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OVERVIEW

SearchCam® 3000 Victim Location System (VLS)

The SearchCam® 3000 is designed to address rescue teams’ need for a camera while performing search operations in collapsed buildings and confined spaces.

The SearchCam® 3000 VLS is modular and can be configured to meet the needs of any rescue situation. The 240 degree articulating camera with built in audio provides rescuers with the enhanced ability to see and communicate with trapped victims.

The Camera Head with the Environmental Sleeve installed, can be submersed in water up to 75 feet (23 meters) deep (see page 12).

The SearchCam® 3000 records videos and takes photos which are saved to an SDHC card (included). These files can be uploaded to a computer for playback, archive and search review purposes. If an attempt for taking video or picture is made when the memory card is not present or if the memory card is full, “No Memory Card” icon will appear in the centre of the screen.

This manual provides information for the safe and proper operation and maintenance of the SearchCam® 3000. Please read the manual completely before using the SearchCam® 3000.

If there are questions about the operation of the system, or comments on how this product can be improved, please contact Savox Communications at:

1-800-546-3405 (North America Only) or (0) 1-604-244-9323.

* This new release of the SearchCam® 3000 comes with additional features:

1. ClearSearch™ – The new Video Display Unit (VDU) includes a transflective screen with a larger screen size. Thanks to the ClearSearch™ feature the screen adapts to the environment brightness. Working under bright sunlight does not require a sunshield anymore.

2. XtraCharge™ – The new XtraCharge™ firmware allows an operational time of up to 50% when used with the blue Savox batteries (included in this package). The blue batteries can be mixed matched with the previous black batteries but will not lead to any significant increase in operation time. This also applies when using only black batteries with the new XtraCharge™ feature.
# SearchCam® 3000 — Kit 1 Contents

6000-11-001

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>PART NUMBER</th>
<th>QTY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Power Module</td>
<td>6010-00-001</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Standard Length Tube Set</td>
<td>6010-01-000</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Standard Length Coiled Coax Cable (Shipped Inside Tube Set)</td>
<td>6010-04-002</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Gearbox/Audio Module</td>
<td>6010-00-002</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Environmental Sleeve for Audio Module</td>
<td>6010-00-003</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Color Camera</td>
<td>6010-02-000</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>ClearSearch™ Video Display Unit (VDU)</td>
<td>6010-00-008</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Headset</td>
<td>6010-03-000</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>16GB SDHC Card</td>
<td>0316-44-004</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Waterproof Storage Case with Foam</td>
<td>6010-03-002</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>75 Foot (23 Meter) Camera Extension Cable</td>
<td>6010-04-000</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>70 Foot (21 Meter) Rope with Carabiner</td>
<td>6010-04-005</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>Camera Head Rope Coupler</td>
<td>6010-04-001</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>Lithium Ion Batteries</td>
<td>6010-05-005</td>
<td>4</td>
</tr>
<tr>
<td>15</td>
<td>Gang Charger</td>
<td>6010-05-003</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>Power Supply for Gang Charger*</td>
<td>1902-26-015</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>Shoulder Sling</td>
<td>6010-06-003</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>Tube Strap (Not Shown)</td>
<td>6010-06-004</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>VOID Orientation Guide VOG-03</td>
<td>6010-90-002</td>
<td>1</td>
</tr>
<tr>
<td>20</td>
<td>Operation Manual</td>
<td>6010-90-000</td>
<td>1</td>
</tr>
<tr>
<td>21</td>
<td>Tube of Grease</td>
<td>6010-03-003</td>
<td>1</td>
</tr>
<tr>
<td>22</td>
<td>Warranty Card (Not Shown)</td>
<td>6010-90-003</td>
<td>1</td>
</tr>
<tr>
<td>23</td>
<td>Infrared Camera (Optional)</td>
<td>6010-02-002</td>
<td>1</td>
</tr>
</tbody>
</table>

*Varies by country

[Diagram of Kit 1 contents with Kit 2 only label]
SearchCam® 3000 — Kit 2 Contents

**6000-11-002**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>PART NUMBER</th>
<th>QTY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SC3000 Kit1</td>
<td>6000-11-001</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Long Tube Set</td>
<td>6010-01-001</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Extension Tube</td>
<td>6010-01-002</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Long Coiled Coax Cable</td>
<td>6010-04-003</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Infrared Camera</td>
<td>6010-02-002</td>
<td>1</td>
</tr>
</tbody>
</table>
General Precautions

The SearchCam® 3000 is designed to function under the demanding conditions of a disaster scene. However, it is important to remember that the system is a precise instrument and it can be damaged if not cared for properly. The following precautions should be adhered to in order to prevent damage from misuse:

- Avoid exposing the camera head to great deal of leverage which could result in damaging the articulating camera joint.
- Do not use the extension cable or the coiled cable by itself as means of lowering the camera head into a void. Use the provided 70 foot (21 meter) rope with carabiner 6010-04-005 or your choice of rope as a lanyard in conjunction with the provided Camera Head Rope Coupler 6010-04-001 to lower the Camera head into a vertical cavity (see page 10).
- Store the SC3000 Camera System in its original case, laid out as shown on page 2.
- The SC3000 complies with Criteria A of IEC 61000-6-1: 2nd ED 2005 immunity standard at all frequencies except in the range of 211-215 MHz. At these frequencies the SC3000 complies with Criteria B, as the VDU may experience loss of video/audio signal, depending on the intensity of the interfering signal. The SC3000 resumes normal operation without any intervention from the user the moment the interference is no longer present or the SC3000 is reoriented to minimize its effects.
- This equipment has been tested and found to comply with the limits for Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION:
Changes or modifications to this equipment, not expressly approved by the manufacturer could void the user’s authority to operate the equipment.
Safety Precautions

Rescue operations can be very hazardous. All safety practices must be understood and adhered to while working at the rescue scene.

- Always wear the level of personal protective equipment appropriate for the conditions at the rescue scene. Do not attempt any rescue operation without the training and experience required to safely perform the rescue, as you could jeopardize your life as well as the victim’s.

- The SearchCam® 3000 camera will conduct electricity. If the camera comes in contact with a live power line, electrocution could occur while touching any part of the camera. Verify that all power sources in the collapse area have been disconnected. Watch for overhead power lines that may be low enough to make contact with the camera when the camera is extended over your head. Do not operate this unit in an electrical storm. Failure to take these precautions could result in death by electrocution.

- The SearchCam® 3000 is not certified for use in hazardous atmospheres. Do not use the system in flammable atmospheres. Always verify that the atmosphere is clear of flammable gases or liquids before operating the system. Ensure that all potential fuel sources have been disconnected and properly secured. Failure to take these precautions could result in an explosion.

- Operate the SearchCam® 3000 in a safe manner. Adequate training and judgment are required to reduce the inherent risks in the rescue environment. Failure to follow the above safety precautions, and to operate safely at the collapse scene, may jeopardize your life as well as the lives of your team.

- While the Camera Head with the Environmental Sleeve installed, is capable of immersion into water up to 75 feet (23 meters) deep, the Power Module and Video Display Unit are only splash proof. Do not immerse these parts of the system in water, this may result in permanent damage.
SEARCHCAM® 3000 CONFIGURATIONS

The SearchCam® 3000 is modular and can be configured to meet the needs of any rescue situation. This section describes the various configurations of the SearchCam® 3000.

Standard and Long Tube Set Configuration

The camera is stored in the case partially assembled to reduce rescue launch time. If the camera is used directly from the case and has been stored as per factory layout (see page 3), skip to Step 3.

For Long Tube Set Configuration repeat this operation using Long Tube Set and Long Coiled Cable provided with Kit 2.

Step 1.
Connect the Standard Length Coiled Cable stored inside the Standard Length Tube Set to the Camera Head and on one side and to the Power Module on the other side. Make sure the cable is inside the tube set.

All SC3000 cables use Push-Pull action connectors.
Make sure the smaller end of the Tube Set points towards the camera head.

Step 2.
Screw the collars of the Tube Set onto the Camera Head and the Power Module respectively. Make sure both collars are tight. Collars are designed for hand installation.
DO NOT use tools to install the collars.
Step 3.
Install the Video Display Unit (VDU) onto the Power Module. Position the VDU over the Power Module and slide the locking plunger into the receiving socket.

Align the guiding pin on the plunger with the guiding channel on the socket.

Twist the VDU clockwise until the plunger locks securely in place.
Connect the cable from the VDU to the back of the Power Module.

Older versions of the SearchCam 3000 provided a sunshield to protect from a glaring screen when working under bright sunlight. The ClearSearch™ feature has a transreflective screen that adapts to the environment. Working under bright sunlight or with floodlights will not reflect on the screen anymore.
Step 4.
Make sure the ON/OFF Switch on the Power Module is in the OFF position. Remove the battery caps from the battery holders and slide two batteries into the Power Module. Install the caps back onto the battery holders. Make sure the batteries are charged (see page 36).

Step 5.
Adjust the length of the shoulder sling to your comfort.
Camera Probe Configuration in Air

NEVER USE THE EXTENSION CABLE OR THE COILED CABLE BY ITSELF AS MEANS OF LOWERING THE CAMERA HEAD INTO A VOID.

Step 1.
Feed the 75 foot (23 meter) Camera Extension Cable through the long, oval shaped slot on the Camera Head Rope Coupler and connect it to the back of the Camera Head.

Step 2.
Screw the Camera Head Rope Coupler onto the Camera Head as shown. The Coupler is designed for hand installation. DO NOT use tools to install the Coupler.
Step 3.
Clip the snap hook (part of the 70 ft (21 meter) Rope with carabineer) into the Coupler as shown. Connect the other end of the extension cable to the front of the Power Module.

Step 4.
Lower the Camera Head into an air void by unwinding the Rope from its Reel. Make sure that the weight of the Camera Head is always taken by the rope, **NOT** the cable. The Reel may be used as an anchor.
Camera Probe Configuration in Water

Audio is **NOT** available in this configuration.

**Step 1.**
Follow instructions for Camera Probe Configuration in Air on page 10.

**Step 2.**
Slide the Environmental Sleeve onto the Camera Head. Move it all the way up until it reaches the edge of the collar.

**Disclaimer:**
- Tighten the environmental sleeve until the two red arrows align.
- Verify that the environmental sleeve does not move.
- If over-tightened (it has been tightened past the red arrows lining up) **DO NOT** back up, as you will loosen the seal.

**Step 3.**
Lower the Camera Head into a void filled with water up to 75 feet (23 meters) deep by unwinding the Rope from its Reel. Make sure that the weight of the Camera Head is always taken by the rope, **NOT** the cable. The Reel may be used as an anchor.
Super Probe Configuration In Air

(SearchCam® 3000 Kit 2 Required)

Super Probe Configuration requires two operators. One to hold the Power Module and the other to maneuver the Camera Head.

**Step 1.**
Remove the Long Coiled Cable from the Long Tube Set.

**Step 2.**
Screw the back end of the Long Tube Set onto the Extension Tube.

**Step 3.**
Feed the 75 foot Extension Cable through the tubes.

**Step 4.**
Connect the Extension Cable to the Camera Head on one side and to the Power Module on the other side. Screw the small collar of the Long Tube Set onto the Camera Head. Connect the other end of the cable to the Power Module.

---

**Standard Length Tube Set**
with Extension Tube Reach Limits 82” – 133” (208cm – 338cm)

**Long Tube Set**
with Extension Tube Reach Limits 103” – 223” (261cm – 566cm)
Super Probe Configuration In Water
(SearchCam® 3000 Kit 2 Required)

Audio is NOT available in this configuration.

Step 1.
Follow Super Probe Configuration in Air Instructions on page 13.

Step 2.
Slide the Environmental Sleeve onto the Camera Head.

Step 3.
Move the sleeve all the way up until it reaches the edge of the collar.

Step 4.
Screw the two outer rings of the sleeve in the close direction, until the two Red Arrows on the labels align vertically.

Disclaimer:
- Tighten the environmental sleeve until the two red arrows align.
- Verify that the environmental sleeve does not move.
- If over-tightened (it has been tightened past the red arrows lining up) DO NOT back up, as you will loosen the seal.
POWERING UP THE SYSTEM

Powering Up

Make sure the SC3000 have been assembled as per one of the configurations described in the previous section (see pages 7 – 14), and batteries are installed inside the Power Module as per Step 4 on page 9.

Step 1.
Position the power module so the handle is vertical, as shown in step one on page 7. Turn ON the Power Module using the ON/OFF switch located on the back of it. The camera will move to the 0 degree position indicating that the Camera Head has been powered up.

Step 2.
Turn on the VDU using the RED ON/OFF button located in the center of the control pad. The system will take about 15 seconds to “boot up”. During “boot up” the screen may display a warning regarding the Environmental Sleeve. Please read this warning carefully and then press the red button on the VDU to accept and continue.
Shutting Down

IT IS IMPORTANT TO POWER DOWN THE SYSTEM IN THE FOLLOWING SEQUENCE, FAILURE TO DO SO COULD RESULT IN LOST VIDEO IMAGES AND MAY CORRUPT THE SD CARD.

Step 1.
Press and hold down the **RED** ON/OFF button for 3 seconds until the Red LED turns off. The system will take about 10 seconds to shut down.

Step 2.
Wait until the VDU has fully shut down, then switch OFF the Power Module.
SEARCHCAM® 3000 CONTROLS

SearchCam® 3000 is operated using the five Rocker Switches located on the Hand Grip and the buttons located on the front of the VDU.

Rocker Switches

Rocker Switches are located on the hand grip of the Power Module. These switches are used to control the camera’s articulation, illumination, headset volume, and PTT functions. There is also a still image switch.

<table>
<thead>
<tr>
<th>Switch</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Articulation Switch" /></td>
<td>The Articulation Rocker Switch moves the camera at the end of the Camera Head left or right. The camera moves 240 degrees from full left to full right. Hold the left or right side of the rocker switch down to move the camera in either direction. The camera will pause in the center when moving right or left while crossing the 0 degree position. Release the switch and then depress again to continue actuating the head. The Camera Head is equipped with a safety clutch (see page 29).</td>
</tr>
<tr>
<td><img src="image" alt="Illumination Switch" /></td>
<td>The Illumination Rocker Switch turns ON, increases, decreases and turns OFF illumination. Move the rocker switch right to turn ON and again to increase or left to decrease and eventually turn OFF the illumination. The LED ICON is displayed on the VDU screen when illumination is ON. An intensity level bar is displayed on the bottom of the screen while the switch is operated.</td>
</tr>
<tr>
<td><img src="image" alt="Headset Volume Switch" /></td>
<td>This Rocker Switch increases (right) or decreases (left) the headset volume. This function is also duplicated on the Video Display Unit.</td>
</tr>
<tr>
<td><img src="image" alt="PTT Switch" /></td>
<td>The PTT Rocker Switch (with headset installed) controls the communication with the victim. Push the switch left or right to talk to the victim. The switch must be released to listen to the victim’s response.</td>
</tr>
<tr>
<td><img src="image" alt="Image Capture Switch" /></td>
<td>The Image Capture Switch allows you to capture a specific image being shown on the display and store it onto the SDHC Card (see page 32). This function is also duplicated on the Video Display Unit. By default, this button is inactive to prevent accidental image capture (see page 21).</td>
</tr>
</tbody>
</table>
# Display Controls

Display controls are located on the Video Display Unit. These buttons control all display functions in addition to recording video and taking photos.

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Image Capture Button</strong></td>
<td>The Image Capture Button allows you to capture a specific image being shown on the display and store it onto the SDHC Card (see page 32). This function is also duplicated on the Hand Grip.</td>
</tr>
<tr>
<td><strong>Capture Video Button</strong></td>
<td>Press this button to capture a video clip and store it onto the SDHC card. Press it again to stop the video capture. The camera icon will be displayed while the video is being processed and saved. Wait for the icon to disappear before recording another video.</td>
</tr>
<tr>
<td><strong>Playback and Review Button</strong></td>
<td>Press this button to review the last saved video clip or the last saved picture. The playback icon will be displayed during the file review. Press this button again to stop the reviewing. <strong>Note</strong>: Only the last picture/video will be shown. Restarting the SearchCam 3000 will disable this function until a new picture is taken. Audio is not available during the SC3000 recorded video playback. When viewing the recorded video on a PC, audio track is available.</td>
</tr>
<tr>
<td><strong>Menu Button</strong></td>
<td>Press this button to enter the Menu (see page 19).</td>
</tr>
<tr>
<td><strong>Arrow Buttons</strong></td>
<td>Use these buttons to navigate through the Menu.</td>
</tr>
<tr>
<td><strong>Headset Volume Control Buttons</strong></td>
<td>Press the arrow buttons to adjust headset volume up or down. This function is also duplicated on the Hand Grip.</td>
</tr>
<tr>
<td><strong>Brightness Control Buttons</strong></td>
<td>Press the arrow buttons to adjust display brightness.</td>
</tr>
<tr>
<td><strong>Contrast Control Buttons</strong></td>
<td>Press the arrow buttons to adjust display contrast.</td>
</tr>
</tbody>
</table>
Menu

Press the Menu button to access the menu or to exit a submenu.

Camera Menu

Note: Press the Menu button to exit a submenu.
Camera Style
This menu displays the type of camera currently in use.

Photo File Management
This menu allows you to delete all photo files stored on the SDHC Card.

Note: Press the Menu button to exit a submenu.
Pistol Grip Image Capture
This menu allows you to make the Pistol Grip Image Capture Button active or inactive.

Note: Press the Menu button to exit a submenu.
Video File Management
This menu allows you to delete all video files stored on the SDHC Card.

On Screen Display
This menu allows you to turn the On-Screen indicators On or Off.

Note: Press the Menu button to exit a submenu.
LCD Brightness
This menu allows you to set the brightness of the LCD display up or down.

LCD Contrast
This menu allows you to set the contrast of the LCD display up or down.

Note: Press the Menu button to exit a submenu.
Mode Settings

Headset Volume
This menu allows you to set the default headset volume. Use the left and right arrows to adjust the volume up or down.

Note: Press the Menu button to exit a submenu.
Power Saving Mode
This menu allows you to choose how long the system will stay ON before shutting down.

Quick Start - Single User Preference Settings
This menu allows you to save the current system settings, restore previous system settings, or revert to factory default system settings.

Note: Press the Menu button to exit a submenu.
Date and Time Settings

Once programmed, the date and time settings will automatically be saved.

**Date/Time**
This menu allows you to set the current date and time. Use the Up/Down arrow buttons on the VDU to change the parameter settings. Use the Left/Right arrow buttons to move to the next field.

**Note:** Press the Menu button to exit a submenu.
Information Menu

Memory Card Information
This menu shows memory card statistics such as total space, used space, minutes of video recorded, number of photos recorded and available recording time.

<table>
<thead>
<tr>
<th>Total Space</th>
<th>4 GB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used Space</td>
<td>1 GB</td>
</tr>
<tr>
<td>Videos Recorded</td>
<td>60 Min</td>
</tr>
<tr>
<td>Images Recorded</td>
<td>5 Files</td>
</tr>
<tr>
<td>Available Recording Time</td>
<td>180 Min</td>
</tr>
</tbody>
</table>

Note: Press the Menu button to exit a submenu.
Battery Information
This menu shows remaining battery life. The top half of the indicator corresponds to right battery and the bottom half to the left battery.

Note: Press the Menu button to exit a submenu.
USING THE SEARCHCAM® 3000 CAMERA

Safety Clutch

SC3000 is equipped with a clutch which prevents damage to the gears that move the Camera. During a search operation the Camera may be forced out of its position by an obstacle.

If the camera is forced away from the center, it will try to return to its last position. If the camera is forced towards the center, it will move to the 0 degree position. The latter feature is designed to ease the extraction of the Camera Head out of a void or a cavity.
Tube Sets

The SearchCam® 3000 tube sets can be lengthened by loosening the Clutch Collars located on the tube sets. This allows a deeper penetration of the Camera Head into the void.

Standard Length Tube Set Reach Limits 41” – 92” (105cm – 234cm)
Long Tube Set Reach Limits 62” – 182” (158cm – 462cm)

VDU Position Adjustment

The VDU can be turned, rotated and tilted to allow for the most comfortable viewing angle.

**Step 1.**
Loosen the Display Yoke’s Knob to turn the VDU left or right. Tighten the knob when done.

**Step 2.**
To rotate or tilt the VDU, adjust its position with your hand. The VDU will stay in the new spot.

VDU Position Detachment

**Step 1.**
To detach the VDU from the Power Module, push the VDU with its plunger into the socket, twist it counter-clockwise and pull it out.

*Connector is spring loaded. Pull straight back to release the locking tabs on connector.*

To disconnect the VDU completely:

1. Grasp on both sides of the connector.
2. Pull straight back. **DO NOT TWIST**
Connecting the Headset

To communicate with a victim or listen to the sounds inside a cavity under search, wear the provided headset and connect it to the bottom of the VDU.

The PTT Rocker Switch controls the communication with the victim. Push the switch left or right to talk to the victim. Release the switch to listen to the victim’s response.
Inserting the SDHC or SD Card

To insert into or remove the SDHC or SD card from the VDU, loosen the SD cover’s thumb screw and open the latch. Close the latch when finished.

**OPEN THE LATCH IN DRY CONDITIONS ONLY.**
Camera Quick Disconnect (QD)

The SC3000 cameras are interchangeable using the Camera QD. Color and Infrared cameras are available. KIT 1 is supplied with the Color Camera installed on the Gearbox/Audio Module. The cameras can be changed while the system is ON or OFF.

**CHANGE THE CAMERAS IN DRY CONDITIONS ONLY.**

Changing the Camera

**Step 1.**
Move the camera to the 90 degree left position. If the system is ON, use the Articulation Rocker Switch to do so. If the System is OFF, move the camera by hand.

**Step 2.**
With your right thumb pull the Quick Disconnect Latch away from the camera. With your left hand hold the camera, twist it counterclockwise then pull it away.
Step 3.
To install the Camera onto the Gearbox/Audio Module, align the Guide Pin with the round entry point of the Guide Channel…

Step 4.
...Next, position the camera concentric with the Gearbox/Audio Module...

Step 5.
...Then, push the camera in and turn it clockwise until the latch “clicks” into place.

Note:
If the camera change has been conducted with the SearchCam 3000 being ON but the new camera is not recognized, restart the SearchCam 3000
Using the Camera in a Vertical Orientation

To see an upright image while using the camera in a vertical application, position the VDU as shown on the left. With this setup the operator can turn his body 360 degrees while holding the camera to explore the cavity under search. This technique of using the system can be compared to a submarine periscope.

Secondary Display Unit

The SearchCam® 3000 is equipped with an Auxiliary Monitor Port. Any SearchCam® 2000, Mongoose and Recon II display may be connected to the VDU. Battery life will decrease if a secondary display unit is connected.
**Batteries**

When using the XtraCharge™ firmware with the blue batteries, fully charged batteries will typically last up to 3 hours. Both batteries should be replaced at the same time.

**Hot Swapping**

Batteries may be changed one at a time while the system is ON. To do so battery levels should be above 50%. The system will run more efficiently if both batteries have a similar charge. It is not recommended to run the camera with only one battery.

**NOTE:**

If a Secondary Display Unit is being used, it must be disconnected before changing batteries. Reconnect the Secondary Display Unit after both batteries have been changed.

**Level Indicator**

The battery level indicator shows remaining charge of the batteries. The top half of the indicator corresponds to the right battery and the bottom half to the left battery. The battery level indicator changes to red when the battery needs to be replaced. The system will automatically shut down when battery voltage gets too low.

**Charging**

Charge the batteries using the provided Gang Charger only. Insert the batteries into the charger and screw the caps on. A Red LED light above each battery indicates charging. Green LEDs mean the batteries are fully charged. If necessary the batteries can be used before they are fully charged. Charge at an ambient temperature between 32°F [0°C] and 104°F [40°C].

**Storage**

Batteries should ideally be stored at a 30% - 50% state of charge. Any less than 30% state of charge is not recommended since this could potentially drain the battery to 0% charge if stored for extended periods of time. If the batteries are stored at temperatures higher than 20 degrees Celsius they will lose their charge faster and the life of the batteries will be reduced.

**Warnings**

Do not open or disassemble. Do not short out terminals. Do not expose to high temperature above 100°C [212°F]. Do not incinerate or expose to direct sunlight and high humidity. Do not crush, deform or puncture. Do not submerge in water. Improperly charging may cause the battery to flame. Use only Gang Charger Part No. 6010-05-003 supplied with the equipment.
MAINTENANCE

Camera Quick Disconnect (QD) Maintenance

Every month the Camera should be removed from the Gear Box/Audio Module for cleaning and lubrication of the QD connection. Keeping the QD clean and well lubricated will ensure easy Camera replacement.

Step 1.
Remove the Camera as per Step 1 and 2 of Changing the Camera section on page 33.

Step 2.
Remove any dirt that has accumulated in the outer part of the Camera QD Cavity. DO NOT touch or damage the spring loaded contact pins located in the inner cavity.

Step 3.
Apply a thin layer of silicon grease to the two orange sealing “O” ring(s).

*Note: Some Gear Box/Audio Modules may only come with one “O” Ring.

Step 4.
Install the Camera back onto the Gearbox/Audio Module as per Step 3, 4 and 5 of Changing the Camera section on page 34.

General Maintenance

Clean all the parts of the system before storing it. Pay attention to the cable connectors, sockets and all threaded connections, including tube set collars. Keeping dirt from the threads is critical for their smooth operation.
Environmental Considerations

Collapse and rescue missions occur during all weather conditions. The SearchCam® 3000 is designed to function under most of these conditions. The following are guidelines for operating under the more extreme environmental conditions. It is imperative that these recommendations be followed in order to prevent damage to the system.

Cold Temperature Conditions

The system is designed to function at temperatures as low as 14º F (-10º C). However, at temperatures below 32º F (0º C), changes in system operation may occur.

Temperature Guidelines

Recommended system storage temperature: Between 40º F (5º C) and 80º F (26º C)
Absolute Minimum Storage Temperature: -10º F (-23º C)
Absolute Maximum Storage Temperature: 140º F (60º C)

High Temperature Conditions

The maximum recommended continuous ambient operating temperature for the SearchCam® 3000 is 110º F (43º C). The system is designed to operate at this temperature indefinitely.

The system can be operated at higher temperatures for shorter periods of time when necessary. Avoid leaving the system in direct sunlight when not in use.

High Moisture Conditions

The entire SearchCam® 3000 system is designed to be water-resistant. The Camera Head is waterproof and can be submersed in water up to 75 feet deep.

The VDU and Power Module are splash proof only, DO NOT submerse these modules in water.

Post Incident Inspection

After the SearchCam® 3000 system is cleaned, it is recommended that it is inspected and tested before storage. Once the system has been tested, it should be visually inspected for mechanical damage.

System Packing and Storing

- Store the SC3000 Camera System in its original case, laid out as shown on page 3. This storage arrangement ensures quick rescue launch time.
- Charge the batteries before storage. This a good practice and will allow the system to be used when needed.
- Make sure the Power Module is switched OFF for storage.
- Clean all the parts of the system before storing it. Pay attention to the cable connectors, sockets and all threaded connections, including tube set collars. Keeping dirt from the threads is critical for their smooth operation.
## SC3000 SPECIFICATIONS

### GEAR BOX/AUDIO MODULE

<table>
<thead>
<tr>
<th>Specification</th>
<th>Specification Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length with Camera Installed</td>
<td>14.5” (37cm)</td>
</tr>
<tr>
<td>Diameter</td>
<td>1.85” (4.7cm)</td>
</tr>
<tr>
<td>Weight</td>
<td>1.7lb (0.79Kg)</td>
</tr>
<tr>
<td>Camera Tilt Angle</td>
<td>+/- 120 Degrees</td>
</tr>
<tr>
<td>Camera Tilt Radius</td>
<td>4.37” (11cm) With Camera Installed</td>
</tr>
<tr>
<td>Microphone Sensitivity</td>
<td>+1.5dB re. 1V/Pa @ 1KHz (vol. control at max.)</td>
</tr>
<tr>
<td>Microphone Frequency Response</td>
<td>100 Hz to 3.8KHz</td>
</tr>
<tr>
<td>Speaker Output</td>
<td>74 dB @ 12” (30cm) - 1KHz</td>
</tr>
<tr>
<td>Speaker Frequency Response</td>
<td>750 Hz to 3.5 KHz (~10 dB re. average)</td>
</tr>
</tbody>
</table>

### CAMERA

<table>
<thead>
<tr>
<th>Specification</th>
<th>Specification Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>2” (5cm)</td>
</tr>
<tr>
<td>Diameter</td>
<td>1.85” (4.7cm)</td>
</tr>
<tr>
<td>Weight</td>
<td>0.3lb (0.138Kg)</td>
</tr>
<tr>
<td>Color Camera Resolution</td>
<td>811 x 507</td>
</tr>
<tr>
<td>Black &amp; White Camera Resolution</td>
<td>660 x 240</td>
</tr>
<tr>
<td>Focal Length</td>
<td>24” (60cm) to Infinity</td>
</tr>
<tr>
<td>LED Illumination Intensity at Maximum</td>
<td>32 Lux @ 39” (100cm)</td>
</tr>
<tr>
<td>Illumination Angle</td>
<td>32 Degrees</td>
</tr>
</tbody>
</table>

### VIDEO DISPLAY UNIT (VDU)

<table>
<thead>
<tr>
<th>Specification</th>
<th>Specification Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enclosure Dimensions</td>
<td>8” x 5” x 2.45” (20.3cm x 12.7cm x 6.2cm)</td>
</tr>
<tr>
<td>Weight</td>
<td>2.6lb (1.18Kg)</td>
</tr>
<tr>
<td>Screen Size</td>
<td>5” (12.7cm) Diagonal</td>
</tr>
<tr>
<td>Display Format</td>
<td>960 x 234</td>
</tr>
<tr>
<td>Auxiliary Monitor Port</td>
<td>Seven contact Nexus for a 960 x 234 Auxiliary Monitor</td>
</tr>
<tr>
<td>SDHC Card Port</td>
<td>Still picture or video.</td>
</tr>
<tr>
<td>SDHC Card Port</td>
<td>File type BMP and MPEG-4 ext AVI (720 x 480 Frame Size @29.97 FPS)</td>
</tr>
<tr>
<td>Headset Port</td>
<td>Heavy Duty 5 Contacts 0.28” (7mm) Socket</td>
</tr>
<tr>
<td>Headset Output</td>
<td>101 dBC max. Sound Pressure Level</td>
</tr>
<tr>
<td>System Acoustic Gain</td>
<td>8dB @ 1KHz (Headset Output to Camera Microphone Input)</td>
</tr>
</tbody>
</table>

### POWER MODULE

<table>
<thead>
<tr>
<th>Specification</th>
<th>Specification Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>10.25” (26cm)</td>
</tr>
<tr>
<td>Width</td>
<td>3.2” (8.1cm)</td>
</tr>
<tr>
<td>Height</td>
<td>7.5” (19cm) Pistol Grip Included</td>
</tr>
<tr>
<td>Weight</td>
<td>2.71lb (1.22Kg) with Batteries</td>
</tr>
<tr>
<td>Power</td>
<td>Two, Lithium Ion Battery Sticks</td>
</tr>
<tr>
<td>Operating Time</td>
<td>2h Nominal at 60˚F (20˚C)</td>
</tr>
</tbody>
</table>

### BATTERIES

<table>
<thead>
<tr>
<th>Specification</th>
<th>Specification Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Rechargeable Lithium Ion Battery Stick</td>
</tr>
<tr>
<td>Rating</td>
<td>7.2V, 3350 mAh</td>
</tr>
<tr>
<td>Weight</td>
<td>0.24lb (0.108Kg)</td>
</tr>
</tbody>
</table>
STANDARD TUBE SET

<table>
<thead>
<tr>
<th>Weight</th>
<th>2.1lb (0.95Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retracted Length</td>
<td>27&quot; (68cm)</td>
</tr>
<tr>
<td>Extended Length</td>
<td>78&quot; (198cm)</td>
</tr>
</tbody>
</table>

LONG TUBE SET

<table>
<thead>
<tr>
<th>Weight</th>
<th>3.3lb (1.5Kb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retracted Length</td>
<td>48&quot; (122cm)</td>
</tr>
<tr>
<td>Extended Length</td>
<td>168&quot; (426cm)</td>
</tr>
</tbody>
</table>

EXTENSION TUBE

<table>
<thead>
<tr>
<th>Weight</th>
<th>1lb (0.45Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>41&quot; (104cm)</td>
</tr>
</tbody>
</table>

GENERAL

| Operating Temperature | 14˚F (-10˚C) to 110˚F (43˚C) |
| Absolute Minimum Storage Temperature | -4˚F (-20˚C) |
| Absolute Maximum Storage Temperature | 122˚F (50˚C) |
| EMC Tests | Tested as per FCC CFR 47 part 15, IC ICES 003, IEC 61000-5-3:2nd Ed 2006 and IEC 61000-6-1: 2nd Ed 2005 |
| Kit 1 Weight | 41lb (18.6Kg) |
| Kit 1 Dimensions | 53" x 16" x 6" (135cm x 41cm x 15cm) |

IP RATINGS

| VDU, Power Module, Camera Head | IP54 |
| Camera Head with Environmental Sleeve | IP68 |
| Gang Charger | IP20 |

TROUBLESHOOTING

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Unresponsive</td>
<td>If the system becomes unresponsive, shut the system down (see page 15). If the VDU buttons are unresponsive, turn OFF the Power Module.</td>
</tr>
<tr>
<td>Condensation Behind the Camera Lens</td>
<td>If condensation develops inside the camera lens, contact Savox (800.546.3410 or 604.244.9323) for assistance.</td>
</tr>
<tr>
<td>Loss of Date, Time and System Settings</td>
<td>If the VDU fails to keep proper date, time and system settings, the internal backup battery needs to be replaced. This can only be done by the manufacturer. Please contact Savox (800.546.3410 or 604.244.9323) for assistance.</td>
</tr>
</tbody>
</table>
WARRANTY

The SearchCam® 3000 is warranted to be free from all defects in material and workmanship under normal usage for a period of one year. This warranty is granted only to the original purchaser and is subject to the following provisions.

Exclusions

- Parts of the unit that require replacement under normal use, such as batteries.
- Damages or malfunctions caused by negligence, abuse, inadequate maintenance, or use not in accordance with the intended purpose of the unit.
- Defects or damages cause by unauthorized service, modification, or use of non-genuine Savox parts.
- Defects or damages caused by operation outside of environmental specification.
- Damage caused by common carrier or airline.

Relief

Savox will, at its option, repair or replace a defective unit or unit part that is covered by this warranty. As a matter of warranty policy, Savox will not refund the consumer’s purchase price.

Obtaining Warranty Service

To obtain warranty service, you must contact Savox to obtain a Repair Authorization number (RA) and instructions.

Disclaimer

This warranty is expressly in lieu of all other warranties. Savox specifically disclaims any liability for any general, special, or consequential damages arising out of sale, manufacture, or use of this product, whether based upon contract, tort, or any other legal theory. Savox makes no warranties, express or implied (including, but not limited to, any warranty of merchantability or fitness for any purpose) with respect to the identified products.
SERVICE

If your system should require service or if you have a question regarding the SearchCam® 3000, contact Savox at 1-800-546-3405 for assistance. Always contact Savox before returning a system for service. For service outside North America, contact service by phone at 604-244-9323, by fax at 604-270-2138, by email at service@savox.com, or online at www.savox.com.

Before you return the SearchCam® 3000 for repairs or upgrades:

1. Contact Savox for a Repair Authorization number.
2. Insure the shipment for the purchase price of the system.
3. Place the address label on the outside and the inside of the shipping container. Shipping labels can be downloaded at www.savox.com.
4. Include contact information, return address, and a description of the reason for the return.
5. Customers are required to pay shipping to and from Savox.

For international shipments, mark the shipping document as follows:

“Goods of US origin being returned for repair”

Service Centre

US Repairs
Savox
2025 South West 5th Street
Lincoln, Nebraska 68522, USA

According to most export laws, the customs value stated on the return shipment will be either the repair price in the case of billable repairs or the cost of repair to the manufacturer in the case of warranty repairs. The recipient is responsible for payment of all customs charges such as duty upon re-entry to their country. Documents showing proof of original export for repair may be required to minimize these charges. Return documents will state an Insurance Value for the equipment in case of loss. This value is usually much higher than the Customs Value. An Ex-Works return shipment can be requested if the customer chooses not to insure the return shipment.

User comments and suggestions are always appreciated. We continually strive to improve our products and this can only be done with your help. Let us know what you like and what changes would help make the system better to suit your needs.
Thank you for your support.

Please visit our website to see how our other search and rescue gear can assist in your searches.

www.savox.com