Operation Instruction of Disposcope Endoscope
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Thanks for choosing Disposcope Endoscope.

★ Please read the instruction carefully in order to operate correctly.

★ Especially before using, please make sure to read Chapter “Maintenance and Care” and ensure the safe usage.

★ After finishing reading the instruction, please keep it in a safe place for future use.

1. Product Instruction

This product is a medical device that provides assistance to endotracheal intubation at a low price. Its tube body is designed to be discarded after certain number of usage which prevents cross infection among patients.

Laryngoscope is a main traditional device to help doctors to complete endotracheal intubation. However, a lot of inconveniences are found in clinical practices. With the continuous development of science and technology, many new devices are invented, e.g., video laryngoscope, light stick, and tube core with visualization. At present, Disposcope Endoscope is a leading product in the area.

Comparing with similar products, Disposcope Endoscope has four major characteristics:

Accurate --- Immediate video output, 5.6 inches display screen, 70 degrees viewing angle, superb antifogging treatment, clear showing of the in vivo situation of patients, correct locating of glottis, assistance to doctors to avoid blind intubation and to successfully complete endotracheal intubation.

Rapid --- Simple structure, easy operation. The tube body made of flexible memory metal can be bent substantially which enables doctors to adjust the best possible angles in response to a variety of situations, thus to complete intubation smoothly and quickly.

Convenient --- The equipment is very dexterous and easy to carry. The wireless connection between screen and endoscope makes operation more convenient.

Safe --- Effectively reduce the failure rate of endotracheal intubation. Prevent patients from oral bleeding and tracheal contusion caused by intubation. Also protect health care workers from infection at work.
Model Differences:

1. Length difference: 5cm, 15cm, 22cm, 37cm, 45cm and 47cm.

2. Accessory difference: DSOTP and DSENT have an extra accessory, i.e., Optic Tongue Depressor

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<th>DSINTU</th>
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2. Product Basic Information

2.1 Disposcope endoscope and accessories name

I Disposcope Endoscope

II Wire transmitter

III Wireless transmitter

IV 5.6" Monitor
V Charger

VI Input/output line

VII Transformer

VIII Capture Card

2.2 Product Structure Introduction

Charger (Photo 2-1)

Transmitter’s Battery Charger

Battery Light

Battery Light

Monitor’s Battery Light

(Photo 2-1)
Monitor Back (Photo 2-2)

- Wall hang
- Receiving antenna
- Channel adjust button
- Channel display
- Input/output line connector

Wireless transmitter (Photo 2-3)

- Light adjustment button
- Channel adjustment button
- Channel display
- Disposcope connector
2.3 Technical Data

- Total Tube Length: 44.5cm
- Length of tube that can be inserted into trachea: 37cm
- Diameter: 5mm
- Flexibility of tube body: any curvature
- Tube material: flexible memory metal
- Front lighting: 6 white light LED
- Light adjustable: Yes
- System: CMOS
- Output signal: Analog
- Color or Black and White:
- Best visual distance: 5mm-30mm
- Viewing angle: Around 70 degrees
- Radio Frequency: 2.4G Analog
- Channel: 4 Channels
- Compatible Monitor: Any monitor with video output
- Application scope: Endotracheal intubation endoscope, bronchoscope and laryngoscope

2.4 Consumptive Material

Main consumptive material of Disposcope Endoscope is tube body. The total number of usage for each tube is 20 times.
2.5 Storage and Useful Life

2.5.1 Note the following for parts storage:

1. Monitor: Handle gently and with care. It is recommended to hang the monitor in the operation room.

2. Transmitter: Make sure to unplug the transmitter and disposcope after use. Place the transmitter at a safe place.

3. Battery: If intend not to use the battery for a long period of time, store the battery in a dry place less than 25 degrees Celsius after charging. Do not place the battery in refrigerator. For long storage, cover the battery with a thin film to protect it from dust and humidity. During storage, charge and discharge the battery once a month in order to keep battery’s capacity and ion activity.

2.5.2 Parts’ Useful Life:
All parts can be used continuously except for disposcope which can be used for 20 times.

3. Operation Method

3.1 Operation Method of Wireless Transmission

1. Plug the disposcope into the wireless transmission handle until it clicks into place and a short sound of “Beep” is heard. Then the LED light in front of the disposcope lens turns on.

2. Number “3” is shown on the display screen located on the transmission handle.

3. Switch on the display monitor. Number “3” is also shown on the channel display at the back of the monitor.

4. Set the wireless receiver switch located at the back of the monitor on the Wireless-Receiver mode.

5. The image received by the disposcope lens is shown on the monitor.

WARNING:
◎ Please re-plug the disposcope into the transmitter if “continuing-Beeps Sound” is heard.
◎ Please replace a battery immediately (low battery) if “three Long-beeps Sound” is heard.
3.2 Operation Method of Wired Transmission

1. Plug the disposcope into the wired transmission handle until it clicks into place and a short sound of “Beep” is heard. Then the LED light in front of the disposcope lens turns on.

2. Plug the transmission wire (long) into the end of the wired transmission handle.

3. Connect the RCA female plug of the short transmission wire with the RCA male plug of the long transmission wire.

4. Plug the transmission wire (short) into the AV/IN/Out hole at the side of the monitor.

5. Switch on the monitor and set the wired/wireless receiver switch on the Wired-Receiver mode.

6. The image received by the disposcope lens is shown on the monitor.

**WARNING:**
◎ Please re-plug the disposcope into the transmitter if “continuing-Beeps Sound” is heard.
◎ Please replace a battery immediately (low battery) if “three Long-beeps Sound” is heard.

3.3 Charge

On the back of the wired/wireless transmission handle, there is a rechargeable battery. There also is bigger rechargeable battery at the bottom of the monitor. The charger stand has 3 charging docks at different size. When charging, please place the battery into the dock and connect transformer. Please note the following:

1. When charging starts, the indicator light on the charger stand turns on. The light turns off when charging finishes.

2. Flickering channel display on the wireless transmission handle indicates low battery power. Please replace the battery immediately.

3. Flickering monitor screen indicates low battery power. Please replace the battery immediately.

4. Please charge 6 hours continuously when first use.
3.4 Channel Switch

Once the device is switched on, “3” shown on the display screen located on the transmission handle indicates channel 3. There is a channel adjustment button on the left side of the transmission handle. Switch the channel by pressing the channel adjustment button. There are total of 4 channels to be chosen from.

3.5 Display Monitor

There is a round channel adjustment button at the side of the channel display screen at the back of the monitor. Channel changes each time the button is pressed. When the correct channel is chosen, the image received by the Disposcope is shown on the monitor.

3.6 Computer Input

There is an AV IN/OUT hole on the side of the monitor. Plug one end of the transmission wire (long) into the AV IN/OUT hole and the other end (RCA male plug) into the USB capture card. Then plug USB into computer. The image is then input into the computer for further work.

4. Clinical Operation

① Disposcope Endoscope Preparation (Shown as picture 3-1): Connect the transmitter and the tube body. Make sure the channel on the transmitter shows “3”. Check light. Switch on monitor. Check if the channel on the monitor is the same as the transmitter. After confirmation, disconnect the transmitter and the tube body.
② Place Disposcope into Endotracheal catheter. (Show as picture 3-2)

③ Properly shape the head part of disposcope. Prepare suction equipment. (Picture 3-3).
④ Place patient’s head at olfactory position. Wait until muscle relaxant is fully in function. Standing at the cephalic side of patients, operator grips patient’s lower incisors with left thumb in order to expand oropharyngeal cavity space, while holds transmitter with right hand. Keep the tube body parallel to oral fissure. Insert into oral cavity through the right corner of the mouth. (Show as Picture 3-4)

⑤ Rotate Disposcope to make it parallel to patient’s longitudinal axis. Insert downward and rightward along the oropharyngeal curve. (Show as picture 3-5)
⑥ Hold Disposcope immovably. Confirm the location of glottis through monitor. Continue to monitor and insert more tube body so that the lens passes glottis and the tracheal ring is seen (note: do not enter too deep to avoid damaging the anterior wall of the tracheal). Settle the Disposcope down, loose the catheter by left hand, push the catheter downward under monitor. (Show as picture 3-6)

⑦ Keep inserting the catheter under monitor. Pull out the Disposcope after intubation is done. (Show as Picture 3-7)
5. Safety Cautions and Warnings

1. Patients with intubation contraindications cannot use this product.

2. Before intubation, double check the consistency between transmitter channel and receiver channel.

3. After the transmitter being connected with the Disposcope, make sure that the display of transmitter is continuous. Flick transmitter screen indicates low battery power. Please replace the battery immediately.

4. The number of Disposcope usage is 20 times. When 9 times remain, the transmitter flashes 9 times after being connected with Disposcope, which reminds the remaining times (note: the flick is different from low battery). The number of flash decreases progressively afterwards.

5. Be sure to charge the replaced battery on the charging dock.

6. If the product is interfered by other Disposcope product in the operating room, please change the channel (transmitter channel and receiver channel still need to keep the same).

7. When operate the Disposcope Endoscope on patients with loose teeth, fix the loose teeth with thread and tape the thread on the extraoral skin. In addition, an assistant is needed to hold mandible of patients with loose lower incisors, avoid loose teeth when insert the Disposcope.

8. Since glottis of obesity patients is hard to see due to hypertrophy of their neck tissue, find epiglottis, then bypass epiglottis and show glottis and tracheal ring.

6. Clinical Method of Disinfection

I Hospital common disinfectant:
- Glutaraldehyde
- H2O2
- Peroxyacetic acid
- OPA
- Hypochlorite) >1000ppm

II Steps of disinfection
1. Use detergent (with or without enzymes) to brush clean the body of the endoscope. Then, use tap water to rinse off the detergent.
2. Emerge the endoscope in the high concentration antiseptic solution for at least 20 minutes. (For example, 2% Glutaraldehyde, 6% H2O2, Peroxyacetic acid, etc.)

3. Rinse with aseptic water. If not, rinse with tap water and followed by alcohol.

4. Store in an uncontaminated place.

**III Notice of the antiseptic process of the Disposcope Endoscope**

1. The whole body of the endoscope should be fully emerged inside the antiseptic solution.

2. Use FDA approved high concentration antiseptic except glutaraldehyde. The duration of the antiseptic process follows the guideline suggested by the supplier.

3. Some antiseptics take shorter processing time. For examples, OPA for 12 minutes at 20°C. The other, 7.35% hydrogen peroxide with 0.23% peroxyacetic acid for 15 minutes. They can quickly inhibit Mycobacterium tuberculosis. Elevated temperature can quickly kill Mycobacterium tuberculosis, for example, 2.5% glutaraldehyde at 35°C for 5 minutes. (IB)

4. Test the antiseptic concentration daily before use to make sure it exceeds the minimal effective concentration. If not, discard the antiseptic solution without use (IA).

5. After antiseptic process, the endoscope must be rinsed with aseptic water or filtered water. Otherwise, rinsed with tap water and followed by 70-90% alcohol (IA).

**7. Maintenance and Care**

No need for special maintenance and care, due to its good-designing and quality. The monitor cleaned monthly by wet cotton cloth is recommended to ensure the clarity of the pictures. Expiration: two years since antiseptic packaging.

After-Sales Services and Warranty: One year limited warranty on Wireless Transmission Handle, Wired Transmission Handle, Monitor, Charger, and Transformer. Three month’s limited warranty on Monitor battery and Transmitter Battery.