

User Guide

# SEWERCAM SR60-2WL WIFI DRAIN CAMERA

CCTV PIPE INSPECTION SYSTEM



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## **SEWERCAM™ WARRANTY STATEMENT**

### **LIMITED WARRANTY**

Congratulations on the purchase of your new SEWERCAM pipe inspection system. SEWERCAM camera systems are the result of extensive experience and continual development.

Product testing and checking are an essential objective in the manufacturing of the SEWERCAM camera systems. However failures cannot be excluded totally. If failure occurs due to defects in materials or workmanship, you will be covered by our generous warranty.

Please consider that even the best products can only continue to work properly with the right handling, correct operation and maintenance.

### **EXTENT OF THE LIMITED WARRANTY**

Sewerquip (AUS) warrants that your SEWERCAM™ equipment will be free from material and workmanship defects for the period of 12 months from date of delivery.

If failure occurs, which is provable due to defect in material and/or workmanship, we will remedy it during the warranty period free of charge. Sewerquip (AUS) reserves the right to repair the equipment, replace the whole unit or replace the faulty parts or to refund the then-current value of the equipment (if unable to repair or replace the unit).

### **CONDITIONS OF THE LIMITED WARRANTY**

The warranty does not cover damage due to improper treatment of the system, inadequate maintenance, alteration, repairs, normal wear and tear or external causes like lightning, fire, frost or water damage.

The warranty does not cover "wear and tear" parts and does not cover push cable(s), camera lenses, O-rings etc.

The beginning of the warranty period is from date of delivery. All warranty claims must be submitted with an invoice as proof of purchase.

Disassembling the camera, coiler, control unit or any part of the system(s), without prior written approval from the manufacturer is forbidden. Non-compliance of this direction will result in immediate loss of the warranty.

If you would like to obtain warranty service please return the system with the original invoice to your dealer or closest service centre. Equipment returned **MUST BE CARRIGE PAID. WE WILL NOT BE LIABLE FOR CARRIGE COST.**

### **WARRANTY LIMITATIONS**

Our responsibility under this warranty is limited to repair, replacement or refund as set out above.



Sewerquip (AUS) is not responsible for direct, special, incidental or consequential damages resulting from a warrantable failure or breach of warranty, including loss of profits, downtime, goodwill, loss of data, damage to or replacement of equipment and/or property.

Revision – B2012

## General Warnings & Advice

- Never push the larger 7.5mm push cable through a PVC gully or square bottom gully. Doing so could result in the cable being jagged and kinking.
- **Please note: reel are not waterproof.** Keep the camera control system and reel out of the rain. Never hose near the controller. Water in the controller could result in expensive repairs.
- Protect the control-unit from dirt and moisture.
- Should there be any need of repair, please contact SEWERQUIP or an authorized dealer.
- Only ever use genuine SEWERCAM™ spare parts and an authorised SEWERCAM™ repair agent. Failure to do will lead to termination or your warranty.
- This camera system is made for optical pipe inspection only and not made for medical inspection. Please use the camera system only for the predetermined functions.
- Do not clean the camera with high pressure water.
- Avoid extreme temperatures (hot/cold). Temperatures below the freezing point might harm the battery.
- The camera cable(s) may brake if pushed beyond the normal working parameters and is not covered by warranty if a cable is damaged.
- Avoid extreme mechanical strain on the camera head and never use in conjunction with a water jetting machine when running.
- Do not use the inspection system if the camera cable is broken.
- To keep the camera cable clean, a damp cloth can be used to clean the cable while recoiling the cable.
- Keep the lens clean (clean it with Q-tips), no alcoholic fluids are to be used.

## General Safety Information



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

### WORK AREA

- **Do not** operate camera in explosive atmosphere (presence of flammable liquids, gases, or dust).
- **Do not** let bystanders contact camera or power leads.
- Always have open pits or pipes barricaded off to avoid injury.

### ELECTRICAL SAFETY

- Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electrical shock if your body is grounded.
- **Do not** operate camera in the presence of excessive moisture. Doing so could result in electric shock.
- Do not abuse cord. Never use the cord to carry the tool or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges, or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electrical shock.
- Always check the condition of the power cord before operation.
- Never fit a non-genuine SEWERCAM battery.
- Properly dispose of the battery. Exposure to high temperatures can cause the battery to explode, so do not dispose of in a fire. Some countries have regulations concerning battery disposal. Please follow all applicable regulations.
- Only an Authorised SEWERCAM™ repair agent should ever remove the front control panel.

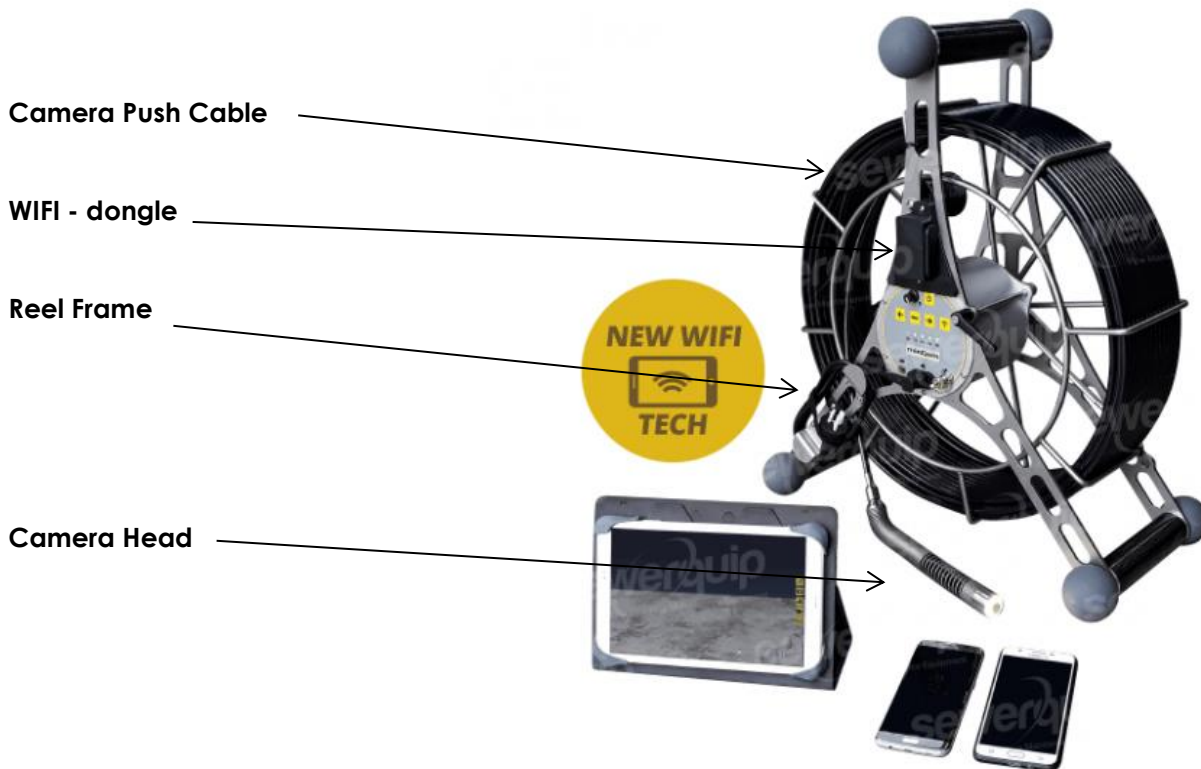
### PERSONAL SAFETY

- Always wear appropriate clothes. Do not wear loose clothes or jewellery which could be caught in moving parts.
- **Gloves should always be worn** for health and safety reasons. Sewer lines are unsanitary and may contain harmful bacteria.
- Open cuts or wounds should always be covered up and kept away from the push cable and other contaminated areas.
- The push cable should be washed down after each use. This can be done by running the cable through a damp rag with a disinfectant when the cable is stored back in the drum.
- Extension cords are not recommended unless they are plugged into a Ground Fault Circuit Interrupter (GFCI) found in circuit boxes or receptacles. The GFCI on the camera control unit power cords will not prevent electrical shock from the extension cords.

## DESCRIPTION OF STANDARD COMPONENTS.

Your SEWERCAM™ pipe inspection system is made up of four major components.

1. Camera Head(s).
2. Camera push cable(s).
3. Reel frame.



## 1. Camera Head.

The camera head is a stainless steel housing that contains the camera eye and adjustable LED lighting elements. The front lens is Sapphire scratch & impact resistant to withstand impacts in Clay and Cast Iron pipe.

Some SEWERCAM™ camera heads have a self-levelling feature. This is where the camera head module is always levelled in the upright position.

Camera Heads available.

- SEWERCAM™ 29ST – 29mm full colour camera with 33 kHz Sonde.
- SEWERCAM™ 29SL – 29mm Self levelling full colour camera with 33 kHz Sonde.
- SEWERCAM™ 55ST – 55mm full colour camera with 33 kHz Sonde.
- SEWERCAM™ 55SL – 55mm Self levelling full colour camera with 33 kHz Sonde.

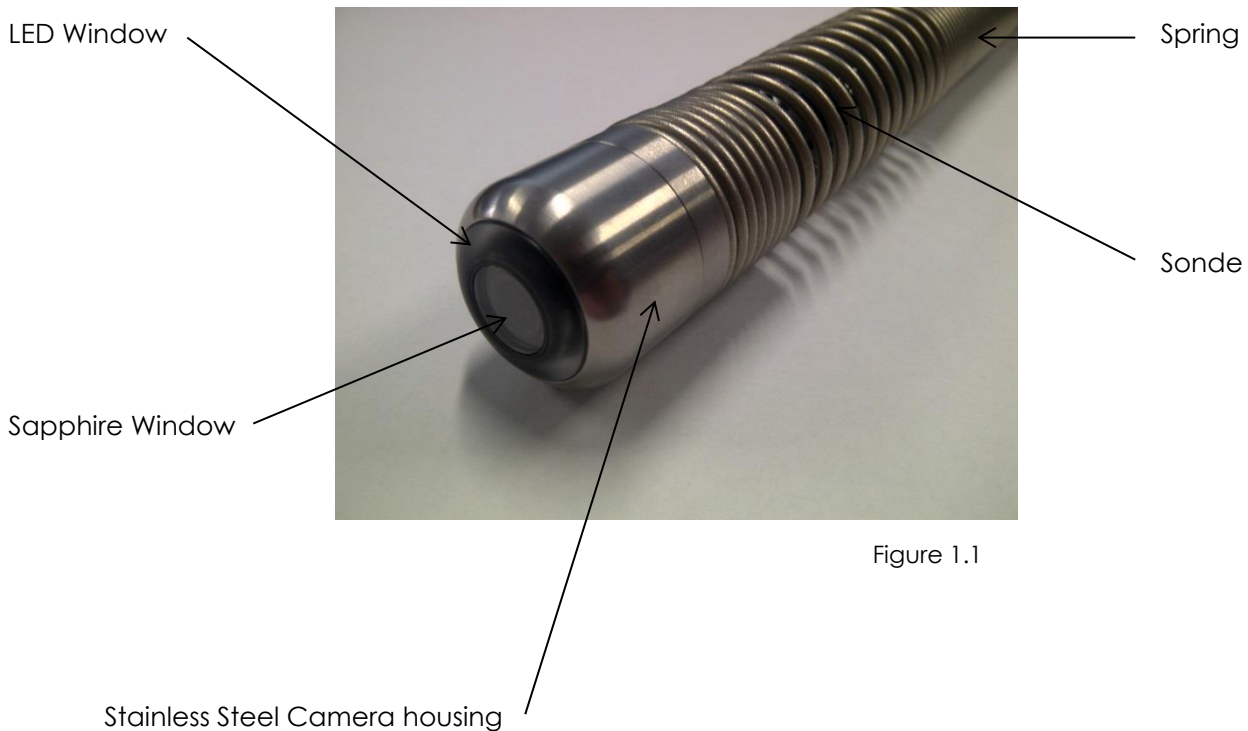


Figure 1.1

## WARNINGS

- **DO NOT** use your camera down the drain with a high pressure water Jetter. Doing so will cause high pressure water to pass the seal in the camera head and destroy your camera head.

- **DO NOT** remove the camera head cover yourself, doing so will void warranty.
- **DO NOT** use the camera in acidic water or other chemicals.
- **DO NOT** put excessive force on the camera, never try to clear a blockage with the camera head. Remember your SEWERCAM™ camera system is for inspection only.
- **ALWAYS** make sure the camera connector nut is tight before carrying out an inspection.

## 2. Push Cable

The SEWERCAM™ push cable is a vital part of your system, without the cable your inspection system will not function. The push cable consists of a fibreglass core with imbedded conductors and hard plastic cover.

Cables Available.

- SEWERCAM™ 5.5mm MICRO push cable. (for pipes from 40-100mm)
  - SEWERCAM™ 7.5mm EASY PUSH cable. (for pipe from 100-300mm)
1. Always check the condition of the push cable before operation. Look for limp sections in the cable or damage (cuts or abrasions) to the outer sheathing. If the cable is found to be damaged, get the cable to a SEWERCAM™ repair agent as possible. Always check the connection points for tightness. If a connection point has been damaged and the camera head becomes detached down the drain, this will not be covered under warranty.
  2. Always keep the end of your hand stroke as close the pipe entry point as possible when pushing the cable into the pipe. This will help prevent whipping the cable and potentially snapping it. Standing back with your hands too far from the pipe will cause the cable to whip and potentially break.
  3. Folding the push cable over a sharp edge will cause the cable to snap. Extreme caution should be used when retrieving the cable from IO's etc.
  4. Using a little water will help minimise friction and allow the cable to be pushed further with less effort and strain on the system.
  5. When inspecting the pipes, it may be necessary to push a little harder to make the camera head negotiate bends. Bringing the camera head back 100mm from the bend and giving it a quick push will make the camera head pop through the bend with minimum strain. Be careful not to push too hard or put extra strain on the camera push cable.
  6. You will almost always be able to push your camera cable further with rubber grip style gloves. This will give you much better grip on the camera push cable.

**NOTE:** A damaged cable will absorb water and allow the water to travel down the core. This will mean a larger section of cable will need to be cut off when a re termination is done. If damage is found the cable should be repaired as soon as possible.

## WARNINGS

- **DO NOT** push the cable beyond its minimum working radius. Doing so will cause the fibres to break internally and eventually fail.
- **DO NOT** use the larger 7.5mm cable through a PVC Gully. Doing so will risk the cable breaking off in the gully throat upon retrieval.



- **DO NOT** allow the push cable to be run over or walked on.
- **DO NOT** twist the push cable.
- **DO NOT** use the push cable if damage is found. Doing so could result in the camera head becoming detached/lost and a very expensive repair bill.

### 3. Reel & Controller

The SEWERCAM™ Push Reel & Controller is the main frame & control system for your inspection system. The controller module in the reel, controls important functions like battery, camera head light brightness intensity, sonde transmitter and meter counter. The unit can be charged via 12v DC or 240v AC.

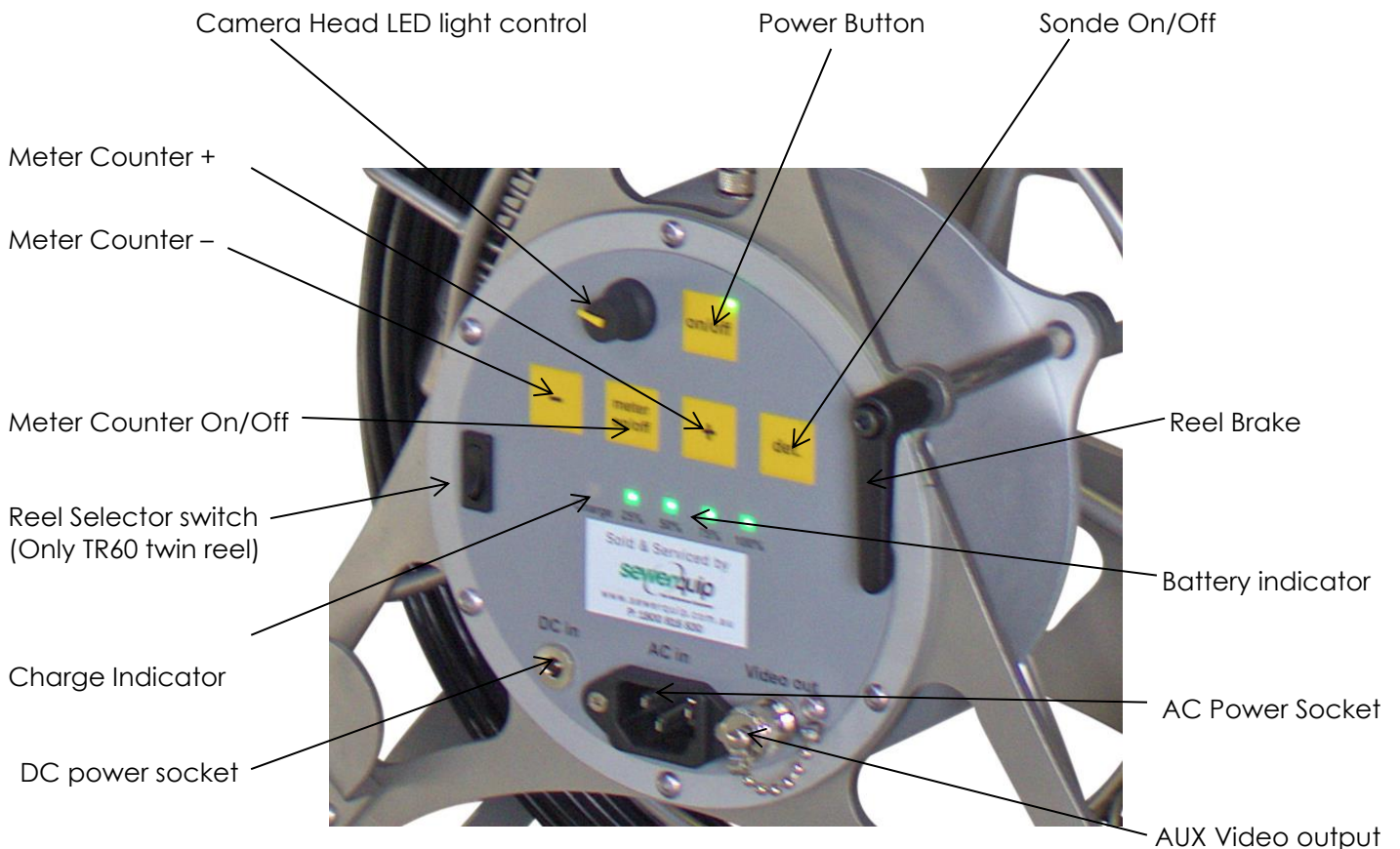
#### Reel

Your SEWERCAM™ Reel is constructed from Stainless Steel for superior corrosion resistance.

The reel is fitted with a reel brake which should be used to control the spooling of the reel. If the reel is allowed to unspool too quickly there is a risk of the push cable being broken. Adjust the brake so that the cable can be feed out easily but stops as soon as you are not removing cable. For transport the brake should be fully applied to prevent reel rotation.

The reel is fitted with a cable running idler. The push cable should always be passed over the idler before use.

#### Controller



#### WARNINGS

- **DO NOT** use high pressure water to wash down the reel or controller centre. Doing so may cause water infiltration and damage to vital electrical components.
- **DO NOT** use or store the camera system in heavy rain or damp environments.
- **DO NOT** remove the control panel for any reason. Doing so will void your warranty. Any repair work is only to be carried out by an approved SEWERCAM™ repair agent.

#### 4. Monitor

### SEWERCAM™ SCD 8.4" RECORDING MONITOR

## Operation

### Starting up the camera system

Before starting up the camera system.

- Make sure the monitor is connected to the reel via the connection lead.
- Check for any visual damage to cables and camera head.
- Ensure all connections are firmly fastened.
- Make sure the camera control system is away from direct contact with water.

Press the on button and wait for the start-up checks to be completed.

- If the camera system has low battery, please connect either the 12v or 240v power cable.
- An external monitor or recording unit can be connected via the BNC video out port.

### Camera Head Lighting

The light can be continuously regulated with the potentiometer. Start the camera with the light setting set half way and adjust as needed.

In PVC or pipes made from reflective materials, not as much light power is needed. More light power will not result in a lighter or cleared picture but just waste battery power. In larger diameter concrete to earthenware pipe more light is required.

### Meter counter

The meter fade-in can be turned on or off by pressing the meter ON/OFF button. The meter counter value can be set with the help of 2 push buttons.

To count forward: push +  
To count backward: push -

### Location transmitter (Sonde)

Your SEWERCAM™ camera is fitted with a 33 kHz location transmitting sonde for accurate location of the camera head. The sonde can be located up to 4m deep depending on the ground type, pipe type, locator receiver and surrounding services.

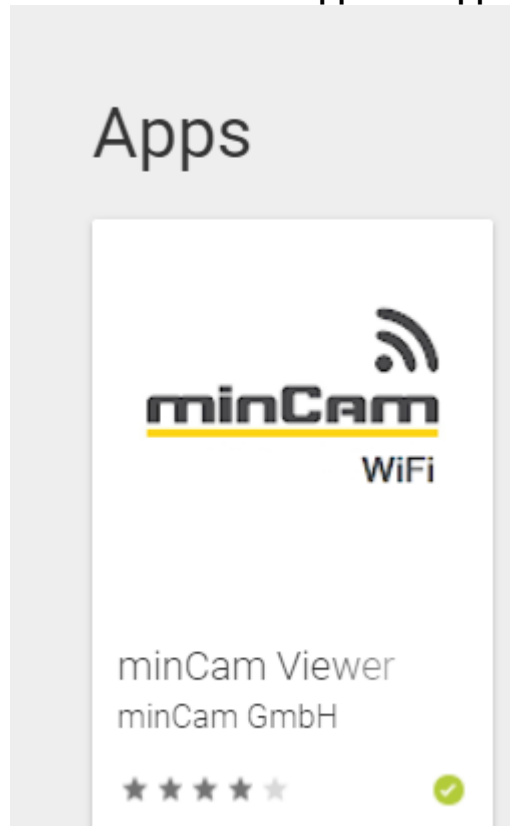
By pushing the **DET** symbol the Sonde is activated. While the sonde is active the video picture will be cut as well as the camera lighting. To deactivate the sonde, press the sonde switch again.

When the Sonde is activated the battery will drain quicker.

When locating the sonde, make sure your locator receiver is set to 33 kHz.

## Recording Videos & Photos

Download MINCAM app from app store.



### Connecting you device.

Turn on your WIFI and search for available networks.



The network name and password are located on the back of the drum. Connect to the network and enter the password. Once connected it will tell you that you do not have access to the internet. The wifi connection does not require your device to have a mobile or wifi connection to operate.

Videos will be stored as MPEG-4 file with the AVI extension. Photos will be stored as BMP files.

Storage resolution of Video and photos can be adjusted through the set up menu. Standard resolution is as below. This can be adjusted through the setting menu.

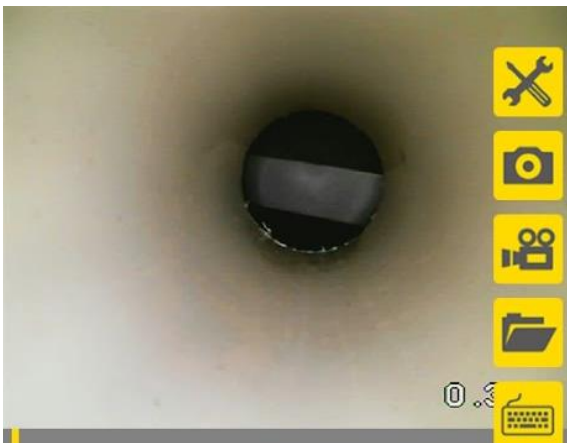
**Photo:** 640 x 800 Pixel

**Video:** 800 x 600 Pixel

## Making Videos

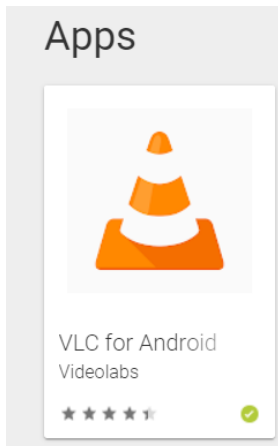
Your videos will be stored in the image / video gallery in the device you are connected to.

Once connected to the camera your screen will appear and be ready for taking videos and photos.



To take a video press the video button this will start the video, to stop the video press the video button again this will stop the video and store it in the gallery.

To view the video on your device you will need to download VLC media player.



### Storing a Photo



PHOTO BUTTON

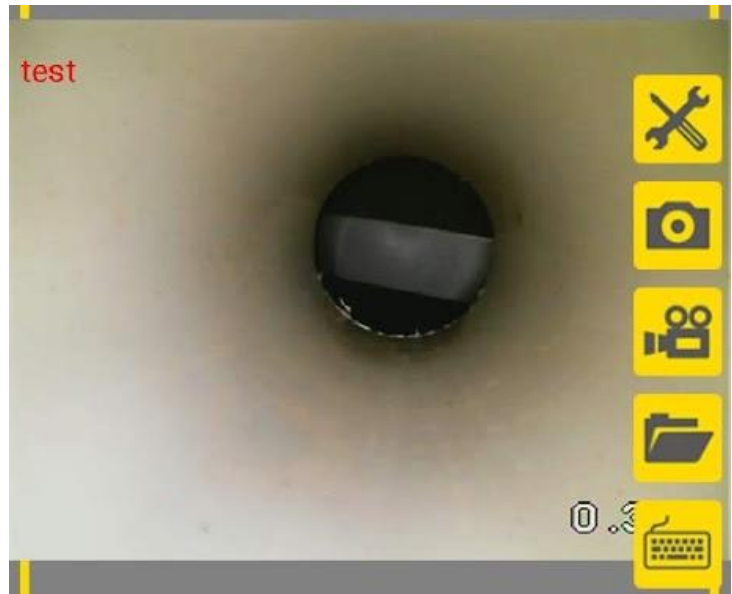
To take a photo press the photo button.

### Taking a photo while video recording

Taking photos while recording can be done by simply pressing the photo button whilst recording a video at the same time.

### Text.

You can type text over the top of the screen by pressing the keyboard button and selecting the colour you want and type text. Press ok and this will imbed the text over the image/video.



## Maintenance and Cleaning

### Camera Head

1. The camera head requires very little maintenance apart from keeping the camera LED light ring and Sapphire window clean for optimal performance.
2. The Camera head can be cleaned with warm soapy water and soft fibre whips. Do not use alcohol or Solvents.
3. Scratches on the light ring and camera housing are normal after use. DO NOT sand the light ring or camera head housing as this could affect their water tightness.
4. DO NOT use sharp/hard tools or wire brush to clean camera head.

### Camera Reel

1. The camera reel can be sponged down with warm soapy water. DO NOT use pressurised water to clean the reel.
2. Check that the Reel brake piston is in good working order. If the brake piston is worn it should be

replaced to avoid the Reel over spooling and possible cable damage.

#### **Push Cable.**

1. The push cable can be cleaned by running it through a damp/soapy rag when retrieving the cable or by running warm soapy water down the pipe while the cable is still inside the pipe.
2. Always check the cable for visible wear & tear or damage. If you find a defect with the push cable it is normally best to have it repaired as soon as possible to avoid further damage to your system.

**NOTE:** A damaged cable will absorb water and allow the water to travel down the core. This will mean a larger section of cable will need to be cut off when a re termination is done. If damage is found the cable should be repaired as soon as possible.

#### **29mm Head**

- Camera head housing is made from stainless steel.
- Fixed or Continuous self-leveling camera module.
- Inbuilt 33kHz transmitting Sonde.
- 4mm Sapphire scratch resistance glass protected lens.
- Fix focus from 4cm to infinite.
- High resolution color camera module 0.2Lux / F1.2; 480 TV-lines
- 12pc LED Chip light ring.
- Outer diameter 29mm.
- Adapter with gold plated collector ring and spring-pins to enable fast changes of camera-heads.
- 10 bar (100m) Pressure rating
- Temperature: -10° to +40°C

#### **Camera cables**

- 60m x 7.2mm SEWERCAM™ EASYPUSH glass fiber push rod cable with inner conductors. (max 80m)



- 30m x 5.5mm SEWERCAM™ MICOPUSH glass fiber push rod cable with inner conductors.
- 20m x 5.5mm SEWERCAM™ MICOPUSH glass fiber push rod cable with inner conductors.

### **Safety hints**

- This operation manual shall help you to get acquainted with this camera system.
- This camera system is made for optical pipe inspection. It is not made for medical inspection. Please use the camera system only for the predetermined functions.
- Do not alter or reconstruct this camera system.
- Do not open the camera system control panel.
- Do not try to repair the camera system on your own.
- Take care of the product. It can be harmed by mechanical impact.
- Beware of moisture and extreme heat, especially for the monitor and control-unit.
- If the operation time of the battery is a lot lower than it was at the beginning, the battery's life time has probably expired.
- Damage, forced by inappropriate use or handling, may suspend the guarantee.
- Technical enhancements and errors excluded.



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