pipetman®

L

Quick Guide

EN

FULLY VARIABLE VOLUME MODELS AUTOCLAVABLE

GILSON®

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Introduction

PIPETMAN® L is an air displacement pipette that uses disposable tips.

Eight **variable volume, single channel models** cover a volume range from 0.2 µL to 10 mL.

Fifteen **fixed volume, single channel models** cover a volume range from 1 µL to 5000 µL.

Fourteen variable volume, multichannel models cover a volume range from 0.5 µL to 1200 µL, including four V-ring (VR) models, covering a volume range from 20 µL to 300 µL.

PIPETMAN L V-ring (VR) multichannel models are equipped with V-rings at the bottom of the tip holders. They create an airtight seal between the tip and pipette making proper fit for most tip brands and low-force attachment with just one gentle push.

Parts Checklist

Single Channel Models

- PIPETMAN L
- Quick Guide
- Safety bag
- Certificate of Conformity (including barcode sticker)
- Tip ejector adapter equipped on P2L/P10L
- Bag of ten filters (only for P5000L and P10mLL)

Multichannel Models

- PIPETMAN L
- Quick Guide
- Safety bag
- Certificate of Conformity (including barcode sticker)
- Ejector spacer for D10 tips (only for Px10L)
- V-rings (bag of four V-rings, only for VR multichannel models)
- V-ring removal tool (only for VR multichannel models)

Fixed Volume Models

- PIPETMAN L
- Quick Guide
- Safety bag
- Certificate of Conformity (including bar code sticker)
- Adjustment key

Good Laboratory Practice (GLP) Compliance

The serial number is engraved on the body of the pipette. It provides unique identification of your pipette and the date of manufacture.
For more details, refer to PIPETMAN L User's Guide LT801575 available on gilson.com.

Example: R H 71023
Year Month Production number

The barcode on the box and the Certificate of Conformity provides traceability for your pipette.

Figure 1
Serial number location

Description

1. Color-coded push button
2. Thumbwheel
3. Tip ejector button
4. Handle
5. Connecting nut
6. Ejector clip
7. Tip holder(s)
8. Tip ejector
9. Ejector support
10. Cover
11. PIPETMAN® DIAMOND Tip(s)
12. V-rings (for VR multichannel models only)
13. Graduated cover for fixed volume models only

Figure 2
PIPETMAN® L single channel, multichannel, VR multichannel, and fixed volume model components

Specifications

PIPETMAN L is a high-quality pipette that offers excellent accuracy and precision. The figures given in the Gilson Maximum Permissible Errors tables were obtained using PIPETMAN® DIAMOND Tips.

These values are guaranteed only when genuine PIPETMAN DIAMOND Tips are used.

Maximum Permissible Errors

The data given in the tables conform to the ISO 8655-2 standard.

PIPETMAN® L FIXED VOLUME MODELS

Vol. (µL)	Gilson				ISO 8655			
	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (%CV*)	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (%CV*)
F1L (P/N FA10017) WITH D10 AND DL10 TIPS								
1	± 0.02	≤ 0.015	± 2.0	≤ 1.50	± 0.05	≤ 0.05	± 5.0	≤ 5.0
F2L (P/N FA10018) WITH D10 AND DL10 TIPS								
2	± 0.05	≤ 0.02	± 2.5	≤ 1.0	± 0.08	≤ 0.04	± 4.0	≤ 2.0
F5L (P/N FA10019) WITH D10 AND DL10 TIPS								
5	± 0.050	≤ 0.025	± 1.0	≤ 0.5	± 0.125	≤ 0.075	± 2.5	≤ 1.5
F10L (P/N FA10020) WITH D10 AND DL10 TIPS								
10	± 0.06	≤ 0.03	± 0.6	≤ 0.3	± 0.12	≤ 0.08	± 1.2	≤ 0.8
F20L (P/N FA10021) WITH D200 TIPS								
20	± 0.10	≤ 0.05	± 0.5	≤ 0.25	± 0.20	≤ 0.10	± 1.0	≤ 0.5
F25L (P/N FA10022) WITH D200 TIPS								
25	± 0.20	≤ 0.07	± 0.8	≤ 0.28	± 0.50	≤ 0.20	± 2.0	≤ 0.8
F50L (P/N FA10023) WITH D200 TIPS								
50	± 0.35	≤ 0.12	± 0.7	≤ 0.24	± 0.50	≤ 0.20	± 1.0	≤ 0.4
F100L (P/N FA10024) WITH D200 TIPS								
100	± 0.55	≤ 0.15	± 0.55	≤ 0.15	± 0.80	≤ 0.30	± 0.8	≤ 0.3
F200L (P/N FA10025) WITH D200 TIPS								
200	± 1.2	≤ 0.30	± 0.6	≤ 0.15	± 1.60	≤ 0.60	± 0.8	≤ 0.3
F250L (P/N FA10026) WITH D300 TIPS								
250	± 1.50	≤ 0.75	± 0.6	≤ 0.3	± 4.00	≤ 1.50	± 1.6	≤ 0.6
F300L (P/N FA10027) WITH D1000 TIPS								
300	± 2.4	≤ 0.50	± 0.8	≤ 0.17	± 4.00	≤ 1.50	± 1.33	≤ 0.5
F400L (P/N FA10028) WITH D1000 TIPS								
400	± 2.4	≤ 0.80	± 0.6	≤ 0.2	± 4.00	≤ 1.50	± 1.0	≤ 0.4
F500L (P/N FA10029) WITH D1000 TIPS								
500	± 3.0	≤ 0.80	± 0.6	≤ 0.16	± 4.00	≤ 1.50	± 0.8	≤ 0.3
F1000L (P/N FA10030) WITH D1000 TIPS								
1000	± 5.0	≤ 1.3	± 0.5	≤ 0.13	± 8.00	≤ 3.00	± 0.8	≤ 0.3
F5000L (P/N FA10031) WITH D5000 TIPS								
5000	± 20.0	≤ 7.0	± 0.4	≤ 0.14	± 40.00	≤ 15.00	± 0.8	≤ 0.3

*CV means Coefficient of Variation

PIPETMAN® L SINGLE CHANNEL—VARIABLE VOLUME MODELS

Vol. (µL)	Maximum Permissible Errors							
	Gilson				ISO 8655			
	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (%CV*)	Systematic Error (µL)	Random Error (µL)	Systematic Error (%)	Random Error (%CV*)
P2L (P/N FA10001M AND FA10001P) WITH D10 AND DL10 TIPS								
0.2	± 0.024	≤ 0.012	± 12.0	≤ 6.0	± 0.08	≤ 0.04	± 40.0	≤ 20.0
0.5	± 0.025	≤ 0.012	± 5.0	≤ 2.4	± 0.08	≤ 0.04	± 16.0	≤ 8.0
1	± 0.027	≤ 0.013	± 2.7	≤ 1.3	± 0.08	≤ 0.04	± 8.0	≤ 4.0
2	± 0.030	≤ 0.014	± 1.5	≤ 0.7	± 0.08	≤ 0.04	± 4.0	≤ 2.0
P10L (P/N FA10002M AND FA10002P) WITH D10 AND DL10 TIPS								
0.5	± 0.040	≤ 0.016	± 8.0	≤ 3.2	± 0.12	≤ 0.08	± 24.0	≤ 16.0
1	± 0.025	≤ 0.012	± 2.5	≤ 1.2	± 0.12	≤ 0.08	± 12.0	≤ 8.0
5	± 0.075	≤ 0.030	± 1.5	≤ 0.6	± 0.12	≤ 0.08	± 2.4	≤ 1.6
10	± 0.100	≤ 0.040	± 1.0	≤ 0.4	± 0.12	≤ 0.08	± 1.2	≤ 0.8
P20L (P/N FA10003M AND FA10003P) WITH D200 TIPS								
2	± 0.10	≤ 0.030	± 5.0	≤ 1.5	± 0.2	≤ 0.1	± 10.0	≤ 5.0
10	± 0.10	≤ 0.050	± 1.0	≤ 0.5	± 0.2	≤ 0.1	± 2.0	≤ 1.0
20	± 0.20	≤ 0.060	± 1.0	≤ 0.3	± 0.2	≤ 0.1	± 1.0	≤ 0.5
P100L (P/N FA10004M AND FA10004P) WITH D200 TIPS								
10	± 0.35	≤ 0.10	± 3.5	≤ 1.0	± 0.8	≤ 0.3	± 8.0	≤ 3.0
50	± 0.40	≤ 0.12	± 0.8	≤ 0.24	± 0.8	≤ 0.3	± 1.6	≤ 0.6
100	± 0.80	≤ 0.15	± 0.8	≤ 0.15	± 0.8	≤ 0.3	± 0.8	≤ 0.3
P200L (P/N FA10005M AND FA10005P) WITH D200 TIPS								
20	± 0.50	≤ 0.20	± 2.5	≤ 1.0	± 1.6	≤ 0.6	± 8.0	≤ 3.0
100	± 0.80	≤ 0.25	± 0.8	≤ 0.25	± 1.6	≤ 0.6	± 1.6	≤ 0.6
200	± 1.60	≤ 0.30	± 0.8	≤ 0.15	± 1.6	≤ 0.6	± 0.8	≤ 0.3
P1000L (P/N FA10006M AND FA10006P) WITH D1000 TIPS								
100	± 3.0	≤ 0.6	± 3.0	≤ 0.6	± 8.0	≤ 3.0	± 8.0	≤ 3.0
500	± 4.0	≤ 1.0	± 0.8	≤ 0.2	± 8.0	≤ 3.0	± 1.6	≤ 0.6
1000	± 8.0	≤ 1.5	± 0.8	≤ 0.15	± 8.0	≤ 3.0	± 0.8	≤ 0.3
P5000L (P/N FA10007) WITH D5000 TIPS								
500	± 12	≤ 3	± 2.4	≤ 0.6	± 40	≤ 15.0	± 8.0	≤ 3.0
2500	± 15	≤ 5	± 0.6	≤ 0.2	± 40	≤ 15.0	± 1.6	≤ 0.6
5000	± 30	≤ 8	± 0.6	≤ 0.16	± 40	≤ 15.0	± 0.8	≤ 0.3
P10mLL (P/N FA10008) WITH D10mL TIPS								
1000	± 30	≤ 6	± 3.0	≤ 0.6	± 60	≤ 30.0	± 6.0	≤ 3.0
5000	± 40	≤ 10	± 0.8	≤ 0.2	± 60	≤ 30.0	± 1.2	≤ 0.6
10000	± 60	≤ 16	± 0.6	≤ 0.16	± 60	≤ 30.0	± 0.6	≤ 0.3

*CV means Coefficient of Variation

Part numbers ending with M correspond to a pipette with a stainless steel ejector, and part numbers ending with P correspond to pipettes with plastic ejector.

PIPETMAN® L MULTICHANNEL MODELS								
Maximum Permissible Errors								
Vol. (µL)	Gilson				ISO 8655			
	Systematic error (µL)	Random error (µL)	Systematic error (%)	Random error (%CV*)	Systematic error (µL)	Random error (µL)	Systematic error (%)	Random error (%CV*)
P8X10L (P/N FA10013) AND P12X10L (P/N FA10014) DL10 TIPS								
0.5	± 0.08	≤ 0.04	± 16.0	≤ 8.0	± 0.24	≤ 0.16	± 48.0	≤ 32.0
1	± 0.08	≤ 0.05	± 8.0	≤ 5.0	± 0.24	≤ 0.16	± 24.0	≤ 16.0
5	± 0.20	≤ 0.10	± 4.0	≤ 2.0	± 0.24	≤ 0.16	± 4.8	≤ 3.2
10	± 0.20	≤ 0.10	± 2.0	≤ 1.0	± 0.24	≤ 0.16	± 2.4	≤ 1.6
P8X20L (P/N FA10009) AND P12X20L (P/N FA10010) WITH DL10 TIPS								
2	± 0.10	≤ 0.08	± 5.0	≤ 4.0	± 0.4	≤ 0.2	± 20.0	≤ 10.0
10	± 0.20	≤ 0.10	± 2.0	≤ 1.0	± 0.4	≤ 0.2	± 4.0	≤ 2.0
20	± 0.40	≤ 0.15	± 2.0	≤ 0.75	± 0.4	≤ 0.2	± 2.0	≤ 1.0
P8X200L (P/N FA10011) AND P12X200L (P/N FA10012) WITH D200 TIPS								
20	± 0.50	≤ 0.25	± 2.5	≤ 1.25	± 3.2	≤ 1.2	± 16.0	≤ 6.0
100	± 1.00	≤ 0.40	± 1.0	≤ 0.4	± 3.2	≤ 1.2	± 3.2	≤ 1.2
200	± 2.00	≤ 0.50	± 1.0	≤ 0.25	± 3.2	≤ 1.2	± 1.6	≤ 0.6
P8X200LVR (P/N FA10035) AND P12X200LVR (P/N FA10036) WITH D200 TIPS								
20	± 0.50	≤ 0.25	± 2.5	≤ 1.25	± 3.2	≤ 1.2	± 16.0	≤ 6.0
100	± 1.00	≤ 0.40	± 1.0	≤ 0.4	± 3.2	≤ 1.2	± 3.2	≤ 1.2
200	± 2.00	≤ 0.50	± 1.0	≤ 0.25	± 3.2	≤ 1.2	± 1.6	≤ 0.6
P8X300L (P/N FA10015) AND P12X300L (P/N FA10016) WITH D300 TIPS								
20	± 1.00	≤ 0.35	± 5.0	≤ 1.75	± 8.0	≤ 3.0	± 40.0	≤ 15.0
30	± 1.00	≤ 0.35	± 3.3	≤ 1.17	± 8.0	≤ 3.0	± 26.67	≤ 10.0
150	± 1.50	≤ 0.60	± 1.0	≤ 0.4	± 8.0	≤ 3.0	± 5.33	≤ 2.0
300	± 3.00	≤ 1.00	± 1.0	≤ 0.33	± 8.0	≤ 3.0	± 2.67	≤ 1.0
P8X300LVR (P/N FA10037) AND P12X300LVR (P/N FA10038) WITH D300 TIPS								
20	± 1.00	≤ 0.35	± 5.0	≤ 1.75	± 8.0	≤ 3.0	± 40.0	≤ 15.0
30	± 1.00	≤ 0.35	± 3.3	≤ 1.17	± 8.0	≤ 3.0	± 26.67	≤ 10.0
150	± 1.50	≤ 0.60	± 1.0	≤ 0.4	± 8.0	≤ 3.0	± 5.33	≤ 2.0
300	± 3.00	≤ 1.00	± 1.0	≤ 0.33	± 8.0	≤ 3.0	± 2.67	≤ 1.0
P8X1200L (P/N FA10039) AND P12X1200L (P/N FA10040) WITH D1200 TIPS								
100	± 6.0	≤ 0.9	± 6.0	≤ 0.9	± 32	≤ 12.0	± 32.00	≤ 12.0
120	± 6.0	≤ 0.9	± 5.0	≤ 0.75	± 32	≤ 12.0	± 26.67	≤ 10.0
600	± 8.0	≤ 1.2	± 1.33	≤ 0.2	± 32	≤ 12.0	± 5.33	≤ 2.0
1200	± 10.0	≤ 1.5	± 0.83	≤ 0.13	± 32	≤ 12.0	± 2.67	≤ 1.0

*CV means Coefficient of Variation

Setting the Volume

The volume of liquid to be aspirated is set using the volume display. The dial colors are either black or red to indicate the position of the decimal point, depending on the model (refer to Figure 3).

Model	Color of Volumeter Numbers		
	BLACK	RED	INCREMENT
P2L	µL	0.01 µL	0.002 µL
P10L to P20L – P8X10L - P12X10L	µL	0.1 µL	0.02 µL
P100L – P200L P8X200L - P12X200L P8X300L - P12X300L	µL	-	0.2 µL
P8X200LVR - P12X200LVR P8X300LVR - P12X300LVR	µL	-	0.2 µL
P1000L	0.01 mL	mL	0.002 mL
P8x1200L - P12x1200L	0.01 mL	mL	0.002 mL
P5000L	0.01 mL	mL	0.002 mL
P10mLL	mL	0.1 mL	0.02 mL

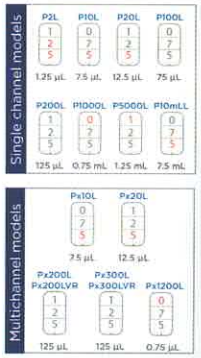

Figure 3
Dial colors by model

Lock System

For additional safety, the volume selected is lockable.

1. Unlock the thumbwheel by pushing it up with your thumb.
2. Set the volume by turning the thumbwheel. The thumbwheel can be turned using one hand to slowly reach the required setting.
3. Lock the newly set volume by pushing down on the thumbwheel.

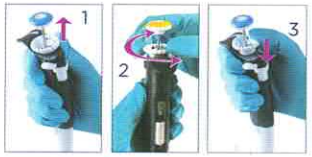

Figure 4
Volume unlock and unlock

NOTICE If step 3 is forgotten, the volume selected will be automatically locked during the next purge.

To obtain maximum accuracy when setting the volume:

- When **decreasing** the volume setting, slowly reach the required setting, making sure not to overshoot the mark.
- When **increasing** the volume setting, pass the required value by 1/3 of a turn and then slowly decrease to reach the volume, making sure not to overshoot the mark.

User Adjustments (Fixed Volume Models Only)

PIPETMAN L fixed volume models are factory calibrated using distilled water and very high precision balances. The nominal volume may be adjusted slightly to compensate for liquids of different density or viscosity.

To accommodate for density or viscosity, an adjustment of one full turn of the adjustment key in either direction equals:

± 0.05 µL (F1L to F2L)
± 0.2 µL (F5L to F10L)
± 0.5 µL (F20L to F25L)
± 2.0 µL (F50L to F100L)
± 5.1 µL (F200L to F250L)
± 20 µL (F300L to F1000L)
± 102 µL (F5000L)

Figure 5
PIPETMAN® L fixed volume model adjustment key

NOTICE Adjustment of the factory calibration must only be performed using the supplied adjustment key.

The cover is graduated in tenths of the key revolution (letters A, B,..., J) and is read from left to right. Each small graduation mark represents 0.25 of the distance between each letter.

To adjust the nominal volume setting to compensate for a specific density or viscosity, engage the two hooks of the spanner tool inside the two small holes on the top of the body, and then turn the key slowly:

- **Clockwise** to decrease the volume; making sure not to overshoot the mark.
- **Counterclockwise** to increase the volume; pass the required value by 1/4 turn, and then slowly decrease the volume to reach the required setting.

Figure 6
Adjust PIPETMAN® L fixed volume setting to compensate for a specific density or viscosity

Fitting the Tips

Single Channel Models

To fit a new PIPETMAN DIAMOND Tip, push the tip holder into the tip using a slight twisting motion to ensure a firm and airtight seal.

PIPETMAN DIAMOND Tip Compatibility for single channel variable volume models	
P2L, P10L	D10, DL10, DF10ST, DFL10ST
P20L	D200, DF30ST
P100L	D200, DF100ST
P200L	D200, D300, DF200ST, DF300ST
P1000L	D1000, D1200, DF1000ST, DF1200ST
P5000L	D5000
P10mLL	D10mL

PIPETMAN DIAMOND Tip Compatibility for fixed volume models	
F1L, F2L, F5L, F10L	D10, DL10, DF10ST, DFL10ST
F20L, F25L	D200, DF30ST
F50L, F100L	D200, DF100ST
F200L	D200, DF200ST
F250L	D300, DF300ST
F300L, F400L, F500L, F1000L	D1000, DF1000ST
F5000	D5000

Figure 7
PIPETMAN® DIAMOND Tip compatibility charts for single channel models

NOTICE D5000 and D10mL PIPETMAN DIAMOND Tips do not have any filter. P5000L and P10mLL models are sold with a bag of 10 filters. For more details, refer to PIPETMAN L User's Guide LT801575.

Multichannel Models

PIPETMAN DIAMOND Tips: TIPACK AND TOWERPACK

PIPETMAN DIAMOND Tips are best fitted with the ROCKY RACK™ technique, invented by Gilson, available only in our TIPACK and TOWERPACK.

PIPETMAN DIAMOND Tip Compatibility for multichannel models	
P8x10L, P12x10L	D10*, DL10, DF10ST, DFL10ST
P8x20L, P12x20L	DL10, D200, DFL10ST, DF30ST
P8x200L, P12x200L	D200, D300, DF200ST, DF300ST
P8x200LVR, P12x200LVR	D200, D300, DF200ST, DF300ST
P8x300L, P12x300L	D200, D300, DF200ST, DF300ST
P8x300LVR, P12x300LVR	D200, D300, DF200ST, DF300ST
P8x1200L, P12x1200L	D1200, DF1200ST

Figure 8
PIPETMAN® DIAMOND Tip compatibility charts for multichannel models

Figure 9
ROCKY RACK™ technique

V-Ring Multichannel Models

V-ring (VR) multichannel models complete the PIPETMAN L range of multichannel pipettes with four models of 8- and 12-channel pipettes covering a volume range from 20 µL to 300 µL.

PIPETMAN L multichannel V-ring models have a leak-free tip holder design. Each VR multichannel model has V-rings at the bottom of the tip holders that create an airtight seal between the tip and pipette to get a proper fit for most tip brands and low-force attachment with just one gentle push.

Figure 10
V-rings

Fitting the Tip Ejector Adapter and the Tip Ejector Extension

Single Channel Models

For P2L and P10L pipettes equipped with a stainless steel tip ejector, a dual-position adapter is required to fit and eject DL10 tips (long collar tips) and D10 tips (short collar tips).

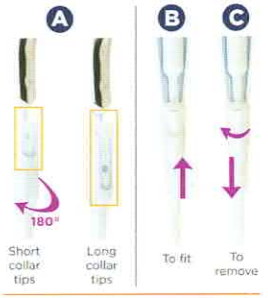

Figure 11
Tip ejector dual position adapter and extension for P2L and P10L

A To fit the adapter for short and long collar tips (refer to Figure 11):

1. Pull the adapter down from the stainless steel tip ejector.
2. Turn the adapter 180°.
3. Refit the adapter so that the end of the stainless steel tip ejector engages the shorter or longer slot of the adapter.

For the F1L, F2L, F5L, F10L, P2L, and P10L equipped with a plastic tip ejector, a tip ejector extension is supplied to fit with D10 tips (short collar tips). Refer to Figure 11.

B To fit a tip ejector extension:

1. Slide the extension over the tip holder.
2. Push the extension firmly onto the end of the tip ejector until it clicks into place.

C To remove a tip ejector extension:

1. Gently twist the adapter.
2. Pull it away from the pipette.

Multichannel Models

Fitting the Ejector Adapter for P8x10L and P12x10L Multichannel Models

Depending on the tip used, either D10 or DL10, you may have to fit the ejector adapter. Long collar tips can be inserted without it.

1. Remove the tip ejector: keep both ejector locks depressed ❶, and then pull the tip ejector down ❷.
2. Fit the ejector adapter ❸ and click it to the tip ejector.
3. Gently re-insert the tip ejector vertically into the rails of the ejector support ❹.

Figure 12
Fitting ejector adapter on multichannel models

Pre-Wet the Tips

Pre-wetting the tips before pipetting helps prepare the tips for the best pipetting performance. Ideally, the pre-wet includes both immersing the tip in the liquid and performing one pipetting step. Pre-wetting the tips helps ensure that volumes that you pipette will achieve accuracy and precision within specifications.

Aspirate

1. Press the push button to the **first stop** (this corresponds to the set volume of liquid).
2. Hold the pipette vertically and immerse the tip in the liquid (see immersion depth table below).
3. Release the push button slowly and smoothly to top position to aspirate the set volume of liquid.
4. Wait one second (time depends on model, for more details, please refer to PIPETMAN L User's Guide LT801575), and then withdraw the pipette tip from the liquid. You may wipe any droplets away from the outside of the tip using a medical wipe; however, if you do so, take care to avoid touching the tip's orifice.

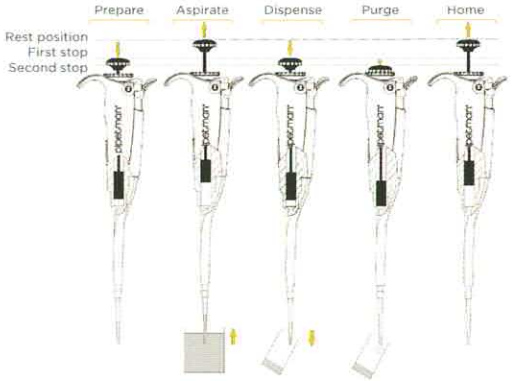

Figure 13
Pipetting motion - Aspirate and dispense

Dispense

1. Place the end of the tip against the inside wall of the recipient vessel (at an angle of 10° to 40°).
2. Press the push button slowly and smoothly to the first stop.
3. Wait for at least a second, then press the push button to the second stop to expel any residual liquid from the tip. Keep the push button pressed fully and while removing the pipette, draw the tip along the inside surface of the vessel.
4. Release the push button smoothly. Eject the tip by pressing firmly on the tip ejector button.

Eject the Tips

Before you start to pipette, you can adjust the tip ejector button according to your preferences.

1. Position the tip ejector button by rotating the tip ejector button to the most comfortable position: left, right, or middle.
2. Activate the tip ejector. You can either push the tip ejector button with the tip of the thumb as usual, or with the base of your thumb for more comfort.

Maintenance

Routine maintenance will help keep your pipette in good condition, ensuring a continued high level of performance.

NOTICE Gilson recommends maintenance and calibration at least annually, more frequently as needed, depending on use.

Maintenance is limited to:

- Cleaning or decontamination (For more details, please refer to PIPETMAN L User's Guide LT801575 available on gilson.com)
- Replacing spare parts
- Greasing the piston assembly

Cleaning and Decontamination

PIPETMAN L is designed so that the parts normally in contact with liquid contaminants can easily be cleaned and decontaminated, and the variable volume models are autoclavable without disassembly.

For further information, please refer to PIPETMAN L User's Guide LT801575 available on **gilson.com.**

Warranty

Gilson warrants this pipette against defects in material under normal use and service for a period of **three years** from the date of purchase.

This warranty shall not apply to pipettes which are subject to abnormal use and/or improper or inadequate maintenance (contrary to the recommendations given in the user's guide), including, but not limited to pipettes which have been subjected to physical damage, improper handling, or spillage or exposure to any corrosive environment. This warranty shall also be void in the event pipettes are altered or modified by any party other than Gilson or its designates. Gilson's sole liability under this warranty shall be limited to, at Gilson's sole option , repair or replacement of any defective components of pipettes or refund of the purchase price paid for such pipettes. **Routine cleaning, control, and recalibration are not covered under the warranty. The replacement of wearing parts such as seals, O-rings, broken pistons assembly, and broken tip holders are not covered under the warranty.**

NOTICE Yearly routine maintenance is highly recommended to keep your pipette in good condition, ensuring a continued high level of performance.

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