SKC

AirChek 2000

Operating Instructions

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Indicates a reminder or note

Indicates a warning or caution

Indicates a note or caution

AirChek 2000 Quick Guide

Operation

Star Button ✸
Scrolls through run time data, display options, and sampling parameters during pump setup

Up and Down Arrow Buttons ▲▼
Increase or decrease sampling parameters and toggle between display choices in setup

Button Sequence
▼✸ = press buttons individually
[▲▼] = press simultaneously when bracketed
✸▲▼✸ = security code, always press in sequence

Security Code ✸▲▼✸
Must be pressed within 10 seconds
of previous command

Pump Activation
Press any button.

Mode Change
Press [▲▼] to toggle between Run and Hold.

Pump Setup Options

User Interface Level One — Set Up Flow Rate
To enter flow rate setup, pump must be in Hold. Press [▲▼] to Run pump and press ✸▲▼✸ within 10 seconds.

- **Change and calibrate flow rate:**
  Flow rate and SET flash. Press ▲ or ▼ to change flow rate. Press ✸ when finished; ADJ displays and flashes. Press ▲ or ▼ to adjust the flow until pump and calibrator agree. When finished, press ✸ until End displays. Press [▲▼] to save new setting.

User Interface Level Two — Set Up Sampling and Display
To enter sampling and display setup, pump must be in Run. Press [▲▼] to Hold pump and press ✸▲▼✸ within 10 seconds. Select from the following options:

- **Clear accumulated data:**
  Press ✸ until CLr displays and then press [▲▼]. Press ✸ until End displays and then press [▲▼].

- **Change temperature scale (F/C):**
  Press ✸ until temperature displays. Press ▲ or ▼ to switch units. Press ✸ until End displays and then press [▲▼] to save new setting.

- **Change atmospheric pressure scale (mm Hg/ins Hg/millibars):**
  Press ✸ until pressure displays. Press ▲ or ▼ to switch units. Press ✸ until End displays and then press [▲▼] to save new setting.

- **Change time scale (12 Hr/24 Hr):**
  Press ✸ until 12 Hr or 24 Hr displays. Press ▲ or ▼ to switch units. Press ✸ until End displays and then press [▲▼] to save new setting.

- **Change time of day:**
  Press ✸ until time displays. Press ▲ or ▼ to change flashing hour. Press ✸ to move to minutes and press ▲ or ▼ to change. Press ✸ until End displays and then press [▲▼] to save new setting.

- **Change sample time:**
  Press ✸ until SΓ 00 displays. Press ▲ or ▼ to change flashing digits. Press ✸ until End displays and then press [▲▼] to save new setting.

To exit without saving changes in User Interface Level Two, scroll to Esc and press [▲▼].

Description

The SKC AirChek® 2000 Pump is an advanced programmable sample pump that combines lightweight compact design, computer-compatible circuitry, and a patented* isothermal flow sensor. AirChek 2000 can be used with optional DataTrac® 2000 Software and your PC to expand pump programmability and record keeping options. The result of extensive research and development, the AirChek 2000 Pump exemplifies SKC's commitment to quality and innovation in air sampling equipment.

*   *U.S. Patent No. 5,892,160*

Inlet Port with Protective Filter

Battery Status Icon

Flashing LED Run Indicator

Liquid Crystal Display (LCD)

FLOW

3250

mL/min

Keypad with Operating Buttons

Battery Pack

Not shown:
  Belt clip (back)

  Battery Charging Jack (back)

  Computer Interface Port (back)

AirChek 2000 Sample Pump

Performance Profile

Flow Range: 1000 to 3250 ml/min *(5 to 500 ml/min requires low flow accessories. See Accessories.)*

Flow Control: An internal isothermal flow sensor measures flow directly and continuously. Sensor readings are used in a flow monitoring algorithm to maintain calibrated volumetric flow. In addition, built-in atmospheric temperature and pressure sensors provide readings to correct volumetric flow for these parameters when they vary from point of calibration.

Compensation Range: 3000 ml/min at 15 inches water back pressure
2000 ml/min at 30 inches water back pressure
1000 ml/min at 30 inches water back pressure

Typical Back Pressure of Sampling Media (*inches water*)

Flow Rate (L/min)	1.0	1.5	2.0	2.5	3.0
Filter/Pore Size (μm)					
25-mm MCE, 0.8	6	9	12	15	18
25-mm MCE, 0.45	14	22	28	35	40
37-mm MCE, 0.8	2	3	4	5	6
37-mm PVC, 5.0	1	1	2	2	2.5

Compare the information in this table to pump compensation range to determine appropriate applications.

Accuracies:
Timing: 1 min/month at 25 C
Atmospheric Pressure: ± 0.3 ins Hg
Flow Rate: ± 5% of set-point after calibration

Battery Charge Level Indicator: Icon displays at full, mid, and low charge (*see page 6*)

Temperature Range:
Operating: 32 to 104 F (0 to 40 C)
Charging: 50 to 113 F (10 to 45 C)
Storage: -4 to 113 F (-20 to 45 C)

Operating Humidity: 0 to 95% non-condensing

> ⚠ *Protect sample pump from weather when in use outdoors.*

Altitude: The pump can apply correction to volumetric flow during sampling for weather-related or altitude variations from the atmospheric pressure established at calibration up to at least 7500 ft above and 5000 ft below sea level.

Run Time: **NiCad Battery:** 10 hrs minimum at above compensation ranges; dependent on media used. *See Table 1.*
NiMH Battery: 12 hrs minimum at 2000 ml/min and up to 30 inches water back pressure; dependent on media used. *See Table 2.*
Battery Eliminator: Pump provides extended runs.

Sample Time (SГ) Setting:	AirChek 2000 sample time can be set up to 999 minutes from the pump keypad or up to 43,200 minutes (30 days) from a PC using DataTrac 2000 Software. During sampling, the pump LCD will display remaining run time (will count time down from a set number of minutes) when sample time is set from the keypad. The pump LCD will show elapsed time in minutes when the pump is programmed from a PC. If run time is longer than 9999 minutes (6.8 days), the sample time displayed on the LCD will roll over to 1 after reaching 9999.
Time Display:	Time of day in hours and minutes (12 or 24-hr clock) with AM and PM indicators
Volume Display:	Continually updated, based on corrected flow rate multiplied by sampling time
Flow Fault:	If the pump is unable to compensate for longer than 15 sec due to excessive back pressure, the pump enters flow fault mode. During flow fault, the pump goes into HOLD, the fault icon appears on the display during the length of the fault, and the accumulated run time display is frozen and retained. After 5 min in flow fault, auto-restart is attempted every 5 min up to 10 times.
Power Supply:	**Rechargeable 4.8-V nickel metal hydride (NiMH) battery pack,** 3.5-Ah capacity or **Rechargeable 4.8-V nickel cadmium (NiCad) battery pack,** 2.0-Ah capacity A **battery eliminator** is available (*see Accessories*); use voids the UL Listing for intrinsic safety.
Charge Time: *(varies with battery capacity and level of discharge)*	6 to 8.5 hrs using PowerFlex charger
Size:	5.6 x 3 x 2.3 in (14.2 x 7.6 x 5.8 cm)
Weight:	22 oz (624 gm)
RFI/EMI Shielding:	RFI/EMI-shielded case, CE marked
Intrinsic Safety:	UL and cUL Listed ATEX and ANZEx Models available
Tubing:	*Requires 1/4-in ID tubing*

CE marked   UL Listed for intrinsic safety

> *Use only SKC-approved parts to ensure reliable performance. Failure to do so voids any warranty and the UL Listing for intrinsic safety.*

Table 1. AirChek 2000 Run Time in Hours with NiCad Battery

Following are typical run times achieved when using a fully charged nickel-cadmium (NiCad) battery pack. Data is sorted by type of sample media. All run times are listed in hours. Results obtained using a new pump and new fully charged battery. Pump performance may vary.

Mixed Cellulose (MCE) filter, 0.8-µm pore size

Flow Rate (L/min)	Filter Diameter	
	37 mm	25 mm
2.0	24.2	15.2
2.5	20.4	12.4
3.0	17.7	**

Polyvinyl Chloride (PVC) filter, 5.0-µm pore size

Flow Rate (L/min)	Filter Diameter	
	37 mm	25 mm
2.0	28.2	21.8
2.5	27.0	22.0
3.0	22.6	18.2

** Filter back pressure exceeded pump capability during testing.

Note **Increases in back pressure during sampling due to buildup of sample on the filter can decrease battery life.**

Table 2. AirChek 2000 Run Time in Hours with NiMH Battery

Following are typical run times achieved when using a fully charged nickel-metal hydride (NiMH) battery pack. Data is sorted by type of sample media. All run times are listed in hours. Results obtained using a new pump and new fully charged battery. Pump performance may vary.

Mixed Cellulose (MCE) filter, 0.8-µm pore size

Flow Rate (L/min)	Filter Diameter	
	37 mm	25 mm
2.0	37	32
2.5	33	26
3.0	30	21

Polyvinyl Chloride (PVC) filter, 5.0-µm pore size

| Flow Rate (L/min)	Filter Diameter	
	37 mm	25 mm
2.0	44	40
2.5	36	34
3.0	31	27

Note **Increases in back pressure during sampling due to buildup of sample on the filter can decrease battery life.**

Installing the Battery Pack

1. Carefully align the battery jack on the battery pack with the battery terminal on the bottom of the pump base plate and push the battery pack into place.

2. Insert and tighten two security screws provided.

3. Charge battery completely before operating pump. *See Charging the Battery Pack.*
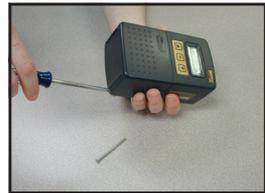
Charging the Battery Pack

For optimum charge, ensure the pump is **not** running while charger is attached. To charge the battery, orient plug on charging cable properly (*see caution and photo below*). Insert the charging plug from the charger into the battery charging jack on the back of the pump. Plug the charger into a standard wall outlet. The PowerFlex Charger will fully recharge the battery in 6 to 8.5 hours *(see Accessories for charger)*. Follow charger instructions.

Computer Interface Port

Battery Charging Jack

> ⓘ *Ensure proper orientation of charging cable plug before inserting it into the charging jack. Improper orientation/contact will short-circuit the battery. See photo at right. Note the keyed side of the charging cable plug must mate with the keyed side of the pump charging jack. Inserting the plug does not take much force. If force is required, the plug is not properly oriented.*
>
> *Short-circuiting the battery pack will render it immediately inoperative.*

> ⓘ *After charging the battery pack, it is good practice to run the pump for approximately five minutes before calibrating. This ensures the battery is in more steady-state conditions and improves the agreement in pre and post-sampling calibrations.*
>
> *Do not charge or operate pump from charger in hazardous locations.*
>
> ⓘ *Use only SKC-approved charger designated for this model to ensure reliable performance. Failure to do so voids any warranty.*
>
> *Failure to follow warnings and cautions voids any warranty.*
>
> ⓘ *The battery pack may be kept on the SKC-approved charger for an indefinite time.*

Battery Operation

Battery Charge Level Indicator

Three bars indicate a full charge (normally appears after charging), approximately 75 to 100%.

Two bars indicate that the battery is charged enough to operate the pump, approximately 25 to 75%.

One bar indicates battery charge is low (charge battery), approximately 1 to 25%.

Low Battery Fault

No bars and a flashing outline indicate a Low Battery Fault (pump will go into HOLD, and then SLEEP mode in 10 seconds). Run time data can be displayed by pressing any button. The pump will return to SLEEP in 10 seconds. This may be repeated.

When the pump stops due to a low battery and is left to stand for a period of time, one battery bar may appear. This false "recovery" will fall quickly if the pump is operated without recharging it. RECHARGE THE PUMP BEFORE SAMPLING.

Replacing the Battery Pack

Battery Replacement Notes:
- **To retain pump history, ensure the pump has been allowed to go to SLEEP after the last run. Pump history will be lost if the battery pack or AC power (battery eliminator) is removed while the pump is running. SKC recommends that data be downloaded to a PC using DataTrac 2000 Software prior to removal of the battery or power.**

- **Replacing the battery pack may erase scheduled runs programmed with DataTrac 2000 Software. After replacing the battery pack, use the software to reprogram the scheduled runs in the AirChek 2000 pump.**

- **Replacing the battery pack will erase sampling time, delayed start, and other settings entered using the pump keypad. Reset these parameters after replacing the battery pack.**

1. Release the battery pack by removing the two security screws located on the bottom of the battery pack. Pull the battery pack away from the pump body.
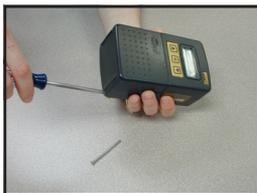
2. Carefully align the battery jack on the replacement battery pack with the battery terminal on the bottom of the pump base plate and push the battery pack into place.

3. Replace and tighten the two security screws removed in Step 1.
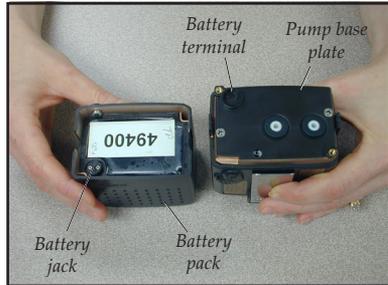
> ⓘ **Use of a repaired or rebuilt battery pack voids any warranty and the UL Listing for intrinsic safety.**

> ⓘ **Do not charge or operate the pump from the charger in hazardous locations!**

> ⓘ **Use only an SKC-approved charger and battery pack designed for the AirChek 2000 Sample Pump to ensure reliable performance. Failure to do so voids any warranty and the UL Listing for intrinsic safety.**

> ⓘ **Use of any device other than the approved battery pack to power the pump voids the UL Listing for intrinsic safety and any warranty.**

> ⓘ **Failure to follow warnings and cautions voids any warranty.**

> 🖥 *For more information on battery care and maintenance, go to http://www.skcinc.com/instructions/1756.pdf.*

Battery Eliminator

The Battery Eliminator is an accessory that converts alternating current (AC) to direct current (DC) from which the pump can be operated for extended runs. **The Battery Eliminator should be used in non-hazardous locations only.** *See Accessories for ordering.*

To use the Battery Eliminator, the battery pack must be removed from the pump *(see Replacing the Battery Pack)*. The Battery Eliminator is comprised of two pieces, (1) a wall cube that converts AC voltage to DC voltage and (2) a power adapter that reduces DC voltage. The wall cube fits into a standard wall outlet and its plug end is inserted into the power adapter. The power adapter is fitted on the pump in place of the battery pack.

> ⓘ **Use the battery eliminator to operate the pump in non-hazardous locations only.**

> ⓘ **Use of the battery eliminator to power the pump voids the UL Listing for intrinsic safety.**

Introduction

Pump Display
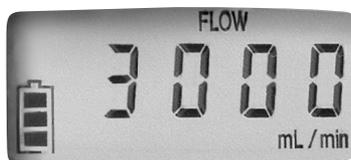
AirChek 2000 LCD

HOLD:	Flashes when the pump is in HOLD mode, *see page 10*
SΓ or S:	Displayed when a sample time is manually programmed into pump memory, *see page 12*
VOL:	Volume of air pumped
SET:	Flashes when changing any setting
CLr:	User Interface option that clears volume and run time data, *see page 13*
ESC:	User Interface Level Two option that exits User Interface without saving changes, *see page 13*
End:	User Interface option that saves changes and exits User Interface, *see page 13*
ADJ:	Displayed during pump flow calibration, *see page 12*
CAL:	User Interface option that allows pump to be set up for single or multiple-point calibration using the CalChek feature, *see page 12*
FLOW:	Appears when flow rate is displayed
PROG:	Displayed when a delayed start or a DataTrac 2000 program is loaded into pump memory

Display Icons

Flow Fault: ➤➤❘	Flashes during flow fault, *see page 10*
Battery Charge Level: 🔋	Shows battery charge level, *see page 6*

Keypad Basics

The AirChek 2000 Pump operates by pressing various button sequences on the keypad located on the front of the pump housing.

▲ Up arrow button   **✳ Button**   **▼ Down arrow button**

AirChek 2000 Keypad
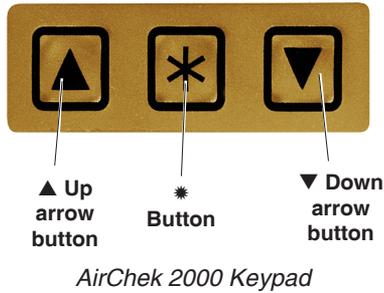
✳	Scrolls through run time data, display options, and sampling parameters during pump setup
▲	Increases values and toggles between options
▼	Decreases values and toggles between options
[▲▼]	When pressed simultaneously, displayed item is selected or entered.
✳▲▼✳	Security code that must be pressed in sequence within 10 seconds after mode change to enter the User Interface. If the 10-second time limit is exceeded, the pump will remain in its current mode. Perform steps again to enter the User Interface. *See Entering and Navigating the User Interface on page 11.*

Pump Activation
- Press any button firmly to activate the LCD.
- Press [▲▼] to run the pump or to place a running pump in HOLD.
- Auto OFF switches pump to SLEEP after five minutes in HOLD with no activity.

Introduction

Pump Operating Modes

RUN

Pump is running; run time data is continuously updated in memory. The LCD shows real-time run time data. Press ✷ to scroll through the parameters. Run time and volume stored in memory will continue to accumulate unless reset. *See page 13.*

> To change the pump from HOLD to RUN, press [▲▼].

HOLD

Pump is off and run time data is stored. Run time data readings are retained and displayed on the LCD.

> To change the pump from RUN to HOLD, press [▲▼].

SLEEP

After five minutes in HOLD, the pump automatically enters SLEEP. The LCD shuts down and the electronic circuitry enters a low-power state.

> Press any button to change pump from SLEEP to HOLD.

Flow Fault ➤➤▐

If the pump is unable to compensate for longer than 15 seconds due to excessive back pressure, the pump enters flow fault mode. During flow fault, the pump goes into HOLD, the fault icon appears on the display during the length of the fault, and the accumulated run time display is frozen and retained. As part of the flow fault feature, the pump attempts to restart sampling after five minutes in flow fault and continues to attempt a restart every five minutes thereafter until the restricted flow is corrected or the pump has attempted a maximum of 10 restarts. The maximum number of restart attempts may be changed using a PC and DataTrac 2000 Software.

Verifying Battery Charge Level

The LCD displays an icon that shows the current battery charge level
(see Battery Operation on page 6). A new battery should be fully charged before
operation.

Entering and Navigating the User Interface

The AirChek 2000 User Interface features two levels:

> **Level One—Set Up Flow Rate** allows the user to change flow rate,
> adjust flow rate to a primary standard, and calibrate the pump using
> the CalChek feature.

> **Level Two—Set Up Sampling and Display** permits the user to change
> display options of temperature (F or C) and atmospheric pressure (ins,
> m, or mm), set a sampling time, set 12 or 24-hour clock or delayed start,
> set real-time clock, and clear accumulated run time data.

Entering:
- With pump in HOLD, press [▲▼] to place pump in RUN and enter
  ✴▲▼✴ within 10 seconds. *You are in Level One of the User Interface.*

- With pump in RUN, press [▲▼] to place pump in HOLD and enter
  ✴▲▼✴ within 10 seconds. *You are in Level Two of the User Interface.*

Navigating: Press ✴ to scroll through parameters. Once LCD shows End,
parameters will repeat until the user exits the User Interface.

Exiting: Press ✴ until End appears on the LCD. Press [▲▼]. Any changes
made to parameters will be saved and the pump will continue in its current
mode. Level Two of the User Interface offers the option of exiting without
saving changes to parameters. Press ✴ until ESC appears on the LCD. Press
[▲▼].

Using User Interface - Level One

Flow Set   Set flow by pressing ▲ to
increase or ▼ to decrease pump
flow rate. Press ✴ to move to
next parameter, or continue to
press ✴ until End appears to exit
User Interface. Press [▲▼] to
save new flow setting and exit.
See page 13.

Setup

ADJ   Used during calibration with calibrator *(not for use with CalChek feature)*. Press ▲ to increase or ▼ to decrease flow adjustment until desired flow is indicated on an attached calibrator. Press ✳ to move to next parameter, or continue to press ✳ until End appears to exit User Interface. Press [▲▼] to save new flow and adjustment settings and exit the User Interface. *See page 17.*
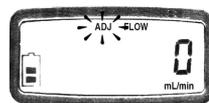
CAL   Use for CalChek calibration feature only. Press [▲ ▼] to initiate single-point calibration. Press ▲ seven times to start a full calibration. *See Set/Calibrate Flow Rate (CalChek Single-point) on page 18 and Full Calibration (CalChek Multiple-point) on page 25.*

Using User Interface - Level Two

Temperature   Press ▲ or ▼ to toggle between Fahrenheit (F) and Celsius (C). Press ✳ to move to next parameter.

Atmospheric Pressure   Press ▲ or ▼ to toggle through inches of mercury (ins), millimeters of mercury (mm), and millibars (m). Press ✳ to move to next parameter.

Sample Time (SΓ)   Program a specific run time. Press ▲ to increase or ▼ to decrease the time in minutes (from 1 to 999). Press ✳ to move to the next parameter. Sample Time is not an option when a DataTrac 2000 program is loaded into pump memory (PROG). *See page 14.*

12-hr/24-hr Clock and Delayed Start   Press ▲ or ▼ to toggle through standard (12-hour) time, military (24-hour) time, and delayed start (dELA). *See Setting a Delayed Start on page 15.* Press ✳ to move to next parameter.

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Time of day   The hour will flash. Press ▲ to increase and ▼ to decrease hour. Press ✻ to advance to minutes. Once minutes are flashing, press ▲ to increase or ▼ to decrease minutes. Press ✻ to move to next parameter.

CLr   Press [▲▼] to reset accumulated run time and volume from pump memory to zero. *See below.*

ESC   Press [▲▼] to exit User Interface Level 2 without saving changes to parameters.

End   Press [▲▼] to save changes to parameters and exit User Interface.

OFF   Appears only when a DataTrac 2000 program or delayed start is loaded in pump memory. When OFF displays, press [▲▼] to delete and exit the User Interface. *See page 15.*

Resetting Run Time Data

To reset accumulated volume and run time data to zero, enter User Interface Level Two by placing a running pump in HOLD and pressing ✻▲▼✻ within 10 seconds. Press ✻ until CLr appears on the LCD. Press [▲▼] to clear the run time data. Press ✻ until End appears, and then press [▲▼]. The pump is now in HOLD.

> **CLr does not clear previously set sample time (SΓ).** *See Deleting a Sample Time on page 16.*

Setting Pump Flow Rate

1. With the pump in HOLD, press [▲▼] to run the pump and enter ✻▲▼✻ within 10 seconds. *You are now in User Interface Level One.*
2. The flow rate on the LCD will flash. Press ▲ to increase flow or ▼ to decrease flow until the desired flow rate is displayed.
3. Press ✻ repeatedly until End appears on the LCD.
4. Press [▲▼] to save the flow rate and exit the User Interface.
5. Press [▲▼] again to place the pump in HOLD if desired.

Setup

Setting Sample Time (SΓ)

Program the AirChek 2000 from the keypad to run STEL, TWA, or any other run time from 1 to 999 minutes.* AirChek 2000 sampling time may also be programmed from a PC using DataTrac 2000 Software.* To program a sample time using the pump keypad:
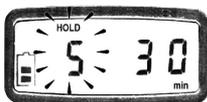
1. With the pump running, press [▲▼] to place the pump in HOLD and enter ✳▲▼✳ within 10 seconds. *You are in User Interface Level Two.*
2. Repeatedly press ✳ until SΓ and a flashing 00 appear on the display.
3. Set the sample time by pressing ▲ to increase it or ▼ to decrease it to the desired time in minutes.
4. Press ✳ repeatedly until End appears.
5. Press [▲▼] to save the sample time and exit the User Interface. A flashing S will appear with the selected sampling time on the LCD.
6. Press [▲▼] to begin sampling. The time display will count down, the pump will go into HOLD, and the total sample time will display when sampling is complete.
7. To delete a set sample time, enter User Interface Level Two, scroll to SΓ, and press ▼ until time appears as 00. Exit the User Interface by scrolling to End and pressing [▲▼].

If a time still displays after canceling a sample time, this display is the total run time since the data was last reset.

If a sample time (SΓ) has been programmed into the pump, a DataTrac 2000 program cannot be entered without deleting the sample time first (*see page 16*). Likewise, if a DataTrac 2000 program resides in pump memory, the sample time (SΓ) function cannot be selected until the DataTrac program is deleted (*see page 16*).

* Sample Time (SΓ) Setting: AirChek 2000 sampling time can be set up to 999 minutes from the pump keypad or up to 43,200 minutes (30 days) from a PC using DataTrac 2000 Software. During sampling, the pump LCD will display remaining run time (will count time down from a set number of minutes) when sample time is set from the keypad. The pump LCD will show elapsed time in minutes when the pump is programmed from a PC. If run time is longer than 9999 minutes (6.8 days), the sample time displayed on the LCD will roll over to 1 after reaching 9999.

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Setting a Delayed Start

The Delayed Start feature is available in pump version 2.59 or higher.

When setting the pump manually for sampling to begin within a 12-hour timeframe, follow this procedure:

1. With the pump running, press [▲▼] to place the pump in HOLD and enter ✳▲▼✳ within 10 seconds. *You are in User Interface Level Two.*
2. Press ✳ until SΓ appears. Press ▲ or ▼ to set a sample time. This is required to set a delayed start.
3. Press ✳ until the display reaches the 12-hr/24-hr clock. Press ▲ or ▼ until the display shows a flashing dELA (delayed start).
4. Press ✳. Time will display with hours flashing. Press ▲ to increase or ▼ to decrease the hour. Press ✳ to move to minutes. Press ▲ to increase or ▼ to decrease the minutes.

> **The time entered here will be the next occurrence of this time. There is no AM or PM designation.**

5. Press ✳ until End appears.
6. Press [▲▼].
7. The PROG icon and a flashing HOLD will appear in the upper left corner of the display. The pump is now set for delayed start.

> **If setting a delayed start using DataTrac 2000 Software, refer to the DataTrac 2000 Operating Instructions (included on the software CD). A programmed delayed start can be viewed in the DataTrac 2000 Scheduler.**

Deleting a Delayed Start

This is the same method used to delete a DataTrac 2000 program from the pump (*see Deleting a DataTrac 2000 Program on page 16*).

1. With the pump running (will only run in short bursts), press [▲▼] to place the pump in HOLD and enter ✳▲▼✳ within 10 seconds. *You are in User Interface Level Two.*
2. Press ✳ to scroll to the flashing OFF indicator and press [▲▼].
3. Press ✳ until End displays.
4. Press [▲▼]. The PROG icon should be gone. If not, repeat process until it disappears.

Setup

Deleting a Sample Time (SΓ)

To delete a sample time, enter User Interface Level Two and press the ✳ button to scroll to SΓ. Press ▼ until SΓ 00 appears. Press the ✳ button until End appears. Press [▲▼].

Deleting a DataTrac 2000 Program

If a DataTrac 2000 program is in pump memory, the PROG icon will appear in the upper left corner of the display. To delete a DataTrac 2000 program, enter User Interface Level Two, scroll to the flashing OFF indicator, and press [▲▼]. This is the same method used to delete a delayed start from the pump. *See Deleting a Delayed Start on page 15.*

Flow Rate and Volume Display

Flow rate displayed on the pump LCD is the flow to which the pump has been calibrated. To maintain flow as displayed, the pump automatically adjusts flow during sampling for changes in temperature and atmospheric pressure* that may differ from the temperature and atmospheric pressure present at the time of calibration. The flow rate display does not change from the calibrated flow rate. The pump will fault if it is unable to maintain the calibrated flow rate.

Volume displayed on the pump LCD is "corrected" in that it is the result of a continual calculation of corrected flow rate multiplied by sample time.

*   *The pump can apply correction to volumetric flow during sampling for weather-related or altitude variations from the atmospheric pressure established at calibration up to at least 7500 feet above and 5000 feet below sea level.*

High Flow Applications (1000 to 3250 ml/min)

Set/Calibrate Flow Rate (Manual)

*   *Allow pump to equilibrate after moving it from one temperature extreme to another.*

*   *Charge pump battery completely before calibration and sampling.*

*   *Pressing [▲▼] will place a running pump in HOLD, and a holding pump in RUN.*

*   *If a delayed start or DataTrac 2000 schedule has been programmed into the pump, it may remain in pump memory. PROG will display in the upper left corner of the pump display. To delete this program, enter User Interface Level Two, scroll to the flashing OFF, and press [▲▼].*

1. Ensure that battery is fully charged and that pump has run for 5 minutes before calibrating.
2. Prepare the calibrator. *See calibrator instructions*.
3. Set up a calibration train: Using flexible tubing, connect the calibrator outlet (suction port) to the representative sample medium inlet. Using 1/4-inch Tygon tubing, connect the sample medium outlet to the pump inlet.
4. From HOLD, press [▲▼] to run the pump and enter ✳▲▼✳ within 10 seconds. *You are in User Interface Level One.* SET flashes on the LCD.
5. The LCD will display a flashing flow rate from the last sample taken. If you do not wish to change the flow rate, go to Step 7.
6. Press ▲ to increase the flow rate or ▼ to decrease the flow rate to the desired setting.
7. Press ✳. The flashing ADJ appears on the LCD, replacing the flashing SET. The pump flow rate can now be calibrated using a calibrator.

    Note: **The flow rate displayed on the calibrator will change as a result of this adjustment, not the flow rate displayed on the pump. The pump will display an adjustment factor (ADJ) only.**

Operation

8. Compare the flow rate from the calibrator to that displayed by the pump. If the calibrator indicates a higher flow rate than the pump, press ▼ until the pump and calibrator are in agreement (within ± 5%). If the calibrator indicates a lower flow rate than the pump, press ▲ until the pump and calibrator are in agreement (within ± 5%).
9. Press ☀ until End appears on the LCD. Press [▲▼] to save flow setting and exit the User Interface. The pump will remain in RUN. Reset run time data. *See Resetting Run Time Data.*
10. Place pump in HOLD by pressing [▲▼]. Disconnect the calibration train.

Set/Calibrate Flow Rate (CalChek Single-point)
Calibration Using the CalChek Automatic Calibration Feature

- *If using a pump version below 2.59, a pump upgrade is required for the CalChek feature. Contact SKC.*

- *Do not perform single-point calibration until the pump has remained at ambient temperature for several hours.*

- *Successful single-point calibration will provide an entry in the pump history that can be viewed using DataTrac 2000 Software (v. 3.59 or higher). If used with earlier DataTrac 2000 versions, the entry will appear as an undecipherable code; update DataTrac 2000 Software. If an error occurs during calibration, the event will not be stored in history.*

The CalChek automatic calibration feature is available when calibrating an AirChek 2000 Pump with a Defender Calibrator. A CalChek Communication Cable (Cat. No. 210-502) is required. Optional DataTrac 2000 Software can be used to expand the documentation capabilities of this system. The CalChek feature provides two calibration options: single-point calibration allows setting and verifying a flow rate at a single point before and after sampling. Multiple-point (full) calibration corrects flow to a primary standard at multiple flow rates to cover the basic operational flow range of the pump. *See Maintenance for full calibration procedure.* Both types of calibration bring flow to within 5%.

The CalChek feature provides correction at a single flow setting and takes less than one minute to complete. Use it to set the desired flow rate before sampling and to verify flow after sampling.

1. Run the pump for 5 minutes before starting calibration. Leave the pump on.
2. Use 1/4-inch tubing to connect the Defender Calibrator suction port to the inlet of a representative sampling medium and the outlet of the medium to the pump inlet.

3. Select the Defender data port:
    a. Press and hold the Defender power button to turn on the calibrator.
    b. Press the right arrow to highlight **Setup**; press Enter.
    c. Press the right arrow to highlight **Preferences**; press Enter.
    d. Press the down arrow to navigate to **Data Port**.
    e. Press the left or right arrow to toggle to **SKC**.
    f. Press the down arrow to highlight **Confirm**; press Enter.
4. Enter Defender calibration mode:
    a. Press the right arrow and then the down arrow to highlight **Measure**; press Enter.
    b. Press the right arrow to highlight **Cont.**; press Enter.
5. Attach the female end of the CalChek Communication Cable to the serial port (RS-232) on the back of the Defender Calibrator.
6. Insert the male end of the CalChek Communication Cable into the data port on the pump.
7. Place the pump in HOLD by pressing [▲▼]. Press [▲▼] again to start the pump running, and enter the security code ✷▲▼✷ in sequence on the pump keypad within 10 seconds. *You are in User Interface Level One.*
8. Press ▲ or ▼ to set the pump to the desired flow rate.
9. Press ✷ on the pump keypad until CAL appears on the pump display.
10. Press [▲▼] to select single-point calibration.
11. 1CAL will appear on the pump display. During calibration, the pump will display briefly the flow rates that it is reading from the calibrator.
12. When calibration is complete, the pump display will either show End indicating a successful calibration, or it will show an error code of E4[x]. *See CalChek Error Chart in Troubleshooting*.

    Note: *To remove a CalChek error code from the LCD, press ✷.*

13. Press [▲▼] twice to place the pump in HOLD. Disconnect the pump from the representative sampling medium and the calibrator.

> ⃠ **To ensure sample integrity, tubing seals tightly onto the pump inlet filter cover. Use care when removing tubing to prevent cracking or breakage of the inlet filter cover.**

14. Allow pump to go to SLEEP. *Note: Data does not write to memory until pump has gone into SLEEP mode.*

Operation

Set Up/Sample (Constant Flow)

- *Protect sample pump from weather when in use outdoors.*

- *Allow pump to equilibrate after moving it from one temperature extreme to another.*

- *Use of any device other than the approved battery pack to power the pump voids the UL Listing for intrinsic safety and any warranty.*

- *When using impingers, place an in-line trap between the pump and the impinger to protect the pump from harmful liquids or vapors. Failure to use the impinger trap voids any warranty.*

- *To ensure sample integrity, ensure tubing seals tightly onto the pump inlet filter cover. Use care when removing tubing to prevent cracking or breakage of the inlet filter cover.*

1. Following calibration, replace representative sampling medium with a new unexposed medium. Ensure run time data has been reset. *See page 13.*
2. To begin sampling, press [▲▼] to run the pump. Record the start time.
3. Sample for the time specified in the method used.
4. To stop sampling, press [▲▼] to place the pump in HOLD. Record the stop time.
5. When sampling is complete, pump data is retained in memory for recovery. Data can be viewed on the LCD by using the ✳ button to scroll through it or on a PC using DataTrac 2000 Software. ***Note:*** *If a delayed start or DataTrac 2000 schedule has been programmed into the pump, it may remain in pump memory. PROG will display in the upper left corner of the pump display. To delete this program, see page 15 or 16.*

Low Flow Applications (5 to 500 ml/min)

- *Single-tube sampling requires the All-in-One low flow holder; see the operating instructions for the All-in-One for details on its operation.*

- *Multiple-tube sampling requires a Constant Pressure Controller (CPC) and a Dual, Tri, or Quad Adjustable Low Flow Tube Holder accessory; see the operating instructions for the CPC and Adjustable Low Flow Tube Holder for details on their operation.*

Set/Calibrate Flow Rate for Single Tube

- *Requires an All-in-One Low Flow Holder*

- *Allow pump to equilibrate after moving it from one temperature extreme to another.*

- *Charge pump battery completely before calibration and sampling.*

- *Calibrate/verify pump flow rate before and after each sampling operation using the tube holder and pump to be used for sampling.*

- *The flow rate through the pump is set first and then the flow rate through the sorbent tube is calibrated.*

- *Two small inlet holes on the bottom of the built-in CPC of the All-in-One can become blocked. Periodically inspect and, if needed, clean with a small pick and blow particles away with a puff of air.*

Pump Flow Rate

1. Ensure that battery is fully charged and that pump has run for 5 minutes before calibrating.
2. Prepare the calibrator *(see calibrator instructions).* Using flexible tubing, connect the calibrator outlet (suction port) to the pump inlet.
3. With the pump in Hold, set the pump flow rate to 1.5 L/min as follows:
   a. Press ✳▲▼✳ to enter user setup functions and enter ✳▲▼✳ within 10 seconds. *You are in User Interface Level One.* SET and flow rate flash on the LCD.
   b. The flow rate displayed is from the last sample taken. Press ▲ to increase flow and ▼ to decrease the flow to the desired setting. Press ✳ until End appears, and then press [▲▼] to save the change and exit the User Interface. The pump will remain running. If desired, press [▲▼] again to place the pump in HOLD.
4. Remove tubing from the pump inlet.

Flow Rate Through Sorbent Tube

1. Attach the Tygon tubing from the All-in-One low flow holder to the pump inlet. Break tips off the representative sorbent tube and insert it into the rubber sleeve on the holder **(arrow on tube pointing toward pump)**. *Note: Ensure that the sorbent tube fits snugly in the rubber sleeve prior to sampling to avoid any air leakage. Two sleeves, each a different inner diameter, are supplied with the All-in-One.*

🛑 **If the pump flow faults shortly after attaching the tube holder, check that the needle valve on the All-in-One is open by using a small flat-head screwdriver to turn the flow adjust screw on the holder slightly counterclockwise. If the flow fault continues, check that the two small holes on the bottom of the built-in CPC are not blocked.**

2. Using flexible tubing, connect the exposed end of the sorbent tube to the calibrator outlet (suction port).
3. From Hold, press [▲▼] to run the pump. Adjust the flow rate through the sorbent tube using a small flat-head screwdriver to turn the flow adjust screw on the holder *(see right)*, **counterclockwise** to increase flow or **clockwise** to decrease flow, until the calibrator indicates the method-specified flow rate. **Do not adjust flow rate on the pump.**

Flow adjust screw

Turn screw on holder to adjust flow.

🛑 **Do not shut off flow completely with flow adjust screw or use an oversize screwdriver to adjust flow — valve or thread seat damage may result.**

4. When calibration is complete, place the pump in Hold by pressing [▲▼] and disconnect the calibrator and tubing from the sorbent tube inlet. Reset run time data to zero.

Operation

Set Up/Sample with Single Tube

- *Allow pump to equilibrate after moving it from one temperature extreme to another.*

- *Charge pump battery completely before calibration and sampling.*

- *Protect sample pump from weather when sampling outdoors.*

- *Calibrate/verify pump flow rate before and after each sampling operation using the tube holder and pump to be used for sampling.*

- *Use of any device or battery pack other than P20136 and P20136MH to power the pump voids the UL Listing for intrinsic safety and any warranty.*

1. Replace the representative sorbent tube used for calibration with new unexposed sorbent tube for sample collection. ***Note:*** *Ensure that sorbent tube fits snugly in rubber sleeve before sampling to avoid any air leakage. Two sleeves, each a different inner diameter (ID), are supplied with the All-in-One.*
2. Place the protective tube cover over the tube and thread it into place on the All-in-One until secure.
3. Place the sorbent tube where appropriate for sampling. For **personal sampling,** clip the All-in-One to the worker in the breathing zone and the pump to the worker's belt using the belt clip.
4. Press [▲▼] to run the pump. Record start time and other pertinent information.
5. Sample for the time specified in the method used.
6. To stop a sample run, press [▲▼]. This places the pump in Hold. Record stop time and other pertinent information.

Possible Displays During Sampling

Flow Fault ➤➤❙ — If the pump is unable to compensate for longer than 15 seconds due to excessive back pressure, the pump enters flow fault. During flow fault, the fault icon is displayed on the LCD during the length of the fault, the pump enters Hold mode, and the accumulated run time display is retained. The pump attempts to restart sampling after 5 minutes in flow fault and continues to attempt a restart every 5 minutes thereafter until the restricted flow is corrected or the pump has attempted a maximum of 10 restarts. This maximum number may be changed using DataTrac 2000 Software.

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7. Cap the sample tube and send it with blanks and pertinent sampling information to a laboratory for analysis.
8. Verify the flow.
   a. Turn on the pump and reinstate the calibration train and sampling media.
   b. Take three readings and record the average value as the post-sample flow rate. **Do not adjust the pump flow rate during this step.**
   c. Compare the pre and post-sample flow rates. Note in sampling documentation if the values differ by more than ± 5%.

Set/Calibrate Flow Rate for Multiple Tubes

* *Requires Constant Pressure Controller (CPC) and Dual, Tri, or Quad Adjustable Low Flow Tube Holder (see Accessories). The low flow tube holder used with CPC allows up to four tube samples to be taken simultaneously, each at different flow rates if desired.*

* *Allow pump to equilibrate after moving it from one temperature extreme to another.*

* *Charge pump battery completely before calibration and sampling.*

* *Calibrate/verify pump flow rate before and after each sampling operation using the tube holder and pump to be used for sampling.*

* *The flow rate through the pump is set first and then the flow rate through each sorbent tube is calibrated.*

Pump Flow Rate
1. Ensure that the battery is fully charged and that the pump has run for 5 minutes before calibrating.
2. Prepare the calibrator *(see calibrator instructions)*. Using flexible tubing, connect the calibrator outlet (suction port) to the pump inlet.
3. With the pump in Hold, set the pump flow rate to ≥ 15% higher than the sum of the flow rate through all the tubes as follows:

✋ **Do not exceed 500 ml/min flow rate per tube for multiple-tube sampling.**

    a. Press [▲▼] to run the pump and enter ✳▲▼✳ within 10 seconds. You are in User Interface Level One. SET and flow rate flash on the LCD.

    b. The flow rate displayed is from the last sample taken. Press ▲ to increase flow and ▼ to decrease flow until the calibrator indicates the method-specified flow rate. Once the desired flow rate is indicated on the calibrator (within ± 5%), press ✳ until End appears, and then press [▲▼] to save the change and exit the User Interface. The pump will remain running. If desired, press [▲▼] again to place the pump in Hold. Take a minimum of three readings and record the average flow rate as per OSHA/NIOSH instructions.

4. Remove tubing from the pump inlet and calibrator.

Flow Rate Through Sorbent Tubes
1. Attach the tubing on the CPC outlet (side of the CPC without a label) to the pump inlet. Attach the Adjustable Low Flow Holder to the CPC inlet (marked "To Sample").
2. Break tips off the representative sorbent tubes and insert the tubes into the rubber sleeves on the holder **(arrow on each tube pointing toward pump)**. Place unopened tubes in any unused ports to "seal" them.
3. Label all tubes and ports.
4. Using flexible tubing, connect the exposed end of the tube to the calibrator outlet (suction port).

Operation

5. From Hold, press [▲▼] to run the pump. Loosen and turn the brass flow adjust screw directly beneath the port holding the first active tube to be calibrated (**clockwise** to increase, **counterclockwise** to decrease) until the calibrator indicates the method-specified flow rate. **Do not adjust the flow rate on the pump.** *Note: For tri and quad models, first rotate each anti-tamper cover to expose the flow adjust screws, then adjust the appropriate one until the calibrator indicates the desired flow.*

6. Repeat Steps 4 and 5 for each active tube.

7. Once flow is calibrated for each active tube, it is recommended practice to re-check the flow rate through representative tubes before removing them. Any adjustment should be minimal.

Set Up/Sample with Multiple Tubes

• *Requires Constant Pressure Controller (CPC) and Adjustable Low Flow Tube Holder (see Accessories). The low flow tube holder used with CPC allows up to four tube samples to be taken simultaneously, each at different flow rates if desired.*

• *Allow pump to equilibrate after moving it from one temperature extreme to another.*

• *Protect sample pump from weather when sampling outdoors.*

• *Calibrate/verify pump flow rate before and after each sampling operation using the tube holder and pump to be used for sampling.*

• *Use of any device or battery pack other than P20136 or P20136MH to power the pump voids the UL Listing for intrinsic safety and any warranty.*

• *Charge pump battery completely before calibration and sampling.*

1. Replace representative sorbent tubes used for calibration with new unexposed tubes for sample collection.

2. Place a tube cover over each tube and thread into place on holder until secure.

3. Place the adjustable holder with tubes where appropriate for sampling. For **personal sampling,** clip the sample collection media to the worker in the breathing zone and the pump to the worker's belt using the belt clip.

4. Press [▲▼] to run the pump. Record start time and other pertinent information.

5. Sample for the time specified in the method used.

6. To stop a sample run, press [▲▼]. This places the pump in Hold. Record stop time and other pertinent information.

7. Cap the sample tubes and send with blanks and pertinent sampling information to a laboratory for analysis.

8. Verify the flow.
   a. Turn on the pump and reinstate the calibration train and sampling media.
   b. Take three readings and record the average value as the post-sample flow rate. **Do not adjust the pump flow rate during this step.**
   c. Compare the pre and post-sample flow rates. Note in sampling documentation if the values differ by more than ± 5%.

Replacing the Inlet Port Housing and Filter

1. Remove the three screws that secure the inlet port housing to the top of the pump.
2. Remove the inlet port housing and gasket.
3. Remove the O-ring.
4. Remove and discard the filter.
5. Insert a new filter (Replacement Cat. No. P40011).
6. Insert O-ring.* Replace the gasket.
7. Align the inlet port housing with the three screw holes and the LED.
8. Insert the three screws and tighten in an alternating fashion.

> (!) **Do not overtighten screws. Overtightening can crack the inlet filter cover.**

* *Replace with new O-ring only as needed.*

Full Calibration (CalChek Multiple-point)

This type of calibration provides flow correction across the basic operating range of the AirChek 2000 pump (750 to 3000 ml/min) in approximately four minutes. The operation calibrates each flow rate to a calibrator. It can also provide a record of calibration for maintenance and quality purposes if DataTrac 2000 Software is used. SKC recommends that a full calibration be performed during pump maintenance and after non-factory repairs.

> (!) **Full calibration clears history, run time parameters, and the Scheduler in DataTrac 2000 Software.**

> (!) **Do NOT place sampling media in line for full calibration. Ensure the battery pack is completely charged before starting a full calibration.**

> (!) **Do not perform multiple-point calibration until the pump has remained at ambient temperature for several hours.**

1. Run the pump for 5 minutes before starting calibration. Leave the pump on.
2. Use 1/4-inch tubing to connect the Defender Calibrator suction port to the AirChek 2000 pump inlet. *Do NOT place sample medium in line.*
3. Follow Steps 3 through 9 from *Single-point Calibration Using CalChek* on pages 18 and 19.
4. Verify that the battery icon on the pump display shows at least two bars. If it does not, charge the battery before proceeding.
5. Press ▲ on the pump keypad seven times to place pump in full calibration mode.
6. The Defender Calibrator will begin to automatically calibrate the pump. Initial flow measurements are taken without flow from the pump and the pump flow rate is adjusted automatically. The pump will display FCAL,

CS1, and a brief flow rate. The pump will continue to display CS2, then a flow rate, CS3, then a flow rate, etc. until calibration is completed at all flow rates between 750 and 3000 ml/min.

Full calibration begins at flows lower than 750 ml/min. At these lower flow rates, the calibrator piston will move slowly. This is normal; do not interrupt calibration.

CalChek full calibration can be aborted by pressing [▲▼]. The pump will go to HOLD.

7. When calibration is completed, the pump will go to HOLD. If the calibration was successful, the pump LCD will revert to displaying pump run time as zero. If there was failure during the calibration process, an error code of E4[x] will appear. *See CalChek Error Chart*.

   Note: *To remove a CalChek error code from the LCD, press ✳.*

8. Allow the pump to go to SLEEP mode to write calibration data to pump memory.

Data does not write to pump memory until pump has gone into SLEEP mode.

CalChek Full Calibration Data

Full calibration data can be viewed and printed by going to the DataTrac 2000 Pump Manager window and clicking on the View menu. Choose Calibration Info. This will display calibration results, pump serial number, and date of the last full calibration. A button allows this data to be printed. The printed report contains pump version, date printed, and a validation code.

CalChek Calibration Data Verification in DataTrac 2000 Software

This feature requires pump version 2.62 or higher and DataTrac 2000 Software version 3.62 or higher.

To ensure that printed data has not been tampered with, pull down the Tools menu and choose Confirm Validation Code. Enter the data from the printed report, including the validation code. DataTrac 2000 will indicate whether the information is completely valid or if a parameter has been changed.

Clearing the history will not clear full calibration data. This data can only be cleared by performing another full calibration or by obtaining more than 36 pump history records.

When entering data to confirm the validation number, enter the date in the following format: mmm dd, yyyy (e.g., Aug 18, 2009)

CalChek Error Chart
Single-point Calibration Errors

Error	Problem	Troubleshooting
E41	Correction required too large. A mismatch of greater than 360 ml/min between the flow setting on the pump and the reading generated by the Defender Calibrator has occurred.	Perform a full calibration. If this fails, contact SKC Technical Support at skctech@skcinc.com.
E48	Could not get a successful single point calibration within five flow readings	Try the calibration again. If problem persists, perform a full calibration.

Full (Multiple-point) Calibration Errors

Error	Problem	Troubleshooting
E44	First flow reading greater than 750 ml/min. The pump is flowing faster than it should, even though the calibration routine delivered only a very small voltage to the pump.	Check pressure sensor tubing to ensure it is not pinched or blocked, or contact SKC Technical Support at skctech@skcinc.com.
E45	Pump unable to achieve flow rate of 3000 ml/min possibly due to a blocked flow tube or an air leak inside the pump.	Check pump's flow tube to ensure it is not blocked, or contact SKC Technical Support at skctech@ skcinc.com.
E46	Analysis error in the data (rare)	Try full calibration again. If problem persists, contact SKC Technical Support at skctech@skcinc.com.
E47	Less than two bars appear in the battery icon on the pump display indicating that the battery is too low. There must be at least two bars to begin a full calibration.	Recharge the battery.
No Code	At conclusion of full calibration, pump does not verify to within 5%.	Pump not at ambient conditions for at least two hours. Retry calibration after pump has been at ambient conditions for two hours. Pump not running for five minutes prior to calibration. Run pump for five minutes and retry calibration.

Errors That Can Occur During Both Calibration Modes

Error	Problem	Troubleshooting
E42	Unstable average. There is too much variation in the flow readings.	Try the calibration again. If problem persists, contact SKC Technical Support at skctech@skcinc.com.
E43	Serial time out. The calibrator is not communicating with the pump.	Check cable connection. If loose or disconnected, connect properly.

Replacement Parts

Description	Cat. No.
Replacement Parts	
Battery Pack, NiMH	P20136MH
Belt Clip	P20139
Case	P20137
Case with interface control board in place	P20137A
Charging Jack	P20145
Cover, Battery Pack	P20144
Filters/O-rings, pk/3	P20140
Filter Housing	P20142
Inlet Filters, pk/50	P40011
Gasket Set	P21273
Keypad	P79361
Stack	P20138
Interface Control Board	P79543
Port Cover	P20179
Screw/Gasket Kit	P21002
Valve Assembly, bottom	P21272
Valve Assembly, top	P21322

> ⊙ ***Use only SKC-approved parts to ensure reliable performance. Failure to do so voids any warranty and the UL Listing for intrinsic safety.***

Accessories

Description	Cat. No.
chek-mate Calibrator, for manual calibration, 0.75 to 5 L/min, includes 9-volt alkaline battery and NIST-traceable certificate	375-07550N
CalChek Communication Cable, *required for CalChek feature*	210-502

Chargers

	Cat. No.
PowerFlex Charging System for SKC Personal Pumps	
5 stations, 100-240 V	223-1000
Single, 100-240 V	223-2000
PowerFlex Pump Cable for AirChek 2000	223-1001
Battery Eliminator, for continuous run using line power, *use voids the UL Listing for intrinsic safety*	
115 V	223-320
230 V	223-320B

Protective Pouches with adjustable waist belt and shoulder strap

	Cat. No.
Black	224-88
Red, high-profile	224-96A
Black, noise reducing	224-96C
DataTrac 2000 Software Package includes software and instructions on CD and USB cable, *see details on page 30*	877-91
Low Flow Adapter Kit (5 to 500 ml/min) includes All-in-One Low Flow Holder and Type A Protective Cover	210-500
Constant Pressure Controller (CPC) for sampling in the 5 to 500 ml/min flow range. *Use with Adjustable Low Flow Tube Holder listed below.*	224-26-CPC

Adjustable Low Flow Tube Holders for Constant Pressure (Low Flow 5 to 500 ml/min) Applications
Use with CPC listed above. Requires separate tube cover listed below.

	Cat. No.
Dual	224-26-02
Tri	224-26-03
Quad	224-26-04

Sample Tube Protective Covers
Use with adjustable low flow tube holders listed above.

	Cat. No.
Type A (tubes 6-mm OD x 70-mm L), included in Low Flow Adapter Kit above	224-29A
Type B (tubes 8-mm OD x 110-mm L)	224-29B
Type C (tubes 10-mm OD x 150-mm L)	224-29C
Type D (tubes 10-mm OD x 220-mm L)	224-29D

Accessories

DataTrac 2000 Software

With the optional DataTrac 2000 Software accessory, the AirChek 2000 is programmable using a PC. DataTrac 2000 simplifies chain-of-custody reporting by allowing users the option of programming a complete running sequence, delayed start, timed stop, and intermittent sampling, all at different flow rates. Time and sample volume are continuously updated in memory. There is no need to perform lengthy calculations; DataTrac does it for you. The advanced information retrieval system is specifically designed to store data and provide chain-of-custody information. Fault features allow storage of historical data in memory that can be retrieved days later as long as the battery pack is not completely discharged.

Features
- Program a sampling operation from a PC
- Calibrate the AirChek 2000 flow rate to a primary standard
- Display the AirChek 2000 operating state including flow rate, temperature, atmospheric pressure, run time, and battery status of the connected pump
- Create and save an AirChek 2000 program on a PC and upload to the pump for operation in the field.
- Program up to ten sampling sequences, each with different flow rates
- Download the AirChek 2000 run time data and history to your PC
- Document sampling history using the sample set-up feature
- Print a history file containing AirChek 2000 run time data
- Print a worker exposure profile containing run time data and the AirChek 2000 history
- Document date of pump calibration and validate information when using the CalChek Automatic Calibration feature (DataTrac 2000 version 3.59 or higher)

DataTrac 2000 Requirements
- Hard drive with a minimum of 20 MB free disc space
- CD-ROM drive
- Available USB port
- Mouse
- Microsoft® Windows® XP or higher, including Windows 7 (64 bit)

DataTrac 2000 Software includes software and
instructions on CD and USB cable .... Cat. No. 877-91

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.