



MC2001Plus/MC2002Plus

Medcam Video Laryngoscopes User Manual



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Manufacturer Information

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Chinese Patents

The Medcam Video Laryngoscope technology is protected under Chinese Patents. Applied Chinese Patents:

ZL201620082375.1

ZL201620082173.7

ZL201630543506.7

ZL201720246532.2

ZL201620573285.2

ZL201730166005.6

ZL201721893598.7

ZL201721128421.8

Information in this User's Manual and Quick Reference Guide may change at any time without notice.

Trade Mark:



Hebei Vimed Medical Device Company, Ltd. is the owner of above trade mark which is registered in



China. All of our video laryngoscope products are marketed under this trade mark.

“MEDCAM” is a trade name of Hebei Vimed Medical Device Company, Ltd. And Supporting Healthcare NV.



Product Information

Name: Medcam Video Laryngoscope (MVL)

Model: MC2001Plus/MC2002Plus

The Medcam Video Laryngoscope (MVL) is designed to present a consistent, clear, real-time view of patient's airway to physicians, and to assist them in getting a quicker and safer tracheal intubation.

There are two different models of Medcam Video Laryngoscope (MC2001Plus/MC2002Plus) available for different situations and/or different physicians. MC2001Plus is suitable for baby and infant patients and MC2002Plus for adult patients. Both of them are designed to be used with disposable blades which are known as "Single-Use VL Blade".

The Medcam Video Laryngoscope is a portable, handheld and user-friendly medical device. Its "one-touch button" controls the device's all functions such as On/Off, Photo-Taking and Video-Recording. Its 3" display monitor is two-way rotatable, which offers clarity for real-time viewing, optimal for image recording and analysis during tracheal intubation or the laryngopharynx examination and treatment. And the digital video output is ideal for display video recordings. The Medcam video laryngoscopes and their "Sing-Use VL Blade" are available in a wide range of configuration and size, allow clinicians to meet the requirements of patients ranging in size from preterm to morbidly obese. The device also incorporates a rechargeable 18500A lithium battery and an anti-fog mechanism. The 18500A battery is interchangeable. The water-resistance of VL handle is IPX7 and IPX4 for the 3" monitor.

Model & Size Difference

As mentioned above, MC2001Plus is designed for babies & infants (see Fig. 1) and MC2002Plus for adults (see Fig. 2) . They must be used with their own sterile disposable blades.



Fig. 1 Medcam VL MC2001PLUS



Fig. 2 Medcam VL MC2002Plus

Medcam Video Laryngoscope Components

Table 1 MC2001PLUS (Infant-baby) standard configuration

Components	Qty/Unit	Model & Sizes	Remarks
Medcam video laryngoscope	1pcs	MC2001PLUS	For baby & infant
Single-Use VL Blade	-	Mac-0	Ordered separately
Single-Use VL Blade	-	Mac-1	Ordered separately
18500A Li-ion Battery	2pcs	3.7 VDC 2040 mAh	Rechargeable
Data cable	1pcs	USB	
Charger pack	1pcs	For 18500A Use only	
Packing box	1pcs	Carton	

Table 2 MC2002PLUS (Adult) standard configuration

Components	Qty/Unit	Model & Sizes	Remarks
Medcam video laryngoscope	1pcs	MC2002PLUS	For adult patients
Single-Use VL Blade	-	Mac-2	Ordered separately
Single-Use VL Blade	-	Mac-3	Ordered separately
Single-Use VL Blade	-	Mac-4	Ordered separately
18500A Li-ion Battery	2pcs	3.7 VDC 2040 mAh	Rechargeable
Data cable	1pcs	USB	
Charger pack	1pcs	For 18500A Use only	
Packing box	1pcs	Carton	

MC2002PLUS Key & Parts Typical Diagram

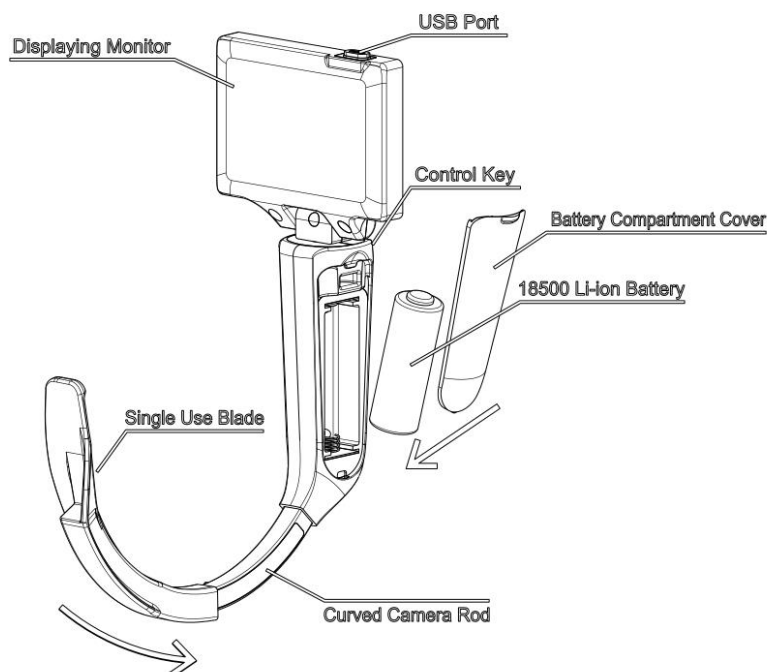


Fig. 3 MC2002Plus KEY & PARTS TYPICAL

Other Components



Fig.4 Charger Pack



Fig.5 Batteries

Control Key & Function

Table 3 “Control Key” and its functions

MC2001PLUS/MC2002PLUS Current State	Control-Key’s Operating mode	Aim at
OFF	Long-press 2-3 Sec	Turning on MVL
ON	Long-press 2-3 Sec	Turning off MVL
ON	Short press once	Photo-taking
ON	Continuously short press twice	Video-Recording
Video recording	Short press once	Stop video recording

Transportation and Storage

The Medcam video laryngoscope and its components must be operated and stored under the environmental conditions specified as following:

Operating Condition

Temperature:+5°C ~ +40°C (41°F~104°F)
 Relative Humidity:0 – 80%
 Atmospheric pressure:.....86 - 106kPa

Shipping and Storage Conditions

Temperature: -40°C ~ +55°C (-40°F~131°F)
 Relative Humidity:0 - 93%
 Atmospheric pressure:86 - 106kPa

General Device Specification

Classification: I
 Safety: Class II
 Battery Power (18500A Li-ion rechargeable): 2040mAh, 3.7Vd.c.
 Operation Time: ≥240 min per fully charged 18500A Li-ion Battery
 Display Monitor: 3”
 Video Aspect Ratio: 4:3
 Voltage Input: DC 3.7V
 Current Input: 310± 10mA
 Max Power: 1.8W
 Illumination: > 300lx
 Charging mode adapter input: 100-240Va.c. 50/60Hz 0.4A
 Charging mode adapter output: 5Vd.c. 2.1A

Type of Protection Against Electric Shock: Class II for adapter or internally powered equipment

Degree of Protection against Electric Shock: Type B applied parts
Interchangeable Battery Power: 18500A Li-ion rechargeable batteries
Mode of operation: Continuous
Applied Part: Single-use VL Blades or reusable blades

Warnings and Cautions

- A. This User Manual is applicable to both MC2001PLUS & MC2002PLUS Medcam video laryngoscopes (MVL). Every user must carefully read this manual before operating the MVL.
- B. For the first time using MVL, please make sure all of the components are fully furnished, and in good condition. If not, please contact the manufacturer and/or the distributors as soon as possible.
- C. Before using the MVL, please make sure the equipped 18500A Li-ion battery is fully charged. For the first time of charging the battery, it may take up to 6 hrs. Please use the equipped battery charger pack only.
- D. There is a battery power level indicator displayed on the screen. The battery power level is measured in terms of “bars”, which indicates the battery power level. When the battery is fully charged, there will be “3 bars” displayed on the indicator. When there is only “one bar” displayed on the indicator and the color of the indicator turned to “Red”, please replace the battery with a fully charged one immediately.
- E. For Medcam Video Laryngoscopes, there are a few different sizes ‘Single-Use VL Blades’ which are compatible with each of them. Before using the Medcam Video Laryngoscopes, please make sure:
 - ‘Single-Use VL Blades’ is suitable to the patient and compatible with the Medcam Video Laryngoscope.
 - The package of the ‘Single-Use VL Blades’ is in good shape, if the package is broken, please discard the blade. Dispose of the used ‘Single-Use VL Blades’ as medical waste.
- F. Do not expose the Medcam video laryngoscope to humidity over 93%.
- G. Do not expose the Medcam video laryngoscope to temperatures over +55°C (131°F).
- H. Do not extrude data transmission cable.
- I. Do not heat or burn the 18500A lithium-ion battery.
- J. Instructions to check the outer surface of the ‘Single-Use VL Blades’ for rough surfaces, sharp edges or protrusions which may cause a safety hazard before using them.
- K. Do not disinfect the Medcam video laryngoscope using devices such as autoclaves, ultrasonic cleaners, or pasteurizers. The use of such methods to disinfect video laryngoscope will cause permanent damage and void the manufacturer’s warranty. Refer to the disinfection instructions.
- L. If you need details about the circuit diagram and component information, please contact us.
- M. The consumables should be used before the expiry date.
- N. The light-emitting area surrounding the camera of the video laryngoscope may exceed 41°C as part of normal operation. However, Continuous contact with the area surrounding the camera is unlikely because the product is typically not held stationary for an extended period of time exceeding 1 minute.

Note: Typical intubations are less than 1 minute in duration.

Applications

The Medcam Video Laryngoscope is the perfect tool for physicians and other healthcare professionals who need to effectively operate on difficult airways. The device is easy to use, learn, and teach. It integrates easily into standard ICU, ER, Respiration and Anesthesia departments of any medical institution. The device is also ideal for mobile patient transport units such as ambulances and helicopters.

The Medcam Video Laryngoscope makes intubation easier & safer. The advanced data recording unit helps confirm tube placement in clinical practices. Multiple blades, from preterm to morbidly obese, can meet any clinical requirements. Additionally, it is useful for verification of endotracheal (ET) position, nasal intubation, ET exchange, and teaching.

Intended Use

The Medcam Video Laryngoscope is intended for use by qualified medical professionals to obtain a clear, real-time view of the patient's airway during tube placement medical procedures.

A Caution

The Medcam Video Laryngoscope 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.

Allergic to PC material, please use the Medcam Video Laryngoscopes with caution due to their disposable blades are made of PC (polycarbonate).

Notice to Operators

All operators should read this user manual in its entirety before operating the device. Failure to do so may damage the device and/or jeopardize the medical procedure.

Keep the user manual safe, operate the device according to this manual strictly.

Do not overcharge the 18500A Li-ion batteries.

Without the authorization from the manufacturer, no organizations or individuals may repair or dismantle the device or its parts. Otherwise, the product warranty will be void immediately.

The 18500A lithium-ion battery is rechargeable, reusable and recyclable, do not disassemble, refit, or dispose of the lithium battery arbitrarily.

Ensure high level of battery charged before operating.

The MVL is a precise instrument, handle with care.

Applicable Procedures

Normal or restricted oropharyngeal visualization and assessment of the oropharynx

Trauma airways - excellent when dealing with blood and secretions in the airway

Airway management in morbidly obese patients

Preterm and newborn or neonatal intubations

Re-intubation in Intensive Care Unit (ICU) settings Supervision and documentation of the laryngoscopy

Laryngoscopic foreign body removal

Awake intubation for difficult airway management

Teaching the anatomy of the airway in medical school

Clinical Application Tips

The intubation procedure may vary from patient to patient depending on the users' skill, experience and preference. Practical training of using Medcam Video Laryngoscope on a mannequin before clinical application is highly recommended. And the same technique may not be suitable for using MC2001PLUS Medcam VL to conduct the intubation on baby and infant patients.

Intubation Instruction

Important: Intubation with the MC2002PLUS Medcam video laryngoscopes should only be performed by or under direct supervision of trained medical personnel. The following intubation technique is just for your reference.

1. In the patients' mouth

Looking directly into the patient's mouth, holding the Medcam video laryngoscopes with the left hand, introduce the Medcam video laryngoscopes into the patient's mouth from the right side of the mouth. By moving the Medcam video laryngoscopes' blade slowly to push the patient's tongue to the left, get the blade gently down to the laryngeal pharynx.

2. Look at the display monitor

With the Medcam video laryngoscopes' blade inserted into the patients' mouth, look at the display monitor of the Medcam video laryngoscopes, slowly pushing the Medcam video laryngoscopes' blade forward along the middle of the oral pharynx, to identify the uvula, once seeing the uvula and then slightly lifting the VL forwards to obtain the best view of the glottis.

3. In the patients' mouth

Choose a suitable Endotracheal tube for the patient, and use a proper stylet to shape the tube's distal part with a 120° angle or even smaller. Then insert the shaped tube together with stylet into the patients' mouth from the right side of the patient's mouth.

4. At the monitor

Once the glottis can be clearly seen on the monitor, slowly insert the tube along the Medcam video laryngoscopes' blade, till the distal part of the tube appeared on the monitor and manipulate the tube gently till it reaching the glottis, then carefully insert the tube into the glottis.

IMPORTANT!

- ★ Please do not insert the VL blade too deep in the patients' mouth in the very beginning. Otherwise, the view of glottis can be easily missed.
- ★ The Medcam video laryngoscope is designed to be inserted down the midline of the tongue to the epiglottis. It can be used to lift the epiglottis, expose the glottis, and guide the medical intubation correctly.

Getting Started

Initial Inspection

Upon receiving the device and packing list, inspect the components of Medcam Video Laryngoscope for any obvious physical damage that may have incurred during transportation. We recommend that the inspection be performed by a qualified professional who is familiar with electronic medical devices. To verify that you have received the appropriate components, refer to the packing list included with the device. If any of the components are missed or damaged, notify the carrier and contact contact your local distributor immediately.

Preparing for First Use

Prior to using the Medcam Video Laryngoscope for the first time, perform the following steps:

Charge the Battery

There is a battery compartment inside the Medcam Video Laryngoscope's handle, where a 18500A Li-ion rechargeable battery can be placed to provide power to the Medcam Video Laryngoscope and the display monitor. The 18500A battery should be charged separately with the specially equipped battery charger pack. The video laryngoscope cannot be operational while charging the battery unless another fully charged battery is placed inside the compartment. To charge the 18500A battery, its charger must be connected to a wall socket.

IMPORTANT! The 18500A battery must be fully charged prior to its first use. For the customers' convenience the 18500A batteries equipped with the Medcam Video Laryngoscope are fully charged in our factory before shipped out.

For optimal battery life

There is a battery power level indicator displayed on the monitor's screen in terms of bars; When there is only "one bar" displayed on the indicator and the color of the indicator turned to "Red", please replace the battery with a fully charged one immediately. The battery should be charged with the equipped charger only at room temperature, between 5°C~40°C(41°F~104°F).

Proper Charging Procedure

- (1) Using the charger especially furnished with the Medcam Video Laryngoscope only to charge the 18500A battery.
- (2) There are two charging modes available: charging one battery or charging two batteries together.
- (3) Placing the battery or batteries into the charger's charging compartment, make sure the battery's anode is in the right position.
- (4) Connecting the charger to a transformer (output 5VDC, 1000mA), and plugging the transformer into wall socket (100~240V, 50~ 60Hz).
- (5) The charging status indicator will turn red, indicating that the charging cycle has begun. When the battery is fully charged, the charge status indicator will turn green.



Fig. 6

IMPORTANT! The USB port on the display monitor and the equipped USB cable are used for data communication only, not for charging

There are two charging modes available. This one is charging the single 18500A battery (see Fig. 6) . Placing one battery into the charger's charging compartment, make sure the battery's anode is on the right position. Then follow **Proper Charging Procedure** to complete the charging process.



Fig. 7

There are two charging modes available: This one is charging two 18500A batteries together (see Fig. 7). Place two batteries into the charger's charging compartments and make sure the battery's anode is in the right position. Then follow **Proper Charging Procedure** to complete the charging process.

Preparation (Loading and unloading batteries)

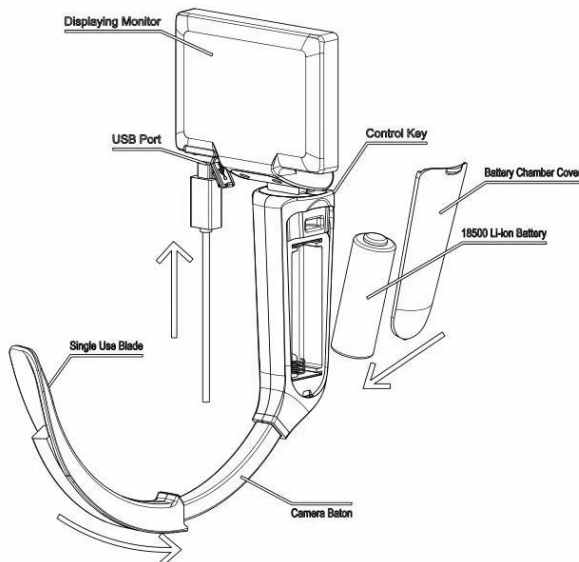


Fig. 8 MC2001PLUS & MC2002PLUS Typical Parts Diagram

There is a battery compartment inside the Medcam video laryngoscope's handle with a removable cover. There is a rechargeable 18500A Li-ion battery placed inside the battery compartment. When replacing a low power level battery with a fully charged one, please pull to open the cover of the battery compartment (see Fig. 9), then take out the "empty" battery (see Fig. 10). To reload a fully charged one in the battery compartment, just reverse the operation as in Fig.10. Then put the cover back to close the battery compartment, just reverse the operation as in Fig. 9.

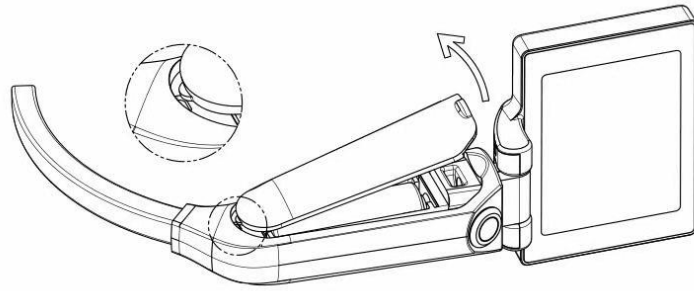


Fig. 9 MC2001PLUS & MC2002PLUS Typical Diagram-Opening the battery compartment

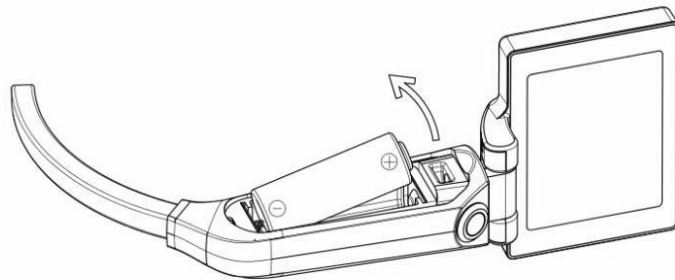


Fig. 10 MC2001PLUS & MC2002PLUS Typical Diagram-Unloading the battery

Perform a Functional Check

To perform a functional check, please refer to Table 3 “Control Key” and its functions.

Prior to the first use of Medcam Video Laryngoscope, please perform the following functional check to assure that the Medcam Video Laryngoscope is working properly and its quality is up to the standard. Please contact with a customer care representative if your Medcam Video Laryngoscope does not function as described below:

- (1) Slide a fully charged 18500A battery into the compartment (compartment) inside the MVL handle, make sure the plus points (anode) to the top, and assemble the MVL accordingly.
- (2) Long pressing the “Control Key” for 3-5 seconds to turn on the Medcam Video Laryngoscope, both the display monitor and the led light of the video laryngoscope will be on.
- (3) Short pressing the “Control Key” once, a picture is taken. A camera sign appears on the screen briefly.
- (4) Quickly short press the “Control Key” twice, to start video recording. There is a “red dot” flashing on the screen.
- (5) Short pressing the “Control Key” once, to stop video recording. The flashing “red dot” will disappear from the screen.
- (6) Long pressing the “Control Key” for 3-5 seconds to turn off the video laryngoscope both the display monitor and the led light of the video laryngoscope will be off.

Verify that the logo is displayed on the monitor screen.

Important Note: The logo will display on screen for a few seconds when powering on, then the system is ready to work, and the battery level and real-time are displayed on the screen.

Time Settings

The Medcam Video Laryngoscope’s display “Time” has been preset in the factory before shipping out. The standard time applied is Beijing’s local time. The users from the other time zones can reset the display “Time” to their local time by performing the following steps:

- (1) Put a fully charged 18500A battery into the battery compartment of Medcam VL;
- (2) Connect the Medcam VL to a computer with the equipped data cable, please connect the Medcam VL first, then connect the computer;

- (3) Turn on the power of Medcam VL;
- (4) Find out “My Computer” on the desktop of the computer and open it;
- (5) The TF card of the Medcam VL appears on the screen as a “USB flashing disk”
- (6) Find out “USB flashing disk” and open it. Its drive will be installed automatically.
- (7) If nothing happens, please wait for a while or reconnect the Medcam VL to the computer again.
- (8) In the opened the “USB flashing disk” create a new file“rtc.txt”
- (9) Then key in the “Right Time” into the file as following: 20160101152201 which means: year=2016, month=01(Jan.), day=01, hour=15(24hour), minute=22, second=01.
- (10) Save the file immediately and log out the “USB flashing disk”;
- (11) Unplug the USB cable from the Medcam VL, the set time will be automatically updated in it.

Data Retrieval

Connect the Medcam VL to a USB interface computer with the equipped data cable (see Fig. 2 for the VL’s USB port), and then press the button to turn on the Medcam VL. Double-click "My Computer" where you will see "Removable Disk", from where you can access the memory card data. **Please connect the Medcam VL first, then to the computer.**

Battery power indication

The battery’s power level will be displayed on the display monitor in terms of “bars” which indicate the battery power of the Medcam video laryngoscope. When the battery is fully charged, there will be “3 bars” displayed on the display monitor. When there is “one bar” left on the display monitor and the bar is in red color and flashing, please replace the battery with a fully charged one immediately. Meanwhile please recharge the empty battery immediately with the equipped charger.

Attaching the Single-Use Blade to the Medcam video laryngoscope

Before using the Medcam video laryngoscope, attach the single-use VL blade to the Medcam video laryngoscope firmly and properly. Follow the proper attaching procedure as below:

- (1) Unpack the package bag of a single-use VL blade and make sure the package is in good condition.
- (2) Take out the single-use VL blade carefully.
- (3) Insert the curved camera rod of the Medcam video laryngoscope into the opening of the single-use VL blade.
- (4) Ensure the position lock of the single-use VL blade is compact and seamless with video laryngoscope..

Caution: Damages may be caused by improper connection and excessive force.

Make sure the selected single-use VL blade is a good match for the Medcam video laryngoscope and it is suitable for the patient.

Detaching the single-use Blade from the Medcam video laryngoscope

After using the Medcam video laryngoscope to complete the intubation, the used single-use VL blade should be disposed as medical waste. Follow the proper procedures to detach the used single-use VL blade from the Medcam video laryngoscope:

- (1) Prizing the position lock of the single-use VL blade with the left thumb.
- (2) Removing the used single-use VL blade from the Medcam video laryngoscope.
- (3) Dispose of it as medical waste by following proper procedure.

The Features of single-use VL blade

- (1) Imported Germany medical grade polymer.
- (2) Ergonomic curve design.
- (3) Durable material ensures the safety of applying the single-use VL blade to rescue a conscious patient.
- (4) Enclosed design prevents the cross infection of infectious disease.
- (5) Anti-fogging technology guarantees a clear view during the intubation.

Selecting the Correct Medcam Video Laryngoscope and its single-use VL blade

Make sure to select the Medcam video laryngoscope and its single-use VL blade that best fit your patient. Please refer to the compatibility of Medcam Video Laryngoscopes and their single-use VL blades in table

Table 4 Match the Medcam video laryngoscope with its disposable blades

Blade Size	MVL model	Clinical Application	Remarks
Mac-0	MC2001PLUS	Baby & Infant	5-15Kg
Mac-1		Children	10-40Kg
Mac-2	MC2002PLUS	Teens & Adult female	40-60Kg
Mac-3		Adult male	60-90Kg

Cleaning, Disinfecting, and Maintenance

Cleaning and disinfecting are very important factors to maintain the Medcam Video Laryngoscopes in good condition. Make sure the Medcam Video Laryngoscopes are clean and disinfected before each use. Examine the Medcam Video Laryngoscopes periodically to make sure they are functioning correctly.

Important Notes :

- 1 Clean and disinfect the Medcam video laryngoscope with 75% medical-grade ethanol and wipe them only.
- 2 When disinfecting the Medcam Video Laryngoscopes' handles by soaking them in the disinfectants, the battery must be removed from its compartment and leave the compartment open. The surface of the disinfectant solution must be lower than the Medcam Video Laryngoscopes' "control key".

General Maintenance Information

Periodic inspection should be performed to ensure safe and effective operation. We recommend that a qualified technician perform a full visual inspection of all components at least every six months.

The technician should check for the following items:

- ✧ External damage;
- ✧ All functions;
- ✧ Damage to the power supply;
- ✧ Connectors and cable insulation integrity

To ensure patient safety, the users should perform a routine inspection of the Medcam video laryngoscope before each use to ensure that all components are free of rough surface, sharp edges, protrusions, or cracks. If inspection reveals any faults in the components, please contact your local distributor immediately.

Caution: Risk of permanent equipment damage.

Do not expose the video laryngoscope to any temperature above 55°C. Do not soak the Medcam video laryngoscope's display monitor and "control key" in any disinfectants solution.

Disinfection Instructions

- (1) Disinfect the components of Medcam Video Laryngoscope according to the disinfecting procedure of this manual.
- (2) Do not disinfect Medcam Video Laryngoscopes with strong acid or alkaline disinfectants.
- (3) Do not expose Medcam Video Laryngoscopes to places with organic solvent, such as acetone and butanone.
- (4) Do not expose Medcam Video Laryngoscopes to places where the temperature is above 55°C.
- (5) Never soak the display monitor of Medcam Video Laryngoscope in any kind of disinfectant.
- (6) Cleaning the glass of camera window whenever necessary to ensure the optimal observing view after disinfection.

Disinfection Procedure for Medcam Video Laryngoscopes (Wipe clean)

- (1) Take off the single-use VL blade from the Medcam video laryngoscope after every use.
- (2) Wipe the Medcam video laryngoscope with medical wiper properly, for example, 75% ethanol medical wipers.
- (3) Start from the front end of the Medcam video laryngoscope (the end with camera lens).
- (4) Apply the wiper gently to cover the whole Medcam video laryngoscope including the display monitor.
- (5) Do not wipe the Medcam video laryngoscope back and forth with the same wiper.

- (6) Dispose of the used medical wipers as medical waste.
- (7) The sterilization of the Medcam video laryngoscope can also be done with EO, as long as control the temperature under 50°C.

Cleaning the Data Transmission Cable


Using a soft and lint-free wiper gently wipe the data transmission cable with IPA (70% isopropyl alcohol), bleach (100ppm), or a mild detergent and water.



Warning

- (1) The Medcam video laryngoscopes should be cleaned and disinfected before first use.
- (2) The Medcam video laryngoscopes are partially water resistance, IPX7 for the handle, IPX2 for the monitor.
- (3) The Medcam video laryngoscopes cannot withstand any kind of automated cleaning and ultrasonic cleaning.
- (4) The disposable blade is for single-use only, discard the blade after each procedure.
- (5) Test all Medcam video laryngoscopes before use.
- (6) Follow the cleaning and sterilization methods as stated in the User manual.
- (7) If you have any doubts about the cleaning and disinfection process, please contact the local authorized representative or the manufacturer.
- (8) Do not use iodide solutions or bleach on the unit.
- (9) Maintenance and service of Medcam video laryngoscopes can only be done by authorized technicians.

General Cleaning, Disinfection and Maintenance instructions (Table 5)










INSTRUCTIONS	
Limitations on reprocessing	Repeated using has minimal effect on the performance of the Medcam video laryngoscope (MVL). The life time of MVL is normally determined by wear and damage due to its clinical use.
Initial treatment at point of use	<ol style="list-style-type: none"> 1. Pull off the used blade from the MVL handle and discard the blade as medical waste. 2. During clinical application, if body fluid or secretions contaminate the MVL handle or its monitor, please clean and disinfect the MVL immediately in order to prevent the buildup of bioburden, development of biofilms, and drying of secretions. The MVL must be properly cleaned and disinfected after each use. <p>★ Using soft cloth to scrub the monitor, do not immerse the monitor and the “control key” in the water or alcohol, do not rinse the screen.</p> <p>★ Using soft cloth with alcohol to scrub the handle, dry the handle with a soft cloth.</p> <ol style="list-style-type: none"> 3. Each used MVL must be properly cleaned, disinfected and dried. Then keep the dried and disinfected MVL in a safe and clean place for next use.
Preparation before cleaning	No particular requirements if disinfect the MVL with a soft cloth and 75% medical Ethanol to wipe clean it. If dipping the MVL handle in a disinfectant solution, the cover of the battery compartment and the battery must be removed. Do not immerse the monitor and the “control button” in any solution.
Cleaning: Manual	<p>Manual cleaning should be conducted immediately after each use to prevent any soil from drying on the MVL. Soil that remains on the MVL may interfere with the ability of the sterilization process to effectively kill or inactivate microorganisms and allow biofilm to develop.</p> <ul style="list-style-type: none"> ● Use a soft cloth with 75% medical-grade alcohol to scrub the surface of MVL. ● Use a soft brush to clean any soil in gaps, joints etc. ● Thoroughly wipe the surface of the MVL until soil and organic matter have been visibly removed (In case of heavy soiling more than one wipe may have to be used). <p> Do not use an excessively wet cloth!</p>
Manual Disinfection	<p>After cleaning, visually inspect all surfaces for complete removal of soil and fluids. If ANY soil or fluid is still visible, repeat manual cleaning process.</p> <p>We recommend using 75% alcohol, sodium-dichloroisocyanurate or chlorine dioxide (ClO₂) as the disinfectants.</p> <p>Wipe the MVL completely for at least 2 minutes with damp cloth with suitable and effective disinfectant solution.</p>
Drying	Allow the MVL to air dry. Ensure the MVL is completely dry before stored it.
Inspection and maintenance	Maintenance of the MVL can only be done by persons authorized by the manufacturer. Inspect every surface area, major part and connection for damage or deterioration. Slide a single-use VL blade on the MVL, turn on its power and check the function of MVL in proper working condition.
Packaging	The Medcam video laryngoscope should be packed according to the hospital protocols.
Storage	The MVL should be stored in a well-ventilated, clean and dry area. If not used, please check the mechanical functions of MVL and battery every week. For the single-use VL blade’s storage, make sure “First in, first out” rule applied properly.

Trouble Shooting (Table 6)

#	Malfunction	Troubleshooting Method
1	The Device doesn't work while powering on.	Check the battery level and the connection of VL handle and display monitor especially the connecting pins.
2	The fogging displays on the screen of monitor	Check the single-use VL blade, replace the blade when necessary.
3	Stain displayed on screen of monitor	Check if there are stains on the screen of the monitor or single-use external shell or the camera protection glass.
4	It cannot be connected with data transmission.	Use the cable furnished with video laryngoscope only, ensure the cable is connected properly.
5	No storing function	Check the VL's TF card and make sure there is enough data space available for recording, download the files to a computer and release the data space.
6	Turns off automatically after charging or connecting with the computer.	Check the connection and restart. The charging power is checked automatically by system, and it will power off when wrong connection is detected.

If the troubleshooting methods above do not work, or malfunction persists, please contact your local distributor immediately.

Symbol Directory (Table 7)

Symbol	Meaning
---	Direct current
	Class II Electric shock protection
	Power on/off
	Manufacturer
	Caution
	Type BF applied part
	Date of production
	Consult with IFU
	Dispose by local law or regulation
	Serial Number

Limited Warranty

The warranty obligations of Hebei Vimed Medical Device Company, Ltd. (hereinafter called Vimed Medical) for Medcam Video Laryngoscope are limited to the terms set forth below:

What is covered?

This limited warranty covers defects in materials and workmanship in this product.

What is not covered?

This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malfunction resulting from any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Vimed Medical to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover Consumable items.

How Long this Coverage Lasts?

The standard limited warranty for Medcam video laryngoscope product is two (2) years from the date of original purchase.

Who is covered?

Only the original purchaser of this product is covered under this limited warranty. This limited warranty is not transferable to subsequent purchasers or owners of this product.

What Vimed Medical will do?

Vimed Medical will, at its sole option, provide a replacement unit to satisfy a proper claim under this limited warranty.

How to Obtain a Remedy under This Limited Warranty?

To obtain a remedy under this limited warranty, you must contact the authorized Vimed Medical distributor from whom you purchased this product, or the EAR directly.

Limitation of Liability

THE MAXIMUM LIABILITY OF VIMED MEDICAL UNDER THIS LIMITED WARRANTY SHALL NOT EXCEED THE ACTUAL PURCHASE PRICE PAID FOR THE PRODUCT. TO THE MAXIMUM EXTENT PERMITTED BY LAW, VIMED MEDICAL IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY.

Other Conditions

This limited warranty is void if (i) the label bearing the serial number of this product has been removed or defaced, (ii) the product is not distributed by Vimed Medical or (iii) this product is not purchased from an authorized Vimed Medical distributor.

Your rights under this limited warranty are not diminished if you do not complete and return the product registration form or complete and submit the online product registration form. However, your original Invoice of Purchasing must be presented when requesting a replacement.

Vimed Medical thanks you for purchasing a Vimac video laryngoscope product. We hope it will give you years of satisfaction.

Hebei Vimed Medical Device Company, Ltd.