

User Guide

EZ-Pak[®] Dispenser Curve



The Life Science business of Merck operates as MilliporeSigma in the US and Canada.

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Notice

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Carefully read the user guide and safety instructions before using the instrument.

Please keep these documents and safety instructions for further reading.

Introduction

The EZ-Pak[®] Dispenser Curve provides portable, hands-free, high-speed dispensing of ready-to-use, sterile, individually packed membranes for microbiological analysis of liquid samples.

- The system is powered by lithium-ion battery (up to 10,000 membranes are dispensed per charge).
- EZ-Pak[®] membrane cartridges contain 150 white, black, or green gridded 47 mm or 50 mm diameter membranes, and can be used with the Microfil[®] filtration system.
- EZ-Pak[®] membrane cartridges can be loaded into the EZ-Pak[®] Dispenser Curve in less than 30 seconds.
- The EZ-Pak[®] Dispenser Curve automatically collects the protective packaging.
- The EZ-Pak[®] Dispenser Curve is designed to be used under standard clean conditions and with traditional membrane filtration methods.

Specifications and Operating Requirements

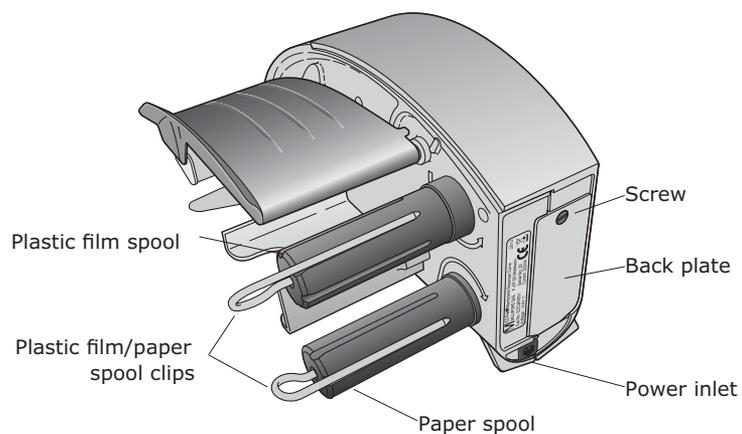
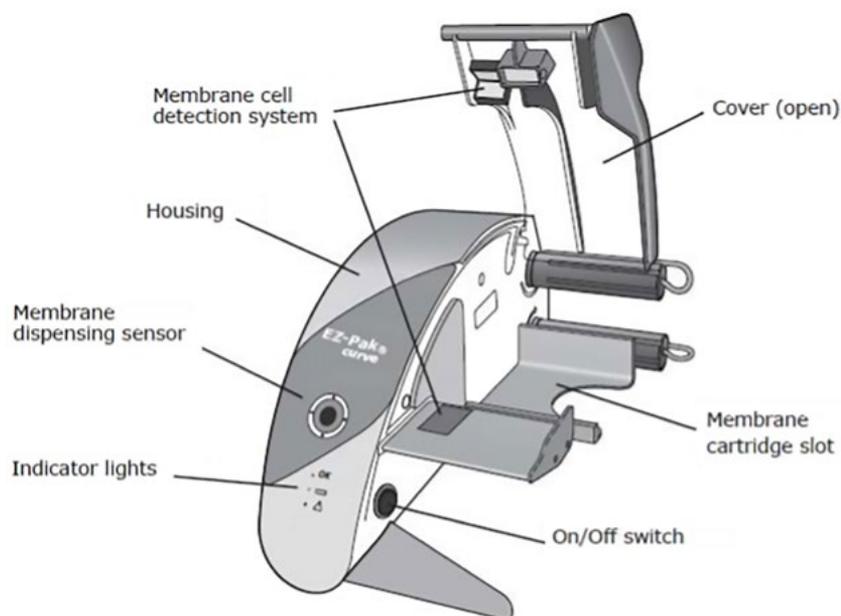
Dimensions	Width	31 cm / 12.2 in.
	Depth	18 cm / 7.1 in.
	Height	16.5 cm / 6.5 in.
	Weight	2.1 kg / 4.7 lbs.
Voltage	Supply Voltage Input	100 V–240 V /10% 50 Hz / 60 Hz ±2 Hz
	Dispenser Input DC	24 V
	Dispenser Input DC	1.6 A
Environmental operating temperature		15 to 40 °C (59 °F to 104 °F)
Operating humidity		<Relative humidity conditions of 80% at temperature up to 31 °C
Operating altitude		<3000 m
Protection type (IEC 60529-2004)		IP42 for the dispenser IP40 for the external power supply
Sound intensity		<70 dB
Materials of Construction	Housing	Glass bead—reinforced polyamide 6
	Cover	Glass bead—reinforced polyamide 6
	Front sticker	Polyester
	On/Off switch	Polyamide 6-6
	Paper and plastic film spool	Polyoxymethylene (POM)
	Clips	Stainless steel
	Feet	Silicone
	Power Inlet	Brass

System Components

The package contains:

- EZ-Pak® Dispenser Curve
- Plastic film and paper spool clips
- Rechargeable lithium-ion battery
- Screwdriver (for membrane exposure adjustment)
- Safety requirements

NOTE: The accessories of the EZ-Pak® Dispenser Curve, listed above, are located on the upper side of the top cushion layer.



Dispenser Indicator Light Information

When the dispenser is ON, three indicator lights provide information about the state of the dispenser.

Indicator Color	Meaning	Status	Information
Green	OK	OFF	The dispenser is off or is not ready to use (battery completely discharged or dispenser failure).
		Blinking	The dispenser is in sleep mode.
		ON	The dispenser is ready to use.
Yellow		OFF	The dispenser battery is charged.
		Blinking	The dispenser battery is charging.
		ON	The dispenser battery is low. The dispenser still can be used but should be recharged.
Red		OFF	The dispenser is operating properly.
		ON	The dispenser is in a failure mode. See "Troubleshooting" in this user guide.

NOTE: When the dispenser battery is completely discharged, the yellow and green indicator lights go off.

The battery can only be recharged if the switch is in the ON position.

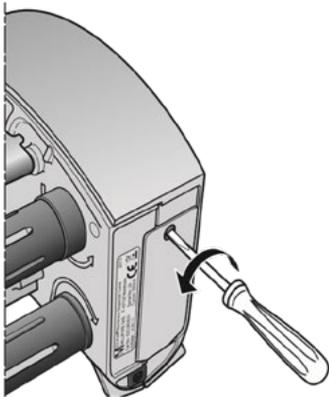
Installing the EZ-Pak[®] Dispenser Curve

1. Remove all components from the box. Remove the dispenser from the protective bag.

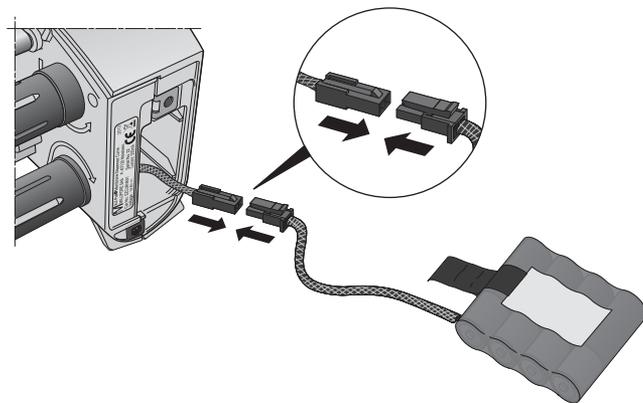
NOTE: Retain all packing materials. If the unit needs to be shipped, it should be packed in the original materials.

2. Place the dispenser in its working environment.

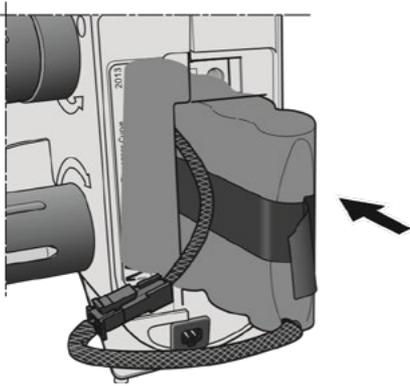
-
1. Use the screwdriver delivered with the dispenser to remove the screw that secures the plate located at the back of the dispenser.



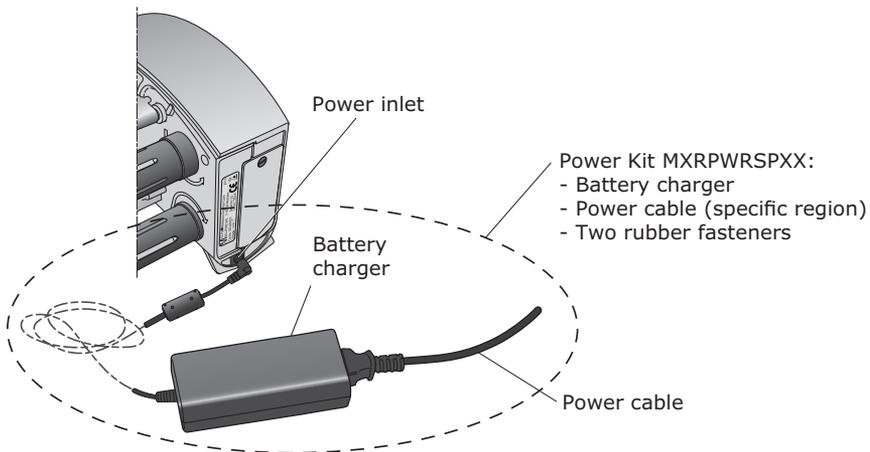
2. Remove the plate.
3. Pull the cord out from the slot.
4. Plug the battery delivered with the dispenser to the cord connector.



- Put the battery into the dispenser.



- Put the plate back on the dispenser and fasten the screw.
- Connect the power supply to the power inlet on the dispenser



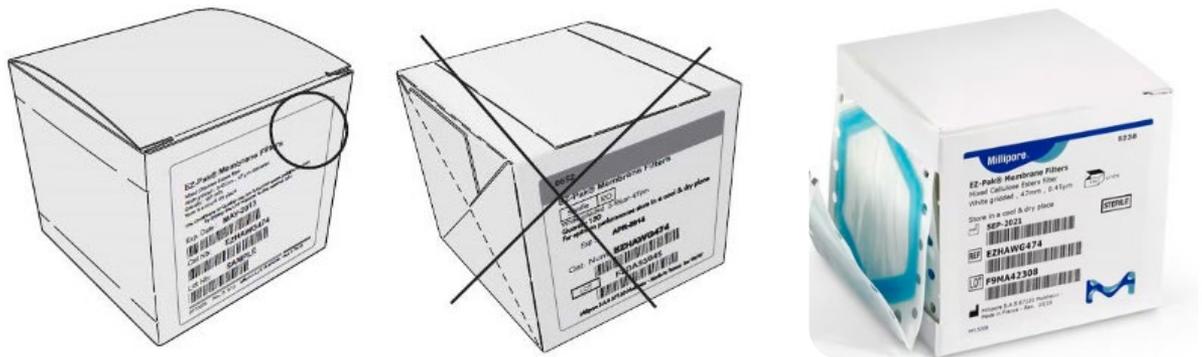
- Connect the power supply to the appropriate power cable
- Connect the other end of the power cable to a grounded 100/240 V 50–60 Hz power outlet battery charger to a power outlet.

NOTE: Fully charge the battery before using it for the first time.

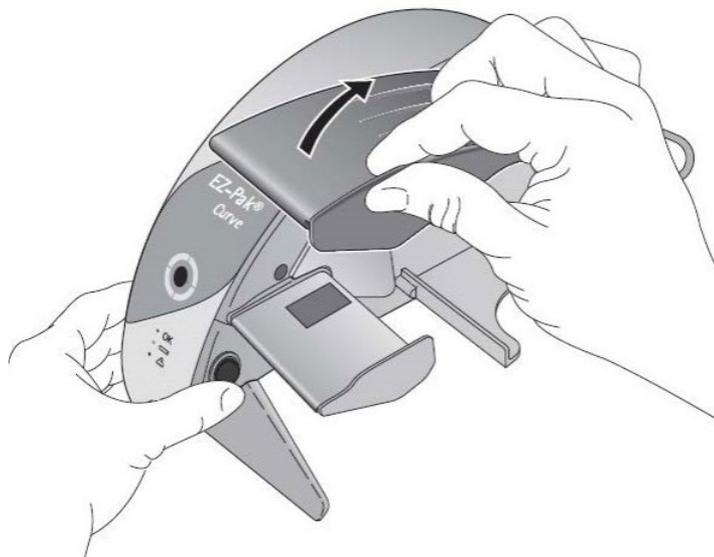
Loading a Membrane Cartridge into the EZ-Pak® Dispenser Curve

1. Ensure that the dispenser is off.
2. Open an EZ-Pak® membrane cartridge by detaching the piece of cardboard from the left side of the box.

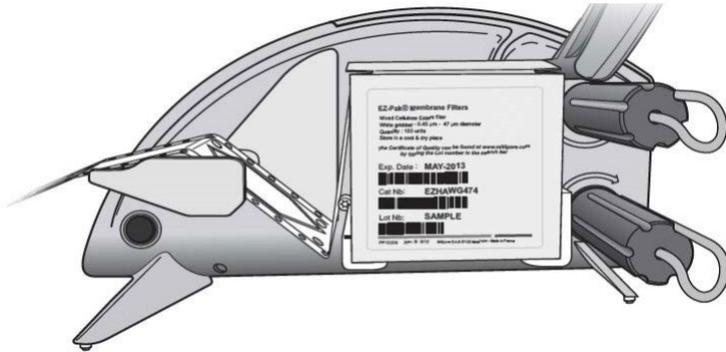
NOTE: Only EZ-Pak® membrane cartridges with the “M” logo on the cartridge label are compatible with the EZ-Pak® Dispenser Curve.



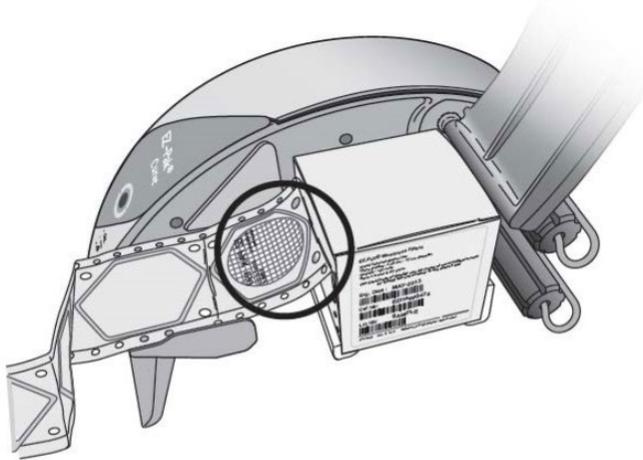
3. Open the dispenser cover.



4. Insert the EZ-Pak® membrane cartridge as shown:

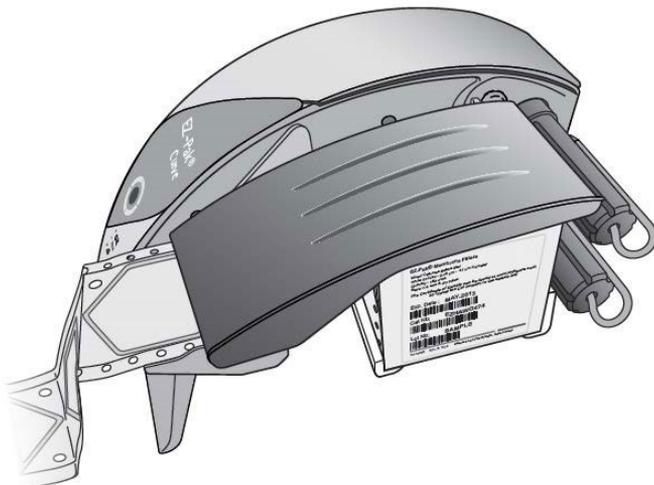


5. Pull out the band until the first cell containing a membrane is fully visible and removed from the membrane cartridge.



NOTE: To avoid membrane waste, the initial cells on the band do not contain membranes.

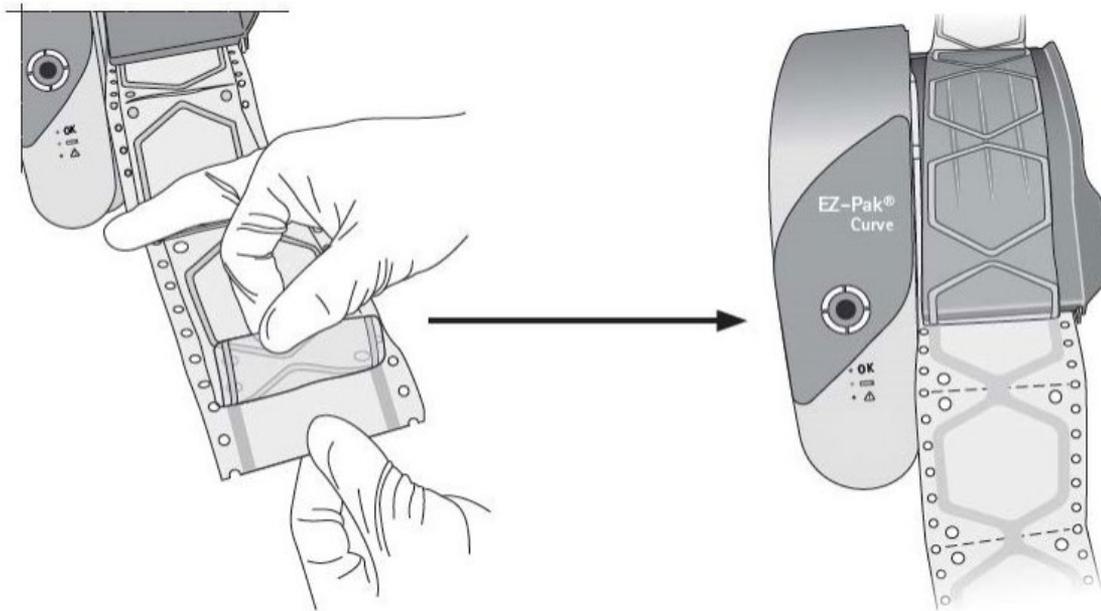
6. Close the cover.



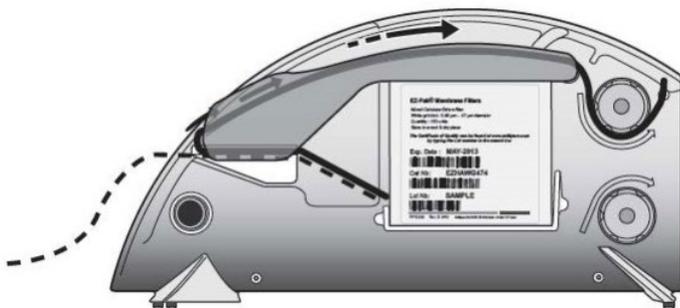
7. Pull off the plastic film and the paper spool clips.



8. Peel the transparent plastic film off the paper backing of the cells located outside the dispenser.

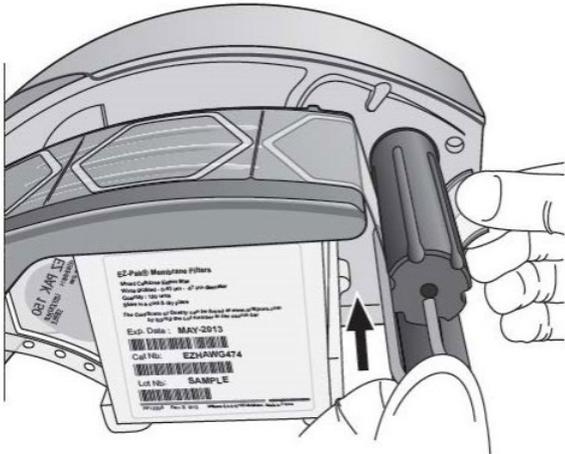


9. Place the end of the plastic film **below** the plastic film spool.

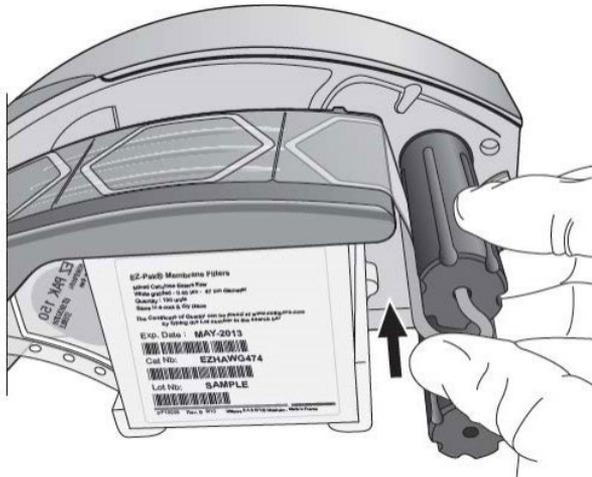


NOTE: Refer to the arrows on the dispenser for placement of the film and the backing paper on the spools.

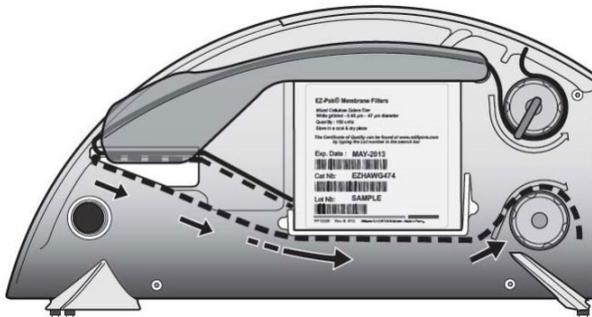
10. Insert the longer part of the clip into one of the grooves of the plastic film spool to secure the film against.



11. Secure the film by inserting the small part of the clip into the plastic film spool until it reaches the end stop.

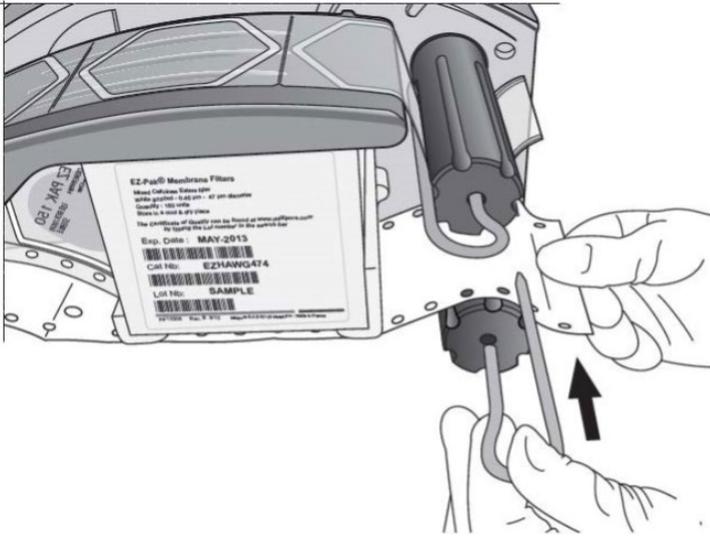


12. Place the backing paper above the paper spool.

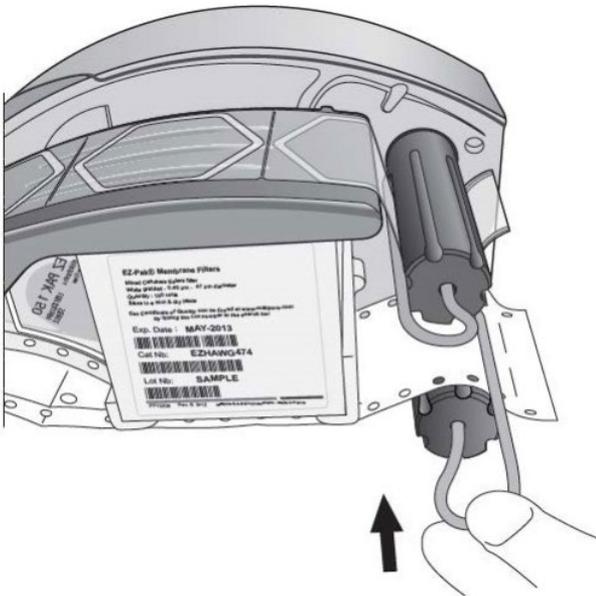


NOTE: Refer to the arrows on the dispenser for placement of the film and the backing paper on the spools.

13. Secure the backing paper to the spool by placing the long end of the clip into one of the grooves on the paper spool.



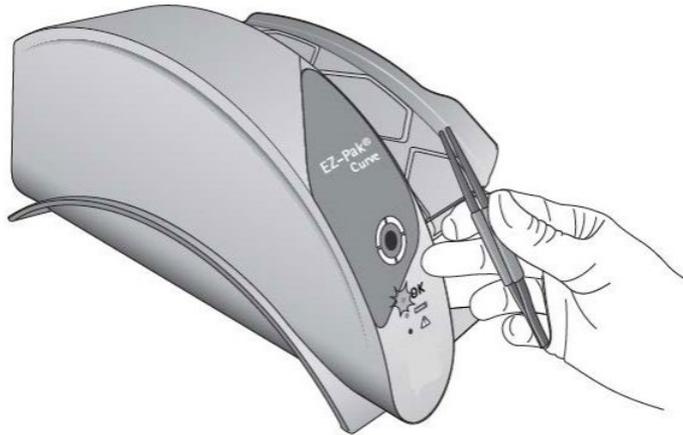
14. Fasten the backing paper by inserting the small part of the clip into the paper spool until it reaches the end stop.



15. Place the dispenser on the working area.
16. Power on the dispenser by pressing the On/Off switch to (I) position. The dispenser is now ready to use.

Using the EZ-Pak[®] Dispenser Curve

1. Press the On/Off switch to | position to power on the dispenser.
2. To dispense a membrane, move your hand in front of the membrane dispensing sensor until the dispenser releases a membrane.

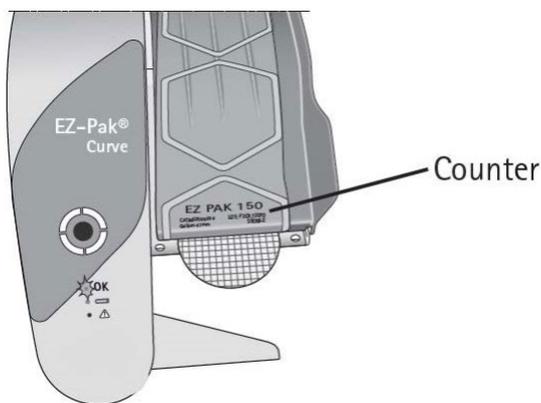


NOTE: The first cells of a new membrane cartridge are empty. Repeat this step until a membrane is released.

NOTE: If the EZ-Pak[®] Dispenser Curve stays inactive for ten minutes, it enters sleep mode, causing the green indicator light to blink. To reactivate the dispenser, move your hand in front of the membrane dispensing sensor until the dispenser releases a cell.

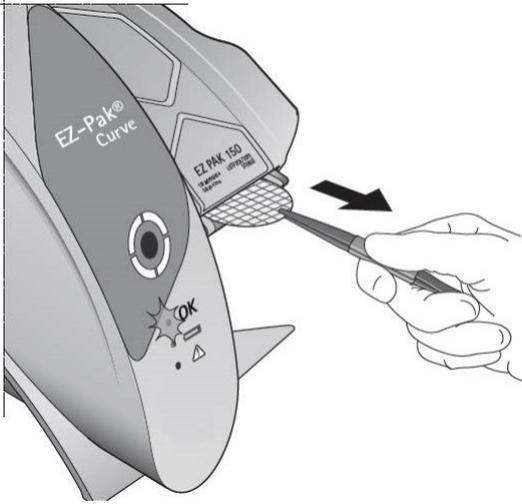
NOTE: On a dispenser powered by rechargeable battery, when the yellow indicator light turns on, this means up to 750 membranes can still be dispensed.

3. Open the dispenser cover.



NOTE: The counter printed on the plastic film indicates the number of membranes remaining in the cartridge.

- Using forceps, carefully remove the membrane by pulling it straight out from the cell.

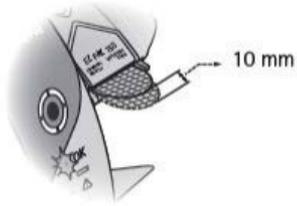


- Set the membrane on a Microfil® or other filtration support.
- After dispensing the last membrane from a cartridge, detach the spool clips and remove the rolls of used backing paper and plastic film, as along with the empty cartridge.

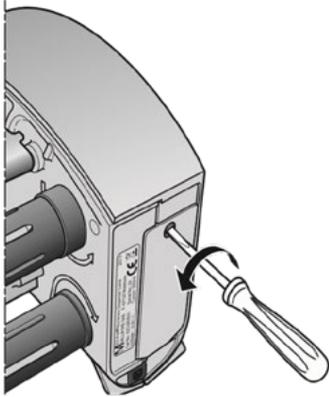
NOTE: At the end of the day, or if the EZ-Pak® Dispenser Curve will not be used for an extended period of time, turn the On/Off to position 0 to switch power off the dispenser.

Adjusting the Membrane Exposure (optional)

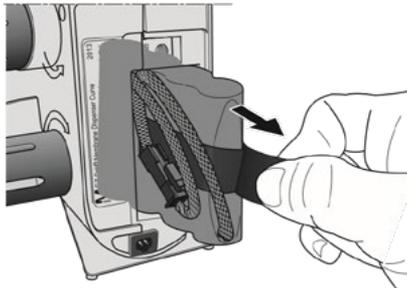
The membrane exposure can be increased by about 10 mm from the nominal value.



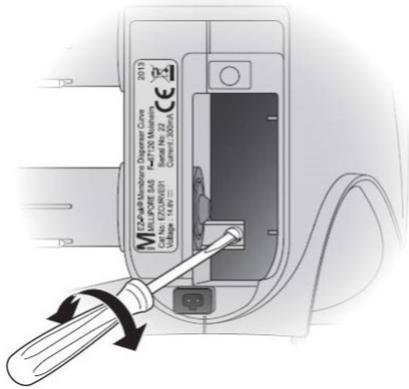
1. Ensure that the dispenser is off.
2. Use the screwdriver delivered with the dispenser to remove the screw that secures the plate located at the back of the dispenser.



3. Remove the plate.
4. Remove the battery from the battery slot.



5. Use the screwdriver delivered with the dispenser to slightly rotate the adjustment screw clockwise to increase the membrane exposure.



6. Press the On/Off switch to | position to power on the dispenser.
7. Dispense a membrane to check membrane exposure. (See "Using the EZ-Pak® Dispenser Curve" in this user guide). To readjust the membrane exposure, power off the dispenser and repeat step five.
8. Put the battery back into the dispenser.
9. Put the plate back on the dispenser and secure the screw.

Cleaning the EZ-Pak[®] Dispenser Curve

1. Switch off and disconnect the EZ-Pak[®] Dispenser Curve from the power outlet before cleaning.
2. Wipe outside surfaces of the dispenser with a non-woven wipe moistened with one of the products listed in the following table.

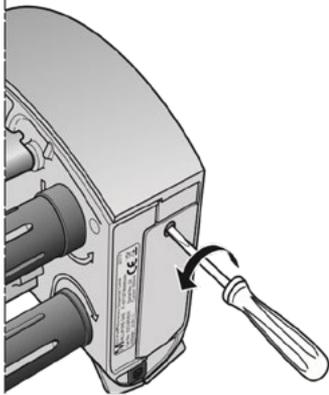
NOTE: Do not spray any cleaning products, solvents, or abrasives onto or into the EZ-Pak[®] Dispenser Curve, as these could damage the mechanism.

Cleaning Product	Validated dilution
Propan-2-ol (70%), deionized water solution (30%)	Ready to use
Ethanol (70%)	Ready to use
Sodium hypochlorite	250 ppm
Hydrogen peroxide (6%)	Ready to use
Ethanol (N ^o CAS 64-17-5 : 226 mg/g), Chlorhexidine digluconate (N ^o CAS 18472-51-0: 0.64 mg/g), Didecyldimethylammonium chloride (N ^o CAS 7173-51-5: 0.53 mg/g), excipients	Ready to use
Isopropyl alcohol (N ^o CAS 67-63-0 10%) Didecyldimethylammonium chloride (N ^o CAS 7173-51-5: 0.15936%)	Ready to use
Peracetic acid (0.08%), hydrogen peroxide (1%), and acetic acid (<10%)	Ready to use
Quaternary ammonium: ethanol <0.5% didecyldimethylammonium chloride <0.5% N-(3-aminopropyl)-N-dodecylpropane-1,3-diamine <0.5%	Ready to use

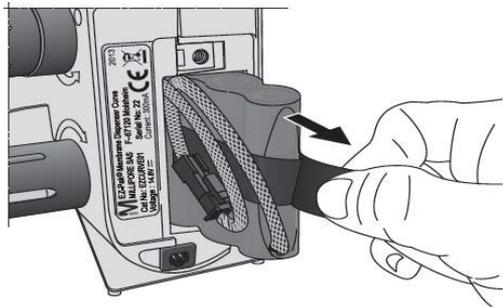
Replacing the Battery

NOTE: Battery instructions apply only to the EZ-Pak® Dispenser Curve powered by a rechargeable battery.

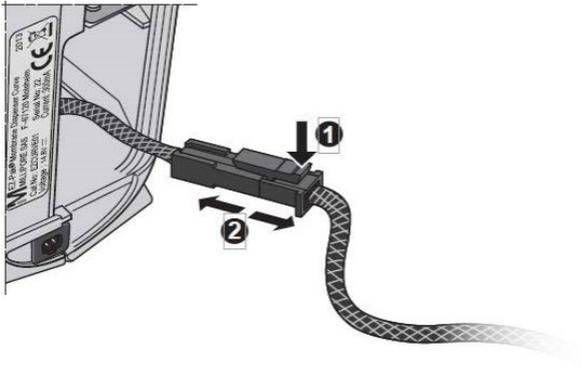
1. Switch-off the EZ-Pak® Dispenser Curve and disconnect the battery charger.
2. Use the screwdriver delivered with the dispenser to remove the screw that secures the plate located at the back of the dispenser.
3. Remove the plate.



4. Remove the battery from the battery slot.



5. Push the clip on the connector located at the end of the cord to unplug the battery from the cord.



NOTE: Do not discard the battery in standard waste. Refer to your local regulations for proper disposal instructions.



6. Plug the new battery (catalogue number EZCURVBAT) to the cord connector.
7. Put the battery back into the dispenser.
8. Put the plate back on the dispenser and secure the screw.
9. Fully charge the battery before first use.

Troubleshooting

Generic problems

Symptom	Possible Cause	Remedy
The green indicator light is on, but nothing happens when a hand is moved in front of the dispensing sensor.	The hand is too far from the dispensing sensor.	Move the hand closer to the dispensing sensor.
	The dispensing sensor is dirty.	Switch the dispenser off. Clean the dispensing sensor using a nonwoven wipe moistened with one of the products listed in "Cleaning the EZ-Pak® Dispenser Curve" in this user guide.
The dispensing cycle starts when a hand moves in front of the dispensing sensor, but no membrane is released.	No membrane cartridge is loaded in the dispenser, or the membrane cartridge loaded in the dispenser is empty.	Turn off the dispenser. If an empty membrane cartridge is present, remove it then load a new membrane cartridge. Switch the dispenser back on.
	The clips are not properly dragging the plastic film and/or the backing paper.	Switch the dispenser off. Check that the plastic film and/or the backing paper are properly placed and secured on the spools. Switch the dispenser back on.
		Switch the dispenser off.
Several membranes are released when a hand moves in front of the dispensing sensor.	The membrane cell detection system is dirty.	Clean the membrane cell detection system using a non-woven wipe moistened with one of the products listed in "Cleaning the EZ-Pak® Dispenser Curve" in this user guide.
	The membrane cartridge is not compatible with the dispenser.	Check that the "M" logo is present on the membrane cartridge label.
	The membrane cartridge is not loaded properly.	Check that the membrane cartridge is loaded according to instructions in "Loading the Membrane Cartridge into the EZ-Pak® Dispenser Curve" in this user guide.
The red indicator light is on	The dispenser is in failure mode because of one of the symptoms listed in this table.	Switch the dispenser off. Solve the problem according to the instructions in this table. Switch the dispenser back on.
	The dispenser is out of order.	Contact technical support.

Specific problems related to the dispenser powered by a rechargeable battery

Symptom	Possible Cause	Remedy
The On/Off switch is in the on (I) position, but all the indicator lights are off.	The battery is completely discharged.	Charge the battery by connecting the dispenser to a power source.
After a charge cycle, the battery life is abnormally short.	The battery cannot hold charge anymore.	Replace the battery.
The battery charger is in "error" status.	The battery is out of order.	Replace the battery.

If any of the above problems persists, contact us.

Ordering Information

EZ-Pak® Membrane Dispenser Curve

Description	Quantity/Pack	Catalogue Number
EZ-Pak® Membrane Dispenser Curve, powered by lithium-ion battery	1	EZCURVE01

Spare Parts

Description	Quantity/Pack	Catalogue Number
Rechargeable lithium-ion battery	1	EZCURVBAT
External power supply/charger for battery-powered dispenser	1	EZCURVCHA
Spools clips	2	EZCURVCLI
Milliflex® Rapid Power Supply—AU	1	MXRPWRSPAU
Milliflex® Rapid Power Supply—BR	1	MXRPWRSPBR
Milliflex® Rapid Power Supply—CN	1	MXRPWRSPCN
Milliflex® Rapid Power Supply—DK	1	MXRPWRSPDK
Milliflex® Rapid Power Supply—EU	1	MXRPWRSPEU
Milliflex® Rapid Power Supply—IN	1	MXRPWRSPIN
Milliflex® Rapid Power Supply—JP	1	MXRPWRSPJP
Milliflex® Rapid Power Supply—SZ	1	MXRPWRSPSZ
Milliflex® Rapid Power Supply—UK	1	MXRPWRSPUK
Milliflex® Rapid Power Supply—US	1	MXRPWRSPUS
Milliflex® Rapid Power Supply—ZA	1	MXRPWRSPZA

EZ-Pak® Membranes (4 cartridges, each containing 150 membranes)

Description	Quantity/Pack	Catalogue Number
EZ-Pak® Membranes, 0.45 µm, white, gridded, 47 mm diameter	600	EZHAWG474
EZ-Pak® Membranes, 0.45 µm, black, gridded, 47 mm diameter	600	MSP000814
EZ-Pak® Membranes, 0.45 µm, green, gridded, 47 mm diameter	600	EZHAGG474
EZ-Pak® Membranes, 0.45 µm, white, gridded, 50 mm diameter	600	EZHAWG504
EZ-Pak® Membranes, 0.45 µm, black, gridded, 50 mm diameter	600	EZHABG504
EZ-Pak® Membranes, 0.45 µm, green, gridded, 50 mm diameter	600	EZHAGG504
EZ-Pak® Membranes, 0.8 µm, black, gridded, 47 mm diameter	600	EZAABG474
EZ-Pak® Membranes, 0.8 µm, white, gridded, 47 mm diameter	600	EZAAWG474
EZ-Pak® Membranes, 0.7 µm, white, gridded, 47 mm diameter	600	EZHCGW474
EZ-Pak® Membranes, 0.22 µm, white, gridded, 47 mm diameter	600	EZGSWG474

EZ-Pak® Membranes (150 membranes with 150 Microfil® funnels)

Description	Quantity/Pack	Catalogue Number
100 mL Microfil® funnels and EZ-Pak® Membranes, 0.45 µm, white, gridded, 47 mm diameter	150	MZHAWG101
250 mL Microfil® funnels and EZ-Pak® Membranes, 0.45 µm, white, gridded, 47 mm diameter	150	MZHAWG251
100 mL Microfil® funnels and EZ-Pak® Membranes, 0.45 µm, black, gridded, 47 mm diameter	150	MZHABG101
250 mL Microfil® funnels and EZ-Pak® Membranes, 0.45 µm, black, gridded, 47 mm diameter	150	MZHABG251
100 mL Microfil® funnels and EZ-Pak® Membranes, 0.8 µm, white, gridded, 47 mm diameter	150	MZAAWG101
250 mL Microfil® funnels and EZ-Pak® Membranes, 0.8 µm, white, gridded, 47 mm diameter	150	MZAAWG251
100 mL Microfil® funnels and EZ-Pak® Membranes, 0.8 µm, black, gridded, 47 mm diameter	150	MZAABG101
250 mL Microfil® funnels and EZ-Pak® Membranes, 0.22 µm, white, gridded, 47 mm diameter	150	MZGSWG101

Related Products

Description	Quantity/Pack	Catalogue Number
EZ-Stream™ Pump	1	EZSTREAM1
Filter forceps	3	XX6200006P
EZ-Fit™ Manifold, 1-place for Microfil® funnels and membranes	1	EZFITMIC01
EZ-Fit™ Manifold, 3-place for Microfil® funnels and membranes	1	EZFITMIC03
EZ-Fit™ Manifold, 6-place for Microfil® funnels and membranes	1	EZFITMIC06

Standard Product Warranty

The applicable warranty for the products listed in this publication may be found at: **SigmaAldrich.com/terms** (within the “Terms and Conditions of Sale” applicable to your purchase transaction).

Technical Assistance

For more information visit **SigmaAldrich.com/techservice**

For additional information and documentation please contact:

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