
**Portable endoscope for veterinary
Instructions for use**

Portascope.com

Advice:

Prior to use please read this manual carefully and keep it with the product for future reference. If it is lost or damaged, please ask for it from our company in time.

Warning!

Before using the endoscope, set the angle adjustment lock to the "free" (F) position, and then confirm whether the head end can move freely without obstruction. If you encounter abnormal obstacles when introducing the endoscope or operating the bending mechanism, do not use the device. And please immediately contact our company or our service center nearby.

1. General description

1.1 Intended use

The portable veterinary endoscope achieves the purpose of displaying images by connecting a small image display outside the operating handle, reducing the necessary equipment when using the endoscope. Do not use this endoscope for any other purpose.

1.2 Working environment

A) Temperature range: +5°C~+40°C;

B) Humidity range: 30%~85%;

C) Pressure range: 700hPa~1060hPa

2. Cautions

1. Before using this endoscope, please read this manual carefully. This manual includes the most appropriate instructions for proper maintenance and operation of the endoscope. Although the endoscope itself is very slender and precise, if you can perform accurate operation and cleaning according to the instructions shown in this manual, it will greatly reduce the occurrence of malfunctions and extend the life of the device.

2. This manual introduces the ideal procedure for preparing and checking the equipment before use of this endoscope. It is not a detailed instruction on how to perform a clinical examination, nor is it intended to familiarize beginners with endoscopy techniques and medical knowledge. This device should be operated and used by medical personnel who have been trained in endoscopy technology and have thoroughly mastered the operation technology.

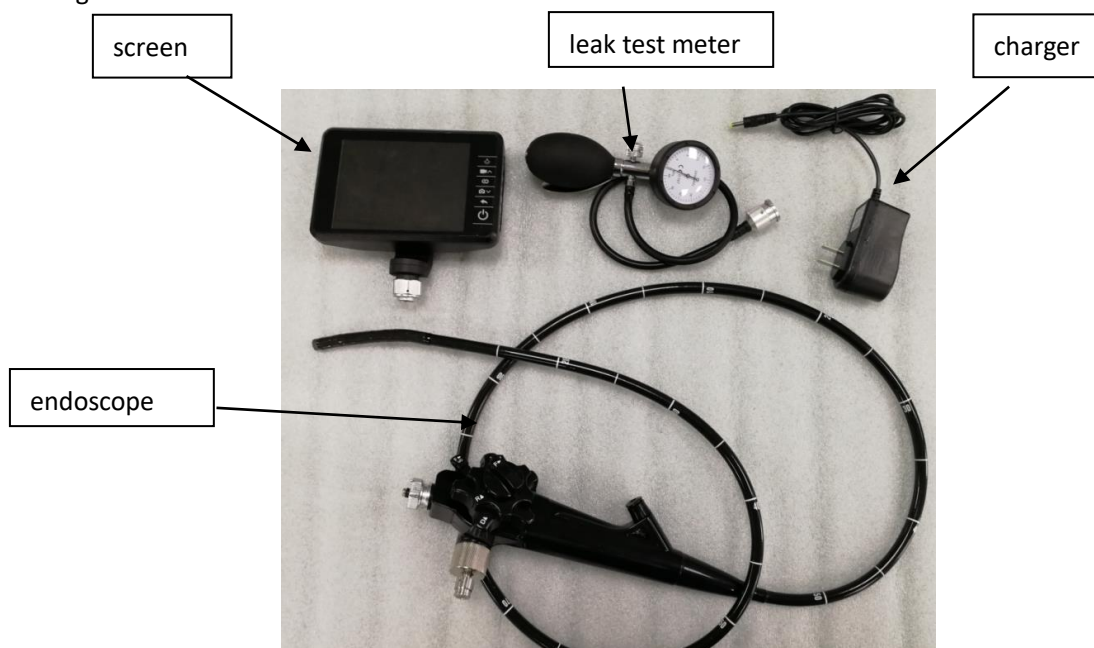
3. The safety of the endoscope depends not only on the endoscope itself, but also on any auxiliary equipment used with it. To ensure compatibility, it is recommended that this endoscope only use auxiliary equipment produced by or confirmed by our company.

4. If you have any questions about the materials provided by the company's manual, or the operation and safety of the endoscope, please contact the company or the company's maintenance station nearby.

5. The endoscope and its accessory parts should be taken out of the mirror box and stored in accordance with the instructions in the manual. The mirror box is not used to store the endoscope, it is only used when loading or carrying the endoscope.

3. Composition

The portable veterinary endoscope consists of a tip part, a bending part, an insertion part, and an operation part. This product includes the following accessories: charger, pressure gauge, display. See the figure below for details:



Main parameters

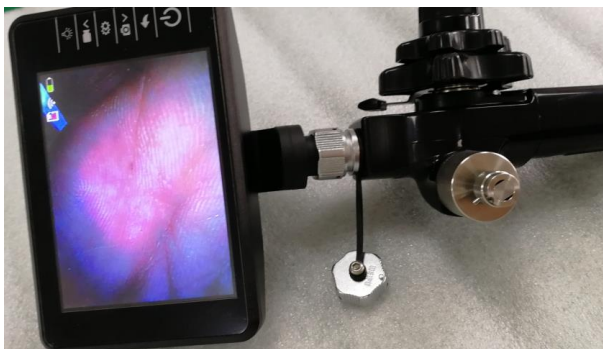
1. Field of view: 80°
2. Depth of field: 3mm-60mm;
3. The outer diameter of the head end: 9.8mm;
4. The outer diameter of the insertion part: 9.6mm;
5. The inner diameter of the clamp channel: 2.8mm;
6. Bending angle: up: 210°; down: 90°; left: 100°; right: 100°;
7. Effective working length: 1500mm;
8. Total length: 1800mm;
9. Total pixels: 300,000.

4. Instructions for use

- 1) Connect the leak tester to the endoscope for leak testing. After connection, hit the pressure gauge pointer to about 26kPa. If the pointer does not fall back, the endoscope has good sealing performance and can be used.



- 2) Connect the display to the endoscope. Be careful not to forcibly connect during connection to avoid damage to the connector.

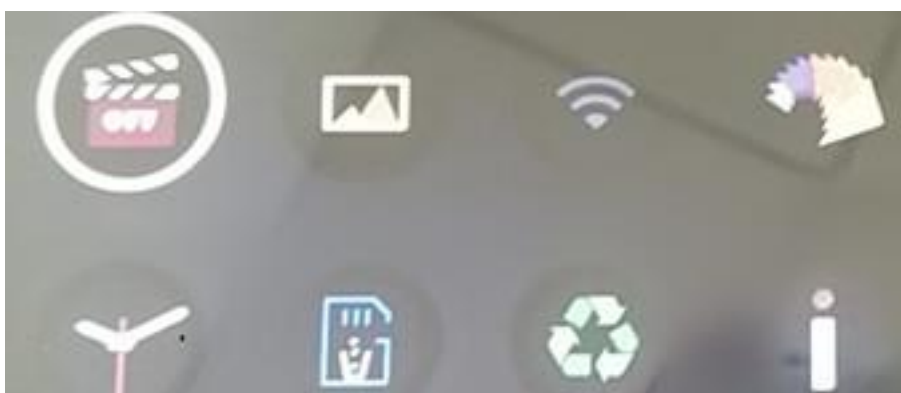


- 3) Long press the display switch for a few seconds, the boot animation will appear. The image is displayed on the display.
- 4) If the power supply of the display is insufficient, just use the charger to charge the display.
- 5) Set up two water inlets. See below. Both use a syringe to inject water, one way is forward water injection, which can flush the target. Spray water from the nozzle all the way, mainly washing the lens.



Parameters on the screen

Icon descriptions of the menu:



The first line:

1. Photo delay: 30ms delay, 60ms delay, no delay, default: no delay
2. Continuous shooting number: single shooting, two continuous shooting, three continuous shooting, default: single shooting
3. Wireless: not used
4. Image adjustment: brightness adjustment, contrast adjustment, color adjustment, each with 15 levels

The second line:

1. Time setting: You can set year, month, day, hour, and minute
2. TF card: TF card monitoring and information
3. Restore factory settings: can be turned on and off, default: off
4. Version number: check the software version number

Operation method:

In the preview mode, press the "**menu and confirm button**" to enter the menu interface, press the "**recording and uplink button**" and "**photograph and downlink button**" to select the corresponding menu, press the "**menu and confirm button**" to open, and press "Video Adjust the relevant parameters with the "uplink button" and "photograph and downlink button", and press the "browse and return button" to return to the previous menu.

Descriptions of buttons

From top to bottom, in order:

1. LED brightness cycle adjustment button
2. Button for recording and uplink
3. Menu and confirm button
4. Photograph and downlink buttons
5. Browse and return buttons
6. Switch button

Note: The top button is not used!



5. Cleaning and disinfection

After each inspection, please take off the display and clean it. Especially the mucus attached to the tip and the pipe. If it is not cleaned for a long time, the performance of the electric endoscope may be abnormal. Be sure to cover the sealing cap before cleaning and disinfection to avoid water or moisture.

★ After each clinical examination is completed, it must be cleaned and disinfected immediately. The method of cleaning and disinfecting the endoscope is determined by the endoscope operating doctor, the hospital infection control committee, etc., or implemented in accordance with the "Endoscope Cleaning and Disinfection Technical Operation Specification" issued by the Ministry of Health of the People's Republic of China. There are two methods for cleaning and disinfecting electric endoscopes: automatic cleaning and disinfection, manual cleaning and disinfection. Our company only introduces the manual cleaning and disinfection methods of electric endoscopes. For other automatic cleaning and disinfection methods, please refer to the relevant equipment manuals.

1) Cleaning

- (1) Wipe the insertion part with gauze or soft sponge in clean water to remove the turbidity on the hose.
 - (2) Immerse the insertion part in the cleaning solution, and use gauze or soft sponge to gently scrub the insertion hose repeatedly.
 - (3) Use a cleaning brush to insert from the opening of the clamp to scrub the inner wall of the clamp.
- ★ The cleaning brush cannot be moved in the reverse direction halfway, and the brush head must be completely exposed from the end of the head before being pulled out in the reverse direction to avoid damage to the inner wall of the pipe
- (4) Manually aspirate the syringe repeatedly and inject clean water into the endoscope tube for cleaning

2) Disinfection

This product is a fully waterproof endoscope, which can be immersed and disinfected. However, the sealing of the whole machine should be checked before immersion.

Warning: Please do not immerse the electric endoscope for more than one hour in disinfection, because repeated or long-term immersion in the disinfectant solution will increase the internal humidity of the electric endoscope, destroy the imaging system, and cause the lens to be blurred or

even damaged .

(1) Immerse the insertion part of the electric endoscope in the disinfectant, and gently and repeatedly scrub the insertion tube with gauze or soft sponge.

(2) According to the method of cleaning the clamp tube of the endoscope, the tube can be disinfected.

(3) After the endoscope is disinfected, rinse with clean water to remove the disinfectant residue. At the same time, the residual disinfectant in the pipe should be removed according to the method of cleaning the clamp pipe of the endoscope.

(4) Wipe the outer surface of the electric endoscope with dry gauze.

(5) Dry the clamp channel of the endoscope.

(6) Wipe the outer surface of the electric endoscope with gauze (70%) soaked in alcohol.

3) Precautions for disinfection of endoscopes

General washing solutions and methods will not achieve the purpose of disinfection. If it is necessary to disinfect endoscopes, various disinfection methods and materials should be studied and selected from the perspective of medical professionals and according to special clinical conditions.

(1) Some materials (such as synthetic resin and rubber, etc.) used in the structure of the electric endoscope may cause damage when certain disinfectants are used. Before using any disinfection method, full attention should be paid to the safety of electric endoscopes.

(2) According to long-term tests and clinical use, the following disinfectants are safe for electric endoscopes when used correctly.

2% alkaline glutaraldehyde solution soaking time not less than 10 minutes

(3) The following disinfection methods will cause major failures of the electric endoscope and should be absolutely prohibited!

Heating and pressurizing type with pressure above 1.5 atmospheres and temperature above 40°C, EGO disinfection

a) Ultrasonic cleaning and disinfection

b) Boiling disinfection

c) Drying and sterilizing

d) Steam sterilization

e) Disinfect with cresol solution or formaldehyde

f) Disinfect with an undiluted solution for cleaning and disinfection with chlorinated benzene

(4) When disinfecting or when the electric endoscope is not in use, please cover it with a sealing cap to avoid water or moisture.

(5) The disinfection and soaking time of the electric endoscope should not exceed one hour, because repeated or prolonged soaking in the disinfectant solution will increase the internal humidity of the electric endoscope, resulting in blurred lenses and even damage to the coms.

4) Sterilization

This product can be sterilized by 2% glutaraldehyde soaking, the specific method is as follows:

Immerse the cleaned, dried and sterilized endoscope in a container containing 2% glutaraldehyde, cover it, soak for 10 hours, take it out aseptically, rinse it with sterile water, and dry it aseptically use.

Note: The effective concentration and expiration date of glutaraldehyde must be ensured. If the effective concentration is lower than the effective concentration and the expiration date, it should be replaced in time.

5) Sterilization of other parts

(1) The expansion head, stone fence, guide wire, and surgical instruments used with the endoscope should also be sterilized after cleaning.

(2) Pressure steam sterilization, which is currently the most effective sterilization method. The use conditions and methods are the same as those of the endoscope sterilization.

(3) It can also be sterilized with ethylene oxide. The operating parameters and precautions are the same as those of the endoscope.

(4) Sterilize by soaking in 2% glutaraldehyde for 10 hours. All parts should be soaked in disinfectant, and all channels should be filled with disinfectant.

(5) Low-temperature steam formaldehyde sterilization should be carried out in a formaldehyde sterilization box. See the instruction manual for the specific method.

(6) For optical cables, cameras and other accessories, use 75% alcohol cloth to wipe and disinfect them twice, or use disposable sterile plastic covers for isolation and disinfection, but the contact area should still be wiped and disinfected with alcohol.

Note:

(1) The relevant sections or valve parts should be fully opened during disinfection.

(2) The parts after fumigation or immersion disinfection must be thoroughly rinsed with isotonic saline or distilled water to wash away the disinfectant remaining on the surface of the parts.

(3) Glutaraldehyde is corrosive to carbon steel products, 5% sodium nitrite should be added to prevent rust before use.

(4) For other uncovered matters and specific methods, see "Technical Specifications for Disinfection in Hospitals".

6. Maintenance

If the following failure occurs, if the debugging according to the inspection method shown below does not work, please stop using it immediately and contact our company's after-sales service department.

Fault phenomenon	Inspection method
The image is not clear or has interference	Whether there is dirt on the mirror
See water droplets or streaks	Tel: contact after-sales service department
There is no illuminating light or light is dark	Check whether the LED light switch is turned on
The corner is insufficient or the corner does not move.	Tel: contact after-sales service department
The corner locking device fails.	Tel: contact after-sales service department
Sampling clamps and other disposal tools cannot be inserted.	Check whether foreign objects fall into the pipeline.
There are needle-like protrusions on the surface of the insertion tube.	Tel: Contact after-sales service department
There are cracks in the observation window and	Tel: Contact after-sales service department

7. Storage

1. Transportation and storage:

a. Ambient temperature range: $-40^{\circ}\text{C} \sim +55^{\circ}\text{C}$

b. Relative humidity range: 10%~95%

c. Atmospheric pressure range: 500hPa~1060hPa

★ The packed electric endoscope should be stored in a cool and dry place with no liquid contamination, no chemicals or explosive gas, no corrosive gas, and a well-ventilated room with a relative humidity of no more than 80%.

2. Before storage, the electric endoscope must be completely dry and kept as straight as possible. The insertion part should be kept in an environment without external influence.

3. The mirror box is not a safe deposit box. Please do not use the mirror box to store the electric endoscope to avoid infection.

4. If it is found that various faults of the electric endoscope are caused by man-made damage, it is not within the term of warranty.

8. Other cautions

1) When inserting, pulling out and storing the electric endoscope, please confirm whether the angle lock wrench has been released.

2) The internal structure of the electric endoscope is very fine, do not forcefully bend, fold, twist, or collide during use.

3) Please do not store the electric endoscope in a high temperature, humidity, and dusty environment.

4) If the electric endoscope is irradiated by X-rays, the internal coms and other fine parts will age and change color, so please use it to the minimum.

5) The end of the electric endoscope lens must not be pointed at strong light (such as sunlight, light from the light source, etc.), because the coms is a photosensitive precision device, so it is easily damaged.

6) After an abnormal situation occurs in the electric endoscope, please stop using it immediately and contact the company's after-sales service department in time, or contact the company's authorized dealer or service center nearby.

7) When electric endoscope products and their internal components are scrapped, they should be handed over to a professional medical waste recycling agency or department for disposal. Do not discard them without authorization.

9. After-sales service

1. The electric endoscope implements the “three guarantees” from the date of purchase, and the

warranty is one year. The implementation of the "three guarantees service" is based on the invoice or product warranty or installation acceptance form. Vulnerable parts and gifts are not included in the three guarantees.

2. During the warranty, if there are problems with the product's own parts and materials and processes under normal use and maintenance conditions, after the problems are verified by our company, the service will be free of charge.

When your product fails during normal use, our company only promises the above free warranty service. In the following situations, please choose the paid service provided by our company. Our company's "service commitment" is limited to repairing product malfunctioning hardware.

(1) After your product is repaired by our service center, you continue to enjoy the promise of the original machine's warranty period. If the repair part exceeds the free warranty period, you need to pay a certain repair service fee, and our company will repair. The standard of the repair service fee is provided by our service center.

(2) When you request warranty service from our service center, please show the three-guarantee certificate or purchase invoice. If you are unable to present the warranty certificate or purchase invoice, the warranty certificate or purchase invoice does not match the repaired product, our company reserves the right not to provide warranty service.

(3) Our company reserves the right not to provide warranty service for damage caused by incorrect installation due to failure to follow the instructions.

(4) For damage caused by man-made, our company reserves the right not to provide warranty service.

(5) Our company reserves the right not to provide warranty service for damage caused by all natural disasters such as floods and fires.

Notes:

a) Our company reserves the right not to provide warranty service if it is repaired, modified or disassembled by non-authorized service personnel.

b) You should ask to open the box to check the quality of the machine before the product is handed over. Defects or malfunctions discovered after the completion of the product transfer are presumed to be caused by our company's fault.

c) Our company is not responsible for all additional commitments made by the seller to you. In order to provide you with better after-sales service and protect your rights and interests, our company welcomes you to supervise our work.

Warranty Card

User information (please fill in details)

User name			
Address		Postal code	
Product name:	Product code:		
Purchase place:	Purchase date:		
Invoice no.:	Tel.:		

The warranty card must be sent back to our company within one month after purchase.

TEXT OR EMAIL

repairs@endoscoperepair.com

Warranty method: contact the service center of our company with the invoice (or copy), and the product warranty card must be sent back to our company within one month of purchase.

Warranty conditions: within one year of purchase, our company is responsible for free warranty for any product quality failure.

The following conditions are not covered by the warranty:

1. Damage caused by improper use or improper storage by the user
2. Damage caused by user disassembly

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