

PEAK

PEAK-AB10 Afterburner User Manual



I. Important Safety Instructions

Unauthorized personnel are strictly prohibited from disassembling or modifying the afterburner's electrical circuits, gas pipelines, or air inlet/outlet ducts. Such operations must be performed by qualified technicians or by contacting the equipment supplier.

The afterburner is a device with high oxygen consumption. It must be installed in a well-ventilated area. For indoor installation, ensure adequate ventilation to prevent oxygen depletion which could impact health.

A stable pipeline gas supply system is crucial for the reliable operation of the afterburner. Low pressure, flow interruption, or complete loss of gas supply will cause the equipment to shut down.

To ensure operational safety, continuous ignition attempts should be avoided.

Maintain an interval of approximately 5 seconds between ignition attempts. During the ignition period, the solenoid valve is forced open (ignoring flame detection signals), releasing fuel into the combustion chamber regardless of ignition success.

If multiple consecutive ignition attempts fail, combustible gas may accumulate in the combustion chamber. Subsequent ignition could cause a minor flare-up or, in severe cases, an explosion. Therefore, do not exceed two consecutive ignition attempts.

An emergency shut-off valve must be installed in the afterburner's gas supply pipeline. This valve must be closed immediately in case of equipment malfunction or when the afterburner is not in use.

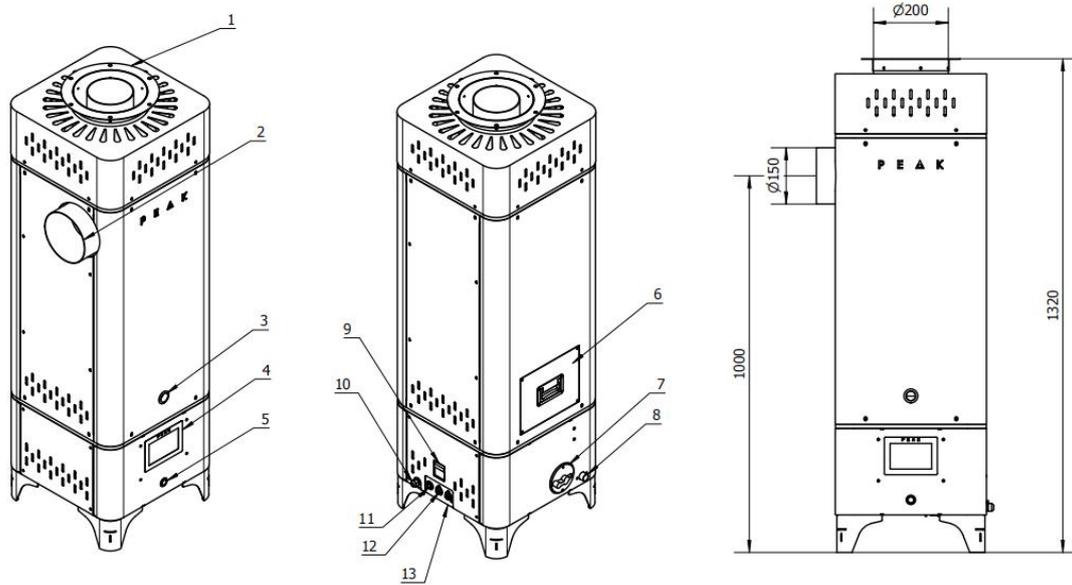
6. This device is for commercial use only. Household use is strictly prohibited.

This is a commercial appliance intended for commercial production. It requires regular maintenance by qualified personnel to ensure it remains in good working condition and operates safely.

II. Technical Specifications

Parameter	Value / Specification	
Model	PEAK-AB10	
Output Power	KW	0-26
	10^4 Kcal/h	0-2
Control Method	Manual / Automatic	
Applicable Fuels	Natural Gas, LPG, Bottled Gas	
Gas Consumption (Natural Gas)	M ³ /h	0-2.6
Gas Consumption (LPG)	Kg/h	0-1.8
Allowable Inlet Pressure Range	Kpa	2-3
Design Fuel Calorific Value	Kcal/Nm ³	22
Power Supply Requirements	AC220V / 50Hz	
Device Power Consumption	35W	
Connection Type	Fixed Flange Connection	
Inlet Duct Diameter	150mm	
Outlet Duct Diameter	200mm	
Fuel Inlet Size	DN15	
PEAK-AB10 Dimensions	mm	470×420×1320
PEAK-AB10 Weight	kg	75kg

III. Structure and Dimensions



- 1. Exhaust Duct Flange 2. Hot Air Duct 3. Sight Glass / Viewing Port
- 4. Control Panel / Screen 5. Ignition Power Supply 6. Access Panel / Service Cover
- 7. Air Damper 8. Gas Inlet Connection 9. Main Circuit Breaker 10. AC 220V Power Cord 11. Reset Button 12. Auto Remote Interface 13. Manual Remote Interface

IV. Afterburner Control System Description





System Display Information: Hot Air Temperature, Exhaust Temperature, Power Level (Burner Output), Equipment Status, Current Operating Mode.

Modes: Manual Mode and Automatic Mode.

Manual Mode: Allows manual adjustment of the burner power level for combustion control.

Automatic Mode: After setting the desired exhaust temperature, the system automatically adjusts the burner power to maintain the set temperature.

Alarms: Over-temperature Alarm, Automatic Flame-Out (Shutdown).

V. Afterburner Combustion Principle

The afterburner is an integrated device comprising an air inlet/outlet, combustion chamber, air-gas mixing chamber, ventilation fan, burner, gas safety valve train, microprocessor-based control system, ignition system, and automatic flame monitoring system.

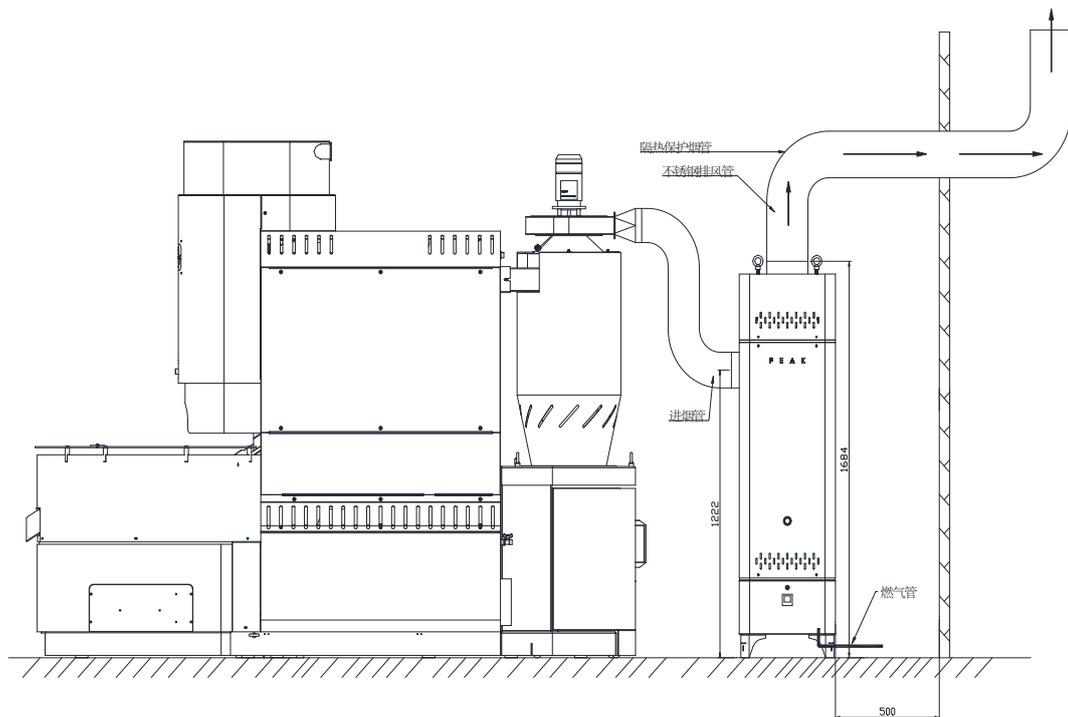
When smoke generated by the coffee roaster enters the afterburner through the air inlet, the afterburner is activated. Combustible gas is introduced into the burner head according to the program set by the microprocessor control system. Primary air mixes with the combustible gas, and the mixture is ignited. Secondary air is supplied to support complete combustion, enabling the flame to burn off undesirable substances within the smoke, thereby purifying the air and emitting clean air that meets environmental standards.

In case of a combustion fault (e.g., oxygen deficiency in the combustion chamber, low gas pressure, gas flow interruption, insufficient gas volume), the control system

issues a command. The solenoid valves in the gas supply system close rapidly, cutting off the gas supply and ignition power. The burner performs an automatic purge cycle before shutting down and indicates the fault.

The gas valve train structure includes dual automatic reset solenoid valves for protection, supplemented by an added emergency shut-off valve. These comprehensive gas supply protection measures ensure the stable and safe operation of the afterburner.

VI. Installation and Piping Layout



Notes:

The stainless steel exhaust duct must be insulated, as the exhaust temperature can reach approximately 600°C. This prevents heat exposure and mitigates the risk of fire caused by prolonged contact with hot surfaces.



Connect the gas supply pipeline (DN15 / 1/2 inch) to the afterburner. An emergency shut-off valve must be installed in this line to allow manual gas shut-off in case of emergencies.

Connect the power supply to a standard 220V, 10A household outlet.

VII. Pre-Operation Checklist

After connecting the afterburner to the roaster, first check that the gas supply pipeline is installed correctly and there are no leaks (check for leaks according to standard combustible gas inspection procedures).

Ensure adjustable components in the gas supply, such as the pressure regulator, are functioning correctly and indicating properly.

Check that the electrical wiring is correct. The equipment power input must be grounded. Adhere to the standard: Left (Neutral), Right (Live), Top (Earth/Ground).

Identify any potential safety hazards: ensure adequate fire safety measures and safe distances around the afterburner equipment, and confirm the presence of standard fire extinguishers in the vicinity.

VIII. Startup Procedure

Turn on the main circuit breaker for the afterburner. The temperature controller will display the current temperature. Open the gas inlet valve. Press the ignition switch.

The afterburner will then operate automatically according to its programmed sequence.

IX. Troubleshooting Guide



Fault Condition	Possible Causes	Solution
Failure to Ignite	<ol style="list-style-type: none">1. Faulty Igniter2. Excessive Ignition Electrode Gap3. Faulty Solenoid Valve4. No Gas Flow5. Previous Fault Not Reset (Red light on controller reset button)	<ol style="list-style-type: none">1. Check/Igniter (Low failure frequency)2. Check/Adjust electrode gap to 2-3mm (Low failure frequency)3. Cut off fuel, check if solenoid valve activates.4. Check gas supply solenoid valve and gas supply system.5. Press and hold the controller reset button for 3 seconds.
Ignites but Fails to Run	<ol style="list-style-type: none">1. Flame Detection System Fault (Photo cell/Flame Sensor)2. Power Supply Not Grounded3. Live/Neutral Wires Reversed	<ol style="list-style-type: none">1. Cut off fuel, check if solenoid valve activates.2. Connect the ground wire to the power supply.3. Swap the Live and Neutral wires.
Incomplete Combustion	<ol style="list-style-type: none">1. Excessive Burner Heat Input Setting.2. Air Damper opening too small or blocked.3. Damaged Fan.	<ol style="list-style-type: none">1. Check gas supply pressure is not too high.2. Remove any blockages from the fan air intake.3. Replace the fan.
Frequent Fault Shutdowns	<ol style="list-style-type: none">1. Restricted system exhaust, causing oxygen deficiency in the combustion chamber.2. Insufficient chimney height/draft.	<ol style="list-style-type: none">1. Check the exhaust system for blockages.2. Increase the chimney height.



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