



# chek-mate Flowmeter

## Cat. No. 375-07550N

### Operating Instructions

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Figure 1. chek-mate Flowmeter

## Introduction

### Description

The chek-mate Flowmeter (Figure 1) is designed specifically for use with air sample pumps. It has a flow measurement range of 0.75 to 5 L/min and a volumetric accuracy of 1%.

### Checking Package Contents

See below to verify that you received all items associated with the Cat. No. ordered. If you are missing items, contact SKC at 800-752-8472 (U.S. only) or 724-941-9701.

If You Ordered Cat. No.	Your Package Should Contain
375-07550N	Flowmeter with 9-volt alkaline battery and NIST-traceable calibration certificate

### Required Equipment

- ☒ 1/4-inch ID tubing

# Getting Started

## Notes and Cautions


- Allow chek-mate to equilibrate after moving it from one temperature extreme to another before use.
- The chek-mate case is rated IP40, not as waterproof or splashproof, so do not use it where water can enter the case.
- Ensure that fluids do not enter either the inlet or outlet port.
- Protect the chek-mate from direct exposure to sunlight to prevent the sunlight from heating the case.
- Avoid extended use of the chek-mate in areas with high levels of airborne particulates.
- Failure to follow these guidelines will void the warranty.

## Turn On/Off

Press the on/off button on the front of the chek-mate to turn it on. *See Figure 1.*

## Read Battery Status on LCD

When the battery voltage drops below 8 volts as it nears the end of its life, LOW BATTERY will be displayed in the upper left corner of the LCD. Replace the battery. *See Maintenance.*

 **When the battery voltage drops below 7 volts, the LOW BATTERY message displayed on the LCD will flash on and off and the chek-mate will turn off automatically. If the chek-mate is turned on again with the battery still in this condition, the LCD will display bAtt LO ten times and then turn off automatically.**

# Operation

## Set/Calibrate Flow Rate

- Allow the chek-mate to equilibrate for at least 10 minutes after moving it from one temperature extreme to another.
- Protect the chek-mate from direct exposure to sunlight to prevent the sunlight from heating the case.
- Ensure that fluids do not enter either the inlet or outlet.
- Avoid extended use of the chek-mate in areas with high levels of airborne particulates.

1. Turn on the flowmeter by pressing the on/off button on the front. The LCD screen will cycle through the startup messages, "On" followed by the flow meter range "5.0 L," and will then indicate the current flow rate.

**Note:** The chek-mate Flowmeter does not zero the flow reading at startup, so it is also possible to turn it on with the sample train already connected and airflow passing through the flowmeter without affecting the accuracy of the flow reading.

2. Connect the flowmeter outlet to the inlet of the calibration train using a length of flexible 1/4-inch ID tubing, and if required by the sampler, a calibration adapter. *See Figure 2.*
3. Start the sample pump and observe the LCD on the flowmeter until it achieves a steady value. The reading may vary by up to  $\pm 0.005$  L/min around the steady value. **Note:** Run the pump for a minimum of 5 minutes to stabilize before adjusting the flow rate.
4. Adjust the sample pump to give the desired sample flow rate.
5. Disconnect the tubing from the flowmeter outlet, taking care not to twist the tubing. Turn off the flowmeter using the on/off button.




**Figure 2.** Calibration Train

### Automatic Power Off Timer

The chek-mate Flowmeter will remain on indefinitely provided that a flow rate higher than 0.5 L/min is indicated. With a flow rate lower than 0.5 L/min or no airflow, the flowmeter will automatically turn off after 15 minutes to preserve battery power.

## Maintenance

-  If the chek-mate is not going to be used for an extended period, remove the battery from the battery compartment. Deep discharge of alkaline batteries can result in the eventual leakage of battery electrolyte even from quality batteries and can corrode the battery compartment terminals and potentially the flowmeter printed circuit board.

### Replace the Battery

- SKC recommends using quality alkaline batteries to ensure long battery life and prevent damage due to leaking battery electrolyte. A quality battery such as the Duracell Industrial model supplied with the chek-mate should provide as many as 30 hours of operation.
- Failure to follow these guidelines will void the warranty.


When the battery voltage drops below 8 volts as it nears the end of its life, LOW BATTERY will be displayed in the upper left corner of the LCD. Replace the battery as follows:

1. Unscrew the two captive screws securing the battery compartment cover using a small Phillips head screwdriver and remove the cover.
2. Lift the old battery straight up and out of the battery compartment.
3. Insert the replacement battery into the compartment, ensuring that the terminals are oriented correctly as shown on the label at the bottom of the compartment.
4. Insert the battery compartment cover and secure it with the two captive screws. **Do not overtighten the screws.**

-  When the battery voltage drops below 7 volts, the LOW BATTERY message displayed on the LCD will flash on and off and the chek-mate will switch off automatically. If the chek-mate is turned on again with the battery still in this condition, the LCD will display bAtt LO ten times and then turn off automatically.

### Calibrate the chek-mate Flowmeter

Although SKC recommended a minimum calibration interval of one year, users are responsible for determining the most suitable interval to meet their quality assurance system requirements; they should also consider the frequency of use and operating environment.

-  **Calibrate the chek-mate Flowmeter under vacuum.**

Because the chek-mate is designed specifically for use with air sample pumps, which operate under vacuum, it is factory-calibrated under vacuum, connecting the vacuum flow source alternately to the chek-mate Flowmeter and reference flowmeter to ensure its accuracy for this application. If a calibration is to be performed other than as just specified and/or using a positive pressure flow source, contact SKC technical support for advice on calibration methodology.

## Replacement Parts

Battery, 9-volt alkaline

P37500

## SKC Limited Warranty and Return Policy

SKC products are subject to the SKC Limited Warranty and Return Policy, which provides SKC's sole liability and the buyer's exclusive remedy. To view the complete SKC Limited Warranty and Return Policy, go to <http://www.skcinc.com/warranty.asp>.

## Appendix

### Performance Profile

<b>Flow Measurement Range</b>	0.75 to 5.0 L/min volumetric
<b>Airflow Display Resolution</b>	0.001 L/min
<b>Airflow Accuracy</b>	± 1% of reading
<b>Operating Temperature Range</b>	32 to 104 F (0 to 40 C)
<b>Operating Atmospheric Pressure Range</b>	20.7 to 32.2 in Hg (700 to 1090 mbar)
<b>Operating Altitude</b>	Sea level to approximately 10,000 ft (3050 m) above sea level
<b>Dimensions</b>	3.3 x 7.1 x 1.3 in (83.5 x 178.5 x 33.5 cm)
<b>Weight</b>	8.5 oz (242 gm)
<b>Tubing</b>	<i>Requires 1/4-in ID tubing</i>
<b>Enclosure IP Rating</b>	IP40
<b>Power Supply</b>	9-V alkaline PP3/6LR61/1604A or equivalent; should provide 30 hrs of operation
<b>Low Battery</b>	When battery voltage drops below 8 V, LCD displays LOW BATTERY.
<b>Low Battery Fault</b>	When battery voltage drops below 7 V, flowmeter shuts down.
<b>Automatic Power Off Timer</b>	15 min
<b>Certifications</b>	CE marked