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⚠️ Indicates a warning or caution

🔍 Indicates a premier feature of the pump

For Universal Sample Pump Operating Instructions
in Spanish, German, and French Canadian, visit www.skcinc.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.
Description

The 44XR Universal Sample Pump is a constant flow air sampler suitable for a broad range of applications. It is ideal for industrial hygiene studies as well as environmental testing.

- **Durable RFI-shielded Case**
  provides protection from radio frequency interference between 27 and 1000 MHz.

- **Rechargeable NiCad Battery**
  provides continuous 8-hour operation on a single charge.

- **Low Flow Regulator Screw**
  (beneath cap screw) allows pump to be switched from high to low flow.

- **Tamper-resistant Cover**
  prevents changes to settings.

- **Recessed Flow Adjustment**
  adjusts flow rate between 1000 and 5000 ml/min.

- **Built-in Particulate Trap**
  in see-through housing protects pump.

- **Built-in Rotameter**
  provides a visible check of relative flow rate during sampling from 0.5 to 5 L/min.

- **Accessory Mounting Screws**
  allow sampling accessories such as impinger holders to be secured to pump.

44XR Universal Sample Pump
Performance Profile

Flow Range: 1000 to 5000 ml/min (UL Listed)
(5 to 500 ml/min requires adjustable low flow holder)

Weight: 34 oz (964 gm)

Dimensions: 5.1 x 4.7 x 1.9 in
(13 x 11.9 x 4.8 cm)

Compensation Range: 1000 to 2500 ml/min at 40 inches water back pressure
3000 ml/min at 35 inches water back pressure
4000 ml/min at 20 inches water back pressure
5000 ml/min at 10 inches water back pressure

Typical Back Pressure of Sampling Media (inches water)

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

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

Flow Control: Holds constant flow to ± 5% of the set point

Run Time: Battery: 8 hrs minimum at 4000 ml/min and 20 inches water back pressure; dependent on media used
See Table 1.

Battery Eliminator: Indefinite

Flow Indicator: Built-in rotameter with 250-ml division; scale marked at 1, 2, 3, 4, and 5 L/min

Power Supply: 6.0-V plug-in NiCad battery pack, rechargeable, 2.0-Ah capacity

Charging Time: 6 to 8.5 hrs with PowerFlex charger

(varies with capacity and level of charge)

Intrinsic Safety: UL Listed for: Class I, Division 1 and 2, Groups A, B, C, D; Class II, Division 1 and 2, Groups E, F, G; and Class III, Temperature Code T3C

ATEX-approved models available. Contact SKC. MSHA-approved models available. Contact SKC.

Operating Temperature: 32 to 113 F (0 to 45 C)

Storage Temperature: -40 to 113 F (-40 to 45 C)

Charging Temperature: 41 to 113 F (5 to 45 C)

Operating Humidity: 0 to 95% Relative

Protect sample pump from weather when in use outdoors.

Multiple-tube Sampling: Built-in constant pressure regulator allows user to take up to four simultaneous tube samples at different flow rates up to 500 ml/min each using optional adjustable low flow holder.
Table 1. Pump 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.

<table>
<thead>
<tr>
<th>Flow Rate (L/min)</th>
<th>Filter Diameter</th>
<th>Filter Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>37 mm</td>
<td>25 mm</td>
</tr>
<tr>
<td>Mixed Cellulose (MCE) filter, 0.8-μm pore size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.0</td>
<td>24.1</td>
<td>16.3</td>
</tr>
<tr>
<td>2.5</td>
<td>21.4</td>
<td>14.5</td>
</tr>
<tr>
<td>3.0</td>
<td>19.1</td>
<td>11.0</td>
</tr>
<tr>
<td>3.5</td>
<td>17.8</td>
<td>10.7</td>
</tr>
<tr>
<td>4.0</td>
<td>15.4 **</td>
<td></td>
</tr>
<tr>
<td>4.5</td>
<td>14.6 **</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Flow Rate (L/min)</th>
<th>Filter Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>37 mm</td>
</tr>
<tr>
<td>2.0</td>
<td>31.6</td>
</tr>
<tr>
<td>2.5</td>
<td>27.7</td>
</tr>
<tr>
<td>3.0</td>
<td>27.0</td>
</tr>
<tr>
<td>3.5</td>
<td>22.8</td>
</tr>
<tr>
<td>4.0</td>
<td>19.4</td>
</tr>
<tr>
<td>4.5</td>
<td>19.0</td>
</tr>
</tbody>
</table>

** 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.

RFI/EMI Shielding: Complies with requirements of EN 55022, FCC Part 15 Class B, EN 50082-1; frequency range of the radiated susceptibility test was 27 to 1000 MHz.

- CE marked
- UL Listed
  See UL Certificate on page 23.
- ATEX-approved models available
- MSHA-approved models available
Operation
High Flow Applications (1000 to 5000 ml/min)

Setup
Ensure pump is not running. Charge the battery by connecting the charger plug to the sampler charging jack (Figure 1, #15). Ensure that the battery is fully charged before sampling.

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.

Do not charge or operate pump from charger in hazardous locations.

Use only an SKC-approved charger designated for this model to ensure reliable performance. Failure to do so voids any warranty.

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.

Failure to follow warnings and cautions voids any warranty.
Deactivating the Regulator

To ensure the pump is set for high flow, remove the cap screw (Figure 1, #11) covering the regulator valve and turn the exposed screw clockwise until it stops. (Do not overtighten.)

Replace the cap screw. The pump is now set for high flow.

Setting or Verifying Flow Rate

Ensure pump has run for 5 minutes before proceeding with calibration.

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

Using 1/4-inch Tygon® tubing, connect the sampling medium to the pump intake (Figure 1, #6).

Connect a calibrator to the intake of the sampling media.

Remove the tamper-resistant cover. Start the pump using the on/off switch (Figure 1, #1), and set the flow rate using the flow adjustment screw (Figure 1, #4).

When the flow rate is set, turn off the pump and disconnect the calibrator.

Replace the sampling media used for calibration with unexposed media for sample collection.
Sampling

For personal sampling, clip the sample collection media to the worker in the breathing zone.

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

⚠️ Protect sample pump from weather when in use outdoors.

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

Start the sampling period by turning on the pump using the on/off switch (Figure 1, #1), and record the start time.

At the end of the sampling period, turn off the pump and record the stop time.

Sampling with Impingers

When using impingers, place an inline trap between the pump and the impinger to protect the sampler from liquid or vapors. The impinger and trap can be mounted to the sampler using the accessory mounting screws (Figure 1, #5) or placed in a holster at the worker’s waist.

⚠️ Failure to use the impinger trap voids any warranty.

⚠️ Protect sample pump from weather when in use outdoors.

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

Ensure pump is **not** running. Charge the battery by connecting the charger plug to the sampler charging jack (Figure 1, #15). Ensure that the battery is fully charged before sampling.

**1** 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.

**2** Do not charge or operate pump from charger in hazardous locations.

**3** Use only an SKC-approved charger designated for this model to ensure reliable performance. Failure to do so voids any warranty.

**4** 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.

**5** Short-circuiting the battery pack will render it immediately inoperative.

**6** Failure to follow warnings and cautions voids any warranty.

---

Figure 1

Front, back, and top views of 44XR Sampler

*For additional drawings, see pages 17-19.*

---

Low Flow Applications (5 to 500 ml/min)

Using Single Adjustable Low Flow Holder

---

1 On/Off switch

4 Flow adjustment screw

5 Accessory mounting screws (2)

6 Intake filter housing

11 Cap screw to regulator

13 Battery pack screws (2)

15 Charging jack

---

Charger and battery pack connected
Activating the Regulator

Remove the tamper-resistant cover. Start the pump using the on/off switch (Figure 1, #1), and adjust the flow rate using the flow adjustment screw (Figure 1, #4) until the built-in rotameter reads approximately 1.5 L/min.

Remove the cap screw covering the regulator valve (Figure 1, #11) and turn the exposed screw four to five turns counterclockwise.

Replace the cap screw. The pump is now set for low flow.

Setting or Verifying Flow Rate

Ensure pump has run for 5 minutes before proceeding with calibration.

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

Connect a single adjustable low flow holder (Figure 2) to the pump intake (Figure 1, #6) using 1/4-inch Tygon tubing.

Insert an opened sorbent tube (Figure 2, #3) into the rubber sleeve (Figure 2, #2) of the low flow holder with the arrow on the tube pointing toward the holder.

Connect a calibrator to the exposed end of the sorbent tube.

continued on page 9
Loosen the brass flow adjust screw (Figure 2, #1) on the low flow holder. Activate the pump by using the on/off switch (Figure 1, #1). Adjust the flow rate by turning the flow adjust screw (Figure 2, #1) on the holder until the calibrator indicates the desired flow.

⚠️ Do not adjust the flow on the pump. Adjust the flow only by using the flow adjust screw on the low flow holder.

Turn off the pump and disconnect the calibrator.

Replace the sorbent tube used for setting the flow with a new unexposed sorbent tube for sample collection.

Place the appropriate size tube cover over the tube, and screw it into place on the low flow holder.
Sampling

For personal sampling, clip the low flow holder to the worker in the breathing zone.

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

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

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

Start the sampling period by turning on the pump using the on/off switch (Figure 1, #1), and record the start time.

At the end of the sampling period, turn off the pump and record the stop time.

To return to high flow, remove the low flow holder and deactivate the regulator. *See page 5.*

Clip holder to worker and pump to belt.
Low Flow Applications (5 to 500 ml/min)
Using Multiple-tube Adjustable Low Flow Holder

Setup
For a diagram of the pump, see Figure 1, page 4.

Ensure pump is **not** running. Charge the battery by connecting the charger plug to the sampler charging jack (Figure 1, #15). Ensure that the battery is fully charged before sampling.

![Diagram of pump with labels](image)

1. Anti-tamper cover
2. Flow adjust screws
3. Rubber sleeve
4. Sorbent sample tube
5. Protective cover

**Figure 3**
Quad Adjustable Low Flow Holder

- 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.

- **Do not charge or operate pump from charger in hazardous locations.**

- **Use only an SKC-approved charger designated for this model to ensure reliable performance. Failure to do so voids any warranty.**

- **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.**

- **Failure to follow warnings and cautions voids any warranty.**
Setting or Verifying Flow Rate

**Note:** When performing multiple-tube sampling using an adjustable low flow holder (dual, tri, or quad), ensure the regulator has been activated and the pump flow rate is set at 1.5 L/min. The maximum flow rate through any one tube is 500 ml/min*. Calculate the sum of all tube flow rates. If the sum is ≤ 1000 ml/min, proceed with calibration and sampling without any further adjustment to pump flow rate. If the sum is > 1000 ml/min, set the pump flow rate 15% higher than the sum of tube flow rates.

* Back pressure across some sample tubes can be higher than average. In these instances, the maximum flow rate of 500 ml/min per tube may not be achieved.

Ensure pump has run for 5 minutes before proceeding with calibration.

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

Ensure the pump is set for low flow (see Activating the Regulator, page 8).

Connect the adjustable low flow holder (Figure 3, page 11) to the pump intake (Figure 1, #6 on page 7) using 1/4-inch Tygon tubing.

Insert an opened sorbent tube into each rubber sleeve of the low flow holder (Figure 3, #3 and 4) with the arrow on the tube pointing toward the holder.

If sampling with fewer tubes than number of ports, insert unopened sorbent tubes in the empty ports to seal them.

Note the flow rates specified by each sampling method and add them together. If the sum is ≤ 1000 ml/min, proceed to the next step. If the sum is > 1000 ml/min, multiply the total tube flow rate by 1.15 and set the pump for that flow rate.

Connect the exposed end of a sorbent tube to an external calibrator. Remove the tamper-resistant cover from the face of the pump. Start the pump using the on/off switch (Figure 1, #1). Turn the brass flow adjust screw (Figure 3, #2) for the appropriate port of the low flow holder until the desired flow rate is achieved. Turn clockwise to decrease the flow.

*continued on page 13*
Do not adjust the flow on the pump. Adjust the flow only by using the flow adjust screw on the low flow holder.

Do not exceed 500 ml/min flow rate per tube.

Remove the calibrator from the tube and connect to the exposed end of the next sorbent tube. Repeat the flow adjustment process until all tubes are flow calibrated. Changing the flow on one tube will not affect the flow rate through the remaining tubes.

For tri and quad models, first rotate each anti-tamper cover (Figures 3 and 4) to expose the flow adjust screws, then adjust the appropriate screw until the calibrator indicates the desired flow.

When the flow rate is set for each tube, turn off the pump and disconnect the calibrator.

Replace the sampling media used for calibration with unexposed media for sample collection. Use protective tube covers to prevent tube breakage.

If sampling with fewer tubes than number of ports, insert unopened sorbent tubes in the empty ports to seal them.

Sampling

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

Protect sample pump from weather when in use outdoors.

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

For personal sampling, clip the low flow holder to the worker in the breathing zone.

Start the sampling period by turning on the pump using the on/off switch (Figure 1, #1), and record the start time.

At the end of the sampling period, turn off the pump and record the stop time.
Maintenance

Pump Inlet Filter
The 44XR Sampler is fitted with a filter/trap inside a clear plastic intake port housing. This prevents particles from being drawn into the pump mechanism. The filter should be visually checked to assure that it does not become clogged. If maintenance is necessary, follow this procedure:

1. Clean dust and debris from around the filter housing.
2. Remove the four screws and the front filter housing.
3. Remove and discard the filter membrane.
4. Remove O-ring.
5. Clean the filter housing.
6. Insert O-ring* and a new filter membrane.  
   (See Replacement Parts on pages 18-19)
7. Reattach the front filter housing and cross-tighten the four screws.

* Replace with new O-ring only as needed.

Battery Pack Care
For proper maintenance of battery packs, SKC offers chargers (see Optional Accessories on page 20) that condition the battery for optimum performance in 6 to 8.5 hours. Ensure pump is not running during charging. Follow charger instructions.

Fully charge packs before use. For more information on SKC pump batteries, visit http://www.skcinc.com/instructions/1756.pdf.

To comply with intrinsic safety regulations, battery packs should not be charged in hazardous locations.

Using a non-approved charger voids any warranty.

Use of a repaired or rebuilt battery pack voids any warranty and the UL Listing for intrinsic safety.

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.

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.
Replacing the Battery Pack

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

1. Remove the two screws that secure the battery pack and loosen the two case screws above and below the belt clip.
2. Carefully slide battery pack out from under the belt clip. Ensure that the battery is kept level.
3. Slip the front edge of the new battery pack under the belt clip and position battery pack to engage the grooves in the case.
4. Slide the battery pack toward the pump until it is flush with the pump case on all sides.
5. Reinstall battery screws and tighten the case screws.

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 with charger in hazardous locations!

Use only an SKC-approved charger and battery pack designed for the Universal Sample Pump to ensure reliable performance. Failure to do so voids any warranty and 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.

For more information on SKC pump batteries, visit http://www.skcinc.com/instructions/1756.pdf.

Pump Service

Pumps under warranty should be sent to SKC Inc. for servicing (see Service Policy on page 21).
Parts Descriptions

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

See page 17 for drawing.

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>On/Off switch</td>
</tr>
<tr>
<td>2</td>
<td><strong>Tamper-resistant cover</strong> protects controls from accidental contact or tampering.</td>
</tr>
<tr>
<td>3</td>
<td><strong>Cover screw</strong> fastens tamper-resistant cover.</td>
</tr>
<tr>
<td>4</td>
<td><strong>Flow adjustment control</strong></td>
</tr>
<tr>
<td>5</td>
<td><strong>Accessory mounting screws (2)</strong> secure accessories such as impinger and trap holders.</td>
</tr>
<tr>
<td>6</td>
<td><strong>Intake (pump housing)</strong>, air intake port and trap</td>
</tr>
<tr>
<td>7</td>
<td><strong>Filter housing screws (4)</strong> secure filter housing.</td>
</tr>
<tr>
<td>8</td>
<td><strong>Filter O-ring</strong> - leak seal for filter in housing</td>
</tr>
<tr>
<td>9</td>
<td><strong>Filter (crimped fiber polyester)</strong> prevents particles from entering pump.</td>
</tr>
<tr>
<td>10</td>
<td><strong>Built-in rotameter</strong> monitors flow changes.</td>
</tr>
<tr>
<td>11</td>
<td><strong>Cap screw</strong> accesses regulator.</td>
</tr>
<tr>
<td>13</td>
<td><strong>Battery pack screws (2)</strong> secures pack to pump.</td>
</tr>
<tr>
<td>14</td>
<td><strong>Battery pack assembly</strong> provides power to pump.</td>
</tr>
<tr>
<td>15</td>
<td><strong>Charging jack</strong>, connector for battery charger</td>
</tr>
<tr>
<td>16</td>
<td><strong>Belt clip</strong> secures pump to worker’s belt.</td>
</tr>
<tr>
<td>A</td>
<td><strong>Compensation Pot A</strong> adjusts pump compensation, which is factory set. Access screw guards against accidental contact or tampering.</td>
</tr>
<tr>
<td>B</td>
<td><strong>Compensation Pot B</strong> adjusts pump compensation, which is factory set. Access screw guards against accidental contact or tampering.</td>
</tr>
</tbody>
</table>
224-44XR Sample Pump

See page 16 for parts listing.
Replacement Parts

*See drawings on page 19.*

**Pump Case Parts**
- P21411  Case Parts (excluding Battery Case)
- P21661  Battery Pack Assembly
- P22417BC  Belt Clip with screws
- P22433Q  Control Board
- P22433R  Cap Screws (set of 2)
- P22433RS1  Replacement Stack - does not include flowmeter and filter housing assemblies or motor
- P2243001  Battery Connector (pk/10)

**Pump Stack Parts**
- P22417D  Filter Housing Assembly
- P22417F  Valve Plate Assembly
- P22417G  Pump Body
- P22417H  Diaphragm/Yoke Assembly
- P22417J  Regulator Assembly
- P22417K  Pulsation Dampener Assembly (2)
- P22417W  Bottom Plate Assembly
- P22433L  Flowmeter Assembly

**Parts not indicated in illustration**
- P21251  Half Stack (Includes pump body, valve plates, diaphragm/yoke, gaskets, and O-rings)
- P2243201  Charging Jack (pk/5)
- P22433C  Tamper-resistant Cover
- P22433ES  External Screws

**Replacement Filters**
- P22409  Replacement Filter Kit (3 filters/3 O-rings)
- P2240901  Filters only (pk/10)
- P2240902  Filter/O-ring (100 filters/10 O-rings)
Pump Case Parts

Pump Stack (Part #P22433RS1) Exploded

See page 18 for replacement parts listing.
## Optional Accessories

### Calibrator:
Defender Primary Standard Calibrator, 50 to 5000 ml/min, includes lead-acid battery, charger (100-240 V), Optimizer 110 Software, and 1-m serial cable  
**Cat. No.** 717-510M

### Adjustable Low Flow Holders:
- **Single Holder** 224-26-01  
- **Dual Holder** 224-26-02  
- **Tri Holder** 224-26-03  
- **Quad Holder** 224-26-04

### Protective Sample Tube Covers:
<table>
<thead>
<tr>
<th>Type</th>
<th>for tubes up to:</th>
<th><strong>Cat. No.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>70-mm length (standard charcoal)</td>
<td>224-29A</td>
</tr>
<tr>
<td>B</td>
<td>110-mm length (large charcoal)</td>
<td>224-29B</td>
</tr>
<tr>
<td>C</td>
<td>150-mm length</td>
<td>224-29C</td>
</tr>
<tr>
<td>D</td>
<td>220-mm length</td>
<td>224-29D</td>
</tr>
</tbody>
</table>

### Battery Maintenance:
- **PowerFlex Charging System** for SKC Personal Pumps  
  - 5-station, 100-240 V 223-1000  
  - Single, 100-240 V 223-2000  
- **PowerFlex Cables**  
  - Universal XR (5-cell) 223-1002  
  - Universal XR (4-cell, MSHA) 223-1003  
- **Replacement Battery Pack** P21661  
- **Battery Eliminator**, for sampling using line voltage  
  - 115 V 223-325  
  - 230 V 223-325B

### Miscellaneous:
- **Screwdriver Set** (included with pump) 224-11  
- **Protective Nylon Pouch with belt and shoulder strap**, available in:  
  - **Black** 224-87  
  - **Red** 224-95A
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.
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.
UL Certificate

CERTIFICATE No. Ex.280693-62011
28 June 1993

Issued to: SKC Inc.
R. D. 1 No. 395 Valley View Rd.
Eighty-Four, PA 15330 U. S. A.

This is to certify that: Intrinsically safe Portable Air Sampling Pumps, Models 224-43XR, 224-44XR, 224-PCXR3, 224-PCXR4, 224-PCXR7, 224-PCXR8 for use with self-contained 6.0V battery pack, Models 224-30, or P21661 and intrinsically safe portable air sampling pumps, Models 224-PC3 and 224-PC7 for use with self-contained 4.8V battery pack, Model 224-175D have been investigated by Underwriters Laboratories Inc. in accordance with the standard indicated in this certificate.

UL Standard for Safety:

The Air Sampling Pumps comply with the requirements as defined by the standard indicated in this document for intrinsically safe apparatus for use in Class I, Division 1 and 2, Groups A, B, C and D, Class II, Division 1 and 2, Groups E, F and G and Class III hazardous locations.

To establish that a product is under the Certification program it is necessary to determine that the product has been manufactured under UL's Follow-Up Service. The Listing Mark of Underwriters Laboratories Inc. on the product is the only method provided by UL to identify a product manufactured under its Follow-Up Service. The Listing Mark includes the symbol of Underwriters Laboratories Inc. "☺" together with the word "Listed" and the control number 124U.

Code: Intrinsically safe apparatus: Class I, Division 1 and 2, Groups A, B, C, D; Class II, Division 1 and 2, Groups E, F, G; and Class III, Temperature Code T3C

Tamb = 40°C

Investigation and Test Report Reference:
E62011, 20 January 1987

[Signature]
Albert A. Bartkus
Associate Managing Engineer
Hazardous Locations Engineering Services