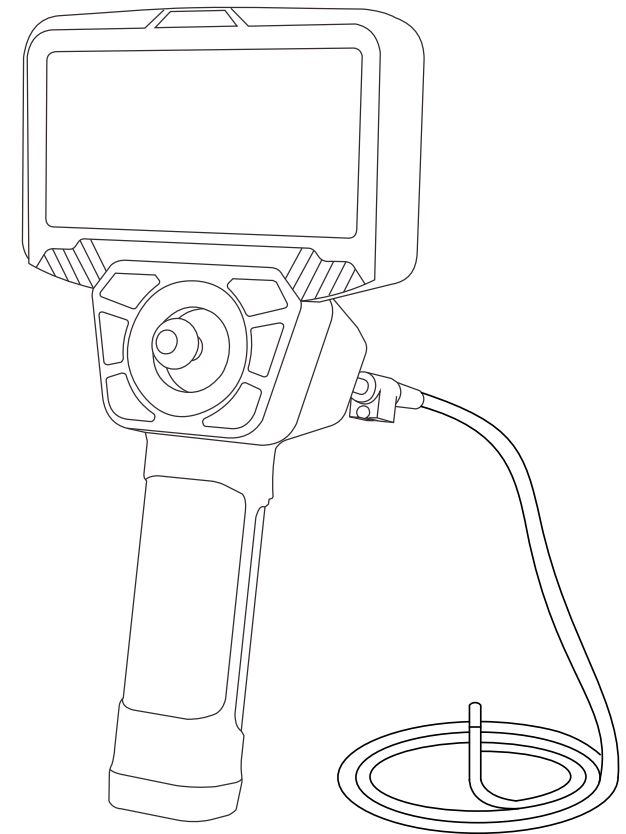


Warning: Please read the instruction manual before use

Industrial Endoscope

Instruction Manual



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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.

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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	Durable flexible probe
System language	Chinese, English, German, French, Russian, Spanish, Italian, Polish, Japanese, Ukrainian, and other languages
Screen size	5 inch IPS HD screen
Image/Video format	JPEG/MOV
Host structure	Screen and handle detachable split design
Storage	Standard 32GB TF card, Max support 128GB
Data port	Type-C port, HDMI video output port, AUX port
IP Grade	Insert probe IP67
Host working time	≥4 hours
Host weight	≤0.8kg (with battery)
Power	26650 battery (5000mAh)
Power adapter	DC5V

2.2 Operating environment

Host system working temperature	-10°C~50°C
Video probe working temperature	-20°C~70°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

Series Number	Description	Number	Unit
1	Host	1	PCS
2	Endoscope Probe	1	PCS
3	Card reader	1	PCS
4	TF card(32G)	1	PCS
5	26650 Battery	1	PCS
6	Packing case	1	PCS
7	Charging adapter	1	PCS
8	Type-C cable	1	PCS
9	HDMI cable	1	PCS
10	Instruction Manual	1	PCS
11	Certificate card	1	PCS
12	Warranty card	1	PCS

3. Operation process

3.1 Take out the instrument

Open the outer box of the instrument, take out the main body of the endoscope, connect the handle pipeline, and hold the probe firmly to avoid collision with the probe and scratching of the probe lens.

3.2 Power up and prepare to insert the TF card

3.3 Press the boot key to turn on the instrument

3.4 Use endoscope

Use the endoscope probe to insert into the internal part of the inspection work piece.

3.5 Bending operation

According to the on site detection, the joystick is required to control the probe bending.

If the joystick is suddenly resistant during the shaking process, or any abnormalities in the operation of the endoscope, please stop observing immediately. After shaking the joystick to the middle position, carefully take out the endoscope from the testing products

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 power switch and put the endoscope into the portable box, split the host and the handle probe, and put the inserted into the pipe disk (if the battery is not used for a long time, take out the batteries)

4. Operation Guide

4.1 Preparations before starting up

Remove the endoscope and insert the TF card; keep the probe as straight as possible. When the environment is not allowed, the probe is prohibited from being used.

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

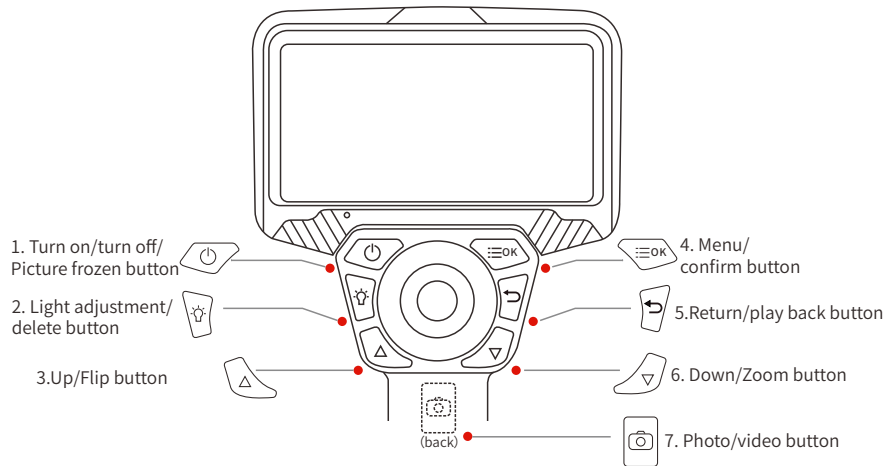


Figure 1 Key Button diagram

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. 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
3. Up/Flip button: 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. 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.
6. 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.
7. Photo/video button: When the small dot icon is displayed in the upper left corner, press and hold for 3 seconds to take a picture. Press and hold for 3 seconds to enter the video mode. Press and hold for 3 seconds to return to the video mode and save the video file
8. TF card slot: External storage; maximum support 128GB
9. HDMI: Use with external large screen
10. Type-c: Used for data transmission and charging functions
11. AUX: AUX audio port

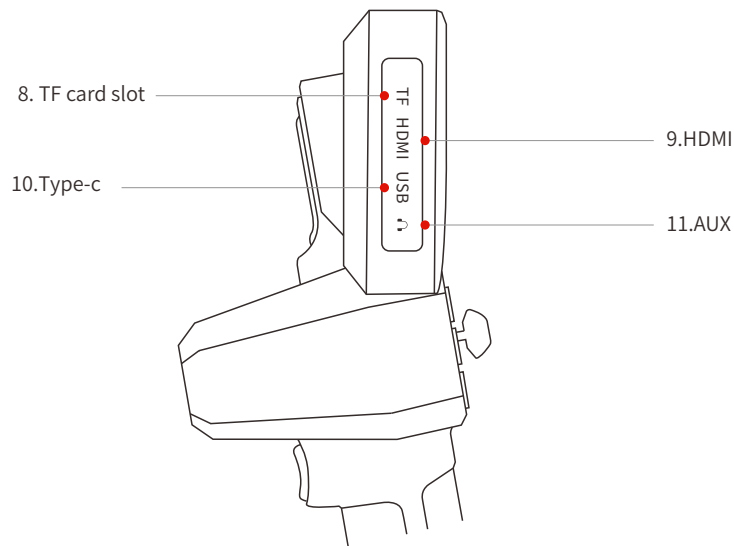


Figure 2 Interface diagram

4.4 Battery disassembly and charging

The battery cover is at the bottom of the handle. Use a cross screwdriver to remove the 4 screws and open the cover to take out the battery.

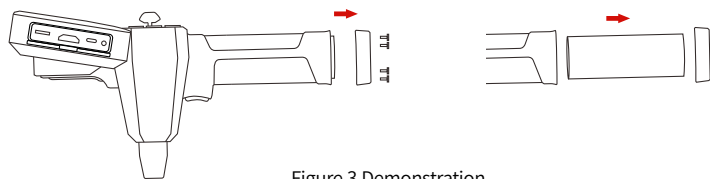
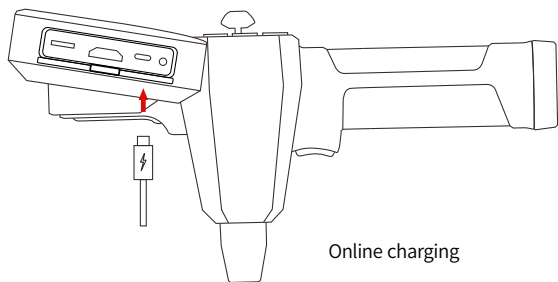
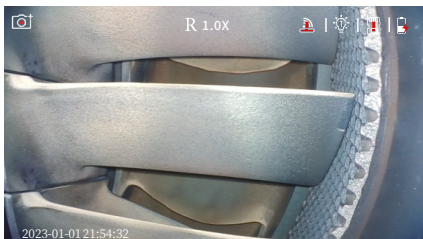


Figure 3 Demonstration of battery disassembly

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



Online charging



● Charging indicator

Figure 4 Charging diagram

When charging, the indicator light below the screen shows red, and when the battery is full, the indicator light shows green.

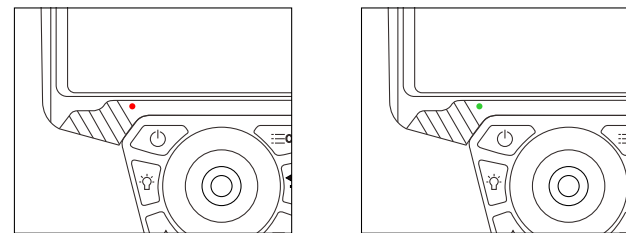


Figure 5

4.5 Quick split Screen and Install Screen

Hold the handle tightly and pull up the screen to separate it; to install the screen, just align it with the slot and press down firmly.

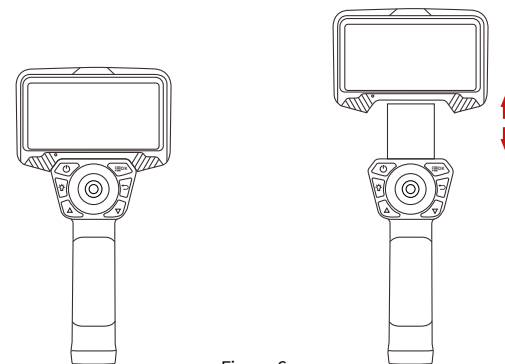


Figure 6

4.6 Data reading

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

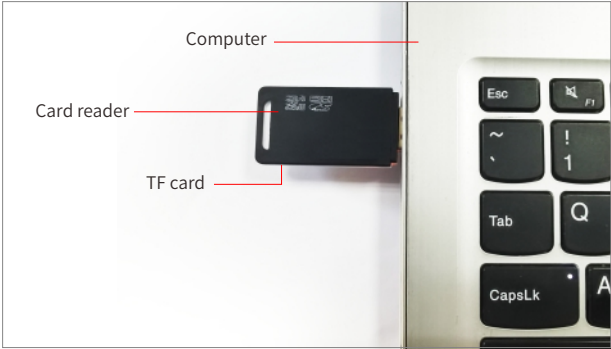


Figure 7 Schematic diagram of card reader reading

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

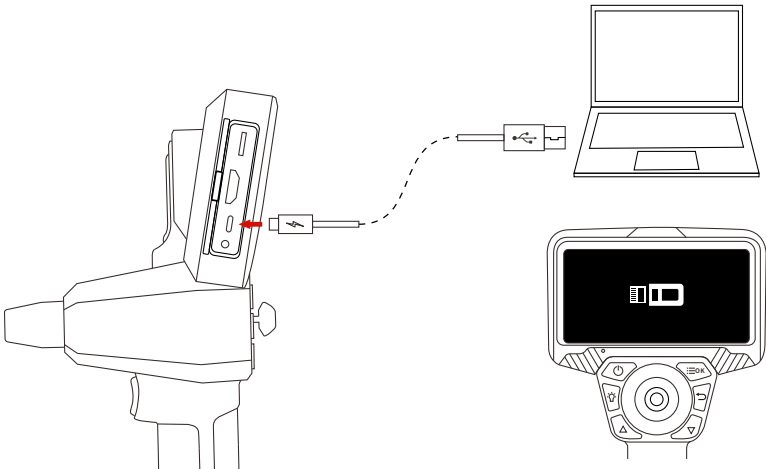


Figure 8 Direct connection to read data

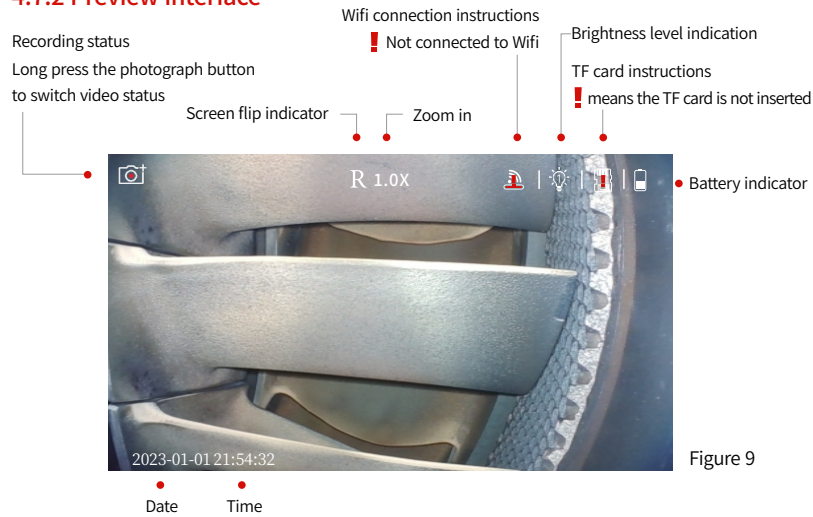
4.7 Endoscope working mode quick start guide

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.

4.7.1 Key function list

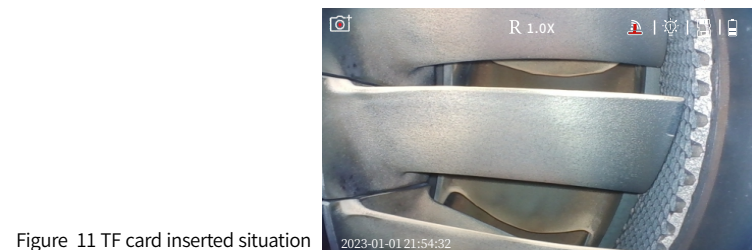
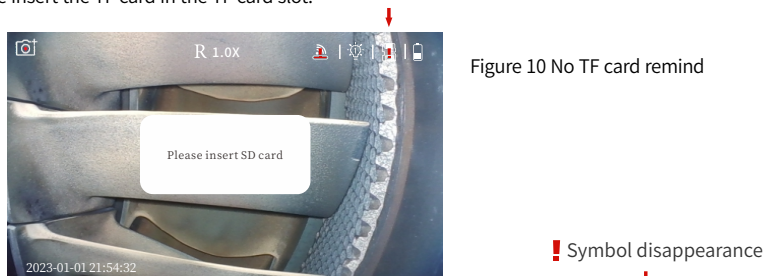
Key shape	Name	Browsing interface	Browsing	Play video	System setup	Time setup
	On/Off/ Picture frozen button	Off/ Picture frozen button	Long press to power off	Long press to power off	Long press to power off	Long press to power off
	Light adjustment /Delete	Light adjustment	Delete	Delete	/	/
	Up key/ Rollover key	Image flip	Navigate up	Navigate up	Navigate up	Navigate up
	Menu Confirm	Enter menu	confirm/ zoom	suspend/ play	confirm	confirm
	Back/ Playback key	Photo/ video browsing	Back	Back	Back	Back
	Down / zoom key	mage scaling/ Long press the hide icon	Navigate down	Navigate down	Navigate down	Navigate down
	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				

4.7.2 Preview interface



4.7.3 Installing the TF card:

Without inserting the TF card, the device will display “no TF card” when taking photos or videos. Please insert the TF card in the TF card slot.



4.7.4 Photo/Video

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.



4.7.5 Photo/video browsing

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

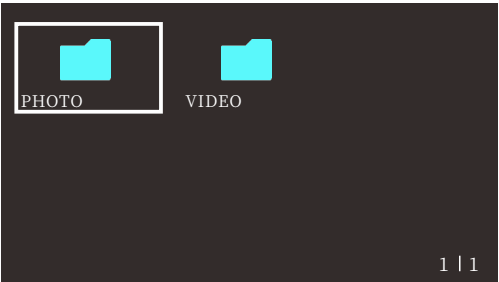


Figure 14 Files

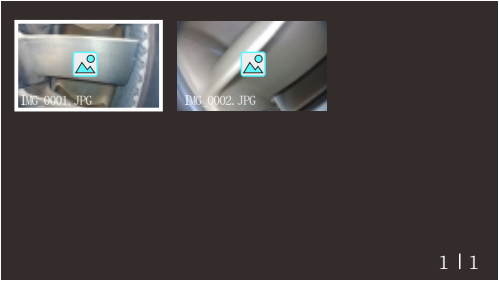


Figure 15 Photos files

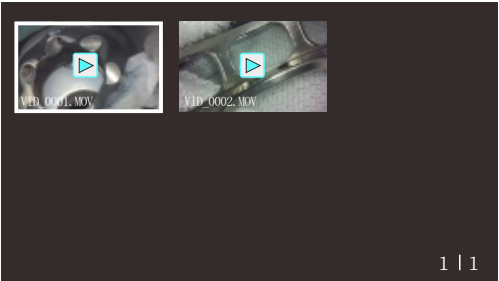


Figure 16 Videos files

Press  key in the file folder to preview photos or play videos in full screen.



Figure 17 View photos in full screen mode



Figure 18 Video not display mode



Figure 19 Video playing mode

When previewing photos or videos in full screen and not playing, press  and  to scroll up or down photos and videos

During video playback, press  and  to fast forward or rewind the video

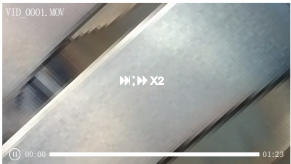


Figure 20 Video fast forward

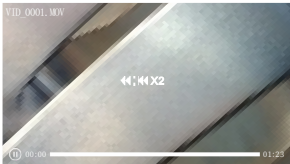


Figure 21 Video rewind

Press  to delete photos, video files or folders, and the delete option can select single or multiple files.

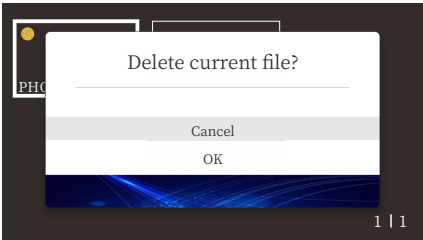


Figure 22 Asking for deletion status

4.7.6 System setup mode:

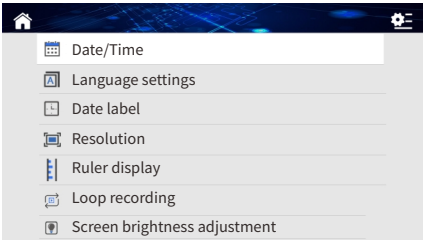


Figure 23 Setting interface

4.7.6.1 Date and time settings:

 to enter the date and time setting interface.

Press  and  to add or subtract, and press  to switch.

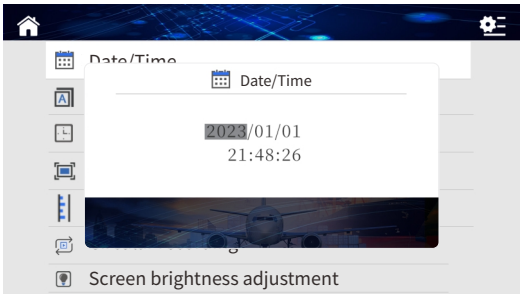


Figure 24 Date and time setting interface

4.7.6.2 Language settings:

Select the "Language Settings" column in the setting interface and press  to enter the language setting interface.

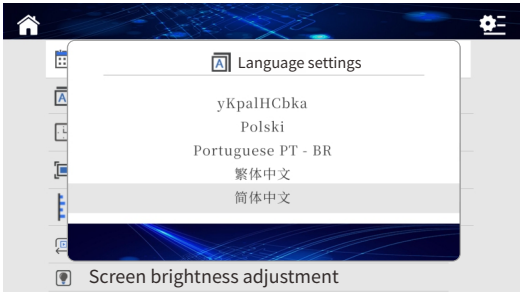


Figure 25 Language setting interface

4.7.6.3 Date label:

Select the "Date Label" column in the setting interface and press  to enter the date label setting interface.

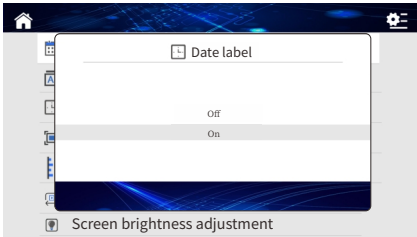


Figure 26 Date label settings

The shooting time and date will be displayed in the lower right corner of the file taken with "Date Tag" turned on, but not with the shooting time and date.



Figure 27 Open the date label and shoot



Figure 28 Close date label and shoot

4.7.6.4 Resolution:

Select the "Resolution" column in the setting interface and press  to enter the resolution setting interface.

Select the desired resolution and press  to complete the setting.

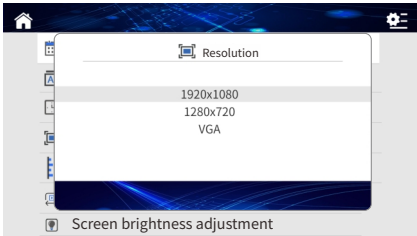


Figure 29 Resolution settings

4.7.6.5 Ruler display:

Select the "Ruler Display" column in the setting interface, and press  to enter the ruler display setting interface to select the desired ruler mode.

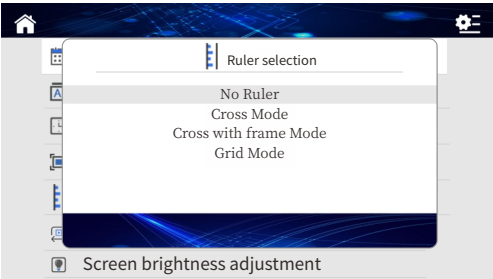


Figure 30 ruler display

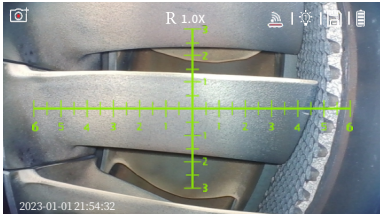


Figure 31 Cross mode

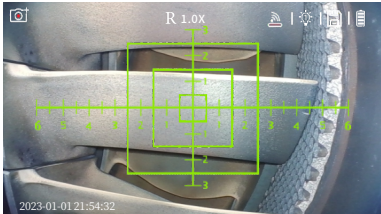


Figure 32 Cross frame mode

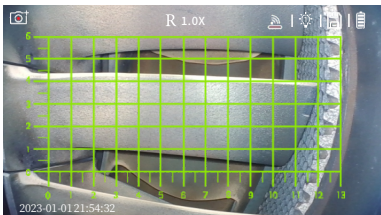


Figure 33 Grid mode

4.7.6.6 Loop recording:

Select the "Loop Recording" column in the setting interface, press  to enter the loop recording interface, and select the time interval for saving images.

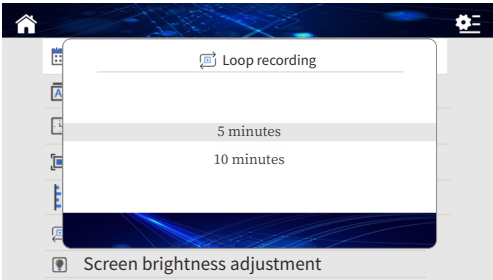


Figure 34 Loop recording

4.7.6.7 Screen brightness adjustment:

Select the "Screen Brightness Adjustment" column in the settings interface, press  to enter the screen brightness adjustment interface, and select the screen brightness level.

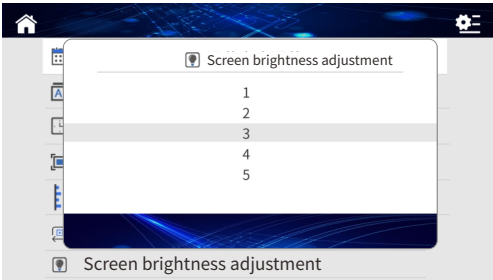


Figure 35 Loop recording

4.7.6.8 Wi-Fi:

Select the "Wi-Fi" column in the setting interface, press the button  to enter the Wi-Fi setting interface and choose to turn on or off the WiFi function, and connect WiFi with a mobile phone.

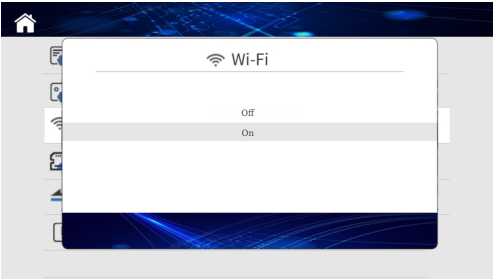


Figure 36 Wi-Fi setting

Install APP "DVRuning2"  from Apple Store or Google Play



Figure 37 WiFi connection

4.7.6.9 Format:

Select the "Format" column in the setting interface, press the button  to enter the formatting interface, and choose whether to format the data.

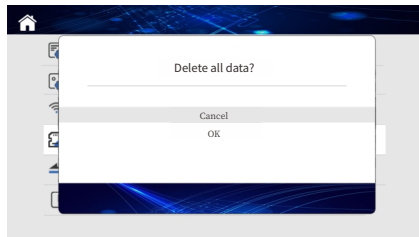


Figure 38 Format setting

4.7.6.10 Default settings:

Select the "Default Settings" column in the settings interface and press  to choose whether to restore the default settings.

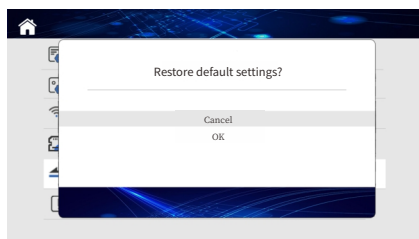


Figure 39 Default settings

4.7.6.11 Version:

Select the "Version" column in the settings interface to view the version information of the device.

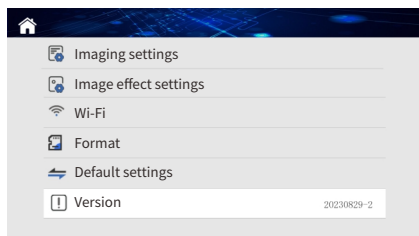


Figure 40 Version information

4.7.7 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 41 Battery status



Figure 42 Low battery status

4.7.8 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 43 preview status

grade 8 len brightness indicator

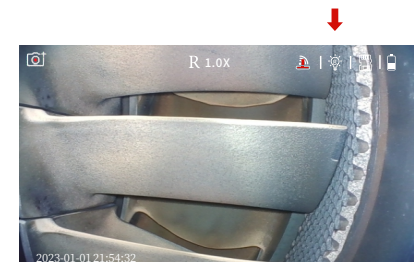


Figure 44 Len grade 8 brightness status

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 insufficien	Replace cards or delete unwanted pictures