SeeSnake® LCDPak

⚠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.

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SeeSnake® LCDPak

RIDGID®

SeeSnake® LCDPak

Record the Serial Number of your unit below and retain for your records.
See nameplate for serial number.

Serial Number	

Safety Symbols

In this operator's manual 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 risk of electrical shock.

General Safety Rules

⚠ **WARNING**

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

SAVE ALL WARNINGS AND INSTRUCTIONS
FOR FUTURE REFERENCE**!**

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 grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electrical shock if your body is grounded.

• **Do not expose electrical devices to rain or wet conditions.** Water entering this product will increase the risk of electrical shock.

• **Do not abuse cord. Never use the cord to carry the device, or to 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.

• **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.** This reduces 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.** Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.
- **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the tool 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, or 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 switch does not turn it ON and OFF.** Any equipment that cannot be controlled with the switch is dangerous and must be repaired.
- **Disconnect the plug from the power source and/or the battery pack from the equipment before making any adjustments, changing accessories, or storing.** Such 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 and clean; free from oil and grease.** Allows for better control of the equipment.

Battery and Charger Safety

⚠️ **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 that is 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. When 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 be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally 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, so do not dispose of in a fire. Some countries have regulations concerning battery disposal. Please follow all applicable regulations.

Service

- **Have your equipment serviced by a qualified repair person using only identical**

replacement parts. This will ensure that the safety of the equipment is maintained.

- **Damage to the product.** 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 product does not operate normally by following the operating instructions;
  - If the product has been dropped or damaged in any way; or,
  - When the product exhibits a distinct change in performance.

Specific Safety Information

⚠️ **WARNING**

This section contains important safety information that is specific to this equipment.

Read these precautions carefully before using the LCDPak to reduce the risk of electrical shock or other serious personal injury.

SAVE THESE INSTRUCTIONS!

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

LCDPak Safety

- **The equipment is intended for indoor use when used with the AC power supply.** When powered by battery it is considered portable, therefore when used, it shall be protected from exposure to weather. This product is not water-resistant; therefore do not expose the equipment to moisture or rain. Water entering the unit housing can increase the risk of safety hazard and electrical shock. Only the camera and cable in a SeeSnake Pipe Inspection Reel are waterproof.
- **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 insure that the outlet is properly grounded. If in doubt, have the outlet inspected by a licensed electrician.
- **Power the LCDPak only with a specifically designated battery or a double insulated power supply.**
- **Do not operate this equipment if operator or machine is standing in water.** Operating machine while in water increases the risk of electrical shock.

- **The LCDPak is not waterproof. 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 operators' manual, and the instructions for any other equipment in use and all warnings before operating the LCDPak.** Failure to follow all instruction may result in property damage and/or serious personal injury.
- **Always use appropriate personal protective equipment while 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 equipment such as 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 using 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, causing 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 exposed body parts 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 with 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.
If you have any question concerning this Ridge Tool product:

- 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 Services Department at rtctechservices@emerson.com, or in the U.S. and Canada call (800) 519-3456.

Description, Specifications and Standard Equipment

Description

The SeeSnake LCD*Pak* is a modern, portable monitor and camera control unit for use with a SeeSnake Pipe Inspection diagnostic system.

The LCD*Pak* is designed to easily connect with a SeeSnake reel and camera and provide a clear image of the camera's field of view, easily daylight-visible. It provides readily accessible controls for adjusting the camera and the display and for controlling the in-line Sonde built in to most SeeSnake cameras, which allows the operator to locate the camera when it is underground. The LCD*Pak* also enables the operator to connect an external Line Transmitter to the SeeSnake cable and use a standard locator to line-trace the path of the SeeSnake cable in a pipe.

The LCD*Pak* is used in conjunction with any SeeSnake reel configuration (Figure 1). Other auxiliary equipment used with the SeeSnake LCD*Pak* includes:

- Rechargeable batteries.
- A Ridgid locator/receiver (such as the SeekTech SR20, the SeekTech SR-60, the RIDGID Scout or the Navitrack II).
- A Ridgid transmitter (such as the SeekTech ST-510, the SeekTech ST-305, the SeekTech ST-33Q, the Navitrack Brick or the Navitrack 10-watt transmitter).
- The Count*Plus* cable-measurement system, normally built in to SeeSnake pipe inspection systems.

Specifications

Weight:	12.8 lbs (5.8 kg) w/o batteries
	15.6 lbs (7 kg) w/ 2 batteries
Dimensions:	Length: 14.3" (36.3 cm)
	Width: 11.9" (30.2 cm)
	Height: 12.4" (31.5 cm)
Power Source:	100-240VAC/50-60Hz, 1.5A or
	18 VDC
Battery Type:	2x 18 V Li-Ion, 2.2 Ah

Operating Environment

- **Temperature: 32°F to 104°F (0°C to 40°C)**
- **Humidity: 5% to 95% RH**
- **Storage Temperature: 14°F to 158°F (-10°C to 70°C)**
- **Altitude: 13120 feet (4000 meters)**

LCD Display

- **Resolution: VGA 640x480 pixels**
- **Display Size (HxV): 12.1" (30.7 cm)**
- **Contrast Ratio: 700:1**
- **Brightness: 500 cd/m2**
- **Horizontal Frequency: 31.5 kHz**
- **Vertical Frequency: 60 Hz**
- **Power Consumption:13 W**

Standard Equipment

1. LCD*Pak*
2. Operator's Manual
3. Instructional DVD

Optional Equipment

	Cat # (US)	Cat # (EU)
18 V Li-Ion Rechargeable Battery	32743	28218
Battery Charger	32068	32073
Dual Battery Kit with Charger	32648	32693
Single Battery Kit with Charger	32708	32713

The LCDPak Pak is protected under U.S. and international patents.

Figure 1: LCD*Pak* with a SeeSnake Reel

LCD*Pak* Components

Brightness Key

Sonde Key

Power Key

Monitor

Accessory
Interface Port
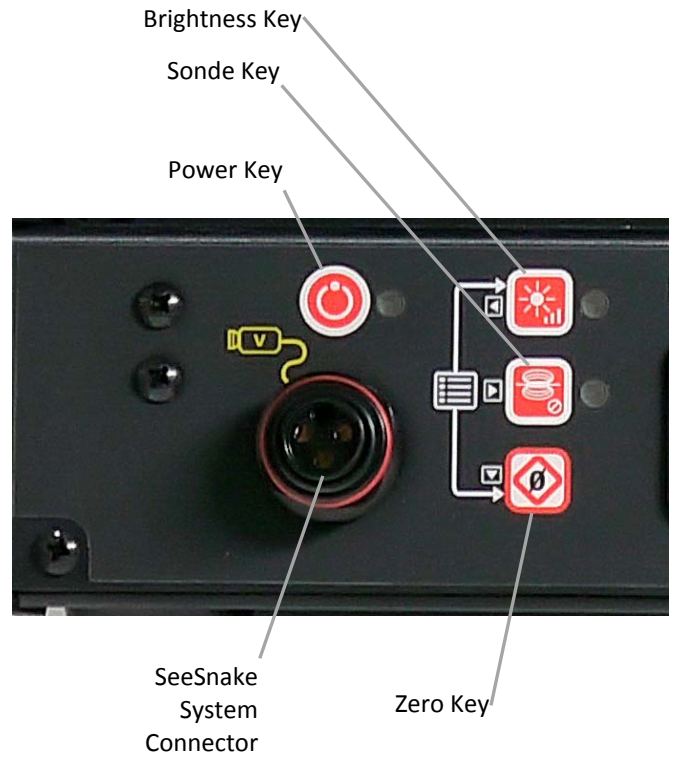
SeeSnake
System
Connector

Zero Key

Transmitter Clip-
on Terminal

Video Out

Figure 2: Front View (Open) and Controls

External Power
Cord

Front Cover

Serial # Label

Optional
Batteries

Front Cover
Release Button

Figure 3: Front View (Closed)

Figure 4: Rear View

Icon Legend

 Power Key
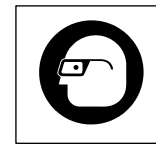
 Brightness Key

 Sonde Key

 Zero Key

Pre-Operation Inspection

⚠ **WARNING**

Before each use, inspect your SeeSnake LCDPak 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, any external power and cords are disconnected, and the battery is removed. Inspect the cords, cables and connectors for damage or modification.

2. Clean any dirt, oil or other contamination from the SeeSnake LCDPak to aid in inspection and to prevent the unit from slipping from your grip while transporting or using.

3. Inspect the LCDPak 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 Set Up

⚠ **WARNING**

Set up the LCDPak and work area according to these procedures to reduce the risk of injury from electrical shock, fire, and other causes and to prevent damage to the LCDPak.

1. Check work area for:

   • 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 LCD*Pak* 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 done if possible, determine the drain access point(s), size(s) and length(s), presence of drain cleaning chemicals or other chemicals, etc. If chemicals are present, it is important to understand the specific safety measures required to work around those chemicals. Contact the chemical manufacturer for required information.

3. Determine the correct equipment for the application. The SeeSnake LCDPak is made to view inspections done with an inspection camera. Inspection equipment for other applications can be found by consulting the Ridge Tool Catalog, online at www.RIDGID.com or www.RIDGID.eu.

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.

LCDPak Placement

Place the LCDPak to allow easy access and viewing while manipulating the camera and pushrod for an inspection. Make sure that the location is not wet and will not let the LCDPak and other equipment get wet during use. The LCDPak 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 LCDPak and cable reel are stable.

Front Cover/Tilt Stand

The LCD*Pak* front cover protects the unit during transportation and storage. When open, the front cover provides a sun hood to reduce glare.

1. Place the LCD*Pak* in the desired location.

2. Tilt the unit back slightly and then pull forward on the tilt stand until it locks in place.

Opening the Front Cover

1. Locate the orange release buttons on each side of the unit. Depress these buttons while gently pressing in on the lower corners of the cover with your thumbs (Figure 5).

Figure 5: Opening the Front Cover

2. Once you depress the orange buttons, you will feel the cover release. Allow the cover to swing upward (Figure 6).

3. Raise the front cover to its uppermost position. Make sure the cover locks into place on both sides.

Closing the Cover

1. Keeping clear of the front cover, gently depress the orange buttons to drop the cover to the

lower position. Press cover into place until it locks.

Set up the LCD*Pak* so its monitor screen is easy to see and its controls are easy to reach during use. In brightly lit areas, point the monitor screen away from bright light sources and/or use the monitor's sun shade to reduce glare.

Figure 6: Front Cover Released

Connecting the LCDPak

SeeSnake System Cable

Unwrap the SeeSnake System Cable from its holder and match the System Cable plug to the matching SeeSnake System Connector on the LCD*Pak*. To join the connectors, align the guide pin to the guide socket, push the connector straight in and tighten the outer locking sleeve (Figure 7).
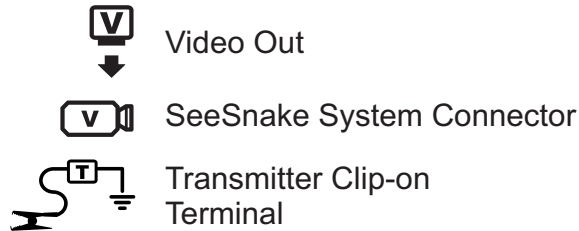
NOTE! A guide ridge molded into the top of the cable connector will point up when the plug is correctly aligned.

Guide
Ridge

Figure 7: Connecting to SeeSnake System Connector

NOTICE

When connecting/disconnecting the SeeSnake system cable, turn only the locking sleeve. To prevent damage, do not bend or twist the connector or cable.

Connection Icons

V̅   Video Out

[V]📷   SeeSnake System Connector

[T]   Transmitter Clip-on Terminal

External Monitor

The LCDPak may be used with an external SeeSnake monitor by connecting an RCA cable from the Video input port on the external monitor. Connect the other end of the cable to the yellow LCDPak video output port on the front of the LCDPak, marked with V̅ .

Figure 8: Power Cord and Power Cord Wrap

Powering The SeeSnake LCD*Pak*

The SeeSnake LCDPak can either be powered with RIDGID Li-Ion rechargeable battery or plugged in to an outlet using a supplied AC/DC power converter. Battery power is the preferred powering method to reduce the risk of electrical shock. **Additionally, the power converter is not rated for outdoor use and should only be used indoors.**

Battery Power

With dry hands insert 1 or 2 fully charged battery onto the battery dock on the back of the LCDPak. Make sure that the battery locks onto the dock. See the Battery Charger operator's manual for more information.

Batteries supplied for the LCDPak are rated at 2.2 amp hours. When fully charged, depending on use (recording time, etc.) the LCDPak will run for approximately 1.75 hours with a single, fully charged battery, and approximately 4.5 hours with two fully charged batteries (actual time may vary).

Two LEDs for each battery will be seen on the front face. The LCD*Pak* will reflect the state of each battery as shown in Table 1, below.

Table 1: LCD*Pak* Battery Indicators

Green	Full charge.
Green-Red	Partial Charge.
Red	Battery low.
Slow Blink	External power is in use. Beeps on disconnecting.
Blinking red and beeps	Replace batteries immediately; shutdown in one minute.
Solid red and continuous tone	Shutdown in 5 seconds.

Outlet Power

To power the system up 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 (Figure 8: Power Cord and Power Cord Wrap).
With dry hands, plug the power cord into an approved outlet. If using an extension cord ensure it is of adequate wire gauge. For cords of 25 feet a minimum gauge of 18AWG is required. For cords greater than 25 feet a minimum gauge of 16 AWG is required.

To remove all power to the unit, unplug the power plug and remove the batteries.

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 or 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 Up

1. Check that the unit is properly set up.

2. Place the camera head into the reel's guide hoop and turn the LCD*Pak*'s power on by pressing the power key ⊙. After turning on, you should see the words "Count*Plus*" (if your unit includes a Count*Plus* distance counter) and a version number on the monitor screen. If you do not see an image on the monitor after boot-up (about 5 seconds), check to make sure its power is turned on and the system cable is correctly connected and secured.

3. The monitor will power on automatically when the LCD*Pak* switch is turned on.

4. The LED by the Power Key will blink in a series of short and long blinks (a Morse code "S-O-S") if there is no video detected by the LCD*Pak*.

5. When using external power, the battery condition LEDs on either side of the accessory interface port will blink, if they are lit, indicating external power is being used.
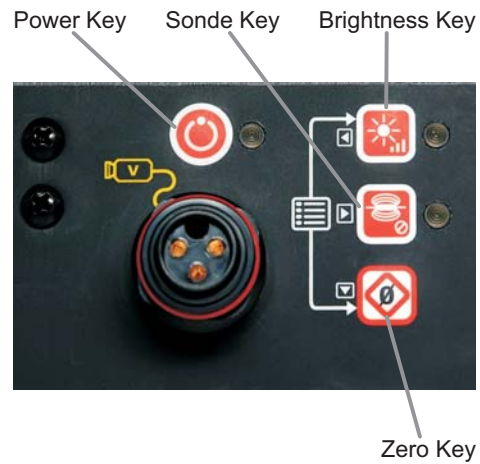
Power Key   Sonde Key   Brightness Key

Zero Key

Figure 9: LCD*Pak* Controls

Power Key: Powers the camera, camera control unit and monitor ON or OFF.

Sonde Key: Powers the built-in 512 Hz Sonde in the camera head ON or OFF.

Brightness Key: Adjusts camera LED brightness.

Zero Key: Sets a temporary zero-point for measuring intermediate distances. Long press (> 2 sec) resets both the system counter and any temporary counter to zero (Count*Plus* only).

Once the set-up instructions above are complete, the display should be showing a view from the camera head. Monitoring the camera is simply a matter of watching the screen as you push the camera through the pipe.

Inspecting The Line

1. Power up the LCDPak if it is OFF.

2. Put the camera head in the line.

3. Proceed with pipe inspection as described in your SeeSnake manual.

Using the Sonde Key 🔘

Modern SeeSnake cameras have a built-in 512 Hz transmitter, or Sonde, which can be controlled from the LCD*Pak*. The 512 Hz Sonde can be toggled on or off using the Sonde Key (Figure). When the Sonde is on, the LED by the Sonde Key will show a steady blue light, indicating the Sonde is activated.

Using the Brightness Key 🔘

The Brightness Key modulates the camera's LED brightness. The steps of brightness can be selected gradually by pressing the Brightness Key one step at a time (single-step mode) or selected rapidly by holding the Brightness Key down until the desired step is reached (press-and-hold mode).

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 be heard indicating the progression is changing direction (from dimmer to brighter or vice-versa).   Single-step mode (short presses) will increase the brightness step by step until it reaches maximum and then decrease it until it reaches minimum.

The Brightness LED next to the 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.

Using the Zero Key

If you are using a SeeSnake reel equipped with the CountPlus distance counter, the measured distance will appear on the display. If you want to set an interim zero point to measure distance from some location (such as a junction or pipe-head) pressing the Zero Key will start a temporary distance count, with the number displayed in square brackets [0.0]. A second short press will return to the main count. A long press (3 seconds) will re-zero the main distance counter.

For details on using the CountPlus see the CountPlus manual. CountPlus parameters such as date and time are set using the CountPlus menu key and going to the CountPlus Tools menu. CountPlus text overlays are managed with the CountPlus keypad as described in the CountPlus Operator's Manual.

Locating The Camera Using The Sonde

Many SeeSnake pipe inspection systems have a built-in Sonde which transmits a locatable 512 Hz signal. When the Sonde is turned on, a locator such as the SeekTech SR-20, SeekTech SR-60, RIDGID Scout™ or NaviTrack® II set to 512 Hz will be able to detect it, allowing you to detect the camera's location underground.

To turn the SeeSnake Sonde ON while using the LCDPak, press the Sonde Key . A Sonde icon will appear on the display while the Sonde is ON. The display may also show some lines of interference from the Sonde's transmission. These will vanish when the Sonde is turned OFF by again pressing the Sonde Key .

The most workable approach to tracking the Sonde is to run the pushrod into the pipe about five or ten feet (1.5 to 3 meters) and use the locator to find the Sonde's position. If desired, you can then extend the pushrod a similar distance further down-pipe and locate the Sonde again starting from the previous located position. To locate the Sonde, turn the locator on and set it to Sonde mode. Scan in the direction of the Sonde's probable location until the locator detects the

Sonde. Once you have detected the Sonde, use the locator indications to zero in on its location precisely. For detailed instructions on Sonde locating, consult the Operator's Manual for the locator model you are using.
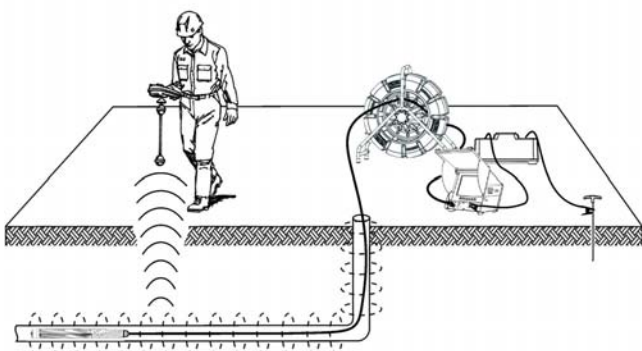
Line Tracing The SeeSnake Pushrod

In addition to being able to trace a Sonde built into the system camera, the LCDPak also enables you to trace the line of the SeeSnake push rod underground, using a standard RIDGID locator such as the NaviTrack® II, the Scout™, the SeekTech SR-20 or the SeekTech SR-60. To line-trace the SeeSnake push cable, simply connect a line transmitter with one connector well-grounded using the grounding stake, and the other connector clipped to the LCDPak's Transmitter Clip-on Terminal. The Transmitter Clip-on Terminal is a metal lug located just to the right of the Video Out jack, above the SeeSnake logo (Figure 10).

Figure 10: LCDPak Transmitter Clip-on Terminal

Set the line transmitter and the locator to the same desired frequency, such as 33 kHz and use the locator to trace the line (Figure 11). The camera's built-in Sonde may be on at the same time, and if your locator is equipped with *SimulTrace*™ capability, you can follow the pushrod all the way to the camera's location and then detect the Sonde in the camera as you approach it above ground.

If you don't have the SimulTrace™ feature, use a line transmitter and a locator to line-trace the pushrod. When the signal fades, switch the locator to Sonde mode at the frequency of the in-line Sonde, usually 512 Hz. Pick the 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 cause distortion of the image on the monitor, it is best to turn Sonde and line transmitters off while inspecting the interior of a line and turn them on only when ready to do a locate.

Figure 11: Line Tracing the Pushrod

Monitor Settings

For more detailed control of the monitor display, press the Brightness Key ⬚ and the Zero Key ⬚ simultaneously. A menu of display control options will appear.

A count-down display will appear and count from 10 to 1 while a menu item is displayed. The count will reset to 10 each time a key is pressed to change a menu item or setting.

Scroll through the options by pressing the Zero Key ⬚ until the desired option is highlighted. To increase the setting of the highlighted option, press the Sonde Key ⬚. To decrease the value of the highlighted option, press the Brightness Key ⬚. When all three options are set to your satisfaction, press the Brightness Key ⬚ and the Zero Key ⬚ simultaneously to return to the normal display.

The Color, Contrast, and Brightness choices increase and decrease the value of the appropriate display characteristic on a sliding scale.

The Units option toggles between Auto-detection, Feet, and Meters for the unit of measurement used in displaying distance counts. Auto-detection (Compact reel only) detects the type of camera (NTSC or PAL) and automatically sets the units to feet (NTSC) or meters (PAL).

Maintenance Instructions
Cleaning

⚠ **WARNING**

Make sure all cords and cables are disconnected and the battery removed prior to cleaning the LCDPak to reduce the risk of electrical shock.

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

Accessories

⚠ **WARNING**

The following accessories have been designed to function with the LCDPak. Other accessories suitable for use with other equipment may become hazardous when used with the LCDPak. To reduce the risk of serious injury, only use accessories specifically designed and recommended for use with the LCDPak, such as those listed below.

Cat # US	Cat # EU	Description
32743	28218	18 V Li-Ion rechargeable battery
32068	32073	Battery charger
32648	32693	Dual battery kit with charger
32708	32713	Single battery kit with charger
Various		RIDGID SeekTech® or NaviTrack® Locator
Various		RIDGID SeekTech® or NaviTrack® Transmitters
Various		CountPlus Cable Counter cable-measurement system, normally built in to SeeSnake Pipe Inspection Systems.

Transport and Storage

Remove batteries before shipping. Do not expose to heavy shocks or impacts during transport. If storing for an extended period, remove batteries. Store within temperature range of 14'F to 158°F (-10°C to. 70°C).

Store electrical devices in a dry place to reduce the risk of electrical shock.

Protect against excessive heat. The unit should be situated away from heat sources such as radiators,

heat registers, stoves or other products (including amplifiers) that produce heat.

Service and Repair

⚠ WARNING

Improper service or repair can make the LCD*Pak* unsafe to operate.

Service and repair of the SeeSnake LCD*Pak* 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 Services Department at rtctechservices@emerson.com or in the U.S. and Canada call (800) 519-3456.

Disposal

Parts of the unit contain valuable materials and 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.

Battery Disposal

For USA and Canada: The RBRC™ (Rechargeable Battery Recycling Corporation) Seal on the battery packs means that RIDGID has already paid the cost of recycling the lithium-ion battery packs once they have reached the end of their useful life. RBRC™,

RIDGID®, and other battery suppliers have developed programs in the USA 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.

Chart 1 Troubleshooting

PROBLEM	PROBABLE FAULT LOCATION	SOLUTION
Camera video image not seen.	No power to SeeSnake connector.	Check power is correctly plugged in. Check switch on LCD*Pak* monitor.
	Connections faulty.	Check alignment and pins of connection to LCD*Pak* unit from SeeSnake.
		Check orientation, seating, and pin condition in the SeeSnake connection.
	Monitor set to wrong Source.	Press the Source key on the LCD monitor until it sets to AV1 video.
	Batteries Low.	Recharge batteries.
Count accuracy seems unreliable. (Count*Plus*)	Count*Plus* settings incorrect for reel or cable being used.	Verify the settings are correct for the SeeSnake cable length, cable diameter and reel type you are using.
	Counting from a zero point other than the one intended.	Confirm you are measuring from the intended zero-point. Reset zero-point using Zero Key (Page 12).
Low Battery warning appears on screen. (Count*Plus*)	Count*Plus* Battery dead or near-dead.	Replace 3-volt battery in the Count*Plus* (CR2450).
Low Battery Buzzer sounds or Battery LEDS are both red.	LCD*Pak* 18 V batteries low.	Recharge LCD*Pak* batteries. Switch to external power (110VAC).
The symbol "+" appears after the on-screen distance measurement. (Count*Plus*)	Physical cable measurement has exceeded the cable parameter in settings.	Verify the actual length of your installed cable; re-set the reel and cable settings for the correct reel type and actual cable length and diameter as described in the Count*Plus* manual.
SOS blinking on Power Key LCD.	No video signal.	Check Source setting of monitor and re-seat SeeSnake system cable connection.

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.

Ridge Tool Company

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We Build Reputations

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Professional Tools