
**LPG / ULPG MOBILE INDUSTRIAL DIRECT
FIRED AIR HEATER
BY BROMIC**

**INSTALLATION, INSTRUCTION AND
SERVICE MANUAL**

**MODELS:
HF15 / HF20 / HF30 / HF50 / HF70**



**⚠ WARNING: THIS HEATER IS APPROVED FOR
INDUSTRIAL USE ONLY**



IMPORTANT: This heater should be installed and operated in accordance to the manufacturers instructions outlined within this manual. The user shall ensure that local gas fitting regulations, municipal building codes, AS/NZS 1596 and other relevant statutory regulations are adhered to. Use appliance only in a well-ventilated space. Read and understand this manual before attempting to assemble, operate and service the appliance. Keep this manual for future reference.

This manual contains important information about the assembly, operation, and maintenance of Blow Heaters. Please pay close attention to the important safety information shown throughout this instruction manual. Any safety information will be accompanied by the following safety alert symbols:

 DANGER,  WARNING,  IMPORTANT

WARNING: THIS HEATER IS APPROVED FOR INDUSTRIAL USE ONLY

DO NOT SPRAY AEROSOLS IN THE VICINITY OF THIS APPLIANCE WHILE IT IS IN OPERATION

DO NOT USE OR STORE FLAMMABLE MATERIALS IN OR NEAR THIS APPLIANCE

DO NOT PLACE ARTICLES ON OR AGAINST THIS APPLIANCE

DO NOT MODIFY THIS APPLIANCE



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GENERAL HAZARD WARNING:



IMPORTANT SAFETY INSTRUCTIONS

READ THIS MANUAL CAREFULLY BEFORE INSTALLING OR SERVICING THIS PRODUCT.

IMPROPER INSTALLATION, OPERATION, OR MAINTENANCE CAN RESULT IN DEATH, SEVERE INJURY OR PROPERTY DAMAGE.

INSTALLATION MUST BE CARRIED OUT BY AN AUTHORISED PERSON/S IN ACCORDANCE WITH AS/NZS 1596 THE STORAGE AND HANDLING OF LP GAS.

CAUTION: Equipment must be grounded.

CAUTION: Hazard of electric shock.

CAUTION: Not for use with ductwork.

CAUTION: Heater should be properly installed such that it is not directly exposed to water spray, rain and/or dripping water

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 instructions manual, labels, etc. Please contact the manufacturer.

IMPORTANT:

- This product is not for domestic use! Use only in open buildings and please abide by the relevant national and local guidelines and regulations!
- This appliance is not to be installed to fixed consumer piping

WARNING:

- Fire, burn, inhalation and explosion hazard. Keep solid combustibles such as building materials, paper or cardboard, a safe distance away from the heater. Never use the heater in spaces which do or may contain volatile or airborne combustible particles, or products such as gasoline, solvents, paint thinners, dust particles or unknown chemicals.

WHEELS ASSEMBLY (FOR HF30/HF50/HF70 ONLY):

- Remove the heater from the carton box and remove any Styrofoam transit protection and plastic packaging.
- Place the heater on its side and retrieve the packaging containing wheels and associated fasteners.
- Place the wheel on the axle and slide it on until it contacts the rear stop.
- Place a washer on the exposed threaded portion of the axle.
- Place the securing nut onto the threaded portion of the axle and rotate clockwise until wheel just freely rotates.
- Repeat steps 1-5 above for opposite axle and wheel assembly

VENTILATION:



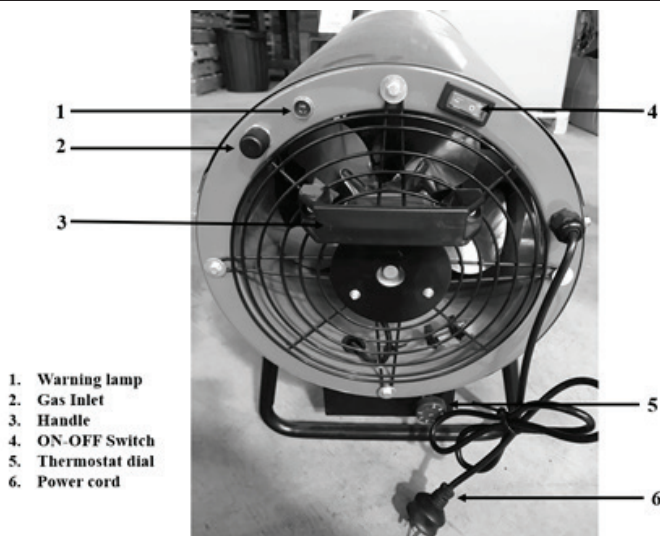
WARNING: USE ONLY IN A WELL VENTILATED SPACE

- **OXYGEN DEPLETION** - The combustion of propane and ULPG requires an adequate supply of oxygen. The appliance shall be operated in a space (measured in cubic meters), of minimum 5 times the rated gas consumption of the appliance (in MJ/h). The user shall ensure that when the appliance is in use, a permanent opening to the outside air is available for adequate ventilation. Never use the appliance in an enclosed space.
- **CARBON MONOXIDE (CO) POISONING** - Even though the direct-fired system of this heater operates very close to 100% combustion efficiency, it may still generate small amounts of CO. Some people are more affected by CO than others. The symptoms of CO effects are headache, dizziness, burning eyes and nose, nausea, dry mouth or sore throat, etc. Be sure to follow strict advice about ventilation.
- Never block the air inlet (rear) or air outlet (front) of the heater.
- Be sure to let the fan operate for at least 30 seconds before igniting the heater and a minimum of 2 minutes after the burner has stopped.
- Ventilation to the outside air must be provided at all times whilst operating the heater.

GUIDELINES OF FUEL GASES:

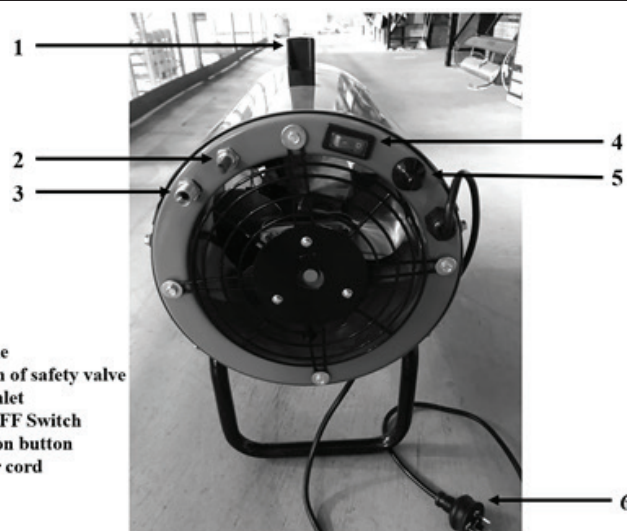
- This heater is intended for the use of temporary heating of buildings under construction, alteration or repair. There may be other local standards or regulations governing the use of fuel gases and heating products, of which the user should consult their local authority for advice.
- Propane and Butane belong to odourless fuel gases. Normally gas suppliers will add an odour-making agent to help you to detect a gas leakage. However, the added odour can diminish over time. Fuel gases maybe present even though no odour exists.
- Installation and storage of gas cylinder must be in accordance with local regulations and AS/NZS 1596.
- To check the leakage of Propane/Butane, please use a professional gas-leakage detector or with a soap and water solution. Never check for gas leaks with a flame!
- Propane and butane are heavier than air. This appliance should only be used in above ground situations with adequate natural ventilation, no stagnant areas and where gas leakage and products of combustion are rapidly dispersed by wind and/or natural convection. Do not operate this heater in basement areas and below ground.
- Always maintain proper clearances from combustible material. A minimum clearance of 2.5meters from the heater outlet and 1.25 meters from the top, sides and inlet should be observed. Never operate the appliance on elevated structures such as platforms or scaffolds.
- Install the heater such that it is not directly exposed to water spray or rain.

OPERATING INSTRUCTIONS: PRE-START CHECKS AND WARNINGS



Operator controls - Automatic model (HF30/50/70)
industrial use only, using on 13kg/45kg cylinder

- The hose assembly shall be visually inspected prior to each use of the heater. If it is evident there is excessive abrasion or wear, or the hose is cut, it must be replaced prior to the heater being put into operation. The replacement hose assembly shall be that specified by the manufacturer and of a certified approved type.
- The installation must conform with local codes, with location of and/or alternative locations of gas inlet connections to be as detailed in AS/NZS 1596, for pipe sizing and installation details.
- The heater must be located at least 1.5m from any propane gas cylinder.
- The heater discharge shall not be directed towards any ULP (Propane/Butane) gas container within 6m



Operator controls - Manual piezo model (HF15/20)
for use only on 4.5kg/9kg cylinder with a LCC27 valve.
Do not use adaptors!

- HF15 & HF20 can only be used with a cylinder that uses the LCC27 valve; No adapters are allowed to be used.
- The cylinder supply system shall be arranged to provide for vapour withdrawal from the operating cylinder only.
- When the heater is not in use, the gas must be turned off at the propane supply cylinder.
- This appliance is NOT intended to be operated on recreational vehicles and/or boats/marine environments.
- When the heater is to be stored indoors, the connection between the propane supply cylinder and the heater must be disconnected, and the cylinder removed from the heater.

AUTOMATIC MODELS (HF30/HF50/HF70)

- Check the heater thoroughly for damage. Never operate a damaged heater. This includes damaged gas hose and electrical cord.
- Be sure the heating area is adequately ventilated, free of moisture and dust and far away from any combustible material.
- Place the gas cylinder (for a detail specification, contact your gas supplier) behind the heater. Never place the gas cylinder in front of an operational heater.
- Check firstly the outlet pressure of the gas regulator and gas hose according to the specification on the appliance name-plate. Do not install a kinked gas hose.
- Screw-fasten the gas hose with regulator to the left hand thread, POL type, gas cylinder valve. Ensure the connection is gas tight.
- Screw-fasten the gas hose to the industrial blow heater gas inlet connector, located at the inlet side of the appliance. Note that this is a left hand threaded connection. Ensure the connection is gas tight.
- Check the gas connections and turn on the gas supply valve. Test the connections for leaks with a soap water solution or leak testing kit. Never check for leaks with a flame.
- Plug in the extension cord to a wall socket (10Amp).
- Open the gas valve on the cylinder slowly. Be sure there is no gas leakage.
- Press the ON-OFF switch. The heater should begin a start sequence and the fan should operate approximately 10 seconds from switching the unit on. The unit will automatically open the gas valves and initiate an ignition sequence. The heater should now be operating automatically.
- After the burner ignites, the heater will continue to operate. The user may adjust the room temperature control dial to set the desired room temperature.

MANUAL PIEZO MODELS (HF15/HF20)

- Check the heater thoroughly for damage. Never operate a damaged heater. This includes damaged gas hose and electrical cord.
- Be sure the heating area is adequately ventilated, free of moisture and dust and far away from any combustible material.
- Place the gas cylinder (for a detail specification, contact your gas supplier) behind the heater. Never place the gas cylinder in front of an operational heater.
- Check firstly the outlet pressure of the gas regulator and gas hose according to the specification on the appliance name-plate. Do not install a kinked gas hose.
- Hand-tighten the gas hose with the provided LCC27 regulator to the LCC27 cylinder valve. Ensure the connection is gas tight.

- Screw-fasten the gas hose to the industrial blow heater gas inlet connector, located at the inlet side of the appliance. Note that this is a left hand threaded connection. Ensure the connection is gas tight.
- Check the gas connections and turn on the gas supply valve. Test the connections for leaks with a soap water solution or leak testing kit. Never check for leaks with a flame.
- Plug in the extension cord to a wall socket (10Amp).
- Press the ON-OFF switch. Let the fan motor run for at least 30 seconds to check if the fan works properly and/or to purge any remaining fuel gas.
- Open the gas valve on the cylinder slowly. Be sure there is no gas leakage.
- After ensuring fan operation, push in and hold the automatic gas control valve button. Simultaneously, push the piezo-ignitor button repeatedly until the burner ignites.
- After the burner ignites, keep the gas valve button depressed for at least 5 seconds, then release. The heater will continue to operate.

SWITCHING OFF THE HEATER (NORMAL SHUT-DOWN)

- To switch off the heater, always close the gas cylinder valve first.
- Allow the fan motor to continue to run for at least 2 minutes, so as to allow the heater to sufficiently cool down.
- Switch off the motor, unplug the power cord.
- If the heater will not be used again for a short period, disconnect the gas hose from the heater first, then disconnect the hose and regulator from the valve on the gas cylinder.



WARNING: Be sure that the valve on the gas cylinder has been shut off firmly before disconnection! When changing cylinder(s), be sure that the surrounding atmosphere is free from any potential ignition sources. Should there be any gas leakage during operation, close the valve on the gas cylinder immediately, open all windows and doors to dissipate any gas with natural ventilation.



IMPORTANT: The minimum period between every repeat operation should be not less than 3 minutes!

EMERGENCY SHUTDOWN

- Turn off the power switch on the heater body
- Shut off the gas supply to the gas cylinder
- Shut off the gas valve on the heater body
- Remove the electric plug from the mains electric supply
- Do not operate heater until the cause of the emergency shutdown has been identified and remedied

SPECIFICATIONS

For exact appliance specification, please refer to data plate affixed to appliance at the intake side of blow heater.

Model	HF 15	HF 20
Maximum Heat Output	*54 MJ/h	*72 MJ/h
Gas Consumption	1.08 KG/H	1.44 KG/H
Burner type	Single gas burner	Single gas burner
Ignition Type	Push button piezo	Push button piezo
Air Flow	500 m ³ /h	500 m ³ /h
Gas Type	Propane (LPG) and Universal (ULPG) gas only	Propane (LPG) and Universal (ULPG) gas only
Gas Inlet Connection	¼" G - Left hand thread	¼" G - Left hand thread
Injector Size	0.95 mm	1.15 mm
Dimensions (L x W x H)	520mm x 270mm x 450mm	520mm x 270mm x 450mm
Unit Weight	8.95kg	8.95kg
Operating Pressure	70 kPa	70 kPa
Limit Thermostat Setting	100°C ± 5°	100°C ± 5°
Minimum Room Volume	270m ³	360m ³
IP Class	IP 44	IP 44
Electrical	230-240V/ 1φ / 50Hz	230-240V/ 1φ / 50Hz
Motor Rating	28W / 1430 rpm	28W / 1430 rpm

*specified rating based on theoretical calculation and is therefore approximate.



SPECIFICATIONS CONTINUED...

For exact appliance specification, please refer to data plate affixed to appliance at the intake side of blow heater.

Model	HF 30	HF 50	HF 70
Maximum Heat Output	*108 MJ/h	*170 MJ/h	*242 MJ/h
Gas Consumption	2.16 KG/H	3.4 KG/H	4.85 KG/H
Burner type	Single gas burner	Single gas burner	Single gas burner
Ignition Type	PCB controlled Automatic ignition	PCB controlled Automatic ignition	PCB controlled Automatic ignition
Air Flow	1000 m³/h	1000 m³/h	1400 m³/h
Gas Type	Propane (LPG) and Universal (ULPG) gas only	Propane (LPG) and Universal (ULPG) gas only	Propane (LPG) and Universal (ULPG) gas only
Gas Inlet Connection	¼" G - Left hand thread	¼" G - Left hand thread	¼" G - Left hand thread
Injector Size	1.10 mm	1.55 mm	1.70 mm
Dimensions (L x W x H)	645mm x 340mm x 500mm	740mm x 340mm x 500mm	840mm x 340mm x 500mm
Unit Weight	14.8kg	16.1kg	17.5kg
Operating Pressure	150 kPa	150 kPa	150 kPa
Limit Thermostat Setting	100°C ± 5°	100°C ± 5°	100°C ± 5°
Minimum Room Volume	540m³	900m³	1260m³
IP Class	IP 44	IP 44	IP 44
Electrical	230-240V/ 1φ / 50Hz	230-240V/ 1φ / 50Hz	230-240V/ 1φ / 50Hz
Motor Rating	75W / 1430 rpm	75W / 1430 rpm	70W / 2700 rpm

*specified rating based on theoretical calculation and is therefore approximate.



MAINTENANCE AND STORAGE

- Keep the heater clean, especially the motor grid and fan blades. This should be done seasonally or sooner if used in dirty operating conditions.
- Store the heater in dry, clean and safe place, away from the reach of children.
- The heater should be inspected at least once a year by a suitably qualified person.
- Frequently check the gas hose and its screw connections for leaks. Replace damaged gas hoses immediately.
- Frequently check the electrical cord for damage and abrasion. Replace damaged cords immediately.
- Appliance repair and replacement of damaged electrical cords/gas hoses, should only be done by a suitably qualified person.

SERVICING INSTRUCTIONS AND MAINTENANCE SCHEDULE

Note: Service is to be carried out annually by qualified technicians

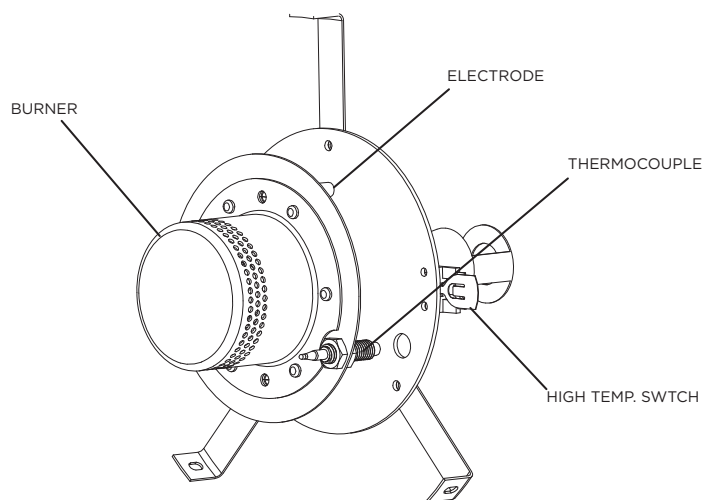
- After isolating the appliance from gas and electrical supplies, remove the 4 screws that hold the appliance cover in place. This will allow access to components for service/inspection:
- After maintenance/inspection work is complete, make sure all screws and fasteners are tight. Reconnect the gas hose and check for leaks. Following the instructions set out in this manual, check for the correct operation of the heater and make sure that all safety components are functioning correctly – flow switch, flame failure device, limit thermostat.

ELECTRICAL COMPONENT SERVICE

- Check the flow switch for continuity and that all connections are in good condition.
- Check the limit thermostat for continuity and that all connections are in good condition.
- Check the electrical fan connections are in good condition and that the fan is securely mounted within the appliance casing.

GAS COMPONENT SERVICE

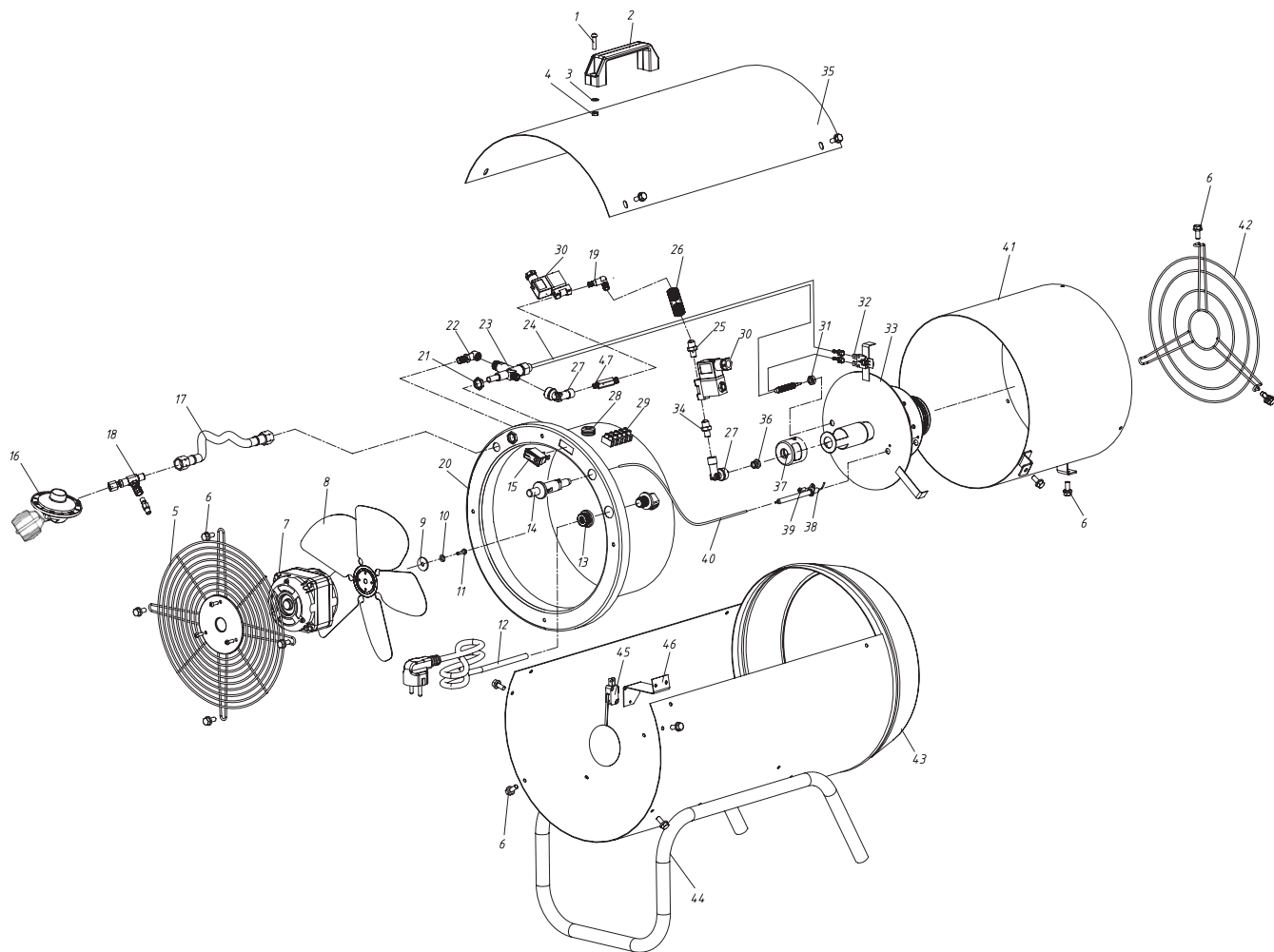
- Check the gas tightness of the various components within the gas train by brushing a soapy solution over the suspect connection. NEVER use a naked flame to check for suspected gas leaks.
- Ensure all connections are gas tight and fasteners are adequately tightened.



BURNER SERVICE

- Check the connection between the injector holder and venturi pipe. If connection is loose, tighten securing screw.
- Loosen and remove retaining screw from injector holder to burner venturi. Set aside screw in safe location for future reassembly. Remove injector body and inspect injector for blockage. If required, injector can be cleaned by blowing compressed air in opposite direction to normal gas flow.
- Remove all securing screws/bolts for the combustion assembly and set aside for future reassembly. Remove the combustion assembly and clean with compressed air where necessary. Check flame failure device (thermocouple) and ignition electrode for any cracks and that they are correctly positioned. Reassemble the burner unit in reverse order to the above instructions. Ensure all fasteners are adequately tightened.

ILLUSTRATED PARTS BREAKDOWN AND PARTS LIST

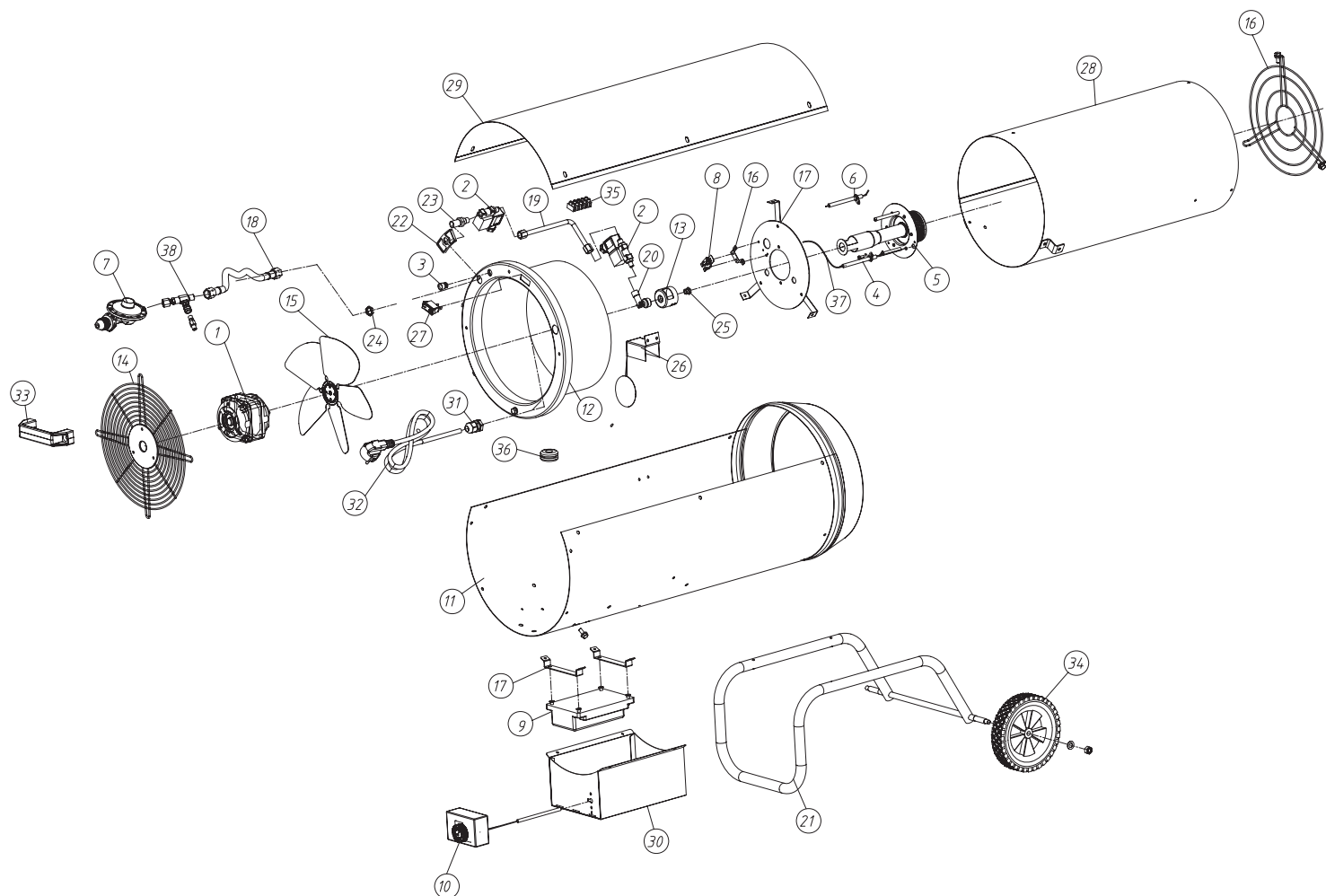


HF 15/20 - MANUAL MODEL

REF15/20 MANUAL MODEL SPARE PARTS SCHEDULE		
ITEM	DESCRIPTION	QUANTITY
1	M4 x 25 bolt	4
2	Handle	1
3	Dished washer	2
4	M4 nut	2
5	Motor grille	1
6	6.3 x 13mm screw	14
7	Motor assembly	1
8	Fan blades	1
9	Dished washer	1
10	Spring washer	15
11	Screw	9
12	Plug and cord	1
13	Electrical cord grommet	1
14	Piezo-ignitor	1
15	ON-OFF Switch	1
16	LCC27 Regulator	1
17	Gas hose	1
18	Inlet connection	1
19	Gas cock	1
20	Motor housing	1
21	M12 nut	1
22	Elbow	1
23	Gas safety valve	1
24	Thermo element	1
25	Nipple	1
26	Gas pipe	1
27	Nozzle body	1
28	Grommet	1

29	Terminal block	1
30	Solenoid valve	2
31	M8 Nut	1
32	Thermostat	1
33	Burner assembly	1
34	Nipple	1
35	Cover	1
36	Injector nozzle	1
37	Nut	1
38	Ignition electrode	1
39	M4 x 10 screw	1
40	Ignition cable	1
41	Inner combustion liner	1
42	Outlet safety guard	1
43	Heater body	1
44	Frame stand	1
45	Wheels	2
46	Dished washer	2
47	Nut	2
48	Flow proving switch	1
49	Bracket	1

ILLUSTRATED PARTS BREAKDOWN AND PARTS LIST

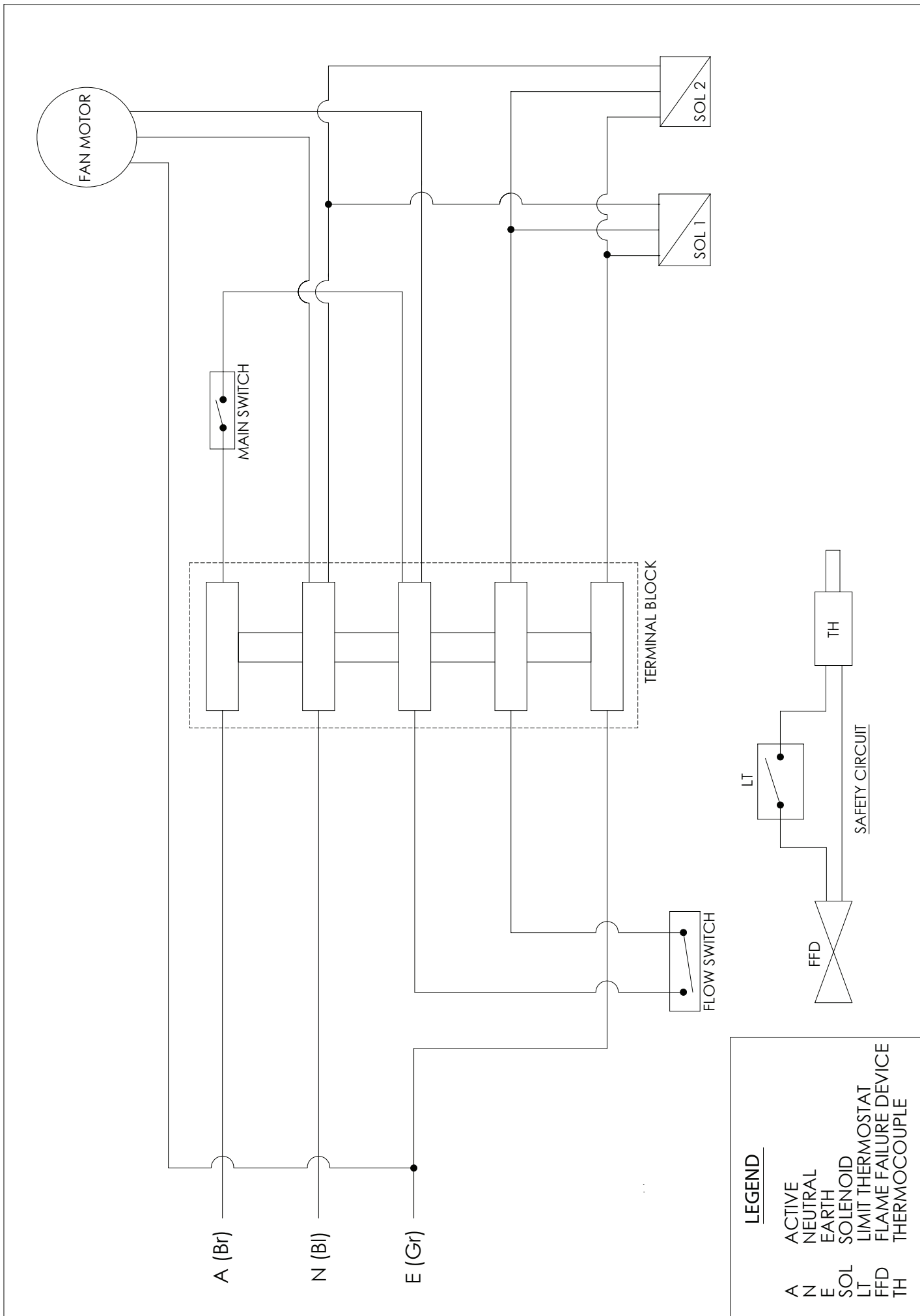


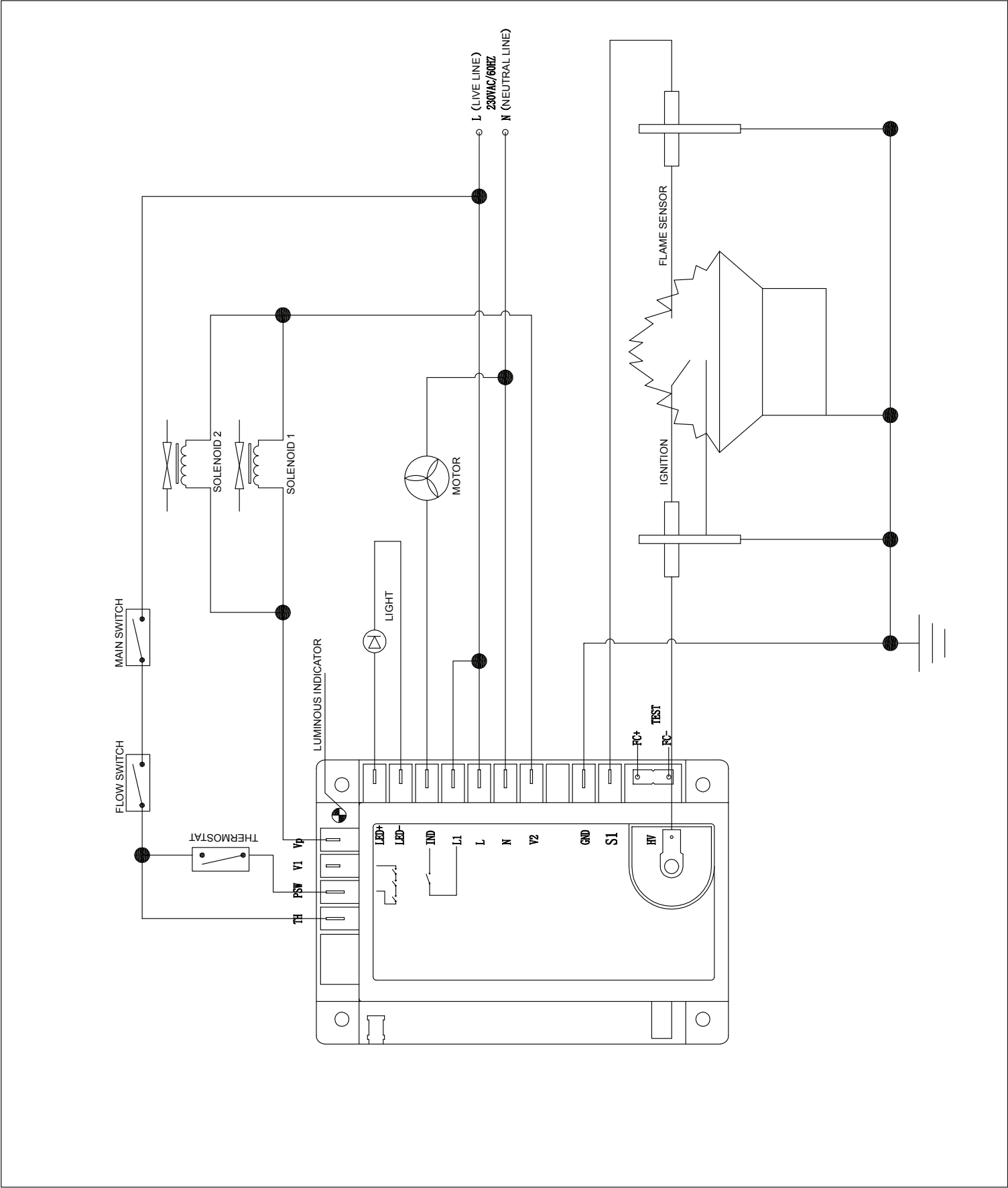
HF 30/50/70 - AUTOMATIC MODEL

REF30/50/70 AUTO MODEL SPARE PARTS SCHEDULE		
ITEM	DESCRIPTION	QUANTITY
1	Motor assembly	1
2	Solenoid valve	2
3	Indicating Lamp	1
4	Flame Detection Needle	1
5	Burner Assembly	1
6	Igniting Electrode	1
7	Gas Regulator	1
8	Thermostat	1
9	PSB Controller	1
10	Temperature Switch	1
11	Heater Body	1
12	Motor Mount	1
13	Damper	1
14	Inlet Grill	1
15	Fan Blades	1
16	Grill Outlet	1
17	Burner Assembly	1
18	Gas Hose	1
19	Gas Pipe	1
20	Injector Block	1
21	Wheel Frame Support	1
22	Bracket	1
23	Construction Joint	1
24	M18 x 1 Nut	1
25	Injector Nozzle	1
26	Flow Switch	1
27	ON - OFF Switch	1
28	Combustor Liner	1

29	Cover	1
30	Controller Box	1
31	Cord Grommet	1
32	Plug & Cord	1
33	Handle	1
34	Wheel	2
35	Terminal block	1
36	Rubber bush	2
37	Ignition Line	2
38	Test Connection	1

ELECTRICAL SCHEMATIC - MANUAL MODEL HF15/20





TROUBLESHOOTING

- The appliance is equipped with a self-fault diagnostic device. Any repair of the heater should only be carried out by a qualified technician.
- Be sure the heater is disconnected from the gas cylinder before any repair work is undertaken.
- Be sure that the power cord is disconnected from the power socket and that the appliance is electrically isolated, prior to any repair/maintenance work being undertaken.
- Never try to modify the heater from its original configuration.
- Only use manufacturer's original spare parts to repair the appliance.
- If the heater cannot be adjusted to operate as per the manufacturers specifications, contact the manufacturer or an approved service agent. Do not continue to operate the appliance.

PROBLEM	POSSIBLE CAUSE	REMEDY
Fan does not work	<ul style="list-style-type: none"> - No electric supply - Fan blade blocked by shell - Flow switch open 	<ul style="list-style-type: none"> - Check heater is on - Adjust motor grid or rear handle screw. - Check flow switch is not impeded, replace if faulty
Ignition failed Piezo model (HF15 / HF20)	<ul style="list-style-type: none"> - Igniting cable worn out - Hi voltage module defective - Distance between electrode and burner too large. 	<ul style="list-style-type: none"> - Service with qualified person - Change module - Adjust distance between 3-8mm
Ignition failed Automatic model (HF30 / HF50 / HF70)	<ul style="list-style-type: none"> - Temperature switch set lower than ambient temperature - When power supply cut off and recovery, heater does not automatic start 	<ul style="list-style-type: none"> - Set a target temperature higher than ambient temperature by adjusting thermostat dial (Item 5 of automatic model -refer to page 5) - After power supply cut-off and recovery, the ON-OFF switch (Item 4 of automatic model - refer to page 5) must be manually reset for operation to resume
No gas	<ul style="list-style-type: none"> - Gas cylinder empty - Gas valve on cylinder closed - Gas valve of heater is closed - Gas solenoid shut - Limit thermostat open 	<ul style="list-style-type: none"> - Replace with new cylinder - Check the valve on cylinder is open - Press the button of the gas valve - Ensure solenoid has power, replace solenoid - Check limit thermostat and reset if necessary
Gas leak in inlet line	<ul style="list-style-type: none"> - Leaking regulator / gas hose 	<ul style="list-style-type: none"> - Immediately close the gas connection and check hose and connections in the gas supply line. Replace hose and regulator immediately.
Flame extinguishes while heater is running	<ul style="list-style-type: none"> - Thermo electric element not at operating temperature - Thermostat turns off - Restricted air flow. 	<ul style="list-style-type: none"> - Repeat ignition process. - Allow heater to cool for minimum 5 minutes. - Check heater inlet and outlets and move any obstructions.