# HD COMPACT DRAIN INSPECTION CAMERAS



# INDUSTRIAL VISUAL INSPECTION TOOL

# USER MANUAL

**Version 1.21**

# CONTENTS

FCC/CE Statements: This device complies with part 15 of the FCC Rules and standards including Low Voltage Device Directive 73/23/EEC.

EMC: Directive 89/336/EEC. It passed the subject tests by the authority concerned and is authorized to bear the CE mark.

## GENERAL          SAFETYINFORMATION

# WARNING!

Read and understand all safety warnings and instructions. Failure to follow all safety warnings and instructions listed below may result in electric shock, fire and/or serious

## SAFETY     INSTRUCTION

·Save this User Manual for future reference.

·Use only the original accessories especially the power adapter and lithium battery provided by the vendor to avoid possible risks to health and property, and thus meet all related legal regulations.

·The camera fully installed on the push cable and the unopened control box are waterproof, however the keyboard and the DVR inside the control box are not. Do not expose them in water or rain when the control box is open, increasing the risk of electrical shock and damage to the device.

·Do not drop, knock, shake or press hard on the device, inappropriate behavior may damage the internal electronic circuit board or deform the lens shape.

·Do not disconnect the SD card/USB storage device while recording or playing back as this may damage the system and/or the SD card/USB storage device.

·Always backup your data before connecting your SD card to this system and remember that always backup the data after using this system to avoid data damage/loss or accidental deletion. Memory devices should not be considered as a long-term storage device.

·Keep the device and its accessories out of the reach of babies, toddlers, and children.

·When using the camera LED lights, do not use to close to human or animal eyes, particularly for babies, toddlers, and children to avoid injury.

·Do not use the unit to inspect environments known or suspected to contain exposed electrical wiring

·Do not use the unit in the presence of high voltage equipment, flammable or explosive liquids/gases, hazardous chemicals, superheated liquid or heavy dust.

·Do not try to use the camera head to clear obstructions. This System is a diagnostic tool, not a drain cleaner. Using the camera head to clear obstructions could damage the camera head or cause it to be caught in the obstruction.

·Never use the solvents to clean any part of the system. Substances like acetone and other harsh chemicals can cause cracking of the camera's waterproof ring and affect its waterproofness.

·When using the device, please place it on a flat surface to prevent the screen from closing suddenly, which may cause the sunshield to cause harm to the human body. Or the screen may collide with the USB flash drive in use, causing damage to the screen.

·Turn off the system if it is not in use and keep routine maintenance.

·Some countries have regulations concerning batteries disposal. Please follow all applicable regulations.

## WELCOM

Thank you for purchasing our HIGH-DEFINITION PIPE INSPECTION CAMERA SYSTEM.

This pipe inspection camera system is designed as an HD real-time inspection camera to unveil the internal objects and/or structures with the illumination of the highlight LEDs, it is specially designed for pipelines, sewers, drains, ducts, chimneys, plumbing, buildings, swimming pool, milk  pipes, water mains, cable pipes, central air conditioning, pipes ventilation systems and other plumbing related sites, and   many  more where a pipe inspection camera system is required.

This system is suitable for pipes with the inner diameter of 15mm-300mm (0.5"-12").

Ability to go through 90°bends in the  pipe with inner diameter at:

> 1.2''/32mm (for 12.8mm camera with 4.8mm push rod)
>
> 1.8''/45mm (for 21mm camera with 5.3mm push rod)
>
> 2''/52mm (for 21mm camera with 6.8mm  push rod).
>
> 3''/80mm (for 29mm camera with 6.8mm push rod)
>
> 3.2''/82mm (for 29mm camera with 7.2mm push rod)

## FEATURES

- Camera diameter 12.8mm (with push rod cable diameter 4.8mm/5.3mm cable),21mm (with 5.3mm/6.8mm cable), 29mm (with 6.8/7.2mm cable) and 39mm (with 7.2/9mm cable) are available.
- Camera head with sapphire glass lens cover and #304 stainless steel housing allows the camera to with stand repeated hits in various pipes.
- The LED brightness control button is used pulley button without breakpoint dimming.
- The whole system is waterproof when the camera head is installed and the control box is closed.  >9"/13.3"IPS LCD color monitor with standalone power button to turn on/off the screen alone. >On-screen date &time stamp and distance counter.
- The meter counter reset button can recount the meter at any time as required.
- The Meter-Feet button can switch the length unit easily.
- Microphone for local audio recording, just one press on the audio button to turn on/off the audio recording.
- Wireless keyboard for text input on the real-time picture or video like a laptop's, very easy to operate.
- The external storage SD card slot or USB port to store still pictures or videos.
- The cable reel is out of the control box for easy cleaning and won't cause dirty in the box.
- Rechargeable battery lasts up to 7 hours of continuous work (9" DVR).
- Rotatable cable reel mounted in metal frame for convenient operation.
- All-in-One visual pipe inspection camera system with push rod fiberglass cable length 10/20/30/40/50/80/130m and  diameter φ4.8/5.3/6.8/7.2/9mm for options.
- Other optional functions:

> 1. 512Hz transmitter for  12.8mm/21mm/29mm/ 3 9 m m camera

2. <u>Self-leveling for 21mm/29mm/39mm camera</u>

3. <u>512Hz transmitter and self-leveling for 21mm/29mm/39mm camera</u>

4. Wireless 2.4G 5inch monitor to synchronize viewing the host screen when collaborating with  multiple  people

5. The external super battery pack allows the machine to work continuously for 9 hours.

## STRUCTURE    INTRODUCTION

## Machine 1.0



① **Camera  head**

② **Cable reel with meter counter**

③ **Control  box**

④ **Metal  frame  and  its  accessories**

⑤ **Connection   cable**

⑥ **Camera    skids**

⑦ **Pothook  holder  and  Pothook**

## Machine 2.0



①**control box 2.0**

② **Dual** c**able reel with meter counter**

③ **Camera  head**

④ **Brake system**

⑤ **Battery pack**

⑥ **Level Telescopic Handle**

⑦ **Double spinner wheels**

**Control box:**



Sunshade

13.3" screen
9" screen

AV out port    SD card slot    Reset the recond    Battery capacity indicator

Loudspeaker    USB slot    Unit conversion    LED pulley button

Keyboard

**Ports and others:**
**Control Box 1.0**                                    **Control Box 2.0**



Power charger port    Power indicator

Camera port    Pothook holder

Battery indicator

Power charger port    Switch channel button

Pothook holder

Channel 1 camera port

Channel 2 camera port

External battery socket

## Super charger and battery pack:



4 Level battery indication
9 Hours battery life
Voltage: 18.5~20.5V (Max)
Capacity: 4.5Ah
Energy: 92.5W/h

4 Level battery indication
Frequency: 50~60Hz
Output power: 84W
Output volage: DC-21V
Output current: 4

**Display control buttons:**

Menu button: To enter menu/confirm the selection

Up and Down button: Up and down select/Increase and decrease

ESC button: Exit the current interface and return to the previous interface

Flip button: To flip and mirror the image, RD/RN/RU/LD

Power button: Power on/off the display only

**Control board buttons:**

Power button: Power on/off the whole system

LED pulley button: Rollup/rolldown to enhance/less the LED brightness

2.4G button: Turn on/off the 2.4G function

Channel switch button: Select the 2.4G channel to pair with the monitor

Audio button: Turn on/off the audio input

Camera button: Take picture/Pause or continue video playing

Video/OK button: Start video recording/Pause or continue recording/Confirm the selection

Pause button: Stop video recording/Stop video playing

Reset button: Set zero the meter counter

Meter-Feet switch button: Switch the meter unit from Meter to Feet or vice versa

Menu button: Enter menu

ESC button: Exit the current interface and return to the previous interface

Up and down button: Zoom in and zoom out/Up and down select/Increase and decrease

Left and Right button: Page down and page up/speed up and speed down

SD card slot/USB slot for USB mobile hard disk: To insert memory device

AV out port: Connect to a TV to get the same image from the display

Loudspeaker: Audio output

Keyboard: Wireless keyboard for text input on real-time image/video

Switch button: Switch channel 1 and channel 2, each channel corresponds to a camera system.

Battery Indicator: The green indicator light indicates that the external battery pack is connected and working. The indicator is off, indicating that the battery pack is out of power.

Single cable **metal frame and its accessories:**
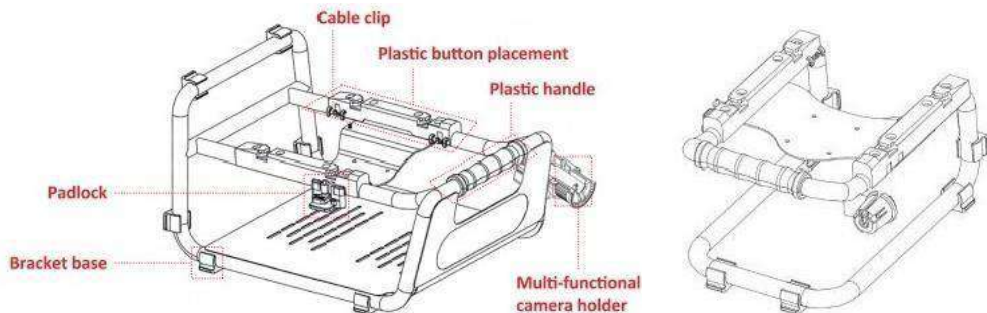


Camera holder/stopper: Hold the camera head/stop the cable.
Bracket base: To protect the metal frame.
Plastic button placement: To install control.
box Cable clip: To tidy the connection cable.
Padlock: To automatically lock the control box.
Plastic handle: To reduce pressure and prevent slip.

Dual cable **metal frame and its accessories:**

# PACKING    LIST

| | Metal frameX1<br><br>Cable reel with camera head X1<br><br>Control box with DVR & wireless keyboard X1<br><br>Connection cable X1 | 25mm skid for 12.8mm camera X1<br><br>ScrewX2<br>Screwdriver X1<br><br>Waterproof ring for 12.8mm cameraX2 | |
| | | 46mm skid for 21mm camera X1<br><br>78mm skid for 21mm camera X1<br><br>Screw and nut X6<br><br>Waterproof ring for 21mm camera X6<br><br>ScrewdriverX1 | DC12V power supply X1 |
| | | 65mm skid for 29mm camera X1<br>105mm skid for 29mm cameraX1<br>Waterproof ring for 29mm    cameraX6<br>Liner X2<br>screwX2<br>ScrewdriverX1 | Car charger X1<br><br>AV cable X1<br><br>PothookX2 |
| | | 46/78mm skid for 21mm camera X1<br>64/105mm skid for 29mm cameraX1<br>Waterproof ring for 21/29mm cameraX12<br>Liner X2<br>screwX2<br>ScrewdriverX1 | User Manual X1 |
| | | 46/78mm skid for 21mm<br><br>64/105mm skid for 29mm<br><br>Waterproof ring for 21/29mm cameraX12<br>Liner X2<br>screwX2<br>ScrewdriverX1 | |

## SPECIFICATION

| | Item | 29mm camera (Standard) | 29mm camera (Customized) | 21mm camera | 12.8mm camera |
|---|---|---|---|---|---|
| **General** | Operating Temperature | -10~50° ℃/+14~+122° F | | | |
| | Operating Humidity | 30%RH~90%RH | | | |
| | Storage Temperature | 。-20~60° C/+4~+140° F | | | |
| | Power adapter | Input:110VAC~240V AC, Output:12VDC 2A | | | |
| | Power Supply | DC12 input | | | |
| | Current Consume | 750mA Max | | | |
| | Battery Capacity | 9000mAhL-ion Battery | | | |
| | A Single Full Charge Work Time | 7 Hours (9inch DVR);5 Hours(13.3inchDVR) | | | |
| | Charge Time | 8Hours | | | |
| | Waterproof | P66(Whole machine is waterproof only when the control box is closed and camera fully installed) | | | |
| | MEAS | QY6566:445*385*355mm; QY6688:540*430*365mm | | | |
| | Weight | QY6566: Approx 9Kg; QY6688:Approx13Kg QY6688D: Approx 18Kg QU6689D: Approx xxKg QY6698: Approx xKg(Slight different from different length & thickness of cable) | | | |
| **camera** | Sensor | 1/3″CMOS | | | 1/4″CMOs |
| | Resolution | 1080P (1920*1080) | | | 720P (1280*720)/ 1080P(1920×1080New) |
| | View Angle | 150° | 120° | | 100° |
| | Focus Distance | 10cm | 15cm (approx) | | 5cm (approx) |
| | Depth Of Field | 150cm(approx) | 100cm(approx) | | 100cm(approx) |
| | Camera Size | Φ29*50mm (Main body) | | Φ21mm×45mm (Main body) | D12.8mm×12mm (Main body) |
| | Camera Length | 260mm | | 165mm | 135mm |
| | Front Lens | Sapphire | | | |
| | Shell Material | #304 Stainless Steel | | | |
| | Lighting | Built-in 15×LED (White) | Built-in 12×LEDs (Low beam) & 2xLED (High beam) | Built-in12×LED (White) | Built-in6×LED (White) |
| | LED Driver | Built-in Dimmer (Pulley button) | | | |
| | Water Pressure(Bar Rating) | 3Bars (Camera fixed on cable) | | | |
| **DVR** | Screen | IPS16:9 super bright high-definition color LCD screen | | | |
| | Resolution | 9inch DVR:1024(RGB)) ×600;13.3inch DVR:1920(RGB)×1080 | | | |
| | Mirror and Flip | 9inch DVR: Support image mirror, Flip, Mirror &Flip;13.3ich DVR: None | | | |
| | Video Resolution | 1920×1080 | | | 1280×720/1920×1080(New) |
| | Video Encoding | H.264 | | | |
| | Photograph | 1920×1080 | | | 1280×720/1920×1080(New) |
| | Audio Recording | Local Sound | | | |
| | Out Put | TV and Audio output | | | |
| | External Memory | Support MAX.1TB SD Card or USB storage device | | | |
| | Play Back | Photo and Video with Audio | | | |
| | Language | English, Chinese | | | |
| | Keyboard Compatibility | Support Specific PC Wireless keyboard | | | |
| | Typing Language | English | | | |
| | Precision of Meter | Counter ±0.5% | | | |
| | Meter and Feet Counter Switch | Support | | | |
| | Set Zero | Support | | | |
| **cable** | Cable Diameter | 7.2mm/9mm | Φ6.8mm | Φ5.3mm/6.8mm | Φ4.8mm/5.3mm |
| | Cable Color | Red: Φ9mm Φ7.2mm Φ6.8mm Φ5.3mm | | | Blue: Φ4.8mm |
| | Cable Length | QY6688D: inner 30M-4.8mm (Max)/ outer 50M-6.8mm (Max) QY6689D: inner 30M-5.3mm (Max)/ outer 80M-7.2mm (Max) QY6698: 130M-9MM (Max) QY6688:20/30/40/50M-6.8mm QY6566;10/20/30M-5.3mm | | | QY6566:10/20/30/40M-4.8mm QY6688:20/30/40/50M-4.8mm QY6566;10/20/30/40M-4.8mm |
| | Meter/Footage Counter | Standard | | | |
| **Control Box** | Size | 361*262*157mm | | | |
| | Box color | Black + Red | | | |

# INSTALLATION

### Install cable reel to metal frame

Put the cable reel into the middle of the metal frame, align the 4 screw slots and fasten by 4 pairs of screws and nuts. ①

### Install camera head

Pull out the fiberglass cable with connector through the hook ② and screw in camera head ③ then put the camera head in the camera holder ④ Plug one end of the connection cable to the camera port ⑤ in the reel and fasten the screw.
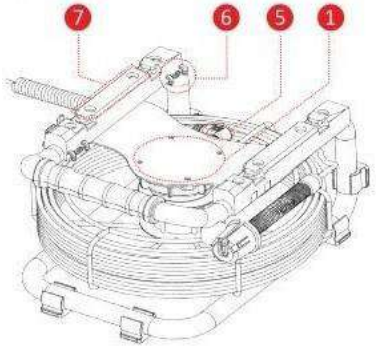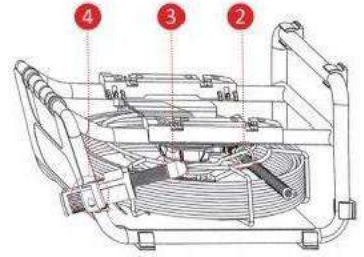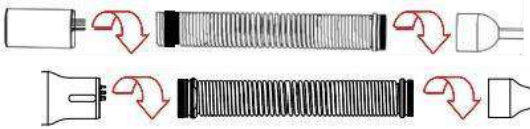
### Install control box

Before install control box, settle the connection cable to the cable clip ⑥ on the plastic button placement to make it tidy. Place the control box on the plastic button placement ⑦ with the control box handle and metal frame handle in the same direction, then push forward the control box gently until there is a sound to indicate that the control box is automatically locked by the ⑧ padlock   Plug the other end of the connection cable to the ⑨ camera port   in the control box and fasten the screw. Take out the pothooks and put into ⑩ pothook holder 10   wind the connection cable around the pothooks to make it tidy.

### Uninstall control box

Use one finger to press the padlock to the bottom while using the other hand to hold the handle of the control box and pull gently until the control box is loose to take out.

**Press the PADLOCK**

**Use the HANDLE**
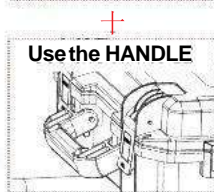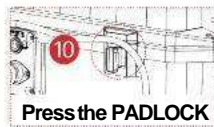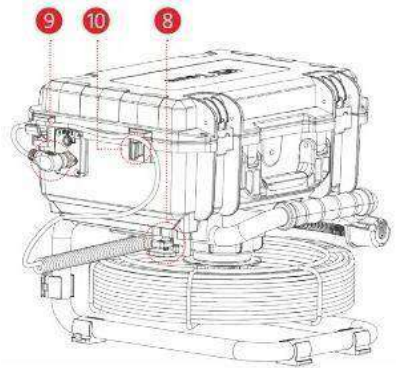
Uninstall

Install

**Install camera skids**

Camera skids are designed to support the camera and keep it in the middle of the pipe. There are 2 kinds of skids for 21mm camera head, 2 kinds of tool-less skids for 29mm camera head,1 skid for 12.8mm camera head. Choose skid properly per application requirement.

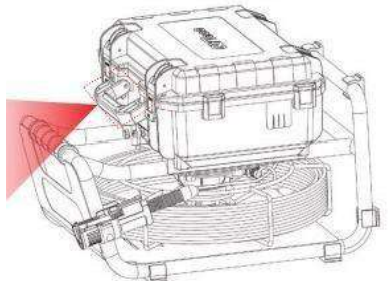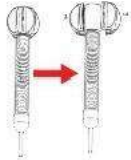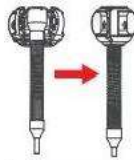| 46mm skid<br>For 2.5"-3.5"pipes | 78mmskid<br>For 4"-8"pipes | 65mm tool-less skid<br>for 3"-5" pipes | 105mm tool-less skid<br>for 5"-10'pipes | 25mmskid<br>For 1.5"-2"pipes |
| --- | --- | --- | --- | --- |

| Sleeve the camera head with 46/78mm skid, then fasten each pairs of screws and nut by screwdriver | Sleeve the camera head with 65/105mm skid, then snap on by hand. | Sleeve the camera head with 25mm skid, then fasten screw by screwdriver. |
| --- | --- | --- |
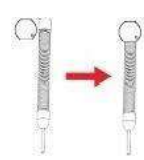
# BASIC   OPERATION

**Charge the device**
Before you use the device for the first time, please make sure the power is fully charged. Plug the 12V power supply or car charger into the power charge port in the control box to charge, the power indicators will illuminate red to show in charging status, and it will turn off when the power is fully charged.
A full charge will be taken about 8 hours

*Notice: You must use the original power supply or car charger provided by the vendor.*

**Install SD card/USB storage device**
To insert the SD card (MAX.1TB) into the SD card slot, use your thumb and index finger to carry the SD card and insert into the SD card slot, then use your thumb to push gently until the SD card is locked with a sound. To take out the SD card, push the end of the SD card with your thumb, the SD card is
unlocked and pop-up, then you can pull out the SD card. To insert USB storage device, insert the right direction of the USB socket into the USB slot to reach the bottom.
*Notice:*

*1. Please insert the SD card/USB storage device before powering on the device.*

*2. The device can only identify one memory storage at a time, so just choose SD card or USB storage device before you work. If you insert both, the system defaults to choose SD card*

*3. If you insert the USB storage device with length more than 22mm, please remember to take it out before you close the control box to avoid damage on the USB storage device and the USB slot.*

**Install wireless keyboard**
Take out the wireless keyboard and flip to the back, remove the battery cover, install 2XAAA batteries correctly, reinstall the battery cover, flip the ON/OFF swift to ON to power on, then reinstall the Wireless keyboard back to the control box.

## OPERATING        INSTRUCTION

**Safety Precautions:**

1. Please always wear protective gloves to operate the camera unit for safety reasons. Properly positioning the cable reel will save time and strength to push out/in the pipeline, while minimizing the  rate of equipment damage.

2. When pushing the camera in the pipe, the end of your stroke should be as close to the entry as possible, but DO NOTCONTINUETO PUSHWHENYOUR HANDSCATCHTHECABLE ONTHE ENDGE OF AN ENTRY TO PREVENT YOUR HANDS STABBED. Standing too far back with an excess of cable between your hands and the entry may cause the cable to fold on itself outside the entry and damage the cable.

3. Try to keep the push cable away from sharp edge of a pipe entry because this may cause damage. If the camera does not seem to go any farther, DO NOT FORCE TO PUSH THE CAMERA! Try another entry  if possible.

4. The larger the cable diameter, the greater the elasticity. PLEASE BE MORE CAREFUL WHEN YOU OPERATE THE CAMERA UNIT WITH 6.8MM FIBERGLASS ROD TO PREVENTTHECABLE REEL POP OUTAUTOMATICALLYTOGET HURTYOURSELFANDTHE PEOPLE/OBJECTSAROUND

5. Always try to inspect the pipe with the same direction of water flow, this will keep the camera clean, and allow you to push noticeably farther with less friction. If the water is preventing you from seeing an area of importance, stop and temporarily turn it off

6. Always try to push the push cable through the pipeline steadily and slowly, with a short distance entry per time, keep the hands at the pipeline entrance, so that can control the push cable and prevent it stuck, bent or scratched.

7. When inspecting a pipe with changes in direction such as P-traps, S-traps, Tee's, Y's, crossovers, elbows, etc., it  is necessary to give a little extra pushing force to go through the changes. Pull back the camera head about 20cm/8"from the bend and give it a quick push (if necessary) to pop-up the camera to go through the turn rapidly by using the minimal force.

8. Make sure the sapphire cover is clean enough  before inspecting. A slight film of detergent on the sapphire cover may minimize the possibility of grease sticking to the cover. If necessary, take advantage of any standing water in the pipe to wash the camera head by jiggling it in the water

9.  As the materials of pipe are vary, it will be necessary to adjust the lighting settings to maxim ize picture quality when you place the camera head into the pipe.

10. The camera can go through  multiple 45 and 90-degree bends and wyes, but do not try to force it to go through a P-trap or Tee if there is a large amount of resistance.

11. Do not attempt to remove or store push cable on the reel solely by turning the reel itself. You can manually pull or push the cable from the reel and wind or unwind it.

12. The camera with LED lights on stays in the pipe or confined space will be easy to generate heat, this   may cause the fuzzy lines to appear on the monitor. In this situation, please turn off the system, take out the camera from the pipe or confined space  for 10-15minuts to cool the camera head. Running water into the pipe may also help to cool the camera head. Always use the minimum illumination required to maximize picture quality and avoid excessive heat generated to protect the camera head.

13. When you finish your inspection work, or take a prolonged break while working, turn off the system for power saving.

14. Operating  environment:

(1) The camera system operating temperature is between-10℃~50℃(14°F~122°F). It is normal for the operating time to be shortened when the temperature is low.

(2) Storage at too high or low temperatures will also result in a gradual battery capacity loss. As a result, the operating time of your inspection system may be considerably reduced.
(3) It is normal for the camera system to become warm during operation, because the inspection system casing can conduct heat.

### 1. **Preparation**
Place the system in a flat place, open the control box, adjust the sunshade to the appropriate position.

### 2. **Power on the device**
Press and hold the **Power button** ⏻ on the control board for 3 second to power on the unit and illuminate the LCD. The power indicators beside the power button and out of the control box will turn green, the battery capacity indicator will light up to show the battery capacity (When the battery meter showed one bar of power left and flickering, it indicates that the battery is low and needs to be charged as soon as possible). When illuminating the LCD, the Screen will show on "NO SIGNAL" with blue background for 5 seconds and "WELCOME" for another 5 seconds with white background, then enter the real-time image. The lower the battery, the longer it takes.
After entering the system, the date and time is shown on the upper left corner, the storage icon and capacity information is shown on the upper right corner.

### 3. **Camera inspection operating**
Take out the camera from the camera holder, one hand to hold and control the reel speed, the other hand to point the camera head at the target entrance of the pipe, slowly pushing forward. When retrieve the push cable, one hand to pull out the cable slowly, the other hand to take up the cable backward to prevent being stacked and intertwined
When storing the push cable, hands should be close to the cable reel and push the cable with a short length every time. Push a long distance can cause the push cable bend or broken.

### 4. **Meter counter operating**
When you pull out the cable with the reel rotating, the meter counter will begin to work and the meter data will be shown on the lower right corner. You can switch the meter unit from meter to feet by pressing the **Meter-Feet switch button**, 🔵 or start to measure the meter from 0 at a certain distance by pressed the **Reset button.** 🔵
*Notice:(1) To decrease th0e deviation of the meter counter, turn on the system before you pullout the push cable from the cable reel. (2) The deviation ofmeter counter will be increased if the total length ofcable is changed more than 3meters, you need to change the default perimeter value to decrease the deviation.*

### 5. **Photo and video operating**
Press the **Camera button** 🔴 to take a picture, a camera icon will be shown in the middle of the display to indicate the capture is successful and stored. Press the **Video button** or **OK button** 🔴 🔵 to start recording a video, a red recording icon with recording time will be shown on the lower left corner to indicate the recording status. In recording status, press the **Video/OK button** 🔴 🔵 to pause the recording, press again to continue recording; press the **Camera button** 🔴 to capture a picture; press the **Audio button** 🔴 to turn on the audio recording, press again to turn off; press the **Up button/Down button** 🔺 🔻 to zoom in and zoom out; press the **Stop button** 🔴 to stop the recording.

10

**6. Wireless keyboard operating**

The receiver is default installed in the control board and paired with the wireless keyboard. Press the blank key (or the other keys available) to display the >_ on the image, the white cursor flashing, you can begin to type 48 characters for each line and 15 lines in total in an image.

*Notice:*

*(1) Not all the keys on the keyboard are available to use in this system, but it doesn't affect you to input the English characters including letters, numbers and symbols, special keys set with special functions:    F5: Prohibit input; ESC: Release the prohibit input; F7: Clear all input characters on the display.*

*(2) Both picture and video can be input text and saved with the picture and video.*

*(3) When the battery indicator on the wireless keyboard is flashing, it indicates that the low power please replace the battery in time, otherwise the keyboard will stop working or can't type characters properly.*

*(4) When you change a new keyboard, please change the receiver together*

**7. Playback videos/pictures**

Press the **Menu button** 🌐 on the control board to enter MAIN MENU, then select PLAY AVI and press OK button to enter the VIDEO PLAYBACK status. Press **Up/Down button** to move up or down to select the target file, press the **Right/Left button** 🔘 🔘 to page down and page up. Once select the target file, press **OK/Video button** to play video, press the **Camera button** to pause play, press again to

continue playing; press the Stop button to finish the play; press the **ESC button** 🔴 to quit playing and return the previous interface. In playing video status, press the **Up/Down button** to enlarge/decrease the volume; press the **Right/Left button** to speed up/down the video playback speed (Rate at X2, X4, X8, X16, X32).

In MAIN MENU status, select PLAY JPEG and enter the PICUTRE PLAYBACK status. Select the target picture to playback.

**8. Deletion operating**

To delete the video/picture, you can only delete the file in the single file listed by pressing the Stop button. It will pop up a prompt "Do you want to delete this file?", you can choose "NO" to cancel the deletion, or "YES" to confirm the deletion.

**9. System setup**

In MAIN MENU status, select SYSTEM SETUP to enter the setting interface. Follow the flow chat to set up the language, date/time, date format, display resolution, video system/length/quality, perimeter, disk for mat, upgrade system and system restart.

*Notice: The perimeter is set according to the total length and diameter of push cable and the diameter of the reel, please don't change the default value to reduce the error rate of the meter counter unless you change the above elements.*

```
SYSTEM
SETUP
├── LANGUAGE
│   ├── English
│   └── Chinese
├── DATE TIME ── DATE/TIME (Setting)
│   ├── OK
│   └── CANCEL
├── DATE FORMAT
│   ├── YYYYMMDD
│   ├── MMDDYYYY
│   ├── DDMMYYYY
│   └── OSD OFF
├── DISPLAY
│   ├── 800 X 600
│   ├── 1024 X 768
│   ├── 1280 X 1024
│   ├── 1366 X 768
│   ├── 1440 X 900
│   ├── 1280 X 720
│   └── 1920 X 1080
├── VIDEO SETTING (VIDEO SETUP)
│   ├── VIDEO SYSTEM
│   │   ├── AUTO
│   │   ├── 1080P-PAL
│   │   ├── 1080P-NTSC
│   │   ├── 720P-PAL
│   │   ├── 720P-NTSC
│   │   ├── CVBS-PAL
│   │   └── CVBS-NTSC
│   ├── VIDEO CLIP
│   │   ├── 1 Minute
│   │   ├── 5 Minute
│   │   ├── 10 Minute
│   │   ├── 15 Minute
│   │   └── 30 Munite
│   └── QUALITY
│       ├── Good
│       ├── Very Good
│       ├── Normal
│       ├── Bad
│       └── Low
├── PERIMETER(Unit mm) ── (Input the value)
├── DISK SETTING (STORAGE SETUP)
│   ├── DISK SELECT
│   │   ├── SD1
│   │   └── SD2
│   ├── FORMAT DISK ── Format current disk?
│   │   ├── CANCAL
│   │   └── OK
│   ├── TOTAL CAPACITY ── ?? GB
│   └── AVAILABLE CAPACITY ── ?? GB
├── UPGRADE ── ED Sep 27 2018 ── No Upgrade File!
│   ├── CANCEL
│   └── UPGRADE
└── SYSTEM RESART ── Reboot now?
    ├── NO
    └── YES
```

## 10. **Display setup operating**

Press **Menu button** 🌐 on the display control board to enter the display settings. Press **Up/Down button** 🔽 🔼 to select the setting; press the **Menu button** to confirm the selection; press **Flip button** to flip the screen (9inch display)/Press **ESC** ESC button to exit the setting and return to last interface (13.3inch display), press **Power button** to power on/off the display only.

**For 9inch display settings:**

(1) BRIGHTNESS:0-100

(2) CONTRACT:0-100

(3) COLOR:0-100

(4) HPOSITION:0-100

(5) VPOSITION:0-100

(6) AUTO:(Choose   auto   setting)

(7) Z00M: 16:9 (default), 4:3

(8) DOWN: RD, RN, RU, LD

(9) LANGUAGE: ENGLISH, 日文, 繁體中文, 简体中文, YCCK., ENGELS, ITALIANO, PORTUG, ENSPANOL, FRANC., DEUTSCH

(10) RESET

(11) VER: AGA-7DH

**For 13.3inch display settings:**

(1) BRIGHTNESS

BRIGHTNESS:0-100

 CONTRACT:0-100

ECO: STANDAND, TEXT, GAME, MOVIE

DCR: OFF, ON
(2) IMAGE

H. POSITION: 0-100

V. POSITION: 0-100

CLOCK:0-100
PHASE:0-100

ASPECT:WIDE,4:3
 (3) COLOR TEMP.
COLOR TEMP.:USER (setting by user), COOL, WARM

RED:0-100

GREEN:0-100

 BLUE:0-100

(4)  OSD SETTING

LANGUAE: ENGLISH, FRANÇAIS, DEUTSCH, 简体中文，ITALIANO, ENSPANOL, PORTUGUES, TURKCE, POLSKI, NEDERLANDS, 日本語.

OSD H.POS.: 0-100

OSD V.POS.: 0-100

OSD TIMER: 0-100

TRANSPARENCY: 0-100

(5) RESET

IMAGE AUTO ADJUST, COLORAUTO ADJUST, RESET

(6) MISC.
SIGNAL SOURCE: VGA, HDMI

(disabled) VOLUME:(disabled)


11. **2.4G monitor operating (optional function)**

If your system supports a 2.4G monitor, install the antenna first to get better signal (The antenna port is outside the control box on the left.). Press t h e  **2.4G button** to turn on 2.4G function, the indicator beside it will turn green. Press the Channel **switch button**  to pair with the monitor. (There are 2 Channels for  options.)

For the  operation  of the monitor, please refer to  the User Manual of 5" TFTVIDEO  MONITOR.


12. **512Hz transmitter (optional function)**

When using the 512Hz receiver to search the camera with the 512Hz transmitter, set the sensitivity according to the distance, the closer to the camera head, the lower the sensitivity.The deviation is about 10CM.

| 512Hz Transmitter | Frequency | 512±2Hz |
|---|---|---|
| | Transmit Mode | Constant |
| | Transmission Distance | Up to 7 meters in open area |

Note:
①. When you choose the 512Hz transmitter function, the 512Hz sonde comes on/off automatically when powered up/down.
②. When the 512Hz sonde comes on, any locator that picks up a 512Hz signal will work with it.


13. **End  of  work**

When  ending the inspection  work, press  the **Power button** on control  board for 3 seconds to turn off the system and close the sunshade before closing the control box.

## TROUBLESHOOTING

| Problems | Possible    Causes | Likely Solutions |
|---|---|---|
| No Image | Connection cable is faulty or loose | Check the connection cable, clean and reconnect if necessary |
| | Camera connector soiled | Clean the camera connector |
| | Black Screen | Screen switch off, turn on again |
| | The front-end cable connector was damaged/broken/pulled off | Replace front end cable connector |
| | The connection cable is damaged | Replace the connection cable |
| | Water inside the camera head | Replace the camera head part |
| | Spring part of the camera damaged | Replace the spring part |
| | Camera head connection pins | Replace the camera head part |
| DVR can not boot | No Power | Recharge |
| | Display power connection is faulty or loose | Check the display power connection, reconnect if necessary |
| | Charging circuit fault | Replace PCB |
| | The switch circuit is faulty | Replace PCB |
| | Core board seat contact is poor/damaged | Check the contact seat/replace the core board |
| Can not input characters | The wireless keyboard is not powered | Correctly install the 2 AAA batteries and switch the power button to ON |
| | The wireless keyboard has low battery | Replace the batteries |
| | Wireless keyboard or receiver fault | Check the keyboard and receiver on PC |
| | The keyboard cannot enter letters or numbers | Restart the system |
| Meter counter is not accurate | Knurled wheel slip | Fit push cable into the guide slot and hook |
| | Not set to zero | Press reset button to set zero |
| | Pull out the push cable before power on the system | Power on the system before pulling out the push cable from the cable reel |
| | The setting of distance counter is changed | Reset the perimeter value: QY6566:9700(mm)  QY6688:11200(mm) |
| Can not play some AVI videos | These AVI videos are not recorded by the system | Play videos on another device supported like PC or smart TV. This system can only replay videos created from the record function. |
| | Wrong SD card/USB storage device | Turn off and replace the storage device |
| | The storage device capacity is not displayed | The slot contact problem, need to repair or replace a new one SD card/USB flash drive is damaged, need to repair or replace a new one |
| | Does not read the SD card/USB flash drive information | Format the SD card/USB flash drive in the system |

## MAINTENANCE TIPS

1. If you haven't used this system for a long time, please charge it every 6 months to ensure the battery is in normal working status.

2. To avoid unclear images, be sure to clean the inspection system lens before taking pictures or recording videos. Use a lens brush or soft cloth to clean the lens.

3. Before initial use of a memory device, it is recommended to use the system to format first so as to make it more conducive to the system.

4. Do not force the misplaced SD card/USB storage device into the SD card/USB slot, and do not force to pull out the SD card from the slot directly.

5. When the machine is not in use, please place it in a dry, dust-free, temperature-appropriate environment, away from flammable objects and chemicals.

## WARRANTY INFORMATION

We warrant its instruments and accessories against defects in material or workmanship for one year from the date of purchase. We will replace or repair the defective unit, at its option, subject to verification of the defect.

The warranty becomes void if any physical damage is present or if the system is disassembled by the user. Warranty is void if damage or system failure occurred due to outside factors such as collision, fire, flood, dirt, sewage, earthquake, and other force majeure events as well as incorrect usage of electricity or use of non-original accessories. It is the sole responsibility of the user if problems (such as data loss and system failure) occur due to non-factory installed software, parts, and/or non-original accessories.

This warranty does not apply to defects resulting from abuse, neglect, accident, unauthorized repair, alteration, or unreasonable use of the product.

Any implied warranties arising from the sale of a product, including but not limited to implied warranties of merchantability and fitness for a particular purpose, are limited to the above. We shall not be liable for loss of use of the product or other incidental or consequential damages, expenses, or economic loss, or for any claim of such damage, expenses, or economic loss.

State laws vary. The above limitations or exclusions may not apply to you.

Products and accessories purchased from our authorized agents are also entitled to one-year free warranty service if the damage is not caused by human factors and is verified by the agent and does not meet the above conditions. For maintenance matters you can directly contact the agent.

## RETURN FOR REPAIR POLICY

Every effort has been made to provide you with a reliable product of superior quality. However, in the event your instrument or part of the instrument requires repair, please contact our Sales to obtain an Return Goods Authorization. Not all units are returnable. A modified unit cannot be returned under any circumstances. We reserve the right to final judgment on all product returns.

*All the graphics and specifications included in this usermanual are subject to minor change without prior notice.*

# HIGH DEFINITION COMPACT DRAIN INSPECTION CAMERAS

## RAZORBACKDRAINS.AU



Thank you for purchasing our products. If you have any questions, please don't hesitate to contact us.