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SMOKELESS BIO-MEDICAL WASTE INCINERATOR



OPERATIONS & MAINTENANCE MANUAL

Smokeless Bio-Medical Waste Incinerator Machine

Model Capacity: 5–10 kg/batch

Manufacturer: Vakratund Invention India Pvt. Ltd.

1. Introduction

The Smokeless Bio-Medical Waste Incinerator provides safe, odour-free and smoke-free disposal of biomedical waste generated in healthcare facilities. The system utilizes a dual-chamber high-temperature combustion process combined with an **Anode-Based Smoke Elimination Device**, making the machine **chimney-less** and compliant with environmental standards.

This document contains operating guidelines, safety instructions, and maintenance procedures.

2. System Overview

Parameter	Value
Operation Type	Fully Automatic
Capacity	5–10 kg per batch
Primary Chamber Temperature	800–900°C
Secondary Chamber Temperature	1000–1200°C
Technology	Dual-Stage Combustion with Smoke Elimination Device
Exhaust System	Chimney Not Required
Construction	MS/SS with heat-resistant coating
Suitable Waste	Napkins, diapers, PPE, masks, gloves, cotton, tissue, bandages, expired medicines etc.

3. Safety Precautions

- Only trained operators may run the machine.
- Wear PPE: mask, heat-proof gloves, face shield, closed shoes, and apron.
- Do NOT incinerate: **glass, metal, batteries, aerosols, chemical reagents, liquids, or pressurized cans.**
- Ensure machine is kept in a **dry, ventilated indoor area** with no flammable materials nearby.
- Keep fire extinguisher nearby.



4. Installation Requirements

- Place machine on a **levelled concrete surface**.
 - No chimney setup required.
 - Provide dedicated electrical connection(Three Phase) with earthing and MCB
 - Maintain minimum clearance:
 - Rear: **1 ft**
 - Sides: **2 ft**
 - Front: **3 ft**
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5. Operating Procedure

A. Start-up Checklist

- Power supply connected
 - Ash tray empty
 - Chamber door properly sealed
 - Smoke Elimination Device ON and active
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B. Loading Waste

- Open door unlocking the latch lock.
 - Load waste evenly (max. 5–10 kg depending on model).
 - Close chamber door tightly & lock.
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C. Starting the Cycle

1. Turn ON the main power switch.
 2. Select/confirm pre-set mode (Auto Preferred).
 3. Press **START** to begin ignition and heating.
 4. System automatically transitions from primary to secondary combustion.
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D. During Incineration

- Cycle duration: **45–60 minutes** depending on waste type.
- Smoke Elimination Device ensures a smoke-free operation.

E. Shutdown & Cooling

- System automatically stops after completion.
- Allow **20–30 minutes cooling** before opening door.
- Turn OFF power after cooling.

6. Ash Removal Procedure

- Open ash drawer only when machine is cool.
- Collect ash using recommended scraper tool.
- Dispose ash as per **CPCB Biomedical Waste Disposal Rules (Yellow Category)**.

Ash residue generated is approx. **2–5% of original volume**.

7. Maintenance Schedule

Task	Frequency	Instructions
Empty ash tray	After every batch	Do not allow overflow
Clean chamber walls	Weekly	Use wire brush
Check door seal/gasket	Weekly	Replace if damaged
Inspect Smoke Elimination Device	Weekly	Ensure anode condition is intact
Lubricate hinges & latches	Monthly	High-temperature grease
Full technical service	Every 6–12 months	Mandatory for compliance

8. Troubleshooting

Issue	Possible Cause	Solution
Smoke at startup	Door leak or wet waste	Seal door firmly / reduce moisture
Lower temperature	Loose heater connection	Check wiring & fuses
Burning not complete	Overloaded chamber	Reduce batch size
Odor present	Smoke Elimination Device OFF or clogged	Restart device / clean anode

9. Compliance Statement

This incinerator complies with **CPCB and Pollution Control Guidelines** and operates without a chimney using an environmentally safe **Anode-Based Smoke Neutralization System**.

10. Warranty

- Warranty: **12 months** from installation.
- Covers manufacturing faults.
- Excludes damage caused by misuse, overloading, unauthorized repair, or prohibited waste usage.





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THANK YOU



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