

Visual Inspection Device

BK5500

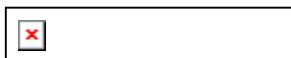
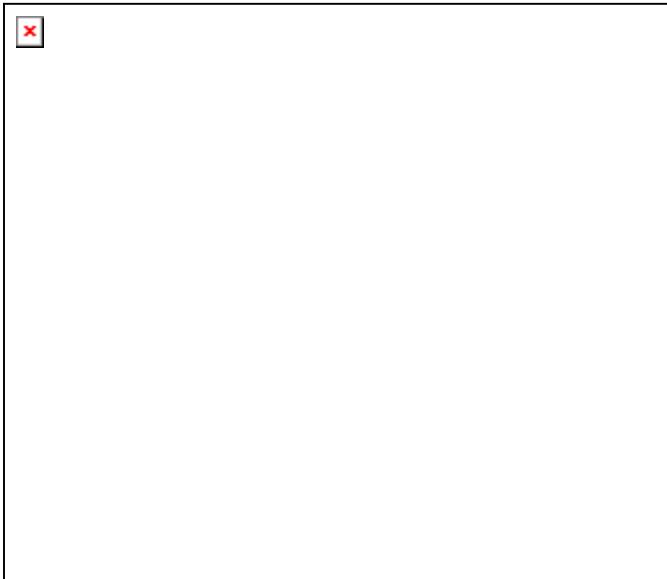
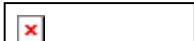


Table of Contents

General Safety Information	5
Work Area Safety	5
Personal Safety	5
Battery Precautions	5
Visual Inspection Device Use and Care	5
Service	6
Specific Safety Information	6
FCC Compliance Statement	6
FCC Interference Statement	6
FCC Exposure Statement	7
PAL/SECAM Statement	7
Visual Inspection Device Safety	7
Description, Specifications and Standard Equipment.....	8
Description	8
Specifications	8
Standard Equipment	9
Assembly	9
To Install Batteries in either the Display Unit (3 AA) or the Handle (3 AA):	9
To connect the Imager to the Handle:	9
Installing an Accessory	11
To connect the mirror:	11
Tool and Work Area Setup.....	11
Operating Instructions	11
Using the Display Unit and Imager	11
To turn the Display Unit on:	11
To turn the Handle on:	12
To adjust the brightness of the LED light:	12
Typical Applications	13
Instructions for the Video Out feature	13

Transportation and Storage.....	14
Maintenance Instructions.....	14
Snap-on Service Center Locations	14
Troubleshooting.....	15
User serviceable repair parts.....	15
Warranty.....	15

General Safety Information



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

SAVE THESE INSTRUCTIONS!

Work Area Safety

- **Keep your work area clean and well lit.** Cluttered benches and dark areas may cause accidents.
- **Do not operate electrical devices or visual inspection tool in explosive atmospheres, such as in the presence of flammable liquids, gases, or heavy dust.** Electrical devices or visual inspection tools create sparks which may ignite the dust or fumes.
- **Do not use the visual inspection tool around corrosive chemicals.**
- **Keep bystanders, children, and visitors away while operating visual inspection tool.** Do not let visitors contact the unit.

Personal Safety

- **Stay alert, watch what you are doing and use common sense.** Do not use visual inspection tool while tired or under the influence of drugs, alcohol, or medications. A moment of inattention while operating tools may result in serious personal injury.
- **Do not overreach.** Keep proper footing and balance at all times. Proper footing and balance enables better control of the tool in unexpected situations.
- **Use safety equipment.** Always wear eye protection. Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.
- **Use proper accessories.** Do not place this product on any unstable cart or surface. The product may fall causing serious injury to a person or serious damage to the product.

- **Prevent object and liquid entry.** Never spill liquid of any kind on the video display unit. Liquid increases the risk of electrical shock and damage to the product.
- **Do not use this device for personal or medical use/inspection in any way.**
- **The unit is not shock-resistant.** Do not use it as a hammer or drop it.

Battery Precautions

- **Remove the batteries when cleaning the unit.**
- **Remove the batteries before storing the unit for a long time.**
- **When necessary, REPLACE ALL FOUR BATTERIES in this unit with new ones.**
- **Use only the size and type of battery specified.**
- **Be sure to install the battery with the correct polarity as indicated in the battery compartment.**
- **Properly dispose of the battery.** Exposure to high temperatures can cause the battery to explode, so do not dispose of in a fire. Place tape over the terminals to prevent direct contact with other objects. Some countries have regulations concerning battery disposal. Please follow all applicable regulations.

Visual Inspection Device Use and Care

- **Use visual inspection tool only as directed.** Do not operate the inspection unit unless the owner's manual has been read and proper training has been completed.
- **Do not immerse the handheld display unit or imager handle in water.** Store in a dry place. Such measures reduce the risk of electric shock and damage. The imager head and the cable are water resistant when the unit is fully assembled, but the video display unit is not.
- **Do not use the camera if condensation forms inside the lens.** Let the water evaporate before using again.
- **Do not use tool if ON/OFF switch is not properly working.** Any tool that cannot be controlled with the switch is dangerous and must be repaired.

- **Store idle equipment out of the reach of children and other untrained persons.** Equipment is dangerous in the hands of untrained users.
- **Maintain the visual inspection tool with care.** Properly maintained tools are less likely to cause injury.
- **If unit is dropped check for breakage of parts, and any other conditions that may affect the tool's operation.** If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools.
- **Use only accessories that are recommended by the manufacturer for your tool.** Accessories that may be suitable for one tool may become hazardous when used on another tool.
- **Dry your hands before turning the unit ON or OFF and before replacing batteries.**
- **Protect against excessive heat.** The product should be situated away from heat sources such as radiators, heat registers, stoves or other products (including amplifiers) that produce heat. Do not use the unit near moving machinery or areas where the temperature will exceed 113°F.

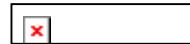
Service

- **Do not attempt to take any pieces of this unit apart unless directed to by this manual.**
- **Follow instructions for changing accessories.** Accidents are caused by poorly maintained equipment.
- **Provide proper cleaning.** Do not use acetone to clean the unit. Instead, use alcohol.
- **Gently clean the LCD with a dry cloth.** Remove batteries before cleaning.
- **Stop using the unit if it starts smoking or emitting noxious fumes.**
- **Remove the batteries and refer servicing to qualified service personnel under any of the following conditions:**
 - If liquid has been spilled or objects have fallen into product;
 - If product does not operate normally by following the operating instructions;

- If the product has been dropped or damaged in any way;
- When the product exhibits a distinct change in performance.

If you have any questions regarding the service or repair of this machine, call or write the appropriate **repair center location** (see "Snap-on Service Center Locations" on page 14):

Specific Safety Information



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

FCC Compliance Statement

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.
2. This device must accept any interference received, including interference that may cause undesired operation.

WARNING! Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Interference Statement

This equipment has been tested and found to comply with the limits for Class B digital devices, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does

cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Use of shielded cable is required to comply with Class B limits in Subpart B of Part 15 of the FCC rules.

Do not make any changes or modifications to the equipment unless otherwise specified in the manual. If such changes or modifications should be made, you could be required to stop operation of the equipment.

FCC Exposure Statement

This portable transmitter with its antenna complies with FCC/IC RF exposure limits for general population/uncontrolled exposure.

PAL/SECAM Statement

The video output port found on this device puts out a standard NTSC video signal, but does not output PAL or SECAM video signals, or video signals in any other format. If the video output of this device is connected directly to the input jack of a PAL or SECAM television or other PAL or SECAM audio-visual equipment, no image will visible to the user.

Visual Inspection Device Safety

- Do not place tool into anything or anywhere that may contain a live electrical charge.
- **FOR WALLS:** For inspecting inside walls, be sure to shut off the circuit breaker to the whole house before using the tool behind any of the walls.
- **FOR PIPES:** If you suspect a metal pipe could contain an electrical charge, have a

qualified electrician check the pipe before using the tool. Ground circuits, in some cases, can be returned to cast iron pipes and cause them to be charged.

- **FOR AUTOMOBILES/HEAVY EQUIPMENT/MOTORSPORTS:** Be sure the automobile, heavy equipment or motorsport is not running during inspection. Metal and liquid under the hood may be hot. Always clean imager with mild detergent or solvent after exposure to any chemical, especially petroleum-based products. Exposure to petroleum-based substances will eventually degrade the imager head covering.
- **GENERAL USE:** Do not use anywhere the unit may come into exposure with hazardous chemicals, electrical charges or moving parts. Such situations may result in serious injury or death.

SAVE THESE INSTRUCTIONS!

Description, Specifications and Standard Equipment

Description

The BK5550W wireless visual inspection device displays live color video from an imaging sensor and lighting source connected to a flexible

imager cable. It can be used to look into tight spots and beam back real-time video to a color LCD. Accessories (mirror, hook and magnet) are included to attach to the imager head to provide application flexibility.

Specifications

Recommended Use

Indoor

Optimal Viewing Distance

1" to 12" (2.5 cm - 30 cm)

Power Supply

6 AA Alkaline cells

Estimated Battery Life

3 hours of continuous use

Weight

1.2 lbs (0.5 kg) TBD

Dimensions

Display Unit:

Length

1.6" (4.2 cm)

Width

5.4" (14.0 cm)

Height

3.7" (9.5 cm)

Resolution

320 RGB x 240

Screen

2.7" (6.6 cm) LCD

Handle:

Length

2.25" (5.5 cm)

Width

2.12" (5.2 cm)

Height

5.4" (14.0 cm)

Imager:

Length

36 inches (0.9m) extendable to 10' (3.05 m)

Wireless Reception Range

100' (30.4m) (unobstructed line-of-sight distance)

Video-out port

3.5mm TRS (Tip Ring Sleeve)

Video Signal

NTSC

Operating Environment:

Temperature

32°F to 113°F (0°C to 45°C)

Humidity

5% to 95% non-condensing (display unit)

Storage Temperature

-4°F to 158°F (-20°C to 70°C)

Water Resistance

Imager head and extensions up to 10' (3.05 m) water depth.
(When assembled)

Standard Equipment

The visual inspection device comes with the following items, as shown:

1. Hand held display unit
2. Imager
3. Accessories (Mirror, Magnet and Magnet Strap)
4. Protective Carrying Case
5. Auxiliary video cable
6. Handle
7. Kickstand
8. Hooks

System Components



Assembly

NOTICE: Be sure to read **Battery Precautions** (on page 5).

To Install Batteries in either the Display Unit (3 AA) or the Handle (3 AA):

1. Open battery compartment cover using switch and insert three (3) new AA batteries into the proper slots. Proper battery orientation is indicated on the battery compartment.
2. Snap battery compartment cover back into place.

To use the display unit, it must be connected to the imager head and cable. NOTE: Maybe link this to the Use topic.

To use the display unit see...

Installing Batteries



To connect the Imager to the Handle:

1. Make sure the keyed ends are properly aligned.

2. Press imager connector firmly into the unit until the retaining ring is completely engaged.

If the keyed ends are not properly aligned, the connector will not be fully seated.

Match up the arrows when inserting the imager. In this case, rotate the imager connector until the tabs are fully seated. The imager connector should only need to rotate a maximum of 180 degrees.

Connecting cable to display



Installing an Accessory

The two included accessories, (mirror and magnet) attach to the imager the same way.

To connect the mirror:

- Match up the Slot in the Mirror with the Boss on the Imager and push together to lock in place.

Installing Accessory-Mirror



Same Column Figure Template



Tool and Work Area Setup



To prevent serious injury, proper setup of the tool and work area is required. The following procedures should be followed:

- Review General Safety Information section of this manual (Page 5).
- Check work area for: adequate lighting, flammable liquids, vapors or dust that may ignite.
- Follow tool set-up according to specific tool operator's manual.

Petroleum-based products will ruin the imager's protective plastic covering over time. Avoid submersing the imager head into corrosive, oily places.

Using the Display Unit and Imager

Operating Instructions

- Do not use excessive force to insert or bend the imager.
- Do not use the visual inspection tool to modify surroundings, clear pathways or clogged areas, or as anything other than an inspection device.
- The imager connector, handle and display unit are not water resistant. The imager head and its covering are water resistant, but are not acid-proof or fire proof.

To turn the Display Unit on:

- Hold the viewer with the LCD screen facing you.

2. Push the ON/OFF switch away from you to turn on the screen.

To turn the Display Unit on



Using the Imager-Controls

To turn the Handle on:

1. Verify that the channel switch located on the display unit and imager cable are on the same frequency number.

2. Push the ON/OFF switch away from you to turn on the imager handle.

To adjust the brightness of the LED light:

- Press the arrow key with the (+) sign to increase the brightness and press the arrow key with the (-) sign to decrease the brightness.

Using the Imager



Using the Imager-LEDs

Typical Applications

The **Snap-on Wireless Visual Inspection Device** is designed as a remote inspection device.

Typical applications might include automotive inspection,



Typical Applications-Automotive Inspection

Instructions for the Video Out feature

To use the auxiliary video out port (Fig. 10) on the BK5500W:

1. Remove the rubber protective cap from the video out port on the top of the unit.
2. Find the auxiliary video cable that is provided in the case with the BK5500.
3. Plug the male end of the 1/4" mono mini-plug into the video out port.
4. Plug the RCA end of the video cable into the video input on the video monitor. This port is typically colored yellow.

cable routing,



Typical Applications-Cable Routing

automotive / boat / aircraft inspection, etc.

5. Verify the video monitor is set to display the video from the designated video port.



Video Out top of unit

PAL/SECAM Statement

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format. If the video output of this device is connected directly to the input jack of a PAL or SECAM television or other PAL or SECAM audio-visual equipment, no image will visible to the user.

Transportation and Storage

1. Avoid exposing the unit to continuous vibration or extreme hot and cold temperatures.
2. Always store the visual inspection device indoors in the case it came with.
3. Always remove the batteries if the unit will not be used for an extended period of time.

Maintenance Instructions



Make sure the batteries have been removed from the unit before performing maintenance.

The Snap-on visual inspection device has been designed to require little maintenance. However, in order to maintain its performance, you must always follow these guidelines:

1. Always handle the device with care. It is not shock-resistant and should not be banged or dropped. Treat it as you would any other sensitive optical device.
2. Always clean the imager head after use with mild detergent.
3. Use only alcohol swabs to clean the connections.
4. Avoid rubbing too hard on the LCD. After use, wipe the display clean gently with a dry cloth.
5. Do not disassemble this device beyond what is shown in the manual. Doing so will void your warranty.

Snap-on Service Center Locations



If you have any questions regarding the service or repair of this machine, please call or write the most geographically convenient service center listed below:

Eastern Repair Center (USA) 6320 Flank Dr. Harrisburg, PA 17112 USA Phone (toll free -USA only): (800) 848-5067 Phone: (717) 652-7914 Fax: (717) 652-7123	Snap-on Tools (Australia) Pty Ltd. National Distribution Centre Unit 6/110 Station Road PO Box 663 Sven Hills, NSW 1730 Australia Telephone: (61) 2-9837-9100 Fax: (61) 2-9624-2445 e-mail: sota.webmasters@sapon.com
Northern Repair Center (USA) 3011 E. RT 176, Dock 8 Crystal Lake, IL 60014 USA Phone (toll free – USA only): (877) 777-4412 Phone: (815) 479-6850 Fax: (815) 479-6857	Snap-on Tools Singapore PTE, Ltd. 25 Tagore Lane #01-01 Singapore 787602 Tel: +(65) 6451-5570 Fax: +(65) 6451-5574 e-mail: esale.sg@sapon.com Internet: http://sapon.com.sg

<p>Western Repair Center (USA) 3602 Challenger Way Carson City, NV 89706-0753 USA Phone (toll free – USA only): (888) 762-7972 Phone: (775) 883-8585 Fax: (775) 883-8590</p>	<p>Snap-on Tools Japan, K.K. Snap-on, Bahco, and Cartec Also serving Taiwan and Micronesia (Distribution Center and Technical Repair Center) 2-1-6 Shinkiba, Koto-ku, Tokyo, 136-0082 JAPAN Telephone: +81 3 5534 1280 Fax: 81-5534-1284 e-mail: SOJ-INFO@snapon.co.jp OEM, National Accounts, GSA Distribution: +81-3-5534-1300 Industrial: +81-3-5534-1281 BAHCD: +81-3-5534-1301 Technical Repair Center: +81-3-5534-1289</p>
<p>UK Repair Centre Snap-on Tools, Ltd. Telford Way, Kettering Northants NN16 8UN, England Telephone: 01536 413855 Fax: 01536 410740</p>	<p>Snap-on Tools of Canada, Ltd. 2325 Skymark Avenue Mississauga, Ontario L4W 5A9 Telephone: (905) 624-0066 Fax: (905) 238-9658 e-mail: canadianquestions@snapon.com Internet: http://www.snapon.com/canada</p>

Troubleshooting

Symptom	Possible Reason	Solution
Display turns ON but does not show image.	Loose or dirty imager cable connections.	- Check Cable Connections required - Re-attach
	Imager head covered by debris.	Make sure imager head is free of debris.
	Channel selection switches on imager handle and viewer not tuned to same channel.	Check channel switch setting on imager handle and viewer - tune to same channel number
	Imager handle batteries have run out.	Check battery status light on handle. If battery in handle does not turn on, replace.

Image contains excessive static or "snow," or the image appears and disappears erratically.	Battery power is low, causing transmitted signal to become weak.	batteries.
	Too many obstacles or too much distance between viewer unit and imager handle.	Check battery status on imager handle and viewer unit. Move imager handle and viewer closer to each other (less than feet (30m) line-of sight), or remove obstacles that exist between the imager handle and the viewer.
	Loose or dirty imager cable connections.	- Check Cable Connections, clean if required - Re-attach
LEDs on imager head are dim at max brightness	Battery power is low.	Check battery status, and replace batteries if necessary.
Display switches between black and white	Battery power is low	Check battery status, and replace batteries if necessary.
Imager handle and/or viewer unit will not turn on.	Battery power is very low.	Replace batteries.

User serviceable repair parts

Imager Head - BK5500-1; Blow Molded - BK5500-6; Magnet and Mirror - BK5500-2

Warranty

Limited Two (2) Year Warranty

Snap-on Tools Company (the "Seller") warrants only to the original purchaser that under normal use, care and service, the Equipment (except as otherwise provided herein) shall be free from defects in material and workmanship for two years from the date of original invoice. SELLER'S OBLIGATIONS UNDER THIS WARRANTY ARE LIMITED SOLELY TO THE REPAIR OR, AT SELLER'S OPTION, REPLACEMENT OF EQUIPMENT OR PARTS WHICH TO SELLER'S SATISFACTION ARE DETERMINED TO BE DEFECTIVE AND WHICH ARE NECESSARY IN SELLER'S JUDGMENT, TO RETURN THIS EQUIPMENT TO GOOD OPERATING CONDITION. NO OTHER WARRANTIES, EXPRESS OR IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OR MERCHANT ABILITY OR FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY AND ALL SUCH WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED. This warranty does not cover (and separate charges for parts, labor and related expenses shall apply to) any damage to, malfunctioning, inoperability or improper operation of the Equipment caused by, resulting from or attributable to (A) abuse, misuse or tampering; (B) alteration, modification or adjustment of the Equipment by other than Seller's authorized representatives; (C) installation, repair or maintenance (other than specified operator maintenance) of the Equipment or related equipment, attachments, peripherals or optional features by other than Seller's authorized representatives; (D) improper or negligent use, application, operation, care, cleaning, storage

or handling; (E) fire, water, wind, lightening or other natural causes; (F) adverse environmental conditions, including, without limitation, excessive heat, moisture, corrosive elements, or dust or other air contaminants, radio frequency interference, electric power failure, power line voltages beyond those specified for the Equipment, unusual physical, electrical or electromagnetic stress and/or other condition outside of Seller's environmental specifications; (G) use of Equipment in combination or connection with other equipment, attachments, supplies or consumables not manufactured or supplied by Seller; or (H) failure to comply with any applicable federal, state or local regulation, requirement or specification governing emission analyzers and related supplies or consumables. Repairs or replacements qualifying under this Warranty will be performed on regular business days during Seller's normal working hours within a reasonable time following purchaser's request. All requests for Warranty service must be made during the stated warranty period. This Warranty is non-transferable.

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FCC NOTIFICATION:

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