RIDGID®

# Operator's Manual

# SeeSnake® Compact2


**Shown with the CS6x Versa™ monitor*

**⚠ 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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## Introduction

**The warnings, cautions, and instructions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.**

## Regulatory Statements

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

This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## Safety Symbols

In this 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 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 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 electrical 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.
- **Avoid traffic.** Pay attention to moving vehicles when using on or near roadways. Wear high-visibility clothing or reflector vests.

## 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.
- **Keep all electrical connections dry and off the ground.** Touching equipment or plugs with wet hands can 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 electrical shock.
- **If operating equipment that is powered by an AC adapter in a damp location is unavoidable, use a ground fault circuit interrupter (GFCI) protected supply.** Use of a GFCI with an AC adapter 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 injury.
- **Dress properly.** Do not wear loose clothing or jewelry. Loose clothes, jewelry, and long hair can be caught in moving parts.
- **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. To prevent contamination from toxic or infectious material, do not eat or smoke while operating or handling drain inspection equipment.
- **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, and cause burns or other issues. Appropriate personal protective equipment always includes safety glasses and may include a dust mask, hard hat, hearing protection, drain cleaning gloves or mitts, latex or rubber gloves, face shields, goggles, protective clothing, respirators, and steel toed, non-skid footwear.
- **If using drain cleaning equipment and drain inspection equipment at the same time, wear RIDGID drain cleaning gloves.** Never grasp the rotating drain cleaning cable with anything else, including other gloves or a rag which can become wrapped around the cable and cause hand injuries. Only wear latex or rubber gloves underneath RIDGID drain cleaner gloves. Do not use damaged drain cleaning gloves.

## Equipment Use and Care

- **Do not force equipment.** Use the correct equipment for your application. The correct equipment does the job better and more safely.
- **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.
- **Do not overreach.** Keep proper footing and balance at all times. This enables better control of the equipment in unexpected situations.
- **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 can result in hazardous situations.
- **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.** Clean handles give better control of the equipment.

## Pre-Operation Inspection

**⚠ WARNING**

**To reduce the risk of serious injury from electrical shock or other causes, and to prevent damage to your equipment, inspect all equipment and correct any problems before each use.**

To inspect all equipment, follow these steps:

1. Power off your equipment.
2. Disconnect and inspect all cords, cables, and connectors for damage or modification.
3. Clean any dirt, oil, or other contamination from your equipment to ease inspection and to prevent it from slipping from your grip during transport or use.
4. Inspect your equipment for any broken, worn, missing, misaligned, or binding parts, or any other condition which might prevent safe, normal operation.
5. Refer to the instructions for all other equipment to inspect and make sure it is in good, usable condition.
6. Check your work area for the following:
   - Adequate lighting.
   - The presence of flammable liquids, vapors, or dust that may ignite. If present, do not work in area until sources have been identified and corrected. The equipment is not explosion proof. Electrical connections can cause sparks.
   - A clear, level, stable, and dry place for the operator. Do not use the equipment while standing in water.
7. Examine the job to be done and determine the correct equipment for the task.
8. Observe the work area and erect barriers as necessary to keep bystanders away.

## Specific Safety Information

**⚠ WARNING**

**This section contains important safety information that is specific to the SeeSnake Compact2. Read these precautions carefully before using the equipment to reduce the risk of electrical shock, fire, and/or serious injury.**

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

### SeeSnake Compact2 Safety

- **Read and understand this manual, the digital reporting monitor's manual, and the instructions for any other equipment you are using before operating the equipment.** Failure to follow all instruction may result in property damage and/or serious injury. Keep this manual with the equipment for future use.
- **Operating the equipment while in water increases the risk of electrical shock.** Do not operate the Compact2 if operator or equipment are standing in water.
- **The digital reporting monitor's battery and other electrical equipment and connections are not waterproof.** Do not expose the equipment to wet locations.
- **The equipment is not designed to provide high voltage protection and isolation.** Do not use where a danger of high voltage contact is present.
- **To prevent damage to the Compact2 and to decrease the risk of injury, do not expose the Compact2 to mechanical shocks.** Exposure to mechanical shocks can damage equipment and increase the risk of serious injury.
- **Do not carry the Compact2 by the monitor's docking handle or its front handle when transporting the system long distances or under conditions where disengagement of the docking system would be hazardous.** An unexpected disengagement of the docking system may result in property damage and/or injury.
- **Placing the Compact2 where the drum cannot spin freely may result in the push cable over-winding inside the drum.** Over-winding the push cable may result in property damage and/or serious injury. During operation, place the Compact2 on a stable surface and make sure the drum can spin freely.

# Product Overview

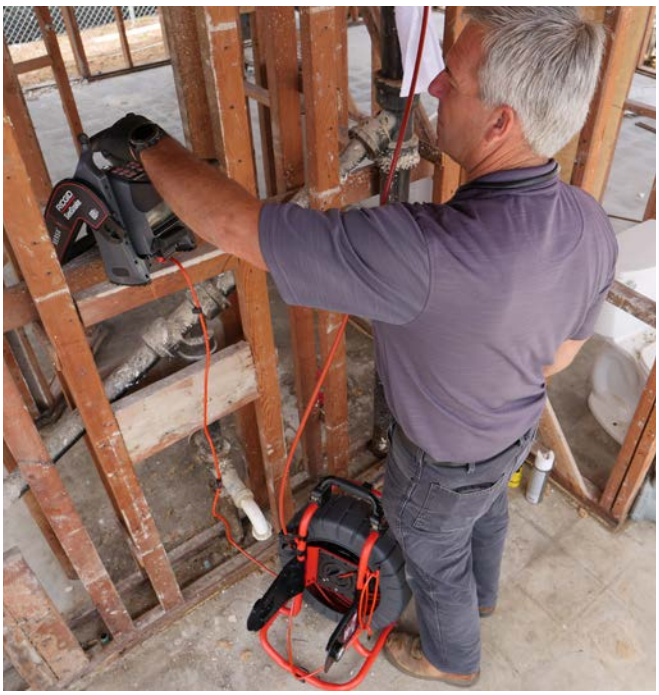
## Description

The SeeSnake Compact2 camera reel offers fast, easy setup and can take on the most diverse and demanding inspection conditions. The Compact2 features a self-leveling camera at the end of a push cable stiff enough to give you the power to push through small or restricted pipes, yet flexible enough to make multiple tight turns.

The Compact2 has a 30 m [100 ft] long, friction-reducing push cable and a 25 mm [1 in] self-leveling camera designed to inspect pipes ranging from 38 mm to 152 mm [1.5 in to 6 in] in diameter, depending on pipe conditions. Once a point of interest has been found in the pipe, use the integrated 512 Hz sonde and a receiver to locate its position.

All SeeSnake monitors can connect to the Compact2 with the SeeSnake system cable. The SeeSnake CS6x Versa™ is specifically designed to mount on the Compact2's docking system for viewing ease, quick setup, and effortless transport.

The Compact2's unique docking system gives you ultra-fast setup. Tilt the CS6x Versa to the desired viewing angle while docked or easily remove it from the dock for convenient placement in your work area.



| Specifications | |
|---|---|
| **Weight** | 7.7 kg [17 lb] |
| **Overall Dimensions** | |
| Length | 626 mm [25 in] |
| Height | 429 mm [17 in] |
| Width | 360 mm [14 in] |
| **Drum Diameter** | 432 mm [17 in] |
| **Camera** | |
| Type | Self-leveling |
| Length | 26 mm [1 in]*<br>37 mm [1.5 in]** |
| Diameter | 25 mm [1 in] |
| Light source | 6 LEDs |
| Sonde | 512 Hz |
| **Resolution** | |
| NTSC | 656 × 492 pixels |
| PAL | 768 × 576 pixels |
| **Push Cable** | |
| Length | 30 m [100 ft] |
| Diameter | 7 mm [0.27 in] |
| Fiberglass core diameter | 3 mm [0.12 in] |
| Minimum bend radius | 64 mm [2.5 in] |
| **Pipe Capacity** § | 38 mm to 152 mm [1.5 in to 6 in] |
| **System Cable Length** | 3 m [10 ft] |
| **Operating Environment** | |
| Temperature ‡ | -10°C to 50°C [14°F to 122°F] |
| Storage temperature | -10°C to 70°C [14°F to 158°F] |
| Ingress protection without monitor | IP×6 |
| Relative humidity | 5 to 95 percent |
| Altitude | 4,000 m [13,120 ft] |
| Camera depth rating | Waterproof to 100 m [328.1 ft] |
| * Measured from lens to spring. | |
| ** Measured from lens to end of threads. | |
| § Actual pipe capacity depends on pipe conditions. | |
| ‡ While the camera can function in extreme temperatures, some image quality changes may occur. | |

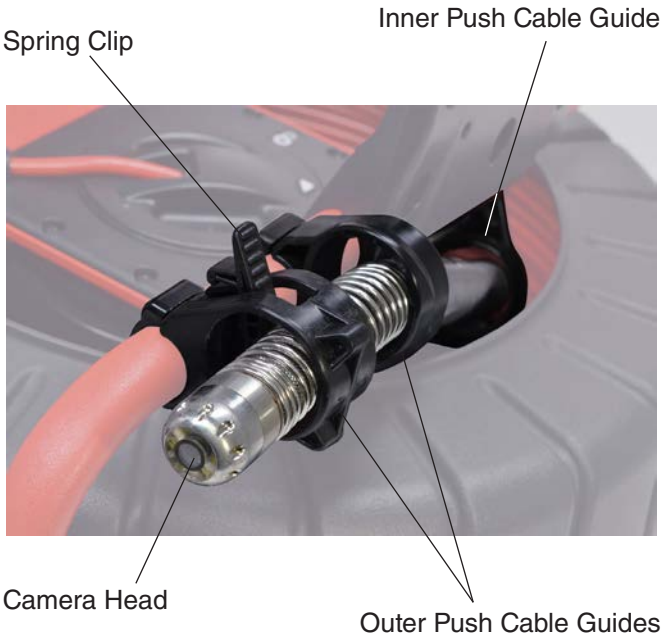
## Standard Equipment

- SeeSnake Compact2
- Docking System
- Operator's Manual
- Pipe Guide Kit
- Spanner Wrench

## System Components


### Push Cable Guides

There are three push cable guides on the frame, one inner guide and two outer guides. When using the Compact2, the camera, spring, and push cable should be threaded through all three guides.




### Spring Clip

On the outermost push cable guide, press the tab toward the outer edge of the push guide to lock open the clip and free the camera spring. After the camera spring is released, return the spring clip to the operation position. In the operation position, the spring clip helps guide the push cable and secures the camera spring when it is pushed back through the cable guides preventing it from retracting back into the drum. The spring clip must be in the operation position during transport to prevent the camera spring from retracting back into the drum.


Only lock open the spring clip when you are routing the camera. Keep the spring clip in the operation position during normal use.

## Operating Instructions

**⚠ WARNING**

**Wear appropriate protective equipment such as latex or rubber gloves, goggles, face shields, and respirators when inspecting drains that might contain hazardous chemicals or bacteria. Always wear eye protection to protect against dirt and other foreign objects.**

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

### Placement

Place the SeeSnake Compact2 and the CS6x Versa near the pipe entrance so you can manipulate the push cable while viewing the display.

Placing the Compact2 where the drum cannot spin freely may result in the push cable over-winding inside the drum. Over-winding the push cable may result in property damage and/or serious injury. During operation, place the Compact2 in a stable location and make sure the drum can spin freely. Do not pull the push cable out of the drum unless the drum can spin freely.

## Routing the Camera

If the camera is inside the drum, you must route the camera through the push cable guides. The push cable and camera head should be threaded through all three guides.

1. Lock open the spring clip.
2. Reach inside the drum and find the camera.
3. Insert the camera through the inner push cable guide and then through the two outer push cable guides.

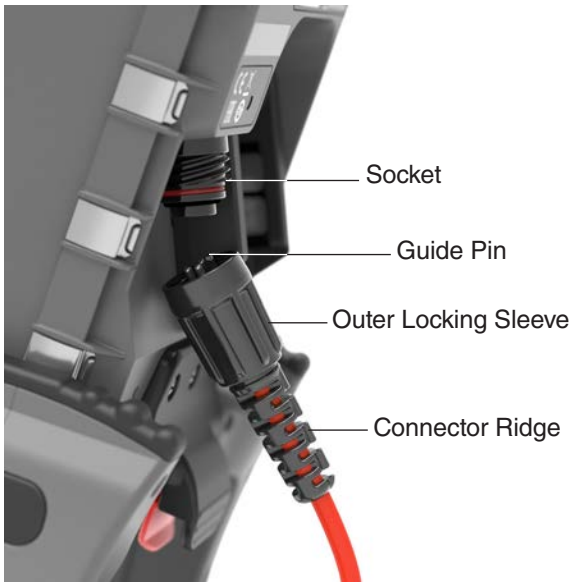

4. Return the spring clip to the operation position to secure the spring and prevent the push cable from retracting back into the drum.


## Connecting to a SeeSnake Monitor

The Compact2 can connect to any SeeSnake monitor with the SeeSnake system cable.

1. Unwrap the system cable from the cable wraps.
2. Pull back the outer locking sleeve on the system cable connector.
3. Align the connector ridge and plastic guide pin with the socket and push the connector straight in.
4. Tighten the outer locking sleeve.

**NOTICE** **Only twist the outer locking sleeve. To prevent damage to the pins, never bend or twist the connector.**




5. Power on the system:
   - Press the Power key to power on the system.
   - On a digital reporting monitor, press the Autolog key to quick-start an inspection.

## Pipe Guides

Pipe guides center the camera in the pipe, improve picture quality, and help keep the lens clear. Use pipe guides when possible to reduce wear and tear on the camera system.

Pipe guides can easily be installed, adjusted, and removed to provide better camera and push cable movement in the pipe. For small pipes, tubes, or voids, the camera head guide helps push the camera through stubborn fittings. For larger pipes, ball guides center the camera for better visibility and light illumination.


Without Pipe Guide


With Pipe Guide

### Camera Head Guide Installation

The 36 mm [1.4 in] camera head guide can be used in smaller pipes to push the camera through stubborn fittings.

1. Loosen the screws on both sides of the guide until it slides easily onto the camera head.
2. Re-secure the screws until the guide stays in place, but do not over-tighten.

### Ball Guide Installation

Ball guides are designed to slip onto the spring and lock into place. Depending on work conditions, you can place a ball guide on the spring behind the camera to tilt the camera head upward to view the top of the pipe.

1. Make sure the ball guide is unlocked.
2. Slide the ball guide beyond the camera on to the spring.

3. Press down on the blue locks to secure the ball guide onto the spring.
4. Slide the red locks over the blue locks to secure the ball guide into place.

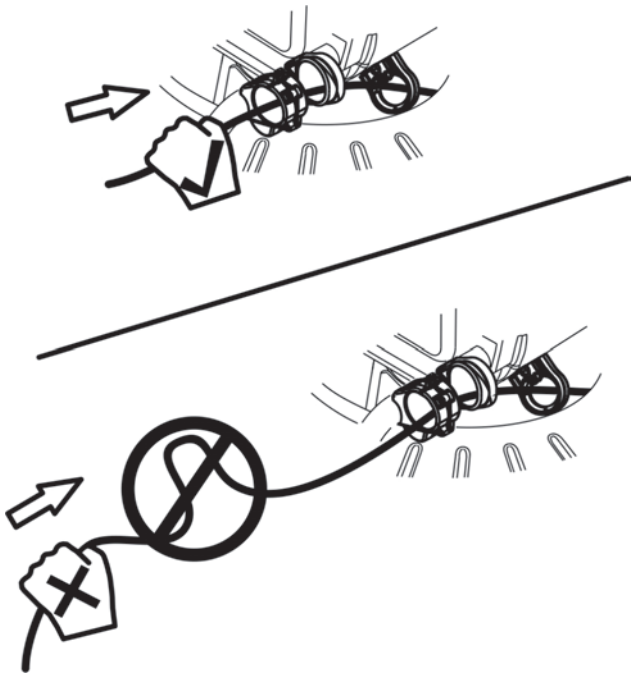

**NOTICE** **If a ball guide gets snagged in a pipe, it can fall off the spring. To avoid losing ball guides and obstructing the pipe, do not use excessive force to push through the pipe when you feel resistance.**

## Retrieving the Camera

After completing the inspection, pull the push cable back out of the pipe with slow, steady force and return it to the drum. Wipe the push cable with a paper towel or cloth as you withdraw it. If possible, continue running water down the pipe to clean the push cable.

To avoid damage to the camera or push cable, do not exert excessive force during retrieval. If the camera head is stuck behind a turn, you can pop the camera past the turn or run water down the pipe to lubricate the push cable.

**NOTICE** **Gripping close to the Compact2, always use short strokes to feed back small lengths of the push cable into the drum. Pushing back longer lengths of the push cable or forcing the push cable may cause it to loop, kink, or break.**



# Individual Components

## Self-Leveling Camera

The bearings and weight of the self-leveling camera may create a swinging effect when you push the push cable through the pipe. The camera image settles quickly when the push cable is steady.

The self-leveling camera can be removed to troubleshoot problems, send for repair, or to replace. Refer to Appendices C and D for instructions on how to remove and install the camera head.

## System Cable Assembly

The system cable assembly includes the system connector, for connecting to SeeSnake digital reporting monitors; 3 m [10 ft] of system cable; and the slip-ring assembly, which is made up of the slip-ring dial and the slip-ring cavity on the frame.

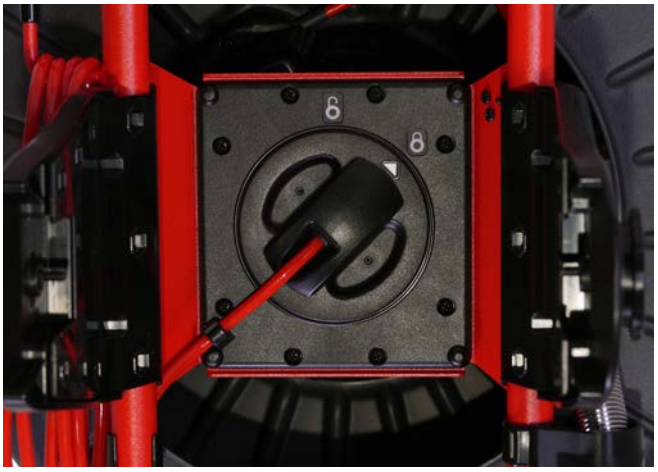
Before cleaning the Compact2, ensure the slip-ring dial is locked 🔒 in the slip-ring cavity. Avoid getting the slip-ring assembly wet when cleaning.

**NOTICE** **To avoid damaging the slip-ring contact pins or getting the internal electrical components wet, keep the slip-ring assembly locked.**

### System Cable Installation

To install the system cable, follow these steps:

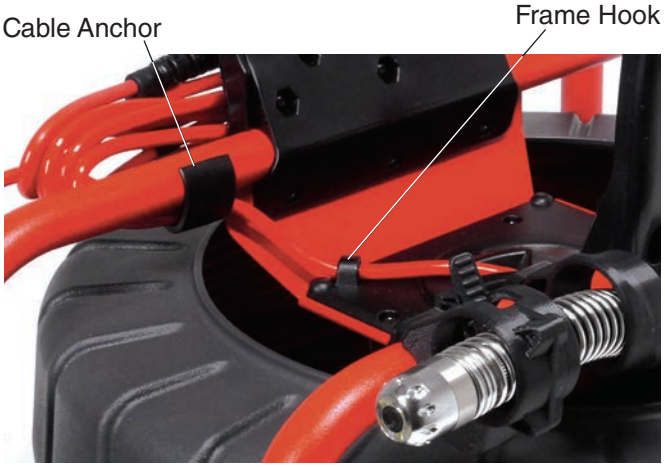
1. Align the arrow on the slip-ring dial with the unlock symbol 🔓 on the frame and insert the slip-ring dial into the slip-ring cavity.
2. Turn the slip-ring dial to the locked position 🔒.



3. Hook the system cable into the frame hook and snap the cable anchor onto the frame.
4. Wrap the system cable around the cable wraps.

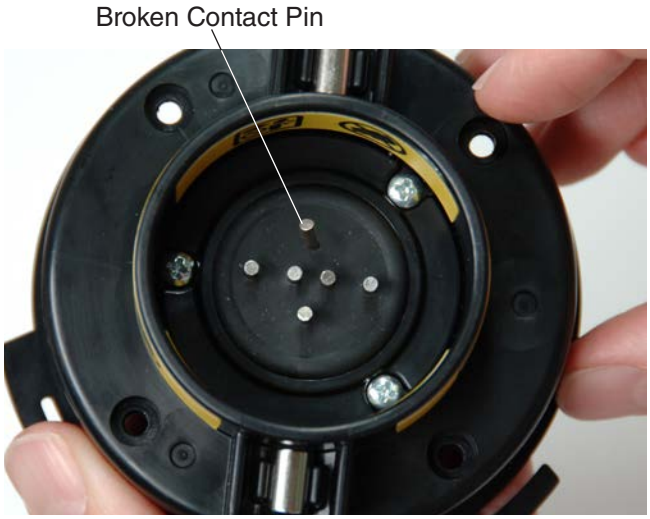
### System Cable Removal

1. Disconnect the system cable from the reporting monitor and remove the monitor from the docking system.
2. Unwrap the system cable from the cable wraps.
3. Pop the frame cable anchor off the frame and unhook the system cable from the frame hook.




4. Turn the slip-ring dial counter-clockwise to the unlocked position 6.
5. Pull straight out.

**NOTICE** **Do not touch the contact pins inside the slip-ring dial. Stressing the contact pins can cause them to break.**




## CS6x Versa Docking System

**⚠ WARNING**

**Do not carry the Compact2 by the monitor's mounting frame or kickstand. Doing so can cause the monitor to disengage from the docking system and may result in property damage and/or serious injury.**


The CS6x Versa is designed to dock onto the Compact2, Compact C40, and Compact M40 reels. The CS6x Versa's position can be adjusted to create a desired viewing angle. Grasp the mounting frame and rotate the kickstand to adjust the viewing angle.

The monitor can be docked onto the reel while mounted in either the low or high position. Mount the CS6x Versa in the desired position before docking it onto the reel.

## Mounting the Monitor

1. Turn the docking joints on sides of the docking handle so that the openings point down.


2. Center the CS6x Versa over the docking fins and align the docking joints with the joint sockets.


3. Firmly push the monitor down into the docking system until you feel the monitor lock into place.

## Removing the Monitor

1. Place the Compact2 so you can grasp both quick-release knobs.
2. Pull both knobs out and away from the docking fins. In the same motion as pulling the knobs out, turn the knobs together in either direction to disengage the locks.

   *Note: The locks are disengaged when the yellow indicator labels are visible under the knobs.*

3. Grip the monitor's handle and pull the digital reporting monitor straight up.

# Maintenance and Support

## Maintaining Components

### Camera Head

The camera head requires little maintenance other than keeping the LED ring and sapphire window clean. Use a soft nylon brush, mild detergent, and rags to clean the camera.

Scraping tools may permanently scratch the camera. Scratches on the LED ring have a minimal effect on the camera's performance.

**NOTICE** **Do not sand the LED ring to remove scratches. Sanding the LED ring can damage the watertight housing.**

### Spring

Stretch the spring end-to-end as far as it allows so you can visually inspect the inner components. Stir the spring in lukewarm water and a mild detergent to flush away debris.

### Push Cable

Keep the push cable clean. Run a rag over the push cable as it goes back into the drum after each inspection to clean it and reduce debris accumulation.

Visually inspect the push cable for cuts and abrasions while pushing it back into the drum. Replace or repair the push cable if the outer jacket is cut or abraded.

## Transport and Storage

Store and transport your equipment with the following in mind:

- Store in a locked area out of the reach of children and people unfamiliar with its purpose.
- Store in a dry place to reduce risk of electrical shock.
- Store away from heat sources such as radiators, heat registers, stoves, and other products (including amplifiers) that produce heat.
- Storage temperature should be -10°C to 70°C [14°F to 158°F].
- Do not expose to heavy shocks or impacts during transport.

## Service and Repair

**Improper service or repair can cause the SeeSnake Compact2 to be unsafe to operate.**

Service and repair of the Compact2 must be performed at a RIDGID Independent Authorized Service Center. To maintain the safety of the tool, make sure a qualified repair person services your equipment using only identical replacement parts. Discontinue using the Compact2 and contact service personnel under any of the following conditions:

- If liquid has been spilled or objects have fallen into the equipment.
- If the equipment does not operate normally when operating instructions are followed.
- If the equipment has been dropped or damaged.
- If the equipment exhibits a distinct change in performance.

## Disposal

Parts of the SeeSnake Compact2 contain valuable materials that can be recycled. 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 2012/19/EU 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.

| Troubleshooting | | |
|---|---|---|
| **Problem** | **Probable Fault** | **Solution** |
| No video feedback | No power to the SeeSnake monitor. | Check to make sure the power source is properly connected. |
| | Slip-ring assembly is broken or the connection is faulty. | Check all alignment and connection pins. |
| | | Check placement and pin condition in the slip-ring assembly. |
| | SeeSnake system cable connection is faulty. | Check SeeSnake system cable connection. Make sure the connectors are pushed all the way in. |
| | Camera is faulty. | Isolate the fault to the camera. Refer to Appendix B for instructions. |
| No count measurement | Older SeeSnake monitors may not be compatible with the Compact2's integrated counter. | Count measurements will show up on job reports, and may show up on the monitor during viewing. A new monitor may be required if capturing count measurements to media is necessary. |

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