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Air-Met Scientific
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chek-mate Flowmeter

Cat. No. 375 Series

Quick Guide

This Quick Guide covers basic operation of all chek-mate Flowmeter models:

High Flow chek-mate Flowmeter with CalChek Cat. Nos. 375-50300N, 375-50300, and 375-50300S

Medium Flow chek-mate Flowmeter with CalChek Cat. Nos. 375-0550N, 375-0550, and 375-0550S

Low Flow chek-mate Flowmeter Cat. Nos. 375-00205N, 375-00205, and 375-00205S

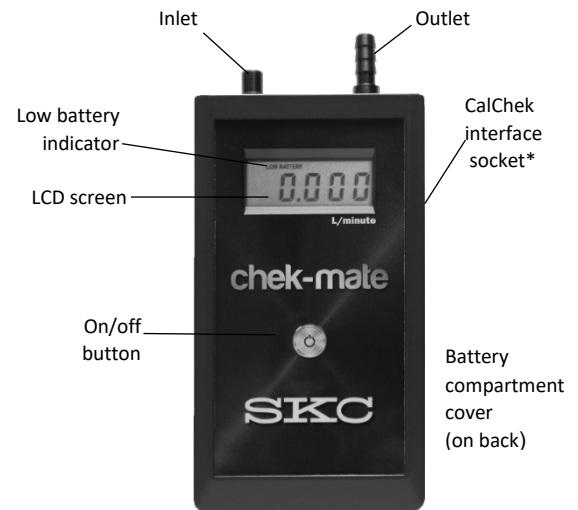
For complete chek-mate operating instructions, go to www.skcin.com/knowledgecenter or



Turn Flowmeter On/Off:

Allow the chek-mate to equilibrate for at least 10 minutes in the location where it will be used to ensure that it has stabilized to ambient temperature.

1. Press the on/off button on the front of the flowmeter (see Figure 1).
2. The LCD screen will cycle through startup messages, "On" followed by the upper limit of the flowmeter range ("**30 L**" for high flow model, "**5.0 L**" for medium flow model, or "**0.5 L**" for low flow model) and will then indicate the current flow rate or "0.000" if there is no airflow or the flow rate is below the minimum display value. **Note:** Minimum display value depends on the atmospheric conditions, but at 68 F (20 C) and 1 atm (1013.25 mbar), values are **5 ml/min for low flow model, 0.3 L/min for medium flow model, and 3 L/min for high flow model.** Minimum display values will be higher when the flowmeter is used at higher altitudes and temperatures.
3. The chek-mate will remain on indefinitely provided that a flow rate higher than the minimum display value is indicated. With a flow rate lower than the minimum display value or no airflow (0.000 on the LCD), the flowmeter will automatically turn off after 15 minutes to preserve battery power. Or press the on/off button to turn off the flowmeter.



*High flow and medium flow models only

Figure 1. chek-mate Overview

Determine Battery Status:

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 (see Figure 1). Replace the battery.

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" 10 times and then turn off automatically.

Set/Verify Flow Rate:

- Set pump flow rate per pump operating instructions.
1. Turn on the flowmeter.
 2. Prepare the flow rate verification train. Connect the flowmeter outlet to the train inlet (Figures 2 and 3):
 - a. **For medium flow and low flow models**, use flexible 1/4-inch ID tubing, and if required by the sampler, a calibration adapter. See Figure 2.
 - b. **For high flow model**, use flexible 3/8-inch ID tubing. Place Pulsation Dampener Cat. No. 375-150 in line between the flowmeter outlet and representative sample medium inlet; it is always required in line to achieve the highest possible accuracy when verifying flow rate of pumps with flow rate ≥ 5 L/min. If required by the sampler, use a calibration adapter. See Figure 3.

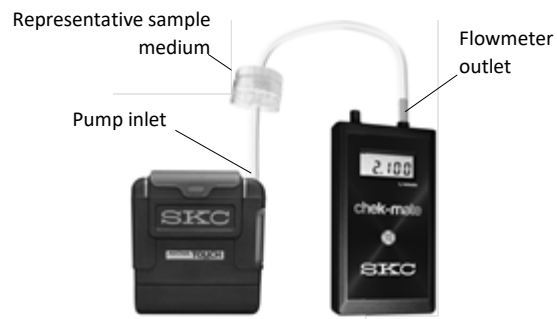


Figure 2. Medium and Low Flow Rate Verification Train
(Medium Flow Pump and Flowmeter Shown)

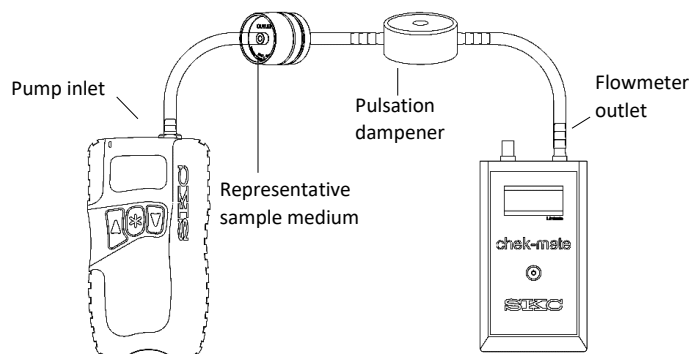


Figure 3. High Flow Rate Verification Train

3. Start the sample pump and observe the flowmeter LCD until it shows a steady value. The reading may vary around the steady value by up to **± 0.05 L/min on the high flow model, ± 0.005 L/min on the medium flow model, and ± 0.5 ml/min on the low flow model**. If the flow is fluctuating, calculate and display the average flow value by activating the Average Display function* as follows:
 - a. Press and hold the on/off button for several seconds. "AVE" and then "On" will be displayed on the LCD screen. The current flow rate will be recorded every 3.5 seconds for 10 readings. "AVE" will appear briefly on the LCD screen followed by the average flow value of those 10 readings. The average will be displayed for 7.5 seconds and then a new cycle of readings will begin. This sequence takes approximately 45 seconds.
 - b. Reset the average reading at any time during a cycle, press and hold the on/off button for several seconds. The **next 10 readings** will be used to calculate the average flow.
 - c. To cancel the Average Display function, turn off the flowmeter by briefly pressing the on/off button and then turn it on again.



Run the pump for a minimum of 5 minutes to stabilize before adjusting the flow rate.

4. Adjust the sample pump to reach the desired sample flow rate.
5. Disconnect the tubing from the flowmeter outlet, taking care not to twist the tubing.
6. Turn off the flowmeter.

** For older models without Average Display function, determine average flow value by observing highest and lowest readings and calculating average of these two readings **OR** recording ten flowmeter readings and calculating average of readings.*

Perform CalChek Automatic Flow Verification/Calibration for CalChek-ready Pumps AirChek TOUCH and Leland Legacy (High and Medium Flow chek-mate Models Only):

For complete details on CalChek operation, see chek-mate operating instructions at www.skccinc.com/knowledgecenter.

1. Prepare the pump per pump operating instructions.
2. Turn on the flowmeter.
3. Connect CalChek Communication Cable Cat. No. 375-200 to the CalChek interface socket on the flowmeter and the CalChek port on the AirChek TOUCH pump charging cradle or the data port on the Leland Legacy pump.
4. Prepare the single or full CalChek train using 1/4-inch ID flexible tubing for AirChek TOUCH and 3/8-inch ID flexible tubing for Leland Legacy, and a calibration adapter if required.
 - a. **CalChek single flow verification:** Place sample media in line and, if using high flow chek-mate, Pulsation Dampener Cat. No. 375-150 in line.
 - b. **CalChek full calibration:** Do not **place** sample media in line, instead install Pulsation Dampener Cat. No. 375-100 for medium flow chek-mate or Cat. No. 375-150 for high flow chek-mate between flowmeter and pump.
5. Initiate CalChek function from the pump per pump operating instructions.
6. When airflow through the flowmeter is detected, it automatically produces its flow rate reading via the CalChek serial interface at 3.5-second intervals. The pump will automatically read in flow readings as required to complete the CalChek process and will indicate completion on its screen display.