

**User's Manual - GB**

direct fired air heater



Dear customer : thank you very much for choosing our products, it's our pleasure to offer you our products and service. Please read the user manual carefully before using the appliance and operate following the operation instructions in this manual, in order to prevent fire or other accidental danger. Keep this manual in a safe place for future reference. Any understanding problem relates to this manual please contact your dealer.

**Warning** : During operation always provide adequate ventilation and keep a 2.5 m safety distance away from combustible articles.

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## safety warnings

For your own and other's safety please read this USER'S MANUAL and follow its instructions carefully.

### △ Danger

1. Never use the heater where flammable vapors may be present, there is danger of explosion, fire and burning.
2. Always provide adequate ventilation during the use. Only use the appliance in well ventilated area, the air must be regular exchanged during the use (two times/one hour, inadequate burning caused by oxygen shortage can cause carbon monoxide poisoning.

### □ Warning

1. It's need a standard reducer and hose when you use this machine. (specification of reducer : pressure  $P_u=700\text{mbar}$  , flow rate  $Q_n=1.5\text{kg/h}$  )
2. Don't use spay products at the location where the heater is used , the gas from the spay tin can cause danger of fire and explosion.
3. Don't use the appliance in place with combustible powder ( wastepaper, wood crumbs, fibre scraps , if these powder are sucked in the heater and heated up, flake and spark may be ejected out and cause fire and burning danger.
4. Never block air inlet or heating part , it can cause abnormal burning and fire.
5. Never modify the heater, alteration may cause malfunction and fire, is very dangerous.
6. Don't expose the appliance to rain or snow, never use it in humidity places either. Pull out the plug before the routine maintenance and examination.

### △ Attention

1. In order to prevent fire while in operation, please don't place articles near the heater. Keep all combustible materials away from heater. Minimum clearances: Outlet (front) 2.5M , air inlet (rear) 2M , top 2M , side 2M.
2. While in operation , make sure that the ground surface does not overheat , overheating may cause fire.
3. Do not fill fuel tank while heater is in operation, make sure the heater stopped and the flame extinguished before you fill the tank. Filling while in operation may result causing fire.
3. Before use the appliance, make sure that the voltage and frequency on site is in accordance with the ones shown on rating plate.

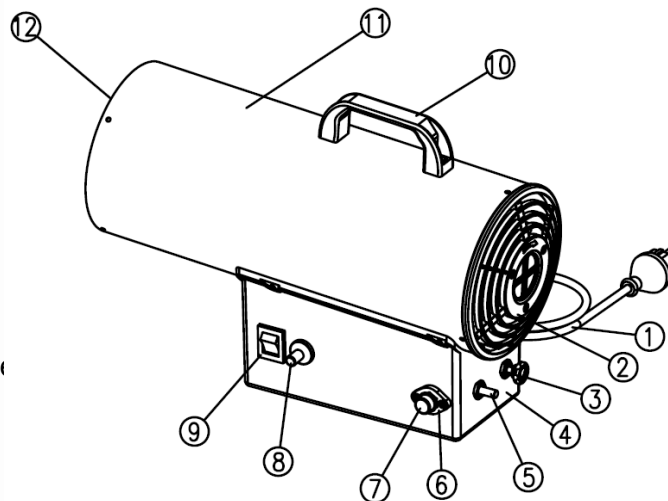


## Brief introduction of products

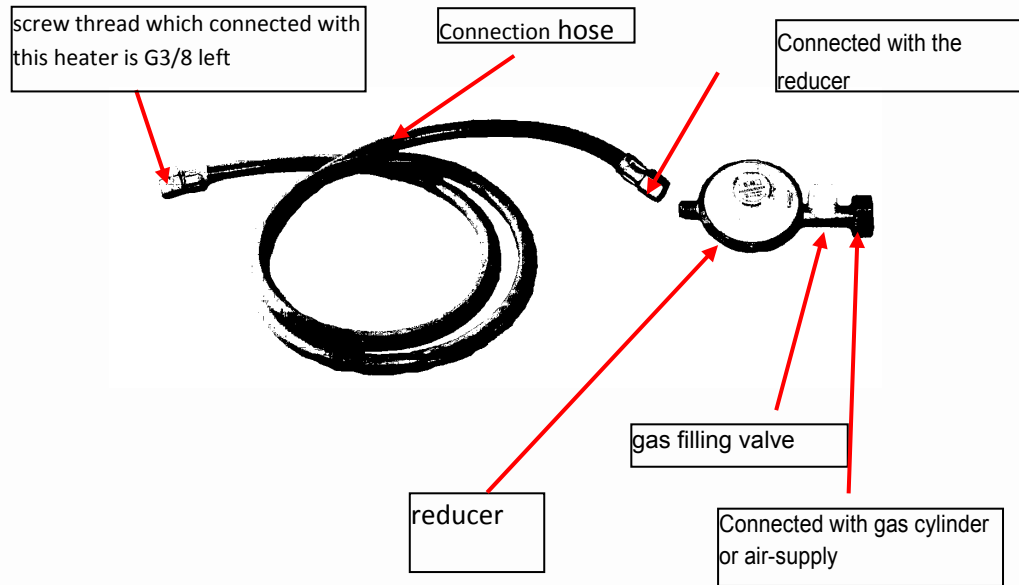
- 1 , This heater is a direct fired air heater, it incorporates a fan motor to increase air circulation and enhance the oxygen supply to ensure the effective gas burning. It warms up the room as a space heater. By adopting the method of direct fired air heating, it can achieve high heat input while keeps the energy consumption.
- 2 , This product incorporates a multifunctional electromagnetic control device which enables power shutoff-, flame failure- and overheating protections. The three kinds of protections prevent the gas leakage and potential carbon monoxide poisoning and fire danger induced by gas leakage.
- 3 , A gas rate adjustment valve is installed in this product, so the heat input can be regulated to fulfill variable requirements at different locations.

## Overview of appliance

1. power cord
- 2 rear grid
- 3 plastic knob
- 4 control box
- 5 flameout protector
- 6 fixation nut for gas inlet
- 7 protection guard
- 8 igniter
- 9 power switch
- 10 plastic handle
- 11 enclosure
- 12 air outlet grid

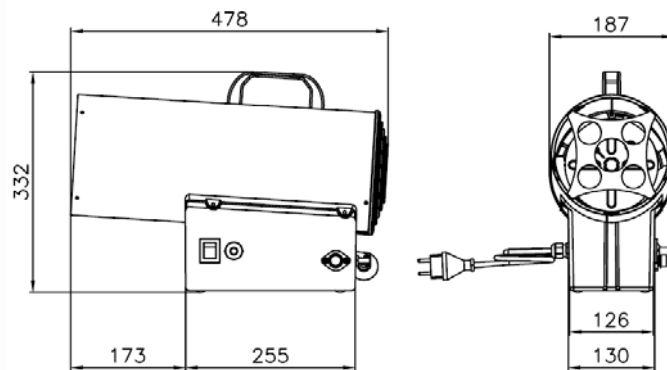


## Introduction of pressure reducing value and hose



**Attention :** In order to use the machine safely, please configure the correct reducer and hose. The reducer of this machine which requested is: pressure  $P_u=700\text{mbar}$ , flow rate  $Q_n=1.5\text{kg/h}$ . Please try to use the reducer as the same as (or the similar) the picture.

## Dimensions






## Technical data




Gas pressure	Rated voltage	Motor power input	Max. gas consumption	Max. heat input	Hot air output
0.7bar	230V 50Hz	25W	1.11 Kg/h	15KW	300m <sup>3</sup> /h

## Operation instructions

1. Prepare a full cylinder gas according to the heating requirements and make sure the gas pressure gets 1.5 bar. Connect one end (with pressure adjusting valve) of the gas hose to gas cylinder, tighten the connector nut to make sure no gas leakage happens. ( Figure 1 )
2. Put the heater on a stable working underground, take away the protection guard from the machine , connect the other end of gas hose with machine and tighten the locking connector nut to ensure the soundness of the gas inlet. ( Figure 2 )
3. Open the gas tap , press down the button of the pressure regulator to let the soft hose be filled with gas , check the soundness of the connection again. ( Figure 3 )
4. Set the regulator to the maximum setting. ( Figure 4 )
5. Make sure the machine is proper connected with the gas cylinder and the power switch is at the "OFF ( O ) "position , plug the power plug in the socket outlet , shut on the power switch ( put the power switch at the "ON ( 1 ) "position. ( Figure 5 )
6. When the turning of the fan blades becomes stable , use the right hand to push the aluminum handspike of the flameout protector and keep for 10 seconds, then use the left hand to press the igniter button for ignition , after the gas ignites keep on pressing the handspike for another 10 seconds then release the right hand and the gas will burn continuously. ( Figure 6 )
7. Turn the adjustment knob to regulate the flame length and make it comply with the corresponding heat input.
8. Repeat the above 3-7 steps when the machine runs out of gas and a new full cylinder is to be replaced.

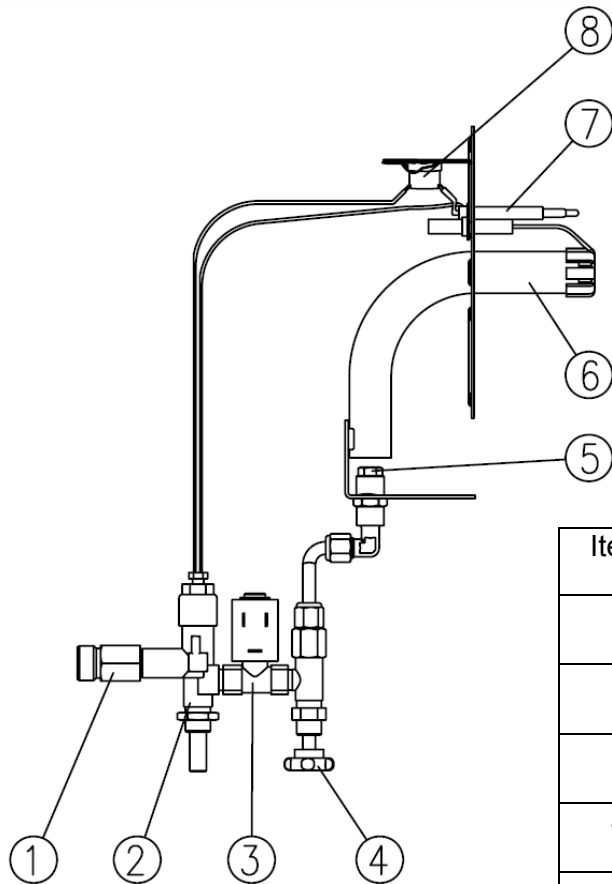
**Attention : when you operate the machine according to the above procedures and the heater doesn't operate correctly after three times ignition, never try to ignite again under this condition. There is explosion danger caused by high gas concentration ! Contact your dealer in time to clear the reason of malfunction.**

		
Tighten the connector according to the arrowhead direction	Tighten the connector according to the arrowhead direction	Open the gas supply tap according to the arrowhead direction

		
Press down the pressure regulator	Put the power switch at position "1"	Ignite



## Gas supply circuit

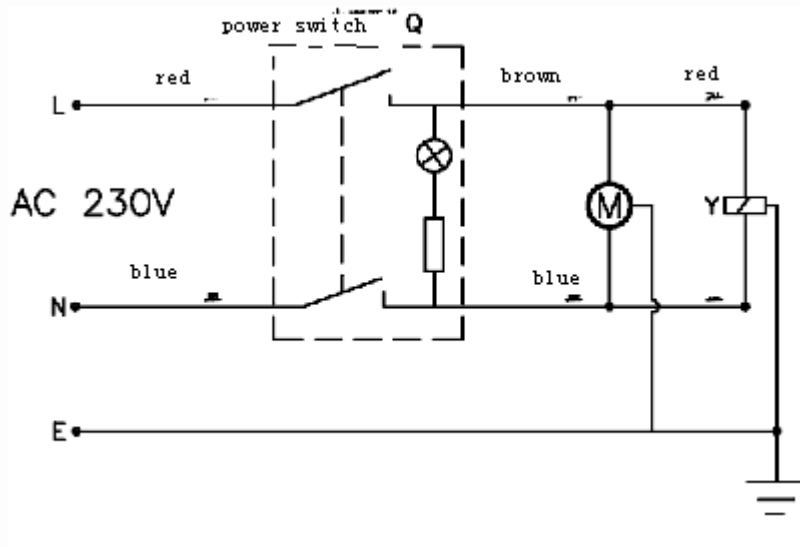


Item	Parts name
1	Gas inlet connector
2	Flame failure protector
3	Electromagnetic valve
4	Gas rate regulator
5	Gas nozzle
6	Burning head
7	Thermocouple
8	Thermostat

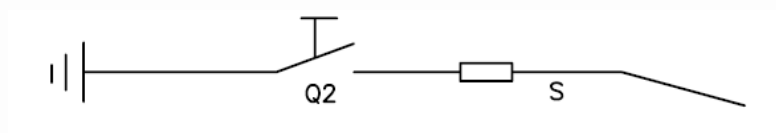
### Working principles

When the machine is connected to the gas supply, the gas passes in sequence the following parts: 1. Gas inlet 2. Flameout protector 3. Electromagnetic valve 4. Gas rate adjustment valve 5. Gas nozzle 6. Being ignited by the high-voltage spark plug and burning at the burning head 7. Current occurs in the thermocouple due to the heat output by gas burning. 8. The thermostat activates an electric circuit to enable the small electromagnetic valve in the flameout protector magnetizing the armature of flameout protection valve, the gas passes through and burns continuously.

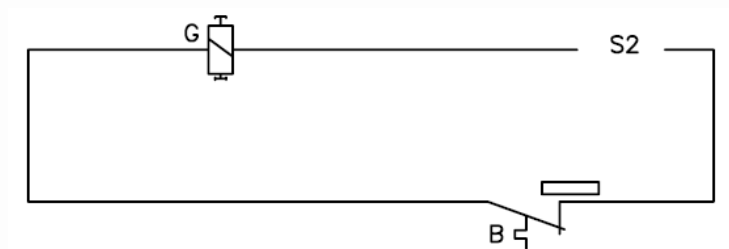
## Electric circuit



Motor, electromagnetic valve circuit



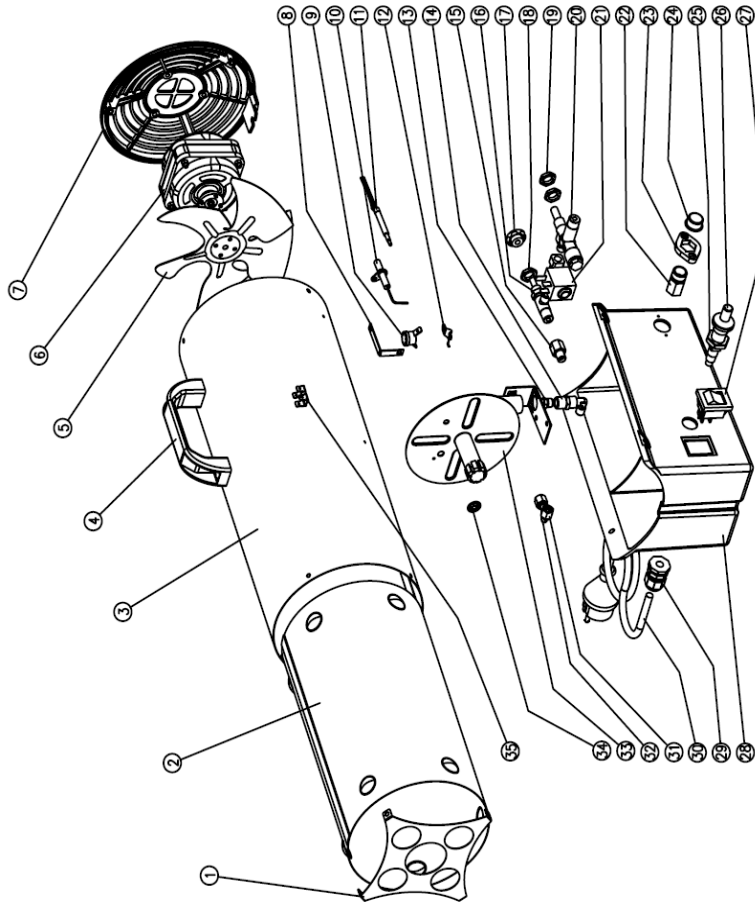
Ignition circuit



Flameout protection circuit

B thermostat    G integral electromagnetic valve in the flameout protector  
 M fan motor    Q power switch    Q2 igniter    S ignition needle    S2  
 thermocouple    Y electromagnetic valve    C capacitor

## Exploded parts drawing



### Parts name

item	name
1	Front grid
2	Heat insulation plate
3	Enclosure
4	Plastic handle

item	name
5	Fan blade $\phi 172$ 19°
6	Motor 25W 230V/50-60Hz IP44
7	Rear grid
8	Thermostat supporter
9	Thermostat operation temperature 85°C
10	Ignition needle
11	Thermocouple
12	Thermostat clip
13	Gas nozzle
14	Nozzle seat
15	Connector
16	Adjustment valve
17	Plastic knob
18	Fixation nut M12×P1.0
19	Fixation nut M12×P1.0
20	Lameout protector
21	Electromagnetic valve
22	Gas inlet connector
23	Fixation nut for gas inlet
24	Protection guard
25	Fixation nut for igniter
26	Igniter
27	Power switch
28	Control box
29	Cord fixation head
30	Power cord
31	Cap connector
32	Copper tube
33	Burning head
34	Thermocouple clip
35	Earthing terminal

## Trouble shooting

Problem	Heater does not start	Heater does not ignite	Flameout while burning	Insufficient heat input	Solution
No power	●				Make sure the power is proper connected
Low voltage	●				Resolve the problem which causes low voltage
Flame failure protection handspike was not pushed to proper position		●			Push the handspike to proper position
Gas exhausted		●	●		Replace the gas cylinder
Power failure	●		●		Re-ignition after the power recovers
The knob was not set at maximum setting		●			Adjust the knob to maximum setting
The knob was not set in the proper setting position				●	Adjust the knob setting
Thermostat operated			●		Remove the cause after the heater cools down, then ignite and operate the heater
Others	●	●	●	●	Contact service personal or your dealer