

Operating Manual

Infrared Oil Heaters

IR 25



Perfection is our aim.



EC – Declaration of Conformity

according to machine directive 2006 / 42 / EEC

Structure of the machine

Portable air heaters (oil fired with and without heat exchanger)

Description:

IR 25

is designed, constructed and manufactured in accordance with the above-mentioned directive, EMV directive 2014/30 EEC, the directive for low tension 2014/35 EEC and the directive 2011/65/EC RoHS.

The following harmonized standards have been used:

- EN 61000-3-2 Harmonics on low-voltage networks
- EN 61000-3-3 Voltage fluctuations and flicker on low-voltage networks
- EN 61000-6-4 Electromagnetic compatibility (EMC)
- EN 61000-6-2 Electromagnetic compatibility (EMC)
- DIN EN ISO 12100 Safety of machines
- EN ISO 13857 Safety of machinery - Safety distances
- EN 60335-1-2002 Electrical equipment for industrial machinery
- EN 60335-2-102

Note: The observance of EN 13857 refers only to the protection against accidental contacts of the unit. For the complete fulfillment of EN 13857 the user resp. installer is responsible.

Mönchengladbach,
15.04.2020



Managing Director

Place, Date

Signature

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Infrared Oil Heaters Type IR 25

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1. Technical Specifications

<u>Type:</u>	<u>IR 25</u>
Heat Capacity:	20,5 kW 17.600 kcal/h 70.400 BTU/h
Fuel:	Heating oil EL, diesel or kerosene
Tank capacity:	15 l
Voltage:	230 V / 50 Hz
Power consumption:	70 W
Control:	Flame control with automatic aftercooling
Rated current:	16 A
Combustion system:	High-Pressure Atomization burner
Ignition system:	High-Voltage transformer
Fuel pump pressure:	10 bar
Nozzle:	0,4 G 80° S
Consumption:	1,9 kg/h
Weight:	14 kg
Dimensions: L x W x H in mm	530 x 370 x 560

2. General Informations

Introduction:	This chapter contains general informations about the heater and the operating manual.
Target group:	The operating manual is meant for technicians who install the heater, do service or exchange defective parts.
Copyright:	The duplication of the manual in total or in parts of it is allowed only with written permission of Hans Wilms GmbH & Co. KG.
Reserve:	Hans Wilms GmbH & Co. KG reserves the right to make changes and improvements of the product and the operating manual without prior notice.

Safety Informations

Safety standards

Read this manual carefully before doing any work on the heater and obey the safety stickers which are directly on the machine.

The manufacturer is not liable for damages / injuries of persons or materials which are caused by disregard of these directions.

The machine may be operated by trained people who are qualified for these jobs.

Minors may not use these machines.

The heater may be operated only for the intended purpose.

3. Before operating read very carefully!

IMPORTANT !

Infrared Oil Heaters IR 25 shall not be placed in the neighbourhood of explosives or easily flammable materials. Also, they shall not be used within a place where much dust can be stirred such as wood dust, etc. The position of the heater should be taken into consideration and not be placed under minimum distance of 3 m from flammable materials. Transportation or manipulation of running equipment is forbidden. Refuelling during the operation shall not be made. Good ventilation is required.

Where Infrared Oil Heater is used, operators shall refer to OWNER'S MANUAL. Amount of air change shall be secured. Refer to labels on heaters.

NOTES FOR USE:

IR 25 is designed for use on floor ground.

Manufacturer shall not be liable for any loss or damage arising from such uses altered excessively from original conditions as separating burner unit from fuel tank and suspending it at an elevated location.

In case of use within a small enclosed space, be sure to ventilate the space so as to supply sufficient oxygen necessary for perfect combustion. Otherwise, imperfect combustion might occur.

The smoke coming out at the first ignition is due to both evaporation of moisture in combustion chamber material (ceramics) and burning of anti-corrosion oil coated on the surface of components. After 30 second operation, smoke will disappear.

Although fire can be put out with switch „OFF“, do not pull power cable off outlets as long as operation indicator lamp is on.

Unattended use is not recommended for safety.

Do not use an insufficient voltage (less than 85 %).

4. Danger of serious burns!



Never fill the unit with petrol.

Never refill the tank while heater is in operation or hot.

Never block air-outlet- or air-suction.

Never operate the unit with warm air hose / ducting.

Never touch the heater while it is still hot.

Never transport the heater with full tank.

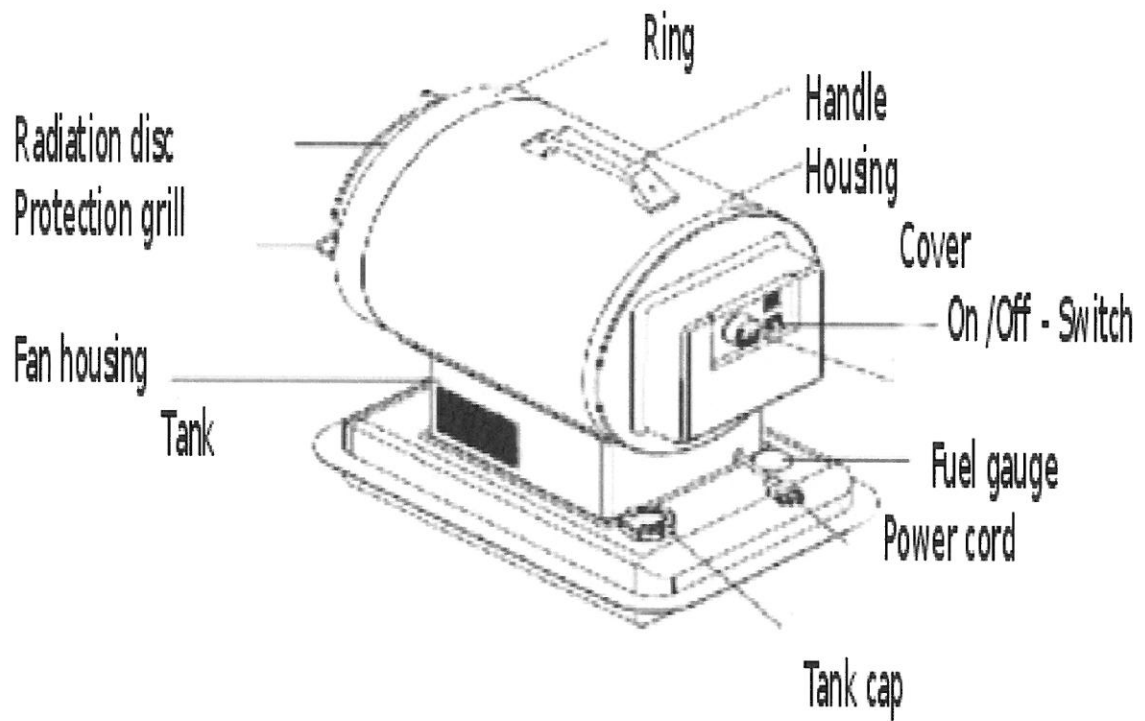
Never use the heater with separate tank.

Never let children or animals near the heater.

Never get too close to the heater with your clothes.

The heater must always be on a safe stable ground.

5. Specifications IR 25



6. Assembly Instructions IR 25

Carton-Contents

Fasten the handle while the heater is still in the carton. This makes it easier to unpack, refer picture 4.

Handle

- Put the threads in the housing with the hole of the handle in line. Refer picture 3.
- Put the screws in and tighten these.

Required tools

Screwdriver

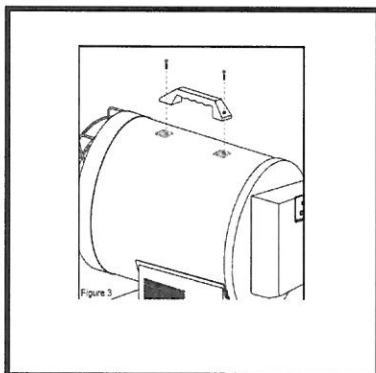


Fig. 3

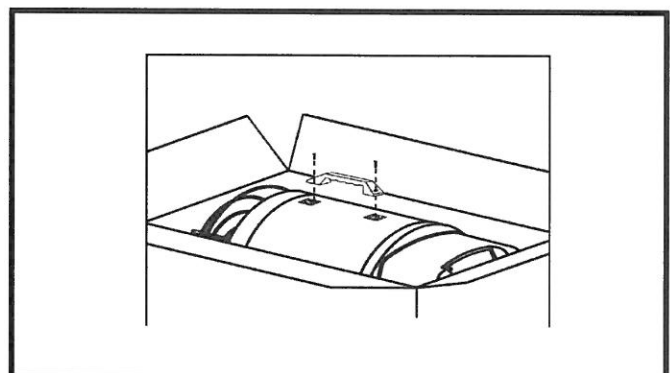
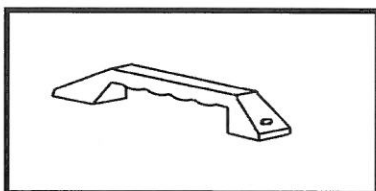


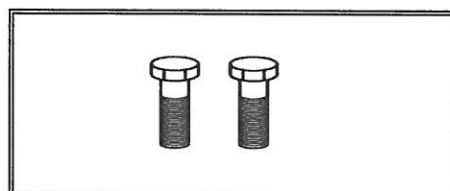
Fig. 4

Remove the heater as well as all the packaging material out of the carton.

Keep the carton as well as the packaging material because it might be used for future shipments etc.



Handle



2 Screws

7. Starting the heater

Filling of the tank:

For the best performance of the heater we recommend Heating fuel / Diesel or parafin / cerosene.

Never use Bio-Diesel.



Never fill the tank during operation or while it is still hot. This might lead to fire or explosion.

Fill the tank only on a stable, solid surface.

Never overfill the tank.

Never use petrol / gasoline.

Never store heating fuel in the bright sun or near any heater.

Never use old or long stored heating fuel. The heater will not operate troublefree with old heating fuel.

Ventilation:

Use the heater only in well ventilated areas.

Obey the safety informations.

A special care has to be taken when the heater is used in a humid surrounding.

Disconnect the power supply.

Take care that all electrical components are protected and can not get wet.

The heater should be operated only by trained personel.

Starting of the heater (Ignition)

1. Fill the tank with clean fuel until the needle of the fuel gauge is on „F“ position.
2. Close the tank lid.
3. Connect the heater with an earthed socket.



On initial or repeated start you can possibly hear a metallic noise. This is caused by the fuel pump which pushes air bubbles out of the fuel line.

The heater will start within a few seconds.

If the heater does not start, repeat the procedure and take care that the tank is sufficiently filled. Check this on the fuel gauge.

The electrical components of the heater are protected by a fuse on the control board.

In case the unit does not start at all, check first the fuse and replace it if necessary.

Also check if the unit is connected with a correct socket. Compare with values on the serial plate.

1. Complete the above three steps.
2. Operating switch on position „ON“.
The control light is lightning, the heater is starting – refer picture 9.

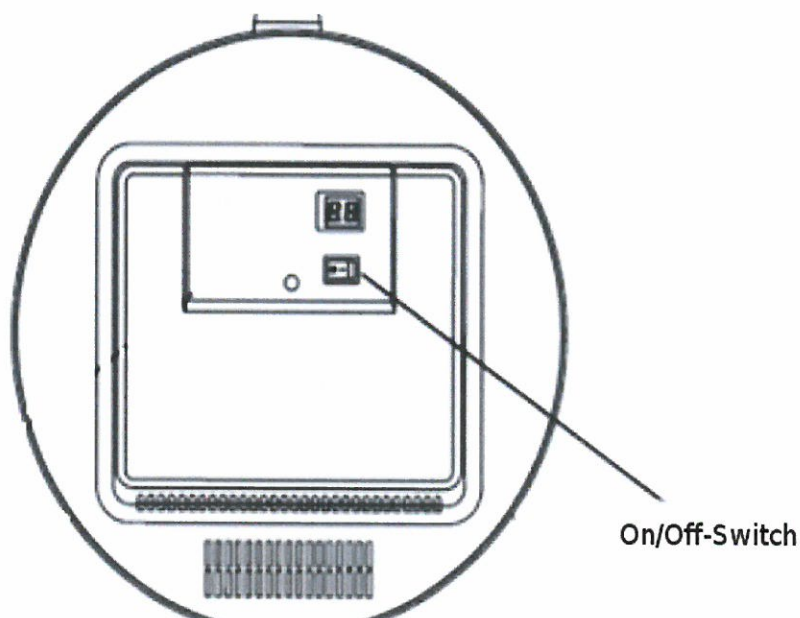


Fig. 9

8. Misfire resetting

If the heater IR 25 is on misfire, the operating switch has to be set to position „AUS – OFF“ first for resetting. After the cause of the malfunction has been eliminated you can restart the unit.

9. Switching off the heater (cooling phase) IR 25:

1. Operating switch on „OFF“-position.
Combustion stops, cooling process begins.

approx. 7 minutes

2. After the automatic cooling the fan stops and you can pull the plug.



Never pull the plug before the cooling process is finished.

If you pull the plug earlier it can possibly result in heavy overheating and damage of the heater or the radiation plate.

Restart

1. Wait after the automatic cooling, approx. 10 seconds.
2. Then continue according the instructions of the regular start.

10. Maintenance IR 25

Longterm storage:

1. Remove the tank cap.
2. Empty the tank via the filling sleeve.
3. Clean the tank by using a rest of the heating fuel.



Never mix heating fuel with water, this will result in rust on the inside of the tank.

Drain the tank completely.

Never store old heating fuel between the heating periods, old heating fuel is bad for the heater.

Store the heater in a dry – well ventilated surrounding.

Take care that the surrounding is dustfree.

If possible, pack the heater together with the operating manual again in the original packing.

Service:



Never service the heater while it is still connected with the power supply or it is still hot.

Do not make any changes on the heater.
Check always with a specialist first.

We recommend the following service work:



Tank

Follow the instructions of longterm storage / tank.

Clean the tank every 200 operating hours – resp. when it is necessary.

Do not use under any circumstance water for cleaning.

Ignition electrode

Clean it every 600 operating hours – resp. exchange it.

After removing the ignition electrode you can clean this with a wire brush.

Check the electrode distance (4,5 mm)

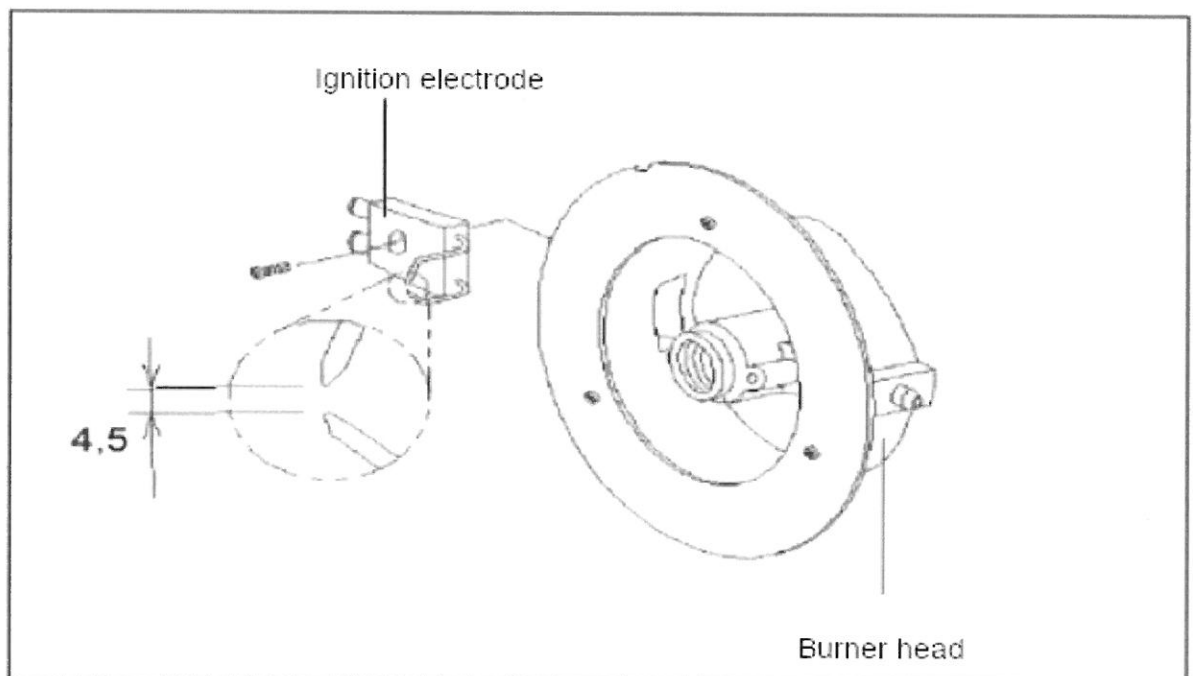


Fig. 11

Fan blade

The fan blades should be cleaned once during the heating period.
Remove all dust and dirt. Picture 12

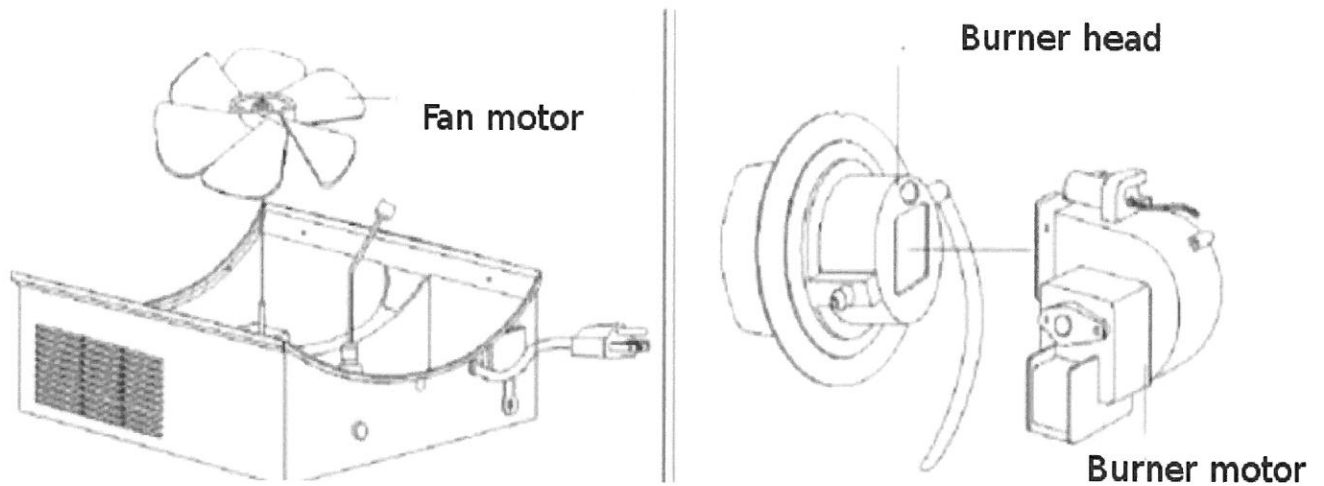


Fig. 12

Nozzles

Nozzles should be cleaned once or replaced during the heating period.

Dirty heating fuel can clog the nozzle. In order to clean it,
blow air through the nozzle.

In order to loosen dirt particles, put the nozzle into diesel or heating fuel first.

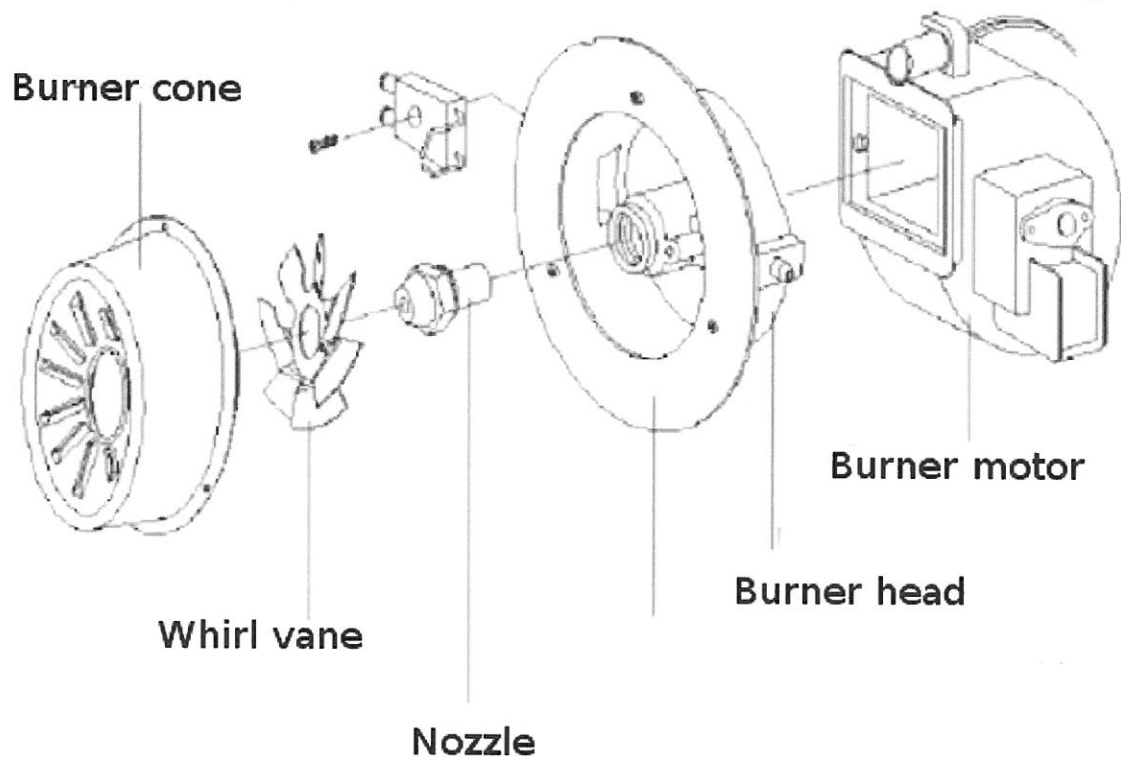


Fig. 13

Photocell

The photocell should be cleaned at least once per heating season. This depends also on the condition of the photocell.

For cleaning use a soft cloths, soke it in water or alcohol and clean the lens of the photocell.

Take care that the photocell is replaced in the correct position, refer picture 14.

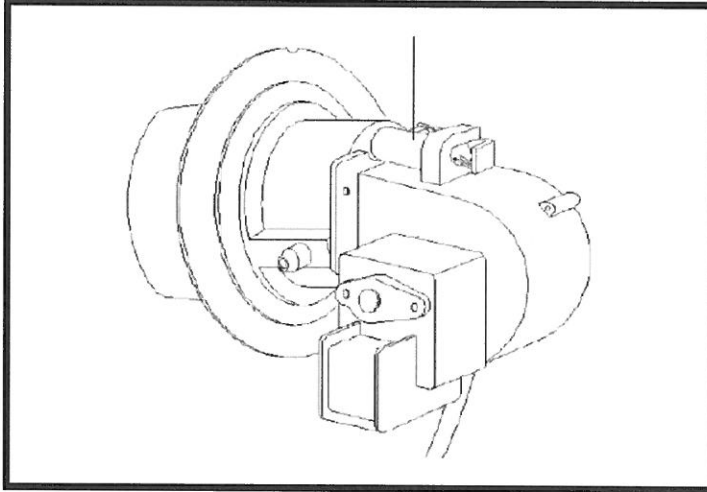


Fig. 14

Filter

The air- and oilfilter should be cleaned at least twice per heating season. Clean them in pure heating fuel or replace if necessary.

When using dirty fuel an earlier cleaning / replacement may be necessary, refer picture 15.

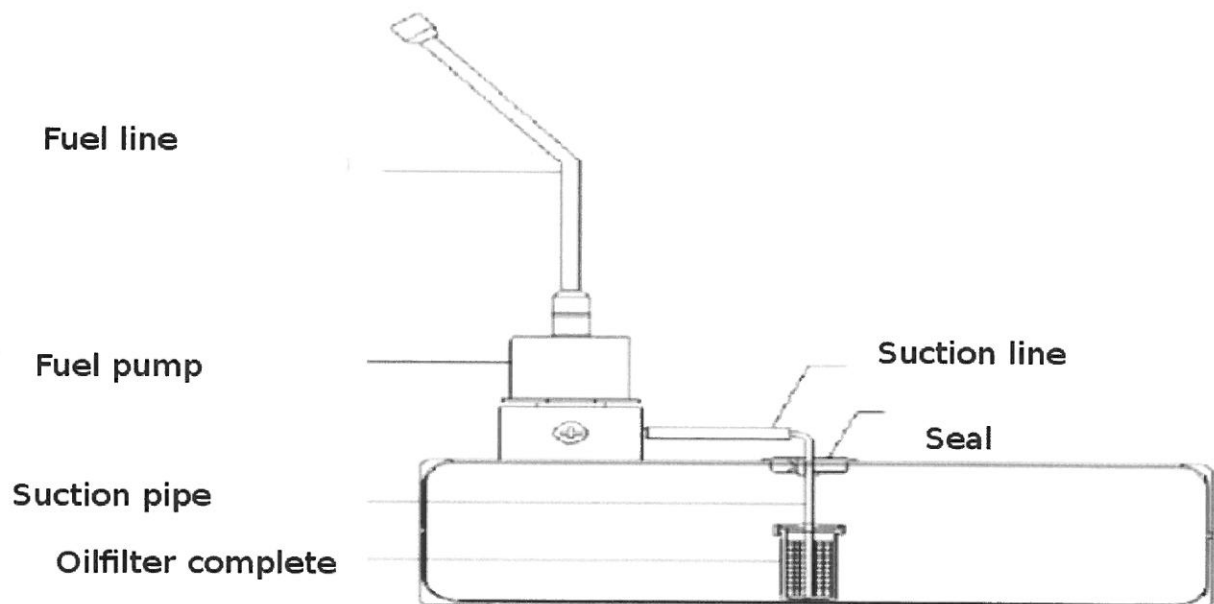


Fig. 15

11. Possible Malfunctions and Remedies

<u>Malfunction</u>	<u>Cause</u>	<u>Remedy</u>
Flame burns, but goes out after a short time.	A Dirty filter. B Dirty nozzle. C Dirty photocell. D Wrong installed or defective photocell. E Defective electrical connection. F Fan is blocked.	A Replace filter or clean it. B Replace nozzle or clean it. C Replace photocell or clean. D Install photocell properly or replace it. E Check electrical connection. F Check if fan runs free.
Heater does not work. Motor runs only a short time	A No fuel in tank. B Dirty electrode, incorrect distance. C Dirty filter. D Dirty nozzle. E Water in tank. F Electric connection not correct. G Transformer cable not connected with electrode. H Defective transformer.	A Fill tank. B Clean/replace electrode. Change distance. C Clean/replace filter. D Clean/replace nozzle. E Clean tank. F Check all electrical connections. G Connect cable with electrode. H Replace transformer.
Heater makes noises.	Air in the pump.	Noise stops after approx. 3 seconds. If noise continuous, fill tank.

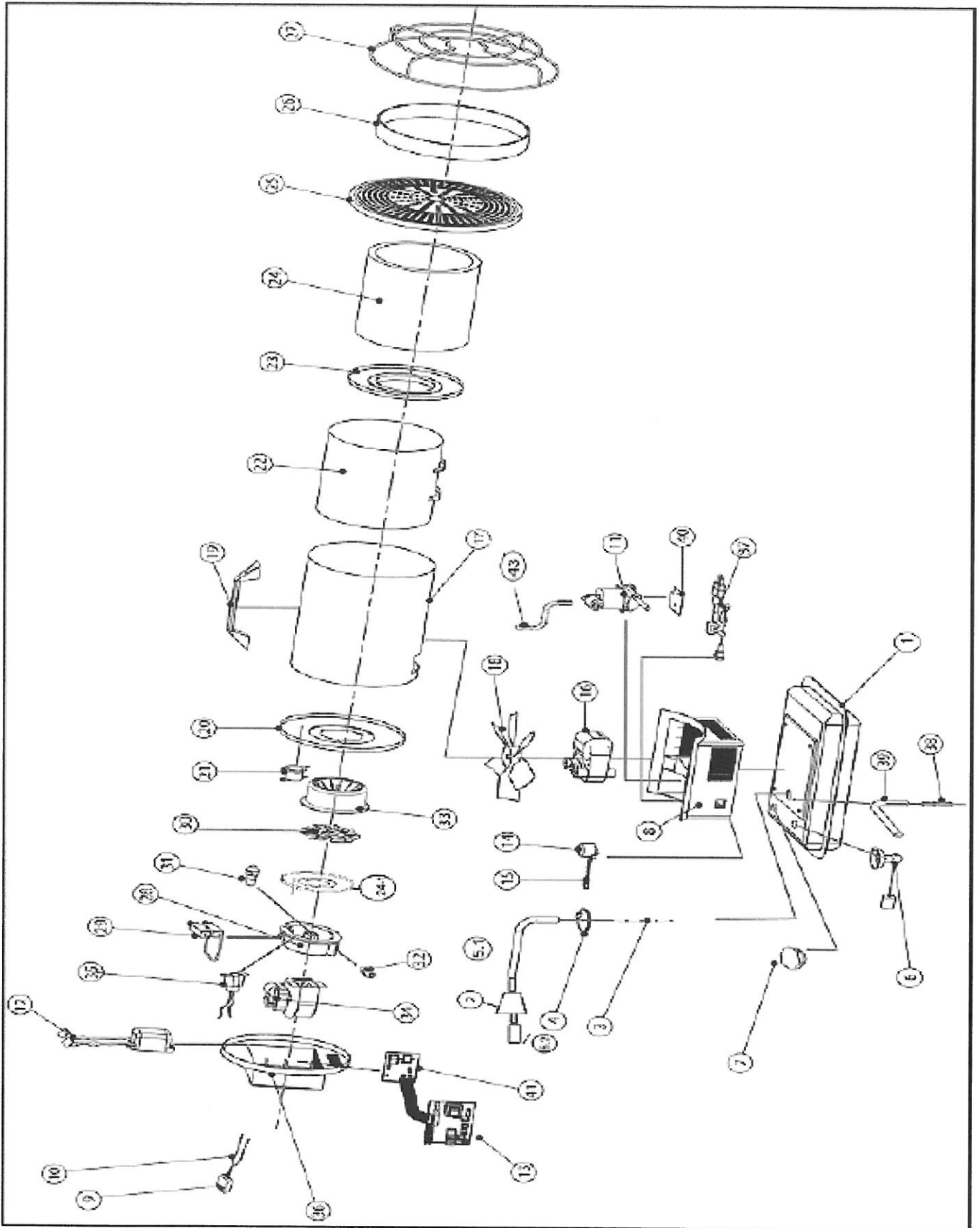
Possible Malfunctions and Remedies

<u>Malfunction</u>	<u>Cause</u>	<u>Remedy</u>
Heater does not start. Control light lights up.	A Temperature limit switch is overheated	A Set switch on „OFF“, let the heater cool down for 5 minutes, then set switch again to „ON“.
	B No electrical connection.	B Check electrical connection.
	C Defective fuse.	C Check/Replace fuse.
	D Electrical disorder between Temperature limit switch and control board.	D Check all electrical connections.
Poor combustion or soot formation.	A Pump pressure	A Check pump pressure.
	B Poor quality of fuel	B Check fuel, do not use old fuel.
Heater connected with a power outlet main switch on position „ON“ but Heater does not operate.	A No connection between control board and motor.	A Check all electrical connections according to wiring diagram.
	B Insufficient electrical supply.	B Use a new power cord or a different socket.

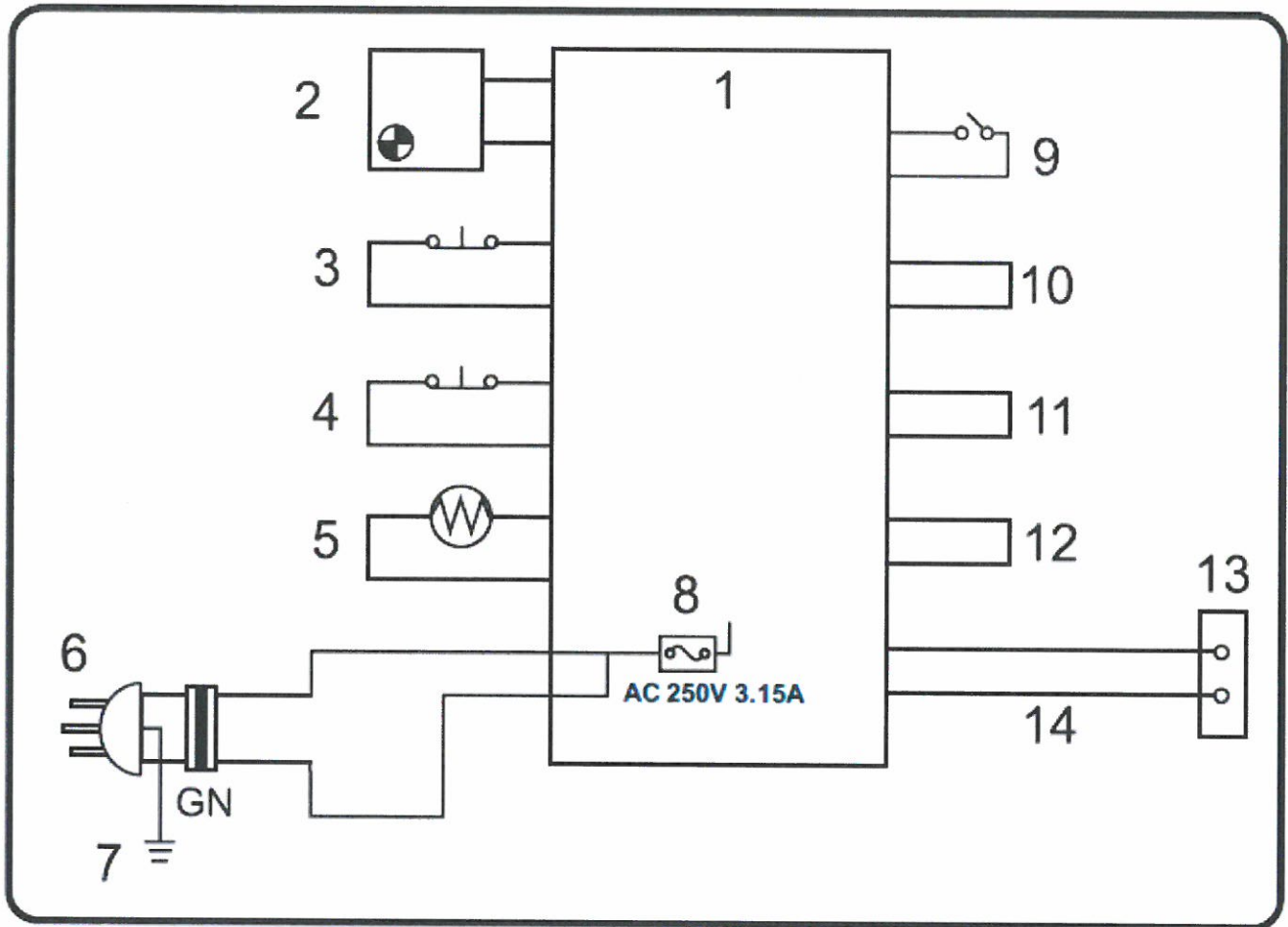
12. Spare-Parts List IR 25

Pos.	Part No.:	Description	Qty.
1	8400110	Fuel tank	1
2	8400111	Fuel filter	1
3	8400112	Fuel pipe	1
4	8400004	Gasket	1
5.1	8400130	Fuel line 190 mm	1
5.2	8400113	Fuel line 45 mm	1
6	8400006	Fuel gauge assembly	1
7	8400114	Fuel cap	1
8	8400115	Housing	1
8.1 not shown	8400116	Back cover	1
9	8400009	Switch	1
10	8400010	Power switch wires	1
11	8400012	Pump complete	1
12	8400089	Ignitor	1
13	8400117	Main PCB	1
14	8400015	Tip over sensor	1
15	8400016	Tip over sensor wire assembly	1
16	8400017	Cooling motor assembly	1
17	8400019	Housing	1
18	8400018	Cooling fan	1
19	8400020	Handle	1
20	8400021	Cover plate	1
21	8400022	Temperature limit switch	1
22	8400023	Combustion chamber	1
23	8400024	Combustion chamber insulation	1
24	8400025	Ceramic fiber	1
24-1	8400043	Burner body cover	1
25	8400026	Heat plate	1
26	8400027	Ring	1
27	8400028	Safety guard	1
28	8400029	Burner body	1
29	8400030	Spark plug	1
30	8400122	Baffle plate	1
31	8804023	Nozzle	1
32	8400033	Nipple	1
33	8400034	Flame tube	1
34	8400035	Motor	1
35	8400036	Photocell assembly	1
35-1	8400048	Bracket	1
36	8400118	Burner cover	1
37	8400038	Power supply	1
38	8400039	Return hose	1
39	8400131	Fuel line	1
40	8400041	Bracket	1
41	8400120	Rear PCB	1
41-1	8400121	Rear PCB wire assembly	1
43	8400129	Pipe pump nozzle	1
not shown	8400123	Diffusion cap gasket	1
not shown	8400124	Burner head gasket	1
not shown	8400125	Pump connector	1
not shown	8400126	Hose clamp	8
not shown	8400127	Pressure gauge	1
not shown	8400128	Gauge connector	1

13. Exploded view drawing IR 25



14. Wiring diagram IR 25



- 1 Control
- 2 Operating light
- 3 Tumble switch
- 4 Temperature limit switch
- 5 Photocell
- 6 Plug
- 7 Earth
- 8 Fuse
- 9 Main switch
- 10 Burner motor
- 11 Fan motor
- 12 Pump
- 13 Electrode
- 14 Transformer