Gen-Eye Macro®
Video Pipe Inspection System
Operating Instructions

Your Gen-Eye Macro Video Pipe Inspection System is designed to give you years of trouble-free, profitable service. However, no machine is better than its operator.

Read, understand and follow all safety warnings and instructions provided with the product. Failure to follow the warnings and instructions may result in electric shock and/or serious injury. Save all warnings and instructions for future reference.

SAVE THESE INSTRUCTIONS!

General
PIPE CLEANERS

WARNING

Read and understand operator's manual before using this machine. Failure to follow operating instructions could result in death or serious injury.

WARNING! Read and understand all instructions. Failure to follow all instructions listed below may result in electric shock, fire and/or serious personal injury. Replacement manuals are available upon request at no charge, or may be downloaded from our website, www.drainbrain.com. Instructional videos are available for download on our website, and may be ordered. If you have any questions or problems, please call General's customer service department at 412-771-6300.

SAVE THESE INSTRUCTIONS!

These instructions are intended to familiarize all personnel with the safe operation and maintenance procedures for the Gen-Eye Macro Video Pipe Inspection System.

SAFETY SYMBOLS

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION indicates a hazard with a low level of risk which, if not avoided, will result in minor or moderate injury.

WARNING

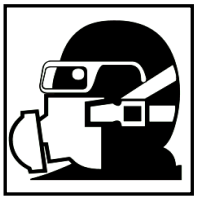
Electric shock resulting in death can occur if you plug this machine or its battery charger into an improperly wired outlet. If the ground wire is electrified, you can be electrocuted by just touching the machine, even when the power switch is off. A ground fault circuit interrupter will not protect you in this situation. Use a UL approved tester to determine if the outlet is safe.

Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. Power tools create sparks which may ignite the dust or fumes.

Only wear leather gloves with rubber or latex gloves inside leather gloves. Never use any other type of glove, such as cloth, rubber, or coated gloves. Never grasp a rotating cable with a rag. These items could become wrapped around the cable and cause serious injury.

Always wear safety glasses and rubber soled, non-slip shoes. Use of this safety equipment may prevent serious injury.

Do not overstress cables. Overstressing cables may cause twisting, kinking, or breaking of the cable and may result in serious injury.



Always wear a respirator when chemicals, bacteria or other toxic or infectious substances are present or suspected to be in a drain line. Drains may contain chemicals, bacteria and other substances that may cause burns, be toxic or infectious or may results in other serious personal injury.

GENERAL SAFETY RULES

⚠ WARNING

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

SAVE THESE INSTRUCTIONS!

Work Area

1. **Keep work area clean and well lit.** Cluttered benches and dark areas invite accidents.
2. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Power tools create sparks which may ignite the dust or fumes.
3. **Keep bystanders, children, and visitors away while operating a power tool.** Distractions can cause you to lose control.

Electrical Safety

1. **Grounded tools must be plugged into an outlet, properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any adapter plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded.** If the tool should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user.
2. **Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is grounded.
3. **Do not expose power tools, battery or battery chargers to rain or wet conditions**. Water entering a power tool will increase the risk of electric shock.
4. **Do not abuse power cords**. **Never use the cord for carrying, pulling or unplugging the power tool or battery charger. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged cords increase the risk of electric shock.
5. **When operating a power tool outside use an outdoor extension cord marked "W-A" or "W".** These cords are rated for outdoor use and reduce the risk of electric shock.
6. **Keep all electric connections dry and off the ground**. Reduces the risk of electric shock.
7. **Do not touch plugs or tools with wet hands.** Reduces the risk of electric shock.
8. **Double insulated tools are equipped with a polarized plug (one blade is wider than the other). This plug will fit a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way.** Double insulation eliminates the need for the three wire grounded power cord and grounded power supply system.

Personal Safety

1. **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use tool while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating power tools may result in serious personal injury.
2. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts.
3. **Remove hazards from work area before using equipment.**
4. **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the tool in unexpected situations.
5. **Always wear safety glasses and rubber soled, non-slip shoes**. Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.
6. **Rubber glove inserts should be worn for health and safety reasons when applicable.** Sewer lines are unsanitary and may contain harmful bacteria.
7. **Check to make sure pipes are not electrically hot.** In some cases, ground circuits may be returned to cast iron pipes causing them to be electrically charged. Care should be taken to check the entire length on any pipe you are going to inspect.
8. **Prevent object and liquid entry.** Never push objects of any kind into this product through the openings as they may touch dangerous voltage points or short circuit to parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
9. **Practice good hygiene. Do not eat or smoke while handling or operating the tool.** After handling or operating the drain cleaning equipment, use hot soapy water to wash hands and other body

Tool Use and Care

1. **Use clamps or other practical way to secure and support the workpiece to a stable platform.** Holding the work by hand or against your body is unstable and may lead to loss of control.
2. **Do not force tool**. **Use the correct tool for your application.** The correct tool will do the job better and safer at the rate for which it is designed.
3. **Do not use tool if switch does not turn it on or off.** Any tool that cannot be controlled with the switch is dangerous and must be repaired.
4. **Disconnect the plug from the power source and/or battery from the tool before making any adjustments, changing accessories, or storing the tool.** Such preventative safety measures reduce the risk of starting the tool accidentally.
5. **Store idle tools out of reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
6. **Maintain tools with care.** Keep tools clean.
7. **Inspect for breakage of parts, and any other condition that may affect the tool's operation**. If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools.
8. **Only use accessories that are recommended by the manufacturer for your model**. Accessories that may be suitable for one tool may become hazardous when used on another tool.

Battery tool use and care

- The Gen-Eye Macro is only compatible with Milwaukee M18 battery packs. The recommended battery pack is model: 48-11-1850 and should only be charged with the charger specified by the manufacturer: 48-59-1812.
- Use equipment only with specifically designated battery packs. *Use of any other battery pack may create a risk of injury and fire.*
- Recharge battery with charger specified by manufacturer. *A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.*
- Do not use a battery or equipment that is damaged or modified. Damaged or modified batteries may exhibit unpredictable behavior resulting in fire, explosion or risk of injury.

WARNING: Read all safety warnings, instructions, and cautionary markings for the battery, charger and product. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Important Battery Safety Instructions

- **DO NOT charge or use the battery in explosive atmosphere, such as the presence of flammable liquids, gases or dust.** Inserting or removing the battery from the charger may ignite the dust or fumes.
- **Charge in a well-ventilated area.** Do not block charger vents. Keep clear, allow proper ventilation. Do not allow smoking or open flames near a charging battery. Vented gases may explode.
- **Do not expose a battery pack or tool to fire or excessive temperature.** Exposure to fire or temperatures above 265° F may cause an explosion.
- **Follow all charging instructions and do not charge the battery or tool outside the temperature range specified in the instructions.** Charging improperly or at temperatures outside the specified range may damage the battery and increase risk of fire.
- **Never force the battery into the charger holder.** Do not modify the battery in any way to fit into a non-compatible external charger as battery may rupture causing serious personal injury.
- **DO NOT splash or immerse the battery in water or other liquids.** Keep the battery dry.
- **DO NOT incinerate the battery even if it is severely damaged or is completely worn out.** Battery can explode in a fire.
- **Do not short circuit.** A battery pack will short circuit if a metal object makes a connection between the positive and negative contacts on the battery pack. When not in use do not place a battery pack near anything that may cause a short circuit, such as coins, keys, or nails in your pocket. A short circuited battery pack may result in fire and personal injury.
- **Battery chemicals cause serious burns. Never allow contact with skin, eyes, or mouth.** If a damaged battery pack leaks battery chemicals, use rubber or neoprene gloves to dispose of it. If skin is exposed to battery fluids, wash with soap and water and rinse with vinegar. If eyes are exposed to battery chemicals, immediately flush with water for 20 minutes and seek medical attention. Remove and dispose of contaminated clothing.
- **Under abusive conditions, liquid may be ejected from the battery; avoid contact.** If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help. Liquid ejected from the battery may cause irritation or burns.

Attaching/Detaching the battery pack

- Turn tool off before detaching battery pack.
- Battery tools do not have to be plugged into an electrical outlet; therefore, they are always in operating condition. Be aware of possible hazards when not using your battery tool or when changing accessories.
- To attach, align battery pack slots and slide onto tool.
- To detach, depress battery release buttons and pull the battery out to remove it from the tool.

WARNING: Burn hazard. Battery may be flammable if exposed to spark or flame.

WARNING: Fire hazard. Never attempt to open the battery for any reason. Don't use the battery when it is cracked or damaged. Damaged battery should be returned to the service center for recycling.

Storage Recommendations

- Keep the storage place cool and dry, away from direct sunlight.
- Do not store battery pack in a vehicle or metal building during the summer. Or where temperatures may exceed 120° F (50°C).
- Do not store battery in cold temperatures below 14° F (-10°C).
- For long storage, it is recommended to charge the rechargeable battery every 3 months.
- Battery should not be stored completely depleted of charge. The battery will need to be recharged before use.
- Keep battery out of reach of children and in original packaging until ready to use.
- Do not place battery tools or their batteries near fire or heat.

Disposal Information

This symbol on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries must not be mixed with general household waste.

For proper treatment, recovery and recycling of old products and batteries, please take them to applicable collection points in accordance with your local legislation.

For more information about collection and recycling, please contact your local municipality, dealer or supplier. Penalties may be applicable for incorrect disposal of this waste, in accordance with local legislation.

Service

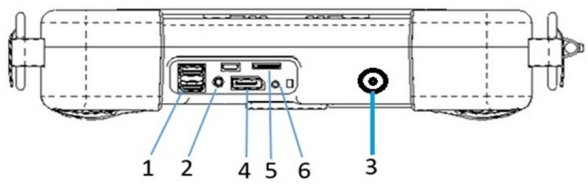
1. **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.
2. **Never service damaged battery packs.** Service of battery packs should only be performed by the manufacturer or authorized service providers.

SPECIFIC SAFETY RULES

1. **Keep the device out of the reach of children.**
2. **Do not look directly into the camera lens at the end of the probe rod.** Your eyesight may be seriously damaged.
3. **Do not forcibly bend, twist or elongate the camera rod.**
4. **Strong impact on the device may result in the breakage of the camera lens at the tip of the insertion tube.**
5. **Do not use or store the device at a temperature higher than 140°F (60°C) or lower than -4°F (-20° C).**
6. **Store the device in a dry and adequately ventilated environment.**
7. **Keep the device away from acid or alkaline solutions, oil or gas, and do not use it in an atmosphere containing their vapors.**
8. **Do not remove the flash drive while data is being saved to the card.** This may cause the data to be lost or the flash drive to be damaged.
9. **Do not use tool if switch does not turn it ON or OFF.** Any tool that cannot be controlled with the switch is dangerous and must be repaired.
10. **Be sure that the unit is plugged into a properly grounded receptacle.** If in doubt, check receptacle before plugging in machine. Check the power cord to see that there are no cuts or frays, and that the grounding prong on the plug is still in place.
11. **If the power cord supplied with the machine is not long enough, be sure to use a 16 gauge heavy duty extension cord no more than 50 feet long and in good condition.** Using lighter cords can result in severe power loss and motor overheating.
12. **Be careful when inspecting drains where cleaning chemicals have been used.** Avoid direct contact with corrosive drain cleaners. Drain cleaning chemicals can cause serious burns, as well as damage the cable. Neutralize or remove corrosive drain cleaners in the drain before starting the job.
13. **Do not operate machine if operator or machine is standing in water**. Will increase risk of electrical shock.
14. **Wear safety glasses and rubber soled, non-slip shoes.** Use of this safety equipment may prevent serious injury.
15. **Protect against lightening.** For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the outlet. This will prevent product damage due to lightning and power surges.
16. **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.
17. **Only operate the Gen-Eye Macro with the 15 volt power supply included or the recommended battery pack.**
18. **Do not plug a hard drive into the external USB port.** External hard drives are not supported with Gen-Eye Macro monitors.
19. **Do not use a USB flash drive larger than 64 GB.** The recording drive could be damaged and data could be lost if a larger flash drive is used.

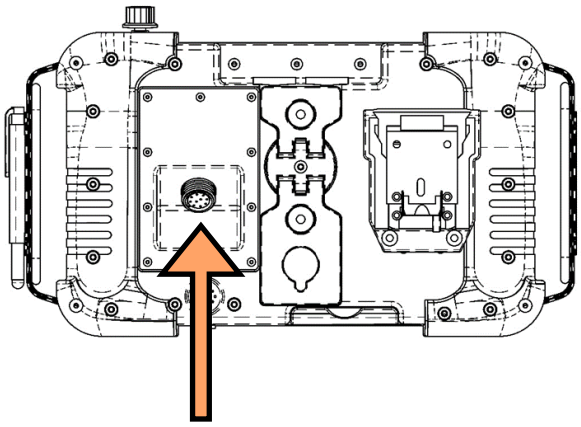
FEATURES

Bottom View:



1. USB Port: External USB Flash Disk storage.
2. Mono earphone jack
3. DC power adapter input
4. Display Port (DP) connector; output for external monitor
5. Micro SD card: Used for updating monitor software
6. RESET button for hard reboot

Back View:



Camera Reel Connection

GEN-EYE MACRO COMMAND MODULE

The Command Module should not be used in wet locations or in the rain, as moisture may cause damage to the unit.

THE AC CORD SHOULD ALWAYS BE PLUGGED INTO THE COMMAND MODULE FIRST, THEN INTO THE WALL.

Command Module Controls and Components

Display	
LCD Size/Res/ Type	8" 1280 x 800 IPS
Brightness	400 nits typical
Touch screen	Projected Capacitive Touch
I/O	
USB, multi-purpose	Type A 2.0 x1; supports up to 64GB USB flash drive. Note: Support FAT32 format USB drive for up to 64GB.
Micro SD Card Slot	Insert Micro SD card in slot for software updates
Wi-Fi	For wireless video streaming
Bluetooth	Supports BLE Bluetooth 5.0; supports mic, headphone
External Monitor	Display Port (DP) Connector for external TV/monitor
Audio	Onboard mono speaker, and microphone
Camera Input	
	Digital camera input; supports: 720P AHD Analog Camera "OR" 1080P AHD Analog Camera 720P CBVS Camera
Features	
Camera LED light control	Adjust camera LED light intensity.
Image flip	Normal, mirror flip, vertical flip, mirror and vertical flip
Image adjustment	
Screen brightness adjust	Adjust screen brightness intensity
Camera image adjust	Adjust camera's contrast, brightness, hue, saturation, sharpness, white balance, color mode, gamma, power-line frequency and exposure.
Image freeze	Still frame of current image.
Microphone On/Off	Enable or mute microphone for video recording.
File management	Manage photo and video files; photo viewer, video playback and file delete functions
Photo editor	Add freehand drawing to photo
Text message insert	Insert text and/or status bar to photo and video
Photo snapshot	Photo is saved to USB Flash Drive; format 1280 x 720 JPG
Video recording	Video is saved to USB Flash Drive; format 1280 x 720 MP4
Power Adapter	Output: 15VDC @ 2.4A Input: 100-240VAC, 50/60Hz 0.6A
Operating temperature	0°C to +75°C (+32°F to +104°F)
Storage	-20°C to +60°C (-4°F to +140°F)
Dimensions	280mm (W) x 173mm (H) x 65mm (D)
Net weight	1.9 kg (4.2 lbs)
Battery	Use M18 Rechargeable Battery

Physical Buttons

Below are the physical buttons located on the Command Module.

	Long press to power ON or OFF.
	Press to take and store a snapshot.
	Press to start/stop video recording.

Display Icons

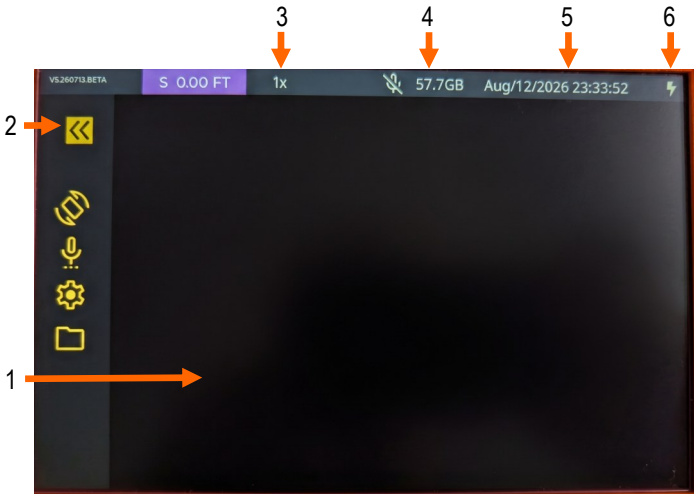
This is a list of the most commonly displayed icons. Menu and other icons are presented the instruction manual sections.

S 0.00 FT	Footage Counter Indicator, shows the distance that the camera has been pushed out. Can be toggled to change units of measure.
1x	Camera Zoom Indicator, displays 1x and changes up to 4x when adjusted.
	Microphone Indicator. (On or Off)
---.-GB	Memory Capacity Remaining.
Aug/12/2026	Date (Month/Day/Year)
22:56:25	Clock/Time (HH:MM:SS)
	Power Indicator

Main Display

The main display appears as shown.

1. Camera Image Area
2. Main Menu
3. Magnification Level (Zoom)
4. Microphone and Storage Capacity
5. Date and Time
6. Power Indicator

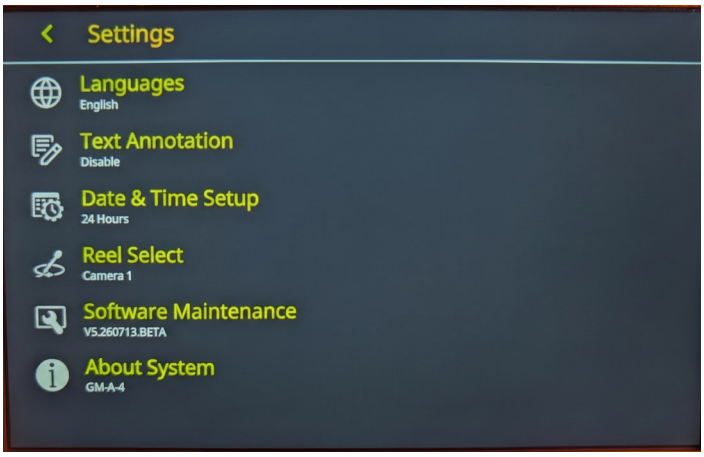


Main Menu Functions

	Image flip N: Normal; V: Vertical Flip; H: Horizontal Flip 90R: Rotate 90° to right 180: Rotate 180° 90L: Rotate 90° to left Note: HD Camera systems are self leveling
	Microphone: Tap icon to enable (on) or Mute (off) the microphone.
	Setup Menu: Open the system settings menu.
	File Management: Open file management menu.

Settings Menu

Click this icon in the Main Menu to enter system settings menu.

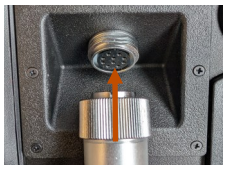


Language	Menu language select
Video Streaming	Setup video streaming user ID and password.
Text Annotation	Add text on bottom left corner of the image. One can also enable time stamp in setup menu.
Date/Time Setup	Click this icon to enter date & time setup menu.
Camera Select	Click this icon to enter camera select menu. Switch between cameras if more than one camera is connected. When camera is connected but no image displayed, click here to detect and connect camera to fix error. For pipe camera, user can select the reel type to display correct cable length counter.
Software Maintenance	Place system update file in micro SD card, click here to perform system firmware update.
About System	Click this icon to display device system information.

Getting Started Using USB Flash Drive:

Insert USB flash to the USB slot shown in Fig. 4-1-2. USB flash format: **FAT32 up to 64GB** USB drive larger than 64GB is not recommended to use.	 Fig. 4-1-2 Insert USB flash
The remaining storage space is displayed in the status bar (Fig. 4-1-3). If storage space shows 0 GB, please check: 1. USB drive is firmly inserted; re-plug the drive if necessary. 2. USB drive is formatted in FAT32. 3. The drive is not full. 4. The drive is compatible.	 Fig. 4-1-3 Remaining storage space indicator

Connecting the Camera:

Connect the 10 pin connector to the display unit as shown in Fig. 4-2-1 and tighten the locking collar.	 Fig. 4-2-1 Connecting camera
Press the POWER button (Fig. 4-2-2) for 3-5 seconds to turn on the unit. The startup sequence is approximately 10 seconds. Then it opens to the main operation screen.	 Fig. 4-2-2 Power button

MAIN MENU:

Set Language

1. Select settings icon and then select Languages.
2. Select preferred language. Your selection is automatically saved.

Set Text Annotation

1. For a different keyboard layout or color and clock display, select Text Annotation from the settings menu.
2. Select your preferences. Your selection is automatically saved.

Date & Time Setup

1. Using the touch screen, from the settings menu select Date & Time Setup.
2. Select preferred Time Format and Date Format.
3. Select the year to adjust the year and month.
4. Select the day from the calendar displayed on the screen.

Reel Select

1. From settings menu, choose Reel Select.
2. A selection prompt will appear.
3. Choose your camera reel type. Your selection is automatically saved.

Factory Default Reset and Software Version

1. Select the settings icon from the Main Menu. Software Version is listed underneath Software Maintenance tab.
2. Ensure Micro SD card with latest software has been placed into the unit.
3. From the settings menu, select the Software Maintenance button.
4. Select Update Software. Wait for update to complete.
5. For power reset, press green Reset button shown in Fig. 4-1-2.

Image and Video Files

Use this menu to view stored images and videos on the main unit display.

1. From the left side menu, select the File Management Icon.
2. Scroll through the available image and video storage folders and files. Files names are derived from type of file and the Date/Time of the recording (i.e. VID_U_20260812_002203).
3. Select desired date/time to open the file.
4. Select image or video file to view it.
5. For video, use the stop icon to restart video. Press video progress bar to Skip-Forward or Rewind. Release progress bar press to Resume the video.
6. To delete files, from the image/video viewer press the trash icon. Select “Yes” or “No” to keep or delete file.

   If “Yes” is selected the file will immediately be deleted.

Video Recording & Viewing

NOTE: The Gen-Eye Macro is equipped with an integral microphone. The microphone can be toggled from the side panel menu. Please be aware if you are recording video and would like to record audio.

1. Press the Video button (movie camera icon) to begin recording the image. " ● REC" will be displayed in the top right of the screen.
2. Press the Video button again to stop recording. The recording is immediately saved to the local storage device. " ● REC" disappears from the screen when video record has stopped.
3. If the storage device does not have enough free space, image recording will not save.
4. To view videos, press the file management icon from the menu on the display and a list of video recordings will appear. Press the desired file to view it.
5. The following features are available when viewing a video:
6. Press video progress bar to skip to desired video frame, then hit play to refresh image and resume video.
7. Stop icon will restart the video from the beginning.
8. Pause and Play icons.
9. Use back arrow icon to return to the file management screen.
10. To delete the files (without using command module), remove the storage device and place it in your computer or laptop.

Image Capturing & Viewing

1. Press the image button (camera icon) to take a snapshot of the screen. The screen will take a snapshot (blinks black screen) when the snapshot has been stored on the storage device. When the live image is displayed the image has been saved.
2. If the storage device does not have enough free space, image recording will not save.
3. To view videos, press the file management icon from the menu on the display and a list of images will appear. Press the desired file to view it. The date and Time the image was taken is also shown.
4. Use image markup icon to edit images. Once an image is marked up and saved, it will overwrite the original image. Once overwritten, the previous markup can not be edited.
5. Zoom level must be adjusted before taking a image snapshot (from 1X to 4X).
6. To delete the files (without using command module), remove the storage device and place it in your computer or laptop.

VIEWING THE INSPECTION ON ANOTHER DEVICE

If you wish to view/display your inspection with another device, you can plug an external display into the DISPLAY PORT connection on the Command Module. The display will appear on that device.

Wi-Fi

Your unit is equipped with Wi-Fi. You can use your smart phone or tablet to record still images or video. Follow the directions on the following pages for "How to Set-Up the Wi-Fi Feature" for the type of device you are using.

Setting up Wi-Fi and Device Live Streaming

See pages 9 and 10 for instructions for Apple and Android devices.

Voice-Over Microphone

This unit includes an internal microphone so you can add commentary to your videos. The Microphone is "live" and records while video is recorded. Audio may be monitored during recording by inserting an earphone into the jack on the left side on the monitor. Audio can be heard though the speaker in the Command Module during video playback.

Power Input

Power input is located on the right side of the Command Module. Only operate the Macro with the 15 volt power supply supplied with monitor or recommended battery pack.

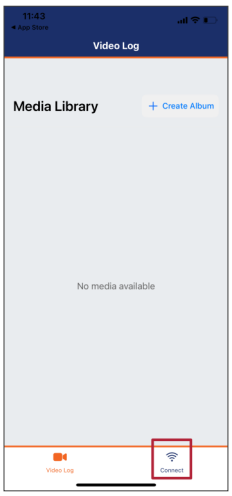
CAMERA REEL

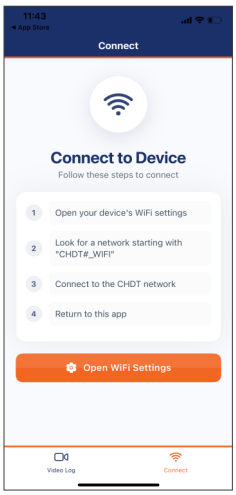
Reel Type	Pipe Sizes	Lengths Available
Macro-Reel	2" to 3" (51 to 76mm)	200 ft. (60 m)

NOTE: The macro push rod is designed to be used in 2" to 3" lines ONLY. Do not use it in larger or smaller lines, or you may damage the push rod.

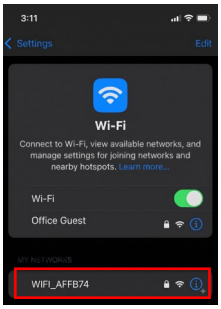
How to Set-Up the Wi-Fi Feature for Gen-Eye Camera Systems On an Apple device

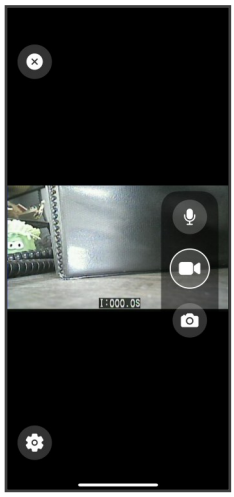
1. Make sure the Command Module is turned ON and you are next to the unit. The Wi-Fi signal is always on if the unit is on.
2. On your cell phone, tablet, or other Wi-Fi enabled device, go to the App Store. **NOTE:** You must have an Apple account set up before proceeding.
3. Search for and download: "General Pipe Cleaners App". iOS icon
4. Upon opening the App, you will be routed to the Media Library Screen.

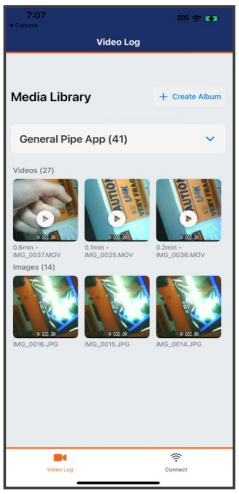




5. From the Media Library screen, select "Connect".
6. From the connect screen, select "Open Wi-Fi Settings".
7. Open your device's Wi-Fi Settings. Look for a network starting with "CHDT#_WIFI". Connect to the CHDT Network.
   Password: 12345678
8. Return to the General Pipe Cleaners App.
9. When the app opens, you should see the image transmitted by the camera on your screen.
10. Grant the General Pipe Cleaners App access to your devices microphone, camera, and photo gallery when prompted.







Icon Key:

Settings—*Allows you to adjust the brightness and contrast.*

Microphone—*Tap to record audio. *NOTE to include audio in your recording, you must tap the microphone first, then tap the video camera icon to begin recording.*

Video Camera—*tap to begin/end recording.*

Camera—*tap to take screenshots.*

The number of photos and/or the length of video you can shoot will depend on the amount of storage available on your device.

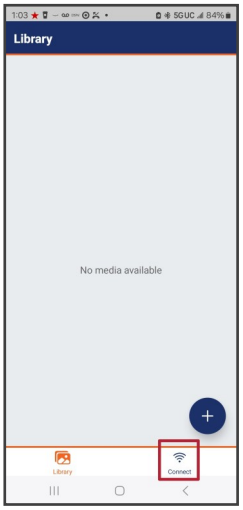
1. You are now ready to record video or take snap shots.
2. To include audio in your video recording, tap the microphone icon first, then tap the video camera icon to begin recording with audio.
3. To start recording video, tap the video camera icon. (Tap it again to end recording).
4. To adjust the brightness, contrast, tap the settings icon and select your desired settings.
5. To view your snap shots and recordings, navigate to Library or the photo/video gallery application on your device. You can view your photos/videos in your device's gallery.

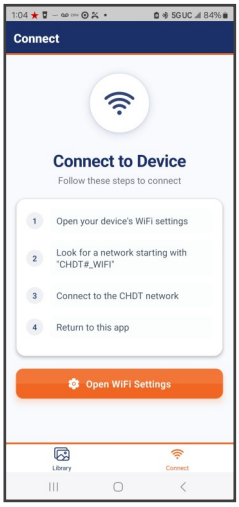
How to Set-Up the Wi-Fi Feature on Gen-Eye Camera Systems On an Android device

1. Make sure the Command Module is turned ON and you are next to the unit. The Wi-Fi signal is always on if the unit is on.
2. On your cell phone, tablet, or other Wi-Fi enabled device, go to the Play Store (Android). **NOTE:** You must have a Google account set up before proceeding.
3. Search for and download "General Pipe Cleaners App".

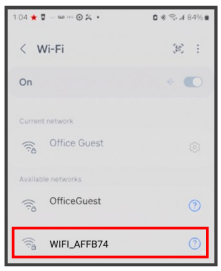
Android icon

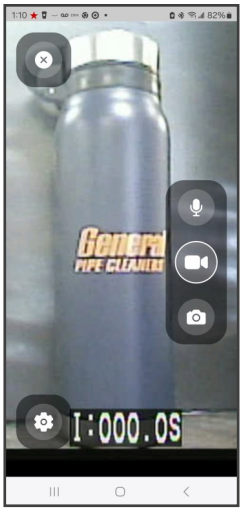
4. Upon opening the app you will be routed to the media library.

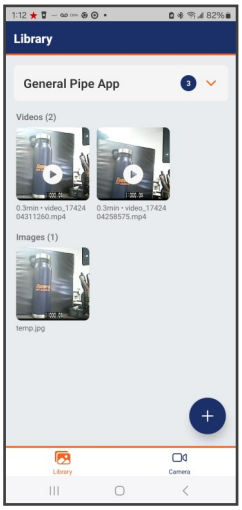




5. From the media library screen, select "Connect".
6. From the Connect screen, select "Open Wi-Fi Settings".
7. Look for a network starting with "WIFI_XXXXXX". Connect to the Wi-Fi network. **Password: 12345678**
8. Return to the General Pipe Cleaners App.
9. When the app opens, you should see the image transmitted by the camera on your screen.
10. Grant the General Pipe Cleaners App access to your devices microphone, camera, and photo gallery when prompted.







Icon Key:

Settings—*Allows you to adjust the brightness and contrast.*

Microphone—*Tap to record audio. *NOTE to include audio in your recording, you must tap the microphone first, then tap the video camera icon to begin recording.*

Video Camera—*tap to begin/end recording video.*

Camera—*tap to take snap shots.*

The number of photos and/or the length of video you can shoot will depend on the amount of storage available on your device.

1. You are now ready to record video or take snap shots.
2. To include audio in your video recording, tap the microphone icon first, then tap the video camera icon to begin recording with audio.
3. To start recording video, tap the video camera icon. (Tap it again to end recording).
4. To adjust the brightness, contrast, tap the settings icon and select your desired settings.
5. To view your snap shots and recordings, navigate to Library or the photo/video gallery application on your device. You can view your photos/videos in your device's gallery.

SET UP - COMMAND MODULE

1. To set up for pipe inspection, mount the hand-held Command Module onto the reel by first threading the mounting block with twist knob into the back of the unit.
2. Then slide the mounting block onto the end of the arm assembly at the center of the reel. Adjust the Command Module for the desired viewing angle and tighten the knob on the mounting block near the arm assembly.

3. Connect the Interface Cord from the reel to the Command Module.
4. Insert flash drive into USB slot on the bottom side of the Command Module.
5. If using AC power, plug power adapter into the left side of the Command Module.
6. If using DC power, insert appropriate fully charged battery into the battery adaptor on rear left side of the command module.
7. Press the POWER button for 3 – 5 seconds to turn the Command Module on. The Start-Up screen is shown briefly, followed by the Status screen for 5 seconds.

The status bar shows the capacity of the flash drive.

3. Press and hold POWER button. Start up screen will appear in a few seconds.
4. When the image from the camera appears on the screen, begin the inspection.
5. Make sure you have established live image on the monitor prior to recording. Use the ZOOM IN or ZOOM OUT functions as required to capture the image needed. You can also use the ROTATE function to rotate the image as needed.
6. Slide the camera into the line. Be sure that the push rod is rated for the size pipe you are inspecting. Be careful not to force the camera around tight bends. **If you see an obstruction, stop. Do not attempt to clear the pipe by using the camera head as a battering ram.** Always use the proper tool for the job.
7. Once the camera is in the pipe, adjust camera to a level which produces the best picture with the least amount of light. This will vary depending on pipe conditions. In some cases white or lighter colored objects may cause the picture to “flare” or “wash out”. If this happens, simply adjust until a good picture is achieved.
8. 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.
9. When negotiating a corner, care should be taken not to butt the nose of the camera against the sidewall with any force. It would be better to let the camera “work” its way around the corner.
10. Should resistance become extreme, or the camera gets entangled or stuck, slowly push and pull back and forth to free it. Do not force the camera through a collapsed pipe.
11. To record video or snapshots of inspection, see page 8.
12. When inspection is complete, retract Camera from drain and secure in the reel.

Tip: It's often helpful to have a small stream of water running in the line to clean the Camera Head while it’s still in the drain line.

INSPECTION CAMERA OPERATION

NOTE: The micro push rod is designed to be used in 1-1/2” to 4” lines ONLY. Do not use it in larger or smaller lines, or you may damage the push rod.

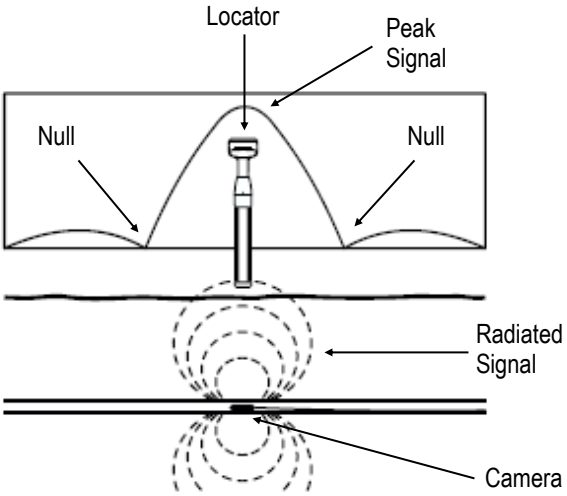
1. Connect camera cable and power cord.
2. Insert USB Flash Drive (Part #184490) into port of the bottom side of the Command Module.

DO NOT BEND THE CAMERA REEL TIP AT AN ANGLE GREATER THAN 30 DEGREES!
DO NOT BEND WHERE IT CONNECTS TO THE DISPLAY UNIT!

CAMERA LOCATION

1. Turn on Gen-Eye Camera system.
2. Press and hold the Hot Spot Locator On/Off button. Check battery strength on display.
3. Press MODE icon until indicator displays Sonde/Camera Head mode.
4. Press Antenna Select icon until indicator displays Total Field configuration.
5. Set Locator to 512Hz by pressing FREQ button until 512 Hz appears on display.
6. Press up arrow button to increase GAIN to maximum sensitivity.

7. Push camera head/Sonde only 10 to 15 feet into the line before starting the location process.
8. Stand near pipe entrance and hold the Gen-Eye Hot Spot Locator so that the blade is pointed at 45 degree angle, out and down towards the ground at the approximate distance of the transmitter.
9. Rotate in a circle, listening to the signal strength indicator tone. If you receive full signal strength in every direction, press and release the DOWN ARROW button to reduce the GAIN, or sensitivity of the device. Repeat process until you receive a strong-steady tone from just one direction. Reduce gain further if necessary to clarify exact direction.
10. Hold Hot Spot Locator blade perpendicular to the ground and walk in the direction of the strongest signal.
11. As you walk, reduce gain by pressing and releasing down arrow button as often as necessary to keep signal strength indicator near the 50% level. (Signal Strength levels in the 100% range will erode accuracy. Always aim to keep the signal strength near 50%.)
12. The radio waves propagating from the transmitter look like this:



Notice that there is a PEAK signal over the exact location of the transmitter, and two NULL points on either side of the PEAK, lined up parallel with the lay of pipe.

13. Watch the Gen-Eye Hot Spot monitor display as you approach the transmitter's location.
14. When you reach the vicinity of a NULL point the screen will produce this display:

Simply follow the arrows to find the exact spot. When you are over the NULL point, the screen will produce this display.

15. When you reach the vicinity of the PEAK the screen will produce this display:

Follow the arrow to pinpoint the location of the transmitter. Simply rotate the flat edge of the locator blade relative to the arrows on the outside of the 'compass' to determine the orientation of the transmitter. When the display shows this graphic:

you will have the exact location of the transmitter and the lay of the pipe.

16. Find and mark the location of both the NULL and the PEAK points.
17. Push the camera ahead another 10-20 feet and repeat the process. Duplicate every 10-20 feet until the problem area is visible on the Gen-Eye monitor. At the completion of this process the entire line will be traced and marked.

MAINTENANCE

DISCONNECT MACHINE FROM POWER SOURCE BEFORE PERFORMING MAINTENANCE ON MACHINE!

CAMERA CLEANING

After every use, the camera should be cleaned and checked for possible damage that may have occurred during the inspection. External scuffing of the camera housing is normal and should be of no concern; however, use the trap skid to protect the camera and help it slide around elbows more easily.

The camera lens is made of sapphire and should be cleaned with a soft, damp cloth. Grease, dirt, or scratches will affect the quality of the video picture.

CABLE AND REEL ASSEMBLY CLEANING

WHEN CLEANING THE REEL ASSEMBLY DO NOT USE A POWER WASHER. WATER MAY GET INTO UNSEALED AREAS SUCH AS THE REEL HUB ASSEMBLY AND SLIP RING HOUSING CAUSING DAMAGE AND VOIDING THE WARRANTY.

The cable and reel assembly should be kept clean from dirt. When rewinding the cable back onto the reel after an inspection, it is good practice to use a clean rag to wipe off any debris the cable may have.

TROUBLESHOOTING

COMMAND MODULE

No Picture AND No Lights:

- Check to see if the Main Power switch is ON. Check to make sure the power source is "live" (for 120 volt AC) or check to see if the light is lit on the cigarette lighter plug (for 12 volt DC).
- Check to make sure that the camera lens is not covered or looking at a surface that provides no detail, therefore any image detail.
- Check all connections and connectors from the camera back to the Command Module, including the cable reel.
- Disconnect main power and contact the factory service department.

Picture BUT No Lights:

- Check if Power switch is ON.
- Check to see if LED Dimmer control (located on the panel of the Command Module) is turned up.
- Check cable for possible breaks or intermittent open circuits by flexing the cable.
- Disconnect main power and contact the factory service department.

No Picture, Lights OK

- Check Monitor power switch is ON. Check to make sure the power source is “live” (for 120 volt AC) or that the battery is charged.
- Check the interface cords for possible damage or intermittent problem by flexing the cable.
- Check the Reel Push-Rod for possible breaks or intermittent open circuits by flexing the cable.
- Disconnect the main power source and contact the factory service department.

No Picture, only words on display after turning the power on:

- Check that the Probe Rod or push rod is correctly connected to the display unit.

Unable to record still photos or video:

- Flash drive not present, incorrectly inserted, full or faulty.
    - Check that a flash drive is present and correctly inserted into display unit.
    - Check flash drive capacity.
    - Check if flash drive will work in other devices.

All Display unit functions frozen/failed:

- Reboot system
    - Insert a pin into the hole located on the side of the display unit. The system will restart automatically.