RAININ

Pipetting 360°

EDP®1

Multichannel Electronic Pipette

with LTS® LiteTouch™ Tip Ejection

Advanced Multichannel Pipette

Models:

EP8-10
EP8-20
EP8-50
EP8-200
EP8-300
EP8-1200

EP12-10
EP12-20
EP12-50
EP12-200
EP12-300
EP12-1200

EP2X8-20
EP2X8-100

EP24-20
EP24-100

EP8-200 shown

METTLER TOLEDO

EDP1 LTS Electronic Multichannel Pipette

EDP1 multichannel pipettes are based on EDP1single-channel models and use the patented LTS LiteTouch Tip Ejection System.

Four versions of the multichannel EDP1 are available: 8-channel (EP8), 12-channel (EP12), 16-channel in two rows (EP2X8), and 24-channel in two rows (EP24).

8 and 12-channel models are available in 6 volume ranges: 0.5-10 µL, 2-20 µL, 5-50 µL, 20-200 µL, 20-300 µL., and 100-1200 µL. The 2x8-channel and 24-channel models are available in 2 volume ranges, 2-20 µL and 10-100 µL.

This is an addendum to the EDP1 manual which describes pipette operation, modes, and options.

Note that the liquid ends on EDP1 multichannel pipettes are NOT removable or interchangeable.

Speed Setting

The maximum speed setting for all EDP1 multichannel pipette models is **9.**

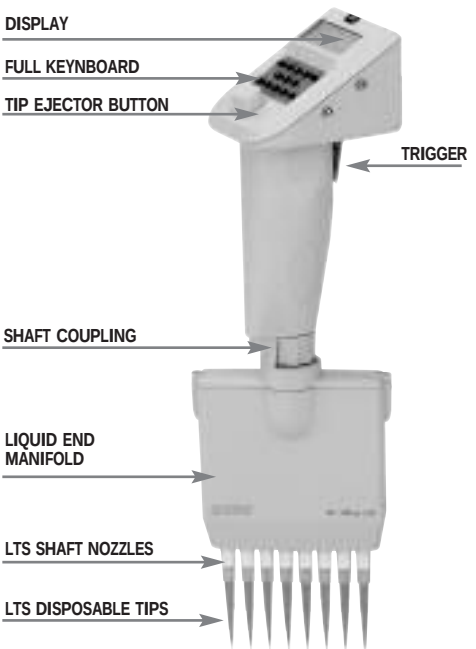

FIGURE 1 EP8-200 PIPETTE

Positioning the Liquid End Manifold

The liquid end manifold can be rotated to any angle for convenience. You do not need to loosen the coupling nut.

Tip Selection

EDP1 multichannel pipettes must be used with RAININ LTS tips.

EP8-10, EP8-20, EP12-10, EP12-20, EP2X8-20 & EP24-20:
20µL LTS tips

EP8-50, EP12-50, EP8-200, EP12-200, EP2X8-100 & EP24-100:
250 µL LTS tips

EP8-300 and EP12-300:
300 µL LTS tips

EP8-1200 and EP12-1200:
1200 µL LTS tips (recommended)
OR 1000 µL LTS tips – picks up 1200 µL (except aerosol-resistant)

LTS tips have a cylindrical cross-section with a well-defined seal ring, thin wall, and positive stop. They seal properly on the shaft and cannot be jammed or forced too far onto the shaft nozzles.

Mounting LTS Tips: 8- and 12-channel

Mounting racked LTS tips onto EP8 and EP12 pipettes is simple. First align the shaft nozzles into the row of tips, holding the pipette at a slight angle. (Figure 2.1). Position the pipette upright and press the nozzles into the tips until the “positive stop” is reached. (Figure 2.2). The tips are now mounted with proper sealing.

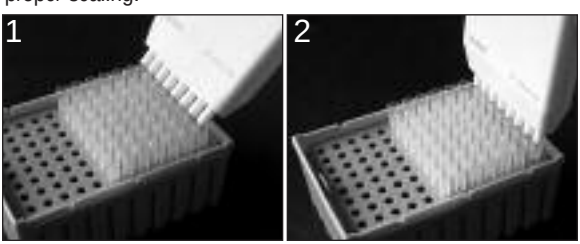

FIGURE 2: MOUNTING RACKED LTS TIPS, 8-AND 12-CHANNEL

You do not need hand-tighten, use heavy pressure, or “rock” the nozzles onto the tips to obtain a good seal.

Mounting LTS Tips: 2x8- and 24-channel

1. Align the first row of shaft nozzles with the first row of tips, holding the pipette almost vertically. Move the pipette as shown by the arrow to align the second row of tips. You may need to “rock” or rotate the pipette to get all tips aligned.
2. When you are satisfied that all tip nozzles are aligned with the tips, lightly press both rows of shaft nozzles into the tips until you feel the “positive stops” in the tips.
3. While maintaining slight pressure, “rock” the pipette back and forth and in a circular direction to ensure both rows of tips are attached. Do not press very hard; a little practice will help you find the optimal pressure and amount of rocking.

The tips are now mounted with proper sealing.

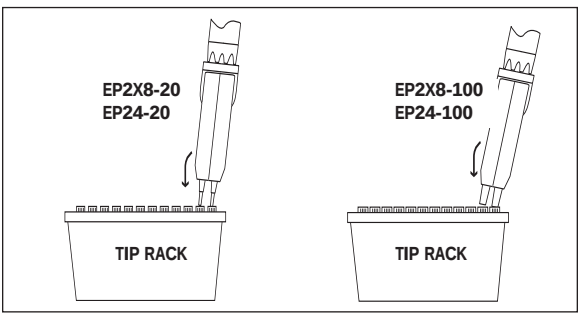

FIGURE 3: MOUNTING RACKED LTS TIPS, DOUBLE-ROW MODELS

Note for 2x8- and 24-channel models

On the 2x8-channel and 24-channel models, both rows of tips need to be touched-off. Normally, dispense and blow-out are performed automatically by EDP3-Plus as you press and release the trigger for dispensing. This may not provide enough time to touch-off the second row on double-row models, if you touch-off each row separately.

You can delay the dispense / blowout sequence and obtain more time for touch-off by holding-in the dispense trigger for the dispense stroke, instead of pressing and releasing the trigger. Hold the trigger only long enough to touch-off both rows of tips, then release the trigger.

You can also touch-off both rows of tips at the same time; touch off all tips together at the bottom of the wells. Practice both methods to develop your technique.

Tip Immersion Depth

The recommended depth for tip insertion into the sample for each EDP1 multichannel model is shown in the table below.

EDP1s Model	Immersion Depth
EP8-10, EP12-10	2 - 3 mm
EP8-20, EP12-20, EP8-50, EP12-50, EP2X8-20, EP24-20	2 - 3 mm
EP8-200, EP12-200, EP2X8-100, EP24-100	2 - 4 mm
EP8-300, EP12-300	2 - 4 mm
EP8-1200, EP12-1200	4 - 10 mm

Tip immersion depth is important. If exceeded, the volume measured may be inaccurate, possibly out of specification.

Tip angle: Operate the pipette within 20 degrees of vertical.

Tip Ejection

Simply press on the tip ejector button. All tips are ejected cleanly with minimal pressure on the thumb.

Note: Unique tips for 1200 µL models

The RT-L1200 and RT-L1200S tips are specifically designed for use with 1200 µL models in MULTIDISPENSE mode. The unique design of these tips prevents drop formation and eliminates the need for touch-off between dispenses in MULTIDISPENSE mode.

The RT-L1200F aerosol-resistant tip allows a full 1200 µL to be aspirated under the filter. However, fluid dynamics dictate that touch-off may be required when multidispensing.

Specifications

These manufacturer's specifications should be used as guidelines when establishing your own performance specification.

Model	Volume µL	Increment µL	Accuracy %	Accuracy µL (±)	Precision %	Precision µL (≤)
EP8-10, EP12-10 (range 0.5-10 µL)	1	0.01	2.5	0.025	1.2	0.012
	5		1.5	0.075	0.6	0.03
	10		1.0	0.10	0.4	0.04
EP8-20, EP12-20 EP2X8-20, EP24-20 (range 2-20 µL)	2	0.02	7.5	0.15	2.0	0.04
	10		1.5	0.15	0.5	0.05
	20		1.0	0.20	0.3	0.06
EP8-50, EP12-50 (range 5-50 µL)	5	0.05	3.5	0.18	1.5	0.075
	25		1.2	0.30	0.4	0.1
	50		0.8	0.40	0.2	0.1
EP2X8-100, EP24-100 (range 10-100 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
EP8-200, EP12-200 (range 20-200 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
EP8-300, EP12-300 (range 20-300 µL)	30	0.2	2.5	0.75	1.0	0.3
	150		0.8	1.2	0.25	0.375
	300		0.8	2.4	0.15	0.45
EP8-1200, EP12-1200 (range 100-1200 µL)	100	1.0	3.6	3.6	0.60	0.60
	600		0.8	4.8	0.20	1.20
	1200		0.8	9.6	0.15	1.80

(Specifications subject to change without notice)

Service

If you experience any problems with your multichannel EDP1 pipette contact RAININ Technical Support at 800-543-4030.

Ordering Information

Cat. No.	Pipette Description
8-channel	
EP8-10	8-channel, 0.5 to 10 µL
EP8-20	8-channel, 2 µL to 20 µL
EP8-50	8-channel, 5 µL to 50 µL
EP8-200	8-channel, 20 µL to 200 µL
EP8-300	8-channel, 20 µL to 300 µL
EP8-1200	8-channel, 100 µL to 1200 µL
12-channel	
EP12-10	12-channel, 0.5 to 10 µL
EP12-20	12-channel, 2 µL to 20 µL
EP12-50	12-channel, 5 µL to 50 µL
EP12-200	12-channel, 20 µL to 200 µL
EP12-300	12-channel, 20 µL to 300 µL
EP12-1200	12-channel, 100 µL to 1200 µL
2x8 (16-channel)	
EP2X8-20	16-channel, 2x8 configuration, 2 µL–20 µL
EP2X8-100	16-channel, 2x8 configuration, 10 µL–100 µL
24-channel	
EP24-20	24-channel, 2x12 configuration, 2 µL–20 µL
EP24-100	24-channel, 2x12 configuration, 10 µL–100 µL

Note: LTS multichannel pipettes require LTS tips.

EDP1 Pipettes are supplied with:

6100-080 NiCad Battery Pack

6100-063 Wall Power Supply
Recharges EDP1 in 14 hours

Optional Accessories:

6101-049 Rapid Charge Stand.
Recharges EDP1 in 90 minutes

To order pipettes or accessories, call 800-472-4646, or visit www.rainin.com on the web.

RAININ is a registered trademark and EDP1 and LTS are trademarks of Rainin Instrument, LLC. EDP1 Pipettes are manufactured under U.S. Patents. 4,671,123, 4,779,467 and 4,905,526, 5,187,990, 5,614,153, 6,299,841 and 6,254,832; and under the following national patents: Taiwan, NI-23042; Australia, AU 589891; France, FR 2559904; Europe: CH, DE, GB, IT, NL, EP 0152120 and EP 0428500; Canada, CA 1293709; Japan, JP 1807271; Germany, DE 3588071 and DE 3586289. LTS LiteTouch Tip Ejection System is protected under U.S. patents 6,168,761 B1 and 6,171,553 B1. Other U.S. and national patents pending.

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 LTS pipettes are calibrated with RAININ LTS tips.

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

Contacting RAININ

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E-mail: pipets@rainin.com

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