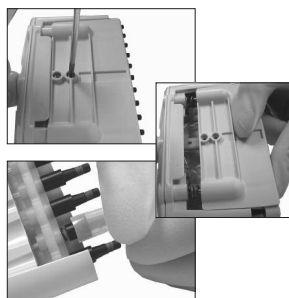


Nozzles and Nozzle Filters *(continued)*

Note for 0.5–20µL Models only:

To remove a nozzle(s), the rear panel of the ejector sleeve needs to be removed. Remove two screws on the panel, and slide it away as shown. Remove springs from posts, and remove affected nozzle(s) with tubing provided. After nozzle(s) has been replaced, reinstall springs, rear panel and screws.



- Place rubber tubing onto a new or reconditioned nozzle, and screw the nozzle onto the pipette in a clockwise direction. **Firmly tighten** and remove tubing from nozzle.

To replace a nozzle filter:

- Remove the filter inside the nozzle(s) by inserting a straightened paperclip into the small hole in the tip end of the nozzle, and push the filter out through the wide (threaded) opening.



- Pick up a new nozzle filter with tweezers and place it into the wide (threaded) end of the nozzle.

Make sure the narrow end is inserted first.



- Use the filter insertion tool to push the filter into position. Press down until the end of the tool makes contact with the inside bottom of the nozzle.



- Tap the nozzle on the counter to remove any loose cellulose material.

- The nozzle is ready for re-installation.



VistaLab Technologies, Inc.
27 Radio Circle Drive
Mt. Kisco, NY 10549 USA
(888) 652-6520 or (914) 244-6226

Tips & Accessories

4060-1332

Catalog number

Ovation – Multichannel models:

0.5–20µL 2–125µL 25–850µL
5–250µL 25–1250µL

		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	
	VistaRak, Filtered, Sterile, Pyrogen-free, RNase/DNase certified, 192 tips/rack, 5 racks	4060-1332	4060-2332	4060-3332	
ACCESSORIES	Nozzles, 4/box	9060-1010	9060-2010	9060-3010	
	Replacement Nozzle Filters, 48/bag		9060-4005		
	Replacement Nozzle Seals, 4/bag	9060-1013	9060-2013	9060-3013	
	Replacement Nozzle Seals, 24/bag	9060-1012	9060-2012	9060-3012	
	Nozzle Reconditioning Kit: contains 2 nozzles 24 seals, 24 filters & tool	9060-1011	9060-2011	9060-3011	
	Ovation Pipette Stand		9057-4003		
	Power Supply, 90-264VAC, 47-63Hz		9060-9005		
	Power Supply w/4 pipette connections		9060-9006		
Base Screw with "O" ring		9057-4006			

Pipette Operating Temperature & Environment Conditions

Indoor use / Pollution Degree 2

Altitude up to 2000m

Temperature Range: 15°–35°C

Relative Humidity Range, non-condensing: 10°–85°C

Atmospheric Pressure: 70–106kPa

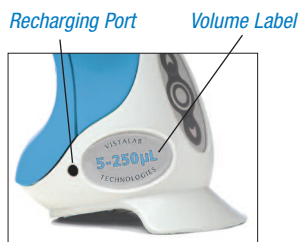
Specifications, Troubleshooting Information and the complete Operator Instructions can be found at www.vistalab.com.






Pick Up Ovation

1. Allow body to fill your palm.
2. Rotate adjustable hook to rest comfortably on your forefinger.

Multichannel models require an Ovation Power Supply Unit (sold separately) to recharge the pipette's battery. Use of other power units can damage the pipette and invalidate warranty.



Select Function or Program

1. Press  button to advance the pipette to the desired liquid handling function or next setting within a function.
2. Press  or  button to change the settings within a function, such as volume, speed and count.



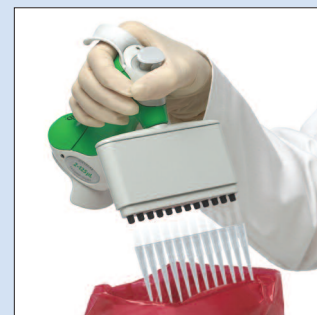
Install Tips

1. Insert nozzles into tips.
2. Press down until a "click" is heard. This indicates that all tips are securely sealed onto the nozzles.



Aspirate & Dispense

1. Immerse tips into sample liquid.
2. Press and release pipetting trigger to aspirate sample. To dispense, press pipetting trigger again.



Eject Tips

1. Point pipette tips into a waste container.
2. Press the tip eject button. The ejector slide is activated, effortlessly discarding all tips simultaneously.

First Time Use


Recharge the pipette for approximately 90 minutes prior to use (see *Recharge the Battery* in this guide), and register the pipette at www.vistalab.com to activate the warranty.

Pipette Display

Displays volume and values during set-up, e.g. # of mix cycles, # of dispenses

Displayed when cal factor has been changed from factory setting of 1.000

1000 µL

C  MULTI

Symbol indicates next portion of aspirate (up) or dispense (down) cycle to be performed





Displays liquid handling function, setting or prompt that is active

Liquid Handling Functions

Function	Description
P1, P2, P3	Pipette – Routine aspirating and dispensing at stored (user-defined) volumes (TC or “to contain” pipetting). Sample volume is dispensed with overblow to expel all liquid.
MULTI	Multiple Dispense – repetitive dispensing of equal volumes. The pipette calculates, displays and aspirates the total volume required, then dispenses in multiple aliquots. An automatic repetitive dispensing utility, PRCE , can be activated.
SDILU	Serial Dilute – a sequence of dilutions. Sample is aspirated, dispensed into diluent and mixed. Diluted sample is automatically aspirated for addition to the next diluent.
MIX	Mix – repetitive cycles of aspirating and dispensing.
REVER	A sample transfer function based on exact dispense volume (“to deliver” pipetting). Sample volume is aspirated with slight overage and the exact volume is dispensed, leaving some liquid in the tip that is then purged.

For detailed examples on setup, review and running of each liquid handling function, see the *Ovation Multichannel Operator's Guide* at www.vistalab.com

Operation

- Press  to display the desired liquid handling function.
 - To review current settings, press and release the pipetting trigger as needed to step through the full pipetting cycle
 - To adjust a setting, press  or  until desired value is displayed, then save the new setting by pressing 
- Press and release pipetting trigger to aspirate sample.
- To dispense, press pipetting trigger again.
 - Liquid handling functions **P1**, **P2**, and **P3** have automatic “overblow”. Hold trigger when dispensing to stop pistons at their lowest position. **Move tips away from dispense area before releasing pipetting trigger to prevent accidental re-aspiration of sample.**



Pipetting Hints for Optimal Performance

- When using viscous or volatile reagents, pre-wetting pipette tips 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 a tip during aspiration, return the sample, discard the tips, and use fresh tips.
- When finished aspirating, touch pipette tips against the side of the vessel as they are being withdrawn to remove any liquid that may have adhered to the outside of a tip. Wipe pipette tips ONLY if there is liquid adhering to the outside. Be careful not to “wick out” any of the contents from a 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 a pipette tip, touch off the tips against the side of the receiving vessel.











If the pipette is to be used with hazardous fluids, safe laboratory practice should 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. When organic or volatile solutions are routinely used, VistaLab Technologies recommends the use of VITON seals. See the chemical compatibility chart in the Ovation documentation library at www.vistalab.com for more information.

Settings and Prompts

Display	Description
FILL	Volume to be dispensed. (When using P1 , P2 or P3 , this is also the volume that will be aspirated)
SPEED	Speed at which the pipette aspirates, dispenses and mixes within a liquid handling function. 5 settings are available. (1 is slowest, 5 is fastest)
DIS	Shows the number of dispenses remaining when using MULTI .
DISP	Volume of individual dispense(s) when using MULTI .
MIX	Volume of dilution to be mixed when using SDILU .
VOL	Volume of sample to be mixed when using MIX .
COUNT	Number of dispenses to be made when using MULTI , or the number of mix cycles (1-9) when using SDILU or MIX .
PURGE	Ends any function and expels liquid remaining in tips. Press  during a function and PURGE appears on LCD. Press pipetting trigger to expel liquid or  again to cancel PURGE .
ZERO	Indicates the pipette pistons are at the overblow or lowest position at the end of MIX . Pressing the pipette trigger when ZERO is displayed will return the pistons to the start position.

Additional Options

<u>Display</u>	<u>Description</u>
PRCE	<p>Used for automatic repetitive dispensing with the MULTI function. When dispensing, press and hold the pipetting trigger to activate PRCE, and sample will be dispensed at timed intervals. Four settings are available. To set the PRCE interval:</p> <ol style="list-style-type: none">1. Simultaneously press and hold  until TRNE appears on display.2. Press and release  until PRCE appears on display, then press  to select or change setting (lower number = shorter interval).3. Press the pipetting trigger to return to routine operation.
TRNE	<p>Ovation pipettes use “beep” tones to indicate various actions:</p> <ul style="list-style-type: none">• A <u>single</u> beep tone indicates the end of a pipetting step.• A <u>double</u> beep tone indicates the completion of the (last) dispense cycle when using the MULTI function and REVER.• A <u>triple</u> beep tone indicates the end of a liquid handling function.• An <u>alert</u> tone indicates the pipetting trigger was pressed before set-up was completed, or an illegal action or programming event has occurred. <p>Beep tones may be disabled. Simultaneously press and hold  until TRNE appears on display. Press  to toggle “beep” setting ON or OFF, and press the pipetting trigger to return to routine operation.</p>
LCD	<p>The contrast on the pipette’s liquid crystal display can be adjusted as needed:</p> <ol style="list-style-type: none">1. Simultaneously press and hold  until TRNE appears on display.2. Press and release  until LCD appears on display, then press  to increase or decrease contrast to desired level.3. Press the pipetting trigger to return to routine operation.
SLEEP	<p>After 10 minutes of inactivity, the pipette automatically enters SLEEP to conserve battery power. Press any key or the pipetting trigger to resume operation.</p>
HOME	<p>When the pipette is first activated after SLEEP, the HOME prompt is displayed while the plungers are automatically reset.</p>
CAL	<p>Ovation pipettes have an internal software program for easy in-lab calibration. See the <i>Ovation Multichannel Operator’s Guide</i> at www.vistalab.com for complete instructions. A Performance Verification procedure is also available on the web site.</p>

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. Remove ejector sleeve and wipe outside of nozzle and inside of ejector sleeve with 70% alcohol to remove any accumulated deposits. **ONLY WIPE THE LCD SCREEN DISPLAY WITH WATER.**

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

Recharging the Battery

To ensure the pipette always has a full charge, it may be left connected indefinitely to the power supply. The battery should be recharged when the battery icon on the LCD is flashing which indicates a low charge. Recharge a drained battery for approximately 90 minutes.



WARNING! Only connect power supply to a compatible power source. Use of an incompatible power source can cause shock and fire hazard. Use only the power supply provided by VistaLab Technologies. Use of other power supplies can damage the pipette and invalidate warranty. Unplug power supply before cleaning exterior.

For more information see *Ovation Multichannel Operator’s Guide* at www.vistalab.com

Nozzles and Nozzle Filters

Ovation pipettes feature a removeable nozzle with an internal aerosol/liquid barrier filter which prevents liquid from being aspirated into the pipette. If this filter becomes wet, the pipette will not aspirate fluid until the filter or entire nozzle is replaced.

If any or all channels are not aspirating or dispensing properly, it could be caused by (a) poor fitting non-Ovation tip, (b) loose nozzles that can be tightened by turning clockwise, (c) a nozzle or filter that needs to be replaced, or (d) a nozzle seal that is dirty, worn or torn. To clean seals, wipe with lint-free material and alcohol.

To remove a nozzle:



NOTE: Wear gloves when doing this procedure.

1. Place rubber tubing onto nozzle, and unscrew in counterclockwise direction. If it is suspected that the air tube has been contaminated, gently wipe the end of the air tube with a tissue, then dry it off.