

# CENTTECH®

## 3.5 LCD INSPECTION CAMERA

**Model 67980**

### 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.**

Copyright© 2010 by Harbor Freight Tools®. All rights reserved. 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.

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

---

# Table of Contents

<b>1. Safety Instructions.....</b>	<b>1</b>
<b>1.1 Work Area Safety.....</b>	<b>1</b>
<b>1.2 Electrical Safety.....</b>	<b>1</b>
<b>1.3 Personal Safety.....</b>	<b>2</b>
<b>2. Description, Specifications and Tool Components.....</b>	<b>3</b>
<b>2.1 Description.....</b>	<b>3</b>
<b>2.2 Specifications.....</b>	<b>3</b>
<b>2.3 Accessories Included.....</b>	<b>4</b>
<b>2.4 Tool Components.....</b>	<b>5</b>
<b>2.5 Buttons and Ports.....</b>	<b>6</b>
<b>3. Installation and Connection.....</b>	<b>8</b>
<b>3.1 The Imager Head and Cable Installation.....</b>	<b>8</b>
<b>3.2 Accessories Installation.....</b>	<b>9</b>
<b>3.3 SD Card Installation.....</b>	<b>10</b>
<b>3.4 USB Cable Connection.....</b>	<b>10</b>
<b>3.5 Video-Out Cable Connection.....</b>	<b>11</b>
<b>3.6 Earphone Connection.....</b>	<b>11</b>
<b>4. Battery Charging Precautions.....</b>	<b>12</b>
<b>4.1 Battery Charging Safety.....</b>	<b>12</b>
<b>4.2 Battery and Charger Specifications.....</b>	<b>12</b>
<b>4.3 Charger Inspection.....</b>	<b>13</b>
<b>4.4 Battery Charging Procedures.....</b>	<b>13</b>
<b>5. Operation Instructions.....</b>	<b>15</b>
<b>5.1 Basic Operation.....</b>	<b>15</b>
<b>5.2 Operation Precautions.....</b>	<b>16</b>
<b>5.3 Tool Inspection.....</b>	<b>17</b>
<b>5.4 Tool and Work Area Set-Up.....</b>	<b>18</b>
<b>5.5 On Screen Navigation.....</b>	<b>20</b>
<b>5.6 Icons.....</b>	<b>27</b>
<b>6. Troubleshooting.....</b>	<b>35</b>
<b>7. Parts List and Diagram.....</b>	<b>36</b>

# 1. Safety Instructions

***IMPORTANT: To prevent electric shock, fire and/or personal injury or damage, read this user's manual first and observe the following safety instructions.***

## 1.1 Work Area Safety

- Always perform automotive testing in a safe environment.
- Keep your work area clean and well lit. Cluttered benches and dark areas may cause accidents.
- Keep clothing, hair, hands, tools, test equipment, etc. away from all moving or hot engine parts.
- Operate the tool in a well-ventilated work area.
- Do not operate the tool in explosive atmospheres, such as in the presence of flammable liquids, gases, or heavy dust.
- Keep a fire extinguisher suitable for gasoline/chemical/electrical fires nearby.
- Do not use the tool around corrosive chemicals which can ruin the photo quality.
- Keep bystanders, children and visitors away while operating the tool.
- Keep the tool dry, clean, free from oil, water and grease. Use a mild detergent on a clean cloth to clean the outside of the tool when necessary.

## 1.2 Electrical Safety

- Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators.
- Do not expose the tool to rain or wet conditions. Water entering the tool will increase the risk of electric shock.
- Do not abuse the cord. Never use the cord for carrying, pulling, or unplugging the tool. Keep cord away from heat, oil, sharp edges or moving parts.
- If operating the tool in a damp location is unavoidable, use a ground fault circuit interrupter (GFCI) to protect supply.

## **1.3 Personal Safety**

- Do not use the tool while tired or under the influence of drugs, alcohol, or medications. A moment of interruption can result in serious personal injury.
- Do not over-reach. Keep proper footing and balance at all times. Proper footing and balance enables better control of the tool in unexpected situations.
- Always wear safety eye protection that meets ANSI standards.
- 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.
- Do not place the tool on any unstable cart or surface. The tool may fall causing serious injury to a person or serious damage to the tool itself.
- Never spill liquid on the display units. Liquid increases the risk of electric shock and damage to the tool.
- Do not use the tool for personal or medical use in any way.
- The product is not shock-resistant. Do not use it as a hammer or drop it.

## 2. Description, Specifications and Tool Components

### 2.1 Description

The Inspection Camera is an ideal and powerful tool for inspecting difficult-to-reach areas normally hidden from sight. It is a completely digital platform that features the function of capturing and recording photos and videos either on its internal memory or on removable SD cards (not included). The ergonomic tool not only features a 3.5" full color LCD screen, multi-language interface and viewing capacity as close as 1" with crystal clear output, but also offers the capacity to view real time images directly connected to a TV and upload captured photos and videos to a PC. Accessories (magnet, hook and mirror) are included to attach to the imager head to provide application flexibility.

### 2.2 Specifications

<b>Recommended use</b>	Indoor
<b>Optimal viewing Distance</b>	1" to 14"(2.5cm to 35.6cm)
<b>Image capture</b>	640 x480
<b>Screen type display</b>	3.5" TFT LCD
<b>Display resolution</b>	320 x 240
<b>Power supply</b>	Built-in rechargeable lithium-ion battery pack (3.7 Volt)
<b>Tested battery life</b>	5-6 hours of continuous use
<b>Dimensions</b>	255 x 108 x 36mm (10" x 4.25" x 1.42")
<b>Weight</b>	Net: 0.6 kg (1.3 lbs); Gross: 2.3 kg (5.1lbs)
<b>Recording medium</b>	Internal memory or SD card (SD card is optional and not included)

<b>Image controls</b>	Zoom, low light vision
<b>Lighting</b>	Fully adjustable LED
<b>Cable reach</b>	1m (3') -- expandable to 6m (19') w/optional extensions (not included)
<b>Imager head</b>	8.5mm (0.33")
<b>waterproof</b>	Imager head and cable to 3m (10')
<b>Additonal ports</b>	USB, video out and earphone ports
<b>Operating temp.</b>	Main unit: 32 °F to 113 °F (0 °C to 45 °C); Cable: 14 °F to 176 °F (-10 °C to 80 °C)
<b>Storage temp.</b>	-4 °F to 158 °F (-20 °C to 70 °C)
<b>Operating humidity</b>	5% - 95% non-condensing (display unit)
<b>Video output</b>	RCA

## 2.3 Accessories Included

- 1) Protective carrying case
- 2) User's Manual
- 3) Imager head and cable (8.5mm)
- 4) Magnet, hook and mirror
- 5) Charger
- 6) USB cable
- 7) Video-out cable

## 2.4 Tool Components

*Note: Because of continuing improvements, actual product may differ slightly from photo.*

The Inspection Camera comes with the following items:

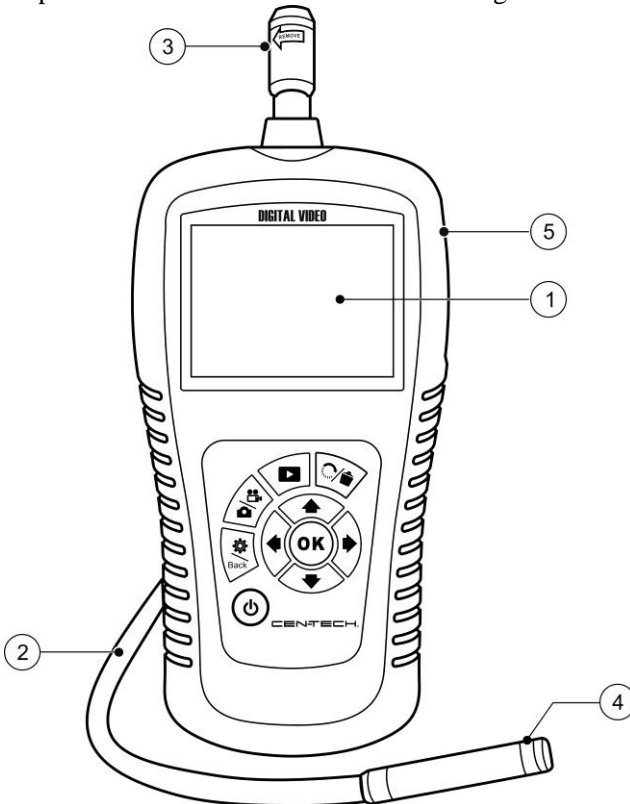
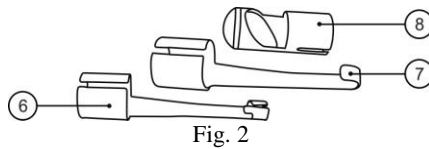


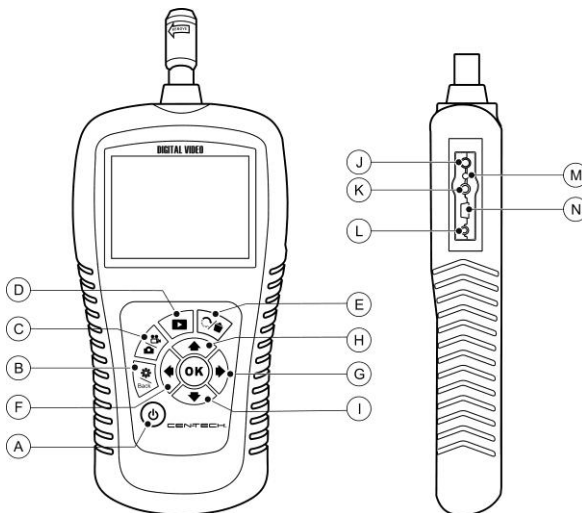
Fig. 1

- 1) **LCD Screen** – Indicates still images and videos.
- 2) **Cable** – Connects to the tool while in use.
- 3) **Cable Connector** – Connects the display unit to the imager head and cable.
- 4) **Imager Head** – Connects to the cable to view real-time images.
- 5) **Rubber Boot** – Protects the tool casing.



- 6) **Accessory Magnet** – Picks up small metal objects such as dropped rings or screws on the floor.
- 7) **Accessory Hook** – Unclogs obstacles and picks up wires in pipes or confined areas.
- 8) **Accessory Mirror** – Helps users look around corners and see inside difficult to reach areas.

## 2.5 Buttons and Ports



- A. **Power Button** – Turns on/off the tool.
- B. **Setting/Back Button** – Moves to the primary settings screen, or when pressed again, returns to the last viewed screen.
- C. **Camera/Video Button** – Captures photos or videos.
- D. **Play Button** – Changes to play mode to play captured photos and videos.



- E. **Trash Can/Reverse Button** – Deletes captured photos and videos in the play mode. Pressing again will control the direction of the real-time image and video in the live screen. The real-time image and video will do a horizontal reverse or a vertical reverse.
- F. **LEFT Arrow LED Lighting Adjusting Button** – Uses left arrow button to decrease LED brightness in the camera mode.
- G. **RIGHT Arrow LED Lighting Adjusting Button** – Uses right arrow button to increase LED brightness in the camera mode.
- H. **UP Arrow Zoom Adjusting Button** – Uses up arrow button to zoom in while in the camera mode.
- I. **DOWN Arrow Zoom Adjusting Button** – Uses down arrow button to zoom out while in the camera mode.
- J. **DC Power Source Port** – Connects the tool to the supplied charger for battery charging.
- K. **Video-out Port** – Connects the tool to a TV with the supplied video-out cable to view the real-time image.
- L. **Earphone Port** – Connects an optional earphone/microphone.
- M. **Charging Indicator Light** – When the battery is charging, the charging indicator light is red. When the battery is fully charged, the charging indicator light changes to green.
- N. **Mini USB Port** – Connects the tool to a computer with the supplied USB cable to upload and view captured photos and videos.

## 3. Installation and Connection

### 3.1 The Imager Head and Cable Installation

To use the tool, the imager head and cable must be connected to the display unit. To connect the cable to the display unit, make sure the key and slot (*Fig. 4*) are properly aligned. Once they are aligned, slide the connecting sleeve up to the threads on the cable, and finger-tighten to hold the connection firmly in place.

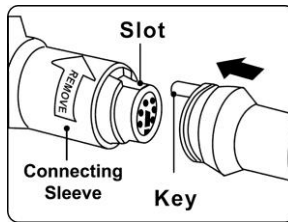


Fig. 4

## 3.2 Accessories Installation

The three accessories include a magnet, a hook and a mirror (Fig. 2). All are attached to the imager head in the same manner. Hold the imager head as shown in Fig. 5.

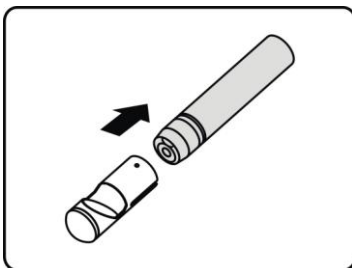


Fig. 5

Slip the end of the accessory over the tip of the imager head to fix the accessory as shown in Fig. 6.

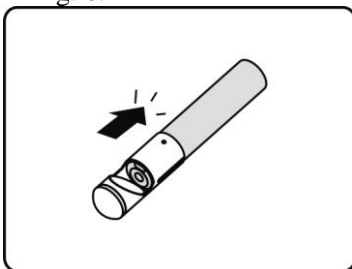


Fig. 6

### 3.3 SD Card Installation

*NOTE: The SD card slot provides for additional memory. The SD card is optional and not included. Different SD cards can be used to insert into the SD card slot.*

To insert an SD card into the SD card slot, make sure the contacts are facing towards the slot and the angled portion of the card is facing down. When the SD card is installed, a small SD card icon will appear at the top right portion of the screen. To remove an SD card, gently push the SD card inward and then release to eject it from the card slot.

### 3.4 USB Cable Connection

Use the supplied USB cable to connect the tool to a PC to upload and view captured photos and videos. A “**USB Connected**” message will appear on the screen as shown. (*Fig. 7*)



Fig. 7

### **3.5 Video-Out Cable Connection**

Insert the video-out cable into the video-out port of the tool and the other end of the cable into the video-in port of a TV. The LCD screen will output a high quality real-time image.

### **3.6 Earphone Connection**

Connect an earphone with microphone (optional, not included) to the earphone port of the tool. Speak into the microphone to record your voice.

## 4. Battery Charging Precautions

**IMPORTANT:** To reduce the risk of serious injury, read these precautions and the label on the charger carefully before using. Lithium batteries store a large amount of energy and will vent fire or explode if mistreated.

### 4.1 Battery Charging Safety

- Do not probe charger with conductive objects.
- Do not use the charger if it has been dropped or damaged in any way.
- Charge the battery in temperatures above 41 °F (5 °C) and below 113 °F (45 °C).
- When in use, keep the charger out of heat, high voltage and away from children.
- Use only the supplied charger. Do not charge the battery over 24 hours.
- Do not allow anything to cover the charger while in use.
- Unplug the charger from its outlet before attempting any maintenance or cleaning.
- Do not store the charger in damp, wet or explosive environments.
- Do not open the charger housing. Have repairs performed only at authorized locations.
- Do not charge the battery near fire or in the sunlight.
- Proper care will prevent serious damage to the charger.

### 4.2 Battery and Charger Specifications

<b>Input</b>	100-240 VAC/12 VDC 50/60Hz
<b>Output</b>	5V DC
<b>Battery Type</b>	3.7V lithium-ion
<b>Battery Capacity</b>	4500 mA
<b>Input Current</b>	0.3A/1A (DC)
<b>Charging Time</b>	5-6 hours
<b>Cooling</b>	Passive convection cooling (No fan)

## 4.3 Charger Inspection

**CAUTION:** Before using, inspect the charger and correct any problems. Set up the charger according to these procedures to reduce the risk of injury from electric shock, fire and other causes, and to prevent tool damage.

- 1) Make sure the charger is unplugged. Inspect the power cord and charger for damage or modifications, or broken, worn, missing, misaligned or binding parts. If any problems are found, do not use the charger until the parts have been repaired or replaced.
- 2) Clean any oil, grease or dirt from the tool especially on the buttons. This helps to prevent the tool from slipping from your hands and allows proper ventilation.
- 3) Check that the warning label on the charger is intact and readable.
- 4) Select an appropriate location for the charger before using. Check the following:
  - ◆ The charger must be between 41 °F (5 °C) and 113 °F (45 °C) for charging. If the temperature goes below or exceeds this range at any point during charging, the operation will be suspended until brought back to the correct temperature range.
  - ◆ Inspect that the plug fits correctly into the desired outlet.
  - ◆ The charger needs a clearance of at least 4" (10 cm) on all sides to maintain a proper operating temperature.

## 4.4 Battery Charging Procedures

**NOTE:** A new battery reaches full capacity after approximately 5 charging and discharging cycles.

The tool has a 3.7V built-in lithium-ion rechargeable battery. When the battery is low, a “**Battery critically low!**” message appears and suggests you to charge the battery in time. (*Fig. 8*)



Fig. 8

There are two means of charging battery:

- 1) To charge the battery with the charger: Locate the DC power source port of the tool. With dry hands, connect the tool to the charger and plug in the charger to start charging.
  - 2) To charge battery by USB cable: Locate the USB port of the tool. With dry hands, connect the tool to a PC with the USB cable to start charging.
- ◆ The battery will begin charging automatically. While the battery is charging, the charging indicator light is red.
  - ◆ When the battery is fully charged, the charging indicator light turns green.
  - ◆ Once the battery is charged, it may remain until it is ready to be used. There is no risk of over-charging the battery. When the battery has been fully charged, the charger automatically switches to retention charging.
  - ◆ Unplug the charger from outlet once charging completes.



## 5. Operation Instructions

**IMPORTANT:** Always wear safety eye protection to protect your eyes against dirt and other objects. Follow the operation instructions to reduce the risk of injury from electric shock, entanglement and other causes.

### 5.1 Basic Operation

**NOTE:** When in operation, the cable can be bent into a specific shape. This may help to maneuver the cable into confined areas.

- 1) Hold the tool with the LCD screen facing you and press the **Power** button to turn it on. Wait for several seconds. While the unit is booting up an introductory screen is displayed. Then the live screen is displayed, where you can do most of your work.
- 2) Press the **OK** button to capture photos in the camera mode. Press the **OK** button to begin capturing videos in the video mode. Press the **Camera/Video** button to switch between the two modes.
- 3) Press the **UP and DOWN** arrow buttons to zoom in or out. A zoom indicator bar is displayed as you make the adjustment.
- 4) Press the **LEFT and RIGHT** arrow buttons to increase or decrease the LED brightness while in the camera mode. A brightness indicator bar is displayed as you adjust LED light intensity.
- 5) Press the **Play** button to view captured photos and videos.
- 6) Press the **Trash Can** button to delete captured photos and videos as needed when playing back captured photos and videos.
- 7) Press the **Reverse** button to control the direction of the real-time image and video as needed in the live screen.
- 8) Press the **Setting/Back** button to enter **Setup** mode or return to the last viewed screen.
- 9) Use the supplied accessories to provide application flexibility.
- 10) Use the supplied USB cable to connect the tool to a PC to upload and view captured photos and videos.
- 11) Connect the supplied video-out cable to the video-out port of the tool and the other end of the cable to the video-in port of a TV to view a high quality real-time image.

- 12) Connect the optional earphone with microphone to the earphone port of the tool. Speak into the microphone to record your voice.

## **5.2 Operation Precautions**

- Use the tool only as directed. Do not operate the tool unless the user's manual has been read thoroughly and proper training has been completed.
- The display unit is not waterproof. The imager head and cable are waterproof, but not acid-proof or fireproof. Avoid submersing the imager head and cable into corrosive, oily places and be sure to keep the imager head and cable away from high temperature objects.
- Do not immerse the tool and display unit in water. Such measures reduce the risk of electric shock and damage.
- Do not use excessive force to insert or withdraw the imager head and cable. This may result in damage to the tool or inspection area.
- Do not use the imager head and cable to modify surroundings, clear pathways or clogged areas.
- Do not place the imager head and cable into anything or anywhere that may contain a live electrical charge or moving parts, which increase the risk of electric shock or entanglement injuries.
- Do not use the tool for personal inspection or medical use in any way. This is not a medical tool.
- Do not eat or smoke while operating the tool. Use hot, soapy water to wash hands and other body parts exposed to drain contents after using the tool to inspect drains and other areas that may contain chemicals or bacteria. This will help prevent contamination with toxic or infectious material.
- When the inspection is completed, carefully withdraw the imager head and cable from the inspection area.
- Store idle components out of the reach of children and other untrained persons.
- Maintain the tool with care. Properly maintained tools are less likely to cause injury.
- Do not drop the tool, if the tool is dropped accidentally, check for

breakage and any other condition which may affect its operation.

- Use only accessories that are recommended by the manufacturer for the tool.
- Dry your hands before operating the tool or charging the battery.
- Always use appropriate personal protective equipment while handling and using the tool. Appropriate personal protective equipment always includes safety glasses and gloves, and may include latex or rubber gloves, face shields, goggles, protective clothing, respirators and steel toed footwear.
- Protect against excessive heat. The tool should be kept away from heat sources such as radiators, stoves or others products that produce heat. Do not use the tool near moving machinery or areas where the temperature will exceed 113 °F (45 °C).
- Store the tool, charger and all cables in a locked area out of the reach of children and people unfamiliar with the tool.

## 5.3 Tool Inspection

***WARNING: Before using, inspect your tool and correct any problems to reduce the risk of serious injury from electric shock and other causes and to prevent damage to the tool.***

- Make sure the power is OFF.
- Clean any oil, grease or dirt from the tool, especially on the buttons and ports. This helps to prevent the tool from slipping from your hands.
- Inspect the imager head lens for condensation. To avoid damaging the tool, do not use the tool if condensation forms inside the imager head. Let the water evaporate before using again.
- Inspect the full length of the cable for cracks or damage. A damaged cable could allow water to enter the tool and increase the risk of electric shock.
- Make sure the connections between the display unit and imager head and cable are tight. All connections must be properly assembled for the cable to be waterproof.
- Check if the warning label is present, firmly attached and readable. Do not operate the tool without the warning label.

- Turn on the power and make sure the tool starts up as described in the Basic Operation section.
- If the tool does not work well after turning it on, have the tool checked by a qualified technician. Any tool that cannot be controlled with the power button is dangerous and must be repaired.

***NOTE: Please check following methods to avoid injury.***

- ✓ **FOR WALLS:** For inspecting inside walls, shut off the circuit breaker to the whole house before using the tool.
- ✓ **FOR PIPES:** If you suspect a metal pipe could contain an electrical charge, have a qualified electrician check the pipe before using.
- ✓ **FOR AUTOMOBILES:** Be sure the automobile is not running during inspection. Metal and liquid under the hood may be hot. Do not get oil or gas on the imager head.

## **5.4 Tool and Work Area Set-Up**

***CAUTION: Set up the tool and work area according to these procedures to reduce the risk of injury from electric shock, entanglement, and other causes and prevent tool damage.***

- 1) Check work area for:
  - ✓ Sufficient lighting.
  - ✓ Do not work in an area until flammable sources have been identified and corrected. The tool is not explosion proof and can cause sparks.
  - ✓ Do not use the tool while standing in water.
- 2) Check the area and determine if the Inspection Camera is the correct tool for the job.
  - ✓ Check the access points to the area.
  - ✓ Check if there is any electric power supplied to the area to be inspected.

- ✓ Check if any liquids will be contacted during inspection. The imager head and cable are waterproof to a depth of 3m (10'). Greater depths may cause leakage into the imager head and cable and cause electric shock or damage the tool. The display unit is not waterproof and should not be exposed to wet conditions.
  - ✓ Check if any chemicals are present, especially in the case of drains. Chemicals may damage the tool.
  - ✓ Check the temperature of the area. The working temperature of the tool is between 32 F (0 °C) and 113 F (45 °C).
  - ✓ Check if any moving parts are present in the area.
- 3) Make sure the tool has been properly inspected.
  - 4) Install the correct accessories for use in the appropriate application.

***CAUTION: Make sure the tool has been powered off before performing maintenance.***

- Tool maintenance must be performed only by qualified repair personnel. Maintenance performed by unqualified repair personnel could cause injury.
- When maintaining, use only identical replacement parts. Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electric shock or injury.
- Do not attempt to take any pieces of the tool apart unless directed by the manual.
- Follow instructions to change accessories.
- Do not use acetone to clean the tool. Instead, use only alcohol to swab the connections. Avoid rubbing too hard on the LCD screen. After using, wipe the display unit clean gently with a dry cloth.
- Upon the completion of any maintenance of the tool, ask qualified repair personnel to perform safety checks to examine if the tool is in proper operating condition.
- Stop using the tool if it starts smoking or emitting noxious fumes.
- Always handle the tool with care. It is not shock-resistant.
- Do not disassemble the tool beyond what is shown in the manual. Doing so will void your warranty.

## 5.5 On Screen Navigation

### 1) Splash Screen

When the tool is powered on, the first screen displayed is referred to as the splash screen. (*Fig. 9*) This screen tells you the tool is booting up. Once the tool is fully powered up, the screen will automatically switch to the live screen.



Fig. 9

### 2) Live Screen

The live screen is where you will do most of your work. A live image of what the imager head sees is displayed on the screen. You can zoom in or out, adjust LED brightness, rotate images and video, view and capture photos and videos from this screen.

### 3) Switching from Still Image Capture to Video Capture

The tool defaults to still image capture when powered on. Press the **Video/Camera** button to switch between still image capture and video capture as needed.

### 4) Adjusting LED Brightness

Press the **RIGHT** and **LEFT** arrow buttons on the key pad (in the still camera mode) to increase or decrease the LED brightness. A brightness indicator bar will be displayed on the screen as you adjust the brightness. (*Fig. 10*)

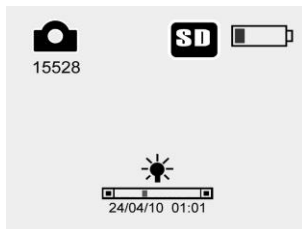


Fig. 10

## 5) Zooming

Press the **UP** and **DOWN** arrow buttons while in the still camera mode to zoom in or out. A zoom indicator bar will be displayed on the screen as you adjust the zoom. (*Fig. 11*)



Fig. 11

## 6) Entering the Primary Settings Screen

Pressing the **Setting** button while in the live screen will take you to the primary settings screen. (*Fig. 12*) Pressing the **Back** button at any point will take you back to the live screen.

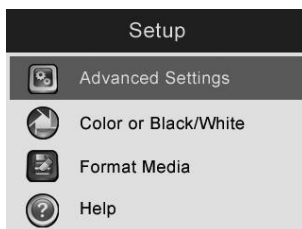


Fig. 12

7) **Capturing a Photo**

When in the live screen, make sure the camera icon is present at the top left portion of the screen. (*Fig. 13*) Press the **OK** button to capture a photo. The image is saved to the internal memory or SD card. The total number of photos is displayed below the camera icon. The number will increase or decrease as different capacity SD cards are used, or the photo quality is adjusted.



Fig. 13

8) **Capturing a Video**

While in the live screen, make sure the video icon is present at the top left portion of the screen. (*Fig. 14*) Press the **OK** button to start capturing video. A record icon will appear at the top right portion of the screen, just below battery capacity icon. This shows that video is capturing. The time at the top left portion, just below video icon will begin counting down. This indicates how much video you can store in the internal memory or SD card. Press the **OK** button again to stop capturing a video.

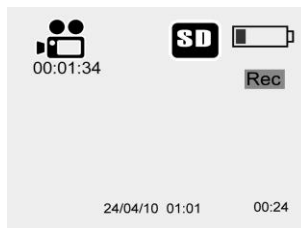


Fig. 14

- If you wish to record sound, you can insert the optional earphone with mic into the earphone port of the tool. When capturing a



video, you are recording simultaneously. It may take a few seconds to save the captured video to the internal memory or SD card.

**9) Playing Back and Deleting Captured Photos and Videos**

Press the **Play** button on the key pad to display two modes for you to select. Photos and videos that were captured will be displayed on the screen. Use the **LEFT** and **RIGHT** arrow buttons to move from **Photo** mode to **Video** mode. (*Fig. 15 and Fig. 16*)

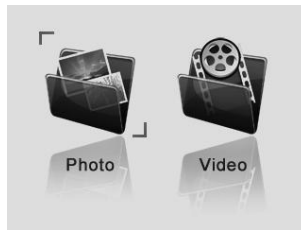


Fig. 15

While **Photo** mode is highlighted (*Fig. 15*), press the **OK** button. The stored photos will be displayed. Use the **LEFT** and **RIGHT** arrow buttons to play back captured photos one after another. Use the **UP** and **DOWN** arrow buttons to zoom in and out.

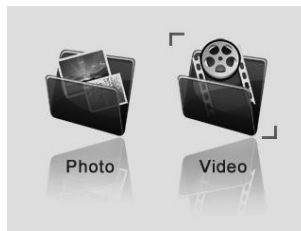


Fig. 16

While **Video** mode is highlighted (*Fig. 16*), press the **OK** button. The stored videos will be displayed. Use the **LEFT** and **RIGHT** arrow buttons to play back captured videos one after another.

- ✓ While in the photo mode, select a photo and press the **OK** button. A bar will appear with **record** mode in the middle of the screen. (Fig. 17)



Fig. 17

- Inserting the optional earphone with microphone and pressing **OK** button will begin recording (Fig. 18) and timing.



Fig. 18


- Press the **OK** button as desired to stop recording and then the “” icon will appear.
- Press the **OK** button to play the recording. Press **OK** again to pause the recording in the record mode. (Fig. 19 and Fig. 20)



Fig. 19



Fig. 20


- If you wish to delete the recording, use **LEFT** and **RIGHT** arrow buttons to select “” icon then press **OK**. (Fig. 21)



Fig. 21

- ✓ While in the video mode, selecting a video which has been recorded and pressing the **OK** button will start playing the recording. Press the **OK** button again to pause playing the

recording. Press the **LEFT** button to fast forward recording and the **RIGHT** button to reverse the recording. Press the **UP** button to stop playing the recording.

- ✓ Either in the **Photo** mode or in the **Video** mode, press the **Trash Can** button to delete captured photos and videos, and a “**Are you sure you want to delete this file?**” message appears on the screen. (*Fig. 22 and Fig. 23*) Use the **LEFT** and **RIGHT** arrow buttons to select **Yes** or **No**, then press the **OK** button to save your selection.



Fig. 22

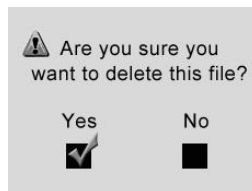


Fig. 23

- When you delete all the photos and videos, a “**No Files Available**” message appears on the screen. (*Fig. 24*)



Fig. 24

## 10) Entering the Secondary Settings Screen

While in the Primary Settings Screen (*Fig. 12*), select **Advanced Settings** from **Setup** and then press **OK** button, you will enter the secondary settings screen (*Fig. 25*) where you can set the **Date and Time**, **Restore Defaults** and select a **Language** as needed. Press the **Back** button at any point to go back to the primary settings screen and press it again to go back to the live screen.

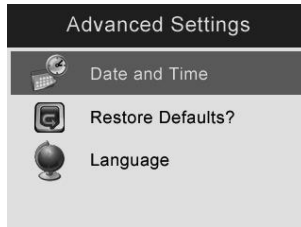












Fig. 25

## 5.6 Icons

- 1)  **Battery Capacity** - Fully charged battery.
- 2)  **SD Card** - Indicates an SD card has been inserted into the tool.
- 3)  **Still Camera** - Indicates the tool is operating in still camera mode.
- 4)  **Video Camera** - Indicates the tool is operating in video camera mode.
- 5)  **Record sound** - Push **OK** to record sound in the photo play mode.
- 6)  **Record** - Press **OK** to record in the photo record mode.
- 7)  **Stop** - Press **OK** to stop playing recording in the photo record mode.
- 8)  **Play** - Press **OK** to play recording in the photo record mode.
- 9)  **Pause** - Press **OK** to pause playing recording in the photo record mode.
- 10)  **Delete** - Press **OK** to delete the recording in the photo record mode. (You will be prompted: “Are you sure you want to delete this file,” before deletion is completed.)

11)  **Advanced settings**

- ✓ *Advanced Settings is the default mode from the Setup menu.*
- Press the **Setting** button to enter **Setup**.

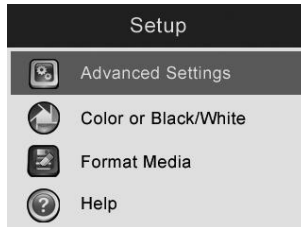


Fig. 26

- Select **Advanced Settings** from **Setup** and press the **OK** button to modify advanced settings.

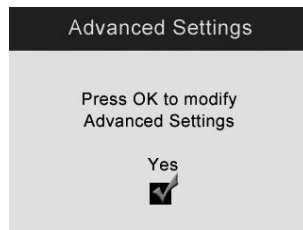



Fig. 27

- When necessary, use the **UP** and **DOWN** arrow buttons to select **Date and Time**, **Restore Defaults** and **Language** from **Advanced Settings**.

12)  – Displays color or black/white.

- ✓ *Color is the default mode.*
- Select **Color** or **Black/White** from **Setup** and press the **OK** button.

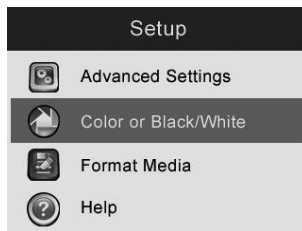


Fig. 28

- Use the **LEFT** and **RIGHT** arrow buttons to select from **Color** mode to **Black/White** mode, then press the **OK** button to save your selection.
- If you wish to view or capture color images and videos, select **Color** from **Setup**.

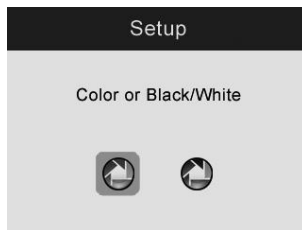


Fig. 29

- If you wish to view or capture black/white images and videos, select **Black/White** from **Setup**.

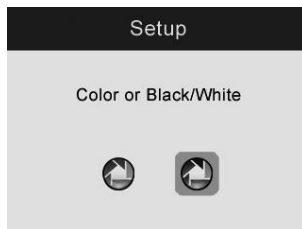



Fig. 30

13)  – Asks if format media.

- Select **Format Media** from **Setup** and press the **OK** button.

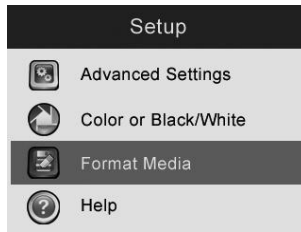


Fig. 31

- If you wish to format media, select **Format Media** from **Setup** and press the **OK** button and then use the **LEFT** and **RIGHT** arrow buttons to select **Yes**, then press the **OK** button to save your selection.

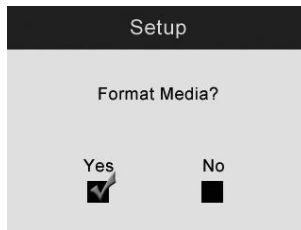


Fig. 32

- If you do not wish to format media, use the **LEFT** and **RIGHT** arrow buttons to select **No** to return to the previous menu.

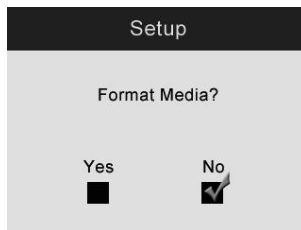


Fig. 33

- If you select **Yes**, a message **“Warning - this will erase ALL**



**files in memory**” appears on the screen. Press the **OK** button to save your selection and return to the previous menu.

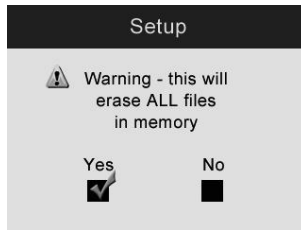


Fig. 34

- If you do not wish to format media, select **No** to return to previous menu.

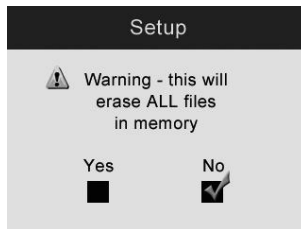



Fig. 35

14)  – Displays firmware version.

- Select **Help** from **Setup** and press **OK** button to display **Firmware Version**.

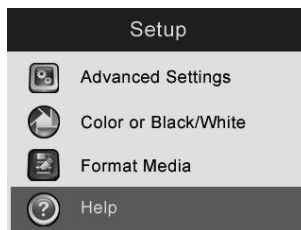



Fig. 36



Fig. 37

15)  – Sets date and time.

- When you enter **Advanced Settings**, select **Date and Time** and press the **OK** button.

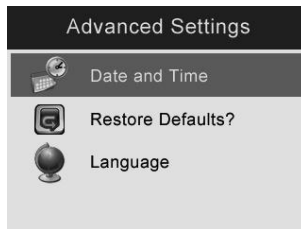


Fig. 38

- Use the **UP** and **DOWN** arrow buttons to set the exact date and time while using the **LEFT** and **RIGHT** arrow buttons to move from one item to another and press the **OK** button to save.

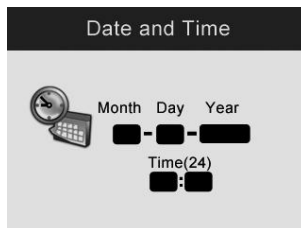


Fig. 39

16)  – Ask to restore factory defaults.

- Select **Restore Defaults** from **Advanced Settings** and press the

**OK** button.



Fig. 40

- If you wish to restore factory defaults, use **LEFT** and **RIGHT** arrow buttons to select **Yes**, then press the **OK** button to save your selection.



Fig. 41

- If you do not wish to restore factory defaults, select **No** to return to the previous menu.

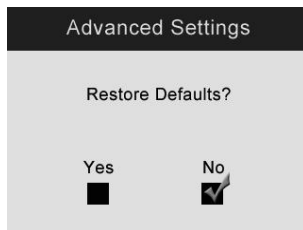



Fig. 42

- 17)  – Displays multi-language interface.

- ✓ *English is the default language.*
- Select **Language** from **Advanced Settings** and press the **OK** button.

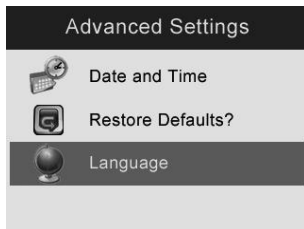


Fig. 43

- Use the **LEFT** and **RIGHT** arrow buttons to switch among English, Spanish, French, German and Dutch. Select the desired language and press the **OK** button to save your selection.



Fig. 44

## 6. Troubleshooting

<b>SYMPTOMS</b>	<b>POSSIBLE REASONS</b>	<b>SOLUTIONS</b>
Display is on, but does not show image.	Cable connection is loose.	Check and reattach.
	Imager head is covered by debris.	Inspect imager head and clean if needed.
LEDs on imager head are dim at max brightness, display changes between black and white, and/or the color display turns itself OFF after a short period.	Low battery.	Charge battery.
The tool will not turn on.	Dead battery.	Charge battery.

## **7. Parts List and Diagram**

<b>Item #</b>	<b>Description</b>
1	Rubber Cover
2	Lens
3	Skin
4	Front Shell
5	Button
6	LCD
7	PCB
8	Power Switch
9	Screw
10	Battery
11	Back Shell
12	Screw
13	Screw
14	Square Gasket
15	Hex Nut
16	Connector
17	Cable Connector
18	Ring
19	Female Connector
20	Ring
21	Ring
22	Imager Head and Cable
23	Mirror (not shown)
24	Magnet (not shown)
25	Hook (not shown)

# Parts List and Diagram

---

