STERIS®

VHP® 100P
PORTABLE SMALL VOLUME BIODECONTAMINATION SYSTEM

APPLICATION

For portable decontamination of clean, hard, dry surfaces in small isolators, biosafety cabinets, gloveboxes, incubators, and other sealed enclosures* between 0.05 and 2 cubic meters (2-70 cubic feet), for medical, and biological laboratories.

DESCRIPTION

The VHP 100P Biodecontamination System is a hydrogen peroxide vapor generator. The generator operates at ambient temperature and atmospheric pressure to offer operating flexibility. The generator can be easily transported to decontaminate multiple enclosures.

To minimize exposure to the liquid hydrogen peroxide during handling, the system uses specially designed disposable cartridges (available separately) containing approximately 950 ml of Vaprox® Hydrogen Peroxide Sterilant.

Units are available for operation on 120, 200, or 230 Volts, 50/60 Hz, single phase electrical service.

* *Enclosure must be leak tested at the enclosure manufacturer's recommended pressure.*

STANDARDS

The generator and its control system meet the applicable requirements of the following standards:

- **Underwriters Laboratories (UL) Standard 3101-1** as certified by ETL Testing Laboratories, Inc.
- **Canadian Standards Association (CSA) Standard C22.2 No. 1010.1-92** as certified by ETL.
- **EMC Directive 89/336/EEC, 92/31/EEC, 93/68/EEC.**
- **Low Voltage Directive 73/23/EEC, 93/68/EEC.**



(Typical only - some details may vary.)

CYCLE DESCRIPTION

The VHP cycle operates in a closed-loop configuration. An optional leak test may be performed to confirm that the enclosure is sealed. The enclosure is subjected to four phases:

Dehumidification

The relative humidity in the enclosure is reduced by the VHP 100P by recirculating air through a reusable or disposable desiccant cartridge. When the desired relative humidity and set time have been achieved, the cycle advances to the Condition phase.

Condition

The VHP 100P injects H_2O_2 vapor at the rate set by the operator for the time period selected to quickly reach the desired concentration of H_2O_2 vapor. After the Condition phase is completed, the cycle advances to the Decontamination phase.

Decontamination

The VHP 100P injects H_2O_2 vapor at the rate set by the operator for the time period selected to provide microbial kill. After the Decontamination phase is completed, the VHP 100P provides the signal to begin Aeration.

The Selections Checked Below Apply To This Equipment

VOLTAGES

- ☐ 120 VAC, 50/60Hz
- ☐ 200 VAC, 50/60Hz
- ☐ 230 VAC, 50/60Hz

ACCESSORIES

- ☐ Reusable Dehumidification System -
  - Reusable Desiccant Cartridge(s)
  - Reusable Desiccant Cartridge Regenerator
    - ☐ 120 VAC, 50/60Hz
    - ☐ 200 VAC, 50/60Hz
    - ☐ 230 VAC, 50/60Hz
- ☐ Disposable Dehumidification System -
  - Disposable Desiccant Cartridge(s)
  - Adaptor

LANGUAGE OPTIONS
Siemens Control

- ☐ English
- ☐ French
- ☐ German
- ☐ Spanish
- ☐ Italian
- ☐ Japanese

Item _____

Location(s) _____

_____

Aeration

Enclosure air is recirculated through the VHP 100P to reduce the H_2O_2 vapor concentration to the desired level.

Cycle times vary with initial temperature and humidity, enclosure type, size and configuration, and load.

ACCESSORIES

To reduce relative humidity in the enclosure, either a reusable or disposable desiccant system must be employed.

Reusable Desiccant Cartridge(s) and Regenerator

Constructed of aluminum, the reusable cartridge containing desiccant is easily installed in the VHP 100P. Following use, a prompt notifies the operator that it is time to remove the cartridge and install it in the regenerator to refresh the desiccant. A visual indicator on the cartridge signals the user that the cartridge is ready for reuse.

Disposable Desiccant Cartridges and Adaptor

Constructed of plastic, the disposable cartridge containing desiccant is easily installed in the VHP 100P using the aluminum adaptor. Following use, a prompt notifies the operator that it is time to discard and replace the cartridge.

FEATURES

Control panel includes a display window, touch-sensitive keypads, and an impact printer to allow easy initiation, option setting, and monitoring of cycles. The display and printer are factory-set to provide messages in the language of the destination country to which the Processor is shipped.

- **Display window** – the 2-line x 16-character, easy-to-read vacuum fluorescent display shows cycle information and option selections.
- **Touch pads** – by pressing the control panel touch pads, the operator can start or cancel a cycle, check the cycle phase while the unit is in-cycle, change or set option selections, and advance the printer paper. Control touch pads are International symbols for use irregardless of the destination country to which the unit is shipped.
- **Printer** – 24 character, dot matrix, ink-on-paper, impact-type printer with a takeup motor records all cycle data on 2-1/4" (57 mm) wide, single-ply paper.

Printouts include key cycle data, including date, time the cycle was started, Load ID (manually entered by the operator or processor-printed), remarks section (for manually entering any comments), Operator ID number (manually entered or processor-printed), Processor ID, and cycle count. Cycles also include process temperature, exposure time and relative humidity of return air. Any cycle faults are listed and warn the operator of incomplete decontamination, should a fault occur. Diagnostic cycles also include whether the Processor passed or failed (and if so, the reason for the failure). The printout will also list options that can be programmed, including Operator ID, and type of enclosure.

Control system includes preprogrammable decontamination cycles that can be input for typical load and processing requirements.

CONTROL VALUE SETTINGS

Cycle values (time, temperature) can be adjusted by the operator; however, certain control settings are operator-adjustable:

- **Language** – for displays and printouts. Default is language of the unit's destination country. Options are: English, Spanish, French, German, Italian, Japanese.
- **Time set** – for setting/adjusting current time of day for displays and printouts.
- **Date set** – for setting/adjusting current date for displays, printouts.
- **Access code** – for limiting access to certain options to authorized operators.
- **Automatic duplicate print** – to have a duplicate printout at the end of each cycle.
- **End-of-cycle tone** – to have a tone sound at the end of each cycle.
- **Time format** – for setting the sequence for time displays and printouts in AM/PM or 24-hour format.
- **Date format** – for setting the sequence for date displays and printouts (month/day/year, day/month/year, year/month/day).

CONSTRUCTION

VHP Generator

Enclosure: Stainless steel with removable aluminum side panels

Hydrogen Peroxide Cartridge Interface: Flame-resistant plastic

The liquid hydrogen peroxide is metered with a precision pump.

Disposable Desiccant Cartridge: Plastic

Reusable Desiccant Cartridge: Aluminum

Reusable Desiccant Cartridge Regenerator Enclosure and Doors: Stainless steel with removable aluminum side panels.

CALIBRATION

STERIS recommends that all VHP 100P Generators be calibrated at least once every 6 months. STERIS Service representatives can provide this service to assure unit operation can be validated.

PREVENTIVE MAINTENANCE

A global network of skilled service specialists can provide periodic inspections, and adjustments to assure low-cost peak performance. STERIS representatives can provide information regarding Annual Maintenance Agreements.

NOTES

1. STERIS recommends that a dedicated, grounded electrical circuit be provided for each unit. Extension cord use is not recommended.
2. Unit should be installed in an area which is compatible with oxidizers. Consult the MSDS regarding Vaprox Hydrogen Peroxide Sterilant.
3. Regenerator must be on a hard, level surface.
4. Access must be provided to power switch and hose connectors.
5. Hose clearance must be adequate to prevent kinks and strains on the connectors.
6. Hoses must be supported to keep them from resting on the floor or other cold surfaces.
7. Clearance must be provided to doors on M100 and regenerator.
8. Access must be provided for desiccant cartridge installation and removal.

UTILITY REQUIREMENTS

Electrical Supply

- 100P:

  120 VAC, 17 A, 50/60 Hz
  200 VAC, 10 A, 50/60 Hz
  230 VAC, 9 A, 50/60 Hz

- Dryer Regenerator:

  120 VAC, 8 A, 50/60 Hz
  200 VAC, 4 A, 50/60 Hz
  230 VAC, 4 A, 50/60 Hz

AIRFLOW/PRESSURE

- Airflow range: 8-11 scfm (14-19 m^3/h)
- Maximum control pressure: 2.3 W.G. (572 Pa)

ENVIRONMENTAL FACTORS

Ambient Conditions

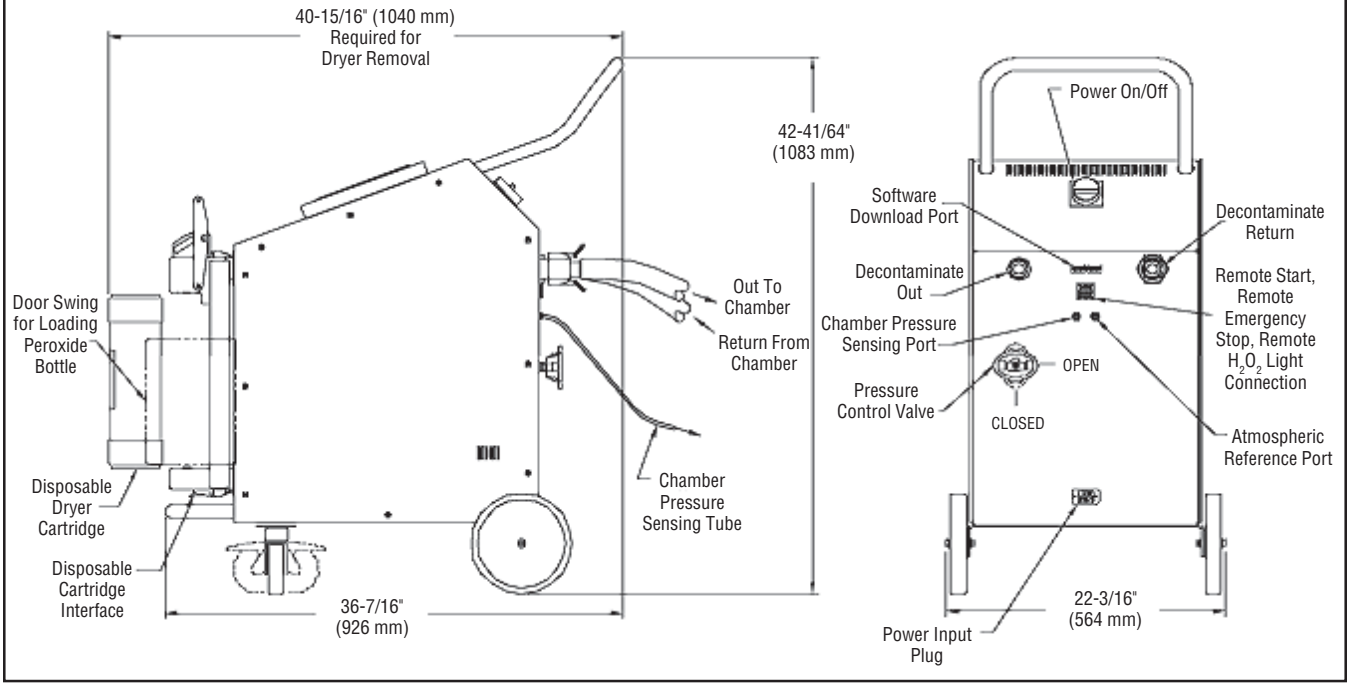
- Room Temperature: 60°-80°F (10°-35°C)

Refer to the M100 equipment drawing for additional information.

. . . CHECK LOCAL CODES . . .

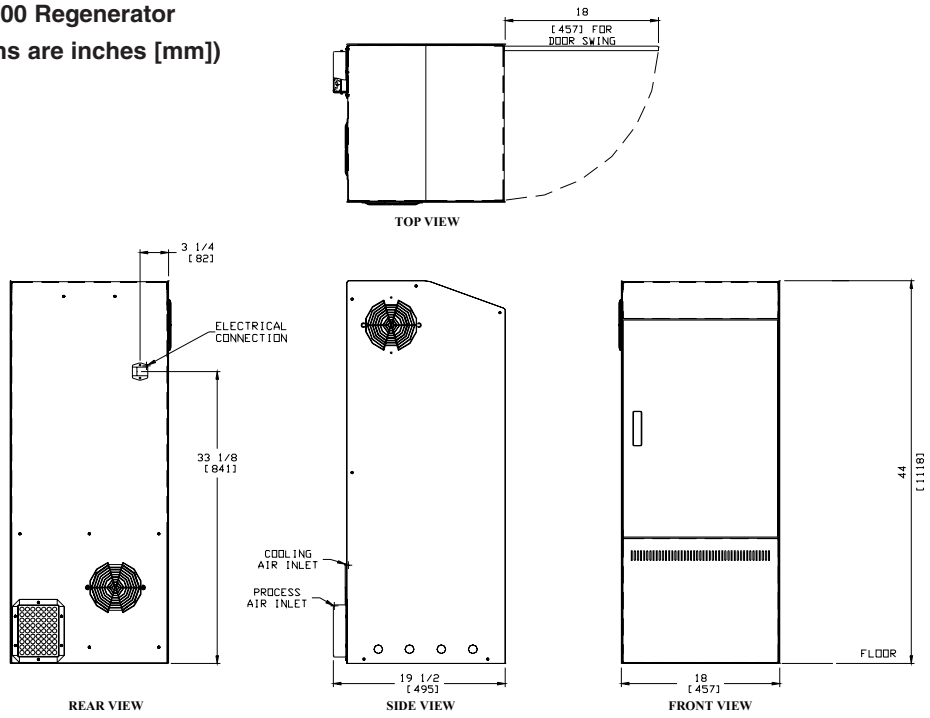
Dimensions shown here are typical, and subject to change without notice.
REFER TO STERIS EQUIPMENT DRAWINGS FOR COMPLETE AND DETAILED INSTALLATION SPECIFICATIONS.

Small Volume VHP Generator (100P)
(dimensions are inches [mm])

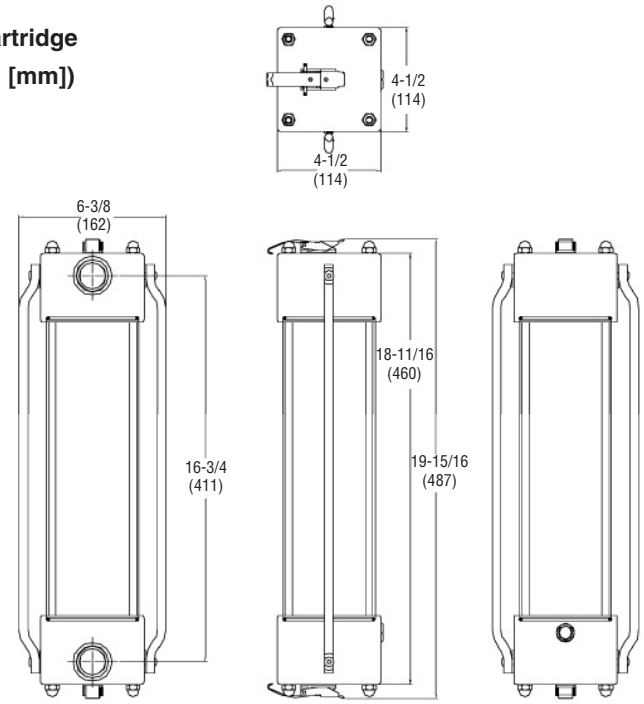


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VHP 100 Regenerator
(dimensions are inches [mm])



Reusable Desiccant Cartridge
(dimensions are inches [mm])



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