RIDGID

Operator's Manual

SeeSnake® CS1000

⚠ WARNING!

Read this Operator's Manual carefully before using this tool. Failure to understand and follow the contents of this manual may result in electrical shock, fire and/or serious personal injury.

SeeSnake® CS1000™	
Record product serial number below as it appears on the nameplate.	
Serial No.	

Original Instructions – English – 1

Table of Contents

Safety Symbols

In this operator's manual and on the product, safety symbols and signal words are used to communicate important safety information. This section is provided to improve understanding of these signal words and symbols.

⚠ This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE NOTICE indicates information that relates to the protection of property.

This symbol means read the operator's manual carefully before using the equipment. The operator's manual contains important information on the safe and proper operation of the equipment.

This symbol means always wear safety glasses with side shields or goggles when handling or using this equipment to reduce the risk of eye injury.

This symbol indicates the risk of electrical shock.

General Safety Rules

⚠ WARNING

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

SAVE THESE INSTRUCTIONS!

Work Area Safety

- **Keep your work area clean and well lit.** Cluttered or dark areas invite accidents.

- **Do not operate equipment in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Equipment can create sparks which may ignite the dust or fumes.

- **Keep children and bystanders away while operating equipment.** Distractions can cause you to lose control.

Electrical Safety

- **Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges, and refrigerators.** There is an increased risk of electrical shock if your body is earthed or grounded.

- **Do not expose equipment to rain or wet conditions.** Water entering equipment will increase the risk of electrical shock.

- **Do not abuse the cord.** Never use the cord for carrying, pulling, or unplugging the power tool. Keep cord away from heat, oil, sharp edges, and moving parts. Damaged or entangled cords increase the risk of electric shock.

- **If operating equipment in a damp location is unavoidable, use a ground fault circuit interrupter (GFCI) protected supply.** Use of a GFCI reduces the risk of electric shock.

- **Keep all electrical connections dry and off the ground.** Do not touch equipment or plugs with wet hands to reduce the risk of electrical shock.

Personal Safety

- **Stay alert, watch what you are doing, and use common sense when operating equipment.** Do not use equipment while you are tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating equipment may result in serious personal injury.

- **Use personal protective equipment.** Always wear eye protection. The appropriate use of protective equipment such as a dust mask, non-skid safety shoes, a hard hat, and hearing protection will reduce personal injuries.

- **Do not overreach.** Keep proper footing and balance at all times. This enables better control of the equipment in unexpected situations.

- **Dress properly.** Do not wear loose clothing or jewelry. Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewelry, and long hair can be caught in moving parts.

Equipment Use and Care

- **Do not force equipment.** Use the correct equipment for your application. The correct equipment will do the job better and safer at the rate for which it is designed.

- **Do not use equipment if the power switch does not turn it ON and OFF.** Any equipment that cannot be controlled with the power switch is dangerous and must be repaired.

- **Disconnect the plug from the power source and/or the battery pack from the equipment before making adjustments, changing accessories, or storing.** Preventive safety measures reduce the risk of injury.

- **Store idle equipment out of the reach of children and do not allow persons unfamiliar with the equipment or these instructions to operate the equipment.** Equipment can be dangerous in the hands of untrained users.

- **Maintain equipment.** Check for misalignment or binding of moving parts, missing parts, breakage of parts, and any other condition that may affect the equipment's operation. If damaged, have the equipment repaired before use. Many accidents are caused by poorly maintained equipment.

- **Use the equipment and accessories in accordance with these instructions; taking into account the working conditions and the work to be performed.** Use of the equipment for operations different from those intended could result in a hazardous situation.

- **Use only accessories that are recommended by the manufacturer for your equipment.** Accessories that may be suitable for one piece of equipment may become hazardous when used with other equipment.

- **Keep handles dry, clean, and free from oil and grease.** This allows for better control of the equipment.

Battery Use and Care

⚠ WARNING
Read the battery charger manual before using the charger or batteries. Failure to read, understand and follow the contents of the charger manual may result in extensive property damage, severe personal injury, or death.

- **Recharge only with the charger specified by the manufacturer.** A charger suitable for one type of battery pack may create a risk of fire when used with another battery pack.

- **Use equipment only with specifically designated battery packs.** Use of any other battery packs may create a risk of injury and fire.

- **Do not probe battery with conductive objects.** Shorting of battery terminals may cause sparks, burns, or electrical shock. When the battery pack is not in use, keep it 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.

- **Under abusive conditions, liquid may eject from battery; avoid contact.** If contact occurs, flush with water. If liquid contacts eyes, seek medical help. Liquid ejected from the battery may cause irritation or burns.

- **Use and store batteries and chargers in dry, appropriate temperature areas.** Extreme temperatures and moisture can damage batteries and result in leakage, electrical shock, fire or burns. See charger manual for more information.

- **Do not cover charger while in use.** Proper ventilation is required for correct operation. Covering charger in use could result in fire.

- **Properly dispose of batteries.** Exposure to high temperatures can cause the batteries to explode; do not dispose of in a fire. Some countries have regulations concerning battery disposal. Follow all applicable regulations.

Service

Ensure a qualified repair person services your equipment using only identical replacement parts to maintain the safety of the tool. Remove the batteries and refer servicing to qualified service personnel under any of the following conditions:

- If liquid has been spilled or objects have fallen into product.

- If the product does not operate normally when following the operating instructions.

- If the product has been dropped or damaged.

- When the product exhibits a distinct change in performance.

Specific Safety Information

⚠ WARNING
This section contains important safety information that is specific to the CS1000. Read these precautions carefully before using the CS1000 to reduce the risk of electrical shock, fire, or other serious personal injury.

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE!

Keep this manual with the equipment for use by the operator.

CS1000 Safety

- **The equipment is intended for indoor use when used with the AC power supply.** When powered by battery protect it from exposure to weather. This product is not water resistant. Do not expose the equipment to moisture or rain. Water entering the unit housing can increase the risk of safety hazards and electrical shock. Only the camera and cable in a SeeSnake Pipe Inspection Reel are water-resistant.

- **An improperly grounded electrical outlet can cause electrical shock and/or severely damage equipment.** Always check work area for a properly grounded electrical outlet. Presence of a three-prong or GFCI outlet does not ensure that the outlet is properly grounded. If in doubt, have the outlet inspected by a licensed electrician.

- **Power the CS1000 only with a specifically designated battery or a double insulated power supply.** This minimizes the risk of electrical hazards from moisture or faulty electrical outlets.

- **Do not operate this equipment if operator or CS1000 is standing in water.** Operating CS1000 while in water increases the risk of electrical shock.

- **The CS1000 is not waterproof.** It is dust resistant and splash-resistant. Only the camera and push cable are waterproof. Do not expose the equipment to water or rain. This increases the risk of electrical shock.

- **Do not use where a danger of high voltage contact is present.** The equipment is not designed to provide high voltage protection and isolation.

- **Read and understand this operator's manual, the reel operator's manual, the instructions for any other equipment in use and all warnings before operating the CS1000.** Failure to follow all instructions and warnings may result in property damage and/or serious personal injury.

- **Always use appropriate personal protective equipment when handling and using equipment in drains.** Drains may contain chemicals, bacteria, and other substances that may be toxic, infectious, cause burns or other issues. Appropriate personal protective equipment always includes safety glasses and may include drain cleaning gloves or mitts, latex or rubber gloves, face shields, goggles, protective clothing, respirators, and steel toed footwear.

- **If using drain cleaning equipment at the same time as drain inspection equipment, only wear RIDGID drain cleaning gloves.** Never grasp the rotating drain cleaning cable with anything else, including other gloves or a rag. They can become wrapped around the cable and cause hand injuries. Only wear latex or rubber gloves under RIDGID drain cleaner gloves. Do not use damaged drain cleaning gloves.

- **Practice good hygiene.** Use hot, soapy water to wash hands and other body parts exposed to drain contents after handling or using drain inspection equipment. Do not eat or smoke while operating or handling drain inspection equipment. This will help prevent contamination from toxic or infectious material.

The information supplied with this product cannot cover all possible conditions and situations that may occur, and should be used in conjunction with appropriate training, sound judgment, and good work practices. These factors cannot be built into the product, but must be supplied by the operator.

The EC Declaration of Conformity (890-011-320.10) will accompany this manual as a separate booklet when required.

Description, Specifications, and Standard Equipment

Description

The CS1000 is designed to provide a convenient accessible portal for all your pipe inspection, recording, monitoring, and report generation needs. Use the CS1000 with RIDGID SeeSnake reels and cameras to make a complete inspection system.

The CS1000 will help you organize your inspections by grouping all the associated still photos, videos, Autolog videos, text notes, job location information, and customer information into "Jobs." Jobs give you a convenient way to transfer inspection data from the CS1000, and they form the basis for creating "Reports" in the CS1000. As you work with your CS1000, Jobs are automatically assembled from the information you collect during the inspection process; making organization easy to understand.

Your CS1000 is fully compatible with SeeSnake HQ. SeeSnake HQ is a new report generating software that you can use to quickly generate customized reports for your customer that can then be emailed, printed, burned onto DVD, or exported for viewing online. You can download the latest version of SeeSnake HQ for free at www.hq.seesnake.com.

Specifications

Table 1 SeeSnake CS1000 Specifications	
Weight:	
without batteries	14.65 lb [6.64 kg]
Closed dimensions:	
Length	14.3 in [36.3 cm]
Width	11.9 in [30.2 cm]
Height	12.4 in [31.5 cm]
LCD display:	
Working resolution	VGA 640 x 480 pixels
Display size (HxV)	12.1 in [30.7 cm]
Contrast ratio	700:1
Brightness	500 cd/m^2
Power source	100-240VAC/50-60Hz 1.5A or 18 VDC
Battery type	18 V Li-Ion Rechargeable
Operating environment:	
Temperature	32°F to 104°F [0°C to 40°C]
Storage temperature	14°F to 158°F [–10°C to 70°C]
Humidity	5% to 95% RH
Altitude	13,120 ft [4,000 m]

Standard Equipment

- CS1000
- Operator's Manual
- Quick Start Guide
- Instructional DVD

Components

Figure 1 – CS1000 Front View

Labels: Front Cover, LCD Screen, Keyboard, Mini Keypad, Tilt Stand, SeeSnake System Connector, Main Keypad
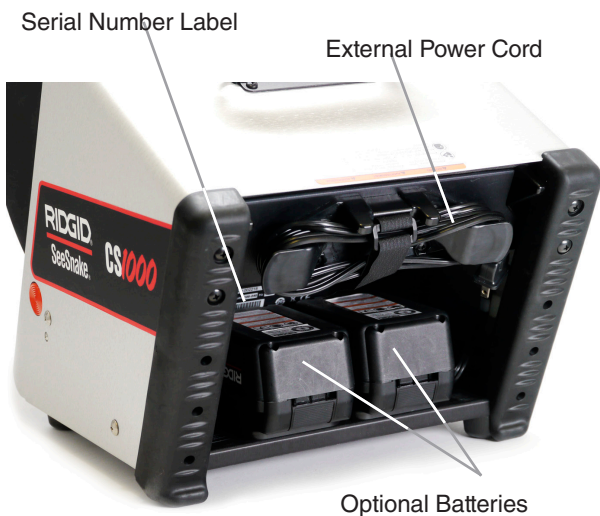
Figure 2 – CS1000 Rear View

Labels: Serial Number Label, External Power Cord, Optional Batteries

Figure 3 – CS1000 Keyboard

Labels: Keyboard LED Indicators, Microphone
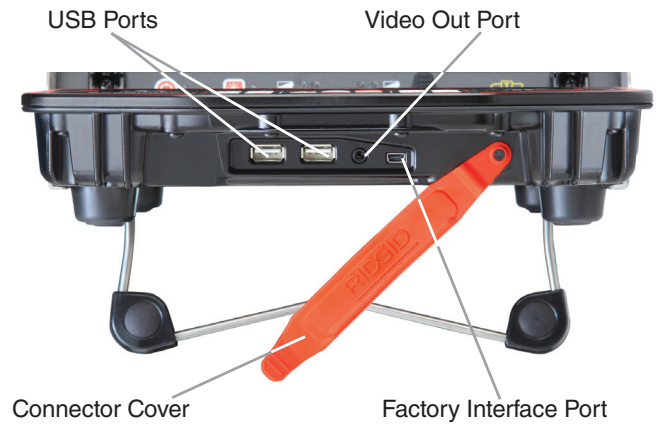
Figure 4 – Keyboard Connections

Labels: USB Ports, Video Out Port, Connector Cover, Factory Interface Port
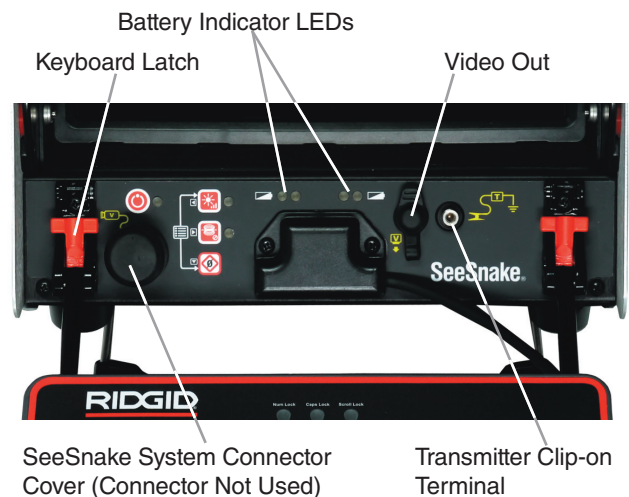
Figure 5 – Mini Keypad and Connections

Labels: Battery Indicator LEDs, Keyboard Latch, Video Out, SeeSnake System Connector Cover (Connector Not Used), Transmitter Clip-on Terminal

Icon Legend

Table 2 CS1000 Keypads and Icons	
Main Keypad	
	Power Key
	Select Key
	Arrow Keys
	Menu Key
	Photo Key
	Photo Tag Key
	Autolog Key
	Video Key
	Job Review Key
	Job Manager Key
	LED Brightness Key
	Sonde Key
	Zero Key
	Microphone Mute Key
	Image Flip Key
Mini Keypad	
	Power Key
	LED Brightness Key
	Sonde Key
	Zero Key

Table 3 Connection Icons	
	Video Out
	Transmitter Clip-on Terminal

Pre-Operation Inspection

⚠ WARNING

Before each use, inspect your CS1000 and correct any problems to reduce the risk of serious injury from electrical shock or other causes and prevent machine damage.

1. Confirm that the power is OFF, that any external power and cords are disconnected, and that the battery is removed. Inspect the cords, cables, and connectors for damage or modification.

2. Clean any dirt, oil, or other contamination from the CS1000 to aid in inspection and to prevent the unit from slipping from your grip during transport or use.

3. Inspect the CS1000 for any broken, worn, missing, misaligned or binding parts, or any other condition which might prevent safe, normal operation.

4. Inspect any other equipment being used per its instructions to make sure it is in good, usable condition.

5. If any problems are found, do not use the unit until the problems are corrected.

Work Area and Equipment Setup

⚠ WARNING

Set up the CS1000 and work area in accordance with these procedures to reduce the risk of injury from electrical shock, fire, and other causes and to prevent damage to the CS1000.

1. Check work area for the following:
   - Adequate lighting.
   - Flammable liquids, vapors, or dust that may ignite. If present, do not work in area until sources have been identified and corrected. The CS1000 is not explosion proof. Electrical connections can cause sparks.
   - Clear, level, stable dry place for operator. Do not use the machine while standing in water.

• Clear path to electrical outlet that does not contain any potential sources of damage for the power cord when using external power.

2. Inspect the work to be performed. If possible, determine the drain access points, sizes and lengths. Determine the presence of drain cleaning chemicals or other chemicals. If chemicals are present, it is important to understand the specific safety measures required to work around the chemicals. Contact the chemical manufacturer for required information.

3. Determine the correct equipment for the application. The CS1000 is made to view and record inspections with a SeeSnake inspection camera.

4. Make sure all equipment has been properly inspected.

5. Evaluate the work area and determine if any barriers are needed to keep bystanders away. Bystanders can distract the operator during use. If working near traffic, erect cones or other barriers to alert drivers.

6. If needed, remove fixture (water closet, sink, etc.) to allow access.

Placement

Place the CS1000 to allow easy access and viewing while manipulating the camera and push cable for inspection. Setup the CS1000 so its screen is easy to see. Adjust the controls so they are easy to reach during use. In brightly lit areas, point the screen away from bright light sources and/or use the monitor's front cover as a sun shade to reduce glare. Make sure that the location is not wet and will not let the CS1000 and other equipment get wet during use. The CS1000 is not waterproof and exposure to wet conditions can cause electrical shock or equipment damage.

Place camera and reel as instructed in their operator's manual. Ensure the CS1000 and cable reel are stable.

Tilt Stand

You can use the tilt stand to customize the viewing angle of the screen and the positioning of keyboard depending on the inspection environment and personal preference.

1. Use the handle *(See Item 1, Figure 6)* on the top of the CS1000 to place the unit in the desired location.

2. Tilt the unit back slightly and pull forward on the tilt stand *(See Item 2, Figure 6)* until it locks in place.

3. To store the tilt stand, tilt the unit back slightly, and push the tilt stand toward the back of the unit until it lays flat against the base of the unit.

Figure 6 – Placing the CS1000 and Setting Up the Tilt Stand

Front Cover

The CS1000 front cover serves two purposes: it protects the unit during transportation and storage, and it acts as a sun hood to reduce glare during inspections.

Opening the Front Cover

1. Depress the orange Front Cover Release Buttons *(See Item 1, Figure 7)* on each side of the unit.

2. Raise the front cover *(See Item 2, Figure 7)* to its uppermost position where it will lock securely into place.

3. Lower the keyboard *(See Item 3, Figure 7)* into its operating position.

4. (Optional) Use the keyboard latches *(See Item 4, Figure 7)* to adjust and secure the position of your keyboard. Pull the red T-shaped latches toward you to lock the keyboard into an upwardly angled position.

Figure 7 – Opening the Front Cover

Closing the Front Cover

1. Disconnect all connections, including USB.

2. Fold up the keyboard.

3. Keeping fingers clear of the front cover, depress the orange Front Cover Release Buttons on both sides of the unit to drop the cover to the lower position. Press front cover into place until it locks.

Connecting the CS1000

System Connector

NOTICE When connecting or disconnecting the System Cable, twist only the locking sleeve! To prevent damage to pins, never bend or twist the connector or cable!

1. Unwrap the SeeSnake System Cable from its holder and insert the System Cable plug into the SeeSnake System Connector *(See Item 1, Figure 8)* on the front edge of the keyboard.

2. To join the connectors, align the guide pin to the guide socket, push the connector straight in. A guide ridge *(See Item 2, Figure 8)* molded into the top of the cable connector will point up when the plug is correctly aligned.

3. Tighten the outer locking sleeve *(See Item 3, Figure 8)*.

Figure 8 – Connecting SeeSnake System Cable to CS1000 System Connection

Additional CS1000 Ports

There are four ports located behind the red rubber connector cover on the front edge of the keyboard.

NOTICE The areas behind the connector cover, containing the USB ports, Video Out Port, and Factory Interface Port are not internally sealed. Keep the connector cover in place in wet or moist conditions to prevent damage to the ports.

Figure 9 – CS1000 Ports

USB Ports

The two USB ports are suitable for thumb drives or other storage devices. Use any one USB port at a time.

Video Out Port

The Video Out Port enables you to connect the CS1000 to an external monitor for video display. The Video Out Port only outputs audio on video playback and not during recording.

Factory Interface Port

To perform diagnostics the manufacturer will use the Factory Interface Port. Do not use the Factory Interface Port for other devices.

Powering the CS1000

The CS1000 can be powered with one or two RIDGID Li-Ion rechargeable battery or plugged into an outlet using a AC power converter. Battery power is the preferred powering method to reduce the risk of electrical shock. The power converter is not rated for outdoor use. Only use the CS1000 indoors when powered with the AC converter.

When fully charged, one 18 V Li-Ion battery rated at 2.2 Ah will power the CS1000 for approximately 1.75 hours; and two batteries will power the CS1000 for approximately 4.5 hours. Actual battery operation time will vary with battery rating and use.

Battery Power

• With dry hands, insert one or two 18 V Li-Ion batteries into the battery docks in the back of the unit. The unit can be tilted forward and rested on the closed face for convenience.

• Only recharge the batteries with the approved charger. Attempting to charge batteries with the wrong charger can damage the batteries.

Checking Battery Status: Icons

You can monitor your battery levels using the two battery icons in the bottom left corner of the screen. Table 4 shows the on-screen battery indicator icons.

Figure 10 – On-Screen Battery Icons

Table 4 On-Screen Battery Icons	
	Full charge
	Partial charge
	Battery low
	No charge
	AC power

Checking Battery Status: LEDs

The CS1000 has four battery indicator LEDs, two for each battery, located just below the screen.

Figure 11 – Battery Indicator LEDs

When the unit is turned ON and there are batteries in the battery docks, the LEDs on the CS1000 will reflect the state of each battery as shown in Table 5.

Table 5 Battery Status LED Indicators	
LED Behavior	**Meaning**
Left LED is Green Right LED is OFF	Battery full charge
Left LED is Green Right LED is Red	Battery partial charge
Left LED is OFF Right LED is Red	Battery low
Blinking red and beeps	Replace batteries immediately. Shutdown in 1 min
Solid red and continuous tone	Dead batteries. Shutdown in 5 sec
Slow blink	External power in use. Beeps when disconnected

Outlet Power

NOTE: The provided external power supply is intended for indoor use only.

For plug-in operation, a double insulated AC power cord is supplied to reduce wall outlet voltage to the correct voltage for the CS1000.

1. To power the system using AC power with the power cord, locate the power cord on the back of the unit. Unhook the Velcro® strap and remove the plug from its holder.

2. With dry hands, plug the power cord into an approved outlet. If using an extension cord ensure the use of adequate wire gauge. For cords no greater than 25 ft [7.6 m] long, use a wire gage of at least 18 AWG is required. For cords longer than 25 ft [7.6 m], use a wire gauge of at least 16 AWG.

3. Never power the unit from AC using the power cord in a wet environment.

Sometimes you may need to move locations during a job. If you are running your CS1000 using AC power and have at least one battery in the rear battery docks, you can unplug the CS1000 to move it without powering it OFF.

Interface Overview

Software Overview

The on-screen interface has three regions: Live View, Dashboard, and Status Bar.

Live View

The largest area of the screen, where the live video feed appears, is called "Live View" *(See Item 1, Figure 12)*.

Dashboard

The Dashboard *(See Item 2, Figure 12)* is visible when you are viewing live video and in the Menus and Job Manager. Dashboard icons have two states: default and alternate. Table 6 explains the Dashboard's default and alternate states.
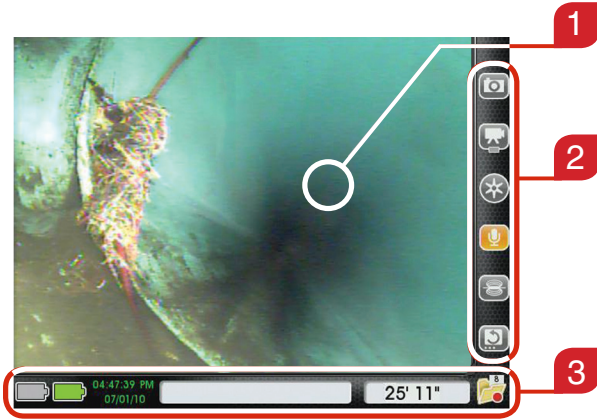
Figure 12 – Live View, Dashboard, and Status Bar

Table 6 Dashboard Icon States and Meanings		
Icon	**Name and State**	**Meaning**
	Photo Default	Highlights red when a photo is being taken or when a photo tag is created. The on-screen icon will also briefly highlight red at the beginning of Autolog and video recordings.
	Photo Alternate	
	Video Default	Highlights red when a video recording is in progress. A splash screen will appear in Live View, at the beginning of a video recording.
	Video Alternate	
	Autolog Default	Highlights red when an Autolog video recording is in progress. A splash screen will appear in Live View.
	Autolog Alternate	
	Sonde Default	Highlights green when Sonde is activated. Additionally, when the sonde is activated, an overlay will appear on bottom of the Live Video.
	Sonde Alternate	
	Microphone Mute Default	Highlights yellow when the microphone is ON. When muted, the icon will appear gray with a slash through it. The Microphone Mute Key can be used to disable audio recording during an inspection or to mute audio during video or Autolog video playback.
	Microphone Mute Alternate	

Table 6 Dashboard Icon States and Meanings		
Icon	**Name and State**	**Meaning**
	Image Flip Default	Highlights red and flips when the screen image is flipped vertically and mirrored horizontally.
	Image Flip Alternate	

Status Bar

The Status Bar *(See Item 3, Figure 12)* is located at the bottom of the screen. The Status Bar lets you keep an eye on your batteries and internal drive's storage space. When the CS1000 is ON, the status bar is visible from every screen and menu. Figure 13 shows an example of what the Status Bar can look like on a CS1000.

Figure 13 – Status Bar

Status Bar Folder Icon

In the bottom right corner of the screen you will see a folder. This folder communicates useful information about the number of jobs being stored on your internal hard drive and the status of your current job.

Table 7 Status Bar Folder Variations		
Icon	**Meaning**	**Details**
	No Job open	The number in the icon signifies the number of Jobs stored on your internal hard drive.
	Job open	The red dot signifies that you currently have a Job open.
	Job paused	The pause symbol signifies that you have a Job open, but it is paused.
	Job stopped	A black square on the folder signifies that a Job has been stopped.

Keypad Overview

Navigating the Menus and Screens

The CS1000 keypad Arrow Keys ▲▼◄► and keyboard arrow keys can both be used to navigate through menus and screens in the equipment's interface. Use the Select Key ◎ or the keyboard's Enter Key to make selections and to apply changes.

Use the CS1000's Menu Key 📋 or the keyboard's Esc Key to move backwards through the various menus and screens.

Table 8 Main Keypad		
Icon	Key	Function
	Power Key	Turns the CS1000 ON or OFF.
	Arrow Keys	Used to navigate menus and screens. The keyboard's arrow keys can also be used to navigate menus and screens.
	Select Key	Used to select menu items. The keyboard's Enter Key may also be used to make selections and apply changes.
	Menu Key	Brings up the Main Menu.
	Photo Key	Takes a photo.
	Photo Tag Key	Takes a photo and opens a form where custom text or issue tags can be added. Issue tags are a set of descriptions and definitions of common problems encountered during pipe inspections.
	Video Key	Starts and stops video recording. When a video is recording, the LED located on the bottom of the Video Key will be highlighted red.
	Autolog Key	Starts and stops Autolog video recording. Autolog videos are made up of continuous audio recording and still-image frames taken at regular intervals and saved in a compressed format.
	Job Review Key	Allows review of any photos or clips in the currently open Job. Also allows editing Report Fields and selecting clips or photos for inclusion in reports. A preview of the report can also be accessed from this screen.
	Job Manager Key	Opens the Job Manager where you can choose to close a job, add a new session, preview the report, edit job information, or access the Job Browser.

Table 8 Main Keypad		
Icon	Key	Function
	Sonde Key	Toggles the Sonde ON or OFF.
	LED Brightness Key	Press to step up or down through various brightness levels or press once and then use the arrow keys to step through the brightness levels. An indicator bar will appear in the progress bar at the bottom of the screen.
	Zero Key	Press the Zero Key once to reset a temporary relative zero point for intermediate measurement. Relative zero will appear in parenthesis. Press the Zero Key a second time to stop relative zero and return to your actual count. You can also press and hold the Zero Key to reset the count to zero.
	Microphone Mute Key	Toggles the microphone ON or OFF. Also mutes audio on video playback.
	Image Flip Key	Flips the image top to bottom, but not left to right.

Table 9 Mini Keypad		
Icon	Key	Function
	Power Key	Closely resembles the Power Key on the Main Keypad. Both can be used to turn the CS1000 ON and OFF. The Mini Keypad's Power Key has a blue LED to the right that lights up whenever the unit is powered ON.
	LED Brightness Key	Press the key to step through the various levels of brightness. The blue LED next to the Mini Keypad's LED Brightness Key indicates the level of brightness by blinking. At minimum brightness the LED will be OFF and at maximum brightness the LED will be ON steadily. In between, it will blink faster the brighter the setting.
	Sonde Key	Both this Sonde Key and the one on the Main Keypad can be used to toggle the Sonde ON and OFF. The Mini Keypad's Sonde Key has a blue LED to the right that lights up when the Sonde is ON.
	Zero Key	Works exactly the same as the Zero Key on the Main Keypad despite a slightly different appearance.

Using the Brightness Key

The Brightness Key modulates the camera's LED brightness. The levels of brightness can be selected gradually by pressing the Brightness Key one step at a time or selected rapidly by holding the Brightness Key down until the desired step is reached.

When pressed and held down, the Brightness Key will continue to gradually increase the brightness until it reaches maximum and will then decrease brightness until it reaches minimum. At each end of the scale, a beep will sound; indicating that the progression is changing direction. Single-step mode (individual key presses) will increase the brightness step-by-step until it reaches maximum and then decrease until it reaches minimum.

Figure 14 – Adjusting Brightness

LED brightness can also be controlled by pressing the Brightness Key once and then using the keypad Arrow Keys.

Using the Zero Key

If your SeeSnake has the CountPlus distance counter, the Zero Key will act in a similar manner as the Zero Key on the CountPlus.

The Zero Key enables you to measure two things:

• The distance from the access point to the camera's current position.

• The distance between any two points in the line.

The CS1000 has a Zero Key on the Main Keypad and a Zero Key on the Mini Keypad located just below the screen. Though different in appearance, these keys function in exactly the same way.

Relative Zero

Pressing the Zero Key once will set a temporary "Relative Zero" point for intermediate measurement. This enables you to start a distance count from a preferred point such as the entry to a pipe or a particular branch line within a pipe. Relative zero will display in parenthesis on the Status Bar.

Press the Zero Key one more time to exit "Relative Zero" and return to the original count.

Figure 15 – Relative Zero in Parenthesis on Status Bar

Absolute Zero

You can reset the count to absolute zero at any point during your inspection by pressing and holding the Zero Key until the display clears to read either 0" or 0 cm. This is a hard reset and will also zero the temporary counter.

Using the Image Flip Key

The image on the screen will orient according to the camera's position and view. If the camera gets turned, the image will also turn on the screen. Press the Image Flip Key to flip the camera image top to bottom for easier interpretation of the situation in the line.

Using the Sonde Key

Many SeeSnake cameras have a built-in 512 Hz transmitter, or Sonde, which can be controlled from the CS1000. The built-in Sonde is not always activated even though the system is ON.

Use either the Sonde Key on the Main Keypad or the Sonde Key on the Mini Keypad to toggle the Sonde ON and OFF.

When the Sonde is activated you may notice horizontal lines of interference on the monitor. The sonde symbol will be appear as an overlay on the video *(See Item 1, Figure 16)*. The Sonde icon on the Dashboard *(See Item 2, Figure 16)* will appear highlighted green as long as the sonde is active.

Figure 16 – Sonde Enabled

When the Sonde is ON, the blue LED by the Sonde Key 🔴 will be lit up, indicating that the system is sending a signal to the Sonde. The LED will be lit even if the Sonde is missing or not operational.

Locating the Camera with the Sonde

For normal camera operation, the Sonde should be turned OFF to save power until you want to locate the camera head underground using a locator.

When you are ready to activate the Sonde, press either the Sonde Key 🔴 on the Main Keypad or the Sonde Key 🔴 on the Mini Keypad. When you are finished locating the Sonde, press the Sonde Key 🔴 again to turn it OFF.

Line Tracing the SeeSnake Push Cable

In addition to being able to locate the Sonde built into the system camera, it is possible to trace the path of the push cable underground by using a RIDGID locator such as the NaviTrack II, Scout, SR-20, or SR-60.

To line-trace the SeeSnake push cable perform the following:

1. Connect a line transmitter with one connector well-grounded to the grounding stake, and the other connector clipped to the CS1000's Transmitter Clip-On Terminal *(See Item 1, Figure 17)*.

2. Press the Sonde Key 🔴 *(See Item 2, Figure 17)* to activate the Sonde.

3. Set the line transmitter and the locator to the same desired frequency and use the locator to trace the line.

Figure 17 – Transmitter Clip-On Terminal

The built-in 512 Hz Sonde may be on at the same time. If your locator is equipped with SimulTrace dual-frequency capability, you can follow the push cable all the way to the camera's location and then detect the Sonde in the camera as you approach it above ground.
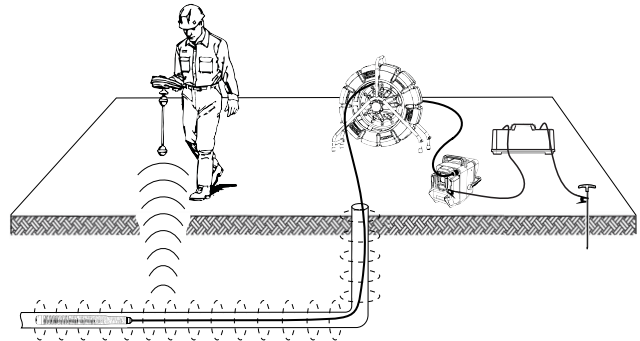
Figure 18 – Line Tracing the Push Cable

Alternatively, use a line transmitter and a locator to line-trace the push cable. When the signal fades, switch the locator to Sonde mode. Pick the 512 Hz signal up from where the line-trace frequency started to weaken and zero in on the in-line Sonde.

Because locating frequencies from transmitters can distort the image on the monitor, turn the Sonde and the line transmitters OFF while inspecting the interior of a line and turn them ON only when ready to do a locate.

Operating Instructions

⚠ WARNING

Always wear eye protection to protect your eyes against dirt and other foreign objects.

When inspecting drains that might contain hazardous chemicals or bacteria, wear appropriate protective equipment, such as latex gloves, goggles, face shields, and respirators to prevent burns and infections.

Do not operate this equipment if operator or machine is standing in water. Operating machine while in water increases the risk of electrical shock. Rubber soled, non-slip shoes can help prevent slipping and electric shock, especially on wet surfaces.

Follow operating instructions to reduce the risk of injury from electrical shock and other causes.

Starting a Job

Starting Up the CS1000

1. Check that the unit is properly set up.

2. Connect the CS1000 to both a power source and a SeeSnake camera inspection system.

3. Place the camera head into the inspection start point, typically the pipe entrance.

4. Power the CS1000 and camera ON by performing one of the following:

   • Pressing the Power Key 🔘 on the Main Keypad.

   • Pressing the Power Key 🔘 on the Mini Keypad.

   • Pressing the Autolog Key ✳ on the Main keypad. This will power on the CS1000 and camera, start a new Job File, and start recording an Autolog video.

5. (Optional) Zero the counter by pressing and holding the Zero Key 🔟.

6. Push the camera head through the line. Proceed with pipe inspection in accordance with your SeeSnake operator's manual.

Starting a New Job

Once ON, there are several ways to begin a new Job. If no Job file is open at the time, start a new Job by pressing one of the following keys:

   • Autolog Key ✳: Opens a new job and starts recording an Autolog video.

   • Video Key 🔲: Opens a new job and starts a video recording.

   • Photo Key 🔲: Opens a new job and takes a photo.

   • Photo Tag Key 🔲: Opens a new job, takes a photo, and brings up the Issue Tag and Note screen.

   • Job Manager Key 🔲: Opens the Job Manager screen where you can use the Select Key 🔲 to choose "Start New Job" from the list.

Figure 19 – "Start New Job" from the Job Manager

Capturing and Creating Media

Recording Autolog Video

Autolog video recording allows the entire inspection to be captured in a compressed format. The smaller Autolog file allows faster file exportation over standard video files.

Press the Autolog Key ✳ once to start recording an Autolog video. A splash screen will appear at the start of each Autolog recording. The Autolog icon on the dashboard will highlight red to indicate that an Autolog video recording is in progress.

An Autolog recording saves screen images in a motion JPEG video format at the rate of 4 frames per seconds. If no change in position or view is detected from the counter because the camera is not moving, the CS1000 will stop adding new frames until the camera moves again.

Figure 20 – Autolog Splash Screen

The CS1000 records audio continuously during Autolog video recording even if the camera is not capturing new frames. To record an Autolog video without audio, press the Microphone Mute Key 🎤.

You can capture additional photos or higher-quality video clips while recording an Autolog video by pressing the Photo Key 🔲, the Photo Tag Key 🔲, or the Video Key 🔲. To stop the Autolog video recording, press the Autolog Key ✳ one more time.

Recording Video

Press the Video Key 🔲 to start recording a video. A splash screen will appear at the start of each video recording. The video icon on the dashboard will highlight red to indicate that a video recording is in progress.

To record video without audio, press the Microphone Mute Key 🎤 to mute the microphone.

Figure 21 – Video Splash Screen

The CS1000 can record video and Autolog video simultaneously. The two recordings are independent of each other so if you start recording a video and then start recording Autolog video, you can start and stop both video types without affecting the other.

You can also capture additional photos by pressing the Photo Key or the Photo Tag Key . To stop the video recording, press the Video Key one more time.

Taking Photos

To take a photo, press the Photo Key . A splash screen containing your photo will appear each time you take one. The photo icon on the dashboard will highlight red to indicate that a photo has just been taken. You can add notes to photos during Job Review or you can annotate your photos during your inspection process by using the Photo Tag feature.
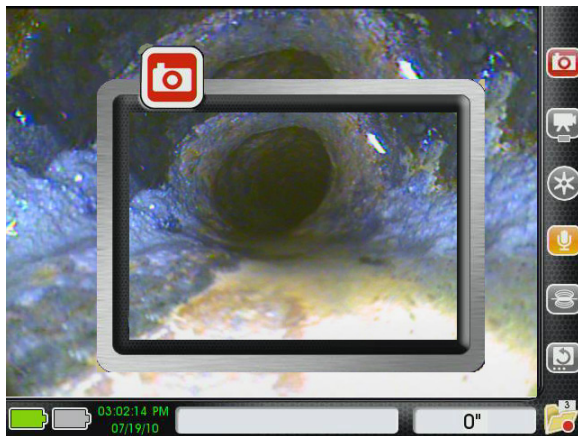
Figure 22 – Photo Splash Screen

Adding Notes to Photos

Pressing the Photo Tag Key will take a photo and open the Issue Tag and Note screen. The note screen has a text box where you can use the keyboard to add notes for your customer. Notes entered here will be included in reports alongside its associated photo.

Figure 23 – Issue Tag and Note Screen

To add a note, perform the following:

1. Press the Photo Tag Key .

2. Use the keyboard to type a note about the photo.

3. Press the the Select Key on the keypad to save your note and to return to Live View.

Adding Issue Tags to Photos

The CS1000 has a built-in library of "Issue Tags" which can be attached to images. The Issue Tags describe common conditions found during pipe inspections such as cracks, root intrusions, and collapsed pipes. Refer to Table 13 in this Operator's Manual for a chart containing the Issue Tags in your CS1000's library.

To add an Issue Tag perform the following:

1. Press the Photo Tag Key .

2. Use the left Arrow Key to navigate to the "Add Issue Tag" button. When the blue highlight is around the "Add Issue Tag" button , press the Select Key to open up the Issue Tag Library.

Figure 24 – Adding an Issue Tag

3. Use the Arrow Keys ▲▼◀▶ to find the Issue Tag that describes the problem in the photo. The name of the Issue Tag will appear below the photo and the description will show up in the text box.

4. When the blue highlight is around the Issue Tag you want to choose, press the Select Key ⬣.
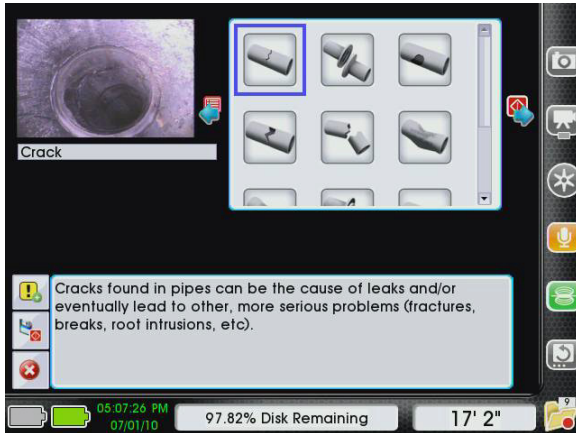
Figure 25 – Issue Tag Library

NOTE: Some of the Issue Tags allow you to specify a second level of detail. For example, the Issue Tag for "crack" allows you to further specify if the crack is longitudinal, circumferential, or if there are multiple cracks visible in the photo.

5. Add details to Issue Tag.
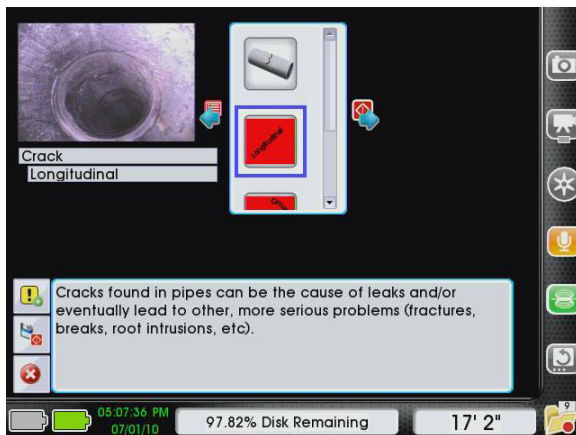
Figure 26 – Adding Specific Details with Issue Tags

• To skip this step and to save the Issue Tag without any additional details, press the Select Key ⬣.

• To include specific details, use the up and down Arrow Keys ▲▼ on the keypad to navigate to your choice and then press the Select Key ⬣ to save it.

6. From the Confirm Issue Tag screen you can save the Issue Tag as is, customize it, add a note, or add additional Issue Tags.

• To save the Issue Tag as is, press the Select Key ⬣. The "Save" button 🖲 will be selected automatically, so pressing the Select Key ⬣ will quickly save the Issue Tag without any additional details and return you to Live View.
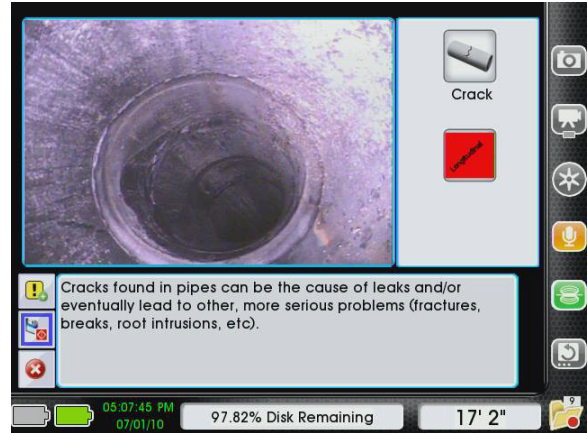
Figure 27 – Confirm Issue Tag Screen

• To customize or to add to an Issue Tag's description, use the right Arrow Key ▶ to navigate into the text box. Use the keyboard to make edits. After making changes, press the Select Key ⬣ to save the edited Issue Tag and to return to Live View.

• Multiple Issue Tags can be added to a single photo. After selecting the first Issue Tag, instead of pressing the Select Key ⬣ again to save it and return to Live View, press the up Arrow Key ▲ to navigate from the "Save" button to the Add Issue Tag button 🔖. Press the Select Key ⬣ to add additional Issue Tags to the photo. Issue Tags appear in reports in the order added.

Figure 28 – Adding a Text Note to an Existing Issue Tag

Photos can be saved to the job without adding a note or issue tag by simply pressing the Select Key ⬣ when you first get to the Issue Tag and Note Screen.

You can also exit the Issue Tag and Note Screen without saving the photo, any notes, or tags by using the down Arrow Key ▽ to move to highlight the "Cancel" button ✖ and then pressing the Select Key ◉.

Annotating an Inspection by Voice

When the CS1000 microphone is ON, the screen icon for the microphone will highlight gold.

The Microphone Mute Key 🎤 will mute and unmute the mic and toggle the screen icon ON and OFF to indicate the state of the microphone.

Figure 29 – Microphone on Keyboard

When the microphone is ON, comments made during Auto-log or video capture will be recorded and attached to the video clip in the report.

You can mute the microphone at any point during a video or Autolog recording without affecting the video. This enables you to turn the sound recording off during portions of the video when you are not speaking directly to the customer; thus eliminating unwanted sounds or remarks from becoming part of the report or job file.

Adding Job Information

Job information can be added, edited, and deleted from either the Job Manager screen or the Job Review screen.

Figure 30 – Job Manager Screen

Job Manager

Add, edit, or remove a job's information by opening the Job Manager and choosing from the five categories of information.

1. Press the Job Manager Key 🗁.

2. Use the Arrow Keys △▽◁▷ and Select Key ◉ to pick which of the five categories of job data you want to edit in the right column.

3. Use the keypad's Arrow Keys △▽◁▷ to navigate between fields on each page.

4. After entering the information, use the down Arrow Key ▽ to navigate to "Save" and select it by pressing the Select Key ◉.

Table 10 Job Manager Categories and Fields	
Categories	**Available Fields**
Job Information	Job Name Job ID Inspection Type Purpose
Customer	Name Company Name Street Address, City, State, Zip code Phone Number (Home/Cell) Email Address
Inspector	Your Name Your Company Name Company Website Street Address, City, State, Zip code Phone Number (Work/Cell) Email Address
Job Address	Street Address, City, State, Zip code
Job Results	Summary Recommended Action Quote

Reviewing a Job

Playback videos and Autolog videos in the Job Review screen. Pressing the Job Review Key ▶ during an inspection will open this screen with the most recent capture (photo, video, or Autolog video) highlighted.

Figure 31 – Last Capture Highlighted

Playback Video

To watch a recently recorded video from the Job Review screen, use the right Arrow Key ▷ to navigate from the thumbnail of the video you want to play to the "Play" button and then press the Select Key ⊙.

Figure 32 – Video and Autolog Playback Controls

You can mute the audio on video or Autolog video playback by pressing the Microphone Mute Key 🎤. From the play-back screen you can use the left and right Arrow Keys ◁▷ to move between the playback controls.

Job Review Status Bar

During video or Autolog video playback, the appearance of status bar will change as follows:

- The time and date on the status bar will change to re-flect the video date and frame time stamp. To indicate playback time and date instead of current time and date, the text will appear as red instead of green.

- The count value displayed on the status bar will also change during playback to reflect the distance cov-ered in the video or Autolog video you are watching. The text will appear as red instead of black to indicate that it is reflecting playback distance count.

Figure 33 – Status Bar Changes during Video Playback

Adding and Editing Notes and Issue Tags

You can also add notes and edit Issue Tags from the Job Review screen.

To edit a note or Issue Tag's description, press the right Arrow Key ▷ to navigate to the text box. After editing, use the down Arrow Key ▽ to navigate to the "Save" button and press the Select Key ⊙.
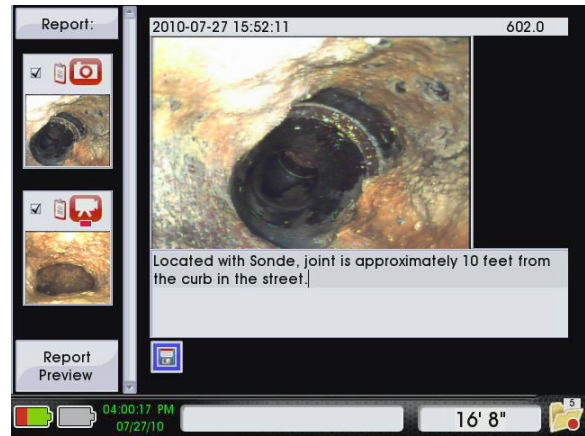
Figure 34 – Editing Notes from the Job Review Screen

Use the Photo Key 📷 to add notes to photos by following the same steps you would take to edit notes or Issue Tag descriptions.

Adding a New Session

It will sometimes occur that you want to do more than one inspection for the same job. For example, you may want to inspect a kitchen drain, basement drain, and roof vent all in one visit to discover the cause of a problem.

To add a new session to a job perform the following:

1. Press the Job Manager Key 📂.

2. Use the down Arrow Key ▽ to navigate to "New Session."

3. When the blue highlight appears around "New Session," press the Select Key ⊙.

Figure 35 – Adding a New Session

Excluding Media from Reports

From the Job Review screen you can choose which media elements you want to include and exclude in reports. Use the Select Key to check or uncheck the box of a selected media element in the left column.
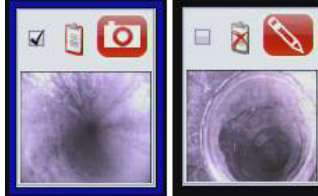
Figure 36 – Included (left) and Excluded (right) Elements

Excluded media elements will remain in the job file, but will not show up in reports you create for your customer.

Editing Job Information During Job Review

Add, edit, and delete job information from the Job Review screen by performing the following:

Figure 37 – Report Fields in Job Review Screen

1. Press the Job Review Key .

2. Use the up Arrow Key to navigate to the top of the left column where it says "Report."

3. When "Report" appears highlighted in blue, press the right Arrow Key to navigate to the first information field in the list.

4. Move between fields as you add and/or edit information using the Arrow Keys .

Previewing Reports

To preview a report from the Job Review screen, use the down Arrow Key to move to the bottom of the left column to "Preview Report" and press the Select Key to generate a preview of your customer report.

Figure 38 – "Report Preview" from Job Review Screen

You can also preview your report anytime from the Job Manager screen by pressing the Job Manager Key and then using the down Arrow Key to navigate to "Preview Report" and pressing the Select Key .

Figure 39 – Preview Report in Job Manager

Customer Report Preview

Figure 40 shows what your customer will see if you export the report directly to a thumb drive.

1. Inspector's company name and address, Inspector's name and contact information.

2. Customer's name, address, and contact information and Job address.

3. Job information, including Job name, ID, and purpose.

4. Two sample sessions. The first session contains a video and a photo tag, the second session contains a photo.

5. Job results, including summary, recommended action, and quote.

This is strictly a report preview and therefore is not editable. To edit the information and media elements included in your report, press the Menu Key 🔲 to make changes from the Job Review Screen.

Figure 40 – Expanded Customer Report Preview
(at right)

Closing a Job

After completing the inspection and after adding images, text comments, and video clips close the job by pressing the Job Manager Key 🔲 and then, with "Close Job" high-lighted, press the Select Key 🔲. The data associated with the job will be saved in a report.

Figure 41 – Closing a Job

Resuming a Closed Job

If a job has been interrupted by the unit being shut down unexpectedly, such as by a power outage, a prompt asking you if you want to resume the job will appear when the unit is started up again.

INSPECTION
REPORT

1 A-B-C Plumbing
4789 Robbins St.
San Diego CA 92122

INSPECTOR:
Bob Greene
800-555-0933
858-555-4122
bgreene@email.com
www.abcplumbing.web

2 CUSTOMER:
Bridgette Wheeler
3855 Skyway Rd. San Diego CA 92123
Unified School District
858-555-5102
bwheeler@email.com

JOB ADDRESS:
3855 Skyway Rd. San Diego CA 92123

3 Job Name:3855 Skyway Rd.
Job ID:2010-0187
Inspection Type:Video
Job Date: 08-04-2010 12:24:54
08-04-2010 12:24:54 - 08-04-2010 12:35:17

Purpose: Record condition of city owned laterals for property owner

4 Session Number: 1, Time: 08-04-2010 12:24:54

Counter Distance: 11' 7" , Time: 08-04-2010 12:25:02

Counter Distance: 28' 9" , Time: 07-29-2010 12:21:19

Open joint
Medium
Joint is completely open.

Segment Number: 2, Time: 07-29-2010 12:43:51

Counter Distance: 31' 0" , Time: 07-29-2010 12:43:59

5 Summary:
First and seventh laterals have roots. One possible open joint.

Recommended Action:
Clear and reline or replace.

Quote: $2,300

12:37:13 PM
08/04/10   12' 9"

Figure 42 – Resume Job from Job Manager

You can re-open and modify closed jobs by performing the following:

1. Press the Job Manager Key

2. Use the down Arrow Key to navigate to "Resume Job" and press the Select Key .

3. Use the up and down Arrow Keys to navigate to the job you want to resume. When the blue outline is around the "Resume Job" icon of the job you want to resume press the Select Key .

Figure 43 – Resuming a Closed Job

Powering OFF the CS1000

Power OFF your CS1000 by pressing the Power Key either on the Main Keypad or on Mini Keypad. There will be a 3-second power down countdown after you press the Power Key . Cancel the power down countdown by pressing any of the keys on the main keypad.

Close or Pause a Job

If you try to power OFF the CS1000 when a job is open you will be asked if you want to close or pause the job before powering down.

Figure 44 – Close or Pause a Job

- Choose **"Close Job and Power Down"** to close the job and turn OFF the CS1000. To resume the job in the future select if from your "Resume Job" list.

- Choose **"Pause Job and Power Down"** to pause the job and turn OFF the CS1000. The next time you turn the CS1000 ON you will be asked if you want to resume your paused job. This is especially convenient if you want to take a quick break without using your batteries or if you want to move to a new inspection entry point at the same job location.

Abnormal Shutdown

If the CS1000 powers OFF abnormally, the equipment will perform a systems check to inspect and repair any damage the next time it powers ON. A systems check can take a few minutes. The following events may result in a systems check:

- An unexpected power outage during use.
- Unplugging the CS1000 when it is still ON.

Recycling Jobs

Remove Jobs from the Job Browser by sending them to the Recycle Bin.

Figure 45 – Select Jobs to Recycle

1. Open the Job Browser using one of the following methods:

   • Press the Menu Key 🔘, use the right Arrow Key ▷ to navigate to the Job Browser icon 📄 and press the Select Key ◎ to open the Job Browser.

   • Press the Job Manager Key 🗂, use the down Arrow Key ▽ to navigate to "Browse Reports," and press the Select Key ◎ to open the Job Browser.

2. Use the Select Key ◎ to check the jobs you want to recycle and to uncheck the jobs you want to leave in the Job Browser.

3. Use the right Arrow Key ▷ to navigate to the "Recycle" button and press the Select Key ◎.

To exit the Job Browser without recycling any jobs, navigate to the "Back" button in the lower right corner and press the Menu Key 🔘 on the keypad.

Configuring the CS1000

After configuring, the CS1000 will save and use the settings everytime the system starts.

Main Menu

Press the Menu Key 🔘 to access the main menu.

Figure 46 – Main Menu

Use the left and right Arrow Keys ◁▷ to move between the three icons in the main menu: Settings ⚒, About 🔢, and Job Browser 📄. Use the Select Key ◎ to open the menus. Use the Menu Key 🔘 to exit the main menu and to return to Live View.

Customizing Settings

Select the Settings icon ⚒ to bring up the configuration menus. From these menus you can modify various preferences and settings.

Edit Target Media

From the Edit Target Media menu you can use the up and down Arrow Keys △▽ to choose how to store jobs. You can store jobs to the internal drive, a USB drive, or both. The default setting only writes jobs to the internal drive.

Figure 47 – Set Job Storage Mode

If writing new job data to "USB Drive Only" or "USB + Internal Drive" insert a USB drive into one of the USB ports on the front of the CS1000 and open a new job to capture new media.

Edit Video Options

Select Edit Video Options 🎞 to open the video menu. Select between MPEG4 and MJPEG Capture Mode.

MPEG4 has a higher compression rate and results in smaller files, but may not be compatible with your computer system when you want to transfer the files.
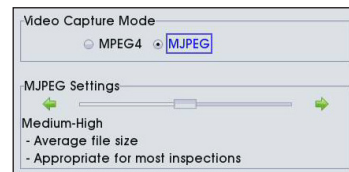
Figure 48 – Video Menu

CS1000's default capture mode, MJPEG is less compressed but is more widely compatible on different PC and Mac platforms.

You can further specify MJPEG settings further by using the down Arrow Key ▽ to move into the "MJPEG Settings" box and then the left and right Arrow Keys ◁▷ to move through three file size options. Refer to Table 11 to learn more about the differences between the file size options.

To apply changes, use the down Arrow Key ▽ to navigate to "Save" at the bottom of the screen and press the Select Key ◎. This will take you back to the settings menu. Press the Menu Key 🔘 on the keypad to return to the settings menu.

Table 11
MJPEG File Size Settings

Size	Description
Medium	Smallest file size. Good for long inspections
Medium-High	Average file size. Good for most inspections
High	Largest file size. Uses memory quickly. Not recommended

View Recycled Jobs

Select the Recycle Bin icon 🗑 to bring up a list of recycled and to recover or permanently delete jobs. Restoring a job will return it to the Job Browser 📋. Permanently deleted jobs are not recoverable.
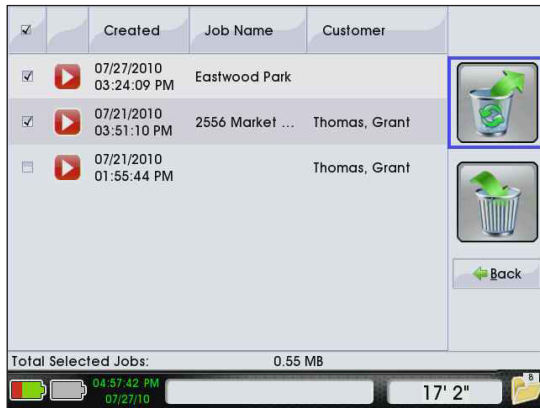

Figure 49 – Restore Selected Jobs
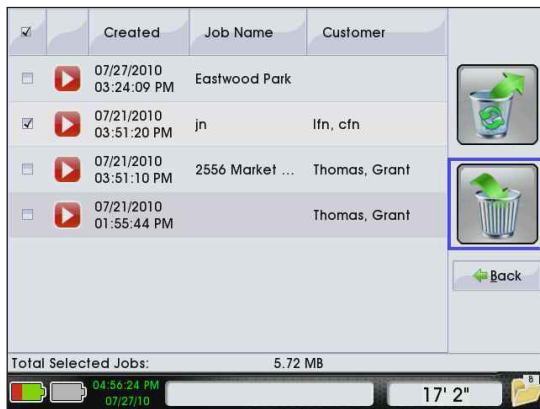
Figure 50 – Permanently Delete Selected Jobs

Use the Select Key ⏻ to check boxes in the left column to select which Jobs. Use the right Arrow Key ▶ to navigate to the right column and the Select Key ⏻ to either restore or permanently delete.

Control Reel Overlay

Select the Control Reel Overlay icon ⚙ to open the "CountPlus Settings" screen. This screen has a video preview in the left column and a

CountPlus Overlay in the right column. To toggle between enabling and disabling the overlay press the Select Key ⏻.
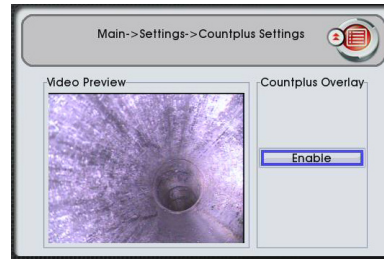
**Figure 51 – Enable Overlay**
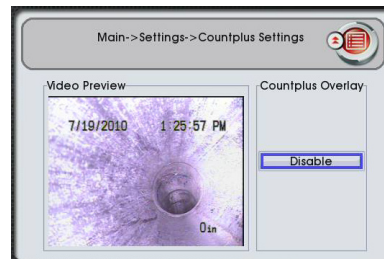
Figure 52 – Disable Overlay

Press the Menu Key 🔲 to return to the Settings Menu.

Country Preferences

Access the Country Preference menu by first navigating to the Settings menu from the Main menu. From within the County Preference menu, make changes to the region, language, count units, date format, and count format.

Figure 53 – Country Preferences Menu

- Customize the region by using the up and down Arrow Keys ▲▼ on the keypad to navigate to the arrow icons on the right side of the "Select region" section. Press the Select Key ⏻ to toggle between the options.

- Customize the language preference by using the up and down Arrow Keys ▲▼ on the keypad to navigate to the arrow icons on the right side of the "Language"

section. Press the Select Key ⬡ to chose between English, Dutch, or Spanish.

- Use the left and right Arrow Keys ◀▶ to change the count measurements display to either "feet" or "meters." The selected choice will be highlighted in blue.

- Use the left and right Arrow Keys ◀▶ to chose between "MM/DD/YYYY" or "DD/MM/YYYY" date formats. The selected choice will be highlighted in blue.

- Use the left and right Arrow Keys ◀▶ to chose between decimals or commas to separate count measurements. The selected choice will be highlighted in blue.

Save your preferences by using the down Arrow Key ▽ to navigate to "Save" at the bottom of the screen and pressing the Select Key ⬡. You will need to reboot the CS1000 when prompted to allow the changes to take effect.

Edit Time/Date

Select the Edit Time/Date icon 🗓 to open the date and time menu and to set the current time, date, and date format. Use the Tab key or the keyboard's arrow keys to move to the field you want to change. Use the number keys on the keyboard or the up and down Arrow Keys △▽ on the keypad to set the correct values.

Set Time: 02 : 55 PM
Set Date: 07 / 29 / 2010

Figure 54 – Set Time and Date

Save changes by using the left and right Arrow Keys ◀▶ to navigate to "Save" at the bottom of the screen and pressing the Select Key ⬡. Saving will return you to the settings menu. Alternatively, press the Menu Key 🔲 to return to the settings menu.

Delivering Reports

One of the most valuable features of the CS1000 is the ability to generate comprehensive formatted reports easily and quickly. In many cases you will be able to hand your customer a USB drive containing a report before leaving the job site.
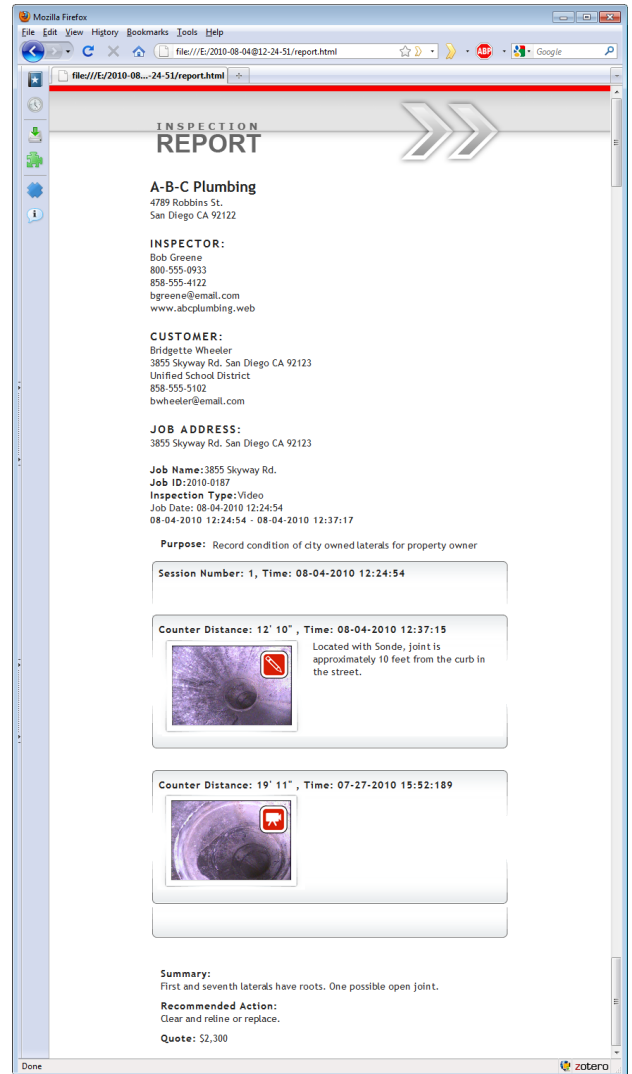

Figure 55 – Customer Report Viewed in Web Browser

"Direct Customer Reports" include photos, video, Autolog video, audio, Issue Tags, and text notes. You can also use the SeeSnake HQ software to create reports for printing, emailing, uploading to the internet, or to burn reports to DVD.

Customer Direct Reports

To save the current inspection as a report on a USB drive for the customer, perform the following:

1. Close the job.

2. Insert an empty USB drive into one of the USB ports.

3. Use the Select Key ⬡ to choose "Export Jobs."

Figure 56 – Select USB Function, Export

4. The Job Browser ▦ will open automatically. A list of jobs and reports on the CS1000's internal drive will appear in the Job Browser ▦ . Choose the job you want to deliver to the customer and use the Select Key ⊙ to toggle its selection box checkmark ON. Make sure to uncheck the boxes next to any jobs and reports you do not want to export.

5. Use the Arrow Keys △▽◁▷ to navigate to the "Customer Report" icon in the far right column. With the "Customer Report" icon highlighted, press the Select Key ⊙.

Figure 57 – Select to Export a Customer Direct Report

6. After pressing the Select Key ⊙, you will see an export progress screen. The CS1000 will write a report to the thumb drive. The report will be in a format that can be read by most web browsers.

Figure 58 – Exporting Jobs to a USB Drive

7. Exporting has finished successfully when "Copying Job" changes to "Copied Job" and the "OK" button has a blue outline. Press the Select Key ⊙ to select "OK" and continue.

Figure 59 – Export Complete

8. Next, you will be asked if you want to recycle the job you copied.

   • To move the job to the Recycle Bin, press the Select Key ⊙.

   • To keep the job in the Job Browser ▦, press the right Arrow Key ▷ to navigate to the "Cancel" button and press the Select Key ⊙.

Figure 60 – Recycle Copied Jobs

9. Remove USB drive and hand it to your customer. Instruct your customer to double-click the file called "report.html." The report will open in their default web browser.

SeeSnake HQ Compatible Reports

The process for exporting reports to SeeSnake HQ is similar to the process for exporting Customer Direct reports, except you will choose the "Export to SeeSnake HQ" option from the Job Browser.

1. Close the job.

2. Insert an empty USB drive into one of the USB ports.

3. Use the Select Key ⊙ to choose "Export Jobs."

4. The Job Browser 📋 will open automatically. A list of jobs and reports on the CS1000's internal drive will appear in the Job Browser 📋. Choose the job you want to deliver to the customer and use the Select Key ⊙ to toggle its selection box checkmark ON. Make sure to uncheck the boxes next to any jobs and reports you do not want to export.

5. Use the Arrow Keys △▽◁▷ to navigate to the "Export to SeeSnake HQ" icon in the far right column. With the "Export to SeeSnake HQ" icon highlighted, press the Select Key ⊙.

Figure 61 – Export to SeeSnake HQ

6. The export process will begin. The export process for an SeeSnake HQ Compatible Report is the same as for a Customer Direct Report.

7. Exporting has finished successfully when "Copying Job" changes to "Copied Job" and the "OK" button has a blue outline. Press the Select Key ⊙ to select "OK" and continue.

8. Next, you will be asked if you want to recycle the job you copied.

   • To move the job to the Recycle Bin, press the Select Key ⊙.

   • To keep the job in the Job Browser 📋, press the right Arrow Key ▷ to navigate to the "Cancel" button and press the Select Key ⊙.

9. Remove USB drive from your CS1000 and insert it into your PC laptop or desktop.

SeeSnake HQ Software

SeeSnake HQ can be used on a laptop or desktop PC. With SeeSnake HQ, you can organize Jobs, customize Reports, generate CD/DVD versions for customers, and put Reports into a variety of file formats for various distribution methods.
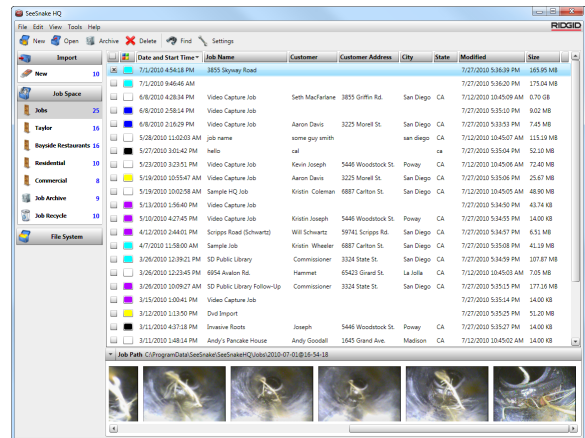
Figure 62 – SeeSnake HQ

SeeSnake HQ offers an array of tools to edit a Job's information, and to modify the report using a pre-built report style. You can create shorter video clips of video and Autolog video for your customers. You can also add audio notes to photos.

Figure 63 – Review and Edit Media in SeeSnake HQ

The printable version of the report can be printed or emailed as a PDF file. Alternatively, a multimedia report can be viewed in a web browser or on a DVD.

SeeSnake HQ also allows you to upload reports to RIDGID-Connect, an online service for storing and sharing inspection reports. To learn more about RIDGIDConnect, visit www.ridgidconnect.com.

Figure 64 – Report Preview in SeeSnake HQ

For a complete description of SeeSnake HQ and how to use it go to www.hq.seesnake.com. To contact the SeeSnake HQ support team send an email to hqsupport@seesnake.com.

Download the latest version of SeeSnake HQ for free from www.hq.seesnake.com.

Maintenance Instructions

Software Updates

If Auto-Launcher is enabled on the SeeSnake HQ and if software updates for the CS1000 are available, an update notification will automatically appear on the computer. If Auto-Launcher is not enabled, manually check for software updates from the Home Window by either selecting "Check for Update" from the Help menu or by selecting "Device Manager" from the Tools menu. After performing a manual check, a notification will appear if updates are available.

To install a software update on the CS1000, click the "Yes" button from the notification pop-up window and select the CS1000 from the device manager. Insert a USB drive into the computer and select the "Copy" button from the pop-up window to download the software update. After downloading the software update, remove the USB drive from the computer and insert the USB drive into the CS1000. Select "Update" from the window that pops up on the C1000. After the CS1000 copies, extracts, and verifies the update, click the power button to reboot the CS1000 when prompted to complete the installation.

Cleaning

> **⚠ WARNING**
> Disconnect all cords and cables and remove batteries prior to cleaning the CS1000 to reduce the risk of electrical shock.

Do not use liquid or abrasive cleaners on the CS1000. Clean the CS1000 with damp cloth. Only clean screen with cleaners approved for use on LCD screens. Do not allow any liquid to enter the CS1000.

Accessories

> **⚠ WARNING**
> The following accessories have been designed for use with the CS1000. Other accessories may become hazardous when used with the CS1000. To reduce the risk of serious injury, only use accessories specifically designed and recommended for use with the CS1000.

- RIDGID-SeekTech or NaviTrack Locator
- RIDGID-SeekTech or NaviTrack Transmitters
- CountPlus Cable Counter cable-measurement system, normally built in to SeeSnake Pipe Inspection Systems

Transport and Storage

Keep the equipment indoors or well-covered in wet weather. Store the machine in a locked area, out of the reach of children and people unfamiliar with its operation. This machine could cause serious injury in the hands of untrained users. Do not expose to heavy shocks or impacts during transport.

Remove batteries before shipping and before storing for extended periods.

Store electrical devices in a dry place to reduce risk of electrical shock. Store in temperatures from 14°F to 158°F [–10°C to 70°C]. Store the unit away from heat sources such as radiators, heat registers, stoves, and other products (including amplifiers) that produce heat.

Service and Repair

> **⚠ WARNING**
> Improper service or repair can make the CS1000 unsafe to operate.

Service and repair of the SeeSnake CS1000 must be performed by a RIDGID Independent Authorized Service Center.

For information on your nearest RIDGID Independent Service Center or any service or repair questions:

- Contact your local RIDGID distributor.
- Visit www.RIDGID.com or www.RIDGID.eu to find your local Ridge Tool contact point.
- Contact Ridge Tool Technical Service Department at rtctechservices@emerson.com or, in the U.S.A. and Canada, call 800-519-3456.

Disposal

Parts of the unit contain valuable materials that can be recycled. There are companies that specialize in recycling that may be found locally. Dispose of the components in compliance with all applicable regulations. Contact your local waste management authority for more information.
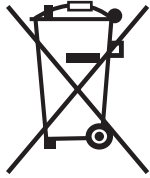
For EC countries: Do not dispose of electrical equipment with household waste!

According to the European Guideline 2002/96/EC for Waste Electrical and Electronic Equipment and its implementation into national legislation, electrical equipment that is no longer usable must be collected separately and disposed of in an environmentally-correct manner. Recycle defective or used battery packs/batteries in accordance with 91/157/EEC.

Battery Disposal

The RBRC™ (Rechargeable Battery Recycling Corporation) Seal on the battery packs signifies that RIDGID has already paid the cost of recycling the Li-Ion battery packs.

RBRC™, RIDGID®, and other battery suppliers have developed programs in the U.S.A. and Canada to collect and recycle rechargeable batteries. Normal and rechargeable batteries contain materials that should not be directly disposed of in nature and contain valuable materials that can be recycled. Help to protect the environment and conserve natural resources by returning your used batteries to your local retailer or an authorized RIDGID service center for recycling. Your local recycling center can also provide you with additional drop-off locations.

RBRC™ is a registered trademark of the Rechargeable Battery Recycling Corporation.

For EC countries: Defective or used battery packs/batteries must be recycled according to the guideline 2006/66/EC.

Table 12 Troubleshooting		
Problem	**Probable Fault**	**Solution**
Video/Image not seen	No power to SeeSnake	Check power is correctly plugged in or battery is charged. Press power key on CS1000 body or keypad.
	Connections faulty	Check connections between CS1000 unit and SeeSnake. Make sure system cable is firmly connected to the System Connector on the front left edge of the keyboard.
	Batteries low	Recharge batteries or connect to external power supply.
Flashing battery warning appears	18 V Li-Ion batteries low	Recharge batteries. Switch to AC power (110/220VAC).

Table 13
Issue Tag Icons and Descriptions

Icon	Name	Issue Tag	Second Level of Detail
	Crack	Crack apparent in the pipe wall that has not become visibly open, but can cause leaks and can eventually lead to other, more serious problems such as fractures, breaks, or root intrusions.	Longitudinal Circumferential Multiple Spiral
	Open Joint	Longitudinal displacement of adjacent pipes leaves the joint completely open.	Medium Large
	Hole	Visible hole in the pipe wall that may have been formed during construction or work performed near the pipe.	—
	Fracture	Crack has become visibly open on the pipe wall and can cause leaks and severe structural integrity loss.	Longitudinal Circumferential Multiple Spiral
	Broken	Pipe pieces noticeably displaced from its original position and generally needs replacement.	—
	Deformed	Original cross-section of pipe likely altered by pressure and indicates structural integrity loss.	—
	Collapsed	Collapsed pipe indicates complete loss of structural integrity and that greater than 50% of the sectional area has been lost.	—
	Joint Displaced	Longitudinal displacement of adjacent pipes likely caused by ground movement.	Medium Large
	Surface Damage	Surface on the inside or the outside of the pipe damaged by spalling or wear.	—
	Roots	Roots penetrated the pipe and may lead to cracks or blockage.	Fine Tap Mass
	Attached Deposits	Foreign material such as grease and calcium clinging to the pipe wall and may lead to blockage.	Encrustation Fouling Grease Other

Notes

FULL LIFETIME WARRANTY
Against Material Defects
& Workmanship

What is covered

RIDGID® tools are warranted to be free of defects in workmanship and material.

How long coverage lasts

This warranty lasts for the lifetime of the RIDGID® tool. Warranty coverage ends when the product becomes unusable for reasons other than defects in workmanship or material.

How you can get service

To obtain the benefit of this warranty, deliver via prepaid transportation the complete product to RIDGE TOOL COMPANY, Elyria, Ohio, or any authorized RIDGID® INDEPENDENT SERVICE CENTER. Pipe wrenches and other hand tools should be returned to the place of purchase.

What we will do to correct problems

Warranted products will be repaired or replaced, at RIDGE TOOL'S option, and returned at no charge; or, if after three attempts to repair or replace during the warranty period the product is still defective, you can elect to receive a full refund of your purchase price.

What is not covered

Failures due to misuse, abuse or normal wear and tear are not covered by this warranty. RIDGE TOOL shall not be responsible for any incidental or consequential damages.

How local law relates to the warranty

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific rights, and you may also have other rights, which vary, from state to state, province to province, or country to country.

No other express warranty applies

This FULL LIFETIME WARRANTY is the sole and exclusive warranty for RIDGID® products. No employee, agent, dealer, or other person is authorized to alter this warranty or make any other warranty on behalf of the RIDGE TOOL COMPANY.

We Build Reputations™

RIDGID®

EMERSON™
Professional Tools

E M E R S O N . C O N S I D E R I T S O L V E D.™