

# ***Megatherm***

## **Space heater**



## **Installation & User Manual**

## 1. Warnings, Cautions, and Notes

- Read the safety instructions carefully before installation. Always follow the safety instructions during installation and during maintenance
- Keep this manual so that it is accessible to professionals and future needs.
- Installation and initial launch can only be completed by the authorized service team indicated by the manufacturer.
- All electrical installation and service work shall be done by certified and qualified personnel in accordance with local codes and regulations.
- Use ONLY with the electrical voltage specified
- Ensure the appliance is properly earthed.
- Use ONLY in well ventilated areas.
- The minimum clearance from any combustible materials is 300cm from hot air outlet and 200cm from the top and sides.
- Keep children and animals away from heater at all times.
- When used with a thermostat, bear in mind, the heater may start at anytime.
- Use heater in accordance with all fire regulations.
- NEVER use heater in living or sleeping areas.
- NEVER leave a heater plugged in without adult supervision if children or animals are likely to be present.
- NEVER cover or impede air flow into or out of heater.
- Disconnect the heater from the power supply when not in use
- Remove the ash from the heaters main chamber every 500-600kg of wood pellet consumption (depending on pellet's quality).
- Remove the ash for the heaters exhaust gases tubes every 3.000-4.000kg (depending on pellet's quality)
- Keep clean the heater's **air fan**. It must be cleaned frequently (at least once per month) in case is used in poultry rooms, by using compressed air
- The belt's driving the heaters air fan, must be checked often if there are tight.
- **Important:** After the 1<sup>st</sup> month of operation, the belts must checked if there are tight.
- The chimney must be cleaned at least 1-2 times per year, depending on the consumptionThe Producer reserves the right for technological changes as technical details, size, appearance and accessories of the Air Heater without previously informing the user, as long as it doesn't meaningful interfere with the functioning of the appliance.

### **Maintenance increases operation length and life of the unit**

## **2. Description**

- Megatherm's PSH space heater has been designed to work with **Megatherm's wood-pellet burner**.
- The fire chamber of the space heater is made by stainless steel and the external covers are made by galvanised steel, which are electrostatic painted (optional).
- The upper part of the space heaters around the fire chamber is well insulated to eliminate the losses.
- The exhaust gas tubes are made of manessman type tubes
- A powerful centrifugal air fan is used with variable speeds, so to give the opportunity to the user to adjust the air overflow depends on the needs.
- Hot air ducting system can be connected to the space heater.
- Speed controller of the air fans (standard for models PSH 35/60/80/90, optional for PSH 150/250)
- Furnace temperature aerostat is used for controlling the exhaust air temperature and the space heater's air fan
- Electric board with air fan's protection is supplied
- **When Megatherm's wood pellet burners are installed in the PSH space heater, it is suggested the burner to work at the "analogue mode"**

### 3. Technical specifications

Type		PSH 35	PSH 60	PSH 80/90	PSH 150	PSH 250
Nominal heat output		35kW	60 kW	80 / 90 kW	150 kW	250 kW
Air fan's max airflow		2,980 m3/h	4,500 m3/h	6,950 m3/h	11,900 m3/h	15.500 m3/h
Max air ΔT		40 oC	48 oC	45 oC	42 oC	48 oC
Max diameter of air outlet (D)		300	400mm	400mm	550mm	600mm
Dimensions / mm	Length including the chimney (L)	920	1100	1100	1450	1700
	Length incl. the burner (L1)	1320	1550	1550	2100	2350
	Width (W)	540	650	650	825	900
	Height (H)	1450	1730	1730	2000	2330
	Height incl. the air outlet (H1)	1800	2180	2180	2600	2950
Weight		180kg	260kg	260kg	380kg	500kg
Air fan's power cons		0.25kW	0.38 kW	0.75 kW	2.20 kW	3.00kW
Power. Supply		230V/50Hz	230V/50Hz	230V/50Hz	410V/50Hz	410V/50Hz
Fuel		Wood pellet	Wood pellet	Wood pellet	Wood pellet	Wood pellet
Gas flue pipe (chimney)		125mm	150mm	150mm	200mm	200mm
Pellet storage tank (silo)		250kg	250kg	250kg	250kg	250kg
Wood pellet burner		Nani 35	MPB 60	MPB 80 MPB 90 Pro	MPB 150 Pro	MPB 250 Pro

\* The height of the space heaters is approximately. It is depended on the diameter of the air outlet.

### 4. Chimney

We recommend that you have a local chimney sweeper or other corresponding authority make an inspection and provide advice and instructions on the chimney measurements in accordance with local codes and regulations.

The chimney should then of a length and diameter that gives a draught of:

- **10-30Pa for PSH 35/60/80/90**
- **30-40Pa PSH 150/250**

Measures have to be taken if the chimney is smaller or much larger in diameter in order to give the proper draught and flow.

If there is not enough draught in the chimney, exhaust gases stack in boiler's combustion chamber or in the chimney with the risk of explosion. Also, gas flow into the boiler's room can happened.

Notice: It is suggested exhaust gas fan to be used in case of low chimney draught

## **5. Heater's Air fan**

- The air fan is centrifugal. Due to its high static pressure it gives the opportunity a ducting system to be connected on the space heater.
- The air-fan is controlled by the aerostat 0-90 °C.
- It is used 3-speed air fan for the models PSH 35/60/80/90,
- The speed of the air fan for the PSH 150 & 250 is achieved by inverter (optional)
- If the static pressure because of ducting is high, the centrifugal air fan must be chosen in consultation with the manufacturer of the space heater

**Attention: If the space heater is installed in room where it is full of dust/feathers/straw/animal remains/ etc, the air fan must be cleaned well very often (1-2 times per month). Places like this are poultry farms and generally animal farms. Also, the belts driving the heaters air fan, must be checked often if there are tight.**

## **6. Heater's double aerostat**

### **Aerostat 0 – 120 °C (Heaters protection STB)**

This aerostat is used as a protection for the space heater. It is connected on the STB (Safety temperature limiter) of the burner's controller. When the temperature of the space heater is above this temperature, then the feeder stops feeding pellet. If temperature goes below this temperature, then the feeder can work again.

Suggested temperature: 90-95 °C.

This function protects the space-heater of overheating in case the air-fan is broken or the burner does not stop working at the maximum temperature.

### **Aerostat 0 – 90 °C (Heater's air fan)**

This aerostat controls the air-fan of the space heater.

When temperature is above this value, the air-fan works.

When temperature is below this value, the air-fan stops working

Suggested temperature: 40-50 °C.

## 7. Working conditions

- Temperature between 0°C and 30°C
- Humidity between 5% and 85%
- No dustiness and no chemical pollution
- Environmental protection IP20
- **Good ventilation of the heated space – according to all required norms**

## 8. Installation

Installation and initial launch can only be completed by the authorized service team indicated by the manufacturer

1. The Space Heater must be placed on a hardened ground and be leveled.
2. Keep the appliance away from flammable material – there mustn't be any flammable material in the room/heated space.
3. The height of the chimney connected to the space heater should be as long as possible and inclined upwards. Its diameter must fit the outlet chimney of the heater.
4. Each heater must be connected to a separate chimney
5. Supply the electrical voltage is specified.
6. Install the burner on the heater's door
7. Connect the burner with the burner's electric controller by using the grey cable
8. Connect the feeder with the burner's electric controller by using the cables with IEC connectors
9. Follow the instruction on burner's manual paragraph 11 / page 19 "First use" for setting up the burner (it is also described on the paragraph 10)

## 9. Electrical connection

Electrical connections must be undertaken by specialized, experienced and trained technicians, in accordance with the current legislation. • Ensure that the electricity supply specifications correspond to those indicated in the in this manual. • It is obligatory that the device is grounded using an efficient ground line. The installation must foresee a device enabled to disconnect the machine from the electric supply

The electrical connection of the heaters must be done by the appropriate wiring:

- For models PSH 35/60/80/90, with cable 3x2.5mm<sup>2</sup> (230V / 50HZ)
- For models PSH 150/250, with cable 5x2.5mm<sup>2</sup> (410V / 50HZ). Please make sure that the supplied voltage is over 380V.

## 10. Room thermostat connection

The installation involves the use of a humidistat or a thermostat ON/OFF controlling the power of the machine. The start and stop of the machine must be done manually.





The room thermostat must be connected on the burner's controller REG 03/1C or REG 03/2C, on pins Nr 1 & 2.

**WARNING.** Do not supply voltage on the room thermostat connection. It is just a cold junction

## 11. First use – Setting up the burner

1. Ensure that the installation has been done according to the burner's manual
2. Ensure that the plastic pipe is not connected to burner's feeding pipe
3. Fill the external feeder up with wood-pellet, by following the instructions below, "Feeder filling procedure".
4. Ensure that the feeder is full. Let the feeder working after the first pellets come out of the feeder for 10-15 minutes (locate a plastic bag at the exit of the feeder)
5. Empty the plastic bag and place it back at the exit of the feeder.
6. Make the feeder to work again for 2 *minutes* continuously.
7. Weight the wood pellet which is in the bag (*for example 0.8kg*)
8. Multiply it by 30 *minutes* ( $0.8 \times 30 = 24\text{kg/hr}$ ). This is the **feeder's performance**
9. *Repeat the steps 4-8, 2-3 times* until you make sure that you weight the right quantity.
10. **Place this value (i.e 24kg/hr) on manufacturer's settings menu, in the parameter "5. Feeder Performance"**
11. When the maximum power of the burner is reached , then adjust the burners flame by calibrating the air. The burning air is calibrated by changing the value of "Overflow pellet's air" at Manufacturer's menu

## 12. Feeder's filling procedure

1. Remove the plastic tube connection the burner with the feeder
2. Switch on the controller by pressing the button 
3. "Stop" appears on the LCD screen
4. By pressing the button "MODE/  " once changes the operation from "Stop" to "ignition".
5. "CHOICE FUNCTION-/+ " appears on the LCD screen
6. Press the button  to start the feeder
7. If press the button  again, stops the feeder

## 13. Cleaning

### Cleaning the burner

The frequency of cleaning burner's chamber is depended on wood pellet's quality. If premium pellet is used, It is suggested the burner's chamber to be cleaned 1-2 times a week (maximum consumption 500-600kg). Follow the following instruction for cleaning the burner

1. The burner can be either at “**Work**” or “**Maintain**” or “**standby**”
  2. Press the button “**MODE** “ continuously till “**STOP MODE**” appears on the screen.
  3. It is written “**Burning off**” till the photo sensor stops to detect fire (3-5 min)
  4. When the photo sensor stops to detect fire, “cleaning procedure takes place for few seconds.
  5. When “**Stop**” appears on the LCD screen, waiting few minutes till the burner cools down.
  6. Open the boilers door, clean the burners tube and close back the door.
  7. By pressing the button “**MODE** “ once changes the operation from “**Stop**” to “**ignition**”.
- By pressing the button “**MODE**“ changes the operation from “**Ignition**” to “**Automatic**”.

### Cleaning the space heater

- Cleaning of the **heater's fire chamber** should be done at the same time the burner is cleaned, by opening the door where the burner is installed and remove the ash. It is suggested vacuum cleaner for ashes to be used.
- Cleaning the **exhaust gases tubes** of the heater should be done 3-4 times per year. ( Max 3.000-4.000 kg of pellet consumption), depending again on wood pellet's quality.

Procedure:

- Remove the upper front external cover
- Remove the heater's exhaust gases front and back cover
- Use the brush which has been supplied with the furnace to clean the tubes.



*Upper front cover*



*Exhaust gases tubes*

- More frequent intervals increases efficiency and the life of the device.



## **14. Warranty**

Megatherm gives 2-years warranty on the PSH space year, regarding manufacturing faults on ingoing components.

The exception are damages caused by lack of maintenance, incorrect handling or deficient installation. The warranty does not cover damages on persons or other property other than the sold product, not other consequential damages or indirect occurred damages.

The logo for Megatherm, featuring the word "Megatherm" in a stylized, green, italicized font with a slight 3D effect.

**Pellet heating systems**

Vasilika, Thessaloniki

57006, Greece

tel. +30 2396023437

[www.megatherm.gr](http://www.megatherm.gr)

[info@megatherm.gr](mailto:info@megatherm.gr)