

Radioactive Waste Incinerator, Robotic Automated  
Scintillation Vial Washer & IR Animal Dryer

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## WE Series

Radioactive Waste Incinerator,  
Robotic Automated Scintillation Vial  
Washer & IR Animal Dryer



*Windy 2000*



*Burnclean Series*



*Robo Clean-400*



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# Robo Clean-400

## Robotic Automated Scintillation Vial Washer

The Wakaida ROBO CLEAN-400 is a fully automated robotic scintillation vial cleaning system, which performs the following functions.

- Remove cap of the vial, which contains radioactive waste solution after scintillation measurement.
- Drain radioactive waste solution.
- Remove filter for cleaning.
- Sort and collect radioactive waste solution as per their properties.
- Fully automated operation results in operator safety, and cost savings in radioactive waste disposal and labor.

### Universal Application

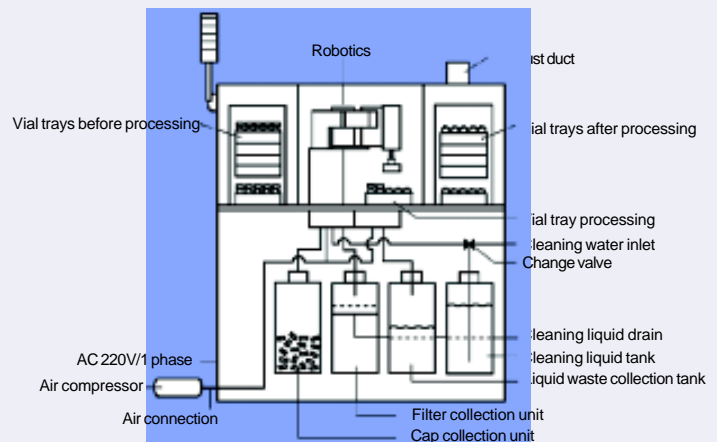
The ROBO CLEAN-400 can clean various kinds of vials by changing trays: Standard vial; Mini vial; glass or plastic vial.

### Extremely Easy Operation

Automatic control method, operated by sequence circuit is used so that the operator has to push only one switch to start. System status or operation methods are displayed on the large LCD panel.

### Safety Features

Steam from the organic solution of liquid waste is forced to exhaust. In addition, interlocks in the system design such as air drive mechanism prevent explosion. Safety interlocks are installed in each component. In case of emergency, the system stops automatically and cause and measures are displayed in the panel.



### Description

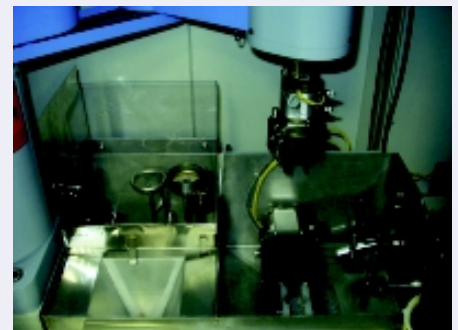
Vials that can be processed  
Max process capability  
Process time  
Vial Tray

### Specification

Standard vials (20ml) and mini vials  
400 vials (8 trays) in one batch  
400 vials in approximately 4 hours  
Standard vials (20ml) or mini vials 50 bottles  
Dimension: 440(W) x 250(D) x 70(H) mm  
1 tray 5 x 10 line  
1 charge 50 x 8 column  
Tray for standard vial  
Tray for mini vial, possible to mount either pallet at the same time  
Liquid waste collection tank, 20 liter  
Vial cap collection tank, 20 liter  
Cleaning liquid tank, 20 liter. Changeable to city water  
Filter collection unit  
Standalone (Not necessary if compressed air is available.)  
0.75 kW with dryer

Installed tanks

Compressor



# Burnclean Series I, II, III

## Radioactive Waste Incinerator

The Wakaida incinerator is a small self-contained system designed for in-situ destruction of scintillating solutions, which are low-level radioactive organic liquid waste. Three models are available depending on the volume to be processed (1, 2 or 3 l/hr).

Fundamental mechanism of the BURNCLEAN consists of a rotating pilot burner, air, and main burner. It can burn solutions at high temperatures, which minimizes the residue, and enables easy maintenance. Material of the hearth is ceramic fiber, which is durable and impervious to acid.

Unlike vaporizing waste burners, BURNCLEAN does not require air volume control, eliminating the need for a valve in the system. The BURNCLEAN is capable of handling and disposing all solvents, from aqueous to 100% organic solution.

### Clean Burning

Vaporizing circular jet burning method evaporates waste liquid and voluminous circulating air is supplied to mix. The mixed air rotates to burn at higher than 800°C. It burns the waste liquid to respond to dioxin countermeasures.

### Extremely Easy Operation

Voluminous air circulation eliminates the need to adjust air supply depending on the type of waste incinerated. Sequencing circuit is used for automatic control. Push button control allows the automated operation after pouring waste liquid into the waste liquid tank. The inside chamber is automatically cleaned by a spray after incineration.

### Operation and Monitoring

Operation is controlled through LCD touch panel enabling continuous monitoring of it's status.

### Burning Temperature

As per Science and Technology Agency Requirements, the burning temperature is monitored and recorded. Waste liquid starts to burn when temperature inside of the hearth reaches higher than 800°C and it stops when the temperature goes below 800°C.

### Residue

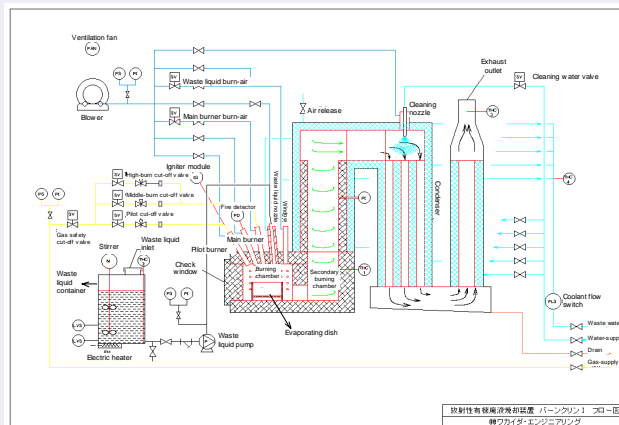
Almost no residue remains because the burning system is "Vaporizing circular jet burning method".

### Safety Features

Safety interlocks are installed for: Inside temperature and pressure monitoring systems for hearth; Coolant water temperature monitoring system; Gas pressure monitoring system; Coolant water flow monitoring system; Overheat proof system; Fire monitoring system; Vibration monitoring system; and Explosion proof device. In case of an emergency, the alarm and display are activated and automatically stops the incinerator after system purge.

### Features

- Burning chamber
- Burning air pressure switch
- Condenser
- Burning air on-off valve
- Waste liquid tank
- Gas safety valve
- Burning blower
- Gas on-off valve
- Waste liquid pump
- Fire monitoring
- Waste liquid supply connector
- Gas pressure switch
- Exhaust tube
- Burning chamber pressure sensor
- Pilot burner
- Burning chamber thermal sensor
- Sub burner
- Waste liquid pressure switch
- Waste liquid vaporizing plate
- Waste liquid level sensor
- Waste liquid filter
- Waste liquid stirrer
- Waste liquid warming heater
- Waste liquid temperature sensor
- Condenser cleaning nozzle
- Cleaning water on-off valve
- Exhaust thermal sensor
- Waste liquid nozzle
- Coolant water flow sensor
- Waste liquid drain connector
- Coolant water thermal sensor
- Burning air pressure meter



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# Windy 2000

## IR Animal Drying System

The Wakaida WINDY 2000 Far-IR Animal Drying System uses thermal reaction with Far-IR to permeate animal cellular tissue contaminated by radioactive isotope (RI) to dehydrate.

Conventional microwave dryer does not radiate uniformly and traces of metal in the animal cause burn and strong odor. Freeze vacuum dryer takes a long time to process and it is impossible to sterilize.

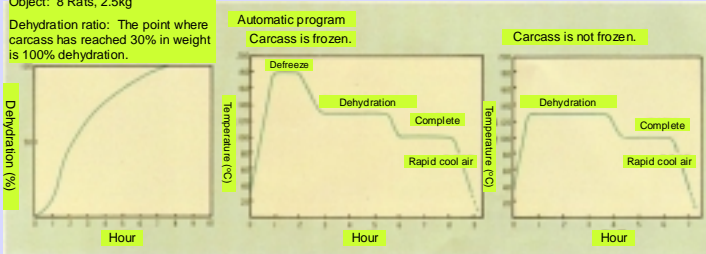
WINDY 2000 does not have these limitations.

- Infrared System** - Using Infrared emission ceramic panel, and automatic temperature control, the carcass can be dehydrated in a short time.
- Large Drying Chamber** - The drying chamber capacity being 200 liters, large volumes can be processed at the same time.
- Special Dry Bag** - Use of the special dry bag can dehydrate blood, body fluids, urine, etc. in the bag, eliminating contamination of the system. The dried animal can be collected in the special container without handling.
- Easy Operation** - Computer controlled, stored automated programming methods allow for easy and fast operation.
- Odorless** - Negative pressure in the drying chamber and cool air at the end of the cycle after dehydration, eliminates all odors.
- No Waste Oil** - Since a rotary vacuum pump is not used, there is no contamination of oil by radioisotopes.
- Safety Features** - Safety interlocks such as vibration monitor; condensed water monitor; coolant water level; overheating of the drying chamber; overheating of coolant water; thermal trip; etc. are used to prevent accidents.
- Low maintenance** - Consumables such as change of magnetron for the microwave or vacuum pump for freeze dryer, and oil, etc. are not required.



### RI polluted carcass test data

Object: 8 Rats, 2.5kg  
 Dehydration ratio: The point where carcass has reached 30% in weight is 100% dehydration.



### Description

- Dehydration method
- Drying chamber dimensions
- Drying chamber material
- Drying chamber capacity
- Operation
- Main dimensions

### Specification

- Far-IR emission ceramics 2.4KW
- 730(W) x 550(H) x 500(D) mm
- SUS (All welded drying chamber)
- 200 liter
- Auto programming (Select method)
- 1050(W) x 1620 (H) x 745(D) mm



**Applications in Radiochemistry, P.E.T. Labs, Nuclear Medicine,  
 Pharmaceutical Labs, Drug Metabolism, Lipid Analysis,  
 Monitoring Radio-labeled compounds, etc.**

### Complete turnkey solutions include:

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>✓ Radio-TLC Scanner</li> <li>✓ Radio-GC Detector</li> <li>✓ Floor Monitors</li> <li>✓ Survey meters</li> <li>✓ Shielding Box for 32 TLC Plates/Cassettes</li> </ul> | <ul style="list-style-type: none"> <li>✓ Radio-HPLC Detector</li> <li>✓ Area Monitors</li> <li>✓ Hand &amp; Foot Monitors</li> <li>✓ Portal Monitors</li> </ul> |
|--|---|

### Manufacturer

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