

# atmoCRAFT



VK 654/9 - 1654/9



DE/AT/GB/CZ/SK/HU/PL/HR/SI/SCG

For the owner

Operating manual  
**atmoCRAFT**

Gas heating boiler

VK 654/9 - 1654/9

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## Appliance characteristics

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### Appliance characteristics

#### Application

Your atmoCRAFT gas heating boiler provides heating for living or business rooms via a hot-water central heating system.  
A storage tank is connected to your boiler for heating the hot water.  
Various controllers are available as Vaillant accessories for comfortable adjustment of the heating and hot water functions of your boiler.

#### Description of the appliance

- The especially efficient two-stage method of operation of the gas burner in the atmoCRAFT boilers ensures low switching frequency and high levels of standard efficiency.
- Your boiler is fitted with a digital information and analysis system (DIA-System) for maintenance and service work by the heating engineer.  
The status display provides information on the operational condition of your boiler. In the event of a fault, the display of diagnosis and fault codes assists your heating engineer in quickly finding the cause of the fault.

## 1 Notes on the documentation

The following information is intended to help you throughout the entire documentation. Further documents apply in combination with this operating manual.

**We accept no liability for any damage caused by failure to observe these instructions.**

### Other applicable documents

For the heating engineer:  
Installation and maintenance instructions no. 835553

The manuals for any accessories and controllers used also apply.

### 1.1 Storage of the documents

Please store this operating manual and all related documents in such a way that they are available whenever they are required.

If you move out or sell the appliance, pass on the documents to the buyer.

### 1.2 Symbols used

Please observe the safety instructions in this operating manual for the operation of the device!



**Danger!**  
**Immediate risk of serious injury or death!**



**Caution!**  
**Potentially dangerous situation for the product and environment.**



**Note!**  
**Useful information and instructions.**

- Symbol for a necessary task

### 1.3 CE label

CE labelling shows that the appliances comply with the basic requirements of the applicable directives as stated on the data badge.

Only for Germany:

In accordance with the requirements of § 7 of the regulations of small combustion installations dated 07.08.1996 (1st BImSchV) the above units emit less than 80 mg/kWh nitrogen dioxide (NO<sub>x</sub>) when using natural gas.

### 1.4 Data badge

The identification plate is included with the burner and should be mounted on the separation wall.

## 2 Safety

### What to do in an emergency



**Danger!**  
**If you smell gas, risk of poisoning and explosion due to a malfunction!**

If you smell gas:

- Do not switch lights on or off.
- Do not use any other electrical switches.
- Do not use a telephone in the area of the hazard.
- Do not use naked flames (such as matches or cigarette lighters).
- Do not smoke.
- Close the gas stop cock.
- Open the windows and doors.
- Warn other residents.
- Get out of the house.
- Notify your gas supplier (GVU) or a suitably qualified heating engineer.

### Safety instructions

Always observe the following safety instructions and regulations.



**Danger!**  
**Inflammable mixtures of gas and air may explode**  
**Do not use or store explosive or easily flammable substances such as petrol or paint in the same room as the appliance.**



**Danger!**  
**Risk of poisoning and explosion due to a malfunction**  
**Never put the safety devices out of operation or tamper with them so as to impair their function.**

Therefore, do not attempt any modifications:

- to the appliance
- around the appliance
- to the gas, air, water and electricity supply pipes
- to the flue pipes
- and to the safety valve and the drain pipe for the heating water.

This also applies to alterations to structural elements in the vicinity of the appliance which might affect its operational safety.

For example:

- Keep all openings for air and flue gas free. Make sure, for example, that any temporary covers used when performing work on the outside wall are removed.

## 2 Safety

### 3 Notes on the installation and operation

For alterations to the appliance or to its environment, you must refer to the suitably qualified heating engineer which is responsible for it.



#### **Caution!**

**Inappropriate alterations can cause damage! Under no circumstances should you ever attempt to make alterations to the gas heating boiler or other parts of the system. Never try to carry out maintenance work or repairs on the appliance yourself.**

- Do not damage or remove seals on components. Only suitably qualified heating engineer or our customer service may removed sealed components.



#### **Caution!**

##### **Risk of damage!**

**Do not use sprays, solvents, chlorinated cleaning agents, paint, adhesives or similar substances in the vicinity of the appliance. These substances can cause corrosion, including in the flue system.**

#### **Installation and setting**

The appliance may only be installed by an suitably qualified heating engineer, This engineer also assumes responsibility for installing the appliance properly and putting it into service for the first time.

He is also responsible for inspection, maintenance and repairs to the appliance, and alterations to the set gas volume.

#### **Filling pressure of the heating system**

The filling pressure of the heating installation should be checked at regular intervals.

#### **Emergency power supply**

Your specialist technician connected your gas heating boiler to the electrical mains during installation. If you wish to keep the unit running with an emergency power supply in the event of a power failure, the technical specification of the unit (frequency, voltage, earthing) must be in agreement with the mains power supply, and must be rated to at least the power consumption of your unit. Please consult your heating engineer on this subject.

#### **Frost protection**

If you are going to be away during a cold period, make sure the heating system remains in operation and that the rooms are sufficiently heated.



#### **Caution!**

##### **Risk of damage!**

**If there is a power cut or if the room temperature is set too low in individual rooms it cannot be ruled out that sections of the heating system are damaged by frost. Please always observe the instructions concerning frost protection in Section 4.10.**

## 3 Notes on the installation and operation

### 3.1 Vaillant warranty

Vaillant provide a full parts and labour warranty for this appliance.

The appliance must be installed by a suitably competent person in accordance with the Gas Safety (Installation and Use) Regulations 1998, and the manufacturer's instructions. In the UK 'CORGI' registered installers undertake the work in compliance with safe and satisfactory standards.

All unvented domestic hot water cylinders must be installed by a competent person to the prevailing building regulations at the time of installation (G3).

Terms and conditions apply to the warranty, details of which can be found on the warranty registration card included with this appliance.

Failure to install and commission this appliance in compliance with the manufacturer's instructions may invalidate the warranty (this does not affect the customer's statutory rights).

### 3.2 Intended use

The Vaillant atmoCRAFT gas boilers are state-of-the-art appliances which have been constructed in accordance with recognised safety regulations. Nevertheless, there is a risk of injury or death to the user or others and damage to the appliance or other property in the event of misuse or use for which the appliance is not intended. The units are intended as heat generators for closed and open hot-water central heating installations and for central hot water preparation. Any other use or extended use is considered to be improper. The manufacturer or supplier is not liable for any resulting damage. The user alone bears the risk.

Intended use includes the observance of the operating and installation manual and all other applicable documents, as well as adherence to the maintenance and inspection conditions.

**Caution!****Any improper use is forbidden.**

The appliances must be installed by a heating engineer, who is responsible for adhering to the existing regulations, rules and guidelines.

**3.3 Requirements of the installation site**

The Vaillant gas heating boilers atmoCRAFT must be installed in boiler rooms. Ask your heating engineer which national regulations must be observed. The entire installation site should be frost-proof. Observe the specified frost protection measures in section 4.10 if you are unable to ensure this requirement.

**Note!**

**It is not necessary to keep a clearance between the appliance and combustible materials or components, since at the rated heating power of the appliance the temperature at the surface of the housing is always lower than the maximum allowed temperature of 85 °C.**

**3.4 Care**

- Clean the exterior of your appliance with a damp cloth and a little soap.

**Note!**

**Do not use scouring or cleaning agents, which might damage the exterior or plastic controls.**

**3.5 Recycling and disposal**

Both your Vaillant atmoCRAFT gas boiler and its packaging consist mainly of recyclable raw materials.

**3.5.1 Appliance**

Do not dispose of your Vaillant atmoCRAFT gas boiler or any of its accessories with household waste. Make sure the old appliance and any accessories are disposed of properly.

**3.5.2 Packaging**

Please leave the disposal of the transport packaging to the qualified servicing company which installed the appliance.

**Note!**

**Please observe the applicable national legal regulations.**

**3.6 Energy saving tips****Installing a weather compensator**

Weather compensators regulate the heating supply temperature according to the outside temperature. No more heat is created than is required. The designated heating feed temperature for the corresponding outside temperature must be set on the weather compensator. This setting must not be greater than that required by the design of the heating installation.

The correct setting is normally undertaken by the heating engineer. The desired heating and set-back phases (e.g. at night) are automatically turned on and off using the integrated time programmes.

Weather compensators combined with thermostat valves are the most economical form of heating regulation.

**Reducing the heating system**

Reducing the room temperature at night and in your absence. This is best and most reliably realised using regulators with customisable time programmes.

At such times, set the room temperature approx. 5 °C lower than during full heating times. Reduction of more than 5 °C brings no additional energy saving, because then increased heating capacities would be needed for the next full heating period. Only for longer absences, e.g. holidays, is it worthwhile to further lower the temperatures. However, in winter, make sure that there is adequate frost protection.

**Room temperature**

Set the room temperature only as high as would be enough for your comfort level. An extra degree would mean increased energy consumption of about 6%. Adjust the room temperature according to the purpose of use of the room. For example, normally, bedrooms or seldom used rooms are heated to 20 °C.

**Setting the operating mode**

In warmer seasons, when the apartment needs no heating, turn the heating to summer mode. The heating mode is then shut off, however, the device or the plant remains ready for operation for water heating.

**Uniform heating**

Often, in an apartment with central heating, only one room is heated. Through the encapsulation surfaces of this room, i.e. walls, doors, windows, roofs, floors, the unheated adjoining rooms are also heated in an uncontrolled manner, i.e. heat energy is lost inadvertently. The capacity of the radiator in this one heated room is obviously not enough for such an operating mode.

Consequently, the room cannot be heated adequately and an uncomfortable feeling of coolness prevails (the same effect is produced when doors between heated and unheated or partially heated rooms remain open). This is incorrect saving: The heating is in operation and still the room temperature is not comfortably warm. Greater heating comfort and a more practical operating

## 3 Notes on the installation and operation

mode is achieved when all rooms in an apartment are heated uniformly and in accordance to their usage. The building structure can also suffer if components of the building are unheated or only inadequately heated.

### **Thermostat valves and room thermostat**

It should be a matter of course, today, that all radiators be fitted with thermostatic valves. They exactly maintain the set room temperature. You can adjust the room temperature to suit your individual requirements and ensure effective operation of your heating installation using the thermostatic valves in combination with a room temperature regulator (weather compensator).

In the room where the room temperature regulator is located, all the radiator valves should be fully opened since otherwise the two regulating systems will work against each other and the regulation quality can be affected.

The following actions by the user are seen quite often:

As soon as the temperature in the room gets too hot, the thermostatic valves are turned down (or the room thermostat is set to a reduced temperature). If it gets too cold again after a time, the thermostatic valve is opened up again.

This is not necessary since the temperature regulation system takes over this task via the thermostatic valve: If the room temperature rises above the value set on the sensor head, the thermostat valve shuts off automatically, and when the temperature drops below the defined value, it opens again.

### **Do not cover regulators**

Do not cover your regulators with furniture, drapes or similar objects. The room air must circulate unhindered. Covered thermostat valves can be equipped with remote sensors and thus still work.

### **Appropriate hot water temperature**

The warm water should only be heated up to the extent that is necessary for use. Any further heating results in unnecessary power consumption and hot water temperatures of more than 60 °C also lead to increased lime scale production.

### **Energy-conscious use of water**

Energy-conscious use of water can reduce your bills considerably.

For example, taking a shower instead of a bath: whereas about 150 litres of water are required for a bath, a modern shower equipped with water saving fittings only requires a third of this water quantity. Incidentally: a dripping water tap wastes up to 2000 litres of water and a leaking toilet flush up to 4000 litres of water each year. On the other hand, a new seal only costs a few cents.

### **Run circulation pumps only if needed**

Hot water piped systems are often fitted with so-called circulation pumps. These provide continuous re-circulation of hot water in the piping system so that hot water is immediately available, even at drawing-off points which are located far away.

These circulation pumps can also be used with the Vaillant atmoCRAFT. There is no doubt that they provide increased comfort for hot water heating. Please bear in mind, however, that these pumps consume electricity. And circulating hot water that is not used cools off when passing through pipes and then needs to be reheated. Therefore, circulation pumps are to be operated only when hot water is actually needed for the household. By using switch clocks, with which most circulation pumps are equipped, individual time programmes can be defined. Weather compensators often have ancillary functions for controlling circulation pump timings. Consult your heating engineer.

### **Ventilating residential spaces**

During the heating period, open windows only for ventilation and not for temperature regulation. A brief impact-ventilation is more effective and energy-saving than windows that are kept open for a long time. We recommend that the windows be opened fully for a short period. During ventilation, close all thermostatic valves in the room or set the room regulator to minimum temperature. In this way, there will be adequate ventilation without unnecessary cooling and energy loss (e.g. by the heating switching on during the ventilation procedure).

## 4 Operation

### 4.1 Overview of the operating elements

The operating elements are accessible after folding up the upper section (1) and folding down the lower section (2) of the switching field cover.

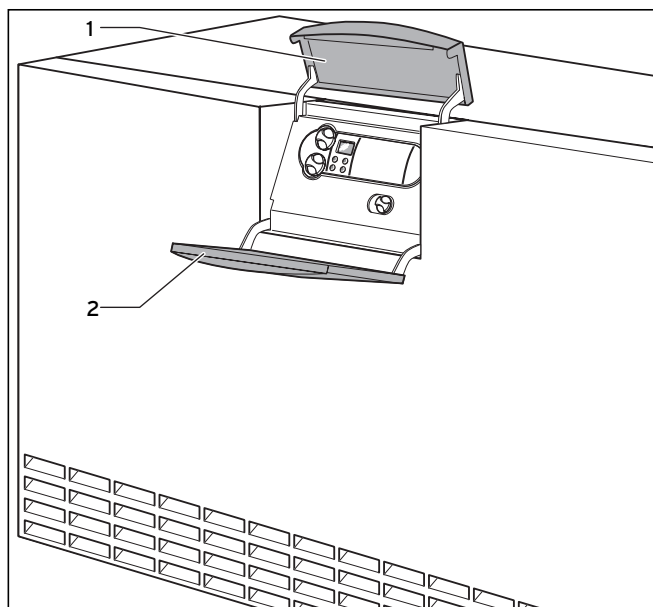


Fig. 4.1 Opening the door in the cover

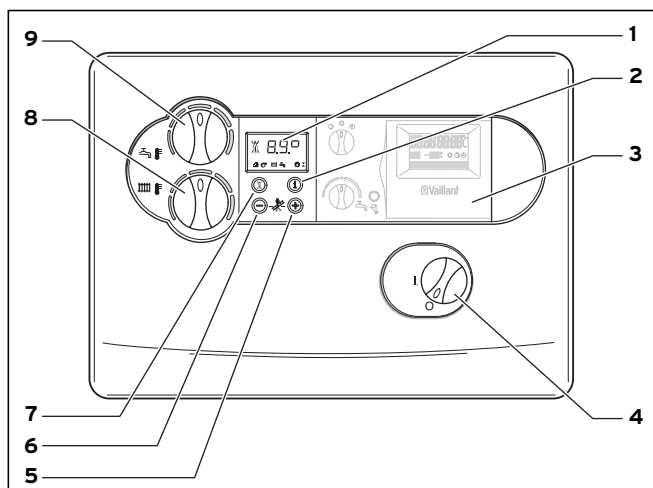


Fig. 4.2 Controls

The operating elements have the following functions:

- 1 Display for indication of the current operating mode or specific additional information
- 2 "i" button for calling up information
- 3 Controller (accessory)
- 4 Button for switching the unit on and off.
- 5 "+" button for moving forward in the display (for adjustment and troubleshooting by the engineer); Inquiry of the current storage tank temperature in normal mode, if a storage tank sensor is connected.
- 6 "-" button for moving backwards in the display (for adjustment and troubleshooting by the engineer)
- 7 "Reset" button for resetting certain faults
- 8 Rotary knob for setting the heating feed temperature
- 9 Rotary knob for setting the storage tank temperature

### Digital Information and Analysis System (DIA-System)

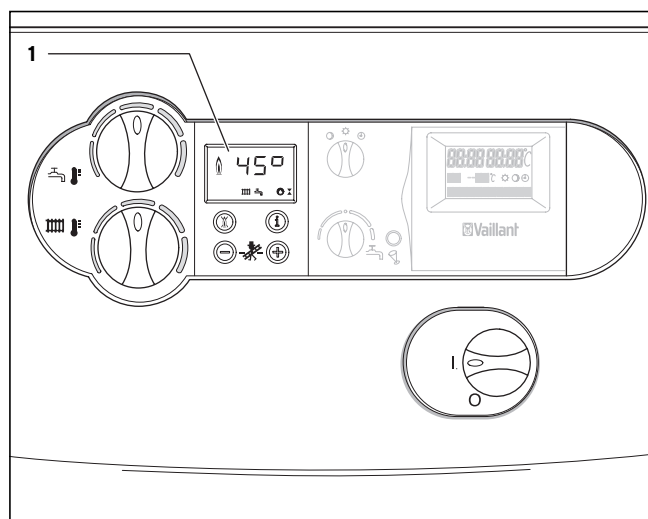


Fig. 4.3 Display of DIA-System













Your unit is fitted with a Digital Information and Analysis System (DIA-System). This system provides information on the operating status of your appliance and helps you deal with problems.

In normal operation of the unit, the display (1) of the DIA-System shows the current heating feed temperature (45 °C in the example). In the event of a fault, an error code appears instead of the temperature.

You can also see the following information from the symbols displayed:




## 4 Operation

- 1 Display of the current heating feed temperature or display of a status or fault code
-  Flue problem
-  Flue problem
-  Permanently on: Heating operation active
-  Flashing: Burner lockout time active
-  Hot water preparation active
-  Permanently on: Operating mode storage tank charging in readiness
-  Flashing: Storage tank charging is in operation
-  Burner on
-  Heating pump in operation
-  Actuating internal gas valve
-  Flame with cross: Fault during burner operation; Unit is switched off
-  Flame without cross: Burner operation normal

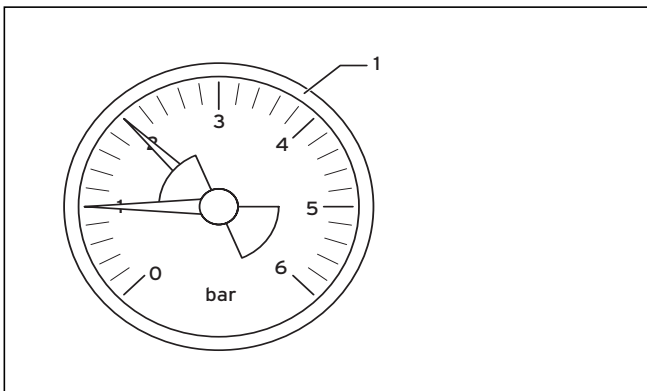
### 4.2 Preparing for initial operation

#### 4.2.1 Opening the shut-off valves

 **Note!**  
**The shut-off valves are not included in the scope of supply of your unit. They are fitted by your heating engineer in the installation. He should show you the location and how to operate these components.**

- Open the gas stop cock by depressing and turning it anticlockwise as far as it will go.
- Check that the service valves in the feed and the return are open.

#### 4.2.2 Checking the system pressure




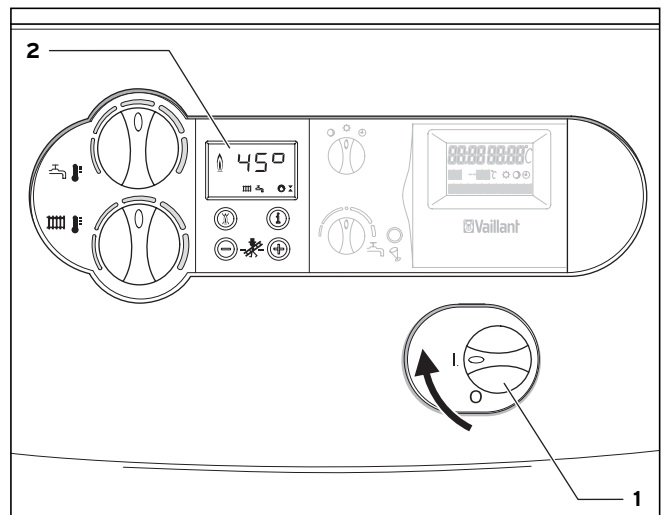
**Fig. 4.4 Checking the filling pressure of the heating installation (pressure gauge not included)**

- Check the filling pressure of the installation using the pressure gauge (1, not included). For the heating system to operate properly, the pointer on the pressure gauge (1) must be between 1.0 and 2.0 bar filling pressure. If it is below 0.75 bar, please top up the water (see Section 4.8.7).

If the heating system extends over several storeys, the system may require a higher filling pressure. Ask your engineer for details.

### 4.3 Start-up

 **Caution!**  
**Risk of damage!**  
**The main switch may only be turned on if the heating system is sufficiently full of water (see Section 4.2.2).**  
**If this is not complied with, damage to the pump and heat exchanger may occur.**



**Fig. 4.5 Switch the unit on**

- Use the main switch (1) to switch the appliance on and off:  
 I: "ON"  
 O: "OFF"

When the main switch (1) is in the "I" position the unit is switched on. On the display (2), the standard read-out of the Digital Information and Analysis System Systems is shown (for the details see Section 4.1).

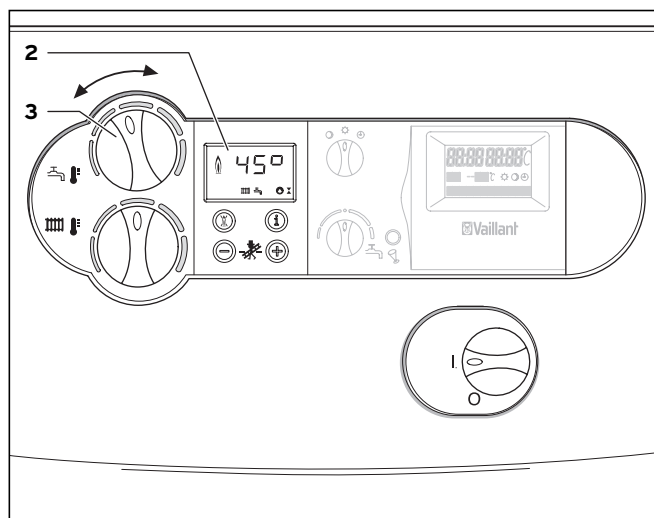
To adjust the appliance according to your requirements, read sections 4.4, and 4.5, which describe the setting options for hot water supply and heating.

**Caution!**  
**Risk of damage!**  
**The frost protection and monitoring systems are only active when the main switch of the appliance is in the "I" position and it is not disconnected from the mains power supply.**

**Caution!**  
**Danger of calcium deposit build-up.**  
**If your water hardness is more than 1.79 mol/m<sup>3</sup> (10 °dh), do not turn the knob (3) further than the middle position.**

To ensure that these protection devices remain active, switch your boiler on and off using the controller (see the corresponding operating manual). Section 4.9 describes how to take your gas boiler out of commission.

#### 4.4 Settings for hot water preparation



**Fig. 4.6 Adjusting the storage tank temperature (only if a hot water storage tank is included)**

For hot water preparation using an atmoCRAFT boiler, a hot water tank must be connected to the boiler.

Proceed as follows to adjust it:

- Turn the rotary knob (3) to the desired temperature. In doing this:

**Turning all the way to the left, frost protection 15 °C**  
**Minimum set water temperature 40 °C**  
**Turning all the way to the right**  
**Maximum set water temperature 70 °C.**

When setting the desired temperature, the value is shown on the display (2) of the DIA-System. After approx. five seconds the display returns to standard mode (the current heating feed temperature).

**Note!**  
**We recommend a setting of 60 °C for economic and hygienic reasons (e.g. Legionella).**

#### 4.4.1 Drawing hot water

- Open one of the hot water taps at one of the water draw-off positions (hand-wash basin, shower, bath etc.). The hot water is drawn off from the integrated hot water storage tank.

If the water in the tank falls below the set temperature, the appliance starts up automatically and reheats it. During the charging process of the storage tank the read-out in the display (2) flashes  $\approx$ , see Figure 4.6. When the storage tank temperature that you have set is achieved, the unit switches off automatically. The pump continues to run for a short while.

#### 4.4.2 Switching off the storage tank operation mode

On the atmoCRAFT boilers with connected hot water storage tanks you can switch the storage tank charging system off, whilst continuing to operate the heating system.

- To do this, turn the rotary knob (3) for setting the hot water temperature all the way to the left, see Figure 4.6. The frost protection function for the storage tank remains active.

A storage tank temperature of 15 °C is shown in the display (2), for approx. 5 seconds.

## 4 Operation

### 4.5 Settings for heating

#### 4.5.1 Setting the flow temperature (when using a controller)

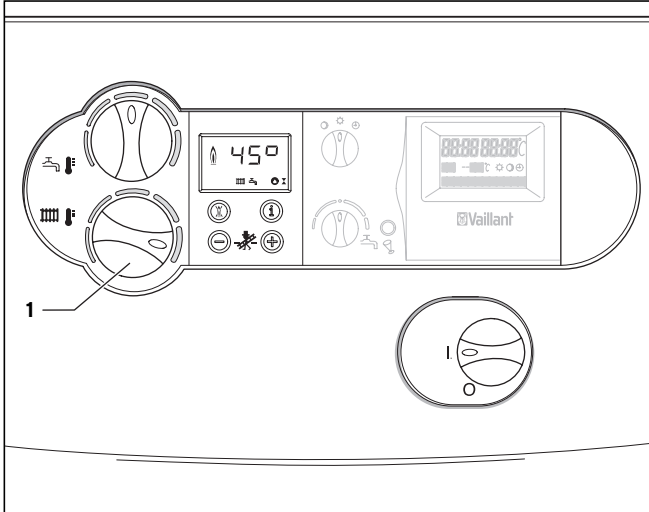


Fig. 4.7 Setting the feed temperature when using a controller

To comply with the **regulations concerning the energy-saving requirements of heating-technology installations and hot water installations (heating installation regulations - HeizAnIV)**, your heating system must be fitted with a weather-controlled controller or a room-temperature controller.

In this case, the following setting must be undertaken:

- Turn the rotary knob (1) for setting the heating feed temperature all the way to the right.

The flow temperature is automatically adjusted by the controller (for information see its operating manual).



#### Note!

**Your heating engineer can provide information concerning the control system fitted to your heating system.**

#### 4.5.2 Setting the flow temperature (no controller connected)

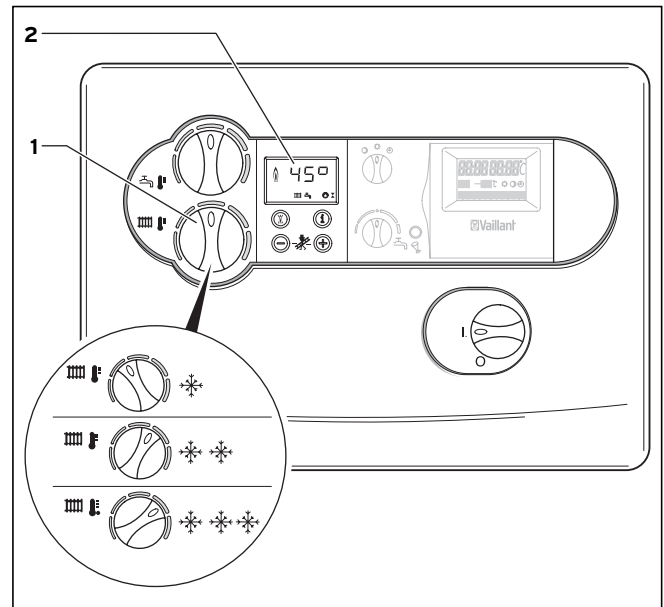


Fig. 4.8 Feed temperature setting without heating controller

If there is no external controller, set the flow temperature using the knob (1) according to the outside temperature. We recommend the following settings:

- **Left position** (but not all the way) in spring and autumn: Outside temperature 10 to 20°C
- **Mid-position setting** in reasonably cold weather: Outside temperature 0 to 10°C
- **Right position** in very cold weather: Outside temperature 0 to -15 °C

When setting the desired temperature, the value is shown on the display (2) of the DIA-System. After five seconds the display returns to standard mode (the current heating flow temperature).

Normally you can adjust the knob (1) continuously up to a feed temperature of 75 °C. However, if higher temperatures can be set on your appliance, your engineer has made adjustments so that you can operate the heating system at higher feed temperatures up to 85 °C.

### 4.5.3 Switching off heating (summer operation)

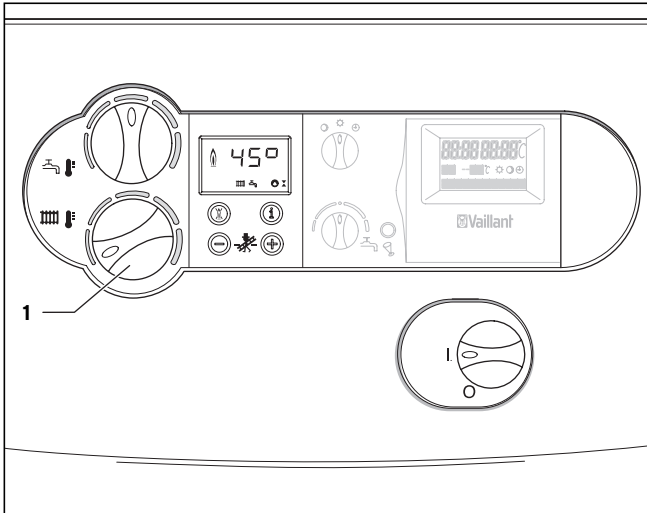


Fig. 4.9 Switching off heating (summer operation)

You can switch off the heating in summer without switching off the hot water supply.

- Turn the rotary knob (1) for setting the heating feed temperature all the way to the left.

### 4.6 Setting a room thermostat or weather compensator

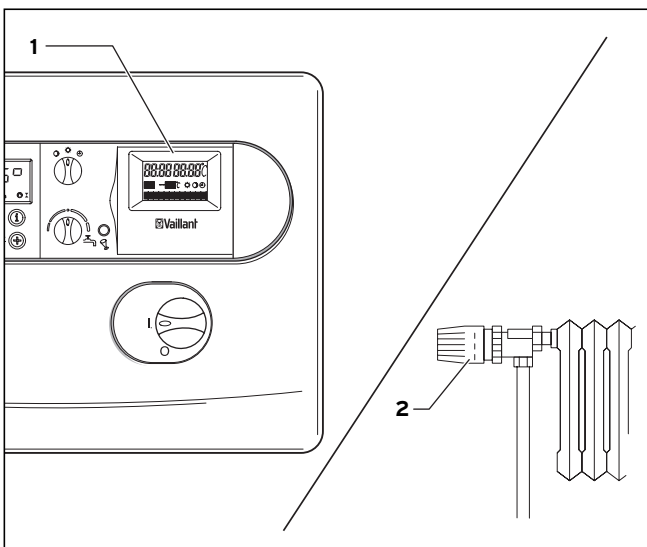


Fig. 4.10 Setting the room temperature controller/weather controlled regulator

- Set the programmable room thermostat (1), weather compensator or heater thermostat valves (2) according to the operating manuals for these accessories.

### 4.7 Status displays

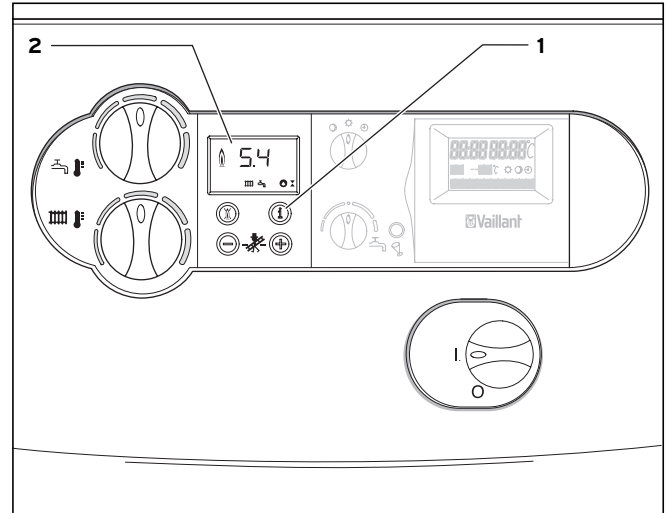


Fig. 4.11 Status displays

The status display provides information on the operational condition of your boiler.

- Press the "i" button (1) to activate the status displays. The display (2) then shows the individual status codes, e.g. "S. 4" for burner operation. The table below explains the most important status codes. In switching phases, for example on starting up again after the flame was extinguished, the status message "S." briefly appears.
- Press the "i" button (1) again to switch the display back to normal mode.

Display	Meaning
<b>Displays during heating operation</b>	
S. 0	No heat required
S. 2	Heating pump supply
S. 3	Heating ignition
S. 4	Heating burner on
S. 7	Heating pump run-out
S. 8	Burner lock after heating mode
<b>Displays in storage tank operation</b>	
S. 20	Storage cycle mode active
S.23	Storage tank charging ignition
S. 24	Storage tank charging burner on
S.27	Storage tank charging pump overrun
S.28	Burner blocking time after storage tank charging

Table 4.1 Status codes and their meaning

## 4 Operation

Display	Meaning
	<b>Displays of system conditions</b>
S.30	No heat requirement from 2-point controller
S.31	Summer mode active
S.34	Frost protection heating active
S.36	No heat requirement controller from continuous controller
S.39	Switch on "unit thermostat" terminal has interrupted
S.42	Exhaust gas flap contact on accessories is open
S.51	The unit has detected exhaust gas emission and is within the 30 second continuous tolerance time
S.52	Appliance is within the 20-minute waiting period of the operation block function due to exhaust gas emission

Table 4.1 Status codes and their meaning (continuation)

### 4.8 Troubleshooting

If you have problems with your gas boiler, you can check the following points yourself:

#### No hot water, heating stays cold;

##### Appliance does not start:

- Is your house stop cock in the gas supply or the gas stop on the appliance open (see Section 4.2)?
- Is the power supply switched on?
- Is the main switch on the gas boiler switched on (see Section 4.3)?
- Is the rotary knob for setting the storage tank temperature turned to the far left position, in other words to frost protection (see Section 4.4)?
- Is the filling pressure of the heating system sufficient (see Section 4.8.2)?
- Is there air in the heating system (see Section 4.8.2)?
- Is there an ignition problem (see Section 4.8.3)?

#### Hot water operation, no problem;

##### Heating does not start:

- Is there a requirement for heating from the external controller (e.g. type VRC controller) (see Section 4.7)?
- Has an external monitor switched off the system (see Section 4.7)?

#### Heating, no problem; no hot water:

- Is the hot water preparation blocked by an external controller (see controller instructions)?

If when simultaneously depressing the buttons "+" and "-" no hot water is shown, then the sensor is faulty or is not connected.



#### Caution!

**Inappropriate alterations can cause damage! If your gas boiler still does not work properly after you have checked the above points, you must call a suitably qualified heating engineer for help.**

### 4.8.1 Faults during heating operation

In the event of a fault on the boiler, a fault code will be shown on the display. In the case of the faults described above you can try to resolve the fault yourself.



#### Caution!

**In the event of other faults in the heating system an authorised heating engineer must be consulted to check the system.**

### 4.8.2 Problems due to lack of water

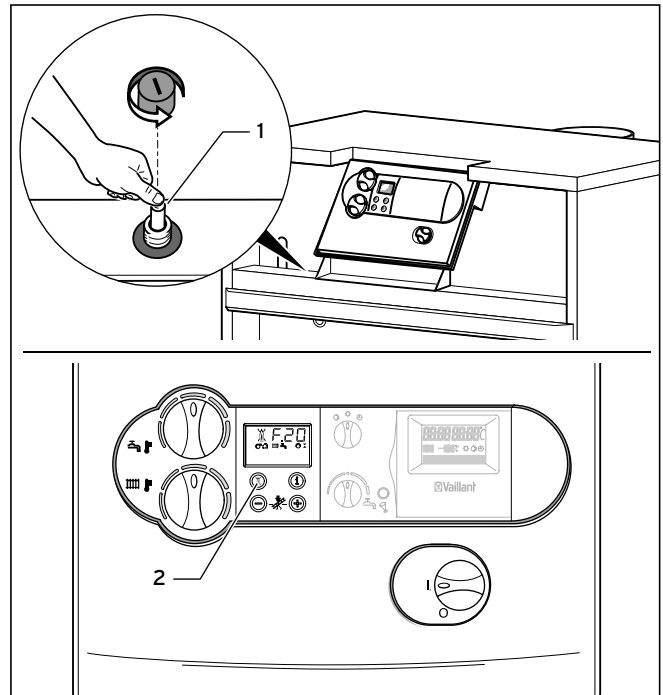


Fig. 4.12 Releasing after water shortage

The device switches to **"Fault"** if the filling pressure in the heating system is too low. This fault is displayed by the fault code **"F.20"**.

- Remove the front cover.
- Release the STB by pushing the pin (1).
- Reset the electronic system by pushing the "Reset" button (2).

The unit can only be re-started if the heating system has sufficient water in it (see Section 4.8.7).

**Caution!**  
If the fault signal F.20 is shown repeatedly, an authorised heating engineer must be consulted to carry out a check of the system.

### 4.8.3 Ignition problems

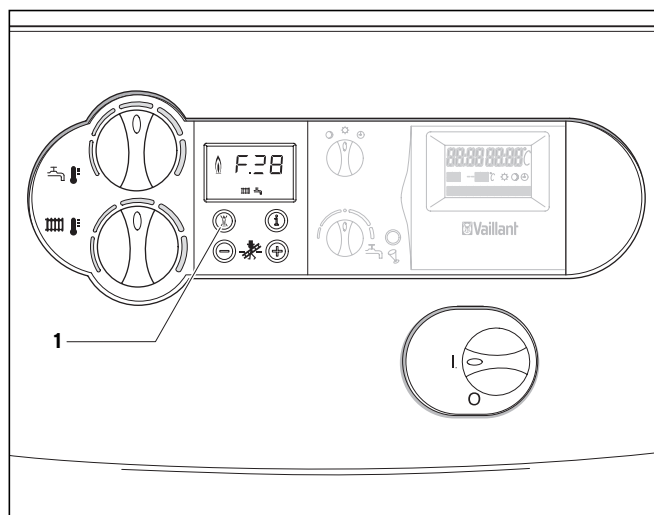


Fig. 4.13 Fault resolution

If the burner fails to ignite after three attempts, the device does not start up and switches to "Fault". This is indicated by the fault code "F.28" or "F.29" in the display.

- First check whether the stop-cock in the gas line is open.

Automatic ignition can only take place after you manually reset the fault.

- To reset the fault, press the "reset" button (1) and hold it down for approx. one second.

**Caution!**  
Inappropriate alterations can cause damage!  
If your gas boiler still does not start after the third attempt, you must call a suitably qualified heating engineer for help.

### 4.8.4 Fault caused by exceeding the temperature

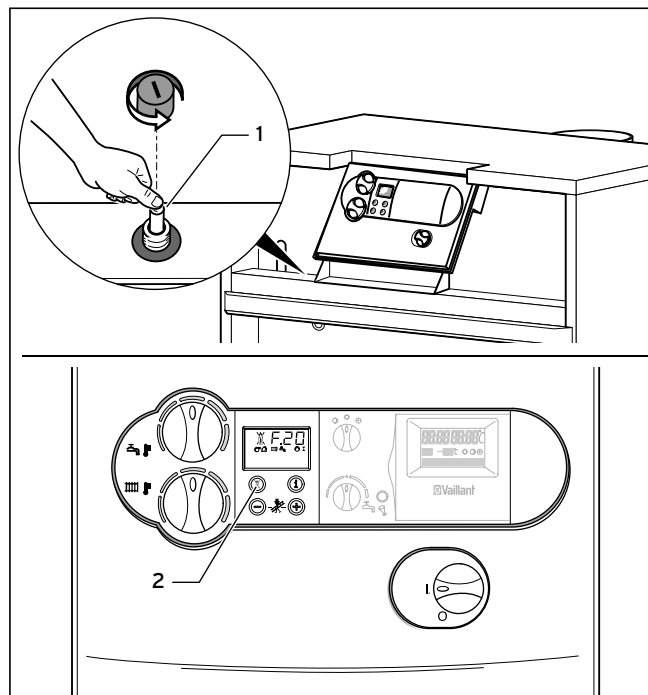


Abb. 4.14 Releasing after STB switch-off

Your boiler is equipped with a safety temperature limiter (STB) which automatically switches off the boiler if the temperature gets too hot. This fault is displayed by the fault code "F.20".

- Remove the front cover.
- Release the STB by pushing the pin (1).
- Reset the electronic system by pushing the "Reset" button (2).

**Caution!**  
If the fault signal F.20 is shown repeatedly, an authorised heating engineer must be consulted to carry out a check of the system.

### 4.8.5 Faults with the exhaust gas removal

The Vaillant atmoCRAFT units can be equipped with an exhaust gas sensor (accessories). If the exhaust gases are not removed properly, the unit switches off temporarily in order to prevent the escape of exhaust gas into the room where the boiler is located. The display shows the symbol "Fault in air/exhaust gas route". The unit starts up again automatically after approx. 15-20 minutes after this switch-off. After repeated switch-off (max. three failed attempts) the unit does not start up again. The error message "F.36" appears in the display.

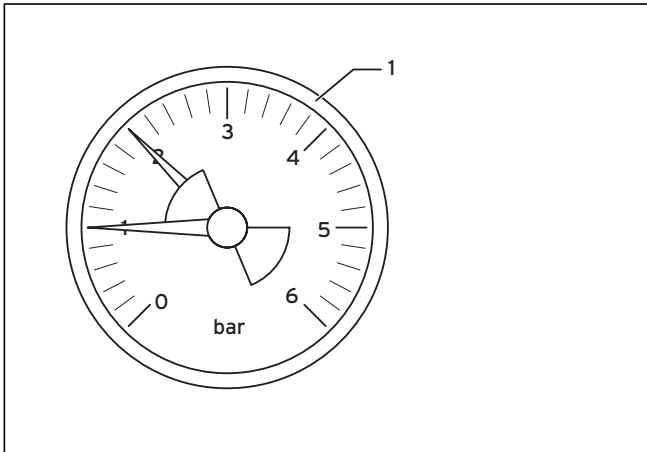
## 4 Operation



### **Danger!**

**If the unit still does not start after repeating the fault resolution process three times, then an authorised heating engineer must be consulted to check the unit.**

### 4.8.6 Filling unit/heating installation



**Fig. 4.15** Checking the filling pressure of the heating installation (pressure gauge not included)

For the heating system to operate properly, the pointer on the pressure gauge (1) must be between 1.0 and 2.0 bar filling pressure when the system is cold. If it is less than 0.75 bar, then water should be added.

If the heating system extends over several storeys, the system may require a higher filling pressure. Ask your engineer for details.



### **Caution!**

**Danger of damage to the gas boiler.**

**Use only clean tap-water to top up the heating system.**

**The addition of chemicals such as e.g. frost and corrosion prevention materials (inhibitors) is not permitted.**

**Otherwise it could result in damage to seals and diaphragms as well as noises in the heating operation.**

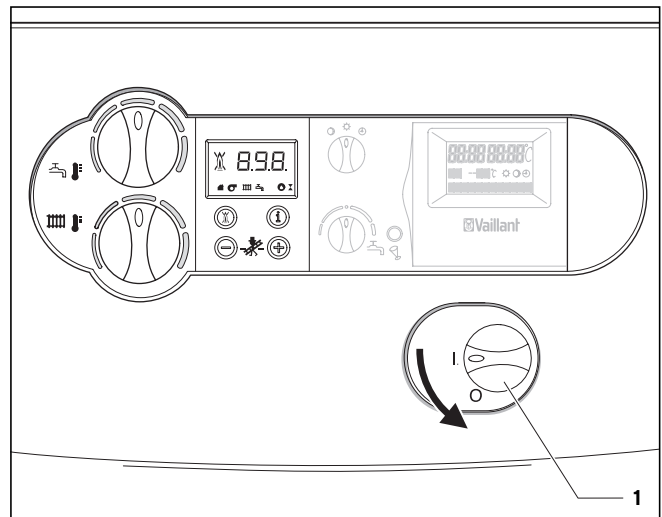
**Vaillant assumes no liability for this and such consequential damages.**

To fill up and to refill the heating system, you can normally use tap water. However in exceptions, the water quality might not be suitable for filling in the heating system (heavily corrosive or extremely calciferous water). In a case such as this you should please contact your authorised heating engineer.

Proceed as follows to fill the installation:

- Open all thermostatic valves in the installation.
- Connect the filling tap of the installation to a cold water draw-off valve with a hose (your heating engineer should have shown you the filling fittings and explained the filling and draining of the system).
- Open the filling cock slowly.
- Turn the filling cock and the tap on slowly and add water until the required installation pressure is shown on the pressure gauge (1).
- Turn the tap off.
- Vent all the radiators.
- Then check the system pressure on the pressure gauge (1) and add more water if necessary.
- Close the filling cock and remove the filling hose.

### 4.9 Shut-down



**Fig. 4.16** Switching the unit off

To shut down your gas wall boiler, turn the main switch (1) to the "0" position.



### **Caution!**

**The frost protection and monitoring systems are only active when the main switch of the appliance is in the "I" position and it is not disconnected from the mains power supply.**

To ensure that these protection devices remain active, switch your gas boiler on and off in normal mode using the controller (see the corresponding operating manual).

**Note!**

**For longer periods of shut-down (e.g. holiday periods), the gas stop-cock and the cold water stop-cock should be switched off. In this connection, please refer to the instructions in Chapter 4.10 concerning frost protection.**

**Note!**

**The shut-off valves are not included in the scope of supply of your unit. They are fitted by your heating engineer in the installation. The position and handling of these components should be described to you.**

**4.10 Frost protection**

The heating system and water pipes are sufficiently protected against frost if the heating system remains on and the rooms are sufficiently heated while you are away.

**Caution!**

**The frost protection and monitoring systems are only active when the main switch of the appliance is in the "I" position and it is not disconnected from the mains power supply.**

**Caution!**

**Danger of damage to the gas boiler by frost prevention material. Addition of frost preventative medium to the heating water is not permitted. Otherwise it could result in damage to seals and diaphragms as well as to noises in the heating operation. Vaillant assumes no liability for this and such consequential damages.**

**4.10.1 Frost protection function**

The gas boiler is equipped with a frost protection function: If the heating feed temperature falls below 5 °C **with the main switch on**, the unit starts up and heats the unit heating circuit to approx. 35 °C.

**Caution!**

**Danger of freezing up of parts of the entire installation. The frost protection system cannot guarantee flow through the entire heating system.**

**4.10.2 Frost protection by draining**

Another way to protect the heating system and the appliance from frost is to drain them. You must ensure that the system and the appliance are completely drained. All cold and hot water pipes in the house and the hot water storage tank connected in the building must also be drained.

Contact your heating engineer.

**4.11 Maintenance and customer service****4.11.1 Inspection and maintenance**

Permanent operational readiness, reliability and a long service life require inspections and maintenance work to regularly carried out by a heating engineer.

**Danger!**

**Danger of property damage and personal injury from improper handling!**

**Never attempt to perform maintenance or repairs on the gas boiler yourself.**

**Assign an approved qualified servicing company with this work. We recommend making a maintenance agreement.**

**The operational reliability of the device can be impaired, resulting in damage to property or personal injury, if maintenance work is not carried out.**

Regular servicing ensures maximum efficiency and economical operation of your gas boiler.

**4.11.2 Maintenance requirement indicator**

The heating engineer can adjust a maintenance requirement display in your boiler.

If this function is activated, the read-out "**SER**" appears in the display on your boiler as soon as maintenance becomes necessary.

When this display appears you should inform your heating engineer and he should perform the maintenance work.

If this function is not activated, and a maintenance requirement display is not shown, the boiler should be serviced at least once a year.



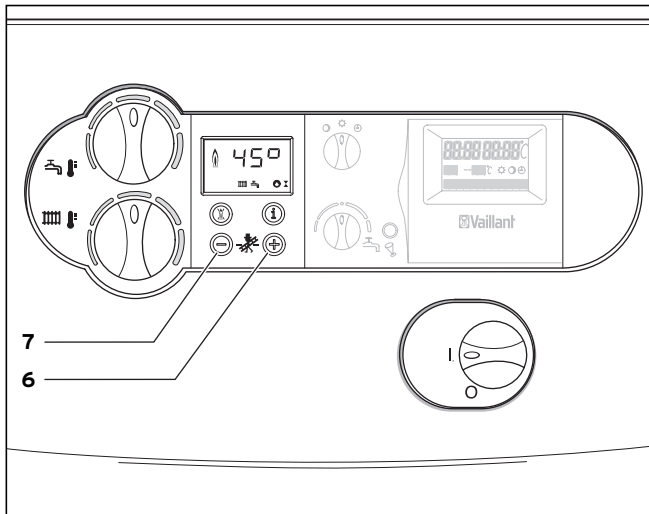
## 4 Operation

### 4.11.3 Chimney sweep measurements



**Note!**

The measurement and checking work should be carried out only by the chimney sweep.



**Fig. 4.17** Switch on the chimney sweep mode

Proceed as follows to perform the measurements:

- Activate the chimney sweep mode by simultaneously pushing the buttons "+" (6) and "-" (7) on the DIA System.
- The measurements should be taken at the earliest after 2 minutes of operation of the unit.
- By simultaneous pushing of buttons "+" (6) and "-" (7) you can exit the measuring mode. The measuring mode will also be ended if no button is pushed within a 15 minute period.