industrial borescopeuser manual

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Information for users 1
1
1
Security WARNING 2
Product configuration 3
A description of the host function... Error. No bookmark defined.
7
The separation of the mainframe from the probe control module 9
Battery installation dismantling 10
Directed from a point of view 11
Software functionality 12

1. Display interface operations 12
13 2
14 3
15 4
5, Photo Editor 16
6. Image functional settings 17
18 7

Maintenance 20
22
Technical specifications and parameters 23

User information

Overview

industrial borescope system, which is a no-loss visual detection device.

Access to the inner cavity for no-loss visual detection and, without disrupting the target being tested, to provide a flight

Empty engine, gas unit, car engine, wind generator, gear box, casting, precision zero

The inner cavity of the contents and so forth, as well as the surface silence of the observation position, which cannot be observed or observed directly by any human eye.

State images and dynamic videos.

System principles

High-light source (white/infrared/infra-UV) after internal integration of the mainframe or handle, lighting via probe

Inserts a high-quality fibre-optic beam integrated internally into the tube to the front end of the probe, lighting the target detection area.

Insert the front end of the tube, integrated micro-colour imaging units, and project optical images into imaging through lenses

On a meta device, converted to an electronic video image and inserted into the internal signal cable of the tube through a probe, will contain

The data of the electronic video image is sent back to the host system.

On this machine or on an external video display system.

Security
WARNING

It is prohibited to use this instrument to observe humans or animals, otherwise the consequences are self-inflicted.

Prohibiting the use of explosive, powerful electromagnetic fields, flammable gas sites, which may cause fire or explosion

Prohibition of use in a flammable dust environment which could otherwise lead to fire or explosion

It is prohibited to operate with electrical charge to prevent electrocution.

After use in high temperature environments, exposure at the end of the exposure may result in burns

Do not use end-of-eye lens lighting at close range to avoid strong light affecting vision

Do not bend too hard, stretch, twist and press the probe line, which could cause damage to the equipment

The use of this product can stain lenses, lead to blurry images and affect data collection.

Please wipe your mirrors with alcohol after use.

Once the instrument is complete, please clean the insertion tubes and optical lens of the instrument in a timely manner.

Product Configuration

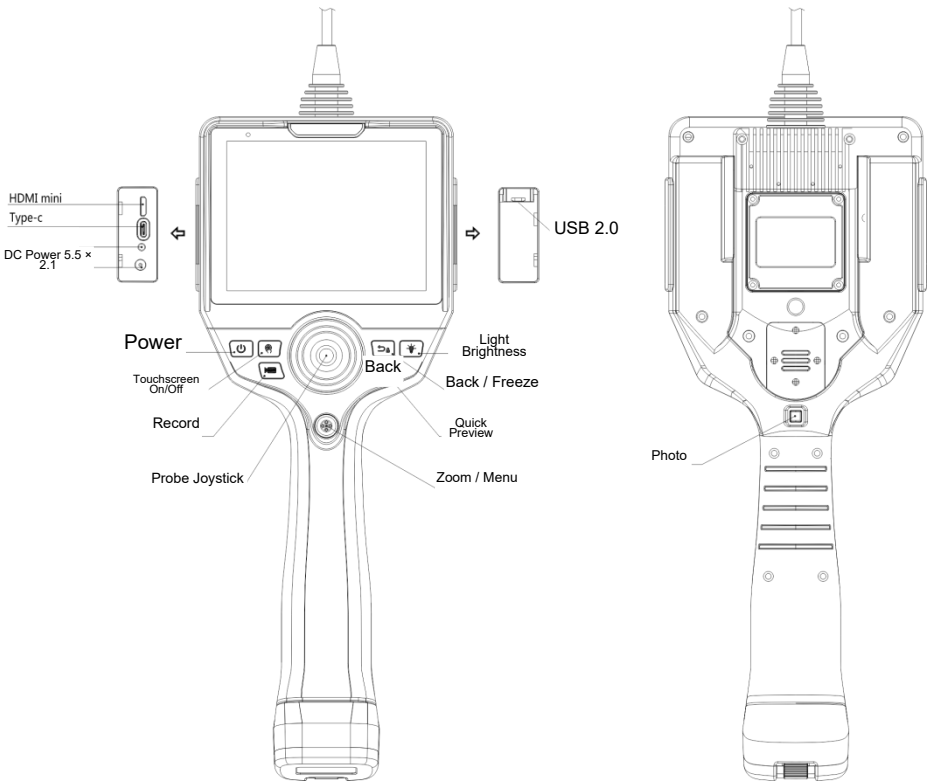
Basic Configuration

Serial number	Name	Number
1	Host system	1
2	Video probe plug in tube (into lens) module	1
3	Installation of disassembly tool for the probe	1
4	Lithium batteries	1
5	Communication power adapter	1
6	USB Mobile Storage Disk	1
7	Equipment storage for transport poles	1
8	Cleaning the suit.	1
9	User Manual	1
10	Use of caution	

Optional Configuration

Serial number	Name
1	Video probe plug in tube (into lens) module
2	Pocket suit
3	Test aids
4	Host support arm
5	Chargeable lithium battery batteries
6	HDMI High-Level Video Wire
7	Customised mainframe and attachment services provided

Host functionality profile



Key function

1, switch/off:

The long press 3 seconds, and the long press 3 seconds when it's on.

2. Touch screen opening/key:

The default status of the starter is open mode, which shows the middle position on the edge of the top of the screen

 icon. Short click to close or open the touch screen, when the touch screen closes **Icon does not show, touching screen closes in mode, touch screen is not operational.**

3, Video

Screeching red beans and time on the top left corner of the screen after pressing short buttons to start video mode

You can still take photos and adjust lighting, and finish the video on time again.

, the image function sets the time period for automatically saving the video.

4, Lightness Adjustment

In the open state, press short to turn on the light source, default to 10 level (most bright),

Top right corner of the screen 

Icon with a grade value, drop 1 level at 1 ~10 level every time you press a key

Any level status is lower by pressing the button to close the light source directly.

5, Return/Frozen

Press the short button to freeze the image in the image preview, display the top of the screen when the image is frozen

Show middle position on edge  icon. Press the defibration image again to restore image preview mode. In progress

When you enter the settings mode, the key is used as a return key, and the last step is returned every time you press.

6, Quick Preview

In dynamic preview interface mode, short buttons can be entered directly into the stored folder, contrast

Films and video files are browsing.

7, Zooming/menu navigation

Keys are five-way, push forward in dynamic preview interface mode as image magnification enabled

Use, push backwards as a downscaling function, magnifying or downsizing the 0.1 multiple at a single click, magnifying the maximum multiple

is the 3 multiple. After entering the settings interface, you use the top, bottom, left, right and confirmed keys (medium keys).

8, Probe Guided Control Rock

By swinging the pole, you can achieve a synchronous shift and rotation of the probe, the greater the swing of the pole,

The angles and ranges of the props are also larger. The swinging direction of the pole and the preview of the screen are moving in the same direction.

9, Photo

The key to take the photograph.

Interface Functions

1、HDMI mini

Use the HDMI data line to synchronize image images on the outside display screen from

Adapt to the sync display.

2、Type-c

The computer connects to the data line in the active mode to read the folder directly.

Photos and video files can also be copied directly to the computer.

3, 3.5mm microphone

Recording of audio video files is achieved by relaying the microphone.

4, Power DC 5.5*2.1

Access to online power supply of chargers and battery modules for 7.4V-12V / 2A

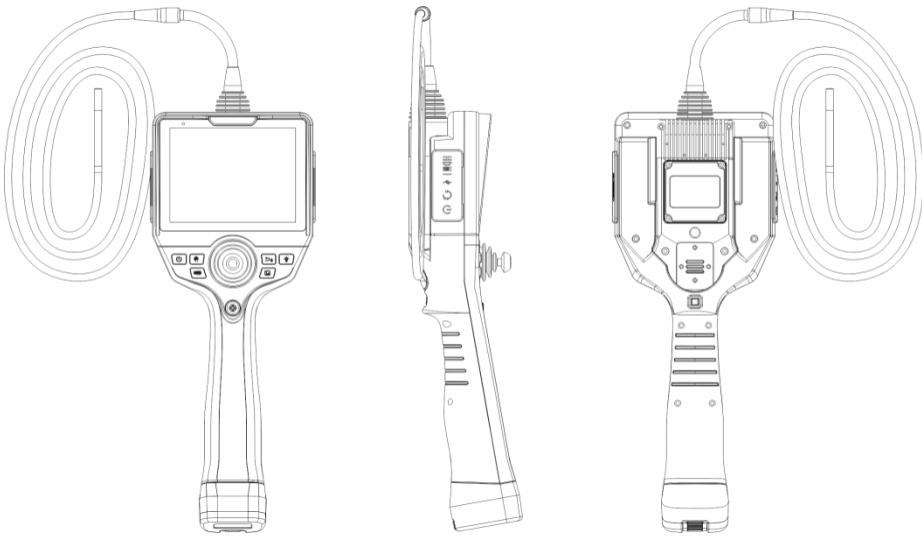
Line charge, which can be applied to battery modules in turn-on and off.

5, USB 2.0 interface

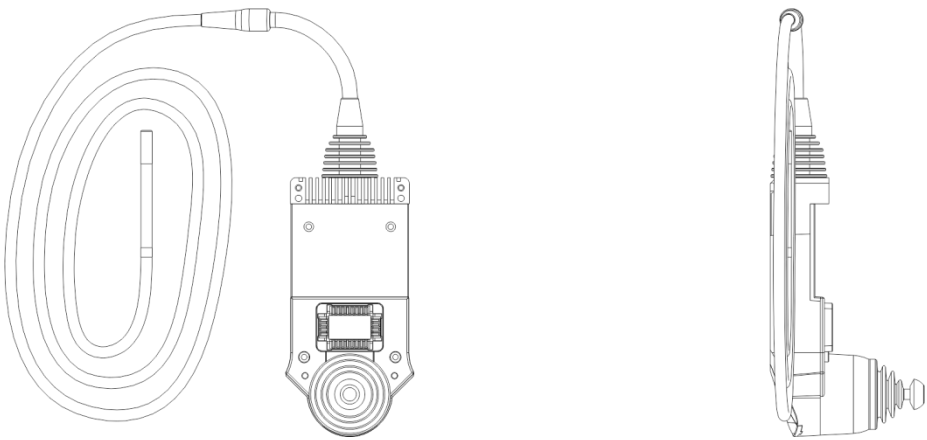
The interface is used primarily to store the U disk, which supports any U disk that stores space; it can also connect the keyboard

or the mouse handles the file. The interface of the U disk can be moved to the 30 angle.

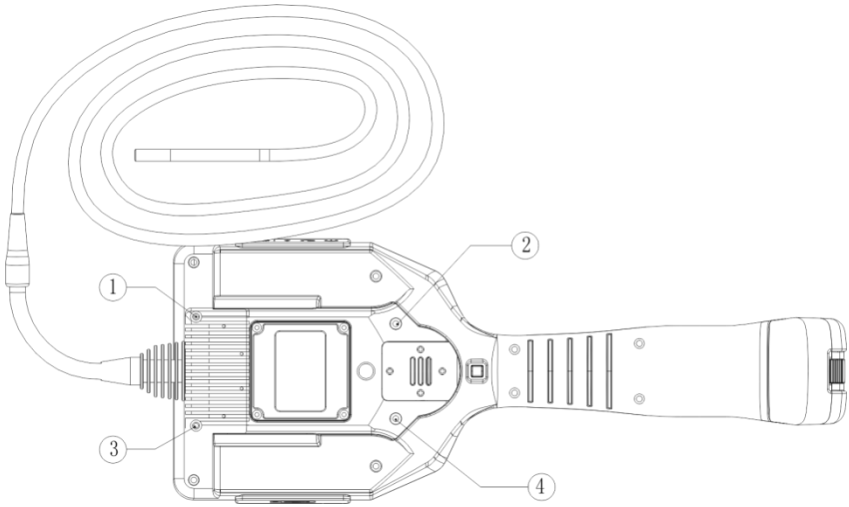
Whole Chart



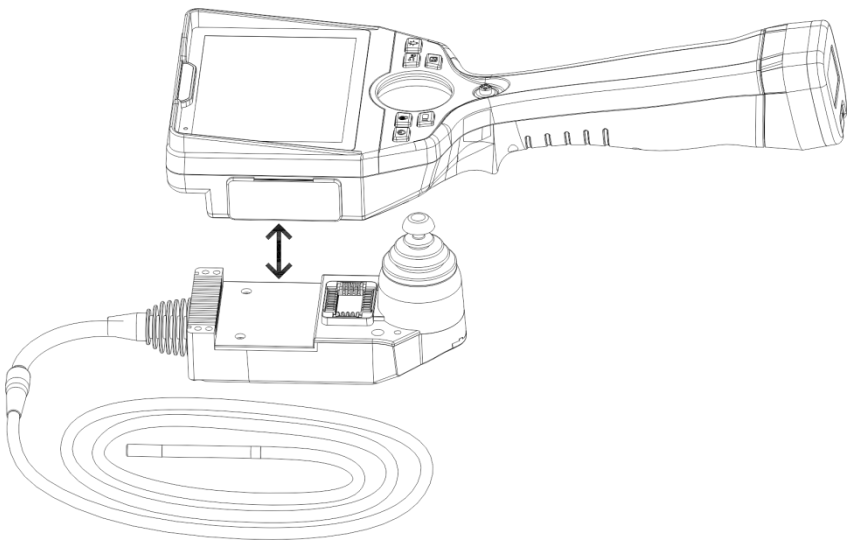
Probe Control Module



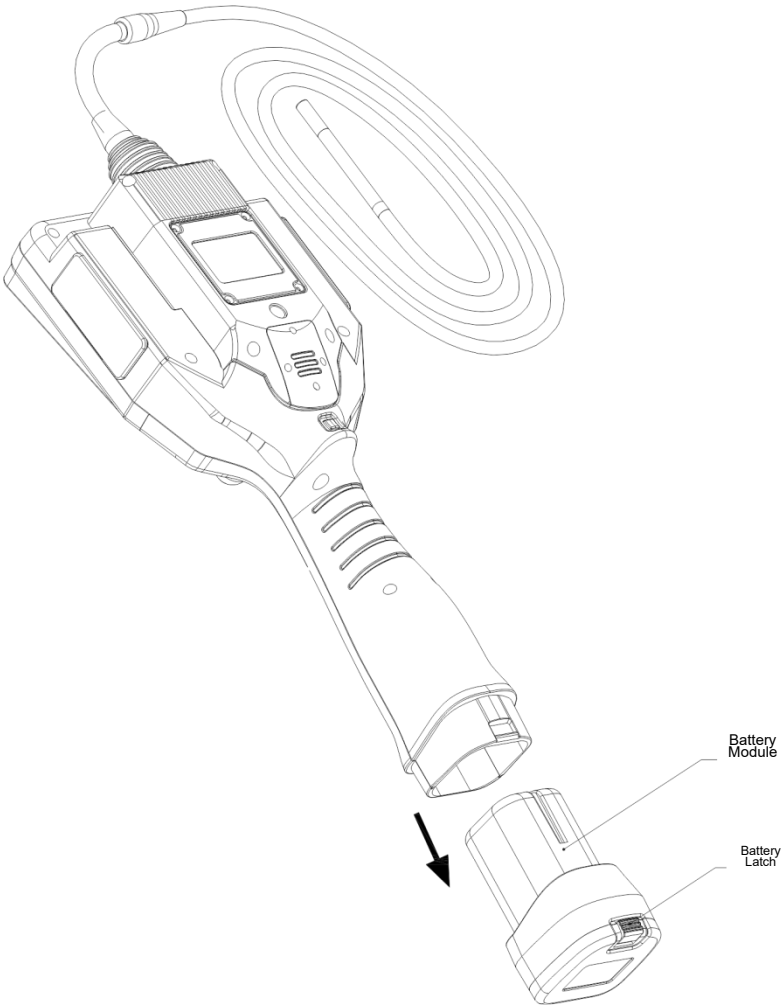
Separation of the host from the probe control module



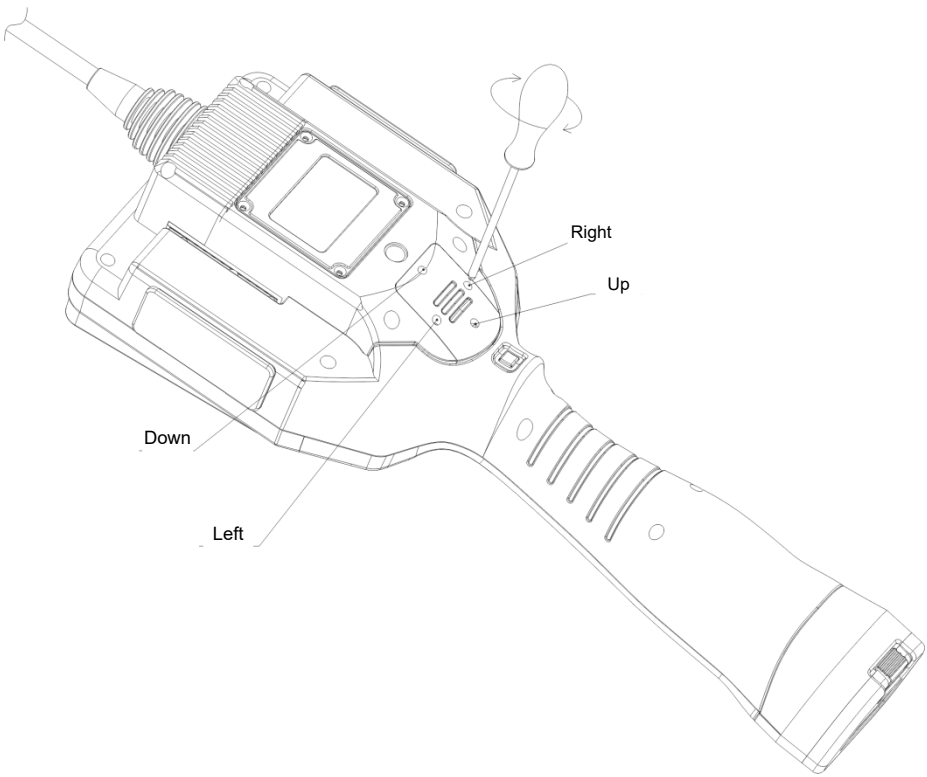
• Disaggregation
When the screws of the 4 serial numbers indicated in the above chart are twisted, hold the handle in the right hand and hold the spot in the left hand.
At the bottom of the control module, the right hand's mother can separate the probe by pressing the lever down.



Battery installation and dismantling



• Battery dismantling
When the battery card is pressed to the end, the mother and the mother are used to draw the battery in parallel to the handle. Inspect direction angle reconciliation



- Without dismantling the product, the operator uses the equipped screw himself.

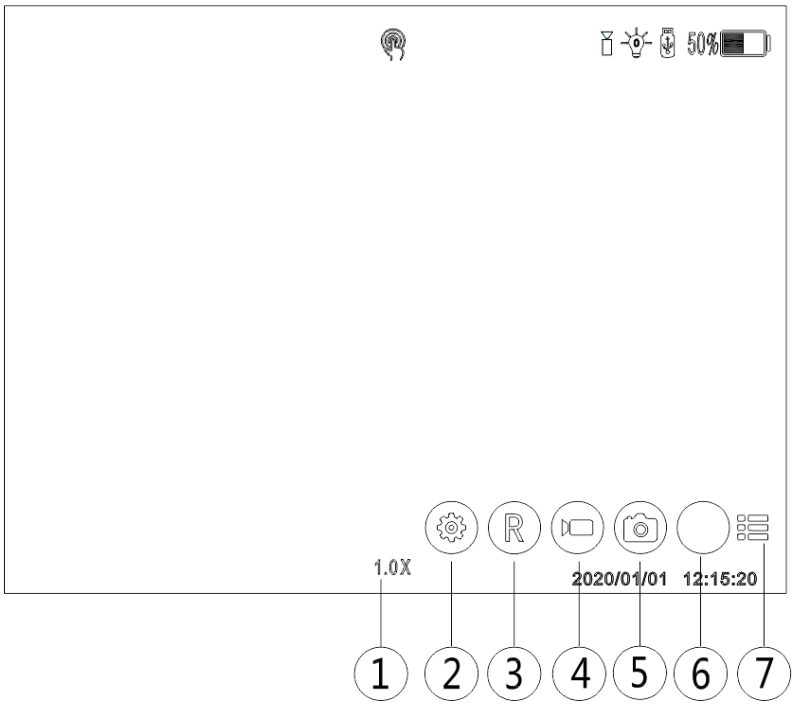
The knife adjusts itself. The directional angle of the 4 of the probe can be adjusted manually.
Sections, maximum reconciliations can be reconciled from 0 to 180.

- Operating method: use a cross screw knife with a diameter less than 3mm, corresponding to the need

The screws of the directional position of the whole bending angle are adjusted, and the right direction is sharpened.
The angle of the probe bends, and the angle adjusts the degree of the 180.
The left is the bend of the small probe.
Angle.

Software functionality

Show interface operation profiles



① Image magnification multiplier indicator, 1.0X is proportional to the original image.

② **The backstage function sets the touch key.**

③ Image Rotation Function Keys, rotate 90 degrees with a clockwise click and rotate 360 degrees with a continuous click.

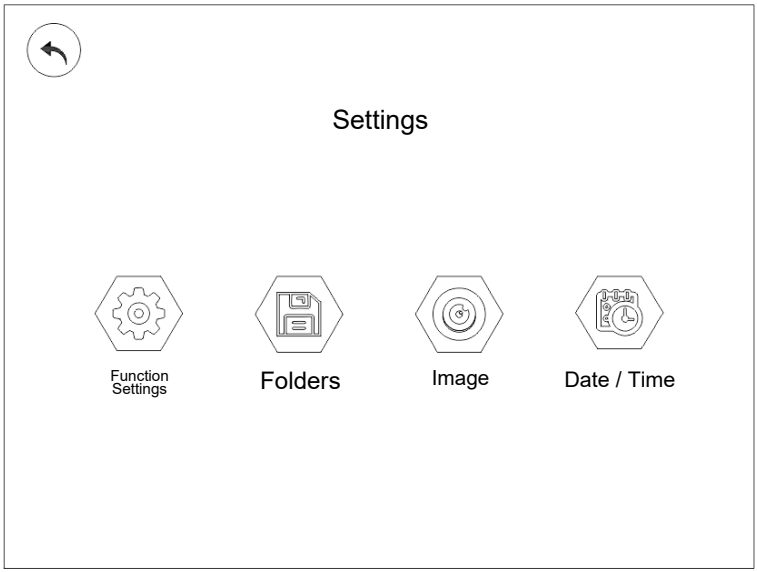
④ **The video can touch the key.**

⑤ **Take a picture of the touch button.**

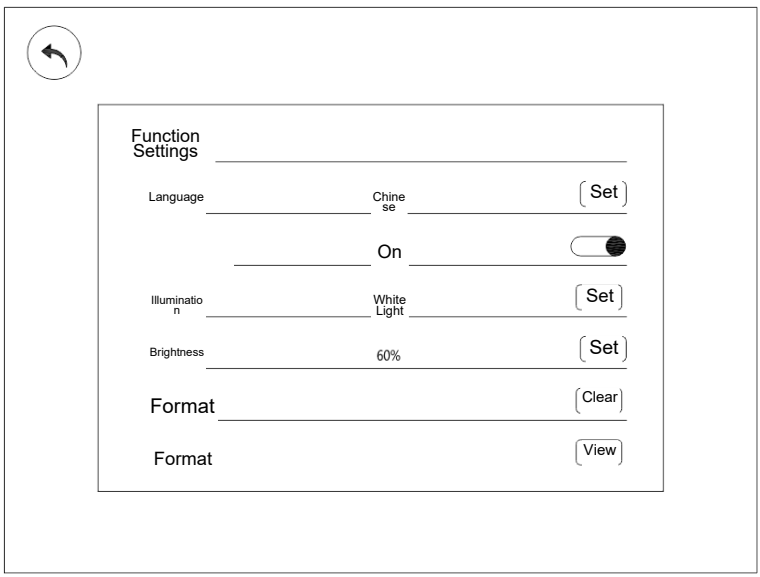
⑥ **Quick preview photo and video file function button.**

⑦ **Touch key hides function keys.**

Set Interface



Function Settings

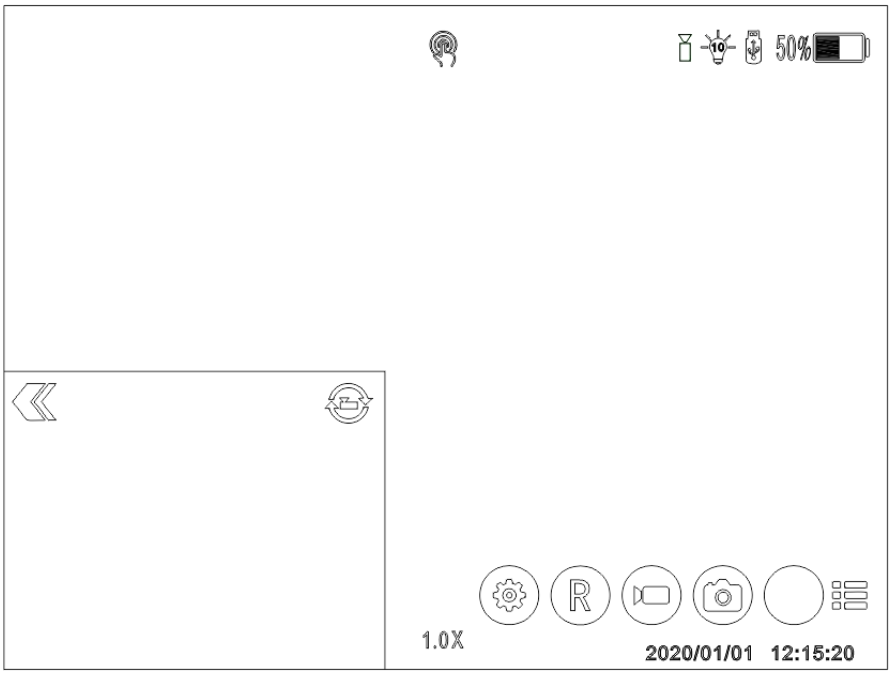


Direct/Perspective Interface

Direct/side vision only directs, side-views and focussing, close-focused probes for two cameras

Use, when this feature is turned on, the image preview interface shows the image of two cameras in the painting, as follows:

The figure shows that the displays of the two windows can be switched at any time.



Icon Press keys to switch functions between two image windows, click on the images displayed in the last two cameras

Displays the image for the change window.

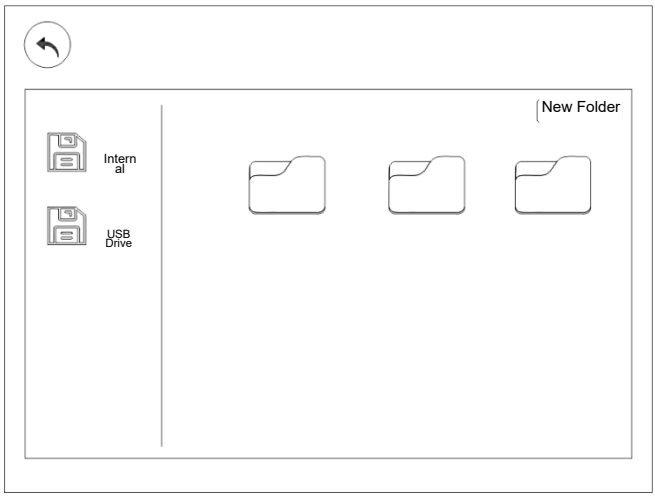
Icon Press the key to hide and display the function for a small window, click on it in the state displayed in the painting

key to hide a small window and show only single window images. Click to hide a small window

Show me.
Folder

The default file storage path is U in the state where the device is attached to the U disk. The default file storage path is U disc in the state where the U disk is not taken.

The default storage path is in a hard disk that is built into the device.



Click on the folder to switch to the editing interface to copy files in the editing state

Paste, delete and rename operations.

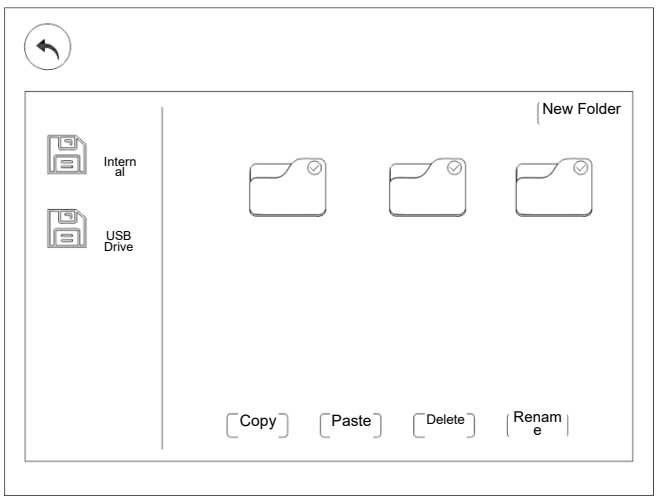


Photo Preview

The photo browsing interface slides to the left or right on the touch screen to flip the page, clicking on the editor at the bottom right corner of the picture

Function Keys **You can enter photo mode.**



Photo Editor

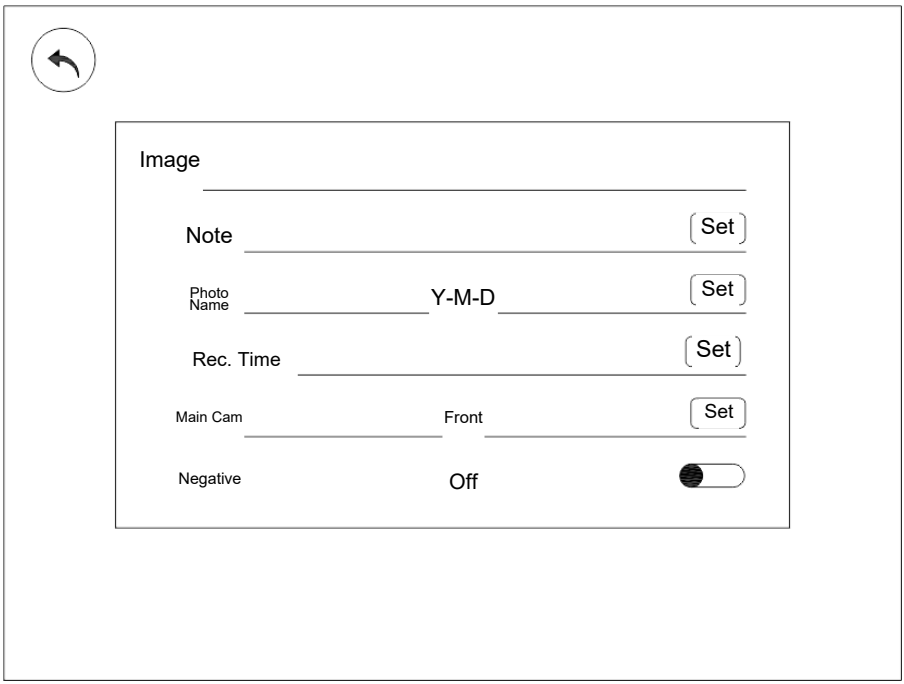
Photos can be painted, special effects, rotated, cut, preserved and deleted in photo editing.

Operation.



Image

Image Function Settings Interface



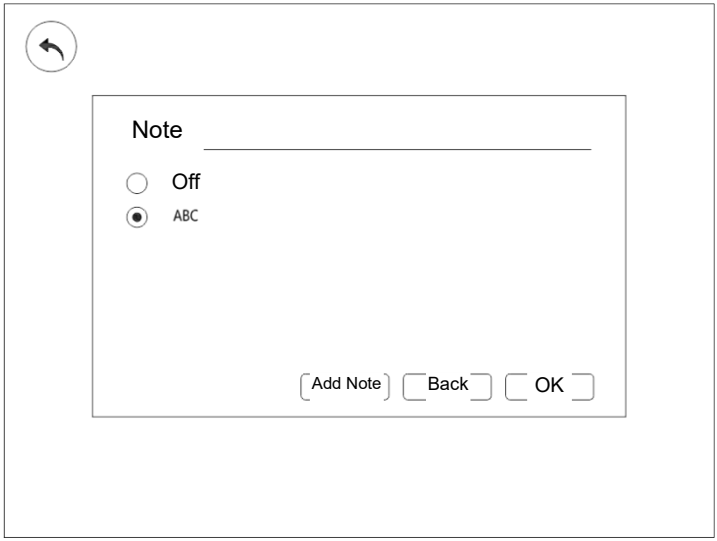
Text Comment

The text comment function is the watermarking function in the image preview, the content of which can be set

Infinite content options, modifications, and presets are added, and can be used when needed.

Watermarks are displayed in all photographs taken after opening the comment function; watermarks are located in

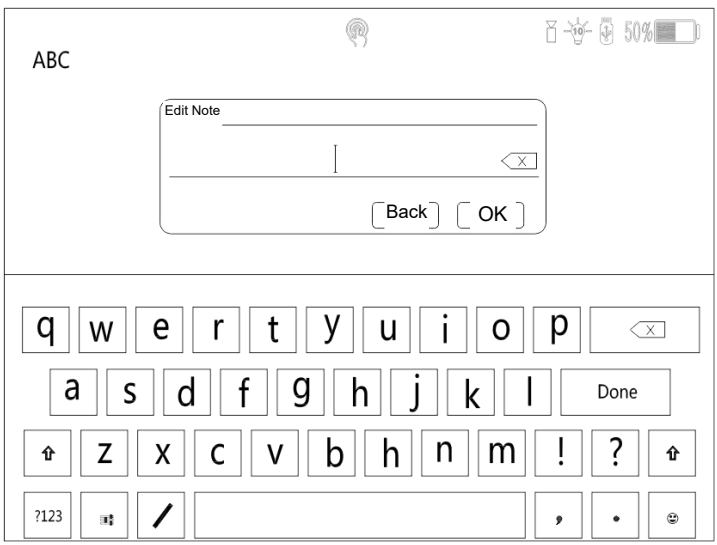
Preview interface and top left corner of the photo.



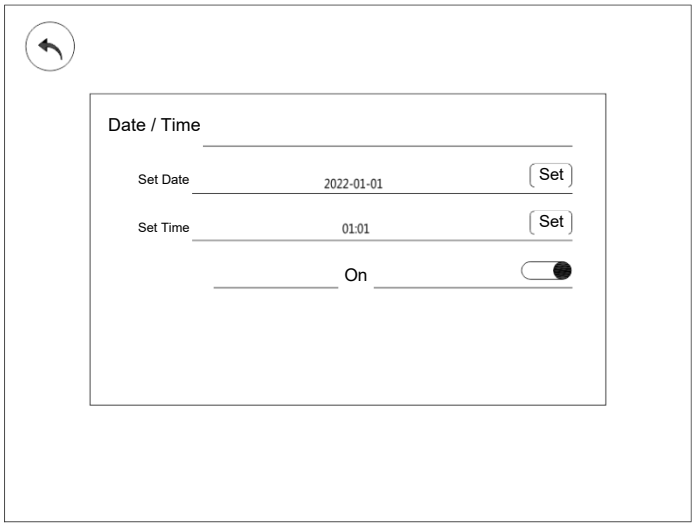
Quick Edit

In the image preview interface, double-click the text position of the comment to switch directly to the text editing interface for content

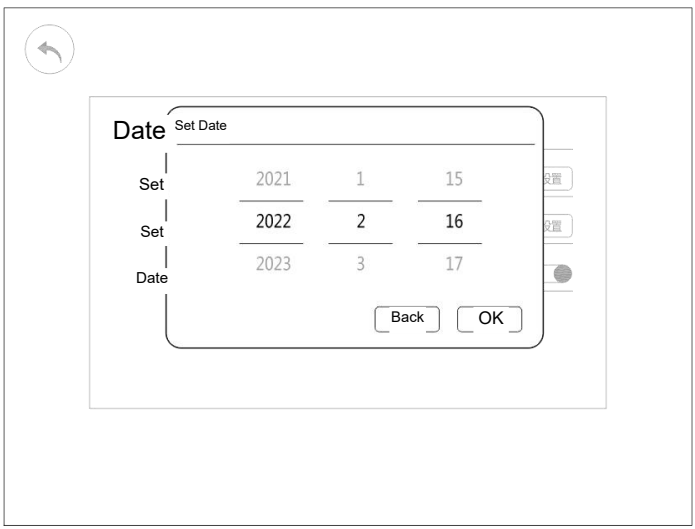
Changes. After the changes are completed, click the OK key to complete the changes and return the image preview interface.



Date/time setting interface



Date settings, like time settings, select the settings needed by sliding upwards or downwards by touching , select the value and then click Confirm to complete the settings.



Maintenance

Before and after each use, an endoscope system needs to be checked and cleaned and used in bad environments such as oil pollution,

Increased need for the timely cleaning of endoscope lenses and probe plugging tubes and signal cables; if normal focal range ejections

The current image is blurry, the optical camera surface may be dirty, and it needs to be cleaned in time.

The surface and display surfaces need to be cleaned frequently.

Cleaning tools: dustless cottonmarks, dustless or soft cloths, 70%-95% alcohol solution

1. **Cleaning cameras and taps.**

Cleaning steps

(1) Checks whether lenses and probes have broken or oiled surfaces, etc.

(2) Insert a soft cloth clean spot with an alcoholic solution into the outside of the tube

(3) Dustless cotton-coated alcohol solution, clean optical lens

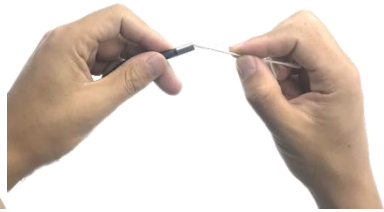
Note: Check if the lens is broken; check if the main surface of the rigid probe is worn and squeezed shape or break; soft probes insert tubes to detect whether the main protection layer is fuse-oriented tungsten

Whether the filament layer is broken or loose.

Dealers, promptly repaired, avoiding further damage and further damage.



I'll clean up the spot.



Cleaning the camera.

2. Cleaning of the external surface of the mainframe

Both the oil and dust on the mainframe screens affect the observation effects and are cleaned on a daily basis.

A soft cloth with alcohol solution is enough.

Note: Cleaning of detergents such as glass water is prohibited and can corrosive equipment.

Dismantling.

Fault phenomena	Causes of malfunction	Treatment of recommendations
Image Fuzzy	The camera is dirty. The surface is dirty.	Cleans the optical lens surface and screen
Image instability (blink)	Plugs are down.	Clean and re-plugged the probe. We need a close interlocking.
There are stripes in the image	Electron interference The signal cable is damaged.	Check if the host is in order. Normal, still stripes, contacts with the manufacturer or Authorized dealers.
Dynamic image card is dead.	Electron interference	(1) Check if the mainframe is normal. (2) Power outages, mainframe restart.
The screen's insensitive.	Surface surface liquid oily Electron interference	(1) Clean screen surface (2) Shut down, restart the mainframe.
Lights are getting weaker.	It's dirty.	Check the front end of the probe for light and clean up. It's still unsolved. Squeeze deformation and contact the manufacturer in time
The angle of the angle is reduced.	Intangible internal orientation of the probe There's more resistance in the tunnel.	Try to put the probe in the tube and shake. Don't pull your joints and probes while you're shaking. Head root;
Software failure	Complex failure.	Most of the software failures can be severed. Open host solution. If this is not resolved, please contact It's a factory.

Technical specifications and parameters

Probe module parameters

Insert pipe	1.0mm /1.2mm/1.7mm/2.0mm/2.4mm/2.8mm/3.9mm/6.0mm
Camera	16 10,000, 30 10,000, 52 10,000, 100 10,000, 200 10,000 super-high-level pixels, custom cameras
Straight Mirror	Straight-side one: a set of direct and side-view lenses that display both front and side video images without matching
Close focus.	A close focus lens: a close focus and a close focus are integrated, and can be seen in large space, near-observed micro-targets.
Insert pipe	1m, 2m, 3m, 5m (0.5-12m is customised for any length)
Direct vision mirror	3mm-80mm, 4-120mm, 15mm-Infinity, 50mm-Infinity
Side vision mirror	2-15mm、4-120mm
Camera	90°、120°、130°
Lighting	LED light source, fibre-optic light
Lights up.	100,000Lux + (6.0mm), 80,000Lux + (3.9mm)
Colour temperature	6,500K
Light Source Life	**30,000 Over hours**
Brightness	Self-adapted brightness reconciliation, manual 10 compensation reconciliation
Bending Guide	Spectrum insertion tube front end 360° full-dimensional orientation, with a minimum angle greater than 160°/hard rod mirror not able to bend direction
Guided fuck.	**Rolling pole machine, single-handed.**
Spectrum.	Flexy, high-resistible double-layer special tungsten tungsten crochets with polyurethane coatings (other protective skins that can be customised)
Protection, etc.	IP68
Waterproofness	Plugging tube to withstand 1bar water pressure, equivalent to 10.2 deep water
Anti-liquid.	Normal use in diesel fuel, aviation kerosene, hydraulic fluid, lubricants, weak acid alkalis or 5% salt solution
Work temperature	-30°C to 100°C (detection insertion tube working temperature range)
Spectrum.	Plugging tubes with interchangeable probes. A host can select both multiple probes with different diameters and lengths.

Host system parameters

Host system	**Portable integrated handheld smart host system**
Smart compatibility	Hosts are compatible with plugging tube modules from all 1.0mm-6mm specifications diameter
Whole weight	1.2KG (with batteries, 6.0mm diameter 2.0 mime probe module)
Host Size	36cm×13.5cm×7.0cm
System Storage	Internal 64GB Capacity SSD Solid Hard drive
Display	5.2 High-Lightened Capability Touch screen, Brightness 500cd/m2, visible in daylight, resolution: 1280 x 960
More touch.	**Screen support for multitouch scaling of pictures**
Operation	Physical entities combine key and touch screens to improve operational detection efficiency
USB2.0 Connect	1 standard USB2.0 port, photo and video files taken, directly into the external U disk
Type-C Connect	1 and Type-C interfaces, positive or negative plug-in, high-speed data transfer
Video Output	**1 video output interface HDMI**
Exchange power	100-240V 50-60Hz with a dedicated power adapter (for 24 hours of continuous work)
Lithium batteries for	Specialized lithium batteries, capable of working continuously for 4 hours or more
Working temperature	**- 30°C to 60°C**
Relative humidity	**Top 95%, no condensation**
IP Level	IP65
System Language	**Chinese, English, etc.**
Software systems	**Smart endoscope operating system**
Take pictures.	**Record format: JPEG(.JPG)** Resolution: 1440 x 1080, 960 x 720, 640 x 480, 800 x 800,
Video	**Record format: MPEG4(.MP4)** Resolution: 1440 x 1080, 960 x 720, 640 x 480, 800 x 800,
Image Edit	Image scaling, flipping, text notes, graffiti labels, etc.
Double-Sight Window Show	Double-vision windows display both direct and side-view images, long and close-focus images, and toggle size windows to hide small windows
Document management	New folders, files and folders deleted, copied, pasted, renamed, etc.
Software upgrades	**USB Disk allows for on-site upgrade**
Size of aircraft	550mmxXACXVCXAD, puller load: 6.5kg can be mounted on a plane, high iron, and put on a luggage rack 350mmx 240mm