

## **Owner's Manual & Safety Instructions**

**▲ WARNING**

Read this manual before using this product.  
Failure to do so can result in serious injury.  
**SAVE THIS MANUAL.**



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**General Safety Warnings:** Read all safety warnings, instructions, illustrations and specifications provided with this appliance. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

The term “appliance” in the warnings refers to your mains-operated (corded) appliance or battery-operated (cordless) appliance.

### 1) Work area safety

- a) Keep work area clean and well lit. Cluttered or dark areas invite accidents.
- b) Do not operate appliances in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.

### 2) Electrical safety

- a) Appliance plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) appliances. Unmodified plugs and matching outlets will reduce risk of electric shock.
- b) Avoid bodily contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is earthed or grounded.  
&D Do not expose appliances to rain or wet conditions. Water entering an appliance will increase the risk of electric shock.  
å Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the appliance. Keep @ cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
- e) If operating an appliance in a damp location is unavoidable, use a residual current device (RCD) protected supply. Use of an RCD reduces the risk of electric shock.

### 3) Personal safety

- a) Stay alert, watch what you are doing and use common sense when operating the appliance.
- b) Ensure the switch is in the OFF-position before disconnecting and picking up or carrying the appliance.

### 4) Appliance use and care

- a) Do not use the appliance if the switch does not turn it ON and OFF. Any appliance that cannot be controlled with the switch is dangerous and must be repaired.
- b) Disconnect the plug from the source before making any adjustments, changing accessories, or storing appliances. Such preventive safety measures reduce the risk of starting the appliance accidentally.
- c) Store idle appliances out of the reach of children and do not allow persons unfamiliar with the appliance or these instructions to operate the appliance.
- d) Maintain appliances and accessories. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the appliance's operation. If damaged, have the appliance repaired before use. Many accidents are caused by poorly maintained appliances.

SYMBOL	DESCRIPTION
	Read the manual before set-up and/or use.
	Do not dispose with house-hold waste.
	Conforms to relevant safety standards.

### Technical Data:

<b>Model</b>	<b>DH30KW</b>
Heat Input [kW] *	30
Air Flow Rating [m <sup>3</sup> /h]	720
Fuel Type	Diesel - Kerosene
Fuel consumption [kg/h]	<b>2.4</b>
Fuel Nozzle Size [gph]	0.80
Voltage [V/Hz]	AC220-240V/50
Air Pressure Setting [bar]	0.31
Current Rating [A]	1.1
Electrical Power [W]	230
Fuse Rating	T3.15A
<b>Dimensions</b>	
Net Weight (kg)	21
Length (mm)	880
Width (mm)	456
Height (mm)	590
Tank Capacity (l)	38
Operating range (h)	~13
<b>Standard Accessories</b>	
Fuel gauge	yes
Handle	1
Ambient thermostat	built-in
Malfunction detection light	built-in

#### Assembling:

#### 4. Assembling Instructions

Extract the heater from its carton. If the unit is anyhow damaged, do not use it and contact your dealer.

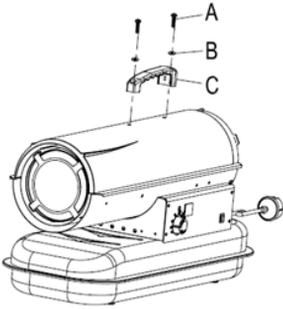
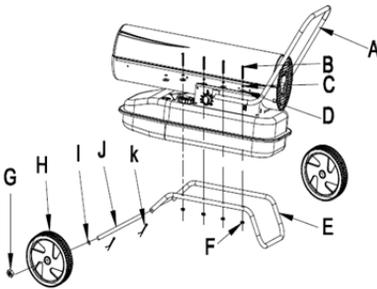


Fig.1

Pos.	Description	Qty
A	Screw	2
B	Plain washer	2
C	Handle	1



Pos.	Description	Qty
A	Handle	1
B	Screw	6or8
C	Spring washer	6or8
D	Plain washer	6or8
E	Feet pipe	1
F	Nut M5	6or8
G	Nut M12	2
H	Wheel	2
I	Plain washer $\phi$ 12	2
J	Wheel shaft	1
K	Cotter	2

To assemble the heater, proceed as follows (see Fig. 2):

1. Insert the wheel shaft J to the corresponding hole of feet pipe E, insert the cotter K to the corresponding holes; put plain washer I to the two sides of shaft, slide the wheel H over the wheel shaft J, screw the nut G to fix the wheel on the shaft.
2. Put the heater body on the feet pipe assembly, make sure the 4 holes of handle A point towards the corresponding 4 holes on the feet pipe respectively.
3. Using the screw B, spring washer C, plain washer C and nut 4 to fix the feet pipe assembly and handle to the tank.

### Installation Instructions:

Position the heater on a flat, level, non-flammable, solid surface.

Direct-fired heaters are intended for use in outdoor open areas or in indoor well ventilated areas. For indoor use, provide permanent ventilation openings of at least 25 cm<sup>2</sup>/kW, equally distributed between floor and high level, with a minimum of 250 cm<sup>2</sup>.

	BGO1601-10	BGO1601-20	BGO1601-30	BGO1601-50
Minimum Opening Size	260 cm <sup>2</sup>	600 cm <sup>2</sup>	600 cm <sup>2</sup>	800 cm <sup>2</sup>
	1250 cm <sup>2</sup>			

- Only install the heater in normal upright position.
- Do not place the heater near walls, corners or low ceilings.
- Do not place the heater below a socket outlet.
- Do not place the heater on moving vehicles or where it can tip over.
- Keep the heater away from flammable, combustible, explosive or corrosive materials.
- Keep the heater away from curtains or similar materials that could block the air inlet and outlet.
- Never block or restrict the air inlet and outlet for any reason.
- Keep the power cable away from heat sources, sharp edges, cutting and moving parts.
- Do not expose directly to the weather or to excessive humidity.
- Do not place the heater in the immediate surroundings of a bath, shower or swimming pool.

Follow general and special fire safety regulations in force in all fields of applications. In any case ensure the following minimum safety clearances from materials or objects in the surroundings of the heater:

- Side: 0.6 m
- Air inlet side: 1 m
- Top: 1.5 m
- Hot air outlet side: 3 m
- Floor: 0 m
- Floors and ceilings must be made of fireproof materials in the place where the heater is operated.
- Do not connect direct-fired heaters to air ducts.

### Application use:

#### 6.1. Start-up

Fill tank with clean fuel. Only use Diesel or Kerosene.

The fuel gauge on top of the tank allows to check fuel level

Connect the power cord plug to a 230 V 50 Hz earthed electrical supply system.

Earthing is mandatory.

When complete "start-up" above, the power indicator will light, the display window will show the ambient temperature value.

Push the power switch to "on" position.

If the thermostat control knob setting temperature is higher than the ambient temperature, the electrodes start sparking and after 7 seconds, the heater starts.

If the thermostat control knob setting temperature is lower than the ambient, turn thermostat control knob to desired temperature setting, the electrodes start sparking and after 7 seconds, the heater starts.

**COLD START-UP:** at low temperature keep the air vent hole (see Fig. 6) closed by a finger during ignition to make start-up easier.

**ABNORMAL OPERATION:** in case of malfunction (flame failure, reduced air flow, bad combustion, etc.) the heater stops and the indicator light starts **FLASHING** (THE LOCK-OUT MODE code will be showed on the display window).

### Cleaning and maintenance:

Regularly wipe the enclosure using a soft sponge or cloth. For very dirty parts, use a sponge with warm water and a mild detergent, then dry using a clean cloth.

Keep air inlet and fan free from dust and dirt. To clean inner parts, gently blow compressed air through air inlet.

Regularly inspect the power cable: if worn, cracked or damaged have it replaced by technical service.

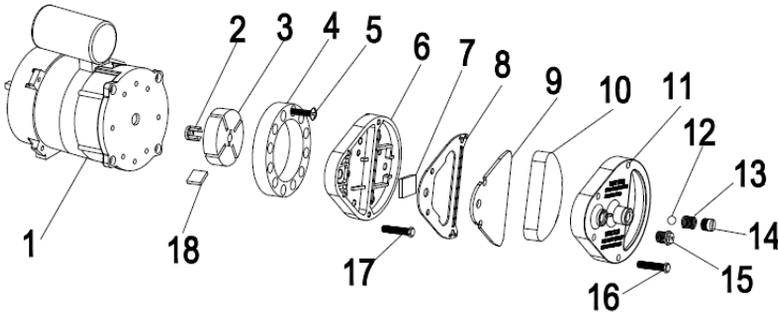
Before storing the heater, make sure it is perfectly cool and dry. Cover the unit with a plastic bag, put it in its packing box and store it in a dry, ventilated place.

#### Nozzle

Carefully unscrew nozzle from nozzle fitting. Blow compressed air through nozzle orifice to free it from dirt. Replace nozzle if necessary.

#### Air Filters

Clean air filters. Remove filter end cover (11), wash air intake filter (10) using a light detergent and dry it thoroughly before re-installing. Replace air delivery filter (9) once a year (Fig.3)



#### Ignition Electrodes

Clean, adjust and if necessary replace ignition electrode. For electrode gaps see Fig. 4-5 (dimensions in mm).

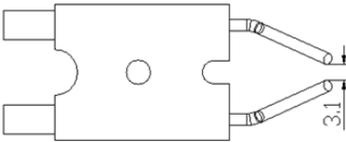


Fig.4

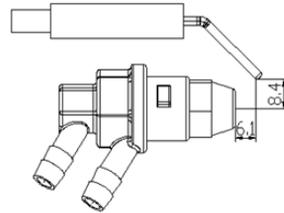
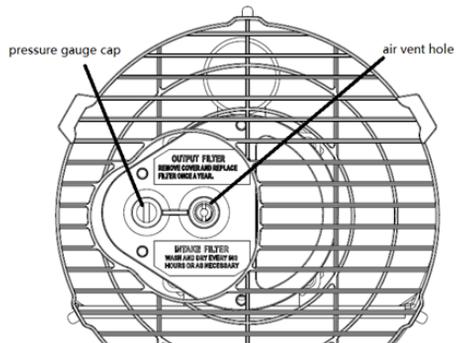
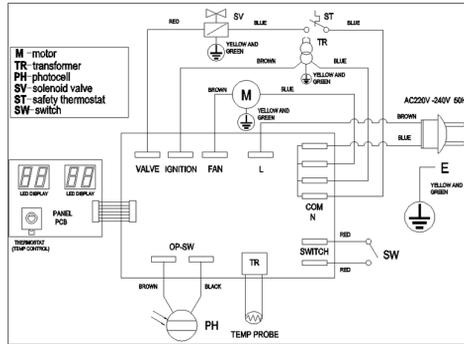


Fig.5

Remove pressure gauge cap. Connect a pressure gauge on the pressure measuring port on the rear guard. Start heater and read air pressure value. If necessary adjust pressure to the correct value turning the adjusting screw (the air vent hole in the adjusting screw middle) clockwise to increase, anticlockwise to decrease the pressure:



### Wiring Diagram:



PROBLEM	CAUSE	REMEDY
Motor does not start  E1 displayed on the screen	No power or low voltage	Check power line and voltage Check fuse and replace if necessary
	Faulty or damaged power cord	Check and replace if needed
	Faulty motor/capacitor	Check and if necessary replace
	Lock-out of appliance due to previous overheating	Detect the cause of overheating Shut the appliance down Check air inlet and outlet Wait some minutes and restart the appliance
E2 displayed on the screen	The temperature probe is faulted or the connector for temperature probe is loosen	Check and replace if the temperature probe is needed Check and replace the PCB if needed
Motor runs, but the heater does not ignite and locks out after a short time  E1 displayed on the screen	Empty fuel tank, dirty or wrong fuel	Remove wrong or dirty fuel Fill the tank with clean Diesel or kerosene
	Fuel filter clogged	Clean or replace fuel filter
	Air leaks in oil line	Check hoses, tighten connections, if necessary replace
	Burner nozzle clogged	Clean nozzle blowing compressed air, replace if necessary
Flames come out of flue outlet	Fuel viscosity increased at low temperature	Mix Diesel with 10-20% kerosene
	Insufficient airflow into combustion chamber	Check air inlet, fan, motor
E1 displayed on the screen	Compressor pressure too high	Check air pressure, adjust if needed*
Heater stops during operation  Ambient temperature displayed on the screen	The room temperature set on room thermostat has been reached	Normal operation To start turn the temperature control knob clockwise on a higher setting
Heater stops during operation  E1 displayed on the screen	Flame failure	Check and remove the cause(s) of malfunction
	Bad combustion	To reset, turn On/Off switch to 0 and then to I
	Reduced airflow	Call technical service if the problem persists
	Overheating	

**Seller Details:**

**DECLARATION OF CONFORMITY**



EC – Declaration of Conformity according to;

Machinery Directive 2006/42/EC  
Restriction of Hazardous Substances Directive 2011 / 65 / EU  
Electromagnetic Compatibility Directive 2014/30/EU

We, Toolsave Limited, located at Unit C, Manders Ind. Est., Old Heath Road, Wolverhampton, WV1 2RP, United Kingdom, declare in exclusive responsibility that the Diesel Heater meets the essential health and safety requirements of the above-mentioned directives.

To ensure presumption of conformity, the product has been assessed for compliance with the following directives and standards either in part or in full.

Directive	Requirements and / or Standards applied
Machinery Directive 2006/42/EC	EN 61029-1:2009+A11:2010 EN 61029-2-1A:2012+A11:2013
RoHS 2 Directive 2011 /65 / EU	Directive 2011/65/EU
Electromagnetic Compatibility Directive 2014/30/EU	EN 55014-1:2006/A2:2011 EN 55014-2:1997/A2:2008 EN 61000-3-2:2014 EN 61000-3-11:2000

TCF reference no. : DH30KW

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10/08/2020





**TOOLSAVE**

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