

Cole-Parmer®

Single-Use Dispensing Pump

Powered by i-FILL®

91400-81

Quick Start Guide



coleparmer.com

CE

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Overview



Human Machine Interface (HMI)

The HMI is a touchscreen interface used to control the pump. Fill volumes, flow rates, fill cycles, and more can be controlled from this easy-to-use interface.

USB Port

This easily accessible USB port allows controlled access to the pump to update firmware and operating parameters. Export recipe details and loaded parameters to an excel file for review and documentation.



Mounting Plate

Easily mount the i-FILL pump heads using 3 thumb screws. The mounting plate can also be rotated clockwise/ counter-clockwise to switch between priming and dispensing modes.

Piston

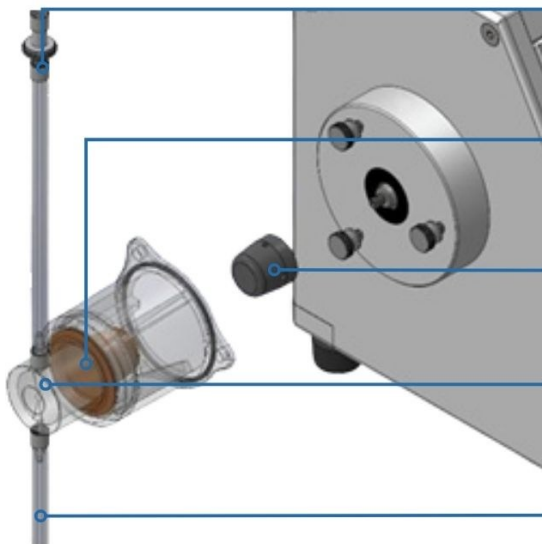
The piston actuates the diaphragm in the pump heads to move fluid through the fluid path.

6-Pin Power/COM Plug

This allows the pump to connect to accessories such as the foot switch.

Main Power Plug

The main power plug accepts the pumps grounded power cord and AC/DC power adapter.



Discharge Tubing

Features check valve and dispensing nozzle. When dispensing, the discharge tubing is at 12 o'clock.

Diaphragm

The diaphragm flexes in controlled strokes to draw in and precisely dispense micro-volumes of fluid.

Piston

Pump Head

Disposable, single-use pump head provides a sterile, contamination-free fluid path that can be quickly replaced.

Intake Tubing

Supplies fluid to the pump head and features a check valve. In dispensing mode, the intake tubing is at 6 o'clock.

Things You'll Need



Pump Drive



Piston (1 mL or 10 mL)



Thumbscrews (3)



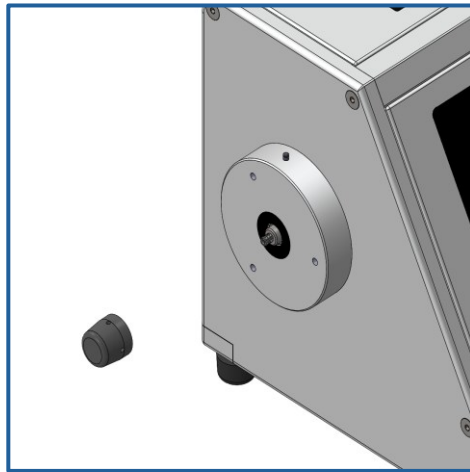
Power Adapter



Pump Head Kit: 1 mL or 10 mL

Mounting the Pump Head

1

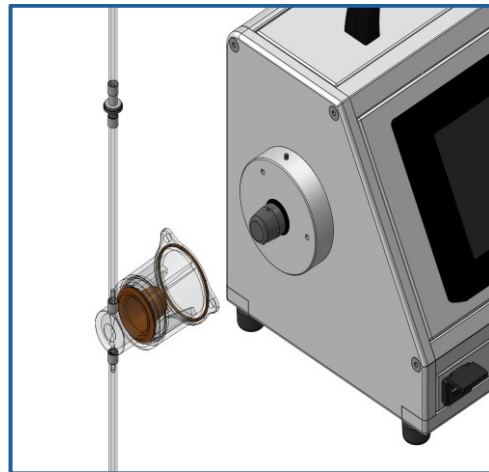


Begin by taking a piston (1 mL or 10 mL) and screwing it onto the pump shaft. Hand tighten the piston until it is securely fastened and will not rotate. Be careful not to overtighten.

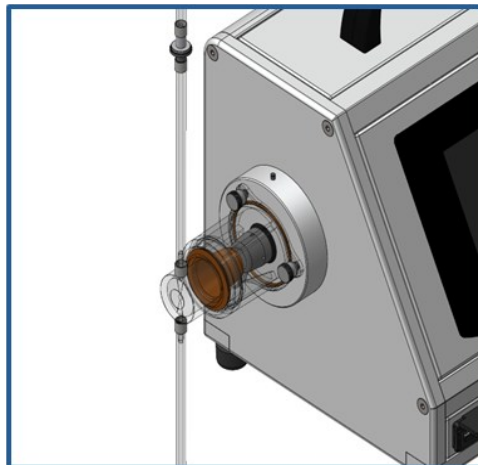
Take your pump head assembly (1 mL or 10 mL) and align the holes of the base of the pump head assembly with the screw holes of the mounting plate.

Make sure that the mounting plate and pump head assembly tubes are oriented as shown in the image. Check to make sure that the O-ring under the pump head assembly is still in place before mounting.

2



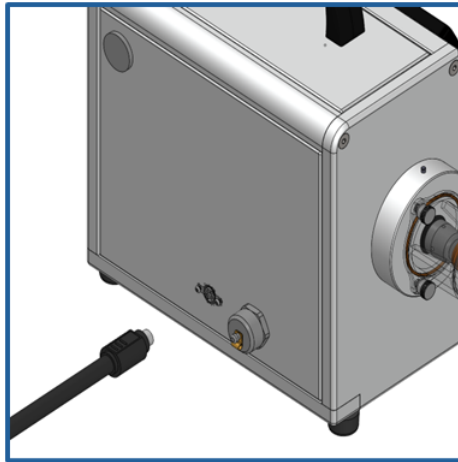
3



Secure the pump head assembly by hand-tightening the three thumbscrews into the screw holes of the mounting plate. Hand tighten the thumb screws until the pump head assembly is securely fastened. Be careful not to overtighten.

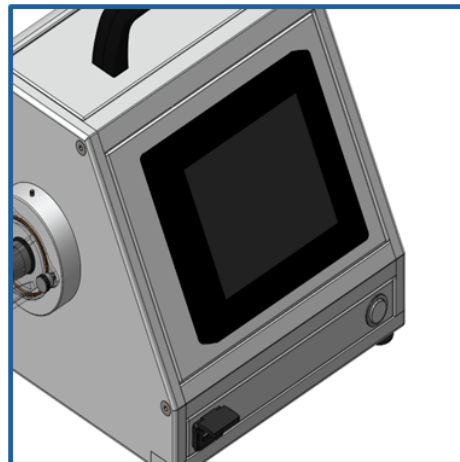
Powering On

1



On the backside of the drive, locate the receptable for the power supply and plug it in.

On the front of the drive, locate the power button and power ON the pump. The i-FILL logo should appear on screen, and an audible humming noise should be heard. Allow a few seconds for the software to load.



2

3



Use the touchscreen HMI to select the logo and navigate to the main menu.

Priming the Pump

1



Set up your dispensing operation.

Select PUMP SETUP on the main menu to apply settings. Select the correct pump head assembly. Selecting the incorrect pump head assembly can result in damage to the assembly or the pump.

Note that any setting changes will require a login from an authorized user.

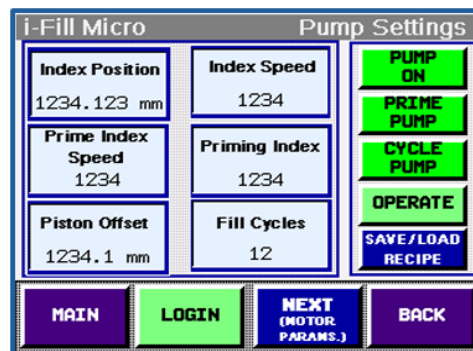
Select the index position and prime index speed settings to adjust the actuation distance and actuation speed of the piston. Select the priming index setting to adjust the number of actuations to prime the pump.

Index positions for pump head kits:

1 mL: 0 to 18 mm

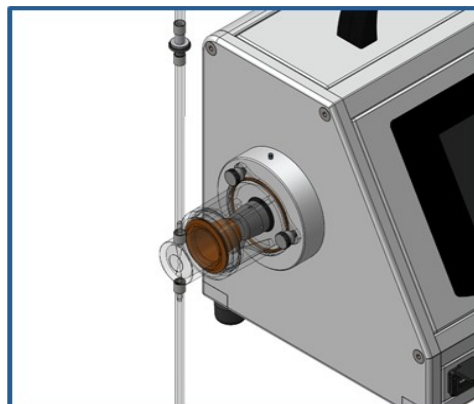
10 mL: 0 to 46 mm

Prime index speed settings: 0 to 4000



2

3

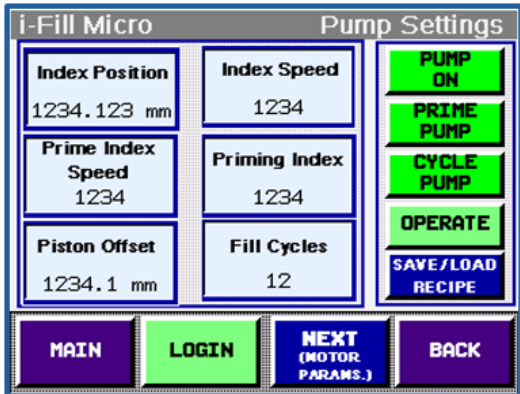


Rotate the mounting plate so the tubing with the dispensing tip is in the 12 o'clock position while the source tube is in the 6 o'clock position.

Select PRIME PUMP to begin the priming protocol. You may need to tilt the pump head upward to expel any air in the fluid path. Repeat until it is fully primed.

Starting a Dispensing Protocol

A



For manual dispensing:

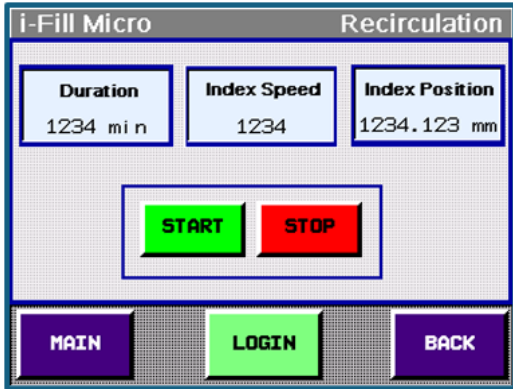
Adjust the index position and index speed settings for your manual dispensing protocol. Select CYCLE PUMP to perform a single dispense with these settings.

To save these settings or load existing ones, select SAVE/LOAD RECIPE and follow the prompts on the screen.

For continuous dispensing / product transfer:

Navigate to the Main Menu and select RECIRCULATION. Adjust the Duration, Index Speed, and Index Position settings to adjust pumping time, actuation speed, and actuation distance of the pump.

Select START to begin the protocol. Select STOP to end the protocol.



B

See Appendix A for example settings.

Appendix A

Typical Dispensing Settings

Note: The settings below are approximate. Index position and index speed may require additional adjustments to achieve exact fill volumes and/or flow rates.

Approximate Index Position (mm) Settings for Typical Fill Volumes At Index Speed: 3000 and Acceleration/Deceleration: 150

Fill Volume	1 mL Pump Kit	10 mL Pump Kit
1 mL	15	6
5 mL	Use 10 mL Kit	17
10 mL	Use 10 mL Kit	28
15 mL	Use 10 mL Kit	37

Typical Flow Data

1 mL Kit			10 mL Kit		
Index Speed	Index Position	Flow Rate (mL/min)	Index Speed	Index Position	Flow Rate (mL/min)
4000	18	14.3	4000	46	148
	14	9.9		40	139
	10	5.4		30	105
	6	2.6		20	74
	4	1.1		10	29
	2.5	0.1		5	6
1000	18	14.3	1000	46	142
	14	9.9		40	126
	10	6.2		30	104
	6	2.5		20	76
	4	0.7		10	29
	2.5	0.1		5	6
500	18	11.5	500	46	92
	14	8.9		40	75
	10	6		30	85
	6	2.7		20	58
	4	1.1		10	28
	2.5	0.1		5	6
100	18	3.4	100	46	22
	14	2.7		40	22
	10	2.2		30	20
	6	1.2		20	15
	4	0.6		10	9
	2.5	0.1		5	3

Additional Notes:

All pump kits are Lot# controlled with Lot# controlled component parts. Vendor documentation is kept on file pertaining to animal / non-animal origin of component parts. Kits are double-bagged and individually labeled with Part #, Lot #, and Gamma Irradiation label. Kits are irradiated within a range of 25 to 44 kGy by an approved supplier. Irradiation Process run records are maintained for each Lot #.

All settings were tested with water at about room temperature (75°F, 23.8°C). All settings are approximate.

MAINTENANCE: The Cole-Parmer i-FILL pump is a self-contained unit that requires little to no maintenance. Users should occasionally wipe the unit with a soft, clean cloth. The touch screen control is protected by a cover that should protect it from the regular use of an appropriate stylus. Maintenance should only be performed by an authorized technician. Please call 1-800-323-4340 for technical support or service regarding the proper care of this unit.

SAFETY AND COMPLIANCE: This machine was built to meet, at a minimum, the requirements of the ANSI /PMMI B155.1 Safety Requirements for the Construction, Care and Use of Packaging and Packaging-Related Converting Machinery. Other voluntary standards are also referenced such as NFPA 79 (electrical), ANSI B11.19 (safeguarding), ANSI Z535.4 (warnings) and ANSI Z535.6 (instruction manuals), OSHA Standard 29 (lockout/tagout). The i-FILL is compliant with the EU Directive on Electromagnetic Compatibility (EMCD 2014/30/EU) in accordance with Article 14 Annexes II and III.

WARRANTY AND SUPPORT: For warranty and/or factory repair request, contact Customer Service at 1-800-323-4340 with the unit part and/or model number, serial number, and a description of the problem. The model and serial number information can be found on the equipment identification tag mounted on the unit.

Ordering Information and Accessories

Description	Item Number
Dispensing Pump Powered by i-FILL®	91400-81
Pump Kit, 1 mL	91400-82
Pump Kit, 10 mL	91400-83
Replacement Piston, 1 mL	91400-84
Replacement Piston, 10 mL	91400-85
Angled Stand	91400-86
Foot Switch	91400-87



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*Inquiries from Germany and France are now handled in our St. Neots office by native-speaking experts.