

OWNER MANUAL

Pipe Inspection System

PIPE INSPECTION SYSTEM



Note: The product picture is for reference, the actual details shall prevail. This is the original instruction, please read all manual instructions carefully before operating. We reserve a clear interpretation of our user manual. The appearance of the product shall be subject to the product you received. Please forgive us that we won't inform you again if there are any technology or software updates on our product.

	Please retain instructions for future reference Protect yourself and others by observing all safety information, warnings and cautions. Failure to comply with instructions could result in personal injury and/or damage to product property.
	FCC Information: CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to

operate the equipment!

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- 1) This product may cause harmful interference.
- 2) This product must accept any interference received, including interference that may cause undesired operation.

WARNING: Changes or modifications to this product not expressly approved by the party responsible for compliance could void the user's authority to operate the product.

Note: This product has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules, These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This product generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this product does cause harmful interference to radio or television reception, which can be determined by turning the product off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna.
- Increase the distance between the product and receiver.
- Connect the product to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for assistance.



WEEE symbol. Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your Local Authority or local store for recycling advice.

CameraPhone App Connection & Permission Setup Guide

1. Device WiFi Connection (SF1534A / SF1534C Series)

- ①. Go to **Settings > WLAN** on your phone and connect to the device WiFi (e.g., WIFI_981EA6, WIFI_981E55).
- ②. When the “Can’t connect to the internet” prompt appears, select **No thanks** to stay connected to the device network.
- ③. If you do not see the prompt, forget the network, reconnect the device WiFi, and try again.
- ④. Open the CameraPhone App to receive the device video signal.

2. First-Time App Permission Setup

Allow the following permissions when opening the App for the first time.

Required for full functionality.

Permission Type	Purpose Description
Camera	Display and receive device video feed
Microphone	Record synchronized audio
Photos and Videos / Storage	Save captured images and videos

3. Permission Troubleshooting (SF0619E Series)

If the App does not work properly after first use, manually enable permissions:

- ①. Go to **Settings > Privacy & Security**
- ②. Open **Camera, Microphone, Photos** permission settings
- ③. Find **CameraPhone** and set all permissions to **Allow**
- ④. Restart the App

4. Troubleshooting FAQ

Problem Phenomenon	Troubleshooting Solution
No video / Black screen	- Stay connected to device WiFi (do not switch mobile network) - Turn off VPN or proxy

	- Restart the App and reconnect
Cannot save photos or videos	- Confirm photo/storage permission is enabled - Check phone storage space - Clear App cache and restart
Abnormal function on first use	- Re-enable all system permissions - Reinstall the App and re-authorize

PRODUCT SPECIFICATION

Item	parameter
Cable length /material	20-50 meters (line length optional) / 5mm diameter elastic high-strength fiber tube
Screen size	N/A
Control box function	Battery level indicator, charging status light, and brightness adjustment
Video/photo images	Colour
Photo snap	1920*1080
Video recording	30FPS / 1920*1080
Video format	AVI
Photo format	JPG
Display input voltage	5V DC
Display operation	Key-press
Language	Phone language

Battery	Built-in rechargeable polymer lithium battery with 4500mAh capacity
Working time	About 6.5 hours
Charger	100VAC-240VAC 5V2A USB_A to TYPE_C
Camera pixel	1920*1080
Camera diameter	23mm
Applicable pipe diameter	25mm ≤pipe dia≤50mm: Minimum turning angle should be larger than 90-degree to get the camera pass through Pipe dia≥50mm: Minimum pipe turning angle can be 90-degree.
Camera light source	12 high-brightness white LEDs (three-level adjustable)
Camera viewing angle	110°
Camera size/material	23mm*140mm / stainless steel
Working temperature	-20℃ to 60℃
Storage temperature	-20℃ to 60℃

ATTENTION

1. Please read the manual carefully before using it.
2. Handle it carefully during operation, avoid throwing down or pressing it heavily.
3. If the users disassemble or deliberately damage the machine, it will beyond the warranty.
4. Please keep distance from the system when charging
5. After being used, turn off the display and pull out all the connection joints.
6. Due to the version upgrades, if mentioned in this manual content does not accord with your machine, please refer to our machine.
7. If the camera is damaged or the cable is broken due to improper operation, it will not be covered by the free warranty.

8. The product complies with relevant standards and regulations. Installation of this device must comply with all applicable regulations, and it should only be operated in well-ventilated areas. Please read the user manual before installing and using this equipment.

9. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

10. Children shall not play with the appliance.

11. This appliance shall not be used by children. Keep the appliance and its cord out of reach of children.

12. This appliance is intended to be used in household and similar applications such as:

staff kitchen areas in shops, offices and other working environments;

farm houses;

by clients in hotels, motels and other residential type environments;

bed and breakfast type environments.

Battery Safety Warning

Do not disassemble, short-circuit, or expose to fire.

Do not use batteries not specified in this manual.

The built-in lithium battery is not removable.

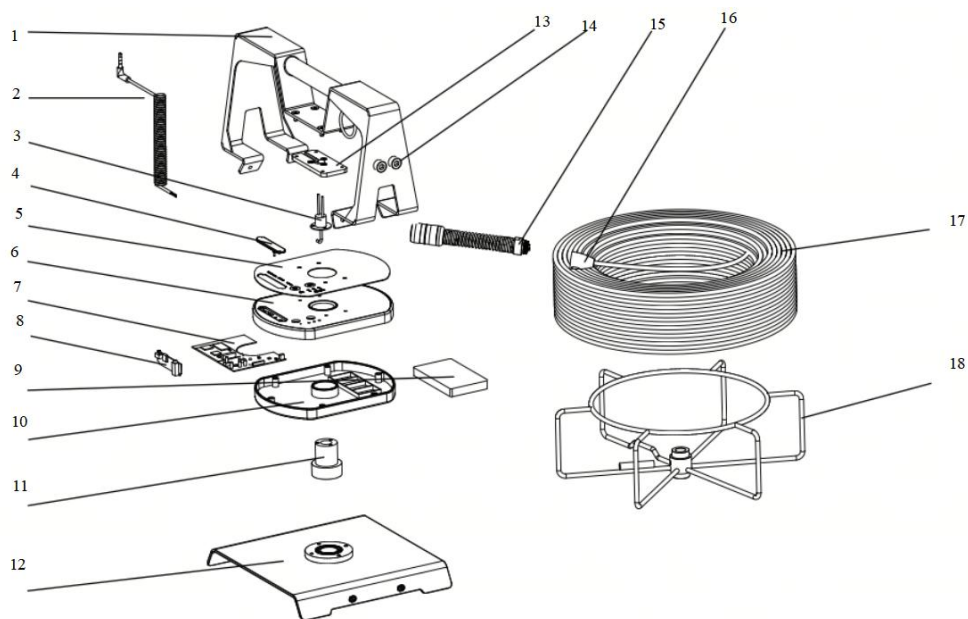
Do not attempt to replace it.

Disposal Information:

This product contains lithium batteries and AAA batteries, which must be recycled separately.

Do not dispose of with household waste. Please contact your local recycling center or electronic retailer for proper disposal

exploded view of the finished product



13.9650 control box cover plate; 14. M8X20 nylon hexagon socket screw; 15. Model A modular high-definition camera; 16. Bullet-shaped head; 17.7.5mm yellow cable; 18.9650 coil

NO.	accessory name
1	frame handle
2	Headphone spring cable
3	Conductive ring
4	black soft rubber plug
5	PVC sticker tape with LOGO
6	box top cover
7	WiFi motherboard PCBA
8	adapter motherboard PCBA
9	terminal head battery

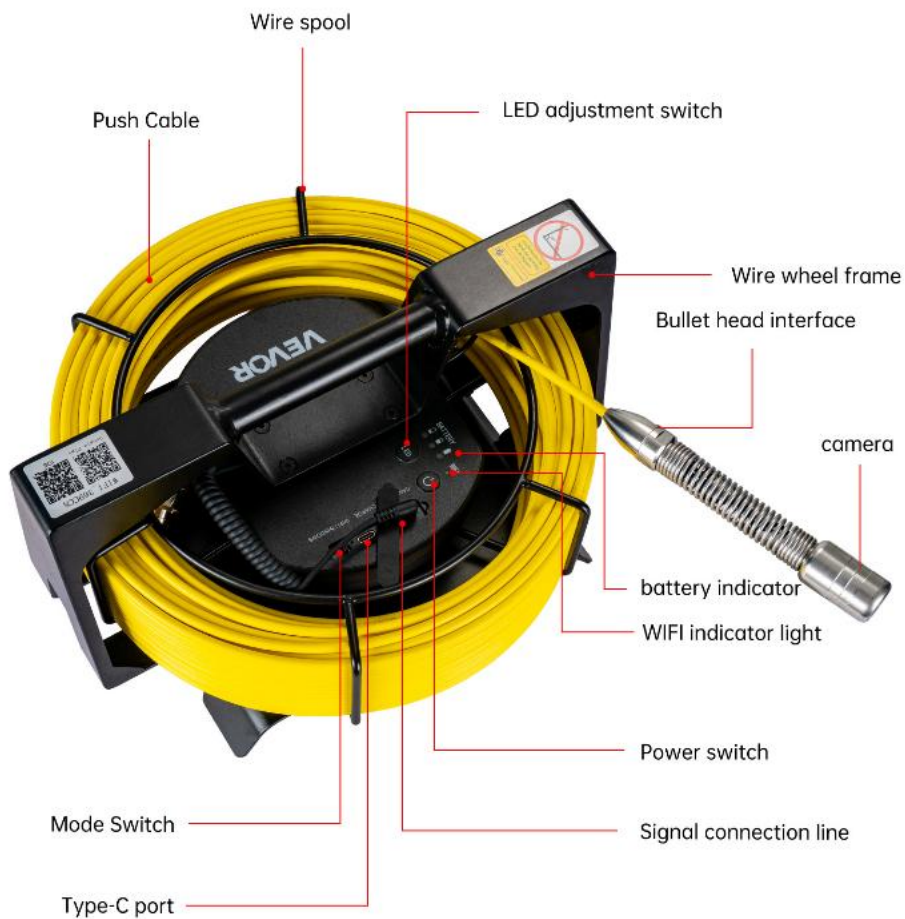
10	box lower shell
11	bearing housing
12	rack base
13	control box cover plate
14	M8X20 nylon hexagon socket screw
15	Model A modular high-definition camera
16	Bullet-shaped head
17	5mm yellow cable
18	coil

APPLICATION

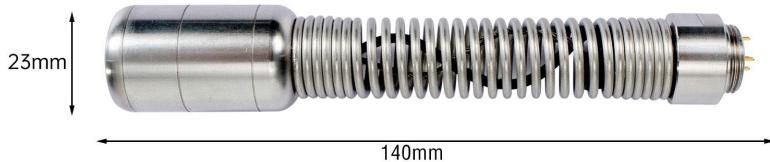
Water supply pipelines, air conditioning pipelines, cable duct, oil and gas pipes, plumbing (PLUMBING) pipes, pipeline vacuum systems, buildings, underground pipelines, rescue work in confined spaces, exploration of underground caves in the wild, underwater riverbed research, underground TV, detection or monitoring for equipment maintenance.

PRODUCT INSTRUCTION AND OPERATION

1. Whole equipment:



2. AHD Camera Head:



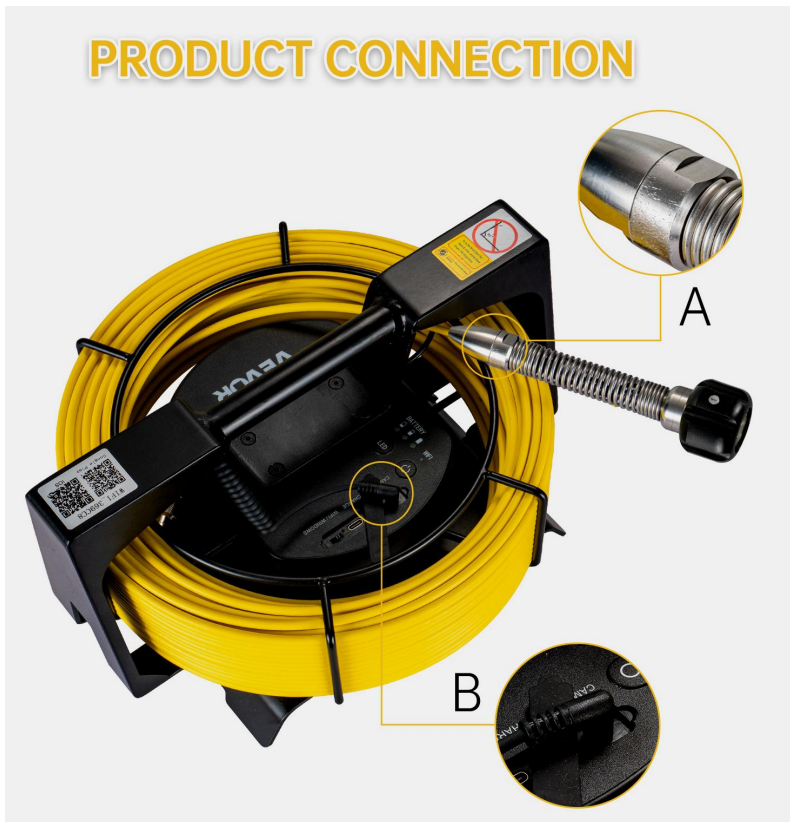
3. Cable operation

HIGH QUALITY PUSH CABLE



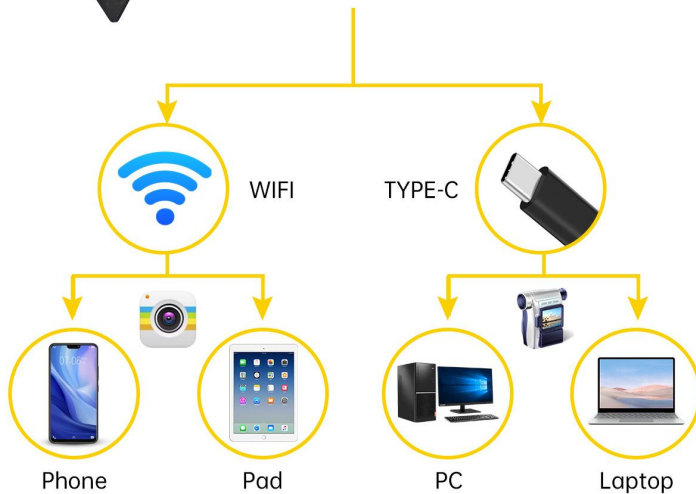
4. Connection

- (1) Plug the signal connection line "B" onto the display (**make sure it is fully inserted**). Attach the camera to the "A" bullet head interface of the push rod cable. (As shown in the picture below)
- (2) Turn on the power switch on the right side of the monitor (ON/OFF), and press and hold the "POWER button" for 3 seconds to turn the monitor on or off.
- (3) Use a flat blade screwdriver to install the guide wheel on the camera, then insert it into the pipe, adjust the appropriate brightness for use.
- (4) After use, remove the camera from the pipe, wipe it clean with a cloth and put it back to its original position.



5. Mobile APP download

WIFI connection, APP download and installation instructions



The "Camera Phone" APP is compatible with Android phones, tablets (with Android 4.1 or higher operating system), iPhones (with IOS 13.0 or higher operating system), and Windows computers (Windows 10/11). Please follow the instructions below to download and install the "Camera Phone" APP onto your phone or tablet.

(1) Hot spot setting

- a. After the download and installation, open the following picture(Figure 1): The device name is on the label of the machine. Connect the phone's WIFI network to this device.
- b. Enter the device password (initial password: 12345678). Wait until the phone shows a successful connection. At this time, the phone will prompt: (WLAN connection cannot access the internet. Do you want to intelligently switch to other networks? Select "No" to maintain the current connection.) Select "No". Then return to the startup page (Figure 2).

Figure 1

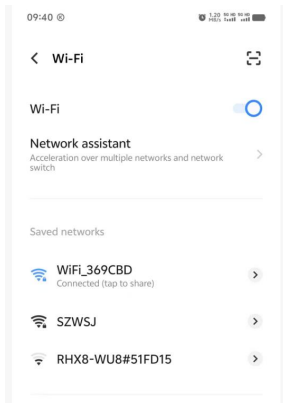


Figure 2



(2) Operation of the APP

- a. Main interface, click to operate the functions

Click “” icon to connect to the camera to view the real-time image.

Tap the display screen to bring up the drop-down menu



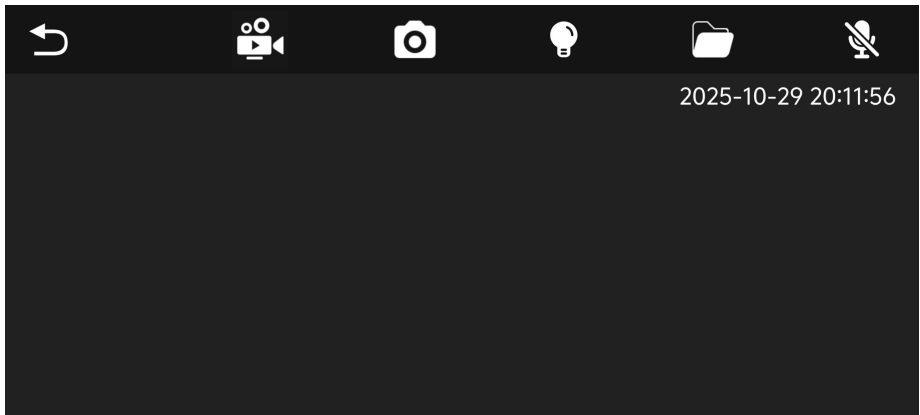
b. Operation interface

Video recording: Click the white icon “”, the video recording icon flashes, and the video is about to start recording. Click the icon “” again to stop recording.

Photosnap: Click the white icon “”, the camera icon flashes for a moment, indicating that the photo has been taken successfully.

Video and photo playback: Click this “” icon to view the file.

Lamplight Adjust: Click the icon “” to adjust the light. The lighting can be adjusted in three levels, it can also be adjusted on the display screen using the LED function, as well.



6. Windows (10/11) System

(1) **Software download:** Download APP on the computer Softonic



(2) Connection



CHARGING INSTRUCTIONS

1. Connect the charger output to the charging port.
2. Insert the the charger input into an AC 100V-240V power socket.

Pay Attention to:

1. Charge the battery as soon as possible when low power. Overusing the battery may cause damage or impact.
2. Charging indicator on the display: red light means charging and green light means fully charged. Charging time is usually about 7.5 hours.
3. Use the original charger only, and do not use inferior or non-matching chargers.
4. Immediately turn off the charger when the indicator light turns green to avoid overcharging (Do not float charge for more than 1 hour).
5. Do not use damaged chargers to avoid electric shock and fire accidents.

Battery Safety Warning.

Do not disassemble, short-circuit, or expose to fire.

Do not use batteries not specified in this manual.

The built-in lithium battery is not removable.

Do not attempt to replace it.

Disposal Information:

This product contains lithium batteries and AAA batteries, which must be recycled separately.

Do not dispose of with household waste. Please contact your local recycling center or electronic retailer for proper disposal

BATTERY RECHARGE



Equipped with a dedicated data cable,
please use the dedicated data cable to charge the device

PRODUCT COMPOSITION

PRODUCT COMPONENTS



Camera



Wler rack wheel



Push Cable



G2 Guide Wheel



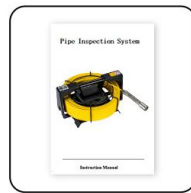
G3 Guide Roller



Data cable



Screwdriver



Instruction book

FAULT ANALYSIS AND PRECAUTIONS

Failure analysis	Fault reasons and precautions
Blue screen	1. Check if camera connector is loose. It would cause poor contact if camera is loose. 2. Check whether the connection between the monitor and the signal cable is normal and whether it is fully inserted. 3. Check if cable is broken. 4. Check if there is water leakage in the front of the camera or if camera is damaged. 6. When using the camera, put on the protective cover first to prevent it from being damaged by hitting hard objects and thus unable to display images.
LED light not on	1. Read the manual to get the correct way to turn on the light. 2. Check if there is water in the camera, the water will damage the camera LED.
No Power	1. Check if battery is fully charged. 2. Check if display screen is damaged.
Photo/video cannot be saved	1. Check if memory card is damaged. Replace the memory card. 2. Check if memory card slot is with foreign objects or deformation.
Cannot format	The memory card is damaged. Please replace the memory card.

Unable to charge	1. Check if charging port is with foreign matters or deformation. 2. Check whether the charger is damaged. 3. If the power is too low, it should be charged in time to prevent the battery loss and unable to charge
Broken cable	1. It is recommended to use the cable on pipes with a diameter $\geq 50\text{mm}$. Pay attention to the force of pushing the cable to avoid breaking cable. 2. This product is only used for pipeline detection and inspection (application stated in II), and cannot be used for other purposes.
Cable knotting	1. When retracting and releasing cables, the cables can not be crossed and knotted, and the bending arc of cables should not be less than 90 degrees. 2. When retracting the cable, pay attention to the orderly retraction with the rotating iron frame, and do not use it violently.
Equipment cleaning	When cleaning the equipment, turn off the power before cleaning to avoid damage to the equipment.
Note	If the fault cannot be solved, do not disassemble it by yourself. Please contact the after-sales service team.

Complete set of operating instructions and safety warnings for the sewer pipeline inspection device

I. Equipment Overview

The sewer pipeline inspection camera is a specialized device designed for internal defect detection, blockage identification, and operational monitoring of municipal sewage systems, rainwater pipelines, residential

drainage networks, and industrial wastewater pipelines. Utilizing high-definition imaging sensors, it enables non-destructive pipeline inspection and precise hazard localization, with extensive applications in maintenance, emergency repairs, acceptance inspections, and routine patrols. This specification applies to all handheld, tracked, and push-bar types of pipeline inspection cameras during field operations.

II. Standard Operating Procedures Guidelines

(1) Preparations Before Starting Work

1. Personnel Preparation: Operators must be proficient in the equipment structure, operational procedures, and basic principles of pipeline operations. Unlicensed individuals or novices are strictly prohibited from operating independently. The work site must be staffed with at least two personnel: one operating the equipment and one monitoring on-site; single-person operation is strictly forbidden.

2. On-site investigation: Conduct preliminary inspection of the surrounding environment around the wellhead, remove debris, gravel, and silt from the wellhead, and eliminate obstacles in the work area; confirm that there are no toxic or hazardous gases, no stagnant water or underground flows, and no collapse risks within the pipeline. Operation is prohibited on rainy days, sections with excessive water depth, or areas at risk of pipeline collapse.

3. Equipment Inspection: Examine the main unit of the scope, camera probe, cable push rod, battery, and other components for integrity; ensure the housing is undamaged, cables show no signs of aging or cracking, and interfaces are secure. Verify that the testing equipment operates normally with clear imaging, adjustable lighting, and proper functionality for distance measurement, video recording, and photography. The battery should have sufficient charge to meet the requirements for the entire operation..

4. Protective preparations: Wear non-slip shoes, protective gloves, and work attire; safety helmets must be worn when working at wellheads. Install safety warning barriers, warning lights, and signs at the site. For road operations, implement advance traffic management measures to remind passing vehicles and pedestrians to yield.

(II) Power-On and Commissioning Procedures

1. Install all device accessories correctly, connecting the host to the push rod and probe interfaces, ensuring secure insertion and proper waterproof sealing to prevent loosening or detachment.
2. Turn on the device power and wait for the system to start. Connect to Wi-Fi, activate night vision lighting, and set focus mode. Adjust light brightness and image clarity based on the internal lighting conditions of the pipeline..
3. Test core functions such as video recording, photography, and playback to ensure all functions operate normally; verify device parameters to guarantee no image lag, blurring, or black screens.
4. Record the initial state of the device, confirm that the probe displays properly and the push rod extends/retracts smoothly without any jamming or hesitation.

(III) Procedures for pipeline detection operations

1. Align the camera probe smoothly with the pipeline wellhead, then slowly lower both the probe and the push rod while advancing at a constant speed. Strictly avoid rapid forceful pushing, hard pulling, or dragging to prevent the probe from impacting the inner wall or edges of the pipeline

opening, which may cause equipment damage.

2. During operation, continuously monitor the display screen and manually adjust the probe angle slowly to capture comprehensive images of the pipeline's top, side walls, and bottom conditions. The camera feed enables identification of defect locations and states such as blockages, cracks, leaks, misalignment, root intrusion, or sediment accumulation.

3. During rod advancement, maintain straight-line and uniform motion. When encountering pipe elbows, diameter changes, or blockages, reduce the advancement speed, manually adjust the probe angle, thoroughly identify potential hazards, and strictly prohibit forced advancement.

4. Enable video recording throughout the entire process, take timely photographs at critical locations for documentation, and record the location, shape, and dimensions to ensure complete, clear, and traceable visual records.

5. Detection depth must strictly adhere to the equipment's rated parameters; operations exceeding the specified depth or range are strictly prohibited to prevent cable stretching or breakage, as well as probe disconnection or detachment from the pipeline.

(IV) Final Steps for Completing the Task

1. After detection is complete, slowly retract the push rod and probe at a constant speed.

Handle the entire process gently to avoid the probe colliding with pipe openings or surfaces, preventing camera scratches or equipment damage; clean any dirt from the cables while retracting them.

2. Before powering off the device, save all videos, photos, and test data to prevent data loss.

3. Turn off the device power, disassemble all components, clean the surfaces of the probe, push rod, and cables of mud, wastewater, and debris, wipe away water stains, and ensure the equipment remains dry and clean.

4. Inspect the equipment for any damage or missing components, and

store it properly in a dedicated tool box according to specifications.

5. Clean the work site, restore the wellhead to its original condition, remove safety warning facilities, clear surrounding debris, and only leave after confirming there are no safety hazards on site.

III. Complete Set of Safety Warning Specifications

(1) General Safety Warning

1. This device is a precision measurement instrument; unauthorized personnel or unrelated individuals are strictly prohibited from operating, touching, or handling it to prevent malfunctions that may cause equipment damage or safety incidents.

2. Personnel must hold valid certifications and be proficient in equipment operating procedures; violations such as improper operation, reckless operation, or overload operation are strictly prohibited.

3. Smoking, playing around, or leaving the work area without authorization are strictly prohibited throughout the entire operation period. Supervisors must remain on duty at all times and shall not leave the designated work area without permission.

4. The equipment must not be exposed to direct sunlight, rain, or prolonged immersion. It is strictly prohibited to operate the device for extended periods in humid environments or areas with untreated standing water to prevent short circuits or electrical leakage faults.

(III) Electricity Safety Warning

1. Private or unauthorized power connections are prohibited. Charging must use the original battery and charger provided with this product. If the battery or charger components are damaged, contact customer service to purchase replacements and ensure proper

waterproofing and leakage protection.

2. During charging, keep the device away from water sources and flammable or explosive materials; disconnect power immediately after completion. Long-term overcharging or unattended charging is strictly prohibited.

3. In case of leakage current, abnormal noise, or unusual heating in the equipment, immediately shut down the machine and cut off power; cease all operations. It is strictly prohibited to operate equipment that is faulty or defective.

(III) Safety warnings for on-site operations

1. Pipeline wellhead operations must be equipped with safety barriers and warning signs; road work requires prior traffic control measures to strictly prevent vehicle damage to cables and personnel falls into the wellhead.

2. It is strictly prohibited to conduct detection operations under adverse conditions such as toxic environments, oxygen-deficient conditions, excessive concentrations of flammable or explosive gases, pipeline collapses, heavy rainfall, strong winds, or severe snowstorms.

3. When deploying or retraction the probe and push rod, keep hands away from the wellhead; strictly avoid inserting the head or torso above the wellhead to prevent falls or impact injuries.

4. When sharp debris, steel bars, or damaged pipe walls are present in the pipeline, reduce the operating speed to prevent the probe and cable from being cut or obstructed; forcibly dragging the equipment is strictly prohibited.

(IV) Safety warnings for equipment use

1. It is strictly prohibited to operate equipment beyond its specified range, depth, or load capacity; unauthorized modification of equipment wiring, components, or programs is forbidden; and disassembly of the equipment chassis is strictly prohibited.
2. The probe lens is a precision optical component; it must not be subjected to impacts, scratches, or excessive pressure. Wiping the lens with hard objects is strictly prohibited; stains should be removed using a specialized soft cloth.
3. Cable wiring must not be subjected to violent bending, rolling, or pulling to prevent internal wire breakage or outer insulation damage, which could compromise equipment functionality and waterproof performance.
4. If the device experiences lag, black screen, signal interruption, or functional abnormalities, immediately cease operation, slowly withdraw the device, and diagnose the fault; forced operation is strictly prohibited.

(V) Safety warnings regarding maintenance and storage

1. After completing operations, equipment must be promptly cleaned to remove water stains and sediment. Storage with contaminants or moisture is strictly prohibited to prevent corrosion, rusting, or short circuits.
2. The equipment shall be stored in a dedicated area that is dry, well-ventilated, dust-proof, and moisture-resistant, away from high temperatures, acids, alkalis, and corrosive substances.
3. Perform regular inspections and maintenance on equipment, checking the performance of cables, interfaces, batteries, and probes. Faulty equipment must not be operated; it may only be used after passing repair acceptance inspection.
4. Children and unauthorized personnel are strictly prohibited from accessing the stored equipment to prevent damage or accidental safety incidents.

IV. Prohibited Practices (Red Line Guidelines)

1. Single-person pipeline inspection operations are prohibited;
2. Forced operations under severe weather conditions or in hazardous pipeline environments are prohibited;
3. Violent pushing, pulling, or forceful operation of detection equipment is prohibited;
4. Operating the equipment while it is faulty or with insufficient battery power is prohibited;
5. It is prohibited to conduct detection beyond the equipment's rated depth or range;
6. Unauthorized personnel are prohibited from operating or touching the work equipment;
7. Do not expose equipment to rain, water immersion, or use it under improper electrical conditions.

V. Emergency Response Guidelines

1. Equipment lagging or probe jamming in the tube: Immediately cease advancement/retraction, gently adjust the angle to attempt disengagement; strictly avoid forceful pulling. If necessary, remove auxiliary components to prevent equipment fracture or pipe detachment.
2. Equipment leakage or abnormal heating: Immediately cut off power and shut down the equipment, evacuate personnel, diagnose the fault, and prohibit use until repairs are completed.
3. In case of sudden collapse, rapid water accumulation, or abnormal gas odors at the site: immediately cease operations, evacuate personnel promptly, report to the on-site supervisor, identify potential hazards, and resume work only after resolution.
4. Equipment data loss or abnormal images: Immediately pause operations, restart the device for troubleshooting, and document the on-site conditions to ensure complete detection data.

WARRANTY

Dear Customer,

Thank you for choosing our products. We sincerely appreciate your patronage! To protect your rights and interests, please read the following instructions carefully after purchasing:

- 1) Check if the camera is tightened before use.
- 2) Check if the display and signal connection line are plugged in and tightened before use.
- 3) During use, pay attention to charging promptly when the battery runs out to prevent battery failure and inability to charge.
- 4) The push rod cable should not be knotted or bent less than 90° to avoid the push rod cable breaking.
- 5) Do not drop the product forcefully to avoid machine damage.
- 6) Please turn off the device before inserting or removing the memory card to avoid damaging the memory card.

The following situations are not covered by free repair but we can provide paid services. Please note:

- 1) Product damage caused by failure to install or use according to the instructions.
- 2) The product exceeds the warranty period.
- 3) Machine damage caused by using non-company accessories.
- 4) The product has been disassembled, assembled or repaired by unauthorized personnel from our company.
- 5) Product damage caused by accidental factors or human behavior, such as mechanical damage, dropping, severe moisture oxidation of the product, etc.
- 6) Damage caused by transportation, loading and unloading when the customer returns the product for repair.
- 7) Product damage caused by irresistible natural forces such as earthquakes, fires, etc.
- 8) Other failures or damages not caused by problems with the design, technology, manufacturing, quality, etc. of the product itself.
- 9) If the cable is broken or the camera is damaged, it will not be covered by the

warranty and can only be replaced.

Special instructions

1) If there is obvious man-made hard object damage, cracks, severe deformation, etc., replacement will not be provided. Users can purchase new ones instead.

2) Warranty and replacement are limited to core parts, packaging and various paper technical instructions are not within the scope of warranty and replacement. If there are performance problems with the equipment within 15 days of purchase, and there are no scratches on the appearance, you can directly contact our company to replace it with a new product. Products covered by warranty must be tested by our company. If the product is found to be of good quality, it will be returned directly.