EDP3-Basic™

Ergonomic Electronic Pipette and Repetitive Dispenser

9 pipettes for volume ranges from 0.5 µL to 20 mL

200 µL EDP3-Basic shown

RAININ

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FIGURES

This device (EDP3-Basic) is intended for use only as an electronic pipette for pipetting liquids as described in this manual. It is not intended for any other use.

Introduction

EDP3-Basic electronic pipette incorporates the most popular modes and options of EDP3-Plus, with easy-to-use intuitive software. This economical version is useful if most of your work is routine pipetting and multidispensing.

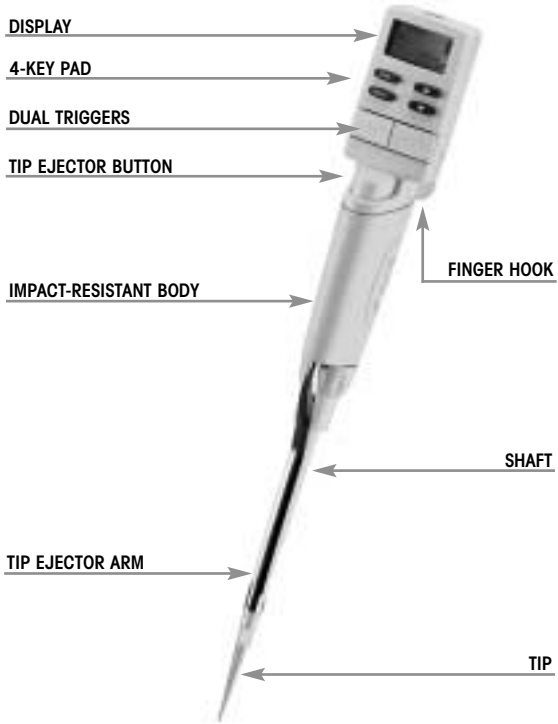


FIGURE 1 200 µL EDP3-BASIC PIPETTE

Unpacking

The EDP3-Basic package should contain:

1. EDP3-Basic Electronic Pipette with Battery
2. Operator Manual
3. Quick Reference Guide
4. Performance Check Report / Warranty Card
5. Sample Tips

The Wall Power Supply or the Rapid Charge Stand (one of which MUST be purchased to recharge the EDP3-Basic battery) are shipped in a separate box.

Unpack and check the contents against this list. If anything is missing, call Technical Service: 800-543-4030.

If any damage is evident, file a claim with the shipping carrier, who is responsible for damage incurred in transit. Save the shipping packages if you file a claim.

Set Up / Initial Charge

EDP3-Basic is shipped with the battery charged. But as it may have been stored before delivery, charge the battery for about 15 minutes initially – you can use EDP3-Plus while it is charging. Connect the wall power supply to a power outlet matching the line voltage printed on the label:

120 VAC/60 Hz	US	220 VAC/50 Hz	Europe
240 VAC/50 Hz	UK	100 VAC/50 Hz	Japan

Connect the other end of the cord to the power socket on the back of EDP3-Basic. After 15 minutes the pipette will be charged enough for a typical day's pipetting, and fully charged after approximately 60 minutes. The battery symbol outline in the top right corner of the display flashes while charging.

Sleep Mode

To extend battery life, the EDP3-Basic display "sleeps" after ten minutes of inactivity; i.e. ten minutes after the last keystroke or trigger press. Press any key or trigger to "wake" the display.

Rapid Charge Stand

E3-RCS Rapid Charge Stand charges 3 EDP3-Basic (or EDP3-Plus) pipettes in sequence. With one EDP3 on the stand, charging proceeds as if the wall power supply were connected directly to the pipette. When charging more than one EDP3, the one placed on the stand first will be charged first, then the others sequentially. To charge a particular EDP3, remove others and place the desired pipette in the stand. See page 8 for more information.

Tip Selection

To ensure proper, leak-free fit and conformance to specifications, use only RAININ tips with EDP3-Basic pipettes. When loading tips, press the EDP3-Basic shaft into the end of the tip with only sufficient force to make a positive seal.

Tip Immersion Depth

Recommended depths for tip insertion into sample are shown below.

EDP3-Basic Volume	Range	Immersion Depth
10 µL	0.5 - 10 µL	1 - 2 mm
20 µL	2 - 20 µL	2 - 3 mm
100 µL	10 - 100 µL	2 - 3 mm
200 µL	20 - 200 µL	2 - 4 mm
1000 µL	100 - 1000 µL	2 - 4 mm
2000 µL	200 - 2000 µL	3 - 6 mm
5000 µL	500 - 5000 µL	3 - 6 mm
10 mL	1mL - 10 mL	4 - 10 mm
20 mL	2mL - 20 mL	4 - 10 mm

Tip immersion depth is important. If these depths are exceeded, the volume measured may be inaccurate, possibly out of specification. Tip angle: hold EDP3-Basic within 20 degrees of vertical.

Filter

EDP3-Basic 5000 µL, 10 mL and 20 mL pipettes use a filter in the end of the shaft to help prevent liquid entering the shaft and contaminating the piston. Using such a filter is important when pipetting large volumes. Replace the filter if it gets wet.

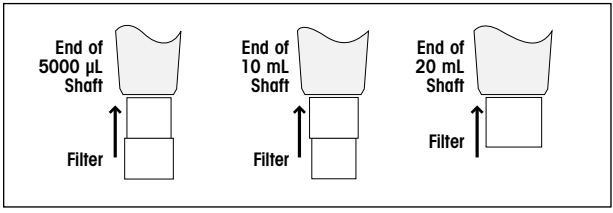


FIGURE 2 FILTER ORIENTATION

The 5000 µL and 10 mL pipettes use the same filter, oriented as shown in the diagram above. For 5000 µL: insert the small diameter into the shaft. For 10 mL: insert the large diameter into the shaft. Filter part numbers are 6190-164 (pack of 100) and 6190-165 (pack of 1000).

The filter for 20 mL is a cylinder which can be installed in either orientation. Filter part numbers: 6190-221 (pack of 100) and 6190-222 (pack of 500).

Initial Operation

Before initial operation you should charge EDP3-Basic for about 15 minutes as described on page 2.

Before pipetting for the first time, take time to familiarize yourself with the key functions, and practice scrolling through modes and options as described on the following pages. The first time the EDP3-Basic pipette is used, it will default to **PIPET** mode. If not, press the **MODE** key until **PIPET** shows on the LCD (see below).

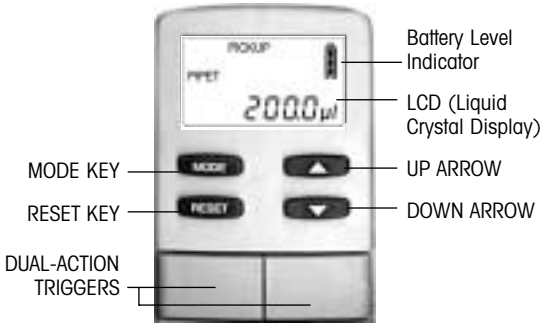


FIGURE 3 EDP3-BASIC INTERFACE – (200 µL model shown)

Modes & Options:

EDP3-Basic has two modes of operation, **PIPET** and **MULTI**.

MODE	OPTIONS AVAILABLE
PIPET	& MIX CC SPEED
MULTI	GLP (ON/OFF) SPEED SND
GLP	(SEE APPENDIX A)

Abbreviations

& MIX: Mix. (Piston moves up and down as trigger is held, mixing the contents of the tip)

CC: Cycle Counter (each pipetting cycle is counted)

SND: Sound **ON / OFF / VOLUME** - 1 (soft) to 7(loud)

SPEED: Aspiration/Dispense speed 1 (slow) to 10 (fast)

GLP: Good Laboratory Practice - user logs

The next few pages describe operation of EDP3-Basic in **PIPET** and **MULTI** modes.

Operation

PIPET MODE

Select Volume with Arrow Keys

ARROW keys operate when **PICKUP** is displayed on the screen. The **DOWN ARROW** reduces, and the **UP ARROW** increases, the volume. Touch either **ARROW** key to change volume by one increment. Press and hold the **ARROW** key: the volume changes while you hold down the key, slowly at first then with increasing speed.

Attach a tip: press the EDP3-Basic shaft into the end of the tip with only sufficient force to make a positive seal.

Volume Scrolling

While pressing the **ARROW** key, note the changing volume setting pauses at 25%, 50%, and 75% of the pipette's nominal volume, then continues at the faster rate.

At maximum volume, pressing the **UP ARROW** rolls the volume over to begin again at the minimum volume (0.5% of maximum volume). Pressing the **DOWN ARROW** at the minimum volume rolls over to the maximum volume. This allows rapid volume change from high to low or vice versa. If you roll over through the high or low values, the display pauses briefly at the maximum and minimum volumes, as it rolls over.

Aspirate or Dispense with Trigger

When the desired volume is set, immerse the tip into the sample the proper depth and touch either trigger to aspirate. To dispense, touch the tip end against the vessel side wall, and touch either trigger. After blowout, remove the tip from the vessel, and press the tip ejector button to discard the used tip.

Press either trigger once to aspirate, then press either trigger again to dispense. You can even press both triggers at once to aspirate and dispense – use the trigger which is most convenient.

PIPET & MIX OPTION

Piston moves up and down while the trigger is pressed, mixing the sample and another liquid in the tip

Press and hold the **MODE** key to reach the **OPTIONS** menu. Then click the **MODE** key until "**& MIX**" appears on the display. The first time used, the display will flash "**OFF**". Use the **ARROW** keys to turn on the option and set the volume to be mixed, from 5% to 100% of nominal volume.

Press **RESET** and set the aspiration volume with the **ARROW** keys.

PIPET & MIX OPTION selected with 50 µL mix volume

Then immerse the tip end into the sample and press either trigger to aspirate the set volume.

Pressing and holding either trigger dispenses the set volume, then mixes the mix volume in the tip by moving the piston up and down while the trigger is pressed. To stop mixing and dispense the tip contents, release the trigger.

Alternately, a single touch to the trigger dispenses without any mixing occurring.

To turn off the **MIX** option, hold the **MODE** key until "**& MIX**" is displayed, then scroll the mix volume with the **ARROW** keys to the minimum or maximum value. Releasing and pressing the last **ARROW** key turns the option off.

CC OPTION

Cycle counter. Each pipetting cycle is counted

Press and hold the **MODE** key to reach the options menu. Then press the **MODE** key repeatedly until "**CC**" is displayed. Use either **ARROW** key to turn this option on or off. The display shows incrementing pipetting cycles in the lower left, up to 999, then rolls over to 0. You can reset the counter to 0 at any time by pressing and holding **RESET** until the display reads 0.

CC OPTION selected with 25 µL set volume and 43 cycles counted

To start the count at any cycle number, press **RESET** momentarily. This allows the desired cycle number to be set with **ARROW** keys.

SPEED OPTION (common to both modes)

Aspiration/dispense speed 1 (slow) to 10 (fast).

EDP3-Basic is delivered with the **SPEED** option set to 10*. This setting can be changed for any mode as desired. High speeds (9 or 10) are best for aqueous samples and slower speeds are useful for viscous, foaming, or shear-sensitive samples.

SPEED set to 10 in PIPET mode

Press and hold the **MODE** key to reach the **OPTIONS** menu. Then press the **MODE** key repeatedly until "**SPEED**" is displayed. Use the **ARROW** keys to set the desired speed.

*The maximum speeds of larger volume models are limited to prevent "fountaining" or air intake when aspirating. Large-volume maximum speeds: 5000 µL–8 , 10 mL–8, 20 mL–6.

SPEED SETTING	FULL-SCALE PICKUP	FULL-SCALE DISPENSE	DELAY BEFORE BLOWOUT	BLOWOUT DURATION	HOLD AT END (CONSTANT)
10	0.7 s.	0.7 s.	0.0 s.	0.13 s.	1.0 s.
9	1.0 s.	1.0 s.	0.4 s.	0.22 s.	1.0 s.
8	1.5 s.	1.5 s.	0.6 s.	0.30 s.	1.0 s.
7	1.9 s.	1.9 s.	0.8 s.	0.38 s.	1.0 s.
6	2.4 s.	2.4 s.	0.9 s.	0.50 s.	1.0 s.
5	2.8 s.	2.8 s.	1.1 s.	0.52 s.	1.0 s.
4	3.2 s.	3.2 s.	1.5 s.	0.58 s.	1.0 s.
3	3.8 s.	3.8 s.	1.7 s.	0.69 s.	1.0 s.
2	4.5 s.	4.5 s.	1.9 s.	0.80 s.	1.0 s.
1	5.3 s.	5.3 s.	2.5 s.	1.04 s.	1.0 s.

Table applies to EDP3-Basic in **PIPET** mode.

MULTIDISPENSE MODE

1. Press **MODE** button until **PICKUP MULTI** shows on the LCD.
2. Set aliquot size using either **ARROW KEY**. EDP3-Basic automatically computes the number of aliquots that can be dispensed and shows the number (8x, 6x, etc.) in the lower left of the display. When aliquot siize is set, and trigger is pressed EDP3-Basic aspirates the maximum volume of sample needed. To ensure accuracy on the last aliquot, EDP3-Basic always picks up slightly more sample than will be pipetted.

MULTIDISPENSE mode selected on a 200 µL EDP3-Basic with 50 µL aliquot volume

OR:

2. Select number of aliquots with **RESET/ARROW** eys. Press either **ARROW KEY** to set aliquot size. Then set the total number of aliquots you wish to dispense by momentarily pressing **RESET.** When the display flashes, press the **ARROW KEY** to set the number of aliquots you wish to dispense. (Note you cannot increase the number of aliquots above the default maximum).

EDP3-Basic will pick up only the amount of sample necessary to accurately dispense the number of aliquots selected.

After aspiration, each time you press a trigger, one aliquot is dispensed. Touch off the droplets from each tip against the vessel wall to ensure accuracy as each aliquot is dispensed.

Multidispense: Pickup **Multidispense: Dispense**

The counter will count down to zero and **RESET** will flash on the display. Press the **RESET** key or double-click either trigger to expel the extra liquid remaining in the tip.

In **MULTI** mode you can dispense all the liquid in the tip at any time by pressing **RESET**.

SND OPTION

Sound – on/off/volume level

Press and hold the **MODE** key to reach the options menu. Then press the **MODE** key repeatedly until "**SND**" is displayed. Use either **ARROW** to turn this option on or off and set the volume level between 1 (soft) and 7 (loud).

SND OPTION turned on with volume set to level 4

With **SND** switched on, the following sounds are heard:

PIPET MODE

End of pickup: **HIGH BEEP**
End of dispense: **LOW BEEP**
Return to home: **DOUBLE HIGH BEEP**

MULTIDISPENSE MODE

End of pickup: **HIGH BEEP**
After each dispensed aliquot: **HIGH BEEP**
After last aliquot: **DOUBLE HIGH BEEP, ONE EXTRA LOW BEEP**
Bottom of blowout: **LOW BEEP**
Return to home: **DOUBLE HIGH BEEP**

GENERAL – BOTH MODES

Key press: **SHORT CLICK**

Low battery warning: **LOUD WARBLE** (continuous alternating high/low beep) after every motor movement when there is a low battery condition, even when snd is turned off.

Error: **LOUD WARBLE** when any error condition is present, even if snd is turned off.

Charging the Battery using the Wall Power Supply

Unlike other types of battery, the Li-Ion battery in the EDP3-Basic has no "memory effect" and does not need to be fully discharged every month or so. It will provide about 3000 full-stroke cycles (fewer in large-volume models) before needing to be recharged. To recharge EDP3-Basic, connect the wall power supply to a power outlet matching the line voltage on the label:

120VAC 60Hz	US	220VAC 50Hz	Europe
240VAC 50Hz	UK	100VAC 50Hz	Japan

and connect the other end of the cord to the power socket on the back of EDP3-Basic. After 15 minutes the instrument will be charged enough for a typical day's pipetting, and fully charged after approximately 60 minutes.

E3-WPS Wall Power Supply
EDP3-Basic can be used while charging

E3-RCS Rapid Charge Stand

FIGURE 4 CHARGING DEVICES

Charging using the Rapid Charge Stand

E3-RCS Rapid Charge Stand will charge three EDP3-Basic pipettes (or a mixture of EDP3-Basic and EDP3-Plus), one at a time, in sequence. Charging contacts are located under the pipette "head" and shown in the diagram in Figure 5.

With only one EDP3 on the stand, charging will proceed as if the wall power supply were connected directly to the pipette. However, when charging more than one EDP3, the first one placed on the stand will be charged first.

To charge a particular pipette, remove other pipettes and place the desired pipette in the stand.

It is a good idea to store the EDP3-Basic pipette on the stand when it is not in use. This practice will provide a safe storage place, and the EDP3-Basic will always be fully charged.

Note: no charging takes place if EDP3-Basic is above approximately 90% of its charging capacity, when connected to a charger. When charging is complete, the outer box on the "battery" symbol flashes to show trickle charging is taking place.

Replacing the Battery

ALL USER SETTINGS WILL BE LOST IF YOU REMOVE THE BATTERY. To preserve your settings, plug in the optional wall power supply cord before removing the battery. Note: If you wish to RESET TO FACTORY SETTINGS, simply remove and replace the battery without the wall power supply cord connected.

Open the battery compartment by pressing upward with the thumb on the grooved area of the compartment door.

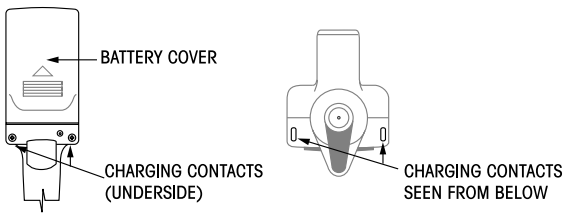


FIGURE 5 BATTERY COMPARTMENT AND CHARGING CONTACTS

1. Remove the old battery by lifting the unattached end slightly and sliding it out.

2. Align the replacement battery connector plug with the socket in the battery compartment. Slide the battery into place. You will see all the display segments flash on briefly then hear EDP3-Basic set itself to zero a few seconds after you plug in the connector.

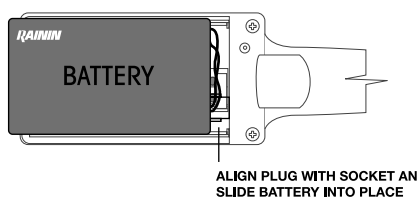


FIGURE 6 REPLACING THE BATTERY

3. Replace the battery compartment door.

Tip Ejector Arm Removal

The tip ejector can be removed if necessary. Three types of tip ejector are used and all can be removed with minimum effort—do not use force.

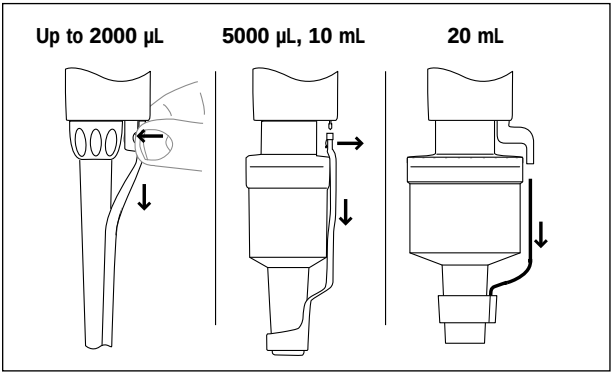


FIGURE 7 REMOVING THE TIP EJECTOR ARM

For models up to 2000 µL, press in the quick-release tabs on the ejector arm and pull the ejector down. For 5000 µL & 10 mL models, grasp the top of the ejector arm and pull outward then downward. For 20 mL models, pull the lower part of the tip ejector away from the upper part (do not remove the upper part).

To replace the ejector arm on all models except 20 mL, insert the shaft through the large opening, align the top with the tip ejector pushrod, and push until the ejector arm snaps in place. For 20 mL models, place the large opening over the shaft and align the rod in the lower part of the tip ejector with the hole in the upper part and press firmly.

Care and Maintenance

EDP3-Basic pipettes are sophisticated laboratory instruments and should be treated with appropriate care. Designed to need very little maintenance, your EDP3-Basic should give years of trouble-free service provided it is treated with proper care and the operating recommendations in this manual are followed.

The most important factor in taking proper care of the EDP3-Basic pipette is to keep the mechanism dry and clean. The following simple rules should be strictly observed.

1. Never allow liquid to enter the shaft where it can contact the piston or seal.

2. Never pick up liquid without a tip attached.

3. Never invert the EDP3-Basic pipette or lay it on its side with liquid in the tip. Always hold it upright and store it upright if possible. The Rapid Charge Stand can be used to hold (and charge) three EDP3-Basic pipettes.

4. Never use solvents to clean EDP3-Basic. Instead, use a lint-free wipe dampened with water to clean the instrument. Keep the keyboard display dry.

5. Never attempt to recharge EDP3-Basic with any other device than either the RAININ Model E3-WPS Wall Power Supply or the Model E3-RCS Rapid Charge Stand. Severe damage to the internal electronics would result.

Autoclaving

Autoclavable parts of the Model EDP3-Basic are the shaft and the tip ejector: 121°C, 1 bar, 15-20 minutes.

Do not autoclave the complete EDP3-Basic pipette or any parts other than the shaft and tip ejector.

Troubleshooting and Repairs

Warning: On models from 10–200 µL , when removing the shaft from the body, ensure the spring, seal and o-ring do not fall off the piston.

Sample Splash (liquid inside the mechanism)

1. Refer to Figure 8 to remove the tip ejector arm.
2. Unscrew the shaft coupling and carefully remove the shaft. Note how the parts fit onto the piston.
3. Inspect the seal assembly and piston for contamination. The piston should be shiny and free of corrosion. Clean with distilled water or isopropyl alcohol. Dry with a lint-free tissue and reassemble after inspecting the interior of the shaft for any contamination.
4. If piston corrosion or staining is evident, do not use the pipette. Call 800-662-7027 for Pipette Service.

Leaks, Inaccurate Sampling, Abnormal Stroke

1. **Loose shaft.** Tighten coupling by hand.
2. **Split or cracked shaft.** Remove the tip ejector and inspect the shaft. Replace the shaft if necessary. If the shaft was dropped, remove it to see if the piston is bent. If so, return the instrument for service.
3. **Worn seal and/or o-ring**. Models below 5000 µL use a polyethylene seal and o-ring. Check the seal and o-ring, replacing them as necessary. To replace, pull off the old seal and o-ring, position the new seal and o-ring on the piston assembly, and reassemble the pipette.

   Do not lubricate any components*. EDP3-Basic has a dry seal (*except for 5000 µL, 10 mL, and 20 mL models, which use a small amount of grease on the seal).

After pipetting concentrated acids or highly corrosive solutions, disassemble EDP3-Basic and inspect and clean the piston assembly, shaft, and seal with distilled water. Dry all components thoroughly and reassemble.

Extensive contact with corrosive fumes may result in premature seal wear and damage to the piston. Exposure of internal components to corrosive fumes can be reduced by using RAININ tips with aerosol barrier filters.

Service, Calibration and Repair

RAININ Pipette Repair and Calibration facilities:

California: 7500 Edgewater Drive, Oakland CA 94621
Tel. 800-662-7027, Fax 510-564-1683

Massachusetts: Rainin Road, Woburn, MA 01801
Tel. 800-662-7027, Fax 781-935-7631

Japan: 4-1-11, Bunkyo-Ku, Tokyo 113-0033
Tel. (03) 5689-8311, Fax (03) 5689-2670

METTLER TOLEDO Pipette Repair and Calibration facilities:

Belgium: N.V. Mettler-Toledo s.a., B-1932 Zaventem
Tel. (02) 334 02 11, Fax (02) 334 03 34

Germany: Mettler-Toledo GmbH, D-35353 Giessen
Tel. (0641) 50 70, Fax (0641) 507 128

Denmark: Mettler-Toledo A/S, DK-2600 Glostrup
Tel. (43) 270 800, Fax (43) 270 828

Spain: Mettler-Toledo S.A.E., E-08038 Barcelona
Tel. (93) 223 76 00, Fax (93) 223 02 71

France: Mettler-Toledo s.a., F-78222 Viroflay
Tel. (01) 309 717 17, Fax (01) 309 716 16

Italy: Mettler-Toledo S.p.A., I-20026 Novate Milanese
Tel. (02) 333 321, Fax (02) 356 29 73

Netherlands: Mettler-Toledo B.V., NL-4004 JK Tiel
Tel. (0344) 638 363, Fax (0344) 638 390

Sweden: Mettler-Toledo AB, S-12008 Stockholm
Tel. (08) 702 50 00, Fax (08) 642 45 62

Service is also available in many other countries through authorized RAININ distributors. See www.rainin-global.com.

Note: It is recommended to use only genuine RAININ replacement parts such as seals and shafts. It is NOT necessary to recalibrate the pipette after changing the seal or shaft. Recalibration of the pipette is only necessary when the piston is replaced, and should be done only by qualified factory-trained personnel in one of the above-mentioned facilities.

Replacement Parts

Parts for E3B-Series 10 µL to 1000 µL:

A Shaft **B** Tip Ejector **C** Seal **D** O-ring
E Stroke Spring **F** Seal Retainer **G** Shaft Coupling

	E3B-10	E3B-20	E3B-100	E3B-200	E3B-1000
A	6202-064	6202-065	6202-066	6202-229	6202-230
B	6202-071	6202-071	6202-073	6202-231	6202-232
C	6200-138	6200-143	6200-150	6200-154	6200-161
D	6200-139	6200-170	6200-151	6200-155	6200-162
E	6200-195	6200-197	6200-197	6200-199	6107-108
F	6200-196	6200-198	6200-201	6200-200	6107-106
G	6107-063	6107-063	6107-063	6107-063	6107-063

Parts for SE3B-Series 10 µL to 1000 µL:

	SEB3-10	SE3B-20	SE3B-100	SE3B-200	SE3B-1000
A	6200-140	6200-145	6200-147	6200-382	6200-383
B	6200-133	6200-144	6200-148	6202-231	6202-232
C	6200-138	6200-143	6200-150	6200-154	6200-161
D	6200-139	6200-170	6200-151	6200-155	6200-162
E	6200-195	6200-197	6200-197	6200-199	6107-108
F	6200-196	6200-198	6200-201	6200-200	6107-106
G	6107-063	6107-063	6107-063	6107-063	6107-063

Parts for E3B and SE3B series 2000 µL to 10 mL:

A Piston O-ring **B** Cylinder **C** Cylinder O-ring **D** Shaft
E Tip Ejector **F** Seal **G** Stroke Spring **H** Seal Retainer

	2000 µL	5000 µL	10 mL
A	6200-167	6107-112	6107-113
B	n/a	6200-365	6200-371
C	n/a	6200-364	6200-370
D E3 Series	6202-214	6202-222	6202-223
D SE3 Series	6200-169	6200-362	6200-368
E	6200-168	6200-373	6200-374
F	6200-166	n/a	n/a
G	6107-109	n/a	n/a
H	6107-107	n/a	n/a

Common parts for 5000 µL and 10 mL E3B and SE3B series:

Tube of grease: 6100-555
Filters: 6190-164 (pack of 100)
6190-165 (pack of 1000)

Parts for E3B-20ML:

Piston O-ring 6202-299
Cylinder 6202-301
Cylinder O-ring 6202-300
Shaft 6202-302
Tip Ejector 6202-298
Tube of grease: 6100-555
Filters: 6190-221 (pack of 100)
6190-222 (pack of 500)

Parts common to all EDP3-Basic models:

Battery: 6107-040
Battery Cover: 6107-224
Wall Power Supply, US E3-WPS
Wall Power Supply, UK E3-WPS240V
Wall Power Supply, EUROPE: E3-WPS220V
Wall Power Supply, JAPAN: E3-WPS100V

Specifications

These manufacturer's specifications should be used as guidelines when establishing your own performance specification in accordance with ISO 8655.

EDP3-Basic Specifications

Model	Volume µL	Increment µL	Accuracy %	Accuracy µL (±)	Precision %	Precision µL (≤)
10 µL	1	0.01	2.5	0.025	1.2	0.012
	5		1.5	0.075	0.6	0.03
	10		1.0	0.1	0.4	0.04
20 µL	2	0.02	7.5	0.15	2.0	0.04
	10		1.5	0.15	0.5	0.05
	20		1.0	0.2	0.3	0.06
100 µL	10	0.1	3.5	0.35	1.0	0.1
	50		0.8	0.4	0.24	0.12
	100		0.8	0.8	0.15	0.15
200 µL	20	0.2	2.5	0.5	1.0	0.2
	100		0.8	0.8	0.25	0.25
	200		0.8	1.6	0.15	0.3
1000 µL	100	1.0	3.0	3.0	0.6	0.6
	500		0.8	4.0	0.2	1.0
	1000		0.8	8.0	0.15	1.5
2000 µL	200	2.0	3.0	6.0	0.6	1.2
	1000		0.8	8.0	0.2	2.0
	2000		0.8	16.0	0.12	2.4
5000 µL	500	5.0	2.4	12.0	0.6	3.0
	2500		0.6	15.0	0.2	5.0
	5000		0.6	30.0	0.16	8.0
10 mL	1 mL	10.0	5.0	50.0	0.6	6.0
	5 mL		1.0	50.0	0.2	10.0
	10 mL		0.8	80.0	0.16	16.0
20 mL	2 mL	20.0	5.0	100.0	0.60	12.0
	10 mL		1.0	100.0	0.20	20.0
	20 mL		0.8	160.0	0.16	32.0

Specifications are subject to change without notice.

Electrical specifications

This device is intended for use only with the power sources with RAININ part numbers listed below. No other power sources may be used with this device.

Wall Power Supply Input:	P/N E3-WPS	120VAC 60 Hz
	P/N E3-WPS220V	220VAC 50 Hz
	P/N E3-WPS100V	100VAC 50 Hz
	P/N E3-WPS240V	240VAC 50 Hz
Wall Power Supply Output:	All P/Ns	5.5VDC 1.04 A regulated Nominal
Battery	P/N 6107-040	Li-Ion 3.6 VDC Nominal 400mAh Nominal

Explanation of symbols:
A - Ampere, Hz - Hertz, mAh - Milliamp Hour, VAC - Volts Alternating Current, VDC - Volts DIrect Current

Appendix A GLP Modes

GLP mode is a special mode for viewing, tracking, and saving various usage log information, e.g. the number of pipetting cycles, or number of days in use. **GLP** mode could also be used to track non-service issues, such as the number of days a particular pipette is used for a particular lab task, and so on.

GLP mode is accessed though the **MULTI** mode. In **MULTI** mode, press and hold the **MODE** key to reach the options and hidden modes, click **MODE** until **GLP** is reached, then switch on **GLP** mode with the **ARROW** key. Press **RESET** and click **MODE** until **GLP** is reached.

GLP mode is on, showing the Pres(ent) set of usage logs

GLP mode shows various usage logs for EDP3-Basic. The first level of **GLP** logs (without options) is reached by pressing **RESET** to cycle through these logs in turn, as shown below:

The cycle count since the last service entry (SEr). Press RESET

Total cycle count (ALL) of EDP3-Basic, in thousands
Press RESET

Number of days (dAS) since the last service entry.

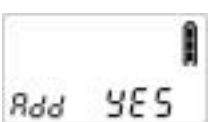
GLP Options

OPTIONS AVAILABLE: AL — dAL — Add— GLP — SND

GLP options are accessed from within the **GLP** mode by a long press of the **MODE** key. Cycle through each in turn by clicking **MODE**.

Cycle count alarm set to 10000 cycles. ARROW keys to set, in thousands, note that as the number gets into 10,000s, the significant unit moves to the left.
(Silent alarm; announced on display)

Day alarm (silent) set for 90 days. Use ARROW key to set from 1 to 999 days.



Add service entry. Use ARROW key to toggle between "Yes" or "No". If "Yes" is selected, click the trigger to begin making an entry

The next screens show a service entry being made. If "Add" was selected in the last screen, click the trigger to open the next screen to set the date, with the "month" number flashing.

Use ARROW keys to select the month, move to the next field with the trigger key, then set the day and year the same way.

FInish the service entry by setting an ID value (01 to 99) with the up/down ARROW keys

Making a service entry does two things: (a)The current (present) cc and date logs are saved with the date and technician ID, at the next lower menu level and (b) the current logs are zeroed and counting will start again when you start pipetting again. As you cycle through the modes, **GLP** mode show PrES: the present set of logs.

Press the DOWN ARROW at this screen to see the last-saved set of logs

Pressing the **DOWN ARROW** opens the last-saved set, level 1, which you can cycle through using **RESET**. Then the **DOWN ARROW** opens the next-last set at level 2, and so on to 40 levels. The **UP ARROW** takes you to more recent entries.

Sample GLP Menu Logs

The following table is a representation of 6 sample sets of GLP logs. Each field of the table is displayed one at a time on the LCD. To navigate through the entries,use the **RESET** key to move to the "right", and the **UP/DOWN ARROW** keys to move "vertically".

At any point in the **GLP** logs, pressing and holding **RESET** takes you to the **GLP** PrES position.

Log Set #	Cycle count since last service	Cycle count total	Days since last service / service date	Tech ID
GLP PrES	SEr 320	ALL 12	dAS 2	n/a
GLP 1	SEr 2617	ALL 11	6.15.2	02
GLP 2	SEr 2524	ALL 9	4.15.2	02
GLP 3	SEr 2491	ALL 6	3.15.2	02
GLP 4	SEr 2605	ALL 4	2.15.2	02
GLP 5	SEr 1572	ALL 1	1.15.2	02

EC Declaration of Conformity
according to ISO/IEC Guide 22 and EN45014

Manufacturer's Name: Rainin Instrument, LLC.

Manufacturer's Address: 7500 Edgewater Drive, Oakland, CA, 94621, USA

declares that the following product:

Product Name:	EDP3-Basic Electronic Motorized Microliter Pipette
Model Number:	EDP3-Basic
Product Options:	E3-RCS Rapid Charge Stand E3-WPS Wall Power Supply

conforms to the following Product Specifications:

Safety:	EN61010-1:1995 IEC1010:1995 + A1, A2
EMC:	EN61326 04:1997 (Emissions) EN55011:1998 CIRSPR11:1997 (Class A Conducted Emissions and Radiated Emissions) EN61326 04:1997 (Immunity) EN61000-4-2:1995+ IEC6100-4-2,A11998-01 (ESD Immunity) EN61000-4-3:1996 (RF Immunity 80-100MHz) ENV50204:1996 (RF Immunity 900 MHz) EN61000-4-4:1995 (Electrical Fast Transient Immunity) EN61000-4-5:1995 (Surge Immunity) EN61000-4-6:1995 (Conducted Immunity) EN61000-4-11

Supplementary Information:

Responsible Signatory:	Jim Petrek, VP, R & D
Date:	April 22, 2002

This Declaration of Conformity applies only to products which have the CE mark attached.

WARNING:

This equipment generates and uses radio frequency energy and if not installed and used properly, i.e. in strict accordance with the instruction manual, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Limited Warranty

See the enclosed Limited Warranty and Limitations of Liability Statement. Please complete and return the Warranty Registration Card on receipt of your pipette.

RAININ pipettes are calibrated with RAININ tips. To assure excellent reproducibility and performance, use only RAININ tips as recommended in this manual. Specified performance is guaranteed only when RAININ tips are used.

Contacting RAININ

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E-mail: service@rainin.com

Direct Order Line:
Phone: 800-472-4646
Fax: 781-938-1152
E-mail: pipets@rainin.com

Web: www.rainin.com

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