

MIRA AGH AGRICULTURAL HEATERS

USER MANUAL



MODELS

AGH SERIES



BEFORE INSTALLING, OPERATING, OR SERVICING THE APPLIANCE, READ THIS MANUAL CAREFULLY TO COMPLETELY UNDERSTAND THE INFORMATION CONTAINED HEREIN.

GENERAL SAFETY PRECAUTIONS

Failure to follow the warnings and directions described in this handbook might result in serious injury or property damage. Only those who completely understand and follow the directions in this handbook may operate or maintain the device.

Please contact the manufacturer if you require assistance or information on the appliance, such as an installation guide or labeling.

KEEP THIS HANDBOOK FOR FUTURE USE

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1. SAFETY INFORMATION

WARNING!

Fire, burning, inhalation, and explosion are all potential hazards. According to the directions, keep a safe distance between the heater and combustible things such as building materials, paper, or cardboard panels. Never use this equipment in a room containing combustible materials such as gasoline, solvents, diluting agents, granular powder, or unknown compounds.

The AGH heating appliances have been designed and certified to meet the EN 17082 standard, making them suitable for industrial and agricultural settings. These heaters are designed to provide temporary or continuous warmth for specified work areas or agricultural spaces. The appliance ensures safe and energy-saving functioning when used correctly. Along with the hot air, the combustion product is ejected in the space to be heated.

Carefully follow the points in this manual during installation and operation.

- When operating the device, make sure that gas and electricity connection requirements are fully met. Make sure that the electrical installation to which the heater is connected is grounded and that it is connected with a 4A V automat for each heater. This is required for warranty.
- While the device is in operation, make sure that sufficient combustion air enters the device.
- This device should not be used in places with strong wind and rain.
- The heater must be checked before each start-up. Defects detected during the control (damaged material, gas leakage, etc.) should be immediately corrected and, if necessary, assistance should be requested from the technical service.
- When using the device, care should be taken to use the materials recommended/recommended by the manufacturer/authorized service.
- Before any intervention/operation, the device should be allowed to cool. During the intervention/operation, the device must be switched off and disconnected from the electricity.
- Never use the heater in environments where explosive, flammable and volatile substances are present.
- Install the heater out of the reach of children.
- It is recommended to have the heater checked by authorized services once a year.
- In case of any gas smell/gas leakage detection;
 - Ventilate the environment,
 - Immediately disconnect the device from the electricity and do not operate any device in the environment,
 - Leave the place/building and ask help from the relevant natural gas emergency unit.

2. UNPACKING

Open up the cardboard box and remove all the units packed along with the heating appliance.



Figure 1: Product

3. INSTALLATION

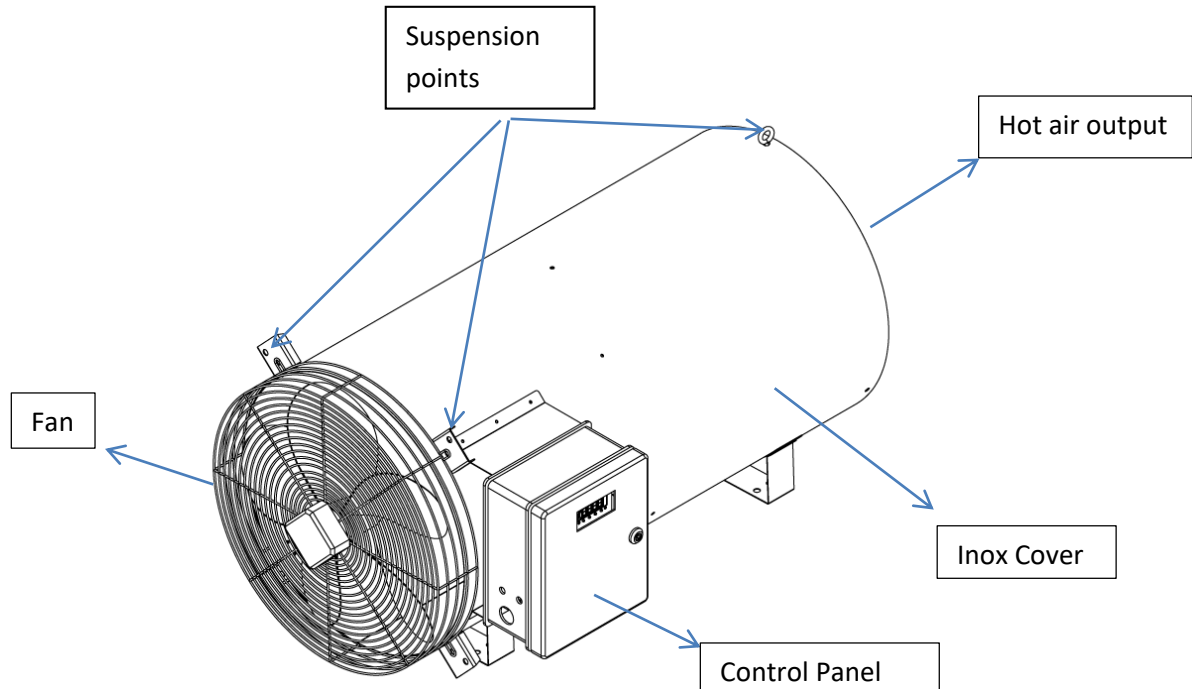


Figure 2: AGH Perspective View

Gas Supply System

AGH heaters can be operated with Natural Gas (G20/G25) or LPG (G30/G31) depending on your choice.

Gas Table					
	Natural Gas		LPG		
Gas Type	G20	G25	G30	G31	G37
Supply Pressure (mbar)	20-50	25-50	30-50	31-50	37-50
Gas Connection	$\frac{3}{4}''$				

Each device has **G3/4** gas inlet dimension, and the gas pressure supplied to the valve must be the gas supply pressures (indicated above) depending on the gas used.

To satisfy the conditions, **pressure regulator** and a **gauge** should be used. Also, please ensure that your pressure regulator has minimum **10kg/h** flow capacity. You can refer to the below image diagram for gas regulator and gauge application. You can refer to the below image diagram for gas regulator.

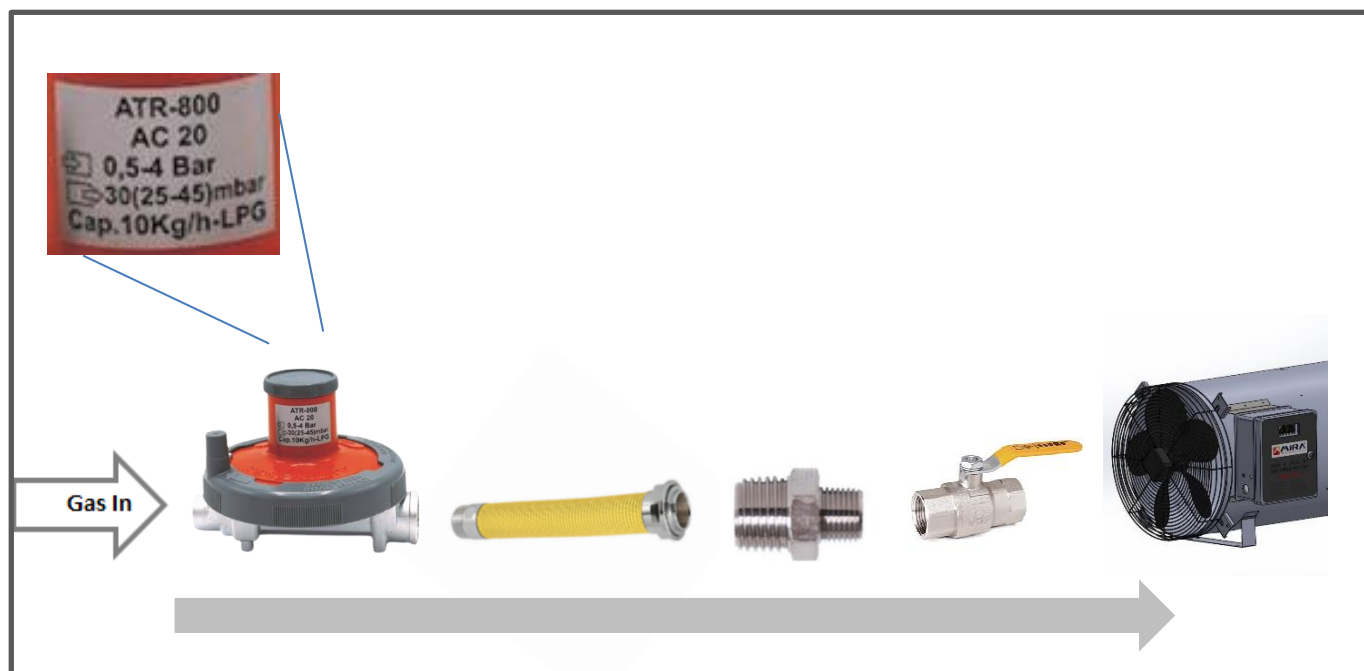


Figure 3: Gas connection diagram

By application in Figure 4, you can ensure that proper gas is provided. This measurement can also

be done directly on the gas valve itself. However, valve measurement operation must only be done by an authorized person. Gas valve description is below.



GAS VALVE STRUCTURE			
1	Modulation connection	5	Measurement screw of gas inlet
2	Gas inlet pressure screw	6	Gas outlet
3	Valve power input	7	Measurement screw of gas outlet
4	Gas Inlet		

WARNING:

To measure the gas pressure, please loosen the screws and put U-tube manometer to the place. After measuring it, DO NOT forget tightening screws back. Otherwise, there will be gas leak.

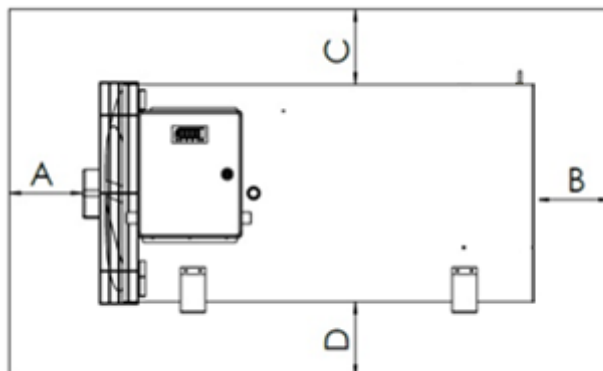
Air Supply System

The motor rotates the fan blades, creating the necessary air flow inside the appliance. The heat and combustion products generated by the burning of a gas-air combination are carried along by this air flow.

Ignition System

If heating is required, the electronic control sends a high-voltage signal to the spark plug, which initiates sparking and the gas-air mixture is ignited.

1) Mounting protection distances



TYPE	PROTECTION DISTANCES (mm)			
	A	B	C	D
AGH-70	1000	2000	500	500
AGH-100	1200	2300	500	500

Suspending

The appliances must be suspended by hanging mechanisms (e.g. chains) with a minimum length of 300 mm after the placement and suspension points have been determined. The hanging chains can be put under the ceiling, on support beams, bearer bars, scaffolds, between columns, or on supporting brackets close to the wall, among other places. The fastening holes on the end of the appliance and the lifting eye in the front of the heater are used to suspend the appliance. When suspending the heater, the appliance's tilting angle must be taken into account. A horizontal configuration is to at maximum variation of $+5^\circ$ or -5°

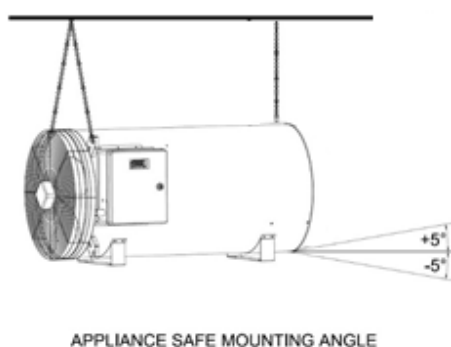


Figure 4: Application figure

Operation Principle

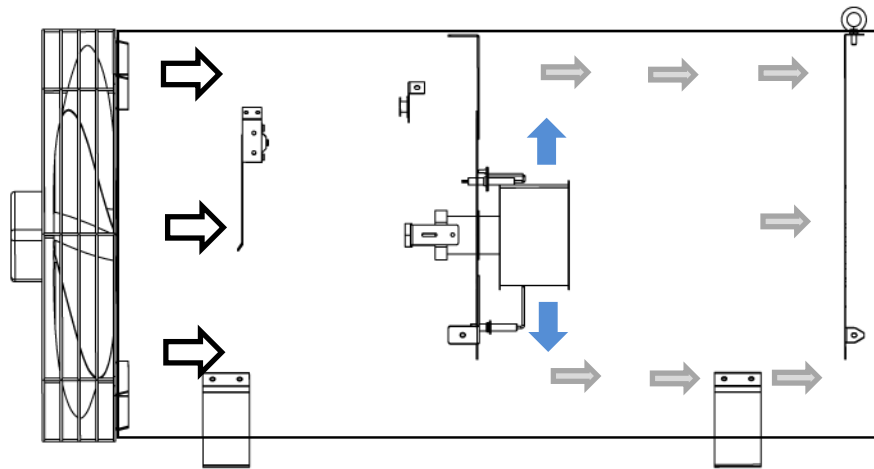


Figure 5: Operation Principle

After Installment

Cleaning of gas pipe

- Before connecting the appliance to the gas supply pipe, the gas pipe has to be cleaned completely and thoroughly.

Leak test

- After the appliance is installed, a leak test has to be carried out on the gas connection hose. This examination has to be performed after each disassembling and assembling.

Air supply

- Always comply with regulations on the minimum amount of fresh/ventilation air. In case the required amount of fresh/ventilation air is not supplied, carbon monoxide poisoning may occur.
- For each 1kW installed capacity, minimum 1 m³/h fresh air should be supplied to the heating area

Arrangement

- Assembling, installation and arranging should be performed in accordance with the local regulations and standards.
- The qualified person performing installation has to carry out the gas leak test at the appliance's connection pipe.
- Before installation, the local conditions as well as the type and pressure of gas have to be checked to see if they are in conformity with appliance's specifications.

4. ELECTRICAL CONNECTION

The fan and the electronic control unit requires a supply voltage from the same plug. The supply voltage should be **230V / 50Hz** single phase.

Power of the device is 650W. You should choose cable line accordingly!

- The appliance must be connected to the electric network with the safety connector to be installed on the device.
- There must be **4A automatic circuit breaker** for each device separately.
- The methods of electric connection: Via grounded plug or fixed connection phased as intended with L and N connections.
- Maximum current consumption of the heater: 3 A
- AGH heater can be connected to the central control system.

ON-OFF switch



Each device has ON-OFF switch on their control panel. This switch must be only used for giving power to the heater. For starting and stopping the device and automation, please use the control buttons inside of the panel and automation pins.

Automation control pins



Automation control system can control the AGH heaters. This operation is done with **DRY CONTACT**. Device has this bridge connection (shown left) inside of the panel. Whenever control system is to be connected, please use these pins for the control system. When there is closed connection as in the left image, device operates. When open connection occurs, not operates.

WARNING: THIS PINS WORK AS DRY CONTACT. NEVER CONNECT THEM VOLTAGE.

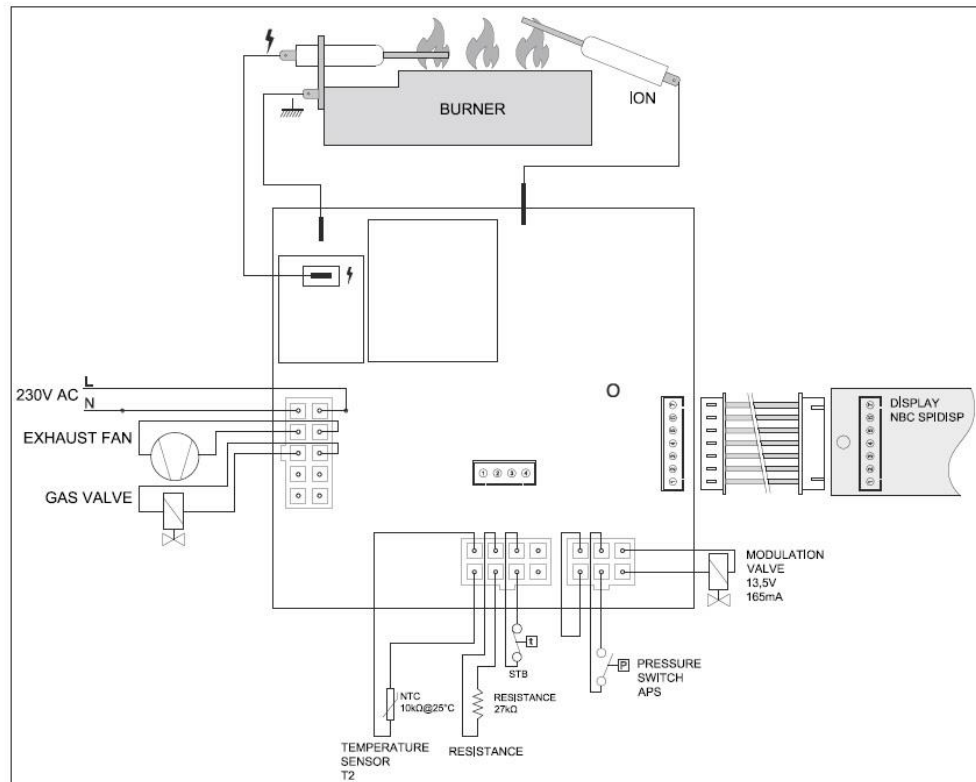


Figure 6: Electronic board connections

5. CONTROL OF APPLIANCES

Check List Before Operation

- For every 1 m³ of gas consumed per hour by the device, 200 m³ of space is required.
- 1 m³/h of fresh air is required for each 1 kilowatt capacity.
- Remove the foil off the device after it has been placed before turning it on.
- The gadget's room thermostat should be installed at least 3 meters below the device.
- 4A automatic circuit breaker must be used with each device.
- After the devices' electrical and gas installations are complete, use the remote control or follow the manual operating instructions to operate it.
- Keep the electronic card box cover closed.
- Keep the control panel of the device closed.
- The control panel should not be intervened, except for the authorized service. Otherwise, the device will be out of warranty.

Remote Control, Digital Panel

	
<p><i>OPERATING INSTRUCTION WITH IR REMOTE CONTROL</i></p>	<p><i>MANUAL OPERATING INSTRUCTIONS</i></p>
<ul style="list-style-type: none"> • THE DEVICE IS STARTED BY PRESSING THE "ON / OFF" KEY. • DEVICE STARTING AFTER FIRST IGNITION (FAN-1, FAN-2, FAN-3, AUTO modes are modulation modes for power. AUTO mode controls the device automatically according to temperature difference) • USING THE "SET (+, -)" KEYS TO SWITCH BETWEEN STAGES. • USING THE C+, C- KEY TO SET THE DESIRED TEMPERATURE (with room thermostat option) • FOR CHOOSING THE REQUIRED ROOM TEMPERATURE, SETTING IS MADE BY USING THE "DEGREE (+, -)" KEYS. (optional with room thermostat) 	

Room Thermostat Kit



The AGH air heater can be optionally equipped with a temperature control unit with 5m cable (room thermostat kit). The control interval is 0-40 Celsius Degree and it modifies its operation to set the ambient temperature to desired degree.

6. OPERATION

Starting

After starting the ON-OFF switch, the device starts operating. For other operation controls, you can use the control panel inside of the control box.

You can start/stop the operation by using remote control/digital panel. After starting, please wait 15 seconds for device to start working. The entire operation progress is automatic.

- 1) The process of ignition always starts with a pre-ventilation period of 30 seconds.
- 2) During pre-vent, the air flow switch senses whether the fan operates properly and generates proper air flow.
- 3) When proper air flow is detected, and the pre-ventilation period of 30 seconds is over, ignition is initiated automatically and solenoid gas valve is opened by the electronic control.

You can set 3 different power stage by using remote control easily as well as from digital control panel. (Fan-1, Fan-2, Fan-3)

- 1) **The heater can be connected to central automation control system.** Using the **DRY-CONTACT** pins which located in the panel as short circuited, you can use central control system connection.

The gas is conducted to the sparks produced by the spark plug through the pipes and nozzles, and the gas-air mixture is combusted. In case the process of ignition was successful and the ionization flame monitoring device senses continuous flame, the appliance operates and performs the heating task.

7. TROUBLESHOOTING

1) The axial fan does not work

Possible causes:

- No voltage supply to the motor
- Cables are disconnected
- The capacitor of the fan has blown out.

Corrective actions:

- Check the power suppl and connections.

- Replace the capacitor.

2) No spark between the electrodes of the igniter

Possible causes:

- The igniter is contaminated, covered with dust.
- No electric connection between the igniter and the automation device. Spark gap is too large.
- Malfunction of the automation device.

Corrective actions:

- Clean the electrodes of the igniter.
- Check the electric connection between the igniter and the automation device.
- Check the spark gap between the electrodes of the igniter. Replace the automation device

3) The gas burner starts but goes out within a short time

Possible causes:

- The phase and the neutral cables are interchanged.
- No suitable nozzle pressure.
- The air flow switch switches to neutral position.

Corrective actions:

- Check the phases.
- Check the output and input gas pressure values on the measuring port of the solenoid valve.
- Check the position of the air flow switch make sure it is not stuck. Clean the switch if needed.

4) No action

Possible causes:

- Electrical supply is not proper.
- Card board is damaged.
- Other causes may occur, please check the Error codes.

Corrective actions:

- Check the electrical supply.
- Check the Error codes.

Error Codes		REASONS
ERR1	Air pressure switch is not closed	<ul style="list-style-type: none"> * There may be reverse pressure. * The pressure sensor cable may not be connected. * The pressure sensor is defective.
ERR2	Air pressure switch is not closed	<ul style="list-style-type: none"> *Exit part of the appliance may be obstructed *Pressure sensor cable may not be connected *Pressure sensor faulty *The fan may not work
ERR3	Ignition Error	<ul style="list-style-type: none"> *Low gas pressure *Flame detection value may be incorrect in parameters settings *Ionization tubes away from flame *Faulty ignition cables or jump to the ground *Defective electronic card or induction coil
ERR4	Ionization sensor error	<ul style="list-style-type: none"> *Dirty ionization probe or contacting to chassis (clean the ionization probe) *Defective ionization rod or cables *Defective electronic card
ERR6	Limit thermostat	<ul style="list-style-type: none"> *The thermostat cable is incorrectly connected or not connected *Device overheated
ERR7	T1 sensor error	*N/A
ERR8	T 2 sensor error	<ul style="list-style-type: none"> *The thermostat cable is incorrectly connected or not connected *Room thermostat is malfunctioned.
ERR15	Memory Error	*Card defective

You can read this Error Codes on the 4-digit display of the device.

8. STORAGE

WARNING: In case the appliance is not operated for a longer period, disconnect it from the gas network.

Replace the plastic protection caps removed during unpacking the heater on the gas connection elements after disconnecting the appliance from the gas network.

Always use new gasket rings when reconnecting the appliance to the gas supply network. To avoid deterioration and preserve the appliance from mechanical impacts, keep it in a dry, clean, and secure location.

9. SERVICE, MAINTENANCE, CLEANING

Never perform servicing on appliances that are electrically charged, connected to the gas supply network, operating or still hot as it can lead to electric shock or burn injuries.

- 1) If the AGH air heater is utilized in an agricultural setting, no further maintenance is necessary other than monitoring and cleaning after each cycle (see: maintenance operations that can be performed by the user). However, it is advised that the appliance be inspected by a brand service or a certified person to ensure safe operation and a long working life. **Maintenance operations that can be performed by the user**
- 2) Preferably use compressed air to clean the cover dust. The device itself and control board has IP65, the fan heater has IP55 protection. However, **when using water jet for cleaning, do not direct water jet to the FAN part and PANEL part from a distance closer than 1meter.**
- 3) Through the exhaustion vent, visually verify the condition of the flame trap disc. It's simple to spot burns.
- 4) Take a look at the suspension chains. By changing each of the suspension parts one at a time, you can ensure that the weight is distributed equally.
- 5) Check the fans and clean them. Ensure that the bladed wheel and blades are free to move. Clean the blades of any contaminants. Cleaning the fans with air is recommended. Remove the four clamping screws from the axial fan to adequately clean the combustion air (radial) fan. Remove the fan from the INOX cover and set it aside. By turning the nozzle in a circular motion, blow out the radial fan from the air intake side with high-pressure air.
- 6) Check the air flow switch activated by the air flow axial fan manually. Check the spring by operating the micro switch two or three times. If necessary, use low-pressure air to clean.,

- 7) If the appliance's operating circumstances are less than ideal (contaminants, dust, steam, etc.), checking and cleaning activities must be performed more regularly. The main reason for this is that dust on the fans diminishes the appliance's effectiveness and greatly increases its weight, compromising the suspension's safety. Also, the dust sticks to the ionization probe so that it blocks its ideal operation.
- 8) The device can be utilized in greenhouses and livestock facilities (poultry, pigs, etc.).
- 9) **CAUTION: Using the appliance when flammable elements are present in the air, such as when cleaning the farm buildings, is banned.**

10. ANNEX

Model	AGH 40	AGH 70	AGH 100	AGH 120
Power (kW)	40-30-20 (3 steps)	70-50-40 (3 steps)	100-80-60 (3 steps)	120-100-60 (3 steps)
NG Consumption (m ³ /h)	3,77 – 2,82 – 1,88	6,59 – 4,70 – 2,90	9,41 – 7,53 – 5,64	11,29 – 9,41 – 5,64
LPG Consumption (kg/h)	2,90 – 2,17 – 1,45	5,07 – 3,62 – 2,18	7,24 – 5,79 – 4,34	8,69 – 7,24 – 4,34
Gas Connection	G 3/4			
Air flow (m ³ /h)	3700	4800	6900	
Weight (kg)	20	25	30	32
Max. Current Cons. (A)	2,5	3	4	4
Voltage Supply	220 V / 50 Hz			
L x W x H	900 x 400 x 470	1100 x 450 x 520	1100 x 520 x 600	1260 x 520 x 600

