

# CHICAGO POWER ELECTRIC® SYSTEMS

## VIDEO INSPECTION SYSTEM

**Model 93765**

### SET UP AND OPERATING INSTRUCTIONS



Visit our website at: <http://www.harborfreight.com>



**Read this material before using this product.  
Failure to do so can result in serious injury.  
SAVE THIS MANUAL.**

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**For technical questions or replacement parts, please call 1-800-444-3353.**

Manual Revised 09j

## PRODUCT SPECIFICATIONS

Pipe Capacity	Ideal for pipes 1-1/2" to 4-3/4" inner diameter with multiple bends
Power Adapter Specifications (Monitor)	Class II Transformer 5'-6" Power Cord 120 V~ / 60 Hz input; 12 VDC / 1200mA output
Battery Specifications	12 V Li-Ion with Built-in Charger 100-240 V~ / 60 Hz input; 12 VDC / 1 A charger output Charge Time: 6 Hours / Operating Time: Approx. 4 Hours
Monitor Specifications	5-1/4" Diagonal Screen Measurement 6" W x 6" H x 8" Deep Overall Dimensions Black & White Screen 420 TV Line Resolution 10 Watts Power Consumption -20° F ~ 120° F Operating Temperature
Camera Specifications	7/8" Diameter x 3" Long 1/2" Lens Diameter 6" Total Length w/Spring & Connector 60° Angle of Vision (Horizontal & Vertical) 1-1/2" Depth of Vision 420 TV Line Resolution Eight Infrared LED's -20° F ~ 120° F Operating Temperature
Cable Reel Specifications	4" Deep x 13" Diameter 5-1/4" Long Rubber Covered Grip 65 Ft. Cable
Weight	23 Pounds

**Note:** Battery, Monitor, and Power Adapters are not water-resistant.

The Video camera may be used for various applications including: inspecting water supply pipes, waste water pipes, electrical conduit, air conditioning ducts, cable ducts, vacuum system ducts, plumbing pipes, etc.

### SAVE THIS MANUAL

You will need this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures, parts list and assembly diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep this manual and invoice in a safe and dry place for future reference.

## UNPACKING

When unpacking, check to make sure all the parts shown at the end of this manual are included. If any parts are missing or broken, please call Harbor Freight Tools at the number shown on the cover of this manual as soon as possible.

## GENERAL SAFETY RULES

### **▲WARNING!**

#### **READ AND UNDERSTAND ALL INSTRUCTIONS**

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

#### **SAVE THESE INSTRUCTIONS**

### WORK AREA

1. Keep work area clean and well lit. Cluttered benches and dark areas invite accidents.
2. Do not operate in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Powered products create sparks which may ignite the dust or fumes.

### ELECTRICAL SAFETY

1. **Grounded devices must be plugged into an outlet properly installed and grounded in accordance with all codes and ordinances. Never modify the plug in any way. Do not use any adapter plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded.** If the devices should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user
2. **Do not expose to rain or wet conditions.** Water entering a device will increase the risk of electric shock.

## PERSONAL SAFETY

1. **Stay alert. Watch what you are doing, and use common sense when operating a device. Do not use a device while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating devices may result in serious personal injury.
2. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts.
3. **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the device in unexpected situations.
4. **Wear ANSI-approved safety impact goggles when using this product.** Dust mask, non-skid safety shoes, and a hard hat must be used for appropriate conditions.

### DEVICE USE AND CARE

1. **Use the correct device for your application.** The correct device will do the job better and safer at the rate for which it is designed.
2. **Do not use this product if the Power Switch does not turn it on or off.** Any product that cannot be controlled with the Power Switch is dangerous and must be replaced.
3. **Turn off the Power Switch and disconnect the Power Adapter from the electrical outlet before making any adjustments, changing**

**accessories, or storing the product.** Such preventive safety measures reduce the risk of electric shock.

4. **Store idle devices out of reach of children and other untrained persons.** Devices are dangerous in the hands of untrained users.
5. **Maintain devices with care. Keep the product and its accessories clean and in proper working order.** Properly maintained devices are less likely to malfunction and are easier to control. Do not use a damaged device. Tag damaged devices "Do not use" until repaired.
6. **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the device's operation. If damaged, have the device serviced before using.** Many accidents are caused by poorly maintained devices.
7. **Use only accessories that are recommended by the manufacturer for your model.** Accessories that may be suitable for one device may become hazardous when used on another device.

### **SERVICE**

1. **Device service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel could result in a risk of injury.
2. **When servicing a device, use only identical replacement parts. Follow instructions in the "Inspection, Maintenance, And Cleaning" section of this manual.** Use of

unauthorized parts or failure to follow maintenance instructions may create a risk of electric shock or injury.


### **Lithium Battery Safety Warnings**



#### **LITHIUM BATTERIES STORE A LARGE AMOUNT OF ENERGY AND WILL VENT FIRE OR EXPLODE IF MISTREATED:**

1. **Keep Battery Pack dry.**
2. **DO NOT DO ANY OF THE FOLLOWING TO THE BATTERY PACK:**
  - a. **Open,**
  - b. **Drop,**
  - c. **Short-circuit,**
  - d. **Incinerate, or**
  - e. **Expose to temperatures greater than 140°F.**
3. Charge Battery Pack only according to the instructions indicated in this manual.
4. Inspect Battery Pack before every use; do not use or charge if damaged.
5. **The charge time for the Battery is 6 hours.** Do not charge the Battery for longer than **6 hours** as damage to the Battery and/or Video system may result.
6. **Keep the Battery disconnected unless the system is being used.** When connected, the system will constantly drain the Battery.

7. **Switch to a fresh Battery when device performance begins to diminish.** Severe heat is most destructive to a Battery. The more heat generated, the faster the Battery loses its power. A Battery that gets too hot can be permanently damaged. Never over-discharge a Battery by attempting to use the Monitor after it indicates low Battery power.

8.  The battery gets hot while charging. The built-in charger's heat can build up to unsafe levels and create a fire hazard if it does not receive adequate ventilation, due to an electrical fault, or if it is used in a hot environment. Do not place the battery on a flammable surface. Do not obstruct any vents on the battery. **Especially avoid placing the battery on carpets and rugs; they are not only flammable, but they also obstruct vents under the battery.**

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## SPECIFIC SAFETY RULES

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1. **If this unit is to be used with a potable water supply, the unit must be thoroughly sterilized and cleaned before use.** Also, flush the water supply when finished and before use.
2. **Keep the Monitor out of direct sunlight.** Do not allow the Monitor to overheat, freeze, or be exposed to wet conditions. **Do not locate the Monitor near radiators, ovens, or any other heat source.**
3. **Handle the Monitor and Camera with care.** Do not allow the Monitor or Camera undergo shaking or strong vibration.
4. **To allow air circulation, locate the Monitor at least two inches from walls, cabinets, or other enclosures.**
5. **When connecting the Camera to the Monitor the power must be off or both units will be damaged.**
6. **Maintain labels and nameplates on the Product.** These carry important information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
7. **When replacing the Fuse in the Battery, only use another Fuse of the same type and rating.** Use of a different Fuse or object may result in property damage, explosion, or fire.
8. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.
9. **WARNING:** Handling the cord on this product will expose you to lead, a chemical known to the State of California to cause cancer, and birth defects or other reproductive harm. Wash hands after handling. (California Health & Safety Code § 25249.5, *et seq.*)
10. The warnings and cautions 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.

## GROUNDING

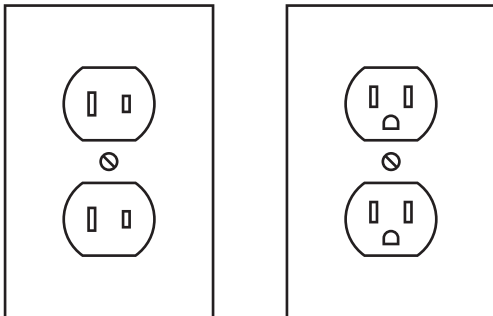
### **⚠️ WARNING** TO PREVENT ELECTRIC SHOCK



#### AND DEATH FROM INCORRECT GROUNDING WIRE CONNECTION:

Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the power cord plug provided with the device. Never remove the grounding prong from the plug. Do not use the device if the power cord or plug is damaged. If damaged, have it repaired by a service facility before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

### Double Insulated Devices: Devices with Two Prong Plugs



**Outlets for 2-Prong Plug**

1. Devices marked "Double Insulated" do not require grounding. They have a special double insulation system which satisfies OSHA requirements and complies with the applicable standards of Underwriters Laboratories, Inc., the Canadian Standard Association, and the National Electric

Code. (See Outlets for 2-Prong Plug.)

2. Double insulated devices may be used in either of the 120 volt outlets shown in the preceding illustration. (See Outlets for 2-Prong Plug.)

### Extension Cords







1. **Grounded** devices require a three wire extension cord. **Double Insulated** devices can use either a two or three wire extension cord.
2. As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible device damage. (See Table A.)
3. The smaller the gauge number of the wire, the greater the capacity of the cord. For example, a 14 gauge cord can carry a higher current than a 16 gauge cord. (See Table A.)
4. When using more than one extension cord to make up the total length, make sure each cord contains at least the minimum wire size required. (See Table A.)
5. If you are using one extension cord for more than one device, add the nameplate amperes and use the sum to determine the required minimum cord size. (See Table A.)
6. If you are using an extension cord outdoors, make sure it is marked with the suffix "W-A" ("W" in Canada) to indicate it is acceptable for outdoor use.

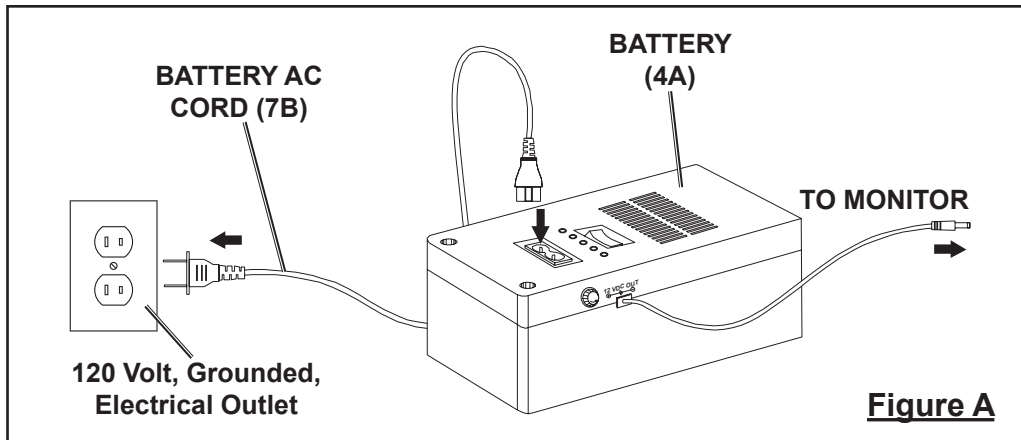
7. Make sure the extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified electrician before using it.
8. Protect the extension cords from sharp objects, excessive heat, and damp or wet areas.

<b>RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS* (120/240 VOLT)</b>					
<b>NAMEPLATE AMPERES (at full load)</b>	<b>EXTENSION CORD LENGTH</b>				
	<b>25'</b>	<b>50'</b>	<b>75'</b>	<b>100'</b>	<b>150'</b>
0 – 2.0	18	18	18	18	16
2.1 – 3.4	18	18	18	16	14
3.5 – 5.0	18	18	16	14	12
5.1 – 7.0	18	16	14	12	12
7.1 – 12.0	18	14	12	10	-
12.1 – 16.0	14	12	10	-	-
16.1 – 20.0	12	10	-	-	-

**TABLE A** \* Based on limiting the line voltage drop to five volts at 150% of the rated amperes.

### Symbology

	Double Insulated
	Canadian Standards Association
	Underwriters Laboratories, Inc.
	Volts Alternating Current
	Amperes
	No Load Revolutions per Minute (RPM)



## CHARGING THE BATTERY

1. Charge the Battery (4) first before use. Thereafter, subsequent charge times are 6 hours. Never charge the Battery for longer than 6 hours, as damage to the Battery and/or video system will occur.
2. To charge the Battery(4A), plug Battery AC Cord (7B) to the battery box and 120 volt, grounded, electrical outlet. (See Figure A.)
3. The charge indicator on the battery box will stay RED until the charge is complete. Once the charge is complete, the indicator will turn GREEN.
4. Unplug the AC cord from its electrical outlet and remove it from the Battery (4A) box. **Do not charge the Battery longer than 6 hours.**

**Note:** The Battery box may feel warm to touch, which is normal during the charging process.



### Monitor Controls:

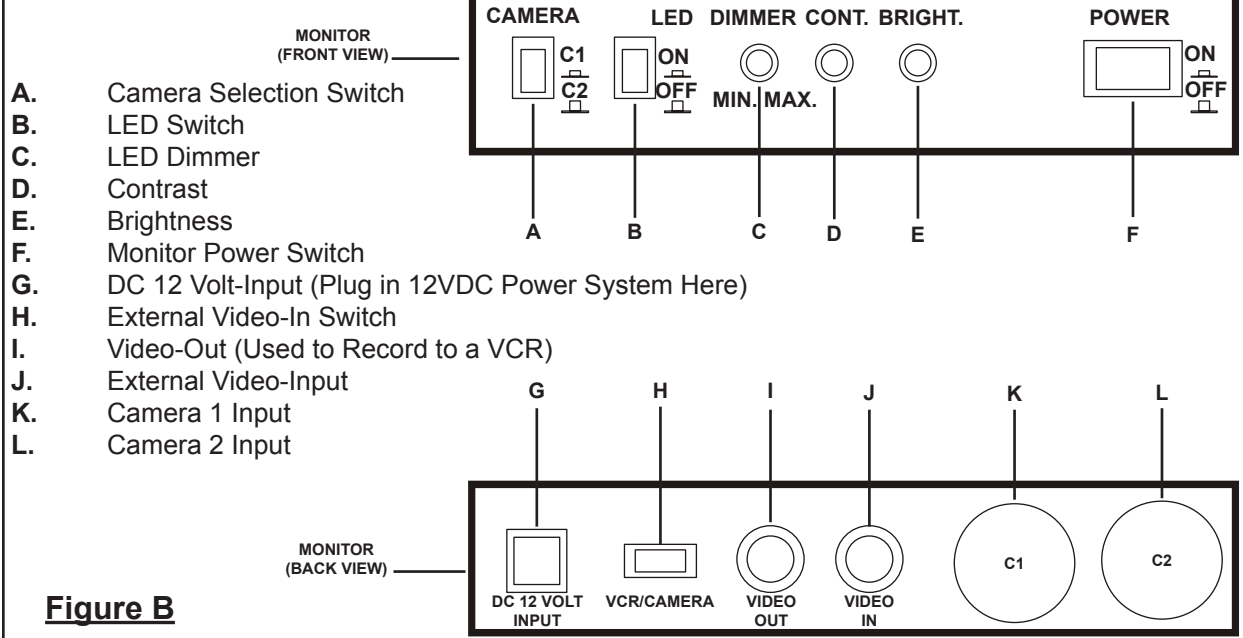
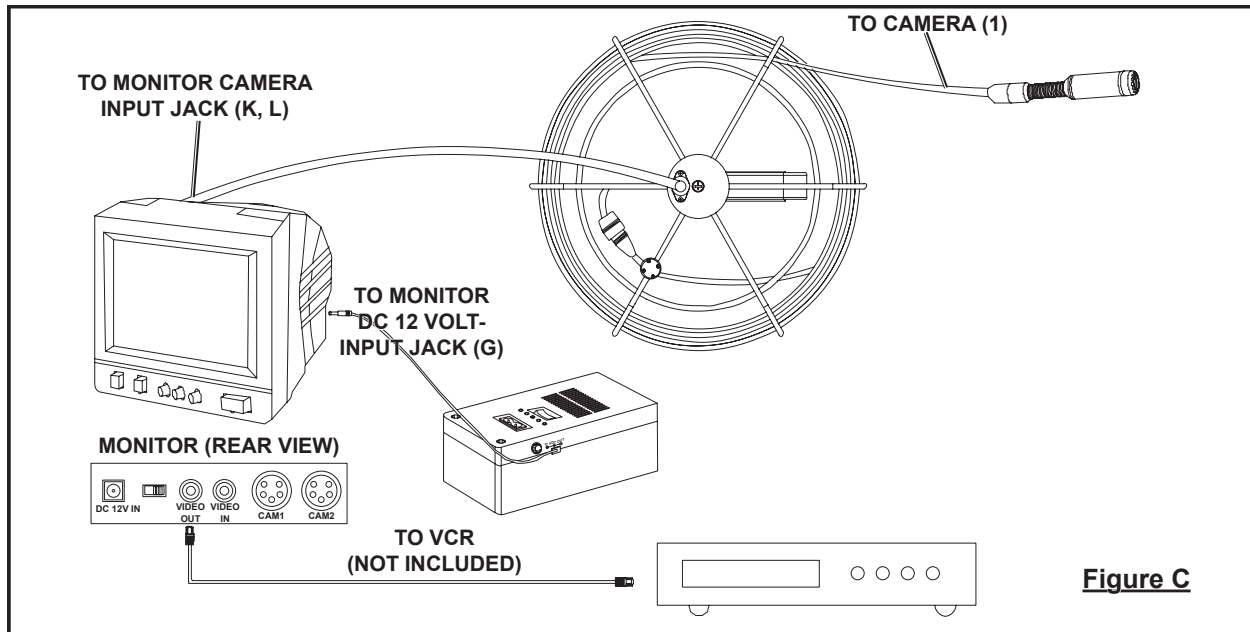


Figure B

## OPERATION

1. **When connecting the Camera (1) to the Monitor (2) the power must be off or both units may be damaged.**
2. **IMPORTANT:** To avoid damage to the Camera (1) and/or Cable (3) use caution when inserting or retracting the equipment in pipes, ducts, etc. Avoid sharp corners and edges; the cable can kink and break internally if bent sharply. If necessary, insert the Ball Protector (9) over the Camera for added protection. The Ball Protector may also help keep the Camera clean.



**Figure C**

3. Set the Monitor (2) on a clean, dry, flat, level surface capable of supporting the weight of the Monitor and its accessories. If necessary, attach the Sunshade (8) over the front of the Monitor to reduce glare. **(See Figure C, and Assy. Diagram.)**

4. Plug the Cable (3) into one of the Camera ports (K, L) on the back of the Monitor (2). **(See Figures E and F.)**

5-1. **To Hook-Up With The Battery:**

- a. Set the Battery (4A) on a dry surface, on a plate or other flat, stable surface out of the sun and close enough for the Battery Cord (5) to reach the rear of the Monitor (2). **(See Figure C.)**
- b. Attach the **BLACK (-)** connector on the Battery Cord (5) to the **BLACK (-)** terminal on the Battery (4A). **(See Figure C.)**
- c. Attach the **RED (+)** connector on the Battery Cord (5) to the **RED (+)**

terminal on the Battery (4A). **(See Figure C.)**

- d. Plug the other end of the Battery Cord (5) into the DC 12 Volt-Input Jack on the back of the Monitor (2). **(See Figure C.)**


5-2. **To Hook-Up With The Power Adapter:**

- a. Plug the Power Adapter (7) into the nearest 120 volt, grounded, electrical outlet.
- b. Plug the end of the Power Adapter's (7) cord into the DC 12 Volt-Input Jack on the back of the Monitor (2).
6. Set the VCR/Camera Switch (H) on the back of the Monitor (2) to "**CAMERA**". **(See Figure B.)**
7. Turn on the **POWER** Switch (F) on the front of the Monitor (2). **(See Figure B.)**
8. Press the LED Switch (4) to turn the LED's on. The LED's may not be visible in a normally lit room. Point the camera at the front of the monitor and

look at the monitor screen to see if the LED's are on or not.  
**(See Figure B.)**

9. Push in on the Camera (A) button if using the C1 Camera Input (K). Leave the button out if using the C2 Input (L). An image should appear on the Monitor (2). If not, recheck the connections. **(See Figure B.)**



10.  **CAUTION! Do not sharply bend the cable; the cable will be damaged if severely bent.**  
Carefully remove the camera end of the Cable (3) out the center of the reel, as shown in the illustration above. Thread it through the hook on the handle.
11. Securely thread the Camera (1) onto the end of the Cable (3) if it is not already connected.
12. Turn the reel to unwind the Cable from the reel while gently feeding it into the pipe, duct, etc. until the Cable (3) is at the desired depth. **DO NOT FORCE CABLE.**

**NOTE: This product is ideal for pipes 1-1/2"-4-3/4" inner diameter with multiple bends.**

13. Adjust the Brightness (E) and Contrast (D) on the front of the Monitor (2). If additional light is needed, push on the LED Switch (B) on the front of the Monitor. Adjust the brightness of the LED lights with the Dimmer Switch (C). **(See Figure B.)**
14. To reel the Cable (3) back in, carefully guide the Cable (3) back into the reel with one hand, while turning the reel with the other. **To prevent damage, do not sharply bend the cable.**
15. When finished, carefully remove the Camera (1) from the pipe, duct, etc. Turn off the **POWER** Switch (F) on the front of the Monitor (2). Disconnect the alligator clips on the Battery Cord (5) from the Battery (4). Then, unplug the Battery Cord from the Monitor. **(See Figure C.)**
16. If necessary, use a disinfectant to clean the Camera (1), Ball Protector (9), and Cable (3) after use. Then dry. Do not immerse the Monitor (2), Battery (4), Power Adapters (7), or any other accessory in liquid. **(See Assy. Diagram.)**
17. Store the Video Inspection System in its Carrying Case (6) and keep the Carrying Case in a clean, dry location out of reach of children.

## **INSPECTION, MAINTENANCE, AND CLEANING**

**⚠WARNING!** Turn off the power and disconnect the battery before performing any inspection, maintenance, or cleaning procedures.

1. **Before each use**, inspect the general condition of the Video Inspection System. Check for loose screws, misalignment or binding of moving parts, cracked or broken parts, damaged electrical wiring, and any other condition that may affect its safe operation. If abnormal noise or vibration occurs, have the problem corrected before further use. **Do not use damaged equipment.**

2. **Before each use**, make sure the terminal contacts on the Battery (4) are clean and free of corrosion.
3. **After each use**, wipe the Camera Lens and all components to remove any dirt and moisture. If necessary, use a disinfectant to clean the Camera (1), Ball Protector (9), and Cable (3) after use. Then dry. Do not immerse the Monitor (2), Battery (4), Power Adapters (7), or any other accessory in liquid.

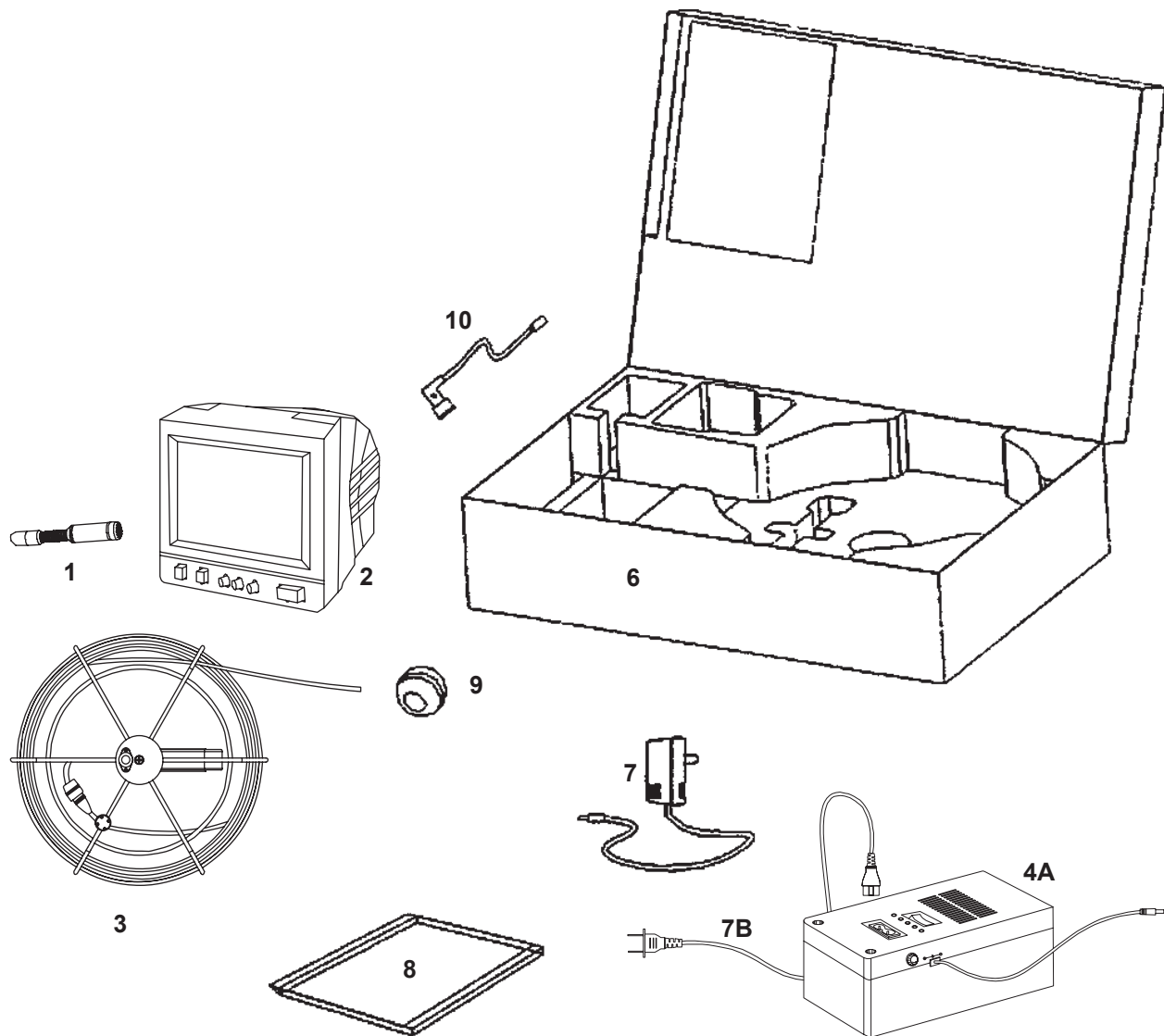
**⚠CAUTION!** All maintenance, service, or repairs not mentioned in this manual must only be performed by a qualified service technician.

## TROUBLESHOOTING

<b>Problem</b>	<b>Possible Solutions</b>
System displays a rolling, shrunk, or unstable picture.	<ol style="list-style-type: none"> <li>1. Check all connections.</li> <li>2. Charge the Battery fully.</li> <li>3. Have a qualified service technician check for a defective Battery and/or other defective components in the System.</li> </ol>
Camera LED's not lit.	<ol style="list-style-type: none"> <li>1. LED's may not be seen clearly in brightly lit room. Point Camera at monitor while on to see if LED's are actually on.</li> <li>2. Adjust LED Dimmer to change LED brightness.</li> </ol>
LED's light, but no image on screen.	Adjust contrast and brightness.
Image on screen is dark when camera is in pipe.	<ol style="list-style-type: none"> <li>1. Turn LED On on monitor.</li> <li>2. Adjust LED dimmer.</li> <li>3. Use ball protector with camera to keep lens above sludge.</li> <li>4. Clean lens and LED's.</li> <li>5. Check cable connections are secure.</li> </ol>
Screen on monitor is white.	Adjust contrast and brightness.
Monitor does not work with battery.	<ol style="list-style-type: none"> <li>1. Recharge/replace battery.</li> <li>2. Use line power adapter.</li> </ol>
Monitor works, but LED doesn't.	<ol style="list-style-type: none"> <li>1. Adjust dimmer.</li> <li>2. Replace camera, if needed.</li> <li>3. Check fiberglass cable and connections for damage and replace, if needed.</li> </ol>
Fuzzy or vertical lines on monitor screen when the camera is used in hot environment.	<ol style="list-style-type: none"> <li>1. Allow camera to cool.</li> <li>2. Use in environments -20 °F to 120 °F only.</li> <li>3. Have qualified technician service/replace camera.</li> </ol>
Monitor does not work.	<ol style="list-style-type: none"> <li>1. Recharge/replace battery.</li> <li>2. Operate unit using line power adapter.</li> <li>3. Have qualified technician service monitor.</li> </ol>
Unit operates intermittently when short cable is moved.	Replace short cable.
Camera lens is loose, cracked or broken.	Replace camera.

## PARTS LIST & ASSEMBLY DIAGRAM

Part	Description	Qty.
1	Camera	1
2	Monitor	1
3	Cable Reel w/65 Ft. Cable	1
4A	Li-Ion Battery	1
6	Carrying Case	1
7	Power Adapter	1
7B	Battery AC Cord	1
8	Sunshade	1
9	Ball Protector	1
10	Short Cable	1



**Note:** Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

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## **PLEASE READ THE FOLLOWING CAREFULLY**

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THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISKS AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

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### **LIMITED 90 DAY WARRANTY**

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Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE

REV 08h  
SKU 93765

**For technical questions, please call 1-800-444-3353.**

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### **WARRANTIES OF MERCHANTABILITY AND FITNESS.**

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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