Quick Reference Guide for ESC Electronic Single Channel Pipettes
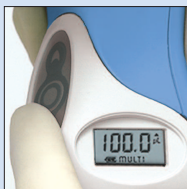
Ovation®
The Better Way to Pipette

Refer to Operator's Guide at www.vistalab.com for complete instructions.

To Pick Up Ovation

1. Allow body to fill your palm

2. Rotate adjustable hook to rest comfortably on your forefinger

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.

Electronic models are supplied with an Ovation Power Supply Unit to recharge the pipette's battery. Use of other power units can damage the pipette and invalidate warranty.

Tip Eject Button

Pipetting Trigger

Ejector Sleeve

Adjustable Hook

Body

Nozzle

Recharging Port

Keypad

Volume Label

25-1250 µL

LCD Display

To Install a Tip

1. Insert nozzle into tip

2. Lightly press down until a "click" is heard. This indicates the tip is securely sealed onto the nozzle.

To Aspirate & Dispense

1. Immerse tips into sample liquid.

2. Press and release pipetting trigger to aspirate sample. To dispense, press pipetting trigger again.
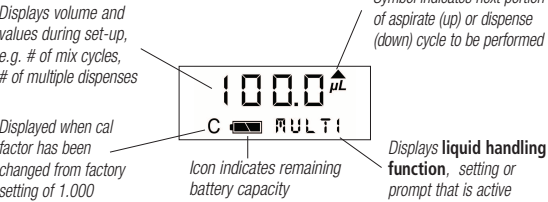
To Eject a Tip

1. Point pipette tip into a waste container.

2. Press the tip eject button. The ejector sleeve is activated, effortlessly discarding the tip.

First Time Use

Recharge Ovation battery approximately 90 minutes prior to use (see *Recharge the Battery*), and go to www.vistalab.com to activate warranty.

Pipette Display

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

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

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

100.0 µL

C 🔋 **MULTI**

Icon indicates remaining battery capacity

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 ("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 Operator's Guide at www.vistalab.com

Operation

1. 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 ◎

2. Press and release pipetting trigger to aspirate sample.

3. 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 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

Display	Description
PRCE	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 PRCE interval:

1. Simultaneously press and hold ⌃⌄ until TONE appears on display.

2. Press and release ◎ until PRCE appears on display, then press ⌃ or ⌄ to select or change setting (lower number = shorter interval).

3. Press the pipetting trigger to return to routine operation.

| TONE | Ovation pipettes use "beep" tones to indicate various actions: |

• A single beep tone indicates the end of a pipetting step.

• A double beep tone indicates the completion of the (last) dispense cycle when using the MULTI function and REVER.

• A triple beep tone indicates end of a liquid handling function.

• An alert tone indicates the pipetting trigger was pressed before set-up was completed, or an illegal action or programming event has occurred.

Beep tones may be disabled. Simultaneously press and hold ⌃ ⌄ until TONE appears on display. Press ⌃ or ⌄ to toggle "beep" setting ON or OFF, and press the pipetting trigger to return to routine operation.

| LCD | The contrast on the pipette's liquid crystal display can be adjusted as needed: |

1. Simultaneously press and hold ⌃⌄ until TONE appears on display.

2. Press and release ◎ until LCD appears on display, then press ⌃ or ⌄ to increase or decrease contrast to desired level.

3. Press the pipetting trigger to return to routine operation.

SLEEP	After 10 minutes of inactivity, the pipette automatically enters SLEEP to conserve battery power. Press any key or the pipetting trigger to resume operation.
HOME	When the pipette is first activated after SLEEP, the HOME prompt is displayed while the plungers are automatically reset.
CAL	Ovation pipettes have an internal software program for easy in-lab calibration. See the *Operator's Guide for Electronic Single Channel Pipettes* at www.vistalab.com for complete instructions. A Performance Verification procedure is also available on the web site.

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.
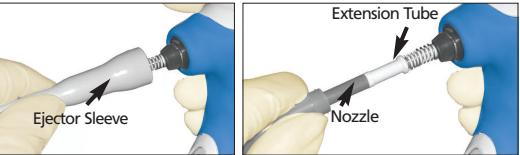
Nozzles and Nozzle Filters

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.

To remove a nozzle:

Note: Wear gloves when doing this procedure.

1. Pull off ejector sleeve, place tubing on nozzle, and unscrew it.

2. Replace the nozzle's filter or use a new nozzle; Place tubing on nozzle, and screw the nozzle onto the extension tube in a clockwise direction. Firmly tighten.

3. Remove tube and slide ejector sleeve back on.

4. Push sleeve firmly into place with rocking or twisting motion.

Ejector Sleeve

Extension Tube

Nozzle

To replace a nozzle filter:

The procedure for replacing nozzle filters is available on the VistaLab Technologies web site – www.vistalab.com

Ovation – Electronic Single Channel models:

		0.5-20µL	2-125µL / 5-250µL	25-1250µL
	TIP SIZE:	**MICRO**	**SMALL**	**LARGE**
NON-STERILE	VistaRak 192 tips/rack, 5 racks	4060-1002	4060-2004	4060-3004
	VistaRak, Low Retention 192 tips/rack, 5 racks	4070-1002LR	4070-2004LR	4070-3004LR
	VistaStak, 192 tips/layer, 5 layers (small size) or 3 layers (micro and large size)	4060-9024	4060-9025	4060-9026
	Stacked Rack, 200 tips/layer, 5 layers (small size) or 3 layers (large size)		9025	9026
	Stacked Rack, Trace Metal Certified, 200 tips/layer 5 layers (small size) or 3 layers (large size)		9022	9023
	VistaBulk™, 1000 tips/bag, or 250 tips/bag (5mL) or 100 tips/bag (10mL)	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, non-pyrogenic, certified RNase/DNase free, 192 tips/rack, 5 racks	4060-1032	4060-2132	4060-3132
	VistaRak, Sterile, non-pyrogenic, Low Retention, certified RNase/DNase free, 192 tips/rack, 5 racks	4070-1032LR	4070-2132LR	4070-3132LR
	VistaTip™ Individually Wrapped Sterile, 200 tips		2025	2026
	VistaTip Individually Wrapped, Sterile, non-pyrogenic, 200 tips		2027	2028
FILTERED	VistaRak, Filtered, Sterile, non-pyrogenic, certified RNase/DNase free,192 tips/rack, 5 racks	4060-1332	4060-2332	4060-3332
	VistaRak, Filtered, Sterile, non-pyrogenic, Low Retention, certified RNase/DNase free 192 tips/rack, 5 racks	4070-1332LR	4070-2332LR	4070-3332LR
ACCESSORIES	Nozzle, 10/box	9057-1010	9057-2010	9057-3010
	Nozzle Replacement Filters, 25/bag	n/a	9057-2009	9057-3009
	EZ Clean Nozzle, 5/box	n/a	n/a	9057-3017
	Type A Nozzle, 5/box	n/a	n/a	9057-1016
	EZ Clean Type A Nozzle, 5/box	n/a	n/a	9057-1017
	Nozzle Extender	9057-1012		n/a
	Ejector Sleeve	9057-1011		9057-3011
	Power Supply, 90-264VAC, 47-63Hz	9060-9005		
	Base Screw with "O" ring	9057-4006		
	Calibration Labels, 5/box	9057-4002		
	Ovation Pipette Stand	9057-4003		
	Cap Opener Kit, Qty 3	9057-4004		

VistaLab
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Dispensing With Tradition.™