



## **IntuBrite VLS 8800 Video Laryngoscope Operating Instructions**



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## **IntuBrite VLS 8800 Video Laryngoscope Operating Instructions**

**Intended Use:** The rigid laryngoscope is intended for use in laryngoscopy to examine and visualize the upper airway and glottis.

Please read the instructions carefully before attempting to operate the VLS 8800.

### **I. Device Assembly and Disassembly**

1. Select the appropriate VLS video blade or wand for the patient. Position the blade or wand connection point to the video handle mounting block and snap into position by pushing down on the tip of the blade or wand. If using the wand, after attaching the wand to the handle, slide the sheath over wand until it clicks into place.
2. For wand only after attaching video wand to handle, slide the sheath over wand until it clicks into place. To remove, unhook from locking tabs and slide off.
3. Orient the connector of the VLS 8800 video cable to the video connection on the top of the VLS handle. Position the red marks on the connector to align with the opposing red mark on the handle.
4. Gently push the cable connector into the handle connection until a positive “click” is felt. The cable is now locked into place.
5. Orient the other connector of the VLS 8800 video cable to the receptor on the side of the VLS 8800 monitor, align with the corresponding red markings on each piece, and push into place. A locking sleeve on the connector will secure it into position.
6. To disconnect cable, grasp the movable locking sleeve on the cable connector in Step 4 and pull it up and away from the handle. This action releases the connector and separates the handle and cable.
7. Disconnect the cable from the monitor.
8. If using a video wand, unlock sheath from tabs, slide off wand and discard the sheath.

9. To remove the video blade or wand from the handle pull the tip of the blade or wand and separate the blade/block connection.

## **II. Operating the VLS 8800 Monitor Connecting Power to the Monitor**

The VLS 8800 monitor can be powered directly by AC power, or through an internal high capacity lithium battery source.

To operate with 100-240v DC converter charger, utilize the long power cord included in the accessory package and attach the small plug to the receptacle in the monitor labeled 12V DC. The larger wall plug is then plugged into a standard 100-240v power source. With the On/Off toggle switch on the side of the unit in the "On" position, power to the monitor would be verified by the illuminated display of the monitor.

This setup also charges the battery. The unit will automatically switch to battery power when power cord is disconnected.

### **Startup**

1. Assemble blade and wand to handle and connect to monitor.
2. Turn the ON/OFF switch to the ON position.
3. In a few seconds, an image from the camera will appear on display. If a video signal is not detected by the monitor, the screen will remain blue.

## **III. VLS 8800 System Operation**

The VLS 8800 is designed to be used with standard laryngoscopy technique similar to that of direct laryngoscopy.

### **Video Blades and Wands**

1. Cleaning: The blade, wand and handle should be appropriately cleaned and/or sterilized before use (see cleaning instructions in PART IV).
2. Anti-Fog: The camera lens on the VLS blade and wand has an integrated heating element designed to reduce or eliminate lens

fogging. Resistance to lens fogging should be achieved within 30 to 60 seconds of attaching the blade or wand to the powered handle.

## **Monitor**

1. Controls and Adjustments: A number of video adjustments have been fine-tuned on each monitor for optimal display performance so further adjustment is not required.

2. Panel control buttons:

- The Review button toggles between live video and access to still/video recorded images on the SD card
- The middle “Picture” button initiates still image recording in “Live” video mode, and advances through still and video images recorded on the SD card when the unit is in “Review” mode
- The right hand Red Record button starts and stops video recording

### **A. Recording, saving and viewing images and video**

Still images and video of the airway and intubation procedures can be recorded and automatically saved to the monitor’s removable SD card.

#### **Recording still images:**

Press the “Picture” icon button on the front of the display. Images are automatically saved to the SD card under a “.JPG” file format. NOTE: Still images cannot be recorded and saved while the device is recording video.

#### **Recording Video loops:**

- Press the Red video “Record” button once to initiate recording. The action is noted by an ongoing blinking Red REC on the display. A recording time counter will also be displayed.

- Press the same button a second time to end the recording.  
The video file will automatically be saved to the SD card under an “.AVI” format.

### **Accessing images and videos:**

Both still images and video loops recorded on the SD card can be accessed by pressing the “arrow” button on the display, and advancing through the images in chronological order by pressing the “Picture” icon button.

- Each file is individually identified by a date/time stamp.
- Video files can be played on the display through communication with the attachable video/DVR remote control (See Directions for Remote Control DVR Functions in next section).

### **B. Managing SD card files with the Remote Control**

The remote control for the VLS 8800 is designed to allow access and management of data on the 8800’s SD card by connection to/through the display, and enable simplification of common video recording functions and controls on the display itself.



### **The remote control features the following control buttons:**

1. “Menu” (upper left hand corner of remote): Allows setting Clock and Still/Video Quality, and controls file deletion and SD card formatting

2. "Access" (upper right hand corner): Changes display from live video feed to access stored files on SD card
3. "Arrow" Up, Down, Left and Right: Enables specific selection of files for viewing on screen, and selects DVR function
4. "Enter" (in center of arrow buttons): Actuates selected DVR function

### **Directions for Remote Control DVR Functions**

#### **To access and manage still image files and video files:**

Press "Access" button

Press Right or Left arrow button to advance through images/files

#### **To Play a selected video file**

Press "Down Arrow" button to start

Press "Down Arrow" button again to pause/stop

#### **To Delete a selected still images or video files**

Press "Menu" button

Press Right or Left arrow buttons to select "Delete Single"  
Press "Enter" button

#### **To Exit to live video**

Press "Menu" button

Deletion of additional single files, all files or to reformat/erase the SD card can be accomplished through this "Menu" button sequence in similar fashion.

#### **Adjusting DVR Setting**

Set Current Time and Date

- In live video mode, Press “Menu” button
- Press Right or Left Hand arrow button to highlight “Time”
- Press “Enter” button
- Press Right or Left arrow buttons to advance to desired portion of date and time to set
- Press Up or Down arrow buttons to adjust values
- Press “Enter” button to return to prior menu

Photo and Movie quality can be adjusted between standard and high quality images using similar actions in this menu.

- Press “Menu” to exit to live video

## **IV. Cleaning Instructions**

### **Video Handle, Blades and Wands**

Reusable laryngoscope video blades must undergo high level disinfection or sterilization between uses. Laryngoscope video handles and wands should be cleaned with low level disinfectant between patients; high level disinfection is optional. Always follow hospital protocol for cleaning reusable laryngoscope components.

- Detach the video blade or wand from the laryngoscope handle. If applicable, detach video display from handle prior to cleaning.
- Remove batteries from the handle and replace the cap of handle.
- Clean external surfaces of the blade, wand and handle with a damp cloth or soft brush using warm water and soap, isopropyl alcohol solution or other anti-microbial disinfectant to remove any deposits. A pH neutral cleaning solutions recommended.
- For high-level disinfection use Cidex® 2.4% glutaraldehyde solution or similar disinfectant. Follow manufacturer’s usage instructions. To avoid damage, do not soak handles in disinfectant or washing solutions for  $\geq 20$  minutes.



- For sterilization, use Steris® or STERRAD® low temperature sterilization by processing. Temperatures should not exceed 140° F (53°C) and/or 28 minute cycles. Refer to Table 1.

**NOTE:**

- Given the electrical componentry, the video blade should not be exposed to extreme temperatures during cleaning.
- DO NOT AUTOCLAVE THE VIDEO HANDLE, BLADE OR WAND.
- Do not use abrasive cleaning techniques or ultrasonically clean.
- Ensure the handle, blade and wand are dry & fully checked prior to storage

*Handles, blades and wands should always be tested after cleaning and prior to use.*

### **Disposable Sheath**

The sheath is disposable and intended for single patient use. Do not reuse or sterilize. Dispose of after each use.

### **Video Accessories**

All cables and other ancillary devices should be cleaned by wiping with a 70% isopropyl alcohol solution, or a mild detergent and water.

Do not immerse these items in fluids. Care should be taken to prevent excessive moisture from penetrating transmitter and display housings

### **VLS 8800 Monitor**

The display is not waterproof. The face of the unit, including the front control buttons, can be cleaned with anti-microbial solution wipes. Cleaning of the unit should be done carefully to avoid introducing liquids into the interior of the monitor.

Table 1

<b>STERRAD® System and Cycle within the United States</b>	
STERRAD® 50	
STERRAD® 200	
STERRAD® 100S	
STERRAD® NX	Standard cycle
STERRAD®100NX	Express, Standard cycle

  

<b>STERRAD® System and Cycle outside United States</b>	
STERRAD® 50	
STERRAD® 200	Short cycle
STERRAD® 100S	Short cycle
STERRAD® NX	Standard cycle
STERRAD®100NX	Express, Standard cycle

*The above listed cleaning guidelines are intended as suggestions only. They are based on procedures compatible with specific materials. Disinfection must be performed to approved hospital protocol. Salter Labs cannot warrant that any of the recommended methods will guarantee sterility. This must be validated by the hospital and/or sterilization equipment manufacturer.*

## V. Batteries and Battery Maintenance

The VLS 8800 system is equipped with rechargeable lithium ion batteries. These batteries are designed to independently provide optimal power to the monitor and the video blades or wands. The batteries can be fully recharged many times with minimal loss in performance.

### 1. Monitor battery

The internal rechargeable battery for the VLS 8800 monitor powers the unit independently.

-Life of one full charge in continuous use: 2 hours (average)

- Time to recharge: approx. 4 hours from fully discharged state

Working life: up to 3 years (average)

In addition, the monitor displays a battery level symbol in the lower left hand corner:

- 3 bars = fully charged

- 2 bars - 1/2 charged

A blinking symbol indicates unit will shut down in several seconds. The power source should be plugged into monitor on the upper left hand side labeled 120V DC.

It is recommended that the monitor be continuously connected to the charger while in storage or during long periods of time between uses. Lithium ion batteries also do not exhibit “memory” characteristics, and do not require deep cycle depletion and recharging regimens to maintain peak functionality.

**Note: Allowing rechargeable lithium batteries to fully discharge can damage the battery and reduce performance significantly. Full discharge of the batteries should be avoided.**

## 2. Handle battery

The rechargeable AA-size 3.7 volt rechargeable lithium ion battery in the video handle powers the camera, and the lens heating element and light source in video blade or wand. When the VLS handle is attached via the cable to the VLS 8800 monitor, the monitor battery and handle battery are linked, and operate as one.

There are two ways to charge the VLS handle battery:

- 1) When the 8800 monitor is being charged with the handle connected to the monitor via cable, the VLS handle battery will be charged as well.
- 2) The handle battery can be removed from the handle and charged independently with the separate AA-size 4.2 volt charger. The battery is accessible by removing the cap on the top of the handle.

When connected to a monitor via the cable, the VLS handle will operate the VLS blade or wand without a 3.7 volt AA size lithium battery installed. However, for longer overall battery charge life for the system, it is recommended that the handle battery be installed.

- Battery characteristics: 3.7 volt rechargeable lithium ion, AA size
- Orientation in handle: Positive terminal end inserted first
- Time to recharge: approx. 4-5 hours from full discharge state in separate charger, 30 minutes if charging through monitor cable and monitor system plugged into AC power.
- Working life: up to 3 years (average)

All VLS batteries (monitor and handle) can be continuously attached to their charger for long periods of time. These batteries also do not exhibit “memory” characteristics, and do not require deep cycle depletion and recharging regimens to maintain peak functionality.

## **VI. Troubleshooting**

Salter Labs VLS systems are generally reliable and simple to operate, requiring minimal maintenance for extended periods. However, the following is offered to help deal with unexpected device conditions:

### **1) Monitor is non-functional, shows no sign of power**

- Check for proper connections with power system and/or battery setup. See Section II.
- For battery operation, ensure that monitor battery is charged, the battery switch on the left side of the case is in the “ON” position and the LED illuminates Green.

### **2) Monitor is powered, but shows blue screen**

- Check connection of video blade or wand to handle
- Ensure blade or wand is properly fit to the handle mount
- LEDs on video blade or wand are illuminated
- Check that cable connections are solid, with connectors fully inserted and engaged: no loose connections

### **3) Image appears on screen, but is grainy or dim**

- Ensure that all batteries are adequately charged
- Check all blade or wand and cable connections
- Ensure that lenses on camera and LEDs on blade or wand are clean, and not contaminated

## **IntuBrite VLS Limited Warranty**

Salter warrants its IntuBrite VLS Products to be free of defects in materials and workmanship under normal use and service of the instruments for twelve (12) months from date of purchase.

**What is covered:** Replacement of Parts and associated Labor.

**What is not covered:** Transportation charges to and from Salter warehouse, damage caused by abuse, misuse, accident or negligence.

**To Obtain Warranty Service:** Please contact [Customercare@salterlabs.com](mailto:Customercare@salterlabs.com). The Customer Care representative will need the part number(s) and serial number(s) of the items for which repair is being requested under the warranty. The Customer Care Representative will review the situation, and if appropriate, issue a Repair Order Number. This Repair Order Number should be provided with the item(s) being returned for repair.

A Repair Order Number is valid for thirty (30) days after issuance. Any returns after the thirty (30) day period has expired are not authorized and will not be accepted.

At the date of original order, you may opt to purchase an Extended Warranty for IntuBrite VLS Products which extends your warranty for either one (1) year or three (3) years beyond expiration of the original one (1) year warranty.

## Salter Extended Warranty for IntuBrite VLS Products

Salter's Extended Warranty covers all VLS products against defects in material and workmanship for a period of up to six (6) years from date of original purchase. This extended warranty is available only to the original purchaser of the VLS system or components, and is not transferable. A one (1) year extended warranty or a three (3) year extended warranty may be purchased in advance and may also be extended for up to three (3) additional years after the completion of the initial Extended Warranty period, accumulating a maximum of six (6) years of coverage.

If additional equipment is added to the original VLS system, an extended warranty package can be purchased separately and independently for each item under the above terms.

If a VLS system fails for any reason during the extended warranty period, Salter will repair or replace the failed component of the VLS system. If requested, Salter can provide a loaner unit. The customer agrees to return the damaged VLS product to IntuBrite upon receipt of the loaner unit and agrees to return the loaner unit within three (3) business days after return receipt of the repaired unit.

This extended warranty does not apply to product that has been damaged due to obvious mishandling or as a result of modification by an unauthorized repair station or person.



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