GENERAL®

WET/DRY RECORDING VIDEO INSPECTION SYSTEM

USER'S MANUAL

DCS660A
DCS665

Please read this manual carefully and thoroughly before using this product.

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INTRODUCTION

Thank you for purchasing General Tools & Instruments' (General's) DCS660A or DCS665 Wet/Dry Recording Video Inspection System. Please read this user's manual carefully and thoroughly before using the instrument.

The DCS660A and DCS665 are two of only four video inspection systems on the market with an IP67 waterproof grip and monitor as well as an IP67 waterproof camera-tipped probe. The other two systems are General's DCS600A and DCS605, non-recording (real-time) versions of the DCS660A and DCS665.

The only differences between the DCS660A and DCS665 are the diameter and depth of field of their probes. The DCS660A comes with an 8mm diameter, 1m (3.3 ft.) long, far-focus probe with a depth of field of 2.4 in. to 10 ft. (60mm to 3m). The DCS665 comes with a 5.5mm diameter, 1m (3.3 ft.) long, close-focus probe with a depth of field of 1.2 to 2.4 in. (30 to 60mm). The remainder of this manual refers to either system as "the Recording Wet/Dry Scope" or simply "the scope".

The Wet/Dry Scope's water tightness makes the system ideal for plumbing-related tasks like inspecting water or sewer lines carrying running water. The system also can be used to inspect parts of boats, ships or bridges just below the surface. Because the entire unit is impervious to water you can use it freely around water without worrying about accidentally "dunking" the grip and monitor. No other camera scope with an integral monitor—other than the DCS600A or DCS605—is completely watertight.

Operated in real-time video mode, the Recording Wet/Dry Scope uses only three control buttons to execute five functions (powering on/off, 1 to 4X zoom, increasing and decreasing brightness, and inverting the field of view), making it very easy to learn to use. Video within the probe's field of view is displayed on a large, crystal-clear 3.5 in. (89mm) diagonal color LCD. Alternatively, video can be viewed on an NTSC- or PAL-format television by plugging an included A/V cable into a jack on the side of the scope's monitor.

The scope's recording capabilities make it possible to document—with high-resolution videos and images—what the probe "sees." Pressing the front-panel ▢/▣ button stores either a still image or an AVI video (depending on how you configure the button) of the probe's field of view on a 4GB MicroSD memory card supplied with the system. The same button is used to view (play back) recorded images and videos on the unit's LCD. Alternatively, recorded images and videos can be viewed on a larger screen by ejecting the SD card and plugging it into a laptop or desktop PC, or by connecting the scope to a PC via the included USB cable.

The scope's recording functions are controlled by a familiar menu-driven interface. Behind the front-panel **MENU** button is a hierarchical control structure that lets you:

- Set the current date and time
- Set the video frame rate to 20, 25 or 30 frames per second (fps)
- Format the MicroSD card
- Choose NTSC or PAL compatibility for video sent to a TV monitor
- Choose English, German, Spanish, French or Dutch as the language of on-screen menus and prompts

The Recording Wet/Dry Scope and its accessories are packaged in a hard plastic protective case along with this user's manual. The unit is powered by four "AA" batteries, which are not included.

KEY FEATURES

- Makes it possible to inspect water and sewer lines carrying running water. Other "waterproof" inspection systems lack watertight grips and monitors

- Allows a diver or snorkeler to view inspection video under water in real time. Ideal for marine search and rescue operations

- For plumbers and boat owners, eliminates concerns about accidentally dropping or dunking grip or monitor in water

- Grip, probe and monitor are guaranteed leakproof to depth of 1m; all three components will also resist leaks at depths up to 2m for short periods (1 hour, max)

- Includes 8mm (0.31 in.) or 5.5mm (0.22 in.) diameter, 3.3 ft. (1m) long camera-tipped probe with adjustable LED lighting; longer, articulating and special-purpose optional probes are available (see p. 18).

- Waterproof probe is flexible-obedient, meaning it retains its shape

- 3.5 in. (89mm) color LCD makes videos and images large and crystal-clear

- Video shown on LCD can be inverted 180° and/or zoomed up to 4X

- Video Out jack for connection to NTSC or PAL television

- Records high-resolution videos and still images with date and time stamps on MicroSD memory card

- Recorded media can be played back on monitor, or uploaded to a PC via MicroSD card or USB cable for viewing on a larger screen

- Selectable video frame rate

- 30-minute Auto Power Off (APO) function extends batteries' life

- Delete files individually or in bulk

- Choice of five menu languages

- Custom hard plastic carrying case

- Includes three probe tip accessories (45° mirror, pickup hook and magnetic pickup), 4GB MicroSD card, and USB and video cables

- One-year warranty

- Powered by four "AA" batteries (not included)

SAFETY INSTRUCTIONS

- Do not use the Wet/Dry Scope to inspect environments known or suspected to contain exposed electrical wiring.
- Do not use it in the presence of flammable or explosive gases.
- Read and understand all of the instructions in this manual before using the system.
- Stay alert, watch what you are doing, and use common sense. A moment of distraction can result in serious personal injury.
- Do not over-reach. Keep proper footing and balance at all times, especially where water is underfoot.
- Always use protective eyewear. A dust mask, non-skid safety shoes, a hard hat or hearing protection may also be appropriate for certain inspection environments and tasks.
- Do not use the system to perform medical inspections.

WHAT'S IN THE CASE

The Recording Wet/Dry Scope and its accessories come in a custom molded plastic case. The scope itself has two main components: a pistol grip permanently connected to an LCD monitor, and a 1m long, 8mm or 5.5mm diameter flexible-obedient camera-tipped probe. Also in the case is a large Ziploc plastic bag containing:

- Three probe tip accessories (a 45° mirror, a pickup hook and a magnetic pickup) in their own small Ziploc bag
- A 4GB MicroSD memory card
- A USB cable with a mini B-type plug at one end and an A-type (full-size) plug at the other
- A composite video cable with a black mini-plug on one end and a yellow RCA plug on the other
- This user's manual and a QuickStart Guide

PRODUCT OVERVIEW

Fig. 1 shows the labels and positions of the controls and connectors on the front panel, top, bottom and right side of the Recording Wet/Dry Scope. Familiarize yourself with the controls' functions before moving on to the Setup Instructions.
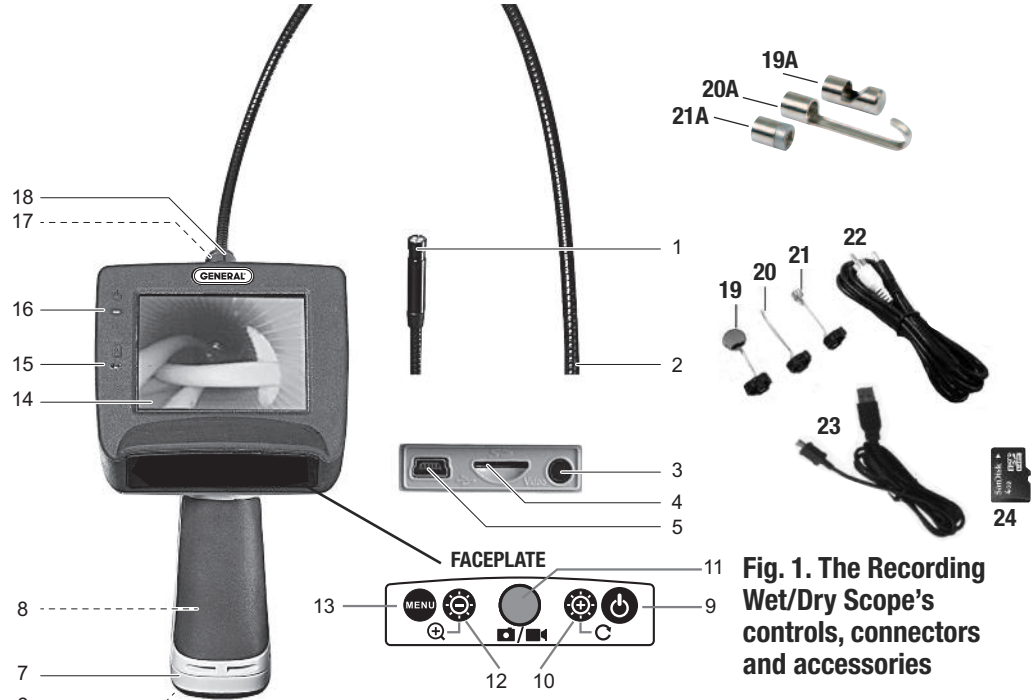

FACEPLATE

Fig. 1. The Recording Wet/Dry Scope's controls, connectors and accessories

1. Camera head

2. 1m long, 8mm or 5.5mm diameter flexible-obedient probe

3. Analog video out jack

4. MicroSD card slot

5. Mini USB jack

6. Battery compartment cover screw

7. Battery compartment cover

8. Battery compartment

9. ⏻ (Power on/off) button

10. ☼ multi-function button. Function depends on operating mode (see table on facing page).

11. ◻/◼ multi-function button. Function depends on operating mode (see table on facing page).

12. ☼ multi-function button. Function depends on operating mode (see table on facing page).

13. **MENU** multi-function button. Function depends on operating mode (see table on facing page).

14. 3.5 in. diagonal color LCD

15. Low battery LED (flashes red when batteries' charge is low)

16. Power on LED (steady green)

17. Triangular hanger hook

18. Probe connector

ACCESSORIES IN THE CASE

19 or 19A. 45° mirror

20 or 20A. Pickup hook

21 or 21A. Magnetic pickup

22. A/V cable

23. USB cable

24. 4GB MicroSD card

The Recording Wet/Dry Scope's multi-function controls

|	MENU button	☀️⊖ button	📷/🎥 button	☀️⊕ button
Real-Time Viewing mode	Enters Main Menu mode	**Pressed briefly**, reduces brightness of camera lighting LEDs. **Pressed and held**, zooms field of view from 1X to 4X in 1X steps and then returns to 1X	Takes a picture or starts/stops recording a video clip (depending on icon displayed at upper left of LCD)	**Pressed briefly**, increases brightness of camera lighting LEDs. **Pressed and held**, inverts field of view (only on LCD; function not available with A/V cable inserted)
Playback mode	Goes up one hierarchical menu level. At highest level, exits Playback mode and enters Real-Time Viewing mode	Selects next-newest photo or video	**Pressed briefly**, pauses/resumes video playback. **Pressed and held**, offers option to delete selected photo or video file, or all saved photo and video files	Selects next-oldest photo or video
Menu modes	Goes up one hierarchical menu level. At highest level, exits Playback mode and enters Real-Time Viewing mode	Highlights one menu item lower on list. **In Time/Date submenu,** decrements value of flashing field	Selects highlighted menu item. **In Time/Date submenu**, saves value of flashing field and begins flashing field to its right	Highlights one menu item higher on list. **In Time/Date submenu**, increments value of flashing field.

# SETUP INSTRUCTIONS

INSTALL BATTERIES

The scope's battery compartment is accessible from the bottom of the pistol grip
(Fig.1, Callout 8).

To open the battery compartment,

1. Use a Phillips-head screwdriver to turn the screw securing the compartment's cover
(Fig. 1, Callout 6) counterclockwise until the head of the screw pops up, flush with the
surface. It is not necessary to remove the screw.

2. Turn the cover slightly counterclockwise (about 2°) to release it from the grip
(see figure below). Set the cover (still holding the screw) aside.
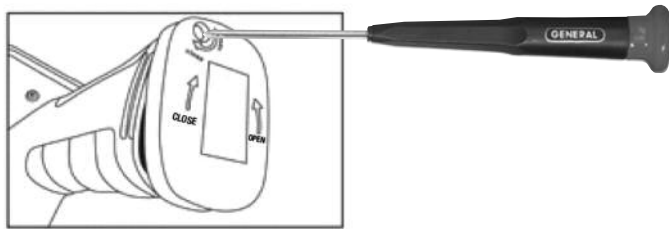
3. Extract the battery magazine from the grip by pulling on the tab at its end (see left
figure below).

4. Load four "AA" batteries into the magazine, using the polarity markings within it as a
guide (see right figure below).
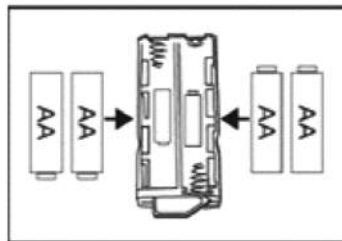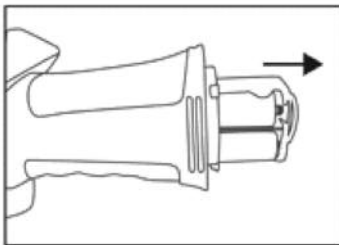
5. Push the loaded magazine back into the grip (it fits only one way).

6. Retrieve the battery compartment cover and position it 2° left of center, relative to the
bottom of the grip.

7. Pressing on the cover, twist it 2° clockwise until it "catches" the grip housing.

8. Turn the Phillips-head screw clockwise until it is tight, with its head below the surface.

Notes:

1. Make sure your hands are completely dry before opening the battery compartment.

2. Take extra care to properly secure the cover of the battery compartment after installing batteries. The battery compartment is one of three places where water could enter the scope, potentially causing irreversible damage. The other two places are the connection between the camera-tipped probe and the grip, and the waterproof door protecting the Video out and USB jacks and MicroSD card slot. The remainder of this section explains the proper procedures for maintaining water tightness at these points.

ATTACH PROBE

The probe must be attached to the grip or the LCD will show a blank screen.

To attach the probe,

1. Slide the metal collar of the grip's coupling back until it touches the rubber boot on the grip's housing.

2. Line up the alignment key on the probe connector with the flat on the coupling (see photo below).

3. Push the two ends together until they mate.

4. Tighten the connection by turning the collar in the direction opposite that indicated by the **REMOVE** arrow on the collar. Double-check the tightness of the connection; if it is not tight, water may enter the system later and ruin it.

To detach the probe, perform the attachment procedure in reverse. To loosen the connection between the two components, turn the collar in the direction indicated by the **REMOVE** arrow.
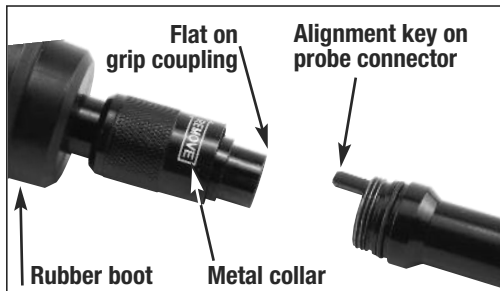
ATTACH VIDEO CABLE (OPTIONAL)

Push latch up

Slide door to the right

If you wish to view real-time video captured by the scope's probe on an NTSC- or PAL-format television, insert the mini-plug end of the supplied video cable into the Video jack on the right side of the monitor (Fig. 1, Callout 3). Plug the yellow RCA connector at the other end of the cable into the television's "Video In" jack.

However, be aware that using the video cable exposes the scope's monitor to water damage because doing so requires leaving the waterproof door on the right side of the grip open. With the video cable attached,

Mini-USB jack   **MicroSD card slot**   **Video jack**

you can still use the probe to perform underwater inspections. But if you accidentally "dunk" the unit, it will be permanently damaged. Such "accidental damage" is specifically NOT covered by the Recording Wet/Dry Scope's limited warranty (see p. 18).

To access the Video jack, open the waterproof door covering it (see top photo above) by using your thumb to push the spring-loaded latch on the door up. Without removing your thumb, use it to slide the door to the right. Once you see the metal of the door's hinge at left, use your index finger to flip the door open and expose the Video jack (see lower photo above), mini-USB jack and MicroSD card slot.

When you are done using the video cable to view inspection video on a TV monitor, remember to swing the door shut. The door is only secure and waterproof when you hear its spring-loaded latch click.

INSTALLING ACCESSORIES

The DCS660A and DCS665 each come with three accessories (see left photos on next page) in a Ziploc bag that attach to the camera-tipped end of the probe. Each accessory has a specific purpose:

- The 45° mirror lets the probe see around corners.
- The pickup hook lets you retrieve otherwise inaccessible items seen by the probe— for example, a wedding ring accidentally dropped down a sink drain.
- The magnetic hook lets you retrieve lost or dropped metal objects—nuts and bolts, for example—located by the probe.
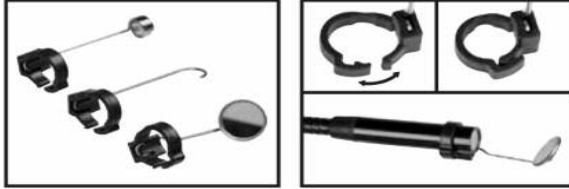
To attach an accessory to the DCS660A probe,

1. Hold its metal stem with your thumb and index finger.
2. Slide the accessory—plastic clasp first—past the camera head at the probe tip until the clasp is centered on the segment that begins 1/4 in. from the end of the probe.
3. Squeeze the clasp until you hear a click (see top right photos on next page), indicating that the two halves have joined.

10
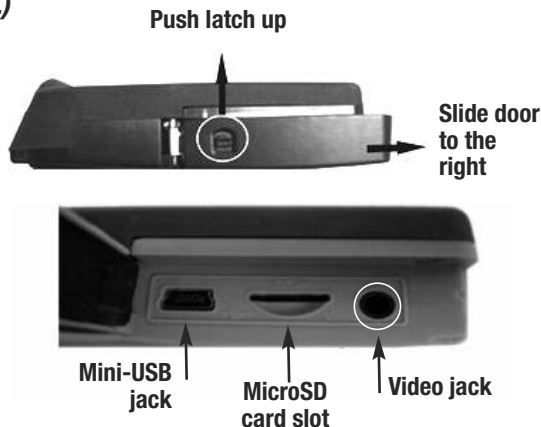
**To detach an accessory from the DCS660A probe,**

1. Use the nail of your index finger to unhook the clasp, opening it up.

2. Hold the accessory's metal stem with your thumb and index finger and slide the accessory and clasp past the camera head.

3. Put the accessory back in the Ziploc bag it came in.

The DCS660A's three snap-on probe-tip accessories

To attach an accessory to the DCS665 probe, simply screw it into the end of the camera head (see right photo below).

To detach an accessory from the DCS665 probe, unscrew it from the camera head.
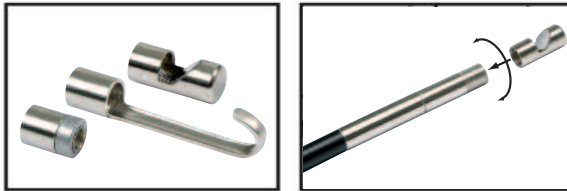
The DCS665's three screw-on probe-tip accessories

OPERATING INSTRUCTIONS

Before using the scope for the first time, remove and discard the plastic film protecting the LCD.

Before using the scope for an inspection session, remove the black rubber cap protecting the probe's camera head. Remember to replace this cap after each and every inspection session.

VIEWING REAL-TIME VIDEO

To power on the scope, press the ⏻ button (Fig. 1, Callout 9). This will cause the green Power On ⏻ LED (Callout 16) to light. The LCD will illuminate and show real-time video from the camera at the tip of the probe.

To zoom in on video, press and hold the ☀ button. Each subsequent press of the button increases the zoom level by 1X from a base of 1X (no zoom). The maximum zoom level is 4X. At 4X magnification, the next press of the button returns to a 1X (no zoom) view.

To increase the brightness of the display, briefly press (but do not hold) the ☀ button.
To decrease brightness, briefly press (but do not hold) the ☀ button.

Whether or not video is being zoomed, the field of viewed can be inverted (rotated 180°). **To invert real-time video**, press and hold the ⚙ button. Use this feature to align the probe's field of view with its real-world surroundings, or to make it easier to read upside-down equipment labels and serial numbers by flipping them right-side up.

To undo video inversion, press and hold the ⚙ button again.

Real-time video exported to a TV monitor cannot be inverted, but it can be zoomed.

Because the probe is flexible-obedient, you can maneuver it into various positions to aim at different targets and it will hold its shape.

The Recording Wet/Dry Scope is designed to be powered for up to five hours by a set of four "AA" batteries. When the batteries' total charge drops below a preset threshold, the red Low battery LED (Callout 15) will begin flashing. To replace the batteries, follow the procedure in the Setup Instructions section of this manual on p. 8.

To power off the scope, press the ⏻ button.

RECORDING AND VIEWING VIDEOS AND STILL PICTURES

In addition to capturing real-time video, the Recording Wet/Dry Scope can document—via high-resolution videos and images—what the probe "sees." Pressing the front-panel 📷/🎥 button either stores a .jpg photo or begins to store or an AVI video clip (depending on the icon displayed at the upper left of the LCD) of the probe's field of view on a 4GB MicroSD memory card supplied with the system. The same button is used to view (play back) recorded images and videos on the console's LCD. Alternatively, recorded images and videos can be viewed on a larger screen by ejecting the memory card and plugging it into a laptop or desktop PC, or by connecting the scope to a PC via the supplied USB cable.

Taking Pictures and Recording Videos

Before you can record videos and still images, you must do two things:

- Insert the 4GB MicroSD memory card supplied with the system (or another MicroSD card of up to 32GB capacity) into the scope. Until the memory card is inserted, an SD card icon with a red slash through it will appear at the upper left of the display.
- Set the current date and time

To insert the memory card, open the waterproof door on the side of the monitor, using the photos and instructions on p. 10 to guide you. Retrieve the memory card from the accessories bag and insert it into the slot in the middle of the side panel with the contacts facing up (see photo at right).

Push the card in until you feel it spring back and hear a click. If the card has been inserted properly, the SD card icon with the red slash through it will disappear from the display.

To set the current date and time, follow the instructions on p. 16.

To take a picture, make sure the unit is in Real-Time Viewing mode, with the current date and

running clock at the bottom right of the display. If an icon of a still camera is at the upper left of the LCD, the scope is configured to take a picture when you press the ▣/◼ button. If there is an icon of a movie camera at the upper left of the LCD, the scope is configured to start recording a video clip when you press the ▣/◼ button, and to stop recording the clip when you press the button again. **You must enter main menu mode to change the button function to or from taking pictures and recording videos**.

Be aware that with the exception of the **Time/Date** submenu (see p. 16) and the **Playback** submenu, all menus and submenus that offer options require that you make a choice within 25 seconds. If you respond too slowly, the menu or submenu disappears and is replaced by real-time video, forcing you to press the **MENU** button again one or more times to return to the same screen.

Pressing the **MENU** button with the scope in real-time mode calls up the screen at right:
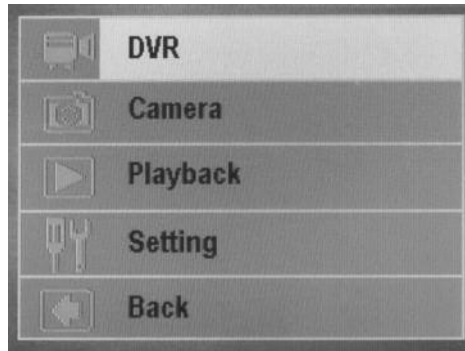
Use the ☼ and ☼ buttons to navigate to and highlight the top line (**DVR**) to configure the ▣/◼ button to record video clips, or the second line from the top (**Camera**) to configure the button to take photos. After selecting the function you want, press the ▣/◼ button to save the selection.

Note that you need to enter main menu mode before pressing the ▣/◼ button only if you want to store a different type of media than the last file you stored. You can store several photo or video files in succession simply by pressing the ▣/◼ button repeatedly. When you take a photo, the on-screen still camera icon will flash three times to confirm that a picture was taken. When you begin to store a video clip, the on-screen movie camera icon will begin to flash and a running clock will appear at the lower left of the LCD. **To stop recording a video clip**, press the ▣/◼ button again to make the running clock disappear and return the movie camera icon to steady (non-flashing) status.

Also be aware that because the scope records video clips with VGA (640 x 480 pixel) resolution, clips are memory-intensive. Each minute of recorded video consumes about 35 Megabytes of memory. However, even at that rate the 4GB MicroSD card included with the system can store 114 minutes (nearly 2 hours) of high-resolution video.

You cannot pause the recording of a video. You must stop recording and start again, creating a new file in the process.

Viewing and Deleting Saved Videos and Pictures

You have three options for viewing (playing back) videos you have recorded and pictures you have taken:

1. View them on the scope's LCD
2. View them on a desktop or laptop PC by ejecting the MicroSD memory card from the scope and plugging it into the PC
3. View them on a desktop or laptop PC by connecting the PC to the scope with the supplied USB cable

The second and third options offer an additional benefit. As you view your recorded inspection videos and pictures, you can copy them to your PC. Once the videos and images are in your computer, you can share them as attachments to e-mails to others experienced at spotting and diagnosing problems in your field.

To view recorded videos and photos on the scope's LCD, you must enter Main Menu mode and select one media type or the other. To do so, first press the **MENU** button. When the main menu screen shown on p. 13 appears, use the ☀ and ☀ buttons to navigate to and highlight the middle line: **Playback**. Press the ▢/◼ button to select this option, and then use the ☀ and ☀ buttons to navigate to and highlight the **Video** or **Photo** line. Press the ▢/◼ button again to save your selected option.

Note that selecting **Video** immediately begins playing the oldest saved video file on-screen, with an overlay of a running clock at lower left and three pieces of information about the file (its position in memory—001 of 004 videos, for example—and the date and time it was recorded) at lower right. **To pause playback** of the clip, press the ▢/◼ button. **To resume playback**, press the ▢/◼ button again. **To begin playing back the next-oldest video clip**, press the ☀ button. **To begin playing back the next-newest video clip**, press the ☀ button.

Selecting the **Photo** line of the **Playback** submenu immediately displays the oldest saved photo on-screen, with three pieces of information about it (its position in memory—001 of 011 photos, for example—and the date and time it was recorded) at lower right. **To display the next-oldest photo**, press the ☀ button. **To display the next-newest photo**, press the ☀ button.

Operating in Playback mode also gives you the opportunity to delete video and photo files individually or in bulk. When a photo or video is on-screen, pressing and holding the ▢/◼ button calls up a screen with two options: **Delete Current** and **Delete All**.

To delete the file of the photo or video currently on-screen, use the ☀ or ☀ button to navigate to and highlight **Delete Current**, and then press the ▢/◼ button to execute the command. The **Delete Current** screen that appears next has two choices: **Yes** and **NO** (highlighted). To delete the file associated with the image currently on-screen, press the ☀ button once to select **Yes** and then press the ▢/◼ button to execute the command.

To delete all media files stored on the MicroSD card, select **Delete All** after pressing and holding the ▢/◼ button. The **Delete All** screen that appears next has two choices: **Yes** and **NO** (highlighted). To delete all media files, press the ☀ button once to select **Yes** and then press the ▢/◼ button to execute the command.

To view recorded videos and pictures on a PC directly from the MicroSD memory card, open the waterproof door on the side of the monitor. Eject the memory card by firmly pushing on it with a fingertip until the card springs back and you hear a click. If you are in Real-Time Viewing mode, the SD card icon with a red slash through it will reappear at the upper left of the display.

Many newer PCs (and flat-screen TVs) are equipped with a slot for a standard-size SD card. If you want to plug your MicroSD card into such a slot, you will need a MicroSD to SD card adapter. They are widely available for $5 or less from most consumer electronics retailers.

Plug the MicroSD card with your recorded inspection videos and picture into the adapter, and then plug the adapter into the SD card slot of your PC or TV.

If you have configured your PC to automatically play external media, plugging in the adapter will open an AutoPlay box that verifies insertion of an "SD card". Clicking on "Open folder to view files" reveals two folders named "DCIM" and "Photo" containing the files of the videos and photos you have captured.

Each video file is stored in a separate folder named "vidXXXX", where X can be any number from 1 to 9. The video files themselves use the YYMMDDXX format to indicate when they were recorded. For example, a file named "141031XX" was recorded on October 31, 2014.

Photo files are also stored in subfolders, but unlike video folders each photos subfolder (with a name such as PIC00X) contains all of the photos captured on a particular day. Photo file names use the same YYMMDDXX convention as video file names. Video clips are in .AVI format and pictures are in .JPG format.

To view recorded videos and pictures on a PC via a USB connection, open the waterproof door on the side of the monitor, using the photos and instructions on p. 10 to guide you. Retrieve the supplied USB cable from the carrying case and insert the mini-USB plug at one end of the cable into the mini-USB jack behind the door. Plug the full-size USB plug at the other end of the cable into a USB port of your PC.

Inserting the USB plug should cause an icon in your PC's system tray to become active. Clicking on the icon opens an on-screen Driver Software Installation dialog box to track the automated process of finding a software driver for the scope's memory. The PC treats the scope as a removable disk drive. The scope responds by replacing the live video on its LCD by a rendering of a USB plug.

When the PC has finished downloading a driver for the scope, the notification "Installing Drivers" will change to "Device driver software installed successfully".

If you have configured your PC to automatically play external media, plugging in the adapter will open an AutoPlay box that verifies connection of a "Removable Disk". Clicking on "Open folder to view files" reveals the same two folders (DCIM and Photo) described earlier.

Before unplugging the USB cable from your PC or the DCS660A, remember to click on the "Safely Remove Hardware and Eject Media" icon in your system tray—just as you would before disconnecting any external storage device.

USING THE SETTING SUBMENU

The **Setting** submenu of the main menu has five submenus of its own (see screen shot at right):
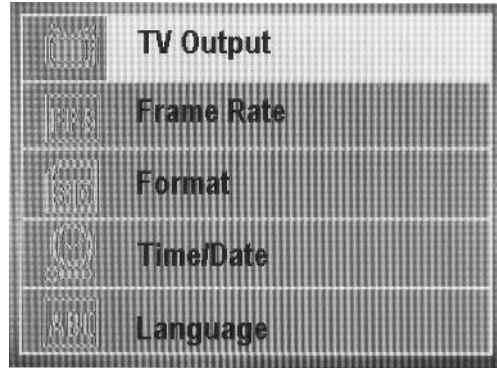
- The **TV Output** submenu lets you configure the analog video output of the scope for viewing on an NTSC or PAL TV. Choose **NTSC** in North America, Central America, Japan, South Korea and Taiwan; choose **PAL** (the default) in Europe, Africa and much of Asia and Africa

- The **Frame Rate** submenu lets you choose a video frame rate of 20 fps, 25 fps or 30 fps.

- The **Format** submenu lets you format a MicroSD card for use with the scope. Formatting any SD card erases all data stored on it.

- The **Time/Date** submenu lets you set the date and local time. Setting the date and time requires sequential setting of three fields in DD/MM/YY (day, month, year) format and three fields in hours/minutes/seconds format. Opening the **Time/Date** submenu produces the **Date Setting** screen with the day value flashing at left. Use the ☼ or ☼ button to adjust the value to that of the current day. Then press the ▣/◪ button to save the setting and move to the month field. Again, use the ☼ or ☼ button to adjust the value and press the ▣/◪ button to save the setting and move to the year field. Once again, use the ☼ or ☼ button to adjust the value and the ▣/◪ button to save the setting.

  Saving the year setting calls up a new, **Time Setting** screen (in hours, minutes, seconds format) with the hours value flashing. Use the same procedure you used to change the three date fields to change the three time fields. The last step—pressing the ▣/◪ button to save the seconds setting—restores the five-line **Setting** menu to the screen. You cannot skip any steps in the six-step Date/Time setting procedure, and you cannot go back to correct any incorrect setting.

- The **Language** submenu lets you choose **English** (default), **Deutsch** (German), **Español** (Spanish), **Français** (French) or **Nederlands** (Dutch) as the language of on-screen menus and prompts.

SPECIFICATIONS

Camera-tipped Probe Type/Diameter/Length	Flexible-obedient/ 8mm (0.31 in.) or 5.5mm (0.22 in.)/ 3.3 ft. (1m)
Probe Minimum Bending Radius	1.77 in. (45mm)
Camera Field of View	54°
Camera Depth of Field (DCS660A)	2.4 in. to 10 ft. (60mm to 3m)
Camera Depth of Field (DCS665)	1.2 to 2.4 in. (30 to 60mm)
Camera and Recording Resolution	640 x 480 pixels (VGA)
Camera Light Source	4 white LEDs
Display Type/Size	Color TFT/3.5 in. (89mm) diagonal
Display Resolution	320 x 240 pixels (QVGA)
Video Out Cable Length	39 in. (1m)
Power Consumption	400mA max @ 6VDC
Operating Temperature	14° to 122°F (-10° to 50°C)@15 to 85% RH
Dimensions of Grip and Console	4.1 x 7.0 x 5.3 in. (104 x 178 x 135mm)
Weight of Grip and Console	1.1 lb. (500g)
Dimensions of Carrying Case	13.0 x 10.5 x 4.5 in. (330 x 267 x 114mm)
Weight of Carrying Case with Instrument, Probe and All Accessories	51.2 oz. (1.45kg)
Power Source	(4) "AA" batteries (not included)

OPERATING & MAINTENANCE TIPS

The Recording Wet/Dry Scope is not shock-resistant. Do not use it as a hammer or drop it. Also, do not use the camera-tipped probe to clear debris

If condensation forms inside the lens, let it evaporate before using the system again.

Remove the batteries if planning to store the unit for months or longer.

The Recording Wet/Dry Scope is equipped with an Auto Power Off (APO) circuit to extend the life of its four "AA" batteries. The APO function will automatically power off the scope following any 30-minute period during which no front-panel buttons are pressed. However, it is good practice to power off the scope whenever you are not "actively" using it. If you do not, the batteries may discharge quickly, in as little as 3 hours.

OPTIONAL PROBES

The table below lists and describes all probes compatible with the Recording Wet/Dry Scope. To order, visit www.generaltools.com.

Model No. (SKU)	Probe Description	Camera Head Diameter	Probe Length	Depth of Field
P608-1SR	VGA Resolution Flexible-Obedient Far-Focus Probe	8mm (0.31 in.) (-1SR included with DCS660A)	1m (3.3 ft.)	2.4 in. to 10 ft. (60mm to 3m)
P608-3SR			3m (9.8 ft.)	
P608-5SR			5m (16.4 ft.)	
P605-1SR	VGA Resolution Flexible-Obedient Close-Focus Probe	5.5mm (0.22 in.) (included with DCS665)	1m (3.3 ft.)	1.2 to 2.4 in. (30 to 60mm)
P605-1ART	VGA Resolution Soft Metal Articulating Probe (with ±90° articulation)	5.5mm (0.22 in.)		
P610-20PR	VGA Resolution Pipe & Duct Inspection Probe & Reel Set (includes handle/belt clip and two stainless steel balls to help guide probe through bends in pipes	10mm (0.4 in.)	20m (65 ft.)	1.2 to 6 in. (30 to 150mm)

WARRANTY INFORMATION

General Tools & Instruments' (General's) DCS660A or DCS665 Wet/Dry Recording Video Inspection System is warranted to the original purchaser to be free from defects in material and workmanship for a period of one year. Subject to certain restrictions, General will repair or replace this instrument if, after examination, the company determines it to be defective in material or workmanship. The warranty period begins on the date of purchase. You are encouraged to register your product online. General will extend your warranty an additional 60 days if you register at www.generaltools.com/ProductRegistry.

This warranty does not apply to damages that General determines to be from an attempted repair by non-authorized personnel or misuse, alterations, normal wear and tear, or accidental damage. The defective unit must be returned to General Tools & Instruments or to a General-authorized service center, freight prepaid and insured.

Acceptance of the exclusive repair and replacement remedies described herein is a condition of the contract for purchase of this product. In no event shall General be liable for any incidental, special, consequential or punitive damages, or for any cost, attorneys' fees, expenses, or losses alleged to be a consequence of damage due to failure of, or defect in any product including, but not limited to, any claims for loss of profits.

Register now at www.generaltools.com/ProductRegistry to receive a 60-day extension to your warranty.

RETURN FOR REPAIR POLICY

Every effort has been made to provide you with a reliable product of superior quality. However, in the event your instrument requires repair, please contact our Customer Service to obtain an RGA (Return Goods Authorization) number before forwarding the unit via prepaid freight to the attention of our Service Center at this address:

General Tools & Instruments
75 Seaview Drive   Secaucus, NJ 07094   212-431-6100

Remember to include a copy of your proof of purchase, your return address, and your phone number and/or e-mail address.

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