Operating Instructions
AirChek® XR5000

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Form 38047 Rev 1505

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Indicates a warning or caution.

AirChek XR5000 Quick Guide

Keypad Basics

✷ (star key)	Scrolls through parameters in user setup functions.
▲▼ (up/down arrow keys)	Increase or decrease flow rate, timed run, and run delay time.

Key Sequences

▼ ✷	Press keys individually.
[▲▼]	Press keys simultaneously. Toggles between Run and Hold and exits user setup functions.
✷▲▼✷	Security code to access user setup functions. With pump in a non-running state (no flashing blue LED), press keys in sequence.

Operation

• **Pump On**	**Press and hold** ✷.
• **Pump Off**	Press and hold ✷ through countdown. Auto-off will shut down pump after 5 minutes without activity.
• **Mode Change**	Press [▲▼] to toggle between Run and Hold.
• **Keypad Lock**	Press ▼ **5** times **quickly** to activate. Press ▼ **5** times **quickly** to deactivate.
• **Run/Hold**	With pump in a non-running state (no flashing blue LED), press [▲▼] to run pump. Press [▲▼] to Hold pump when completed.

Accessing User Setup Functions

- ***Entering User Setup Functions***
  With pump in a non-running state (no flashing blue LED), press ✷▲▼✷.
- ***Exiting User Setup Functions***
  Press [▲▼]. Pump is ready. Press [▲▼] to run the pump or to start a run delay.

User Setup Functions

To navigate while in user setup functions, press ✷ until the desired function displays.

Function	When LCD Displays	User Action	Result
Clear Accumulated Run Time *Function only available when accumulated run time exists.*	CLr and flashing Hold	Press [▲▼].	Clears run and run time and exits functions. Press [▲▼] to run pump.
Adjust Flow Rate*	"---" and flashing ADJ Flow	Press ▲ or ▼. Press [▲▼] to exit functions.	Flow increases/ decreases. Press [▲▼] to run pump.
Set Timed Run†	Flashing Set Timed Run and min	Press ▲ or ▼. Press [▲▼] to exit functions.	Minutes increase/ decrease. Press [▲▼] to run pump.
Set Run Delay†	Flashing Set Run Delay and min	Press ▲ or ▼. Press [▲▼] to exit functions.	Minutes increase/ decrease. Press [▲▼] to start run delay. Blue LED flashes. Pump starts after delay elapses.

** Changing flow rate in user setup functions **will not** clear accumulated run time.*

*† Changing timed run and/or run delay settings in user setup functions **will** clear accumulated run time.*

www.skcinc.com

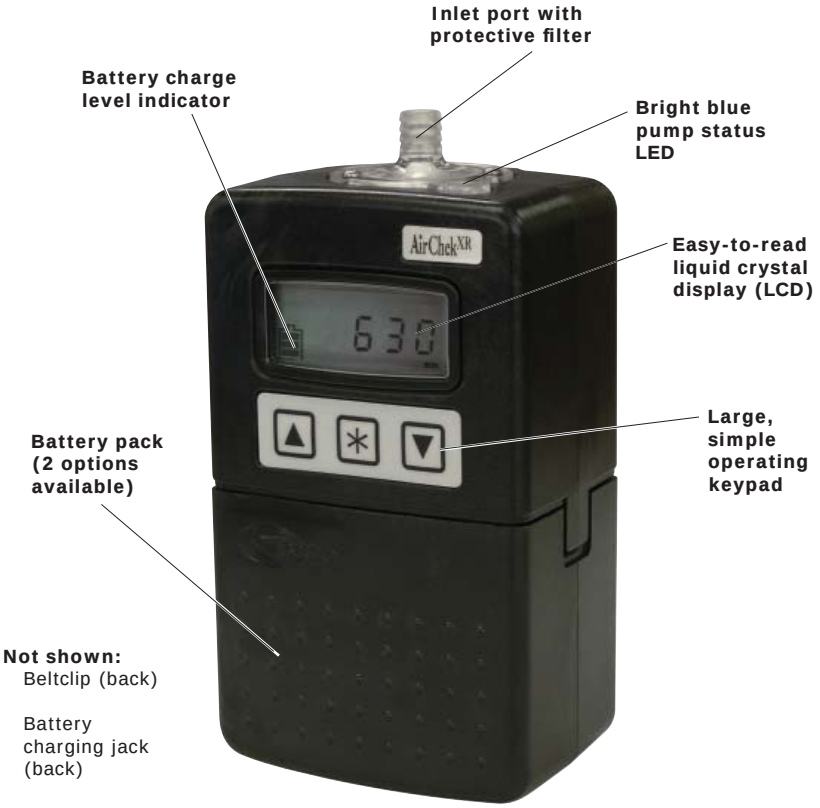
Description

SKC AirChek XR5000 Sample Pumps are designed to offer users enhanced battery power and easy operation in a lightweight pump that provides accurate airflows from 5 to 5000 ml/min.

- Two battery options provide flexibility and economy for different applications including long run times.
- The large three-button keypad and straightforward user setup functions offer user-friendly conveniences.

AirChek XR5000 pumps feature a patented* isothermal flow sensor that measures flow directly and acts as a secondary standard, constantly maintaining the set flow rate. A built-in sensor compensates for changes in temperature that occur after calibration.

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



AirChek XR5000 Air Sampling Pump

Performance Profile

Flow Range: 1000 to 5000 ml/min (5 to 500 ml/min requires optional low flow adapter kit)

Compensation Range: 5000 ml/min at 10 inches water back pressure
4000 ml/min at 20 inches water back pressure
2000 ml/min at 50 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	3.5	4.0	5.0
Filter/Pore Size (µm)								
25-mm MCE/0.8	6	9	12	15	18	21	25	31
25-mm MCE/0.45	14	22	28	35	40	44	50	63
37-mm MCE/0.8	2	3	4	5	6	7	9	11
37-mm PVC/5.0	1	1	2	2	2.5	3	3	4
37-mm, polycarbonate/0.45	4	6	8	10	12	15	17	21
25-mm MCE/0.45 microvacuum	21	31	40	48	59	69	79	100
37-mm PTFE/1.0	1.5	2.5	4	5.5	7	8	9.5	12

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

Flow Compensation System: Patented* isothermal closed loop flow sensor

Accuracies:
Timing: 1 min/mo at 25 C
Flow Rate: ± 5% of set-point after calibration to desired flow

Battery Charge Level Indicator: Icon displays on LCD at full, mid, low charge, imminent low battery fault, and low battery fault.

Temperature Range:
Operating: 32 to 113 F (0 to 45 C)
Charging: 32 to 113 F (0 to 45 C)
Storage: -4 to 95 F (-20 to 35 C)

Operating Humidity: 0 to 95% non-condensing

Typical Run Time†:

XR5000 Model	2 L/min	5 L/min
High-power Li-Ion	40 hrs	22 hrs
Standard Li-Ion	20 hrs	11 hrs

† Results of run time tests using 37-mm, 0.8-µm MCE filters with new pumps and batteries. Pump and battery performance may vary.

For extended run times, the pump may be operated while attached to the charger.

Timed Run, Run Delay, and Continuous Run Display Range: 1 to 9999 minutes (6.8 days). If run time exceeds 6.8 days, timer display rolls over.

Flow Fault: If pump is unable to compensate for > 15 seconds due to excessive back pressure, the pump stops, displays flow fault icon, and holds run time display. Auto-restart is attempted every 15 seconds up to 5 times.

Low Battery Fault: 15 seconds to sleep

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

Performance Profile

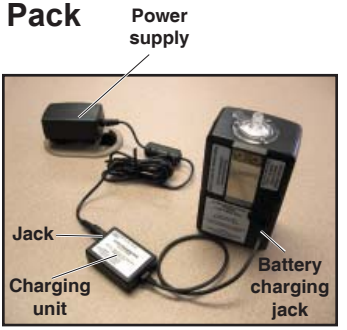
Auto-off:	5 minutes of inactivity
Battery Pack: *(model dependent)*	**High-power Li-Ion (4 cell),** rechargeable, 7.4 V, 4.4-Ah capacity, 32.6 Wh (Cat. No. P85004 for UL Listed pump) or **Standard Li-Ion (2 cell),** rechargeable, 7.4 V, 2.2-Ah capacity, 16.3 Wh (Cat. No. P85002 for UL Listed pump)
Battery Recharge Time: *(with SKC-approved chargers; varies with battery capacity and level of discharge)*	**Standard Li-Ion (2 cell):** approximately 4 hrs **High-power Li-Ion (4 cell):** approximately 8 hrs
Tubing:	Requires 1/4-inch ID tubing
Size:	**High-power Li-Ion:** 5.5 x 3 x 2.3 in (14 x 7.6 x 5.8 cm) **Standard Li-Ion model:** 4.3 x 3 x 2.3 in (10.9 x 7.6 x 5.8 cm)
Weight:	**High-power Li-Ion:** 21 oz (0.6 kg) **Standard Li-Ion model:** 16 oz (0.45 kg)
Case:	Anti-static plastic
RFI/EMI Shielding:	CE marked for RFI/EMI protection
Approvals:	• c UL us LISTED for use in hazardous locations. Models that are UL Listed for intrinsic safety contain the c UL us LISTED logo on the label. These models must be used with battery pack Cat. No. P85004 or P85002 to maintain the UL intrinsic safety listing. • RoHS compliant

Cautions:

- For safe operation in hazardous locations, ensure the pump label contains the c UL us LISTED logo and the battery pack label contains Cat. No. P85004 or P85002. Use of any other battery pack or device to power the pump voids the UL Listing for intrinsic safety.
- Use only the charger and battery packs designed for the AirChek XR5000 pump to ensure reliable performance. Failure to do so voids any warranty.
- Use only SKC-approved parts to ensure reliable performance and to maintain the UL Listing for intrinsic safety. Failure to do so voids any warranty.
- Failure to follow warnings and cautions voids any warranty.

Charging the Lithium-Ion Battery Pack

Shown with single charger (Cat. No. 222-241). A five-station charger is available; see Accessories on page 19. Follow charger instructions.



AirChek XR5000 charging train with single charger

STOP! *Completely charge a new battery pack before operating the pump. It may be necessary to charge the battery a few times before maximum battery capacity is achieved.*

Intrinsic safety circuitry inside the battery causes the pump to self-discharge during storage. Charge battery completely before calibration and sampling to achieve optimum pump operation.

1. For a complete charge, ensure the pump is **not** running. Insert plug on charging unit into the battery charging jack on back of pump. Ensure plug is oriented so that the arrow on the plug is facing upward.

Ensure proper orientation of charging cable before plugging it into the charging jack. Improper orientation/contact will short circuit the battery and voids any warranty.

Short circuiting the battery pack will render it immediately inoperative.

2. Insert plug on power supply into jack on charging unit.

3. Pull locking tab to side and insert appropriate wall plug into power supply. Release locking tab. Plug power supply into a wall outlet.

The standard 2-cell Li-Ion battery pack will recharge in approximately 4 hours. The high-power 4-cell Li-Ion battery pack will recharge in approximately 8 hours. Run pump for 5 minutes after charging is complete.

Interchangeable wall plugs insert into power supply.

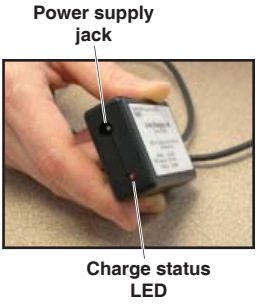
Note *After charging the battery pack, it is good practice to run the pump for approximately 5 minutes before calibrating. This ensures the battery is in more steady-state conditions and improves the agreement in pre and post-sampling calibrations.*

Note *The battery pack may be kept on SKC-approved Li-Ion battery chargers for an indefinite time.*

Reading the Charging Status LED on the Single Charger

The Li-Ion Charging Unit (Cat. No. P22300) indicates battery charge status via an LED on the unit that blinks in specific patterns. Observe the LED steadily for > 5 seconds to read charge status.

LED Action				Charge Status
ON ✸ steady				Charge in progress
ON ✸ 2 sec	OFF ○ .25 sec	ON ✸ 2 sec	(Repeats)	Approximately 80% charged
OFF ○ 2 sec	ON ✸ .25 sec	OFF ○ 2 sec	(Repeats)	Charge completed



Note *The battery pack may be kept on SKC-approved Li-Ion battery chargers for an indefinite time.*

Cautions:

- Do not charge or operate pump from charger in hazardous locations.
- Use only the charger and battery packs designed for the AirChek XR5000 pump to ensure reliable performance. Failure to do so will void any warranty.
- For safe operation in hazardous locations, ensure the pump label contains the c UL us LISTED logo and the battery pack label contains Cat. No. P85004 or P85002. Use of any other battery pack or device to power the pump voids the UL Listing for intrinsic safety.
- Tampering with the battery pack or using a repaired or rebuilt battery pack voids any warranty and UL Listing for intrinsic safety.
- Do not open, disassemble, short circuit, crush, incinerate, or expose the battery to fire or high temperatures.
- Use only the SKC-approved charger for this pump. Use of an unapproved charger may damage the battery and pump and voids any warranty.
- Failure to follow warnings and cautions voids any warranty.

See http://www.skcinc.com/instructions/1756.pdf for more information on SKC pump battery packs.

Setup

Keypad Basics

The AirChek XR5000 operates by pressing key sequences on the keypad located on the front of the pump case.

Keys

✷	Scrolls through parameters in user setup functions
▲	Increases flow rate, timed run, and run delay time
▼	Decreases flow rate, timed run, and run delay time

Key Sequences

▲✷	Press keys individually.
[▲▼]	Press simultaneously to toggle between Hold and Run modes and to exit user setup functions.
✷▲▼✷	Security code. With pump in a non-running state (no flashing blue LED), press to access user setup functions.

Turning the Pump On

- Press and hold ✷ until display shows “ON.”
- Press [▲▼] to run the pump or to place a running pump in Hold. A blue LED on top of the pump indicates pump is running or that there is a run delay programmed into the pump.

Turning the Pump Off

- **Manual Off (Sleep mode):** With pump in a non-running state (no flashing blue LED), press and hold ✷ until a countdown from 3 to 1 appears on the LCD and pump shuts off. Manual Off will operate even when keypad is locked.
- **Auto Off (Sleep mode):** Turns off a non-running pump (no flashing blue LED) after five minutes of inactivity.

Locking the Keypad

Locking: In any mode, press ▼ **5** times **quickly**. A flashing "L" will appear in the lower right corner of the display.

Unlocking: Press ▼ **5** times **quickly**. The flashing "L" will disappear from the lower right corner of the display. The keypad may be operated normally. If the "L" is still displayed, *see Troubleshooting*.

Note

- *While the keypad is locked, the ✷ key will still operate to allow manual pump shut off in a non-running state (no flashing blue LED).*
- *A locked keypad will remain locked until the user unlocks it. Turning the pump off and on does not affect keypad lock status.*

Checking Battery Charge Level

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

Two bars indicate 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%.

No bars indicate that low battery fault is imminent.

Low Battery Fault

No bars and a flashing outline indicate a low battery fault (pump will go into Hold and go to sleep after 15 seconds in low battery fault). Accumulated run time will be retained.

Accessing User Setup Functions

Entering Functions:

- With pump in a non-running state (no flashing blue LED), press ✷▲▼✷.

Exiting Functions:

- Press [▲▼] to exit user setup functions. Pump is ready to run.

Note *User setup functions cannot be accessed while the keypad is locked.*

Setup

User Setup Functions

Function Overview

User setup functions are listed below in the order in which they display. *Note that the CLr function for clearing accumulated run time is only available when accumulated run time exists.*

No Accumulated Run Time	Accumulated Run Time
	CLr
ADJ Flow	ADJ Flow
Set Timed Run	Set Timed Run
Set Run Delay	Set Run Delay

Clearing Accumulated Run Time

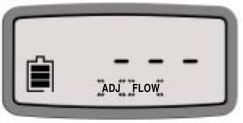
1. With the pump in a non-running state (no flashing blue LED), press ✷▲▼✷.
2. Press [▲▼] at CLr display to clear accumulated run time. Pump is ready to run.

Note *CLr will not cancel Timed Run or Run Delay time settings (see Canceling a Timed Run and/or Run Delay).*

Note

- *Changing the timed run and/or run delay settings in user setup functions will automatically clear accumulated run time.*
- *Changing the flow rate in user setup functions will* **not** *clear accumulated run time.*

Setting Flow Rate



1. With pump in a non-running state (no flashing blue LED), press ✷▲▼✷.
2. Connect pump inlet to a calibrator.
3. Press ✷ until ADJ and Flow flash on display.
4. Press ▲ to increase or ▼ to decrease flow. Dashed lines will move up and down on the LCD to indicate direction of adjustment. Flow rate will not display on the pump LCD. Observe the calibrator for flow reading.
5. Press [▲▼] to accept flow setting and to exit user setup functions.

See Calibration for instructions on calibrating pump flow rate.

Setting a Timed Run

Program the AirChek XR5000 from its keypad to run from 1 to 9999 minutes.

With pump in a non-running state (no flashing blue LED):

1. Press ✷▲▼✷ to enter user setup functions.
2. Press ✷ until a flashing Set Timed Run and min appear on the display.
3. Press ▲ to increase or ▼ to decrease minutes.
4. Press [▲▼] to accept timed run setting and to exit user setup functions. The setting will appear on the display and the pump will be ready to run.
5. Press [▲▼] to run the pump.

During a timed run:

a. The blue LED on top of the pump case will flash. "Timed Run Remaining" will display and count down in minutes on the LCD.
b. Accumulated run time can be displayed by pressing and holding ▲.
c. Run can be paused (Hold) by pressing [▲▼]. The time remaining and accumulated run time displays will freeze. Run can be resumed by pressing [▲▼]. Time remaining and cumulative run time will resume.
d. At the end of the run, the pump will stop and "Timed Run Remaining" and "0" will display. To display accumulated run time, press and hold ▲.
e. To return to "Timed Run" display, press [▲▼]. This will also clear accumulated run time.

Note ***If pump goes to sleep following the run*** *and is awakened, the pump will display "Timed Run Remaining" and "0." Accumulated run time from the run remains and can be displayed by pressing and holding ▲.*

Reminder Pressing [▲▼] after a completed run automatically clears accumulated run time.

Setting a Run Delay with Continuous Run

Program the AirChek XR5000 from its keypad to automatically start a sample run after a specified period of time (1 to 9999 minutes) has elapsed.

With pump in a non-running state (no flashing blue LED):

1. Press ✷▲▼✷ to enter user setup functions.
2. Press ✷ until a flashing Set Run Delay and min appear on the display.
3. Press ▲ to increase or ▼ to decrease minutes.
4. Press [▲▼] to accept run delay setting and to exit user setup functions. Run delay time will display on the LCD and the pump will be ready to start run delay.
5. Press [▲▼] to activate the pump.

During a run delay with continuous run:

a. The blue LED on top of the pump case will flash during the run delay even though the pump is not running.

b. Run delay time remaining will count down in minutes and display on the LCD.

c. Once the run delay time has elapsed, the pump will start running. Accumulated run time will count up in minutes.

d. Run can be paused (Hold) by pressing [▲▼]. The accumulated run time display will freeze. Run can be resumed by pressing [▲▼]. Accumulated run time display will resume.

e. Once the run is complete, stop the pump by pressing [▲▼]. Accumulated run time will display.

Note ***If pump goes to sleep following the continuous run*** *and is awakened, the pump will display accumulated run time.*

Setting a Run Delay and Timed Run

With pump in a non-running state (no flashing blue LED):

1. Press ✷▲▼✷ to enter user setup functions.
2. Press ✷ until flashing Set Timed Run and min appear on the display.

3. Press ▲ to increase or ▼ to decrease minutes (1 to 9999 minutes).
4. Press ✷ to scroll to a flashing Set Run Delay and min.
5. Press ▲ to increase or ▼ to decrease minutes (1 to 9999 minutes).

6. Press [▲▼] to accept run delay and timed run settings and to exit user setup functions. The run delay setting will appear on the LCD and the pump will be ready to start run delay.
7. Press [▲▼] to activate the pump.

During a run delay with timed run:

a. The blue LED on top of the pump case will flash during the run delay even though the pump is not running.

b. Run delay time remaining will count down in minutes and display on the LCD.

c. Once the run delay time has elapsed, the pump will start running. “Timed Run Remaining” will display and count down in minutes on the LCD.

d. Accumulated run time can be displayed by pressing and holding ▲.

e. Run can be paused (Hold) by pressing [▲▼]. The time remaining and accumulated run time displays will freeze. Run can be resumed by pressing [▲▼]. Time remaining and cumulative run time will resume

f. At the end of the run, the pump will stop and "Timed Run Remaining" and "0" will display. To display accumulated run time, press and hold ▲.
g. To return to "Timed Run" display, press [▲▼]. This will also clear accumulated run time.

Note ***If pump goes to sleep following the timed run*** *and is awakened, the pump will display "Timed Run Remaining" and "0." Accumulated run time from the run remains and can be displayed by pressing and holding ▲.*

Tip *When setting a timed run or run delay with a large number of minutes in user setup functions, press ✷ with ▲ or ▼. This activates the speed count feature which scrolls through timed run or run delay minutes in increments of 100.*

Reminder Pressing [▲▼] after a completed run automatically clears accumulated run time.

Canceling a Timed Run and/or Run Delay

With pump in a non-running state (no flashing blue LED):
1. Press ✷▲▼✷ to enter user setup functions.
2. Press ✷ until flashing Set Timed Run and min appear on the display.
3. Press ▼ until time displays as 0.
4. Repeat for Run Delay if needed.
5. Press [▲▼] to exit user setup functions. Pump will be ready to run.

Note *Selecting CLr in user setup functions after a sample run will clear accumulated run time only. It will not clear Timed Run or Run Delay time settings.*

Calibration

Calibration (High Flow: 1000 to 5000 ml/min)

Before use, allow pump to equilibrate after moving it from one temperature extreme to another.

Charge pump battery completely before calibration and sampling.

1. Run pump for 5 minutes before performing calibration.

2. Connect pump inlet to the outlet of a primary standard calibrator with representative sample medium in line.

With pump in a non-running state (no flashing blue LED):

3. Press ✹▲▼✹ to enter user setup functions.
4. Press ✹ until ADJ and FLOW flash on display. Press ▲ to increase flow. Press ▼ to decrease flow. Dashed lines will move up or down on the display to indicate graphically the direction of the adjustment. **Flow rate will not display on pump LCD. Observe the calibrator to determine flow rate.**

5. Follow the calibrator operating instructions. Once the desired flow rate is indicated on the calibrator (within ± 5%), press [▲▼] to accept flow setting and to exit user setup functions. The pump will be ready to run.

Note

- *Changing the flow rate in user setup functions will* **not** *clear accumulated run time.*
- *Changing the timed run and/or run delay settings in user setup functions will automatically clear accumulated run time.*

6. Disconnect the calibrator and tubing. Replace representative tubes with new unexposed media for sampling.

Calibration (Low Flow: 5 to 500 ml/min)

Requires Constant Pressure Controller (CPC) and Adjustable Low Flow Tube Holder - see Accessories, Low Flow Adapter Kit on page 19. The low flow tube holder (low flow adapter kit, Cat. No. 210-500) used with CPC allows up to four tube samples to be taken simultaneously, each at different flow rates if desired.

Before use, allow pump to equilibrate after moving it from one temperature extreme to another.

Charge pump battery completely before calibration and sampling.

1. Run pump for 5 minutes before performing calibration.
2. a. For **single-tube applications**, set the flow rate to 1500 ml/min (*see Setting Flow Rate*).
   b. For **multiple-tube applications**, the pump flow rate must be set at ≥ 15% higher than the sum of the flow rates through all tubes.

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

Adjust flow with flow adjust screw on tube holder.

3. Use tubing on the CPC to connect the pump inlet to the CPC outlet (the side of the CPC without a label). Connect the inlet side of the CPC (marked "to sample") to the Adjustable Low Flow Tube Holder.
4. Label all tubes and ports if performing multiple-tube sampling.
5. Insert opened representative tubes into the rubber sleeve(s) of each port on the Adjustable Low Flow Tube Holder. **If any ports remain unused, place unopened tubes in them; it is important to "seal" unused ports.**
6. Loosen the brass flow adjust screw on the low flow holder. Use tubing to connect the exposed end of one tube to a primary standard calibrator.
7. Turn on pump. Turn the flow adjust screw (needle valve) on the tube holder until the calibrator indicates the desired flow rate **(do not adjust the flow rate of the pump)**. For multiple-tube sampling, repeat this procedure for each port to calibrate the flow rate for each tube. **Seal unused ports during calibration with unopened tubes.**
8. Disconnect the calibrator and tubing. Replace representative tubes with new unexposed tubes for sampling.

Note *The CPC has two small inlet ports on the bottom of the unit. These ports should be inspected periodically for blockage, which can occur when sampling in dusty environments. Blocked ports will cause back pressure to increase. Clean ports with a small pick and use air to blow away particles.*

Sampling

Sampling

- Before use, allow pump to equilibrate after moving it from one temperature extreme to another.
- Use of any device or battery pack other than P85004 and P84002 to power the pump voids the UL Listing for intrinsic safety.
- Charge pump battery completely before calibration and sampling.

1. Calibrate pump flow rate *(see Setting Flow Rate and Calibration)*.
2. Replace representative sampling media with new unexposed media.
3. To start a continuous or timed sample run, press [▲▼]. Record start time and other pertinent information.

Note

- *Sampling will start automatically if a run delay is set and initiated. Sampling will stop automatically if a timed run is set and initiated.*
- *For automatic start and stop, set and initiate both a run delay* **and** *a timed run.*
- *For multiple-tube sampling, seal unused holder ports with unopened tubes.*

4. Sample for the time specified in the method used. Accumulated run time will display on the LCD.
5. To stop a sample run, press [▲▼]. This places the pump in Hold. Record stop time and other pertinent information.

   a. To resume sample run without clearing accumulated run time, press [▲▼].
   b. To clear accumulated run time, place pump in Hold, press ✷▲▼✷ to enter user setup functions, and press [▲▼] when CLr displays.

When using impingers, place a 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.

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 displays on the display and flashes during the length of the fault, the pump enters Hold mode, and the accumulated run time display is retained. The pump will restart in 15 seconds and try to continue sampling. If the flow remains restricted, the pump will return to flow fault. Auto-restart is attempted every 15 seconds up to 5 times. Flow fault time is not added to accumulated run time.

Flow fault during continuous run

To clear a flow fault and the flow fault icon, determine the cause of the fault, remedy the fault cause, and press [▲▼] to remove the icon from the LCD and restart the pump.

Note *A low battery fault may occur instead of a flow fault when there is a low battery charge at the time of the fault, excessive back pressure, and/or when there is a very short distance between the restriction and the pump inlet (e.g., finger fault versus pinched tubing).* ***The flow fault icon will not appear and auto-restart will not be activated under these conditions.*** *A low battery fault icon (see page 7) will appear instead and the pump will go to Sleep.*

Tip *If pump goes to Sleep while in flow fault, the flow fault icon may remain on the display when the pump is subsequently turned on. To remove the icon from the display, place pump in Hold, press ✹▲▼✹ to enter user setup functions, and press [▲▼] when CLr appears.*

Battery Replacement

Replacing the Li-Ion Battery Pack

To retain display data, ensure pump is placed in Hold before disconnecting the battery pack. Display data will not be retained if battery is removed while pump is running.

Removing Existing Battery Pack

1. Release the battery pack by removing the two screws on the bottom of the battery pack housing.

2. Pull battery pack housing away from pump case.

Installing the New Battery Pack

STOP! ***Completely charge a new battery pack before operating the pump (see page 4).***

Note *It may be necessary to charge the battery a few times before maximum battery capacity is achieved.*

1. Align the pump case with the battery pack. The etched SKC logo should be on the same side as the LCD and keypad. Press the two parts together until snug. The pump will power up and the LCD will display the last mode used (typically Hold) and possibly accumulated run time from the last sample run.

2. Replace 2 screws on the bottom of the battery pack housing and use a Phillips head screwdriver to tighten screws in an alternating fashion.

3. Charge the new battery pack completely before use.

Note *If the pump does not operate as expected after replacing the battery pack, see Maintenance, Resetting Pump to Manufacturer Settings.*

See www.skcinc.com/instructions/1756.pdf for more information on SKC pump battery packs.

Issue	Action/Resolution
Keypad will not respond	1. Observe the lower right corner of the pump display: if a flashing “L” is displayed, the keypad lock is activated. Press ▼ 5 times quickly to deactivate the keypad lock: the “L” should disappear. 2. If no “L” is displayed in the lower right corner of the pump display and the keypad does not respond, contact SKC for repair, www.skcinc.com/catalog/infopage.php?id=2400.

Maintenance

Resetting Pump to Manufacturer Settings

If the pump does not operate as expected, perform the following procedure:

1. Remove the battery pack (*see Removing Existing Battery Pack*).
2. On the pump keypad, press and hold ✷ and ▼ simultaneously while attaching the pump to the new battery pack. The LCD should display the software version number (525X).

Do not release hold on the two keys until the pump is firmly attached to the battery pack.

3. Release ✷ and ▼.
4. Press ✷ 2 times. The LCD should read 0. If it does not, repeat Steps 1 through 4 until successful.
5. Install 2 screws and use a Phillips head screwdriver to tighten screws in an alternating fashion.

Cautions:

- For safe operation in hazardous locations, ensure the pump label contains the c UL us LISTED logo and the battery pack label contains Cat. No. P85004 or P85002. Use of any other battery pack or device to power the pump voids the UL Listing for intrinsic safety.
- Do not charge or operate pump from charger in hazardous locations.
- Use only the charger and battery packs designed for the AirChek XR5000 pump to ensure reliable performance. Failure to do so voids any warranty.
- Use only SKC-approved parts to ensure reliable performance and to maintain the UL Listing for intrinsic safety. Failure to do so voids any warranty.
- Tampering with the battery pack or using a repaired or rebuilt battery pack voids any warranty and UL Listing for intrinsic safety.
- Do not open, disassemble, short circuit, crush, incinerate, or expose the battery to fire or high temperatures.
- Use only the SKC-approved charger for this pump. Use of an unapproved charger may damage the battery and pump and voids any warranty.
- Failure to follow warnings and cautions voids any warranty.

Description	Cat. No.
Defender Primary Standard Calibrator, 50 to 5000 ml/min flow range, includes lead-acid battery, charger (100-240 V), software, and 1-meter serial cable	717-510M
Single Charging Kit, *for models with Li-Ion battery packs only,* 100-240 V AC, 50/60 Hz, includes charging unit, power supply, and interchangeable wall plugs	223-241
Take Charge 5 Five-station Li-Ion Battery Charger, *for Li-Ion model XR5000 pumps and Leland Legacy pumps,* includes charging unit and power cable, 100-240 V AC	223-441
Protective Pouches	
Red, for high visibility, for high-power model	224-96A
Black, noise reducing, for high-power model	224-96C
Black, for high-power model	224-88
Black, noise reducing, for standard model	224-913
Low Flow Adapter Kit (5 to 500 ml/min) *suitable for all XR5000 pump models,* includes constant pressure controller (CPC), adjustable low flow tube holder, and Type A protective tube cover	210-500
Constant Pressure Controller (CPC), for sampling in the 5 to 500 ml/min flow range. *Use with adjustable low flow holder listed below. A CPC is included in Low Flow Adapter Kit above.*	224-26-CPC
Adjustable Low Flow Tube Holders for Low Flow (5 to 500 ml/min) Sampling	
Use with CPC listed above. Require separate tube covers listed below	
Single, *included in Low Flow Adapter Kit above*	224-26-01
Dual	224-26-02
Tri	224-26-03
Quad	224-26-04
Sample Tube Protective Covers	
Use with adjustable flow tube holders listed above.	
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

Replacement Parts

Description	Cat. No.
Battery Packs	
4-cell Li-Ion* Battery Pack	P85004
2-cell Li-Ion* Battery Pack	P85002
Accessories	
Belt Clip	P20139
Filter/O-ring, pk/3	P20140
Inlet/Filter Housing	P20142
Inlet Filters, pk/50	P40011
Battery Jack Cover	P20419

** Li-Ion batteries may be subject to special shipping regulations.*

Cautions:

- For safe operation in hazardous locations, ensure the pump label contains the c UL us LISTED logo and the battery pack label contains Cat. No. P85004 or P85002. Use of any other battery pack or device to power the pump voids the UL Listing for intrinsic safety.
- Use only SKC-approved parts to ensure reliable performance and to maintain the UL Listing for intrinsic safety. Failure to do so voids any warranty.
- Any warranty and UL Listing for intrinsic safety are void if pumps are not repaired by SKC or authorized SKC repair centers.
- Failure to follow warnings and cautions voids any warranty.

Li-Ion Battery Shipment

Rechargeable lithium-ion batteries for use with SKC sample pumps have been tested in accordance with the UN Manual and are proven to meet requirements of each test in the *UN Manual of Test Criteria,* Part II, subsection 38.3. They have a watt-hour (Wh) rating below 100.

Per 2013 IATA regulations for air shipments, packaging must meet the specifications of and contain labeling and documentation required by IATA Packaging Instructions 967 (UN 3481, Section II), 966 (UN 3481, Section II), and 965 (UN 3480, Sections IA > 10 Kg G and IB 2.5 to 10 Kg G). *See IATA Lithium Battery Guidance Document: Transport of Lithium Metal and Lithium Ion Batteries, Revised for the 2013 Regulations*

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.