

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 67979

DIGITAL INSPECTION CAMERA



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REV 14i

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.**

Safety Instructions

IMPORTANT: Failure to understand and follow the instructions listed below may result in electric shock, fire and/or serious personal injury.

Work Area Safety

1. Always perform automotive testing in a safe environment.
2. Keep your work area clean and well lit. Cluttered benches and dark areas may cause accidents.
3. Keep clothing, hair, hands, tools, test equipment, etc. away from all moving or hot engine parts.
4. Operate the tool in a well-ventilated work area.
5. Do not operate the tool in explosive atmospheres, such as in the presence of flammable liquids, gases, or heavy dust.
6. Keep a fire extinguisher suitable for gasoline/chemical/electrical fires nearby.
7. Do not use the tool around corrosive chemicals which can damage the tool.
8. Do not abuse the cable. Never use the cable to carry the tool.
9. Keep bystanders, children and visitors away while operating the tool.
10. 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.

Electrical Safety

1. To prevent electric shock, do not allow product to contact live electrical parts.
2. Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators.
3. Do not expose the tool to rain or wet conditions. Water entering the tool will increase the risk of electric shock.
4. 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.
5. If operating the tool in a damp location is unavoidable, use a ground fault circuit interrupter (GFCI) to protect supply.

Personal Safety

1. Do not use the tool while tired or under the influence of drugs, alcohol, or medications. A moment of inattention can result in serious personal injury.
2. 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.
3. Wear eye protection.
4. 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.
5. 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.
6. Never spill liquid on the display units. Liquid increases the risk of electric shock and damage to the tool.
7. The product is not shock-resistant. Do not use it as a hammer or drop it.
8. **WARNING:** This product contains di (2-ethylhexyl) phthalate (DEHP), a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. (California Health & Safety Code § 25249.5, *et seq.*)

Specifications

Recommended use	Indoor
Optimal viewing distance	1" to 14"(2.5cm to 35.6cm)
Image capture	JPG images (640 x 480)
Image controls	Low light vision
Lighting	Fully adjustable LED
Screen type display	2.4" TFT LCD
Display resolution	234 x 480
Power supply	4 alkaline AA batteries (sold separately)
Tested battery life	3-4 hours of continuous use
Cable reach	1m (3') -- expandable to 5m (16') w/ optional extensions
Imager head diameter	16mm (0.63")
Waterproof	Imager head and cable to 3m (10')
Operating temp.	Main unit: 32°F to 113°F (0°C to 45°C); Cable: 14°F to 176°F (-10°C to 80°C)
Storage temp.	-4°F to 158°F (-20°C to 70°C)
Operating humidity	5% to 95% non-condensing (display unit)
Video output	RCA

Accessories Included

1. User's Manual
2. Imager head and cable (16mm)
3. Magnet, hook and mirror
4. Video-out cable
5. Blow molded case

Tool Components

The Camera comes with the 16mm diameter imager head and its matching accessories -- magnet, hook and cable, shown below.

Note: Because of continuing improvements, actual product may differ slightly from photos and/or illustrations.

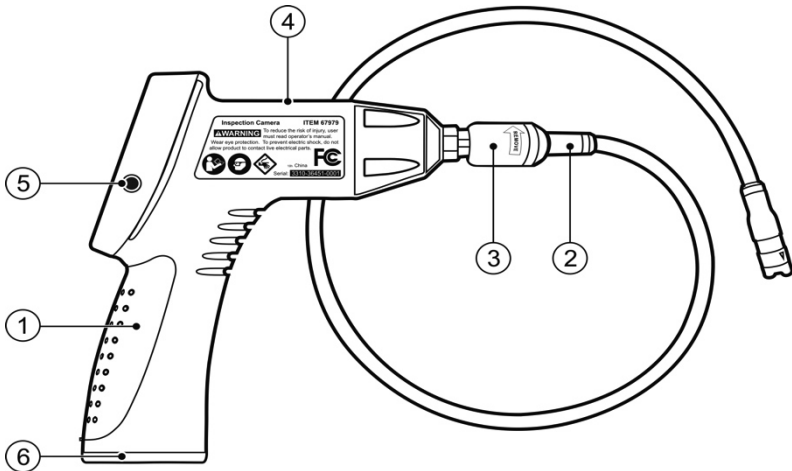


Figure A

1. **Handheld Display Unit** – Ergonomic tool with comfortable pistol grip design.
2. **Imager Head and Cable** – Connects to the tool while in use to view images and videos.
3. **Cable Connector** – Connects the handheld display unit to the imager head and cable.
4. **Power Indicator Light** – Illuminates green once turning the tool on.
5. **Video-Out Port** – Connects the tool to a TV with the supplied video-out cable to view real-time images.
6. **Battery Compartment Cap** – Covers Battery Compartment.

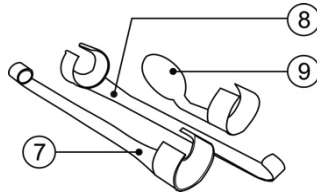


Figure B

1. **Accessory Magnet** – Picks up metal objects such as dropped rings or screws on the floor.
2. **Accessory Hook** – Unclogs obstacles and picks up wires in the pipes or confined areas.
3. **Accessory Mirror** – Helps users look around corners and see inside unreachable areas.

Buttons and Controls

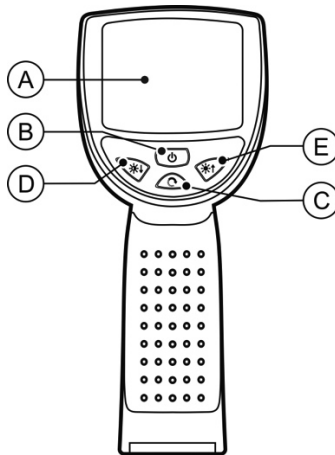


Figure C

1. **LCD Screen** – Indicates test results. Backlit, 234 x 480 pixels display with LED lighting adjustment.
2. **Power Button** – Turns on/off the tool.
3. **Reverse Button** – Controls the direction of the real-time image.
4. **DOWN Arrow LED Lighting Adjusting Button** – Adjusts dim LED lighting.
5. **UP Arrow LED Lighting Adjusting Button** – Adjusts bright LED lighting.

Battery Removal and Installation

NOTE: If the power indicator light is blinking continuously, replace the batteries.

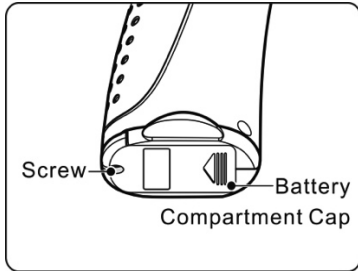


Figure D

1. Turn the handheld display unit upside down to expose the battery compartment cap and screw. (See Figure D.)
2. Use a screwdriver to remove screw and battery compartment cap .

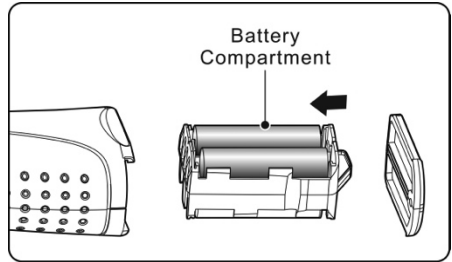


Figure E

3. To remove the batteries, hold handheld display unit to remove the battery compartment and then remove batteries. (See Figure E.)
4. To install the batteries, remove the battery compartment and insert four (4) new AA batteries into the proper slots in the battery compartment.
5. Proper battery orientation is indicated in the battery compartment.
6. Replace the battery compartment and replace the battery compartment cap.

The Imager Head and Cable Installation

1. To use the tool, connect the imager head and cable to the handheld display unit.
2. To connect the cable to the handheld display unit, align the key and slot properly. (See Figure F.)
3. Once they are aligned, finger-tighten the knurled knob to hold the connection firmly in place.

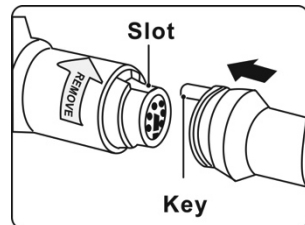


Figure F

Accessory Installation

1. The three accessories include a magnet, a hook and a mirror (see Figure B on page 5). All are attached to the imager head in the same manner.
2. Hold the imager head as shown in Figure G.
3. Slip the end of the accessory over the flat sections of the imager head and then fix the accessory as shown in Figure H.

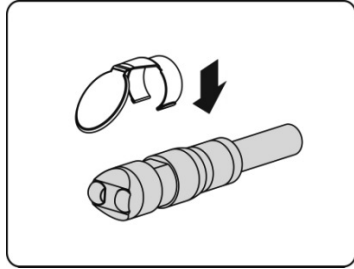


Figure G

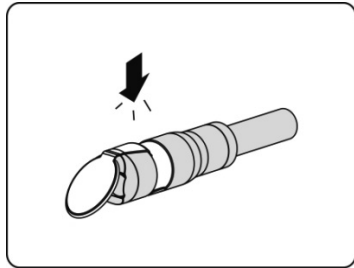


Figure H

Video-Out Cable Connection

Insert the supplied 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.

Operation Instructions

Basic Operation

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

CAUTION: *Keep the cable away from heat, oil, sharp edges or moving parts. Replace damaged cables immediately.*

1. To turn the tool on, hold the handheld display unit with the LCD screen facing you.
2. Press the **Power** button to turn on the screen. The power indicator light will illuminate green. The real-time image will appear on the LCD screen.
3. Press the **LED Lighting Adjusting** buttons to adjust the LED light intensity as needed. Press the **DOWN** arrow button to dim the LED lights, and press the **UP** arrow button to brighten the LED lights.

4. Press the **Reverse** button to control the direction of the real-time image. The real-time image will be reflected with each push of the **Reverse** button. (See Figure I.)

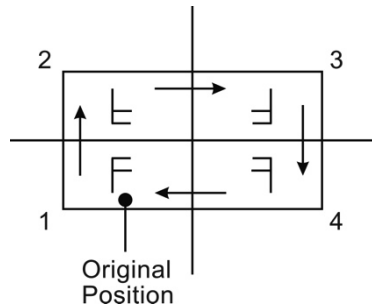


Figure I

5. Use the supplied accessories to provide application flexibility.
6. Connect the supplied video-out cable to 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.

Operation Precautions

CAUTION: Do not put the tool into anything or anywhere that may contain a live electrical charge.

1. Do not operate the tool unless the user's manual has been read thoroughly and proper training has been completed.
2. Do not immerse the handheld display unit in water to reduce the risk of electric shock and damage.
3. Do not use the tool if condensation forms inside the imager head. Let the water evaporate before using again.
4. Do not use excessive force to insert or withdraw the cable.
5. Do not use the imager head and cable to modify surroundings, clear pathways or unclog areas.
6. The handheld display unit is not waterproof. The imager head and its cover are waterproof, but not acid-proof or fireproof. Avoid submersing the imager head into corrosive, oily places and be sure to keep the imager head away from high temperature objects.

7. Do not put the imager head and cable into anything or anywhere that may contain a live electrical charge.
8. If the tool does not work well after turning it on, remove the batteries and do not use. Have the tool checked by a qualified technician. Any tool that cannot be controlled with the power button is dangerous and must be repaired.
9. Store idle components out of reach of children and other untrained persons.
10. Maintain the tool with care. Properly maintained tools are less likely to cause injury.
11. If the tool is dropped, check for the breakage and any other condition which may affect its operation.
12. Use only accessories that are recommended by the manufacturer of the tool.
13. Dry your hands when operating the tool or replacing batteries.
14. Protect against excessive heat. The tool should be kept away from heat sources such as radiators, stoves or other appliances that produce heat.
15. Store the tool in ventilated and dry places.
16. **WARNING! To avoid injury:**
 - a. **FOR WALLS:** When inspecting the inside of walls, be sure to turn off the circuit breaker to the whole house before using the tool.
 - b. **FOR PIPES:** If you suspect a metal pipe could contain a live electrical charge, have a qualified electrician check the pipe before using.
 - c. **FOR AUTOMOBILES:** Be sure the automobile is not running during inspection. Metal and liquid under the hood may be hot. Don't get oil or gas on the imager head.

Battery Precautions

1. Remove the batteries while cleaning the tool.
2. Remove the batteries before storing the tool for a long period of time to prevent battery leakage from damaging battery compartment.
3. When necessary, replace all four (4) batteries with new ones.
4. Use only the size and type of batteries specified.
5. Be sure to install batteries with the correct polarity as indicated in the battery compartment.
6. Properly dispose of batteries. Exposure to high temperatures can cause batteries to explode. Do not dispose in fire.

Maintenance Instructions

NOTE: Make sure the batteries have been removed from the tool before performing maintenance.

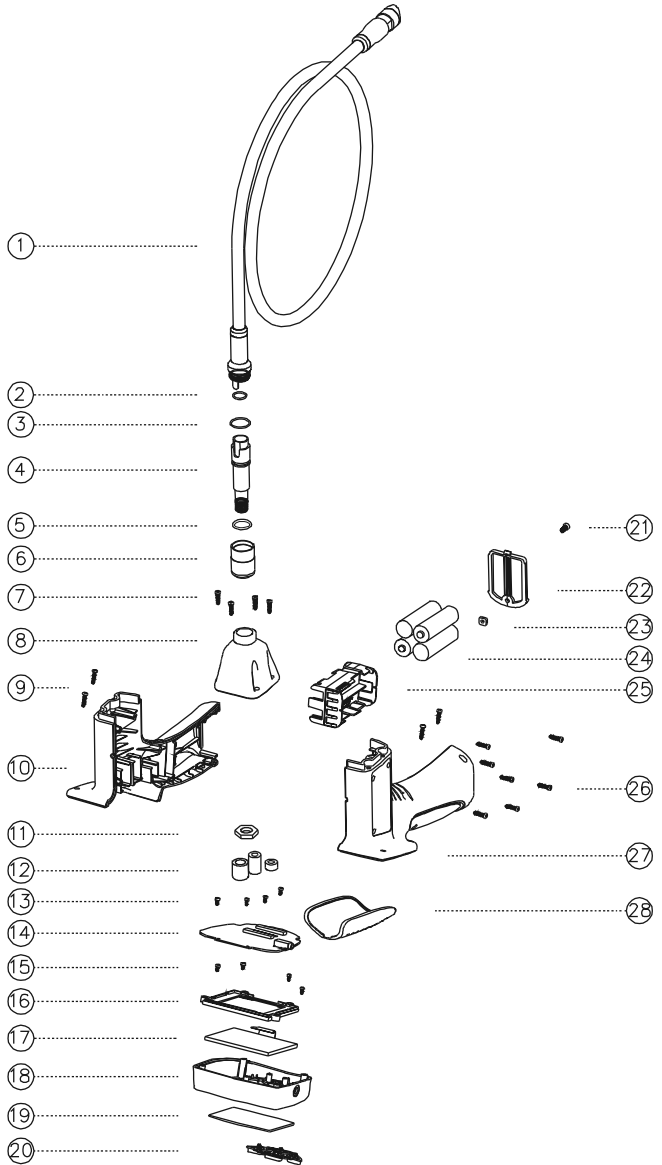
1. Tool maintenance must be performed only by qualified repair personnel. Maintenance performed by unqualified repair personnel could cause injury.
2. When maintaining, use only identical replacement components.
3. Do not attempt to take any pieces of the tool apart unless directed by the manual.
4. Follow instructions to replace accessories.
5. Do not use acetone to clean the tool. Instead, use alcohol. Avoid rubbing too hard on the LCD screen. After using, wipe the display unit clean gently with a dry cloth.
6. Upon completion of any maintenance of the tool, ask qualified repair personnel to perform safety check to see if the tool is in proper operating condition.
7. Stop using the tool if it starts smoking or emitting noxious fumes.
8. Always handle the tool with care. It is not shock-resistant and should not be banged or dropped.
9. Do not disassemble the tool beyond what is shown in the manual. Doing so will void your warranty.

Troubleshooting

SYMPTOMS	POSSIBLE REASONS	SOLUTIONS
Display unit is on, but does not show image.	Cable connection is loose.	Check and reattach.
	Imager head is covered with debris.	Inspect imager head and clean if needed.
LEDs on imager head are dim at max brightness, display changes between black/white and color, or display turns itself OFF after a short period.	Batteries are low.	Replace batteries.
The tool will not turn on.	Dead batteries.	Replace batteries.

Parts List and Diagram

Part	Description
1	Imager Head and Cable
2	Ring
3	Ring
4	Female Connector
5	Ring
6	Cable Connector
7	Screw
8	Cover
9	Screw
10	Front Shell
11	Hex Nut
12	Magnet Ring
13	Screw
14	PCB
15	Screw
16	LCD Back-up
17	LCD
18	Display Shell
19	Lens
20	Button
21	Screw
22	Battery Cover
23	Square Gasket
24	Battery
25	Battery Compartment
26	Screw
27	Back Shell
28	Handheld Display Unit



Record Product's Serial Number Here: _____

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.

PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS DOCUMENT 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 MAKE ANY REPAIRS TO THE PRODUCT, OR 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 RISK 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.

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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