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# USER MANUAL OF ENERGY APPLIANCE TYPE “INSERT CRYSTAL”

CE

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## 1. INTRODUCTION

The energy fireplaces type of **INSERT CRYSTAL** includes four different dimensions of the same fireplace. Each energy fireplace **INSERT CRYSTAL** is constructed in accordance with the Regulation 305/2011 of the European Union, "on the establishment of harmonized conditions for the marketing of construction products" and the EN 13229 Standard and has the **CE** mark.

The energy fireplace **INSERT CRYSTAL** has been tested by an accredited laboratory of the European Union (number of accredited laboratory (NB) 1999) as to the requirements of EN 13229, EN 13229/A1, EN 13229/A2 while through the Quality Management System according to ISO 9001, certified by a notified body is documented that the manufacturing process ensures the compliance of the manufactured products, allowing the affixing of the **CE** mark.

The energy fireplace **INSERT CRYSTAL** is marked with the **CE** marking in an obvious spot that is required by the applicable law that allows free circulation within in the countries of the European Union, only of the products in this category that have been tested - certified and bear the **CE** mark.

This manual was written for your safety and the safety of others. You must read, understand and obey what is specified in it, along with any specific national and European regulations, to consult for any action on the use of the product and keep it with care, bearing in mind that you may need to consult it in the future.

Before installing the fireplace, the installer should be aware of the requirements - guidelines - restrictions of this manual.

Before each operation of the outbreak, the operator must be aware about the requirements - guidelines - restrictions of this manual. Only with full knowledge of this manual can avoid mistakes and ensure the smooth operation of the product.

Please read carefully this manual before using the product.

The manufacturer does not assume responsibility for operation of the energy outbreak of **INSERT CRYSTAL** beyond its intended use and for cases where the conditions - requirements specified in this Technical Manual are not met.

## 2. GENERAL INFORMATION

### 2.1 Description – appropriate use

The Technical Manual is referred to the Family of energy appliance which consist of “INSERT CRYSTAL” which includes the energy stoves with the trade name:

- ✗ CASSETTE T-60 (INSERT CRYSTAL T-60)
- ✗ CASSETTE T-70 (INSERT CRYSTAL T-70)
- ✗ CASSETTE T-80 (INSERT CRYSTAL T-80)
- ✗ CASSETTE T-90 (INSERT CRYSTAL T-90)

- The energy fireplace is consisted of the basic parts:
- Combustion chamber made of steel (double wall on the side surfaces).
- Door made of ceramic crystal.
- Fixed flue gas deflector inside the combustion chamber



Picture 1

- Inlet air flow adjustment lever (primary combustion air).
- Secondary combustion air arrangement, placed on the back of the combustion chamber.
- Combustion air (third) device, mounted on the flame port frame with adjustment lever.
- Air inlet provision for mechanical (forced) flow of cold air (fan).
- Air chamber with up to two openings in the roof of the device for connection to ducts for the supply of hot air to the installation site or to adjacent areas.
- Ash Pan under the flame chamber to collect the ash.

Also, the appliance can work with pipelines for:

- The entry of the primary combustion air from the outside environment,
- The outlet of hot air to the use area of the device and
- The exhaust of the flue gases from the combustion chamber to the outside environment.

**Caution! It is recommended the endings of hot air vents NOT to end up in rooms used as bedrooms as well the appliance should not be installed & operate in bedrooms. Otherwise you should install appropriate detection and warning system for flue gas leaks.**

The appliance is equipped with a double wall, around the perimeter as well as on the roof of the combustion chamber. The air chamber created by the double wall heats the incoming cold air with the help of the suction device (fan) installed under the hob. The air during its circulation in the air chambers is gradually heated and while it has reached the maximum temperature value it is extracted from the hot air outlet ducts to the surrounding area.

The appliance has a regulating lever of incoming air (primary air) the handling of which is described in §8.1. Furthermore, at the back of the combustion chamber there are holes for the flow of the secondary combustion air.

The ceramic glass of the door is durable up to 750°C allowing visual contact with the combustion chamber without having to open the door.

The appliance must be used exclusively for space heating of buildings (except bedrooms) complying with the building codes, the Standard ELOT HD 384 and other relevant provisions.

This appliance is not suitable for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience, unless they are supervised and instructed by individuals responsible for their safety.

Children must be controlled so as not to use the appliance as a toy.

The energy appliance type **INSERT CRYSTAL** is characterized as intermittent operation appliance.

**ATTENTION! Any modification of the appliance is not allowed.**

**WARNING! Inform the children that the appliance acquires a high temperature and should avoid contact with all of its surfaces.**

**ATTENTION! The appliance should always work under the supervision of the operator. It is prohibited to operate without supervision.**

**2.2 Technical characteristics**

TECHNICAL CHARACTERISTICS					
ΜΕΓΕΘΟΣ		T-60 CRYSTAL	T-70 CRYSTAL	T-80 CRYSTAL	T-90 CRYSTAL
Dimensions of the appliance(mm)	Length	600	700	800	900
	Height	500	500	500	500
	Width (depth)	540	540	540	540
Dimensions of the combustion chamber(mm)	Length	440	540	640	740
	Height	370	370	370	370
	Width (depth)	320	320	320	320
Nominal heat output (KW)		10,7	12,5	13,8	14,7
Efficiency (%)		77,0	77,0	77,0	76,7
Flue gas temperature (°C)					
Flue gas CO content (with content of 13% O <sub>2</sub> ) (%)		0,4 (<1%)	0,4 (<1%)	0,4 (<1%)	0,4 (<1%)
Recommended fuel		Wooden logs	Wooden logs	Wooden logs	Wooden logs
Fuel consumption per hour(kg/h)					
Chimney diameter (mm)		160	160	160	160
Weight (Kg)		105	120	136	145
Supply Voltage (V)		230	230	230	230
Frequency (Hz)		50	50	50	50

**Table 1**

### **3. INSTALLATION**

#### **3.1 General**

The responsibility of the manufacturer is limited to the supply of the appliance.

The installation of the energy appliance should be in accordance with applicable national laws and regulations. The installation must conform to the rules of art, be made by taking into account the guidelines and restrictions of this Technical Manual and conducted by qualified personnel that carry the required licenses.

The company that undertakes the installation of the energy appliance is responsible for the delivery of such a position so as to be ready for use. This includes the parameterization and final examinations and tests to verify the safe operation of all assemblies (fireplace).

It should be always ensured the implementation of the national and local legislation (e.g. General Building Regulation, ELOT Standard HD 384, Fire Protection Regulations, etc.).

General steps to be done before installation and operation of the appliance:

- 1) Make sure that the floor where you will install the appliance, it can withstand the load intended to be received (self weight of the appliance, weight of decorative coating, weight of the fuel) and also that it has fireproof properties. Otherwise you should take appropriate measures e.g. enhance the strength regarding the mechanical loads that can be accepted, insulate with fireproof material about radiant heat etc.,
- 2) make sure there is adequate ventilation of the area where you will install the appliance and the combustion air enters directly from the external environment (e.g. with a suitable nozzle of inlet air),
- 3) avoid the installation of the appliance in a place where they operate central ventilation ducts, hoods, gas appliances Type B, heat pumps or general appliances that can cause depression when operated simultaneously with the appliance,
- 4) make sure for the suitability of the pipelines connecting the appliance to the flue and of the chimney as well as that the chimney will be used exclusively for the connection of your appliance,
- 5) Keep minimum clearance **at least of 10cm** at least between the sides (side & back) of the appliance and the side surfaces (e.g., walls, partitions, etc.) when these surfaces are made of flammable materials under the prerequisite interference of 30mm thickness insulator and thermal conductivity of at least 0,04W/mK or better. For shorter distances of 10cm, the side surfaces should be coated with a suitable non-combustible material,
- 6) Ensure that the competent person who installed the device has checked the safe connection to the chimney and adequate flow of combustion air.

Put the appliance into test mode for two to three days. Only if it is determined that it works properly, that it has become a safe connection to the chimney and there are no emissions in space, trims can be placed.

### 3.2 Installation of vents of hot air extraction

The appliance has openings of rectangular cross-section in front, from which hot air is allowed to exit to the place where the device is installed. At the same time, the device is equipped with two (2) circular cross-section on its roof, from where appropriate air ducts  $\Sigma 1$  and  $\Sigma 2$  can be connected (see next figure).

Air exits forcibly by using the centrifugal fan through the vents  $\Sigma 1$  &  $\Sigma 2$  (see figure below).

The outlets of the air ducts  $\Sigma 1$  &  $\Sigma 2$  can be installed above the stove or in another remote area depending on the heating needs (except bedrooms), at a distance of less than 3m from the device. For distances greater than 3m, the temperature of the outgoing air shows a decrease proportional to the distance.

The top cover of the hob has two outlets (E1 & E2) where the ventilation ducts  $\Sigma 1$  and  $\Sigma 2$  are connected. The installation of the vents must be completed before the decorative fireplace surround is installed.

To install the air ducts, follow the steps below:

- 1) Attach one end of the vents  $\Sigma 1$  &  $\Sigma 2$  to the respective outlets E1 & E2. Use the appropriate clamps K3 & K4 to secure them.
- 2) Attach the other end of the air ducts  $\Sigma 1$  &  $\Sigma 2$  to the louvers  $\Pi 1$  &  $\Pi 2$  which are installed on the structural elements of the building. Use the appropriate clamps K1 & K2 to secure them.

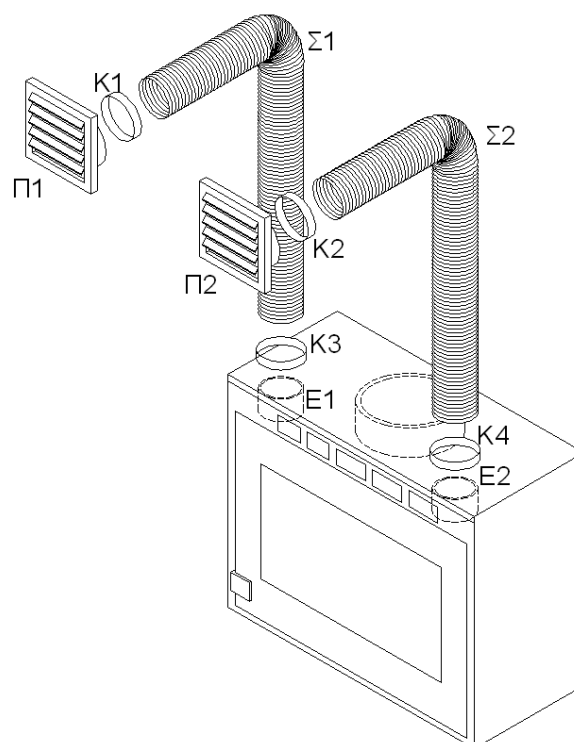


figure 1

Each vent must be insulated to prevent transmission of noise and heat.

### **3.3 Installation of air intake vents of combustion air**

The installation area of the appliance must be ensured flow of oxygen to start and maintain the combustion of wood logs directly from the external environment rather than indirectly from the area where the appliance is installed. This can be achieved by placing the appropriate air inlet vent. The opening of the nozzle which communicates with the external environment should be lined with suitable blinds that initially allow the production of sufficient quantities of air and secondly prevents the entry of birds, rodents or other living organisms.

The diffuser of the air must be positioned so as not to allow coverage and be protected by appropriate blinds. If the nozzle is not possible to communicate directly with the outside environment, is allowed to communicate with adjacent spaces.

It is **FORBIDDEN** the combustion air to be from side rooms used as garages, kitchens, toilets, engine and boiler rooms.

### **3.4 Installation of the flue gas exhaust**

The flue pipe that will be used to connect the appliance to the chimney should be appropriate for this use (to meet the technical requirements of the Directive 89/106/ EEC or the Regulation 305/2011 and relevant national provisions) and bear the required **CE** certification.

The flue pipe must not be steeper than 45 degrees (relative to the vertical axis) and must be connected to the chimney, with a fully sealed manner. The flue pipe is connected to the top of the appliance to the central outlet of circular cross section. At the connection should be used suitable fireproof material and should be ensured the necessary tightness. The flue pipe must be insulated properly and should not come in contact with flammable materials.

**ATTENTION:** In case the chimney is not connected with complete sealing, then the appliance may not function properly and can also be observed release of hazardous gas emissions from combustion of wood logs (e.g. CO, CO<sub>2</sub>).

### **3.5 Installation of blinds of hot air natural flow (expansion)**

The area located perimetrically of the appliance within the trims of the fireplace, must be continuously and adequately ventilated. The ventilation of the area helps to not risk of overheating the appliance while the air that is heated diffused in the area with natural flow, through the discharge blind which must be placed on the top of the fireplace trim.



### **3.6 Installation of decoration of the fireplace**

The construction material of the decorative coverings must be suitable for high temperatures that are expected to develop inside the decoration. This material should exhibit refractory properties.

It is **FORBIDDEN** the decorative lining of the fireplace to be based on the appliance. Support should be ensured by independent metallic frame, so that the weight of the decorative liner cannot be transferred to the appliance.

### **3.7 Installation of thermostat – ventilator layout**

The (2) centrifugal fans have been pre-installed at the bottom of the energy appliance. The operation of the centrifugal fans is achieved automatically by special electronic thermostat.

The connection of the thermostat with the fan and with the power supply must be made by a competent person (qualified electrician) in accordance with national regulations.

**ATTENTION!** The power cable is **FORBIDDEN** to contact with hot surfaces. It is recommended the use of special cables that resist to high temperatures.

**ATTENTION!** You must ensure that the appliance will be connected with proper grounding line. Verification of the suitability should be done by qualified person (electrician) and should be performed at regular intervals (e.g. annually) according to the instructions of the competent person.

**WARNING:** The handling device & control of the appliance ensures the perfect functioning. The company **SONS A. MISAILIDIS CO** assumes no liability for assembly with other types of fan without the written approval of the company **SONS A. MISAILIDIS CO**.

## **4. CHIMNEY**

### **4.1 Requirements for the construction and draft**

Before you place the appliance, make sure that the chimney satisfies the following:

- The construction ensures resistance to high temperature combustion products and any condensates.
- It is insulated and watertight.
- It is vertical and does not show reduction of internal cross at any point.
- If there is a change in direction, that does not exceed 45 degrees.
- Construction must meet any technical specifications of the European Union Directives and the relevant national provisions (Regulation 305/2011 etc.).

In cases where the cross-section of the chimney is not circular, to prevent smoke marking, its internal corners should be rounded with a radius of at least 20mm.

Chimneys that will be installed outside the building must have sufficient insulation along their entire length.

At the upper end of the chimney before placing the cap the space between the duct of the chimney and the building materials that surrounds must be properly sealed.

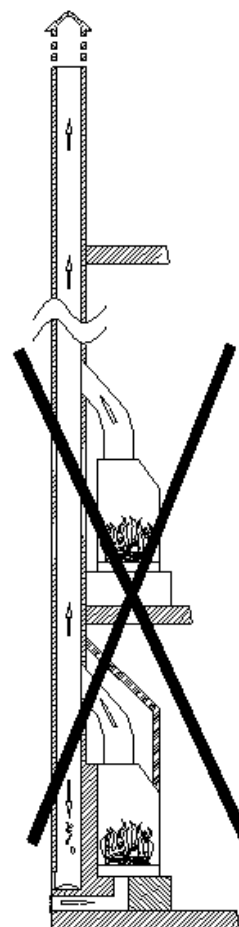
**It is FORBIDDEN to connect two or more appliances in one chimney.**

**It is FORBIDDEN to pass air ducts from the interior of the chimney.**

#### **4.2 Flue terminals**

The chimney should extend from the highest point of the roof at least 1m (see Figure 3).

The hat of the chimney must be suitable for the size of the chimney, to prevent the ingress of rain, snow and any other foreign body in the chimney and allow easy inspection for possible interventions for maintenance and cleaning.



**Figure 2 – Wrong way to install**

The end point should not be obstructed by walls, slopes and trees within 10 meters around. If this is not feasible, then the end point must be lifted at least 1 meter above the barrier (see figure 3).

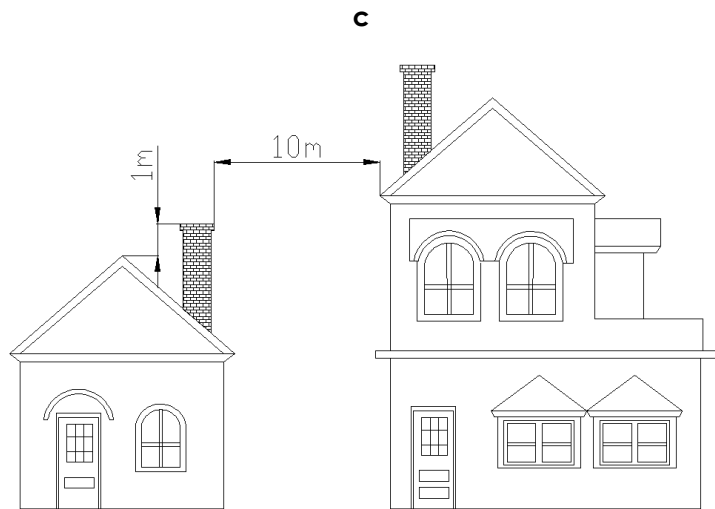
In case there are collateral chimneys, should the tip of one to be at least 50cm taller than the other, to prevent the transfer of pressure between them (see figure 4).

It is **FORBIDDEN** to produce the guards (covers) of moving parts or active parts where mechanical and electrical hazards develop respectively.

**5. SAFETY RULES**

The appliance should be handled in accordance with this technical manual.

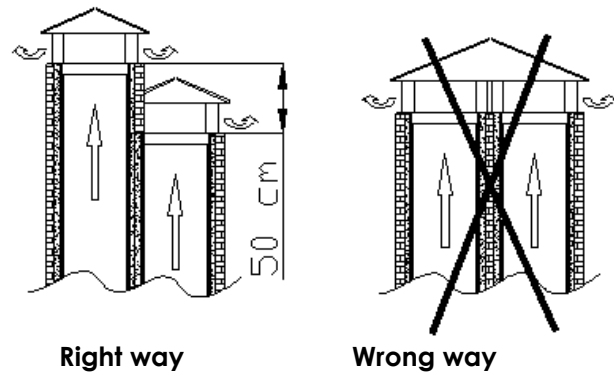
The cooperating with the appliance equipment should be appropriate and bring the required certifications (e.g. **CE**) where required by applicable laws & regulations.



**Figure 3**

**It is FORBIDDEN** to operate the device without the guards in their intended position.

Any maintenance or repair work should only be carried out by qualified technical personnel authorized by the manufacturer or its representative.



**Figure 4**

All maintenance work or repair should be performed only by qualified technicians with the approval of the manufacturer or his representative. The spare parts which may be used must be approved by the manufacturing company.

All maintenance work or repair should be performed only if the machine has been isolated from the source of power supply and has been cooled to room temperature.

**CAUTION!** Even low temperature of hot surfaces of the appliance can cause burns in case of prolonged contact.

Individuals, whose responsibilities relate to the maintenance, replacement, repair, etc. of the appliance or part thereof, should use appropriate personal protective equipment e.g. safety shoes and gloves against mechanical and electrical hazards.

In any case you should follow the instructions and limitations of the person responsible for the safety of any maintenance or repair crew.

**CAUTION!** Every electrical work should be performed by a licensed electrician in accordance with applicable law.

## 5. FIRE HAZARD

### 6.1 Measures to prevent fire

The following typical measures should be taken into account to avoid fire hazard:

- a) The appliance should not be working with the door of the combustion chamber opened.
- b) In front of the fireplace should not be any object or material that is flammable or heat sensitive within a distance of 100cm.
- c) You must always keep the safety distances specified in §3.1. Within these safety distances from the appliance, should not be interfered any other movable flammable objects.
- d) If the appliance is intended to be installed on a floor with no refractory properties, then there should be placed a fireproof material (e.g. steel sheet) between the appliance and the floor, in size that the local regulations define.
- e) For the optimal operation of the appliance and to prevent the risk of ignition of flue gases that are deposited on the walls of the chimney the cleaning of the chimney should be regularly repeated.
- f) The combustion residues (ashes) should be removed regularly. Caution should be exercised in their handling due to high temperature - It is recommended their handling if they have cooled sufficiently. For the temporary storage and to cool them in a safe temperature, the ashes must be collected in a suitable container with refractory properties.
- g) You should not turn on the appliance if there are emissions of gases or fumes.
- h) You should not place inflammable materials near the appliance.
- i) There should be sufficient number of proper fire extinguishers in positions easily accessible and instantly perceived in order to extinguish a fire on the appliance in a hazardous situation. The adequacy of the fire extinguishers should be checked regularly by a competent person in accordance with applicable law.

### 6.2 Instructions for fire fighting

If you notice an expression of fire in the fireplace or chimney IMMEDIATELY perform the following steps:

- I. Close the door of the appliance.
- II. Close the adjuster of primary combustion air - move to the left in closed position (see Chapter 8 "OPERATING MODE").
- III. Close the adjuster of tertiary combustion air - move to the left in closed position (see Chapter 8 "OPERATING MODE").
- IV. Use appropriate fire extinguishers to put out the fire.
- V. Call immediately the Fire Service (phone for Greece: **199**).

**AVOID EXTINGUISHING THE FIRE USING WATER.** Throwing water will likely lead to the development of cracks in the metal surfaces of the appliance due to their abrupt change of the temperature. But if there is no other extinguishing mean, use water.

After the successful extinguish of the fire contact to a qualified person to check the appliance and the chimney for possible cracks or points with insufficient sealing.

## **6. COMBUSTIBLE MATERIAL FOR USE IN THE APPLIANCE**

The appliance is designed to burn wood logs. You may use only dry wood logs with a length of about 30cm and a maximum circumference 30cm. Smaller wood can be used for firelighters.

**You may burn compressed wood parts without resin such as those are commercially available. Using this type of fuel should only be done with particular attention. This type of fuel has a high calorific value and can cause overheating with harmful results if you use large quantities.**

When using the appliance should be used dry wood with a moisture content of 8% (the green wood's contain about 60% moisture and are highly unsuitable for combustion). Woods intended for burning should be kept in dry and sheltered area.

**It is dangerous and it is FORBIDDEN to be used as fuel: coal, paper, pieces of bark and panels, green or painted wood and plastic materials. In case damaging the appliance by using non-permitted fuels, the company bears no responsibility. The warranty provided by buying an appliance is canceled in these cases.**

You may use paper and cardboard only as firelighters.

**Caution!** Paper and paperboard bearing prints on their surfaces are dangerous because during the combustion are released dangerous chemical substances contained in the ink.

**NOTE!** You must take under consideration that it isn't possible the continued space heating of the area from the appliance during the night, as the woods are not long lasting fuel. The woods that are in the combustion chamber after some time are consumed (burned) and so they do not generate heat.

It is **FORBIDDEN** to use the appliance as an incinerator.

## **7. OPERATING MODE**

In order to function optimally in each case, the energy stove is equipped with a device for adjusting the flow:

- ✓ of the incoming primary combustion air and

✓ of the incoming tertiary combustion air.

### 8.1 Set incoming flow of the combustion air

The device located in the middle of the front of the device (see next picture), below the flame port, achieves regulation of the primary combustion air flow. The primary air enters below the combustion chamber and is led to the base of the combustion chamber through the lower grate.

At the same time, with the device located at the upper right end of the flame port (see next image), regulation of the flow of the burning combustion air is achieved. In this case, the tertiary combustion air is guided parallel to the glass of the flame port, limiting the soot (smoke) that settles on it, while supplying the combustion with an additional amount of air according to the case-by-case heating need.



- 1) Primary air inlet controller
- 2) Tertiary air inlet controller

**Picture 2**

When lighting the stove, it is recommended that the primary and tertiary combustion air device be placed in its fully open position (ON) to ensure the inflow of a large amount of combustion air. During combustion and depending on the heating needs of the space, each device can independently move from its fully open position (ON) to its fully closed position (OFF), regulating the amount of air entering the combustion chamber and by extension the intensity of the burning of the wooden logs.

At the normal operation of the appliance is recommended the lever not to be in the closed position (OFF), in order to achieve constant flow of air in front of the ceramic glass of the door preventing that way the contact between the exhaust gases with the crystal and thereby preventing it from soon blackening.

By increasing the amount of air that enters the combustion chamber, is increased the intensity (and the "perkiness") of the fire and thus the fuel consumption (faster combustion of the wooden logs).

## 8.2 Set hot air flow

The appliance is equipped with two (2) centrifugal ventilators which are located below the combustion chamber and inside of the appliance and are turned on automatically by a thermostat-dimmer. The pin of the thermostat, checks the temperature of the air exiting from the third air chamber, and when exceed the initial setting of the thermostat (40°C) it gives an order and automatically the fan starts.

## 8. IGNITION OF THE APPLIANCE

During the first uses of the appliance, it is possible to be developed a characteristic odor in the area where the appliance is installed. This is due to the drying of the protective varnish with which is coated the appliance and of the adhesive substance that is used to seal around the door. After a short use of the appliance the odor will disappear.

The area were the device has been installed must be well ventilated. Do not ever light up the appliance when there are flammable gases in the room.

At the first uses of the appliance it should be made use of a limited quantity of fuel (wooden logs) in order to restrain the growth rate of the temperature of the surfaces of the appliance to give the required (capable) timeframe for the appliance to expand smoothly.

The type of the fuel that is used shall be as allowed by this Technical Manual (see Chapter 7).

It is **FORBIDDEN** the use of accelerative substances (alcohol, gasoline, diesel, etc.) for the lighting of the appliance.

When fire lighters are lighted up you can put extra wooden logs. At this point you should open the door for two to three seconds to equalize the pressure developed within the appliance with the pressure of the installation area to ensure that there will not be any escape of flue gases within the installation area. After you have placed the wooden logs and you have closed the door, you may regulate the combustion in accordance with the instructions in Chapter 8.

For the proper and without problems operation of the appliance, the user should comply with the following:

1. To ensure adequate ventilation of the area throughout the operating duration of the appliance.
2. To operate the appliance in the first lighting (3 ~ 4 times) with reduced amount of fuel for sufficient time (6 ~ 10 hours). In the next lightings to be used progressively greater quantities of fuel up to the point that the appliance will operate at maximum load. During this phase it should as far as possible be maintained long periods of lighting up and switching off, so that the appliance will adjust smoothly.

The above steps must be completed before placing the decorative covering of the appliance so that at the same time there is the possibility to check the proper connection of the flue with the appliance and chimney. After having successfully completed the above process, decoration can be placed.

When the materials and the connections on the decoration have dried up, the appliance can be operated as normal, avoiding excessive loads or the use of fuels that can lead to sudden fluctuations the temperature of the surfaces of the appliance.

**When the appliance is in use, high temperatures are developed, which can cause burning in humans or animals or cause fire to objects that touch the appliance or are in close distance. It should be kept safe distances for the adjacent objects, to be taken reduction measures of access for the children, pets or other animals and not to attempt contact with hot surfaces until they are cooled sufficiently.**

## **9. FEEDBACK WITH FUEL**

To feedback the appliance with recommended fuel follow the steps below:

1. Open the fire door.
2. Place the recommended fuel into the combustion chamber.
3. Close the door of the combustion chamber and make sure it is locked in the closed position.
4. Repeat the above steps when the fuel in the combustion chamber has been consumed and for as long as you want to keep the appliance burning.

Note! It is allowed during the feedback to place one or two wood logs.

## **10. OPERATION UNDER NORMAL CONDITIONS**

During normal operation of the appliance, the adjustment lever of the air flow for combustion and the regulating lever of the flow of flue gases can take any position from fully closed to the fully open, depending on the needs of space heating.

**CAUTION: The appliance should not operate with large amounts of fuel or with excessive inflow of combustion air, because it may overheat and cause damages.**

During the normal operation of the appliance, the smoke that is coming out of the chimney should be transparent. The white color of the exhaust gases indicates that the wood logs, have excessive moisture or that the device is not adjusted right while the gray or black color of the exhaust gases



indicates that the combustion is incomplete due to lack of oxygen and the lever must be adjusted to a position that allows greater air input.

It should be taken care for regular disposal of ashes to allow the primary air for the combustion to circulate in the combustion chamber. The procedure for the safe discharge of the combustion chamber and the ash handling is described in paragraph 13.3 (see chapter 13).

**It is FORBIDDEN to use the appliance with the combustion chamber door open it creates a risk of fire and emission of dangerous fumes (CO, CO<sub>2</sub>) inside the installation area**

If during the operation of the appliance notice impairment (e.g. release fumes, overheating the appliance etc.) take the following necessary steps:

- Move the primary air inlet controller (see Picture 2) in position OFF.
- Move the tertiary air inlet controller (see Picture 2) in position OFF.
- Ventilate well the area where the appliance is installed.
- Do not feed the appliance with extra fuel.

If necessary, apply fire fighting measures (see Chapter 6).

## **11. OPERATION IN CONDITIONS OF INCREASED AMBIENT TEMPERATURE**

In cases of increased environmental temperature (sudden increases of the temperature) may occur a small degree of draught of the chimney, even if previously the appliance was operating with sufficient draft.

When the draft is not satisfactory, the exhaust gases are not completely removed from the chimney and there is possible to be an odor of gas (soot) in the area were the appliance is installed. In this case, the combustion air that is imported should be increased and the amount of fuel in the combustion chamber should be reduced.

If the effect is maintained under different temperature conditions, then it must be conducted a check on the connections with the chimney to verify their sealing and also to verify that there are no objects blocking the chimney and reduce the draught of exhaust gases.

## **12. MAINTENANCE INSTRUCTION**

The safety rules prescribed in Chapter 5 of this Technical Manual must be applied.

### **13.1 Chimney cleaning**

While cleaning, the appliance and the chimney must have been sufficiently cooled. The cleaning is necessary in order to remove the soot that accumulates in various parts of the chimney and can cause malfunction of the appliance and / or fire in the chimney.

Cleaning should be performed regularly, at least once a year and / or over shorter time periods depending on the use or if deemed necessary by the user. Cleaning should be entrusted to a qualified person, who must also verify and certify the adequate draft of the chimney.

During the cleaning process of the chimney the ash pan must be in its intended position and the door of the appliance must maintain the closed position to avoid problems from the expected drop of large amounts of soot. After this stage, when the amount of soot has been decreased significantly, keep the door open in order to obtain good draft of the chimney which helps remove the residues of soot.

### **13.2 Cleaning of the ceramic glass**

**CAUTION!** The ceramic glass must be cleaned after it has been cooled to environment temperature. If you attempt to clean it while is hot it may crack while there is a risk to burn.

The cleaning frequency of the ceramic crystal depends on:

- the quality of the used fuel and moisture content
- the selected settings when using the appliance and
- the frequency of use of the appliance.

For the cleaning of the ceramic glass, follow the steps below:

1. Be sure the appliance is cool enough and no danger of burn could arise.
2. Open the fire door and clean the inside of the ceramic glass.
3. After the finish of cleaning the glass, close and lock the fire door.

**CAUTION!** To remove the soot you can use special cleaning products for ceramic glass and absorbent paper (wet sheet of newspaper can be used). If there are developed stains that needs rubbing to eliminate, the use of special ceramic glass scraper is permitted (such as those used in ceramic cookers). The use of special scraper should be done carefully to avoid scratching the ceramic glass.

For cleaning the ceramic glasses do not use fabrics that can scratch the surface. Also do not use products (e.g. chemicals) which are not suitable for ceramic glass as they may blur the glass.

**It is FORBIDDEN the operation of the appliance if the door is not locked right.** In this case the combustion chamber is not adequately insulated, and the appliance cannot function right and exhaust gases may escape to the installation area.

**NOTE!** The crystal is made of ceramic materials that withstand temperatures up to 700 °C without creating abnormalities. Cracks can occur during cleaning if you do not comply with the above rules or by mechanical damage due to misuse of the appliance (collisions with objects, operation of the door without being secured right, violent opening or closing of the door etc). The warranty does not cover the replacement of the ceramic glass since it can't be created damage during the proper function of the appliance according to the instructions and limitations of this Technical Manual.

### **13.3 Cleaning the appliance from the ashes**

**CAUTION!** The temperature which the ashtray develops when the appliance is operating as well as for some time after the termination of its use, it is extremely high.

The ash pan is equipped with a handle that allows handling with bare "hands" only if the appliance ceases to function and all its parts, including the ash pan, have been sufficiently cooled. Otherwise, you should be carefully using the special gloves that came with the appliance.

The ash must be regularly removed from the ash pan. The appliance should not operate when the ash pan is full filled as it impedes the passage of air and causes overheating of the grate.

For cleaning the ashes follow the steps below:

1. Use a small hand vacuum to collect the ashes in an ash pan.
2. Remove the bottom grate at the base of the appliance.
3. Remove the ash pan located beneath the grate.
4. Dispose of the ashes (it is recommended the use of special vacuum for cleaning fireplace ashes). Before disposing of the ashes make sure the ashes have cooled completely and are at room temperature. Otherwise it may cause fire in the container or place intended to be rejected.
5. Replace the empty ash pan to its original position.
6. Replace the grate to its original position.
7. Return the grill to its original position.
8. Close and secure the flue gas deflector

### **13. HANDLING DURING THE SUMMER**

During summer months where there is no use of the appliance, after the cleaning of the chimney and of the appliance, close the adjusters and the door of the appliance until the next usage period.

## 14. DECLARATION OF PERFORMANCE



# DECLARATION OF PERFORMANCE



Reg. 305/2011/EC

1	Declaration's Number					
2	Unique identification code of the product-type <input type="checkbox"/> INSERT CRYSTAL T-60 <input type="checkbox"/> INSERT CRYSTAL T-70 <input type="checkbox"/> INSERT CRYSTAL T-80 <input type="checkbox"/> INSERT CRYSTAL T-90					
3	Type, batch or serial number or any other element allowing identification of the construction product					
4	Intended use or uses of the construction product, in accordance with the applicable harmonised technical specification <b>INSET APPLIANCE (ENERGY APPLIANCE WITH SECONDARY COMBUSTION AIR) FIRED BY SOLID FUELS</b>					
5	Name, registered trade name or registered trade mark of the manufacturer <b>A. MISAILIDIS SONS CO</b>					
6	Contact address of the manufacturer <b>7,5th km THESSALONIKI-KAVALA</b> <b>T: +30 23940 20799, +30 2310 688988 F: +30 2310 681 033, www.tzaki.com.gr</b>					
7	Name and contact address of the authorized representative					
8	System of assessment and verification of constancy of performance of the construction product <b>SYSTEM 3</b>					
9	Name and identification number of the notified body, carry out determination of the product-type under system 3 and issued test/calculation reports <b>TTC / (NB) 1999</b>					
10	Test/Calculation reports number					
11	Essential characteristics	Performance				Harmonized Technical Specification
	Nominal heat output (kW)	T-60	T-70	T-80	T-90	Harmonized Standard EN 13229:2001 & A1:2003
	Efficiency (%)	10.5	12.5	13.8	14.5	
	CO emission (13% O <sub>2</sub> ) (%)	76.7	76.7	76.7	76.5	
	Flue gas temperature (°C)	0,3599	0,3227	0,2856	0,2485	Appropriate Technical Documentation (Technical File) T168-02/TΦ2.16
	Recommended fuel types	300.0	310.0	320.0	330.0	
	Distance to adjacent combustibles (cm) * (to the side) (to the back)	10	10	10	10	
	* Application to insulated surfaces according to the Technical Manual					
The performance of the product identified in points 2 and 3 is in conformity with the declared performance in point 11. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 5 and 6.						
Signed for and on behalf of the manufacturer by:						
<b>For A. MISAILIDIS SONS CO</b>						
Name and function	<b>Misailidis Anestis General Manager</b>				Signature	
Place	<b>Thessaloniki, Greece</b>				Date	

THIS IS STATED WITH EXCLUSIVE RESPONSIBILITY THAT THE ABOVE APPLIANCE HAS BEEN DESIGNED AND MANUFACTURED IN ACCORDANCE WITH THE REQUIREMENTS OF REGULATION 305/2011/EC AND REMAIN IN COMPLIANCE WITH THESE REQUIREMENTS WHEN IS USED IN ACCORDANCE WITH THE ATTACHED INSTRUCTIONS AND/OR THE RULES AND RESTRICTIONS