



# **HATHORN**



## **KEYHOLE GAS CAMERA OPERATOR'S MANUAL**

THIS PRODUCT IS **NOT RATED AS INTRINSICALLY SAFE** AND THUS IS **NOT EXPLOSION PROOF**. HATHORN CORPORATION SHALL NOT BE HELD LIABLE FOR ANY DAMAGES, INCLUDING BUT NOT LIMITED TO DIRECT, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF, RESULTING FROM, OR IN ANY WAY CONNECTED TO THE USE OF THIS PRODUCT IN EXPLOSIVE ENVIRONMENTS.

HATHORN ASSUMES NO RESPONSIBILITY FOR OTHER PARTY'S USE OR MISUSE OF THIS PRODUCT.

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## **LIMITED WARRANTY**

This Limited Warranty provides one full year of coverage under our manufacturer's standard new product warranty. Hathorn warrants to the original purchaser of the product herein registered that the product shall function properly for a period of one year from the original date of purchase under normal and proper usage. This one-year Limited Warranty covers malfunctions resulting from defects in materials or workmanship only. If the product fails to function properly under normal and proper usage due to defects in materials or workmanship during the period of this Limited Warranty, the manufacturer will repair, adjust or replace defective parts as it deems appropriate.

This Limited Warranty is only available to the original purchaser; it is not transferable under any circumstances.

The manufacturer's responsibility under this Limited Warranty is limited to the repair, adjustment or replacement of defective parts as determined by Hathorn in its sole discretion. Routine cleaning and normal cosmetic wear and tear are not covered by this Limited Warranty.

## **LIMITATION OF LIABILITY**

By your acceptance of this limited warranty, you agree that Hathorn shall have no liability to you for any damages resulting from delay or loss of use of the product in service or repair. Hathorn shall have no liability for general, special, incidental or consequential damages arising out of breach of this limited warranty. Hathorn assumes no responsibility for warranties either expressed or implied beyond that which is contained herein.

## **SERVICE**

If the product requires service, please contact the Hathorn service centre nearest to you or one of our authorized distributors. Service locations are listed on page 18 of this document. Hathorn is not responsible for damages or loss incurred in

## **FREIGHT**

After completing your “Return Authorization Sheet,” ship the item(s) PREPAID and INSURED to the appropriate service center. After the repair, the item(s) will be returned via the same method. (i.e. shipped in via UPS, returned via UPS. Shipped via air, returned via air.)

## **NON-WARRANTY CHARGES**

Repairs centers will charge direct for non-warranty repairs and may require payment prior to repair. Should you have any further questions regarding service or sales, please contact Hathorn at: 1-905-604-7040

## **PRODUCT FEATURES**

Hathorn Keyhole Gas controllers are only compatible with Hathorn gas reels.

### **Features include:**

- 12” daylight readable HD impact resistant screen
- One touch recording on USB or HDD video with backup/download capability
- 240Gb internal solid-state hard drive
- 512hz sonde on/off & camera lighting control
- On screen footage counter/reset
- 8X digital “pan and zoom” technology
- Video date/time stamp
- 8 pages of text typing overlay
- Adjustable screen brightness & contrast
- 4hr internal Li-Ion battery with charge indicator
- Audio/video out ports
- Microphone and speaker for audio overlay
- Computer file transfer via USB cable

## USER INSTRUCTIONS

**Setting Up the System for Use** - Connect the patch cable to your reel and the controller prior to turning on your system. Press the power button on for 2 seconds. You should now see the main menu.

Select Video In to receive video from the camera and to enter the reel selection screen.

You will be asked to select the reel that you are using. Use the enter button to toggle until the correct reel is chosen. It is important to choose the correct reel as selecting the incorrect reel will affect the footage counter. Press the counter reset button to confirm your reel choice. The system should now be ready to use.

**Locating Sonde** - Push the “Sonde” button to turn the sonde on or off. A symbol will appear next to the footage counter on screen when the sonde is on. Sondes are locatable up to ~15ft. dependent upon amount of concrete/steel/cast iron pipe.

**Footage Counter Reset** - Push the “Counter” button for 3 seconds and the counter will flash, let it go and the count will reset.

**Camera Lights** - Camera lights can be controlled using the light up/down buttons on the front of the monitor.

## INSPECTION PROCEDURE

The head on your gas camera reel includes a skid which should never be removed from the camera head other than for service.

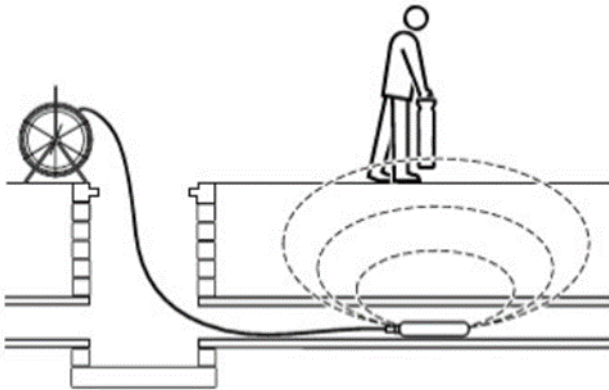
For use of your gas camera with stuffing boxes or saddle joints please refer to the instructions of those tools to ensure safe operation.

1. Always remember that this product is **not rated as intrinsically safe and thus is not explosion proof.** Users must ensure that they have developed and are using safe pipe access procedures.
2. Once the camera has entered the pipe slowly push the camera down the pipe and negotiate the camera into posi-

3. Push the camera slowly and carefully during the inspection taking note of the pipe condition for possible hazards that may entangle or damage the camera on entry or retrieval.
4. When negotiating a corner, care should be taken not to butt the nose of the camera against the sidewall with force. It is better to let the camera “work” its way around the corner. If resistance is encountered when turning the corner and there are no visible signs of blockage, turning the push rod or pulling the camera back and forth sometimes helps.
5. Should resistance become extreme, or the camera get entangled or stuck, slowly push it back and forth to free it. Sometimes turning the push rod may also help. If the camera is visible, you may be able to free it with your hand or some other means.
6. Upon completion of the inspection and retrieval of the camera, it may be necessary to ‘manipulate’ the camera through your insertion tool or stuffing box. Use caution to not disturb the stuffing box or get the camera caught on any hang ups.
7. **NEVER** use the camera to clear debris in the pipe. Doing so can cause damage to the camera head or lens.
8. **NEVER** force the camera down a pipe as this may cause a kinked cable which will require expensive repairs.
9. **NEVER** use a pressure washer to clean any part of the system. High pressure water can cause degradation of the electronic parts causing damage.

## LOCATING THE 512 Hz SONDE

1. Insert the sonde in the drain and locate it while it is still just in view at the drain or duct entrance. Hold the locator vertical directly over the sonde with the antenna in line with the sonde. Adjust the locator sensitivity so the bar graph reads between 60% and 80%. Push the sonde along the pipe to the desired area.
2. Approach the peak of the signal working perpendicular to the pipe. Move the locator backwards and forwards and stop when the bar graph indicates a Peak.
3. Push the camera 4-6 ft. further, pinpoint, and mark the position. Repeat this pinpoint procedure at similar intervals along the line of the drain or duct until the survey is completed.
4. Most locators will automatically display the depth of a located sonde providing the locator is correctly oriented and positioned above the sonde.



# TOUCH KEY IDENTIFICATION

Sonde On/Off



Power On/Off



Lights Up



Counter Position

Lights Down



Counter Reset  
(Hold 3 sec)  
Logo Clear and  
Digital Zoom

Options: Re-  
name, Delete  
files



Home / Main  
Menu



Enter

One Touch Vid-  
eo Record with  
LED light



Video Play

Video Stop



Video Pause



**Note: The "Power ON/OFF" button also functions as a battery check. Press for 1 second and the battery life indicator will illuminate how many bars of charge the internal**



## **KEYBOARD FUNCTIONS**

The keyboard can be used to type information onto the screen overlay. Anything shown on the screen will show up on the recording.

**Pg1 to Pg8** – Brings up the corresponding page for typing.

**Hide Pg** – Hides the pages and also brings up the last page viewed. Please note that anything typed will remain in the background until it is deleted.

**BLK** – Changes the background behind the text from black to white

**Save Pg** – Saves what is visible on the displayed screen into the memory. Example: A company name and address can be saved on a page into the memory and then shown at the beginning of each recording/survey when the page is displayed.

**Enter Key** – Toggles through reel selection on opening screen

**Arrow Keys** – Moves cursor

**Escape Key** – Toggles text overlay contrast up/down

**Mic Key (top right)** – Turns the speaker and microphone on and off. Note that only one can be on at any one time. For instance, if the mic is engaged the speaker will not play on the video. Similarly, when the speaker is selected the video will not record audio.

## **SETTING UP YOUR MONITOR**

1. Press the Home button and navigate over to the “Setup” screen. Press enter.
2. From this screen the user has the ability to change the video settings (brightness, contrast, hue etc.), the recording device (HDD or USB), the recording quality and menu languages.
3. The user can also change the input of the camera from NTSC to PAL to other resolutions. It is recommended that users do not change this setting.

## **SETTING UP THE RECORDING QUALITY**

1. Press the Home button and navigate over to the “Setup” screen. Press enter.
2. Navigate to the right again until you reach the “REC” tab. From here the user can adjust the recording quality and the recording device.
3. The recording quality is set as HQ (High Quality) at the factory but the user has a choice of HQ, SP, LP, EP and SLP in order of reducing quality but with smaller file sizes.
4. Videos are always recorded in MPEG4 format.
5. Choose your recording device (HDD or USB) you can only record to one device at a time.
6. Note only use USB#1 for recording directly to USB

## **RECORDING TO HDD OR USB**

If recording to USB insert the USB in slot #1 and wait 5 seconds. If recording to HDD then skip this step.

Press “RECORD” button on keypad, red light will come on while recording, also an indicator will show on the top left corner of the screen. To stop the recording press the stop button. If you pause the recording the red light will flash. To stop PAUSE recording press the “PAUSE” button again.

**Note: Video files are always stored in MPEG4 format for optimal quality and file size. Resolution: / 720x480 at 30fps (NTSC) Recording size: 2GB per hour on HQ setting**

## **PLAYING VIDEOS FROM HDD OR USB**

To view your recordings press the “HOME” button on keypad. Press right arrow button and navigate to “BROWSER”. Press the “ENTER” button. Press the up and down arrow buttons to navigate to the drive you recorded to. (USB or HDD)

Once you have selected the drive press “ENTER”. Navigate to the “MY RECORDINGS” file. Press the “ENTER” button.

Use the up and down arrows to navigate to the recording you wish to select. To play the selected recording press “PLAY”. Press “STOP” button and the screen will return to the last menu. You can also pause the playback with the “PAUSE” button.

## **RENAMING/DELETING VIDEOS**

To rename or delete the recording press the “INFO” button. Select the task you wish to perform then press “ENTER” RE-NAME: Use the up, down, right and left arrow buttons to move to the letters or numbers you wish. Then press “ENTER” over each letter. Select “OK” when you have named your recording.

NOTE: The name you use must have a number in the front of it. Example 123 John Street.

To delete files use the same as above except select “DELETE”.

## **TRANSFERRING FILES FROM HDD TO USB**

Press the “HOME” button on keypad and navigate over to “FILE COPY”. Press the “ENTER” button.

When you enter the File copy interface select the device which your want to copy from. Then press RIGHT to select destination device.

At Source sector, locate the file you wish to transfer the press “PLAY” on the keypad to select file or folders which you want to copy. A check mark will illuminate next to to the file name. Then press “RIGHT” to confirm.

Select the destination file you wish to transfer to. Select “OK” to confirm the transfer and “NO” to cancel. The system will confirm the transfer was successful.

## **FORMATTING THE HARD DRIVE**

Press the “HOME” key then navigate to “SETUP” and then down to “HDD”. Press “ENTER”. You will see an option to format the hard drive and press “OK”.

Use the up and down arrows to select the type of partition. It is recommended to use 100% FAT32 and 0% NTFS for best results in recording. Press “NEXT” and then confirm that you wish to format the drive. Formatting should take under 60 seconds.

## **NETWORKING**

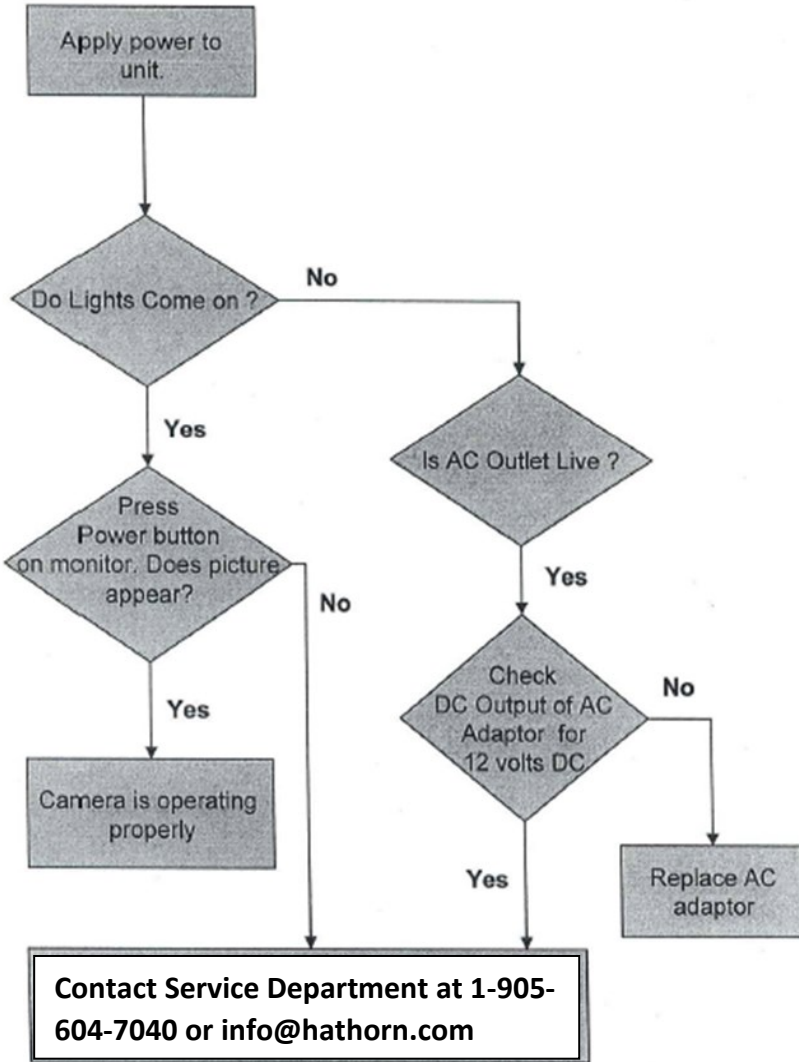
Networking is not available on this model.

## **OTHER SYSTEM OPTIONS**

1. Press the home button and then navigate left or right to “Setup” and press the Enter button.
2. Navigate to the “System” tab which will display system options. Including the opportunity to format the HDD, change the time, date and time zone and reset the system to the factory default settings.
3. Setting the time and date is the most important feature for the average user. To access this area press “Enter” button when “Time” tab is highlighted.
4. Tab down to “Time Zone” to set the time zone applicable to the market in which you are located.
5. Tab down to “Manual” to change the current month, day and time. Press enter to confirm. Then press the home button to return to the main menu.
6. All systems are set to EST on the current date when they leave the factory.

***Note: Setting the date and time are important as these will affect the naming convention of the files stored to USB/HDD.***

# TROUBLESHOOTING



If a problem not shown on this chart is found please contact a Hathorn service center.

## MAINTENANCE

**Inspection Camera** - After every use, the camera should be cleaned and checked for possible damage. External scuffing of the camera case is normal and should be of no concern. The camera view port is made of sapphire and should be cleaned with a soft, damp cloth. Grease, dirt or scratches will affect the quality of the video and if the lens is badly scratched it should be replaced.

**LED Light Replacement** - The camera heads use LED lighting and cannot be replaced by the operator. These lights use very little power and unless physically damaged or extreme voltage is applied to them, should last indefinitely. If replacement is necessary, the camera should be returned to the factory.

**Reel and Cable Assembly Maintenance** - The reel and cable assembly should be kept clean from dirt, slime, grit, etc. When winding the cable back onto the reel after an inspection, it is good practice to use a clean cloth to wipe off any debris.

## WARNING

**NEVER USE A POWER WASHER TO  
CLEAN THIS EQUIPMENT.  
PRESSURIZED WATER MAY GET INTO  
UNSEALED AREAS SUCH AS THE REEL  
HUB ASSEMBLY, SLIP RING HOUSING  
AND MONITOR CAUSING DAMAGE  
AND VOIDING WARRANTY.**

## **SPECIALIZED GAS CAMERA REPAIR**

### **FACILITIES**

Repairs, warranty or otherwise, returned to Hathorn must be submitted with a “**Return Maintenance Authorization.**” For “**RMAs**” please contact:

#### **Hathorn USA**

**Address:** 739 North Wilson Road, Columbus, OH, 43204

**Phone:** 1-855-863-9226 **FAX:** 1-905-604-3400

**Email:** [usaservice@hathorncorp.com](mailto:usaservice@hathorncorp.com)

**Website:** [www.hathorncorp.com](http://www.hathorncorp.com)

#### **Hathorn Corporation (Canada)**

**Address:** 255 Shields Court, Unit C, Markham, ON L3R 8V2

**Phone:** 1-905-604-7040 **FAX:** 1-905-604-3400

**Email:** [service@hathorncorp.com](mailto:service@hathorncorp.com)

**Website:** [www.hathorncorp.com](http://www.hathorncorp.com)



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