

AirChek²⁰⁰⁰

Operating Instructions (Condensed Version)

For more detailed instructions see User Manual.

SKC Inc.
863 Valley View Road
Eighty Four, PA 15330 USA

Form #37740 Rev 0611

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Indicates a warning or caution.

***For AirChek 2000 operating instructions in Spanish and French,
visit www.skinc.com.***

Notice: This operating instruction may not address all safety concerns (if any) associated with this product and its use. The user is responsible for determining and following the appropriate safety and health practices and regulatory limitations (if any) before using the product. The information contained in this document should not be construed as legal advice, opinion, or as a final authority on legal or regulatory procedures.

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

Options for Flow Rate

To enter flow options, pump must be in Hold. Press [▲▼] to Run pump and press *▲▼* all 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 EN displays. Press [▲▼] to save new setting.

Options for Programming/Display

To enter programming/display options, pump must be in Run. Press [▲▼] to Hold pump and press *▲▼* all within 10 seconds.

• Clear accumulated data:

Press * until CLR displays and then press [▲▼]. Press * until EN displays and then press [▲▼].

• Change temperature scale (F/C):

Press * until temperature displays. Press ▲ or ▼ to switch units. Press * until EN 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 EN 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 EN 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 EN displays and then press [▲▼] to save new setting.

• Change sampling time:

Press * until 5:00 displays. Press ▲ or ▼ to change flashing digits. Press * until EN displays and then press [▲▼] to save new setting.

Description

Your new SKC AirChek® 2000 Pump is an advanced programmable sample pump that combines lightweight compact design, computer-compatible circuitry, and an internal flow sensor. The result of extensive research and development, the AirChek 2000 Pump exemplifies SKC's commitment to quality and innovation in air sampling equipment.



AirChek 2000 Air Sampling Pump

Performance Profile

Flow Range: 1000 to 3250 ml/min
(5 to 500 ml/min requires optional low flow adapter kit)

Compensation Range: 3000 ml/min at 15 inches water back pressure
2500 ml/min at 20 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
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 @ 25 C
Atmospheric Pressure: \pm 0.3 inches Hg
Flow Rate: \pm 3% of set-point after calibration to desired flow

Battery Charge Level Indicator: Icon displays at full, mid, and low charge

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



Protect sample pump from weather when in use outdoors.

Altitude: Do not use pump beyond 7500 ft.

Run Time: With battery pack, run time is 10 hours for 2000 ml/min and up to 30 inches back pressure. Dependent on sample media used. See Table 1.

Timer Display Range: 1 to 9999 minutes (6.8 days). If the run time exceeds 6.8 days, the timer display rolls over to 1. Times greater than 9999 minutes are only displayed on a PC using DataTrac 2000 Software.

Time Display: Time-of-day in hours and minutes (12- or 24-hour clock) with AM and PM indicators.

Flow Fault: If flow drops by more than 5%, pump stops and holds historical data. After 5 minutes in fault, auto-restart is attempted every 5 minutes up to 10 times.

Performance Profile

Battery Pack:	Removable battery pack with rechargeable NiCad battery, 4.8 V, 2.0 Ah capacity.
Size:	5.6 x 3 x 2.3 (14.2 x 7.6 x 5.8 cm)
Weight:	22 oz (624 gm)
RFI/EMI Shielding:	RFI/EMI-shielded case, CE approved (Models 210-2002 and 210-2002Ex)
Intrinsic Safety:	UL and cUL Listed (Model 210-2002); CENELEC approved IS to EEx ia IIB T4 (Model 210-2002Ex)



Use only SKC-approved parts to ensure reliable performance and intrinsic safety and to maintain the SKC warranty.

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.*

Setup

Turning the Pump On/Off

- Press * firmly to turn the power on.
- Press [▲▼] to run the pump or to place a running pump in HOLD mode.
- Auto OFF turns the pump off after five minutes in HOLD mode.



Keypad Basics

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

- * Scrolls through run time data and Setup options.
- ▲ Increases values such as flow rate.
- ▼ Decreases values such as flow rate.
- [▲▼] When pressed simultaneously, displayed item is selected or entered.
- *▲▼* Security code that must be pressed in sequence after mode change all within 10 seconds 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.

Entering and Navigating the User Interface

The AirChek 2000 User Interface features two levels.

Level One allows the user to change flow rate, adjust flow rate to a primary standard, or calibrate the pump using the CalChek feature.

Level Two permits the user to change display options, i.e. temperature (F or C), atmospheric pressure (ins, m, or mm), set a sampling time, set 12- or 24-hour clock or delayed start, set real time clock, or clear accumulated run time data.

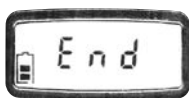
Entering:

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

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

Exiting: Press * until **EN** 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 [**▲▼**].

Resetting Run Time Data



1. With the pump running, press [**▲▼**] to place the pump in HOLD mode and enter ***▲▼*** all within 10 seconds. *You are in Level Two of the User Interface.*
2. Repeatedly press * until **CLR** appears on the display.
3. Press [**▲▼**] and then press * until **EN** appears.
4. Press [**▲▼**]. The accumulated data is cleared and the pump is now in HOLD mode.

Note CLR does not clear previously set sampling time (5⁺). See *Deleting a Sampling Time* on p. 7.

Scrolling Through Run Time Data

Repeatedly press * to view flow rate, sample volume, temperature, time-of-day, atmospheric pressure, and run time.

Checking Battery Condition

See page 12.

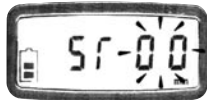
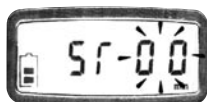
Setting Pump Flow Rate

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

Setup

Setting Sampling Time (5 ⏏)

Program the AirChek 2000 from the keypad or a PC to run STEL, TWA, or any other run time from 1 to 999 minutes. To program a sampling time using the pump keypad:



1. With the pump running, press [▲▼] to place the pump in HOLD mode and enter *▲▼* all within 10 seconds. *You are in Level Two of the User Interface.*
2. Repeatedly press * until 5 ⏏ and a flashing □□ appear on the display.
3. Set the sampling time by pressing ▲ to increase it or ▼ to decrease it to the desired time in minutes.
4. Press * repeatedly until EN⏏ appears.
5. Press [▲▼] to save the sampling 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 in minutes, the pump will go into HOLD mode, and the total sampling time will display when sampling is complete.
7. To delete a set sampling time, enter Level Two of the User Interface, scroll to 5 ⏏, and press ▼ until time appears as □□. Exit the User Interface by scrolling to EN⏏ and pressing [▲▼].

Note A time still appears on the display after canceling a sample time. This is total run time since the data was last cleared.

Note If a sampling time (5 ⏏) has been programmed into the pump, a DataTrac® 2000 program cannot be entered without deleting a sampling time first (see page 7). Likewise, if a DataTrac 2000 program resides in pump memory, the sampling time (5 ⏏) function cannot be selected until the DataTrac program is deleted (see User Manual).

Deleting a Sampling Time (S_T)

To delete the S_T period, enter Level Two of the User Interface and press the * button to scroll to S_T. Press ▼ until □□ displays. Press the * button until EN displays. Press [▲▼].

Setting a Delayed Start

The Delayed Start feature is available in AirChek 2000 pumps version 2.59 or higher. *See User Manual for instructions.*

Changing the Data Display

The data display has been factory-set for Celsius (temperature units), millimeters of mercury (pressure units), and 12-hr (clock). These units can be changed. *See User Manual for instructions.*

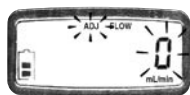
Calibration

Verifying Flow Rate Using a Primary Standard Calibrator

1. Connect the pump inlet to a calibrator with representative sample medium in-line.



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



2. With the pump in HOLD mode, press [▲▼] to run the pump and enter *▲▼* all within 10 seconds. **You are in Level One of the User Interface.** The flow rate and SET icon will display and flash.
3. Set the flow on the pump by pressing ▲ to increase it, or ▼ to decrease it to the desired flow rate.
4. Press *. A flashing [] and [] appear.
5. If the calibrator reads a higher flow rate than the pump was set for, press ▼ until they are in agreement (within 10 ml). If the calibrator reads a lower flow rate, press ▲ until they agree (within 10 ml). When pressing ▲ or ▼, the pump display will indicate the adjustment (or correction) made in ml/min.
6. Press * until [EN] appears.
7. Press [▲▼]. Reset run time data (see p. 5).

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 User Manual.

Calibrating the AirChek 2000 Pump Using the CalChek Automatic Calibration Feature

The CalChek automatic calibration feature is available when calibrating an AirChek 2000 pump (version 2.59 or higher) with DC-Lite Calibrator model 717-01 (10 ml/min to 12 L/min). A CalChek Communicator adapter is required for communication between the pump and the calibrator. Optional DataTrac 2000 Software (version 3.59 or higher) can be used to expand the documentation capabilities of this system. The CalChek feature provides two calibration options: single point calibration allows you to set and verify a flow rate at a single point before and after sampling; full (multiple point) calibration calibrates the flow to a primary standard at multiple flow rates. Both bring the flow to within 5%. *See User Manual for instructions.*

Note

If using a pump version below 2.59, a pump upgrade is required to use the CalChek feature.



For low flow calibration and sampling instructions, see the User Manual.

Sampling (1000 to 3250 ml/min)

1. Following calibration, replace representative sampling medium with a new unexposed medium.



Protect sample pump from weather when in use outdoors.

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 HOLD the pump. 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.



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 the pump warranty.

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 the User Manual.



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



For low flow sampling (5 to 500 ml/min), see the User Manual.

Flow Fault →→

If flow drops by more than 5%, the pump goes into HOLD mode and retains historical data. The flow fault icon flashes during flow fault. The pump will restart in five minutes and try to continue sampling. If the flow remains restricted, the pump returns to flow fault. Auto-restart is attempted every five minutes up to 10 times. Flow fault time is not added to the displayed run time or cumulative volume display.

Programming



See User Manual for programming the pump using a PC.

Battery Operation

Battery Condition



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 mode (pump will go into HOLD mode).

Note

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.



Using a non-approved charger voids the SKC warranty. For more information on Battery Care and Maintenance, see the AirChek 2000 User Manual.

Charging the Battery Pack

To charge the battery, plug the charger into a standard wall outlet. Insert the charging plug from the charger into the battery charging jack on the back of the pump. The fast charging function of the battery pack will recharge the battery in approximately 6 hours or less. For optimum performance, use a charger that does not promote memory effect (*see Accessories on p. 16*). Follow charger instructions.



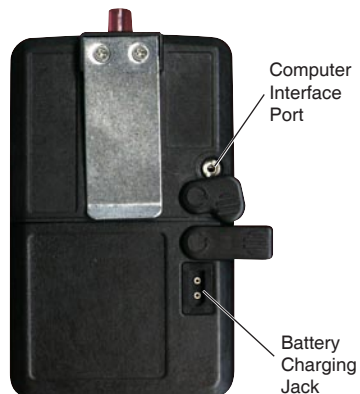
Using a non-approved charger voids the SKC warranty.

Tampering with the battery pack voids the SKC warranty, the UL Intrinsic Safety listing (model 210-2002), and the CENELEC approval for model 210-2002EX.



Do not charge in hazardous environments.

Ensure that the computer interface port is covered before and during charging.



Battery Operation

Replacing the Battery Pack

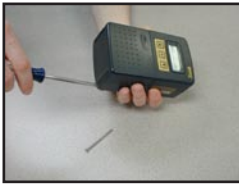


To enhance battery life, SKC ships battery packs uncharged and separate from the pump. Once installed, completely charge battery pack before operating pump.

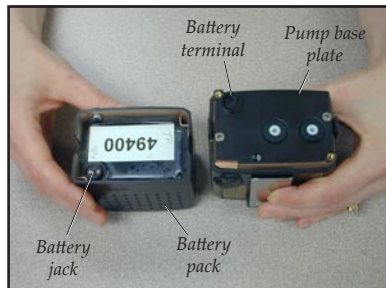


Battery Replacement Notes:

- 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.
 - The first 8 program steps will be retained in memory. Programs should be reloaded using DataTrac® 2000 Software 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 the SKC warranty and the UL Intrinsic Safety Listing.



Do not charge or operate the pump with charger in hazardous atmospheres!



Use only an SKC-approved charger and battery pack designed for the AirChek 2000 Sample Pump to ensure reliable performance and intrinsic safety and to maintain the SKC warranty.

NiCad Battery Notes and Recommended Maintenance

- *NiCad batteries self-discharge at an average rate of 18 to 20% per month at room temperature. The rate of self-discharge increases with temperature. Ultimately, self-discharge results in an increased need for charging.*

Recommended Maintenance:

- Cycle battery use on a monthly basis (quarterly for pumps not used on a regular basis).
 - “Exercise” your battery pack! Use an SKC battery conditioning system (MasterCharger® or PowerFlex®) that automatically exercises batteries. Perform this procedure before storage and monthly (quarterly for pumps not used on a regular basis).
 - Store and charge batteries in the recommended temperature range.
 - Discharge and recharge battery packs fully before use and storage.
- *Stated battery capacity will not be reached “right out of the box,” but only after the battery is exercised. Often new NiCad battery packs require 5 to 7 cycles to reach the stated capacity.*

Recommended Maintenance:

“Exercise” your battery! Use an SKC battery conditioning system (MasterCharger or PowerFlex) that automatically exercises batteries. Perform this procedure before storage and monthly (quarterly for pumps not used on a regular basis).

- *Battery packs are typically shipped less than fully charged to meet testing and shipping requirements.*

Recommended Maintenance:

Discharge and recharge battery packs fully before use and storage.

- *A NiCad battery should not sit on a charger for long periods of time.*

Recommended Maintenance:

Remove battery pack from its charger within 24 to 48 hours after charging is complete.

For further information on Maintaining NiCad Battery Packs, request SKC Publication 1363 (available for download at www.skcinc.com).

Technical Note: Battery Pack Life

- Battery manufacturers typically indicate expected battery life as the number of usable cycles within an approximate number of years (e.g., 300 charge/discharge cycles or 3 years).
- The number of usable cycles/years of useful life for a battery pack is determined by the number of cycles/amount of time it takes for the battery to decline to 80% of its initial capacity when used under ideal conditions. The battery should be replaced at this point.
- Battery life ratings are nominal ($\pm 5\%$) and are generally based on ideal conditions of use such as those in which they are tested (*for testing criteria, see IEC 61436 and IEC 61951 test methods at www.iec.ch*).
- Individual conditions of use, charging procedures, and applications (high versus low current drain, intermittent versus steady current drain) may affect battery life.
- While nickel-metal hydride (NiMH) batteries provide longer run times than NiCad batteries on a single charge, the user can expect less cycles life from an NiMH battery when compared to NiCad cycles life.

Continuous Operation Using Battery Eliminator

Continuous pump operation is possible in non-hazardous environments using the pump with a battery eliminator plugged into a wall outlet. *See Accessories on p. 16. See the AirChek 2000 User Manual or contact SKC Technical Support at 724-941-9701 for details.*

Service

Service Policy

To return products to SKC for servicing:

1. Call 800-752-8472 (724-941-9701 for international customers) to obtain a Return Materials Authorization (RMA) number and Product Decontamination Form.
2. Carefully package the product. Mark the RMA number on any correspondence relating to the return and on the outside of the package.
3. Ship to SKC, freight prepaid, to the following address:

SKC Inc.
National Service Center
863 Valley View Road
Eighty Four, PA 15330

Package product carefully to prevent damage during transit. Include a contact name, phone number, shipping address, RMA number, and a brief description of the problem. For nonwarranty repairs, a purchase order number and billing address are also required. The Service Department will contact nonwarranty customers with an estimate before proceeding with repairs.

Note SKC Inc. will accept for repair any SKC product that is not contaminated with hazardous materials. Products determined to be contaminated will be returned unserviced.



Intrinsic safety and other approvals are void if SKC pumps are not repaired by SKC or authorized SKC repair centers. Use only SKC-approved parts to ensure reliable performance and intrinsic safety and to maintain the SKC warranty.

Accessories

Description	Cat. No.
CalChek Communicator Adapter	210-501
DC-Lite Calibrator , 10 ml/min to 12 L/min flow range, includes charger and tubing	717-01
Chargers	
PowerFlex Charging System for SKC Personal Pumps	
5-station, 100 - 240 V	223-1000
Single, 120 V	223-2000
Single, 100 - 240 V	223-2000B
Battery Eliminator, for continuous run using AC-line operation	223-320
Protective Pouches	
Black	224-88
Red, for high visibility	224-96A
Black, sound reducing	224-96C
DataTrac 2000 Software Package	
Includes software, adapter, and cable	877-91
Low Flow Adapter Kit (5-500 ml/min)	
Includes Constant Pressure Controller (CPC), Adjustable Low Flow Tube Holder, and Type A Protective Cover	210-500
Constant Pressure Controller (CPC) for sampling in the 5-500 ml/min flow range. <i>Use with Adjustable Low Flow Holder (below).</i>	224-26-CPC
Adjustable Low Flow Tube Holders for Constant Pressure (Low Flow 5 to 500 ml/min) Applications (requires separate tube cover listed below)	
Single	224-26-01
Dual	224-26-02
Tri	224-26-03
Quad	224-26-04
Sample Tube Protective Covers (for adjustable flow tube holders listed above)	
Type A (tubes 6-mm OD x 70-mm L)	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 T (tandem for color detector tubes up to 115-mm long and a trap tube)	224-29T

Accessories

Description	Cat. No.
Replacement Parts	
Battery Pack	P20136
Battery Pack (CE approved; for model 210-2002Ex)	P21113
Belt Clip	P20139
Case	P20137
Case with interface for PC board in place	P20137A
Charging Jack	P20145
Cover, Battery Pack	P20144
Filter (inlet)/O-ring (3)	P20140
Filter Housing	P20142
Filters, inlet (50)	P40011
Gasket Set	P21273
Keypad	P79361
Stack	P20138
PC Board	P79519
PC Board Interface	P79543
Cover, Port	P20179
Keypad	P79361
Screw/Gasket Kit	P21002
Valve Assembly, Bottom	P21272
Valve Assembly, Top	P21322
Long-duration Detector Tube Accessories:	
Trap Tubes	222-3D-2
Tandem Protective Tube Cover	224-29T

UNDERWRITERS LABORATORIES INC.®



CERTIFICATE OF COMPLIANCE

- (1)
- (2) UL Certificate Number **99.44269-1**
- (3) This certificate is issued for: **Air Sampling Equipment**
Type/Model: **Airchek 2000, Model 210-2002**
- (4) Issued to: **SKC Inc.**
863 Valleyview Rd.
Eighty Four, PA 15330
- (5) Report Reference: **E62011, Issued 01 April 1999**
- (6) This product has been investigated by Underwriters Laboratories Inc.® in accordance with the following Standard(s) for Safety indicated on this Certificate:
UL 913
CSA C22.2 No. 157-92
- (7) The product marking shall include the following information:
Class I, Division 1, Groups A, B, C and D
Class II, Division 1, Groups F and G
Class III
When used with SKC battery pack, Part No. P20136
- (8) Only those products bearing the UL Listing Mark for the US and Canada should be considered as being covered by UL's Listing and Follow-Up Service meeting the appropriate requirements for the US and Canada.

The UL Listing Mark for the US and Canada generally includes: the UL in a circle symbol with "C" and "US" identifiers; with the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

LOOK FOR THE UL LISTING MARK ON THE PRODUCT

Signed:

Issued: 06 December 1999

Paul T. Kelly
Associate Managing Engineer

This certificate may only be reproduced in its entirety and without alterations.

Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096 (USA)
Phone: +1-847-272-8800, x42326 Fax: +1-847-272-9475 E-mail: hazloc@ul.com Website: <http://www.ul.com/hazloc/>

SKC INC. LIMITED ONE YEAR WARRANTY

1. SKC warrants that its instruments provided for industrial hygiene, environmental, gas analysis, and safety and health applications are free from defects in workmanship and materials under normal and proper use in accordance with operating instructions provided with said instruments. The term of this warranty begins on the date the instrument is delivered to the buyer and continues for a period of one (1) year.

This warranty does not cover claims due to abuse, misuse, neglect, alteration, accident, or use in application for which the instrument was neither designed nor approved by SKC Inc. This warranty does not cover the buyer's failure to provide for normal maintenance, or improper selection or misapplication. This warranty shall further be void if changes or adjustments to the instrument are made by other than an employee of the seller, or if the operating instructions furnished at the time of installation are not complied with.

2. SKC Inc. hereby disclaims all warranties either expressed or implied, including any implied warranties of merchantability or fitness for a particular purpose, and neither assumes nor authorizes any other person to assume for it any liability in connection with the sale of these instruments. No description of the goods being sold has been made a part of the basis of the bargain or has created or amounted to an express warranty that the goods will conform to any such description. Buyer shall not be entitled to recover from SKC Inc. any consequential damages, damages to property, damages for loss of use, loss of time, loss of profits, loss of income, or other incidental damages. Nor shall buyer be entitled to recover from SKC Inc. any consequential damages resulting from defect of the instrument including, but not limited to, any recovery under section 402A of the Restatement, Second of Torts.

3. This warranty extends only to the original purchaser of the warranted instrument during the term of the warranty. The buyer may be required to present proof of purchase in the form of a paid receipt for the instrument.

4. This warranty covers the instrument purchased and each of its component parts.

5. In the event of a defect, malfunction, or other failure of the instrument not caused by any misuse or damage to the instrument while in possession of the buyer, SKC Inc. will remedy the failure or defect without charge to the buyer. The remedy will consist of service or replacement of the instrument. SKC Inc. may elect refund of the purchase price if unable to provide replacement and repair is not commercially practicable.

6. (a) To obtain performance of any obligation under this warranty, the buyer shall return the instrument, freight prepaid, to SKC Inc., at the following address:

SKC Inc., National Service Center
863 Valley View Road
Eighty Four, PA 15330 USA

(b) To obtain return authorization information or for further information on the warranty performance you may telephone 724-941-9701 at the above address. See Service Policy section in operating manual (if applicable).

7. This warranty shall be construed under the laws of the Commonwealth of Pennsylvania which shall be deemed to be the situs of the contract for purchase of SKC Inc. instruments.

8. No other warranty is given by SKC Inc. in conjunction with this sale.