

# Owner's Manual & Safety Instructions

**Save This Manual** Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

# CENTTECH®

**ITEM 61838**

## HIGH RESOLUTION DIGITAL VIDEO INSPECTION CAMERA



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

Email our technical support at: [productsupport@harborfreight.com](mailto:productsupport@harborfreight.com)

REV 14e

When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-888-866-5797 as soon as possible.

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No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools. Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein. Tools required for assembly and service may not be included.

### **⚠ WARNING**

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

# Important Safety Information

## Work Area Safety

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1. Keep your work area clean and well lit. Cluttered benches and dark areas may cause accidents.
2. Operate the Camera in a well-ventilated work area.
3. Do not operate the Camera in explosive atmospheres, such as in the presence of flammable liquids, gases, or heavy dust.
4. Keep a fire extinguisher suitable for gasoline/chemical/electrical fires nearby.
5. Keep bystanders, children and visitors away while operating the Camera.
6. This product is not a toy. Do not allow children to play with or near this item.
7. Use as intended only.
8. Inspect before every use; do not use if parts are loose or damaged.
9. Maintain product labels and nameplates. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.

## Electrical Safety

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1. **Before inspecting walls, shut off the circuit breakers to the whole house.**
2. **Before inspecting pipes that may contain an electric charge, have them checked by a qualified electrician.**
3. **Before inspecting an engine, turn off the automobile.**
4. Do not use the Camera while standing in water.
5. Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators.
6. Do not expose the Handheld Display Unit to rain or wet conditions. Water entering the Display Unit increases the risk of electric shock.
7. Do not place the Imager Head and Cable into any place that may contain a live electric charge or moving parts, which increases the risk of electric shock.
8. Make sure your hands are dry before operating the Camera or charging the battery.

## Lithium Battery Charging Safety

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1. Do not leave Camera unattended while charging.
2. Battery charging should be done by adults only.
3. Use the supplied charger only.
4. Charge on non-flammable surface and keep away from flammable items.
5. Disconnect AC wall chargers from outlets while not in use.
6. If battery-powered device has been damaged, immediately stop use, unplug, and safely move away from flammable materials.
7. Follow instructions for charging battery. DO NOT charge longer than recommended.
8. Allow a clearance of at least 4" on all sides during charging.

## Camera Safety

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1. **The Handheld Display Unit is not waterproof.** The Imager Head and Cable are rated to IP67.  
**See “Specifications” on page 4.**
2. Do not use the Camera if condensation forms in the Imager Head.  
Let condensation evaporate before use.
3. Do not submerge the Imager Head and Cable into corrosive substances, such as drain cleaner.
4. Do not get gasoline or oil on the Imager Head and Cable.
5. Do not use excessive force to insert or withdraw the Imager Head and Cable.
6. Do not use the Camera near moving machinery.
7. Do not place the Camera on any unstable cart or surface.
8. Handle the Camera with care. If the Camera is dropped, check for breakage and any other conditions that may affect its operation.
9. Store the Camera, cables and accessories in a locked area out of the reach of children.

## Personal Safety

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1. Wear ANSI-approved safety goggles during use.
2. Do not wear loose clothing or jewelry. Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts.
3. Do not use the Camera while tired or under the influence of drugs, alcohol, or medications. A moment of interruption can result in serious personal injury.
4. Do not over-reach. Keep proper footing and balance at all times. Proper footing and balance enables better control of the Camera in unexpected situations.
5. Do not use the Camera for personal inspection or medical use in any way. This is not a medical camera.
6. **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.*)
7. 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.
8. The warnings, precautions, and instructions discussed in this instruction 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.

## Service

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There are no user serviceable parts. Camera service must be performed only by qualified repair personnel.

## Specifications

Power Supply Input	120VAC / 60Hz
Power Supply Output	5VDC
Battery Type	3.7V / 1700 mAh rechargeable Lithium-ion
Battery Input Current	0.3A DC
Battery Charging Time	5-6 hours
Battery Charging Operating Temperature	41°F to 113°F
Display Screen	3.5" TFT LCD (320 x 240)
Handheld Display Unit Operating Temperature	32°F to 113°F
Imager Head	8.5mm (0.3")
Imager Head Lights	4 x Adjustable LED
Image Sensor	1/9" VGA CMOS
Imager Head Ingress Protection Rating	IP67 - Protected against the effect of immersion between 15cm and 1m
Imager Head and Cable Operating Temperature	14°F to 176°F
Image Capture	JPG images (720 x 480) AVI videos (360 x 240)
Video Output	USB to Mini-B Cable RCA Cable
Memory	Micro SD Card

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This device complies with Part 15 of the 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.

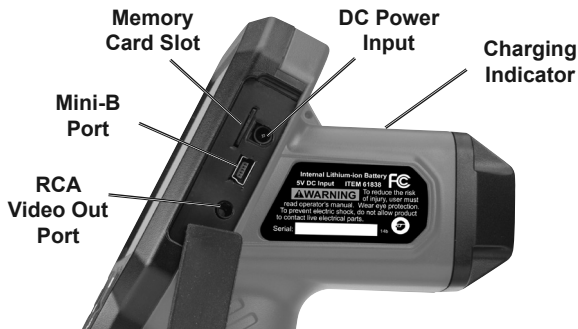
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## Setup- Before Use:



Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this document including all text under subheadings therein before set up or use.

## Components



## Charging the Battery

1. Plug the Power Supply into the DC Power Input, then plug other end into a grounded 120V outlet.
2. The red Charging Indicator will come on and will turn green when charging is finished.
3. DO NOT charge longer than recommended.  
**(See “Specifications” on page 4.)**
4. When charging is complete, disconnect Camera from Power Supply, then unplug Power Supply from outlet.

## Tool Set Up

### **⚠WARNING**

#### **TO PREVENT SERIOUS INJURY FROM ELECTRICAL SHOCK:**

**Make sure that the Camera is OFF and unplugged from its charger before performing any procedure in this section.**

1. **Connecting Cable:**
  - a. Carefully push Cable's key into Cable Connector's slot.
  - b. Turn Cable Connector *counterclockwise* until the Cable and Cable Connector are securely attached.
2. **Disconnecting Cable:**
  - a. Turn Cable Connector *clockwise* until the Cable and Cable Connector are detached.
  - b. Remove Cable.
4. **Attaching Accessories:**
  - a. Hold the accessory against the Imager Head, placing the Hook in the hole.
  - b. Match the slot on the Sleeve to the accessory, then slide the Sleeve down the Imager Head until it covers the Hook.

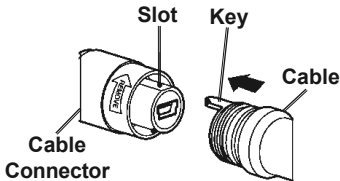


Figure A

3. **Micro SD Card**
  - a. Insert the Micro SD Card into the Memory Card Slot, then push down on the card until it clicks into place.

**Note:** When the card is installed, the **SD** icon will appear on the Display Screen.

- b. To remove card, push down on the card until it pops up, then remove.

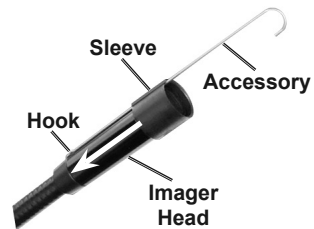


Figure B

5. **Connecting to Computer with USB to Mini-B Cable:**

Plug the Mini-B end into the Mini-B Port, then plug the USB end into a computer.
6. **Connecting to External Monitor with RCA Cable:**

Plug one end into the RCA Video Out Port, then plug other end into RCA Video In Port on monitor.

# Operating Instructions



Read the **ENTIRE IMPORTANT SAFETY INFORMATION** section at the beginning of this document including all text under subheadings therein before set up or use of this product.

## **WARNING**

**TO PREVENT SERIOUS INJURY AND DEATH:**

Always wear eye protection. Wear ANSI-approved safety goggles during use.

Before inspecting walls, shut off the circuit breakers to the whole house.

Before inspecting pipes that may contain an electric charge, have them checked by a qualified electrician.

Before inspecting an engine, turn off the automobile.

## Handheld Display Unit Controls

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Figure C




# General Operating Instructions

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Press the **Power** button to turn the Camera on.

## Settings

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1. Press the **Settings/Back**  button to enter Setup.
2. Select **Advanced Settings**, then press **OK**.
  - a. Select **Date and Time**, then Press **OK**. Use Left/Right and Up/Down buttons to set date and time, then Press **OK**.
  - b. Select **Language**, then press **OK**. Use Left/Right buttons to choose language, then press **OK**.
3. Select **Color or Black/White**, then press **OK**. Use Left/Right buttons to choose color or black and white, then press **OK**.
4. Select **Format Media**, then press **OK**. Choose No or Yes, then press **OK**.

**Note:** Pressing **OK** while **Yes** is selected will erase all files from the Micro SD Card.
5. To view firmware version, select **Help**, then press **OK**.

## Live Viewing


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View on Display Screen or use RCA cable to view on external monitor.

1. **Adjusting Light:** Press **Left** button to dim and turn off light. Press **Right** button to turn on light and increase brightness.
2. **Zooming:** Press **Up** button to zoom in. Press **Down** button to zoom out.
3. **Flip Image:** Press the **Flip Image/Trash Can**  button to flip image horizontally and vertically.

## Capturing Images

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Press the **Camera/Video**  button to toggle between camera and video modes.

1. **Camera mode:** Press **OK** to capture image.
2. **Video mode:** Press **OK** to start video. Press **OK** again to stop video.

## Playback and Delete

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Playback on Display Screen, external monitor, or another device.

1. **Display Screen:**
  - a. Press the **Playback**  button to view JPG and AVI files. Use Left/Right and Up/Down buttons to navigate through files.
  - b. Press **OK** to view image or video. For video, press **OK** to start and stop.
  - c. To delete file, press **Flip Image/Trash Can**  button, select **File Delete**, then press **OK**.
2. **External Monitor:** Connect Camera to monitor using RCA cable, then follow 1. **Display Screen:** instructions.
3. **Another Device:** Remove SD card to view files on another device.

When finished, press the **Power** button to turn the Camera off, then clean and store according to “**Inspection and Maintenance**” on page 10.

# Inspection and Maintenance



Procedures not specifically explained in this manual must be performed only by a qualified technician.

## **!WARNING**

### **TO PREVENT SERIOUS INJURY FROM ELECTRICAL SHOCK:**

**Make sure that the Camera is OFF and unplugged from its charger before performing any procedure in this section.**

### **TO PREVENT SERIOUS INJURY FROM TOOL FAILURE:**

**Do not use damaged equipment. If abnormal noise or vibration occurs, have the problem corrected before further use.**

## Inspection

- BEFORE EACH USE**, inspect the general condition of the tool. Check for:
  - condensation in Imager Head,
  - cracked or damaged Cable,
  - cracked or broken parts, and
  - any other condition that may affect its safe operation.

## Cleaning and Storage

- AFTER USE**, use a mild detergent on a clean cloth to remove any oil, grease or dirt from the Camera, especially on the buttons and ports, being careful to not put excessive pressure on the Display Screen.
- Store the Camera, power supply, cables and accessories in a locked area out of the reach of children.

## Troubleshooting

Problem	Possible Causes	Likely Solutions
Display is on, but does not show image.	<ol style="list-style-type: none"><li>Cable connection loose.</li><li>Imager Head is dirty.</li></ol>	<ol style="list-style-type: none"><li>Check that Cable is connected.</li><li>Clean Imager Head.</li></ol>
<ol style="list-style-type: none"><li>Light is dim at maximum brightness.</li><li>Display turns itself off.</li><li>Camera will not turn on.</li></ol>	<ol style="list-style-type: none"><li>Low Battery.</li><li>Low Battery.</li><li>Low or dead Battery.</li></ol>	<ol style="list-style-type: none"><li>Charge Battery.</li><li>Charge Battery.</li><li>Charge Battery, if it won't take a charge, have it replaced by a qualified technician.</li></ol>



**Follow all safety precautions whenever diagnosing or servicing the tool. Disconnect power supply before service.**

## PLEASE READ THE FOLLOWING CAREFULLY

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### Parts List

Part	Description	Qty
1	Handheld Display Unit	1
2	Cable with 8.5mm Imager Head	1
3	5VDC Power Supply	1
4	RCA Cable	1
5	USB to Mini-B Cable	1
6	Micro SD Card	1
7	45° Mirror Accessory	1
8	Hook Accessory	1
9	Magnet Accessory	1
10	Storage Case	1

#### Record Serial Number Here:

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**Note:** If product has no serial number, record month and year of purchase instead.

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

## Limited 90 Day Warranty

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 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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