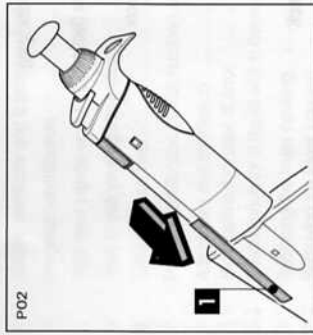
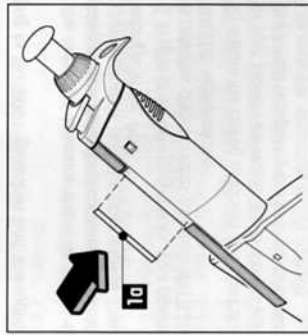


3 Personal identification

Each MultiMate pipette has a protected label for your personal identification.



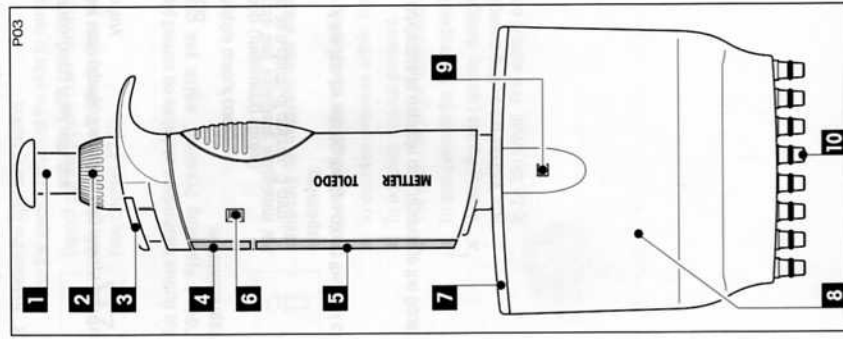
- Pull the transparent plastic window (1) on the side of the pipette downwards. (If necessary, lift it slightly at the lower end).



- Write the identifying information on the label provided (10) and place it on the exposed surface. Then push the transparent plastic window back into position until it locks.

4 How your pipette works

The METTLER TOLEDO MultiMate is a multi-channel piston-stroke pipette with a variable volume setting. The MultiMate consists of a grip and an exchangeable 8-channel or 12-channel lower housing. The pipette only functions when a tip is fitted. As each piston runs in a separate guide, it is also possible to use the pipette with fewer than 8 or 12 tips.

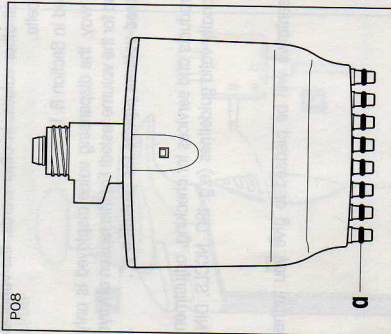


The functions of the parts shown in the illustration are as follows:

- 1 Operating button**
First stop (measuring stroke): the desired volume is aspirated or dispensed.
Second stop (blow out): any liquid remaining in the tip is emptied.
- 2 Setting ring**
Colour coded to match the corresponding tip trays. For stepless adjustment of the volume.
- 3 Ejector button**
Operates to remove the tip.
- 4 Volume display**
4-digit volume measurement.
- 5 Labelling area**
For personal identification of your pipette (see Section 3).
- 6 Adjustment opening**
To adjust the volume measured by the pipette (see Section 8).
- 7 Cover plate**
- 8 Lower housing assembly**
With exchangeable 8-channel or 12-channel tip manifold, or a lower housing with the same size.
- 9 Lower housing catch (ejector)**
For removing the cover plate from the lower housing.
- 10 Nose cone**
Is an important part and must be handled carefully to avoid scratches which can cause leaks.

10 Cleaning and maintenance

P08



10.1 Cleaning

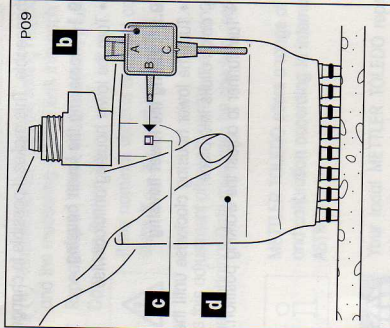
All parts can be cleaned with soap solution, after which they should be rinsed with distilled water and dried at room temperature. Alternatively, they can be disinfected with 60% isopropanol.

Clean the o-rings (a) with isopropanol; then, when they are completely dry, grease them lightly using the silicone grease provided.

10.2 Maintenance

If the MultiMate is used correctly, no maintenance is required.

P09



10.3 Disassembling and reassembling the pipette

Disassembling the lower housing of the pipette.

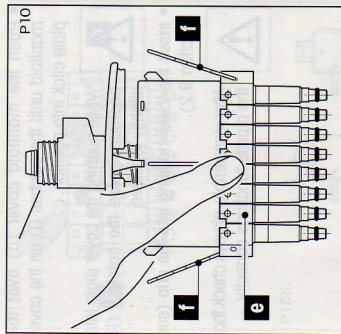
- Remove the pipette lower housing (see Section 9.1).
- Hold the lower housing of the pipette as shown in Fig. P09 and place it vertically on the surface of a bench, pressing it down lightly.
- Insert position B of the tool (b) into the locking hole (c) of the pipette lower housing. Turn the tool slightly to release the catch.
- Pull off the lower housing (d).

- Hold the manifold assembly in the hand as shown in Fig. P10 so that the fingers grip the manifold head (e).



The manifold head is spring-loaded.

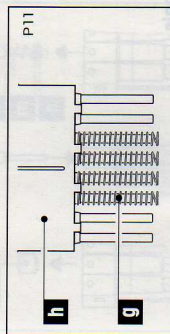
- Release the 2 retaining clips (f) and carefully remove the manifold head (e).



- Pull the springs (g) off the piston mounting (h).

- Clean the pistons.

- Wipe all the pistons; clean with 60% isopropanol if necessary. Then grease them lightly using the silicone grease provided.



Reassembling the pipette lower housing.

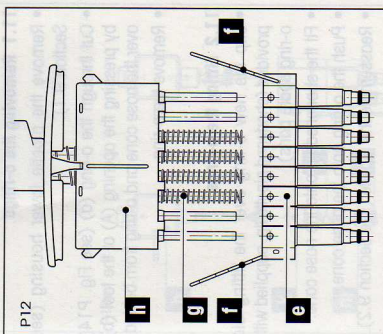
- Replace the springs (g) on the piston mounting (h).



Ensure correct positioning of the springs (g).

MultiMate μ l	8-channel	Spring positions 12-channel
0.5-10	3, 4, 6 or 4, 6, 7	3, 4, 5, 6
5-50 and 25-250	3, 4, 5, 6	4, 5, 6, 8, 9 or 5, 6, 8, 9, 10

- Place the manifold head (e) over the piston mounting and fasten the 2 retaining clips (f).



13 Sterilising the pipette



Do not autoclave the top part of the pipette; clean only as described in Section 10.1. The pipette lower housing can be autoclaved (121 °C, 20 min). Leave to dry at room temperature if necessary. Only screw the pipette together again after it has completely cooled.

After you have checked that it is functioning correctly, your pipette is ready for use again.



Storage under ultraviolet light does not damage the materials of the pipette, but can cause slight discoloration. This has no effect on the functioning of the pipette.

14 Technical Data

Model µl	Colour of button	Increment µl	Volume µl	Inaccuracy	Imprecision
0.5–10	Dark grey	0.01	1	± 8.0 %	≤ 5.0 %
			5	± 4.0 %	≤ 2.0 %
			10	± 2.0 %	≤ 1.0 %
5–50	Light grey	0.05	5	± 4.0 %	≤ 2.0 %
			10	± 2.0 %	≤ 1.0 %
			50	± 0.8 %	≤ 0.4 %
25–250	Dark yellow	0.2	25	± 3.0 %	≤ 1.0 %
			125	± 1.0 %	≤ 0.5 %
			250	± 0.6 %	≤ 0.2 %

Test conditions

Liquid: Double-distilled water, degassed.

Reference temperature: 20 – 25 °C, constant to ± 0.5 °C, in accordance with DIN 12650.

Number of measurements: 10 using original Mettler-Toledo pipette tips.

15 Resistance to chemicals of the plastics used in Mettler-Toledo pipettes

Those parts of the pipette which can come into contact with solvent vapours are made from PP or PVDF. The removable Multimate tip ejector is made from PEI.

In case of doubt, the suitability of the pipette should be checked. After using corrosive substances, the pipette should be cleaned. Due to the individual differences in the conditions of use, no guarantee can be given that the information is correct.

Substance	Density mg/µl	Vapour pressure mbar	Concentration %	Temperature °C	PP	PVDF	PEI
Acetic acid	1.06	15.4	100	20	+	+	+
Acetone	0.79	233.0	100	20	+	0	+
Ammonia			25	20	+	+	+
Butanol	0.81	6.7	100	20	+	+	+
Chloracetic acid	1.6		100	20	+	+	N.T.
Chloroform	1.47	213.0	100	20	0	+	–
Ethanol	0.79	59.0	96	20	+	+	+
Formic acid	1.23	42.0	10	20	+	+	+
Glycerine	1.26		100	60	+	+	+
Hydrochloric acid	1.15		30	20	+	+	+
Hydrofluoric acid	1.13		60	20	+	+	+
Isopropanol	0.78	42.5	100	20	+	+	+
Methanol	0.79	128.0	100	20	+	+	+
Nitric acid	1.41		70	20	–	+	0
Phenol	1.06		10	20	+	+	+
Phosphoric acid	1.88		85	20	+	+	+
Potassium hydroxide	1.29		30	20	+	0	+
Sodium hydroxide	1.33		30	20	+	0	+
Sulphuric acid	1.84		98	20	0	+	0
Trichloroacetic acid	1.62		50	20	+	+	0

Key to table:

- + Resistant to chemicals, unchanged even after prolonged contact.
- 0 Only partly resistant to chemicals, can only be used for short contact time.
- Not resistant to chemicals, material may be affected even after short contact time.
- N.T. Not tested.