

# 9 Liquid Handling Equipment

# Peristaltic Pumps

Advancing the Science of Liquid Handling



## Advanced Control Features

- > Icon Driven User Interface allows for easy setup and operation
- > Large Backlit LCD Display is easy to view from a distance or an angle
- > Durable Front Overlay is resistant to chemicals and wear
- > Polarized and Angled Screen allows for glare free viewing
- > "Trouble-Free" Calibration Screen allows for accurate and quick calibration
- > Ultra High Precision Stepper Motor ensures repeatability and accuracy

## User-Friendly Design Features

- > Low Profile Design reduces space required on the bench or in a hood
- > Pump Settings can be saved and recalled saving time in multi-use settings. Nine quick retrieval setups are available
- > Compliance to Industry Standards: UL/CSA/CE/RoHS/WEEE
- > Multi-Language Help Screens: English, Chinese, French, Japanese, Korean, and Spanish

## OmniSpense ELITE Additional Features

- > Multiple Stacking Pump Heads allows for higher volumes and multiple fill applications with one pump
- > Microcassette Head is ideal for precision micro-dispensing of liquids in well plates, microtubes, or microcentrifuge tubes
- > Works with 2, 3, 6 and 8mm tubing
- > Pump allows for Different Ramping Profiles to avoid splashing or foaming
- > Accommodates a variety of Dispensing and Process Applications

Functionality	Vdose® PRO	Vdose® ELITE
Modes	Dispense Mode	Dispense Mode and Flow Mode
Motor	Dual Speed 75 and 150 RPM	Variable Speed 0.5 to 400 RPM
Direction	Unidirectional; Clockwise	Bidirectional; Clockwise and Counterclockwise
Ramp	Not Offered	User Ramp Control for Dispense and Flow Modes 5 Profiles
Drawback	Not Offered	For Filling into a Closed Container
Pump Heads	Single	Single, Dual, Microcassette
Order No.	W375040-F	W375030-F

## Technical Specification

Model Pump	VAC	WATTS	Operating Speed RPM	Tubing Sizes Available (mm ID)	Dispense Ranges for Tubing mL	Flow Rate Ranges for Tubing mL/min	Accuracy Midrange	Delay Time / Sec	Dim. with Pumphead (HxWxD)	Optional Pump Head Support
Vdose® ELITE	100-240	37	0.5-400	2	0.01-9999.99	20.4-174	≤ ±1%	0.5-99.9	17.3×22.3×33	> Stack up to 2 Pump Heads
				3	0.01-9999.99	40.2-354				> Stacking Pump Head for 2.3mm Wall Tubing
				6	0.01-9999.99	131-1176				> Pump Head for 1.6mm Wall Tubing
				8	0.01-9999.99	200-1746				> Stacking Pump Head for 1.6mm Wall Tubing
Vdose® PRO	100-240	37	75&150	2	0.01-9999.99	30&60	≤ ±1%	0.5-99.9	17.3×22.3×33	> 5-Channel Pump Head for Small-Bore Tubing
				3	0.01-9999.99	60&120				> Pump Head for 1.6mm Wall Tubing
				6	0.01-9999.99	270&540				> Stacking Pump Head for 1.6mm Wall Tubing
				8	0.01-9999.99	540&1080				> Pump Head for 2.3mm Wall Tubing

## Suggested Applications

### Research, Development, and Quality Control

Transfer and distribution of fluids into smaller containers, serial dilutions, sample preparation, and media dispensing.

### Pharmaceutical and Biotechnology

Dispensing microbiological media, pill coating, dilutions, transferring live cells, additions and harvests to and from bioreactors, packaging and filling.

### Food and Beverage

Common uses include dispensing flavorings, colorings, vitamins, and other additives in processing applications, and simple dispensing of end products on production lines or into shelf packages.

### Waste Water and Sample Collection

Industrial and QC applications, environmental compliance hazardous/toxic materials evaluation and site sampling for liquids, sludge, earth/soil, water, etc. Ideal for sampling from barrels and drums.

### International

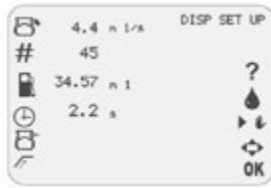
The Icon Driven display and multi-language help screen will work well in laboratories abroad.



Home Screen



Calibration Screen



Dispensing Screen



Microcassette Pump Head



Stacking Pump Head with Standard Pump Head



Stacking Pump Head

## Optional Pump Heads

Order No.	Description	Qty/Case
W375021	Single Pump Head for 2.3mm Wall Tubing	1
W375022	Optional Stacking Pump Head for 2.3mm Wall Tubing	1
W375023	Optional Pump Head for 1.6mm Wall Tubing	1
W375024	Optional Stacking Pump Head for 1.6mm Wall Tubing	1
W375025	Optional 5-Channel Pump Head for use with Small Bore with fixed stops	1

## Peristaltic Pumps Accessories

Order No.	Description	Qty/Case
<b>Tubing Accessories</b>		
374322	Hose Barb/Luer Adapter (fits 2 and 3mm)	1
1050694	Footswitch	1
374324	2 and 3mm Polypropylene Nozzle	6
374326	6mm Polypropylene Nozzle	6
374328	8mm Polypropylene Nozzle	6
374320	Small Glass Sinker (fits 2 and 3mm ID tubing)	6
374321	Large Glass Sinker (fits 6 and 8mm ID tubing)	6
<b>Tubing Support Stand</b>		
1054106	Tubing Support Stand	1
<b>Silicone Tubing Assembly, 2.3 mm wall thickness</b>		
374310	2mm ID, 5 ft Section (1.5m)	1
374311	3mm ID, 5 ft Section (1.5m)	1
374313	6mm ID, 5 ft Section (1.5m)	1
374314	8mm ID, 5 ft Section (1.5m)	1
<b>Silicone Tubing, 2.3mm wall thickness</b>		
374304	2mm ID, 25 ft Section (7.62m)	1
374305	3mm ID, 25 ft Section (7.62m)	1
374306	6mm ID, 25 ft Section (7.62m)	1
374308	8mm ID, 25 ft Section (7.62m)	1
<b>Microtest Manifolds</b>		
851380	4 Position, Straight, 24 Well	1
851381	8 Position, Straight, 96 Well	1
851382	4 Position, Angular, 24 Well	1
851383	8 Position, Angular, 96 Well	1
851388	12 Position, Straight, 96 Well	1
851389	12 Position, Angular, 96 Well	1
<b>Dispensing Cannulas w/Luer Lock</b>		
851411	18 Gauge x 2 in	1
851412	14 Gauge x 4 in	1

### Hose Barb/Luer Adapter

The luer adapter allows connection to equipment and components with a female luer connector.



### Tubing Support Stand

Optional tubing support stand conveniently holds the tubing in place for filling operations.



### Footswitch

Utilize the convenience of a handsfree pump by installing the optional footswitch.



### Silicone Tubing

Assembly consists of 1.5m (5-foot) section of silicone tubing with a wall thickness of 2.3mm, a borosilicate glass sinker, and a polypropylene delivery nozzle. Bulk tubing also available.



### Polypropylene Nozzle & Glass Sinker

- > The nozzle connects to the pump tubing for dispensing of liquids.
- > The glass sinker is used to secure tubing when drawing from a container.



### Microtest Manifolds & Dispensing Cannulas

Ideal for use with 24 and 96 well microplates. This unique dispensing system enables you to perform sample inoculations and cell feedings faster and more efficiently under sterile conditions.



## Portable Suction Unit (Aspirator)

### Adopts oil-free vacuum pump

No lubricant required, maintenance free, low noise and durable.

### Double overflow protection

A built-in float switch plus 0.2 µm PTFE hydrophobic disc filter between suction bottle and pump prevent the medium and bacteria from flowing into the pump.

### Autoclavable

Waste bottle and disc filter are autoclavable.

- > Whole unit is made of ABS plastic and aluminum alloy.
- > Various precision elements are developed, and assembled through long time test.
- > Twin diaphragm pump design low noise, wear resistant, non-pollution, and free maintenance.

### High-Temperature Sterilization

Waste bottle and disc filter can resist high-temperature and high-pressure sterilization

### Employment of an Oil-Free Vacuum Pump

The oil-free vacuum pump is maintenance-free and has a very low noise level and works stable and high-pressure sterilization

### Double Protection Against Liquid Overflow

- > Waste bottle, floating ball.
- > 0.2 µm PTFE disc filter
- > Protection against liquid overflow
- > Keeps liquid from entering the pump.

### Stable and Durable Casing

The casing is made of ABS material, which is light, and easy to clean

### Wire Storage Box

The system provides a storage for the foot switch wire, which makes it easy and convenient to use

**CE**  
Certification  
CE certification



### Application

- > Biochemical cultivation
- > Separation of culture fluids
- > Waste liquid suction in cell cultivation
- > All kinds of waste liquid suction in laboratory environments

Handheld controller

8-branch "tip" plastic suction head

Single-branch stainless steel suction head

Single-branch suction head



### Specifications

Model series	BioVac 225	BioVac 225 PLUS	BioVac 235	BioVac 240	BioVac 240 PLUS
Vacuum Creation Method	Piston Pump	Piston Pump	Piston Pump	Piston Pump	Piston Pump
Power (W)	25	25	25	200	200
Ultimate Vacuum (mbar)	100	100	100	80	80
Max. Flow Rate (l/min)	25	25	35	40	40
Foot Switch	-	-	-	yes	yes
Weight (kg)	4.3	4.3	6.9	12	12
Dimensions (cm)	37 × 15 × 25	37 × 15 × 25	27 × 30 × 28	54 × 26 × 35	54 × 26 × 35
Suction bottle	1000mL X 1	1000mL X 1	1500mL X 2	3000mL X 1	3000mL X 1
Supporting Bio-Suction Kit	Single-branch stainless steel suction head	<ul style="list-style-type: none"> <li>&gt; Single-branch suction head</li> <li>&gt; Single-branch stainless steel suction head</li> <li>&gt; 8-branch "tip" plastic suction head</li> <li>&gt; Handheld controller</li> </ul>	Single-branch stainless steel suction head	Single-branch stainless steel suction head	<ul style="list-style-type: none"> <li>&gt; Single-branch suction head</li> <li>&gt; Single-branch stainless steel suction head</li> <li>&gt; 8-branch "tip" plastic suction head</li> <li>&gt; Handheld controller</li> </ul>
Order No.	167225-22	167225-22-P	167235-22	167240-22	167240-22-P

## Accessories

### Bio-Suction Kit

Successful removal of supernatants from lab containers by means of a vacuum aspiration system depends on applying the correct level of vacuum and on using an aspirator tip that matches the size and form of the container from which liquid is aspirated. The vacuum aspiration tool has been by Wiggins to specifically match the diversity of laboratory containers. Different adapters fit on the hand operator so that your vacuum source is converted into a flexible system for aspirating liquids from tubes, dishes, bottles, T-Flasks, 24-well and 96-well plates.

### Quick-lock design

Ergonomic handle and friendly designed lock switch can keep continuous suction without pressing button all the time.

### Single-handed tip ejection

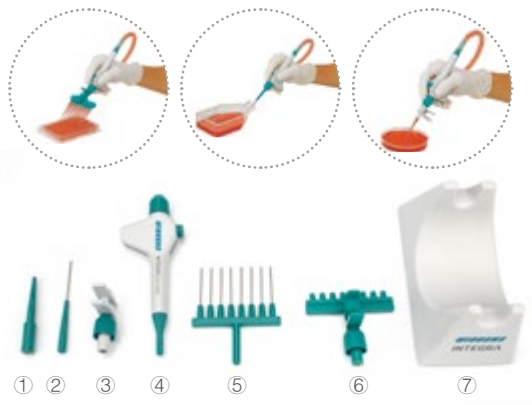
The innovative tip ejection design enables tip ejection by single hand easy.

### Quick fitting change

Quick connection coupling between fitting and handle can make any fittings replaced quickly.

### Vapor sterilization can be applied

The complete kit except rack are made of POM and stainless steel material available for autoclave.



### Specifications

No.	Order No.	Name	Quantity
1	167200-42	Single-branch suction head	1
2	167200-44	Single-branch stainless steel suction head	1
3	167200-45	Single-branch "tip" plastic suction head	1
4	167200-46	Handheld controller	1
5	167200-47	8-branch stainless steel suction head	1
6	167200-48	8-branch "tip" plastic suction head	1
7	167200-49	ABS Depositing rack	1

Name	Bio-Suction Kit
Order No.	167200-37
Operation Form	Vacuum Suction
Outlet Diameter(mm)	5 mm



### Disc Filter

Name	Small Disc Filter	Big Disc Filter
Order No.	167200-35	167200-36
Brand	Pall	Pall
Filter Diameter / Pore Size	37 mm / 0.2 μm	50 mm / 0.2 μm
Outer Diameter	45 mm	73 mm
Material	PTFE	PTFE
Outer Material	PP	PP
Number of Filters per Package	1	1
Suitable for	BioVac225 / BioVac235	BioVac240

### Silicon Tubes



Order No.	Outer Diameter mm	Inner Diameter mm	Thickness mm	Length m
168021-01	14	8	3	1
168022-01	16	10	3	1



167200-50



167200-51

Order No.	Name	Description
167200-50	Manual suction tube	Outer diameter of connector is 8mm, Outer diameter of the PP tube is 5mm
167200-51	High pressure silicone tube	For the tube, the outer diameter is 10mm, inner diameter is 6mm, with hose joints at both ends



167200-52



167200-53

Order No.	Name	Description
167200-52	Plastic stoppers	Suitable for the tube that outer diameter is 10mm or 12mm
167200-53	Detachable tray	300x175mm, suitable for BioVac350 / 650



### PP/PC Waste Bottle

Material	167200-31	167201-32	167200-33
Order No.	167200-31	167201-32	167200-33
Bottle	PC	PC	PC
Bottle Cover	PC	PC	PC
Spill-Proof Buoy	PP	PP	PP
Description			
Capacity(ml)	1000 ml	1500 ml	3000 ml
Outlet(mm)	8 mm	8 mm	8 mm
Spill-Proof Buoy	Yes	Yes	Yes
Autoclavability (121°C)	Yes	Yes	Yes
Suitable for	BioVac225	BioVac235	BioVac240 / 350 / 650

If you want to need other different volume of bottle, please choose 167200-39 followed



### Stand for Suction Bottles

Order No.	Description	Capacity
167200-39-1	Stand for Suction Bottles Designed for Stabilizing	1000mL
167200-39-2	the Bottle in Filtration Work	2000mL
167200-39-3		3000mL

### Foot Pedal



Order No.	Description
167200-40	Foot Pedal, Suitable for BioVac240
167200-41	Foot Pedal

## Vdose Syringe Pumps

The standard syringe pump includes injection element and controller, and the injection element can be single channel or dual channel. Vdose serial syringe pump can carry out accurate liquid transmission automatically. The system is also programmable with a PC to realize more complicated liquid dosing operations.

- > Big TFT display can show the dosing parameters clearly on one screen
- > 11 types of syringes can be selected, from 50 $\mu$ l~25ml, it is easy to change the syringes
- > Dosing speed: from 1.25 $\mu$ l/min to 375ml/min
- > All parts contacted with the liquid are glass or PTFE, that guarantees the chemical resistance
- > The three port valve can switch automatically to complete the repeating withdrawing and dosing
- > The valve ports can be configured for convenient liquid recovery without taking part the tubing
- > RS-232/485 digital communication ports available for remote PC or PLC control



Vdose2400



Vdose1200

### Specifications

Model	Vdose1200	Vdose2400
Number of dosing channel	Single Position	Dual Position
Flow Rate	1.25 $\mu$ l/min~375 ml/min	1.25 $\mu$ l/min~375 ml/min
Precision	$\leq 5 \%$	$\leq 5 \%$
Weight	5.5 kg	9.1 kg
Outer Dimensions (H x W x D mm)	305 x 89 x 330	305 x 178 x 330
Syringe	Size	50 $\mu$ l~25 ml
	Material	Glass and Teflon wetted
	Dispense Resolution	1/6000 of the syringe size in use
	Feature	Easily interchangeable
Valve	Material	PEEK
	Feature	3 to 8 selectable ports
Interface Port	RS232 / 485	RS232 / 485
Electric requirements	110~240V,50/60Hz	110~240V,50/60Hz
Order No.	V900703	V900702

### Order Information

Order No.	Description
V900703	Single Position Syringe pump, with dosing unit and controller (need to specify the valve ports and glass syringe volume)
V900702	Dual Position Syringe pump, with dosing unit and controller (need to specify the valve ports and glass syringe volume)
<b>Accessories</b>	
V900700-5	50 $\mu$ L glass syringe with Teflon plunger
V900700-6	100 $\mu$ L glass syringe with Teflon plunger
V900700-7	250 $\mu$ L glass syringe with Teflon plunger
V900700-8	500 $\mu$ L glass syringe with Teflon plunger
V900700-9	1mL glass syringe with Teflon plunger
V900700-10	2.5mL glass syringe with Teflon plunger
V900700-11	5mL glass syringe with Teflon plunger
V900700-12	10mL glass syringe with Teflon plunger
V900700-13	25mL glass syringe with Teflon plunger
<b>PTFE Tubing and Fittings</b>	
V900700-19	Tubing Length: 6m; Outer Diameter: 1/8" ; Includes: 6 nuts and 6 ferrules
V900700-20	Tubing Length: 30m; Outer Diameter: 1/8" ; Includes: 6 nuts and 6 ferrules
V900700-21	Tubing Length: 6m; Outer Diameter: 1/16" ; Includes: 6 nuts and 6 ferrules
V900700-22	Tubing Length: 30m; Outer Diameter: 1/16" ; Includes: 6 nuts and 6 ferrules

