

 **Ovation**<sup>®</sup>  
*BioNatural Pipette*



**Operator's Guide  
for Fixed-Volume Pipettes**

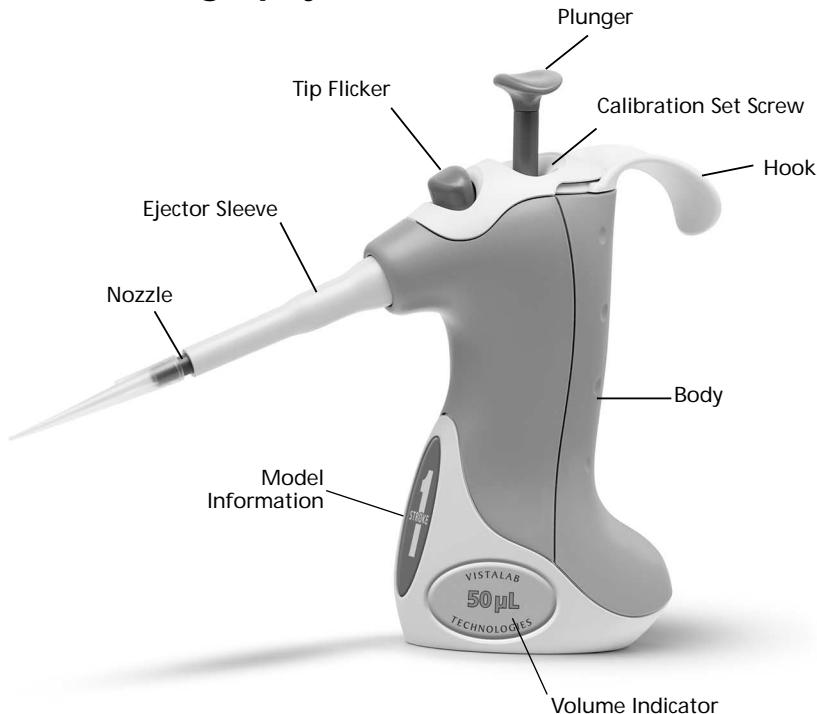
# Introduction

The Ovation® BioNatural Pipette is intended for use as a liquid transfer device, capable of aspirating and dispensing precise fluid volumes. As you can see from its appearance, it is different from every pipette that you have used before, therefore please read the instructions carefully.

This manual describes how to use and care for Ovation fixed-volume pipettes.

Single stroke and two stroke (with overblow) models are available to cover liquid dispensing needs ranging from 1 $\mu$ L to 1000 $\mu$ L. The model is indicated on a label on the front of the pipette.

## A Quick Geography Lesson

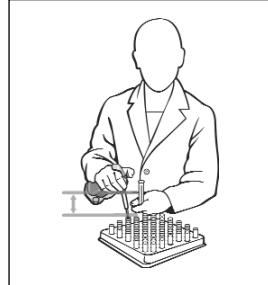


## A Word About Posture

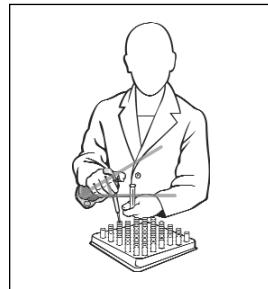
Studies have shown that pipetting is the #1 cause of musculoskeletal disorders in the laboratory – it is, by nature, a repetitive process that puts strain on the body. While we can't change how repetitive pipetting is, we can and did change how comfortable you are while doing it.

The Ovation BioNatural Pipette is the only pipette designed to keep your hand in the neutral position recommended by ergonomics experts. We call this *BioNatural™* pipetting – it allows a lower hand location to ease stress in the shoulder, and a relaxed wrist angle eliminates uncomfortable extension and radial deviation movements in the arm. Force, velocity and exertion from repetition or duration have also been neutralized because of the Ovation pipette's unique working position and reduced forces required during operation.

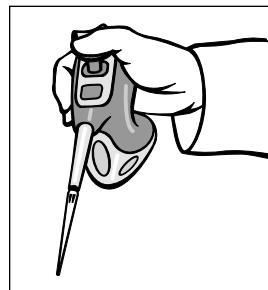
Some practice may be required to change years of posture and habits developed using standard axial pipettes; the physical benefits of BioNatural pipetting are worth the practice! When using the Ovation pipette, arm/hand elevation should not exceed 12" from the work surface, wrist rotation should not exceed 90°, and hand posture should remain relaxed with the wrist and back of hand slightly flexed.



Arm elevation remains low, minimizing stress to elbow, shoulder and neck



Wrist remains in a neutral range of motion throughout all pipetting operations



A loose, relaxed grip increases available strength in the hand, improving endurance and productivity during pipetting

## Picking up the Ovation Pipette

The Ovation pipette has been designed for compatibility with human anatomy. Allow the body of the pipette to fill your palm, and rotate the adjustable hook to rest comfortably on your forefinger. The texture on the unit's back helps reinforce correct hand positioning.

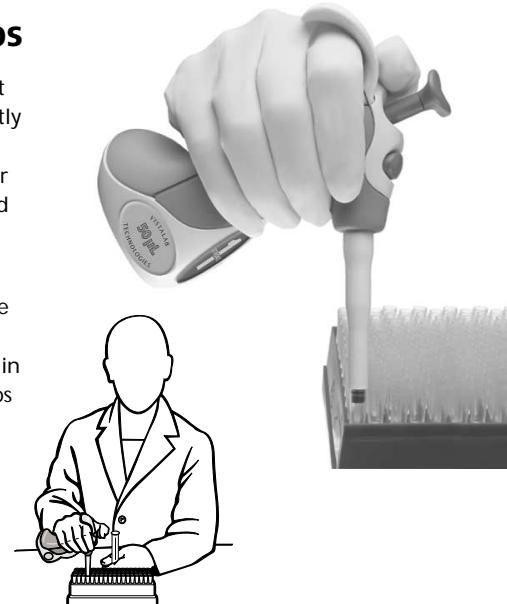
The Ovation pipette's unique ergonomic design and adjustable hook is compatible for both right and left-handed use.



## Acquiring Disposable Tips

Maintaining a flat wrist-hand posture, insert the Ovation pipette's nozzle into a tip. Lightly press down on the body of the pipette until you hear or feel a "click". This "click" is your indication that the tip is properly seated and the tip is ready for use.

Disposable pipette tips are to be used once, then discarded. For proper fit and to achieve stated precision and accuracy specifications, use the VistaLab pipette tips recommended in this manual. Use of other manufacturer's tips can cause the pipette performance to differ from stated specifications, can damage the nozzle or ejector sleeve, or impede the performance of the tip ejection system.



## Aspirating and Dispensing

1. On two stroke models, press the plunger down to the first stop; on single stroke models, fully depress the plunger. Immerse pipette tip in the sample.
2. Smoothly and slowly, release the plunger allowing sample to enter the pipette tip. Wait one second before withdrawing the tip from the sample.
3. Place the pipette tip against the side of the receiving vessel close to the bottom of the vessel, or if it contains liquid, just above the surface of the liquid.
4. On two stroke models, smoothly press the plunger to the first stop, wait one second, then fully depress the plunger to the second stop to dispense all liquid from the tip. On single stroke models, fully depress the plunger.
5. With the plunger depressed, slowly withdraw the tip.
6. Release the plunger when the tip is away from the receiving vessel.

See "Pipetting Hints for Optimal Performance" for additional information.



Tip Immersion Depth	
1μL to 10μL	1mm
11μL to 100μL	2-3mm
101μL to 1000μL	2-4mm

## Discarding Tips

Point the nozzle down and press the Tip Flicker to eject and discard a used tip into an appropriate waste container.

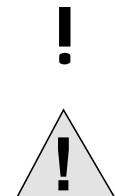


Ensure the nozzle and tip are pointed away from the face, hands and arms.



## Pipetting Hints for Optimal Performance

- When using viscous or volatile reagents, pre-wetting the pipette tip may be appropriate. To pre-wet, aspirate and dispense the liquid back into the original vessel. Then fill the tip and dispense contents into receiving vessel.
- If an air bubble forms in the tip during aspiration, return the sample, discard the tip, and use a fresh tip.
- Smoothly depress and release the plunger when pipetting, maintaining the same speed of motion for all samples. Do not let the plunger "snap back" to the uppermost position.
- When finished aspirating, touch the pipette tip against the side of the vessel as it is being withdrawn to remove any liquid that may have adhered to the outside of the tip. Wipe the pipette tip ONLY if there is liquid adhering to the outside. Be careful not to "wick out" any of the contents from the the pipette tip.
- Dispense against the side of the receiving vessel or above the liquid surface. To remove any of the measured liquid that may have adhered to the pipette tip, touch off the tip against the side of the receiving vessel.



If the pipette is to be used with hazardous fluids, safe laboratory practice is to be followed. Refer to manufacturer's Material Safety Data Sheets for proper handling instructions. Always use VistaLab filtered tips (see *tips table for catalog numbers*) when pipetting potentially caustic, corrosive or volatile solutions. Failure to do so may result in premature wear and damage to the internal seals and piston, and void the pipette's warranty.

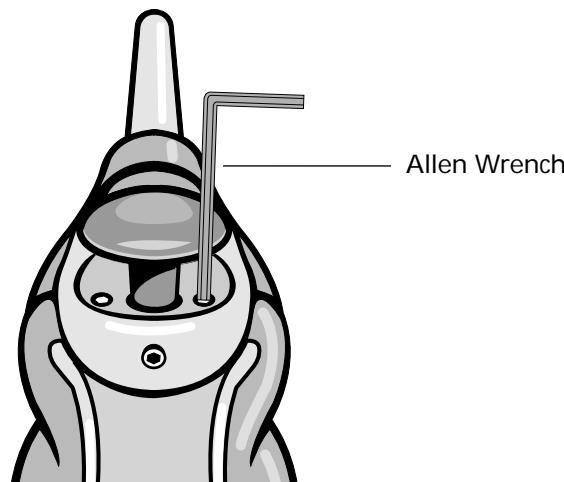
## Calibration

Each Ovation pipette is factory calibrated to manufacturing specifications at 21.5°C (±2°) using distilled water. It is recommended that calibration be verified on an as-needed basis, or every six months, whichever is applicable.

The Ovation pipette can be easily in-lab calibrated ±10% for optimum performance for your operating conditions. To determine volume delivery, VistaLab Technologies recommends following the procedure "Ovation Performance Verification Protocol". This document is available at [www.vistalab.com](http://www.vistalab.com), or through VistaLab Technical Services.

In-laboratory calibration can be accomplished by inserting an Allen wrench into the hole located on the top of the Ovation pipette (see illustration below). Volume delivery is increased by turning the Allen-head calibration set screw in a clockwise direction. Turning the screw in a counterclockwise direction decreases volume delivery.

It is recommended that whenever calibration is changed, the performance of the pipette be verified.



## Taking Care of your Ovation Pipette

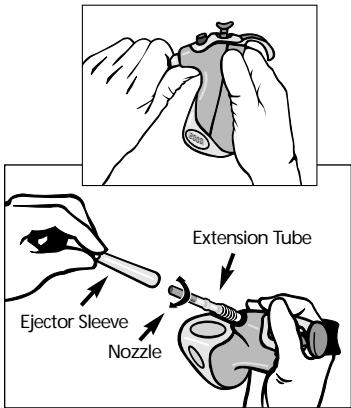
The Ovation pipette requires minimal routine maintenance. Always store it in its "standing" position when not in use. Clean outer surfaces as needed with a soft cloth dampened with warm water. To decontaminate outer surfaces, wipe with a 70% aqueous solution of ethanol or isopropanol, or use a 10% bleach solution followed by water. **ONLY WIPE THE LCD SCREEN DISPLAY WITH WATER.**

### Replacing the Nozzle

The replaceable nozzle contains an internal aerosol/liquid barrier filter to prevent liquid from being aspirated into the pipette. Additionally, the nozzle filter offers some protection to internal parts from routine exposure to hazardous liquids and vapors. If this filter becomes wet, the pipette will not aspirate fluid until a new nozzle is installed.

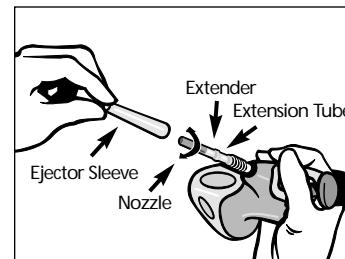
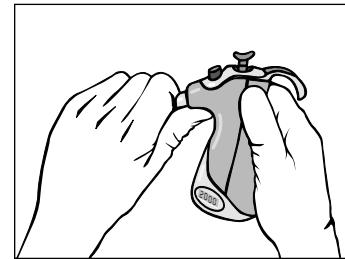
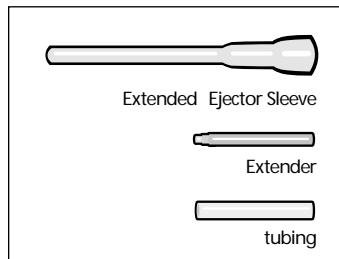
**Note:** Wear gloves when doing this procedure

1. Remove the ejector sleeve by pulling it away from the pipette body to expose the nozzle assembly.
2. Place tubing provided on nozzle, and unscrew it in a counterclockwise direction. If it is suspected that the air tube has been contaminated, gently wipe the end of the air tube with a slightly dampened, lint-free tissue, then dry it off.
3. Place tubing on a new nozzle, and screw the nozzle onto the extension tube in a clockwise direction. **Firmly** tighten and remove tubing.
4. Slide the ejector sleeve over the nozzle assembly.
5. Push the sleeve firmly into place while using a slight rocking or twisting motion.



## Installing the Nozzle Extender Kit

Some applications require aspiration from tall sample tubes. A Nozzle Extender Kit is available to extend the reach of your Ovation pipette. To install the extender and longer ejector sleeve:



**Note:** Wear gloves when doing this procedure.

1. Remove the standard ejector sleeve by pulling it away from the pipette body to expose the nozzle assembly.
2. Place the piece of tubing provided on nozzle, and unscrew it in a counterclockwise direction.
3. Place tubing onto the nozzle extender, and screw it onto the extension tube in a clockwise direction. **Firmly** tighten and remove tubing.
4. Place tubing onto the nozzle, and screw the nozzle onto the extender in a clockwise direction. **Firmly** tighten and remove tubing.
5. Slide the extended ejector sleeve over the nozzle assembly.
6. Push the sleeve firmly into place while using a slight rocking or twisting motion.

# Ovation BioNatural Pipette Specifications – Fixed Volume Models

Model	Accuracy*	Precision*
Ovation 1 $\mu$ L <sup>†</sup>	$\pm 2.7\%$	1.80%
Ovation 2 $\mu$ L <sup>†</sup>	$\pm 1.5\%$	0.90%
Ovation 5 $\mu$ L <sup>†</sup>	$\pm 1.5\%$	0.60%
Ovation 10 $\mu$ L <sup>†</sup>	$\pm 1.5\%$	0.50%
Ovation 20 $\mu$ L <sup>†</sup>	$\pm 1.0\%$	0.30%
Ovation 25 $\mu$ L <sup>†</sup>	$\pm 1.4\%$	0.60%
Ovation 50 $\mu$ L <sup>†</sup>	$\pm 0.8\%$	0.24%
Ovation 100 $\mu$ L <sup>†</sup>	$\pm 0.8\%$	0.15%
Ovation 200 $\mu$ L <sup>†</sup>	$\pm 0.8\%$	0.15%
Ovation 250 $\mu$ L <sup>†</sup>	$\pm 1.2\%$	0.30%
Ovation 300 $\mu$ L <sup>†</sup>	$\pm 1.0\%$	0.25%
Ovation 500 $\mu$ L <sup>†</sup>	$\pm 0.8\%$	0.20%
Ovation 1000 $\mu$ L <sup>†</sup>	$\pm 0.8\%$	0.15%



Additional models of Ovation BioNatural Pipettes with a fixed volume setting are available upon request. Contact VistaLab Customer Services for more information.

\* Specifications subject to change. See [www.vistalab.com](http://www.vistalab.com) for current information.

<sup>†</sup> Available in two stroke models only.

## Ovation Tips – A fitting solution.

Whether the requirements of your application require tips that are sterile, RNase/DNase certified, Pyrogen-free, Trace Metal certified or filtered, there's a genuine Ovation tip to meet your needs. See the tip chart (below) or visit our web site – [www.vistalab.com](http://www.vistalab.com) for complete information on all the tip options for the Ovation BioNatural Pipette, plus accessories and calibration and repair services.

4058-1000

Catalog number

Ovation – fixed volume models: 1 $\mu$ L-20 $\mu$ L 21 $\mu$ L-200 $\mu$ L 201 $\mu$ L-1000 $\mu$ L

	TIP SIZE:	MICRO	SMALL	LARGE
NON-Sterile	VistaRak 192 tips/rack, 5 racks	4060-1002	4060-2004	4060-3004
	VistaStak, 192 tips/layer, 5 layers (small size) or 3 layers (micro and large size)	4060-9024	4060-9025	4060-9026
	VistaBulk™, 1000 tips/bag	4058-1000	4058-2000	4058-3000
	Protectainer™ Bulk Pack, 1000 tips (small) or 750 tips (large)		4025	4026
	Econo-Pak™ Bulk Pack, 1000 tips		4225	4226
Sterile	VistaRak, Sterile, Pyrogen-free, RNase/DNase certified, 192 tips/rack, 5 racks	4060-1032	4060-2132	4060-3132
	VistaTip™ Individually Wrapped Sterile, 200 tips		2025	2026
	VistaTip Individually Wrapped, Sterile, Pyrogen-free, 200 tips		2027	2028
FILTERED	VistaRak, Filtered, Sterile, Pyrogen-free, RNase/DNase certified, 192 tips/rack, 5 racks † 2 $\mu$ L tip for Ovation 0.2-20 $\mu$ L, Ovation 1 $\mu$ L and Ovation 2 $\mu$ L only	4060-1332 4060-1333†	4060-2332	4060-3332

Note: Filtered tips contain a unique hydrophobic filter which acts as a barrier to aqueous liquids and aerosols, protecting the pipette and sample from trace amounts of carryover.

## Accessories for Ovation Pipettes – Fixed Volume Models

### Nozzles, Filters, Extenders & Ejector Sleeves

Catalog No.	Description
9057-1013	Nozzle for Ovation 1µL & 2µL, 5/Box
9057-1010	Nozzle for Ovation models 3µL – 20µL, 10/Box
9057-2010	Nozzle for Ovation models 21µL – 200µL, 10/Box
9057-3010	Nozzle for Ovation model 201µL – 1000µL, 10/Box
9057-2009	Nozzle Replacement Filters for models 10µL to 200µL, 25/bag
9057-3009	Nozzle Replacement Filters for model 100µL to 1000µL, 25/bag
9057-1016	Type A Nozzle for Ovation 100µL to 1000µL, 5/Box
9057-1012	Nozzle Extender for all models <u>except 1µL &amp; 2µL and 100µL to 1000µL</u>
9057-1011	Ejector sleeve for all models <u>except 100µL to 1000µL</u>
9057-3011	Ejector sleeve for Ovation models 100µL to 1000µL

### Plunger Assembly Seal Kits

Catalog No.	Description
9057-1001	Seal Kit for Ovation 1µL & 2µL
9057-1002	Seal Kit for Ovation 3µL – 9µL
9057-1003	Seal Kit for Ovation 10µL – 10µL
9057-2004	Seal Kit for Ovation 21µL-100µL
9057-2034	Viton Seal Kit for Ovation 21µL-100µL
9057-2005	Seal Kit for Ovation 200µL
9057-2035	Viton Seal Kit for Ovation 200µL
9057-3006	Seal Kit for Ovation 201µL-1000µL
9057-3036	Viton Seal Kit for Ovation 201µL-1000µL

### Miscellaneous

Catalog No.	Description
9057-4001	CR2 Battery – for all models
9057-4002	Calibration Labels, 5/Box
9057-4003	Ovation Pipette Stand
9057-4004	Cap Opener Kit, Qty 3
9057-4005	Replacement thumb button
9057-4006	Replacement base screw

## General Product Information

**Product Description:** The Ovation pipette is a fixed volume, air displacement, one stroke or two stroke piston pipette intended to aspirate and dispense precise fluid volumes.

### Operating Temperature & Environment:

Temperature Range: 15° – 35°C

Relative Humidity Range, non-condensing: 10-85%

Atmospheric Pressure: 70-106 kPa

**Pipette body chemical compatibility:** Water, diluted ethanol or isopropanol, diluted bleach. See the document “Ovation Chemical Compatibility” in the support area at [www.vistalab.com](http://www.vistalab.com) about other specific chemical formulations concerning the pipette or VistaLab tips.



Use of the Ovation pipette not specified in this manual may impair protection provided by the equipment.

### Packaging Content:

- Ovation BioNatural Pipette
- Replacement Nozzle
  - 2µL, Micro, Small or Large
- Calibration Certificate
- Calibration Labels
- Quick Reference Guide
- Registration Card

## Safety Compliance

Ovation pipettes have been tested and approved for safety labels:

EN 61010-1:1992 Safety Requirements CSA C22.2, No. 1010.1-92

EN 61326 EMC Requirements UL 3111-1



## Warranty

VistaLab Technologies, Inc. warrants the Ovation BioNatural Pipette against defects in materials and workmanship for one year from the date of purchase. To register your pipette and activate the warranty, return the enclosed registration card, or register on the VistaLab Technologies web site at [www.vistalab.com](http://www.vistalab.com).

This warranty is void if defects or damage result from improper handling, unauthorized modification, or use of ancillary products not supported by VistaLab Technologies. This warranty is exclusive; no other warranty is expressed or implied.

Should the pipette need to be returned for service or calibration verification, contact Customer Service for a return authorization. Repack the pipette in its original packaging. Customer is responsible for shipping and insurance charges. If original packaging is unavailable, contact VistaLab Technologies for alternative packaging instructions.



Damage to the pipette as a result of improper packaging is the responsibility of the customer.

To request a return authorization to send in your pipette for factory maintenance and/or calibration verification, or for other technical assistance, contact us at:

**VistaLab Technologies, Inc.**  
2 Geneva Road  
Brewster, NY 10509 USA

**1-888-652-6520 (North America only)**  
**1-914-244-6226 (Worldwide)**  
e-mail: [techservice@vistalab.com](mailto:techservice@vistalab.com)

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[www.vistalab.com](http://www.vistalab.com)