

## Userguide HR series Eng



**HR-CH**



**HR-Calorifier**



**HR-Combi**

## Introductory remarks

Congratulations on the purchase of your Kabola HR or HRE Boiler. Kabola has been a manufacturer of oil-fired heating systems since 1947. This user manual is intended to familiarize the user with use of the HR /HRE. The user must read this manual before bringing the boiler into use and follow the instructions.

This user manual must therefore be kept safely.

Section 2 covers the safety instructions that you must follow before installing the boiler. Other sections cover safety instructions that you can recognize as shown below.

**Tip:** A tip gives the user suggestions and advice to be able to carry out certain tasks more easily.

**Note:** The user is given additional information here. Any potential problems are also covered.

**Warning:** Chance of (life-threatening) injuries

You can contact Kabola Heating Systems should you have any remarks, wishes or in the case of any shortcomings. Any suggestion for the improvement of the manual are also always welcome. We wish you every pleasure with your purchase.

Kabola Heating Systems  
Placotiweg 1E  
4131 NL Vianen (Utr.)  
Netherlands  
+31 (0)347-320030  
www.kabola.nl  
[info@kabola.nl](mailto:info@kabola.nl)

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# 1 Introduction

## 1.1 General

This user manual is intended for both the installer and the end user of the Kabola HR or HRE heating boiler. There is a wide range of HR/ HRE heating boilers with a broad range of applications. With this purchase you obtain a product of the highest quality due to the practical application of the latest European standards and directives and modern technologies. Kabola Heating Systems BV has been developing and producing heating systems in the Netherlands since 1947.

Use the manual for both installation and while maintaining and replenishing your heating system. Save the manual carefully for future use. You can obtain a digital copy at any time by mailing [info@kabola.nl](mailto:info@kabola.nl) or by downloading from the website [www.kabola.nl](http://www.kabola.nl).

## 1.2 Area of application

The HR and HRE central heating boilers are intended to supply heat to heat up water (or coolant) in a central heating system and/or in combination with the Kabola hot air system.

The HR CALORIFIER boiler with calorifier control is intended to heat both the heating system and hot water using a boiler vessel.

The HR COMBI boiler is intended to heat the heating system and hot tap water without a boiler vessel.

The boilers are not intended to directly heat the space in which they are installed. Heating only takes place using radiators, a hot air system, underfloor heating and/or any custom-made airco systems in which the Kabola boiler is integrated. When using the boilers, account must be taken of the dimensions of the spaces to be heated.

So always carry out a capacity calculation beforehand or take in advice.

## 1.3 Description of the boilers

The Kabola boiler heats the boiler water by means of an oil burner assembled on the boiler. The boilers are supplied as standard as a 230 V design (also see the technical specifications in annex A).

Domestic fuel oil 1, domestic fuel oil 2, diesel or gas oil must be used as fuel. Should you want to use biofuels or mixtures ask for additional advice. These fuels are being developed at speed and have advantages and disadvantages with which account must be taken.

## 1.4 Technical specifications

You can find the most important specifications on the type plate attached to the right-hand side of the boiler. The address of the manufacturer is also mentioned here. You can find the full technical specifications in the back of this manual.

## 1.5 Guarantee provisions

We refer you to the guarantee certificate for the guarantee provisions. It is very important that the boiler is brought into use after installation, and that the commissioning protocol (for bringing into use) is returned to Kabola Heating Systems BV in Vianen. You are then covered by the guarantee.

## 2 Safety

This section includes a summary of points from the manual concerning safety for the procedures you will follow.

### 2.1 General safety

**Warning:** Kabola Heating Systems designs and builds its products according to the current best available techniques. However, it is possible that dangers may occur that can result in injuries or damage to the boilers if the safety instructions are not followed.

**The user must:**

- Have read and understood the 'Safety' section;
- Not carry out any activities that may endanger health;
- Not carry out any activities that may cause damage to the boiler;
- Ensure that the boiler is only used when it is in a technically good condition and has been installed in the correct way;
- Ensure that the safety measures are complied with during use of the boiler.

**Note:** No changes may be made to the boilers without the explicit written permission of Kabola Heating Systems!

### 2.2 Safety instructions

The safety instructions specified below must be followed when using the Kabola boiler.

#### MEASURES FOR SAFE INSTALLATION

- Do not place any flammable and/or gaseous substances that may cause danger of explosion or fire in the space where the boiler is or is to be installed.
- Install the boiler in a moisture-free space on a strong, horizontal surface.
- Fasten the boiler with the assembly bolts (M5) supplied for that purpose.
- Ensure sufficient ventilation in the space where the boiler is installed (see § 4.1.1).
- Provide an earthed wall socket (230 V AC) for the connection of the boiler.
- Before you start connecting make sure there is no voltage on the system.
- For the electrical connections and thermostat connections only use multi-core cables with flexible core (minimum 0.75 mm<sup>2</sup>).

#### MEASURES FOR SAFE USE

- Never change the burner settings on your own initiative.
- When cleaning the boiler do not use any aggressive cleaning products that may corrode the boiler.
- Have the boiler settings checked each year by a specialist installer.
- Before you start working on the boiler make sure there is no voltage on the system.
- Collect any oil that may be released.
- It is recommended to only have maintenance and repair activities carried out by specialist and Kabola-certified persons.

## **3 Transport and storage**

### **3.1 Transport**

Take the following measures before the boiler is transported:

- Drain off the boiler water.
- Disconnect the fuel system.
- Disassemble the burner if required (see § 4.1.6, burner assembly).

During the transport of the boiler the following points must be observed:

- Make sure that the casing cannot be damaged. Use a blanket for example.
- Transport the boiler upright with the base below.

### **3.2 Storage**

When the boiler is to be stored for longer time one must proceed as follows:

- Make sure that the boiler and accessories are stored in a dry and frost-free place.
- Disassemble the burner if required (see § 4.1.6, burner assembly).
- Make sure that the boiler is placed upright.
- Make sure that the boiler is stable.

## 4 Installation and bringing into use

In this section you can find instruction and tips for the correct placing and connection of the boiler and the associated equipment.

**Warning:** Do not place any flammable and/or gaseous substances that may cause danger of explosion or fire in the space where the boiler is or is to be installed.

### 4.1 Installation

#### 4.1.1 Placing the boiler

- Place the boiler in a moisture-free space.
- Place the boiler on a strong, horizontal surface and fasten it firmly with the angle brackets and M5 bolts supplied.
- Ensure sufficient ventilation in the space where the boiler is to be installed.
- As a general rule for determining the diameter of the ventilation opening you can use 2.5 times the diameter of the flue gas outlet (at least 150 mm).
- Secure the base of the boiler against slipping using an angle bracket with bolts or tack-welding.
- Make sure there is a distance between the outlet and the wall of at least 10-20 mm because of the heat transfer from the flue gas outlet.
- Ensure sufficient space around the boiler for service and maintenance work.
- Provide an earthed wall socket (230 V AC) for the connection of the boiler.

#### 4.1.2 Connection to the central heating system

##### PIPING

When assembling the piping the following points must be respected:

- Assemble the piping in such a way that the boiler and control panel remain accessible;
- Ensure sufficient ventilation in places where air can accumulate.

**Note:** Ensure ventilation if the piping does not slope upwards.

##### EXPANSION TANK

An expansion tank must always be assembled with a closed central heating system (pressure system).

- Always assemble the expansion tank in the return pipe (see fig 2) as near as possible to the boiler.
- The size of the expansion tank is approximately 10% of the total water capacity of the whole system. For example; with a volume of 120 litres, assemble a 12-litre expansion **tank**.

### HR central heating (fig 1)

Connection of piping to the boiler takes place as follows:

1. Assemble the central heating supply pipe at point 1;
2. Assemble the central heating return pipe at point 2;
3. Assemble the separately supplied filler tap and drain combination at point 4 (see fig 1).

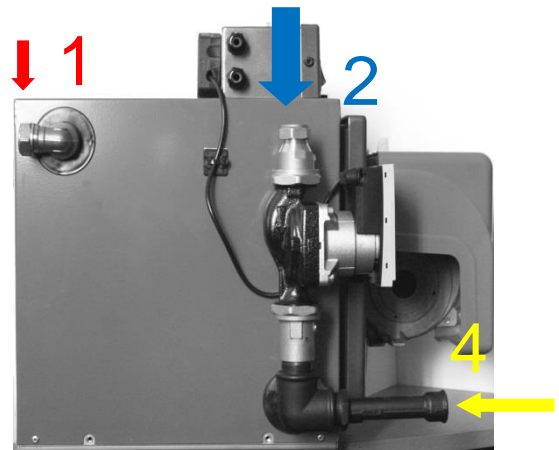


Fig 1

### HR calorifier boiler (fig 2)

Connection of piping to the boiler takes place as follows:

1. Assemble the central heating supply pipe at point 1
2. Assemble the central heating return and boiler vessel return at point 2;
3. Assemble the boiler vessel supply at point 3;
4. Assemble the separately supplied filler tap and drain combination at point 4 (see fig 2).
5. The letters B and A are marked on the 3way valve

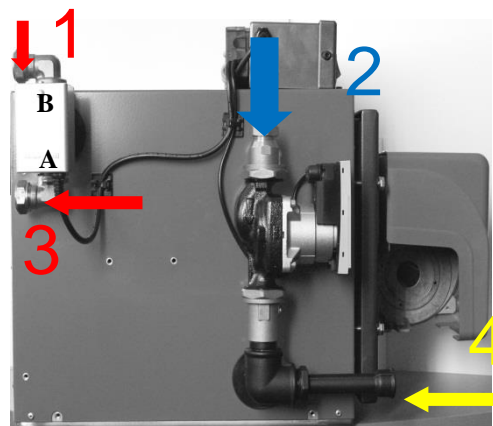


Fig 2

### Note:

**A boiler vessel thermostat must always be fitted (available from Kabola Heating Systems)**

### HR combi boiler (fig 3)

The connection of piping to the HR combi takes place as follows:

1. Assemble the central heating supply pipe at point 1;
2. Assemble the central heating return pipe at point 2;
3. Assemble the separately supplied filler tap and drain combination at point 4 (see fig 2).
4. Assemble the hot sanitary water pipe at point 5 (output);
5. Assemble the cold sanitary water pipe at point 6 (input).

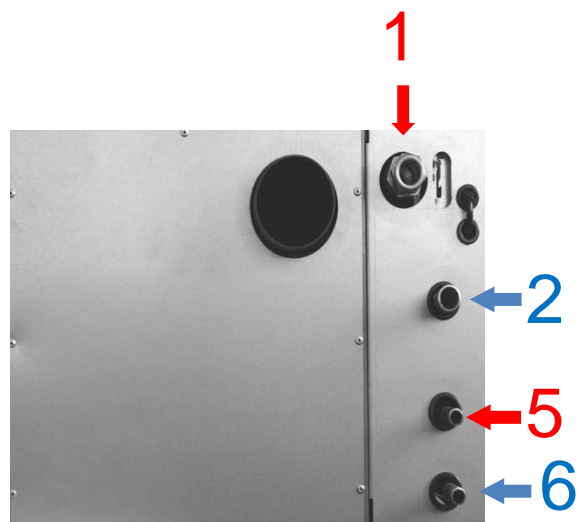


Fig 3



### 4.1.3 Flue gas extraction

#### GENERAL

Flue gas extraction is an essential part of your heating installation. Well-assembled flue gas extraction considerably extends the working life of your heating boiler and has a positive effect on heating efficiency.

**Warning:** Because in most cases the flue gas temperature is higher than 180 °C, it is desirable to insulate the outlet with heat-resistant material in places where contact with body parts is possible. These are available from Kabola Heating Systems B.V.

- Ensure the correct length/diameter proportions. We advise assembling a flue gas outlet with a diameter of 60 mm with a maximum length of 5 meters.
- On sailing and seagoing vessels we advise using a vertical flue gas discharge system (see fig 5).

#### AUTOMOTIVE APPLICATION

With the installation of the heating system for an application not for use on water, one can decide to keep the flue gas outlet as short as possible.

#### HORIZONTAL OUTLET WITH SKIN FITTING

It is possible to bring the flue gas outlet horizontally from the boiler through the wall. The following points must then be respected:

- The maximum permitted length without bends is 3 meters.
- Make sure that the outlet is amply above the water level. If this is not possible use a curved construction (a swan neck as pictured on the right in figure 4).
- Use a skin fitting (single- or double-walled) to bring the flue gas outlet through the wall.
- Use as few as possible bends, no more than 3 bends of 90 °.

**Tip:** If with the existing assembled flue gas outlet you have a larger diameter than the diameter of the flue gas outlet from the boiler, we recommend assembling a flexible flue gas outlet (50 mm diameter) in the existing flue gas outlet. The necessary adaptors and auxiliary parts are available from Kabola Heating Systems B.V.

**Warning:** When using a flue gas outlet longer than prescribed it is possible that condensation water may originate in the outlet. It is very important that the condensation water does not form a water trap with the flue duct becoming blocked (as pictured on the left in figure 4).

Using a swan neck (as pictured right in figure 4) prevents water from entering the flue duct from outside.

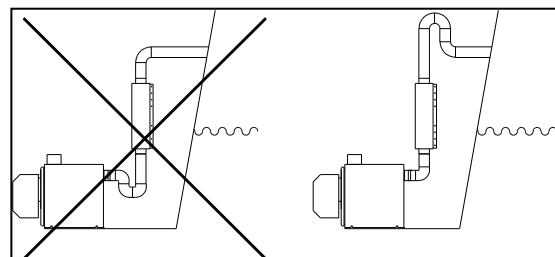


Fig. 4

## VERTICAL FLUE GAS OUTLET

This way of installation is preferable for seagoing boats and sailing boats, because these boats encounter large angles of heel through waves and under sail. For this kind of flue gas outlet, the following points are important:

- Install a proper storm cowl on top of the chimney (this must stop rain from entering) (figure 4).
- Install deck fittings for installing the flue through a deck.
- Install a water trap, to drain possible water caused by condensation
- Keep the chimney as vertical as possible.
- Don't use more than 4 elbows 90°.
- The maximum allowed length is 10 meters. At more than 10 meters in length, always contact Kabola for advice.
- Every elbow of 90° is equivalent to 1 meter straight pipe.
- Use outside double walled chimney pipe
- **With a vertical outlet always use a drain!**

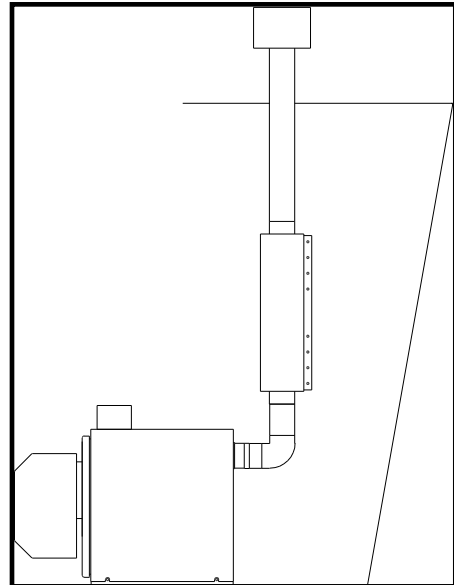


Fig. 5

**Always install a drain with tap directly on the boiler**  
**(See Figure 5.a)**

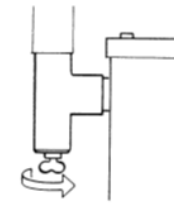


Fig. 5.a

**Hint:** To reduce the noise from flames, it is wise to install a silencer in the exhaust.

**Tip:** Als maatwerk kan Kabola een dekdoorvoer onder een hoek produceren zodat de schoorsteen recht staat.

Your Kabola supplier can provide you with all components which may be required for installation such as:

- Cowls;
- Flexible piping;
- Single and double walled chimney pipes;
- Hull and deck fittings;
- Silencers;
- Water traps;
- Insulation.

#### 4.1.4 Electrical connection

##### Warning:

Disconnect the power supply from the boiler before you start the installation. **The quality of 230 VAC power supply to the boiler should be as good as the power supply from a land line.**

##### TIP:

If you are using an inverter, we recommend a 900W sine wave inverter.

**Do not place the room thermostat near a heat source!**



#### HR- CH

##### To connect the room thermostat (Figure 6)

For connecting the room thermostat use a 2-core insulated wire 0,75 mm<sup>2</sup>. The room thermostat you must connect as follows:

- Remove the cover of the thermostat
- Connect the two thermostat wires to point Lx and L1 (Fig. 7)

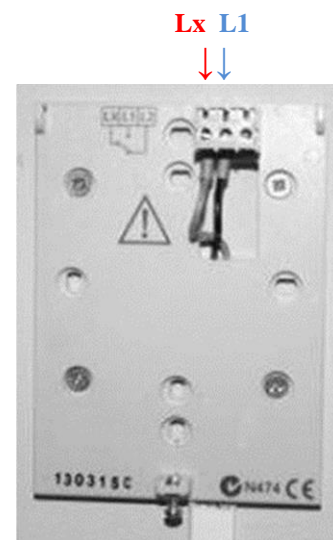


Fig. 7

#### HR- CH

##### To connect the thermostat wires on the HR Boiler

Remove the 7-pin connector at the rear left side of the front panel.

Remove the lid from the 7-pin connector.

Remove the 'bridge' of T1 and T2, connect here the thermostat wires (see sticker).

Replace the lid and push the plug back in.

## HR- Calorifier and Combi boiler

### Connection of the room thermostat and the function warm water on / off

For connecting the room thermostat (with the function of hot water on / off) using a 4-wire 0.75 mm<sup>2</sup> insulated cable. The room thermostat must be connected as follows:

#### HR Calorifier and combi:

- Remove the right plug is located behind the dashboard (see Figure 12);
- Remove the lid from the connector
- Connect the wires of the room thermostat to T1 and T2 as indicated on the sticker in the plug (see Figure 11);

#### HR Calorifier and combi:

- Connect the wires of the hot water on / off function on the points S3 and B4 as indicated on the sticker in the plug (frost guard) (see Figure 11);
- Only at the HR boiler with Calorifier are the two wires to be mounted from the boiler thermostat to the points L1 and N. (see Figure 11);
- Please remove the front of the room thermostat;
- Connect the wires to the thermostat on Q14 and Q11 (see Figure 10); – Please remove the front of the room temperature controller;
- Connect the hot water on / off function on at the points Q21 and Q22 in the thermostat (see Figure 10);
- If the tap is visible in the display, hot water is turned on. If not, it is disabled.

Fig. 9



Fig. 10



Right plug Fig. 12



Fig.11

## 4.1.5 Filling the central heating system for the HR Boiler

The loose fill and drain combination is mounted at point 4 (see figure 2, page 8). Connect your hose on to open the fill and drain combination black button draaien. Open tap the left and put the kettle on 2 bar pressure (see pressure gauge). Vent the entire heating system and put the heating system is between 1.5 and 2 bar pressure.

Add 230 volt voltage to the system by inserting the plug into the earthed electrical socket.

### Bleeding the circulation pump

- Adjust the temperature of the room thermostat higher than the ambient temperature (for example, 5 degrees higher);
- Set the on / off switch (button lights);
- Put the heating pump in automatic venting position. Control knob to 12 hours (see Figure 9);
- Turn a quarter of a turn the red button after about 5 minutes, to position 3 (see Figure 10);
- Check the entire system for air and check the pressure (fill if necessary).

### Tip:

If you do not live permanently on board we recommend to fill the heating system with coolant. The cooling liquid must be suitable for heating systems (pH value 8.5). For more information please contact your dealer or Kabola, Netherlands

- See manual from the circulation pump.

**Attention:** When locking pump couplings are supplied with the boiler, the adjusting grooves must point towards the pump.

Venting mode: Turn switch on 12 o'clock (light flashes)



Figure 9

Operating mode: Turn switch at +/-position 3 (the light will burn continuous)



Figure 10

#### 4.1.6 Connecting of the filter at the oil burner (oil pump)

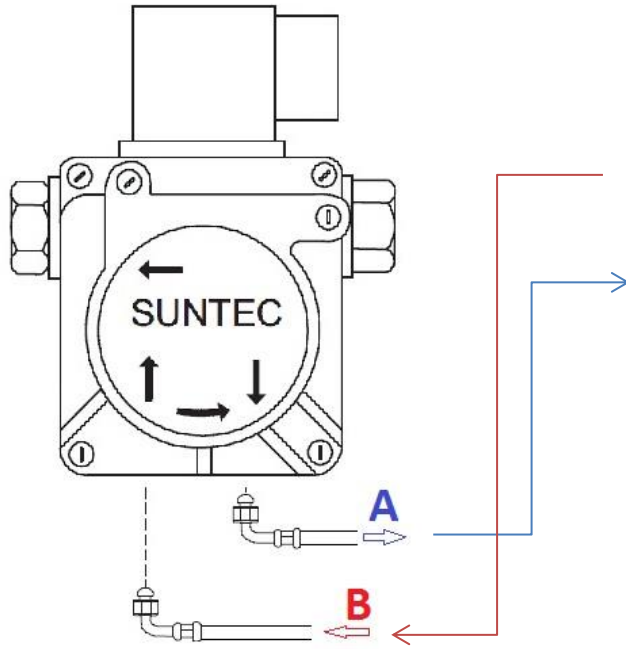


Figure 14

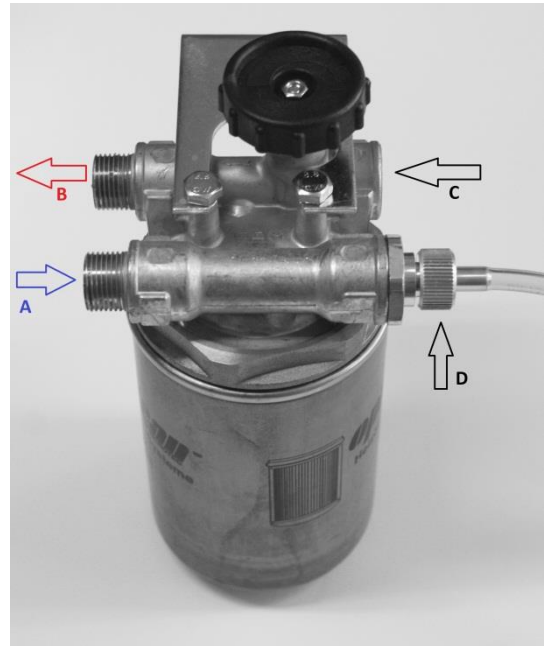


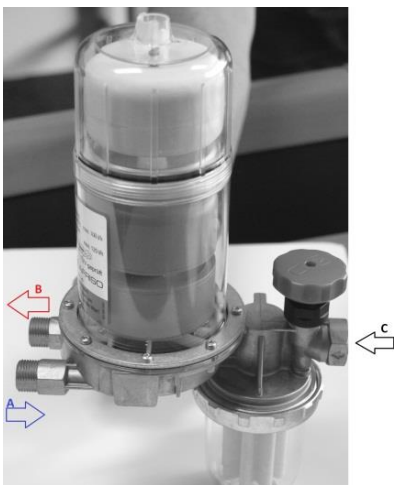
Figure 15

For the connection of the oilfilter the following operations have to be carried out (see figures above ).

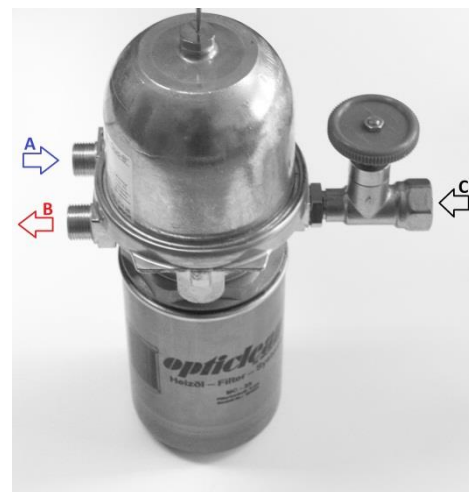
- Connect the two oil hoses from the burner to the oilfilter  
Please note that the arrow markings, ensure that the arrow directions of the oil pump and the oil filter match, the flow and return (see figure 14 and 15);
- Connect the oil line directly from the fuel tank, to the filter (no branch from other users oil (see Figure 15, connector C);
- Venting of the oil filter to pass through swivel rotating D counter-clockwise (see Figure 15). It should clear oil out without foam.

**Warning:** By the following automatic air vent filters never change flow and return (A and B, see figure 14 and 15), this can damage the filter!

- Install the oil filter higher than the oil pump (only in automatic air vent filters);



57-001 Oilfilter Flocotop  
optional



4-D133 Oilfilter TOC-80  
Optional

## 4.2 Starting your system

**After the room thermostat is connected, the following steps:**

- Insert the plug into the grounded socket for 230 volt version.
- Switch the boiler on, at the on / off switch on the control panel. The lamp in the switch indicate that the system is on.
- Put the boiler temperature between 75°and 80°C with the boiler thermostat.
- Set the room thermostat in demand by putting the temperature (for example) 5 degrees higher than the ambient temperature (see also the instructions of the room thermostat);
- Open the valve on the fuel tank;
- Turn the valve on the oil filter through the red knob counterclockwise completely open;
- Open airscrew D by turning left (see Figure 15). Keep repeating this until there are clear oil comes out of the hose:
- If the red (fault) light of the oil burner lit, reset it by pushing it;
- If oil is present the burner will start. If no oil is present the oil burner will give a malfunction. Reset the oil burner by pressing the red light. (Repeat up to 5 times);
- Check all oil connections for leaks when the burner is working;
- Bleed the entire heating system again;
- Check if the boiler turns off when the boiler has reached the set temperature;

If you have **automatic vent filters** (flocotop and toc80), follow the same steps as above

- Check for oil will enter the upper glass bowl;
  - the oil has to have a light color
  - No foaming may occur

Check the steps of section 4.1.7 if no oil will be placed in the glass bowl;

## 5. Operating the boiler

When the boiler has been started and adjusted according to 4.2, operation for the boiler is very simple.

The required temperature is set with the room thermostat, which controls the boiler. The calorifier thermostat controls the boiler. The operation of the room thermostat is explained in the manual of the room thermostat.

If problems arise with the operation of the boiler, you will find a list of possible problems and solutions in Appendix C.

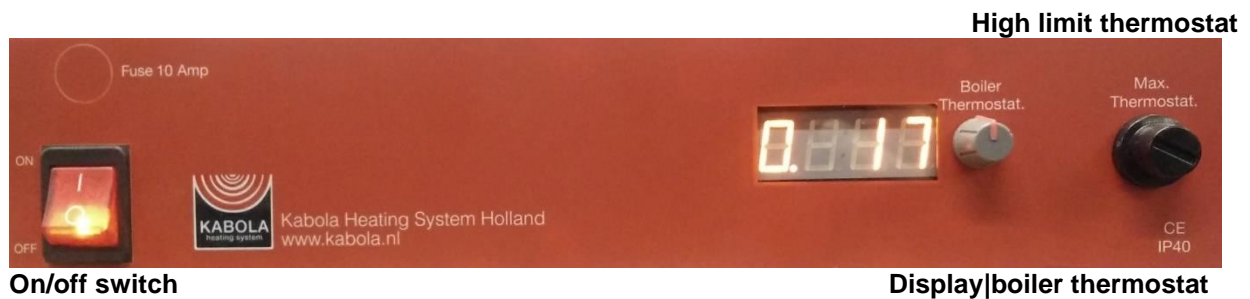
### Operating the room thermostat

Please refer to the manual thermostat

### 5.1 Explanation of the dashboard

#### Operating panel HR-CH (front)

Figure 17



#### Explanation of the operating panel

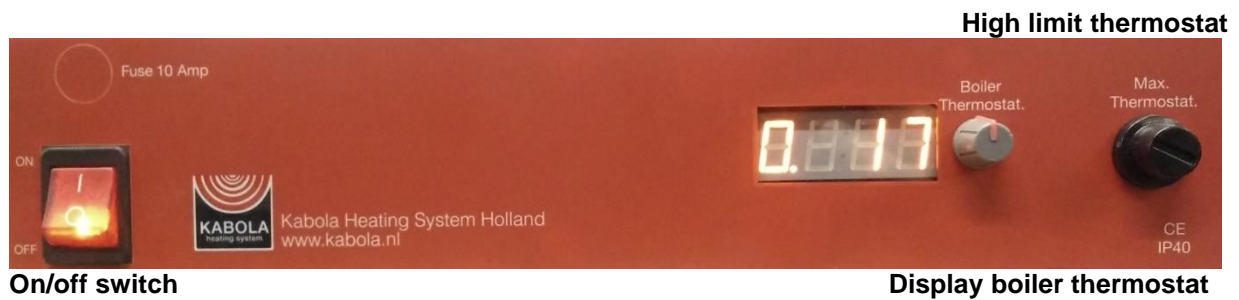
**Set the boiler temperature to 80 degrees Celsius (press boiler thermostat button in and turn).**

Numbers	Explanation	Photo
0	Rest position (boiler is on stand-by) Circulation pump stopped	
1	Room thermostat demands heat. Circulation pump operating	
3	Circulation pump further running time. Circulation pump operates for ± 3 minutes	
	The figure (19) on the right of the display shows the current boiler water temperature	



## Operating panel HR-Calorifier (front)

Figure 18



Explanation of the operating panel

Set the boiler temperature to 80 degrees Celsius (press boiler thermostat button in and turn).

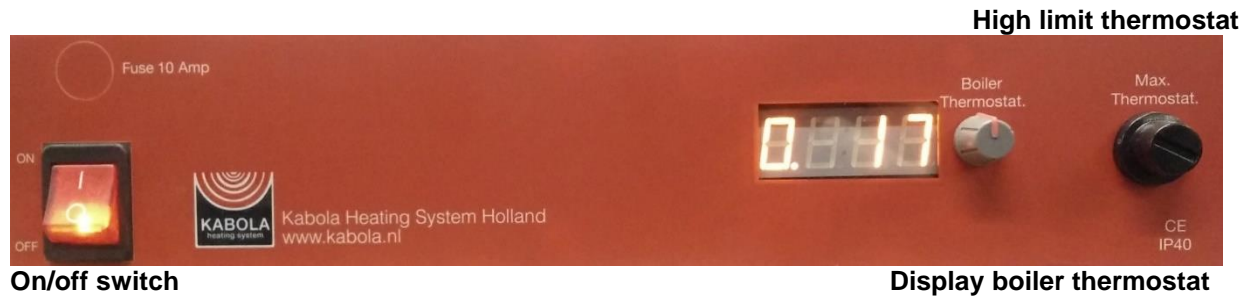
### Key to the boiler display

Numbers	Explanation	Photo
0	Rest position (boiler is on stand-by) Circulation pump stopped	
1	Room thermostat demands heat. Circulation pump operating	
2	Hot water demand from the boiler (boiler thermostat) Circulation pump operating	
3	Circulation pump further running time 0 seconds	
•	Flashing point = hot water off	
•	Point lit up = hot water stand-by	
	The figure (19) on the right of the display shows the current boiler water temperature	

## HR- combi boiler

Operating panel HR-Combi boiler (front)

Figure 19



Explanation of the operating panel

Set the boiler temperature to 80 degrees Celsius (press boiler thermostat button in and turn).

Key to the **combi boiler** display

Numbers	Explanation	Photo
0	Rest position (boiler is on stand-by) Circulation pump stopped	
1	Room thermostat demands heat. Circulation pump operating	
2	Hot water is drawn off. Circulation pump operating	
3	Circulation pump further running time. Circulation pump operates for ± 3 minutes	
4	Tap comfort position Boiler kept at temperature	
•	Flashing point = hot water off	
•	Point lit up = hot water stand-by	
	The figure (19) on the right of the display shows the current boiler water temperature	

## 6. Cleaning and maintenance

### a. Points for attention

Replacement parts must be ordered from Kabola Heating Systems. Only original replacement parts may be used for the guarantee to be applicable. Mention the type and serial number when ordering. Kabola Heating Systems can then supply the correct parts. Annex E includes a summary of the parts.

### b. Cleaning and maintenance

**Warning:** Carry out maintenance and repair activities when the boiler is switched off because the boiler could unexpectedly start up. Remove the plug from the wall socket.

**Warning:** Maintenance and repair activities must be carried out by an accredited installer or a service technician from Kabola Heating Systems.

#### Annually

1. Clean the boiler;
  - 1.1. Remove the oil burner;
  - 1.2. Remove the boiler door;
  - 1.3. Remove the boiler gasket.
  - 1.4. Clean the inside of the boiler using a pipe cleaner;

**Note:** Do not use any aggressive cleaning products when cleaning.

- 1.5. Suck the heating boiler empty with a vacuum cleaner;
  - 1.6. Replace the boiler gasket;
  - 1.7. Replace the boiler door;
2. Clean the flue if necessary.
3. Replace the oil filter cartridge;
4. Clean the burner (see burner manual).
5. Replace the nozzle;
6. Replace the electrode block if required;
7. Replace the photocell if older than 5 years;

**Note:** The old oil filter cartridge must be processed as chemical waste.

It is advised to have the burner settings inspected and adjusted each year by a service technician certified by Kabola Heating Systems.

## 7. Disposal

When disposing of the boiler the following points are important for reasons of safety:

- Dispose of the oil filter and the oil hoses as chemical waste;
- Separate the metal parts and plastic parts and dispose of them separately;
- Dispose of any oil in an environmentally friendly way;
- Transport the discarded boiler according to the instructions in section 3;
- Dispose of this manual with waste paper.

# Appendix A Technical specifications



The Kabola HR-series consists of reliable oil-fired central heating systems supplying 10, 14 and 20kW. The HR series can be supplied as central heating, as calorifier and as combi.

## KABOLA HR-SERIES: ALWAYS THE RIGHT TEMPERATURE



Kabola HR-series  
300, 400 en 500  
**CH**



Kabola HR-series  
300, 400 en 500  
**Calorifier**



Kabola HR-series  
400 en 500  
**combi**

SPECIFICATIONS	HR 300	HR 300	HR 300	HR 400	HR 400	HR 500	HR 500	HR 500	HR 500
Type	cv	boiler	combi	cv	boiler	combi	cv	boiler	combi
Capacity (in kW)	10	10	10	14	14	14	20	20	20
Depth installation size (mm)**	445	480	490	460	490	500	490	480	500
Depth installation size (mm)**	580	580	580	620	620	620	660	660	660
Height installation size (mm)**	435	435	435	450	450	450	500	500	500
CH connection (mm)	22	22	22	22	22	22	22	22	22
Drinking water connection (mm)	15	15	15	15	15	15	15	15	15
Oil connection (internal thread)	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8	3/8
Flue gas (diameter in mm)	60	60	60	80	80	80	80	80	80
Dashboard	digital	digital	digital	digital	digital	digital	digital	digital	digital
Energy efficient circulation pump	+	+	+	+	+	+	+	+	+
Pump timer	+	+	+	+	+	+	+	+	+
Siemens room thermostat	+	+	+	+	+	+	+	+	+
Hot water giv/gh	-	-	-	-	-	-	-	-	-
Oil filter FlocoTop	-(option)	-(option)	-(option)	-(option)	-(option)	-(option)	-(option)	-(option)	-(option)
Oil filter Top 80	-(option)	-(option)	-(option)	-(option)	-(option)	-(option)	-(option)	-(option)	-(option)
Oil filter	+	+	+	+	+	+	+	+	+
External air intake	-(option)	-(option)	-(option)	-(option)	-(option)	-(option)	-(option)	-(option)	-(option)
Fill and drain combination	+	+	+	+	+	+	+	+	+
Voltage (A.C.)	230	230	230	230	230	230	230	230	230
Tap water (600 (p.m. in ltrs)	-	-	3	-	-	4,5	-	-	6,5
Weight (kg)	60	62	65	70	72	75	81	83	94
Efficiency %	90	90	90	90	90	90	90	90	90
Water content boiler (litres)	16	15	16	20	20	20	24	24	24
Fuel	diesel	diesel	diesel	diesel	diesel	diesel	diesel	diesel	diesel
Fuel consumption L/h	1,1	1,1	1,1	1,4	1,4	1,4	1,8	1,8	1,8
Flue gas temperature °C	220/240	220/240	220/240	220/240	220/240	220/240	220/240	220/240	220/240
Spray/Nozzle mm,φ	0,50/60	0,30/60	0,30/60	0,40/60	0,40/60	0,40/60	0,50/60	0,50/60	0,50/60
Start capacity 230V (kW)	295	295	295	295	295	295	295	295	295
Operational capacity 230V (kW)	500	500	500	500	500	500	500	500	500

\* Dimensions include the assembly of central heating pump and oil burner.

*Suitable for heating motor yachts, sailing ships, campers, horse trucks, chalets and even (holiday) homes.*

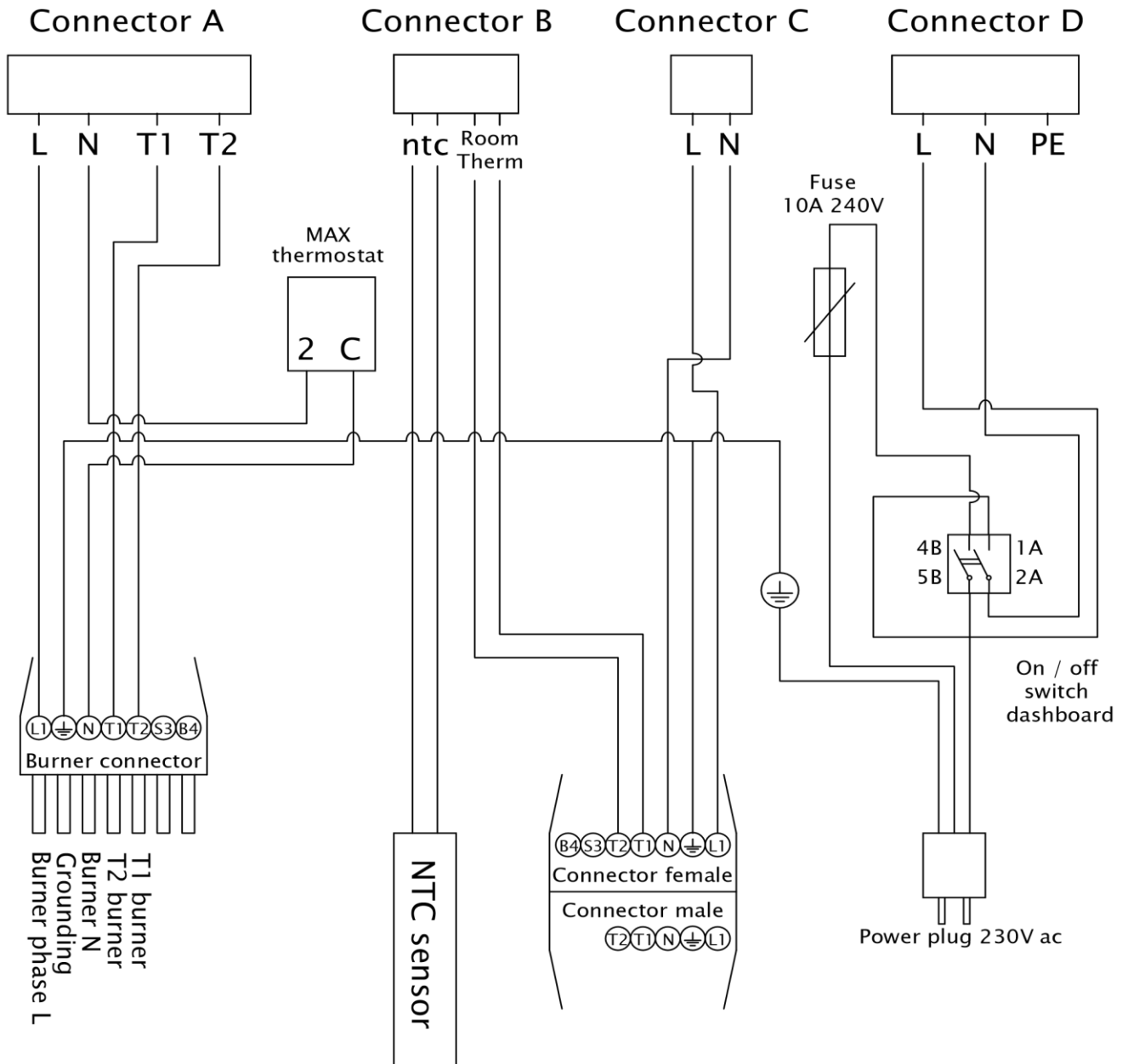
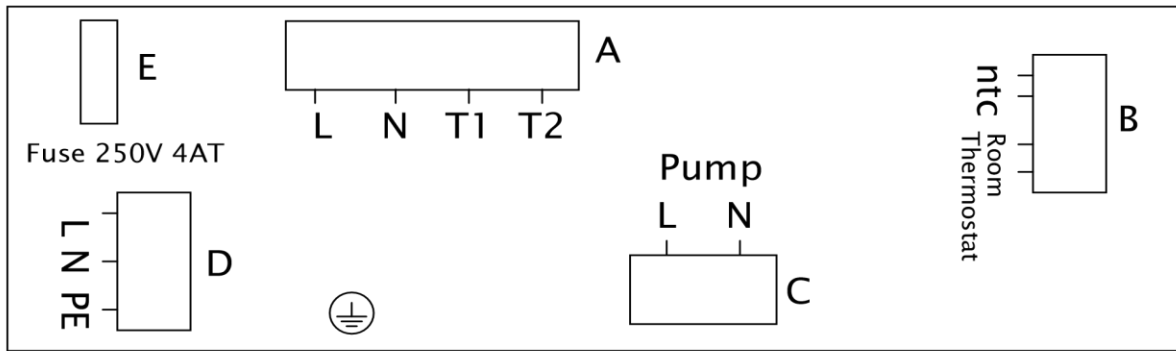
In order to compose an optimum heating system with accompanying central heating boiler, it is important to calculate the **exact capacity**. The capacity is determined by the volume of the rooms on board, the ship's insulation values and the user's requirements. The sailing season and the area where the ship will sail are also very important. Make sure you are properly advised by a Kabola specialist!

**For more information:**  
Tel: +31(0)347 320 030  
Info@kabola.nl  
www.kabola.nl



Appendix B Electrical diagram

Electrical diagram 230V KB/HR/Compact-7 series





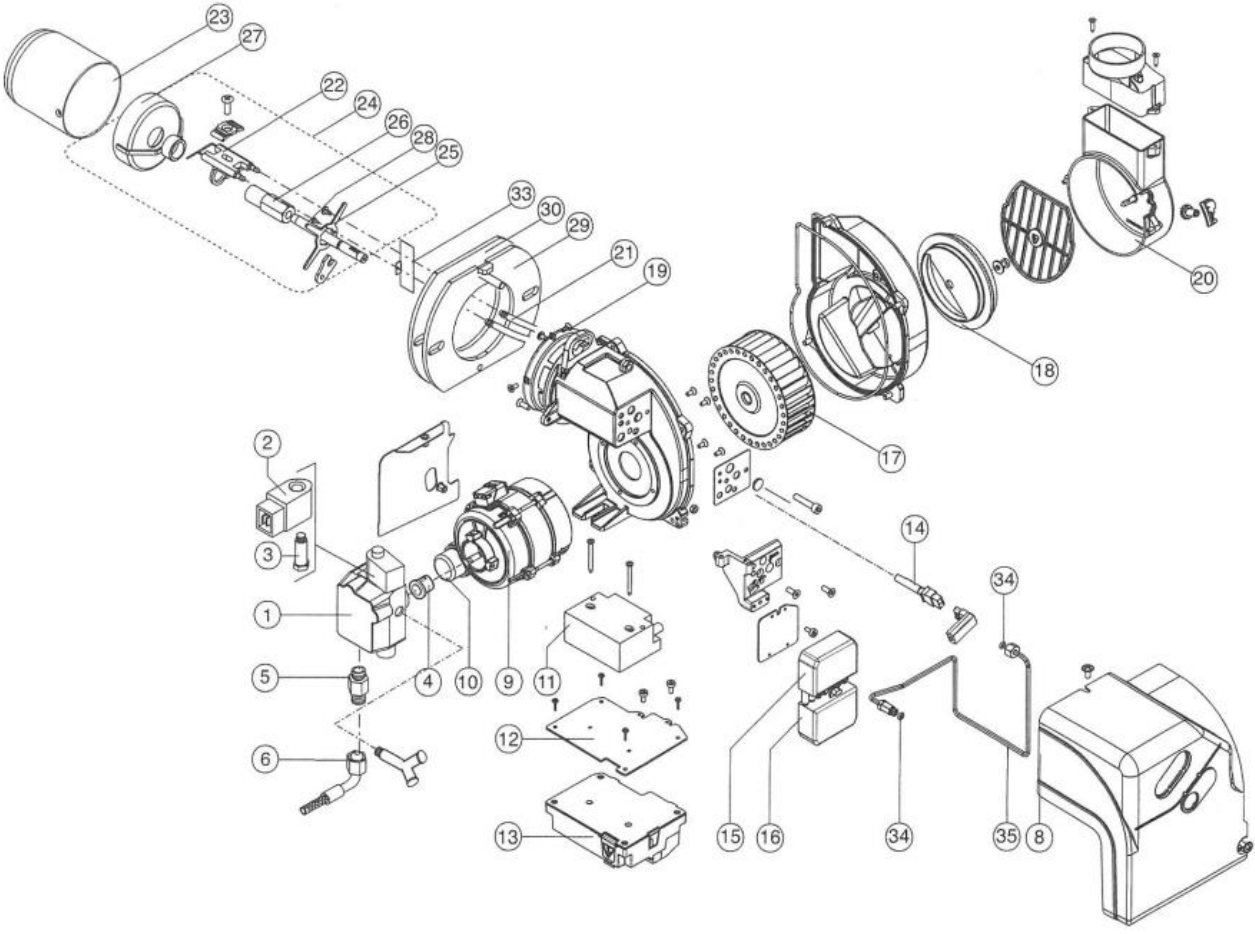
## Appendix C Troubleshooting

Listed below you will find a list with possible problems, their reasons and solutions. When you encounter problems not listed, you should contact your dealer. **Never try to solve problems on your own.**

Problem	Possible reason	Possible solution
Burner will not start	Oil supply interrupted	Bleed the oil filter Change contaminated filter element Fill the oil tank
	Power supply interrupted	Check the fuse on the circuit board (4-8A) Check the power supply Check the max. thermostat at dashboard.
Burner stops		Reset burner (once)
	Flame protection dirty (photo cell)	Clean glass of flame protection
	Flame protection defect (photo cell)	Replace flame protection
Burner starts pulsing	Flue gas flow interrupted	Clear chimney opening
	Boiler dirty	Clean boiler
	Oil supply interrupted	See above
	Nozzle defective	Replace nozzle
Burner shows error		Reset burner (once)
	Low voltage	Check voltage level
	Oil supply interrupted	See above
Boiler does not react to thermostat	Wire in main connector has not been removed (room thermostat)	Remove wire from main connector between 1 and 2
	Boiler thermostat incorrectly adjusted	Adjust boiler thermostat
	Battery of room thermostat flat	Replace battery
Water is not circulating	Pump couplings are closed	Open pump couplings
	Pump not connected to electricity supply	Connect pump
	Rotor of pump is stuck	Turn pump with your hand (see pump manual)

The boiler will reset automatically when the problem has disappeared. Action from the user is only required when the NTC-probe is incorrectly installed, the user needs to have the connection of the NTC-probe checked.

Appendix D Burnerparts





<u>Pos.</u>	<u>Partnumber</u>	<u>Description</u>
1	58-020	Oil pump
2	58-022	Coil pump Suntec
4	58-025	Coupling
5	58-026	not in our system
6	58-026	Oil hose 1/4" 3/8" for Compact burner
8	58-028	Burner cap Compact
9	58-029	Burnermotor 75W Compact
10	58-031	Capacitor 5 uF Simel
11	58-032	Ignition transformer EBI Compact
12	58-033	Mounting Bracket
13	58-034	Burner control box
14	58-035	Flame monitor Ecoflame burner
15	58-036	Connection 7-pole female
16	58-037	Connector 7-pole male
17	58-038	Fan wheel
18	58-039	Air Flap Burner Compact
19	58-040	O-seal for burner Compact/Mounting flange
20	58-041	Air Cabinet burner Compact
21	58-042	Ignition cable TC burner Compact
22	58-043	Electrode block Ecoflam
23	58-057	Flamm Top TC 88,9 x 85 Compact
24	58-048	Nozzle rod TC L-74 with nozzle support Danfoss FPHB 3 Compacytt Burner
25	58-045	Nozzle rod holder support
26	58-046	Nozzle rod Danfoss FPHB 3
27	58-055	Stuwplate Compact 7
29	58-049	Mounting flange Burner Compact
30	58-050	Flange isolation Compact 7
33	58-045	Nozzle rod holder support
34	58-052	Seal Copper oil pipe complete
35	58-053	Copper oil pipe complete

## Annex E EC declaration

### EC declaration of conformity

We,

Kabola Heating Systems BV  
Placotiweg 1 E  
4131 NL Vianen (Utr.)  
The Netherlands

declare entirely under our own responsibility that the product:

#### **Boiler burner Kabola HR – HRE 230 V version**

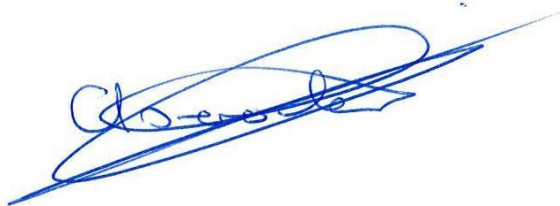
to which this declaration relates, conforms with the following standards:

**EN 303-1, EN 303-2, EN 304, EN 50081-1, EN 50082-1. EN 61010**

according to the provisions of directives

73/23/EEC,  
89/336/EEC,  
92/42/EEC,  
amended by 93/68/EEC.

Vianen, 2017



A.A. van Soolingen,  
Managing Director  
Kabola Heating Systems BV

Appendix F CE declaration

Number E 4008



CERTIFICATE

Gastec Certification B.V. hereby declares that the  
**Heating boiler with forced draught burner, type**

**HR 300            HRE 300**  
**HR 400            HRE 400**  
**HR 500            HRE 500**


made by **Kabola Heating Systems B.V.,**

in **Oudewater, The Netherlands,**

meets the essential requirements as described in the  
**Directive on efficiency requirements (92/42/EEC).**

PIN : 0063BQ3246  
Report number: 176246  
Appliance type : B<sub>23</sub>

Apeldoorn, 28 February 2007

  
Mr. M.L.D. van Rij,  
General Manager.



Gastec Certificatus BV  
P.O. Box 137  
7300 AC Apeldoorn  
Wintersdorf 50  
7327 AC Apeldoorn  
The Netherlands



## Appendix G Guarantee

Certificate of Guarantee

### Guarantee conditions:

1. The scope of this guarantee is restricted to the obligations of Kabola Heating Systems B.V. described on the front page of this document. Secondary damages are specifically excluded.
2. The guarantee period for materials and/or construction defects in the construction of the boiler body is five years. For materials and/or other goods supplied by Kabola Heating Systems B.V., a guarantee period of one year applies.
3. If, during the guarantee period it appears that a material or construction defect in a part cannot be repaired, then the relevant part will be replaced free of charge, and if after replacement, it appears that operation can no longer be guaranteed the entire appliance will be replaced. The above is exclusively at the discretion of Kabola Heating Systems B.V.
4. In the event of the repair of defective parts within the guarantee period, a new guarantee period of 1 year applies.
5. Investigation and repair work will usually be carried out by Kabola Heating Systems B.V. at the location stated by the purchaser.

**Travel and accommodation costs are charged at all times, labour costs are to be borne by Kabola Heating Systems B.V.**

If the boiler must be returned to the factory the transport costs are to be borne by the purchaser. Repaired boilers are delivered on an ex-factory basis. The costs of removing the boiler from the heating system and the installation of the boiler are to be borne by the purchaser

6. A claim against the guarantee will not succeed in the event that:
  - the guarantee certificate has been incorrectly or insufficiently completed, or has been altered
  - No purchase receipt showing the date of purchase can be provided for this guarantee certificate;
  - The appliance has been inexpertly repaired, modified or installed;
  - The appliance has not been installed by a Kabola Heating Systems B.V. dealer or by a Kabola Heating Systems B.V. approved installation contractor,
7. In the event of faults please contact the supplier of your Kabola heating appliance. When doing so, please give your name, address, telephone number, type and serial number of your heating appliance.



## Kabola Heating Systems B.V.

Placotweg 1<sup>6</sup>  
4131 NL • Vianen (Utr.) • Holland

T + 31 (0)347 - 320 030  
F + 31 (0)347 - 355 688

info@kabola.nl  
www.kabola.nl