

# Pipette Information Table

Catalog Numbers

Description	Precision Models	D-Tipper Models	Seal Kits
5µL Silver	<b>1101</b>	<b>1141C</b>	<b>9031</b>
10µL Orange	<b>1021</b>	<b>1051C</b>	
15µL Silver	<b>1102</b>	<b>1142C</b>	
20µL Black	<b>1022</b>	<b>1052C</b>	
25µL White	<b>1023</b>	<b>1053C</b>	
30µL Silver	<b>1103</b>	<b>1143C</b>	
40µL Silver	<b>1104</b>	<b>1144C</b>	<b>9032</b>
50µL Green	<b>1024</b>	<b>1054C</b>	
60µL Silver	<b>1106</b>	<b>1146C</b>	
70µL Silver	<b>1107</b>	<b>1147C</b>	
75µL Silver	<b>1108</b>	<b>1148C</b>	
80µL Silver	<b>1109</b>	<b>1149C</b>	
90µL Silver	<b>1110</b>	<b>1150C</b>	<b>9033</b>
100µL Blue	<b>1025</b>	<b>1055C</b>	
150µL Silver	<b>1112</b>	<b>1152C</b>	
200µL Red	<b>1026</b>	<b>1056C</b>	
200µL Red (Large tip)	<b>1026LT</b>	<b>1056CLT</b>	<b>9034</b>
250µL Purple	<b>1027</b>	<b>1057C</b>	
300µL Brown	<b>1028</b>	<b>1058C</b>	<b>9035</b>
400µL Silver	<b>1113</b>	<b>1153C</b>	
450µL Silver	<b>1119</b>	<b>1154C</b>	
500µL Yellow	<b>1029</b>	<b>1059C</b>	
600µL Silver	<b>1115</b>	<b>1159C</b>	
700µL Silver	<b>1505</b>	<b>1162C</b>	
800µL Silver	<b>1117</b>	<b>1160C</b>	
900µL Silver	<b>1118</b>	<b>1163C</b>	
1000µL Gray	<b>1030</b>	<b>1060C</b>	
50/100/200µL Silver		<b>1132</b>	

## Accessories

Nozzle Inserts	Cat. No. 8066
Calibration Keys	Cat. No. 1099
Seal Lubricant	Cat. No. 9030
Pipette Stand	Cat. No. 1700

# Pipette Tips

4058-2004 ..... Catalog number

MLA Models:		5µL-200µL	201µL-1000µL
NON-STERILE	VistaRak™ 192 tips/rack, 5 racks	4060-2004	4060-3004
	VistaStak™, 192 tips/layer, 5 layers (small size) or 3 layers (micro and large size)	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	49023
	VistaBulk™, 1000 tips/bag, or 250 tips/bag (5mL) or 100 tips/bag (10mL)	4058-2000	4058-3000
	Protectainer™ Bulk Pack, 1000 tips (small) or 750 tips (large)	4025	4026
STERILE/FILTERED	Econo-Pak™ Bulk Pack, 1000 tips	4225	4226
	VistaRak, Sterile, Pyrogen-free, RNase/DNase certified, 192 tips/rack, 5 racks	4060-2132	4060-3132
	VistaTip™ Individually Wrapped Sterile, 200 tips	2025	2026
	VistaTip Individually Wrapped, Sterile, Pyrogen-free, 200 tips	2027	2028
	VistaRak, Filtered, Sterile, Pyrogen-free, RNase/DNase certified, 192 tips/rack, 5 racks	4060-2332	4060-3332

## Notes:

1. 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.

See [www.vistalab.com](http://www.vistalab.com) for the most current listing of tips and accessories



## Operator's Manual

MLA Precision, D-Tipper and Selectable Pipettes

### Introduction

This manual provides information on the use and care of MLA Precision, D-Tipper and Selectable Pipettes.

### Features

All MLA Precision, D-Tipper and Selectable Pipettes are "to deliver" air displacement instruments, i.e. they have a fixed stroke and consistently deliver the stated or calibrated volume when the plunger is fully depressed. Except for MLA Selectable Pipettes, each pipette may be adjusted or calibrated above or below its stated volume. The range of adjustment is approximately ± 10%. This calibration feature is useful when working with solutions whose viscosity and specific gravity differ from distilled water.

The new, improved MLA D-Tipper pipettes have added features:

- a glove guard to eliminate glove pinching
- a serial number for ease of traceability
- lower plunger and tip ejection forces to minimize the fatigue associated with repetitive pipetting.

### MLA and Precision D-Tipper Pipettes

The MLA Precision Pipette has manual de-tipping and the MLA D-Tipper has mechanical de-tipping. Each model is available in 30 standard sizes ranging from 5 to 1,000 microliters and is available in special volume sizes to meet specific customer requirements. The stated volume is engraved on the bonnet/piston assembly. Pipettes are color coded according to volume size. (See Pipette Information Table)

### MLA Selectable Pipettes

The Selectable Pipette is an adjustable model containing three pipette volumes – 50/100/200 microliters. Select the volume by setting the applicable value, engraved on the plunger, adjacent to the line on the bonnet.

### Pipette Tips

It is recommended that MLA Pipettes be used with MLA or Ovation Pipette Tips. The use of tips from other sources may degrade the pipette performance. For information on MLA and Ovation Pipette Tips, refer to the Pipette Information Table.

## Pipetting Procedure

- Using MLA or Ovation Pipette Tips, press the pipette nozzle firmly into a fresh tip.
- Fully depress the pipette plunger and then immerse the tip into the solution (approximately 1/8 inch - 3mm deep).
- Smoothly release the plunger and allow the solution to enter the pipette tip.
- Remove the tip from the solution and touch the tip against the side of the vessel to remove any solution that may have adhered to the outside of the tip.
- Place the tip against the side of the receiving vessel as close to the bottom as possible, or, if the vessel contains liquid, as close to the liquid as possible. Smoothly depress the plunger.
- While holding the plunger depressed, slowly withdraw the tip keeping it against the wall of the container.
- Release the plunger and remove the tip.

## Hints

- When pipetting serum or other biological fluids, a liquid film may be retained in the tip that can change the pipetted volume. Pre-wetting the tip with the liquid to be pipetted can reduce this effect.
- Smoothly depress and release the plunger and maintain the same speed of action for all samples. Do not let the plunger snap back.
- Fully depress the plunger before inserting the pipette tip into a solution. This will prevent an air bubble from forming in the solution.
- Hold the pipette as vertically as possible at all times. Insert the tip to the same depth each time.
- If an air bubble forms in the tip during intake, return the sample, discard the tip and apply a fresh tip.
- Remove and clean the nozzle insert daily. Replace the nozzle insert if necessary.
- Check that the nozzle assembly is screwed firmly into the pipette body.

## Tip Removal Procedure using the D-Tipper Pipette

- Grasp the pipette as shown in Figure 1.
- With thumb and forefinger, apply slight upward pressure to the pipette bonnet. This action will eject the tip.

Figure 1:  
D-Tipping



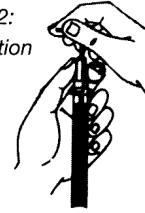
## Calibration

D-tipper and Precision pipettes can be calibrated and are supplied with a calibration key. The pipette is factory calibrated to deliver the volume engraved on the pipette bonnet. Factory tests and calibration are performed at  $21.5 \pm 2^\circ\text{C}$  using distilled water. To change volume, proceed as follows:

- Determine the pipette delivered volume by testing the pipette.

NOTE: Gravimetric or colorimetric techniques may be used to determine the pipette delivered volume. A procedure for the gravimetric method, or information about an MLA Pipette Calibration Kit using a color dilution principle, can be found in the support area of the Vistalab Technologies web site - [www.vistalab.com](http://www.vistalab.com).

Figure 2:  
Calibration



- Insert the key into the plunger. (See Figure 2.)

- To increase volume, turn the key clockwise. To decrease volume, turn the key counter clockwise. Hold the plunger button while turning the key. NOTE: Do not turn the key more than 4 complete revolutions in the clockwise direction.

- Test the pipette again to determine the delivered volume.

## Maintenance

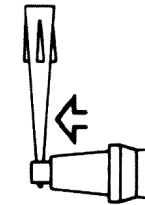
During factory assembly, the internal parts of the pipette are lubricated with a specified oil. Unless the pipette is used with corrosive chemicals or solvents, routine cleaning and lubrication should only be necessary at 6 month intervals. Pipettes used with stronger chemicals or solvents should be maintained on a more frequent basis. Lubrication and/or inner seal replacement may be necessary if the plunger is not moving smoothly or does not return to the "up" position. Additional lubricant is available as catalog no. 9030.

The nozzle, and the nozzle insert in particular, should be cleaned regularly. In case of accidental sample aspiration, the nozzle assembly and insert should be cleaned immediately. Cleaning should be done with a lint-free cloth, dampened with alcohol. Refer to Figure 3 for removing the nozzle insert.

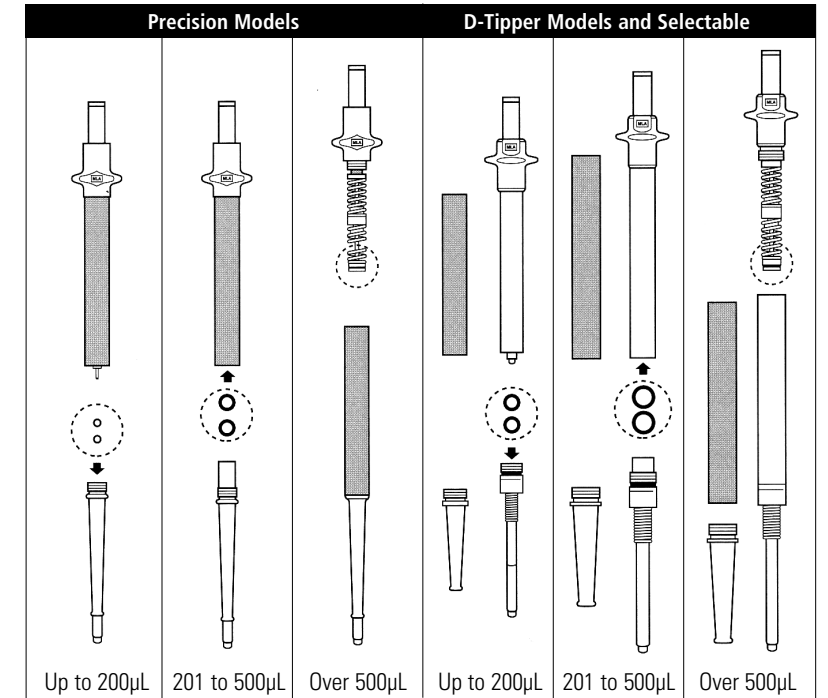
Should the pipette fail to aspirate or dispense, or if delivered volume is low, the seals should be checked for wear and replaced, if necessary.

To disassemble the pipette for lubrication or to replace internal seals, see instructions in the appropriate seal kit or call Technical Service for assistance.

Figure 3:  
Nozzle  
Insert  
Removal



## MLA Pipette Assembly



## Key to Pipette Assembly

