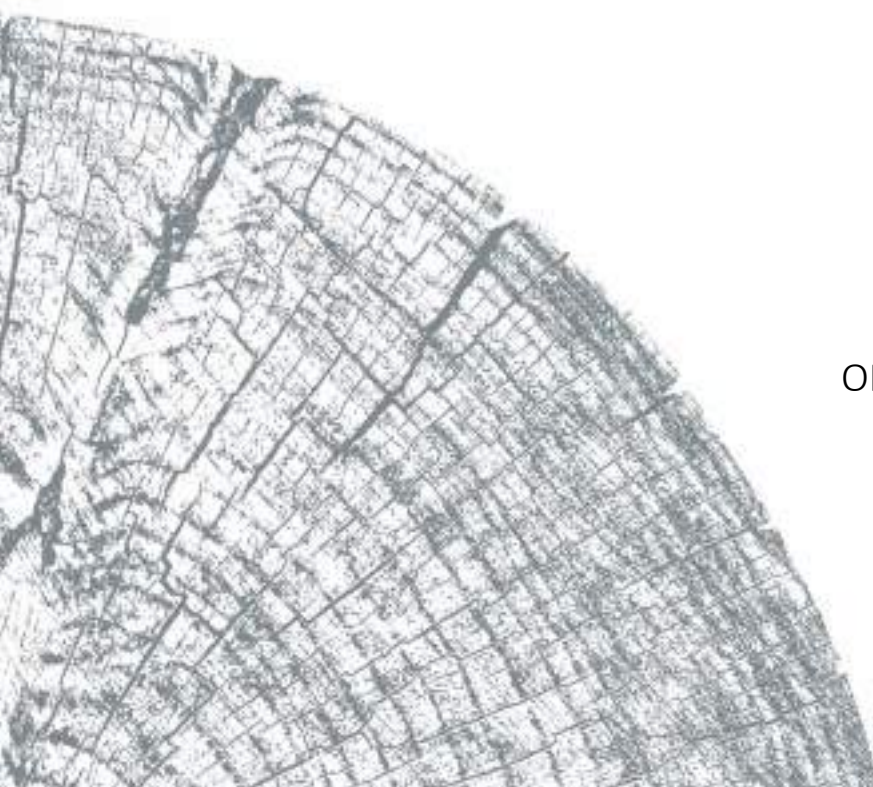




OPERATION AND INSTALLATION MANUAL

FIREPLACE INSERT

# LINIE TRINITY



BEFORE USING THE PRODUCT FOR THE FIRST TIME, READ THE OPERATION AND INSTALLATION MANUAL



In accordance with the requirements of the Ecodesign Directive in the EU Member Countries:

**"This product cannot be used as a basic source of heating"**

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## *INTRODUCTORY INFORMATION*

Dear Customer,

Thank you for buying Hitze product!

**Natural heating** – these words perfectly reflect the philosophy of HITZE brand. In line with this philosophy, we produce fireplaces and stoves fired with wood, i.e. the raw materials which are the least harmful for the environment. Using a state-of-the-art technology, we have created innovative solutions offering modern designs and high heating efficiency.

Our products have been designed to provide you with trouble-free operation and cosy warmth!

**Before installing and connecting the fireplace insert to the heating system, it is absolutely essential to become familiar with the *Operation and Installation Manual* and check if all components are included.**

The information contained in the *Operation and Installation Manual* is crucial for ensuring the correct functioning of the fireplace insert, and thus eliminating the risk of damage and accidents caused by improper use.

In the case of doubts or operation-related problems, contact your purchase point or the Manufacturer.

**NOTE:**

**This device must not be used by children.**

**Never leave your children or animals unattended when the fire is burning or when the fireplace is still hot.**

**Danger of burns (the glass and parts of the fireplace installation can be very hot).**

In order to improve the product, the Manufacturer reserves the right to make changes in drawings, photographs and descriptions or to modify the parameters of equipment without notice at any time.

The *Operation and Installation Manual* may not be copied as a whole or in part without prior consent of the Manufacturer. Please make sure that the *Operation and Installation Manual* is stored out of reach of children.

If the *Operation and Installation Manual* is destroyed, lost or damaged, contact your purchase point or the Manufacturer and provide the identification data of your device to obtain a replacement copy.

## 1. GENERAL INFORMATION

### 1.1 Safety

Compliance with the Manual is essential for ensuring the correct functioning of the fireplace insert and avoiding damage and accidents caused by improper use.

#### 1.1.1 Please observe the following safety rules:

- before installing the insert or performing any maintenance work on it, make sure that you have read and understood the Operation and Installation Manual;
- the fireplace insert should be installed at the most convenient location and in conformity with the applicable construction and fire prevention laws;
- installation, maintenance and operation control activities may only be performed by qualified specialists;
- the device may only be used in accordance with its intended purpose;
- **it is absolutely necessary to provide the installation site with appropriate ventilation and air intake sources;**
- a clothes dryer may be placed at least 1.5 m away from the insert (to minimize the risk of a fire);
- check the permissible load carrying capacity of the substructure (floor, ceiling) at the intended location of the insert (taking into account the total weight of the insert and its encasing);

- provide an appropriate chimney installation to ensure safe operation (e.g. chimney made from non-combustible materials with poor heat-absorbing properties);
- avoid installation in rooms with B type gas devices, hoods (with or without exhaust), heat pumps, collective ventilation conduits or multiple flue pipes; the insert must not be fitted in the vicinity of the staircase or rooms with appliances capable of creating negative pressure;
- avoid direct contact with the insert (it becomes very hot during use) and wear suitable protective equipment (protective clothing or heat-resistant gloves);
- install the insert in a room equipped with appropriate firefighting equipment and all utilities, including air, water, electricity and smoke outlets;
- if you encounter any problems, please contact your point of purchase or the Manufacturer (and always request original spare parts for repairs);
- check and periodically clean the combustion gas outlet pipe in accordance with the applicable provisions of law;
- if the device is sold or lent to another user, make sure to enclose the Operation and Installation Manual;
- during assembly, protect the insert against the effects of construction chemicals used for the assembly and installation of the insert, which may lead to damage and void the warranty.

### 1.1.2 Never:

- lean on the fireplace insert or climb onto it;
- use the appliance in the event of fault or malfunctioning;
- place flammable materials closer than 1.5 m to the fireplace;
- light the fire with flammable materials or burn waste in the fireplace.

### 1.1.3 The manufacturer is released from civil or criminal liability in the case when:

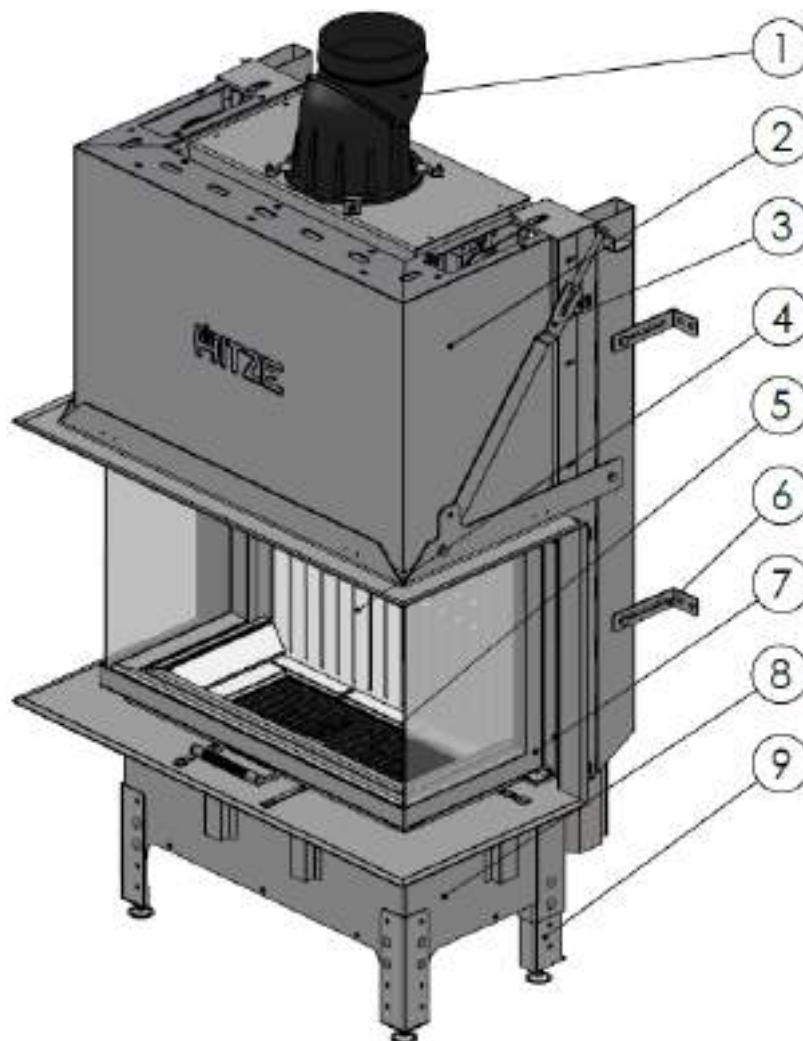
- the insert is not used in accordance with the *Operation and Installation Manual*;
- the fireplace insert is modified or its parts are replaced with non-original parts in an authorized manner (any such modification or replacement immediately renders the guarantee null and void);
- incorrect installation or improper maintenance (non-compliant with the *Operation and Installation Manual*) lead to injuries or damage to property.

## 2. INTENDED USE OF THE INSERT

TRINITY fireplace inserts are intended for use as an additional source of indoor heat. They are equipped with slow-burning hearth and manual loading of fuel and are closed with a guillotine-type door (a pull-down door)

The inserts have been designed to be fuelled, most of all, with the wood of deciduous hardwood. We especially recommend seasoned birch wood. During the burning process, thermal energy is released and transferred from the combustion chamber by conduction and radiation.

In conformity with PN-EN 13229:2002 standard, the hearth of the insert is classified as 1b, with manual loading of fuel and closed doors and it can be encased or built into a recess in the wall.



1 – out flue; 2 – body of the insert; 3 – joist; 4 – panels from ceramic accumulation concrete; 5 – iron grate and ash pan; 6 – bracket; 7 – front panel type guillotine; 8 – bottom cover of the insert; 9 – regulated foot.

**Rysunek 1.** Fireplace insert TRINITY

### 3. TECHNICAL DATA

| Parametry  | Symbol           | Unit                | Fireplace insert TRINITY- three-sided guillotine door        |               |               |
|--|------------------|---------------------|--|---------------|---------------|
|  |                  |                     | TRI54x54x53..G   | TRI54x80x53.G | TRI80x35x53.G |
| Nominal power                                      | P                | [kW]                | 10   | 12            | 12            |
| Range of heating power                             | P <sub>og</sub>  | [kW]                | 5-13   | 6-15,5        | 6-15,5        |
| Maximum fuel load wight                            | C                | [kg]                | 2,1  | 2,8           | 2,5           |
| Avarage fuel consumption                           | B                | [kg/h]              | 2,8  | 3,7           | 3,3           |
| Thermal efficiency                                 | H                | [%]                 | 77   | 78            | 78            |
| CO emmision (with 13% O <sub>2</sub> )             | CO <sub>13</sub> | [%]                 | 1,185  | 1,133         | 0,792         |
| Dust emmision (with 13% O <sub>2</sub> )           | E <sub>p</sub>   | [g/m <sup>3</sup> ] | 0,035  | 0,038         | 0,035         |
| Avarage temperature of the fumes                   | t <sub>śr</sub>  | [°C]                | 205  | 239           | 222           |
| Minimum active field of inlet vents                | A <sub>wy</sub>  | [cm <sup>2</sup> ]  | 700-800  | 840-960       | 840-960       |
| Maximum active field of outlet vents               | A <sub>wl</sub>  | [cm <sup>2</sup> ]  | 400-650  | 480-780       | 480-780       |
| Flue pipe diameter                                 | D <sub>cz</sub>  | [mm]                | 200  | 200           | 200           |
| Inlet pipe diameter                                | D <sub>d</sub>   | [mm]                | 150  | 150           | 150           |
| Glass dimmensions                                  | Sz               | [mm]                | 540x540x530  | 540x800x530   | 800x350x530   |
| Weight   | m                | [kg]                | 320  | 324           | 384           |
| Class of the fireplace                             |                  |                     | 1b   | 1b            | 1b            |
| Maximum lenght of logs (with diameter 25 to 30 cm) | l <sub>p</sub>   | [cm]                | 30   | 35            | 45            |
| lloNumber of logs for one loading                  |                  | [szt.]              | 2  | 2             | 3             |
| Fuel type  |                  |                     | recommended seasoned deciduous wood (beech, birch, hornbeam) |               |               |
| Fuel humidity                                      |                  |                     | between 12 and 20 %  |               |               |

Table 1. Technical data of fireplace inserts with three-sided guillotine doors.

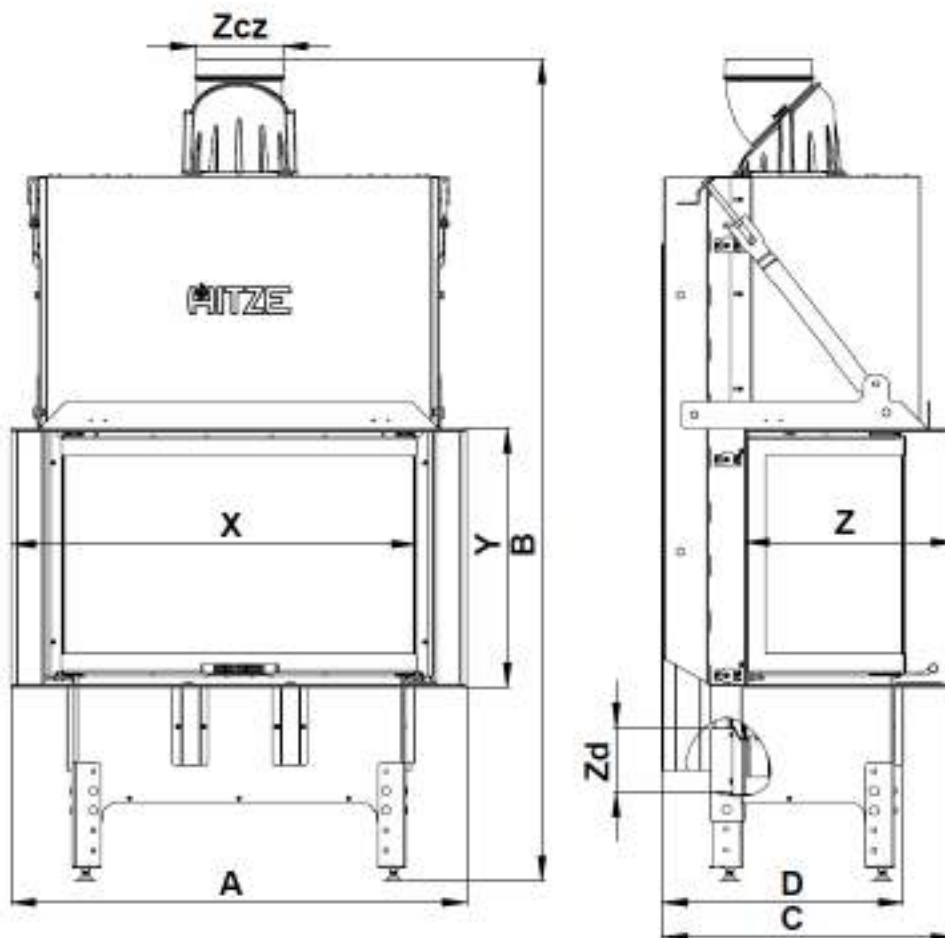
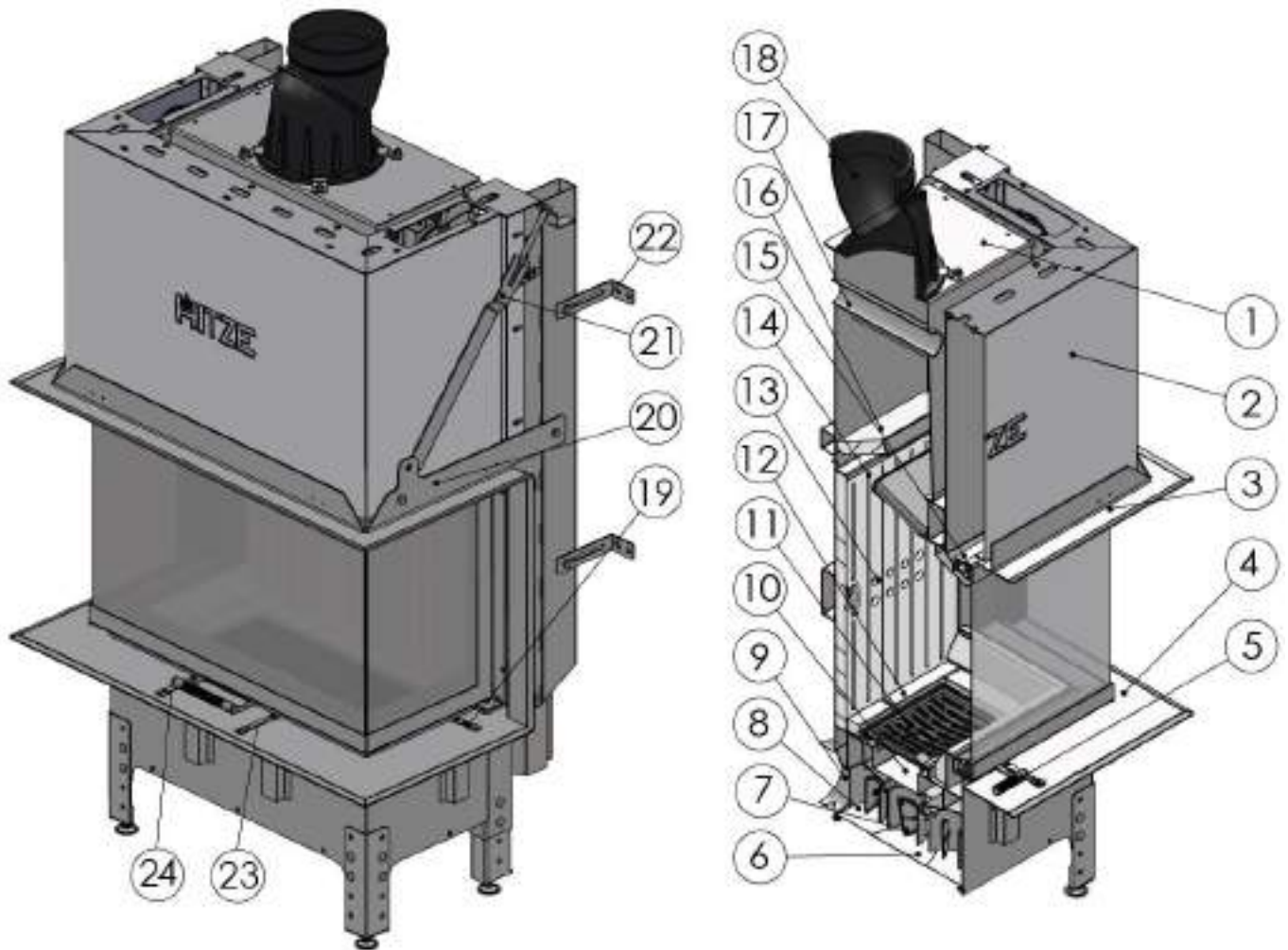


Figure 2. Standard dimensions of the fireplace inserts

| Dimensions<br>[mm] | Fireplace insert TRINITY- three-sided guillotine door |               |               |
|--------------------|---|---------------|---------------|
|                    | TRI54x54x53.G   | TRI54x80x53.G | TRI80x35x53.G |
| A                  | 777   | 777           | 1041          |
| B                  | 1853  | 1897          | 1871          |
| C                  | 855   | 1115          | 670           |
| D                  | 735   | 994           | 549           |
| X                  | 660   | 665           | 924           |
| Y                  | 590   | 590           | 590           |
| Z                  | 667   | 932           | 482           |
| Zcz                | 200   | 200           | 200           |
| Zd                 | 150   | 150           | 150           |

Table 2. Dimensions of the fireplace insert TRINITY with three-sided guillotine door

## 4. STRUCTURE AND OPERATION OF THE INSERT



**Figure 3. General construction of TRINITY insert**

The fireplace insert consists of a body **1** and a front **4**. The body of the insert is made of 3 mm P265GH boiler steel. It is enclosed with the cover **2** and lower and upper bar **3**. The front of the insert consists of steel door made of a special profile and profiled steel metal sheet, heat-resistant glass and a handle **5**. The door is screwed to the bars **15**, which are fastened to the body of the insert.

The front is available in the guillotine option - the door is raised upwards with the possibility of opening the side door by wing (the opening of the side door is used only to service the insert).

The combustion chamber **12** is lined with the ceramic concrete **14** on the bottom and back wall. It is made of a double-walled floor which is the intake of primary and secondary air, as well as the location of the ash pan **10** and grate **11**. The air inlet **9** is realized through a spigot of 150 mm diameter and an expansion box **8** distributing air to the individual primary, secondary and support air intake pipes **7**. Thanks to this solution, the insert needs only one pipe supplying air from the outside.

In addition, the insert is equipped with a bottom cover **6** for mounting the air inlet from below.

The throttles are regulated by levers located under the front (primary **23** and secondary air **23**) and under the side door **19** (primary air supporting and cleaning the glass). To regulate them, turning the lever to the right or left. In



the maximum right lever position, the air supply is cut off and in the left position, the maximum air supply is opened.

The primary air, passing the throttle, goes to the ash pan **10** and then to the grate **11**. And through slots in the grate, it reaches the combustion chamber.

The secondary air enters the combustion chamber through the afterburner **13**, that is, openings located in the ceramic concrete panels. The insert is also equipped with an air curtain and additional throttle for faster burning and to keep the glass pane clean.

Above the combustion chamber, there are special ceramic concrete panels called **16** deflectors (each TRINITY series insert in has 2 deflectors).

Radiators (pipes) **17** are welded to the body of the insert. The radiators and deflector create a convective channel enhancing heat exchange. During combustion, the combustion gases float around the walls of the combustion chamber, the deflector, and horizontal radiators. Then they get out to the flue **18** and through the wires go to the chimney.

The insert is equipped also with the tension **21** of the upper strip which assists in relieving the front of the insert, bracket **22** for mounting the insert to the wall and in the case of a heavier installation, a fixing hole in the upper strip **20** allowing to attach the insert to the ceiling. Both of these solutions prevent deformation of the insert during assembly of heavier buildings and its future work.

The air surrounding the built-in insert is heated (convection) and escapes into the room through the appropriate ventilation slots in the fireplace encasing - heat recovery and additional room heating.

## 5. DOOR OPENING AND CLOSING

### 5.1. Guillotine type with hooks (sideways)

The guillotine door, in addition to up-down shifting, can also be opened sideways.

**Sideways opening serves only to service the insert (cleaning the glass pane, etc.). It is not intended for everyday use.**

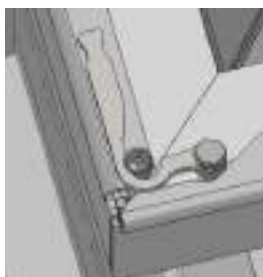
In order to open the door:

- pull tabs protruding in the corners of the guillotine - release the door from the handle;
- open slowly pulling the door towards you;

After opening the door, you can start maintenance or cleaning the cartridge.

**ATTENTION!**

**The doors open at an angle, the attempt of wider opening by force may lead to their damage.**



Closed hook



Open hook

Figure 4. Side doors- opening and closing

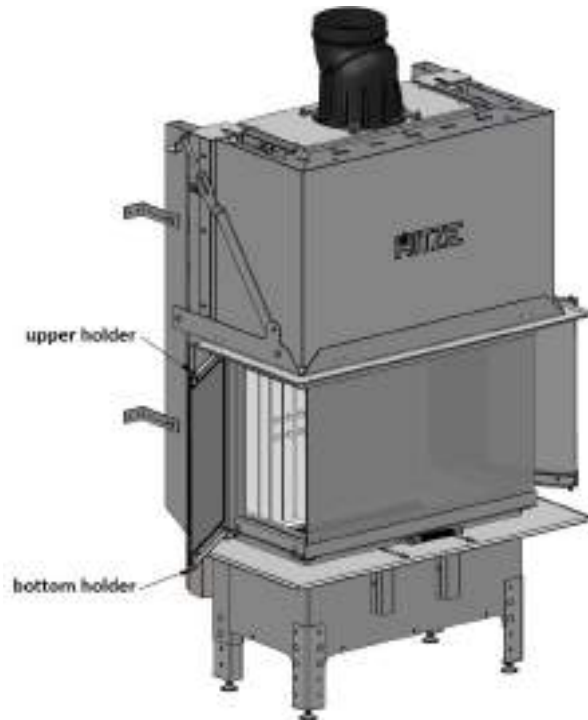


Figure 5. Side door unlocked

**Closing the door of the insert consists in:**

- returning the door to the initial position;
- moving the hooks to the initial position - fixing the door in the holder;

**ATTENTION!**

**Do not slam the door when closing - this may cause the glass crack or break.**

## 6. TRANSPORT, ASSEMBLY AND INSTALLATION OF THE INSERT

The device is compliant with the PN-EN 13229:2002 standard and has a CE certificate.

**Before assembling, installing and using the fireplace insert, read the *Operation and Installation Manual* carefully and follow the instructions contained in it. It will ensure safe and efficient operation of the fireplace. Non-compliance with this *Operation and Installation Manual* may invalidate the guarantee and put the user at risk of injury or loss of life.**

The product must be assembled, installed and used in accordance with the national and local laws and standards, including in particular:

- Regulation of the Minister of Infrastructure of 12.04.2002 Dz.U. [Polish Journal of Laws] No. 75, item 690 amended on 07.05.2004 Dz.U. [Polish Journal of Laws] No. 109, item 1156;
- PN - B – 03406 Standard: 1994 Heating engineering. Calculated heat demand;
- PN – 89 / B – 10425 Standard: Flue pipes, combustion gas ducts and ventilation ducts made from bricks;
- PN – 78 / B – 03421 Standard: Ventilation and air conditioning. Parameters for calculating indoor air;
- PN-EN 13229:2002 Standard “Inset appliances including open fires fired by solid fuels. Requirements and test methods”.

The fireplace insert must be installed by a qualified person or company and commissioning checks must be performed by a master chimney sweep and a fire prevention specialist.

The installation of the fireplace should be performed in the following order:

- connection of the fireplace to the chimney and assembly of the air intake;
- **putting the fireplace into use and observing its functioning for the purpose of detecting defects and anomalies (for about 2 weeks);**
- assembly of the encasing.

## 6.1. Transport

### Transport and handling:

- the insert is delivered as an assembled unit, fastened to a palette and wrapped in stretch foil;
- the fireplace should be transported in a vertical position;
- after unpacking, check the insert for any transport related damage;
- unpack the insert in the vicinity of the installation site; exercise caution when moving the insert (preferably on a cart) (paying special attention to the door and glass);
- the packaging materials of the fireplace insert are not toxic or harmful and should be recycled or stored by the User;
- to facilitate the assembly of the fireplace in hard-to-reach places, the ceramic lining (shielding the hearth) can be removed; after the assembly, every element made of ceramic concrete should be correctly placed in its intended location.

### 6.2. Recommendations concerning the floor:

- the floor must be made of non-flammable material with a minimum thickness of 30 cm; a safety area of least 50 cm must be ensured in front of the fireplace door, and of at least 30 cm from the edges of the door.
- the floor in the place of the feet adjusting the height should be adequately higher so that it is possible to install the air intake pipe in the fixing hole.

### 6.3. Chimney duct

The fireplace insert must be appropriately selected to match the cross section of the combustion gas duct (flue pipe) and the height of the flue.

The cross-sectional area of the flue and of the combustion gas duct is calculated in accordance with the following formula:

$$F = 0,003x \frac{Q}{\sqrt{h}} \quad [m^2]$$

where:

F – cross-sectional area of the flue and of the combustion gas duct [m<sup>2</sup>];

Q – rated thermal input [kW];

h – the height of the chimney [m].

In accordance with the applicable provisions of law, the flue may not be smaller than 14x14cm or its diameter must be 15cm. Inserts with a higher thermal input require a flue with a larger cross section. The cross section also depends on the height of the chimney.

**The fireplace should be connected to the combustion gas duct or the vertical duct in accordance with the applicable national standards.**

The chimney draught should be as follows:

- minimum draught –  $6 \pm 2$  Pa;
- **MEDIUM, RECOMMENDED DRAUGHT –  $12 \pm 2$  Pa;**
- maximum draught –  $15 \pm 2$  Pa.

**NOTE:**

To ensure the correct functioning of the insert, there must be a correct chimney draught in the connector of the flue pipe:

- the insert will not function properly if the chimney draught is not sufficient, resulting in excessive soot deposits on the glass and in combustion gas ducts and reducing the total thermal power of the insert (due to which combustion gases may escape to the room);
- if the draught is too strong, the burning process may be too intense, causing high consumption of fuel and resulting in permanent damage of the insert.

The chimney should be regularly inspected by a chimney sweep company.

### 6.3.1. Connection of the chimney ducts:

- before installing the fireplace insert, the chimney ducts and its technical parameters and condition must be inspected and approved by a chimney expert;
- the fireplace insert may be only installed after the flue pipe has been inspected and approved by a chimney expert.

The chimney duct must satisfy the applicable national or European standards.

The fireplace insert must be mounted and connected to the chimney in accordance with the supplied *Operation and Installation Manual* (together with deflector plates - if they are to be used, and the insulation of the flue pipe).

The manufacturer **does not recommend** the assembly and installation of the appliance by the user on his or her own. To make sure that the insert is installed and put to use in a correct and safe manner and to satisfy the guarantee conditions, the user should have the appliance installed and put to use by a qualified installer or an installation company. The installer is required to confirm in the guarantee card (signature and stamp) that the fireplace has been installed in accordance with good building practices and the applicable legal provisions. If the above-mentioned activities are not performed, it will invalidate the guarantee.

### 6.3.2. The combustion gas outlet system should have the following features:

- the cross section of the flue pipe may not be smaller than the cross section of the chimney duct and it may not become narrow towards the chimney (between the flue pipe and the chimney, the diameter can be increased through the use of mounting adapters);
- the path of the combustion gas duct should be as short and straight as possible (bends increase flow resistance and facilitate the accumulation of condensed moisture);
- it is forbidden to connect the insert to the same chimney duct with another heating device;
- the fireplace insert should be connected to its own chimney duct;
- the combustion gas duct may not have more than two inclinations of  $45^\circ$  when its length does not exceed 5 m and of  $20^\circ$  when it is more than 5 m long;
- the combustion gas duct must be made from non-combustible materials and it must be thermally insulated;
- the insulation of the flue pipe must ensure fire resistance for at least 60 minutes;

- the flue exit should be followed by a straight pipe with a minimum length twice as long as the diameter of the fireplace flue;
- the connector must be leak-proof;
- the end of the chimney should ensure a trouble-free outlet for combustion gases and it should be placed at least 60 cm above the highest point of the roof;
- the connectors must be made from stainless, heat-resistant steel 1.4401 (316) or fireplace steel, painted with a special paint. The metal sheet must have an appropriate thickness (heat-resistant and stainless steel must be 1mm thick, fireplace steel - 2mm) and be resistant to high temperature, the acidity of combustion gases and condensed moisture.

Enough room should be left when building the enclosure of the fireplace insert so as to ensure an easy access for the purpose of cleaning the insert, the flue pipe and the chimney.

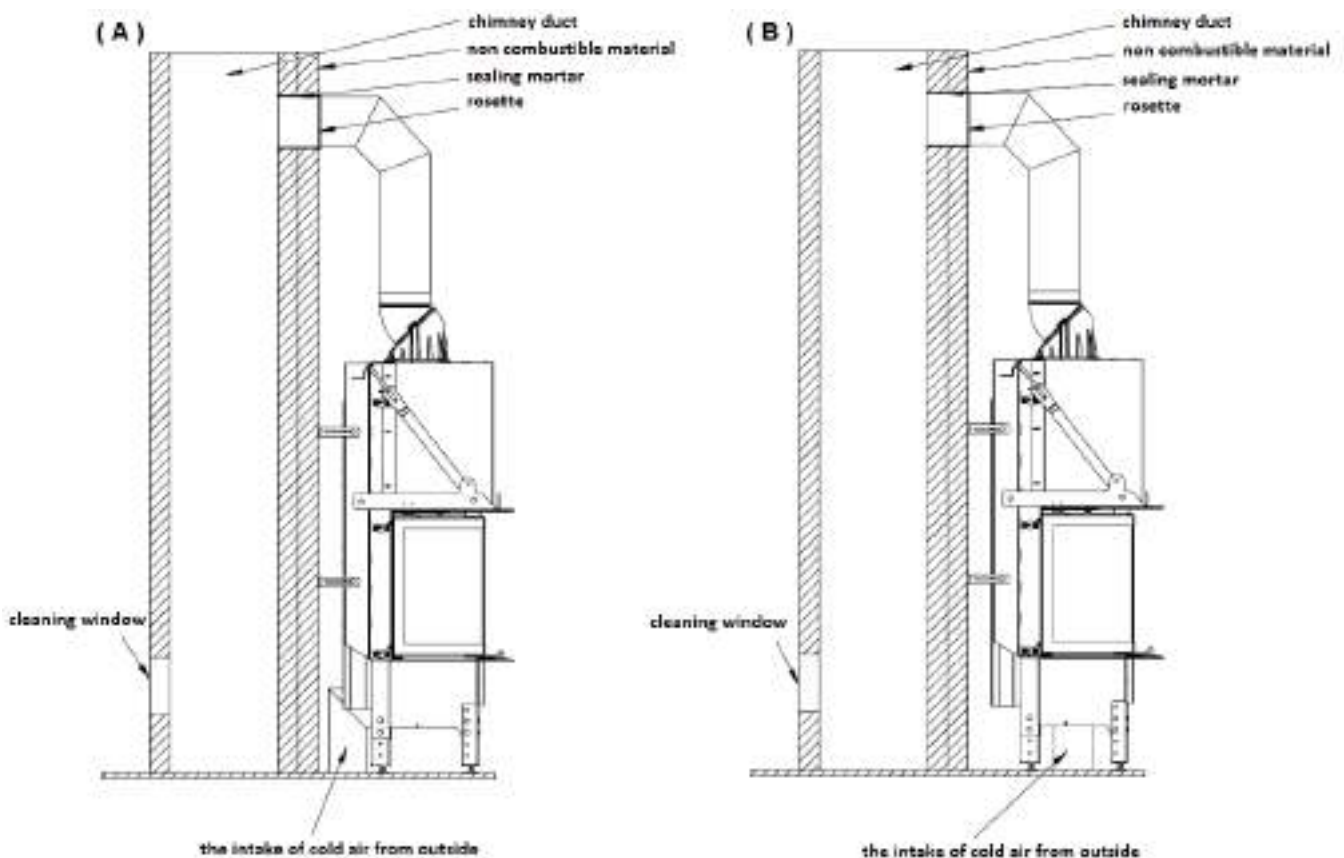


Figure 6. Diagram of connecting the insert to the chimney.  
(A - rear air inlet; B - bottom air inlet)

#### 6.4. Ventilation of the insert:

- fresh air **must** be supplied to the combustion chamber **from outside** (if the amount of air is too small, it will hinder the burning process and toxic combustion gases may be produced, including carbon monoxide);
- the fireplace must be encased in such a way so as to ensure a supply of fresh air from the outside (by using an air inlet pipe with a diameter of 150÷200mm);
- it is estimated that about 8m<sup>3</sup> of air is required for burning 1kg of wood;
- in the case of using a system of distributing air to other rooms, it is essential to ensure the return of cooled air to the room where the fireplace insert is installed so that the air can circulate freely (otherwise, the work cycle of the fireplace insert may become disrupted, which will hinder the distribution of warm air);

- when choosing the site for the appliance and during its installation, attention should be paid to ensuring the correct circulation of air and a proper balance between air inflow and outflow in the room;
- ventilation must be provided in the room where the fireplace is installed;
- the ventilation of the insert should have a cold air inlet and a warm air outlet (ventilation should be provided for the convection space to make sure that air comes into contact with the heatable parts of the insert and enters the flue pipe).

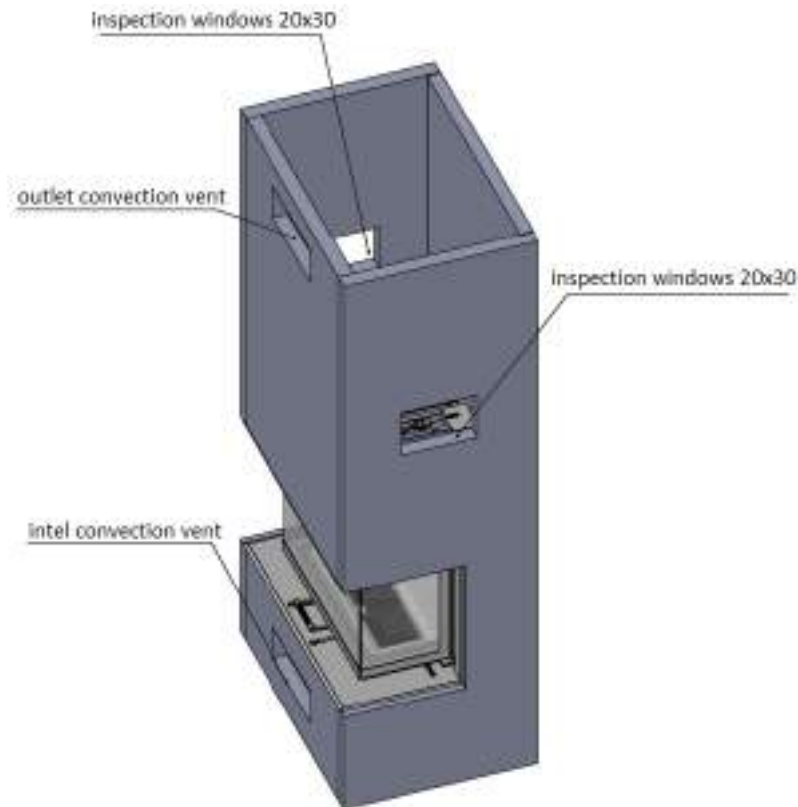
## 6.5. Installation of the insert

The appliance must be installed in accordance with the applicable provisions of the building law.

**The fireplace must be installed and assembled by qualified specialists.**

### 6.5.1. To ensure the correct installation:

- the insert must be placed at a safe distance from any flammable materials (the walls or other surfaces surrounding the fireplace may have to be secured);
- the encasing should ensure easy access to adjusting handles and operating handles (it should be possible to assemble and disassemble the insert without having to dismantle and damage the encasing);
- installation of the fireplace insert is forbidden in bedrooms, bathrooms and rooms where there is another heating device without an independent air supply;
- Trinity insert are uniform construction and do not require additional supports;
- the fireplace is equipped with regulated feet for adjusting the height (levelling) of it (with an adjustment range of up to 4 cm);
- if the fireplace has to be raised above the adjustment range of the feet, make a brick base and place the fireplace on it (do not remove the feet as they are needed for levelling purposes);
- incorrect levelling of the fireplace will hinder the functioning of the door (it will not close properly);
- **an inlet vent (inspection window) at the front or side is recommended, in the lower part of the encasing of dimensions 20cmx30cm - allowing easy access to the throttle mechanism at the front and bottom of the insert;**
- **If there are no inspection windows, the manufacturer is not liable for damage to the cartridge during the service and warranty works.**



**Figure 7. Simplified diagram of the insert construction with an exemplary location of inspection windows.**

### 6.5.2. General recommendations concerning the housing:

- the fireplace insert can be placed anywhere, as long as it is positioned at an appropriate distance from the insulation and the housing;
- the supporting structure and the housing of the fireplace insert must be made from non-flammable heat-resistant materials  $2 \left[ \frac{m^2 K}{W} \right]$ ;
- the housing should be made from non-flammable materials;
- distance between the insulation materials and the insert should be at least 10 cm;
- there should be a warm air outlet vent in the housing, positioned 80cm from the ceiling (in the case of flammable materials);
- during regular use, the housing of the fireplace extends (due to the heat), therefore there should be tiny gaps between stone, marble or ceramic elements;
- preferable insulation material should be resistant to temperatures over 500°C;
- preferably, no insulation should be provided for the flue (it will ensure more effective dissipation of heat into the room);
- it is recommended to create an isolated decompression chamber with separate ventilation vents. Thanks to this, the ceiling is better protected against discoloration and cracking;
- the housing cannot lean on the fireplace;
- the thickness of the insulation depends on the thermal conductivity coefficient  $\lambda$  (the ability of a material to conduct heat) and heat resistance of a given material;
- in the housing of the insert, there should be a cold air inlet vent (at the bottom of the encasing) and a warm air outlet vent;

The  $\lambda$  coefficient is specified by the manufacturer of the insulation, e.g. for mineral wool it is 0.035-0.045. The lower the  $\lambda$  coefficient, the better the insulation (“thermal insulation in the room”)

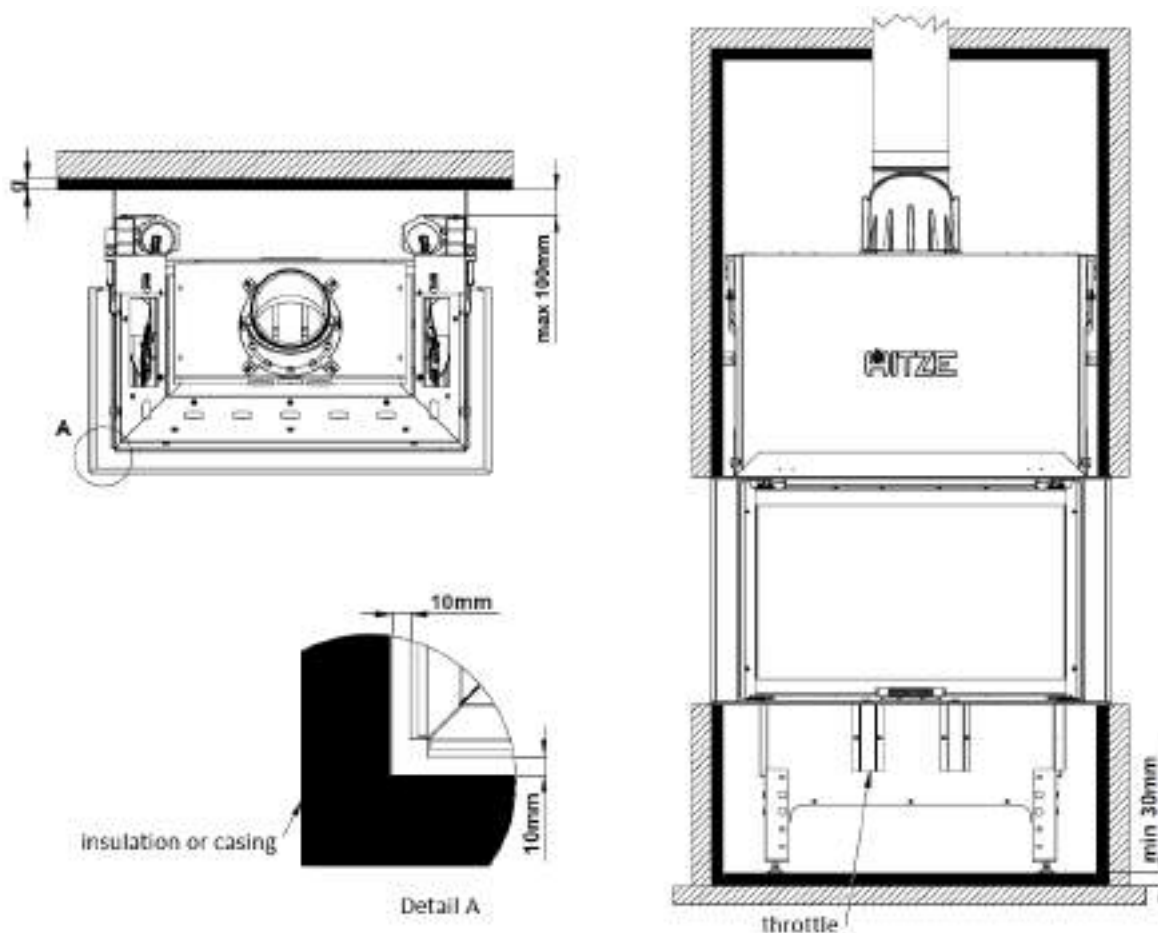


Figure 8. Standard fireplace construction

The thickness of the insulation is calculated in accordance with the formula:

$$g = R \cdot \lambda$$

where:

g – thickness of the insulation (partition) [m];

$\lambda$  – thermal conductivity coefficient [W/m·K];

R – coefficient of thermal resistance of a layer of material [m<sup>2</sup>·K/W].

For materials with thermal resistance of  $2 \left[ \frac{m^2 K}{W} \right]$ , with  $\lambda=0,035$  and  $R=2$ , the thickness of the insulation layer is 0.07m i.e. 7cm.



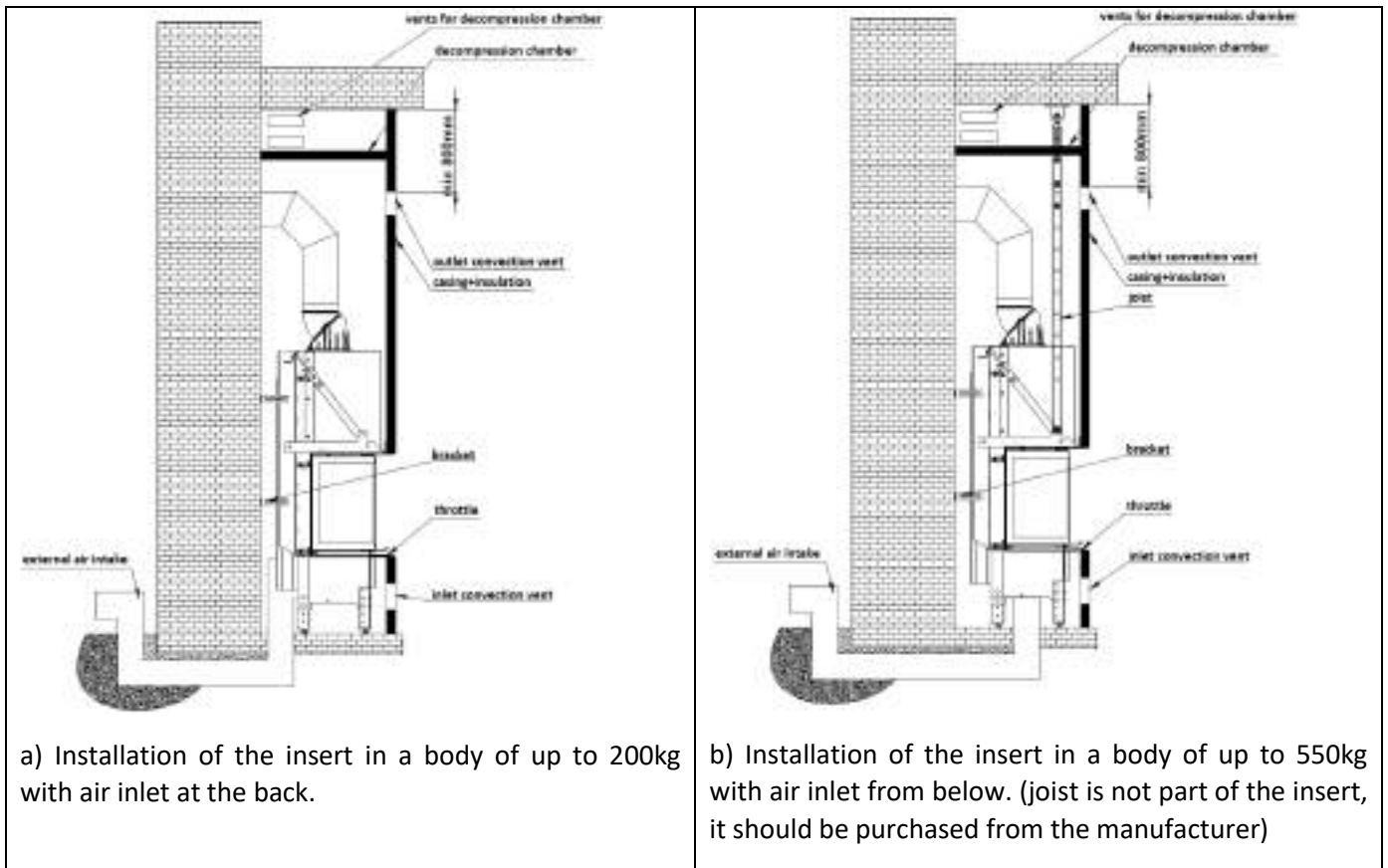


Figure 9. The recommended method of installing the insert

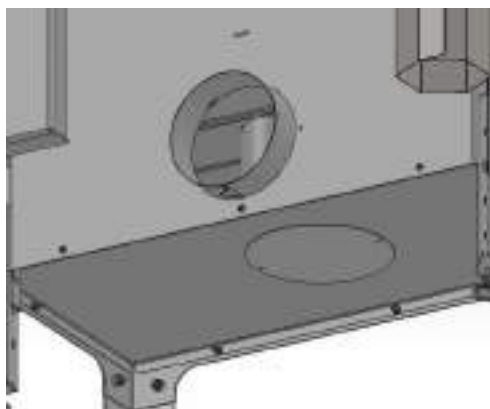
The surfaces of the inlet and outlet grilles depend on the power of the fireplace and the size of the room and its volume. The height of the room 2.5m.

| Power [kW] | Min room space [m <sup>2</sup> ] | Min room cubic volume [m <sup>3</sup> ] | Inlet grille space [cm <sup>2</sup> ] | Outlet grille space [cm <sup>2</sup> ] |
|------------|----------------------------------|---|---------------------------------------|--|
| 10         | 50                               | 125                                     | 400-650                               | 700-800                                |
| 12         | 60                               | 150                                     | 480-780                               | 840-960                                |
| 12         | 60                               | 150                                     | 480-780                               | 840-960                                |

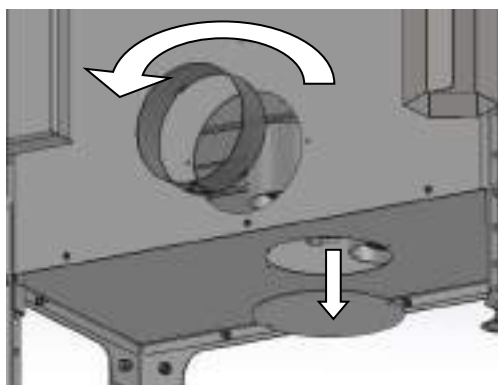
Table 3. The areas of the inlet and outlet vents in the housing of the fireplace

### 6.6. Air inlet configurations.

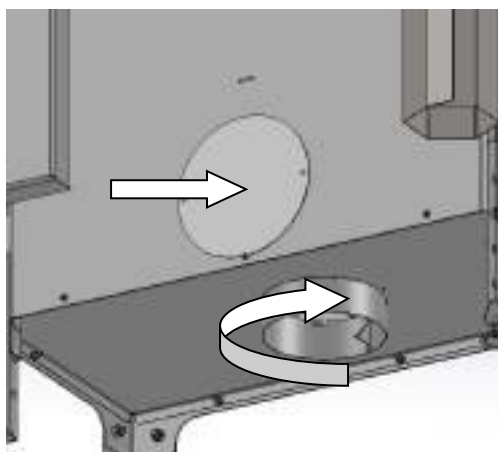
The design of the inserts allows for 2 different configurations for mounting the air inlet to the insert. Air inlet mounted by the manufacturer in the back of the insert and the ability to rearrange the air inlet from the rear to the bottom as shown below.



Air inlet fitted as standard by the manufacturer.



Unscrew the air inlet by turning it to the left and remove the bottom cover by unscrewing 2 screws.



Screw the cover at the back of the insert and tighten the air inlet at its bottom.

## 6.7. Wall mounting.

The insert is equipped with 4 brackets which after mounting to the wall are to ensure the stability of the insert. The choice of the manner of mounting the brackets to the wall should be made on your own, taking into account the loads that will affect the insert and the mounting site.

We recommend installing with the use of a chemical anchor and an M12 threaded rod.



**Figure 10. Bracket for mounting the insert to the wall.**

## 7. START-UP

After the fireplace insert has been mounted and connected to the chimney, the first start-up of the fireplace must be performed by an installer or a qualified service technician.

As part of the start-up procedure, the installer should show the User how to operate the fireplace correctly. The installer is obliged to refuse to put the fireplace into use if he or she finds any assembly-related irregularities which make it unsafe to use. A correctly performed start-up should be confirmed in writing in the guarantee card.

### 7.1. Getting ready for the start-up

Before lighting the fireplace for the first time, it is necessary:

- to remove any labels, paper stickers and accessories from the body of the insert or hearth to eliminate the risk of fire; the same applies to transport safety devices;
- to check if the deflector/s, ceramic fittings are mounted correctly and were not dislodged from their correct position during installation (any discovered mounting errors must be corrected). Non-removal of such errors may hinder proper functioning of the fireplace insert. In the case of inserts with multi-pane glass doors, it should be checked if particular glass panes did not become loose during transport or use;
- to check the operation of:
  - mechanism regulating the air inflow into the combustion chamber (cold air inflow throttle);
  - front door closing mechanism (hinges, handle);
- to check the correctness of the installation in accordance with this *Operation and Installation Manual* and the applicable legal provisions, especially in terms of the following safety-related issues:
  - is the fireplace levelled
  - is a proper ventilation system provided for the room and the fireplace
  - does the air intake ensure unobstructed flow of air from outside and into the room
  - is the connection to the chimney sealed properly
  - has the fireplace encasing been built correctly

## 7.2 Lighting the fireplace

Before lighting the fireplace, please do the following:

- arrange a stack of firewood in the hearth, starting with larger pieces of wood, followed by medium-sized pieces of wood and then by small chips of wood for fire lighting – light it with a match;
- set the primary air regulator in the fully open position (POSITION 2);
- **after lighting the fire, the door of the fireplace must be closed;**
- when the fuel is burning properly, adjust the burning process with air regulators to ensure a steady and calm rate of burning (setting the mechanism between 3 and 4 position will direct a small part of primary air under the grate of the fireplace, whereas the remaining part of the air will be directed to the combustion gases after burning system; opening of the air intake mechanism in POSITION 3 - fuel will burn with high intensity);
- it is recommended, at the final stage of burning, to open the door and move the remaining embers onto the grate, using a poker, so that all fuel is used up;
- test the functioning of other components of the installation (when the fire is lit for the first time).

### ATTENTION:

Because a large amount of air is fed under the grate and to the air curtain and after-combustion system, too much fuel in the combustion chamber causes the production of a large amount of wood gas, which results in a temporary smoke of the glass.

The maximum shift of the throttle to the right causes a complete shut-off of the air supply to the combustion chamber, which results in a gradual extinguishing of the furnace.

If necessary, the grate is unblocked with a poker or a grate lever (if the insert has a movable grate).

During the first hours of using the insert, it is recommended to load the fireplace with a small amount of fuel, i.e. up to 50% of the normal load.

When the fireplace is lit for the first time, water may condense on the internal walls of the combustion chamber. This phenomenon is normal and is caused by the condensation of water vapour contained in combustion gases. It should disappear after the combustion chamber has heated up.

If combustion gases escape from the fireplace chamber, the position of the combustion gas throttle should be adjusted and the chimney draught should be increased.

**Before the next lighting, clean the hearth from remaining ash.**

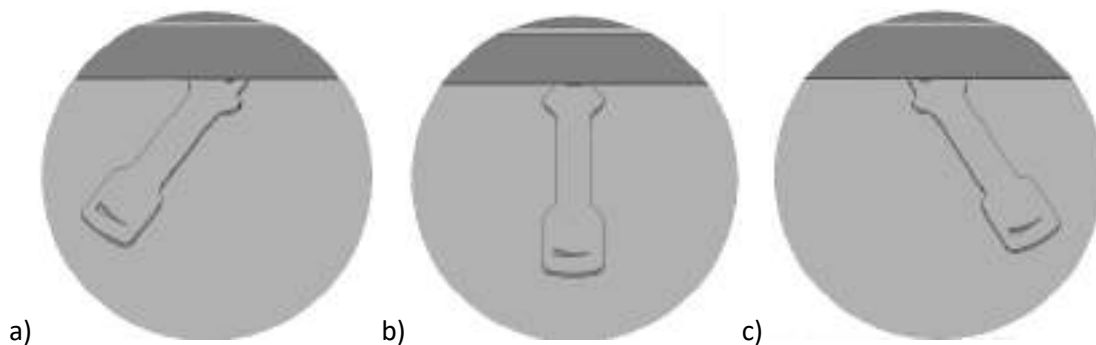
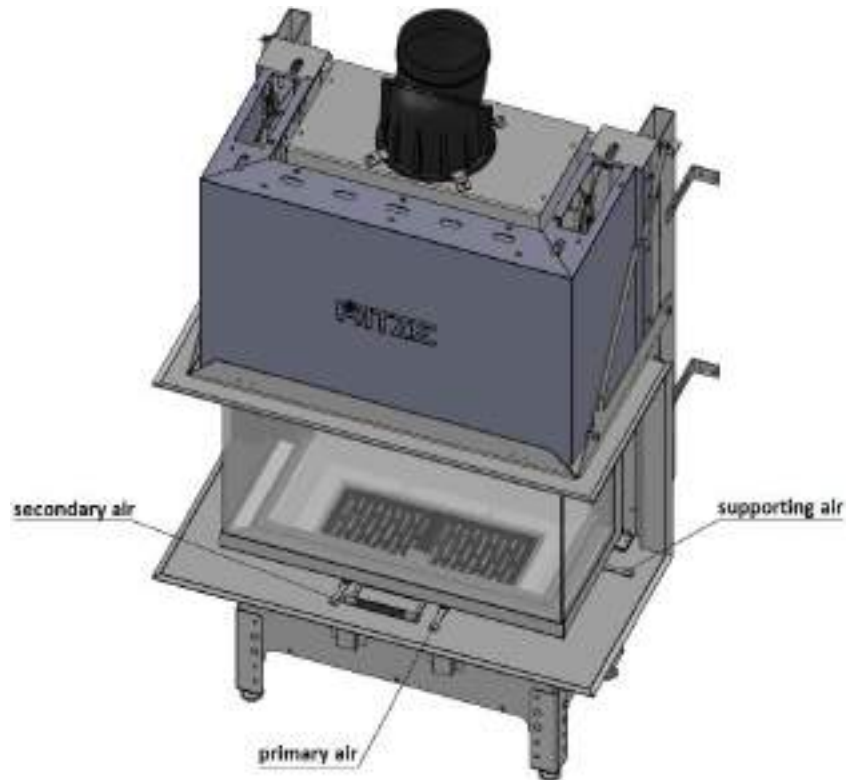


Figure 11. Primary air settings; a) primary air opened in 100%; b) 50% open primary air; c) primary air closed



**Figure 12. Location of individual air adjustment levers.**

## 8. USE

The surface of the insert is covered with a special heat-resistance paint. After lighting the fireplace, this paint initially becomes soft (care must be taken not to scratch it then) and then hardens. Due to this process, an unpleasant smell is produced when the fireplace is lit for the first few times. It is recommended to make sure that the room is well aired during that time.

If pets or birds are kept in the room, they should be temporarily moved to another place.

In the initial stage of using the fireplace (for about 2 weeks), the manufacturer recommends maintaining a small flame by burning a smaller quantity of fuel at a lower temperature. This method of lighting the fireplace is intended to prevent cracks in the ceramic lining, to avoid deformation of the fireplace structure or damage to the protective (paint) layer of the insert.

### 8.1. Types of fuel

Considering the design of our appliances, the most suitable type of fuel is the deciduous hardwood, including: oak, hornbeam, ash, beech, birch. *In particular, we recommend using birch wood.*

The best fuel is wood which has been seasoned (for at least two year in a well-ventilated and dry place), cut and chopped into logs. We advise against using the wood of coniferous trees. Freshly cut or damp wood is not a good fuel because it has low calorific value. The burning of insufficiently dried wood may result in increased deposits of creosote in the combustion gas ducts, which may cause the glass panel to break.

#### NOTE:

**It is forbidden to burn waste fuel, liquid fuels and other types of fuel not recommended by the manufacturer of the fireplace insert.**

It is strictly forbidden to use the following as fuel for the fireplace: bituminous coal, the wood of tropical trees, all types of products containing chemical compounds such as petrol, alcohol, naphthalene, oil, waste and laminated panels containing adhesives.

## 8.2. Refuelling::

- fuel should be added when flames disappear over the layer of embers in the hearth; it is best to heap embers into a pyramid-like shape onto the grate (from both sides, to ensure a sufficient flow of air from underneath the grate for flames to appear) and then add slivers of wood;
- embers should not be heaped over the grate in an even layer because it would significantly reduce the flow of air from under the grate and result in a build-up of gas in the hearth chamber and in the whole insert, which might lead to an explosion;
- wooden logs in the combustion chamber should be arranged in parallel to the plane of the door;
- before loading a fresh portion of fuel into the furnace, the grate should be cleaned when it is necessary to empty the ash pan.

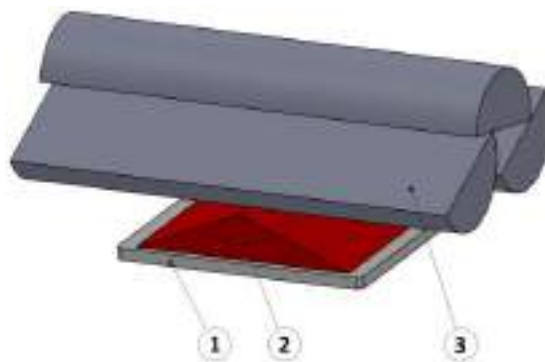


Figure 13. The method of laying embers and adding wood; 1 - grate, 2 - heat, 3 - wood logs.

### 8.2.1 Preventing the escape of combustion gases

To prevent the escape of combustion gases from the insert to the room during the opening of the door, it is recommended to:

- about 10 seconds before opening the door, the primary air regulator must be fully opened (throttle lever maximally to the left);
- open the damper valve of the combustion gas throttle in the flue (if such a valve is installed in a given insert);
- move the door slightly partly open, wait a few seconds (until combustion gases disperse) and then slowly open the door of the insert;
- exercise caution when opening the door and after opening it because burning pieces of wood may fall from the hearth;
- after adding an appropriate quantity of fuel, close the door of the hearth;
- when the fuel is well alight, set the air regulator in its original position;
- the optimum amount of fuel is specified in table no. 1;

#### NOTE:

**Take care not to overload the insert with fuel. Overloading may cause permanent damage to its structure.**

### 8.3. Keeping the glass pane clean

The cleanliness of the glass pane depends on using appropriate fuel, as well as on:

- supplying a sufficient quantity of air for the burning process;
- optimum chimney draught;
- the method of operating the fireplace insert;

- the use of fuel with a moisture content of between 12%-20%

To keep the glass pane clean, it is advised to add the recommended quantity of fuel and to position it centrally on the grate and as far from the glass panel as possible (the same applies to briquettes – a distance of 5 to 10 mm should be maintained between them).

In the case of a build-up of tar on the glass pane, we recommend increasing the intensity of the burning process by opening the primary air regulator. The tar will burn off when the appliance is operating at full capacity.

#### 8.4. Operation in adverse weather conditions and in the first period of use

In the first period of use or in adverse weather conditions (e.g. during a fog, on damp and rainy days, in weather with strong gusty winds or when outdoor temperature exceeds +15°C), the chimney draught may become too weak to remove all combustion gases. To offset this negative effect, the fireplace should be loaded with the smallest possible amount of fuel or additional draught regulators should be used.

#### 8.5. Ash removal

Depending on the amount and type of fuel to be burned:

- use a poker to grab the ashes from the grate into the ash pan;
- after scraping ash, raise the clamp with the grate, then remove the ash pan and empty it;
- the ash pan can be emptied only when it's cold, we recommend that this operation be carried out at the latest before each lighting;
- before emptying the ash pan, check that it contains no burning fuel residue that could cause a fire in the waste container.

#### CAUTION:

**The manufacturer recommends that the ashtray should not be overfilled. Overfilling the ashtray leads to a limitation of the air supply under the grate, which results in a deterioration of combustion parameters, and in extreme cases may prevent the fireplace from firing up.**

If ash remains in the ash pan too long, it may result in premature **corrosion**. Ash from burnt wood can be used for compost or as a fertiliser.

#### 8.6. General comments

Things to be done:

- make sure that the **door of the hearth (combustion chamber) and the door of the ash pan (if installed in a given insert) are closed (unless they need to be opened for maintenance purposes);**
- prior to lighting up after a prolonged shutdown period, check the flue pipe in the chimney and the hearth to make sure that they are unobstructed and clean;
- during the performance of any maintenance or operation-related tasks, remember that the components of the insert can be very hot. Therefore, it is necessary to wear protective gloves;
- for any repairs of the insert use only spare parts produced by its manufacturer;
- all repairs must be performed by a qualified installer;
- during the operation and use of the fireplace insert, follow the basic safety rules.
- protect the insert against the effects of construction chemicals used for the assembly and installation of the insert, which may lead to damage and loss of warranty.

It is forbidden:

- to leave any flammable materials or items sensitive to high temperature near the glass of the insert;
- to use the appliance when its glass is broken;
- to extinguish the hearth fire with water;
- **to let children come near the appliance;**

- to make any structural changes or to alter the rules of installation and use without prior written consent of the manufacturer;
- **if any malfunctions are detected, the fire must be extinguished immediately.**

**NOTE:**

In emergency situations, extinguish the fire by covering the fuel with sand or cold ash.

**DO NOT USE WATER!**

If the fireplace does not function correctly, any maintenance work may only be carried out after ensuring good ventilation of the rooms, as well as the assistance of another person equipped with a dry-powder extinguisher.

**NOTE:**

When the burning process is slow, large quantities of organic products of combustion are produced, which may lead to the build-up and ignition of creosote in the chimney duct. As a result, the so-called chimney fire breaks out, which may spread to the whole building.

**In the case of a chimney fire, please do as follows:**

- cut off the inflow of air to the fireplace by closing the throttle of the cold air inlet;
- close the rotary damper valve of the combustion gas flue (if installed in a given model);
- close the door of the fireplace tightly;
- dial 112 to alert the local Fire Department.

## 8.7. Insert lining

The inserts are lined inside with ceramic concrete that ensures protection of the insert against direct exposure to high temperature on the insert and the accumulation of the generated heat energy. During use, the accumulation concrete is subject to wear and tear, which can lead to cracking and chipping. These phenomena do not change the operation of the insert and do not cause deterioration of its performance. The speed of exploitation depends on the intensity of use of the insert and the amount of energy that the concrete accumulates and then releases into the environment.

**Cracks and chipping of concrete are not covered by the warranty, they constitute a natural process of concrete exploitation (cracks can also occur as a result of rapid temperature jumps in the insert).** Concretes should be replaced when the wall clearances of the fireplace insert are visible. Failure to comply with these recommendations may result in damage to the cartridge and loss of warranty

## 9. MAINTENANCE

To ensure safe and problem-free operation of the appliance, observe the following guidelines:

- perform periodic maintenance tasks in a timely manner – have the fireplace inspected by a specialized servicing company at least once a year;
- keep the following components clean: glass pane, combustion chamber with the ash pan and the chimney duct;
- systematically empty the ash pan - left ash can lead to corrosion of the ash pan;
- make sure that the combustion chamber is cleaned and serviced with a frequency which is appropriate for a given type of fuel;
- make sure that steel or cast-iron elements inside the insert are cleaned with appropriate tools such as: brush, scraper and poker; use protective gloves;
- **any maintenance activities may be only performed after the fire has been extinguished and the fireplace has cooled down;**
- clean the ceramic glass pane of the insert with a kitchen paper (paper towel). It should be moistened with water and then collected with a bit of clean ash from the inside of the grate, avoiding direct contact with



steel elements and cast-iron devices. By rubbing the glass with so prepared moistened paper, we can effectively dissolve the tarnish - so that it can be wiped with a dry paper towel. All agents used to clean the glass must not contain abrasive materials causing its damage (scratching);

- at least twice a year, carry out the cleaning of chimney ducts, documented in the Warranty Card, by an authorised chimney sweeper;
- clean the interior of the fireplace, check the supply and exhaust gas outlet;
- Replace all gaskets after each heating season.

### 9.1 Periodic cleaning of the fireplace

To ensure an efficient burning process in the hearth of the fireplace insert, the combustion chamber, the grate, the flue and combustion gas ducts must be cleaned periodically.

| Component  | Frequency   | Tools and resources  |
|--|---|--|
| The convection surfaces of the fireplace insert and the pipes connecting it with the chimney duct – cleaning                             | As needed, but not less frequently than once a year or after a prolonged shutdown period              | A brush made from a resilient material, vacuum cleaner, fireplace cleaning products.             |
| Combustion gas duct, chimney - checking if the chimney is not obstructed and that the combustion gas installation is in a good condition | At least twice a year, after the heating season and after a prolonged shutdown period                 | Specialist chimney sweep company   |
| Front glass pane   | As needed   | Cooled - moistened paper towel with a bit of clean ash, no abrasive materials causing its damage |
| Grate and internal components of the insert  | As needed   | Vacuum cleaner, fireplace cleaning products  |
| Maintenance of the combustion gas throttle - replacement of the gaskets of the glass pane and of the hearth door                         | At least once a year, after the heating season or as needed, depending on the degree of wear and tear | Servicing company authorized by the manufacturer   |

## 10. TROUBLESHOOTING

During everyday use of the fireplace insert, the below described anomalies may become apparent in the case when the fireplace insert has been installed in a manner contrary to this *Operation and Installation Manual* and the applicable provisions of law.

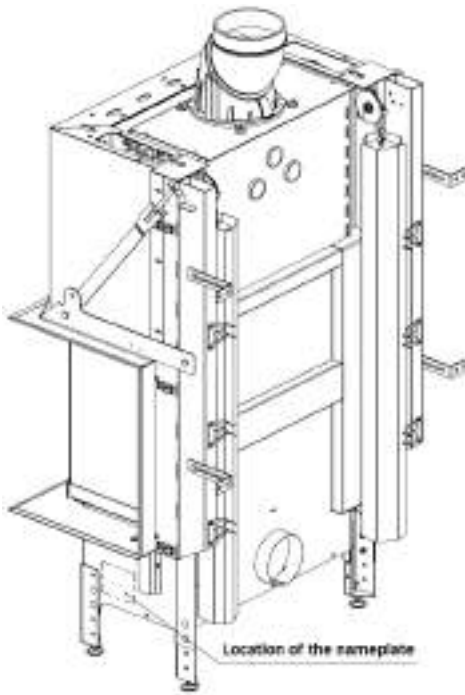
### 10.1 The most frequent malfunctions and ways of eliminating them:

|  | Problem | Solution |
|--|---------|----------|
|  |         |          |

|   |   |  |
|---|---|--|
| Smoke escapes to the room when the door is opened                               | the door may be opened too abruptly, causing negative pressure in the combustion chamber                          | open the door slowly   |
|   | the adjustable damper valve of the flue of the chimney duct is closed (if such a valve has been installed)        | open the damper valve  |
|   | insufficient amount of air in the room where the fireplace insert is installed                                    | check the efficiency of the ventilation and make sure that the room is well aired                                      |
|   | weather conditions  |  |
|   | inadequate chimney draught  | check the efficiency of the chimney installation   |
| The heating efficiency is low or the fire in the hearth goes out                | insufficient quantity of fuel in the hearth   | add as much fuel as is required  |
|   | the moisture content of the fuel is too high  | use fuel with a moisture content of up to 20%  |
|   | inadequate chimney draught  | check the efficiency of the chimney installation   |
| The heating efficiency is low despite the correct burning process in the hearth | inappropriate wood with a low calorific value is used   | use wood with a higher calorific value instead   |
|   | the moisture content of the fuel is too high  | use fuel with a moisture content of up to 20%  |
|   | the fireplace has been fuelled with thin and small pieces of wood which burn very quickly                         | place thicker logs in the fireplace  |
| Soot accumulates on the glass and it does not burn off                          | the fuel burns too slowly and the temperature in the combustion chamber is too low                                | increase the amount of air in the combustion chamber, use fuel with a moisture content of up to 20%                    |
|   | the fireplace has been fuelled with wood of coniferous trees with a high resin content                            | use dry deciduous hardwood instead   |
| The appliance may be functioning incorrectly due to external factors            | tall objects are situated too near the chimney  | increase the height of the chimney or use a rotary chimney cowl cap or another type of chimney cowl cap                |
|   | adverse weather conditions, e.g. wind or windless weather, low atmospheric pressure, high air humidity, fog, etc. | use a chimney cowl cap and, if it does not help, seek advice of a chimney expert to establish the cause of the problem |

## 11. NAMEPLATE

The nameplate is placed on the back wall of the appliance.



|  |               |  |  |                          |  |
|--|---------------|--|--|--------------------------|--|
|  |               | HITZE Sp. z o.o.<br>ul. Gdylńska 12<br>POLAND  |  | 16<br>1452               |  |
| <b>Wkład kominkowy stalopalny</b><br>Fireplace insert for constant burning / Kamininsert dauerhaft |               |  |  |                          |  |
| Norma odwołania:<br>reference standard / referenzstandard  |               | EN 13229:2001; EN 13229:2001/AC:2002; EN 13229:2001/A2:2004;<br>EN 13229:2001/AC:2005; EN 13229:2001/A2:2004/AC:2007 |  |                          |  |
| Model / name / name:   |               | ALBERO 9 kW Standardowy Płomkowy / Albero 9 kW Standard vertical / Albero 9 kW Standard vertikal                     |  |                          |  |
| Typ / type / typ:  | ACS.V         | Certyfikat nr / certificate number /   |  | _____                    |  |
| Model / seria / serie /  | 000010 / 2005 | Klasa konstrukcyjna / construction class /   |  | Bc                       |  |
| Moc nominalna / nominal power /  | 9,0 kW        | Maksymalna ciśnienie robocze /   |  | _____                    |  |
| Moc grzewcza w porównaniu /  | _____         | minimum operating pressure /   |  | _____                    |  |
| Moc grzewcza w porównaniu /  | _____         | minimum  |  | _____                    |  |
| Moc grzewcza w porównaniu /  | _____         | Typ paliwa / fuel type /   |  | Drewno /                 |  |
| Moc grzewcza w porównaniu /  | _____         | minimum  |  | _____                    |  |
| Sprawność / Efficiency /   | 87,4 %        | Typ paliwa / fuel type /   |  | minimum                  |  |
| Sprawność / Efficiency /   | _____         | minimum  |  | _____                    |  |
| Emisja CO (15% O <sub>2</sub> ) /  | 0,996 %       | minimum  |  | _____                    |  |
| Emisja CO (15% O <sub>2</sub> ) /  | _____         | minimum  |  | _____                    |  |
| Średnia temperatura spalin /   | 104,0 °C      | minimum  |  | _____                    |  |
| Średnia temperatura spalin /   | _____         | minimum  |  | _____                    |  |
| Minimalny odstęp od powierzchni palenisk /   |               | Minimal distance   |  | - Odległość od ściany /  |  |
| from fireproof material /  |               | Abstand zum  |  | 200 cm                   |  |
| Nicht-Feuerfestes Material /   |               | Abstand zum  |  | - Odległość od sufitu /  |  |
| Abstand zum  |               | Abstand zum  |  | 200 cm                   |  |
| Nicht-Feuerfestes Material /   |               | Abstand zum  |  | - Odległość od podłogi / |  |
| Abstand zum  |               | Abstand zum  |  | 200 cm                   |  |
| Nicht-Feuerfestes Material /   |               | Abstand zum  |  | _____                    |  |
| Uwagi / notes /  |               |  |  |                          |  |
| Proszę przeczytać i przestrzegać się da instrukcji /   |               |  |  |                          |  |
| Please read and follow the user guide /  |               |  |  |                          |  |
| Bitte lesen und befolgen Sie die   |               |  |  |                          |  |
| Bedienungsanleitung  |               |  |  |                          |  |
| Wytwórca / manufacturer /  |               |  |  |                          |  |
| Hersteller   |               |  |  |                          |  |
| _____  |               |  |  |                          |  |

Figure 14. Sample of the Nameplate and its location

## 12. INSPECTION RECORDS

| REGISTER OF INSPECTIONS OF THE CHIMNEY |                           |
|--|---------------------------|
| Inspection                             | Date, signature and stamp |
| Inspection                             | Date, signature and stamp |
| Inspection                             | Date, signature and stamp |
| Inspection                             | Date, signature and stamp |
| Inspection                             | Date, signature and stamp |
| Inspection                             | Date, signature and stamp |
| Inspection                             | Date, signature and stamp |
| Inspection                             | Date, signature and stamp |

| REGISTER OF INSPECTIONS OF THE FLUE PIPE |                           |
|--|---------------------------|
| Inspection                               | Date, signature and stamp |
| Inspection                               | Date, signature and stamp |
| Inspection                               | Date, signature and stamp |
| Inspection                               | Date, signature and stamp |
| Inspection                               | Date, signature and stamp |
| Inspection                               | Date, signature and stamp |
| Inspection                               | Date, signature and stamp |

## 13. NOTES