BURNER  
BRULEUR

6 THERMOSTATS L2 BOX  
BOITIER THERMOSTATS L2

7 HOISTING BRACKETS  
ÉTRIERS DE LEVAGE

8 SUPPORT/HANDLE  
SUPPORT/POIGNEE

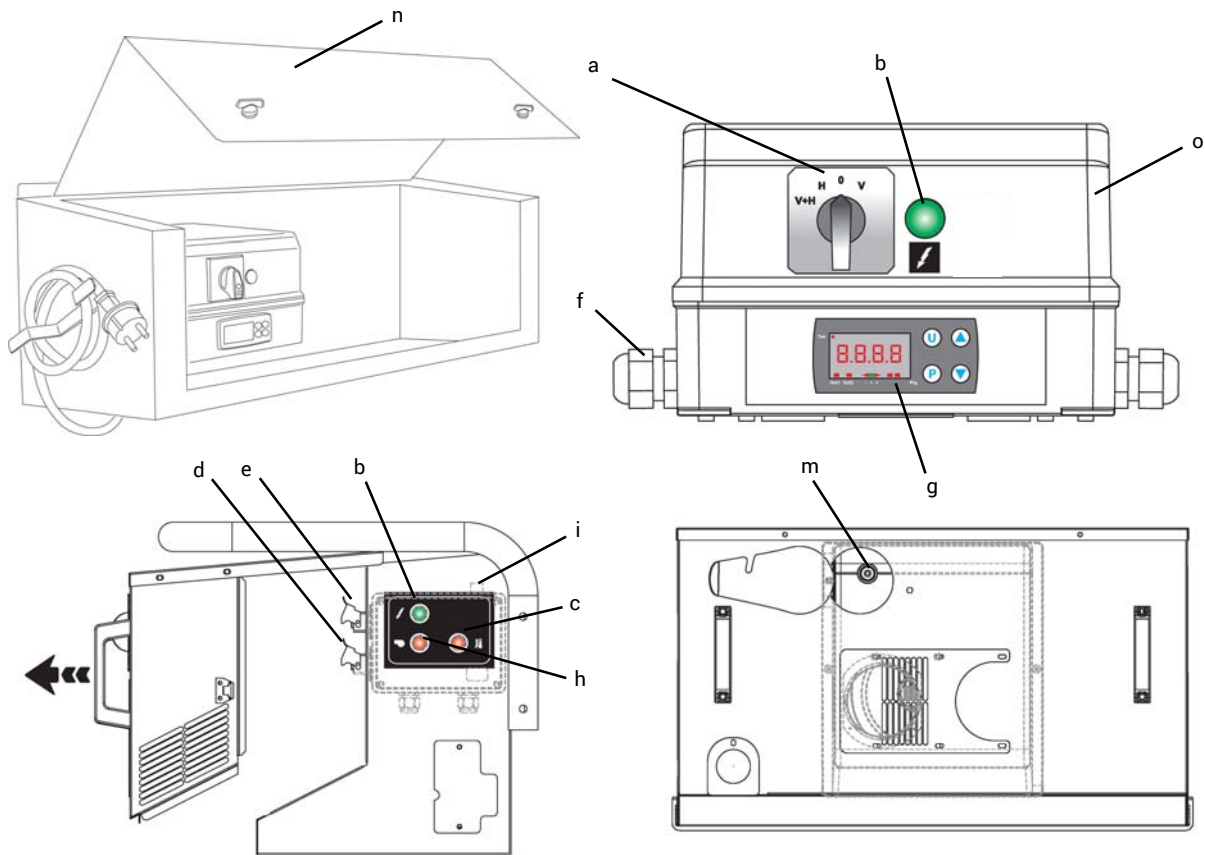
9 WHEEL  
ROUE

10 BURNER BOX  
BOÏTIER BRÛLEUR

11 BUFFER  
PARE-CHOCS

12 ELECTRICAL PANEL BOX  
BOÏTIER TABLEAU ÉLECTRIQUE

## CONTROL PANEL - TABLEAU DE COMMANDE



**a** HEATING-VENTILATION SWITCH  
INTERRUPTEUR CHAUFFAGE-VENTILATION

**b** VOLTAGE LAMP  
TEMOIN TENSION

**c** OVERHEAT THERMOSTATS CONTROL LAMP, L2  
TEMOIN THERMOSTATS DE SURCHAUFFE, L2

**d** ROOM THERMOSTAT PLUG  
PRISE THERMOSTAT D'AMBIANCE

**e** INTAKE FOR PRE-HEAT FILTER  
PRISE POUR FILTRE PRÉCHAUFFAGE

**f** CABLE CLAMP FOR POWER CABLE  
PRESSE-CÂBLES POUR CÂBLE D'ALIMENTATION

**g** TEMPERATURE CONTROLLER  
THERMORÉGULATEUR

**h** BURNER LIGHT  
VOYANT BRÛLEUR

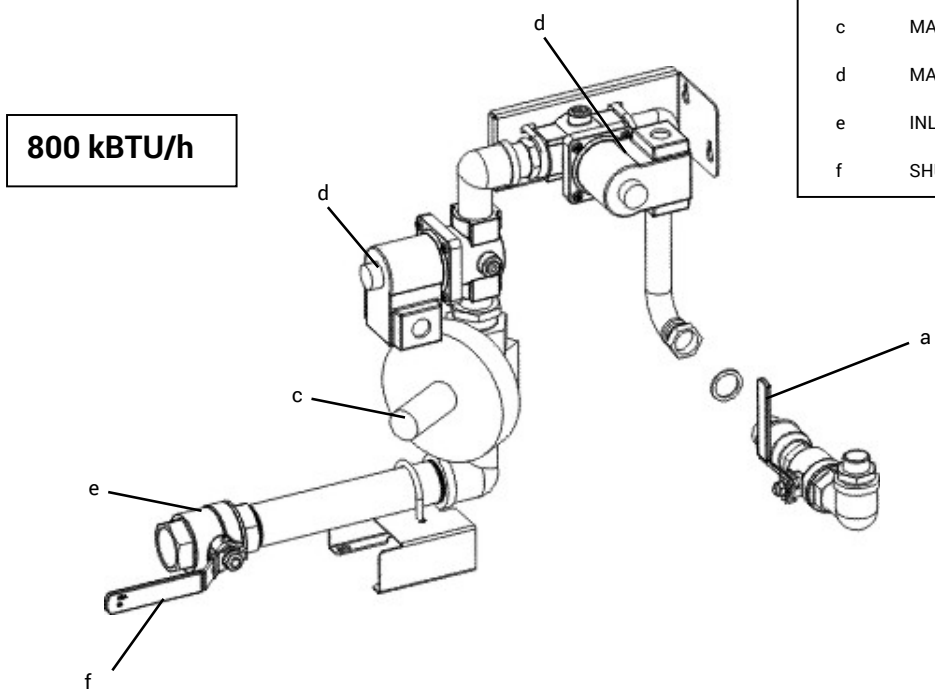
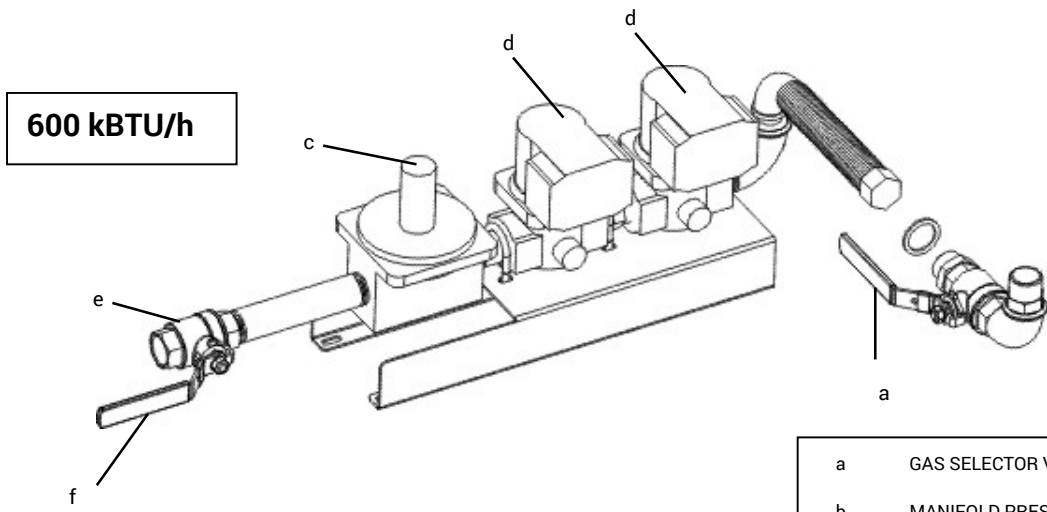
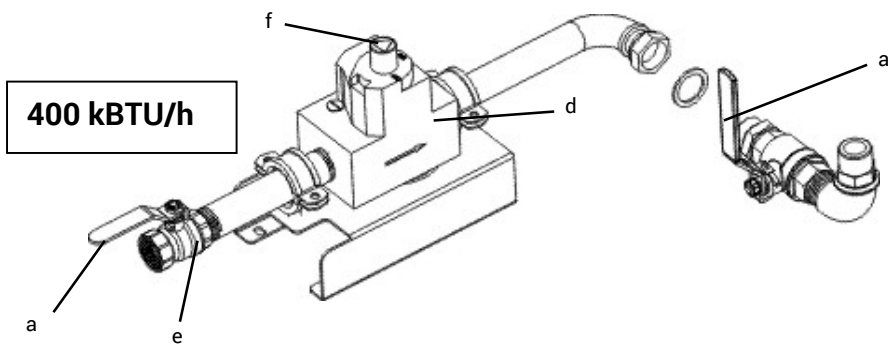
**i** SAFETY THERMOSTAT RESET BUTTON, L2  
POUSOIR DE RÉARMEMENT THERMOSTAT DE SÉCURITÉ, L2

**m** BURNER RESET BUTTON / LAMP  
TÉMOIN / POUSSOIR DE RÉARMEMENT BRÛLEUR

**n** ELECTRICAL PANEL BOX PANEL  
PANNEAU BOÎTIER TABLEAU ÉLECTRIQUE

**o** ELECTRICAL PANEL  
TABLEAU ÉLECTRIQUE

**MANIFOLD ASSEMBLY – MANIFOLD ASSEMBLY**



- |   |   |
|---|---|
| a | GAS SELECTOR VALVE / VALVE SÉLECTEUR GAZ          |
| b | MANIFOLD PRESSURE PORT / PORT PRESSION BRULEUR    |
| c | MANIFOLD PRESSURE REGULATOR / RÉGULATEUR PRESSION |
| d | MAIN GAS VALVE / SOUPE PRINCIPALE GAZ             |
| e | INLET PRESSURE PORT / PORT PRESSION EN ENTRÉE     |
| f | SHUT OFF - FIRING VALVE / VALVE COUPURE           |

## IMPORTANT

**Before using the space heater, carefully read all of the instructions and follow them scrupulously. The manufacturer cannot be held responsible for damage to persons and/or property caused by improper use of the equipment. This instruction manual is an integral part of the equipment and must therefore be stored carefully and passed on with the unit in the event of a change of ownership.**

### 1. DESCRIPTION

Space heaters described in this manual, are designed for use in medium to large-sized rooms and buildings where a fixed or mobile heating system is required.

The air required for combustion is sucked directly by the burner (6) installed on the heater, and can be supplied:

- from the outside by using the flexible connection tube (available as an accessory), which avoids consuming oxygen in the room to be heated, or
- from inside the room to be heated. In this case, the room must be well ventilated to guarantee sufficient exchange of air.

The flow of hot air is moved by the high-efficiency fan (4): air is heated by the thermal energy generated during the combustion and heat from the smoke is transmitted to the fresh air through the metal walls of the sealed combustion chamber and the heat exchanger. After the combustion products are cooled, they are conveyed to a discharge duct and eliminated through a chimney or flue large enough to guarantee their removal.

The space heaters can work with burners having ON-OFF work modes and fuelled by natural gas or propane.

#### Warning



**Only burners approved by the manufacturer and listed in the "TECHNICAL SPECIFICATION TABLE" can be used. The heater's certification and warranty will lapse if the burner is replaced with a non-original model, even if it has similar specifications.**

All of the space heaters are fit with an electronic device that controls the flame and with:

- safety devices (safety thermostat with manual reset, flame control, air pressure switch) that trip in case of serious malfunctions and cause a safety stop. In this case the heater stops, button (d) lights with a steady red light (Stop Light) and the heater can resume operation only after the cause of the stop has been identified and eliminated;
- control devices (temperature controller to control temperature of air outflow, complete with hour counter, fan thermostat, burner thermostat, voltage control) that trip in case of minor operating faults or supply faults, causing temporary stop of the space heater. In this case, the heater will restart automatically when the required condition is restored.

The section "TROUBLESHOOTING" describes all possible operating faults and their possible remedies.

### 2. CONDITIONS OF SUPPLY

The heater is delivered with parts to be assembled and set as described in chapter 4.

- Heater body
- Burner
- Air distribution connector
- Any required accessories (flue pipes, air distribution pipes, etc.)

#### Warning



**Prior to installation, burner adjustment and ignition, the space heater should be assembled in full. All assembly operations should only be performed by professionally qualified personnel only.**

The following are also supplied:

- use and maintenance manuals for
  - space heater
  - burner
- manuals with drawings and spare part lists:
  - space heater
  - burner

#### Warning



**All documents provided constitute an integral part of the unit. The documents should therefore be looked after with care and supplied with the unit in the event of a change in ownership.**

Parts are to be transported and moved using either a manual or automatic forklift truck with sufficient load capacity.

#### Warning



**Never try to lift the heater manually. Doing so could cause serious physical injury.**

### 3. GENERAL ADVICE

The space heater must be installed, adjusted, and used in conformity to national and local laws and regulations for its operation.

General guidelines:

- Follow the instructions in this booklet very carefully;
  - The heater is not installed in an area where there is a high risk of fire or explosions;
  - Minimum clearances from combustible material must be:
    - 1 m (3 feet) from side and rear (air inlet) of heater
    - 1 m (3 feet) on top of heater
    - 3 m (10 feet) on air outlet of heater.
  - Keep inflammable material at a safe distance from the heater (minimum 3 metres);
  - Check that there is no overheating of walls, ceilings or floors made of inflammable materials,
  - All precautions have been taken to prevent fires;
  - The room being heated must be sufficiently ventilated so that the heater has enough air to function properly;
  - The heater must be near a chimney or chimney flue and an electrical panel conforming to declared specifications;
  - Check the heater before switching it on and at regular intervals during its use;
  - After use, make sure the disconnecting switch is off.
- When using any type of space heater it is obligatory:
- not to exceed the maximum heat output level of the furnace ("TECHNICAL SPECIFICATION TABLE");
  - make sure that the air flow is not below the rated level; check that there are no obstacles or obstructions to the air suction and/or delivery ducts, such as sheets or covers on the equipment, walls or large objects near the heater.

**Warning**



This unit may not be used by persons (including children) with reduced physical, sensorial or mental capacities or with limited experience and familiarity unless they are under supervision or instructed on how to use the unit by the person responsible for its safety.

**4. INSTALLATION INSTRUCTIONS**

**Warning**



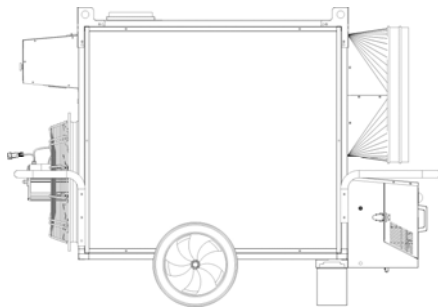
All of the operations described in this section must be performed by professionally qualified personnel only.

The installation shall be in accordance with National Fuel Gas Code ANSI Z223.1/NFPA 54 and with CAN1-B149.1 Installation code. An approved manual gas valve shall be provided by the installer.

**4.1. INSTALLATION ON FLOOR OR CEILING**

The space heater may be installed:

- on the floor in a stable position

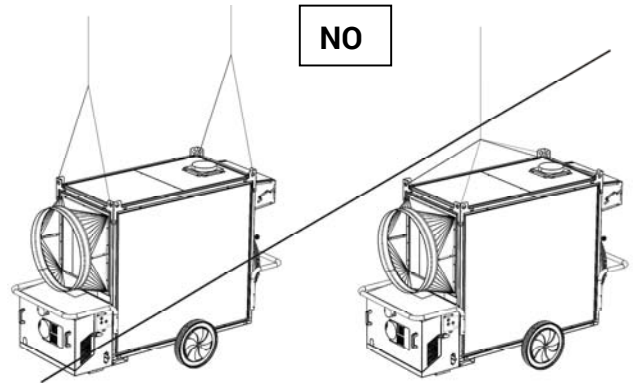
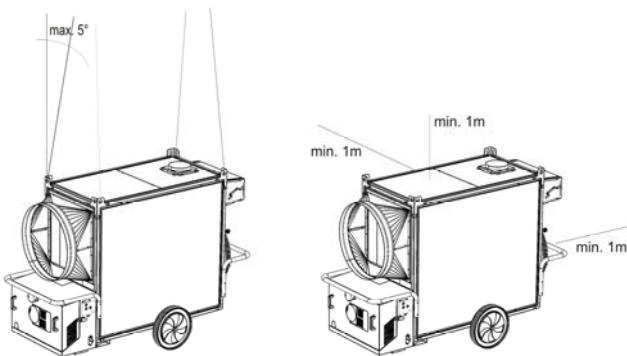


- or suspended by hooking it to the ceiling using cables and/or chains of an appropriate size and length secured to the four suspension points.

**Warning**



Make sure that the ropes and/or chains form an angle not more than 5° with vertical to the ceiling, that the ropes do not cross, and that a different rope is used for each hook.



The minimum distance from surrounding walls and/or ceiling must always be at least 1 metre.

**4.2. POWER CONNECTIONS**

**Warning**



The 120V unit is fitted with a proper power cord. The 220V equipment is fitted with a temporary power cable, used for the final control test at factory. The temporary power cord must be removed and replaced with a proper power cord whose type and dimension shall be in accordance with national rules.

**Warning**



The power line of the generator must feature an earthlead and a residual current circuit breaker. The supply cable must be connected to a switchboard with sectioning switch.

**Warning**



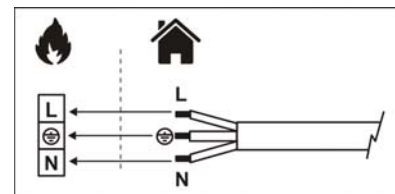
When installed, the appliance must be electrically grounded in accordance with local codes, or in the absence of local codes, with the National Electrical Code, ANSI/NFPA 70, and/or the CSA C22.1, Canadian Electrical Code, if an external electrical source is utilized.

The electrical power cable must be connected in conformity to the polarity specified on the main terminal board of the electrical panel: phase (L) and neutral (N).

**Warning**



If polarities L and N are incorrect, the space heater may stop a few seconds after it is switched on for the first time.



Before switching on the heater and, therefore, before plugging it into the electrical power supply, check that the power supply specifications are the same as those stated on the identification plate.



Any room thermostat or other accessories (such as a timer) are connected to the system by connecting the electrical cable to the thermostat plug (c):

- Take the plug (c) out of the electrical panel, open the plug and remove the jumper between terminals 2 and 3.
- Connect the thermostat electrical cable to terminals 2 and 3 of the thermostat plug (c).
- Close the plug again and plug it back into the panel.

**Warning**



**Never attempt to switch the heater on or off by connecting the room thermostat (or other control devices) to the electrical power line.**

The installation and connection of all the other accessories are described in the specific instructions included with each accessory, together with operating instructions.

The electrical diagram shown in this manual refers to the electrical connection only.

**4.3. CONNECTION TO HOT AIR DELIVERY DUCTS**

The space heater is set to operate with direct distribution of air. Nevertheless, it can be connected to appropriately sized air distribution channels, if required, with maximum diameter and length as shown in the "TECHNICAL SPECIFICATION TABLE."

**Warning**



**Before starting the heater, check that the direction of rotation of the fan matches the direction shown on the fan itself.**

The air distribution channels can be connected by using the various accessories supplied, placing the connector head-on to one or more outlets chosen as needed.

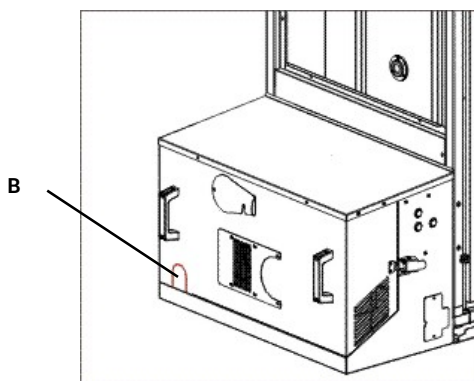
**4.4. MOUNTING THE RIELLO GAS BURNER**

**Warning**

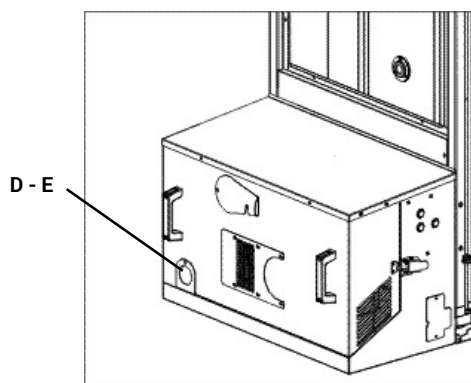


**Riello gas burners are supplied pre-fit with a nozzle for natural gas and a gas selector valve for switching from natural gas to propane or viceversa (see paragraph 4.8).**

- Remove the box cover and, with an appropriate tool, eliminate metal parts B by following the pre-cut line already traced on the cover.



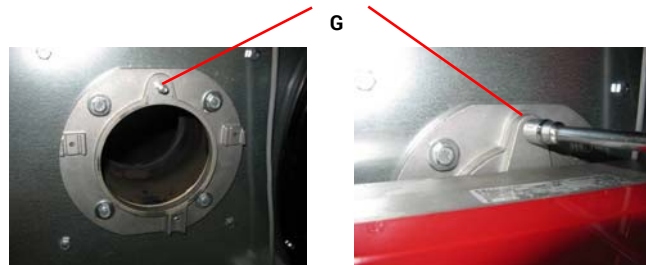
- Take flange D with seal E and assemble them on the burner cover by using the self-threading screws supplied.



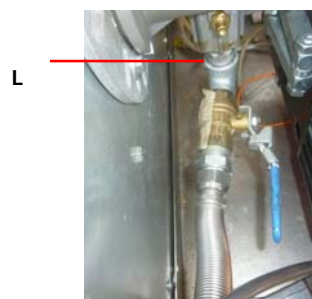
- Consult the user manual of the burner; and fit the burner fixing screw onto the burner plate according to the instructions



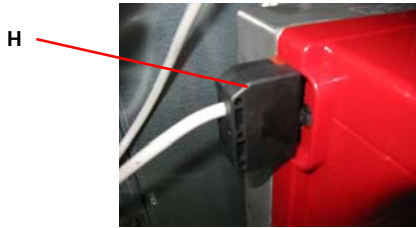
- Secure the burner plate to the machine by using the 4xM8 screws and the D8 x D24 washers;



- Open the box containing the gas valve group + the gas selector valve group
- Connect the gas selector valve group to the burner (use sealant approved for gas connection on thread L)



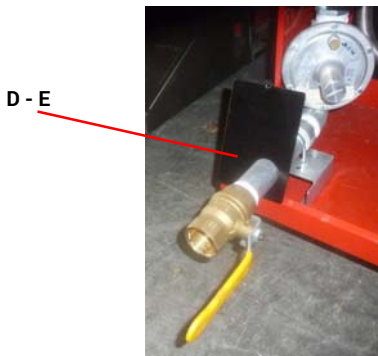
- Insert the burner and fix it to the plate by tightening the nut supplied onto the screw G;
- Locate the black cable with Wieland plug running out of the electrical panel and insert the plug into the socket H on the burner;



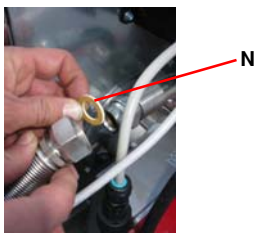
- Secure the gas valve group to the machine using the M8 and M5 screws.



- Remove flange D with seal E previously assembled on the burner cover and insert it by sliding it on the gas delivery pipe.



- Connect the stainless steel flexible hose to the gas valve selector group, taking care to properly insert the N gas seal:



- Locate the cable with Wieland plug running out of the gas valve group and insert the plug into the burner socket;
- Close the burner cover;
- The burner is not pre-adjusted by the manufacturer and must be set according to data reported in Table of Technical Characteristics of the user manual: follow the instructions in the manual to complete the connection of the machine to the gas supply system and for commissioning

**Warning**



Check all threaded connections on the gas line. When commissioning, check for any gas leaks or seepages using soap and water

**4.5. CONNECTION TO FUEL SUPPLY**

**Warning**



The heater must be installed, set up, and used in compliance with all applicable regulations.



Before installing, check the gas supply conditions required for the type of gas chosen.

The gas supply pipe must be properly sized, conform to the installed thermal power, and guarantee the necessary conditions for gas supply.

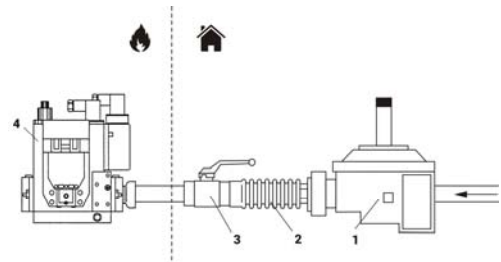
**Warning**



The gas supply pressure must be guaranteed during heater operation and not with the heater off.

The space heater has a gas ramp with: gas filter, pressure regulator, safety electrovalve, work electrovalve, pressure stabilizer, pressure valve.

It is good practice for the installer to set up the supply line as follows:



- 1: filter-pressure regulator or filter
- 2: antivibration joint
- 3: stopcock
- 4: gas ramp

Parts (1), (2) and (3) are available as accessories and are not supplied with the heater.

When the line has been connected:

- Bleed the gas supply pipe;
- Check that the gas pipe is sealed.
- Open the gas stopcock and check the seal of all connections to the heater.

In case of connection of heater to natural gas, the installation shall conform with local codes or, in the absence of local codes, with the National Fuel Gas Code ANSI Z223.1/NFPA 54 and the Natural Gas and Propane Installation Code, CSAB149.1.

In case of connection to a propane supply cylinder:

- (a) the installation must conform with local codes or, in the absence of local codes, with the Standard for the Storage and Handling of Liquefied Petroleum Gases, ANSI/NFPA 58 and the Natural Gas and Propane Installation Code, CSA B149.1.
- (b) to determine size and capacity of the cylinder(s) and for any specific requirements consult your LP gas supplier. In any case propane tank should not be lower than 100 lb (90 liters)
- (c) the cylinder supply system shall be arranged to provide for vapour withdrawal from the operating cylinder;
- (d) the gas shall be turned off at the propane supply cylinder when the heater is not in use;

(e) when the heater is to be stored indoors, the connection between the propane supply cylinder and the heater must be disconnected and the cylinders removed from the heater and stored in accordance with Standard for the Storage and Handling of Liquefied Petroleum Gases, ANSI/NFPA 58 and CSA B149.1, Natural Gas and Propane Installation Code.

The appliance and its individual shut-off 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).

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

A minimum 1/8" NPT plugged tapping, accessible for test gauge connection, must be installed immediately upstream of the gas supply connection to the appliance.

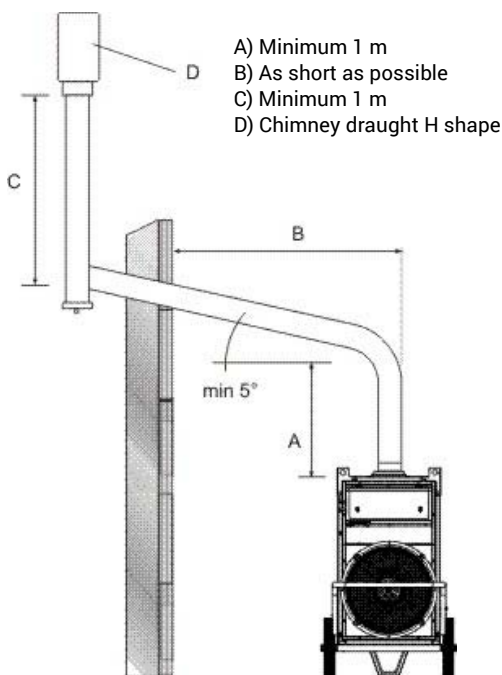
**4.6. CONNECTION TO EXHAUST DUCT**

Exhaust ducts must be in steel and conform to local/national rules. Efficient combustion and trouble-free working of the burner depend on efficient flue draft.

The unit must be connected to the chimney flue in compliance with current legal regulations and in line with the following guidelines:

- The path of the flue pipe smoke should be as short as possible and should slant upwards (minimum height 1 m);
- There should be no sharp curves in the pipes, and the diameter of the pipes must never be reduced;
- there must always be a wind deflector to prevent the entrance of rain and to prevent smoke from being blocked by the wind;
- flue draft must at least equal the level in the Technical Specifications.
- When the heater is connected to a flue pipe, the flue pipe shall terminate in a vertical section at least two feet long and sufficient draft shall be created to assure safe and proper operation of the heater;
- every heater must have its own chimney;

The following diagrams show possible flue positions:



**4.7. FIRST START-UP**

The heater is supplied after a complete functional test and it's therefore prearranged for one of the gas (natural or L.P.G.) indicated in Tab. I: an adhesive label applied on the manual gas selector valve (Fig. 4) indicates the working gas (usually it's natural gas). Should it necessary to change the kind of gas (from natural gas to L.P.G or viceversa) follow the detailed instructions indicated in section "CHANGING TYPE OF GAS".

Only when the heater has been prearranged according to the proper working gas it will be possible to carry out the following operations:

- Leak away some gas from the feed pipe;
- Check that the pipe is gas proof;
- Open the gas stopcock and start the hot air generator;

For installation in the U.S.A. at elevation above 2,000 feet (610 m), the appliance shall be derated 4 per cent for each 1,000 feet (305 m) of elevation above sea level.

For installation in Canada at elevation above 2,000 feet to 4,500 feet above sea level, the heater is derated reducing the input for the appropriate fuel in accordance with the rating plate manifold pressure.

**Warning**



THE CONVERSION SHALL BE CARRIED OUT BY A MANUFACTURER'S AUTHORIZED REPRESENTATIVE, IN ACCORDANCE WITH THE REQUIREMENTS OF THE MANUFACTURER, PROVINCIAL OR TERRITORIAL AUTHORITIES HAVING JURISDICTION AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE CAN/CGA-B149.1 OR CAN/CGAB149.2 INSTALLATION CODES.

A conversion label shall be applied adjacent to the Rating Label:

THIS APPLIANCE HAS BEEN CONVERTED FOR USE AT AN ALTITUDE OF \_\_\_\_\_ FEET (ABOVE 2000 FEET)

Orifice size: \_\_\_\_\_  
 Manifold pressure: \_\_\_\_\_  
 Input rate: \_\_\_\_\_  
 Date of conversion: \_\_\_\_\_  
 Type of fuel: \_\_\_\_\_  
 Converted by: \_\_\_\_\_

For installation in Canada at elevation above 4,500 feet above sea level, consult Provincial or Territorial Authorities having jurisdiction. You can continue and start up the heater only after it has been prepared it according to the instructions for the work category to be used.

**4.8 CHANGING TYPE OF GAS**

This operation may be carried out several times during the working life of the machine and not only at initial start-up. Therefore, first of all check the adhesive label attached to the manual gas selector valve (a) in Fig. (2) to establish the original category of the gas and then consult Tab. I to identify the supply pressure, the working pressure, the use conditions of manual valve.

To change kind of gas it is necessary (Fig. 2):

- to remove the sticker on the manual gas selector valve stating the gas used at that time,
- to remove the screw under the sticker and turn the manual handle on the correct side according to the condition described in Tab.I and by following instruction:

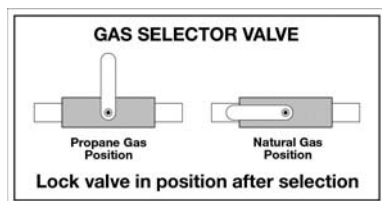


Fig. 4

- After having moved the handle into the opposite position, put again the fixing screw and a new sticker on it, stating the gas which has to be used (a number of different stickers are supplied with the machine)

**Warning**

Burner pressure shall not be adjusted: the heater is ready to run on the new gas

Should it necessary to check the burner pressure:

- connect a manometer to the pressure port located on the burner support,
- carry out the pressure reading on the manometer and turn the pressure regulator (c) if necessary to obtain the correct burner pressure value indicated in Tab. I

**4.9. REGULATING COMBUSTION AND ANALYSING COMBUSTION PRODUCTS****Warning**

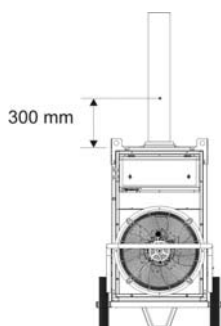
The first start-up should always be carried out by a specialised technician checking the correctness of the combustion parameters.

**Warning**

The burner settings are pre-set at the factory and may not comply with those required, therefore, the settings need to be checked and, where necessary, corrected.

The adjustment values (gas fuel pressure, burner gas pressure, combustion head position, air adjustment) for each of the burners approved for these units are indicated in the "TECHNICAL SPECIFICATION TABLE".

The probe used to periodically check combustion and flue smoke temperatures is to be inserted as indicated:



Combustion is clean and stable when combustion values are as follows:

	NATURAL GAS G20 - G25	LIQUID GAS G30 - G31
Index Bacharach	-	0 (white)
CO <sub>2</sub>	8.5 ÷ 9.5 %	11.5 ÷ 12.5 %
Oxygen (O <sub>2</sub> )	4.5 ÷ 6 %	4.5 ÷ 6 %
CO <sub>ma</sub>	100 ppm	100 ppm

You may have to change the burner settings due to the fuel used and/or installation conditions (high altitude, air suction pipe with or without Snorkel, etc.) if combustion parameters are not correct. When inspection tests are completed, the hole drilled for the probe must be sealed with a material that is resistant to high temperatures and that ensures the tube remains airtight.

**5. OPERATING INSTRUCTIONS****5.1. START**

To start the heater:

- Raise panel (n) on the electrical panel box;
- Make sure the switch (a) is set to "0";
- Supply electrical power to the space heater by pulling up the disconnecting switch on the electric power panel: the green lamp (b) will light up indicating that power is being supplied to the panel;
- Turn switch (a) to position H or H+V: the burner will begin the start-up and pre-wash cycle, after which the flame will ignite; after the combustion chamber has been heating for a few minutes, the main fan will start up;

**Warning**

The fan runs continuously in H+V mode, even when the desired room temperature has been reached, and the burner turns off.

**Warning**

In H mode, the fan only runs when the combustion chamber is sufficiently hot. Therefore, when the desired room temperature has been reached, the burner turns off and the fan keeps running only until the combustion chamber has cooled completely.

- If the heater does not work during the start cycle or work cycle, consult "TROUBLESHOOTING" to find the cause of the malfunction.

**Warning**

If the burner goes into safety stop (lamp m) push reset button (d) for 3 seconds to restart the heater..

**Warning**

If the safety thermostat goes into safety stop (lamp h), push reset button (i) for 3 seconds to restart the heater.

**Warning**

NEVER do more than two restarts in a row: unburned fuel can accumulate in the combustion chamber and suddenly flare up at the next restart.

**5.2. STOP**

Stop the heater by turning switch (a) to "0" position or, if the heater is in automatic mode, by setting the room thermostat to a lower temperature: the burner shuts off and lamp (f) goes out. The fan keeps working, starting and stopping several times until the combustion chamber has cooled completely.

**Warning**



Never stop the heater by simply turning off the disconnecting switch on the panel. The electrical supply must be disconnected ONLY when the fan has come to a complete stop.

**5.3. VENTILATION**

To run the heater only in continuous ventilation mode, turn switch (a) to the position with the symbol V.

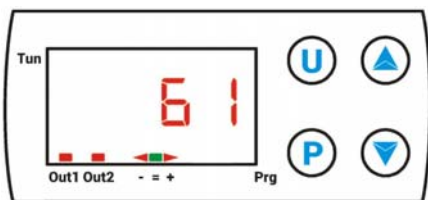
**5.4. TEMPERATURE CONTROLLER**

The heater is equipped with a temperature controller (g) with LCD screen, which displays and controls the following parameters:

- Display of air outflow temperature
- Display of hours of operation
- Control of trip temperature of fan thermostat
- Control of trip temperature of burner thermostat

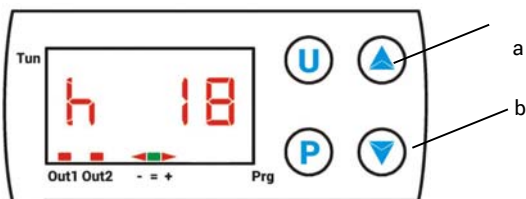
**Display of air outflow temperature**

The screen displays the measured temperature in [°C]:



**Display of hours of operation**

Press key (a) twice: the screen shows the operating time in hours [h]:



**Warning**

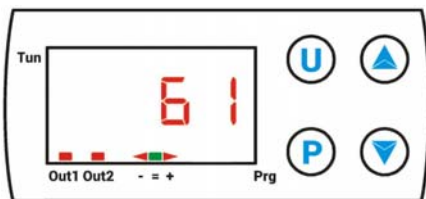


The time shown is not actual heating time, but connection time to the electrical power supply line.

Reset the counter as follows:

- Turn the heater's main switch to position "0" (OFF)
- Press button P on the temperature controller for at least 3 seconds: the word "PASS" will flash for 5 seconds
- Enter code "-481" by pressing key (b) several times until obtaining the number required; press key P to confirm and go to the next number
- Lastly, press key U: the display again shows the air outflow temperature

**Control of trip temperature of fan thermostat**



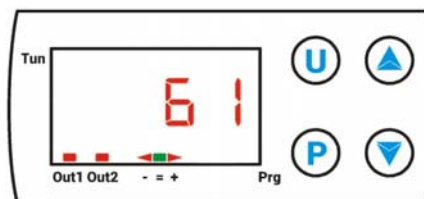
The temperature controller is programmed to start and stop the main fan automatically when the combustion chamber reaches the set temperature. This prevents cold air from blowing when the burner starts and the combustion chamber is not yet hot enough, and ensures that residual heat in the heater is dissipated when the burner stops.

The temperature is factory-set to 35°C, with hysteresis of 5°C.

Red LED "OUT 1" shows the operating state of the fan thermostat:

- LED ON: the fan is on
- LED OFF: the fan is off

**Control of trip temperature of burner thermostat**



The temperature controller is programmed to start and stop the burner automatically when the combustion chamber reaches the set over-temperature. This prevents excessive overheating of the combustion chamber and subsequent tripping of safety thermostat L2, which blocks operation of the heater (see chapter 7 for details on operating problems that cause tripping of safety thermostat L2). The temperature is factory-set to 95 °C, with hysteresis of 5°C.

Red LED "OUT 2" shows the operating state of the burner thermostat, while the LED group "- = +" indicates the current temperature compared to the set temperature:

- if the red arrow at the symbol "-" is ON, it means that the temperature is below the set value and, therefore, the thermostat is ON, i.e., the burner is ON.
- if the green LED at the symbol "=1" is ON, it means that the temperature is at the set value.
- if the red arrow at the symbol "+" is ON, it means that the temperature is above the set value and, therefore, the thermostat is OFF, i.e., the burner is OFF.

**Warning**



The trip temperatures of the fan thermostat and burner thermostat should be changed only if absolutely necessary. Contact the manufacturer for information needed to reprogram the temperature controller..

**6. MAINTENANCE**

**Warning**



All of the operations described in this section must be performed by professionally qualified personnel only.

The following procedures must be done at regular intervals to ensure efficient operation of the heater. Make sure you have detached the electrical power line from the heater before starting any work.

**Warning**



Before doing any maintenance:

- Stop the heater as indicated in the "STOP" paragraph;
- Switch off the power supply by means of the cut-off on the electrical panel;
- Wait until the heater cools.

Procedure	Periodic maintenance			
	Every day	Every week	Every six months	Every year
Check heater	X			
Check gas supply line	X			
Clean exterior of heater	X			
Clean motor and fan		X		
Check gas supply pressure		X		
Check electrical connections			X	
Check and test burner			X	
Check thermostats			X	
Clean interior of heater			X	
Inspect and clean combustion chamber				X

### 6.1. CHECKING THE HEATER AND THE GAS SUPPLY LINE

Perform the following checks:

- Make sure the heater is not installed where there may be a risk of fire or explosion
- Make sure that flammable materials are kept a safe distance away
- If you smell:
  - Open the windows immediately
  - Do not touch electrical switches
  - Close the gas stopcock
  - Find and repair the source of the gas leak
- Do not use the heater if any removed panels have not been remounted
- Make sure the room to be heated is sufficiently ventilated
- Make sure that the air intake and outlet are completely unobstructed
- Make sure that the heater is not covered by any sheets or covers;
- Check that the heater is in a fixed and stable position;
- Make sure the heater is constantly monitored during operation and checked before being started

### 6.2 CLEANING THE EXTERIOR OF THE HEATER

To ensure efficient operation, clean the following parts:

- Burner:
  - Remove all external dirt and debris
  - Make sure the air inlet is not obstructed.
- Pipes, connectors and joints:
  - Clean with a cloth.
- External body:
  - Clean with a cloth.
- Air inlet/outlet:
  - Remove all dirt and debris
  - Make sure the air inlet is not obstructed.

### 6.3 Cleaning the motor and the fan

Clean the fan blades and the motor as follows:

- Remove the fan group fixing screws and then remove the fan group.
- Clean the motor with compressed air.
- Clean the fan blades with a hard brush.

- Reinstall the fan group.

### 6.4 CHECKING THE ELECTRICAL CONNECTIONS

After detaching the power cable, check all electrical connections as follows:

- Make sure that all connections are complete and tight.
- If there are traces of dirt or corrosion, clean or replace the connections if necessary.
- Replace any damaged wires or connectors if necessary.

### 6.5 CHECKING AND TESTING THE BURNER

To reach the burner:

- Remove the burner fixing screw.
- Remove the burner and follow the checking and cleaning instructions in the burner manual.
- Reinstall the burner.
- Run the procedures described in paragraphs 4.7 and 4.8 to measure combustion parameters and check that combustion is stable and clean.

### 6.6 CHECKING THE THERMOSTATS

Inspect the thermostats as follows:

- Remove any air outlet connection ducts
- Find the thermostats fixed to the internal panel of the space heater.
- Clean with a dry cloth, taking care not to cut or bend the capillary tube.

### 6.7 CLEANING THE INTERIOR OF THE HEATER

For thorough cleaning, the heater can be cleaned and washed inside and outside with water. It is however necessary to ensure that:

- the electrical cable is disconnected and unplugged from the socket
- completely close all access panels
- do not use water jets at a pressure exceeding 70 bar at a distance less than 30 cm
- completely dry all parts before reconnecting the electrical cable.

### 6.8 CLEANING THE COMBUSTION CHAMBER

To maintain the burner's high efficiency and prolong its life, the procedure described in this paragraph must be done at least once at the end of the work season or more frequently if there is an excessive build-up of soot. Excessive soot may be caused by poor chimney draught, poor fuel quality, poor regulation of the burner, or more or less frequent alternation of burner starts and stops.

Pay attention during operation: pulsations at start may be due to excessive amounts of soot.

To access the heat exchanger (1), take off the rear panel (3), remove the smoke box inspection panel (2), and then remove baffle plates (7).

To access the combustion chamber (4) remove the burner (5).

Clean with compressed air or, if necessary, with a metal brush to remove any deposited soot and combustion residues.

#### Warning



After any technical work, always check that the heater works correctly.

## 7. TROUBLESHOOTING

In the event of serious anomalies, various safety devices are able to block the machine's operation and signal the same:

- on the electrical panel



the blocking signal following intervention by safety thermostat L2: the reset button is located inside the burner box.

- on the burner
- the blocking signal following intervention by the burner's flame control box.

If the heater is still not working properly, please contact your nearest dealer or authorized Service Centre.

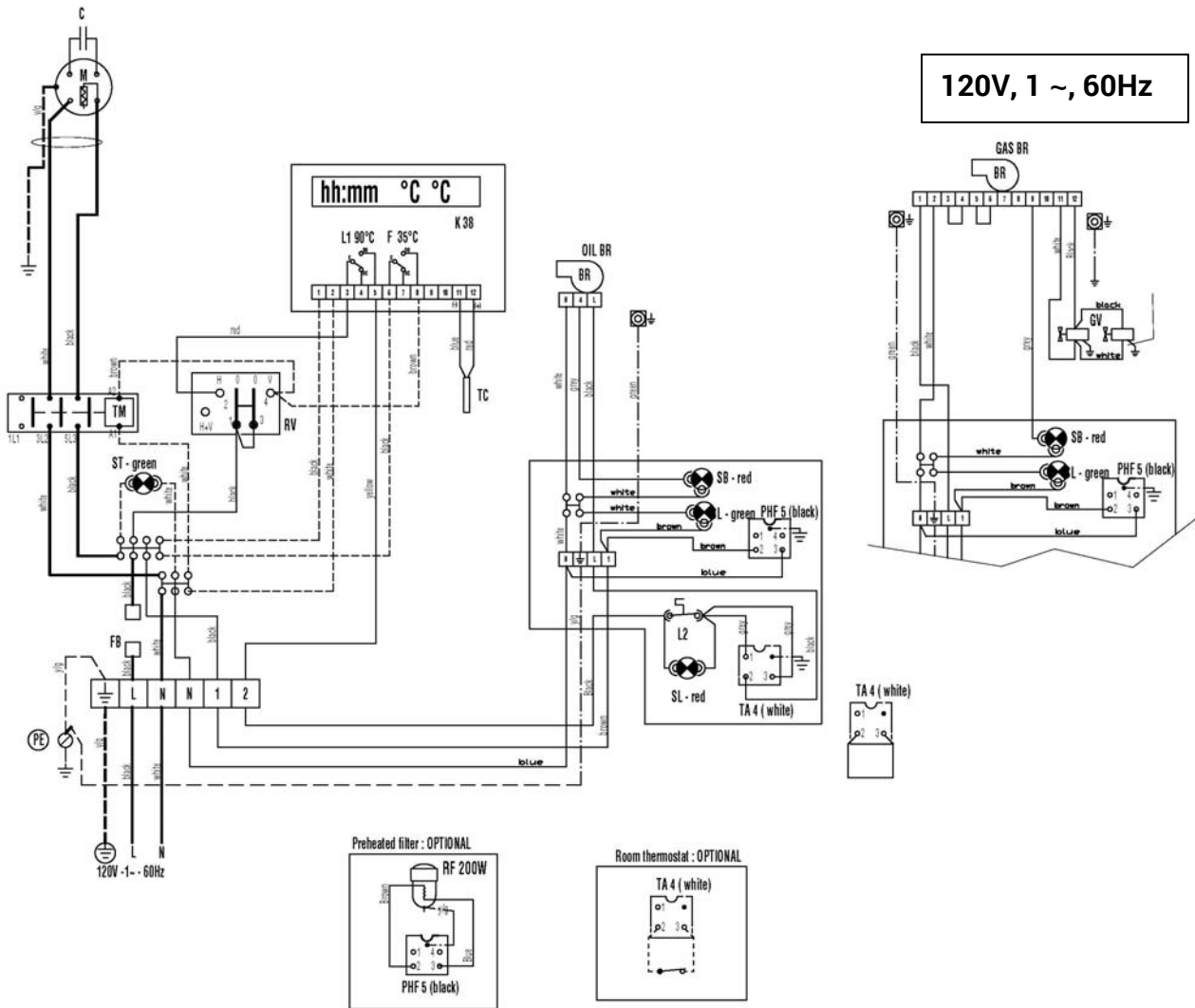
**Warning**



**NEVER do more than two restarts in a row: unburned fuel can accumulate in the combustion chamber and suddenly flare up at the next restart.**

FAULT	CAUSE	REMEDY
<ul style="list-style-type: none"> <li>• The heater does not start:</li> </ul> <p>lamp  is off</p>	<ul style="list-style-type: none"> <li>• No power supply</li> </ul>	<ul style="list-style-type: none"> <li>• Check functioning and position of switch</li> <li>• Check the mains</li> <li>• Check power connections</li> <li>• Check fuse</li> </ul>
<ul style="list-style-type: none"> <li>• The heater does not start:</li> </ul> <p>lamp  is on</p>	<ul style="list-style-type: none"> <li>• Switch (a) in wrong position</li> </ul>	<ul style="list-style-type: none"> <li>• Select correct position</li> </ul>
	<ul style="list-style-type: none"> <li>• Incorrect functioning of the room thermostat</li> </ul>	<ul style="list-style-type: none"> <li>• Check that thermostat connection plug is inserted</li> <li>• Check thermostat electrical connection</li> <li>• Check thermostat setting and correct it</li> <li>• Check functioning of thermostat</li> </ul>
<ul style="list-style-type: none"> <li>• The burner goes on and off alternately and LED OUT 2 on the temperature controller remains ON.</li> </ul>	<ul style="list-style-type: none"> <li>• Insufficient gas supply</li> </ul>	<ul style="list-style-type: none"> <li>• Check and clean gas filter.</li> <li>• Clean and recalibrate the burner.</li> </ul>
	<ul style="list-style-type: none"> <li>• Incorrect setting of burner</li> </ul>	<ul style="list-style-type: none"> <li>• Clean and recalibrate the burner.</li> </ul>
<ul style="list-style-type: none"> <li>• The burner goes on and off alternately and LED OUT 2 on the temperature controller is OFF when the burner goes off.</li> </ul>	<ul style="list-style-type: none"> <li>• Burner thermostat has tripped due to overheating</li> </ul>	<ul style="list-style-type: none"> <li>• Check correct position of air distribution channels and opening of any flaps, openings, etc.</li> <li>• Remove any foreign bodies trapped in the air ducts or ventilation grilles</li> </ul>
<ul style="list-style-type: none"> <li>• The heater does not work:</li> </ul> <p>the lamp  on the electrical panel is on</p>	<ul style="list-style-type: none"> <li>• Manual reset safety thermostat has tripped due to excessive overheating of combustion chamber</li> </ul>	<ul style="list-style-type: none"> <li>• Check that the fan motor starts correctly and is not obstructed</li> <li>• Check that the fan motor is not burned out or that the motor condenser is not broke</li> <li>• Check burner calibration</li> <li>• Check the path and correct discharge of fumes</li> </ul>
<ul style="list-style-type: none"> <li>• The heater does not work:</li> </ul> <p>the lamp  on the burner is steady on</p>	<ul style="list-style-type: none"> <li>• Burner's safety equipment has tripped</li> </ul>	<ul style="list-style-type: none"> <li>• Refer to the burner manual for diagnosis and causes</li> </ul>
<ul style="list-style-type: none"> <li>• Fan noise or vibrations</li> </ul>	<ul style="list-style-type: none"> <li>• Foreign bodies on fan blades</li> </ul>	<ul style="list-style-type: none"> <li>• Remove foreign bodies</li> </ul>
	<ul style="list-style-type: none"> <li>• Insufficient air circulation</li> </ul>	<ul style="list-style-type: none"> <li>• Eliminate all possible obstacles to proper air flow</li> </ul>
<ul style="list-style-type: none"> <li>• Insufficient heating</li> </ul>	<ul style="list-style-type: none"> <li>• Insufficient burner capacity</li> </ul>	<ul style="list-style-type: none"> <li>• Contact Customer Service</li> </ul>

## WIRING DIAGRAM - SCHEMA ELECTRIQUE

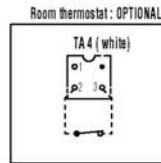
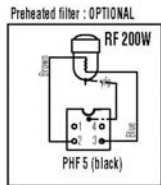
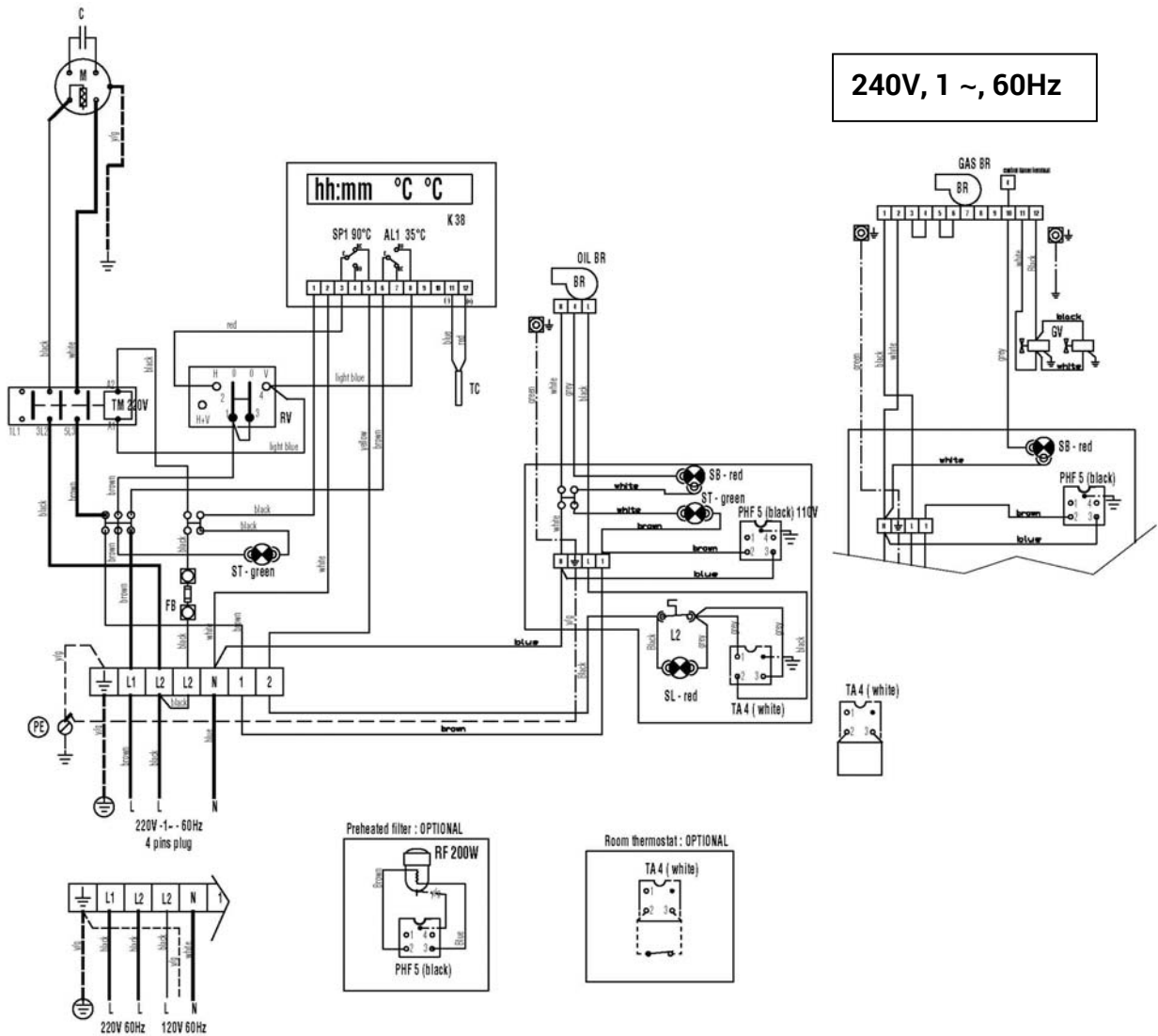


- M** FAN MOTOR  
MOTEUR VENTILATEUR
- F** FAN THERMOSTAT (setting: 30°C)  
THERMOSTAT VENTILATEUR (régulation: 30°C)
- FB** FUSE  
FUSIBLE
- ST** POWER LAMP  
LAMPE TEMOIN MISE SOUS TENSION
- L2** LIMIT THERMOSTAT WITH MANUAL RESTART  
THERMOSTAT DE SECURITE A REARMEMENT MANUEL
- RV** HEATING-STOP-VENTILATION SWITCH  
COMMUTATEUR CHAUFFAGE - ARRÊT - VENTILATION
- SL** OVERHEAT THERMOSTATS CONTROL LAMP  
LAMPE TEMOIN SECURITE DE SURCHAUFFE
- L1** BURNER THERMOSTAT (setting: 90°C)  
THERMOSTAT BRULEUR (régulation: 90°C)
- TA** ROOM THERMOSTAT PLUG  
PRISE THERMOSTAT D'AMBIACE
- RE2** DELAYED IGNITION RELAY

- R** RELAIS DE RETARD ALLUMAGE  
ANTI-CONDENSATION RESISTANCE  
RÉSISTANCE ANTICONDENSATION
- TM** FANS TELE-CONTACTOR  
TÉLERUPTEUR VENTILATEUR
- RM** FANS THERMAL RELAY  
RELAIS THERMIQUE VENTILATEUR
- ST** POWER LAMP  
LAMPE TEMOIN MISE SOUS TENSION
- SM** FAN STOP LAMP  
TÉMOIN VENTILATEUR BLOQUÉ
- BR** BURNER  
BRULEUR
- PB7** BURNER PLUG  
PRISE BRULEUR
- RV** HEATING-STOP-VENTILATION SWITCH  
COMMUTATEUR CHAUFFAGE - ARRÊT - VENTILATION



# WIRING DIAGRAM - SCHEMA ELECTRIQUE



- M** FAN MOTOR  
MOTEUR VENTILATEUR
- F** FAN THERMOSTAT (setting: 30°C)  
THERMOSTAT VENTILATEUR (régulation: 30°C)
- FB** FUSE
- ST** POWER LAMP  
LAMPE TEMOIN MISE SOUS TENSION
- L2** LIMIT THERMOSTAT WITH MANUAL RESTART  
THERMOSTAT DE SECURITE A REARMEMENT MANUEL
- RV** HEATING-STOP-VENTILATION SWITCH  
COMMUTATEUR CHAUFFAGE - ARRÊT - VENTILATION
- SL** OVERHEAT THERMOSTATS CONTROL LAMP  
LAMPE TEMOIN SECURITE DE SURCHAUFFE
- L1** BURNER THERMOSTAT (setting: 90°C)  
THERMOSTAT BRULEUR (régulation: 90°C)
- TA** ROOM THERMOSTAT PLUG  
PRISE THERMOSTAT D'AMBIACE
- RE2** DELAYED IGNITION RELAY

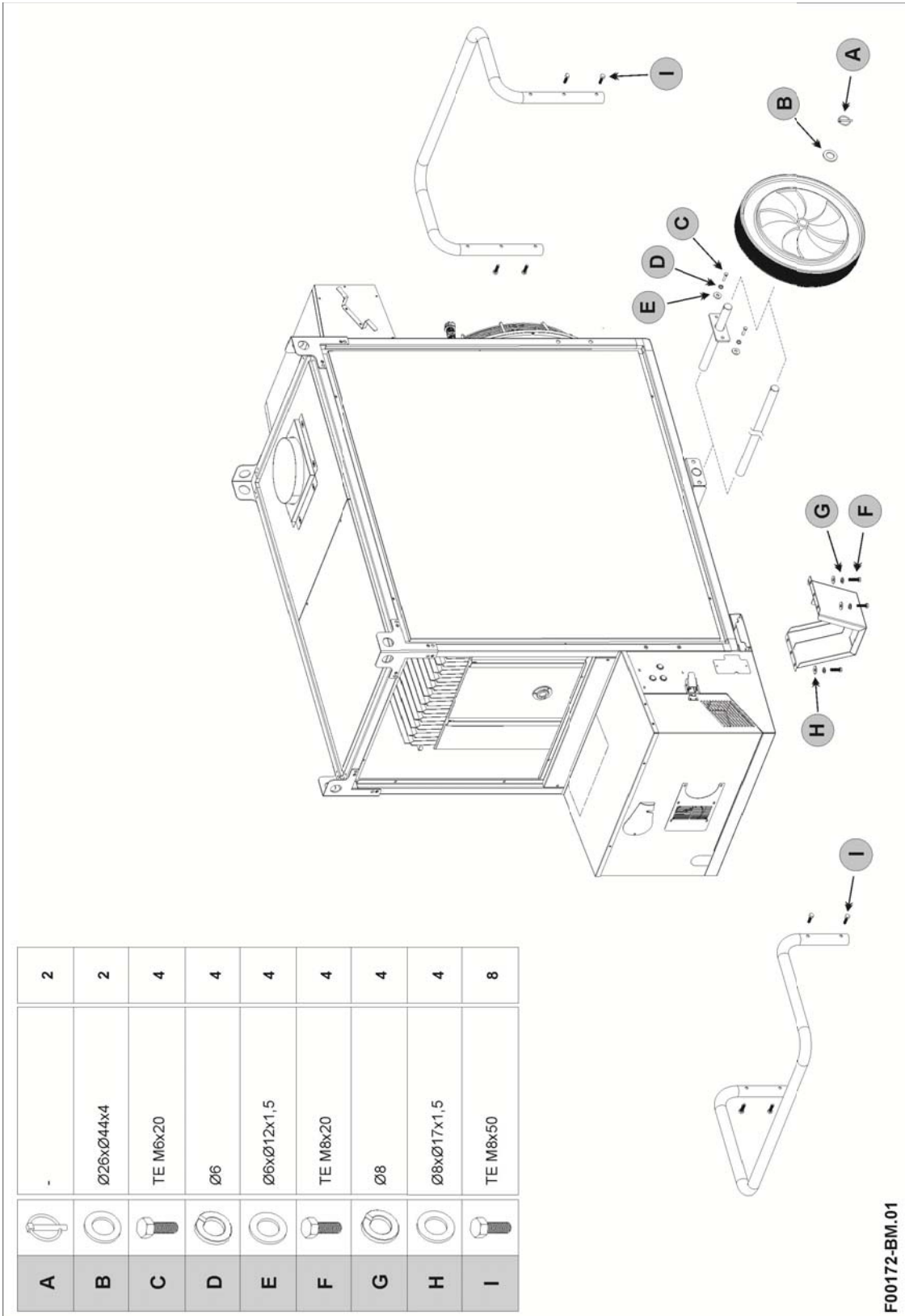
- R** RELAIS DE RETARD ALLUMAGE  
ANTI-CONDENSATION RESISTANCE  
RÉSISTANCE ANTICONDENSATION
- TM** FANS TELE-CONTACTOR  
TELERUPTEUR VENTILATEUR
- RM** FANS THERMAL RELAY  
RELAIS THERMIQUE VENTILATEUR
- ST** POWER LAMP  
LAMPE TEMOIN MISE SOUS TENSION
- SM** FAN STOP LAMP  
TÉMOIN VENTILATEUR BLOQUÉ
- BR** BURNER  
BRULEUR
- PB7** BURNER PLUG  
PRISE BRULEUR
- RV** HEATING-STOP-VENTILATION SWITCH  
COMMUTATEUR CHAUFFAGE - ARRÊT - VENTILATION

TECHNICAL SPECIFICATIONS			JUMBO 400
Burner Model			RIELLO R40-N400S
Burner Nozzle			RIELLO G20
Nominal Heat Input			[BTU/h] 400,000
Natural gas	Normal altitude 0 - 2,000 ft above sea level (U.S.A. and Canada)	Supply pressure	[in w.c.] min 7" w.c. max 10" w.c.
		Heat input	[BTU/h] 394,309
		Manifold pressure	[in w.c.] 3.60
		Burner head position	[N°] 4
		Burner Air setting	[N°] 4.7
	Altitude 2.000 - 4.500 ft above sea level (Canada only)	Fuel consumption	[CFH] 384.31
		Heat input	[BTU/h] 354,878
		Manifold pressure	[in w.c.] 3.40
		Burner head position	[N°] 4
		Burner Air setting	[N°] Max
L.P.G.	Normal altitude 0 - 2.000 ft above sea level (U.S.A. and Canada)	Fuel consumption	[CFH] 345.88
		Supply pressure	[in w.c.] min 8" w.c. max 13" w.c.
		Gas firing valve	[in] 0.374
	Normal altitude 0 - 2.000 ft above sea level (U.S.A. and Canada)	Heat input	[BTU/h] 393,052
		Manifold pressure	[in w.c.] 2.40
		Burner head position	[N°] 4
		Burner Air setting	[N°] 4.7
		Fuel consumption	[CFH] 158.40
	Altitude 2.000 - 4.500 ft above sea level (Canada only)	Heat input	[BTU/h] 353,747
		Manifold pressure	[in w.c.] 2.20
		Burner head position	[N°] 4
		Burner Air setting	[N°] max
		Fuel consumption	[CFH] 142.56
Air flow			[cfm] 5,297
Fan Thermostat Setting			[°F] 95
Burner Thermostat Setting			[°F] 194
Power supply	Phase		1
	Voltage	[V]	120
	Frequency	[Hz]	60
Electric consumption			[W] 950
			[A] 8.2
Flue diameter			[in] 5.91
Compulsory flue draft			[in] 0.05
Maximum air temperature			[°F] 250
Max. operating pressure elec. gas valve			[psi] 0.5
Air distribution duct	Max Static pressure	[in]	0.48
	Max length 1 way - dia 20"	[ft]	60
	Max length 2 ways - dia 16"	[ft]	36
Inlet flexible duct	Max length 1 way - dia 26"	[ft]	12
Noise level at 1 m			[dBA] 68
Dimensions. L x W x H			[in] 73.43 x 30.63 x 47.72
Weight			[lb] 440.9

TECHNICAL SPECIFICATIONS			JUMBO 600	
Burner Model			RIELLO R40-N750S	
Burner Nozzle			RIELLO G20	
Nominal Heat Input			[BTU/h]	600,000
Natural gas	Normal altitude 0 - 2.000 ft above sea level (U.S.A. and Canada)	Supply pressure	[in w.c.]	min 7" w.c. max 10" w.c.
		Heat input	[BTU/h]	596,549
		Manifold pressure	[in w.c.]	2.00
		Burner head position	[N°]	3
		Burner Air setting	[N°]	3.4
	Fuel consumption	[CFH]	581.42	
	Altitude 2.000 - 4.500 ft above sea level (Canada only)	Heat input	[BTU/h]	536,894
		Manifold pressure	[in w.c.]	1.88
		Burner head position	[N°]	3
		Burner Air setting	[N°]	max
Fuel consumption		[CFH]	523.28	
L.P.G.	Normal altitude 0 - 2.000 ft above sea level (U.S.A. and Canada)	Supply pressure	[in w.c.]	min 8" w.c. max 13" w.c.
		Gas firing valve	[in]	0.386
		Heat input	[BTU/h]	593,609
	Altitude 2.000 - 4.500 ft above sea level (Canada only)	Manifold pressure	[in w.c.]	1.60
		Burner head position	[N°]	3
		Burner Air setting	[N°]	3.4
		Fuel consumption	[CFH]	239.22
		Heat input	[BTU/h]	534,248
		Manifold pressure	[in w.c.]	1.40
	Altitude 2.000 - 4.500 ft above sea level (Canada only)	Burner head position	[N°]	3
		Burner Air setting	[N°]	Max
		Fuel consumption	[CFH]	215.30
		Air flow	[cfm]	7,063
Fan Thermostat Setting			[°F]	95
Burner Thermostat Setting			[°F]	194
Power supply	Phase		1	
	Voltage	[V]	120	
	Frequency	[Hz]	60	
Electric consumption		[W]	1,350	
		[A]	12.0	
Flue diameter			[in]	7.87
Compulsory flue draft			[in]	0.05
Maximum air temperature			[°F]	250
Max. operating pressure elec. gas valve			[psi]	5
Air distribution duct	Max Static pressure	[in]	0.60	
	Max length 1 way - dia 28"/26"	[ft]	60	
	Max length 2 ways - dia 20"	[ft]	36	
	Max length 4 way - dia 14"	[ft]	30	
Inlet flexible duct	Max length 1 way - dia 28"	[ft]	12	
Noise level at 1 m			[dBA]	68
Dimensions. L x W x H			[in]	83.66 x 36.22 x 55.65
Weight			[lb]	595.25

TECHNICAL SPECIFICATIONS			JUMBO 800	
Burner Model			RIELLO R40-N900S	
Burner Nozzle			RIELLO G20	
Nominal Heat Input			[BTU/h]	800,000
Natural gas	Normal altitude 0 - 2.000 ft above sea level (U.S.A. and Canada)	Supply pressure	[in w.c.]	min 7" w.c. max 10" w.c.
		Heat input	[BTU/h]	802,180
		Manifold pressure	[in w.c.]	2.68
		Burner head position	[N°]	5
		Burner Air setting	[N°]	5.2
	Altitude 2.000 - 4.500 ft above sea level (Canada only)	Fuel consumption	[CFH]	772.0
		Heat input	[BTU/h]	721,962
		Manifold pressure	[in w.c.]	2.56
		Burner head position	[N°]	5
		Burner Air setting	[N°]	Max
Fuel consumption	[CFH]	694.80		
L.P.G.	Normal altitude 0 - 2.000 ft above sea level (U.S.A. and Canada)	Supply pressure	[in w.c.]	min 8" w.c. max 13" w.c.
		Gas firing valve	[in]	0.464
		Heat input	[BTU/h]	805,499
	Altitude 2.000 - 4.500 ft above sea level (Canada only)	Manifold pressure	[in w.c.]	2.20
		Burner head position	[N°]	5
		Burner Air setting	[N°]	5.2
		Fuel consumption	[CFH]	317.16
		Heat input	[BTU/h]	724,950
		Manifold pressure	[in w.c.]	2.00
	Altitude 2.000 - 4.500 ft above sea level (Canada only)	Burner head position	[N°]	5
		Burner Air setting	[N°]	Max
		Fuel consumption	[CFH]	285.44
		Air flow	[cfm]	10,005.8
Fan Thermostat Setting			[°F]	95
Burner Thermostat Setting			[°F]	194
Power supply	Phase		1	
	Voltage	[V]	240	
	Frequency	[Hz]	60	
Electric consumption		[W]	3,300	
		[A]	15.5	
Flue diameter			[in]	7.87
Compulsory flue draft			[in]	0.05
Maximum air temperature			[°F]	250
Max. operating pressure elec. gas valve			[psi]	5
Air distribution duct	Max Static pressure	[in]	0.80	
	Max length 1 way - dia 28"/26"	[ft]	90	
	Max length 2 ways - dia 24"	[ft]	45	
	Max length 4 way - dia 18"	[ft]	45	
	Max length 5 way - dia 14"	[ft]	36	
Inlet flexible duct	Max length 1 way - dia 28.8"	[ft]	18	
Noise level at 1 m			[dBA]	71
Dimensions. L x W x H			[in]	91.93 x 38.98 x 62.34
Weight			[lb]	773.82

NOTICE DE MONTAGE DU PIED/DE LA POIGNEE - FOOT / HANDLE ASSEMBLY INSTRUCTION



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