# GlideScope®

Video Laryngoscopes


# User's Manual & Quick Reference Guide

# GlideScope® GVL and Cobalt

0900-1204-03-20

GLIDESCOPE®
Video Laryngoscopes


# GlideScope® GVL and Cobalt

# Quick Reference Guide

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The GlideScope® technology is covered under US Patents (6,655,377) (6,543,447) as well as European Patent 1307131. Additional patents pending.

Information in this User's Manual and Quick Reference Guide may change at any time without notice. For the most up-to-date information, see the online manuals on www.verathon.com.

GlideScope® Video Laryngoscope systems are CE marked in accordance with the Medical Device Directive, and the Verathon Inc. quality is Quality System Certified to ISO 13485:2003 standards.



PN 0900-2100-01-20

# GlideScope® System Quick Start

**1** The monitor may be used immediately by plugging it into an AC power source, or by fully charging the battery prior to first use.


**2** To ensure proper charging, follow these steps *in order:*

- Make sure the AC power cord is disconnected and the power switch is in the OFF position.
- Slide the power switch at the back of the monitor to the ON position.
- Plug the Monitor into an AC power source:
  - Insert the female end of the power cord into the port on the back of the Monitor.
- The charge status LED will turn orange, indicating that the recharging cycle has begun.
- When charging is complete, the status LED will turn green. At this point the unit is fully functional on battery power.

**If the AC power cord is inserted before the power switch is in the ON position, the charge status LED will flash orange.**

**3** Connect the Video Laryngoscope to the monitor.

- If using the GVL®:

  Connect either end of the video cable to the GVL® connector. Connect the video cable to the monitor connector.

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# GlideScope® System Quick Start

- If using the Cobalt system:

  Connect the video baton to the monitor as shown for the GVL® above. Then slide a single-use GVL® Stat over the video baton.


To detach a GVL® Stat from a Cobalt Video Baton, grasp the base of the video baton and pull firmly.

**IMPORTANT!** A used GVL® Stat is a biohazard and should be disposed of in compliance with local protocols.

| LED State | Meaning |
|---|---|
| Steady green<br>CHARGE STATUS | The battery is fully charged and ready for use. |
| Flashing orange<br>CHARGE STATUS | Flashing orange can indicate two states:<br>• If the AC power is connected and the power switch is off ("O" - to the left), the CHARGE STATUS LED will flash orange. The monitor will still function but the battery will not charge.<br>• If the AC power is NOT connected and the CHARGE STATUS LED flashes orange, the battery is malfunctioning. |
| Steady orange<br>CHARGE STATUS | Charging in progress |

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# Cleaning and Disinfecting the GlideScope® GVL and Cobalt Video Baton

- **DO NOT expose to temperatures above 60°C (140°F).**
  Do not disinfect using devices such as autoclaves, ultrasonic cleaners or pasteurizers.
- The GlideScope® GVL is a non sterile, reusable device. It is recommended that the GlideScope® GVL is cleaned and disinfected after every patient use using a High Level Disinfectant method. High Level Disinfection is required for the GlideScope® GVL when it is visibly soiled.
- The GlideScope Cobalt Video Baton is a non sterile, reusable device. When used as intended, it is protected from direct contact with the patient by the sterile, single-use GVL® Stat. Low Level Disinfection is recommended for the video baton after every patient use. High Level Disinfection is required for the GlideScope® Cobalt Video Baton when it is visibly soiled.

**1** Disconnect the GVL® or video baton from the monitor.

**2** Place the cleaning cap over the connector as shown.

- During cleaning, the protective cap must be inserted as shown to protect the cable connector.

GVL®


Cobalt Video Baton


**3** Wash the GVL® or video baton manually to remove all foreign material from the surface of the device.

- Chemical compatibility and disinfection methods are detailed in the User's Manual.
- To clean the exterior of the monitor and the video cables, wipe with IPA (70% isopropyl alcohol) bleach (100ppm) or a mild detergent and water.
- Wipe the cradle with a standard hospital-grade surface cleaning product.

**For more detailed cleaning instructions see the GlideScope® System User's Manual.**

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# Attaching/Detaching the GlideScope® GVL or Cobalt Video Baton

**1** Insert the GVL® or Cobalt Video Baton cable into the port located on the face of the monitor so that the arrows on the cable and the monitor line up.

**2** For GVL® only: Attach the opposite end of the video cable to the port located on the GVL®.

Note: When connecting and disconnecting the cable, grasp the connector by the gray sleeve.

# Attaching/Detaching the GlideScope® Cobalt Video Baton and Stat

**1** Insert the Cobalt Video Baton into the sterile, single-use GVL® Stat until it clicks into place. Ensure proper insertion by matching the GlideScope® logo on the side of the video baton and the GVL® Stat.


**2** Detach the video baton from the GVL® Stat by grasping the base of the video baton and pulling firmly.

**IMPORTANT!** A used GVL® Stat is a biohazard and should be disposed of in a manner consistent with local directives in the user's jurisdiction.

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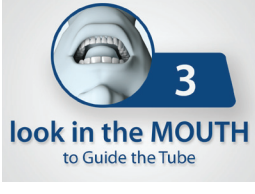
# The GlideScope® 4-Step Technique

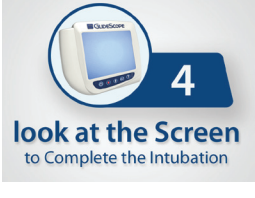

Looking directly into the patient's mouth and with the GlideScope® in the left hand, introduce the video laryngoscope into the midline of the oral pharynx.


With the laryngoscope inserted, look to the monitor to identify the epiglottis, then manipulate the scope to obtain the best glottic view.




Looking directly into the patient's mouth, not at the screen, carefully guide the distal tip of the tube into position near the tip of the laryngoscope.

*It is important to look into the mouth at this step to avoid injuring the tonsils or soft palate.*




Look to the monitor to complete the intubation; gently rotate or angle the tube to redirect as needed.

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# Tips for GlideScope® Video Laryngoscope Insertion

- Verathon® recommends inserting the GlideScope® Video Laryngoscope down the midline of the tongue to the epiglottis.
- The GlideScope® video laryngoscope may be used to produce a MacIntosh indirect lift of the epiglottis or a Miller lift.
- Intubations using GlideScope® Video Laryngoscopes require approximately 0.5kg-1.5kg of lifting force.
- Use of an endotracheal tube stylet is recommended. The GlideRite® Rigid Stylet has been designed to complement the angle of the GlideScope® video laryngoscope to facilitate intubation. A malleable stylet may be used with a 60°- 90° angle.

- To aid the passage of the endotracheal tube, withdraw the stylet (approx. 5 cm) while gently advancing the ETT. A 1 cm adjustment (withdrawal) of the laryngoscope also may be beneficial to reduce the viewing angle and allow the glottis to drop.

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# GlideScope® Products and Systems

| | | REUSABLE | | | | SINGLE USE STATS | | | |
|---|---|---|---|---|---|---|---|---|---|
| GVL® Size | | GVL® 2 | GVL® 3 | GVL® 4 | GVL® 5 | GVL® 1 | GVL® 2 | GVL® 3 | GVL® 4 |
| Patient Weight | | 1.8 - 10 kg | 10 kg - Adult | 40 kg - Morbidly Obese | 40 kg - Morbidly Obese | < 3.6 kg | 1.8 - 10 kg | 10 kg - Adult | 40 kg - Morbidly Obese |
| **Cobalt AVL** | Video Baton 1-2 | | | | | ✓ | ✓ | | |
| | Video Baton 3-4 | | | | | | | ✓ | ✓ |
| **GlideScope® GVL** | | ✓ | ✓ | ✓ | ✓ | | | | |
| **Ranger** | | | ✓ | ✓ | | | | | |
| **Ranger Single Use** | Video Baton 1-2 | | | | | ✓ | ✓ | | |
| | Video Baton 3-4 | | | | | | | ✓ | ✓ |
| **GlideRite® Rigid Stylet*** | | | | ✓ | | | | ✓ | |

Cobalt AVL System (single use)


GVL® System (reusable)


Ranger System (reusable)


Ranger Single Use System

*Note: System configurations vary. The Cobalt AVL and Ranger Single Use Video Batons are reusable.*

*For use with endotracheal tubes 6.0 mm and larger.

# GlideScope® Product Specifications

## SYSTEM MONITORS

### Cobalt AVL Monitor


Color, 6.4in (diagonal), VGA 640 x 480
Height: 190 mm
Width: 225 mm
Depth: 80 mm
Weight: 1.0 kg

### GVL® Monitor

Color, 6.4in (diagonal), 440 x 234
Height: 167 mm
Width: 207 mm
Depth: 83 mm
Weight: 1.4 kg

### Ranger Monitor

Color, 3.4in (diagonal), 480 x 234
Height: 168 mm
Width: 173 mm
Depth: 49 mm
Weight: 0.56 kg

## SINGLE USE SYSTEM COMPONENTS

### Cobalt AVL Video Baton 1-2

Length: Camera tip to SS ring to handle: 66mm
Height of camera: 6 mm
Width of camera: 7 mm
Cable length: 194.5 cm
Weight: 170 g

### Cobalt AVL Video Baton 3-4

Length: Camera tip to SS ring: 100 mm
Height of camera: 11 mm
Width of camera: 11 mm
Cable length: 193 cm
Weight: 230 g

### Ranger Video Baton 1-2

Length: Camera tip to handle: 40 mm
Height of camera: 6 mm
Width of camera: 7 mm
Cable length: 86.4 cm
Weight: 95 g

### Ranger Video Baton 3-4

Length: Camera tip to SS ring: 104.1 mm
Height of camera: 10.7 mm
Width of camera: 10.9 mm
Cable length: 86.4 cm
Weight: 141 g

### GVL® 1 and 2

STAT length (tip to handle): 38 mm/51 mm
Thickness (height) at camera: 8.7 mm/8.7 mm
Width at camera: 9.9 mm/10.9 mm

### GVL® 3 and 4

STAT length (tip to handle): 80 mm/95 mm
Thickness (height) at camera: 16 mm/16 mm
Width at camera: 16 mm/20 mm

***Note: The Cobalt AVL and Ranger Single Use Video Batons are reusable.***

## REUSABLE SYSTEM COMPONENTS

### GVL® 2

Blade length (tip to handle): 47 mm
Thickness (height) at camera: 14.5 mm
Width at camera: 18 mm

### GVL® 3

Blade length (tip to handle): 82 mm
Thickness (height) at camera: 14.5 mm
Width at camera: 20mm

### GVL® 4

Blade length (tip to handle): 102 mm
Thickness (height) at camera: 14 mm
Width at camera: 27 mm

### GVL® 5*

Blade length (tip to handle): 102 mm
Thickness (height) at camera: 14 mm
Width at camera: 27 mm

### Ranger GVL® 3

Blade length (tip to handle): 78mm
Thickness (height) at camera: 14.5 mm
Width at camera: 14 mm

### Ranger GVL® 4

Blade length (tip to handle): 89 mm
Thickness (height) at camera: 14.5 mm
Width at camera: 19 mm

**The GVL® 5 is designed to accommodate anatomical anomalies sometimes associated with bariatric patients.*

VERATHON

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0900-2067-03-86

# Important Information

## Statement of Prescription

Federal (USA) law restricts this device for sale by or on the order of a physician.

The GlideScope® Video Laryngoscope System should be used only by individuals who have been trained and authorized by a physician, or by health care providers who have been trained and authorized by the institution providing patient care.

## Intended Use

GlideScope® Video Laryngoscopes are intended for use by qualified medical professionals to obtain a clear, unobstructed view of the vocal cords for medical procedures.

## ⚠ Warnings and Cautions

**Caution. Risk of permanent equipment damage.**
Do not expose GlideScope® Video Laryngoscopes or Cobalt Video Baton to temperatures above 140° F (60° C). Do not disinfect GlideScope® Video Laryngoscopes or Cobalt Video Batons using devices such as autoclaves, ultrasonic cleaners, or pasteurizers. Use of such methods will cause permanent device damage and void the warranty.

**Equipment Caution: Electrical shock hazard. Refer servicing to qualified personnel.**
This equipment has been tested and found to comply with the standards listed in the Approvals section of this manual. These limits are designed to provide reasonable protection against harmful interference in typical medical installations.

**CAUTION: Risk of equipment damage.**
Failure to cover the cable connector port with the protective cap prior to cleaning may result in water ingress and potential device failure.

Bleach can be used on the baton but with special attention to the connector. Bleach may corrode the stainless steel inserts and damage the connector pins.

**CAUTION: Potential interference with other devices.**
GlideScope® Video Laryngoscopes must be used with the supplied cables to maintain electromagnetic interference (EMI) within certified limits.

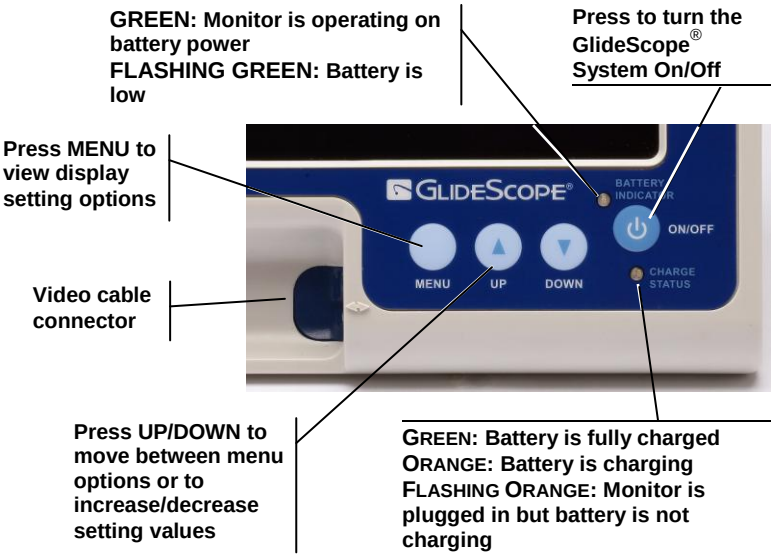
# GlideScope® GVL and Cobalt Systems

## GlideScope® GVL System


## GlideScope® Cobalt System

## GlideScope® Video Monitor Rear Panel


## GlideScope® Video Monitor Front Panel



## GlideScope® System Configurations

The GlideScope® System may be configured in one of three ways to best meet the needs of individual practices. Please refer to the User's Manual for complete assembly and setup information.

**Mobile Stand**

**Hard Shell Case**

**Mounted on an IV Pole**

# Preparing for First Use

Prior to using the GlideScope® system for the first time, perform the following steps:

1. Charge the monitor battery.
2. Set up the GlideScope® system in your preferred configuration.
3. Attach a video laryngoscope or video baton to the monitor.
4. Connect the monitor to an external source such as a TV screen (optional).
5. Perform a functional check.
    a. Connect a GlideScope® Video Laryngoscope to the monitor (GVL® or Cobalt Video Baton + GVL® Stat.
    b. Turn the system on by pressing the ON/OFF button located on the face of the monitor.
    c. Observe the monitor screen to verify that an image is being received from the GlideScope®.

If the GlideScope® GVL, Video Baton, or Stat are stored in cold conditions, additional warming time may be required for optimal performance of the anti-fog feature.

## Cleaning, Disinfecting, and Maintenance

To ensure patient safety, users should perform a routine inspection of the GlideScope® Video Laryngoscope before every use to ensure that all endoscopic components are free of unintended rough surfaces, sharp edges, protrusions or cracks.

If inspection reveals any faults in the components, contact Verathon Medical Customer Care or your local GlideScope® representative. All repairs must be performed by an authorized Verathon Medical Service Center.

**CAUTION: Risk of permanent device damage!**

**Do not expose GlideScope® Video Laryngoscopes or Cobalt Video Batons to temperatures above 140° F (60°C).**


**The temperature indicator turns black when the GVL® is exposed to temperatures above 140° F (60° C)**

# General Cleaning and Disinfection Information

## Table 1: Risk Assessment

| Device | Sterile | Use | Spaulding's CDC Classification | Disinfection | | | Sterilization |
|---|---|---|---|---|---|---|---|
| | | | | Low Level | Int. Level | High Level | |
| GVL® | Non-sterile | Reusable | Semicritical | | | X | |
| GVL® Stat | Sterile | Single use | Semicritical | | | | |
| Cobalt Video Baton* | Non-sterile | Reusable | Noncritical | X | | | |
| Video Cables | Non-sterile | Reusable | Noncritical | X | | | |
| Stylet | Non-sterile | Reusable | Semicritical | | | X | |
| Monitor# | Non-sterile | Reusable | Noncritical | X | | | |
| Cradle# | Non-sterile | Reusable | Noncritical | X | | | |

*It is understood that all items in this chart will be used as intended*

**Key:**

***** The Cobalt Video Baton is a nonsterile, reusable device which is protected from contact with mucous membranes and non-intact skin by the Stat (sterile, single use) when used as intended. Low level disinfection is recommended for the Cobalt Video Baton after every patient use. High Level Disinfection is required for the Video Baton when it is visibly soiled.

\# Disinfect monitor and cradle when they are visibly soiled and on a regular basis as per a schedule established by the medical care facility or provider.

– Shaded areas - not required/not compatible with device materials.

– Checked boxes (x) show minimum requirement.

– Unshaded areas show permissible levels of disinfection based on compatibility with device materials.

**Warning:**

Disinfectants and cleaning methods listed are recommended by Verathon based on compatibility with product materials. Refer to the label instructions for guidance on disinfection efficacy and appropriate clinical uses.

**Caution:** Meticulous cleaning must precede any disinfection process, to ensure all foreign matter is removed from the surface of the device. This allows the active ingredients of the chosen process to reach all the surfaces of the device.

Availability of cleaning products varies by country, and we are unable to test products in every market. Please use the list of recommended chemicals in this manual to compare with products available locally.

**Note:** When using any of the chemicals listed below, read and comply with product use instructions in all applications.

## Table 2: Chemical Compatibility and Disinfection Methods for GVL®, Cobalt Video Batons and Video Cables

| Active Ingredient | Compatibility | Conditions | Disinfection Level | Caution/ Comments |
|---|---|---|---|---|
| Enzymatic debridement agent/ detergent | General hospital grade | As per instructions | N/A | Surface cleaning only in preparation for disinfectant |
| Isopropyl Alcohol Solution | 70% | 70% used to wipe down with minimum 1 minute exposure | Low | |
| Glutaraldehyde | Up to 3.4% | 2.0% – exposure for minimum 20 minutes at 20°C or as per manufacturer's instructions | High | |
| Ortho-Phthalaldehyde | 0.55% | 0.55% – exposure for 12 minutes at 20°C or as per manufacturer's instructions | High | |
| Peracetic Acid | 0.2% | 0.2% - exposure for minimum 12 minutes at 50 to 56°C or as per manufacturer's instructions | See comments on right | Classified as a chemical sterilant |
| Bleach (Sodium Hypochlorite) | Up to 8000ppm | 5000ppm – exposure for 10 minutes at 20°C | High | Corrosive for connector pins and SS ring |
| | | 500ppm – used to wipe down with minimum 1 minute exposure | Low | Noncorrosive at ≤ 500ppm |

## Table 3: Chemical Compatibility and Disinfection Methods for GlideRite® Rigid Stylet

| Active Ingredient | Compatibility | Conditions | Disinfection Level | Caution/ Comments |
|---|---|---|---|---|
| Glutaraldehyde | Up to 3.4% | 2.0% – exposure for minimum 20 minutes at 20°C or as per manufacturer's instructions | High | |
| Ortho-Phthalaldehyde | 0.55% | 0.55% – exposure for 12 minutes at 20°C or as per manufacturer's instructions | High | |
| Peracetic Acid | 0.2% | 0.2% - exposure for minimum 12 minutes at 50 to 56°C or as per manufacturer's instructions | See comments on right | Classified as a chemical sterilant |
| Isopropyl Alcohol Solution | 70% | 70% - exposure for 10 minutes at 20°C | Intermediate | |
| | | 70% used to wipe down with minimum 1 minute exposure | Low | |
| Bleach (Sodium Hypochlorite) | ≤ 500ppm | 500ppm – used to wipe down with minimum 1 minute exposure | Low | Noncorrosive at ≤ 500ppm |
| Enzymatic debridement agent/ detergent | General hospital grade | As per instructions | N/A | Surface cleaning only in preparation for disinfectant |
| N/A | Tested in autoclave (steam cycle) | Minimum 4 minute 132°C pre-vacuum steam sterilization cycle | See comments on right | Based on requests from users, an autoclave cycle has been established for the Stylet for ease of use |

## Cleaning and Disinfecting the GVL® and Cobalt Video Baton

**Caution:** Meticulous cleaning must precede any disinfection process, to ensure all foreign matter is removed from the surface of the device. This allows the active ingredients of the chosen process to reach all the surfaces of the device.

The GlideScope® GVL is a nonsterile reusable device. It is recommended that the GlideScope® GVL is cleaned and disinfected after every patient use, using a High Level Disinfectant method. High Level Disinfection is required for the GlideScope® GVL when it is visibly soiled.

The Cobalt Video Baton is a nonsterile, reusable device which is protected from direct contact with the patient by the Stat (sterile, single use) when used as intended, Low level disinfection is recommended for the Cobalt Video Baton after every patient use. High Level Disinfection is required for the Cobalt Video Baton when it is visibly soiled.

**CAUTION: Risk of equipment damage.**

Bleach can be used on the baton but with special attention to the connector. Bleach may corrode the stainless steel inserts and damage the connector pins.

Availability of disinfection products varies by country, and we are unable to test products in every market. Please use the list of recommended disinfectants in the User's Manual to compare with products available locally.

For more detailed cleaning instructions see the GlideScope® System User's Manual or visit http://www.verathon.com/gs_manuals.htm

## Battery Replacement and Device Repair

Under normal operating conditions, the monitor battery will last 2 - 3 years; or approximately 500 charge/discharge cycles.

The battery is not user-replaceable. In case of battery malfunction, do not attempt to replace the monitor battery. Any attempts to replace the battery by unauthorized service technicians may cause serious harm to the user and will void the warranty. Please contact your Verathon Medical Customer Care Representative for more information on battery replacement.

## Device Disposal

Disposal of this device can be coordinated through your Verathon Medical Service Center in accordance with WEEE requirements.

# Specifications

## General Specifications

| | |
|---|---|
| Classification: | Electrical Class I, Applied Part BF |
| Line Voltage | Range: 100 – 240 VAC, 50 & 60 Hz |
| Line Current: | MAX 0.50 A |
| Power Plug: | Hospital Grade |
| Line Protection: | 2A Fuse, Internal |

## Operation and Storage Conditions

### Operating Conditions

Temperature:……...…10°C to 40°C

Relative Humidity:…….....0 to 95%

Atmospheric Pressure:…….440 to 1060 hPa

### Shipping and Storage Conditions

Temperature:……..……-20°C to 45°C

Relative Humidity:…….....0 to 95%

Atmospheric Pressure:…….440 to 1060 hPa

### Charging Conditions

Temperature:……..…0°C to 40°C

Relative Humidity:…….....0 to 95%

Atmospheric Pressure:…….440 to 1060 hPa

## Standards and Approvals

CMDCAS ISO 13485, Certificate No. 9235, EC Certificate for Class I sterile Stats, Certificate No. 41315937, MDD Requirements met for Class I and Class I sterile devices, CSA Requirements met (Master Contract # 213281), CSA Certificates issued, CB Scheme requirements met (CB Bulletin 112a), CB Test Certificates issued, CAN/CSA C22.2 No 601.1-M90, CAN/CSA C22.2 No. 60601-2-18-01, UL Std No 60601-1, IEC 60601-2-18, CE Mark EMC Directive, IEC 60601-1-2, CISPR 11, VCCI Technical V-3

# Symbol Directory

The following international regulatory symbols are found on the GlideScope® Video Laryngoscope and/or GlideScope® Video Monitor and indicate compliance with international regulatory standards:

| Symbol | Meaning |
|---|---|
|  | Type BF equipment |
|  | CE marking in accordance with the Medical Device Directive (CE0413 for Sterile Devices) |
|  | Canadian Standards Association (CSA) mark of certification to applicable standards for electro-medical equipment |
|  | Tested to Federal Communications Commission Requirements |
|  | Attention – consult accompanying documents. Read instructions before connecting or operating |
|  | Subject to WEEE (Waste of Electronic Electrical Equipment) regulations |

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# User's Manual

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PN 0900-2101-01-60


# GlideScope® GVL and Cobalt

# User's Manual

# Contents

# Important Information

## Product Description

The GlideScope® Video Laryngoscope (GVL®) System incorporates a miniature, autofocusing, high-resolution color camera, an LED light source, a rechargeable lithium battery, and NTSC video output for remote display or video recording.

The GlideScope® Video Laryngoscope System is useful for anterior airways, neonatal intubations, obese patients, and patients with limited neck extension. Additionally, it is useful for teaching purposes, verification of endotracheal (ET) position, nasal intubation, and ET exchange.

The GVL® System is recommended for use with an endotracheal tube stylet, particularly the GlideRite® Rigid Stylet.

## Intended Use

### Statement of Prescription

Federal (USA) law restricts this device for sale by or on the order of a physician.

The GlideScope® Video Laryngoscope System should be used only by individuals who have been trained and authorized by a physician or by health care providers who have been trained and authorized by the institution providing patient care.

### Intended Use

GlideScope® Video Laryngoscopes are intended for use by qualified medical professionals to obtain a clear, unobstructed view of the vocal cords for medical procedures

# Notice to All Operators

All operators should read this entire User's Manual prior to using the GlideScope® System. Failure to follow these instructions may result in patient injury, comprise the performance of the system, and may void the system warranty.

Verathon recommends that new GlideScope® users:

- Practice using the GVL® or Cobalt on a mannequin before clinical use
- Acquire clinical experience on patients without airway abnormalities

Refer to page 43 for recommended techniques.

# Cautions

**Caution. Risk of permanent equipment damage.**
**Do not expose GlideScope® Video Laryngoscopes or Cobalt Video Batons to temperatures above 140° F (60° C).**

**Do not disinfect GlideScope® Video Laryngoscopes or Cobalt Video Batons using devices such as autoclaves, ultrasonic cleaners, or pasteurizers. Use of such methods to disinfect GlideScope® Video Laryngoscopes or Cobalt Video Batons will cause permanent device damage and void the warranty. Refer to page 49 for a list of approved cleaning procedures and products.**

**MDD Class 1 Equipment Caution: Electrical shock hazard. Refer servicing to qualified personnel.**
This equipment has been tested and found to comply with the standards listed in the Approvals section of this manual (page 68). These limits are designed to provide reasonable protection against harmful interference in typical medical installations.

This equipment generates, uses, and can radiate radio frequency energy and if used properly is very unlikely to cause harmful interference to any other device(s) in the vicinity.

However, there is no guarantee that interference will not occur in a particular installation. Interference can be determined by turning the equipment on and off. If this equipment does cause interference with other devices, try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving device
- Increase the separation between equipment
- Connect the equipment to an outlet on a circuit different from that to which the other device(s) is (are) connected
- Consult your Verathon Medical Customer Care representative

**NOTE:** GlideScope® Video Laryngoscopes must be used with the supplied cables to maintain electromagnetic interference (EMI) within certified limits.

Users should be aware that portable and mobile equipment (cellular phones, etc.) may affect medical electrical equipment and take appropriate precautions during operation.

# Introducing the GlideScope® System

GlideScope® Video Laryngoscopes (GVL®) are designed for "1st pass success." They provide a consistently clear view of a patient's airway, enabling quick intubation. GlideScope® Video Laryngoscopes are clinically proven to achieve a Cormack-Lehane Grade I or II view 99% of the time.[1]

All GVL® models include an integrated, high-resolution, CMOS camera, LED light source, and a patented anti-fog mechanism. They connect directly to a color video monitor for real time viewing, video output, and recording. The GlideScope® System is available in both, reusable GVL® and single-use Cobalt versions, in a comprehensive range of versions and range of sizes, allowing clinicians to meet the particular requirements of patients ranging in size from neonatal infants to morbidly obese adults.

The GlideScope® Video Laryngoscope is an ideal tool for physicians and other healthcare professionals who need to effectively manage standard to difficult airways. The GlideScope® System is easy to learn, use, and teach. It is ideal for acute care settings and emergency environments. It also integrates easily into standard ED, OR, ICU, and NICU applications.

GlideScope® Video Laryngoscopes may be useful for the following procedures:

- First use intubations, replacing Direct Laryngoscopy (DL)
- Normal or restricted oropharyngeal views/visualization and assessment of the oropharynx
- Cormack-Lehane grades I - IV laryngeal views

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1 Cooper RM. Cardiothoracic Anesthesia, Respiration and Airway; Early clinical experience with a new video laryngoscope (GlideScope®) in 728 patients. *Canadian Journal of Anesthesia.* 2005; 52: 2: 191–198.

- Trauma airways - excellent when dealing with blood and secretions in the airway
- Airway management in morbidly obese patients
- Preterm and neonatal intubations
- Patients requiring cervical spine immobilization
- Reintubation in Intensive Care Unit (ICU) settings
- Supervision and documentation of the laryngoscopy
- Nasal tracheal intubation
- Insertion of transesophageal echocardiac probes
- Laryngoscopic foreign body removal
- Awake intubation for difficult airway management
- Insertion of double lumen tubes
- Teaching the anatomy of the airway

# GlideScope® System Components

Two interchangeable video laryngoscope systems are available: the reusable GVL® and Cobalt Single-Use System.

Please refer to page 62 for a complete listing of GlideScope® System components and part numbers.

## GlideScope® GVL System

The GlideScope® GVL System includes:

- The GlideScope® Video Monitor
- One reusable GVL®. The GVL® is comprised of a medical-grade plastic shell that houses a high-resolution CMOS camera, LED light source, and patented anti-fogging mechanism. The GVL® device is available in four sizes. Additional units may be purchased separately.
- Video cable (connects the GVL® to the monitor)
- GlideRite® Rigid Stylet

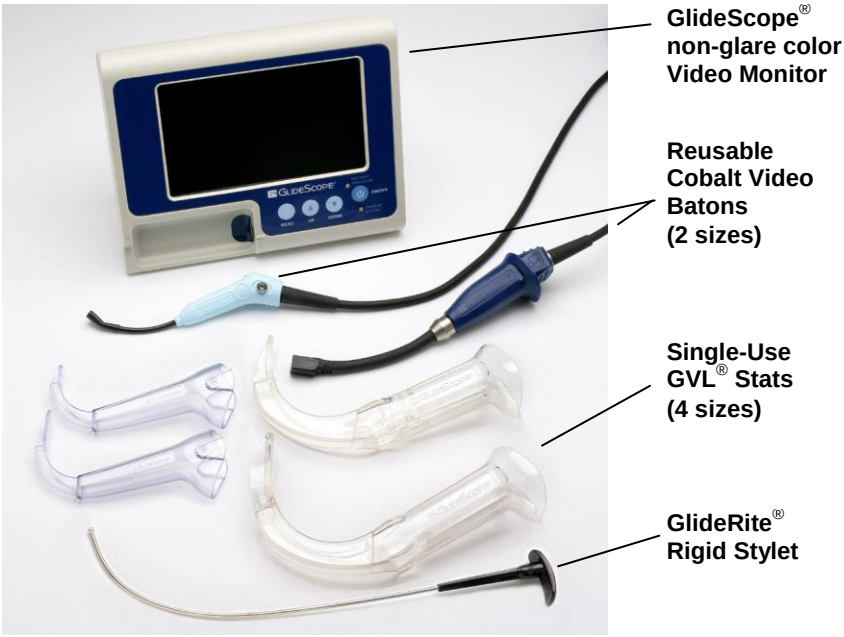
**Figure 1. GVL® System components.**


## Cobalt Single-Use System

The Cobalt Single-Use System includes:

- The GlideScope® Video Monitor
- Reusable video baton with integrated video cable. The Cobalt Video Baton includes a high-resolution CMOS camera, LED light source, and a patented anti-fogging mechanism. The Cobalt Video Baton is available in two sizes and each baton supports two sizes of GVL® Stats.
- GVL® Stats (sterile, single-use blades based on the current GlideScope® GVL design) - four sizes are available
- One GlideRite® Rigid Stylet

**Figure 2. Cobalt Single-Use System.**




# GlideScope® System Setup Options

The GlideScope® Video Monitor, Video Laryngoscopes, and related accessories may be set up in various configurations in order to best meet the needs of your facility. The GlideScope® System may be:

- Mounted on a mobile stand (Figure 3)
- Secured in a hard shell case for remote or emergency applications (Figure 4)
- Mounted on an IV pole (user-supplied) for use in clinics and hospitals (Figure 5)

**Figure 3. GlideScope® System - on mobile stand.**

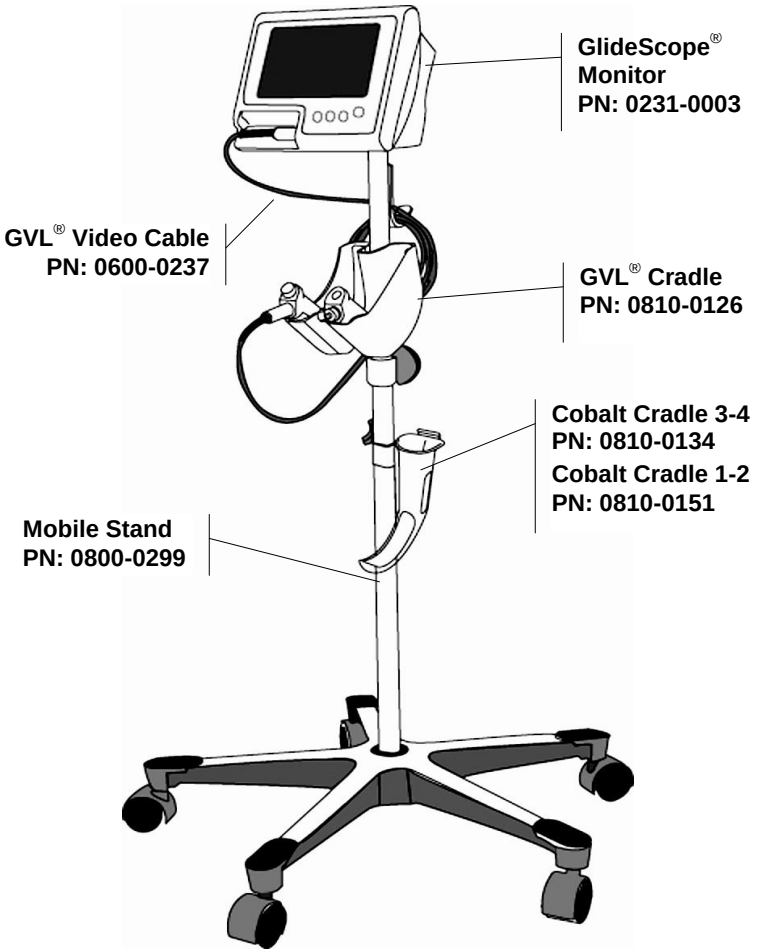


**Figure 4. GlideScope® System - in hard shell case.**

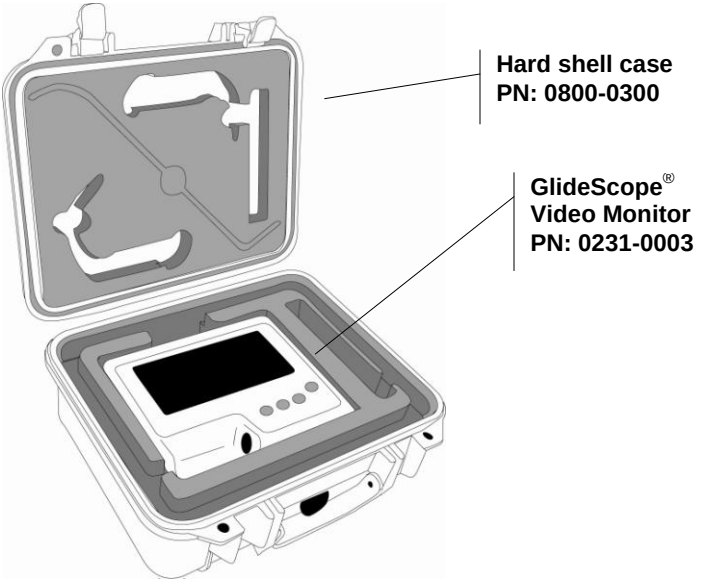
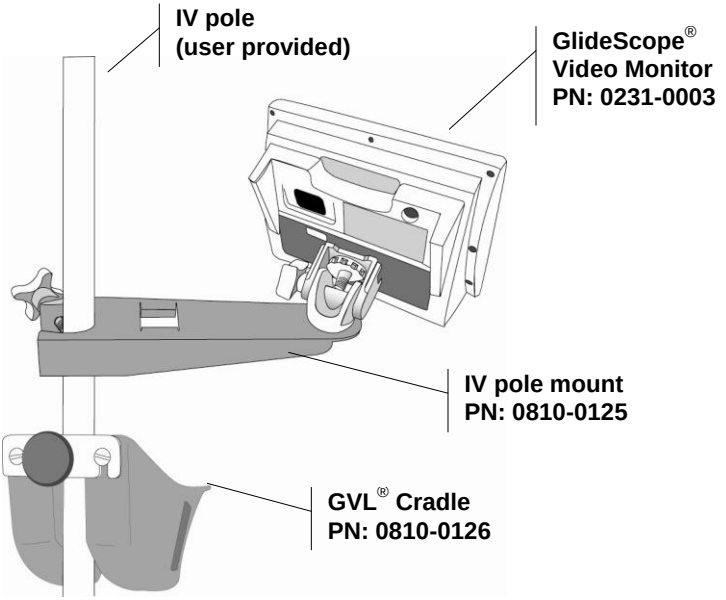



**Figure 5. GlideScope® System - on IV pole (user-supplied).**

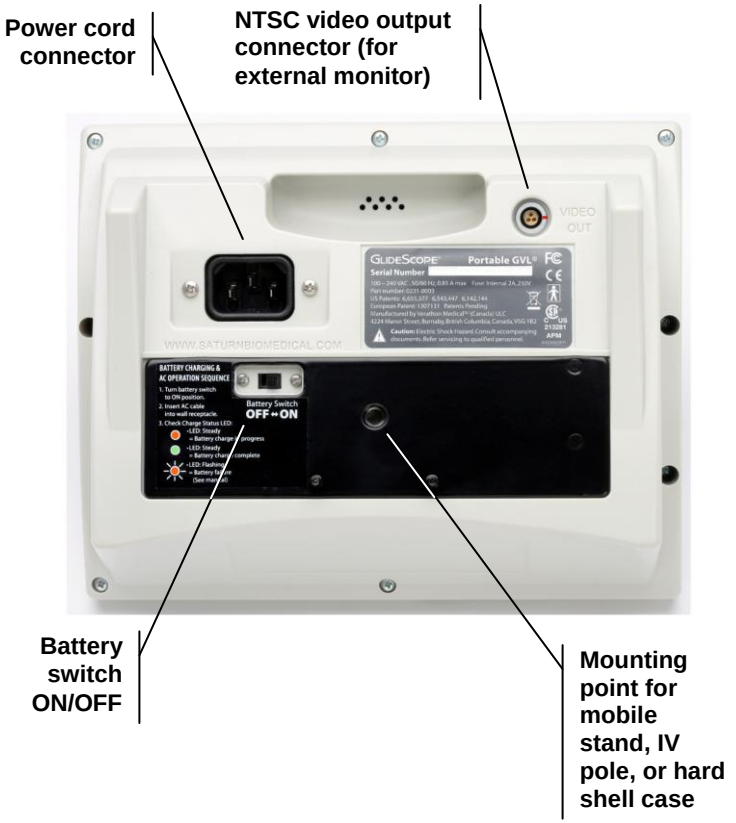


# Displays, Controls, and Indicators

## Monitor Back Panel

The GlideScope® Video Monitor back panel (Figure 6) contains the power cord connector, accessory video output connector, battery ON/OFF slider switch, and a mounting point for the optional mobile stand, IV pole, or hard shell case.

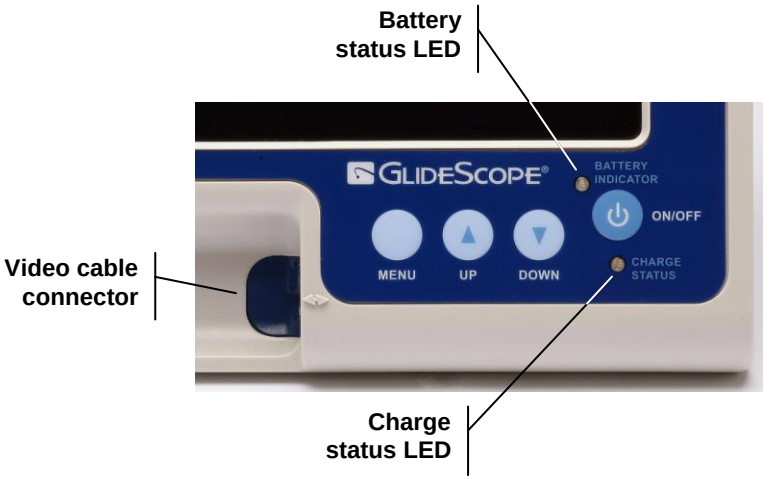
**Figure 6. GlideScope® Video Monitor back panel.**



# Monitor Front Panel

The GlideScope® Video Monitor front panel (Figure 7) contains the video cable connector, two battery status LEDs, and four buttons: MENU, UP, DOWN, and ON/OFF. Button functions are described in the table below.

**Figure 7. GlideScope® Video Monitor front panel.**




**Monitor front panel buttons.**

| Button | Function |
|---|---|
|  ON/OFF | Press to turn the GlideScope® System ON/OFF. |
|  UP DOWN | Press to increase/decrease monitor setting values. |
|  MENU | Press the MENU button repeatedly, to make selections from the displayed list of options. A menu item is selected (active) when highlighted in yellow. Display settings include: |

**Brightness:** When BRIGHTNESS is highlighted, press UP/DOWN to increase/decrease luminosity. A brightness setting of 18 - 20 units is recommended.

**Contrast:** When CONTRAST is highlighted, press UP/DOWN to increase/decrease image contrast. A contrast setting of 16 - 20 units is recommended.

**Color:** When COLOR is highlighted, press UP/DOWN to increase/decrease displayed color saturation. The default setting of 50 units (on a scale of 0 - 100 units) is recommended.

**Mirror:** Press UP to display a mirror image of the displayed image. Press DOWN to return to the original view.

**Reset: Pressing either UP or DOWN will return all monitor settings to the factory defaults.**

**Exit:** When EXIT is highlighted, press either UP or DOWN to save all settings and return to the viewing screen.

**Normal, NTSC, AV1:** These three items display the format and channel of the signal that is being received from the GlideScope®. Since all GlideScope® cameras use the NTSC format, these settings will not change.

**NOTE:** VOLUME and MUTE may appear on some monitor screens. These features are currently inactive.

## Monitor Front Panel LEDs

The monitor front panel has two status LEDs that indicate battery usage and charge states (Figure 8).

- The battery indicator LED illuminates when the monitor is operating on battery power
- The charge status LED indicates the battery charge level

**Figure 8. Front panel LEDs indicate battery usage and charge status.**


### Battery Indicator LED States

| Battery Indicator LED | Description |
|---|---|
| No LED | Monitor is off or the battery is completely depleted and needs to be recharged |
| Solid Green | Monitor is on and battery level is normal |
| Flashing Green | Flashing Green indicates two states of low battery:<br><br>● If there is no beeping, there is approximately five minutes left before the unit turns off due to low battery.<br><br>● If there is beeping, there is approximately one minute left before the unit turns off due to low battery. |

**Charge Status LED States**

| Charge Status LED | Description |
|---|---|
| No LED   | AC power is not connected |
| Flashing Orange   | Flashing Orange can indicate two states:<br><br>● If the AC power is connected, flashing orange could mean the battery switch is in off (to the left) position. In this case the monitor will still function but the battery will not be charged.<br><br>● If the AC power is not connected, flashing orange means the battery is malfunctioning. Please contact your Verathon Medical Customer Care representative. |
| Solid Green   | The battery is fully charged |
| Solid Orange   | Charging is in progress |

# Getting Started

## Initial Inspection

Upon receipt, inspect the components of the GlideScope® Video Laryngoscope System for any obvious physical damage that may have occurred during shipment. Verathon Medical recommends that the inspection be performed by a biomedical engineer or other qualified professional who is familiar with electronic medical devices.

The components you receive will vary depending on which configuration was ordered (see Figure 3-5). To verify that you have received the appropriate components, refer to the packing list included with your system.

If any of the components are missing or damaged, notify the carrier and Verathon Medical Customer Care immediately at:

- 800.331.2313 (Canada and US)
- 425.867.1348 (International)
- +31.30.68.70.570 (Europe)

Please refer to page 61 for additional contact information.

# Preparing for First Use

Prior to using the GlideScope® System for the first time, perform the following steps:

1. Charge the monitor battery (instructions begin on this page).
2. Set up the GlideScope® System in your preferred configuration (instructions begin on page 25).
3. Attach a video laryngoscope to the monitor (instructions begin on page 33).
4. Connect the monitor to an external source such as a TV screen or NTSC video monitor (optional).
5. Perform a functional check (instructions begin on page 39).

## 1. Charge the Monitor Battery

The GlideScope® System can operate on AC power (wall current) or battery power.

The GlideScope® Monitor contains a lithium battery that provides power to the GlideScope® Video Laryngoscope. Under normal conditions, the battery will last approximately 90 minutes before it needs to be recharged.

**IMPORTANT! The battery must be fully charged prior to first use.**

For optimal battery life:

- The battery must be fully charged before first use in battery mode
- When the battery is low, the charge status LED (on the monitor front panel) will flash green for approximately five minutes
- When the battery is nearly depleted, the charge status LED will flash green and beep. This indicates that the battery has approximately one minute of power remaining.

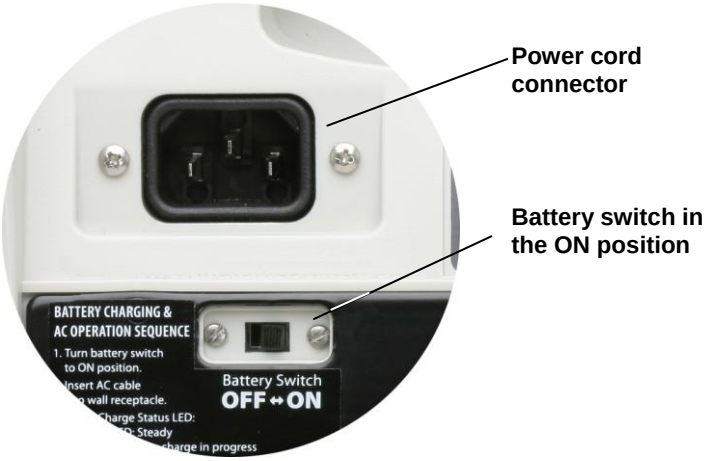
- The monitor battery should be charged at room temperature, between 32° - 104° F (0° - 40° C)

To charge the monitor battery:

**IMPORTANT!** Before beginning, make sure the AC power cord is disconnected and the battery switch (on the monitor rear panel) is in the OFF position (to the left).

1. Slide the battery switch to the ON position (to the right) (Figure 9).
2. Insert the female end of the power cord into the power cord connector on the back of the monitor (Figure 9).

**Figure 9. Rear panel detail: AC power cord connector and battery switch in the ON position.**




3. Insert the other end of the power cord into a wall outlet or appropriate AC power source.

   **NOTE:** For power supply compatibility information, please refer to the label on the back of the monitor.

4. The charge status LED will turn orange, indicating that the charging cycle has begun. When the battery is fully charged, the charge status LED will turn green (Figure 10).

At this point the system is fully functional on battery power.

**Figure 10. The charge status LED will turn green when the battery is fully charged.**


**NOTE:** For more information about charge status LED states, refer to table on page 20.

# 2. Set Up the GlideScope® System

The GlideScope® System may be set up in one of three configurations:

- On a mobile stand (Figure 3)
- In a hard shell case (Figure 4)
- On an IV pole (Figure 5)

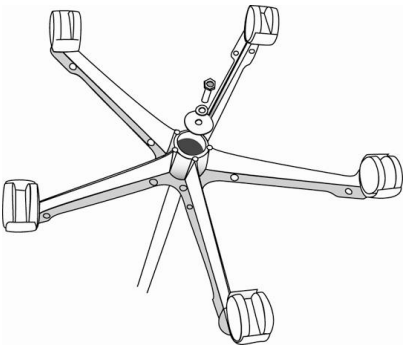
## Setting up the GlideScope® System on the Mobile Stand

(Refer to Figure 3, page 14)

**Attach the center pole to the base (mobile stand only)**

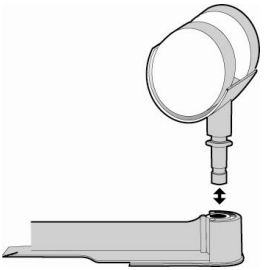
1. Remove the hex bolt and washers from the bottom of the pole.
2. Insert the bottom end of the pole into the top of the base.
3. Flip the base over and screw the bolt and washers back into place to secure the pole to the base. To keep the center pole stable, be sure to tighten the bolt securely.

**Figure 11. Attaching the mobile stand base to the center pole - hardware stack-up.**



4. To reinsert the mobile stand wheels: insert the wheel pin into the opening on the end of the mobile stand base (Figure 12). Applying steady, moderate force, press the wheel pin into the base until it snaps into place.

**Figure 12. Removing and inserting the wheels from the mobile stand.**



**To Remove the Mobile Stand Wheels**

The mobile stand wheels may be removed to facilitate storage and transportation.

Using steady, moderate force, pull the wheels away from the base.

**Adjust the Height of the Mobile Stand (Figure 13)**

1. Loosen the black height adjustment knob located on the mobile stand pole by turning it counterclockwise.

2. Raise or lower the pole to the desired height.

3. Secure the pole in position by turning the height adjustment knob clockwise.

**Figure 13. Adjusting the height of the mobile stand.**

**Attach the Monitor to the Mobile Stand**

Hold the monitor against the screw on the tilt head and turn the tilt head fastener clockwise to tighten (Figure 14).

**Adjust the Monitor Angle**

Before use, the angle of the monitor should be adjusted for optimal viewing. The ideal angle will be determined by the working position of the monitor and the user.

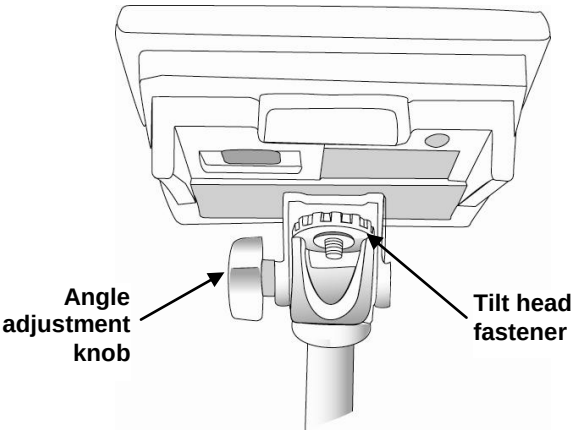
To adjust the angle of the monitor:

1. Loosen the angle adjustment knob located on the tilt head of the IV pole mount by turning it counterclockwise.

2. Tilt the monitor to the desired angle.

3. Secure the monitor in place by turning the angle adjustment knob clockwise (Figure 14).

**Figure 14. Attaching the monitor to the mobile stand.**




### Attach the GVL® Cradle

To attach the GVL® Cradle:

1. Open the cradle latch and position the mobile stand pole on the back of the cradle.

2. Close the cradle latch and tighten in place by turning the black cradle adjustment knob clockwise (Figure 15).

**Figure 15. Attaching the GVL® Cradle to the mobile stand.**

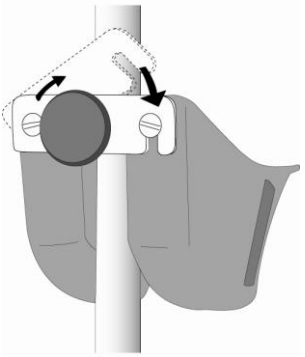
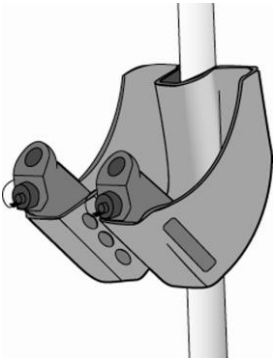


**Figure 16. GlideScope® GVL®s in the cradle bays.**



**Attach the Cobalt Video Baton Cradle**

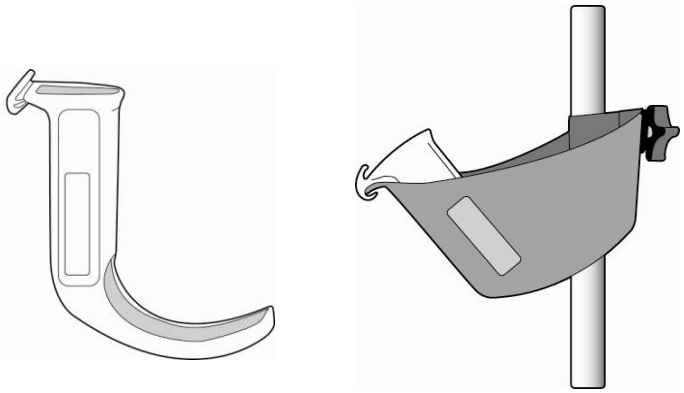
The Cobalt Video Baton Cradle may be mounted either to the GVL® Cradle or directly to the mobile stand center pole.

To attach the Cobalt Video Baton Cradle to the GVL® Cradle:

1. Attach the GVL® Cradle to the mobile stand as shown in Figure 15.

2. Hook the Cobalt Cradle into the GVL® Cradle as shown in Figure 17.

**Figure 17. Attaching the Cobalt Video Baton Cradle to the GVL® Cradle.**

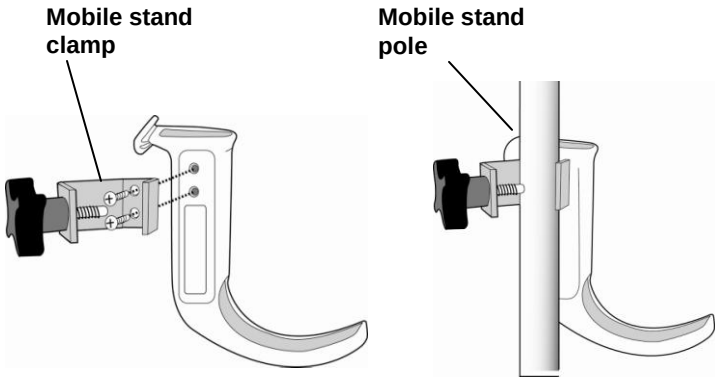


To attach the Cobalt Video Baton cradle directly to the mobile stand or IV pole:

1. Attach the center pole clamp to the Cobalt Cradle.

2. Attach the center pole clamp and Cobalt Video Baton Cradle to the mobile stand or IV pole and turn the black knob clockwise to tighten.

**Figure 18. Attaching the center pole clamp to the Cobalt Cradle.**




## Setting up the GlideScope® System in the Hard Shell Case

Refer to Figure 19 on page 31.

The hard shell case comes with a custom foam insert designed to protect the GlideScope® System components. To secure the monitor in the hard shell case:

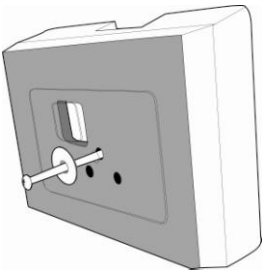
1. Remove the foam insert from the bottom of the hard shell case.

2. Remove the screw from the foam insert.

3. Align the foam insert with the monitor rear panel so that the battery switch remains accessible.

4. Screw the foam insert to the monitor until the screw is snug (Figure 19). Do not over-tighten the screw.

**Figure 19. Removing the video monitor from the hard shell case.**



**Removing the Video Monitor From the Hard Shell Case**

To remove the monitor from the hard shell case:

1. Grasp the monitor handle and pull the monitor and foam out of the hard shell case.

2. On the back of the foam insert, remove the screw holding the monitor to the foam.

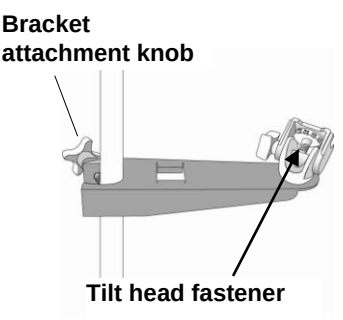
## Setting up the GlideScope® System on an IV Pole

Refer to Figure 5.

1. Attach the IV pole mounting bracket to the IV pole by tightening the bracket attachment knob until the bracket is secure.

2. To attach the GlideScope® Video Monitor: hold the monitor against the screw on the tilt head and turn the tilt head fastener clockwise to tighten (Figure 14).

**Figure 20. Attaching the mounting bracket to the IV pole.**




3. To attach a GVL® Cradle to the IV pole, refer to Figure 15.

   To attach a Cobalt Video Baton Cradle to the IV pole refer to Figure 17 or Figure 18.

# 3. Attaching and Detaching the GlideScope® GVL or Cobalt Video Baton and GVL® Stat

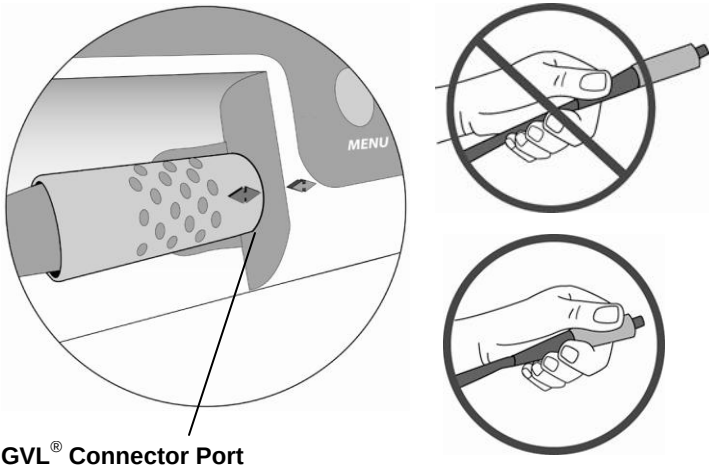
## Attaching the GlideScope® GVL to the Monitor

The GlideScope® GVL connects to the monitor with a detachable video cable (supplied).

1. Insert the GVL® Video Cable into the connector port located on the face of the monitor so that the arrows on the cable and the monitor are aligned (Figure 21).

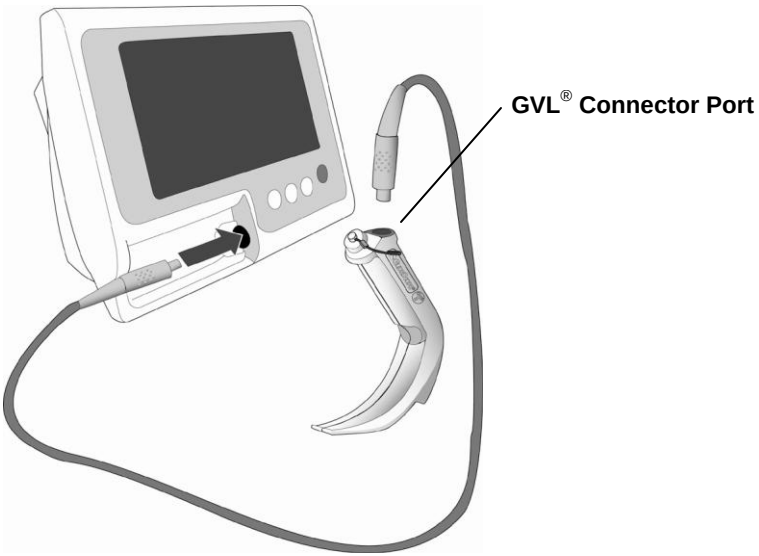
   **NOTE:** When connecting and disconnecting the cable, grasp the connector by the gray sleeve.

**Figure 21. Attaching the GVL® Video Cable to the monitor.**




2. Insert the other end of the cable into the port located on the handle of the GVL® (Figure 22).

**Figure 22. Attaching the video cable to the monitor and GVL®.**




**NOTE:** Visually inspect the GVL® to assure that all surfaces are free of unintended rough areas, sharp edges, protrusions, or cracks.

## Attaching the Cobalt Video Baton to the Monitor

The Cobalt Video Baton includes an integrated video cable. To attach it to the monitor, insert the video cable connector into the port located on the face of the monitor so that the arrows on the cable and the monitor are aligned as shown in Figure 21.

**NOTE:** When connecting and disconnecting the connector cable, grasp the cable by the gray sleeve (Figure 21).

## Inserting the Cobalt Video Baton into the GVL® Stat

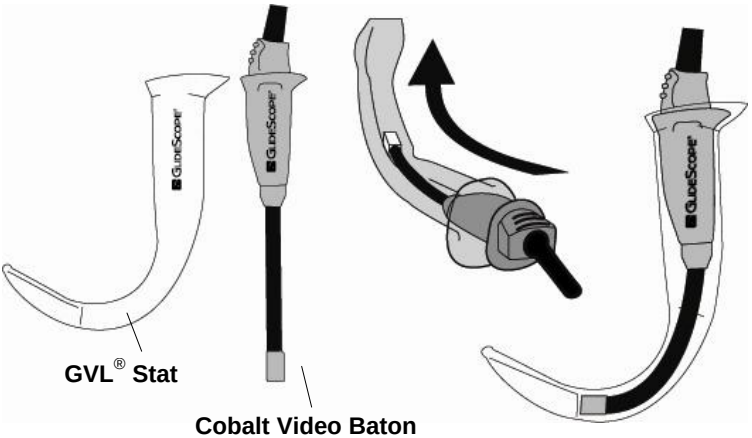
The Cobalt reusable Video Baton is used with a sterile, single-use, GVL® Stat.

- Cobalt Video Baton 1-2 is used with GVL® Stats 1 and 2
- Cobalt Video Baton 3-4 is used with GVL® Stats 3 and 4

To insert the Cobalt Video Baton into the GVL® Stat:

1. Insert the Cobalt Video Baton into the GVL® Stat until it clicks into place (Figure 23).

**Figure 23. Inserting the Cobalt Video Baton into the GVL® Stat.**




2. Ensure proper insertion by aligning the wide collar of the video baton to the wide collar of the GVL® Stat; or match the GlideScope® logo on the side of the video baton with GlideScope® logo on the side of the GVL® Stat.

   Be sure not to insert the video baton backwards (Figure 24). If the video baton does become stuck, insert a tongue depressor into the GVL® Stat shell to release the video baton.

**Figure 24. Do not insert the video baton backwards.**

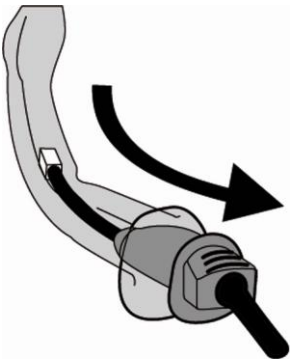
**NOTE:** Visually inspect the GVL® Stat to ensure that all exterior surfaces are free of unintended rough areas, sharp edges, protrusions, or cracks.

### Detaching the Cobalt Video Baton from the GVL® Stat

The GVL® Stat is a single-use device. After each use, it should be removed from the Cobalt Video Baton and disposed of properly.

To detach the Cobalt Video Baton from the GVL® Stat, grasp the handle of video baton and pull firmly (Figure 25).

**Figure 25. Detaching the video baton from the GVL® Stat.**



**IMPORTANT!** A used GVL® Stat is a biohazard and should be disposed of in a manner consistent with local directive's in the user's jurisdiction.

## GlideScope® Anti-Fog Feature

To ensure optimal results of the anti-fog heating feature on the GlideScope® Video Laryngoscope perform the following steps:

### Single Use Model

If using the GlideScope® Cobalt model, follow steps 1, 2 and 3 recommended below.

### Reusable Models

If using the GlideScope® GVL model, attach the GVL® to the system then follow steps 2 and 3.

1. Prior to use, open the GVL® Stat pouch, but do not remove the Stat from the packaging (to keep the Stat clean until ready for use). With the Stat still in the package, insert the Cobalt video baton into the Stat. The video baton must be securely seated in the GVL® Stat for efficient heating of the Stat.

2. Turn on the GlideScope® monitor to activate the anti-fog heating feature.

3. After 30 seconds to 120 seconds, the anti-fog feature should be fully effective, depending on the ambient temperature and humidity where the equipment is being stored and/or used.

If the GlideScope® GVL, Video Baton or Stat are stored in cold conditions, additional warming time may be required for optimal performance of the anti-fog feature.

## 4. Connect the Monitor to an External Video Device (Optional)

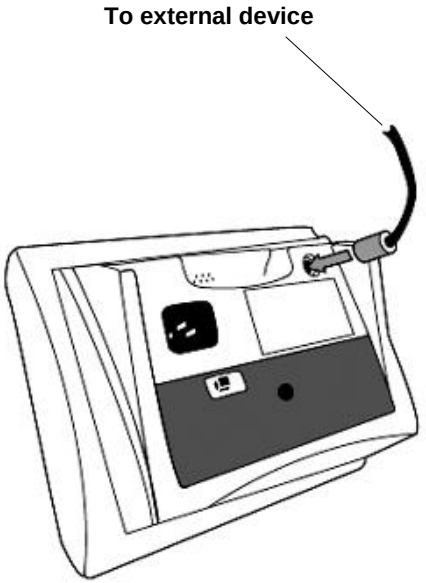
The monitor may be connected to an NTSC-compatible external device such as a TV screen or video recorder by using an optional Verathon video output cable. Please contact your Verathon Medical Customer Care Representative for more information.

To connect the monitor to an external video device:

1. Insert the video output cable into the port on the back of the video monitor.

2. Connect the opposite end of the cable to the external viewing device.

**Figure 26. Attaching a video output cable to the monitor.**




## 5. Perform a Functional Check

Prior to first use, perform the following functional check to assure that the GlideScope® System is working properly. Please contact your Verathon Medical Customer Care Representative if your GlideScope® System does not function as described below.

To perform a functional check of the GlideScope® System:

1. Fully charge the monitor battery (see page 22).

2. Connect a GlideScope® Video Laryngoscope to the monitor (GVL® or Cobalt Video Baton + GVL® Stat, see page 33).

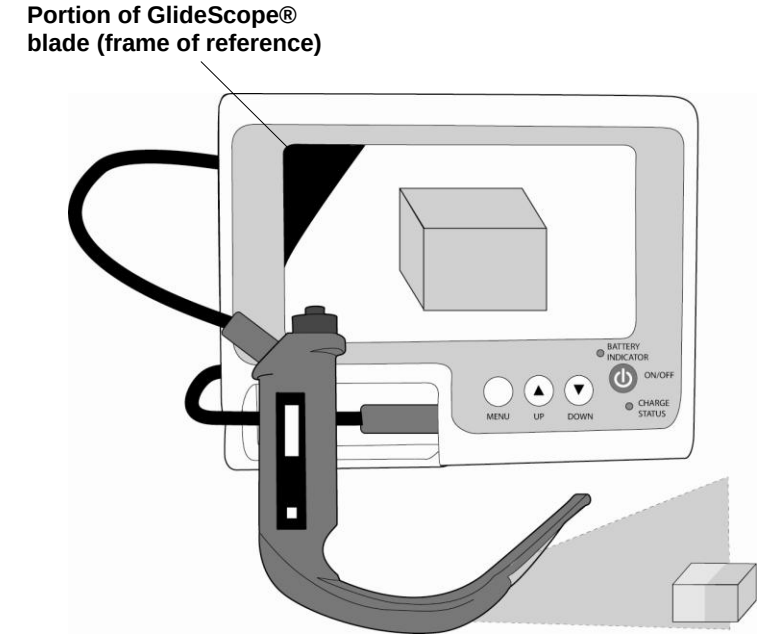
3. Slide the battery switch on the back of the monitor to the ON (to the right) position.

4. Turn the system on by pressing the ON/OFF button located on the face of the monitor.

5. Observe the monitor screen to verify that an image is being received from the GlideScope® (Figure 27).

   **NOTE:** The upper left corner of the LCD screen will display a small portion of the GVL® Blade (Figure 27). The blade is captured in the view due to the wide-angle properties of the camera lens. This opaque portion acts as a frame of reference during the intubation process and assures that the orientation of the image is correct in the monitor.

**Figure 27. When the power is on, one corner of the GVL® blade is visible in the display.**



# Optional Accessory

## GlideScope® DVR for GVL®/Cobalt

The GlideScope® DVR (Digital Video Recorder) is designed to record intubations performed with the GlideScope® GVL/Cobalt.

**Figure 28. GlideScope® DVR**


INSTRUCTIONS FOR USE

### Recording

1. Ensure Monitor is OFF and SD card no larger than 2GB is inserted into the DVR.
2. Connect GVL®/Video Baton cable to DVR
3. Connect DVR cable to Monitor
4. Turn Monitor ON
5. REC LED will light up in solid RED after approximately 3 seconds
6. DVR begins recording automatically

### Playback

1. Turn the Monitor OFF and wait until REC LED turns OFF (approximately 3 seconds)
2. Open DVR door and remove SD card by pushing and releasing.
3. Insert the SD card in an SD card reader connected to a PC
4. Browse to the DVMPG4 folder in SD card drive
5. Playback any recordings with .ASF extensions

## Troubleshooting

**If REC LED is blinking, there may be a problem with recording. Possible causes:**

1. Connections are not secure. Verify cable connections:
   - GVL®/Video Baton to DVR
   - DVR to Monitor
2. SD card is missing or not inserted properly. Turn Monitor OFF; ensure SD card is properly inserted and try again.
3. SD card is defective. Try another SD Card.
4. Problem with GVL®/Video Baton. Ensure proper function by connecting GVL®/Video Baton directly to monitor.

If the problem persists, contact Verathon Medical Customer Care.

## Cleaning

Clean the exterior of the DVR with IPA (70% Isopropyl Alcohol Solution) wipes.

# Clinical Application Tips

## The GlideScope® 4-Step Technique

Verathon recommends using the GlideScope® 4-Step Technique as outlined below:

1. In the Mouth: looking directly into the patient's mouth and with the GlideScope® GVL in the left hand, introduce the GlideScope® Video Laryngoscope into the midline of the oral pharynx.

2. At the Screen: With the laryngoscope inserted, look at the monitor to identify the epiglottis, then manipulate the scope to obtain the best glottic view.

3. In the Mouth: looking directly into the patient's mouth, not at the screen, carefully guide the distal tip of the tube into position near the tip of the laryngoscope.

4. At the Screen: Look to the monitor to complete the intubation; gently rotate or angle the tube to redirect as needed.

## Tips for GlideScope® Video Laryngoscope Insertion

- The GlideScope® GVL is designed to be inserted down the midline of the tongue to the epiglottis.

- The GlideScope® GVL may be used to produce a Macintosh indirect lift of the epiglottis, or a Miller lift.

- Intubations using the GlideScope® GVL only require approximately 0.5 - 1.5 kg (1 to 3.5 lbs) of lifting force.

- The use of an endotracheal tube stylet is recommended. The GlideRite® Rigid Stylet has been designed to complement the angle of the GVL® to facilitate intubation, and should be used with endotracheal tubes 6.0mm and larger. A malleable stylet may be used with a 60° - 90° angle.

- To aid the passage of the endotracheal tube when at the vocal cords, gradually withdraw the stylet approximately 5 cm (2 inches). A 1cm adjustment (withdrawal) of the laryngoscope may be beneficial to reduce the viewing angle and allow the glottis to drop.

**Figure 29. The curvature of the GlideRite® Rigid Stylet complements that of the GVL® and GVL® Stat.**

# Tips for Working with Endotracheal Tubes

- Insert the ET tube behind or immediately adjacent to the GVL® Stat.
- Do not insert the stylet into the larynx during intubation.
- You can bend the proximal tip of the stylet backward to permit one-handed operation of the ET tube.
- Carefully introduce the distal end of the ET tube between the vocal folds.
- When introducing the GlideScope® and/or the endotracheal tube, look directly into the mouth to avoid damaging the endotracheal tube cuff, the patient's teeth, or the soft tissues such as the soft palate or tonsils.
- Advance the ET tube while simultaneously withdrawing the stylet with the thumb (Figure 30). The stylet should be withdrawn approximately 5 cm (2in).
- Avoid excessive lifting or pushing of the glottis by the GVL® Stat. Maximum laryngeal exposure may not facilitate intubation; reducing the elevation applied to the laryngoscope may make inserting the ET tube easier.

**Figure 30. The GlideRite® Rigid Stylet is designed for one-handed removal from the endotracheal tube**.

# Cleaning, Disinfecting and Maintenance

## Cleaning, Disinfecting and Maintaining GlideScope® GVL and Cobalt Systems

Cleaning the GlideScope® GVL and Cobalt system is an important part of maintaining the system. Make sure that the system is clean before each use. You should also examine the system periodically to make sure it is operating correctly.

### General Maintenance Information

Periodic inspections should be performed to ensure safe and effective operation. It is recommended that a qualified technician perform a full visual inspection of all components at least every three months.

The technician should check for the following items:

- External damage
- Damage to the power supply
- Connectors and cable insulation integrity

To ensure patient safety, users should perform a routine inspection of the GlideScope® Video Laryngoscope before every use to ensure that all endoscopic components are free of unintended rough surfaces, sharp edges, protrusions or cracks.

If inspection reveals any faults in the components, contact Verathon Medical Customer Care. All repairs must be performed by an authorized Verathon Medical Service Center.

**Caution. Risk of permanent equipment damage. Do not expose GlideScope® Video Laryngoscopes or Cobalt Video Batons to temperatures above 140° F (60°C). Do not disinfect GlideScope® Video Laryngoscopes or Cobalt Video Batons using devices such as autoclaves, ultrasonic cleaners, or pasteurizers. Use of such methods will cause permanent device damage and void the warranty. Refer to cleaning section for a list of approved cleaning procedures and chemicals.**

# General Cleaning and Disinfection Information

## Table 1: Risk Assessment

| Device | Sterile | Use | Spaulding's CDC Classification | Disinfection | | | Sterilization |
|---|---|---|---|---|---|---|---|
| | | | | Low Level | Int. Level | High Level | |
| GVL® | Non-sterile | Reusable | Semicritical | | | X | |
| GVL® Stat | Sterile | Single use | Semicritical | | | | |
| Cobalt Video Baton* | Non-sterile | Reusable | Noncritical | X | | | |
| Video Cables | Non-sterile | Reusable | Noncritical | X | | | |
| Stylet | Non-sterile | Reusable | Semicritical | | | X | |
| Monitor# | Non-sterile | Reusable | Noncritical | X | | | |
| Cradle# | Non-sterile | Reusable | Noncritical | X | | | |

It is understood that all items in this chart will be used as intended.

**Key:**

***** The Cobalt Video Baton is a non sterile, reusable device which is protected from contact with mucous membranes and non-intact skin by the Stat (sterile, single use) when used as intended. Low level disinfection is recommended for the Cobalt Video Baton after every patient use. High Level Disinfection is required for the Video Baton when it is visibly soiled.

\# Disinfect monitor and cradle when they are visibly soiled and on a regular basis as per a schedule established by the medical care facility or provider.

– Shaded areas - not required/not compatible with device materials.

– Checked boxes (x) show minimum requirement.

– Unshaded areas show permissible levels of disinfection based on compatibility with device materials.

**Warning:**

Disinfectants and cleaning methods listed are recommended by Verathon based on compatibility with product materials. Refer to the label instructions for guidance on disinfection efficacy and appropriate clinical uses.

**Caution:** Meticulous cleaning must precede any disinfection process, to ensure all foreign matter is removed from the surface of the device. This allows the active ingredients of the chosen process to reach all the surfaces of the device.

Availability of cleaning products varies by country, and we are unable to test products in every market. Please use the list of recommended chemicals in this manual to compare with products available locally.

**Note:** When using any of the chemicals listed below, read and comply with product use instructions in all applications.

# Table 2: Chemical Compatibility and Disinfection Methods for GVL®, Cobalt Video Batons and Video Cables

| Active Ingredient | Compatibility | Conditions | Disinfection Level | Caution/ Comments |
|---|---|---|---|---|
| Enzymatic debridement agent/ detergent | General hospital grade | As per instructions | N/A | Surface cleaning only in preparation for disinfectant |
| Isopropyl Alcohol Solution | 70% | 70% used to wipe down with minimum 1 minute exposure | Low | |
| Glutaraldehyde | Up to 3.4% | 2.0% – exposure for minimum 20 minutes at 20°C or as per manufacturer's instructions | High | |
| Ortho-Phthalaldehyde | 0.55% | 0.55% – exposure for 12 minutes at 20°C or as per manufacturer's instructions | High | |
| Peracetic Acid | 0.2% | 0.2% - exposure for minimum 12 minutes at 50 to 56°C or as per manufacturer's instructions | See comments on right | Classified as a chemical sterilant |
| Bleach (Sodium Hypochlorite) | Up to 8000ppm | 5000ppm – exposure for 10 minutes at 20°C | High | Corrosive for connector pins and SS ring |
| | | 500ppm – used to wipe down with minimum 1 minute exposure | Low | Noncorrosive at ≤ 500ppm |

Refer to pages 51-55 for Disinfecting Steps.

# Table 3: Chemical Compatibility and Disinfection Methods for GlideRite® Rigid Stylet

| Active Ingredient | Compatibility | Conditions | Disinfection Level | Caution/ Comments |
|---|---|---|---|---|
| Glutaraldehyde | Up to 3.4% | 2.0% – exposure for minimum 20 minutes at 20°C or as per manufacturer's instructions | High | |
| Ortho-Phthalaldehyde | 0.55% | 0.55% – exposure for 12 minutes at 20°C or as per manufacturer's instructions | High | |
| Peracetic Acid | 0.2% | 0.2% - exposure for minimum 12 minutes at 50 to 56°C or as per manufacturer's instructions | See comments on right | Classified as a chemical sterilant |
| Isopropyl Alcohol Solution | 70% | 70% - exposure for 10 minutes at 20°C | Intermediate | |
| | | 70% used to wipe down with minimum 1 minute exposure | Low | |
| Bleach (Sodium Hypochlorite) | ≤ 500ppm | 500ppm – used to wipe down with minimum 1 minute exposure | Low | Noncorrosive at ≤ 500ppm |
| Enzymatic debridement agent/ detergent | General hospital grade | As per instructions | N/A | Surface cleaning only in preparation for disinfectant |
| N/A | Tested in autoclave (steam cycle) | Minimum 4 minute 132°C pre-vacuum steam sterilization cycle | See comments on right | Based on requests from users, an autoclave cycle has been established for the Stylet for ease of use |

Refer to pages 51-55 for Cleaning & Disinfecting Steps.

# Cleaning and Disinfecting the GlideScope® GVL and Cobalt Systems

**Warning**

Make sure that you do not overheat the GlideScope® GVL or Cobalt Video Baton during cleaning. You can monitor the color of the temperature gauge on the handle to avoid overheating the GVL® or Cobalt Video Baton.

**Caution. Risk of permanent equipment damage.**

Do not expose GlideScope® GVL or Cobalt Video Batons to temperatures above 140° F (60°C).

The manufacturer's warranty is void if the product is exposed to temperatures above 60°C (140°F).

**Figure 31. Monitor the color of the temperature indicator to avoid overheating the GVL®.**


| | |
|---|---|
| ■ | The temperature indicator turns black if the GVL® or Cobalt Video Baton is heated above 60°C (140°F). |
| ■ □ | A gray or white indicator does not indicate overheating. |

**Caution**

Do not use autoclaves or pasteurizers for the GlideScope® GVL and Cobalt Systems

Use of such methods will cause permanent device damage and void the warranty.

Bleach can be used on the baton but with special attention to the connector. Bleach may corrode the stainless steel inserts and damage the connector pins.

## Cleaning the GlideScope® GVL

The GlideScope® GVL is a non sterile reusable device. It is recommended that the GlideScope® GVL is cleaned and disinfected after every patient use, using a High Level Disinfectant method as defined in Table 2. High Level Disinfection is required for the GlideScope® GVL when it is visibly soiled.

To clean the GlideScope® GVL:

1. Disconnect the GVL® from the video cable.

2. Insert the attached protective cap into the video cable port to protect the electronic connector.

3. Wash the GVL® manually using a hospital grade equipment detergent or an enzymatic debridement agent/detergent to remove all foreign material (e.g., soil and organic material) from the surface of the device.

## Disinfecting the GlideScope® GVL

To disinfect use any of the chemicals listed in Table 2 and do the following:

1.Ensure the equipment is clean (see Cleaning Section for GVL®).

2.Ensure the protective cap on the connector is secure.

3.Prepare the disinfectant solution at the concentration and temperature recommended by the disinfectant manufacturer.

Disinfect the equipment following the disinfectant manufacturer's instructions or as stated in Table 2.

4. After the disinfection process, rinse (as applicable) and dry the GVL® and then store the equipment in a clean environment.

## Cleaning the GlideScope® Cobalt Video Baton

The GlideScope® Cobalt Video Baton is a non sterile reusable device, which is protected by the GVL® Stat and is not intended to have direct patient contact.

**Caution**

| |
|---|
| Do not place the Cobalt Video Baton in the cradle if it is contaminated. |

The video baton, which is protected from direct contact with the patient by the Stat, will normally only require cleaning and wiping down between uses using either IPA or bleach. If there is concern about its level of contamination, or if it is exposed to contamination, then it can be disinfected using a High Level Disinfection method, as defined in Table 2 on page 49.

**Caution**: Ensure the protective cap is properly fitted on the video baton prior to immersion in water. Bleach can be used on the video baton but with special attention to the connector, as it may corrode the stainless steel inserts and damage the connector pins. You can also use a soft brush to scrub the video baton, taking care not to damage the camera lens. However, do not use a wire brush because it may damage the surface of the video baton.

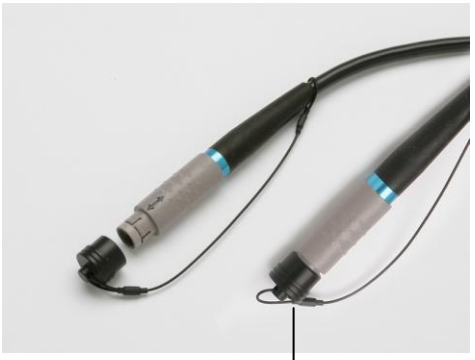
1. Detach the GVL®Stat from the video baton as described on page 36.

   **Note:** A used GVL® Stat is a biohazard and must be disposed of in a manner consistent with local protocols.

2. Disconnect the video baton from the monitor.

3. Place the protective cleaning cap over the connector (Figure 32).

**Figure 32. Make sure that the protective cap is in the correct position before you clean the video baton**.



**Correct cleaning position – protective cap covering the electronic connector**

4. Wash the baton manually using a hospital-grade equipment detergent or an enzymatic debridement agent/ detergent to remove all foreign material (e.g., soil and organic material) from the surface of the device.

5. The Cobalt video baton can now be disinfected.

# Disinfecting the GlideScope® Cobalt Video Baton

To disinfect use any of the chemicals listed in Table 2 and do the following:

1. Ensure the equipment is clean (see Cleaning Section for Cobalt Video Baton).

2. Ensure the protective caps on the connectors are secure.

3. Prepare the disinfectant solution at the concentration and temperature recommended by the disinfectant manufacturer. Disinfect the equipment following the disinfectant manufacturer's instructions or as stated in Table 2.

4. After the disinfection process, rinse (as applicable) and dry the Cobalt Video Baton and then store the equipment in a clean environment.

# Cleaning the Video Cables

Wipe the video cables with IPA (70% isopropyl alcohol), bleach (100ppm) or a mild detergent and water**.**

High Level Disinfection, as stated in Table 2 is required for the video cable when it is visibly soiled.

# Cleaning the Monitor

Wipe the exterior of the monitor with IPA (70% isopropyl alcohol), bleach (100ppm) or a mild detergent and water.

# Cleaning the Cradle

Wipe the cradle with a standard hospital-grade surface cleaning product.

## Cleaning and Disinfecting the GlideRite® Rigid Stylet

The Stylet is a nonsterile reusable device which requires cleaning and High Level Disinfection as defined in the risk analysis – Table 1 on page 47.

1. Clean using a Low Level disinfection wipe method or rinse/ brush method.

2. Using a brush, apply detergent or an enzymatic debridement agent.

3. Rinse under clean, running water for 1 minute.

4. Disinfect the Stylet using a High Level Disinfection method as defined in Table 3 on page 50.

Note: For end user convenience it has been determined that the GlideRite® Rigid Stylet is compatible with the autoclaving cycle in Table 3 on page 50.

## Replacing the Monitor Battery

Under normal operating conditions, the battery will last 2 - 3 years; or approximately 500 charge/discharge cycles.

The battery is not user-replaceable. In case of battery malfunction, do not attempt to replace the monitor battery. **Any attempts to replace the battery by unauthorized service technicians will void the warranty.** Please contact your Verathon Medical Customer Care Representative for more information on battery replacement.

# O-Ring Replacement

A protective cap is attached to the top of the GlideScope® GVL and on the end of the Cobalt Video Baton cable. The protective cap contains a rubber O-ring that ensures an effective seal during cleaning and sterilization. Over time, routine use will wear out the O-ring. Replace the O-ring immediately if:

- Any nicks or tears are visible
- There is any liquid in the cable connector port after cleaning

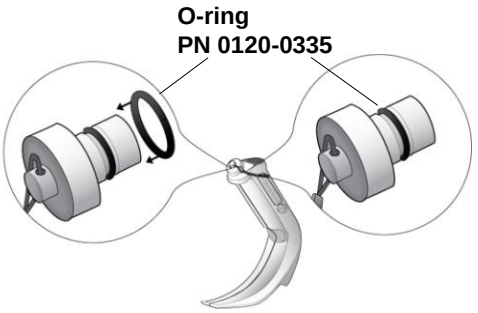
To replace an O-ring:

1. Remove the protective cap from the GVL® port.

2. On the inside of the protective cap, pick the O-ring out of the groove located at the base of the cap and remove.

3. Then stretch the replacement O-ring around the base of the cap and insert it into the groove (Figure 33). Make sure it is seated securely in the groove. Take care not to nick the O-ring during insertion.

**Figure 33. Replacing the O-Ring.**



# Transportation and Storage

GlideScope® System components can be safely used and stored under the environmental conditions specified on page 64.

**Figure 34. Prior to shipping, make sure the battery switch is in the OFF position.**


**IMPORTANT:** The battery switch must be in the OFF (left side) position during shipping and storage.

# Device Disposal

Disposal of this device can be coordinated through your Verathon Medical Service Center in accordance to the WEEE requirements.

# GlideScope® Warranty Offerings

## Original First Year Total Customer Care℠ Warranty

Verathon warrants the GlideScope® System against defects in material and workmanship. This warranty applies for one (1) year from the date of shipment from Verathon. This warranty is given only to the original purchaser of the GlideScope® System.

If a customer's system requires service or repair, Verathon will either replace or provide a loaner unit within one (1) business day from the date of customer service notification. The customer agrees to send the defective unit to Verathon upon receipt of the loaner or replacement unit and agrees to return the loaner unit within two (2) business days of receipt of the repaired unit.

- This warranty provides coverage for damage from accidental drops or mishandling. It does not cover damage due to deliberate mishandling.

- This warranty does not apply if the product has been damaged due to, or as the result of, service or modification by anyone other than an authorized Verathon Service Center.

- This warranty does not apply if there is evidence of the equipment being exposed to temperatures in excess of 60º C.

**The product shall be used in accordance with the instructions contained in this User's Manual. Consumable items (i.e., endotracheal tubes, Stats, stylets, etc.) shall be used in conformance to Verathon product specifications. Consumable items are not covered under this warranty.**

## What is Covered

Warranty coverage is extended to the GlideScope® GVL System:

- Video Monitor including Display Connector Cable and Video output Cable (VOC)
    - VOC is only covered with an extended warranty for the monitor
- GlideScope® Video Laryngoscopes (GVL®)
- Cobalt Video Batons

Additional GVL® laryngoscopes purchased either singularly or as a part of a system must be warranted separately.

Additional video monitors purchased either singularly or as part of a system must be warranted separately.

## Premium Customer Care℠ Warranty

The Premium Customer Care℠ warranty from Verathon Medical may be extended for a total of up to six (6) years from date of purchase.

## Disclaimer of Additional Warranties

There are no understandings, agreements, representations of warranties expressed or implied (including warranties of merchantability or fitness for a particular purpose) other than those set forth in the preceding Warranty section. The contents of this manual do not constitute a warranty.

Some states disallow certain limitations on applied warranties. The purchaser, user, and patient should consult state law if there is a question regarding this disclaimer. This information, descriptions, recommendations, and safety notations in this manual are based upon Verathon experience and judgment with GlideScope® GVL Systems as of September 2008. The contents of this manual should not be considered to be all-inclusive, or to cover all contingencies.

# Contact Information

To obtain additional information regarding your GlideScope® Video Laryngoscope System, please contact Verathon Medical Customer Care at:

**Corporate HQ:**
**(US and Canada)**
Verathon Inc.
20001 North Creek Parkway
Bothell, WA 98011-8128
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800.331.2313 (Canada and US)
425.867.1348
Fax: 425.883.2896
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**Verathon Medical**
**(Canada) ULC**
4224 Manor Street
Burnaby, BC V5G 1B2
Canada
604.439.3009
Fax: 604.439.3039

# Parts and Accessories

**Table 4. GlideScope® System Components and Accessories.**

| Description | Part Number |
|---|---|
| GlideScope® Video Laryngoscope GVL® 5 | 0574-0030 |
| GlideScope® Video Laryngoscope GVL® 4 | 0574-0001 |
| GlideScope® Video Laryngoscope GVL® 3 | 0574-0007 |
| GlideScope® Video Laryngoscope GVL® 2 | 0574-0010 |
| GlideScope® Cobalt Video Baton 3-4 | 0570-0185 |
| GlideScope® Cobalt Video Baton 1-2 | 0570-0210 |
| GVL® Stat 4, Qty 10 | 0270-0628 |
| GVL® Stat 3, Qty 10 | 0270-0626 |
| GVL® Stat 2, Qty 10 | 0270-0429 |
| GVL® Stat 1, Qty 10 | 0270-0428 |
| GVL® Stat 4, Qty 100 | 0270-0629 |
| GVL® Stat 3, Qty 100 | 0270-0627 |
| GVL® Stat 2, Qty 100 | 0270-0431 |
| GVL® Stat 1, Qty 100 | 0270-0430 |
| Cobalt Video Baton 3-4 Kit (includes Stats) | 0270-0382 |
| Cobalt Video Baton 1-2 Kit (includes Stats) | 0270-0608 |
| Portable Video Monitor, GVL® | 0231-0003 |
| GlideRite® Rigid Stylet (Package of Six) | 0803-0009 |
| GlideScope® GVL/Cobalt DVR | 0570-0302 |
| GlideRite ® Guide | 0803-0104 |
| GlideScope® GVL® Cradle | 0810-0126 |
| GlideScope® Video Baton Cradle 3-4 | 0810-0134 |

| | |
|---|---|
| GlideScope® Video Baton Cradle 1-2 | 0810-0151 |
| Mobile Stand | 0800-0299 |
| Hard Shell Case | 0800-0300 |
| IV Pole Mounting Kit | 0810-0125 |
| O-Ring - Protective Cap | 0120-0335 |
| GlideScope® Video Cable - 3 pin to 4 pin | 0600-0236 |
| GlideScope® Video Cable - 4 pin to 4 pin | 0600-0237 |
| AC Power Cord 15 ft (4.5 m) - North America | 0600-0244 |
| AC Power Cord 2 ft (0.6 m) - North America | 0600-0247 |
| AC Power Cord 15 in (4.5 m) - EU | 0600-0243 |
| AC Power Cord 2 ft (0.6 m) - EU | 0600-0246 |
| AC Power Cord 15 ft (4.5 m) - UK | 0600-0245 |
| AC Power Cord 2 ft (0.6 m) - UK | 0600-0248 |
| Video output Cable (for connection to NTSC compatible devices) | 0600-0239 |
| GlideScope® Video Laryngoscope System User's Manual (English) | 0900-1204 |
| GlideScope® GVL/Cobalt Cleaning and Assembly Quick Reference Card | 0900-2013 |
| GlideScope® 4-Step Tips and Techniques Quick Reference Card | 0900-1436 |
| GlideScope® System Cleaning Poster | 0900-1429 |

# Specifications

Verathon reserves the right to change specifications without notice.

## General Specifications

| | |
|---|---|
| Classification: | Electrical Class I, Applied Part BF |
| Line Voltage | Range: 100 – 240 VAC, 50 & 60 Hz |
| Line Current: | MAX 0.50 A |
| Power Plug: | Hospital Grade |
| Line Protection: | 2A Fuse, Internal |

## Operating and Storage Conditions

**Operating Conditions**

Temperature:……...…10°C to 40°C

Relative Humidity:……..…....0 to 95%

Atmospheric Pressure:…….440 to 1060 hPa

**Shipping and Storage Conditions**

Temperature:……..……-20°C to 45°C

Relative Humidity:…….....0 to 95%

Atmospheric Pressure:…….440 to 1060 hPa

**Charging Conditions**

Temperature:……..…0°C to 40°C

Relative Humidity:…….....0 to 95%

Atmospheric Pressure:…….440 to 1060 hPa

# GlideScope® System Components

**Portable Video monitor:**
NTSC Color Video
320 x 240 pixel 7” LCD TFT Panel

| | | |
|---|---|---|
| Height: | 6.57 in | 167 mm |
| Width: | 8.15 in | 207 mm |
| Depth: | 3.27 in | 83 mm |
| Weight: | 3.10 lb | 1.4 kg |

**Mobile Stand:**

| | | |
|---|---|---|
| Base height: | 4.925 in | 12.5 cm |
| Base weight: | 5.5 lb | 2.5 kg |
| Base diameter: | 24 in | 61 cm |
| Pole height range: | 29.5-47 in | 75-119 cm |
| Pole weight: | 1.5 lb | 0.7 kg |

**IV Pole Mount:**

| | | |
|---|---|---|
| Weight: | 2 lb | .9 kg |
| Arm Length: | 10.63 in | 27 cm |
| Width: | 2.44 in | 6.2 cm |

**GVL® 5**

| | | |
|---|---|---|
| Tip to front of handle: | 4 in | 102 mm |
| Thickness (height) at camera: | .55 in | 14 mm |
| Width of camera: | 1.06 | 27 mm |
| Blade length in front of camera: | 2.4 in | 61 mm |
| Max blade width in front of camera: | 1.06 in | 27 mm |

**GVL® 4**

| | | |
|---|---|---|
| Tip to front of handle: | 4 in | 102 mm |
| Thickness (height) at camera: | .55 in | 14 mm |
| Width of camera: | 1.06 in | 27 mm |
| Blade length in front of camera: | 2.4 in | 61 mm |
| Max blade width in front of camera: | 1.06 in | 27 mm |

**GVL® 3**

| | | |
|---|---|---|
| Tip to front of handle: | 3.2 in | 82 mm |
| Thickness (height) at camera: | .6 in | 14.5 mm |
| Width of camera: | .78 in | 20 mm |
| Blade length in front of camera: | 2.1 in | 52 mm |
| Max blade width in front of camera: | .75 in | 19 mm |

**GVL® 2**

| | | |
|---|---|---|
| Tip to front of handle: | 1.9 in | 47 mm |
| Thickness (height) at camera: | .57 in | 14.5 mm |
| Width of camera: | .71 in | 18 mm |
| Blade length in front of camera: | 1.4 in | 36 mm |
| Max blade width in front of camera: | .63 in | 16 mm |

**GVL® Stat 4**

| | | |
|---|---|---|
| Tip to front of handle: | 3.7 in | 95 mm |
| Thickness (height) at camera: | .63 in | 16 mm |
| Width at camera: | .78 in | 20 mm |
| Blade length in front of camera: | 2.1 in | 53 mm |
| Max blade width in front of camera: | 1.1 in | 27.5 mm |

**GVL® Stat 3:**

| | | |
|---|---|---|
| Tip to front of handle: | 3.15 in | 80 mm |
| Thickness (height) at camera: | .63 in | 16 mm |
| Width at camera: | .63 in | 16 mm |
| Blade length in front of camera: | 1.46 in | 37 mm |
| Max blade width in front of camera: | .83 in | 21 mm |

**GVL® Stat 2:**

| | | |
|---|---|---|
| Tip to front of handle: | 2 in | 51 mm |
| Thickness (height) at camera: | .34 in | 8.7 mm |
| Width at camera: | .43 in | 10.9 mm |
| Blade length in front of camera: | 1.10 in | 28 mm |
| Max blade width in front of camera: | .63 in | 16 mm |

**GVL® Stat 1:**

| | | |
|---|---|---|
| Tip to front of handle: | 1.50 in | 38 mm |
| Thickness (height) at camera: | .34 in | 8.7 mm |
| Width at camera: | .39 in | 9.9 mm |
| Blade length in front of camera: | .59 in | 15 mm |
| Max blade width in front of camera: | .51 in | 13 mm |

**Cobalt Video Baton 3-4:**

| | | |
|---|---|---|
| Length: Camera tip to SS ring: | 4.1 in | 104.1 mm |
| Height of camera: | .42 in | 10.7 mm |
| Width of camera: | .43 in | 10.9 mm |
| Cable length: | 66 in | 1676 mm |
| Weight: | 6.3 oz | 180 g |

**Cobalt Video Baton 1-2:**

| | | |
|---|---|---|
| Length: Camera tip to handle (flexible tube) | 1.57 in | 40 mm |
| Height of camera: | .236 in | 6 mm |
| Width of camera: | .276 in | 7 mm |
| Cable length: | 69 in | 1756 mm |
| Weight: | 4.6 oz | 130 g |

**GlideScope® DVR for Ranger:**

| | | |
|---|---|---|
| Length: | 4.1 in | 103.2 mm |
| Width: | 2.3 in | 58.2 mm |
| Height: | 1.2 in | 32.2 mm |
| Weight: | ~.38 lbs | ~172 g |
| Max SD card size: | 2 GB | 2 GB |
| Recording on 1 GB SD card: | ~1.5 hr | ~1.5 hr |

## Standards and Approvals

- CMDCAS ISO 13485, Certificate No. 9235
- EC Certificate for Class I sterile Stats, Certificate No. 41315937
- MDD Requirements met for Class I and Class I sterile devices
- CSA Requirements met (Master Contract # 213281), CSA Certificates issued
- CB Scheme requirements met (CB Bulletin 112a), CB Test Certificates issued
- CAN/CSA C22.2 No 601.1-M90
- CAN/CSA C22.2 No. 60601-2-18-01
- UL Std No 60601-1
- IEC 60601-2-18
- CE Mark EMC Directive
- IEC 60601-1-2
- CISPR 11
- VCCI Technical V-3

# Symbol Directory

**Table 1. Symbol Directory.**

| Symbol | Meaning |
|---|---|
|  | Type BF equipment |
|  | CE marking in accordance with the Medical Device Directive (CE0413 for Sterile Devices) |
|  | Canadian Standards Association (CSA) mark of certification to applicable standards for electro-medical equipment. |
|  | Tested to Federal Communications Commission Requirements |
|  | Caution – consult accompanying documents. Read instructions before connecting or operating. |
|  | Subject to WEEE (Waste of Electronic Electrical Equipment) regulations. |