

**NATURAL GAS / LPG FIRED HEATER**  
GENERATEUR D'AIR CHAUD AU GAS NATUREL/L.P.G.



# PHOEN/N 380

L-L 120.02-BM

**INSTRUCTION MANUAL**  
MANUEL D'INSTRUCTIONS

### **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 PANEL

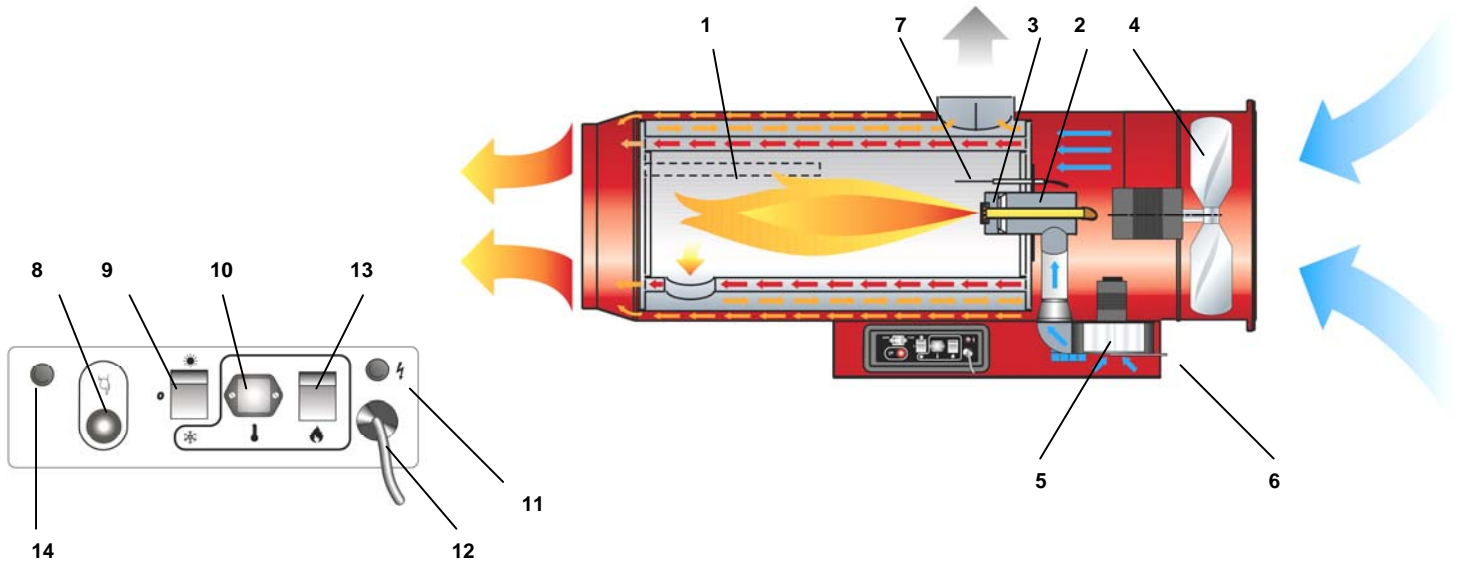
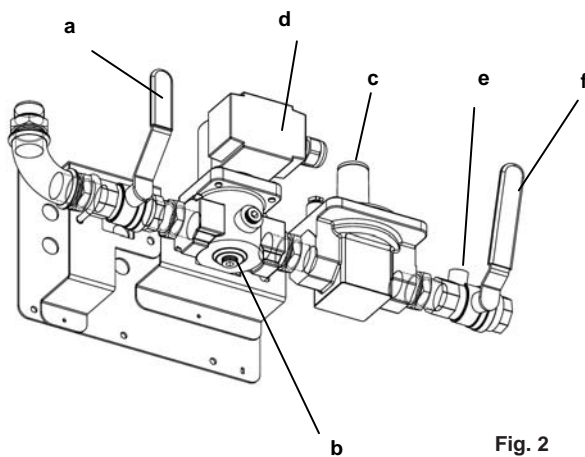


Fig. 1

- |   |                                |    |                            |
|---|--------------------------------|----|----------------------------|
| 1 | COMBUSTION CHAMBER             | 9  | HEATING-VENTILATION SWITCH |
| 2 | BURNER                         | 10 | ROOM THERMOSTAT PLUG       |
| 3 | DIFFUSION RING                 | 11 | CONTROL LAMP               |
| 4 | COOLING FAN                    | 12 | POWER CORD                 |
| 5 | BURNER FAN                     | 13 | BURNER LIGHT               |
| 6 | AIR BURNER REGULATION          | 14 | PHASE / NEUTRAL INDICATOR  |
| 7 | IONISATION ELECTRODE           |    |                            |
| 8 | RESET BUTTON WITH CONTROL LAMP |    |                            |

## MANIFOLD ASSEMBLY



- |   |                                   |
|---|-----------------------------------|
| a | GAS SELECTOR VALVE                |
| b | MANIFOLD PRESSURE PORT (MANIFOLD) |
| c | MANIFOLD PRESSURE REGULATOR       |
| d | MAIN GAS VALVE                    |
| e | INLET PRESSURE PORT               |
| f | SHUT OFF / FIRING VALVE           |

Fig. 2

## DESCRIPTION

The hot air generator is designed for heating medium and large ventilated premises, for which a fixed or mobile heating system is required.

Heater is to be run on heating with natural gas or L.P.G. according to gas supply pressures that must be in conformity with the national laws.

Gases to be used are indicated in Tab. I together with the supply pressures, the regulation of the gas valves group (burner pressure) and gas flow.

Heater is supplied after a complete functional test and it's therefore prearranged for one of the working gas indicated in Tab. I: an adhesive label applied on the gas selector valve (a) indicates the selected gas.

To change the type of gas, follow the detailed instructions indicated in section "CHANGING TYPE OF GAS".

The heater is of the indirect combustion type. The air is heated by the energy developed during combustion and then conveyed to the environment to be heated while a chimney takes away smokes and combustion products.

In the event of serious malfunction various safety devices (electronic flame control unit, overheating thermostat, air pressure switch) trigger turning off the heater .

The electronic flame control unit monitors if the flame is irregular or goes out, the safety thermostat triggers when the temperature in the combustion chamber exceeds the safety limit value, the air pressure switch will cut in if the airflow is insufficient.

In each of the said cases the unit stops according to the procedure described in "OPERATING INSTRUCTIONS".

In each of the said cases the lamp (8) will light up and the heater will stop working. The heater can be restarted only by pressing the reset button (8). Nonetheless, the cause that triggered the safety device should always be carefully analyzed and resolved before restarting the generator (cfr. "FAULTS, CAUSES AND REMEDIES").

## GENERAL ADVICES

Installation, setting and use of the heater must be effected in accordance with the applicable regulations and laws relating to machine use.

### Warning



**Check with your local fire safety authority if you have questions about applications**

Here are a few guidelines which shall be followed:

- The instructions in this manual are carefully followed;
- Minimum clearances from combustible material must be:
  - 1 m (3 feet) from side and rear (air inlet) of heater
  - 1.5 m (5 feet) on top of heater
  - 3 m (10 feet) on air outlet of heater.
- Heater shall not be directed toward any propane-gas container within 6 m (20 feet) and minimum clearances from gas cylinder must be 3 m (10 feet)
- Don't install the heater in places where there may be a risk of fire or explosion
- All fire prevention regulations must be adhered to.
- For air distribution use only original ductworks type M1 Spiraflex from distributor and respect max length as declared in Tab. I
- The room or building which is being heated must be sufficiently ventilated so that the heater has enough air to function properly;
- The air suction and/or supply pipes are not blocked in any way, there are not sheets or covers resting on the machine or walls and bulky objects near the heater;
- The generator is placed near a power switchboard having specifications in conformity with those declared;
- The heater is installed near a chimney to vent products of combustion (see the paragraph "CHIMNEY LAY-OUT RECOMMENDATION") and connected to an electrical switchboard;
- 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;

- The unit is placed in a fixed position;
  - The generator is regularly monitored during operation and checked before being started up;
  - Don't let animals or children near the heater.
  - Make sure heater is inspected before each use, and at least annually by a qualified service person.
  - After use make sure the disconnecting switch is off.
- When using any type of heater it is obligatory:
- not to exceed the maximum level of heat output of the furnace ("TECHNICAL SPECIFICATION TABLE");
  - to make sure that there is adequate air circulation and air supply to the heater and that nothing is obstructing the aspiration and expulsion of air; movement of air may be obstructed in various ways including placing covers or other objects on the heater or positioning the heater too near a wall or other large object. If the airflow is not adequate, the combustion chamber will overheat and the overheat thermostat will turn the burner off ("OBSERVED FAULTS, CAUSES AND REMEDIES").

## INSTALLATION INSTRUCTION

### Warning



**All the operations described in this paragraph must be performed by professional and skilled 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.

### Warning



**In case of installation in greenhouses, mechanical ventilation shall be interlocked to the heater operation or permanent openings shall be fixed for ventilation air.**

## ELECTRICAL CONNECTIONS

### 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.**

Every heater is supplied along with the safety and control devices which are indispensable to the correct functioning of the unit being already electrically connected.

### 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.**

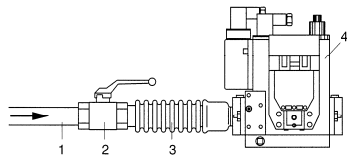
The following operations must now be carried out:

- Plug in the power cord having read the rating plate that specify electric supply characteristics.
- Connect accessories such as the room thermostat or clock to the unit's control panel with the thermostat receptacle.

Having completed all these operations check carefully that all electrical connections correspond to the wiring diagram. When the heater is first turned on you must check that the fan does not use more current than the maximum permitted limit.

## GAS LINE CONNECTIONS

The connection to the gas feed pipe, whose sizes must correspond to the kind of system to be made, must be carried out by placing the "gas ramp" as indicated in Fig. 3: the gas pipe, the interception tap and the anti-vibration joint are not supplied with the heater and they must be arranged by the person in charge of installation.



- |                         |                          |
|-------------------------|--------------------------|
| 1 Main gas pipe         | 3 Antivibrating coupling |
| 2 Manual shut-off valve | 4 Gas valves group       |

Fig. 3

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:

- 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*.
- 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)
- the cylinder supply system shall be arranged to provide for vapour withdrawal from the operating cylinder;
- the gas shall be turned off at the propane supply cylinder when the heater is not in use;
- 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.

### 1° STARTUP

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.

### 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:

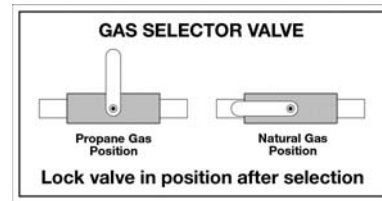


Fig. 4

- 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 (b),
- 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

### OPERATING INSTRUCTIONS

#### Warning



**Any time the power cord of the heaters is connected to a receptacle, check the polarity of power supply:**

- check switch (9) and (13) are on "0"
- connect plug to receptacle
- if lamp (14) lights up, then reverse polarity

#### Warning



**If the correspondance of phase / neutral polarity is not correct, the unit may stop in the reset mode.**

## HEATING MODE

### Turning ON

- Make sure switch (9) is on "0";
- Power the heater by means of the sectioning switch on the switchboard;
- If the unit is operated manually turn the switch (9) to ❄️  
The burner starts up, the combustion chamber heats up and then the fan starts;
- If the unit operates automatically set the room thermostat at the desired level and turn the control knob (9) to ❄️ the heater will now start and stop automatically.
- If after these operations, the generator does not work, refer to the "FAULTS, CAUSES AND REMEDIES" paragraph and find the cause.

### Turning OFF

In manual operation turn control knob (9) to "0" or turn off control in automatic operation.

After switching off the machine, a post ventilation time is electronically set by a control flame box to lower the combustion chamber temperature (usually postventilation lasts for 90 sec).

### Warning



Finally, close the gas supply stopcock, close the shut-off valve (f) and turn off the sectioning switch (Fig. 1-2).

## VENTILATION MODE

To obtain the ventilation effect only, simply turn the switch (9) to the position marked by the symbol ☀️ to start the machine. To stop it, turn the switch to "O"/OFF (Fig. 1).

### Warning



Whichever be the reason, the unit try to restart once. If the cause of malfunction remain, the unit definitely stop and lamp (8) will light up

The heater can be restarted only by pressing the reset button (8). Nonetheless, the cause that triggered the safety device should always be carefully analyzed and resolved before restarting the generator (cfr. "FAULTS, CAUSES AND REMEDIES").

## TRANSPORT AND HANDLING

### Warning



Before moving the unit:

- Stop the machine as indicated in the "STOP" paragraph;
- Disengage the power supply by removing the plug from the power socket;
- Close the gas supply stopcock and shut-off valve (f);
- Fully unscrew the fitting connecting the gas hose pipe to the heater;
- Wait for the heater to cool down.

The hot air generators with wheels must be wheeled.

## MAINTENANCE

To regulate operation of the unit, the fans, combustion chamber and the burner must be at least annually inspected and periodically cleaned by a qualified service person.

### Warning



Before performing any maintenance operation:

- Stop the machine as indicated in the "STOP" paragraph;
- Disengage the power supply by removing the plug from the power socket;
- Close the gas supply stopcock and shut-off valve (f);
- Wait for the heater to cool down.

During cleaning any foreign bodies must be removed from the fan suction grille.

To access the burner, remove the flame guard panel (4) by removing the four screws and clean carefully inside the combustion chamber and the whole burner head: any debris shall be taken away.

### Warning



Do not direct jets of compressed air towards the air pressure points near the main fan: the air pressure switch could be permanently damaged.

Cleaning of the burner shall be regularly performed by qualified service person. To access the burner, remove the flame guard panel of combustion chamber (front side) and clean carefully inside the combustion chamber and the whole burner head and electrodes.

### Warning



After cleaning, the flame guard panel of combustion chamber (4) must be put back in place and secured with the relative screws before operate the heater.

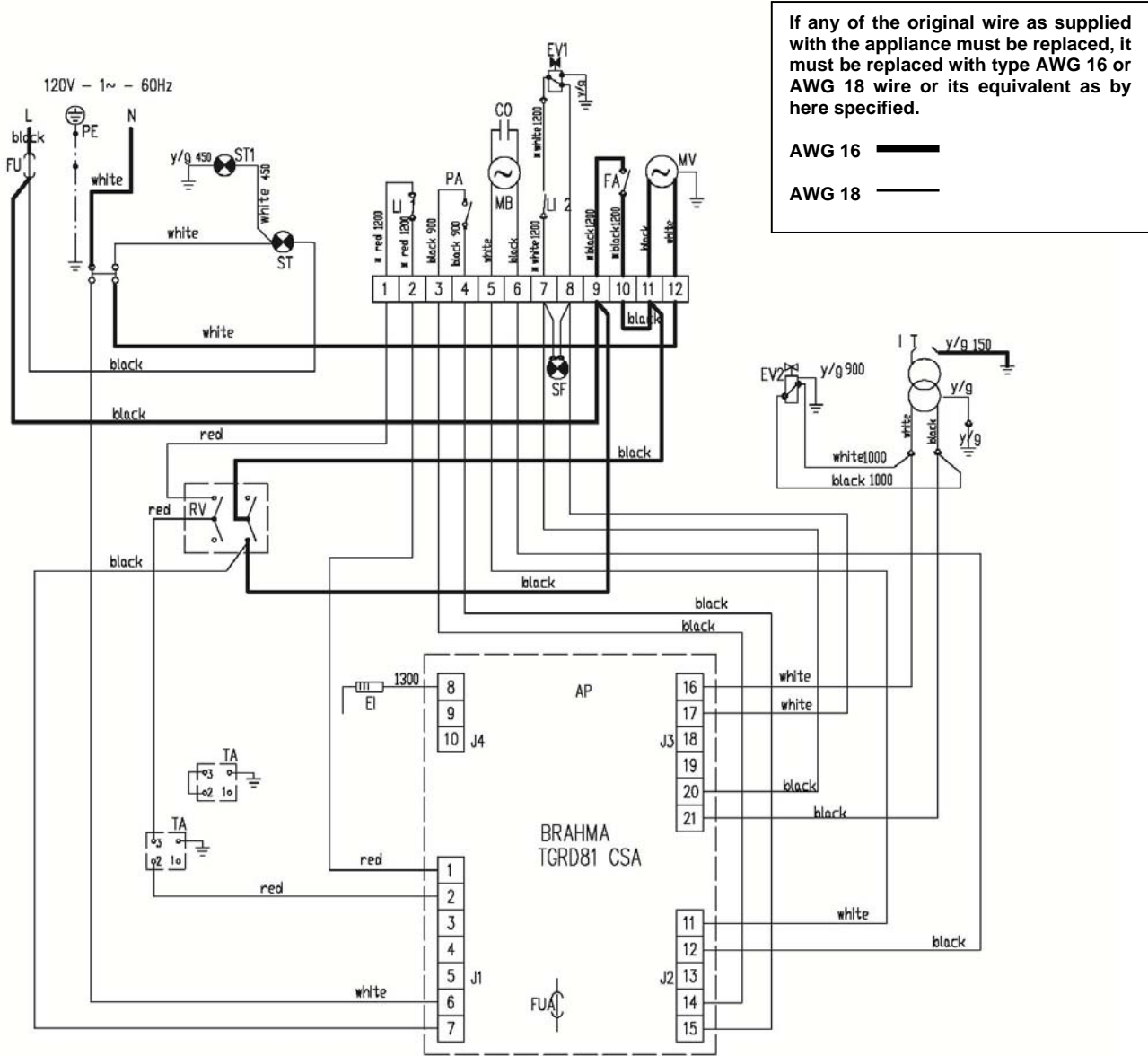
Operating the heater without the flame guard panel of combustion chamber (4) can cause the flame to work with risk to the health of exposed persons (because of formation of carbon monoxide, CO) and constituting a danger for the environment.

## TROUBLESHOOTING GUIDE

FAULTS	CAUSES	REMEDIES
<ul style="list-style-type: none"> <li>The generator fails to start</li> </ul>	<ul style="list-style-type: none"> <li>No power supply</li> </ul>	<ul style="list-style-type: none"> <li>Check power specifications</li> <li>Check power connections</li> <li>Check fuse integrity</li> </ul>
	<ul style="list-style-type: none"> <li>Main switch in wrong position</li> </ul>	<ul style="list-style-type: none"> <li>Select correct position</li> </ul>
	<ul style="list-style-type: none"> <li>Faulty operation of room thermostat</li> </ul>	<ul style="list-style-type: none"> <li>Check thermostat position</li> <li>Check thermostat operation</li> </ul>
	<ul style="list-style-type: none"> <li>Safety device (control unit, safety thermostat, etc.) not reset after a repair</li> </ul>	<ul style="list-style-type: none"> <li>Press button (1) on the control panel</li> </ul>
<ul style="list-style-type: none"> <li>The generator stops and the indicator light (1) comes on</li> </ul>	<ul style="list-style-type: none"> <li>Gas pressure switch trips due to interruption of gas flow (gas pressure switch electric contact does not close during operation)</li> </ul>	<ul style="list-style-type: none"> <li>Make sure the gas supply hose has been bled</li> <li>Check gas supply pressure</li> </ul>
	<ul style="list-style-type: none"> <li>Micro-switch PAM intervention for fan malfunction</li> </ul>	<ul style="list-style-type: none"> <li>Make sure the suction and feed grilles are not blocked</li> <li>Make sure the fan is turning properly</li> <li>Check the electric motor and capacitor and, if these are faulty, replace</li> </ul>
	<ul style="list-style-type: none"> <li>The flame sensor is not operating correctly</li> </ul>	<ul style="list-style-type: none"> <li>Remove the flame sensor and clean</li> </ul>
	<ul style="list-style-type: none"> <li>The safety thermostat trips due to overheating of the combustion chamber (the thermostat electrical contact does not close during operation)</li> </ul>	<ul style="list-style-type: none"> <li>Make sure the suction and feed grilles are not blocked</li> <li>Make sure the environment is well ventilated</li> <li>Make sure the warm air can exit freely</li> <li>Make sure the flow and pressure of the gas are not too high</li> </ul>
	<ul style="list-style-type: none"> <li>Control unit trips due to irregular operation of burner</li> </ul>	<ul style="list-style-type: none"> <li>Contact After-Sales Service</li> </ul>
	<ul style="list-style-type: none"> <li>Faulty gas pressure switch</li> </ul>	<ul style="list-style-type: none"> <li>Check the pressure switch and, if necessary, replace</li> </ul>
	<ul style="list-style-type: none"> <li>Faulty micro-switch PAM</li> </ul>	<ul style="list-style-type: none"> <li>Check the micro-switch and, if necessary, replace</li> </ul>
	<ul style="list-style-type: none"> <li>Faulty electronic control unit</li> </ul>	<ul style="list-style-type: none"> <li>Check the unit and, if necessary, replace</li> </ul>
	<ul style="list-style-type: none"> <li>Faulty thermostat</li> </ul>	<ul style="list-style-type: none"> <li>Check the thermostat and, if necessary, replace</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>Little air circulation</li> </ul>	<ul style="list-style-type: none"> <li>Eliminate any obstacles to proper air flow</li> </ul>



# WIRING DIAGRAM



If any of the original wire as supplied with the appliance must be replaced, it must be replaced with type AWG 16 or AWG 18 wire or its equivalent as by here specified.

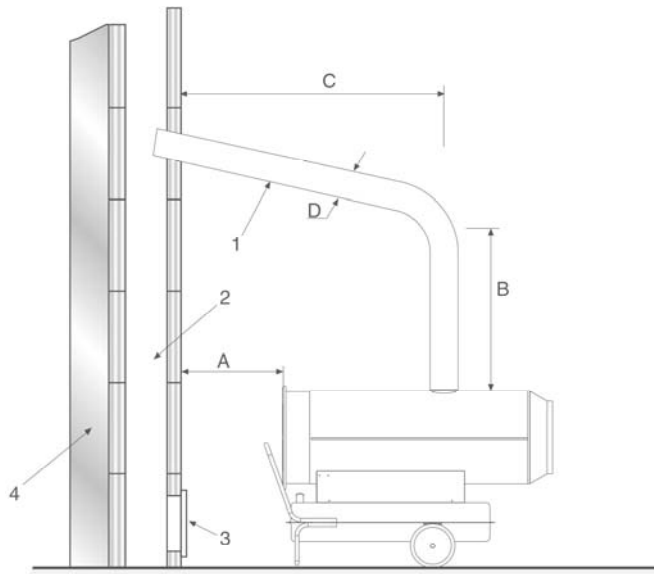
AWG 16 **————**

AWG 18 **————**

- AP CONTROL BOX
- FU FUSE
- EL IONIZATION ELECTRODE
- FUA FUSE
- LI POVERHEAT THEMOSTAT
- PA PRESSURE SWITCH 20 Pa
- RE2 DELAY STARTING RELAY (opt.)
- TA ROOM THERMOSTAT PLUG
- IT TRANSFORMER H.T.
- CO CAPACITOR

- RV HEATING SWITCH
- RE MOTOR RELAY
- ST CONTROL LAMP
- EV GAS TRAIN
- MV COOLING MOTOR
- RV1 VENTILATION MODE SWITCH
- RE1 POST-VENTILATION RELAY
- R ANTIMOISTURE RESISTANCE (opt.)

## CHIMNEY LAY-OUT RECOMMENDATION



### DESCRIPTION

A) Minimal 1 m

B) Minimal 1 m

C) The shortest

D) The same or bigger than the smokes outlet diameter of heater

E) Minimal 1 m

1) Horizontal crossing with minimal upside angle pitch of 5°

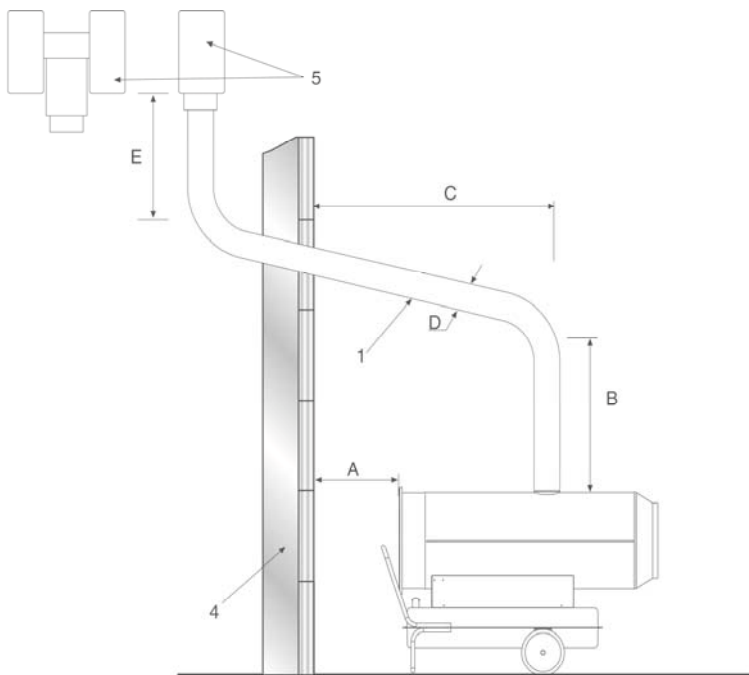
2) Chimney 20 x 20 cm of minimal inside measure

3) Chimney anti-explosion flap door

4) External seating wall

5) Chimney ending H shape

**N.B. Above recommendation indicative only.  
Have your installation checked by local authority.**



TECHNICAL SPECIFICATIONS			PHOEN/N 380	
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]	380.548
		Manifold pressure	[in w.c.]	6,40
		Adjustment of combustion air flap	[N°]	3
	Altitude 2,000 - 4,500 ft above sea level (Canada only)	Fuel consumption	[CFH]	355,97
		Heat input	[BTU/h]	342.493
		Manifold pressure	[in w.c.]	6,07
		Adjustment of combustion air flap	[N°]	10
Fuel consumption	[CFH]	320,37		
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.
		Heat input	[BTU/h]	383.871
		Manifold pressure	[in w.c.]	6,52
		Adjustment of combustion air flap	[N°]	3
	Altitude 2,000 - 4,500 ft above sea level (Canada only)	Fuel consumption	[CFH]	147,47
		Heat input	[BTU/h]	344.939
		Manifold pressure	[in w.c.]	6,19
		Adjustment of combustion air flap	[N°]	10
Fuel consumption	[CFH]	132,52		
Air flow			[cfm]	3.250
Power supply	Phase			1
	Voltage		[V]	120
	Frequency		[Hz]	60
Electric consumption			[W]	1.400
			[A]	12,5
Fuse size (T type)			[A]	20
Ring nozzle			[in]	N. 12 holes x 0,106"
Flue diameter			[in]	5,91
Compulsory flue draft			[in]	0,05
Maximum air temperature			[°F]	250
Max. operating pressure elec. gas valve			[psi]	2
Gas inlet connection thread				3/4" NPT
Air distribution duct	Max Static pressure		[in]	0,60
	Max length 1 way - dia 20"		[ft]	100
	Max length 2 ways - dia 16"		[ft]	60
	Max length 3 way - dia 12"		[ft]	25
Noise level at 1 m			[dBA]	74
Heater	Dimensions, L x W x H		[in]	82,6 x 33,9 x 48,8
	Weight		[lb]	430
Packaging	Dimensions, L x W x H		[in]	85,8 x 29,1 x 49,6
	Weight		[lb]	485

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