

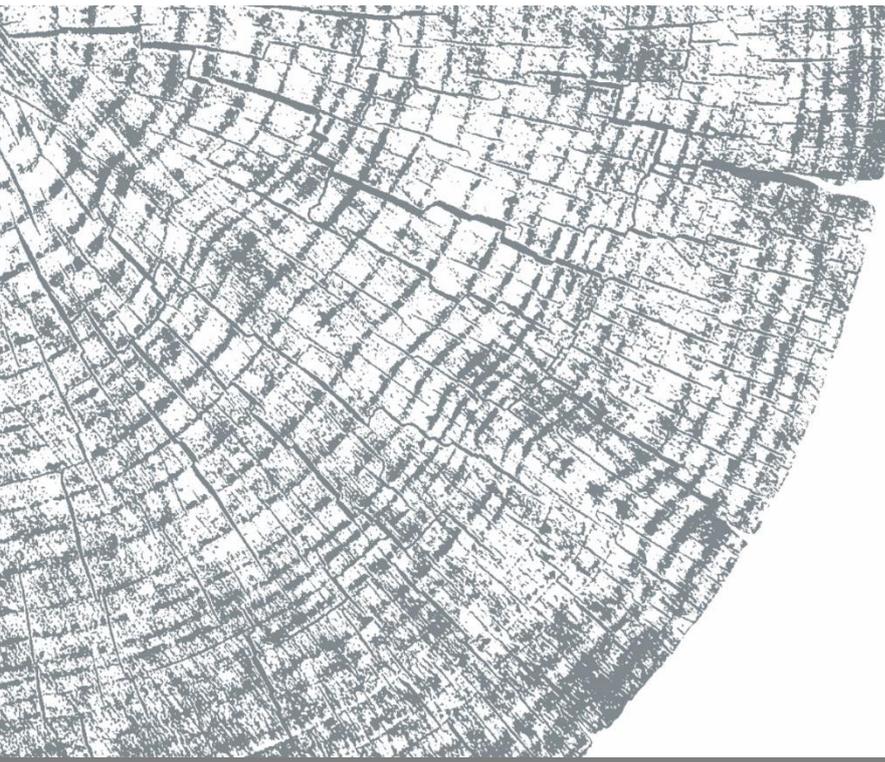
# HITZE

NATURAL HEATING

OPERATION AND INSTALLATION MANUAL

FIREPLACE CASSETTE

CUBO



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 States:  
"This product can not be used as a basic source of heating"

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## Table of contents

1.	GENERAL INFORMATION.....	3
1.1	Safety.....	3
2.	INTENDED USE OF THE CASSETTE .....	4
3.	TECHNICAL DATA.....	6
4.	STRUCTURE AND OPERATION OF THE INSERT .....	8
5.	TRANSPORT, ASSEMBLY AND INSTALLATION OF THE INSERT.....	10
5.1	Transport.....	11
5.2	Recommendations concerning the floor: .....	11
5.3	Chimney duct .....	12
5.3.1	Connection of the chimney ducts: .....	12
5.4	Ventilation of the insert:.....	14
5.5	Installation of the insert.....	15
5.5.1	To ensure the correct installation.....	15
5.5.2	General recommendations concerning the housing .....	15
5.6	Connecting the hot air distribution system. ....	16
5.7	Connecting the fan system.....	18
6.1	Getting ready for the start-up.....	20
6.2	Lighting the fireplace.....	21
7	USE .....	22
7.1	Types of fuel.....	22
7.2	Refuelling: .....	22
7.3	Keeping the glass pane clean .....	23
7.4	Operation in adverse weather conditions and in the first period of use.....	24
7.5	Removal of ash.....	24
7.6	General comments.....	24
8	MAINTENANCE .....	25
8.1	Periodic cleaning of the fireplace.....	26
9	TROUBLESHOOTING .....	26
10.	NAMEPLATE.....	28
11.	INSPECTION RECORDS.....	29

## 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 or wood pellets, 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, 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.

#### 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.
- **use a fireplace insert equipped with fans without fans switched on, this may damage the cassette.**

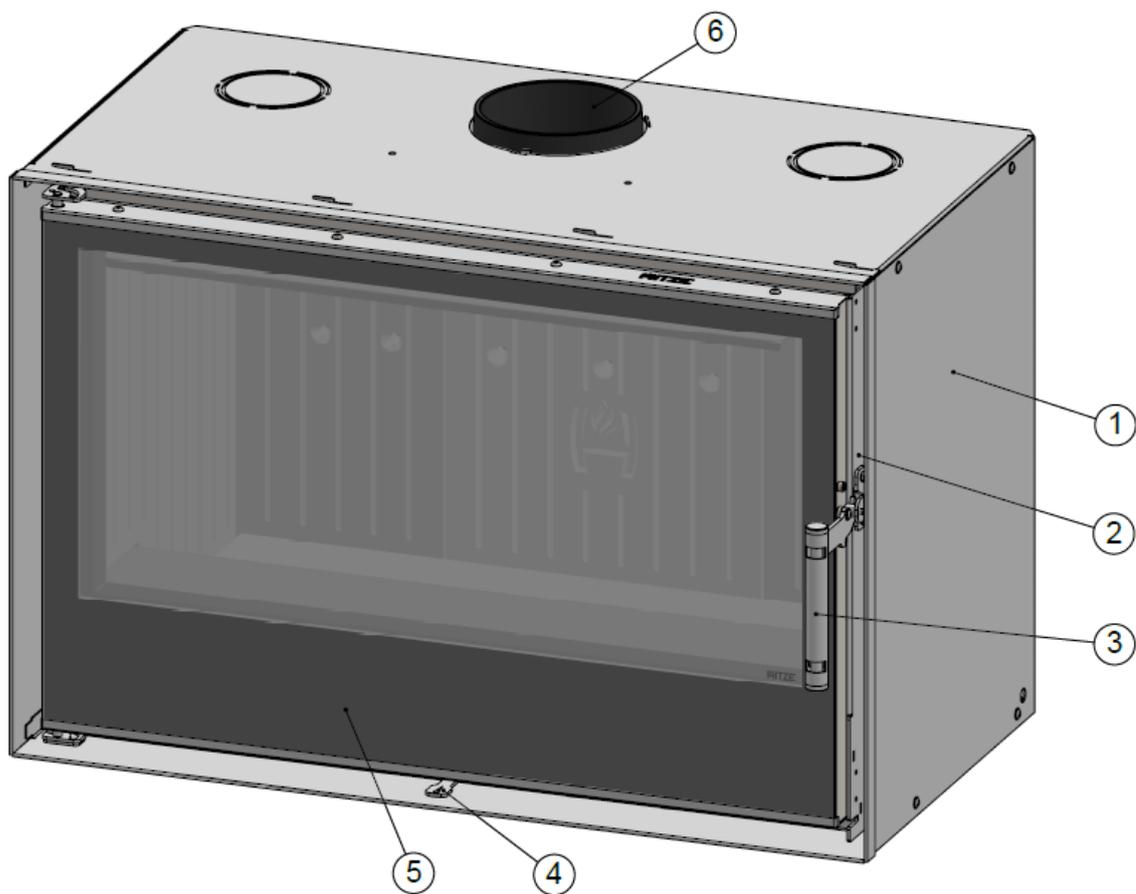
#### 1.1.3 The manufacturer is released from civil or criminal liability in the case when:

- 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 CASSETTE

The fireplace cassette, in contrast to the typical insert, serves to adapt the existing open fireplace to the fireplace with a closed furnace without its disassembly. The cassettes can be used as independent heat sources or used in the air heating systems of the building. Due to the construction, they can only be burned with wood.

The PN-EN 13229: 2002 standard classifies the cassette hearth as 1c, with manual fuel supply, closed door and allows the insert to be installed into the recess. Cubo is a fireplace with periodic combustion



1. encasing of the insert; 2. body of the insert; 3. door handle; 4. air adjustment lever;; 5. door; 6. flue;

**Fig. 1 CUBO insert - general scheme**

### 3. TECHNICAL DATA

Parameters	Symbol	Unit	CUBO insert	
			CUBO 700	CUBO 800
Nominal power	P	[kW]	8	8
Heating load range	Pog	[kW]	4-10	4-10
Maximum fuel loading mass	B	[kg]	2,4	2,2
Heating efficiency	$\eta$	[%]	85	85
CO emission (at 13% O2)	CO13	[g/m <sup>3</sup> ]	0,891	1,206
Average flue gas temperature	t <sub>sr</sub>	[°C]	170	158
Flue pipe diameter	D <sub>cz</sub>	[mm]	150	150
Glass dimensions	Sz	[mm]	640x481	740x481
Weight	mk	[kg]	114	127
power supply of the cassette	U	[V; Hz]	230; 50	230; 50
Maximum log length/logs diameter	lp	[mm]	350	400
Fuel type			Recommended seasoned hardwood (beech, birch, hornbeam)	
Fuel humidity			Between 12 and 20%	

Tab. 1. Technical data of CUBO

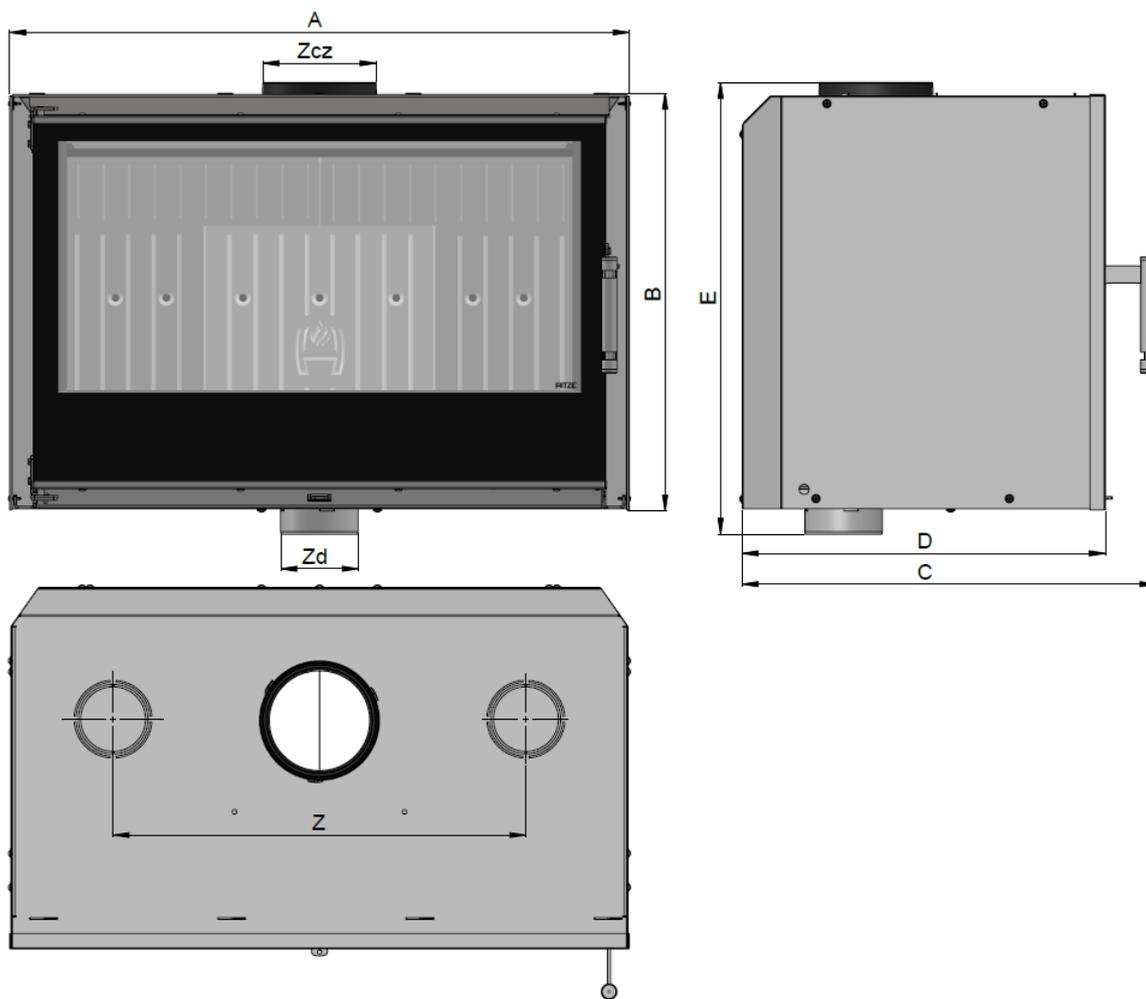


Fig. 2. Basic dimensions of CUBO fireplace cassettes

Dimensions [mm]	CUBO inserts	
	CUBO 70	CUBO 80
A	700	800
B	540	540
C	535	535
D	470	470
E	587	587
Z	460	480
Zcz	150	150
Zd	100	100

Tab. 2. Fireplace cassettes CUBO dimensions

## 4. STRUCTURE AND OPERATION OF THE INSERT

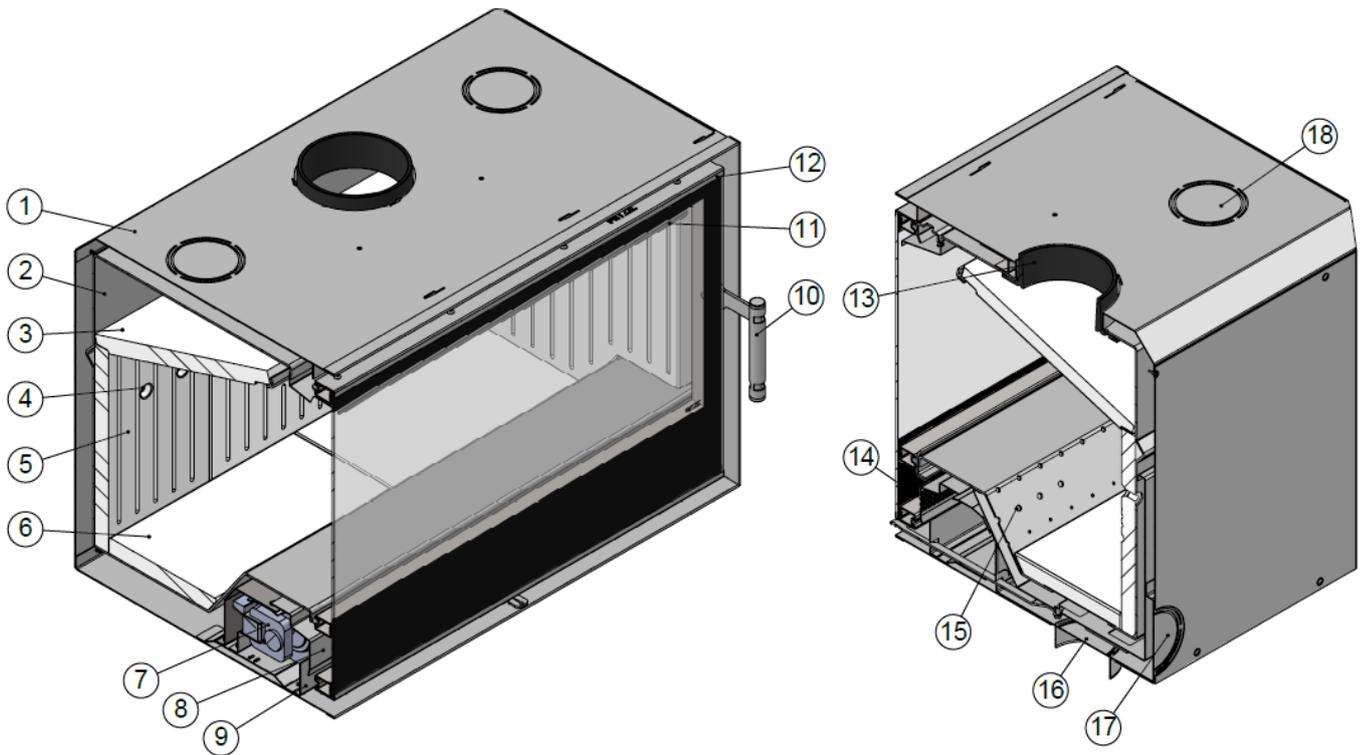


Fig. 3. CUBO fireplace cassette

The fireplace cassette consists of encasing **1**, body **2** and front **12**. The body is made of 3 mm thick P265GH boiler steel. The front of the insert consists of steel door made of special profile, heat resistant glass pane and a handle **10**. The door is screwed to the body of the insert. The combustion chamber **5** is lined with AKUCERAM **6** on the bottom, side walls and back wall. The primary air supply takes place in 3 ways: through a special channel located in the front part **14** behind the cover **8** and **9** bottom channel **16** or rear channel **17**, regulated by a throttle lever.

Throttle adjustment is done by moving the lever forward or backward. In the maximally retracted position, the air supply to the afterburners and openings on the inclined surface **15** is cut off, and in the maximally extended position the maximum air supply is open.

The air used to burn off fumes is realized by two systems. In the first system, the air enters the combustion chamber through the holes located under the door, and then flows through the channel and comes out through the holes located on the inclined surface of the combustion chamber **15**. In the second system, the air goes behind the AKUCERAM ceramic concretes located on the rear wall of the combustion chamber and comes out through the holes of the afterburner **4** located in AKUCERAM. The air curtain has been designed to keep the glass clean when burning fuels. The secondary air continuously between the housing and the body (above the door), through the connection, blows out the air deflector **11** and goes on the glass.

Above the combustion chamber is a plate called deflector **3**. The deflectors form a convection channel to increase heat recovery. During combustion, the exhaust gases flow around the walls of the combustion chamber and deflectors, get into the exhaust duct **13** and pass through the pipe to the chimney.

In the front of the cassette, under the floor of the combustion chamber, there are two blowing fans 7 (only with fans). The fans draw and push the air through a special channel (space between the body and housing). The air flowing around the cassette is heated and get out back into the room. The fans are designed to increase the amount of radiated heat into the room and protect the fireplace system from overheating. The fans start and stop automatically when the temperature in the cassette reaches a certain value. The fans are powered by 230V electricity.

**CUBO cross-section depending on the method of assembly.**



CUBO cassette with lower primary air intake. Armed with a set of fans increasing the heating power of the insert and equipped with a hot air curtain that improves the functioning of the DGP system mounted from the top of the cassette, forcing the air to flow through the DGP system.



CUBO cassette with lower primary air intake. Armed with a set of fans increasing the heating power of the cassette. The fans also ensure that the warm air is distributed more quickly In the room.



CUBO cassette with lower primary air intake. Without set fans assembly. Cooling is done by gravity. The heated air is lighter and flows naturally upwards, bringing in fresh, cooler air.



CUBO cassette without external air intake. Without set fans assembly. Cooling is done by gravity. The heated air is lighter and flows naturally upwards, bringing in fresh, cooler air.

## 5. 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:
  - check and repair worn masonry elements in the recess (fill with heat-resistant mass);
  - if necessary, thermally insulate the walls of the cassette recess;
  - remove the deflectors and the flue pipe from the cassette;
  - connect the chimney flue and insert the cassette into the recess;
  - screw on the flue and install deflectors;
  - connect the cassette to the electric power (option with fans);
  - do the rest of the building.

## 5.1 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.

## 5.2 Recommendations concerning the floor:

- before installing the fireplace insert, check the load-bearing capacity of the floor (to make sure that it is sufficient to bear the weight of a given type of appliance);
- 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.

### 5.3 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.**

#### 5.3.1 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.

### 5.3.2 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° when its length does not exceed 5 m and of 20° 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.

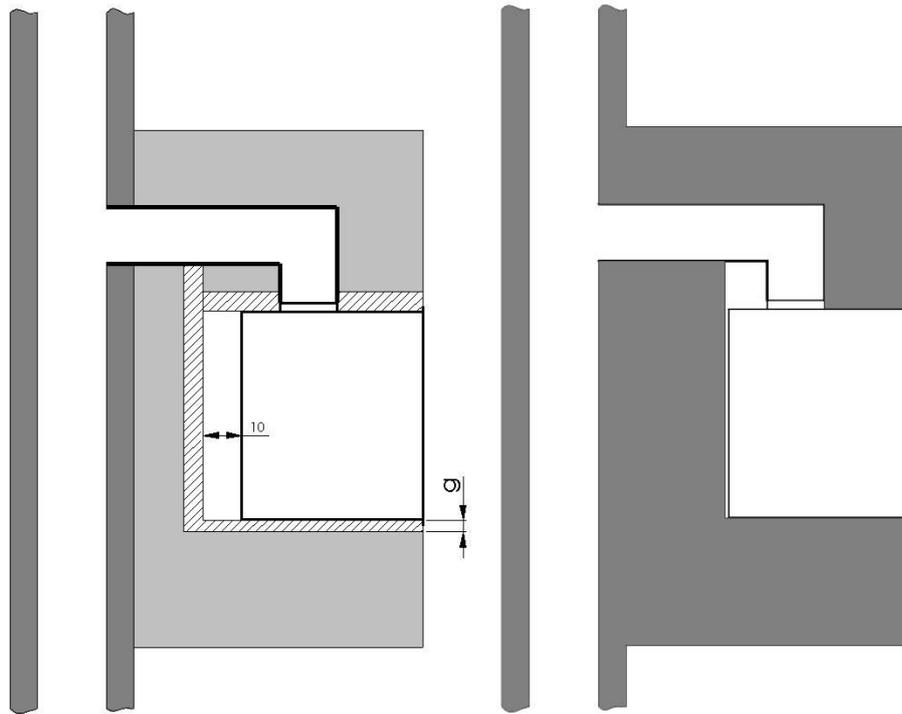


Fig. 4. The scheme of connection of the insert to the chimney duct

#### 5.4 Ventilation of the insert:

- the cassette extracts the air needed for combustion from the room in which it is installed (too little fresh air will cause bad combustion and there may be a risk of carbon monoxide poisoning - carbon monoxide is produced);
- the room where the cassette is to be installed must have ventilation openings;
- 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 insert is installed so that the air can circulate freely (otherwise, the work cycle of the insert may become disrupted, which will hinder the distribution of warm air).

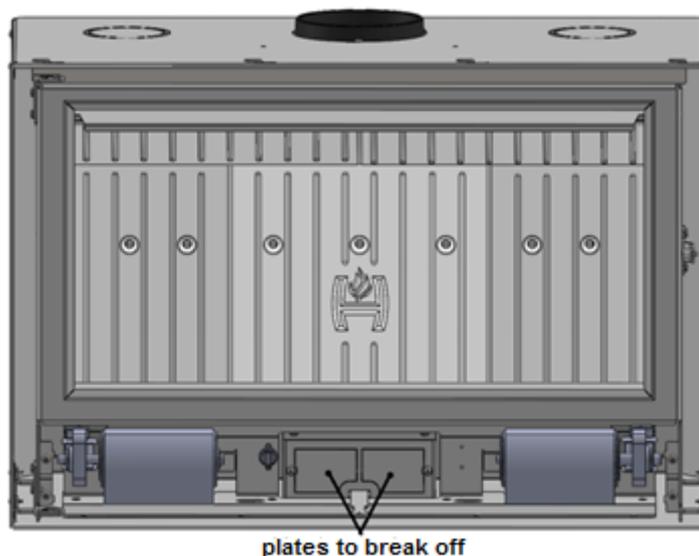


Fig. 5. Break off elements when assembling the cassette without external air supply.

## 5.5 Installation of the insert

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

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

### 5.5.1 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 insert may have to be secured);
- the housing should provide easy access to adjustment and service handles (allow assembly and disassembly of the insert without the need to demolish and damage it);
- the surface on which the cassette will be placed should be flat, even, made of non-combustible material;
- it is forbidden to install the cassette in a bedroom, bathroom or in a room with another heating device without its own air intake;
- CUBO cassettes are standalone devices and do not require any additional supports.

### 5.5.2 General recommendations concerning the housing

- the housing of the fireplace cassette must be made from non-flammable heat-resistant materials of thermal resistance  $2 \left[ \frac{m^2K}{W} \right]$ ;
- the housing should be made from non-flammable materials;
- distance between the insulation materials and the insert should be at least 10 cm;
- the cassette can be installed directly into the recess if the walls are of non-combustible materials and have adequate thermal resistance;
- 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;
- 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;

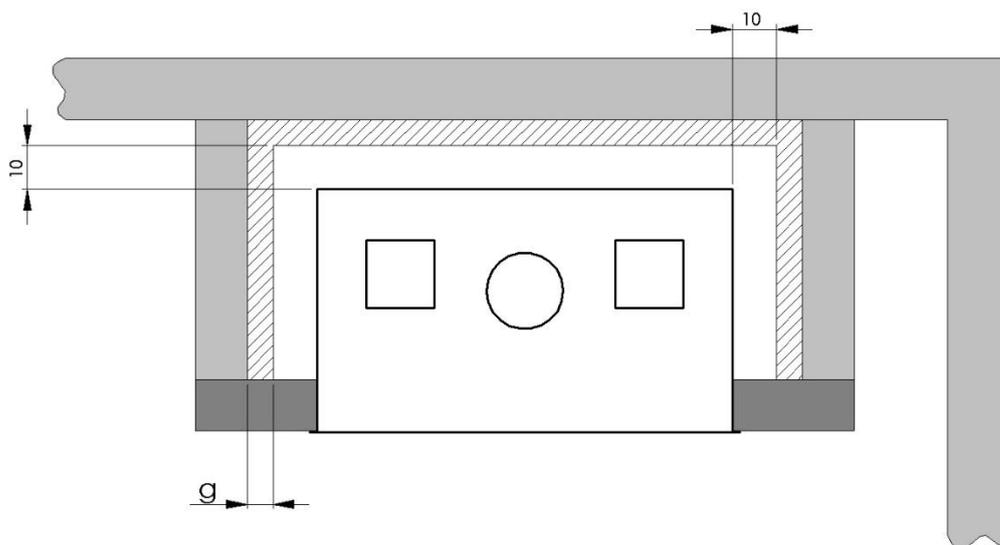


Fig. 5. Cassette housing - inflammable walls and insulation

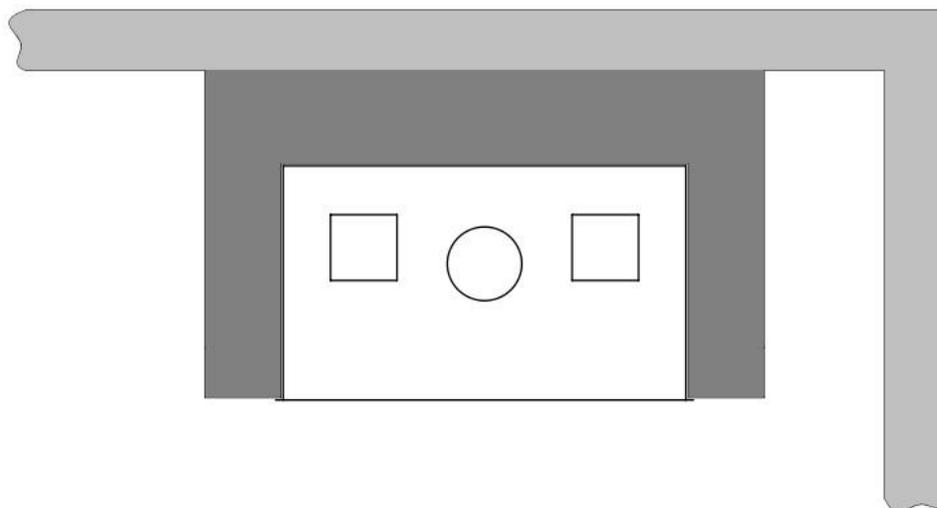


Fig. 6. Cassette housing - walls made of nonflammable materials with proper thermal resistance

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”). 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];

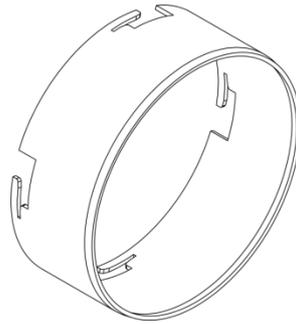
$R$  – coefficient of thermal resistance of a layer of material [m<sup>2</sup>·K/W].

For materials with thermal resistance of , with  $\lambda=0,035$  and  $R=2$ , the thickness of the insulation layer is 0.07m i.e. 7cm

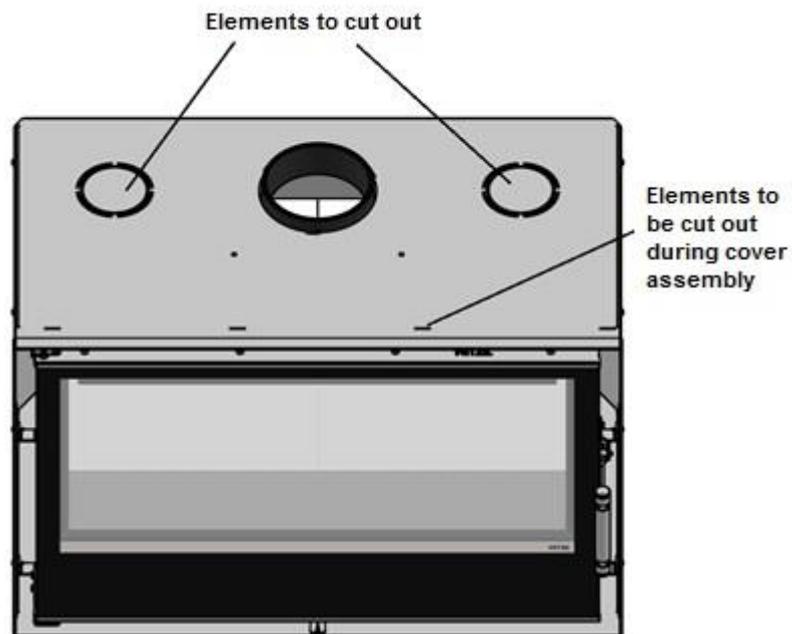
## 5.6 Connecting the hot air distribution system.

The hot air distribution system allows the convective heat generated by the furnace to be used to heat other rooms. Depending on the power of the device and building conditions, different solutions are used. Choosing the right one should be entrusted to a person or company with experience in this field. A simple gravity system is perfect for small single-story houses. On larger surfaces, sometimes it is necessary to use blowers forcing air circulation.

CUBO cassettes allow a hot air distribution system connection from above. During assembly it is necessary to cut out fragments of casing connections in places marked on the drawing. We gain uninterrupted airflow. Montage of the tubes is takes place by to a special set of fittings with a diameter of 100mm. Cutouts allow with assembly to thin or thick sheet metal.



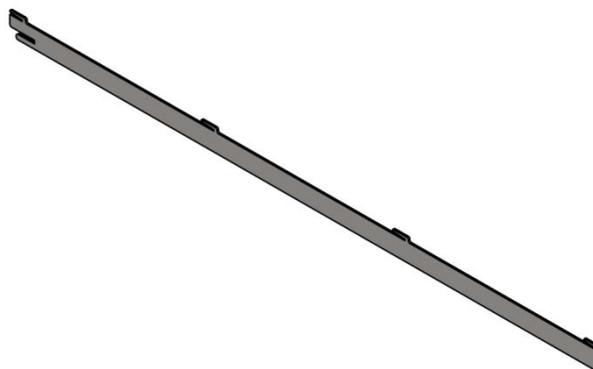
**Fig. 7. Mounting connector with a diameter of 100 mm.**



**Fig. 8. Places of cutting before mounting connector when connecting the hot air distribution system.**

Pipes draining heated air to other rooms are installed on correctly mounted connectors. For the correct operation of the system, ensure the return of cool air to the room where the stove is located.

To improve the hot air distribution system, it is possible to install a hot air outlet cover for better heat transfer to the hot air distribution system (this is not necessary). In order to mount it, cut 4 elements in the front of the insert Fig. 8, and then fix the cover by sliding it into the cut out holes.



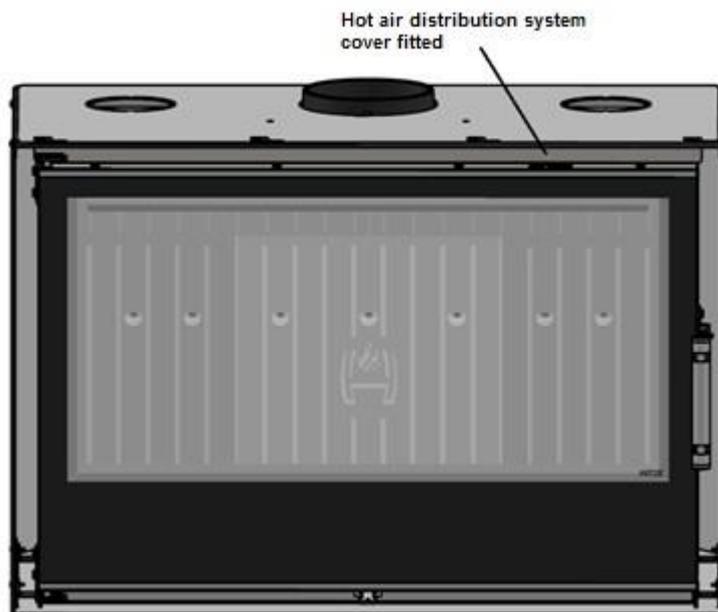


Fig. 9. Hot air outlet cover used in the hot air distribution system.

**ATTENTION!**

The warm air outlet cover should only be installed when usage the hot air distribution system! Mounting the cover without connecting it to the system may lead to the cassette overheating and, as a consequence, its damage and loss of warranty!

### 5.7 Connecting the fan system

The cassettes can be equipped with a fan system. It is an option for self-assembly, ensuring stronger forced air circulation around the insert, giving better heat recovery and its distribution around the room.

**ATTENTION!**

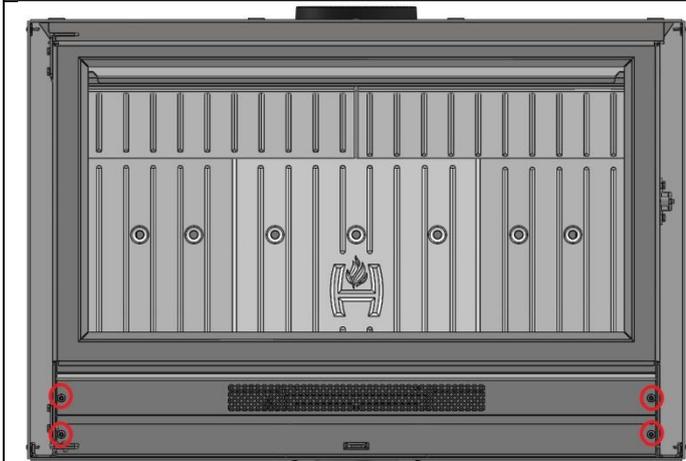
Connection to the installation can only be made by a qualified installer with appropriate permissions. Individual alterations or changes to the electrical installation are prohibited.

How to install the fan system:



### 1) Preparation of the cassette.

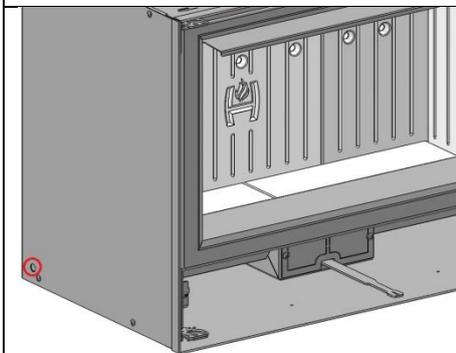
Unpack the cassette, remove all stickers and set in a place with space for comfortable work.



### 2) Removing doors and covers

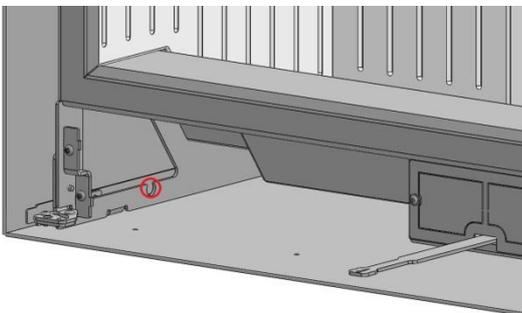
The door should be removed by opening it to a 90 ° angle, lifting it up, which will cause the door to exit the bottom hinge and allow it to be removed from the hinges.

The covers are removed by unscrewing the 4 M5 Allen screws marked in the drawing.



### 3) Routing the fan power cable.

We lead the fan power cable through specially prepared holes marked on the drawings.



	<p><b>4) Fitting the fans.</b></p> <p>After lead the power cable, slide in the fans and fasten them with 4 aluminum rivets <math>\varnothing 4</math> mm. The places for fixing the rivets are marked on the picture.</p>
	<p><b>5) Installation of the cable to the plug.</b></p> <p>The illustration shows how to connect the cable to the plug.</p> <p>L - phase wire (red)  N - neutral wire (blue)  PE - protective conductor (yellow-green)</p>
	<p><b>6) Finishing the assembly.</b></p> <p>We assemble previously unscrewed grilles and cassette door and connect the plug to the socket.</p> <p>The cassette is ready for use.</p>

## 6 START-UP

After the insert has been mounted and connected to the chimney, the first start-up of the insert 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 insert correctly.

The installer is obliged to refuse to put the insert 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.

### 6.1 Getting ready for the start-up

Before lighting the cassette 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 insert. In the case of in-serts 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;
  - front door closing mechanism (hinges, handle);
- to check the correctness of the installation in terms of the following safety-related issues:
  - is the fireplace levelled;
  - is a ventilation system properly installed;
  - is the connection to the chimney sealed properly;
  - has the fireplace housing been built correctly.

## 6.2 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;
- after lighting the fire, the door of the fireplace must be closed;
- when the fuel is properly ignited, use the air regulator to set calm, rather muffled combustion (opening the throttle at 50% - calm burning; opening the air throttle at 100% - maximally extraction causes very intense fuel burning);
- it is recommended, at the final stage of burning, to open the door and move the remaining members onto the grate, using a poker, so that all fuel is used up;

### NOTE:

Because of too big amount of air is fed under the grate and to the after burning system, too much fuel in the combustion chamber causes the production of a large amount of wood gas and the glass pane may become temporarily covered with soot.

When the mechanism is moved to its rightmost position, it will completely cut off the inflow of air to the combustion chamber and the fire will be gradually put out.

If the grate needs to be unclogged, stir accumulated ash with a poker or the lever of the grate (if the insert is equipped with a movable grate).

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

When the insert 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.

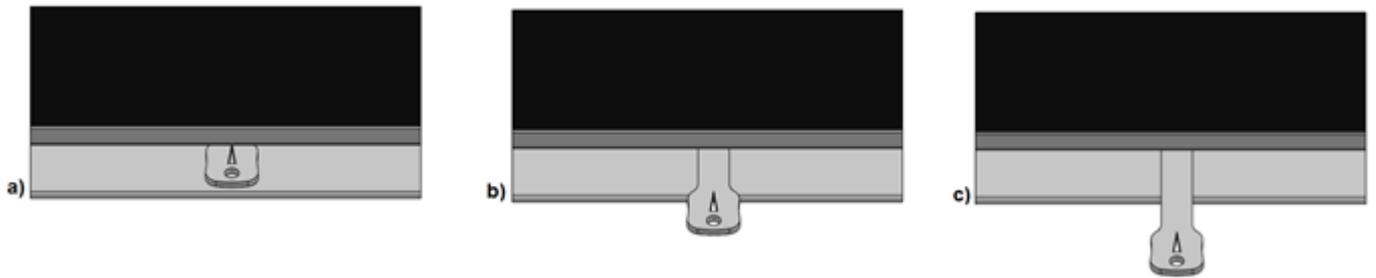


Fig. 10. Throttle operation:

a) minimum air setting; b) 50% open air; c) maximum air setting

## 7 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 insert 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 insert is intended to prevent cracks in the ceramic lining, to avoid deformation of the insert structure or damage to the protective (paint) layer of the insert.

### 7.1 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 years 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 overheating the insert and 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 insert.**

It is strictly forbidden to use the following as fuel for the insert: 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.

### 7.2 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 the hearth with a new portion of wood, remove ash from the grate and empty the ash pan if necessary.

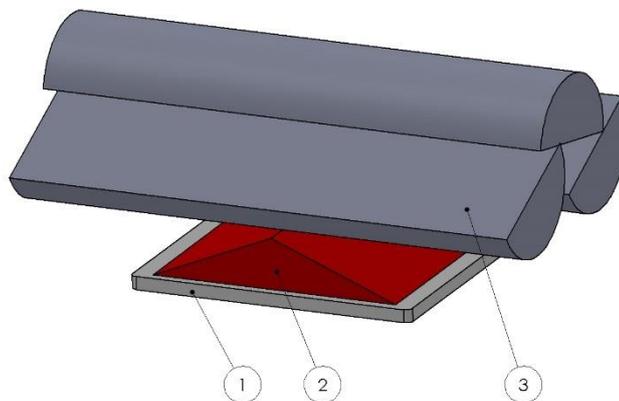


Fig. 11. The way of placing embers and adding wood; 1 - grate, 2 - embers, 3 - wood chips.

### 7.2.1 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:

- set the primary air regulator in the fully open position for about 10 seconds before opening the door (the lever of the throttle maximally extended);
- 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.**

### 7.3 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.

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.

#### 7.4 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.

#### 7.5 Removal of ash

Depending on the amount and type of burning fuel:

- use a poker to rake the ashes through the grate into the ash pan;
- after picking up the ash with a poker, lift the grate, then remove the ash pan and empty it;
- the ash pan can only be emptied when it is cold; it should be done, at the latest, before lighting a new fire;
- before emptying the ash pan, make sure that it does not contain any leftover embers which might cause a fire in the waste bin;

##### NOTE:

**Take care not to overfill the ash pan. If the ash pan is too full, it will hinder the inflow of air under the grate, hindering the burning process or, in extreme cases, even making it impossible to light the fireplace.**

If ash remains in the ash pan too long, it may result in premature corrosion. The ash from burnt wood may be used as compost material or fertilizer.

#### 7.6 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.

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.
- **burning in a fireplace insert equipped with fans without turning on the fans, it may damage the cassette.**

**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 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;
- empty the ash pan regularly - ash left for a longer time may lead to the ash pan corrosion;
- 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);
- chimney ducts must be cleaned by a qualified chimney sweep company at least twice a year and it must be documented in the guarantee card;
- the inside of the fireplace must be cleaned and the airflow and the combustion gas outlet must be inspected.

## 8.1 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

## 9 TROUBLESHOOTING

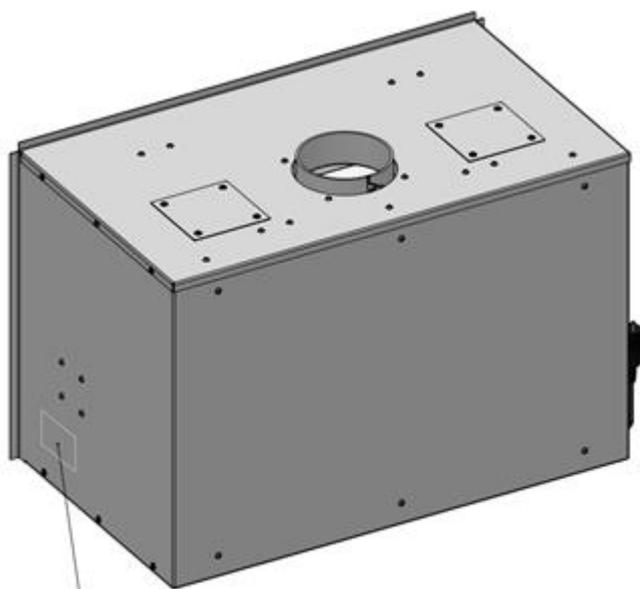
During everyday use of the fireplace insert, the below described anomalies may become apparent in the case when the fireplace insert has been installed in a manner contrary to this *Operation and Installation Manual* and the applicable provisions of law.

### 9.1 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 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 insert has been fueled with thin and small pieces of wood which burn very quickly	place thicker logs in the insert
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 insert 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
No exhaust of hot air in the cassette	no power supply	check if there is electricity; insert the power cord directly into the socket; do not fire in the event of a power failure or use a replacement power supply for the fans
	faulty fan or control system	replace the damaged component

## 10. NAMEPLATE



• nameplate

HITZE Sp. z o.o. 26-600 RADOM ul. Gdyńska 32 www.hitze.com.pl POLAND		16 1452	
<b>Wkład kominkowy okresowego spalania</b> Fireplace insert for constant burning / Kamineinsatz dauerbrand			
Norma odniesienia: Reference standard / Referenzstandard		EN 13229:2001; EN 13229:2001/A1:2003; EN 13229:2001/A2:2004; EN 13229:2001/AC:2006; EN 13229:2001/A2:2004/AC:2007	
Nazwa / Name / Name : CUBO 80 / Cubo 80/ Cubo 80			
Typ / Type / Typ : CUBO 80		Certyfikat nr / Certificate nr / Zertifikat Nummer :	
Nr fabryczny / Serial Number / Seriennummer : 000001 / 2016		Klasa kominka / Insert class / Kaminöse : 1c	
Nominalna moc ciepła / Nominal heat output / Nennwärmeleistung : 11 kW		Maksymalne ciśnienie robocze / Maximum operating pressure / Maximaler Betriebsdruck :	
Moc ciepła wody / Water heating capacity / Wasservermehleistung : nom. ----- min. -----		Typ paliwa / Fuel type / Kraftstofftyp :	
Moc grzewcza w pomieszczeniu / Room heating capacity / Raumvermehleistung : max. ----- min. -----		Drewno twardzielne / Hartholz / Hartholz :	
Sprawność cieplna / Thermal efficiency / Wirkungsgrad : 72,6 %			
Emisja CO [13% O <sub>2</sub> ] / CO Emission / CO Emission : 0,07 %			
Średnia temperatura spalin / The average temperature of the exhaust gas / Abgas Temperatur am Stutzen : 353°C			
Minimalny odstęp od materiałów palnych / Minimal distance from flammable materials / Mindestabstand zu brennbaren Materialien :		- ściana przednia / front wall / Vorderwand : 200 cm - ściana tylna / rear wall / Rückwand : 200 cm - ściany boczne / side walls / Seitenwände : 200 cm	
Uwagi / Notes / Comments : Należy przeczytać i stosować się do instrukcji / Be sure to read and follow the user guide / Man soll die Anweisungen lesen und befolgen Używać wyłącznie zalecanego paliwa / Use only the fuel recommended / Nur die empfohlene Brennstoff			

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

## 11. INSPECTION RECORDS

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

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