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WARRANTY

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User's Guide

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HHB200/300 **Video Inspection System**



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The information contained in this document is believed to be correct, but OMEGA accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

WARNING: These products are not designed for use in, and should not be used for, human applications.

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INTRODUCTION

The HHB200 and The HHB300 inspection systems have been designed as a user friendly and economical way of solving hidden problems and increasing productivity. The product has a high clarity color LCD to show clear images. The camera head is housed inside the tip of the probe with adjustable LED lights, which helps you to reach into gaps and holes. The mirror tip is included to make it possible to view different angles. The magnetic tip is used to pick up small metal objects. The hook is used to grab onto objects.

The video inspection systems have the advantages of clear images, easy operation and portability. It is widely used in applications such as HVAC/R building, aviation and vehicles maintenance.

FEATURES

- **HHB200:** 2.4" (70mm) Color LCD Screen for crystal clear image
- **HHB300:** 3.5" (88.9mm) Color LCD Screen for superb clarity and viewing effect
- 0.47" (12mm) diameter Camera-tipped Probe is flexible and strong with built-in adjustable LED lighting, and is slim enough to perform automotive engine check-up
- Flexible Probe retains configured shape to suit different inspection needs
- View findings instantaneously
- Mirror, Magnet and Pick-up Hook

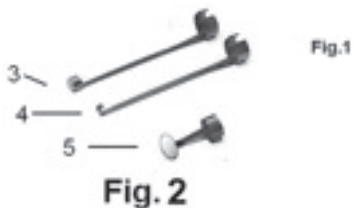
SAFETY INSTRUCTIONS

Failure to follow the instructions listed below may result in electric shock or personal injury.

- Read and understand all instructions prior to any operation.
- Do not remove any labels from the product.
dark areas may cause accidents.
- Do not operate the product in the presence of flammable/explosive gases.
- Do not use the product around corrosive chemicals which can ruin the picture quality.
- Keep bystanders, children and visitors away while operating the product.
- Stay alert, watch what you are doing and use common sense. A moment of interruption can result in serious personal injury.
- Do not over-reach. Keep proper footing and balance at all times.
- Always wear eye protective gear. Dust mask, non-skid safety shoes, hard hat or hearing protection must be used for appropriate conditions.
- Do not place the product on any unstable cart or surface. The product may fall causing serious injury to a person or serious damage to the product.
- Never spill liquid of any kind on the video display units. Liquid increases the risk of electrical shock and damage to the product.
- Do not use the device for personal or medical use.
- The units are not shock-resistant. Do not drop it.

PRODUCT COMPONENTS

1. Hand Held Display Unit
2. Camera Head and Probe
3. Magnetic Tip
4. Hook Tip
5. Mirror Tip



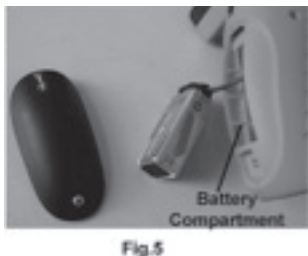
- A. LCD Screen
- B. Battery Compartment
- C. Switch / LED Lighting Adjusting Button
- D. Probe Connector
- E. Probe
- F. Camera Head



INSTALLATION

BATTERY INSTALLATION:

1. Use a screwdriver to open the screw on the battery compartment cover (See Fig. 4).
2. Insert one “9V” alkaline battery (MN1604) into the battery compartment. Close the battery cover and fasten the screw (See Fig. 5).



BATTERY PRECAUTIONS!

- Remove the battery while cleaning the unit.
- Remove the battery before storing the unit for a long period of time.
- Be sure to install the battery with the correct polarity as indicated in the battery compartment.
- Properly dispose of the batteries. Exposure to high temperatures can cause the batteries to explode. Do not dispose in 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.

CONNECTING THE DISPLAY UNIT TO THE CAMERA HEAD AND PROBE:

The display unit must be connected to the camera head and probe. To connect the probe to the display unit, make sure the keyed ends are properly aligned (See Fig. 6). Once they are aligned, tighten the nut.



Fig.6

ACCESSORIES INSTALLATION:

The three accessories include mirror tip, hook tip and magnetic tip (See Fig. 2). All are attached to the camera head the same way. Hold the camera head as shown in Fig. 7, slip the semicircle end of the accessory over the flats of the camera head and then rotate the accessory 90° to fix as shown in Fig. 8.



Fig.7

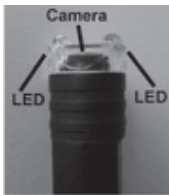


Fig.8

OPERATION INSTRUCTIONS

BASIC OPERATION:

To turn the unit on, hold the LCD display unit facing you (See Fig. 9). Roll the switch towards you to turn the power on. The switch then acts as a dimmer for the twin LED's (See Fig.10), which is the power supply for the camera.



This product is designed for hard-to-reach distance inspection. Typical applications include HVAC/R inspections, car inspections, circuitry, vessel, and aircraft. While in operation, the product is easy to extend ahead. The accessories can be used to pick up items such as rings or screws on the floor.

OPERATION PRECAUTIONS!

1. Please read all the safety instructions carefully.
2. The probe is flexible to help you operate in hard-to-reach areas. Please don't insert or bend by force. Please do not over bend any part of the probe. Normally, the bending radius should not be less than 2" (50mm) to prevent from causing permanent damage to the probe.
3. Don't use the probe or camera head to modify surroundings, clear pathways or clogged areas.
4. The hand-held display unit is not waterproof. The camera head and its cover is waterproof, but not acid-proof or fireproof. Do not touch these materials or they will ruin the camera head's protective plastic. Avoid submersing

the camera head into corrosive, oily places or high temperature objects.

5. Don't place the camera head or probe into anything or anywhere that may contain a live electrical charge. Please check following methods to avoid injury.

For walls: For inspecting the inside walls, be sure to 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 to check the pipe before using. A ground circuit, in some cases, can be returned to the cast aluminum pipes and cause them to be charged.

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 camera head.

- Please do not operate this product unless the manual has been read thoroughly and proper training has been completed.
- Do not immerse the handheld display unit in water which will result in electric shock and damages.
- The camera head is water-proof, but the handheld display is not water-proof.
- Do not use the product if condensation forms inside the camera head.
- If the tool does not work well after turning it on. Please take the batteries out and do not use. Please have the unit checked by a qualified technician.
- Store idle products out of reach of children and other untrained personnel. The product is dangerous in the hands of untrained users.
- Maintain the inspection product with care. If the product

is dropped, check for the breakage which may affect it's operation. If it is damaged, have the product serviced before using. Many accidents are caused by poorly maintained products.

- Use only accessories that are recommended by the manufacturer for your product. Accessories are suitable for the product, but may become hazardous when used on another product.
- Dry your hands before turning the product ON or OFF and before replacing battery.
- Protect against excessive heat. The product should be kept away from heat sources, such as radiators, heat registers, stoves or other products (including amplifiers) that produce heat. Do not use the product near moving machinery or areas where the temperature exceeds 113°F (45°C).
- Store the product in ventilated and dry places.

MAINTENANCE INSTRUCTIONS

- Product service must be performed only by qualified repair personnel. Services performed by untrained repair personnel could result in injury.
- When servicing the product, only use identical replacement parts. Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electrical shock or injury.
- Don't attempt to take any pieces of this product apart unless directed by this manual.
- Provide proper cleaning. Don't use acetones to clean the product. Use soap or soft cloth to clean. Gently clean the LCD with a dry cloth. Remove the battery before cleaning.

- Upon completion of any service or repair, please ask the service technician to check if the product is in proper working condition.
- Stop using the unit if it starts smoking or emitting noxious fumes.
- Remove the battery and ask a qualified personnel under the following conditions:
 - A. If liquid has been spilled or objects have fallen into the product.
 - B. If product doesn't operate normally even if you have followed the operation instructions.
 - C. If the product has been dropped or damaged in any way.
 - D. When the product exhibits a distinct change in performance.

TROUBLE SHOOTING

Symptoms	Reasons	Solutions
The connection Display is on, but no image.	The connection is loose.	Check connection and try again.
	Image head covered by debris.	Check if it is covered by debris.
LED's on the camera head are dim at max bright, display changes from black to white, color display turns itself off after a period.	Low battery.	Replace battery.
The product won't turn on.	Dead batteries.	Replace battery.

SPECIFICATIONS

Video Inspection		Specifications
Recommended use		Indoor
Viewable Angle		60°
Viewable Distance		.98" to 11.8" (2.5 to 30cm)
Diameter of Camera Head		.47" (12mm)
Image Display	HHB200	2.4" T T/LCD
	HHB300	3.5" TFT/LCD
Resolution		320 x 234 pixels
Accessories		Mirror tip, Hook tip and Magnetic tip
Probe Length		39.4" (100cm)
Light Source		Adjustable LED
Power Source		One "9V" alkaline battery (MN1604)
Estimated Battery Life		About one hour
Operating Temperature		32° to 113° F (0° to 45°C)
Operating Humidity		5%~95%Rh non-condensing
Storage Temperature		-4° to 140°F (-20° to 60°C) ≤85% (w/o battery)
Body Dimensions	HHB200	8.5" x 4.6" x 3.2" (215 x 156 x 80mm)
	HHB300	8.5" x 4.6" x 3.8" (215 x 156 x 96mm)
Weight		About 17.6oz (0.5 kg)

CAUTIONS!

- Don't drop the product or use by force.
- Don't disassemble the product to avoid failure.
- Don't place the product with corrosive gas or objects.
- Don't expose the product in environment which is with shock, too high or too low temperatures.
- Store the product in a safe area.
- Don't immerse the product into water which can cause damages to the product.
- Please take out the battery if not in use for long period of time.

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's Warranty adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence. The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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