

**OPERATING MANUAL:**  
Instructions for use & maintenance of the

**Walltherm® Vajolet**

**Version 01**

The **first** water heating wood gasification boiler stove.



Dear stove-owner,

you have made an excellent choice purchasing the Walltherm® boiler stove for your living room. Especially in connection with a heat storage tank, it offers you all the advantages of a radiant heat stove for the living room and furthermore, an economical heating system for your whole house. Please study this manual, it explains how the boiler stove works, how you should operate it and how the Walltherm has to be maintained.

For further information, please contact the manufacturer or any authorized Walltherm dealer.

Fam. Wallnöfer

The manual can be used for the following models:

Model:	Kind of fireplace:	Norm:	Performance class:
Walltherm® Vajolet	Boiler stove	EN13240	10 KW
Walltherm® Vajolet Basic	Insert boiler stove	EN13229	10 KW

**Usage:**

The Walltherm was developed for an optimal combustion of air-dried, untreated logs, wood chips and (partly) briquettes.



**The Walltherm® must not be used for burning waste.**



**Before firing the boiler stove the heat exchanger has to be water filled and connected to the heating system!!**

The heater (wood gasification boiler stove) Mod. Walltherm®, invented by the company Wallnöfer GmbH, complies with the Machine- and Safety Regulations of the European Union (CPR) and consequent amendments. The boiler stove has been tested by TÜV Rheinland Energy (GER) and is registered by VKF (Switzerland).



**In any case the laws and norms valid in the installation country have to be respected.**

Particular respect the correct chimney situation, the correct hydraulic connection to the heating system, the standardized supply for the combustion air and the security distances to flammable parts.



During the planning, we consider to discuss the installation of the Walltherm® with the regional chimney sweeper to respect all the regional rules, specially regarding the chimney installation the combustion air and the distances to flammable material.



produced and developed by



This operation manual is directed to the owner of the Walltherm® boiler stove, the tradesman who installs it, the operators, and the service personal.

In any case of doubt or for further information concerning the manual, please contact the producer or any authorized Walltherm® dealer. Please quote the number of the paragraph and name the topic in question. You find our contact data on [www.wallnoefer.it](http://www.wallnoefer.it)

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Technical information, graphics, and specifications included in this manual must not be published/distributed.

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## 1. Introduction

### 1.a Purpose and contents of the manual

#### Purpose

The purpose of the manual is to provide the operator with the fundamental knowledge to allow the user to take the necessary precautions and to have all the human and material resources required for its correct, safe and lasting use.

#### Contents

This manual contains all the information necessary for installation, use and maintenance of the Walltherm® boiler stove. By complying scrupulously with the contents of this manual, you will ensure a high degree of safety and productivity of the boiler stove.

Do not install or use the boiler stove before you haven't read and understood the contents of this manual. In case of doubt at any time, do not hesitate to contact Wallnöfer GmbH for information.

Wallnöfer GmbH reserves the right to modify the technical and/or functional specifications and features at any time without prior notice.

When planning the installation of a Walltherm® boiler stove please consult the chimney sweeper regarding the chimney system, the combustion air channels and the distances to keep to flammable material.

#### Keeping and consulting the manual

The manual must be kept in a safe, dry place and be available at all times for consultation by the user and by those who see to its installation and maintenance.

The manual with its instructions for operation and maintenance is an integral part of the boiler stove.

#### Deterioration or loss

If required, ask Wallnöfer GmbH for another copy of the manual.

#### Update the manual

This manual reflects the state-of-the-art from the serial number 10000.  
If the stove is sold, the user must give the manual to the new owner.

### 1.b Symbols

Important points in this manual are highlighted with the following symbols:



**Indication:** indications concerning the correct use of the boiler stove and the responsibilities of those using it.



**Attention:** a particularly important note is written here.



**Danger:** Here you are warned of the possibility of bodily harm or material damages.

### 1.c Intended use / combustion technique

The Walltherm® is the first wood boiler stove using the gasification technique.

Walltherm is an innovative, technologically advanced boiler stove for heating, burning fuels like firewood and wood briquettes providing a healthy and safe way of heating.

This boiler stove features the dual primary and secondary combustion system with positive effects both on efficiency and on emission of "cleaner smoke".

The Walltherm® placed in the Livingroom heats directly by radiation and all the residual room through the central heating system (e.g. radiators/floor heating system). In the storage tank can also be heated up hot domestic water.

The application of the boiler stove and its configurations as described above are the only ones permissible by the manufacturer. Do not use the boiler stove in disagreement with the instructions provided.



The described use of the boiler stove is applicable only for stoves in full structural, mechanical and engineering condition.



The Walltherm, produced by Wallnöfer GmbH, must only be used indoors.

**Generally:** In a wood burning stove, a correctly burning flame emits the same amount of carbon dioxide (CO<sub>2</sub>) as would be emitted through the natural decomposition of the wood itself.

The quantity of CO<sub>2</sub> produced by combustion or decomposition of a tree is equal to the quantity of CO<sub>2</sub> that the tree would have extracted from the environment, releasing oxygen into the air whilst utilizing the carbon for growth during its lifetime.

Unlike wood, when fossil fuels are burned – which are not renewable, like coal, diesel oil or gas – a huge amount of CO<sub>2</sub> accumulated in the course of millions of years is emitted into the atmosphere, increasing the green-house effect. Consequently, the use of wood as fuel maintains the perfect equilibrium of nature because it is a renewable fuel of which burning is compatible with nature's life cycle.

The principle of clean combustion is in perfect harmony with these characteristics and Wallnöfer GmbH always adheres to it when designing their products.

#### **The gasification burning system and its advantages:**

Thanks to the gasification burning system of the Walltherm® - boiler stoves the efficiency achieves over 90% and the emissions are really low.

**Double combustion:** What exactly do we mean by clean double combustion and how does it work? By controlling the flow of primary air and by adding secondary air, secondary combustion, or post-combustion, takes places. This is indicated by a second characteristically clearer and stronger flame. By adding new oxygen, this flame consumes the unburned gasses, remarkably improving heat production and reducing the harmful emission of CO (carbon monoxide) caused by incomplete combustion. This is a unique feature of the Walltherm boiler stove for the living room.



## 1d Delivery of the boiler stove

The boiler stove is delivered accurately packed in cardboard and fixed to a wooden pallet so it can be handled by elevator trucks and/or other means.



Don` t tilt the wood pallet!!

You will find the following items inside the boiler stove:

- use, installation and maintenance manual;
- cleaning brush for the flue ways
- a thermal process safeguard valve
- a bleeding valve
- a brush for the ashes
- a fire poker
- ash shovel



**Attention:** the total weight of the boiler stove is around 300 kg (without water content). The focus of the weight is on the backside of the boiler stove. Pay attention on this while moving the boiler stove.



**Danger of suffocation:** Ensure, that any child isn` t playing with the packaging material!!



**Storage in dry environment:** The coating curing will be completed only after the stove was in function (burned) a few times, therefore avoid contact with humidity during the storage of the stove. (Corrosion preventing)

## 2 Safety Precautions

### 2.a Instructions for installers



- comply with the indications given in this manual
- check that the flue and air intake are suitable for the type of installation opted for (12-15 pa draft – max 25 pa)
- the electrical connections must not be done using temporary or non-insulated leads
- make sure the electric system's grounding is effective
- always use individual safety devices and other protection means
- **Danger:** Check the loadability of the lifting carriage. The user of the lifting carriage has the full responsibility for the lifting up.
- **Check** if the static can load the complete weight of the stove including water content and wood logs ...

### 2.b Instruction for users



- **Before firing the boiler stove the heat exchanger has to be water filled and connected to the heating system!!**
- Since the boiler stove is an appliance that heats, its outer surfaces can get very hot. For this reason we advise maximum caution when it is working, in particular:
  - not to touch or go near the glass door as you could get burned;
  - not to touch the flue and air intake;
  - not to do any type of cleaning;
  - not to pull out the ashes;
  - not to touch the lower glass door;
  - make sure that children are kept away.
- Open the doors only when the exhaust fume flap is open and if the wood logs are completely burned to ember!!
- comply with the indications given in this manual
- comply with the instructions and warnings given on the plates on the boiler stove
- these plates are accident prevention devices and as such must be easily and perfectly legible; if not, it is compulsory to change them by asking the manufacturer for an original plate
- only use fuel that complies with the indications given in the chapter referring to fuel characteristics
- keep strictly to the routine and extraordinary maintenance program
- do not use the boiler stove if there is a malfunction, a suspicion of breakage or unusual noises
- do not throw water on the boiler stove when it is lit or to put the fire out
- do not clean the boiler stove until the structure and ashes are completely cold
- all works must be carried out in maximum safety and calmly.



**Only authorized personal are allowed to do the maintenance for the fittings and electric parts.**



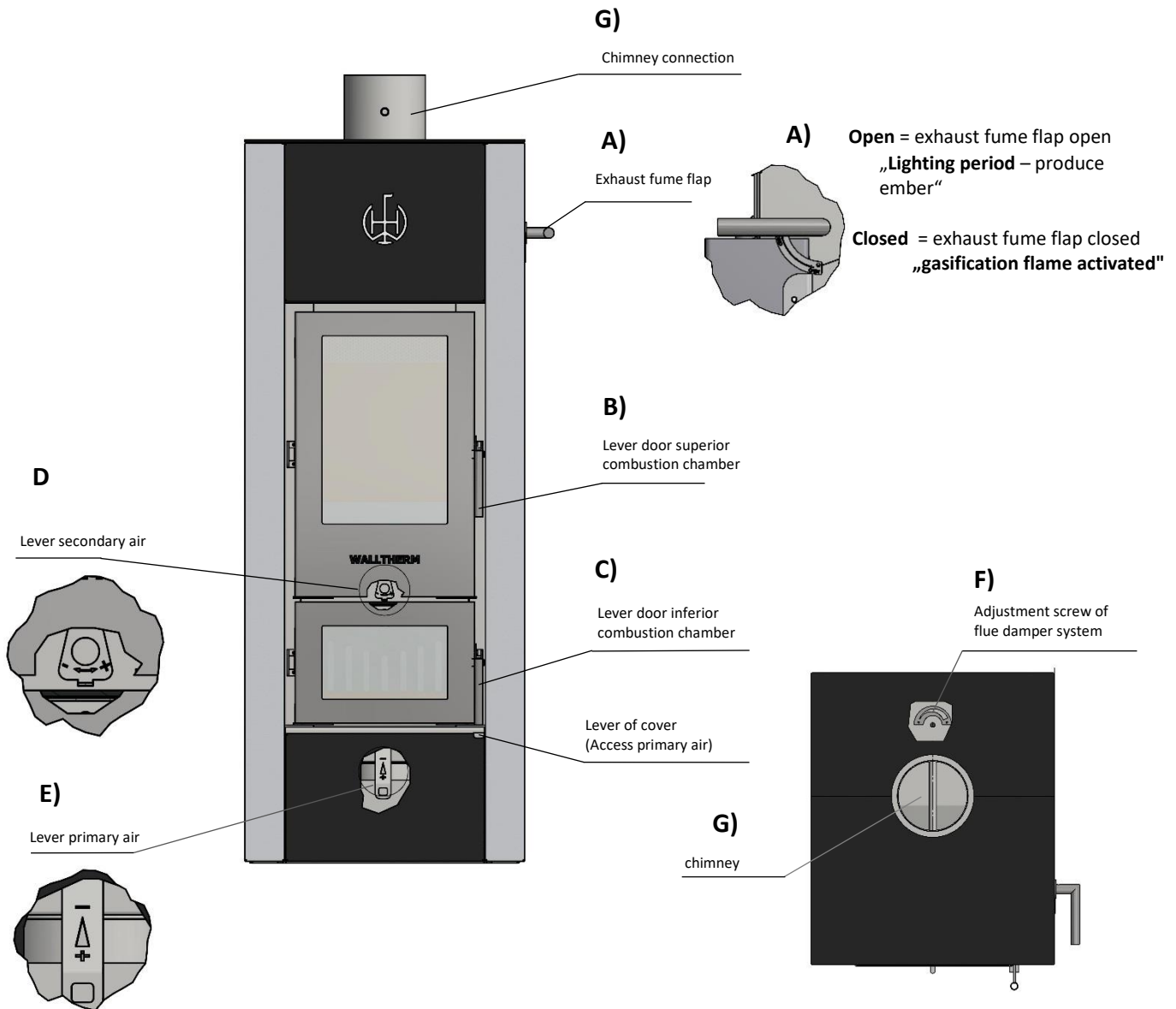
## 2.c Instruction for maintenance personal



- comply with the indications given in this manual
- always use individual safety devices and other protection means
- before embarking on any maintenance work the boiler stove must be completely cold
- even if only one of the safety devices is incorrectly calibrated or not working, the boiler stove is to be considered "not working"
- the electricity must be disconnected before any work is done on switches and connectors. Make sure all parts of the boiler stove are cold.
- Make sure the ashes are completely cold and not burning.
- Use the individual protective gear as established by the EEC directive 89/391.
- Check that the main line switch is off (if an electrical thermostat is used).
- Make sure that the power supply cannot be switched on accidentally. Take the plug out of the wall socket.
- Do not remove or disconnect parts of the water pipes if they are under pressure.
- Always use the most appropriate maintenance tools.
- Once the maintenance or repair work is finished reinstall all the protections and reactivate all the safety devices before switching the boiler stove back on.

**3 The Walltherm® Vajolet wood boiler stove**

3 a Parts



- A) Exhaust fume flap
- B) Lever upper door
- C) Lever lower door
- D) Lever secondary air
- E) Lever primary air
- F) Adjustment screw flue damper system
- G) Chimney
- H) Iron cast grids (4 pz)
- I) Injector block
- J) Air intake (backside and bottom)
- K) Water connection
- L) Air bleeder, sensor water temp, sensor exhaust gas temp., sensor thermal process safeguard valve

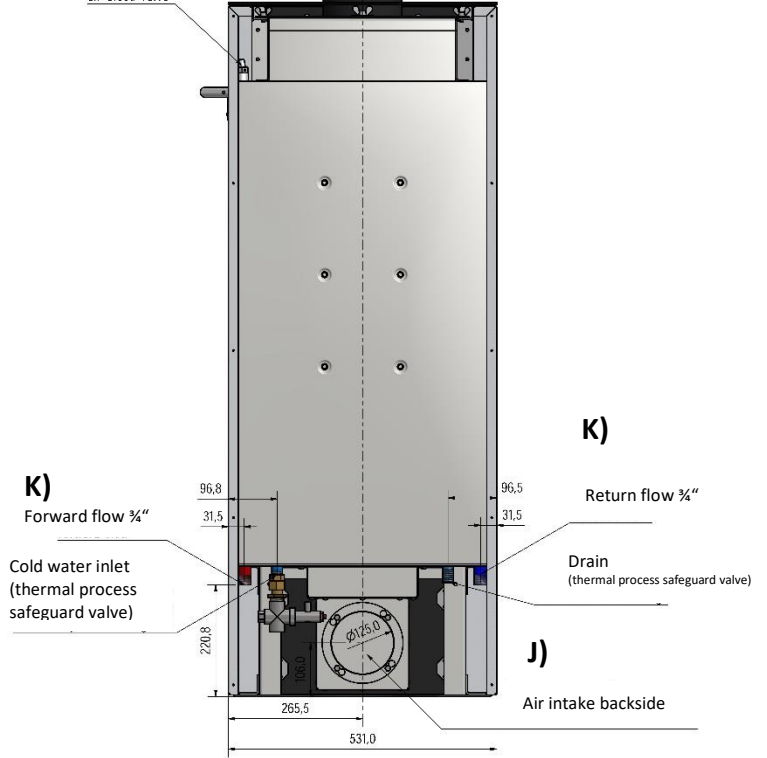
**Internal parts upper combustion chamber**

**H)**  
Iron cast grids  
(2 pz per side)

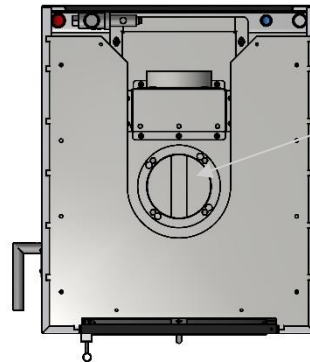


**I)**  
Injector block

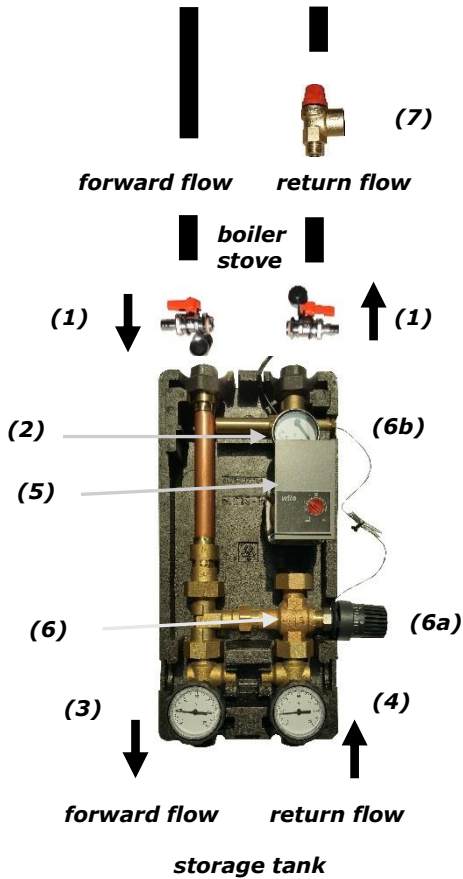
**L)**  
Area for different sensors  
and the air bleeder



**J)**  
Air intake bottom



**Pump unit:**



- 1 Filling and drain valve **(optional)\***
- 2 Thermometer return flow to boiler stove
- 3 Thermometer forward flow storage tank
- 4 Thermometer return flow storage tank
- 5 High efficiency pump
- 6 Thermal mixing valve
- 6a Thermostatic head for adjustments from pos. 1 – 7
- 6b Sensor thermal mixing valve
- 7 Security pressure valve 3 bar **(provided by customer)\*\***

**\*We recommend the installation of filling and drain valves between pump unit and boiler stove to clean the water circuit and to bleed the system with external pump unit.**

**! \*\*A security pressure valve 3 bar has to be installed in the boiler stoves water circuit.**

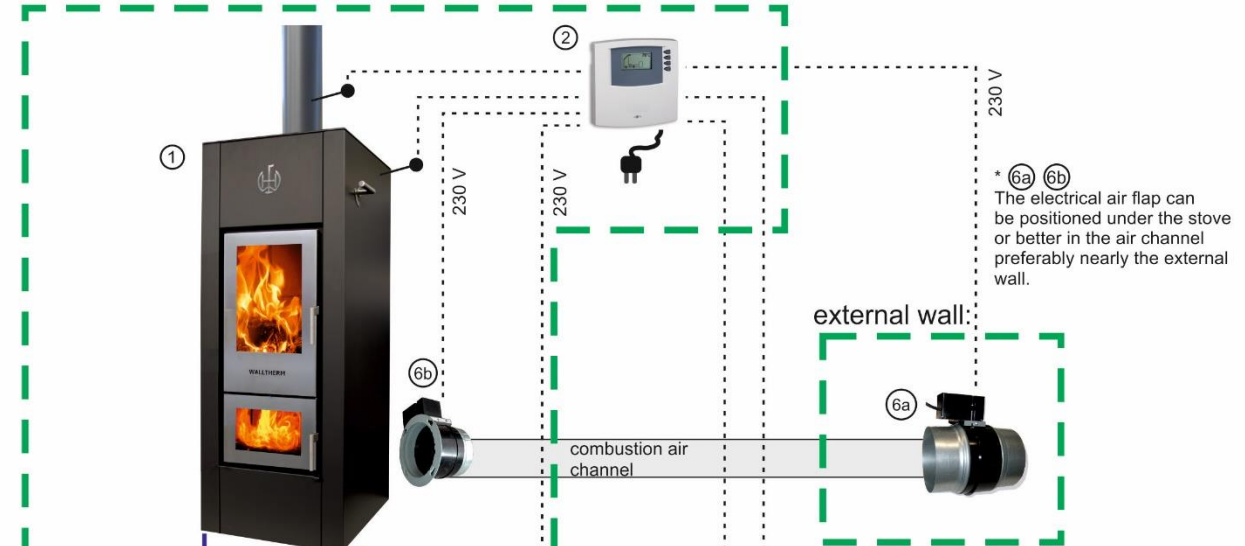
**3.b Delivery contents:**

You get following items with the boiler stove:

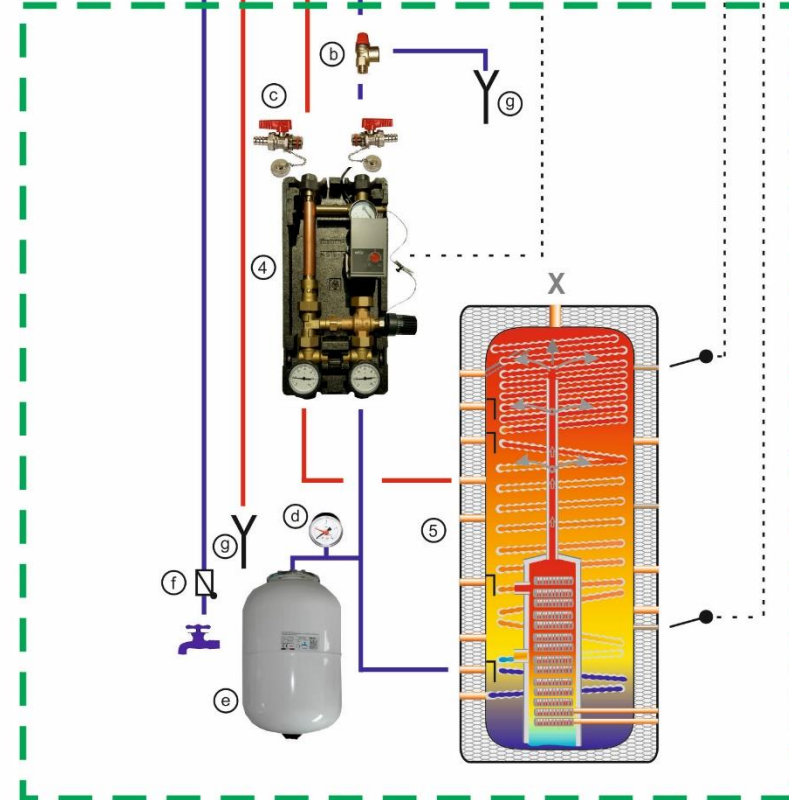
- Use, Installations and maintenance manual;
- Cleaning brush for the flue ways
- Pump unit with thermal mixing valve
- Thermal process safeguard valve
- Manual air bleeder
- Brush for ashes
- Fire poker
- Ash shovel

**3.c Overview off all important components**

Living room:



Technical room:



**Living room:**

- ① Stove
- ② Controller WAL03 with electrical connection with sensors for:
  - exhaust gases
  - water temperatur stove
  - lower storage tank
  - higher storage tank
  - poss. solar system
 with power supply for:
  - stove pump
  - air flap
  - poss. solar pump
- ③ water connections
  - forward flow - Ø 22 mm
  - return flow - Ø 22 mm
  - cold water inlet Ø 18 mm with thermal process safeguard valve
  - hot water discharge Ø 18 mm
- ⑥a \*El. air flap with power supply from controller WAL03
- ⑥b \*El. air flap with power supply from controller WAL03

**Technical room:**

- ④ Pump unit:
  - with 3 thermometers
  - pump and mixing valve
  - additional components water circuit:
    - pressure safety valve 3 bar
    - filling and drain valve
    - manometer 0 - 4 bar
    - expansion vessel
- ⑤ Storage tank
  - with sensor upper storage tank
  - with sensor lower storage tank

**External wall:**

- ⑥a \*El. air flap with power supply from controller WAL03

Legend valves:

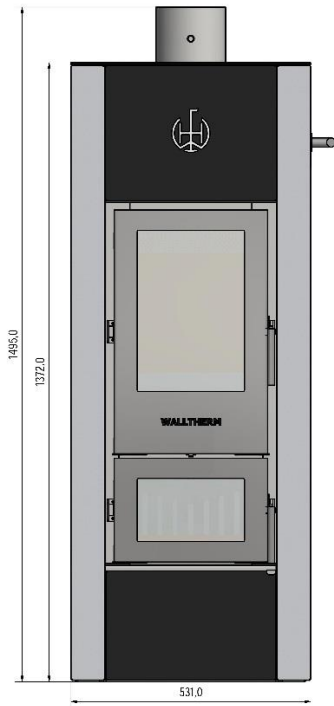
a = thermal process safeguard valve, b = pressure safety valve 3 bar, c = filling and drain valves, d = manometer, e = expansion vessel, f = non return valve, g = discharge

This list is not exhaustive.

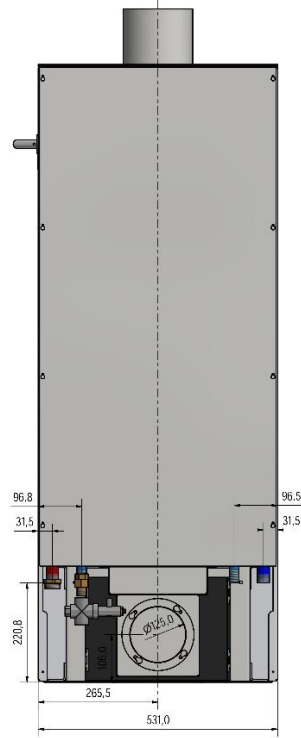
**3.d Dimensions Walltherm® Vajolet and Vajolet Basic**

**Walltherm® Vajolet:**  
(boiler stove)

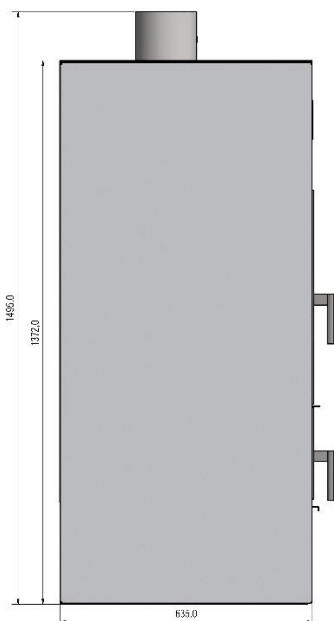
**front side**



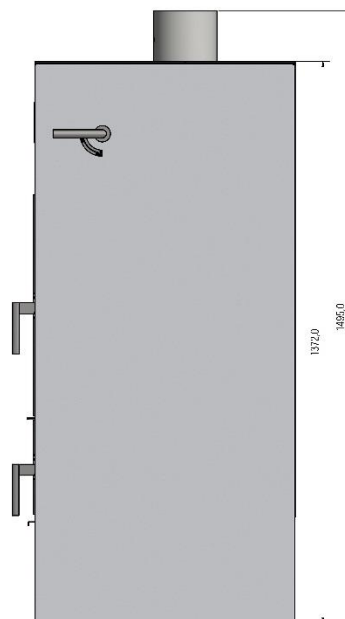
**backside**



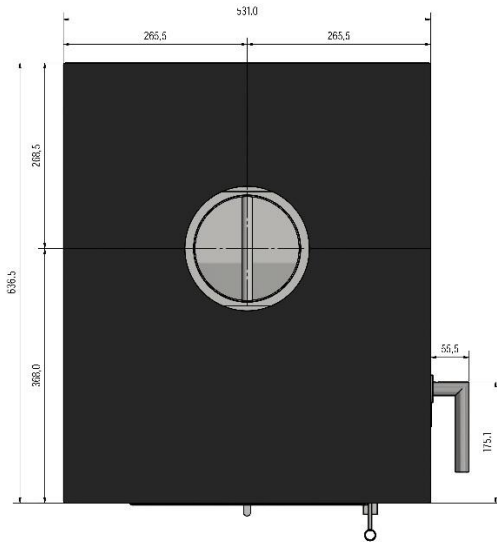
**left side**



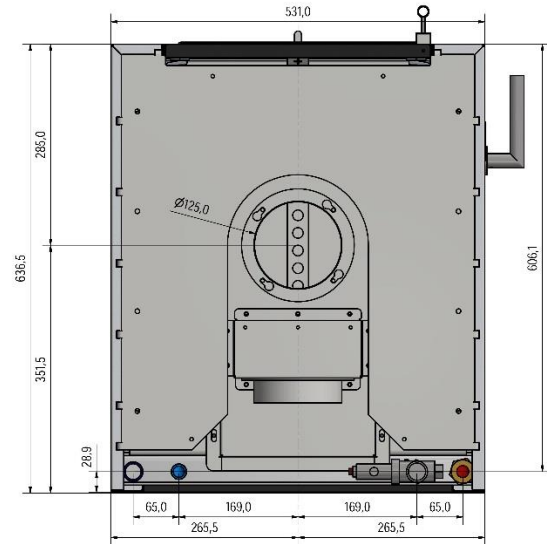
**right side**



**top view:**

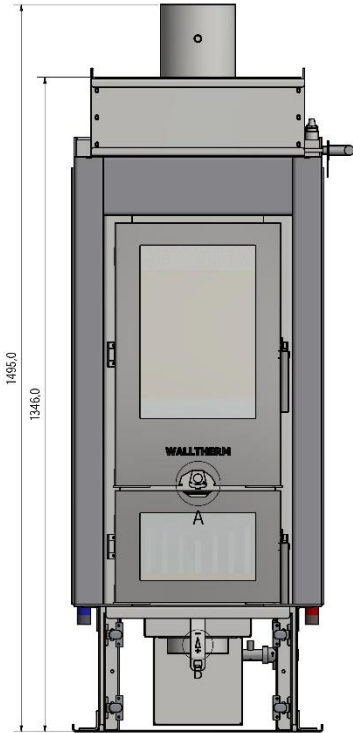


**bottom:**

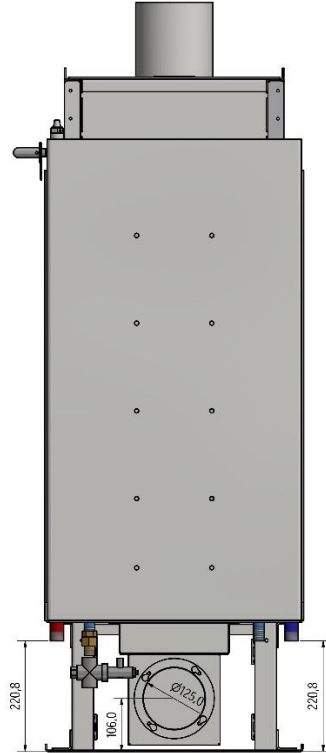


**Walltherm® Vajolet Basic:**  
(insert boiler stove)

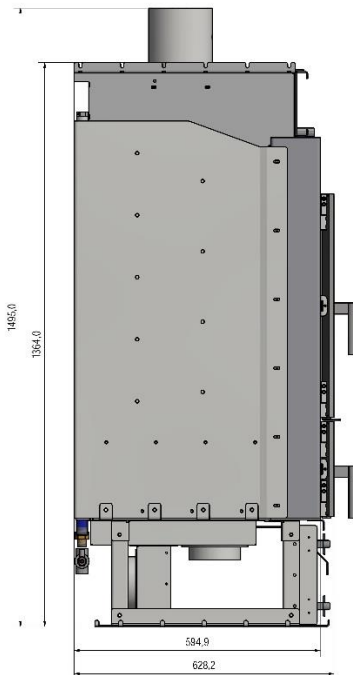
**front side**



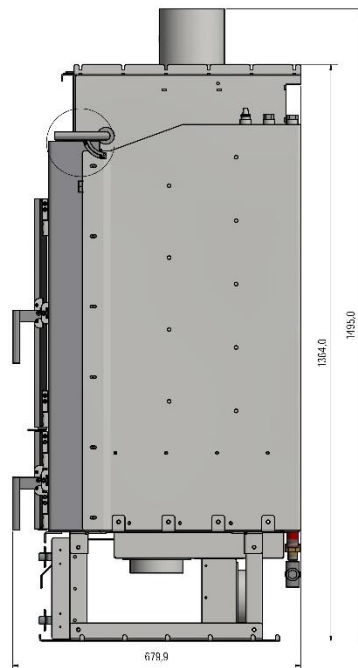
**backside**



**left side**

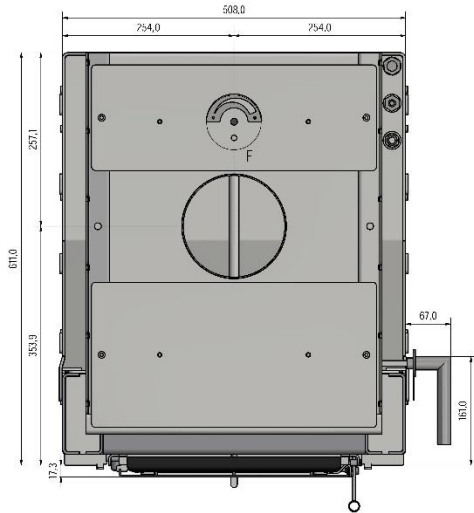


**right side**

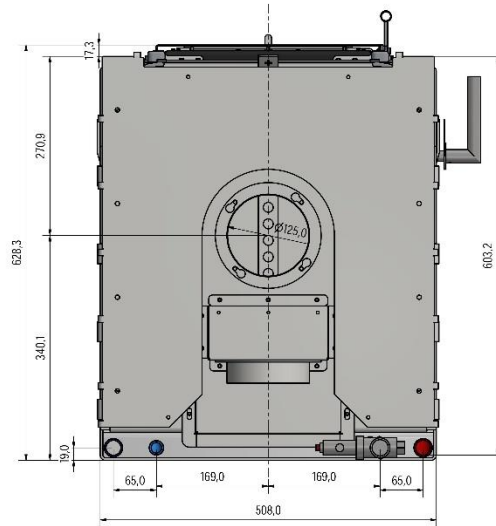




**top view:**



**bottom:**



**3.e Technical data:**

Model:	Kind of fireplace:	Norm:	Performance class:
Walltherm® Vajolet	Boiler stove	EN13240	10 KW
Walltherm® Vajolet Basic	Insert boiler stove	EN13229	10 KW

**Technical data for the boiler stoves Walltherm® Vajolet and Vajolet Basic:**

<b>Efficiency:</b>	<b>&gt;90%</b>
Nominal heat output:	10 KW
Heat output min/max:	8 - 15 KW
Division of heat output:	up to 80% water heat output 20 % heat output by radiation
Operating pressure max:	2,5 Bar
Weight (without water content):	300 kg
Water content:	approx. 80 lt
Flue gas mass flow:	8,8 g/s
Chimney draught:	12 Pa (max 20 Pa)
Exhaust gas temp. with gasification flame:	130 °C - 170 °C
Exhaust gas temp. lighting period:	Up to 400 °C

### 3.f Label with serial number

The label with serial number is attached on the boiler stoves backside.  
If you have to order spare parts please send us your serial number.

#### Label Walltherm® Vajolet (boiler stove):

**Walltherm®  
Vajolet**

**WALLNÖFER**  
SOLAR & WALLTHERM® ÖFEN

Wirkungsgrad / rendimento / efficiency:	90,77 %
Brennstoff / combustibile / combustible:	Stückholz/legna/wood
Nennwärmeleistung / potenza nominale / Nominal heat output:	10 KW
Brennstoffwärmeleistung / Potenza introdotta / heat input:	11,02 KW
Wasserseitige Leistung / Potenza all'acqua / water heat output:	ca. 80 %
Raumwärmeleistung / Potenza resa all'ambiente / space heat output:	ca. 20 %
CO- Gehalt bei Nennlast / contenuto-CO / CO-content:	<400 mg/Nm <sup>3</sup> (13% O <sub>2</sub> ) 10 Pa (max.20 Pa)

Kaminzug / tiraggio canna fum. / chimney draft:	
Max. Betriebsdruck/max. pressione d'esercizio/max. operating pressure:	2,5 bar
Prüfdruck / pressione di collaudo / test pressure:	5 bar
Inhalt Wärmetauscher / volume scamb. / content heat exchanger:	80 lt
Max. Betriebstemp. / temp. massima / maximum temperature:	90 °C

Mindestabstand zu brennbaren Teilen:  
Distanza min. da componenti infiammabili:  
minimum distance to burning objects:

A = 10 cm  
B = 10 cm  
C = 100 cm

Der Ofen ist für den Zeitbrand geeignet  
La stufa funziona in maniera intermittente.  
The stove is suitable for intermittent operation.

konform mit folgender Norm  
conforme alla normativa  
conform with the norm

**DIN EN 13240  
15a B-VG (2015)**

K19652016T1 TÜV Rheinland Energy GmbH  
DOP-Erklärung/dichiarazione/declaration: **001-CPR-2017/02/06**

**Hinweis:** "Lesen und befolgen Sie die Bedienungsanleitung!"  
**Attenzione:** "Leggere e seguire le istruzioni del manuale!"  
**Attention:** "Read and follow the operation instructions!"

**Hinweis:** Es ist notwendig Pufferspeicher einzusetzen.  
**Attenzione:** È necessario usare un accumulatore.  
**Attention:** The use of a storage tank is necessary.

**Hinweis:** "Ausschließlich empf. Brennstoffe verwenden!"  
**Attenzione:** "Usare solo combustibili consigliati!"  
**Attention:** "Use only allowed combustibles."

**Wallnöfer GmbH  
Energiesysteme**  
Gewerbezone  
Kiefernainweg 110  
I-39026 Prad am Stj.  
(Südtirol/Alto Adige)

[www.walltherm.com](http://www.walltherm.com)

Seriennummer:  
No. Matricola:  
serialnumber: \_\_\_\_\_

Seriennummer:  
No. Matricola:  
serialnumber: \_\_\_\_\_

#### Label Walltherm® Vajolet (insert boiler stove):

**Walltherm®  
Vajolet Basic**

**WALLNÖFER**  
SOLAR & WALLTHERM® ÖFEN

Wirkungsgrad / rendimento / efficiency:	90,77 %
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Mindestabstand zu brennbaren Teilen:  
Distanza min. da componenti infiammabili:  
minimum distance to burning objects:

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Der Ofen ist für den Zeitbrand geeignet  
La stufa funziona in maniera intermittente.  
The stove is suitable for intermittent operation.

konform mit folgender Norm  
conforme alla normativa  
conform with the norm

**DIN EN 13229  
15a B-VG (2015)**

K19662016T1 TÜV Rheinland Energy GmbH  
DOP-Erklärung/dichiarazione/declaration: **002-CPR-2017/02/06**

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**Wallnöfer GmbH  
Energiesysteme**  
Gewerbezone  
Kiefernainweg 110  
I-39026 Prad am Stj.  
(Südtirol/Alto Adige)

[www.walltherm.com](http://www.walltherm.com)

Seriennummer:  
No. Matricola:  
serialnumber: \_\_\_\_\_

Seriennummer:  
No. Matricola:  
serialnumber: \_\_\_\_\_



Note the serial number of your boiler stove:

It is recommended to note the serial number because often the backside of the stove isn't easily accessible.

## **4 Installation**

### **4.a Safety precautions**

The responsibility for any work done in the space where the boiler stove is to be installed is, and remains, the users. The user is also entrusted with carrying out the checks regarding the proposed installation solutions. Boiler stove assembly and dismantling instructions are for specialized technicians only. It is always advisable for the user to call our assistance service when they need qualified technicians. If other technicians are called in, please make sure they are truly qualified.

Before the assembler starts either assembling or dismantling the boiler stove, he must comply with the following safety precautions:

- a) he must not work in adverse conditions;
- b) he must be in perfect psychophysical condition to work and ensure that the individual and personal accident prevention devices are complete, functional and in perfect working order;
- c) he must wear accident prevention gloves;
- d) he must wear accident prevention footwear;
- e) he must use electrically insulated tools;
- f) he must make sure that the load-bearing capacity of the area he is working in for assembling/dismantling the boiler stove is adequate referring to the boiler stove's weight.

#### 4.b The chimney system

After having found an appropriate place for installing the stove, please try to install the exhaust pipe, while taking into consideration paragraph 4.c.

For the smoke outlet use rigid, varnished steel pipes (min. 1,5 mm) or high-grade stainless steel pipes (min. 0,5 mm) with 15 cm diameter including sealing.

The vertical chimney with ca. 6 m has to be insulated with min. 20 mm.

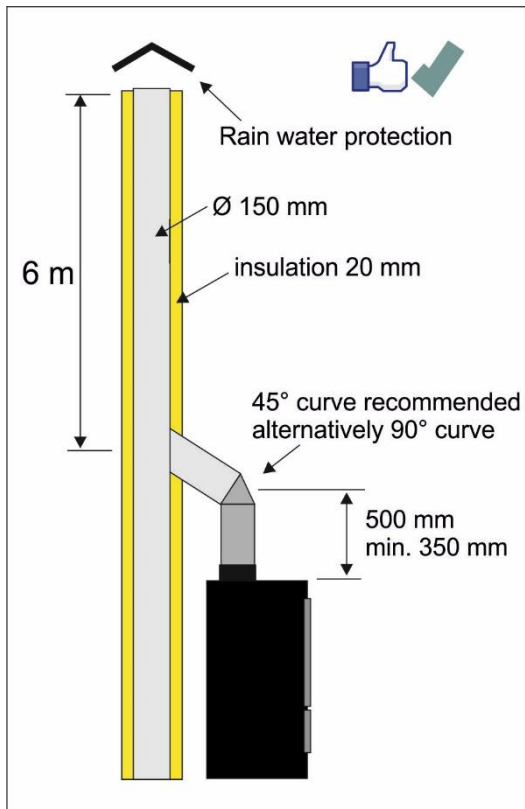


Fig. 4.b

The single wall smoke pipes should have an inspection opening.

The covers on the upper part of the stove for flue ways and exhaust fume flap have to be accessible for maintenance.



**Attention:** For a correctly working drought, the pipe has to exit the stove vertically for at least 0,3 - 0,5 m before having the first angle.

If possible, the pipe then should enter the chimney by using a **45° angle** (better drought than with 90°).

The diameter of the chimney should be around 150 mm (do not use a very big chimney because of the low exhaust gas temperature) 6 m vertical chimney would be the best length.

The material of the chimney can be stainless steel or ceramic with insulation.

**Info:** A chimney out of stainless steel reduces the time of the lighting phase.

It is very **important to insulate the chimney pipe** with suitable materials (rock wool) or to use double insulated steel pipes. If the chimney is not isolated, the Walltherm will most probably not work!

If horizontal smoke pipes are necessary maintain an inclination of min. 10° and contact Fa. Wallnöfer.

The chimney tube is inserted into the muff of the Walltherm stove (see picture). The gap between the chimney pipe and the stove muff needs a sealing.

Dimensions chimney connection: internal  $\varnothing$  150 mm, external  $\varnothing$  154 mm



Install an external or internal rain water protection to avoid contact between rain water and the stove body.

- ! The connection of more furnaces to one chimney is just allowed after agreement of the producer and chimney sweeper and a positive result of the draft calculation. In any case the combustion air inlet of the second heat source (furnace) has to be completely closed if it isn't operating.



**Danger:** The connecting of the exhaust-pipe must not be connected with the following pipes:

- Non insulated chimney systems
- Chimney systems with a diameter bigger than 200 mm
- Chimney hoods which are already used for other heating systems provided by a fan (oil-boilers, heaters, chimneys etc.); (Exception: the chimney sweeper gives permissions!)
- Ventilation systems (extractor hoods, ventilations etc.) even if they are running separately.



**Attention:** Due to unfavorable conditions of the extractor hood (several bends, curves, unsuited chimney etc.) the smoke outlet may not work optimally. In such a case please contact the technical customer service.



**Attention:**

In case of a bigger chimney system, insert an insulated steel tube with a diameter of 150 mm.

- Ensure that the connection of the steel tube is sealed with the chimney.
- Avoid contact with flammable parts (wood beams) and insulated with fire proof material if necessary
- ! The combustion air mustn't be taken through a channel from the roof. If necessary ask for permission from Wallnöfer and the chimney constructor.

In really windy areas install a suitable chimney hat on the top.

#### 4.c Distance to flammable and non-flammable material



The figures below (*fig. 4.c.1 and 4.c.2*) show the minimum distances to flammable materials and other items which have to be kept when installing the boiler stove. Please put install also a floor protection sheet if you have to protect a flammable floor.

If you want reduce the minimum distance you have to install insulation material after getting permission from the chimney sweeper.

<b>A) Back wall</b>	<b>10 cm</b>
<b>B) Side wall</b>	<b>10 cm</b>
<b>C) Front of the doors</b>	<b>100 cm</b>
<b>D) Floor protection sheet</b>	<b>40 cm</b>

In any case it is necessary to maintain a distance of **5 cm** to all sides, also to non-flammable material. The metal sheets has to be removable.

If combustion air will be taken from the living room, maintain 5 cm of space between stoves backside and the wall.

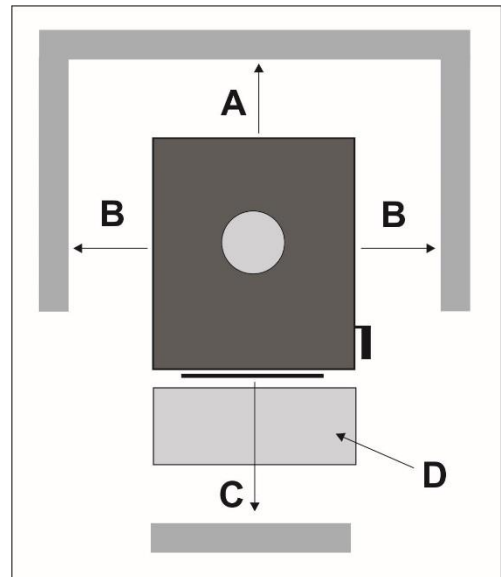


fig. 4.c.1

Eventuelle Holzbalken über dem Heizofen und dem Rauchrohr müssen mit feuerfestem Material isoliert werden (fig. 4.c.2)

**E) flammable material and smoke pipe 50 cm**



**Attention:** Remember to let enough space around the boiler stove for maintenance works specially on the flue ways, water connections and the sensor area.

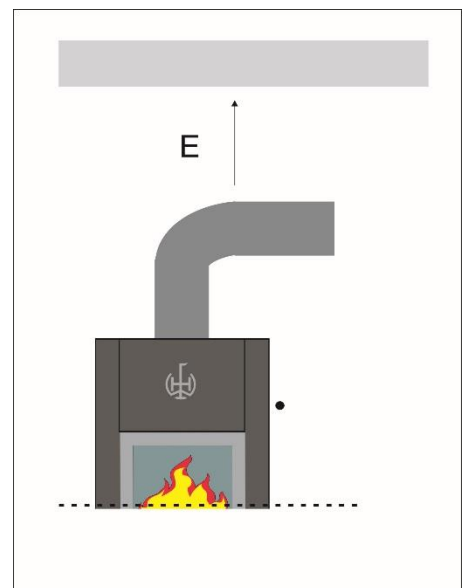


fig. 4.c.2

#### Load capacity of the floor:

Make sure that the floor can resist the weight of the boiler stove Walltherm® Vajolet (around 380 kg with water content) and add the weight of the immuring material if you install the Walltherm® Vajolet Basic insert.

#### 4.d Combustion air

**Combustion air from the room:** When working, the boiler stove takes from the room in which he is installed a certain, small amount of air. Therefore air has to be supplied from outside through an opening to houses that possess controlled airing and ventilation systems.

If possible place the air inlet behind the boiler stove. The dimension of the air inlet should be conform the laws and regulation of the installation country.

The boiler stoves air intake is on the backside!

Outside a stable grille must be fixed; on windy and stormy places should a protection system against rain and wind should be fixed, as well.



**Attention:** Extractor hoods that are installed in the same room as the boiler stove, can cause problems.



**Attention:** If there are other fireplaces near the Walltherm boiler stove, the combustion air must be obtained from outside.



**Danger:** The norms forbid air supply from garages, storerooms where fuel and other materials are kept and rooms where combustible activities are practiced.



**Please obey the laws and norms valid in the installation country.**

#### Combustion air from outside:



If you would like to obtain the combustion air from outside, you can connect a canal. Follow the right of the installation country!

On the Walltherm® Vajolet and Vajolet Basic we have two possibilities to connect the channel with the external combustion air:

- Backside: aperture of Ø 125 mm to connect an air channel from the backside.
- Bottom: Aperture of Ø 125 mm to connect an air channel from the bottom.



**Info:** Close the primary air if the boiler stove isn't operating or install the electrical air flap controlled by the controller WAL03, in that way you can avoid that cold air from outside cool down the boiler stove and the chimney system.

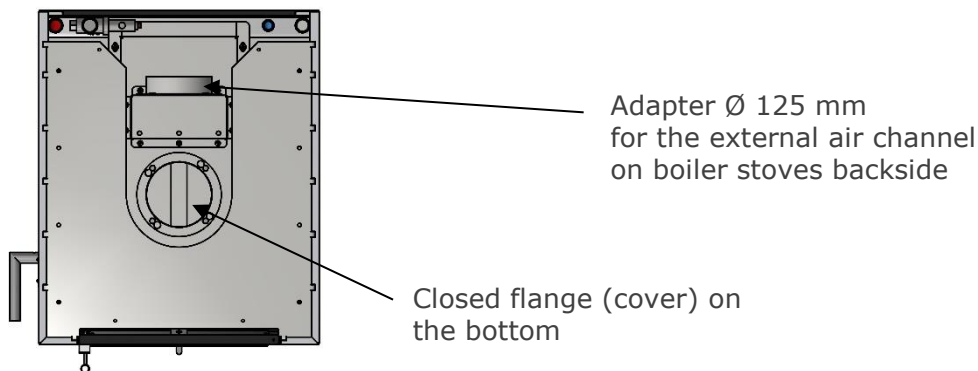
- ! The combustion air mustn't be taken through an air channel from the roof. If necessary ask for permission from Wallnöfer and the chimney sweeper. The lighting phase of the boiler stoves would need much more time!!

### The external air channel Ø 125 mm:

- ! The maximum length of the air channel with Ø 125 mm can be **4 m**. The air channel has to be insulated to avoid water condensation. If you need a longer air channel please increase the diameter to Ø 150 mm.

The connection of the external air channel:

We deliver the boiler stove with a connected **adapter of Ø 125 mm** on the boiler stoves backside, on the aperture on boiler stoves bottom is fixed a closed flange (cover).



If you want to connect the external air channel on the bottom, exchange the adapter on the backside with the closed flange of the bottom.

### Flap in the external air:

On the external air channel you should install a flap, so you can avoid that cold temperature comes inside the Walltherm when it isn't operating.

The flap can be regulated in a manual way or if you have the el. Regulation WAL03 also an electrical flap.

### The electrical air flap:

The flap should be positioned rather outside the house to avoid the channel can cooled down. If not possible we can supply you with an electrical flap which can be fixed under or behind the stove.

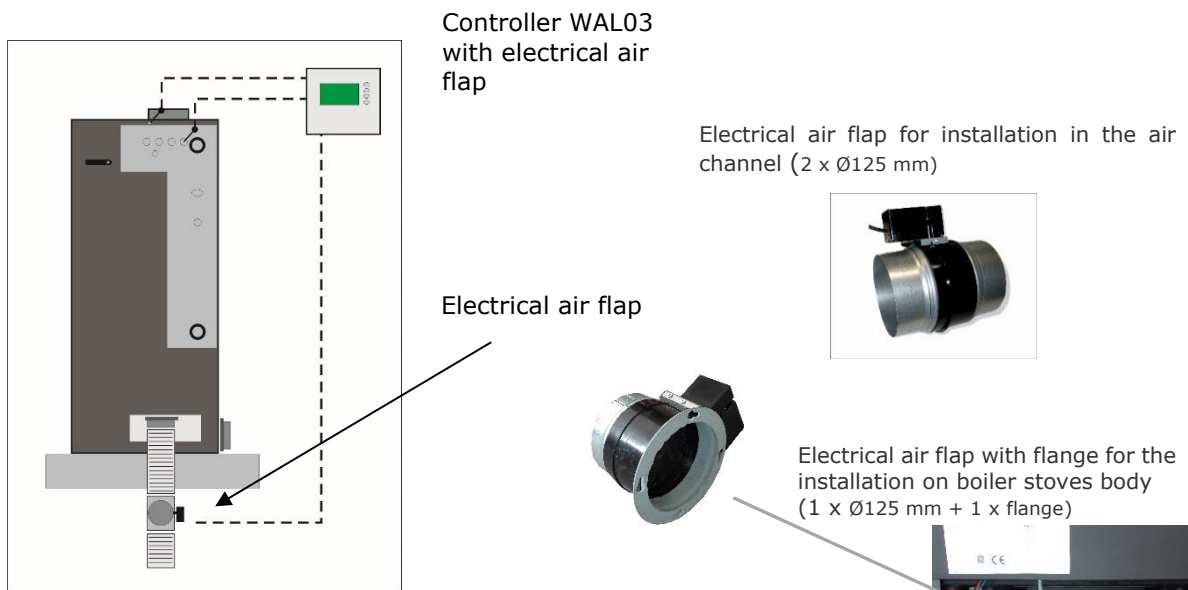


The function of the electrical air flap:

Before lighting the boiler stove you push the "start" button on the controller WAL03 which opens the air flap for minimum 2 hours. Now combustion air can stream to the stove. After the 2 hours the flap remains open if the water temperature (heat exchanger) in the boiler stove is higher than 40°C.

The flap will close if the water temperature falls down under 40°C.

More information about the system you find in the manual of the controller WAL03 and in chapter **4.f**

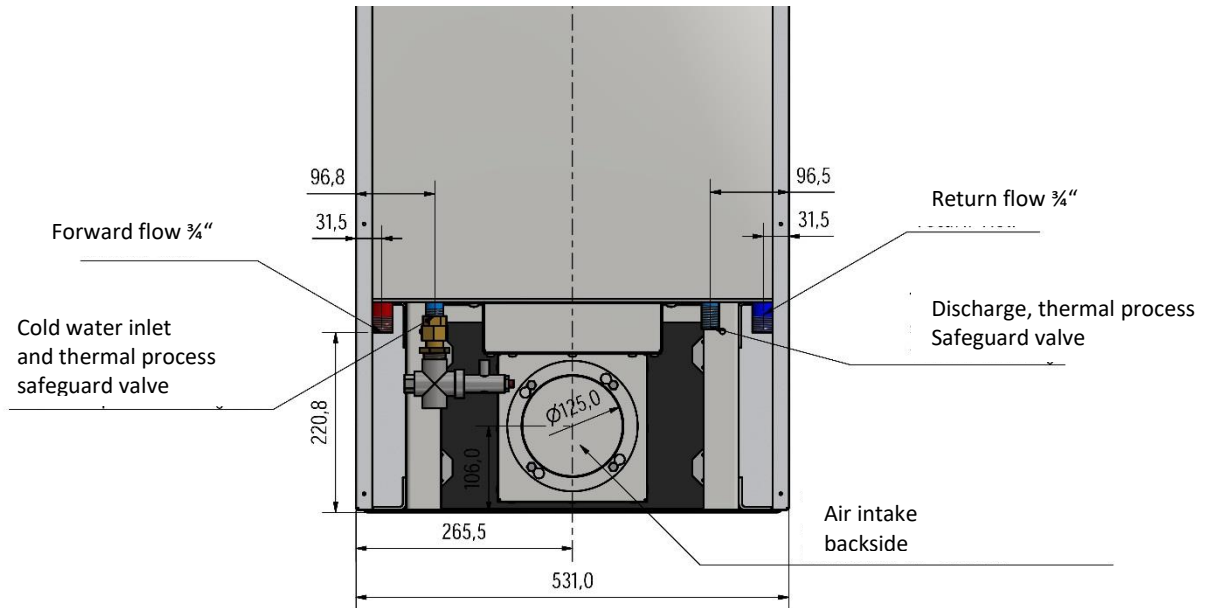


**Info:** We can deliver two types of the electrical air flap. The standard el. air flap for installation in the air channel should be installed as nearest as possible to the air inlet. The el. air flap with flange can be installed on boiler stoves backside or bottom. Look pictures.

#### 4.e The water connections

The Walltherm® Vajolet and Vajolet Basic have to be connected on **4 pipes**:

Forward flow, return flow, cold water and drain and discharge of the thermal process safeguard valve.



The **forward flow** and **return flow** is needed to make circulate the water between storage tank and boiler stove. For the security the boiler stove is provided with a **thermal process safeguard valve** which get connected with two pipes the **cold water (inlet)** and with a pipe to **discharge** hot water.

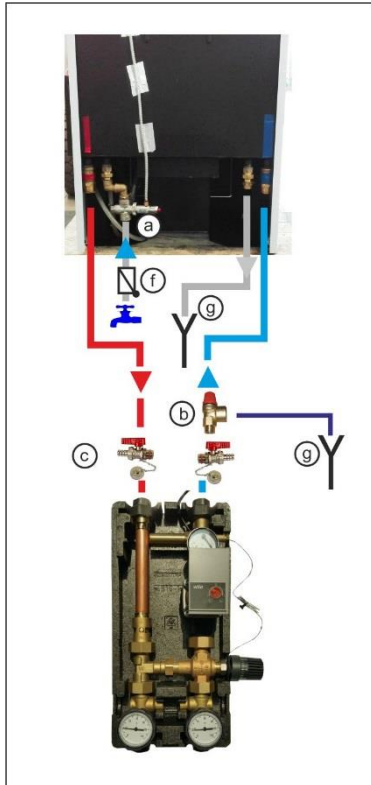
Also the 3 bar pressure safety valve has to be connected in the circuit between boiler stove and it`s pump unit.



**The water in the heating system has to be conform with the guideline VDI 2035:** This guideline protects against water side corrosion .. In this case ions of calcium and magnesium are replaced by sodium ions.

More information you find e.g. on: [www.heating-water.co.uk/technical-information/fill-central-heating.html](http://www.heating-water.co.uk/technical-information/fill-central-heating.html) and similar web pages.

### The water connections:



#### Legend:

- a) Cold water inlet with thermal process safeguard valve
- b) Pressure safety valve 3 bar
- c) Filling and drain valves
- d) Manometer (pressure) (not visible on the picture)
- e) Expansion vessel (not visible on the picture)
- f) Non return valve
- g) Discharge

#### Information for the water connection:



**The installation of filling and drain valves is recommended to clean the water circuit and to bleed the system with an external pump unit.**



**A pressure safety valve 3 bar (b) has to be installed between boiler stove and pump unit.**



**An expansion vessel with enough capacity has to be installed in the heating system.**

Fig. 4.e.1

### Pump unit with mixing valve:

To avoid that the boiler stoves heating exchanger cools down and to avoid the development of condensation because of a too low water return temperature (under 60°C), the pump unit is equipped with a 3 way mixing valve.

This mixing valve makes the heating water partly re-circulate until the return temperature achieves more than 60°C. This pump unit should be installed in the heating room near the storage tank.

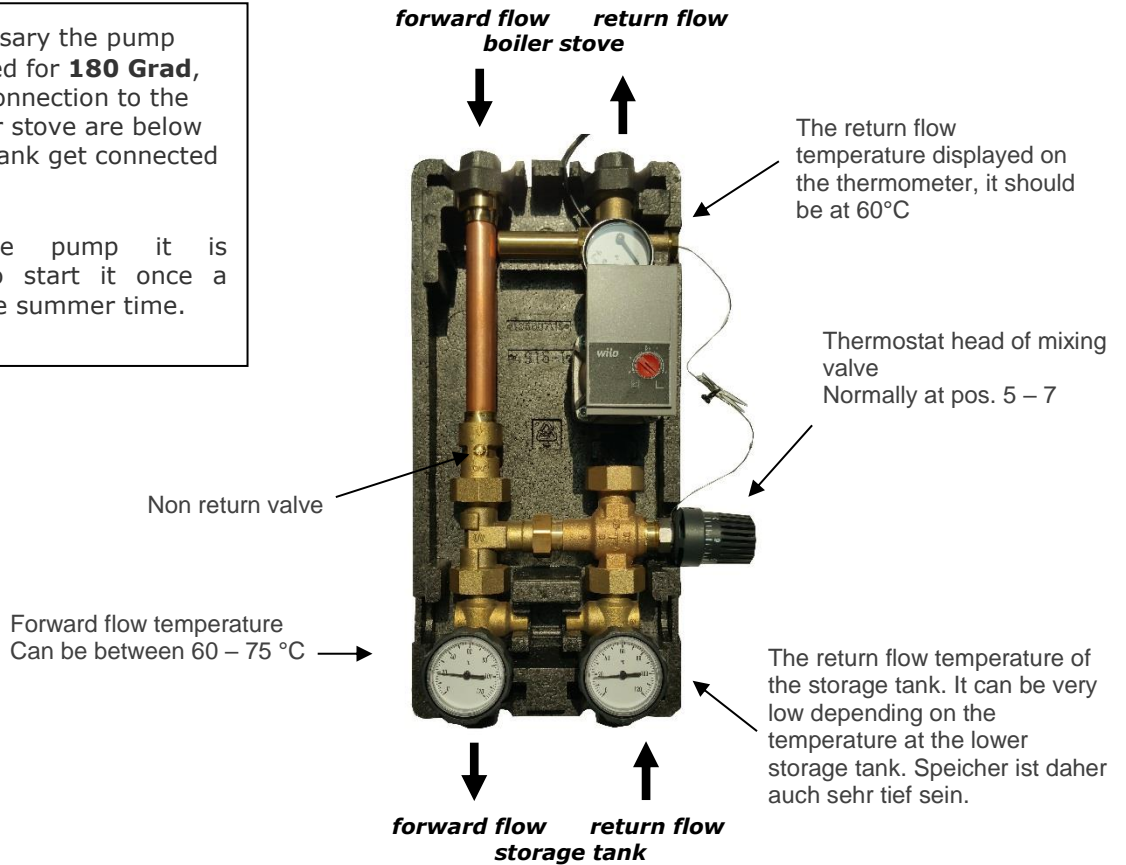
The mixing valve is equipped with a thermostat head, which can be turned from pos. 1 to 7, by turning the thermostat head you can decrease or increase the temperature of the return flow.

The pump of this unit is a high efficiency pump.

The return flow temperature should have minimum 60°C.

**INFO:** If necessary the pump unit can be turned for **180 Grad**, in this case the connection to the Walltherm® boiler stove are below and the storage tank get connected on the top.

To protect the pump it is recommended to start it once a month, also in the summer time.



**The high efficiency pump functions:**



**Variable pressure (left scale):**

in this case the velocity/pressure of the pump will modulate, the max. velocity is the presetted, for example no. 4

**Constant pressure (right scale):**

in this case the pump will work constantly on the adjusted velocity. We consider this setting if you load a storage tank.

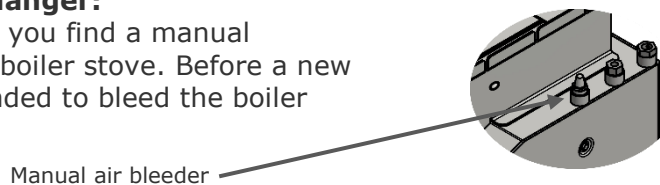
On the imagine you see the constant pressure adjustment on pos. 3.

**Bleed function (position on the top):**

In this case the pump will be activated a few times to bleed the pump body. More information you find in the constructors manual.

**Bleed the boiler stoves heat exchanger:**

On the boiler stoves upper right side you find a manual air bleed valve. Open it to bleed the boiler stove. Before a new heating season starts it is recommended to bleed the boiler stove.



### Thermal process safeguard valve (Emergency cooling):

For the security the Walltherm® boiler stove is provided with a thermal process safeguard and it's security heat exchanger.

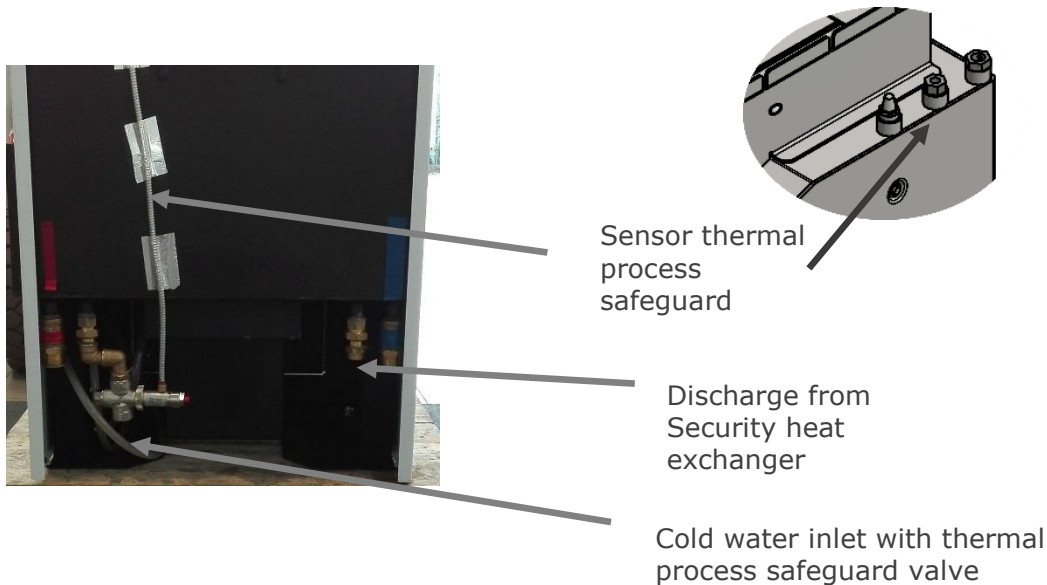
In case of an interruption in the water circuit, to avoid it's overheating, the thermal process safeguard opens at 95°C and let pass cold water to the security heat exchanger to cool down the heating water inside the stove.

The security heat exchanger is fixed in the upper part of the stoves heat exchanger. On its inlet get fixed the thermal process safeguard and the cold water pipe from the water net. On its outlet get connected the drain pipe.

**Function:** In case of an interruption in the water circuit (pump error) the water temperature inside the stoves heat exchanger achieves 95°C and the thermal process safeguard opens. Now cold water from the water net flows through the security heat exchanger, cools down the boiler stove and the water of the heat exchanger, and flows to the drain.

This system keeps the pressure of the heating circuit (water of the heat exchanger) under 3 bar.

! Advice: Install a non-return valve before the inlet to the thermal process safeguard.



!Mont the thermal process safeguard in the right direction!

**Further security systems in the water circuit:**

**Pressure safety valve 3 bar:** As an additional security we mount a pressure safety valve in the heating circuit of the boiler stove (between pump unit and boiler stove) which opens when the pressure raises over 3 bar. In this case the heating water can flow to the drain to avoid to high pressure inside the water circuit

Look Fig. 4.e.1

**Expansion vessel:** The heating circuit has to be provided with an expansion vessel which has the correct dimension and a manometer.

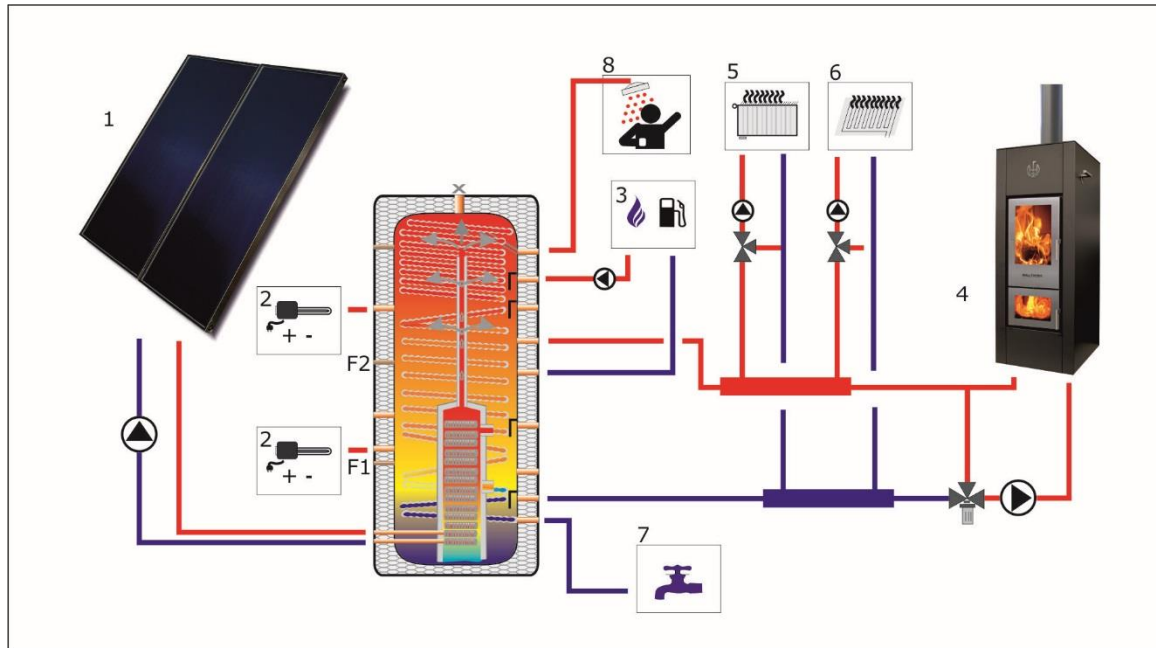


When the pressure safety valve opened the pressure of the heating system is low and therefore authorized personal (plumber) has to refill the system with the correct operating pressure.

Normally the operation pressure is between 1,5 and 2,5 bar.

## Installation scheme

with Walltherm® boiler stove, kombi storage tank and solar system.



**Attention:** Scheme not complete! Concept without safety fittings like expansion vessel, pressure safety valve, thermal process safeguard, domestic hot water mixing valve....

Key:

- 1 Thermal solar panels
- 2 Electric heating element (above hot domestic water, below heating water)
- 3 Oil-/gas burner
- 4 Walltherm® - boiler stove
- 5 Radiators
- 6 Floor heating
- 7 Cold fresh water
- 8 Hot domestic water

### Short description:

At the kombi storage tank can be connected and combined different heating sources.

The heating sources heat up the heating water of the storage tank.

The storage tank Logix24 has additionally a stratification solar heat exchanger in copper to guaranty the best usage of the solar plant.

Due to the stratification module, the solar plant heats up primarily the upper part of the storage tank to get already after a few time hot domestic water.

The heat exchanger for hot domestic water is a stainless steel wave tube, that goes from the bottom to the top of the storage tank. The cold water that flows through this wave tube, gets heated up by the heating water. Hot domestic water exits of the top of the storage tank. This system stops germ (legionella) because the water heats up just when there is a requirement. Therefore it's called fresh water heat exchanger for hot domestic water.

The heating water can be used for radiator and floor heating if there is requirement.



### Advice for regulation heating circuit (radiators, floor heating)

If the heating system is based on solar plant and the Walltherm boiler stove, it's important to use a heating controller\* adapted for the system.

The floor heating and radiators can be activated only if there is enough hot heating water in the storage tank. Otherwise it could happen, that just cold water flows through radiators and floor heating.

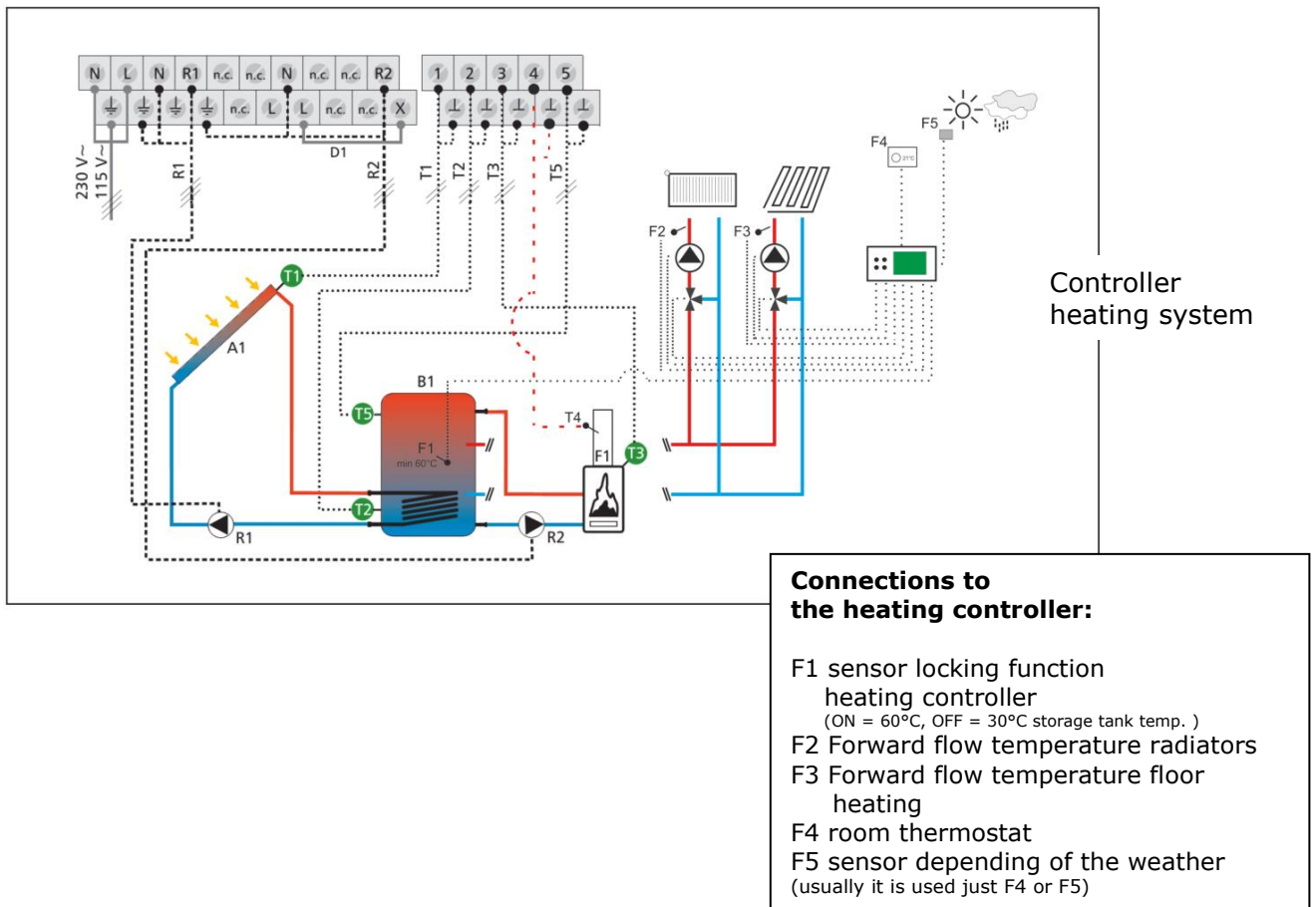
Solution = the locking function:

If there is requirement (sensor F4 or F5) of the floor heating or radiators, the heating water in the storage tank must have a minimum temperature (e.g. 60 °C).

If the minimum temperature is reached, the pump of the heating system can circulate as the temperature of the storage tank sinks to a set value (e.g. 30 °C – F1)

Example: Thermostat 60°C (minimum temperature), with OFF-Hysteresis 30°C

\* heating controller: controller for floor heating or radiators.





**4.f Electrical installation of the controller WAL03 or thermostat, grounding**

For the pump start you can work with a simply thermostat which start´s the pump when the water inside the heat exchanger raises over 60°C or you work with the comfortable controller WAL03.

The controller WAL03 needs connections for sensors to the Walltherm® boiler stove, el. connections to the pump (pump unit), connections to the storage tank (2 sensors) and an electrical connection to the electrical air flap if installed.

**Controller WAL03:**

The controller **WAL03** has to be mounted in the **living room** near the Walltherm®, only in this case it is possible to use all the features of the controller.

Example:

Before lighting the Walltherm® on the display of the controller **WAL03** you can control the lower and upper storage tank temperature. Depending on the temperatures (storage tank) you decide to load the needed quantity of wood.

Or if the electrical air flap is installed you have to open it by pushing the start button on the controller.

**Operating switch:**

manual  
auto  
OFF



**Buttons:**



For navigation in the menu or change a **value and START – button el. air flap**

**Set**

**to confirm or activate a value**

**Esc**

**ESC- button to cancel or to return previous menu**

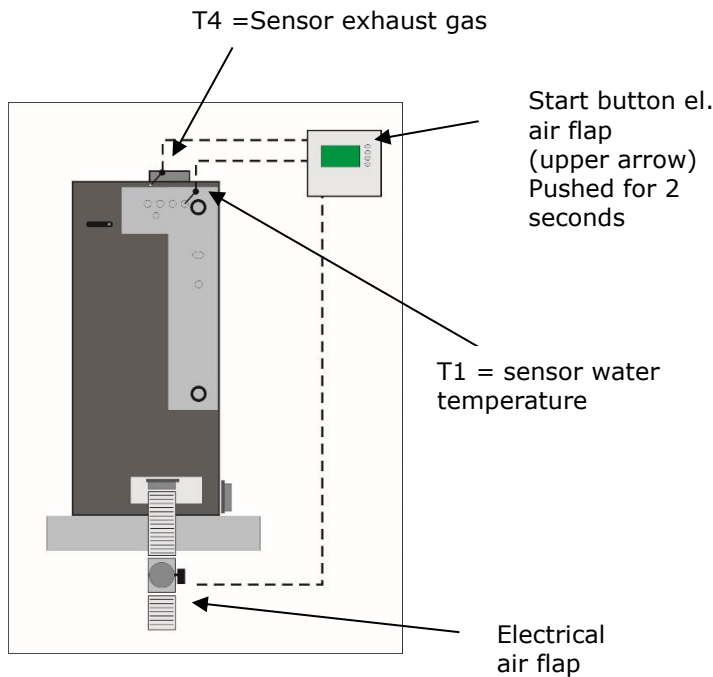


**For navigation in the menu or change a value**

You can see the following values depending on your system:

<b>Only Walltherm® and storage tank</b>	
Temp. storage tank below and upper side, temp. heat exchanger Walltherm®, operating hours, temp. exhaust gas with alarm function*; **el. air flap (open – closed)	
<b>Walltherm and solar system:</b>	
Temp. storage tank below and upper side, temp. heat exchanger Walltherm®, operating hours, temp. exhaust gas with alarm function*; **el. air flap (open – closed)	
Temperature solar panels, operating hours solar system	

<b>Important parameters Walltherm®:</b>	
Min. temp. solid fuel boiler (Walltherm®)	60 – 70°C
Temp. difference Walltherm® - lower storage tank:	6 °C
Max. temp. storage tank	90 °C
Alarm function* fume gas:	300 – 400 °C (depends on chimney system)



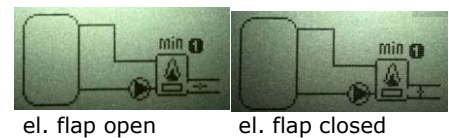
Start button (upper arrow)  
El. air flap function (push 2 sec.)



#### El. air flap function:

Before the Walltherm® gets lighted you have to push the start button for 2 seconds. Then the el. air flap opens for min. 2 hours and remains open until the water temp. in the Walltherm® cools down under 40°C.

On the display you can always control the Condition of the air flap:



#### \* Alarm function:

**Info:** The alarm function has to be activated in the menu FUNCTIONS, read the manual (WAL03)

Often, clients forget to close the exhaust fume flap in time, to avoid it we configured the controller WAL03 with an ALARM FUNCTION. Always when the temperature of the exhaust gasses are reaching for ex. 350 °C (value adjustable) you will hear an acoustic alarm signal, this will remember you to turn to the boiler stove to control if in the combustion chamber is enough ember (3-4 cm), to add wood logs and to close the exhaust fume flap.

#### \*\*el. air flap function:

**Info:** The function electrical air flap has to be activated in the menu FUNCTIONS, read the manual (WAL03)

The electrical air flap can be installed in the external air channel or directly on the boiler stove. Our target is to avoid cold air circulation to the stove and the chimney system when the stove isn't in use.

#### The function:

Before the Walltherm® gets lighted you have to push the start button for 2 seconds. Then the el. air flap opens for min. 2 hours and remain open until the water temperature in the Walltherm® cools down under 40°C

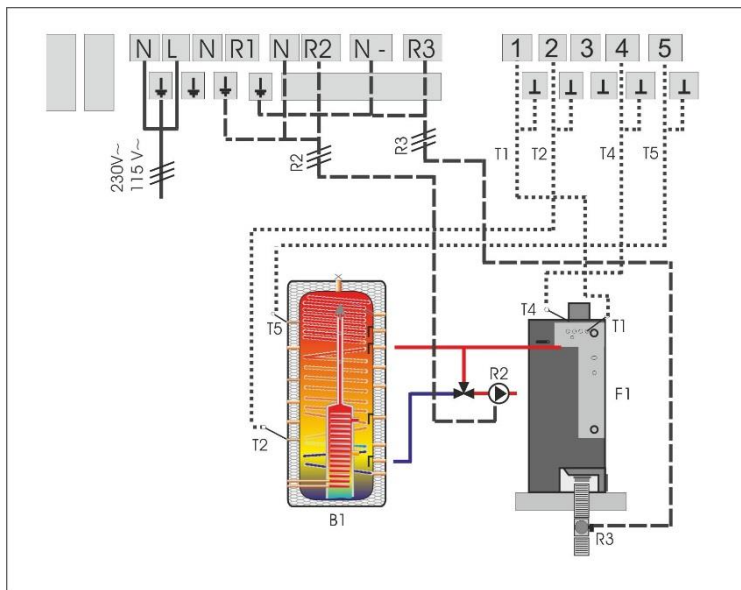
Thanks to this function the stove remains longer warm and we avoid the water condensation on the external air canal.

**Security:** If the water temperature in the Walltherm® reaches a temperature higher than 90°C the el. air flap closes automatically and remain closed until the water temperature cools down to 80°C. In this case the screen becomes red and you can read the information: Water temp. too high!

In case of electricity cut the el. air flap closes automatically and the stove will not be provided with combustion air, the fire chokes. When the electricity return you have to push the start button (2 seconds) to reopen the el. flap.

**Wiring of the WAL03 depending on your system:**

Wiring of a system with Walltherm® and storage tank



- B1 – storage tank
- F1 – Walltherm® boiler stove
- R2 – pump boiler stove (no PWM!!)
- R3 – el. air flap
- T1 – sensor water Walltherm
- T2 – sensor lower storage tank  
**(Sensor position:** lower storage tank but higher than the return flow of the boiler stove)
- T4 – sensor fume temperature Walltherm® (red cable)
- T5 – sensor higher storage tank

**Important:**

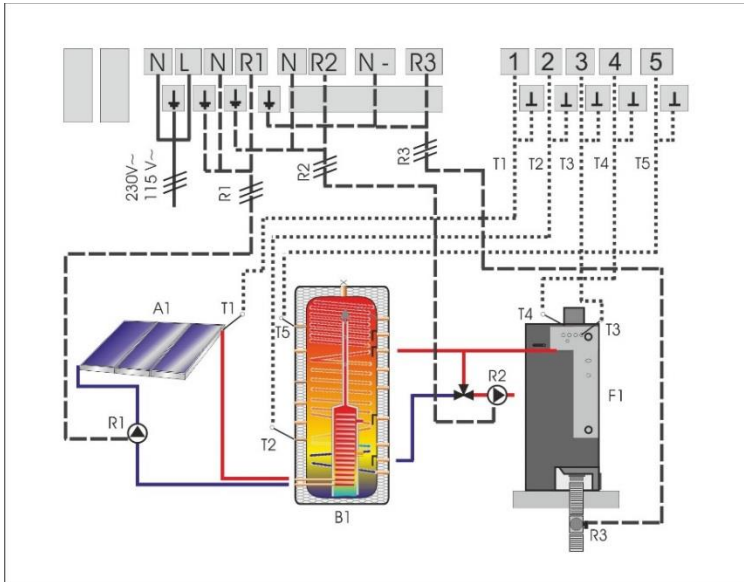
The regulation WAL03 can only work with high efficiency pumps without PWM)

**El. air flap function: (if installed):**

Before the Walltherm® gets lighted you have to push the start button for 2 seconds. Then the el. air flap opens for min. 2 hours and remain open until the water temp. in the Walltherm® cools down under 40°C.

On the display you can always control the condition of the air flap.

Wiring of a system with Walltherm®, storage tank and a solar system

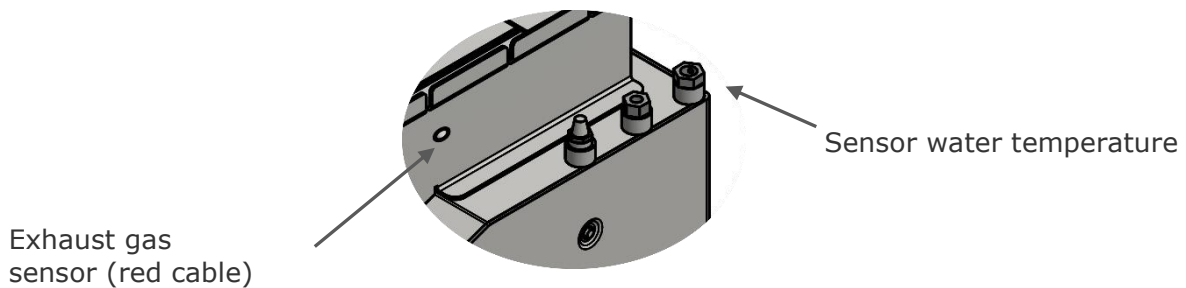


- A1 – solar field
- B1 – storage tank
- F1 – Walltherm® boiler stove
- R1 – pump solar system (without PWM)
- R2 – pump boiler stove (without PWM)
- R3 – el. air flap
- T1 – sensor solar panel
- T2 – sensor lower storage tank  
**(Sensor position:** lower storage tank but higher than the return flow of the boiler stove)
- T3 – sensor water Walltherm
- T4 – sensor fume temperature Walltherm® (red cable)
- T5 – sensor higher storage tank

**Important:**  
The regulation WAL03 can only work with high efficiency pumps without PWM)

**El. air flap function: (if installed):**  
Before the Walltherm® gets lighted you have to push the start button for 2 seconds. Then the el. air flap opens for min. 2 hours and remain open until the water temp. in the Walltherm cools down under 40°C.  
On the display you can always control the condition of the air flap.

**Info:** The electrical sensors (exhaust gas temperature and water temperature) on the Walltherm® are to install on the follow positions:



**Only authorized personal are allowed to do the maintenance for the fittings (water system) and electric parts.**

**Thermostat:**

For the pump start you can work with a simply thermostat which start's the pump when the water inside the heat exchanger raises over 60°C.



**Only authorized personal are allowed to do the maintenance for the fittings (water system) and electric parts.**

The pump start can caused by turning the thermostat (0 – 90°C).

The thermostat should be set to (60 – 70 °C), it means by reaching the adjusted water temperature the pump starts.

A specialized company on electricity needs to connect the thermostat with the heating pump and through a plug with the electric cable. Please read the exact manual from the producer of the product.

**Example: Electrical connection of our standard thermostat with capillary sensor:**

Inside the thermostat there are 4 connections. You need to connect the junctions C and 2 as well as the ground! The connector 1 remains unused! (obtains only for the Wallnöfer product.) Wallnöfer does not make any representations regarding the validity and eventually changes of the product

(see manual thermostat)

**Grounding!**

**Danger:** The system must be grounded and fitted with a circuit breaker as provided for by current laws (fig. circuit diagram).

**4.g Information for immuring the insert Walltherm® Vajolet Basic****Requirement:**

**1) Important:** the Walltherm® should be connected to the chimney and to the water circuit before housing. The client should use the boiler stove a few time before immuring it.

2) the chimney sweeper needs to approve the installation.

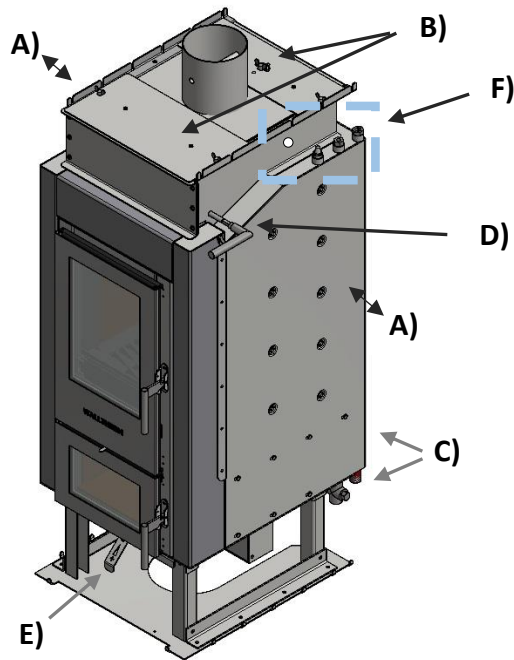
3) the initial startup must be done by specialists and the installation protocol needs to be filled out and send to the producer.

4) the client should be able to use the Walltherm® and should make a positive result of a right combustion.

**Advices for the housing:**

The material for the housing must be heat resisting and fireproof.  
(Control the fire protection class, maybe ask the chimney sweeper).

**Load capacity:** make sure that the floor can resist the weight of the boiler stove (around 380 kg with water content) and add the weight of the immuring material.



**Advice:** If you install a flexible pipe between the thermal process safeguard valve and it`s water connection on the boiler stove you can make maintenance from the side.

A) Keep at least 20 mm of distance between the wall/housing and the stoves body. On the lower and upper side there had to be done some openings to guarantee air circulation. (avoid to much heat)

B) Access to the covers on the top side has to be guaranteed. Remember to let enough space for the steel brush with 1,10 m length, that are needed to clean the vertical flue channels.

C) The water connections (stoves backside) needs to be accessible (also from the side possible). Also the position of the sensors (upper right side) has to be accessible for possible maintenance.

D) The lever of the exhaust fume flap has to be accessible.

E) The lever for primary air below the lower door has to be accessible for daily utilization.  
 F) If you connect an electrical air flap directly on the boiler stove it has to be accessible for maintenance.

**Combustion air from the room:** If combustion air will be taken from the living room, maintain an opening on one side of min Ø125 mm.

## 5 Using the boiler stove

### First activation and description of the boiler stove Walltherm® Vajolet & Vajolet Basic:

The first activation must be done by specialists and the installation protocol needs to be filled out and sent to the producer. During this inspection the client gets information regarding the correct usage and cleaning of the boiler stove.

#### 5.a Control:

- Are eventually existing levers to the flow pipe open?
- Is the water circuit filled with water and ventilated? (no noises of the pump)
- Is a closed expansion vessel installed (control the right dimension, for 1.000 liters about 60 liters or more.) and the system filled with 1,5 bar of pressure?
- Is the pressure safety valve (3 bar opening pressure) installed.
- Is the thermal process safeguard installed to the security heat exchanger?
- Is the stove provided with combustion air?
- Are all flaps in the air channel open? Control if the el. flap on the WAL03 is open (Press start button 2 seconds)?
- Is the primary air lever open? (Pull the lever to +)
- Is the pump connected to its controller? Test if the pump is working.
- If you work with the WAL03 controller make sure the controller is adjusted on AUTOMATIC. Control the parameters:  
(Min. temperature wood boiler 60°C, temp. difference 5°C)
- If you work with a thermostat control if it is adjusted on a temperature between 60 – 70°C
- Is the glass of both doors clean? Clean the glass with a damp cloth, newsprint or a damp paper rubbed in ashes.
- Are the iron cast grids of the upper combustion chamber free of ash?
- The exhaust fume flap for the direct flue outlet must be completely open after the lighting. (Function: lever in horizontal position = flap closed; lever pointing down = flap opened).

## 5.b Lighting

Before the lighting turn the **exhaust fume flap** lever to the position **OPEN** (lever pointing down) that the smoke is taken up gradually through the flue.

First the chimney system and the Walltherm® have to get warm to create draught and ember (3 – 4 cm).

! **Important:** During the combustion time (burning time) keep the doors closed.

! **Important:** Before lighting the boiler stove control the storage tanks temperature to guarantee it can store more energy (hot water). If you have the controller WAL03 you can display the upper and lower temperature of the storage tank.

### A) Open the exhaust fume flap:

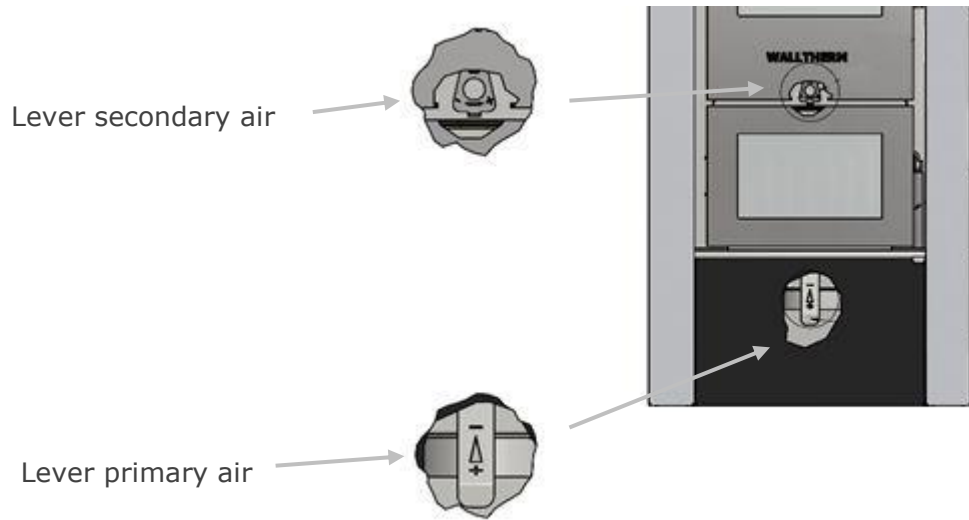
**Turn the lever of the exhaust fume flap to position OPEN:**  
(lever has to pointing down - position OPEN)



**Attention: Do not leave the exhaust fume flap opened constantly, the opened position is only used to heat the stove up at the beginning. Please close the flap completely after the heating phase.**



**B) Control the stove get supplied with combustion air:**



**Open the primary air:** Pull the primary air lever completely to direction +:



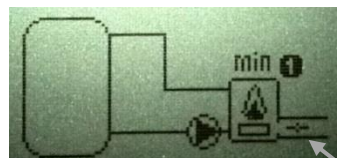
Lever primary air (+ -)

Function: Push in direction - = less or no primary air  
Pull in direction + = primary air open

If the Walltherm® is provided with air from an air channel open all valves/flaps.

On the controller WAL03 you have to open the electrical air flap if connected. Push the start button for 2 seconds!

**Start button (upper arrow)  
Push for 2 seconds**



El. air flap open

### Settings secondary air:

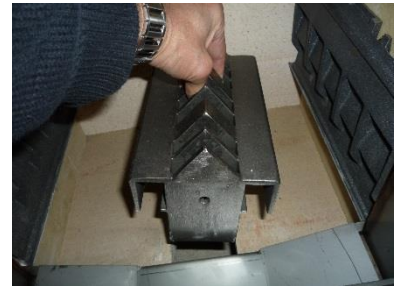
Behind/below the upper door you find the lever for the secondary air.

Settings: Turn in direction - = less secondary air  
 Turn in direction + = secondary air open



Advice: For the nominal heat output the secondary air has to be completely open.

**!** **INFO:** It's very important that the injector block is put inside the stove correctly. See the chapter Using and Cleaning of the Walltherm® boiler stove.



### C) Lighting:

Use ecologically lighter and put them on the 2 grids of the upper combustion chamber. Then spread highly inflammable kindling and wood logs over the complete width of the grids.

To create enough ember (3 – 4 cm) add also some bigger wood logs (2 – 3 pc).

Now you can light the fire.



**The aim is** to heat up the stove (firebricks and heat exchanger), the chimney system for having enough draught and to get enough ember (3- 4 cm).

Firebricks without soot is an indeed that the firebricks absorbed the heat.



Depending on the chimney the exhaust gas temperatures can reach about **400 °C** during the lighting phase.

**Important:** It's necessary to have a layer about **3 – 4 cm of ember**. Therefore it's recommended to use enough wood logs in the lighting phase. (depending on the type of wood)

According to the type of chimney, the lighting phase lasts about 20 – 35 min.

#### D) Gasification function:

As soon as there is a layer about 3 – 4 cm of ember, the water temperature is hot and the chimney is heated up, you can put in split wood logs ( $\varnothing$  8 - 10 cm and max. length 35 cm, max. humidity 20%) over the whole burning chamber. Please try to avoid hollow spaces.



**Avoid hollow spaces under the wood logs**

**Info:** Please insert only as much wood as the buffer tank is able to take up and to convert into energy.

After putting in the wood logs the exhaust gas temperature should be about 300 - 400 ° C and the chimney should have enough natural drought and the gasification flame can be activated.

Depending on the chimney the exhaust gas temperature will be higher or lower to start the gasification.

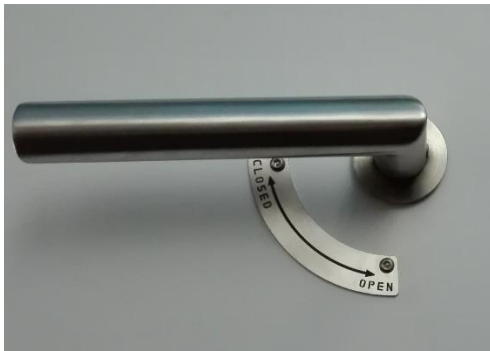
**Then close the exhaust fume flap:**

(Activation gasification flame)

**Turn the lever of the exhaust fume flap to position CLOSED:**

(lever in horizontal position - CLOSED)

By closing the exhaust fume flap, the gasification starts.



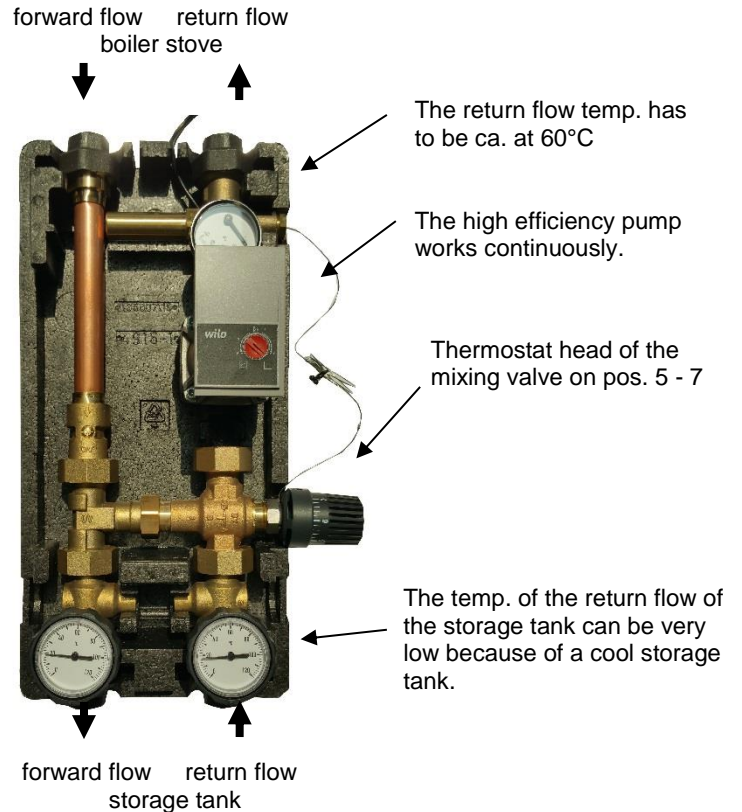
**Info:** If the gasification flame stops (or gets smaller) after some time you need to reopen the exhaust fume flap to heat up more the chimney system and to create more ember. Maybe the wood needs to be adjusted with the fire poker. (avoid hollow spaces)

Slowly there should be the following operating condition.



The exhaust gas temperature drops  
Down to about 130 – 160 °C

The temperature of the  
forward flow can  
vary between 60 – 75 °C



If everything is working correctly, the gasification flame should burn constantly and should always be visible in the lower combustion chamber, if there is enough wood in the upper chamber.  
If not, please contact your specialized technician



**Important:** Always open the exhaust fume flap, while putting more wood logs in the upper chamber. Otherwise the exhaust gases can not escape to the chimney and fume could leak into the living room.

If the gasification flame is **not burning stable** or **turns off**, there could be the following issues:

- The wood logs in the upper combustion chamber are not layered and there are hollow spaces or the wood is burned down.
- Fuel problems: wood logs too humid, too big, too old (more than 8 years)
- The chimney draught is too low (less than 12 PA / 1,2 mm WS)
- The combustion electrical air flap is closed or the primary air is partly closed
- The grids or the injector block are blocked with ash.
- The exhaust gas temperature is too low (< 100 °C)
- The return flow temperature of the stove is under 60 °C. See thermometer of the pump unit. To rise the return flow temperature turn the thermostat head of the pump unit higher (Pos. 6 – 7).



### 5.c Loading wood logs

**Turn the lever of the exhaust fume flap to position OPEN:**  
(lever has to pointing down - position OPEN)



**Just open the door of the upper combustion chamber, if the wood is burned down and there is only ember.**

- Open the door slowly.
- Please check the buffer tank temperature before filling the burning chamber and insert only as much wood as the buffer tank is able to take up and to convert into energy.
- It's necessary to have a layer about **3 – 4 cm of ember** otherwise you have to create it again with some wood logs.
- Then put the wood logs compactly in the upper combustion chamber. There must be a layer of wood and no hollow space.
- After putting in the wood logs the exhaust gas temperature should be about 300 - 400 ° C and the chimney should have enough natural drought and the gasification flame can be activated.

To activate the gasification flame again close the exhaust fume flap:

**Turn the lever of the exhaust fume flap to position CLOSED:**  
(lever in horizontal position - CLOSED)



**5.d Adjustment of the exhaust gas temperature (flue damper system)**

During the wood gasification the exhaust gas temperature is about 130 – 160 °C.

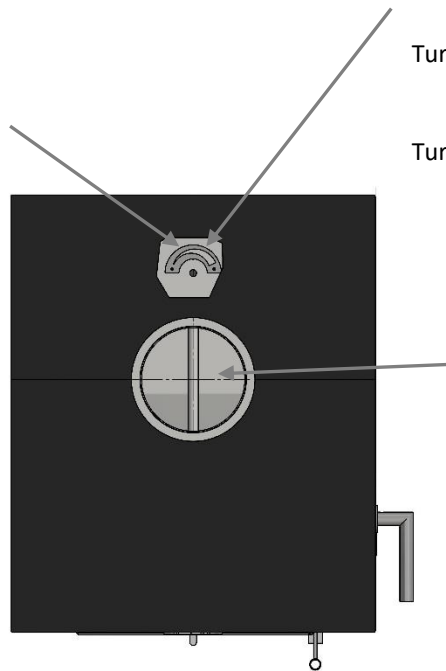
Due to the low exhaust gas temperature, somebody might be thinking about a sootiness of the chimney.

This is not the case, because during the lighting phase the chimney is being heated up and dried due to the temperatures of the lighting phase (300 – 400 °C). During the gasification the exhaust gases are clean and cannot cause a sootiness of the chimney.

If the exhaust gas temperature is too low (< 100 °C) it's possible to reduce the resistance in the heat exchanger. For this, you need to adjust the flue damper flap of the heat exchanger. If the exhaust gas temperature is too high, by increasing the resistance of the flue damper flap, the exhaust gas temperature will drop. The exhaust gas temperature should never drop under 100 ° during gasification.



Flue damper system  
(below cover)



**Settings on flue damper system:**

Turn to the left = exhaust gas temp. drops down

Turn to the right = exhaust gas temp. will increase

Chimney Ø 150 mm

### 5.e Permissible fuels

#### *Important preconditions:*

The fuels' water content should be maximum 20 % (15 % would be the best).

The wood logs have to be dry. The natural drying process lasts 1 ½ - 2 ½ years. This process can occur outdoors (covered up) and should be continued in an appropriate shed.

The Walltherm boiler is totally planned as wood boiler and is therefore for the following types of wood particularly suitable:

#### **Type of wood:**

- **chopped hardwood:**  
max. Ø 8 - 10 cm

- **chopped softwood:**  
max. Ø 8 - 10 cm

**length of the wood: max. 35 cm**

#### **Guideline for the storage**

hardwood: 2 - 2 ½ years

softwood: 1 ½ - 2 years



- **Attention:** Wood which is still damp and has not been stored long enough reaches only the half of its real calorific value!
- In small quantities you can also use woodchips (maximum water content 25 %)
- Pressed wood/briquettes of shaving wood which are not produced with binders, if 50 % log of wood are added. Therefore the proportion of pressed wood can be 50 %.

The boiler stove is only for the combustion of the above mentioned wood fuels and combinations suited. For the use of other fuels we do not take any responsibility for the boiler's function and working life.

**INFO:** Old wood (>8 years) for example wood of an old roof, doesn't contain enough gas to guarantee a correct function and the whole power output of the stove therefore you have to add 2 year old wood and burn it together.

#### **Please notice!**

Fuels which you must not burn:

- free sawdust, hard/glance coal, coke
- wood garbage with a coat of synthetic material/plastic
- all sorts of garbage
- anything that creates acids or other toxics when burning

**The burning of garbage and painted wood or wood which has a coat of halogen is forbidden. These chemical compounds can cause highly toxic exhaust fumes and corrosion damages in the heat exchanger.**



## 6 Cleaning

### 6.a Cleaning the boiler stove

The reactance of the Walltherm® stove is not very hard, but must done faithful and careful to guaranty an efficient power output, an uninterrupted running an a long lifetime.

#### Daily cleaning:

Always remove the ash from the **injector block** and the **grids** before firing up the stove.

Insert the angular shovel into the lower combustion chamber and use a little brush to sweep the ash off the grid in the lower combustion chamber. Sweep the ash to the openings of the injector block where it can fall into the shovel. Remove the shovel with the ash and empty it.



Grids with injector block



shovel



**Monthly cleaning:**

remove the ash under the grids. The grids need to be tilt up.

The removing of the ash under the grids is very important for the combustion air, because the combustions air streams through the grids into the upper combustion chamber.

Remove grids



remove injector block



remove cover



**Important:** Also clean the internal air channel like on the pictures above and below.





After cleaning the cover of the internal air channel, the injector block (attention on its direction!!) and the grids are to put into the upper combustion chamber.

**IMPORTANT: Right direction injector block:** The openings on the injector block has to show to the doorside !! Look picture below



Injector block (Openings on the front/doorside)

**Protection stone** lower combustion chamber:

To protect the door glass of the gasification flame and it's high temperatures (up to 1000°C) we position the protection stone behind the door in the lower combustion chamber.

In the lower combustion chamber you find an edge (stop) which indicates the protection stones position:



edge (stop)



protection stone



correct position



The cleaning of the flame wall is very important to guaranty a proper work.

Keep the flame wall free of ash! A dirty flam wall reduce the draft of the chimney and the performance of the stove.

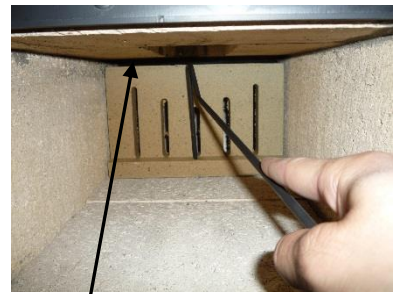
The gaps need to be free! If necessary to put out the flam wall, you need to lift the injector block and then take it out with the fireplace poker!



Flam wall with gaps



injector block (openings to doorside)



edge/stop



**Information:** The flam wall can move during the transport of the stove. We recommend to check the position of the flame deviator and if necessary to adjust it. Push it back into the lower combustion chamber until it gets in contact with an edge (stop) which is on the top.

**A few times you should clean the air supply sheets for the glass cleaning system (upper combustion chamber):**

To prevent the glass from the upper combustion chamber to get black you need to clean the air supply right behind the upper door (stainless steel sheets, see pictures below)



air supply sheets



Clean this spaces from ash, than the air supply for the glass cleaning of the upper and lower combustion chamber works correctly.

**Cleaning of the flue way channels every 2- 3 months:**

The cleaning of the flue way channels of the heat exchanger should be done every 2- 3 months! If the draft and the wood quality isn't so good, the cleaning should be done more often.

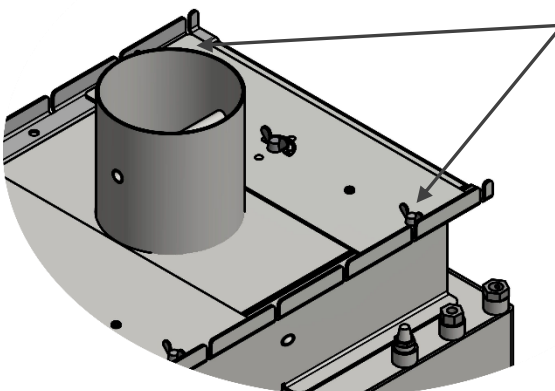
For this cleaning, the Walltherm® is delivered with a steel brush:



**Cleaning of the flue way channels:**

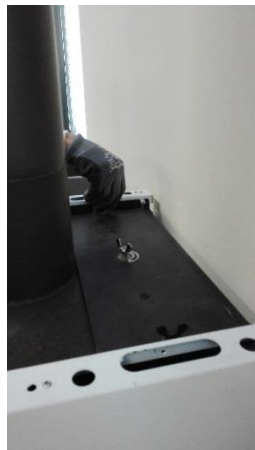
To clean the flue way channels, remove the top cover with flue damper system behind the exhaust fume muff on top of the stove, then you see the heat exchanger.

Look pictures:



Open the screws

Remove the cover with flue damper system



Clean all channels with the long brushes!

**Important:** Every brush must hit the bottom of the lower combustion chamber to make sure every channel is completely cleaned! Repeat until the channels are free of ash remnants. The brush can be seen in the lower combustion chamber, when the brush hits the bottom and the flame wall is removed.

clean all flue way channels with the steel brush



**Advice:** Using a vacuum reduces the dirt caused by blown up dust.

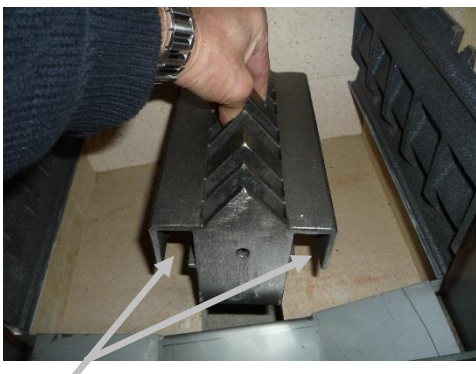
The ash and the soot fall down into the backside of lower combustion chamber. (Space behind flame wall) To take out the ash with the ash shovel or the vacuum of the lower combustion chamber you must take out the flame wall.

Before taking out the flame wall by pulling it with the fire poker, you must take out the injector block.

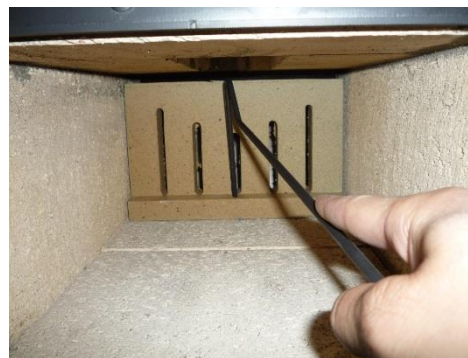
Take out the flame wall:

1) First take out the injector block

2) and then pull out the flame wall.



injector block (openings to doorside)





Flame wall

- After the cleaning, put the flame wall into the lower combustion chamber. Push till to the stop at the top of the combustion chamber. The upper bevel must point to the heat exchanger.

The **injector block** should be cleaned as well.



It's very important the holes (openings) of the injector block point to the front of the stove (doorside). See picture above.

### 6.b Cleaning the glass (doors)

Clean the glass with a damp cloth, newsprint, or damp paper rubbed in ashes. You can also use ordinary oven cleaners. Do not clean the glass while the stove is working and do not use abrasive sponges.





**Protection stone** lower combustion chamber:

To protect the door glass of the gasification flame and it's high temperatures (up to 1000°C) we position the protection stone behind the door in the lower combustion chamber.

In the lower combustion chamber you find an edge (stop) which indicates the protection stones position:



edge (stop)



protection stone



correct position

**7 Maintenance**

**Only authorized personal are allowed to do the maintenance for the water parts and electric parts. See chapter 2.a and 2.c.**

**7.a Doors**

The boiler stove must never be operated with open doors. Eventually out coming glowing materials can cause fire.

Before opening the doors please open the exhaust fume flap so the smoke is taken up gradually through the chimney and cannot escape through the door. The doors should only be opened when the fire turns out and you want to put some more wood on it. If you have to open the doors during the burning phase please try to do so very slowly and carefully. Sparks and fire can possibly come out.



**Attention:** Do not forget to close the fume flap after loading the stove with wood logs.



### 7.b Seals

Please check the seals of both doors (upper and lower door), the warming plate and the smoke channels.

There should be no out coming of smoke in order to avoid that smouldering gases can reach your living room. If the doors let in draught, please change the sealing.

Proof the seals every year. The seals are to change every 2 years.

### 7.c Permissible max/min temperatures

Boiler stove – working temperature maximum 90 °C

Boiler stove – return flow temperature minimum 60°C

These limiting values must never be overstepped nor undercut during the working phase. Continuous undercutting endangers the boiler stove's working life and the supplier's guarantee lapses.

### 7.d Periodical cleaning of the chimney system and the flue ways of the boiler stove

Clean the chimney twice a year at the beginning and halfway through the winter season. In case of horizontal flues please remove all ash and soot deposits before they have the chance to clog the smoke passage.

#### Measures in case of fire in the flue:

Close the fume flap (lever in horizontal position). Close the air inlet (put primary air lever to -).

Clean the flue way channels of the Walltherm® every 2-3 months

Remove the ash from the upper combustion chamber (iron cast grids) every day.

Clean also the space below the iron cast grids once in a month.

The periodical cleaning and inspection increases the boiler stoves durability and it`s correct function.

## 8 Recognizing errors and taking measures against faults

Error	Possible cause	Measure
<b>Very high exhaust temperature &gt;200 °C</b>	Exhaust fume flap opened Exhaust fume flap leaking	Close the exhaust fume flap. Check the seals and if necessary change.
<b>The fire goes out, to less combustion air</b>	Electrical air flap closed (if installed). Water temperature in the stove higher than 90°C, in this case the controller WAL03 closes the el. air flap automatically.	Open the el. air flap by pushing the start button. Please light the fire only if the warmth store is able to take up energy/warmth.  Reducing the storage tank temp.: Use hot domestic water or activate the room heating.
	Primary air closed.	Pull the lever of the primary air to direction +.
<b>The gasification flame goes out</b>	To less return flow temperature, below 60 °C	Set the thermostat head to position 6 - 7. To increase the return flow temperature.
	Low draft of the chimney	Measure the draft, we need minimum. >12 Pa, when the exhaust gases are on 130 - 160°C.
	Lower doors seal leaks.	Control the seal and change it if necessary.
	Grids or injector block closed	Clean the grids, the part under the grids and the injector block.
<b>High water temperature in the boiler stove</b>	Pump doesn't work, control the settings of the controller/thermostat  Pump hanged up. (blocked), start the pump once a month.	Set the start temp. at 60°C or 70°C. Control also if the difference between lower storage tank part and boiler stove is adjusted at 5°C.  Bleed the pump and clean it.
	To less operating pressure.	Set the operating pressure at 1,5 bar (max. 2,5 bar).
	Air in the heat exchanger, no circulation.	Bleed the boiler stove.
<b>Smell/stench in the living room</b>	Sailing leaking.	Check the sealing of the doors and the covers on the top and replace them if necessary.
	Low draft of the chimney	Measure the draft, we need minimum >12 Pa, when the exhaust gases are on 130 - 160°C.
<b>Noises in the heat exchanger</b>	Air in the system	Bleed the boiler stove and set the operating pressure at 1,5 bar.
	Steam in the heat exchanger. The thermal process safeguard opened.	Control if the pump is circulating.
<b>Power cut while the stove is working.</b>		Keep calm. Do not load more wood, the thermal process safeguard come into force. As soon as the electricity is back, please check the following: A) Pressure, at least 1,5 bar B) Bleed the system C) check the pump (set the thermostat at 0° C and check if the pump starts to work, afterwards set it again at 60° C)
<b>Fire in the chimney system</b>	Soot in the chimney.	a) Close the primary air (Push the lever to -)  b) Call the fire fighters.

<p><b>Thermal process safeguard opened:</b></p>	<p>Air in the system. Pump hanged up. A valve in the circuit is closed.</p> <p>Controller with false settings or faulty.</p>	<p>Close the primary air (Push the primary air level to - ).</p> <p>If installed: The WAL03 controller will close the el. air flap when the water temperature raises up to 90°C.</p> <p>Keep closed the doors.</p> <p>Keep calm.</p> <p>Kein Holz mehr nachfüllen.</p> <p>Do not load more wood, the thermal process safeguard come into force. As soon as the electricity is back, please check the following:</p> <ul style="list-style-type: none"> <li>A) Pressure, at least 1,5 bar</li> <li>B) Bleed the system</li> </ul> <p>check the pump (set the thermostat at 0° C and check if the pump starts to work, afterwards set it again at 60° C)</p>
<p><b>How to cool the storage tank if it is heated up completely ( &gt;80°C).</b></p>		
<p><b>Storage tank completely at a temperature &gt;80°C</b></p>	<p>No water consumption, no heating system activated.</p> <p>Boiler stove in function whilst the storage tank was at high temp.</p> <p>A second heat source works at the same time as the boiler stove.</p>	<ul style="list-style-type: none"> <li>a) Start the pump of the room heating system.</li> <li>b) Use hot domestic water.</li> </ul>

## 9 Legal information:

### 9.a General information

#### Information

If there is an exchange of information with the boiler stove manufacturer, please quote the serial number and identification data, which you will find on the stove's label.

#### Liabilities

Upon delivery of this manual, Wallnöfer GmbH declines all liabilities, both civil and penal, for any accidents that may derive from the total or partial failure to comply with the specifications contained in it.



Wallnöfer GmbH also declines all liabilities resulting from an improper use of the stove, incorrect use by the user or resulting from unauthorized alterations and/or repairs, or the use of spare parts that are either not genuine or not specific for this particular model.

### Extraordinary maintenance



Extraordinary maintenance must be carried out by personnel qualified to work on the stove model to which this manual refers.

### Responsibility for installation



It is not the manufacturer's responsibility to carry out the works needed to install the stove. Such works are entirely up to the installer who is requested to check the flue and air intake and to check if the installation solutions proposed are feasible. In addition, all the safety standards established by the relevant law in force in the place of installation must be complied with.

### Use

Use of the boiler stove is subject to compliance with all the safety standards established by the relevant laws in force in the place of installation besides the prescriptions contained in this manual.

### 9.b Guarantee

Wallnöfer offers 5 years of guarantee for the body of the Walltherm®, not included spare parts like injector block, grids, glass, seals, flame wall, firebricks... For all the valves and other components the user may only make use of the legal guarantee, as under the EEC directive 1999/44/CE, if he has scrupulously complied with the regulations indicated in this manual, and more specifically:

- to work always within the boiler stove's range of use
- maintenance must be constant and accurate
- only allow people who are capable and who have been suitably trained to use the boiler stove.

Failure to comply with the regulations contained in this manual will invalidate the guarantee immediately.

In any case of possible legal guarantee, the installation of the boiler stove must have been carried out by people who are authorized and who have been suitable trained to the Walltherm. Furthermore, a copy of the installation protocol has to be delivered to Wallnöfer GmbH.

**Info:** Please send us always the serial number (Label) of your boiler stove and take pictures of the problem you want talking about.

Wallnöfer informs that the following cases aren't query reason:

#### **Fireclay:**

Because of the high temperature loading, the fireclay can get cracks, in this case it isn't necessary to exchange the components, the isolation function is still ensure. The exchange is only necessary if the fireclay falls apart.



produced and developed by



### **Injector block and grids:**

The injector block and the grids are in contact with high temperatures (up to 1000°C) and therefore depending on the working hours they will have attrition. To extend the durability use only allowed fuels. (look chapter permissible fuels)

It is important to build in the injector block in the right direction. The openings have to be orientated to the doors. (look chapter cleaning of the boiler stove)

### **Noise:**

During the boiler stove is heating up or cooling down, it can get some metal cracking noise because of the material extensions.

### **Coating:**

Stock the boiler stove only in dry locations and keep it dry until it get installed! The boiler stove has to be heated up a few times until it`s coating completely cures and protects the metal parts from corrosion.

Please control the external coating before you install the Walltherm, when you find defect parts please contact immediately your reseller.

After the installation of the Walltherm® we can only resolve the problem with sprays.

To avoid coating problems during the operation please take note of the following tips:

- a) Please clean the external parts only with water and soap, do never use alcohol or similar aggressive cleaning liquids.
- b) To protect the upper side of the Walltherm® please close the exhaust fume flap when the gas temperature reaches about 300 - 400°C. (look chapter: Using the boiler stove – Lighting)

### **Glass (doors):**

The glass of the lower door is a wear part, because of the high temperatures of the lower combustion chamber it can get white and lose the transparency. To have a longer durability of the glass please put always the protection stone on its position. Look chapter cleaning.

### **Doors:**

Because of high temperatures the stainless steel frame of the doors can change its colour. The frame can get grinded to recondition the original optic.


### 9.c Manufacturer´s liability

The manufacturer declines all civil and penal liabilities, direct or indirect, due to:


- an installation that fails to comply with the laws in force in the country and with the safety rules and regulations;
- failure to comply with the instructions given in the manual;
- an installation by unqualified and untrained personnel;
- use that fails to conform to the safety directives;
- alterations and repairs on the appliance not authorized by the manufacturer;
- use of spare parts that are either not genuine or specific for this particular model;
- lack of maintenance;
- exceptional events.

### Regarding housing the Walltherm® Vajolet Basic:

The manufacturer declines all civil and penal liabilities, direct or indirect, due to:

-  - **Before housing the boiler stove, an installer (plumber)** who is capable and who has been suitable trained to use the boiler stove has to control the correct combustion of the boiler stove and the correct hydraulic connections and has to send a copy of the installation protocol to Wallnöfer GmbH.

The user should learn how to use the boiler stove before housing the boiler stove.

-  The manufacturer in a case of loss within the guarantee will keep the costs of the reparation of the boiler stove (insert). The costs to dismantle the housing system are not covered (included) by the guarantee.

### 9.d Users characteristic

The owner/user of the boiler stove has to employ a professional trained person with all the necessary technical know-how to carry out routine maintenance of the mechanical and electrical components of the boiler stove.

Do not let children near the appliance to play with it when it is working.



**Ensure, that any child can´t get in contact or play with the burning boiler stove.**

### 9.e Technical assistance

Wallnöfer GmbH is able to solve any technical problem concerning the use and maintenance of the appliance's whole life cycle. The main office will help you find the nearest authorized assistance center.

### 9.f Spare parts

Use genuine spare parts only!

Do not wait until the components are worn from use before changing them.

Changing a worn component before it breaks makes it easier to prevent accidents that could otherwise lead to serious harm to people or damage to things.

See also: Guarantee



Carry out routine maintenance checks as described in the chapter: Cleaning.



produced and developed by



Notes:

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Address plumber/installer:

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Address Walltherm® specialist dealer:

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**Thank you very much  
and a South Tyrolean  
„HERZLICHES VERGELT`S GOTT“**

Thank you very much for having chosen the **Walltherm®** boiler stove and please enjoy this innovative natural down-draught wood gasification stove.

The team  
**Wallnöfer GmbH**  
Gewerbezone 110  
Italy 39026 Prad am Stj. (BZ)  
Tel. 0039 0473 616361  
**info@wallnoefer.it**

**www.wallnoefer.it**

**www.walltherm.com**