RIDGID

SeeSnake® Compact

Operator's Manual

SeeSnake® Compact and Color Compact

SeeSnake® Diagnostic Equipment

⚠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® Compact and Color Compact

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SeeSnake® Compact and Color Compact	
Record Serial Number below and retain product serial number which is located on nameplate.	
REEL Serial No.	
MONITOR PACK Serial No.	

General Safety Information

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

SAVE THESE INSTRUCTIONS!

Work Area Safety

- **Keep your work area clean and well lit.** Cluttered benches and dark areas may cause accidents.
- **Do not operate electrical devices or power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or heavy dust.** Electrical devices or power tools create sparks which may ignite the dust or fumes.
- **Keep bystanders, children, and visitors away while operating tool.** Distractions can cause you to lose control.
- **Do not let visitors contact the tool or extension cord.** Such preventative measures reduce the risk of injury.

Electrical Safety

- **Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electrical shock if your body is grounded.
- **Tool is only splash resistant when the Monitor Shield is in place.** Water entering a power tool will increase the risk of electrical shock. Keep battery out of direct contact with water. Protect AC adapter from damp or wet conditions.
- **Do not abuse cord. Never use the cord to carry the tool or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges, or moving parts. Replace damaged cords immediately.** Damaged cords increase the risk of electrical shock.
- **When operating a power tool outside, use an outdoor extension cord marked "W-A" or "W".** These cords are rated for outdoor use and reduce the risk of electrical shock.
- **Connect the tool to an AC power supply that matches the name plate specification (120 or 240 Volts).** Incorrect voltage supply can cause electrical shock or burns.
- **Use proper extension cords.** *(See chart.)* Insufficient conductor size will cause excessive voltage drop and loss of power.

Minimum Wire Gauge for Extension Cord			
Nameplate Amps	Total Length (in feet/meters), Gauge (in AWG/mm²)		
	0 - 25/0 - 8	26 - 50/8 - 15	51 - 100/15 - 30
0 – 6	18 AWG/.75mm²	16 AWG/1.00mm²	16 AWG/1.00mm²
6 – 10	18 AWG/1.00mm²	16 AWG/1.00mm²	14 AWG/1.00mm²
10 – 12	16 AWG/1.50mm²	16 AWG/1.50mm²	14 AWG/1.50mm²
12 – 16	14 AWG/1.50mm²	12 AWG/1.50mm²	NOT RECOMMENDED

- **Reduce the risk of electrical shock! Keep all electrical connections dry and off the ground.** Do not touch plug with wet hands.

Battery Precautions

- **Use only the size and type of battery specified.**
- **Be sure to install the battery with the correct polarity as indicated in the battery compartment.**
- **Recharge batteries with charging units specified by the battery manufacturer.** Using an improper charger can overheat and rupture the battery.
- **Properly dispose of the battery. Exposure to high temperatures can cause the battery to explode, so do not dispose of in a fire.** Some countries have regulations concerning battery disposal. Please follow all applicable regulations.

Personal Safety

- **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use tool while tired or under the influence of drugs, alcohol, or medications.** A moment of inattention while operating power tools may result in serious personal injury.
- **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts.
- **Gloves should always be worn for health and safety reasons.** Sewer lines are unsanitary and may contain harmful bacteria and viruses.
- **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the tool in unexpected situations.
- **Use safety equipment. Always wear eye protection.** Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.
- **Use proper accessories. Do not place this product on any unstable cart or surface.** The product may fall causing serious injury to a child or adult or serious damage to the product.

- **Prevent object and liquid entry. Never spill liquid of any kind on the product.** To prevent electrical shock never push objects of any kind into this product through openings as they may touch dangerous voltage points or short to parts that could result in a fire or electrical shock.
- **Make sure the pipe you are going to inspect is not electrically charged, or *hot*! In some cases ground circuits may be returned to cast iron pipes causing them to be electrically charged. If you have any reason to suspect the pipe is *hot* have it checked by a qualified electrician before putting the camera in the line.** As sections of pipe joined with shielded hubless connections or compression gaskets may be electrically isolated, care should be taken to check the entire length of any pipe you are going to inspect.

Tool Use and Care

- **Always transport the SeeSnake Compact with the Monitor Shield closed.** This prevents product damage.
- **Do not use tool if switch does not turn it ON or OFF.** Any tool that cannot be controlled with the switch is dangerous and must be repaired.
- **Store idle tools out of the reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
- **Maintain tools with care.** Properly maintained tools are less likely to cause injury.
- **Check for breakage of parts, and any other conditions that may affect the tool's operation.** If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools.
- **Use only accessories that are recommended by the manufacturer for your tool.** Accessories that may be suitable for one tool may become hazardous when used on another tool.
- **Inspect tool and extension cords periodically and replace if damaged.** Damaged cords increase the risk of electrical shock.
- **Keep handles dry and clean; free from oil and grease.** Allows for better control of the tool.
- **Store tools in dry, shaded place.** Such measures reduce the risk of electrical shock.
- **Protect against lightning. For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet.** This will prevent damage to the product due to lightning and power surges.
- **Protect against excessive heat.** The product should be situated away from heat sources such as radiators, heat registers, stoves or other products (including amplifiers) that produce heat.

Service

- **Tool service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified repair personnel could result in injury.
- **When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance Section of this manual.** Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electrical shock or injury.
- **Follow instructions for changing accessories.** Accidents are caused by poorly maintained tools.
- **Provide proper cleaning.** Unplug this product from the wall outlet and remove battery before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- **Conduct a safety check.** Upon completion of any service or repair of this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
- **Damage to the product that requires service.** Unplug this product from the wall outlet, remove the battery and refer servicing to qualified service personnel under any of the following conditions:
  - When the power cord or plug is damaged;
  - 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;
  - When the product exhibits a distinct change in performance.

If you have any questions regarding the service or repair of this machine, call or write to:

Ridge Tool Company
Technical Service Department
400 Clark Street
Elyria, Ohio 44035-6001
Tel: (800) 519-3456
E-mail: TechServices@ridgid.com
On the Web: www.ridgid.com
or www.seesnake.com

In any correspondence, please give all the information shown on the nameplate of your tool including model number, voltage and serial number.

Specific Safety Information

⚠ CAUTION

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

⚠CAUTION Camera head can get HOT! Turn OFF camera while not in use.

Equipment Safety

- **Extension cords are not recommended unless they are plugged into a Ground Fault Circuit Interrupter (GFCI) found in circuit boxes or receptacles.**
- **Do not operate the system with electrical components removed.** Exposure to internal parts increases the risk of injury.
- **Do not place the unit in water.** Water entering the housings will increase the risk of electrical shock.
- **Do not use the unit as a chair or table.** Dropping or shocking the unit can result in damage to the unit, which increases the risk of electrical shock.
- **If used on a cart, product and cart should be moved with care.** Quick stops, excessive force and uneven surfaces may cause the product and cart combination to overturn.
- **Only the camera head and cable are waterproof.** The monitor is splash-resistant only when the Monitor Shield is covering the monitor screen and the unit is operating under battery power. Do not expose AC adapter to damp conditions.

SAVE THESE INSTRUCTIONS!

Description, Specifications and Standard Equipment

Description

The SeeSnake Compact pipe inspection system includes a camera reel and splash-resistant Monitor Pack mounted on a sturdy metal frame. The Monitor Pack camera control unit (CCU) has a built-in high-resolution monitor and can be powered from its included AC adapter or from a rechargeable battery. The Compact is available in both B&W and color versions.

The SeeSnake Compact pipe inspection system is designed for inspecting 1½" to 4" (38mm to 102mm) drain lines. Its flexible camera head can negotiate multiple hard 90° bends and be pushed up to 100' (30m).

The SeeSnake Compact reel is a UL Listed accessory, intended for use only with the following UL Listed SeeSnake controllers: Monitor Pack, Color Video Tool Case, Color Monitor+VCR, Monitor+, Monitor+VCR, Power+A, Power+.

System Components

The SeeSnake Compact pipe inspection system contains the following three sub assemblies: Camera Head, Reel/Frame, and Monitor Pack (CCU). Please take a moment to learn the functions of each of these components. *(Figure 1)*

Figure 1 – System Components

1) Camera Head

The **camera head** *(Figure 2)* has adjustable lighting elements and a highly scratch-resistant sapphire window (Lens Port). The Camera is rated to a water depth of 330′ (100m).

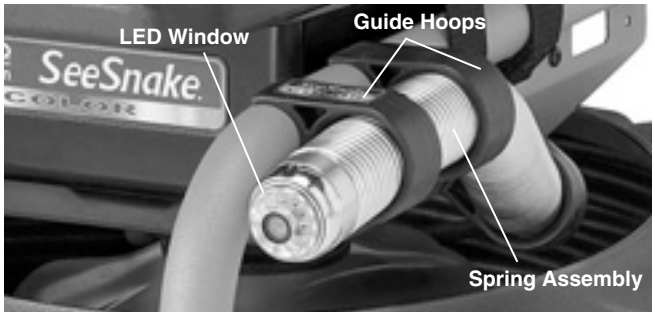


Figure 2 – Camera Head

LED – Light Emitting Diode. The SeeSnake B&W Compact uses infrared LEDs that are **invisible to the human eye** but provide the camera's imaging sensor with enough light for a clear picture. The color version uses white LEDs which can be seen.

LED Window – The donut shaped window that covers and protects the LEDs from abrasion.

Spring Assembly – Flexible stainless steel spring and associated components that hold the camera to the push cable. It provides a flexible transition from camera to push cable, and protects the terminations within the spring.

In Line Transmitter – Is contained within the spring assembly and transmits at 512Hz.

Safety Cable – Stainless steel cable within the spring assembly that keep the spring from over-extending. This ensures the camera's internal connectors are not stressed when pulling the camera out of a pipe.

2) Reel/Frame

Push Cable – *(Figure 3)* Terminates right behind the spring. It has a high-strength fiberglass core stiff enough to allow long distance pushing while flexible enough to negotiate tight turns.

Drum – The push cable is stored in the molded gray drum mounted underneath the frame. Mercury-free slip rings inside the drum's hub provide a rotating electrical connection between the drum and frame.

Frame – The sturdy, powder coated metal structure that holds the reel and Monitor Pack. The **guide hoops** on the frame guide the push cable in and out of the drum.

Interconnect Cord – Stores on the frame and provides the connection between the camera reel and the Monitor Pack (CCU). *(Figure 3)*

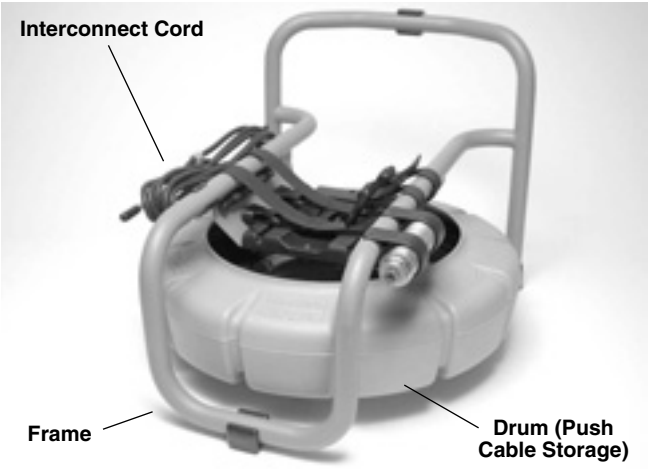


Figure 3 – Reel and Frame

Distance Counter – Measures the distance the cable has traveled inside the pipe. Displays in feet and inches. Can be zeroed by turning the monitor OFF/ON.

Kickstand – The kickstand attaches to the front of the frame for positioning the system at different viewing angles.

Locking Sleeve – Found at the end of the Interconnect Cord, it provides a solid connection between the CCU and the reel.

NOTE! When attaching or removing the Interconnect Cord from the CCU, ONLY turn the connector's outer locking sleeve! Bending or twisting the connector body inside the locking sleeve will damage the connector!

3) Monitor Pack Camera Control Unit (CCU)

The Monitor Pack is a camera control unit (CCU) that provides power to the camera reel, control of the camera's light intensity and a built-in monitor for viewing the image. The Monitor Pack *(Figure 4)* may be powered by either a 120 volt or 230 volt AC source. A 14.4V Makita® rechargeable battery can also power the system. *(See Table below.)*

RIDGID Catalog Numbers	Description
83407	14.4V Battery
83417	115V Charger
84112	230V Charger

The following Makita® batteries are approved for use with this system: 1422 (RIDGID P/N 83407), 1433 and 1434.

Monitor Shield – Protects the monitor and internal electronics *(Figure 4)*.

Figure 4 – Monitor Pack

Tilt Stand – The front handle attached to the monitor shield also acts as a tilt stand for positioning the monitor at different viewing angles *(Figure 5)*.

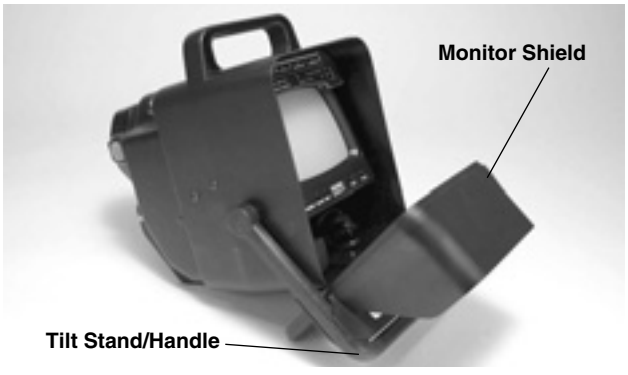


Figure 5 – Tilt Stand

Monitor Controls – Brightness and contrast may be adjusted with the monitor controls. On the B&W version there is also an image inverter and a Day/Night switch to further adjust the image viewed on the screen. *(Figure 6)*

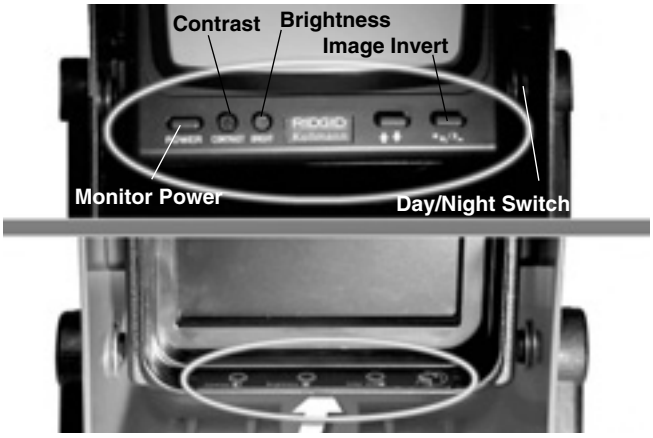


Figure 6 – Adjustment Controls for the B&W (Top) and Color (Bottom) Monitor Screens

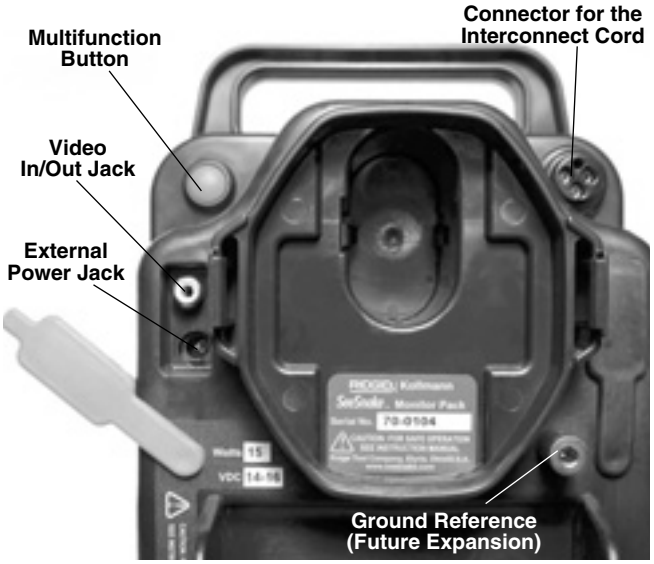


Figure 7 – Monitor Pack Rear Panel

Red Multifunction Button *(Figure 7)* – This button serves the following functions:

- Press and quickly release to turn the system power ON/OFF.
- Press and hold to cycle through the brightness settings of the camera's LED lighting.
- Press and hold for ~1 sec. to activate or de-activate the In-Line Transmitter *(See Table 1 for detailed instructions.)*

NOTE! The B&W camera head uses infrared LEDs that are **invisible to the human eye**; changes to the brightness level will only be visible on the monitor screen.

LED Indicator *(Figure 8)* – The LED indicator next to the monitor screen indicates the following operational conditions:

RED • Steady Glow – Power ON

RED • Steady Flashing – Indicates low battery status when running off the optional battery pack

RED • Flash S-O-S (3 short, 3 long, 3 short) pattern in Morse Code – no video signal from the camera head

WHITE • Steady Flashing – In-Line transmitter is active

RED • Rapid Flashing slowing from 8 to 4 flashes, 2 flashes, 1 flash, While pushing the red multifunction button, indicates changes to the brightness level of the camera's LED lighting. *(Table 1)*

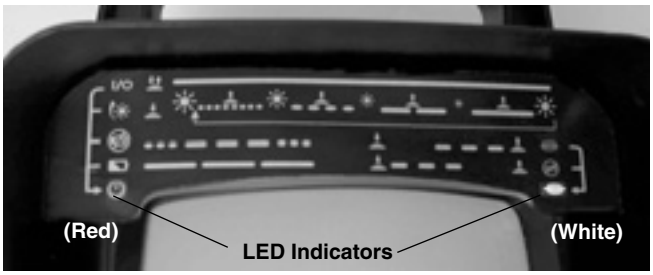


Figure 8 – LED Indicator Panel

Table 1

Button Press Duration	Action	LED Indicators*
Quick Press and Release (<1/2 sec.)	Toggles Power ON/OFF	Red - Lit/Unlit
Medium Press and Release (1/2 – 4 sec.)	Toggles SeeSnake In-Line Transmitter ON/OFF	White - Flashes slowly
Long Press and Release (>4 sec.)	Cycles through LED brightness levels, Release when desired level is reached.	Red - Rapid flashing slowing to 4 flashes, 2 flashes, 1 flash

*LED Indicators - *See Figure 8.*

4) Locating System (Optional)

The flexible transmitter within the camera assembly transmits at the industry standard of 512Hz and is compatible with all RIDGID locators *(Figure 9)*.

Figure 9 – RIDGID Locators: NaviTrack® II and NaviTrack® Scout

The locators are capable of pinpointing the location and depth of the SeeSnake's flexible transmitter.

Specifications

Line Capacity.....1¼" to 4" (32 to 102 mm)

Max. Cable Length .....100′ (30 m)

System Weight .....20 lbs (9.1 kg)

Dimensions
- Length .....21" (53.3 cm)
- Width .....17" (43.2 cm)
- Height.....16" (40.6 cm)

Power Source.....120V/60 Hz or 230V/50 Hz, 14.4 VDC Rechargeable Battery (Optional Equipment)

Power Ratings
- Monitor Pack 14-16VDC, 15W
- Compact Reel.....12VDC, 7W

Video Format.....EIA (CCIR Available) NTSC (PAL Available)

Push Cable Diameter ....0.26″ (6.6 mm)

Camera Depth Rating....Waterproof to 330′ (100 m)

Lighting.....15 Infrared LEDs (B&W) 6 White LEDs (Color)

Flexmitter Transmitter ...512Hz

Operating Environment
- Temperature.....32° F to 104° F (0°C to 40°C)
- Altitude .....Up to 6560 ft. (2000 m)
- Transient Over voltage.....Installation Categories I (1500V Phase to Earth)
- Pollution Degree 2

Storage Temperature ....-4°F to 140°F (-20°C to 60°C)

Humidity .....30-90% RH

Standard Equipment

- Rust Resistant Frame with Debris Capturing, Rotating Drum and Camera
- Monitor Pack (CCU) with a Black and White or Color Monitor
- In Line Transmitter
- 115V Power Supply or 100-240V Power Supply
- Kickstand
- Interconnect Cord
- Instructional Video
- Operator's Manual

Set Up and Operation

Equipment Set Up

⚠CAUTION Misuse of the push cable will result in breakage requiring factory service.

Place the reel so the push cable is easy to manage as you push the camera through the line. Two to three feet (about one meter) from the access point is usually the optimal location.

The Monitor Pack can be left mounted on the frame or removed to improve your view of the monitor screen. To remove the Monitor Pack from the frame, unbuckle the straps securing the Monitor Pack and lift it off the frame *(Figure 10)*.

Figure 10 – Monitor Pack Securing Straps

The Monitor Pack can be tilted to several different viewing angles. When a battery is installed, it can be tilted to rest on its rear supports *(Figure 11)*. The front handle attached to the monitor shield can also be used as a tilt stand *(Figure 5).* Grasp the Monitor Shield Release Lever *(Figure 4)*, pull it toward the handle to release the Monitor Shield, and rotate the monitor shield down *(Figure 5).*

Figure 11 – Monitor Pack Tilted Using Rear Supports

TIP: In brightly lit areas, point the monitor screen away from bright light sources to reduce glare.

Connections

Connect the Monitor Pack to an AC outlet using the supplied AC adapter. If desired, you can install an optional Makita® 14.4V rechargeable battery into the battery holder on the rear of the unit instead of using the AC adapter *(Figure 12).*

If the AC adapter supplied is a universal type with detachable power cord, use only cord with Class II IEC 60320 connector and mains plug approved for the country where unit is used.

Figure 12 – Battery Holder

NOTE! The Monitor Pack will not recharge the battery; the battery must be removed from the Monitor Pack for recharging. Use only the charger specified by the battery manufacturer.

Unwrap the Interconnect Cord from its holder on the frame and plug its connector into the matching connector on the Monitor Pack. To join the connectors, position the Interconnect Cord connector so the red arrow is facing up, push the connector straight in and tighten the locking sleeve *(Figure 13).*

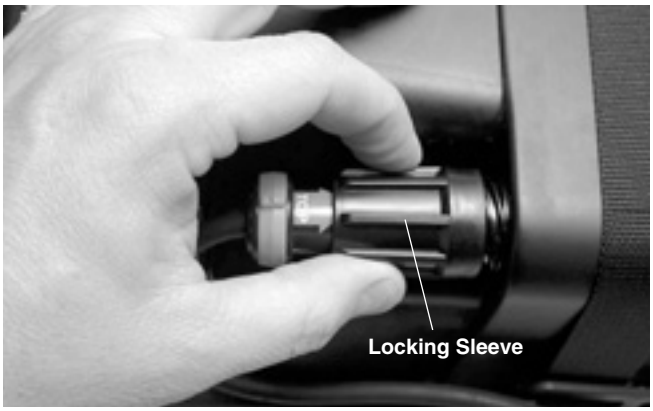


Figure 13 – Tightening the Locking Sleeve

If the connector does not push in easily, align the guide pin on the Interconnect Cord's connector to the guide socket on the Monitor Pack's connector *(Figure 14).*

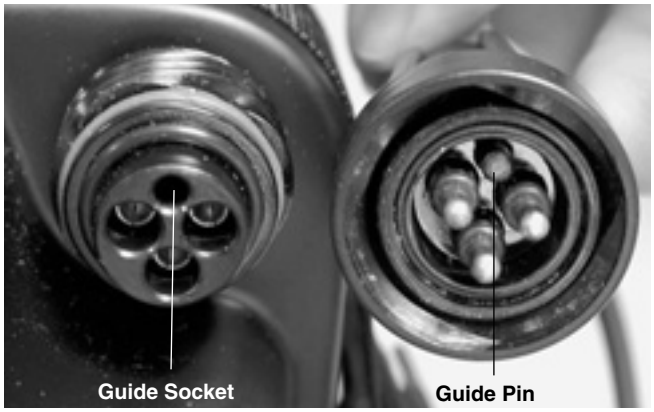
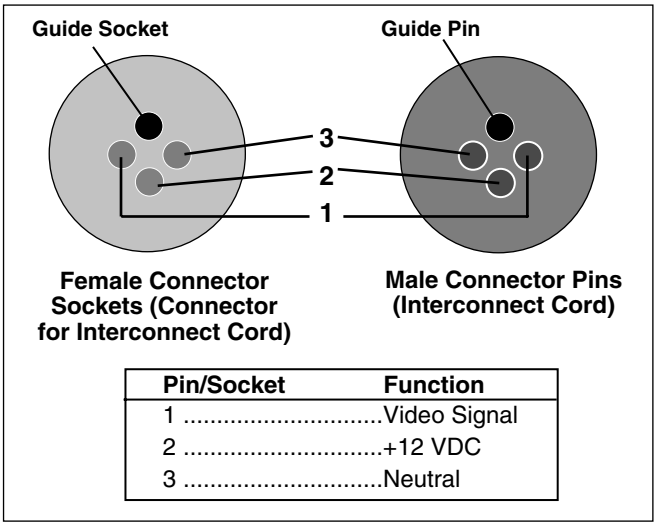


Figure 14 – Guide Pin on the Interconnect Cord

NOTE! Twist only the outer locking sleeve! Bending or twisting the connector body inside the locking sleeve will damage the connector. When unplugging you may wiggle a little, if necessary, but do not bend or twist.



Pin/Socket	Function
1	Video Signal
2	+12 VDC
3	Neutral

NOTE! The Interconnect Cord should be disconnected from the Monitor Pack whenever moving or transporting the system with the Monitor Pack detached from the reel.

Operation

Press and release the multi-function button on the back of the Monitor Pack *(Figure 7)* to turn the power ON. The red LED indicator will light. You should see an image on the monitor screen in a few seconds. If you do not, check to make sure the monitor's power switch is turned ON *(Figure 6)*. To turn the system OFF, press and quickly release the multi-function button.

Put the camera head into the access point and adjust the camera's lighting as necessary. To adjust the camera's lighting, press and hold the red multi-function button. After about four seconds, the red LED indicator on the Monitor Pack will begin flashing rapidly. This indicates that the camera's LED lighting elements are cycling through their brightness levels. When the image inside the pipe looks good, release the red multi-function button.

If necessary, you may adjust the monitor's image controls located on the front panel to further improve the picture. *(Figure 6)*

Video Recording

When the Interconnect Cord is plugged into the Monitor Pack, the Video In/Out jack functions as a Video Out jack. A RCA cable can be used to connect this jack to the "Video In" jack of a VCR for recording, or to another monitor. If connecting to another monitor, and it has a High Z/Low Z switch, place the switch in the High Z position for the best video quality.

When the Interconnect cord is NOT plugged into the Monitor Pack, the Video In/Out jack functions as a Video In jack. An RCA cable can be used to connect this jack to the "Video Out" jack of a VCR for reviewing a recording you have made.

NOTE! The Interconnect Cord must be unplugged to play back video from a VCR. If you attempt to play back video while the camera's Interconnect Cord is plugged into the Monitor Pack, the monitor's image will be garbled.

At the Job Site

The camera pushes better when grip-style rubber gloves are worn. It is much easier to get a grip on dirty push cable, and the gloves also keep sludge off the hands.

Proper positioning of the equipment and pushing of the cable will save time, be more comfortable, and minimize the potential for equipment damage. *(Refer to Figure 15.)*

Set the monitor in an area where it is unlikely to fall, and where it can be viewed while you are pushing the camera. A good location is right next to the cleanout or entry point.

Set the reel about 2′ to 3′ (~1 meter) from the entry. This will provide ample cable to grasp and will develop momentum without having slack dragging on the ground.

When pushing, the end of your stroke should be as close to the entry as possible *(Figure 15)***.** Standing too far back with an excess of cable between your hands and the entry may cause the cable to fold on itself outside the entry and damage the cable *(Figure 16)*.

Figure 15 – Typical System Set-Up

Figure 16 – Incorrect Hand Position on Push Cable

DO NOT Fold the push cable onto the sharp edge of an entry. This can cause it to snap. Extreme caution must be used to minimize the chance of bending the push cable on sharp corners. This can cause push cable failure. If the camera just does not seem to want to go any farther, DO NOT FORCE THE CAMERA! If another entry is available, try it, or run water down the line as explained below.

NOTE! Hands should be close to the line opening. DO NOT catch the cable on the edge of an entry and continue to push.

Always try to run water down the pipe undergoing inspection. This will keep the system much cleaner, and allow you to push noticeably farther with less friction. This will also help you locate the bottom of the pipe. This can be accomplished by feeding a hose with a small amount of flow into the entry or occasionally flushing a toilet that drains to the pipe. If the water is preventing you from seeing an area of importance, temporarily turn it off.

When inspecting a pipe, it is usually necessary to give a little extra push in tight turns. Back the camera head approximately 6" (15cm) from the bend, if necessary, and give it a quick push, “popping” the camera through a turn, using the least amount of force required. Try to be as gentle as possible, and do not hammer or snap the camera head through corners. In many instances, the best way to inspect a section of pipe is to push the camera through quickly, then draw the camera back home slowly and evenly. It is always easier to control the camera when pulling than when pushing.

Make sure the sapphire window is clean prior to entry. In some cases a slight film of liquid detergent on the lens helps minimize the possibility of grease sticking to the lens port.

Do not clear obstructions with the camera head! This may cause premature failure to your camera head. The SeeSnake® is a diagnostic tool that identifies problems. Other tools should be used to make effective repairs. It should never be used to clear obstructions *(Figure 17).*

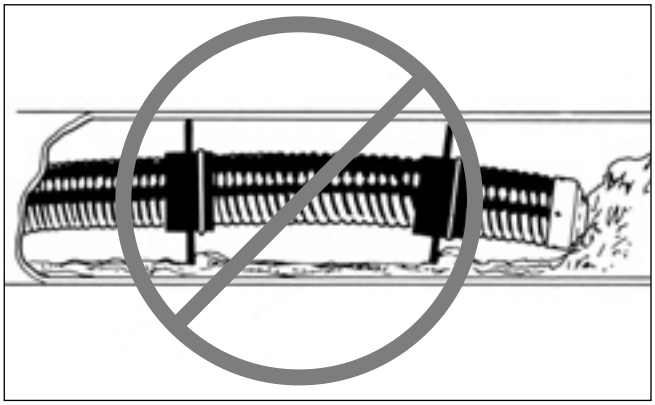


Figure 17 – Do Not Clear Blockage with Camera Head

If local 120V (or 230V) AC power for the CCU is not available, you can operate the system using a voltage converter that plugs into your vehicle’s cigarette lighter. They convert your vehicles 12 volt DC to 120 volts (or 230V) AC.

The system can travel through multiple 45 and 90 degree bends and wyes. Do not, however, try to force it through a P-trap or Tee if there is a large amount of resistance.

Do not attempt to remove or store push cable on the reel solely by turning the reel itself. If for some unusual reason the drum should not turn, do not try to pull the push cable out of the reel. This will force the cable to collapse down around the hub causing unnecessary stress on the cable.

Be careful in Tee-entries not to fold the camera back on itself, this could cause the camera to get caught. (See SeeSnake Tips & Tricks video.)

⚠CAUTION The camera head can get HOT! When finished with your inspection, or if taking a prolonged break in the middle of the inspection, turn off the system. If the camera sits in a pipe, or any enclosed environment, heat will build-up. This may lead to the camera head overheating which will cause fuzzy lines to appear on the monitor. In the event this happens, turn off the system, remove the camera from the pipe (or enclosed environment) and let the camera head cool for 10 to 15 minutes. Running water into the line will also help cool the camera head. Always use the minimum illumination required to maximize picture quality and to avoid excessive heat build-up.

Ask customers what is in the line, or what the line is used for, prior to putting the camera into the line. Avoid lines containing harsh solvents, chemicals, an electrical charge and excessive heat.

NOTE! See the Video Tape that came with your system for valuable Tips and Tricks on how to handle different situations.

Transportation & Storage

If space allows, the reel should be laid on its feet during transportation and use. If there is not enough space to lay the system on its feet, stand it up and run a strap or cord through the frame and secure it to the vehicle.

The Monitor Pack can be stored or transported either on or off the reel frame. When transporting or storing the system with the Monitor Pack detached, disconnect the Interconnect Cord from the Monitor Pack and secure it tightly around the storage hooks on the reel frame.

Store the system in a cool, dry, shaded place.

Centering Guides

Installing the SeeSnake® Star-Type Centering Guides

Centering guides can improve the picture by bringing the camera closer to the pipe's center, allowing the camera to see an equal amount of the pipe wall in all directions. Centering guides also help by raising the camera out of sludge that is often found below the water line. This helps keep the lens cleaner, longer, reduces wear and tear on the LED Ring (*Figure 18).*

We recommend using centering guides whenever possible, but if you are having trouble pushing the camera in a particular pipe, try it without the guides.

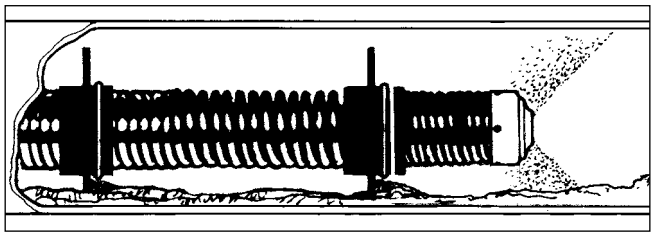


Figure 18 – Centering Guides improve vision by allowing the camera to see an equal amount of pipe wall in all directions and by raising the camera out of sludge. They also reduce wear on the LED ring.

Whether or not you use guides, how many you use, and where you place them on the spring causes the camera to behave differently. The best advice is to experiment and decide what's best for the given job.

One centering guide near the front end of the camera may bias the camera head upward. This could be beneficial if you need to see the top of the pipe during your inspection.

Move the guide back a little and the camera head may bias downward when you push and upward as you pull back. This could help you see the top and bottom of larger pipes more easily.

Two centering guides will tend to keep the camera head aimed toward the center of the pipe, allowing you to see more of the pipe at once.

Centering guides should be pre-stressed prior to use for increased flexibility. To do this, slowly bend the spikes back and forth from the tip (not the base) a few times before use (*Figure 19)*.

Figure 19 – Pre-stress tabs by placing your finger at the top of the spike and slowly pushing the spike 90 degrees. Repeat in the other direction.

Star-type centering guide assembly consists of two parts - two steel c-ring and the plastic centering guide *(Figure 20).*

Figure 20 – Star-Type Centering Guide Components. You may use from one to three guides.

Installing Star-Type Centering Guides

1. Position a centering guide and two c-rings over the spring, with the centering guide between the c-rings *(Figure 21).*

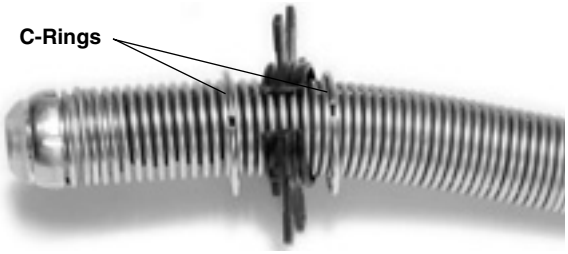


Figure 21 – Guide and C-Rings Positioned On Spring Assembly.

2. Position the opening in the centering guide 180 degrees opposite the opening in the c-rings (*Figure 22).*
3. Press the c-rings into the grooves on each side of the centering guide until the c-rings snap into place. It's easiest if you place the closed portion of the c-ring into the groove and work toward the open end *(Figure 22).*

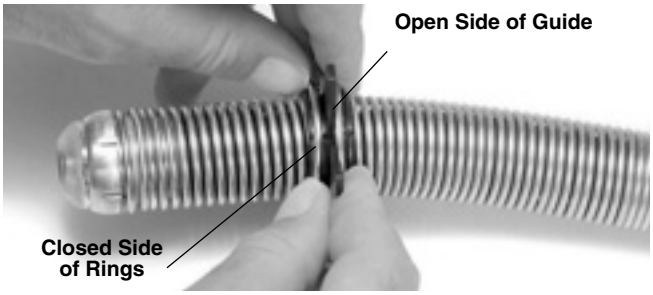


Figure 22 – Press the c-rings into the grooves on the centering guide. Make sure the openings in the c-rings are 180 degrees opposite the opening in the pipe guide.

Removing Star-Type Centering Guides

1. Pry off each c-ring with the tip of a flat blade screwdriver inserted near the open end of the ring and the base of the spikes *(Figure 23).*

Figure 23 – Place flat tip of screwdriver between c-ring and base of spike and pry c-ring out of groove.

2. Slide the c-rings and centering guide over the camera head.

If further assistance is needed, please call the Ridge Tool Company, Technical Service Department at (800) 519-3456. Replacement guides can be ordered from your RIDGID dealer.

Installing the SeeSnake® Compact, and FlatPack Ball-Type Centering Guides

Ball-type centering guides consists of two halves that are pre-assembled at the factory, and two steel clips that hold the guide in place on the spring.

Figure 24 – Centering guides improve vision by allowing the camera to see an equal amount of pipe wall in all directions and by raising the camera out of sludge. They also reduce wear on the LED window.

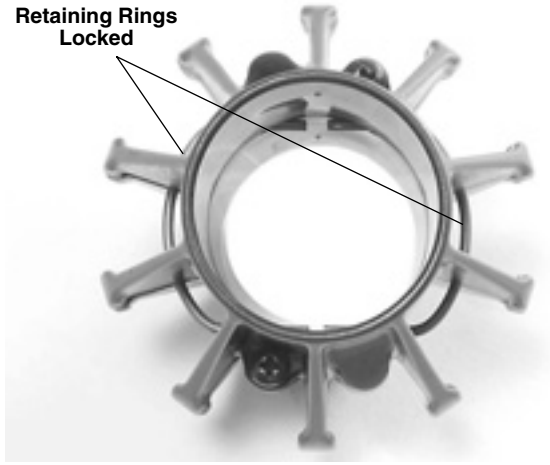


Figure 25 – Retaining Rings in Locked Position

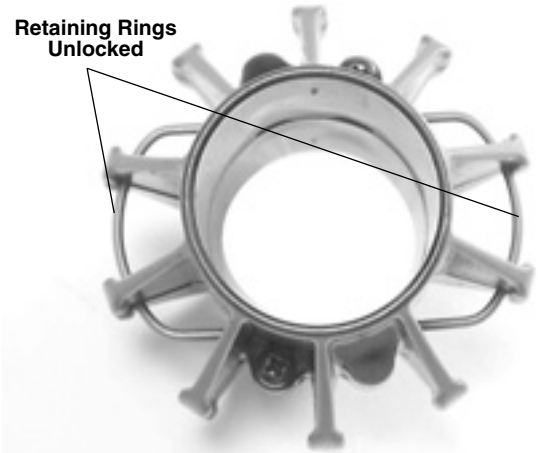


Figure 26 – Unlock Retaining Rings by pulling them up with a flat-bladed screwdriver.

Figure 27 – Slide Ball Guide over spring and push Retaining Rings down to lock the guides in place.

Maintenance and Cleaning

⚠ CAUTION

Make sure equipment is unplugged from power source before performing maintenance or making any adjustment.

Preventative Maintenance

Camera Head

1. The camera head requires little maintenance, other than keeping the LED window and sapphire window clean. Use a soft nylon brush, mild detergent, and rags and sponges from the camera head up to (but not including) the Monitor Pack.
2. When cleaning the camera, do not use scraping tools as they may permanently scratch these areas. NEVER USE SOLVENTS to clean any part of the system. Substances like acetone and other harsh chemicals can cause cracking of the LED window, which could affect waterproofing.
3. As you use the system more and more, you may be surprised to find that scratches on the LED window will have a minimal effect on the performance of the lighting. DO NOT sand the LED window to remove scratches, as it is part of the watertight housing.
4. Another good way to extend the life of the camera is to avoid removing obstructions from pipe with the camera head *(Figure 17).*

Spring Assembly

The spring assembly is the area where foreign matter is most likely to accumulate. Within the spring is the rubber tube between the push cable and a connector. Should sharp objects or harsh chemicals be allowed to remain in this area for long periods, they may wear on these components. Stir in a bucket of warm water and mild detergent to flush the spring area.

NOTE! We DO NOT recommend using a water jetter to clean the spring assembly.

Push Cable, Reel/Frame

It is important to keep the push cable clean to spot any excessive cuts or abrasions, while making it much easier to grasp and push.

NOTE! Whenever you are retrieving push cable into the reel, an excellent way to cut down on cable grime is to run it through a rag in the last hand that touches the cable as it enters the reel.

For a more thorough cleaning, detach the Monitor Pack from the frame, set the unit **upright** and fill the reel with lukewarm water and a mild detergent. Spin the reel to help loosen the grime. Pay out all the cable, remove all of the water, and wipe out the inside of the drum. Run a rag over the cable as you feed it back into the drum *(Figure 28).*

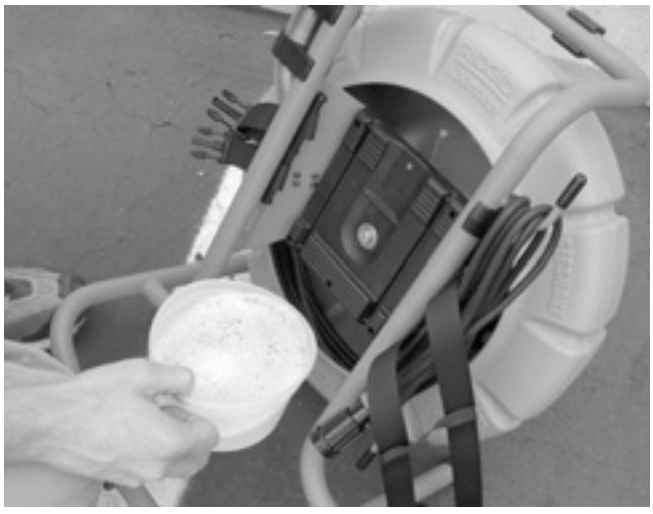


Figure 28 – Correct Cleaning Position

NOTE! **Never fill the drum with water with the reel on its back (open side of drum facing up)!** Water entering the hub could damage the slip rings inside *(Figure 29)*.

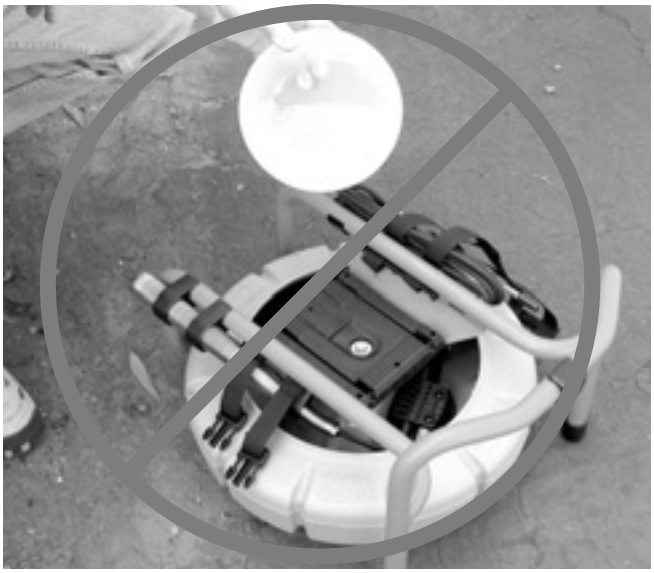


Figure 29 – Never Fill the Drum with the Reel On Its Back

Monitor Pack

Wipe the Monitor Pack with a damp cloth. Clean the monitor screen with a small amount of window cleaner sprayed on a soft, lint-free cloth. Monitor wipes, available at most computer and office-supply stores, not only clean the screen, but also help prevent dust build-up. Always avoid dropping or shocking the Monitor Pack. The abrasion resistant acrylic shield can be cleaned with household glass cleaner and a soft damp cloth.

NOTE! Although the acrylic window resists scratching, care should be taken to brush off excess abrasive particles prior to cleaning.

Locating Faulty Components

For troubleshooting suggestions, please refer to *Chart 1* at the end of the manual. If necessary, contact RIDGE Tool Technical Service at 800-519-3456.

Service and Repair

⚠ CAUTION

Tool should be taken to a RIDGID Independent Authorized Service Center or returned to the factory. All repairs made by Ridge service facilities are warranted against defects in material and workmanship.

If you have any questions regarding the service or repair of this machine, call or write to:

Ridge Tool Company
Technical Service Department
400 Clark Street
Elyria, Ohio 44035-6001
Tel: (800) 519-3456
E-mail: TechServices@ridgid.com

For name and address of your nearest Independent Authorized Service Center, contact the Ridge Tool Company at (800) 519-3456 or http://www.ridgid.com or www.seesnake.com

Chart 1 Troubleshooting

PROBLEM	PROBABLE FAULT LOCATION
Garbled or jumbled video	Fault within camera, cables, or Monitor Pack.
Monitor flickers 4 times per second	Pipe may be electrically charged or “hot”. Remove camera immediately and have pipe checked by qualified personnel.
Dim monitor image	Day/Night switch in night mode (depressed, B&W Only), or brightness knob turned down.
Lights, but no video	Monitor’s contrast and/or brightness knobs turned down or monitor power switch is OFF. Break in video carrying conductor (pin/socket 3) between Camera and Monitor Pack (SOS LED). Fault within camera or Monitor Pack.
No video, no lights	Monitor Pack or monitor screen not turned ON. SeeSnake Interconnect Cord not fully plugged in or loose connection in system (SOS LED). Fault in any sub-assembly.
Video, but no lights	Dimmer turned down. Fault within camera head, LED section.
White screen	Camera exposed to excessive light. No input video. Contrast/Brightness improperly set.
Noisy picture – vertical stripes on monitor screen	Camera head overheated.
Noisy picture – horizontal stripes on monitor screen	Transmitter is ON.

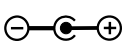
If further assistance is needed, please call RIDGE Tool Technical Service at (800) 519-3456. Additional information may be available at www.ridgid.com or www.seesnake.com

Icon Legend


Caution Symbol


Video In/Out Connector


No Video Signal


External Power Jack (14-16 VDC)


Power On/Off


Power On


Day/Night Switch


Battery Status


Transmitter De-activated


Transmitter Activated


Dimmer Status


MultiFunction Button Release


MultiFunction Button Hold


MultiFunction Button Press and Release


Monitor Image Invert


Camera Connector


Ground Reference (Equipotentiality)


Double Insulated