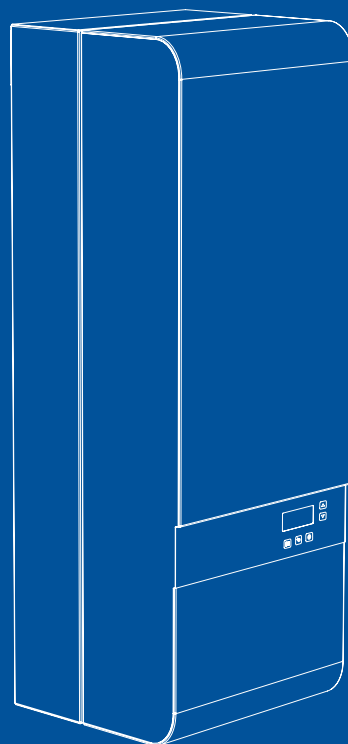


Itho Daalderop
Base Cube

en



user manual

 **Caution!**

DO NOT USE THIS MANUAL IF THE APPLIANCE IS INSTALLED IN COMBINATION WITH AN HP (COOL) CUBE UNIT.

This manual is intended for the user and contains important information concerning safe and correct use, maintenance and troubleshooting the appliance.

The following definitions are used in this manual to draw attention hazards, instructions or indications related to people, products, installations and/or the surroundings.

 **Danger!**

Indicates that action may result in serious or fatal injuries.

 **Warning!**

Indicates a hazard that can cause severe injury and/or severe damage to the product, system or surrounding area.

 **Caution!**

Instructions important for the installation, functioning, operation or maintenance of the product. Failure to observe these instructions can result in minor injury and/or severe damage to the product, system or surrounding area.

Note

Instructions important for the installation, functioning, operation or maintenance of the product. Failure to observe these instructions can result in minor damage to the product, system or surrounding area.

Tip

Instructions that may be important for the installation, functioning, operation or maintenance of the product, but are not related to injury or material damage.

The installer is responsible for installing and commissioning the appliance.

The installer is responsible for the installation and commissioning of the product and/or system.

- The installer must give the user instructions on:
 - how the appliance works
 - how to operate it;
 - how to put it into service, fill and bleed it
 - how to put it out of service and drain it;
 - annual inspection and maintenance;
 - troubleshooting.

Due to our continuous product improvement process, the illustrations in this document may not match the delivered appliance.

The latest version (if available) can be downloaded from our website.

Itho Daalderop cannot be held responsible for costs, damage or personal injury if the product is not used in accordance with the instructions given in the manual.

If you have any questions after reading this user manual, please contact your installer.

Tip

Keep the installation instructions and user manual in a safe place, e.g. with the appliance, so they are available when needed.

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1. Safety

1.1. Work performed by unqualified persons

Installation, commissioning, inspection, maintenance and repair (if necessary) of this product and/or system may only be performed by a qualified installer* in accordance with the instructions (including the safety instructions) stated in the manual. Only original accessories and parts as specified by the manufacturer may be used for these purposes.

**A qualified installer is one who is employed by a central heating or civil engineering installation company registered with the Chamber of Commerce and who is registered in the SEI qualification register, or holds a Sterkin certificate.*

- This product and/or system may be operated safely by children aged 12 years and older and people with physical, sensory or mental disabilities or a lack of experience/knowledge under supervision or following instructions and being aware of the product and/or system hazards.

Do not allow children to play with the product and/or system.

Cleaning and maintenance by the user may not be done by children people with physical, sensory or mental disabilities or a lack of experience/knowledge without supervision.

- This product and/or system is intended for use in domestic and similar environments, such as:
 - personnel kitchens in shops, offices and other work environments;
 - farms;
 - by customers in hotels, motels and other residential environments;
 - bed and breakfast environments

Use in other environments in consultation with the product and/or system manufacturer.

1.2. Explosion of flammable gases

Danger!

There is always a risk of explosion if you can smell gas!

Take the following steps if you smell gas:

- No naked flames, no smoking.
- Do not use any electrical device that may cause a spark (light switch, telephone, plug, doorbell).
- Close the main gas valve.
- Open the windows and doors.
- Evacuate the building.
- Call the gas distribution company from outside the building.
- If you hear gas escaping, leave the building immediately. Prevent others from entering and inform the police and fire brigade once you are outside.

1.3. Contact protection

Danger!

Electrical power is required for specific activities involving the appliance.
Avoid contact with electrical components, such as pumps, fans, etc.

Take the following steps before carrying out work on an open appliance:

- Disconnect the appliance from the mains power supply before carrying out any work on an open appliance.
- Secure the appliance against being switch on accidentally.

1.4. Flue gas leaks

Danger!

Poisonous carbon monoxide may be released if there is a flue gas leak.

Ensure that the installation area has adequate ventilation and air openings in accordance with the current regulations.

Take the following steps immediately if there is a flue gas leak:

- Switch off the appliance.
- Open the windows and doors.
- Evacuate the building.
- Contact a qualified installer.

1.5. Forming of carbon monoxide

The poisonous gas carbon monoxide may be released if there is insufficient air supply to open installations!

- Do not place any objects in front of ventilation or air supply openings. They must always remain clear.
- Do not block ventilation and air supply openings in doors, windows or walls.
- Never reduce the size of ventilation or air supply openings in doors, windows or walls.
- Ensure adequate ventilation when airtight windows are installed.

1.6. Solar water heating booster

Danger!

If the appliance is used as a booster for solar water heating, the appliance and the hot water function must remain enabled.

Warning!

If the appliance is equipped with a thermostatic mixing valve fitted ahead of the appliance, do not set the temperature lower than 60°C.

When solar water heating is used, the sun helps to heat the hot water. When there is not enough sunlight, additional heating is required to raise the temperature of the tap water to at least 60°C to prevent the formation of the Legionella bacteria.

1.7. Precautions during servicing

Danger!

This appliance has a component in the heat exchanger that contains ceramic fibres. Due to the size and structure of these fibres, they could be inhaled with potentially harmful consequences.

The material safety data sheet (MSDS) for the ceramic displacer is available on request or can be downloaded from the website of Itho Daalderop.

ETC VecoForm RCF1260

PRECAUTIONARY MEASURES



The ceramic fibres are irritating to the skin, eyes and respiratory tract. Avoid swallowing, inhalation and direct skin contact.



Wear safety goggles, protective clothing, work gloves and a mask.



Do not eat, drink or smoke while using the product.

When removing waste material, package it safely and avoid stirring up dust.

Health complaints are not to be expected as long as ceramic fibres are used according to regulations.

FIRST AID MEASURES



Skin

Contact with the skin can cause temporary skin irritation. If this happens, rinse the skin with water and wash carefully. Do not rub or scratch the exposed skin.



Eyes

In case of contact with the eyes, rinse copiously with water. Use an eyewash station if available. Do not rub your eyes.

Respiratory tract (nose and throat)

In case of nose or throat irritation, go to a dust-free place, drink water and blow your nose.

Consult a doctor if the symptoms persist.

2. Product information

2.1. CH appliance technical data

TECHNICAL DATA	UNIT	BASE CUBE		
		24/30 13L	24/35 16L	30/35 16L
DIMENSIONS AND WEIGHT				
Height x width x depth (H x W x D)	mm	920 x 400 x 370		
Weight	kg	40		
CONNECTIONS				
Air supply	mm	Ø 80		
Flue gas outlet	mm	Ø 80		
Hot & cold water (domestic)	mm	Ø 15		
CH supply / return	mm	Ø 22		
Gas	mm	Ø 15		
Condensation drain	mm	Ø 32		
GENERAL				
Appliance category		I12L3P		
Appliance class		B23, C13, C33, C43, C53, C63, C83, C93		
IP classification		IPX4D (IPX0B ^[2])		
Flue gas temperature (operating / peak)	°C	99 / 113		
Flue system ΔP min./max.	Pa	0 - 218		
Annual consumption efficiency lower value (HR _{ww})	%	97.9		
Power supply		230 V / 50 Hz, 125 W		
HEATING				
Nominal load upper value [Q _s]	kW	6.7 - 24.0	6.7 - 24.0	6.7 - 30.0
Nominal load lower value [Q _i]	kW	6.0 - 21.6	6.0 - 21.6	6.0 - 27.0
Nominal capacity 80/60°C [P]	kW	20.7	20.7	25.9
Nominal capacity 50/30°C [P]	kW	22.0	22.0	27.5
Gas consumption	m ³ /hr	0.7 - 2.6	0.7 - 2.6	0.7 - 3.3
Maximum CH efficiency (30°C return) upper/lower value	%	96.0 / 107.7		
Maximum CH temperature protection setting	°C	110		
Maximum CH supply temperature	°C	90		
Maximum CH water pressure [P _{ms}]	kPa	300		
Electrical consumption (full load / partial load / standby) ^[1]	W	30.3 / 15.2 / 4.3	30.3 / 15.2 / 4.3	39.9 / 15.2 / 4.3
DOMESTIC WATER				
Nominal load upper value [Q _{nw} (s)]	kW	6.7 - 30.0	6.7 - 35.7	6.7 - 35.7
Load boost upper value [Q _w (s), max]	kW	35.7	-	-
Nominal load lower value [Q _{nw} (i)]	kW	6.0 - 27.0	6.0 - 32.0	6.0 - 32.0
Load boost lower value [Q _w (i), max]	kW	32.0	-	-
Nominal capacity [P]	kW	26.7	32.1	32.1
Gas consumption	m ³ /hr	0.7 - 3.8		
Hot water setting	°C	62.5		
Specific pipe length	m	29.5		
Effective appliance waiting time	s	0		
Tap flow (60°C / ΔT = 50 K) [D]	litre/min	8.1	9.2	9.2
Tap flow (40°C / ΔT = 30 K) [D]	litre/min	13.5	15.7	15.7
Tap flow pressure difference (60°C / ΔT = 50 K) [P]	kPa	60	65	65
Bath capacity (40°C / ΔT = 30 K)	litres	148 l (11 min)	152 l (10 min)	152 l (10 min)
Maximum water pressure [P _{mw}]	kPa	800		
APPROVAL MARKINGS				
High efficiency heating		HR107		
High efficiency hot water		HR _{ww}		
Comfort hot water		CW4	CW5	CW5
Cleaner combustion		SV		
Solar water heating booster		NZ		

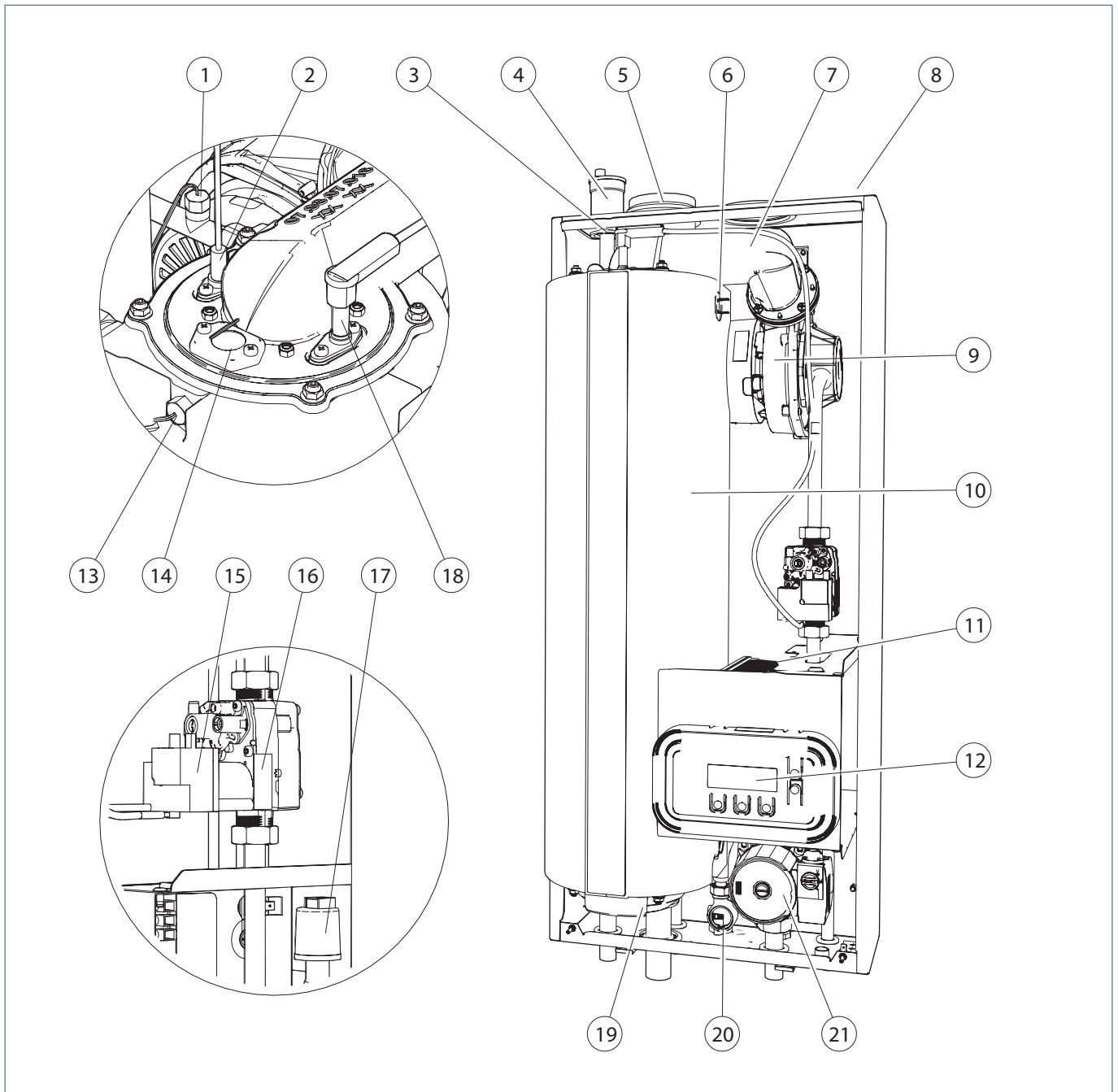
1) Excluding CH pump

2) Appliance class B23

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2.2. CH appliance parts

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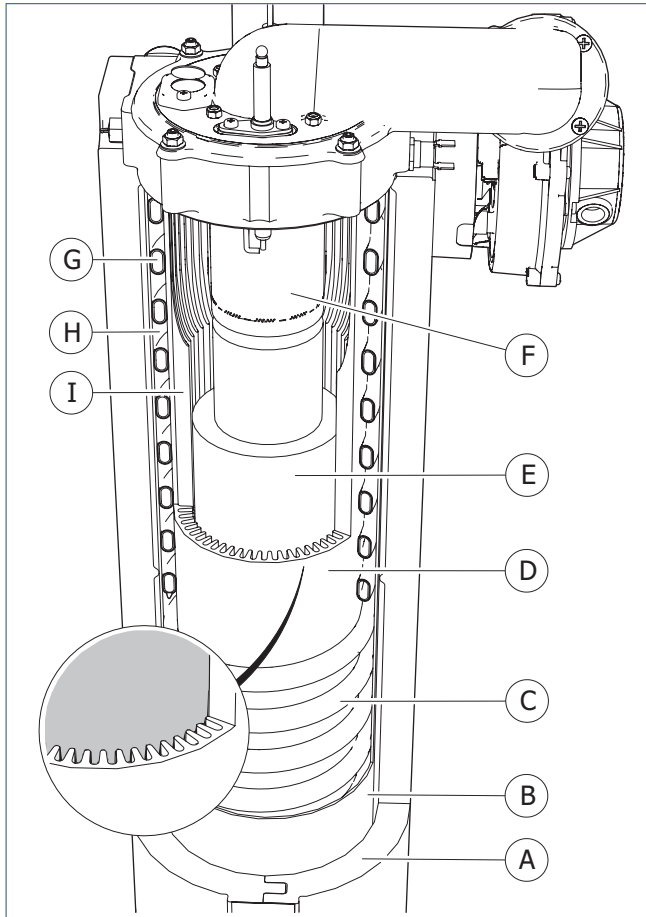
APPLIANCE PARTS LEGEND

- | | |
|-----------------------------------|--|
| 1. Temperature sensor [hot water] | 13. Temperature sensor [CH supply] |
| 2. Ionisation electrode | 14. Sight glass |
| 3. Automatic shut-off | 15. Ignition transformer |
| 4. Bleeder | 16. Gas valve |
| 5. Flue pipe | 17. Pressure sensor |
| 6. Maximum thermostat | 18. Ignition electrode |
| 7. Burner casting | 19. Outlet manifold / condensation catcher |
| 8. Rating plate | 20. Flow sensor |
| 9. Fan | 21. CH pump |
| 10. Heat exchanger | |
| 11. Control unit | |
| 12. Display | |

2.3. Mode of operation of the appliance

The appliance is a continuously modulating HR combination boiler. The heat exchanger specially developed by Itho Daalderop provides very high efficiency for both tap water and central heating water.

2.3.1. CH heat exchanger



- | | |
|-------------------|-----------------------|
| A. Insulation | F. Burner |
| B. Outer tube | G. Hot water |
| C. Helix | H. CH water |
| D. Heat exchanger | I. Heat exchanger rib |
| E. Displacer | |

The heat exchanger consists of an aluminium tube (D) with internal ribs (I). A helical coil (C) is wound around this tube, and the hot water flows through this coil. A second aluminium tube (B) is slid over the helical, and the ends of the assembly are clamped between two aluminium flanges.

The central heating water flows in channel (H) between the bends on the helical coil. A displacer (E) is placed in the core of the heat exchanger and causes the flue gas to pass through the ribs of the heat exchanger.

The top part of the displacer is ceramic, while the bottom part is aluminium. The entire heat exchanger is insulated by two expanded polystyrene (EPS) shells (A).

The heat exchanger causes the central heating water to be heated directly by the heat from the flue gas. A fan forces the flue gas

through the ribs of the heat exchanger, from the top to the bottom. The ribs extract heat from the flue gas and transfer it to the water flowing through the heat exchanger from the bottom to the top. The flue gas cools down so much that some of the water vapour in the gas condenses near the bottom of the heat exchanger. This releases additional heat, which is transferred to the relatively cold water, resulting in an efficiency much higher than 90%. The condensation water is discharged into the sewer system through a trap at the bottom of the appliance.

2.3.2. No three-way valve for hot water

A standard central heating appliance only heats the central heating water. If the appliance also has to produce hot tap water, a three-way valve is fitted in the central heating circuit. The three-way valve directs the heated water to the radiators or to a separate heat exchanger for hot water. In this way the hot water is heated indirectly.

This appliance is one of the few commercially available high-efficiency combination boilers that heats domestic hot water directly in the heat exchanger. This eliminates the need for a three-way valve and a plate heat exchanger for transferring heat from the unique heat exchanger to the domestic hot water supply with high efficiency.

2.3.3. Cleaner combustion

A specially developed burner is located above the heat exchanger. The gas/air mixture is fully mixed before it reaches the burner. This results in a very low flame height during combustion, enabling a compact construction and complete combustion with low emission of environmentally harmful substances. Thanks to this environmentally friendly combustion, the appliance meets the requirements for the "Cleaner Combustion" approval label.

2.3.4. Burner output

The appliance has a continuously modulated burner output control. The burner output can be adjusted by controlling the fan speed with the aid of the mechanical gas/air mixer.

2.3.5. Most efficient start (MES)

MES is a convenient energy-saving feature that keeps the house at a set room temperature while operating on the lowest possible power level (and therefore the most efficient). When there is demand for central heating, the appliance always starts heating the house at the low power level. The appliance is controlled by a standard on/off room thermostat.

The period in which the burner remains at a low power level partly depends on the previous heat demand.

2.3.6. Modulating room thermostat with OpenTherm®

Apart from with the standard on/of thermostat with MES control, the appliance can also be connected to a modulating room thermostat in accordance with the OpenTherm® communication protocol. The modulating room thermostat adjusts the power level of the appliance according to the difference between the desired temperature and the actual temperature in the room. In this way, the house is kept at the desired temperature with the lowest possible power consumption. This translates into high efficiency, a steady room temperature and optimal radiator temperatures. It is also possible, depending on the type and make of room thermostat, for the thermostat to display the current status of the appliance and any error conditions that may arise. For specific information, see the user manual provided with your room thermostat.

2.3.7. Eco Comfort

When hot water production is enabled, the water in the appliance is automatically kept at a set temperature in order to reduce the waiting time. This yields the greatest level of comfort. In **ECO** mode, the water in the appliance is not kept at a set temperature, so that the waiting time is longer whenever hot water is needed. This mode is the most energy efficient.

To provide comfort for the user and allow the appliance to operate efficiently, it also has a unique hot water mode called **Eco Comfort**. This mode analyses the user's hot water consumption over a 24-hour period. The next day, the appliance synchronises the hot water temperatures with the data from the previous day. This way the appliance does not keep the water hot at times when demand is not anticipated.

2.3.8. Outdoor temperature control (OTC)

The appliance is already prepared to be used with an outdoor temperature control. With low outdoor temperatures the radiators need to provide more heat than they do with higher outdoor temperatures. Outdoor temperature control coordinates the temperature of the water supplied to the central heating system with the outdoor temperature. The appliance can easily be operated in OTC mode with a connected digital outdoor temperature sensor.

2.3.9. Suitable for a second CH zone

The appliance can be connected to a second, independently controlled central heating circuit. For example, this second zone could be used to warm up the bathroom in the morning while the rest of the house is remains unheated.

The second zone can be activated independently or in combination with the main zone by using a second thermostat (equipped with a clock switch with a floating contact).

2.4. Applications with new housing developments

High levels of moisture is found in building materials for new housing – about 4,000 litres per house on average. This moisture originates from wet building materials such as concrete, cement, plaster and adhesives. Materials can also become wet from rain during the construction period. The best way to eliminate this moisture is to ventilate the house properly and keep the temperature as constant as possible.

Forced drying: not too fast

Heating the house to promote the drying process is sometimes called forced drying. Forced drying should not be done too quickly, otherwise significant damage (such as contraction cracks) can occur. It is therefore recommended to give careful attention to forced drying. Bear in mind that the forced drying process may take as long as six months. Set the heating to 15 to 18°C, and raise it to 20°C after moving in. Do not set the heating any higher, as the materials will start drying too quickly and damage to the building structure may occur.

Ventilation during forced drying

Good ventilation and air circulation are essential during the drying process. During the first year, keep furniture approximately 5 cm away from the walls to allow the moisture to escape. Open the windows each day for sustained periods. The ventilation grilles must remain open all the times and the forced air ventilation system should be left to run constantly (don't unplug it). Run the forced air ventilation system at high speed as often as possible during the first few months.

This will create the most favourable air circulation in the house.

Energy costs

Good, continuous ventilation is not only important for good health; it is also important to avoid moisture problems in the house. However, ventilation takes heat out of the house. Forced drying new houses also results in higher energy consumption, resulting in a higher energy costs.

2.5. Approval label

The appliance has the following approval labels:

HR (high efficiency heating)



The efficiency of gas appliances is registered according to European standards, based on the lower value (water vapour is regarded as a "by-product" and the heat it contains is therefore not taken into account). Efficiencies of more than 100% result from the fact that HR boilers actually utilise this heat.

The efficiency of the appliance is 107% (HR107). This means that the CH appliance has relatively low energy consumption, which translates into lower energy costs and less environmental impact.

SV (cleaner combustion)



Gas appliances with the SV label have relatively clean combustion. This label indicates that the appliance emits a minimal amount of environmentally harmful substances such as carbon monoxide (CO) and nitrogen oxides (NO_x). Lower emissions reduce acidification of the environment and help to avoid smog.

CW4 (comfort hot water)



Appliances with the CW label (comfort hot water) fulfil significant basic requirements with regard to tap threshold, waiting time, temperature uniformity and efficiency.

An appliance with the CW4 label fulfils the following requirements:

- Kitchen: at least 7.5 l/min hot water at 60°C
- Shower: at least 12.5 l/min hot water at 40°C
- Bath: 120 litres of hot water at 40°C within 11 minutes

CW5 (comfort hot water)



Appliances with the CW label (comfort hot water) fulfil significant basic requirements with regard to tap threshold, waiting time, temperature uniformity and efficiency.

An appliance with the CW5 label fulfils the following requirements:

- Kitchen: at least 7.5 l/min hot water at 60°C
- Shower: at least 12.5 l/min hot water at 40°C
- Bath: 150 litres of hot water at 40°C within 10 minutes

HRww (high efficiency hot water)



Appliances with this label produce hot water efficiently. It supplements the existing Gaskeur/CW label, with the difference that the required efficiency is much higher and the requirements for waiting time in both summer and winter are more stringent.

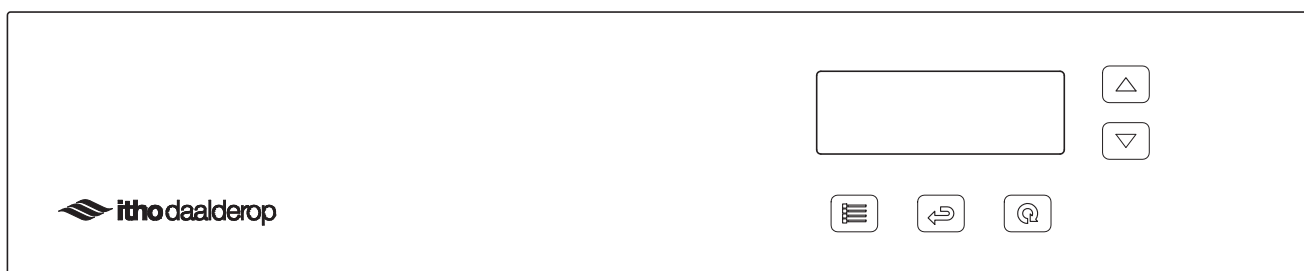
NZ (solar water heating booster)



Appliances with this label are suitable for use as booster heaters for solar water heating systems. Always use an approved solar water heater system.

3. Operation

3.1. Control panel



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The control panel is located at the front of the central heating appliance and is used to start up the appliance, or following a power interruption or power failure, or adjusting the settings, servicing, or in the event of blockages or errors.

The control panel has the following elements:

1 Display

The status of the appliance is shown on the display. Warning, blocking and error messages are also shown on the display.

2 Menu key



Press this key to open the menu from the status screen. When in the menu, press this key to return to a higher level.

3 Enter key



Press this key to activate a selection. This may be a changed setting or an underlying menu.

4 Reset key



When the status screen is displayed, press this key to unlock the appliance. When the menu is displayed, press this key to exit the menu and return to the status screen.

5 Arrow keys (up/down)



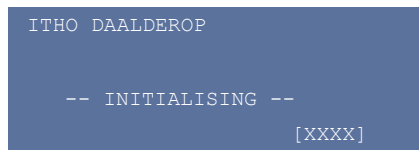
Use the arrow keys to scroll through the menu structure of the CH appliance.



3.2. Menu screens

3.2.1. Initialising

The following screen is shown while the appliance is initialising:



The software version is shown at the bottom of the screen.

The status screen appears within 1 minute, and the appliance is now operating. The appliance is now ready for central heating and hot water heating.

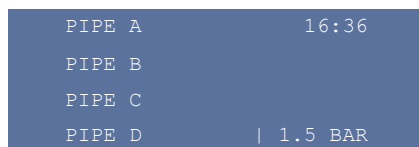
3.2.2. Status screen

Note

The display will flash continuously with errors, warnings or blockages.

The status of the appliance is shown on the display.

If the display is not lit, simply press the **MENU** key to display the status screen.



Pipe A

Error code (Exx), blockage code (Bxx), warning code (Wxx) and time (24-hour clock).

Pipes B and C:

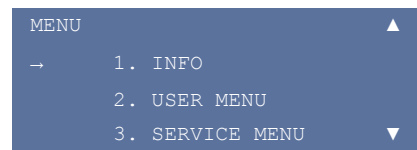
Description of the error, blocking, warning or status

Pipe D:

CH pressure / CH supply temperature

3.2.3. Menu

Each menu screen has a heading that remains on view at the top left of the display.



The arrow → on the display indicates the selected pipe.

The ▲ and/or ▼ arrows at the right side of the display indicate that additional options are available.

- Go to the main menu by pressing the **MENU** key. When in the menu, press this key to return to a higher level.
- Using the arrow keys on the control panel, select an option and confirm your selection with the **ENTER** key.

Use the **MENU** key to go back one level in the menu structure.

In any menu screen, the display will return to the status screen after three minutes if no key is pressed.

3.3. Menu structure

The entire menu structure is presented on the following pages, with each function explained with a brief description.

MENU

<p>MENU</p> <ol style="list-style-type: none"> 1. INFO 2. USER MENU 3. SERVICE MENU 4. LANGUAGE/TAAL 5. DATE/TIME 	INFO	Information about the appliance, software, errors and setpoints.
	USER MENU	The user can adjust a number of settings here.
	SERVICE MENU	Only accessible to installers.
	LANGUAGE/TAAL	Set your preferred language here.
	DATE/TIME	Set the date and time here.

en

INFO

<p>MENU</p> <ol style="list-style-type: none"> 1. INFO 2. USER MENU 3. SERVICE MENU 4. LANGUAGE/TAAL 5. DATE/TIME 	<p>INFO</p> <ol style="list-style-type: none"> A. VERSION B. ERRORS
--	---

VERSION

<p>VERSION</p> <p>DISPLAY [XXXX]</p> <p>CTRL UNIT CH [XXXX]</p>	DISPLAY [XXXX]	Software version of the display
	CTRL UNIT CH [XXXX]	Software version of the control unit

ERRORS

<p>ERRORS</p> <ol style="list-style-type: none"> A. ERROR B. BLOCKING 	The user can view the most recent error messages here.	
	<p>ERROR</p> <p>Code and description of the last fault causing the appliance to be locked out.</p>	<p>ERROR</p> <p>Exx</p> <p>Description 1</p> <p>Description 2</p>
<p>BLOCKING</p> <p>Code and description of the last fault causing the appliance to be blocked (temporarily).</p>	<p>BLOCKING</p> <p>Bxx</p> <p>Description 1</p> <p>Description 2</p>	

USER MENU

en

MENU

1. INFO
2. USER MENU
3. SERVICE MENU
4. LANGUAGE/TAAL
5. DATE/TIME

USER MENU

- A. HOT WATER On
- B. DISPLAY Off after 5 min
- C. DISPLAY SHOWS CH pressure
- D. PRESSURE SENSOR On
- E. HT PRIORITY HT/25
- F. OTC Off
- G. STD SETTINGS

HOT WATER

HOT WATER

- On
- Off
- Eco
- Eco Comfort

The water is automatically kept at the set temperature in order to reduce the waiting time.

- **ON** – Water heating is enabled. The water is kept at a constant temperature in order to minimise the waiting time. This setting provides the greatest comfort.
- **OFF** ⁽¹⁾ – Water heating is disabled. Cold water will flow from the hot water tap.
- **ECO** ⁽²⁾ – Water heating is enabled. The water is not kept at the set temperature, therefore waiting time is longer than with the ON setting. This setting is the most energy efficient.
- **ECO COMFORT** ⁽³⁾ – **[standard setting]**. Water heating is enabled. The water is kept at the set temperature and is synchronised to user consumption. This setting provides a combination of comfort and energy efficiency.

1) The indication "HOT WATER OFF" will flash at the top left of the status screen.

2) The indication "ECO" will flash at the top left of the status screen.

3) The indication "ECO COMFORT" will flash at the top left of the status screen.

DISPLAY

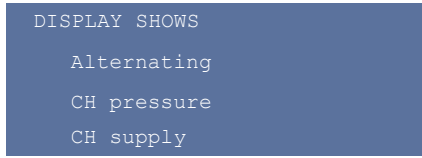
DISPLAY

- Off after 5 min
- Off after 20 min
- Always on

Set the illumination time for the display.

- **OFF AFTER 5 MIN** – **[standard setting]**.
- **OFF AFTER 20 MIN** – The display remains lit for 20 minutes after the last user action.
- **ALWAYS ON** – The display is always lit.

DISPLAY SHOWS



Select the information to be shown at the bottom right of the status screen.

- **ALTERNATING** – The other two selections are shown alternately.
- **CH PRESSURE – [standard setting].**
- **CH SUPPLY** – The temperature of the central heating water leaving the appliance.

PRESSURE SENSOR

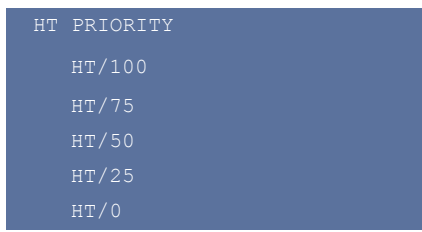


The water pressure of the central heating system is measured.

- **ON – [standard setting].**
- **OFF*** – The pressure sensor value is ignored. The appliance continues to operate.

**) Only when requested by the installer or the manufacturer.*

HT PRIORITY



If there is simultaneous central heating demand from two zones, the demand can be shared over the first and second zones. Distribution is done by setting a percentage of the cycle time in which the second zone can meet the central heating demand.

- **HT/100*** – If there is simultaneous central heating demand, the second zone always takes priority.
- **HT/75*** – 75% of the cycle time is allocated to the central heating demand from the second zone.
- **HT/50*** – 50% of the cycle time is allocated to the central heating demand from the second zone.
- **HT/25 – [standard setting]** 25% of the cycle time is allocated to the central heating demand from the second zone.
- **HT/0*** – If there is a simultaneous central heating demand, the first zone always takes priority.

**) Contact a qualified installer for more information about the setting.*

****) Only relevant when the second CH zone is used (optional).*

OTC

OTC

Off

Room thermostat

Clock Switch

en

Outdoor temperature control adjusts the central heating supply temperature of the appliance according to the outdoor temperature. This form of control must always be combined with individual room control or zone control.

- **OFF – [standard setting].**
- **ROOM THERMOSTAT** – Heat is supplied to the house according to the demand from the thermostat. Along with the outdoor temperature, the indoor temperature is used to determine the necessary central heating supply temperature (room temperature compensation). If there is no heat demand from the room thermostat for an extended period (more than 10 minutes), control switches to a lower central heating supply temperature (night setback period).
- **CLOCK SWITCH** – Heat can be supplied continuously to the house. Only the outdoor temperature is used to determine the necessary central heating supply temperature (no room temperature compensation). A connected on/off room thermostat or clock switch determines when a lower central heating supply temperature is used (night setback).

Tip

The heating system may become imbalanced if the appliance is not configured properly, leading to reduced efficiency.

Tip

Make changes only if requested by the installer or the manufacturer.

STD SETTINGS

DEFAULT SETTING

RESTORE

Accept <ENTER>

Cancel <MENU>

This function resets all user-configured settings to the standard settings.

After resetting, check whether the settings match the system and meet the user preferences.

DEFAULT SETTING

WERE APPLIED!

SERVICE MENU

MENU

1. INFO
2. USER MENU
3. SERVICE MENU
4. LANGUAGE/TAAL
5. DATE/TIME

SERVICE MENU

ACCESS CODE: XXXX

This menu is reserved for installers and service installers and is protected by an access code.

en

LANGUAGE/TAAL

MENU

1. INFO
2. USER MENU
3. SERVICE MENU
4. LANGUAGE/TAAL
5. DATE/TIME

The menu language can be set to **ENGLISH**, **NEDERLANDS**, **FRANCAIS** or **DEUTSCH**.

LANGUAGE/TAAL

English	[en]
Dutch	[nl]
French	[fr]
German	[de]

DATE/TIME

MENU

1. INFO
2. USER MENU
3. SERVICE MENU
4. LANGUAGE/TAAL
5. DATE/TIME

The date and time can be set in this menu.

- Use the **ENTER** key to select the value you want to change.
Use the arrow keys on the control panel to increase or decrease the value.

DATE/TIME

Friday	
14 Feb 2010	07:00

4. Use

4.1. Putting into service

en

Warning!

If the mains lead is damaged, it must be replaced before the appliance is connected to an earthed power socket.
The mains lead may only be replaced by a qualified electrician.

Caution!

Before putting the appliance into service, check and verify the following:

- The entire central heating system has been filled with water and bled.
- The entire hot water circuit has been filled with water and bled.
- The system has been checked for leaks.
- The gas supply has been purged of air and checked for leaks.

- Check that the shut-off valves for gas, water and central heating pipes have been opened.
- Inspect the trap of the appliance and the heating system. They must be filled with water.
- Plug the mains lead of the appliance into an earthed power socket.
The appliance is phase sensitive. If the following message appears, remove the power plug from the power socket and plug it in again after rotating 180 degrees.

```
B10          16:36
Phase Error
Reverse Power Plug!
| 0.0 BAR
```

Tip

If the appliance does not have power, check the fuse in the fuse box and replace it if necessary. If this fuse is not the cause of the problem, check the fuse in the control unit. Replace it if necessary.
If that fuse is also not the cause of the problem, contact Itho Daalderop.

- The display indicates that the system is initialising.

```
ITHO DAALDEROP
-- INITIALISING --
[XXXX]
```

The status screen appears within 1 minute.

Tip

The appliance is supplied ex works with the language set to Dutch. If necessary, the standard setting can be changed to the desired language [Menu – Language/Taal – Select language].
Go back to the main menu after changing the setting.

Tip

The appliance will not start operating if the water pressure in the heating system has fallen below 1 bar.
The display will flash continuously and show a warning that the CH pressure is too low.
Fill the heating system as described in this manual.

- The appliance is now ready to supply the central heating and hot water.

4.2. Appliance set-up

Danger!

If the appliance is used as a booster for solar water heating, the appliance and the hot water function must remain enabled.

Tip

If your appliance uses outdoor temperature controls, this will be dealt with by the appliance or by an OpenTherm® room thermostat.

- Never change any settings related to outdoor temperature controls.
- If you have complaints about comfort, please contact a qualified installer.

Tip

The heating system may become imbalanced if the appliance is not configured properly, leading to reduced efficiency.

For proper operation, it is essential to configure the appliance. The settings depend on the properties of the house and the heating system. Every house is different, so the settings may differ from one house to the next.

The installer is responsible for delivering the appliance with the correct settings.

The settings related to central heating comfort and hot water can be found in the Service menu. Only qualified installers or service organisations may change the settings in the Service menu.

The standard settings are chosen to allow the appliance to be put into service in nearly every situation.

- If desired, you can adjust the settings in the User menu to suit your own preferences.

STANDARD SETTINGS	
USER MENU	
HOT WATER	Eco Comfort*
DISPLAY	5 [min]
DISPLAY SHOWS	CH pressure
PRESSURE SENSOR	on
HT PRIORITY	HT/25
OTC	off

**) Complies with the comfort criteria of the Gaskeur/CW label.*

Tip

For more information about the options, see the MENU STRUCTURE section for explanations regarding the settings.

4.3. Daily use

4.3.1. Heating

The appliance can be controlled and operated by the user in two different ways:

- With an OpenTherm® thermostat.
- With an on/off room thermostat.

Tip

With regard to using thermostats, Itho Daalderop advises you to consult the documentation from the thermostat manufacturer.

- Set the room temperature to the desired level.
- The appliance will start running when it detects heat demand from the room thermostat.

4.3.2. Hot water

Tip

Hot water takes priority over room heating.

- Open a hot water tap.
- The appliance will start running and provide tap water at the set temperature.

4.4. Filling and bleeding the heating system

⚠ Caution!

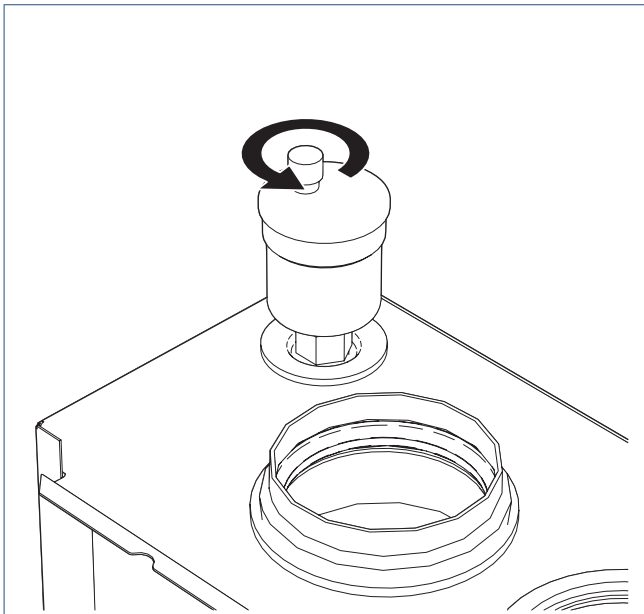
- The heating system must be filled with clean water.
- Follow the manufacturer's instructions for filling and bleeding the floor heating system.

WATER QUALITY

Acidity (pH)	7 – 8.5
Iron content (Fe)	< 0.2 mg/l
Chlorine content (Cl)	< 150 mg/l
Conductivity	< 125 mS/m
Hardness	3 – 12 °dH / 5 – 22 °fH / 0.53 – 2.14 mmol/l CaCO ₃
Chemical additives	Not permitted

Follow the procedure below if the water pressure in the heating system drops below 100 kPa (1 bar) and when the heating system is filled for the first time.

- Do not switch off the appliance.
- Open all radiator valves in the central heating system.
- Check that the cap on the bleeder opens with one turn (anti-clockwise).



- Lower the room thermostat completely and do not draw any hot water.
- Connect the filler hose to the cold water tap.
- Carefully allow the hose to fill up from the cold water tap before connecting it to the filler tap on the heating system.
- Open the filler tap and slowly fill the system by opening the cold water tap.
- Read the water pressure on the display and fill the heating system until the water pressure reaches 200 kPa (2 bar).
- Check the heating system for leaks and bleed all radiators in the house. Start at the lowest point and finish at the highest point.

- If the water pressure after bleeding is less than 150 kPa (1.5 bar), refill the system to 200 kPa (2 bar) as described above.
- Close the filler tap and disconnect the hose.

4.5. Bleeding the plumbing system

If the domestic plumbing has been drained for any reason, the hot water pipes must be bled before use.

- Check that the shut-off valve of the safety group is open.
- Check that the main water valve is open.
- Bleed the plumbing by opening the cold and hot taps in the circuit. Once there is a steady flow of water, the plumbing section in question has been bled and the tap can be closed.

4.6. Decommissioning

4.6.1. Heating system

Caution!

Do not set the room thermostat lower than 15°C in the winter. To avoid the system freezing it is advisable to leave all radiator valves fully or partially open.

Tip

When the central heating supply temperature in the appliance drops below the boiler setting, the appliance starts to run and heats up to approximately 5 to 10°C above the set value.

- a) Leave the mains lead of the appliance plugged into the power socket.
- b) Set the room thermostat to minimum. The hot water will be kept at the set temperature unless configured otherwise (see Hot water on page 23).

4.6.2. Hot water

Danger!

If the appliance is used as a booster for solar water heating, the appliance and the hot water function must remain enabled.

Tip

When the central heating supply temperature in the appliance drops below the boiler safety setting, the appliance starts to run and heats up to approximately 5 to 10°C above the set value.

- a) Leave the mains lead of the appliance plugged into the power socket.
- b) Using the control panel. In the **USER MENU**, go to the **HOT WATER** function and select **OFF**.

HOT WATER

On
Off
Eco
Eco Comfort

4.7. Permanent decommissioning

Caution!

Switching off the appliance during frosty weather can result in the entire heating system freezing. To prevent water damage, drain the heating system and all plumbing pipes at the lowest point.

Tip

Do not simply discard the appliance as rubbish. Ask your installer or local authority about proper disposal.

- a) Set the room thermostat to minimum.
- b) Do not draw any hot water from the tap.
- c) Unplug the mains lead from the power socket.
- d) Close the gas tap located underneath the appliance.

The appliance is made from several primary materials: copper, aluminium and steel. These materials can easily be separated and recycled at the end of the appliance's life-cycle.

5. Messages and errors

5.1. Overview of messages

en

Note

The display will flash continuously with errors, warnings or blockages.

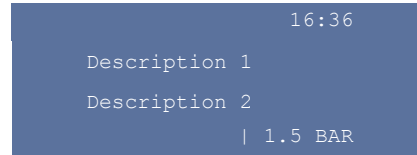
The appliance can display four types of message on the display:

Status, Warning, Blocking and **Error**.

All messages except status messages can be caused by improper operation of the central heating system or the appliance.

5.1.1. CH status

The status (current operating state) is shown on the display when the appliance is operating.



Example status message

STATUS MESSAGE		
	Description 1	Description 2
	Standby	
	Starting	
	Heating	Hot water
	Heating	CH
	Stopping	
	Anti-Pendel	
	Post-Pumping	Hot water
	Pumping	CH
	Frost protection	

The indication **ECO** or **ECO COMFORT** and the time are shown alternately when:

- the **ECO** or **ECO COMFORT** function is enabled
- OpenTherm® activates the **ECO** function.

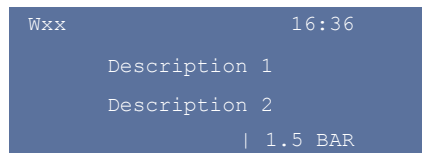
Tip

The **ECO** function disables temperature maintenance for hot water.

The **HOT WATER OFF** indicator flashes instead of showing the time when the **HOT WATER** function is disabled.

5.1.2. CH warning

Warnings are indicated by a code starting with the letter W and a description of the warning. The appliance continues to operate, but the function related to the warning is disabled or ignored. Later the function automatically becomes active again. If a warning message occurs persistently or repeatedly, this can lead to a blocking message and later to an error message.



Example warning message

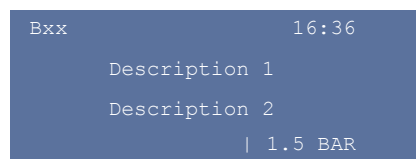
WARNING MESSAGE		
Code	Description 1	Description 2
W10	CH pressure too high	
W20	Sensor fault	Outside sensor

Follow up any instructions shown on the display.

Tip
If this message persists, consult a qualified installer or service organisation.

5.1.3. Blocking CH

Blockages are faults that do not lead to an error. The appliance waits until the blockage disappears and then continues in normal operation. A blockage is indicated by a code starting with the letter B and a description of the blockage.



Example blockage message

BLOCKAGE MESSAGE		
Code	Description 1	Description 2
B00	Sensor fault	CH supply
B00	Sensor fault	Hot water
B01	Sensor fault	CH supply
B01	Sensor fault	Hot water
B05	Net Frequency Error	
B06	Internal Error	Ctrl Unit CH
B09	Flame Error	
B10	Phase Error	Reverse Power Plug!
B12	Reset Error	
B14	Appliance Safety	DHW no temp rise
B22	Appliance Type Error	Select correct type
B25	CH pressure too low	Fill with water

Follow up any instructions shown on the display.

Tip
If this message persists, consult a qualified installer or service organisation.

5.1.4. Error CH

An error is a fault that results in the appliance being shut down and locked out by the control unit. The appliance can only be unlocked by pressing the **RESET** key. An error is indicated by a code starting with the letter E and a description of the error.

First try to remedy the error by pressing the **RESET** key once. If this does not unlock the appliance, try it again after approximately 15 seconds.

```
Bxx          16:36
Description 1
Description 2
| 1.5 BAR
```

Example error message

ERROR MESSAGE		
Code	Description 1	Description 2
E00	Fan	CH
E06	No ionisation	During start-up
E07	Ionisation	Lost
E08	Ionisation	Wrongly Present
E10	Gas valve error	
E14	Appliance Safety	DHW no temp rise
E15	No flow	Hot water
E16	No flow	CH
E21	Maximum thermostat	CH water too hot
E30	Safety error	Ctrl Unit CH
E33	Internal Error	Ctrl Unit CH
E35	Long lasting	Blocking

Press the RESET key.

Tip

If this message persists, consult a qualified installer or service organisation.

5.1.5. OpenTherm® messages

Tip

See the user manual for the room thermostat for the meaning of the symbols on the display.

Look for more information about the message on appliance display.

When certain types or makes of modulating room thermostats that conform to the OpenTherm® communication protocol are used, the following messages may appear on the room thermostat display:

- Status messages
- Warning messages
- Blockage messages
- Error messages

5.2. Troubleshooting

Warning!

Never remove the cover of the appliance.
Some components are live electrically.

Tip

An properly running appliance will only start when there is heat demand.
This means that the thermostat has to be set sufficiently high, or a hot water tap should be opened.

Tip

Some messages are temporary. Wait at least 1 hour before contacting a qualified installer or service organisation, because some faults will repair themselves within this period.
Follow any instructions shown on the display.

5.2.1. Things you can check yourself when there is an error

- Is the room thermostat set properly?
- Is the safety group valve open?
- Is the gas tap open?
- Are the radiator valves open?
- Is the water pressure for the heating system between 1 and 3 bar?
- Has the heating system been properly bled?
- Is the hot water function enabled?

5.2.2. What to do if there is a persistent error

- a) Based on the message on the display, first check whether one of the possibilities mentioned above is the cause of the error.
- b) Press the **RESET** key once or twice. If the error with the appliance persists, try this again after 5 minutes.
- c) If the appliance remains in an error state or the same error occurs repeatedly, contact your installer.

6. Inspection and/or maintenance

en

Danger!

This appliance has a component in the heat exchanger that contains ceramic fibres. Due to the size and structure of these fibres, they could be inhaled with potentially harmful consequences.

The material safety data sheet (MSDS) for the ceramic displacer is available on request or can be downloaded from the website of Itho Daalderop.

Caution!

Always use original Itho Daalderop parts when performing replacements or repairs.

This ensures the safety and correct operation of your product and any warranty claim.

Note

Use a damp cloth only to clean the outside of the product, with liquid soap if necessary.
Never use abrasive or aggressive cleaning agents, as these can damage the paint and the materials used.

Note

Poor maintenance of the appliance can lead to higher energy consumption, shorter life and unsafe operation.
Claims against the factory warranty may be rejected if it can be shown that the maintenance was not carried out properly.

- The appliance must be inspected and/or serviced once per year.
- Servicing must be performed if indicated during the inspection.
- This work should be done by a qualified installer or service organisation.
- Take out a maintenance contract with a qualified installer or service organisation.

7. Warranty

Thank you for purchasing this Itho Daalderop product.

Safety and quality have top priority at Itho Daalderop. Our products are designed and manufactured using modern production methods and they comply with stringent quality standards. In the unlikely event that there are problems with the operation of our product, please contact the person or firm who installed it.

If you do not know who installed the product, we recommend that you contact one of our local service points. See our website for a list of our service locations.

All Itho Daalderop products are covered by a standard 2-year warranty on parts. During this period your Itho Daalderop product or components will be repaired or replaced free of charge, with except in the following situations.

The parts warranty can be extended to 5 years by completing the warranty card and returning it to Itho Daalderop or by registering the product online via the website (www.ithodaalderop.nl/garantie).

The warranty is in addition to the statutory warranty obligations of Itho Daalderop. We recommend that you read these conditions and this manual carefully before contacting your installer.

7.1. Validity

- The standard 2 year factory warranty or extended warranty on parts is only valid if:
 - the product is installed, used and maintained in accordance with the installation manual and/or the user manual,
 - material faults or design faults that have been reported to Itho Daalderop for assessment and/or have been assessed as such by Itho Daalderop are present
 - the warranty claim is accompanied by a purchase invoice with the purchase date and the type number and serial number of the product,
 - the product has the original type plate.
 - the product is used normally based on the number of operating hours according to the applicable product and installation standards.
- **For the 5-year extended parts warranty, the product must be registered with Itho Daalderop within two weeks after the installation date by means of the warranty card or online via the website www.ithodaalderop.nl/garantie.**
- Repair under warranty does not result in any extension of the warranty period nor the start of a new warranty period for the product.
- For repairs, Itho Daalderop provides a 12 month warranty for repairs and parts concerned, exclusively for the same defect.
- Supplementary periods of validity and conditions apply to some products. See www.ithodaalderop.nl/garantie for more information.

7.2. Exclusion

- The warranty is void if:
 - the warranty period has expired;
 - the system is not installed by a qualified installer* if this is explicitly prescribed by Itho Daalderop in the installation manual or the user manual;
 - the device has been subjected to overload, overheating or freezing.
 - the system is installed outside the territorial boundaries of the country where the product was sold;
 - the product is not installed, used and/or maintained in accordance with the installation manual and/or the user manual;
 - the quality of the heating water and domestic water does not fulfil the conditions set by the World Health Organisation;

WATER QUALITY	
Acidity (pH)	7 – 8.5
Iron content (Fe)	< 0.2 mg/l
Chlorine content (Cl)	< 150 mg/l
Conductivity	< 125 mS/m
Hardness	3 – 12 °dH / 5 – 22 °fH / 0.53 – 2.14 mmol/l CaCO ₃
Chemical additives	Not permitted

- structural modifications have been made to the product without the consent of Itho Daalderop;
- parts other than original Itho Daalderop parts are used for repair or maintenance;
- repairs or maintenance are/is performed by unauthorized parties or performed improperly;
- the product is put into service without water or with insufficient water pressure;
- the cold water supply is not connected through a safety group approved for use in the country of installation;
- Itho Daalderop is not liable for any consequential damage such as loss of business, water damage or fire damage.
- In the event of a claim, the amount of compensation will not exceed the purchase price of the product unless otherwise stipulated legally.
- The warranty does not cover defects resulting from:
 - negligence.
 - improper use.
 - force majeure.
 - force majeure or external causes, such as lightning strike, fire, natural disasters, mining activities, gas extraction, excavation works by third parties.
 - exposure to corrosive liquids, vapours or gases.
 - normal wear and tear.

- internal or external corrosion.
- boiler scale deposits
- excessive and/or incorrect voltage;
- use of an incorrect gas type;
- improper combustion.
- improper bleeding, bleeding and/or overpressure release.
- contaminated combustion air supply.
- the effects of chemical additives on the heating circuit or domestic water circuit;
- The following are not covered by the warranty:
 - battery replacement
 - fuse replacement
 - ignition and ionisation electrode replacement.
 - gasket replacement.
 - topping up the system
 - programming thermostats and controls
 - damage to the housing and other non-functional parts resulting from the transport, installation or ageing of the product or the use of abrasive or corrosive cleaning products.
 - costs incurred if the required free space around the product does not comply with the installation manual for the product and/or the product is not freely accessible, so that the time required for removal and installation exceeds 30 minutes

**A qualified installer is one who is employed by a central heating or civil engineering installation company registered with the Chamber of Commerce and who is registered in the SEI qualification register, or holds a Sterkin certificate.*

7.3. Warranty

- If one of our products does not work or does not work properly, it must be repaired at the place of installation by a qualified installer. If the repair is covered by the warranty, replacement parts will be supplied to the installer.
- See our installer's website (zakelijk.ithodaalderop.nl) for instructions concerning how to deal with service and warranty work.
- The user must register a warranty request with a qualified installer immediately after discovering the defect or error.

8. Explanations

EG-Verklaring van overeenstemming | Déclaration de conformité CE |
EG-Konformitätserklärung | EC Declaration of Conformity

en

Itho Daalderop Group BV
PO Box 7
4000 AA Tiel
The Netherlands

Verklaart dat het product |
Déclare que le produit |
Erklärt dass das Produkt |
Declares that the product:

- **HR Combi Boiler – Base Cube 24/30 13L – 07.36.50.740**
- **HR Combi Boiler – Base Cube 24/35 16L – 07.36.50.751**
- **HR Combi Boiler – Base Cube 30/35 16L – 07.36.50.755**

Volvoet aan de bepalingen gesteld in de richtlijnen |
Répond aux exigences des directives |
Entspricht den Anforderungen in den Richtlinien |
Complies with the requirements stated in the directives:

- Low Voltage Directive **2006/95/EC**
- Electromagnetic Compatibility (EMC) Directive **2004/108/EG**
- Gas Appliances Directive **2009/142/EC**
- Hot Water Boilers Directive **92/42/EEG**

Volvoet aan de geharmoniseerde Europese normen |
Répond aux normes Européennes harmonisées |
Entspricht den harmonisierten europäischen Normen |
Complies with the harmonized European standard:

- EN 60335-1:2012
- EN 60335-2-15:2002/A11:2012

Tiel, 2 July 2013



Kerst Algera, R&D Director

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