

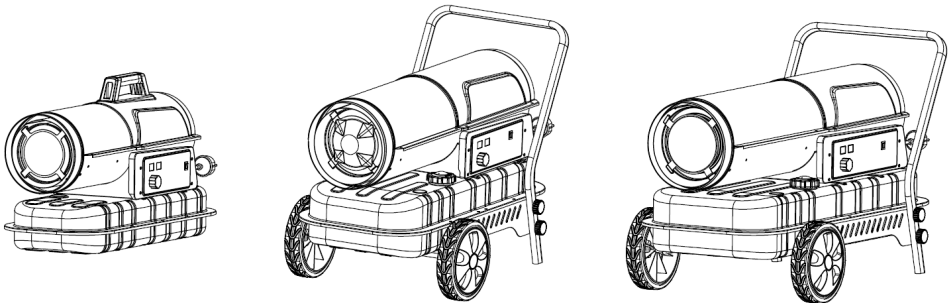


POWER EQUIPMENT

HIGH PRESSURE PRO SERIES INSTRUCTION MANUAL

DIRECT-FIRED DIESEL HEATERS

PIN HK070HF
PIN HK100HFW
PIN HK170HFW



V1.0 2024

INTRODUCTION

Thank you for choosing a BE product. Read this manual carefully before using the unit and save it for future reference.

Disclaimer

B.A.R. Group reserves the right to make alterations to specifications, quantities, dimensions etc. for production or other reasons, subsequent to publication.

While we believe the information is accurate and complete, we make no warranty or representation for any particular purposes. The information is offered in good faith and with the understanding that any use of the units or accessories in breach of the directions and warnings in this document is at the sole discretion and risk of the user.



Disposal guidelines (EU)

Do not dispose of this product with general household waste. This product must be disposed according to the laws governing Waste Electrical and Electronic Equipment. If required, contact your local authorities for information regarding the available disposal facilities.

1. GENERAL SAFETY RULES

READ INSTRUCTIONS CAREFULLY. READ AND FOLLOW ALL INSTRUCTIONS. PLACE INSTRUCTIONS IN A SAFE PLACE FOR FUTURE REFERENCE. DO NOT ALLOW ANYONE WHO HAS NOT READ THESE INSTRUCTIONS TO ASSEMBLE, LIGHT, ADJUST OR OPERATE THE HEATER.

IF THE INFORMATION IN THIS MANUAL IS NOT FOLLOWED EXACTLY, A FIRE OR EXPLOSION MAY RESULT CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR LOSS OF LIFE.

SERVICE MUST BE PERFORMED BY A QUALIFIED SERVICE AGENCY.

UNVENTED PORTABLE HEATERS USE AIR (OXYGEN) FROM THE AREA IN WHICH IT IS USED. ADEQUATE COMBUSTION AND VENTILATION AIR MUST BE PROVIDED. REFER TO INSTRUCTIONS.

WARNING

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

WARNING

FIRE, BURN, INHALATION, AND EXPLOSION HAZARD. KEEP SOLID COMBUSTIBLES, SUCH AS BUILDING MATERIALS, PAPER OR CARDBOARD, A 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

DIRECT-FIRED HEATERS MAY CAUSE CARBON MONOXIDE (CO) POISONING WHEN INCORRECTLY USED, E.G INDOORS WITHOUT ADEQUATE AIR CIRCULATION, OR IF NOT PROPERLY WORKING. CO POISONING MAY LEAD TO DEATH.

GENERAL HAZARD WARNING

FAILURE TO COMPLY WITH THE PRECAUTIONS AND INSTRUCTIONS PROVIDED WITH THIS HEATER, CAN RESULT IN DEATH, SERIOUS BODILY 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 INSTRUCTIONS MANUAL, LABELS, ETC. CONTACT THE MANUFACTURER.

WARNING

NOT FOR HOME OR RECREATIONAL VEHICLE USE

WARNING

YOUR SAFETY IS IMPORTANT TO YOU AND TO OTHERS, SO PLEASE READ THESE INSTRUCTIONS BEFORE YOU OPERATE THIS HEATER

- **THE ELECTRICAL SYSTEM TO WHICH THE APPLIANCE IS CONNECTED MUST COMPLY WITH CURRENT LEGISLATION. INSTALLATION REQUIRES A RESIDUAL CURRENT CIRCUIT BREAKER (RCCB) IN THE MAIN ELECTRICAL DISTRIBUTION BOARD.**
- **UNPLUG THE APPLIANCE BEFORE PERFORMING ANY MAINTENANCE OPERATIONS.**
- **ALWAYS CHECK THE POWER CABLE BEFORE USING THE APPLIANCE. IT MUST NOT BE BENT, TAUT, STRETCHED, CRUSHED OR ANY WAY DAMAGED.**
- **THE POWER CABLE MUST BE REPLACED BY QUALIFIED PERSONNEL ONLY. USE AN ORIGINAL POWER CABLE ONLY WITH A 3-PIN APPROVED PLUG.**
- **THE FRONT OUTLET IS VERY HOT DURING OPERATION. DO NOT TOUCH! BURN DANGER.**

2. PRODUCT DESCRIPTION

Diesel or Kerosene direct-fired mobile/portable space heater with open combustion chamber

3. TECHNICAL SPECIFICATIONS

| Model | PIN HK070HF | PIN HK100HFW | PIN HK170HFW |
|-----------------------------|-----------------------|-----------------------|-----------------------|
| Heat Input [kW] * | 20 | 30 | 50 |
| Air Flow Rating [m³/h] | 500 | 750 | 1100 |
| Fuel Type | Diesel - Kerosene-Bio | Diesel - Kerosene-Bio | Diesel - Kerosene-Bio |
| Fuel consumption [kg/h] | 1.65 | 2.4 | 4 |
| Voltage [V/Hz] | AC220-240V/50 | AC220-240V/50 | AC220-240V/50 |
| Pump Pressure Setting [bar] | 10 | 10 | 10 |
| Current Rating [A] | 0.83 | 0.83 | 1.3 |
| Electrical Power [W] | 150 | 150 | 220 |
| Fuse Rating | T3.15A | T3.15A | T3.15A |
| Dimensions | | | |
| Net Weight (kg) | 13.8 | 20.3 | 23.5 |
| Length (mm) | 752 | 845 | 1010 |
| Width (mm) | 305 | 545 | 555 |
| Height (mm) | 430 | 625 | 610 |
| Tank Capacity (L) | 22 | 38 | 50 |
| Operating range (h) | ~11 | ~14 | ~11 |
| Standard Accessories | | | |
| Fuel gauge | yes | yes | yes |
| Handle | 1 | 1 | 1 |
| Ambient thermostat | built-in | built-in | built-in |
| Malfunction detection light | built-in | built-in | built-in |

* Based on Gross Calorific Value [Hrs]

4. ASSEMBLY INSTRUCTIONS

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

PIN HK070HF: the heater only requires the plastic handle to be fitted, no further operations needed (see Fig. 1).

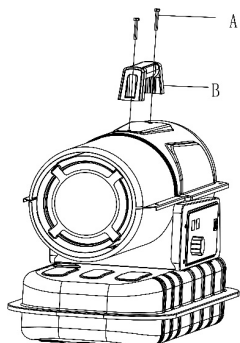


Fig.1

| Pos. | Description | Qty |
|------|-------------|-----|
| A | Screw | 2 |
| B | Handle | 1 |

PIN HK100HFW / PIN HK170HFW The following accessories are supplied in the shipping carton.

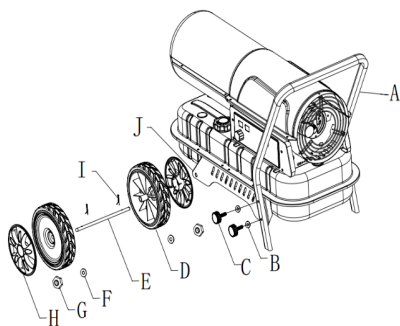


Fig.6

| Pos. | Description | Qty |
|------|-------------------------------|-----|
| A | Handle | 1 |
| B | Plain Washer $\varnothing 6$ | 4 |
| C | Clamping Screw | 4 |
| D | Wheel | 2 |
| E | Wheel Shaft | 1 |
| F | Plain Washer $\varnothing 12$ | 2 |
| G | Nut M12 | 2 |
| H | Wheel Cover | 2 |
| I | Cotter | 2 |
| K | Caster Fixing Plate | 2 |

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

1. Insert the wheel shaft E into the corresponding hole of the caster fixing plate J, insert the cotter I to the corresponding holes of the wheel shaft; put plain washer F to the two sides of shaft, slide the wheel D over the wheel shaft E, screw the nut G to fix the wheel on the shaft, Install the wheel cover H.
2. Use the clamping screw C and Plain washer $\varnothing 6$ B to install the Handle A into the corresponding hole of the caster fixing plate J.

5. 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 cm²/kW, equally distributed between floor and high level, with a minimum of 250 cm².

| | PIN HK070HF | PIN HK100HFW | PIN HK170HFW |
|----------------------|--------------------|---------------------|----------------------|
| Minimum Opening Size | 600cm ² | 800 cm ² | 1250 cm ² |

- 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.

6. INSTRUCTIONS FOR 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 AC220-240V 50 Hz earthed electrical supply system. **Earthing is mandatory.**

When complete “start-up” above, the left display window shows “--”, the right display window shows ambient temperature value.

Push the power switch to “ON”(1) position.

The default temperature setting is 20°C, be showed on the left display window.

If the ambient temperature is lower than default temperature, the electrodes start sparking, after 7 seconds, the heater starts.

If the ambient temperature is higher than default temperature, turn the thermostat control knob to desired temperature, the electrodes start sparking, 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).

6.2. Manual reset/restart

If the heater is in lock-out mode, check and remove the cause of lock-out before restarting the heater. To reset, turn the ON/OFF switch to 0 and then again to I. In case of repeated malfunction, call technical service. Turning the thermostat control knob will NOT reset the heater.

6.3. Shut-down

Move switch to “OFF” (O) position. Unplug the unit when not used for a long time.

- **Never disconnect the heater from mains to stop it while in operation. Always allow the cooling sequence to be completed, otherwise the residual heat could damage internal components.**
- **Do not cover the heater. Do not block the air inlet and outlet.**
- **The heater outlet is extremely hot during operation and after use. Do not touch! Use personal protecting equipment if needed.**
- **Children should be supervised to ensure that they do not play with the appliance.**

- **The appliance is not intended for use by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge.**
- **Unplug the heater before moving it. Never pull the cable to unplug or move the unit.**
- **Do not leave the heater unattended when in use.**
- **Never use the appliance with wet hands or when either the heater or the power cable is wet.**
- **If the supply cable is damaged, it must be replaced by the manufacturer, by a service agent or a similar qualified person.**

7. CLEANING, MAINTENANCE AND STORAGE

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

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

- **Before starting any maintenance task, shut down, unplug, and let the heater cool down for at least 15 minutes.**
- **Do not attempt any electrical repair yourself. If the heater needs service or repair, contact a qualified technician.**
- **Do not use a faulty unit unless a qualified technician has inspected and repaired it.**
- **When cleaning, make sure that water does not enter the unit.**
- **Do not open the enclosure to clean the inner parts. Do not spray water into the heater.**
- **Never use solvents, gasoline, toluene, and similar aggressive chemicals to clean the heater.**

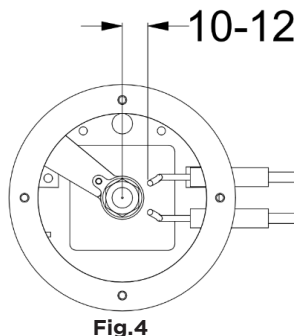
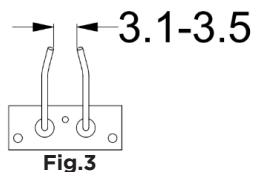
The following checks BY QUALIFIED PERSONNEL ONLY are recommended before every seasonal use:

Nozzle

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

Ignition Electrodes

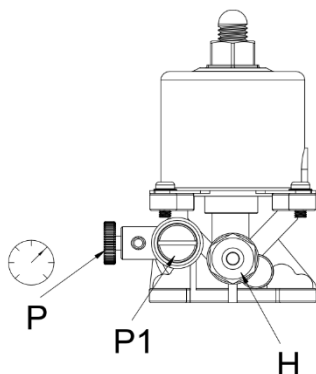
Clean, adjust and if necessary, replace ignition electrode. For electrode gaps see Fig. 3-4 (dimensions in mm).



Compressor Pressure Adjustment (Fig. 5)

- **The fuel pressure is factory set and must be checked and adjusted by qualified technicians only. Tampering with the unit may be dangerous.**

Remove pressure gauge cap (P). Connect a pressure gauge to the pressure measuring port on pump. Start heater and read fuel pressure value. If necessary, adjust pressure to the correct value turning the adjusting screw (P1) clockwise to increase, anticlockwise to decrease the pressure:



| Model | Pump Pressure (bar) |
|--------------|---------------------|
| PIN HK070HF | 10 |
| PIN HK100HFW | 10 |
| PIN HK170HFW | 10 |

Air intake adjustment (Fig. 6)

The air plate position is factory set and must be checked and adjusted by qualified technicians only. Tampering with the unit may be dangerous.

Use of bio-oil:

Due to the low heat of combustion of bio-oil compared to diesel fuel, it may be necessary to reduce the intake air volume by closing the damper. This setting adjustment is necessary to prevent excessive smoke from being generated by excessive intake air volume.

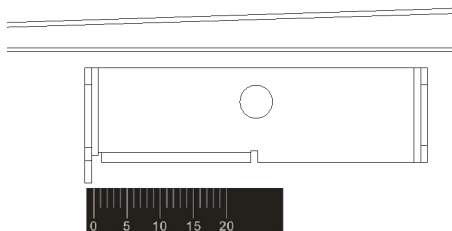
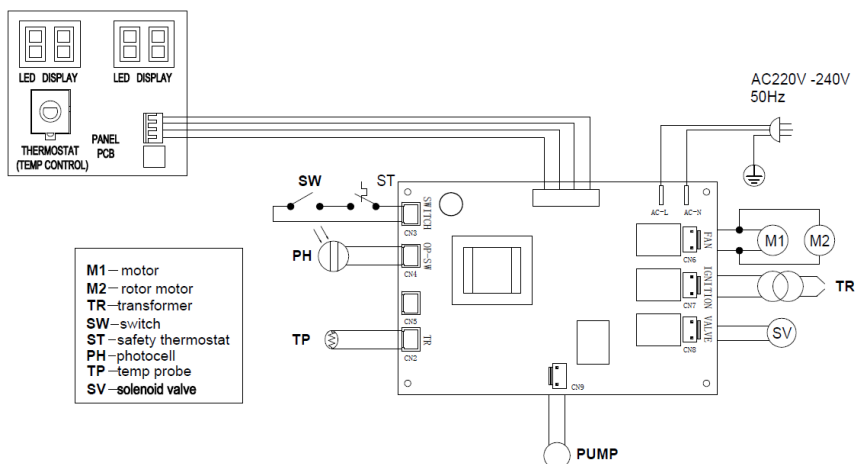


Fig. 6

Electrical

Inspect cables, electrical parts, and connections.

8. WIRING DIAGRAM

Wiring diagram for **PIN HK070HF-/100HFW/170HFW**

8. TROUBLESHOOTING

| 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 |
| | Fuel viscosity increased at low temperature | Mix Diesel with 10-20% kerosene |
| Flames come out of flue outlet E1 displayed on the screen | Insufficient airflow into combustion chamber | Check air inlet, fan, motor |
| | 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 To reset, turn On/Off switch to 0 and then to I Call technical service if the problem persists |
| | Bad combustion | |
| | Reduced airflow | |
| | Overheating | |
| LC displayed on the screen | Failed 3 times for igniting will lock the PCB and stop working | With electricity on, it will be unlocked after 3 times power switch to ON in 10 seconds; |

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