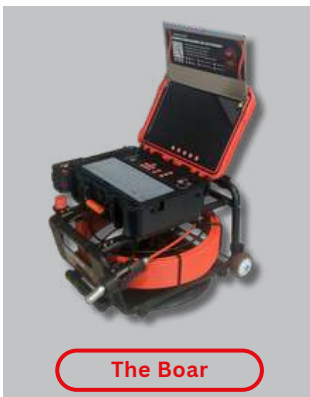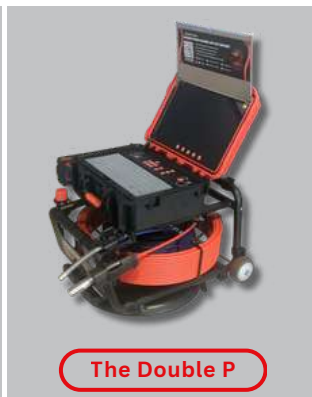# RAZORBACK DRAIN CAMERA

The Boar

The Double P

The Monster

The Beast

Razorback Plumbing Equipment

USER MANUAL
Version 1.3

NOTE: All accessories are under the keyboard!

Please read this user manual carefully before using and keep it for future reference. Failure to understand operation procedures may result in product damage or/and physical injury.

CONTENTS

FCC/CE Statements: This device complies with standard FCC 47 CFR Part 15 Subpart B by measurement procedure ANSI C63.4:2014+A 1:2017 and the council EMC 2014/30/EU by testing standard EN IEC 61326-1:2021 and EN IEC 61326-2-2:2021. It passed the subject the tests by the authority concerned and is authorized to bead the CE mark.

GENERAL SAFETY INFORMATION

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 personal injury.

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, this will increase 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.

• 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.

•When using the device, please place it on a flat surface to prevent the monitor from closing suddenly, which may cause the edge of sunshield to get harm to the human body; Or it may cause the screen to collide with the USB drive, causing damage to both.

WELCOME

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

This pipe inspection camera system is designed as a HD real-time inspection camera and to unveil the internal objects and/or structures with the illumination of the highlight LEDs, it is specially designed for pipeline, sewer, drain, duct, chimney, plumbing, building, 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 32mm-400mm (1.2"-16").

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

1.2''-2.5''/32-65mm (for 12.8mm camera with 4.8mm push rod)

2''-5''/50-125mm (for 21mm camera with 5.3mm push rod)

2''-5''/50-125mm (for 21mm camera with 6.8mm push rod).

3''-8''/80-200mm (for 29mm camera with 6.8mm push rod)

3''-8''/80-200mm (for 29mm camera with 7.2mm push rod)

4''-16''/100-400mm (for 39mm camera with 7.2mm push rod)

4''-16''/100-400mm (for 39mm camera with 9mm 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 7.2/9/11mm cable) are available.

➤ Camera head with sapphire glass lens cover and 304 stainless steel housing allows the camera to withstand 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 7.5 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 10/20/30/40/50/80/90/100/110/120/130m and diameter φ4.8/5.3/6.8/7.2/9/11mm for options.

➤ Camera head optional functions:　○ Optional　◉ Standard　　/ None

Configuration / Camera heads	512Hz Transmitter	Self-leveling	512Hz and Self-lveling
12.8mm	○	/	/
21mm	○	○	○
29mm Standard	○	○	○
29mm Customized	○	○	○
39mm Standard	○	◉	○
39mm Customized	○	◉	○

1. HD 1080P for all camera heads.
2. All camera heads & spring parts are detachable, replaceable, and field serviceable, except the 12.8mm head.
3. 21/29mm camera head is compatible with each other for the same spring part and they can swap in the field.
4. a) 2 versions of 29mm camera head: Standard: 150 degrees wide viewing angle; Customized: Double lights,120 degrees wide viewing angle (Built-in 12LEDs-Low Beam & 2LEDs-High Beam.)
　　b) 2 versions of 39mm camera head: Standard: 150 degrees wide viewing angle; Customized: Double lights,150 degrees viewing angle (Built-in 12LEDs-Low Beam & 2 LEDs-High Beam.)
Info about 2 version camera heads:
　a) The standard with 120/150-degrees wider angle inspects wider pipes inside, making the field of view closer to the pipe wall.
　b) The high beam with a 2M inspection distance can be inspected deeper and faster, easier to find out the pipe situation and protect the camera head.

   c) The low beam with a close inspection can observe closed details effortlessly.

   d) One button to switch high & low beam.

5. 304 stainless steel, sapphire lens.

6. Flexible spring part, easy to turn 90 degrees bends.

Notice:

The camera head is classified as a consumable and fragile item. Any cracks and damages caused by collision, impact, falling, etc. are not supported by repair services.

➤ Control Box Version Introduction

Box Version / Configuration	Ver.1.0	Ver.1.1	Ver.2.0	Ver.2.1
Design				
Old System	√	——	√	——
New System	——	√	——	√
External Battery Pack	——	——	√	√
Pan & Tilt	——	——	——	——
Model Standard	QY6566 QY6688		QY6688U, QY6688D, QY6689, QY6689D, QY6698	

New System

New Operating System & New UI Design

New Appearance Interface

Camera Ports and Battery Pack Slot

Notice:

Since the old system has now been replaced by the new system, so control box 1.0 and control box 2.0 will stop production. As we still have customers who are using the old system, to distinguish, we call them control box 1.0 and control box 2.0. If there is after-sales services are needed, we can distinguish them quickly and provide the correct repair parts if necessary.

STRUCTURE INTRODUCTION

Single cable reel structure

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
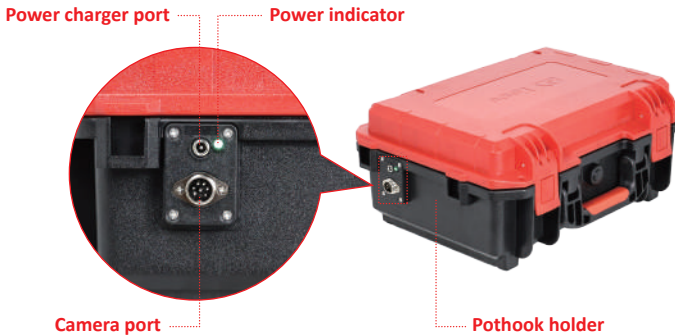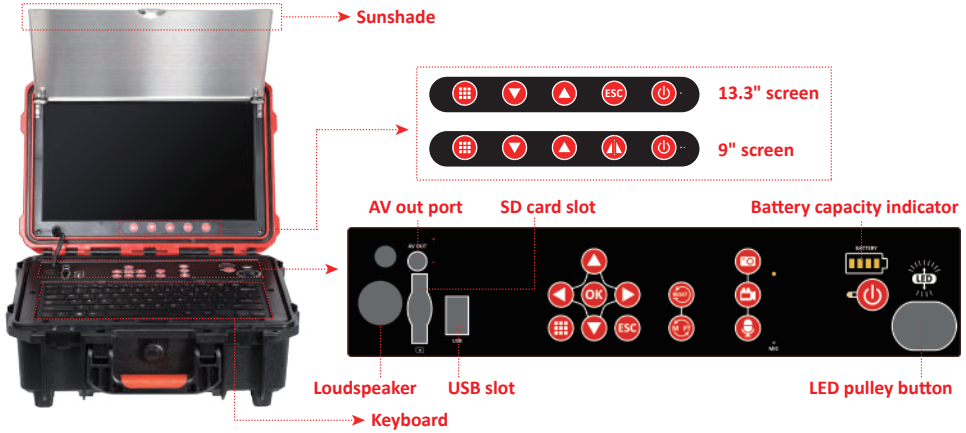
Control Box 1.0/1.1 ports and others:

Power charger port

Power indicator

Camera port

Pothook holder

Sunshade

13.3" screen

9" screen

AV out port   **SD card slot**   **Battery capacity indicator**

Loudspeaker   **USB slot**   **LED pulley button**

Keyboard

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

🎙 Audio button: Turn on/off the audio input

📷 Camera button: Take picture/Take picture during the video recording

OK Ok button: Confirm the selection

🎥 Video button: Start vide recording/Stop video recording

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

Single reel metal frame and its accessories:
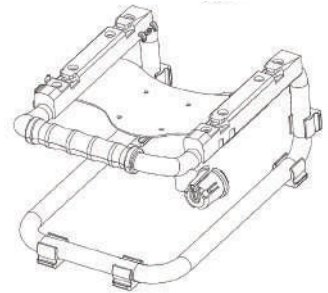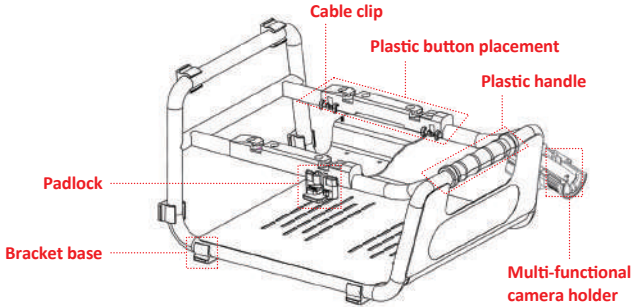
Camera holder/stopper: To hold the camera head/ stop the cable

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

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 ❶.

Install camera head

Pull out the fiberglass cable with connector through the hook ❷ and screw in camera head ❸, then put the camera head in the camera holder ❹. Plug one end of the connection cable to the camera port ❺ in the reel and fasten the screw.
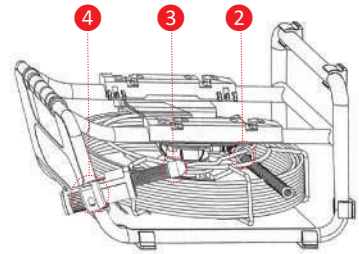
Install control box

Before install control box, settle the connection cable to the cable clip ❻ on the plastic button placement to make it tidy. Place the control box on the plastic button placement ❼ 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 padlock ❽. Plug the other end of the connection cable to the camera port ❾ in the control box and fasten the screw. Take out the pothooks and put into the pothook holder ❿, wind the connection cable around the pothooks to make it tidy.
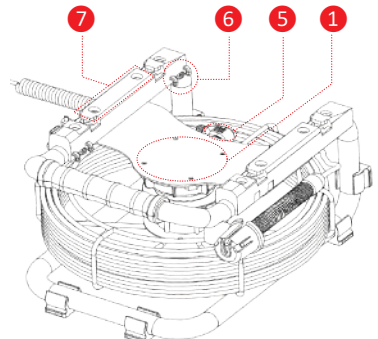
Uninstall control box:

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**
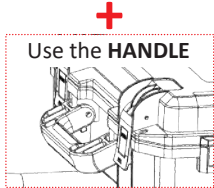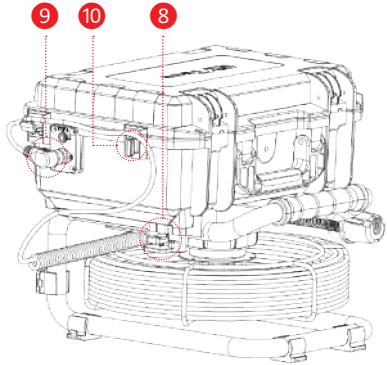
Uninstall ◀ Pull

Install ▶ Push
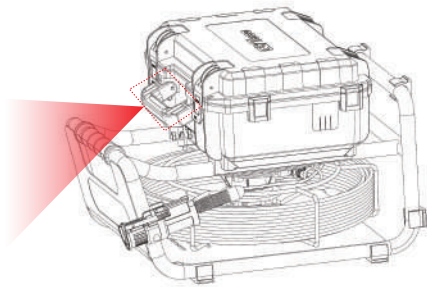
NEW STRUCTURE INSTALLATION

Dual cable reel structure:

① Control box 2.1   ③ Camera head

② Dual cable reel with meter counter

④ Brake system   ⑤ Battery pack

⑥ Level telescopic handle

⑦ Double spinner wheels

12.8mm camera skid

21mm camera skids   29mm camera skids

Control Box 2.0/2.1 ports and others:

Battery indicator

Power charger port

Switch channel button   Pothook holder

Channel 1 indicator

Channel 1 camera port

Channel 2 indicator

Channel 2 camera port

External battery socket

Notice:

1. The external battery indicator will turn green when the battery pack is fully installed.

2. One button to switch 2 different camera channels(CH-1 or CH-2), the channel indicator will turn green correspondingly.

Dual reel metal frame and its accessories:

Cable clip   Plastisc button placement

Extra camera holder -- Camera bracket clamp

Padlock

Multi-functional camera holder

Spinner wheels

Brake system
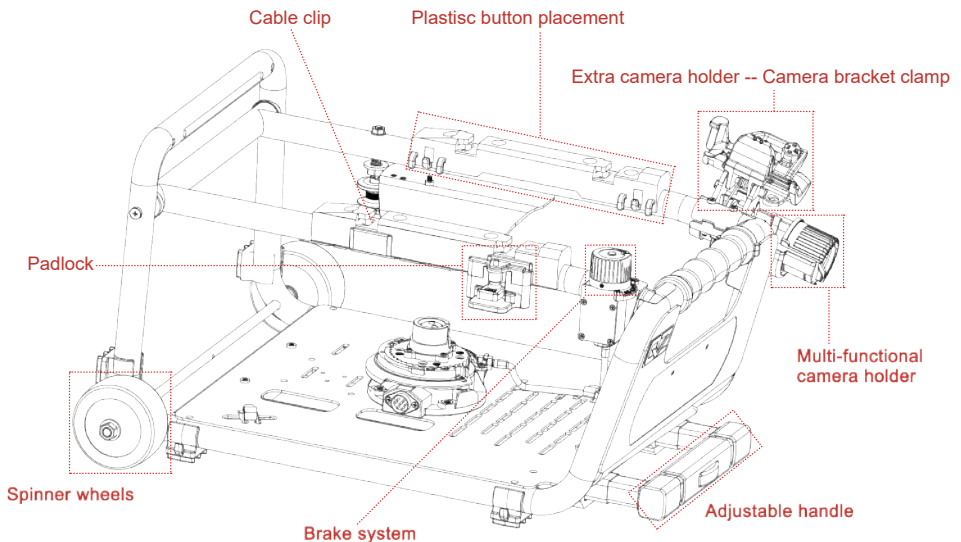
Adjustable handle

Spinner wheels and adjustable handle: To better movement and operation of the machine.

Adjustable brake system: To control the pull-out speed of the outer cable reel.

Camera bracket clamp: To fast control cable and hold the camera head.

Multi-functional camera holder: To hold and protect the camera head or stop the cable reel.

Install QY6688D/QY6688U & QY6689/QY6689D spinner wheels：

Nut
Gasket
Wheel axle
Gasket
Wheel rod
The smooth side of the gasket faces outward
Wheel

Please the accessories in order according to the diagram before assembling.

Hex wrench

Open end wrench

Put the wheel axle into the wheel center
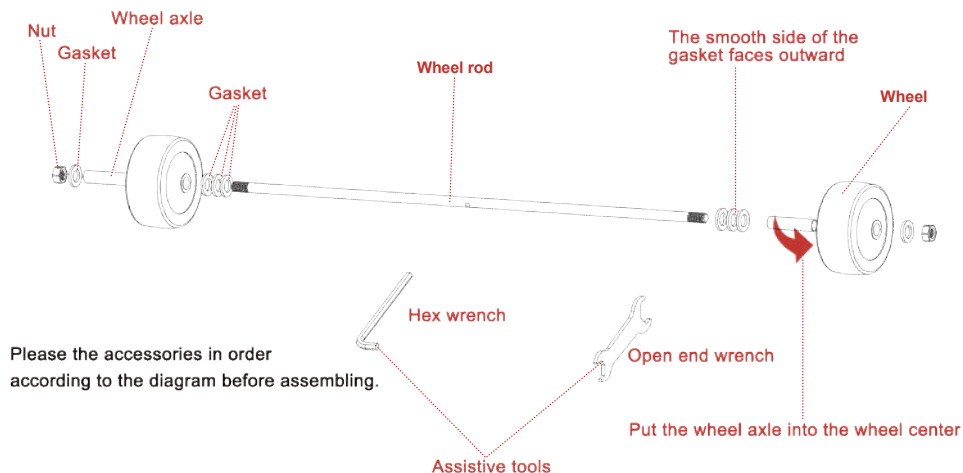
Assistive tools

Accessories: 1 X Wheel rod, 2 X Wheel axles, 2 X Wheels, 8 X Gaskets, 2 X Nuts
Assistive tools: 1 X Hex wrench(3mm), 1 X Open end wrench(13mm)

Install the spinner wheels into the metal frame of QY6688D/QY6688U & QY6689/QY6689D

1.Pass through the wheel rod into the metal frame and balance the same length on both ends.

2.Put 3 gaskets(smooth side facing outward) into the left/right wheel rod, put the wheel axle into the wheel center to make a whole unit, then put this unit into the wheel rod.

Put 1 gaskets (smooth side facing outward) into the left/right wheel rod after the wheel, put the hex wrench into the center hole to fix the wheel rod by one hand(to make sure the wheel rod won't roll when screwing) , then fasten the nut with the open end wrench by another hand.

To fix the wheel rod

To fasten the nut
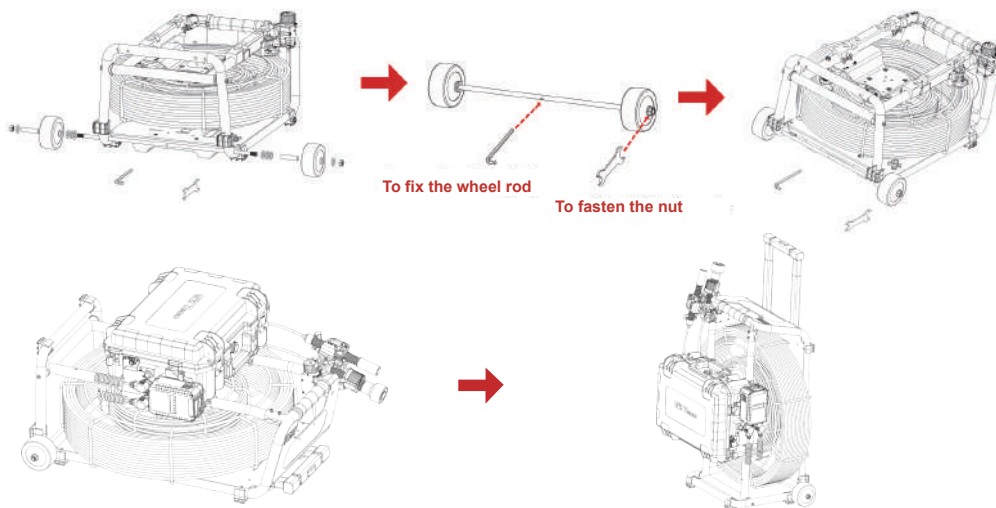
QY6698 introduction:

① Control box 2.0
② Battery pack
③ Brake system
④ Cable reel
⑤ Level telescopic handle
⑥ Meter counter
⑦ Camera head
⑧ Spinner wheels
⑨ 39mm skids

Padlock

Wheel guider

Metal frame

Bracket base
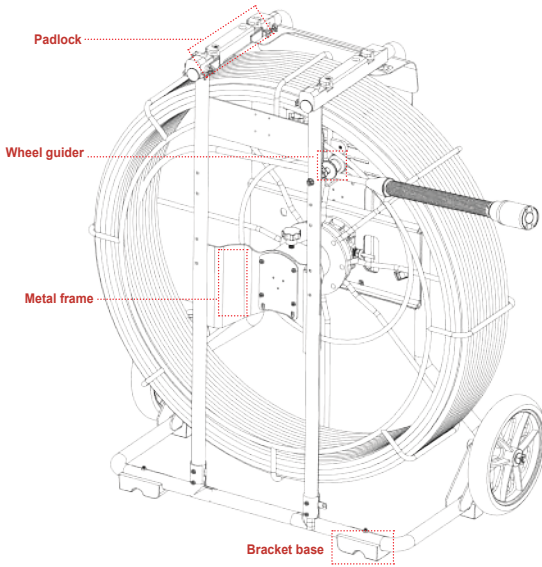
90mm skids

170mm skids
(Optioanl)

140-240mm skids

⑨

Adjustable Handle

2-step telescoping handle

50CM

25CM
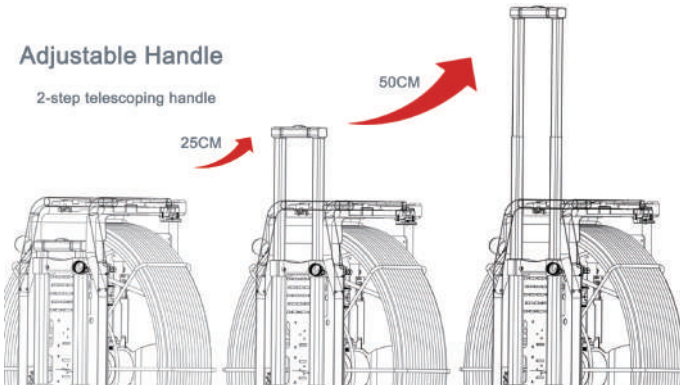
Install QY6698 spinner wheels:

QY6698 Spinner Wheels Assembly Diagram

The smooth side of the
gasket faces outwards

Arrange the parts in order
and assemble them one by one.
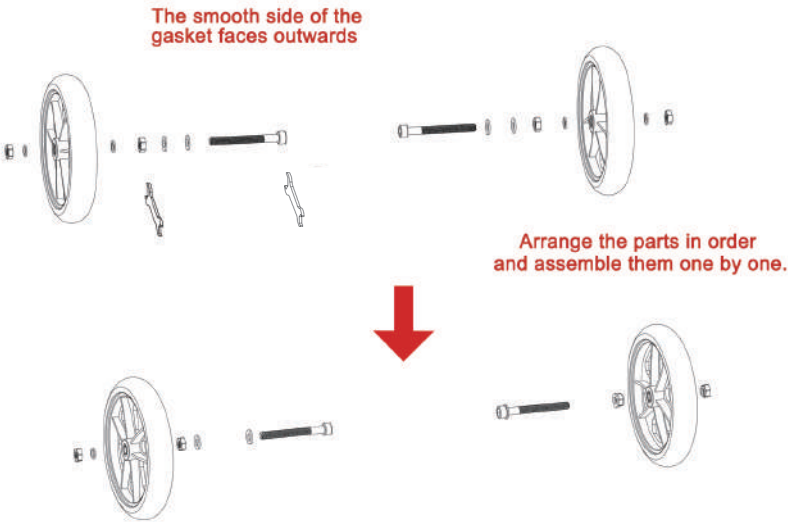
Accessories: 8 X Gaskets, 2 X Wheels, 2 X Long screws, 4 X Nuts
Tools: 2 X Open end wrench(17mm)

Install the spinner wheels into the metal frame of QY6698
Prepare the parts in order as the diagram.
Put the long screw into the metal frame, use one open end wrench to fix the long screw
and the other wrench to fasten the nut which is on the other side of the wheel.
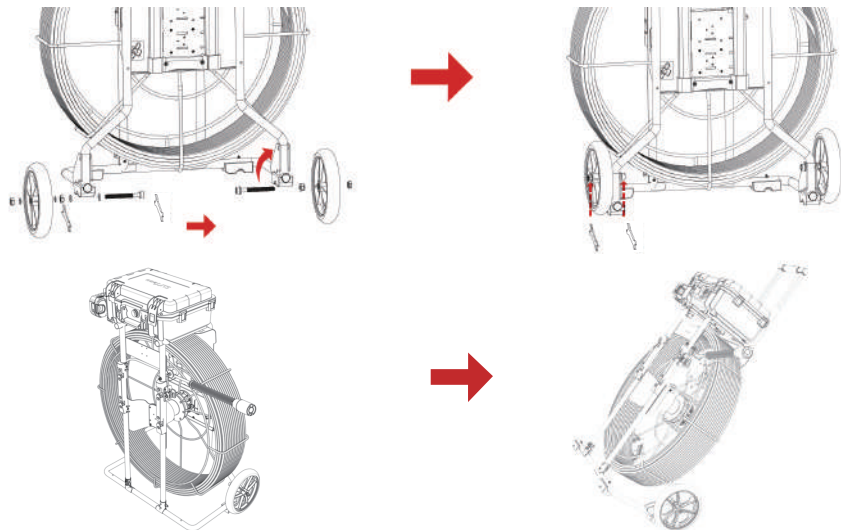
Install and uninstall battery pack:

1 Take out the battery pack and press the buckle button.
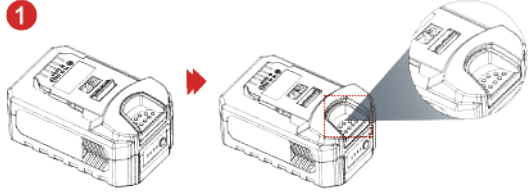
2 Insert the battery pack into the extended battery pack port.
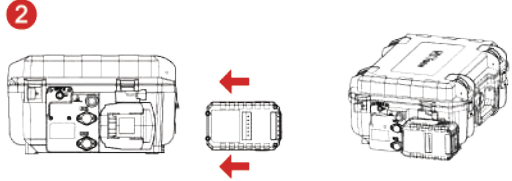
3 When uninstall the battery pack, press the battery pack buckle button and pull it out horizontally.
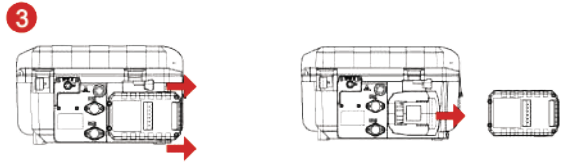
Install camera skids:

Camera skids are designed to support the camera head and keep it in the middle of the pipe. Choose skid properly per application requirement.

25mm skid
For 1.5''- 2'' pipes

46mm skid
For 2.5''-3.5'' pipes

78mm skid
For 4''- 8'' pipes

65mm toolless skid
For 2.5''-3.5'' pipes

105mm tolless skid
For 4''- 8'' pipes

Sleeve the camera head with 25mm skid, then fasten screw by screwdriver.

Sleeve the camera head with 46/78mm skid, then fasten screws and nuts by screwdriver.

Sleeve the camera head with 65/105mm skid, then secure with hand pressure.

90mm skid
for 5"-10"pipes

170mm skid
for 5.5''-12''pipes

120-235mm skid
for 5"-15"pipes
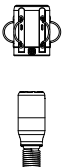
Sleeve the camera head with 90mm skid, then fasten screw by screwdriver.
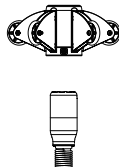
Sleeve the camera head with 170mm skid, then fasten screw by screwdriver.
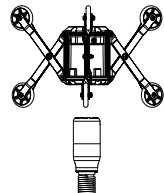
Sleeve the camera head with 140-240mm skid, then fasten screw by screwdriver.

Adjustable brake system introduction:
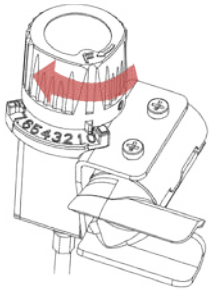
QY6688U/QY6688D&QY6689/QY6689D Brake System

a) 7 gears to adjust, the larger the number, the greater the outward resistance of the push rod.

b) The brake system controls the speed and degree of the tightness of the outer cable reel. To stop the cable, the brake gear should be adjusted to the 7th gear.

c) When the equipment is not in use or the work is finished, the brake gear should be adjusted to the 1st gear for protecting the brake system.
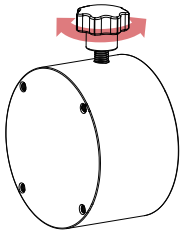
QY6698 Brake System

a) Turn the knob clockwise can increase the resistance force of the push rod outward, turn the knob anti-clockwise can decrease the resistance force of the push rod outward.

b) The brake system controls the speed and degree of the tightness of the push rod. To stop the push rod, the knob should be clockwise adjusted to the tightest setting.

SUPER CHARGER AND BATTERY PACK

Parameter:

4 Level battery indication
9 Hours battery life
Voltage:18.5~20.5V (Max)
Capacity: 5Ah
Energy: 92.5W/h

Battery charging state indication
Frequency:50~60Hz
Output power: 84W
Output voltage: DC-20v
Output current: 4A

Charger indicator status illustration:

Red light always on: Charging indication.

Green light always on: Fully charged indication.

Red light flashing: Battery temperature is too high to charging.

Green light flashing: Charger is plugged in, no battery status.

Alternating red and green light flashing: Battery failure (The battery is damaged or a section is missing).

Battery pack operation indication:

4 level battery capacity indicator.
a) Long press the battery pack button to light up the battery capacity indicator.
b) 4 indicators on means the battery is full, 3 indicators on means 75% left, 2 indicators on means 50% left, 1 indicator on means 25% left.
c) Please charge the battery pack when it is only 1 indicator left, in case the power off affects the work.
d) When the battery pack is installed into Control Control Box 2.0/2.1, the system will preferentially use the battery pack power.
e) When the internal battery of Control Control Box 2.0/2.1 is about to out of power, install a battery pack can make

Charging safety consideration

1. Please recharge only with the charger specified by the manufacturer. A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack. Damage caused by misuse is not covered by warranty.
2. Please charge the battery pack according to the instructions on the charger label.
3. Never charge or use the battery in explosive environments, such as where flammable liquids, gases, or dust are present. Inserting or removing the battery from the charger may ignite the dust or fumes.
4. When charging, please place it in a flat and open place to avoid objects covering the heat dissipation holes, which may cause the charger to heat up, affect charging or cause safety accidents.
5. Please charge the battery pack when the air temperature is between-20°C~55°C(-4°F~131°F) to help the battery have a longer life and optimal performance.
6. Do not charge the battery pack when the air temperature is below -20°C(-4°F) or above 55°C(131°F). This is to prevent serious damage to the battery pack.
7. The charger and battery pack may become warm while charging. This is normal and does not indicate a problem. NOTE: Avoid placing the charger or battery pack in a warm environment, such as a metal shed or uninsulated trailer.
8. When the charger temperature is higher than 55℃, the charger will turn on the high temperature power-off protection. The charger will work normally only when the temperature returns to normal.
9. Do not allow the device to come into contact with or be immersed in water or any other liquid while charging. Otherwise, it may cause electric shock or a short circuit in the device, resulting in a fire.
10. After charging is completed, please be sure to disconnect the charger from the power source.

Notice:
If the battery pack does not charge properly:
1. Move the charger and battery pack to an area where the surrounding temperature is approximately -20°C~55°C(-4°F~131°F);
2. Check if the outlet is working properly by plugging in a lamp or other electrical appliance;
3. Once the outlet is working properly, plug in the charging station to check if the indicator light is on and it is working properly.
4. Check if the battery pack is working properly when the charging station is working;
5. If the charging problem persists, contact the QYTeco Team.
6. The battery pack should be charged when it is no longer generate enough power for completed job.
7. Do not us it under low power condition to avoid failure to charge the machine.

⚠️ WARNINGS！

1. Chemical hazards
a) Under abusive conditions, the battery may eject liquid; Avoid contact, the liquid ejected from the

battery may cause irritation or burns. In case of accidental contact, rinse with water. If the fluid comes into contact with your eyes, seek additional medical help.

b) Do not burn the battery pack even if it is severely damaged or completely worn out. A battery pack may explode in a fire. When a lithium-ion battery pack burns, it produces toxic fumes and substances.

2. Fire hazard

a) Do not store or carry batteries where metal objects may touch exposed battery terminals. For example, do not put batteries in aprons, pockets, toolboxes, product kit cases, drawers, etc. with loose nails, screws, keys, etc. in case the battery terminal accidentally touches conductive materials such as keys, coins, hand tools, etc.

b) Do not place any object on top of the charger or place it in a confined space, as this may block the ventilation slot and cause internal overheating. Place it in an open area away from any heat source.

Notice:

In some cases, when the charger is plugged into the power supply, the charger may be short-circuited due to foreign objects. Foreign matter of conductive nature (such as but not limited to wear debris, metal debris, steel wool, aluminum foil or any metal particle accumulation) should be kept away from the charger chamber. When there is no battery pack in the chamber, be sure to disconnect the power from the power supply.

3. Risk of electrocution

a) Do not operate the charger with damaged wires or plugs.

b) Do not disassemble the charger when repair is needed, contact QYTeco Team for instruction. Incorrect reassembly may lead to the risk of electrocution or fire.

c) When disconnecting the charger, disconnect the plug, not the wire. This will reduce the risk of damaging electrical plugs and wires.

d) Do not allow any liquid inside the charger. It may cause electrocution.

4. Burn risk

a) To reduce the risk of injury, only charge the QYTeco rechargeable battery. Other types of batteries may burst, causing personal injury and damage.

5. Explosion hazard

a) Do not expose chargers and battery packs to rain or snow, and do not store or use chargers and batteries in places where temperatures may reach or exceed 131°F (55˚C), such as outdoor huts or metal buildings in summer.

Storage suggestions:

1. The best storage location is a cool, dry place away from direct sunlight and environmental factors such as excessive heat, cold, or humidity.

2. Long-term storage will not damage the battery pack or charger. Under appropriate conditions, they can be stored for 5 years or more.

3. If the device is not used frequently, it is best to remove the battery pack from the machine after use.

4. When the battery pack and charger are not in use, keep them away from other metal objects like paper clips, coins, keys, nails, screws, or other small metal objects that can make a connection from one terminal to another. Shorting the battery terminals together may cause burns or a fire.

5. Under certain conditions, with the charger plugged in to the power supply, the charger can be shorted by foreign material. Foreign materials of a conductive nature such as, but not limited to, grinding dust, metal chips, steel wool, aluminum foil, or any buildup of metallic particles should be kept away from charger cavities. Always unplug the charger from the power supply when there is no battery pack in the cavity. Unplug charger before attempting to clean.

PACKING LIST

Notice:

1. For reference purposes, the packing list only shows the packaging components of conventional models.
2. Special requirements or customized products are not included, so not can be as a reference. Please consult the QYTeco sales team to address specific needs or tailored solutions.
3. If the product and accessories do not match the packing list after unpacking, please promptly contact the QYTeco team to report and resolve the issue.
4. QY6688U&QY6689 are single-camera systems. Packing list display all heads and skids types. QYTeco Team will match the accessories according to the camera head selected by the user.

QY6566-12.8mm	QY6566-21mm	QY6688-12.8mm	QY6688-21mm

1.Control box with DVR & wireless keyboard X 1   2.Cable reel with camera head X 1   3.Metal frame X 1   4.Connection cable X 1

Screw X 2 Screwdriver X 1 Waterproof ring for 12.8mm camera X 2 25mm skid for X1	46mm skid for 21mm camera X 1 78mm skid for 21mm camera X 1 Screw and nut X 6 Waterproof ring for 21mm camera X 6 Screwdriver X 1	Screw X 2 Screwdriver X 1 Waterproof ring for 12.8mm camera X 2 25mm skid for X1	46mm skid for 21mm camera X 1 78mm skid for 21mm camera X 1 Screw and nut X 6 Waterproof ring for 21mm camera X 6 Screwdriver X 1

QY6698-39mm	1.Control box with DVR & wireless keyboard X 1 2.Cable reel with camera head X 1 3.Metal frame X 1 4.Connection cable X 1 5.Battery pack X 1	90mm skids 170mm skids (Optioanl) 140-240mm skids	Screw and nut X 6 Waterproof ring for 21mm camera X 6 Screwdriver X 1

Super charger X1 (only for extra battery machine)	DC12V Power supply X1	Car charger X 1	AV cable X 1	Pothook X 2	User Manual X 1

QY6688-29mm	QY6688D&QY6689D-21/12.8mm	QY6689D-29/21mm	QY6688D&QY6689D-29/12.8mm

1.Control box with DVR & wireless keyboard X 1   2.Cable reel with camera head X 1~2   3.Metal frame X 1   4.Connection cable X 1

29mm	12.8mm 21mm	21mm 29mm	12.8mm 29mm

105mm skid for 29mm camera X 1	25mm skid for 12.8mm camera X 1	105mm skid for 29mm camera X 1	25mm skid for 12.8mm camera X 1
65mm skid for 29mm camera X 1	46mm skid for 21mm camera X 1	65mm skid for 29mm camera X 1	105mm skid for 29mm camera X 1
Waterproof ring for 29mm camera X 6	78mm skid for 21mm camera X 1	46mm skid for 21mm camera X 1	46mm skid for 29mm camera X 1
	Screw and nut X 6	78mm skid for 21mm camera X 1	Screw X 2 Screwdriver X 1
	Waterproof ring for camera X 8	Screw and nut X 12	Screw and nut X 6
	Screw X 2 Screwdriver X 1	Waterproof ring for camera head X 12	Waterproof ring for camera head X 8
	Screwdriver X 1	Screwdriver X 1	Screwdriver X 1

QY6688U	1.Control box with DVR & wireless keyboard X 1	21mm head	46mm skid for 21mm camera X 1
	2.Cable reel with camera head X 1	29mm head	78mm skid for 21mm camera X 1
	3.Metal frame X 1	39mm head	105mm skid for 29mm camera X 1
QY6689	4.Connection cable X 1	Waterproof ring X 6	65mm skid for 29mm camera X 1
	5.Battery pack X 1	Screwdriver X 1	90mm skid for 39mm camera X 1
			170mm skid for 39mm camera X 1 (Optioanl)
		Screw and nut X 6	140-240mm skid for 39mm camera X 1

Super charger X1 (only for extra battery model)	DC12V Power supply X1	Car charger X 1	AV cable X 1	Pothook X 2	User Manual X 1

SPECIFICATION

	Item	39mm camera(Standard)	39mm camera(Customized)	29mm camera(Standard)	29mm camera(Customized)	21mm camera	12.8mm camera
General	Operating Temperature	-10~50°C/14~+122°F					
	Operating Humidity	30%RH~90%RH					
	Storage Temperature	-20~60°C/4~+140°F					
	Power adapter	Input:110V~240VAC, Output:12VDC 2A					
	Power Supply	DC 12V					
	Current Consume	750mA Max					
	Batter y Capacity	9000mAh Li-ion Battery (66.6W)					
	A Single Charge Work Time	7 Hours (9inch DVR); 5 Hour(13.3inch DVR)					
	Charge Time	>8 Hours					
	Waterproof	IP66 (Whole machine is waterproof only when the control box is closed and camera fully installed)					
	Carton Size & Weight	QY6698: 850*380*940mm, 29~35kg/carton & 440*330*235 mm, 3.5kg/carton QY6689/ QY6689U: 735*605*460mm, 22~32kg/carton QY6688U/QY6688D: 575*480*440mm, 13~25kg/carton (slight different from different length of cable)					
Camera	Sensor	1/ 2.9" CMOS					
	Resolution	1080P (1920*1080)					
	View Angle	150°			120°		100°
	Focus Distance	10cm	15cm (approx)	10cm	15cm (approx)		3cm (approx)
	Depth Of Field	150cm(approx)	100cm(approx)	150cm(approx)	100cm(approx)		100cm(approx)
	Camera Head Size	Φ39*80mm(Main body)	Φ39*80mm(Main body)	Φ29*50mm(Main body)	Φ29*50mm(Main body)	Φ21mm×45mm (Main body)	Φ12.8mm×12mm (Main body)
	Spring Length	256mm(approx)	256mm(approx)	221mm(approx)	221mm(approx)	134mm(approx)	128mm(approx)
	Front Lens	Sapphire					
	Shell Material	304#Stainless Steel					
	Lighting	Built-in 18×LEDs (White)	Built-in 12×LEDs (Low beam) &2×LEDs (High beam)	Built-in 15×LEDs (White)	Built-in 12×LEDs (Low beam) &2×LEDs (High beam)	Built-in 12×LEDs (White)	Built-in 6×LEDs (White)
	LED Driver	Built-in Dimmer(Pulley button)					
	Water Pressure (Bar Rating)	3Bars (When camera is fixed on cable)					
	Waterproof Level	IP68					
	Self-leveling Function	Standard	Standard		Optional		None
	512hz Sonde	Optional					
DVR	Screen	IPS 16:9 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					
	Photo Format	JPEG					
	Video Format	MP4.					
	Video/Photo Resolution	1920×1080					
	Audio Recording	Local Sound					
	Video Out Put	CVBS					
	External Memory	Support MAX. 256GB SD Card or 1TB USB flash drive					
	Play Back	Photo and Video with Audio Video, Photo and Audio					
	Display Language	English, 简体中文,繁体中文, Français, Deutsch, Nederlands, Español, Português Русский, 한국어, 日本語, Italiano,ﺔﯿﺑﺮﻌﻟا, Dansk, Svenska, Hebreiska					
	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 Reel	Cable Diameter	Φ11 / 9 / 7.2mm		Φ6.8mm / 7.2mm		Φ5.3mm / 6.8mm	Φ4.8mm / 5.3mm
	Cable Color	Red					Φ4.8mm blue / 5.3mm red
	Cable Length	QY6698: 50M/60M/70M/80M/90M/100M/110M/120M/130M (Cable diameter 9 / 11mm) QY6689: 50M/60M/70M/80M (Cable diameter 7.2mm) QY6689D: Inner reel 20/30/40M (Cable diameter 4.8mm) or 20/30M (Cable diameter 5.3mm) Outer reel 50M/60M/70M/80M (Cable diameter 7.2mm) QY6688U: 30M/40M/50M (Cable diameter 5.3mm or 6.8mm) QY6688D: Inner reel 30/40M (Cable diameter 4.8mm) or 20/30M (Cable diameter 5.3mm) Outer reel 30M/40M/50M (Cable diameter 5.3mm or 6.8mm)					
	Meter/Footage Counter	Standard (Dual reel sewer camera standard with 2pcs of Meter/Footage Counters, each reel has one.)					
	Brake System	QY6688U/QY6689/QY6698 single reel system series are standard with brake system Dual reel camera system series are only the outer reel with brake system QY6566 and QY6688 series are without brake system					
Control Box 2.0	Extended Capacity Battery Adaptor	Support QYBP59 Battery Pack only					
	Size	440*330*235 mm					
	Box color	Black+Red					
Battery Pack & Super Charger	Battery Pack(QYBP59)	4 level battery capacity indication Full charge in 2hours, work for 9hours Voltage: DC 18.5~20.5V (MAX.) Capacity: 5Ah Energy: 92.5W/h					
	Super Charger(QYBC59)	Input voltage: AC110V~240V Frequency: 50~60Hz Output power: 84W Output voltage: DC 21V Output current: 4A					

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 7hours.

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 power on the device.

2. The New System supports FAT32 format USB storage device/SD card, while the Old System supports the exFAT format. If a USB storage device/SD card is inserted into the Old System, it will be automatically converted to exFAT format, once you put this USB storage device/SD card to the New System, it will cause the New System can't read this USB storage device/SD card. In this case, you need to back up the data and format the USB storage device/SD card to FAT32 format, then you can use it in the NEW System.

3. 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 default to choose SD card.

4. This system can only read and play the MP4 videos/JPEG pictures taken by the system or the same format of the MP4 video/picture as taken by the system.

5. 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, the USB slot and the screen.

Install wireless keyboard

Take out the wireless keyboard and flip to the back, remove the battery cover, install correctly 2XAAA batteries, 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 NOT CONTINUE TO PUSH WHEN YOUR HANDS CATCH THE CABLE ON THE 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 PREVENT THE CABLE REEL POP OUT AUTOMATICALLY TO GET HURT YOURSELF AND THE PEOPLE/OBJECTS AROUND.

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, ect, 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 maximize picture quality when you place the camera head into the pipe.

10. The camera can go through multiple 45 and 90 degree bends, 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 stay 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 so as 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°C ~ 50°C (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 panel for 2-3 seconds, then the device will turn on and light up the LCD screen, about 5 secends popout "NO SIGNAL" for 3 seconds. The power indicator light next to the power button and on the outside of the control box will turn green, and the battery capacity indicator light will light up and display the current battery capacity. When the battery power indicator shows 1 bar remaining and flashes, it means that the battery power is low and needs to be charged as soon as possible. When the LCD screen lights up, the screen will wait for about 20 seconds and then display the black and red background logo "QYTeco" for 3 seconds, and then enter the real-time image. The lower the battery power, the longer the boot time. After entering the system, the date and time are displayed in the upper left corner, and the storage icon and capacity information (remaining usable/total memory) are displayed in 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 top center of screen. 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 pressing the **Reset button** 🔴. At this time, the forward movement will start from 0, while the backward movement will show negative meter values.

Notice:

(1) To decrease the deviation of the meter counter, turn on the system before you pull out the push cable from the cable reel.

(2) The deviation of meter counter will be increased if the total length of cable 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** 🔴 to start recording a video, a red recording icon with recording time will be shown on the lower right corner to indicate the recording status, press again to finish the recording. During recording, press the **Camera button** 🔴 to capture a picture; press the **Audio button** 🔴 to turn on the audio recording, press the **Up button/Down button** 🔺 🔻 to zoom in(2X, 3X, 4, 5X) and zoom out.

6. Wireless keyboard operating

The receiver is pre-installed on the control board and paired with the wireless keyboard. Press the Esc key once to unlock the keyboard. A white cursor " I " will blink on the screen, indicating readiness

for text input.

Notice：

(1) Not all keys on the keyboard are functional in this system, but this does not affect your ability to input English characters (including letters, numbers, and symbols).

(2) Special key function：

`F5` : Enable/Disable typing;

`Esc` : Hide/Display text;

`F7` : Clear all on-screen text;

`Backspace` : Delete characters one by one;　`Enter` : New line (moves cursor to next line start);

`Caps Lock` **: Caps Lock:** Toggles uppercase letters (indicator light shows status);

`Num Lock` : Activates number pad;

`Home` `PgUp` `PgDn` `End` : Moves cursor between characters.

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

(4) 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.

(5) When you change a new keyboard, please change the receiver together.

(6) Each line supports up to 40 characters, with a maximum of 12 lines in total.

7. Playback videos/pictures

Press the **Menu button** on the control board to enter MAIN MENU, then select　and press **OK button** to enter the **9-Grid video preview interface**. In this interface, press the **Left /Right button** to select the target file, press **Up/Down button** to page down and page up . Once select the target file, press **OK button** to play video, press again to pause 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(minimum mute) 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　and enter the **9-Grid picture preview interface**.
Press the **Left /Right button** to select the target file; press the **Up/Down button** page up and down; press **OK button** to display.

8. Deletion operating

To delete the video/picture, you can only delete the single file in **9-Grid video preview interface** by pressing the **Menu 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　to enter the setting interface. Follow the flow chat to setup the language,date format, date/time, video setting(video setup), perimeter(unit mm), disk setting(storage setup), restore factory settings, system information.

Notice:

The perimiter 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 changed the above elements.

LANGUAGE

简体中文　English　France　日本語　Deutsch
español　português　italiano　한국어　русский
العربية　Nederlands　svenska　dansk　ภาษาไทย

DATE FORMAT

Y/M/D　M/D/Y　D/M/Y　OFF

DATE TIME

12H　24H

DATE AND TIME SETTINGS

| Date | 2025 | 03 | 16 |
| Time | 15 | 20 | 09 |

SYSTEM SETUP

VIDEO SETTING (VIDEO SETUP)

SIGNAL SETUP — AUTO

VIDEO CLIP — 5M　10M　20M　30M

COMPRESSION FORMAT — SD　HD　UHD

VIDEO COMPRESSION FORMAT — H264　H265

RECORDING SETTINGS — Cyclic Overwrite　Stop Overwrite

PERIMETER (UNIT MM)

CH-1: 0970 — CH-2: 0000 — (QY6566/QY6688DS)
CH-1: 1120 — CH-2: 0000 — (QY6688/QY6689DS)
CH-1: 1270 — CH-2: 0770 — (QY6688U/QY6688D)
CH-1: 1500 — CH-2: 0970 — (QY6689/QY6689D)
CH-1: 2200 — CH-2: 0000 — (QY6698)

DISK SETTING (STORAGE SETUP)

FORMAT DISK — Format Successfully

RESTORE FACTORY SETTINGS

YES
No

SYSTEM INFORMATION

SYSTEM VERSION UPDATE INFORMATION

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 button** ᴱˢᶜ to exit the setting and return to last interface (13.3inch display), press **Power button** ⏻ to power on/off the display only.

For 9 inch 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 stting)

(7) ZOOM: 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., ENSPAÑOL, FRANC., DEUTSCH

(10) RESET

(11) VER: AGA-7DH

For 13.3 inch 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, ENSPAÑOL, PORTUGUÊS, 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, COLOR AUTO ADJUST, RESET

(6) MISC.

SIGNAL SOURCE: VGA, HDMI (disabled)

VOLUME: (disabled)

11. 512Hz transmitter introduction

When using a 512Hz receiver to detect the camera position, it is necessary to adjust the sensitivity of the receiver accordingly according to the signal strength of the 512Hz transmitter to prepare for the location of the transmitter. Different detectors have different adjustment values.

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

Notice:

This 512Hz transmitter suitable for any brand receivers.

12. End of work

When ending the inspection work, press the **Power button** on control board for 3 seconds to turn off the stystem 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: ①CH-1: 0970 ②CH-2: 0000 (QY6566/QY6688DS) ①CH-1: 1120 ②CH-2: 0000 (QY6688/QY6689DS) ①CH-1: 1270 ②CH-2: 0770 (QY6688U/QY6688D) ①CH-1: 1500 ②CH-2: 0970 (QY6689/QY6689D) ①CH-1: 2200 ②CH-2: 0000 (QY6698)
Can not play some MP4 videos	These MP4 videos are not recorded by the system	This system can only replay the videos recorded by this system.
	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	Back up the data and format the SD card/USB flash drive in the system

MAINTENANCE TIPS

1. If you haven't use this system for a long time, please charge it every 6 months to ensure the battery 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.

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) occurred 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 purchased from our authorized agents also receive one year of free warranty service if the damage is not caused by human factors, 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 user manual are subject to minor change without prior notice.

Razorback Plumbing Equipment

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Thank you for purchasing our products. If you have any questions, please feel free to contact us.