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Warning: Please read the instruction manual before use

# Video Borescope

## Instruction Manual



## Warning:

Due to the continuous update of product technology, the market changes rapidly, and the editing time is limited, there is no guarantee that it is not included in this manual there are errors, so this manual is only for the reference of the user, do not provide any form of warranty. Our company reserves the right the content of this article is revised and changed right. The company has no obligation or obligation to notify any of the amendments.

## 1、User Instructions

1.1 Application and scope of application	01
1.2 Maintenance and modification	01
1.3 Safety precautions	01

## 2、Product Introduction

2.1 System parameters	02
2.2 Operating environment	03
2.3 Packing list	03

## 3、Operation process

## 4、Operation Guide

4.1 Preparations before starting up	04
4.2 Bending control	04
4.3 Buttons, port introduction	05
4.4 Battery disassembly and charging	07
4.5 Data reading	09
4.6 Endoscope working mode quick start guide	10

## 5、Instrument storage mode

## 6、Troubleshooting

## 7、Disposal

## 1. User Instructions

### 1.1 Application and scope of application

This product is applied to realtime detection and analysis of industrial on-site equipment, aerospace, shipbuilding, new energy, and transportation production and maintenance, with direct visual features Point, can directly observe whether there are defects or abnormalities on the inner surface of pipes, turbines, cylinders, engines and other devices. The other in Real-time photography and video recording are performed to provide indispensable data collection for analyzing equipment usage and equipment production guarantee Set.

### 1.2 Maintenance and modification

This product does not have any parts that can be maintained by the user, do not attempt to disassemble, refit and repair, the repair service of this product is only provided by our company and our company authorized dealer repair.

### 1.3 Safety Precautions (Please observe the following when using this product)

- Do not use this instrument to observe human or animal body.
- Do not use or store in places with explosive, strong electromagnetic field or combustible gas, which may cause fire or explosion.
- Do not allow the detected material to work under the condition of live, so as not to cause electric shock.
- Do not contact the end of the lens directly during use, especially pay special attention to the use of the endoscope in a high temperature environment.
- Contact with the ends at this point may cause burns.
- Do not look at the strong light source from the LED at the end of the endoscope probe close to avoid the impact of strong light on vision.
- Do not bend, stretch, twist or roll the probe line too hard, otherwise it may cause damage to the equipment.
- Long-term use of this product will cause stains on the lens objective lens, resulting in blurred picture and affecting data collection.
- Wipe the objective lens clean with alcohol or acetone before use.
- If you feel any abnormality in the Angle adjustment operation, stop the current operation and shut down. Then contact the supplier.
- Keep tube away from any liquids except water, salt water, oil, and light oil.
- After the instrument is used up, please clean the front section of the insertion tube of the instrument in time to prevent corrosion.

## 2. Product introduction

### 2.1 System parameters (Based on general models)

Bending control	360°full direction articulation
Insert tube	Four layer tungsten wire braided hose
System language	Chinese, English, German, French, Russian, Spanish, Italian, Polish, Japanese, Ukrainian, and other languages
Screen size	5 inch HD large screen
Image/Video format	JPEG/AVI
Host structure	Integrated handheld design
Storage	Standard 32GB micro SD card, Max support 128GB
Data port	Micro USB port, HDMI video output port, AUX port
IP Grade	Insert probe IP67
Host working time	≥4 hours
Host weight	≤ 0.8kg (with battery)
Power	Charging lithium battery (Dismantle)
Power adapter	DC5V

## 2.2 Operating environment

Host system working temperature	-10°C~50°C
Video probe working temperature	-20°C~300°C Below 0°C, Steering operations should be reduced
Storage temperature	-20°C~60°C(Host)
Relative humidity	Max 90%, no condensation

## 2.3 Packing list

- 1 x videoscope PCE-VE 260HT
- 1 x 32 GB micro SD card
- 1 x USB card reader
- 1 x mini tripod
- 1 x approx. 40 cm hose
- 1 x HDMI cable
- 1 x case
- 1 x USB power adapter 5 V, 3 A
- 1 x Micro-USB cable
- 1 x instruction manual

## 3. Operation process

### 3.1 Take out the instrument

Open the outer box of the instrument, take out the endoscope host and hold the probe tightly to avoid collision probe and scratching probe head.

### 3.2 Power up and prepare to insert the SD card

Load the battery and insert the micro SD card.  
Connect the outlet pipe of the air compressor (Figure-a)

### 3.3 Press the boot key to turn on the instrument (Figure-b)

### 3.4 Use endoscope

Turn on the switch of air compressor,  
Insert end of endoscope tube into the product under test.

### 3.5 Bending operation

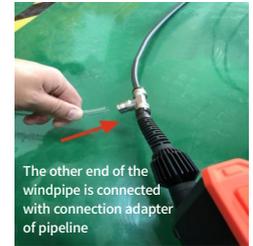
Operate the joystick to control the bending of the probe according to the requirements of field testing.  
If the rocker suddenly encounters great resistance during shaking, or if there is any abnormality during the operation of the endoscope, please click Stop watching immediately. After shaking the rocker to the middle position, carefully remove the endoscope insert end from the inside of the product under test.

### 3.6 Exit

It is confirmed that the bending of the endoscope is in a rough straight position (the joystick is in the middle position), and then slowly exit it.

### 3.7 After use

Turn off the air compressor switch, turn off the endoscope power switch and pull out the air compressor outlet pipe, put the endoscope into the portable box, and coil the inserted tube. (e.g., for a long time no use instrument, please remove the battery)



The other end of the windpipe is connected with connection adapter of pipeline

(Figure-a)



(Figure-b)

## 4. Operation Guide

### 4.1 Preparations before starting up

Take out the endoscope and insert the TF card. Connect the outlet pipe of the air compressor. The probe should be used as straight as possible. Probes are prohibited from winding.

### 4.2 Bending control

The curved corner control of the endoscope is directly controlled by the joystick on the operating panel. The direction of shaking the joystick is the direction of the probe rotation. The size of the corner is determined by the angle of the joystick shaking.

4.3 Buttons, port introduction

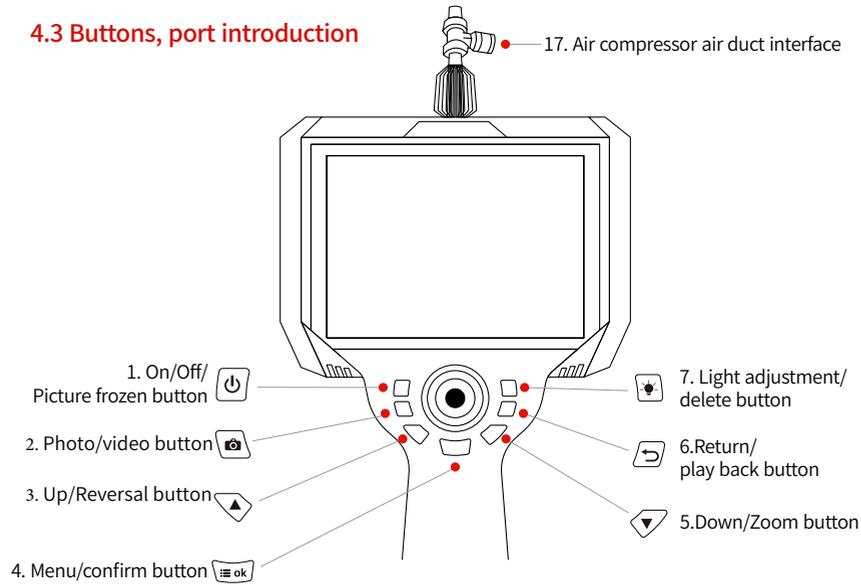


Figure 1 Button introduction

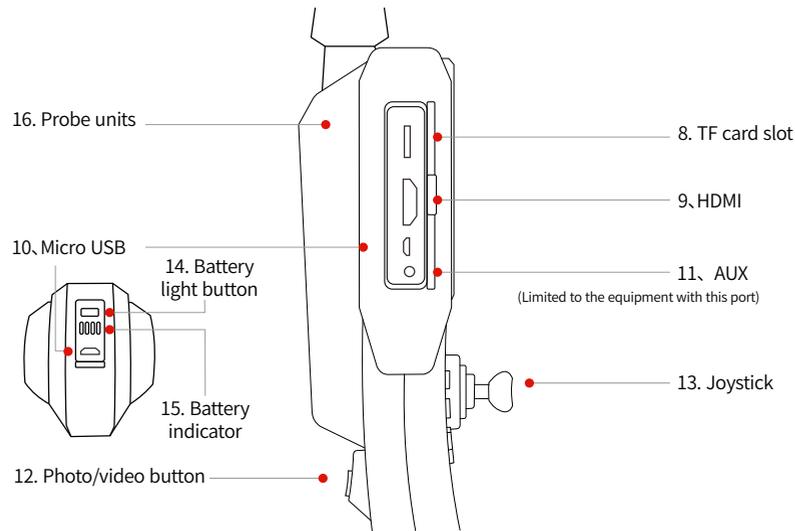


Figure 2 Port introduction

1. On/Off/  
Picture frozen button: Power on and power off function, long press to power on or power off. In the preview state, short press tap to freeze the screen
2. Photo/  
video button: Short press for photo, long press for 3 seconds to video mode, in the video mode, short press is the camera function. Long press 3 seconds to exit the video mode and save the video file.
3. Up/Reversal button/  
Front & side view switch: When setting the interface, the upward navigation function is enabled. The function is rotated when previewing the interface.
4. Menu/  
confirm button: When previewing the interface, press to enter the setting interface; The confirm button is displayed on the Settings screen
5. Down/  
Zoom button: When previewing the interface, it works as zoom buttons, when it comes to setting interface, it is a menu down navigation function.
6. Return/  
play back button: In the preview screen, go to the Photos and videos browse folder; It is used as a return function in the browsing interface.
7. Light adjustment/  
delete button: When the system is powered on, the system is in the visible light lighting state by default, and the brightness level is 0 when it is in the unlit state. Press the "LED light adjustment" button successively, and the LED light will gradually increase: 0, 1, 2...8, after the LED light increases to 8, press the key again, and the LED light will turn to 0, and so on
8. SD card slot: External storage; maximum support 128GB
9. HDMI: Use with external large screen
10. Micro USB: Used for data transmission and charging functions
11. AUX: AUX audio port
12. Photo/video button: Short press for photo, long press for 3 seconds to video mode, in the video mode, short press is the camera function, long press for 3 seconds to exit the video mode and save the video files.
13. Joystick: 360 degree full way articulation
14. Battery light button: Press to display the remaining power
15. Battery indicator: Press the power key to turn on the light
16. Probe connection
17. Air compressor air duct interface: can be connected to air compressor equipment.

### 4.4 Battery disassembly and charging

On the back of the endoscope, press and hold the battery button, pull down, then you can remove the battery.

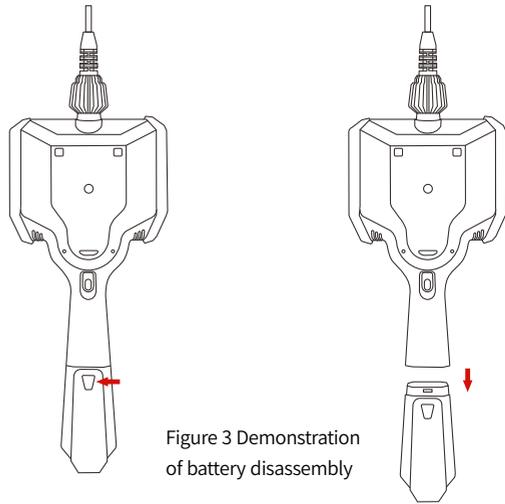
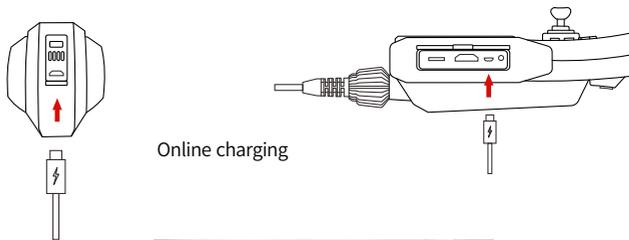


Figure 3 Demonstration of battery disassembly

You can also directly connect the Micro USB cable to charge online. The online charging screen has a charging logo in the upper right corner of the screen.



Online charging

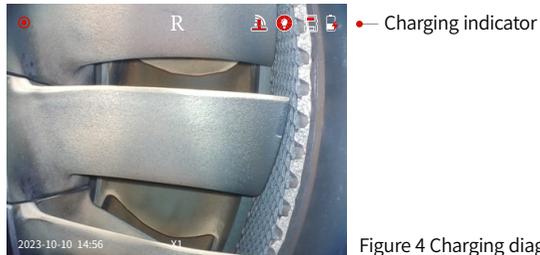


Figure 4 Charging diagram

### 4.5 Data reading

Method 1: The PC directly reads the SD card data, removes the SD card from the SD card slot of the endoscope and inserts it into the PC.

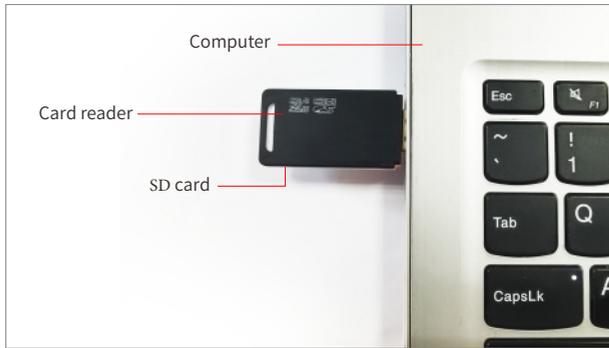


Figure 7 Schematic diagram of card reader reading

Method 2: Turn off the endoscope, connect the endoscope and the computer with a Micro USB data cable, turn on the endoscope, and do not pull out the SDCard at will while the computer is reading data, otherwise it will cause abnormal errors.

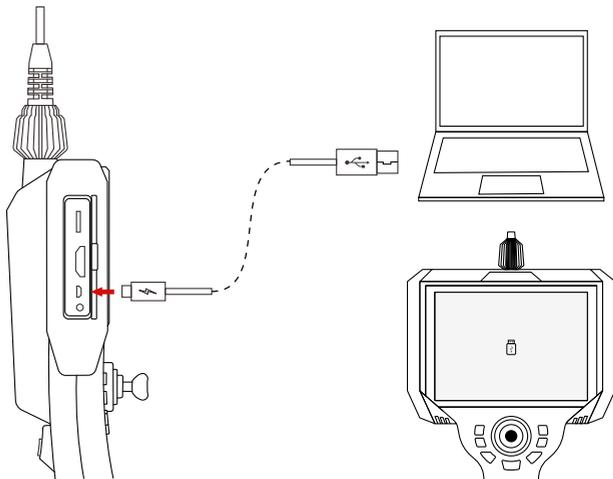


Figure 8 Direct connection to read data

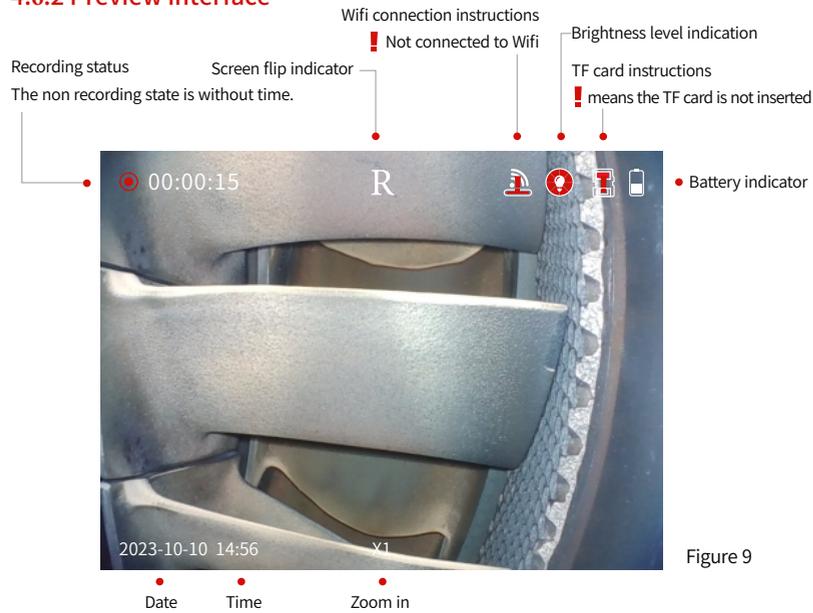
### 4.6 Endoscope working mode quick start guide

The video observation mirror system mainly has 3 working modes, namely: "real time preview mode"; "photo video browsing mode" and "system setting mode". After booting, it will enter the "real-time preview mode" by default. Each mode and sub mode Please refer to "Table 1 Button Function List" for details of the button functions in the mode.

#### 4.6.1 Key function list

Key shape	Name	Browsing interface	Browsing	Play video	System setup	Time setup
	Switch image/freezes	Shutdown/off image freezes	Long press to power off			
	Up key/Rollover key/view switch	Image flip	Navigate up	Navigate up	Navigate up	Navigate up
	Down arrow/zoom key	Image scaling	Navigate down	Navigate down	Navigate down	Navigate down
	Menu Confirm	Enter menu	confirm/zoom	suspend/play	confirm	confirm
	Back/Playback key	Photo/video browsing	Back	Back	Back	Back
	Light adjustment/Delete	Light adjustment	Delete	Delete	/	/
	Photo/Video key	Photo/Video	Back	Back	Back	Back
	Photo/Video key	Photo/Video	Back	Back	Back	Back
	Joystick	Joystick UP: Probe swings up				
		Joystick Down: Probe swings down				
		Joystick Left: Probe swings left				
		Joystick Right: Probe swings right				

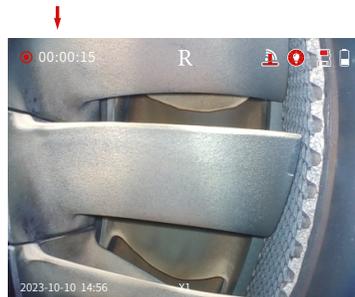
### 4.6.2 Preview interface



### 4.6.3 Photo/Video

In the image preview interface, you can use the photo/video keys to take photos or videos. Short press the button to take photos, and long press the button to record. When recording, you can short press the button to take photos and long press to exit video recording and save.

Note: The SD card must be inserted before taking pictures/videos, otherwise the module cannot take pictures and videos.

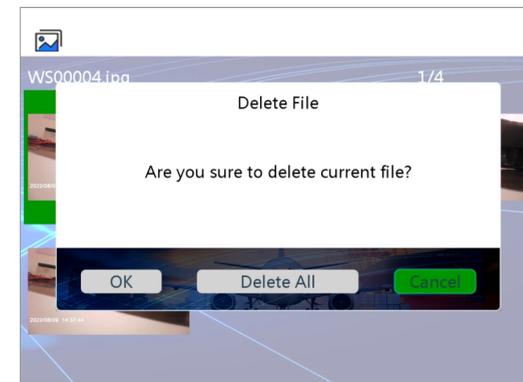


### 4.6.4 Photo/video browsing

Press in the preview interface, Press the key to enter the file, and you can preview photos and play videos online.



Press to delete photo or video files, and the deletion options can be to delete individual files or delete all files.



### 4.6.5 System setting mode

Press the button  in the preview interface to enter the setting interface.

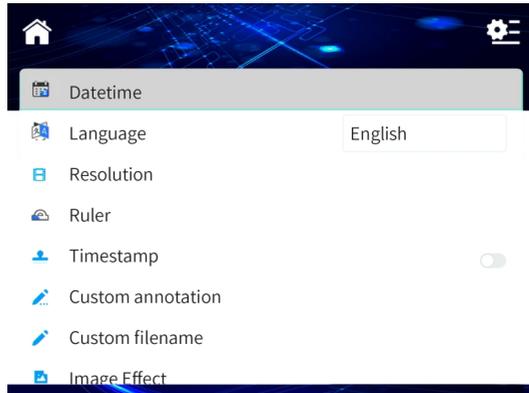


Figure 15 Setting interface

#### 4.6.5.1 Date setting

In the setting interface, press up or down to enter the date setting page.

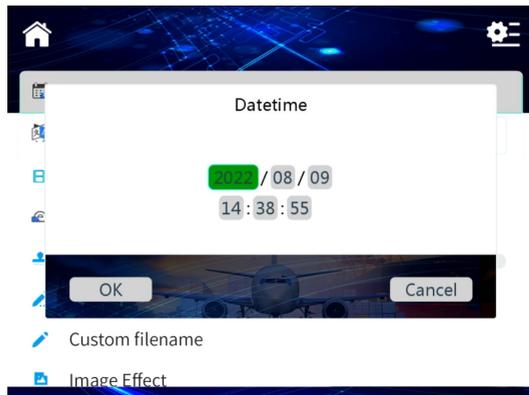


Figure 16 Date setting

Press the menu button to enter editing, up button  to increase the number; down button  to decrease the number, press the menu button  to switch; after the setting is completed, press the menu button to confirm and complete the current setting.

#### 4.6.5.2 Language setting

Enter the language setting page in the setting interface and select the required system language.



Figure 17 Language setting

#### 4.6.5.3 Resolution

Enter the resolution option in the setting interface and select the required resolution. Select the resolution 1280 x 720.

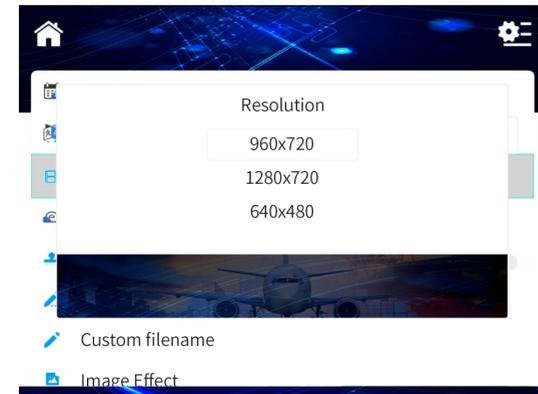


Figure 18 Resolution selection

#### 4.6.5.4 Measurement function

Press up button and down button to enter the ruler interface, select the ruler type, and then turn on the measurement function.

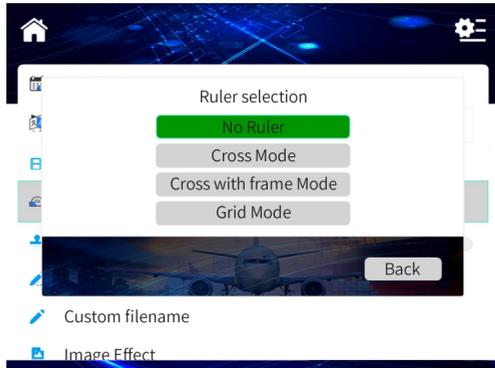


Figure 19 Ruler setting

#### 4.6.5.5 Watermark setting

In the setting interface, Press up button and down button to enter the watermark selection function, press  button to switch and confirm.

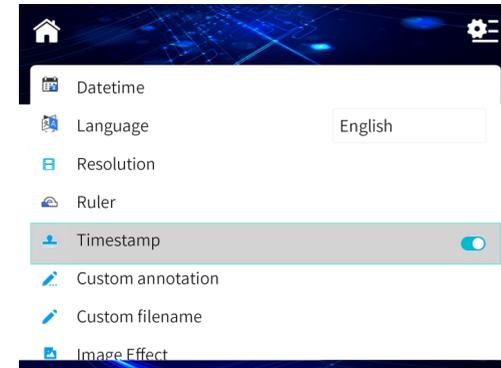


Figure 23 Watermark setting

Turn on the time watermark, when taking photos and videos, there will be a time watermark right below it. If it is turned off, there will be no time watermark.

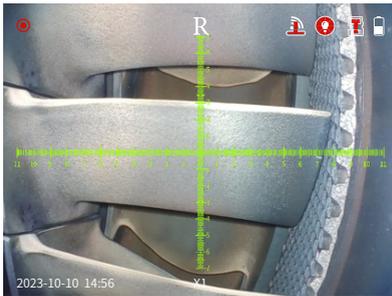


Figure 20 Cross mode

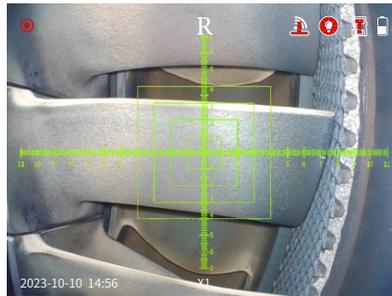


Figure 21 Cross frame mode

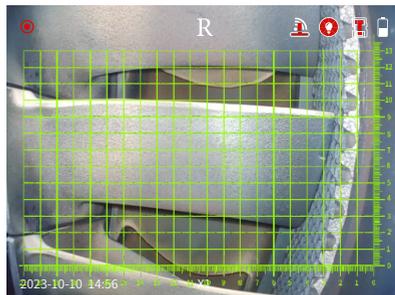


Figure 22 Grid mode



Figure 24 Turn on time watermark



Figure 25 Turn off time watermark

#### 4.6.5.6 Custom annotation

Enter the custom annotation interface in the setting interface. Press up button and down button to select a letter and press  to finish.

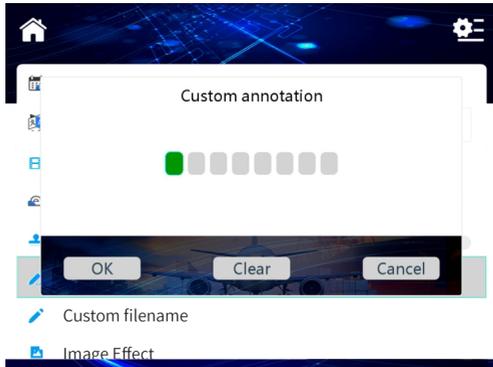


Figure 26 Custom annotation

#### 4.6.5.7 Custom file name

Enter the custom file name option in the settings interface. The naming rule is: custom prefix + serial number.

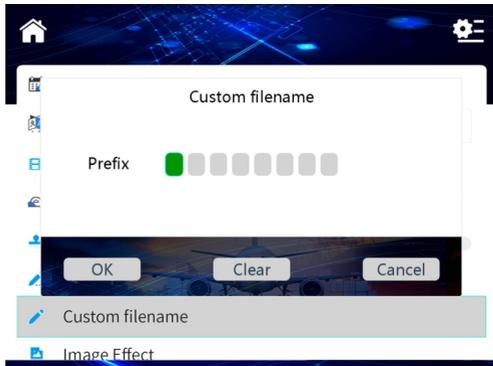


Figure 27 Custom file name

#### 4.6.5.8 Image effect

Enter the image effect option in the setting interface. Select the desired image effect and press  to confirm.



Figure 28 Image effect

#### 4.6.5.9 Audio selection

Enter the audio selection option at the setting interface. Select headphone mode. Headphone mode: you can add audio recordings to a video by using headphones.

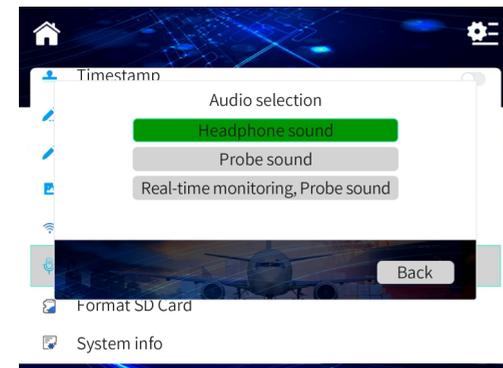


Figure 29 Audio selection

#### 4.6.5.11 Format memory card

Enter the format memory card option in the settings interface. Press the up or down key to select, and press the  key to confirm the selection.

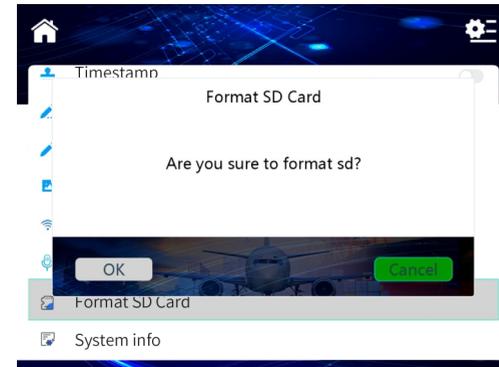


Figure 32 Format memory card

#### 4.6.6 Battery status detection

When the endoscope is running, the battery indicator icon on the upper right side of the screen displays the real-time battery status. When the battery is too low to continue working, the battery indicator icon will show 0. At this time, the system will issue a low battery alarm and automatically shut down after 30 seconds.



Figure 33 Battery status



Figure 34 Low battery status

### 4.6.7 Lens brightness display and setting

Light adjustment/delete button:When the system is powered on, the system is in the visible light lighting state by default, and the brightness level is 0 when it is in the unlit state. Press the "LED light adjustment"  button successively, and the LED light will gradually increase :0, 1, 2...8, after the LED light increases to 8, press the key again, and the LED light will turn to 0, and so on.

grade 0 len brightness indicator



Figure 9 preview status

grade 8 len brightness indicator



Figure 35 Len grade 8 brightness status

## 5. Instrument storage mode

Store the instrument at normal room temperature in a clean, dry, stable place, and keep the instrument level.

It is strictly prohibited to store the instrument in high temperature, high humidity, strong light, strong shock, high dust, pollution or corrosive environment.

When storing, do not collide with other objects or treat the instrument roughly.

When the product is not used for a long time, please remove the battery and check the function of the instrument regularly.

## 6. Troubleshooting

Malfunction	Possible reason	Solution
Unable to start	No battery inserted	Charge or install the battery
Cannot adjust brightness	Low battery	Charge or replace the battery
Automatic shutdown	Low battery	Remove battery, reinstall and restart, charge
Image cannot be recorded	Card Capacity is insufficient	Replace cards or delete unwanted pictures

## 7. Disposal

For the disposal of batteries in the EU, the 2006/66/EC directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose.

In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law.

For countries outside the EU, batteries and devices should be disposed of in accordance with your local waste regulations.

If you have any questions, please contact PCE Instruments.

