

AMD-2500 General Examination Camera

The multi-specialty camera with built-in freeze-frame & polarization



The AMD-2500 video imaging system is the first camera to combine power zoom, auto focus, frame capture and electronic image polarization in one device.



Features

• Power Zoom

Push-button 1-50x zoom allows both close focus and wide angle images.

• Auto Focus

The camera automatically stays in focus for ease of use.

• Freeze Frame

Freeze frame delivers the clearest possible image, making it ideal for both low and high band-width solutions. The integrated freeze frame button on the camera instantly captures an image without the use of a keyboard or mouse.

• Accurate Colors

One-button white balance sets highly accurate colors quickly and easily.

• Polarization

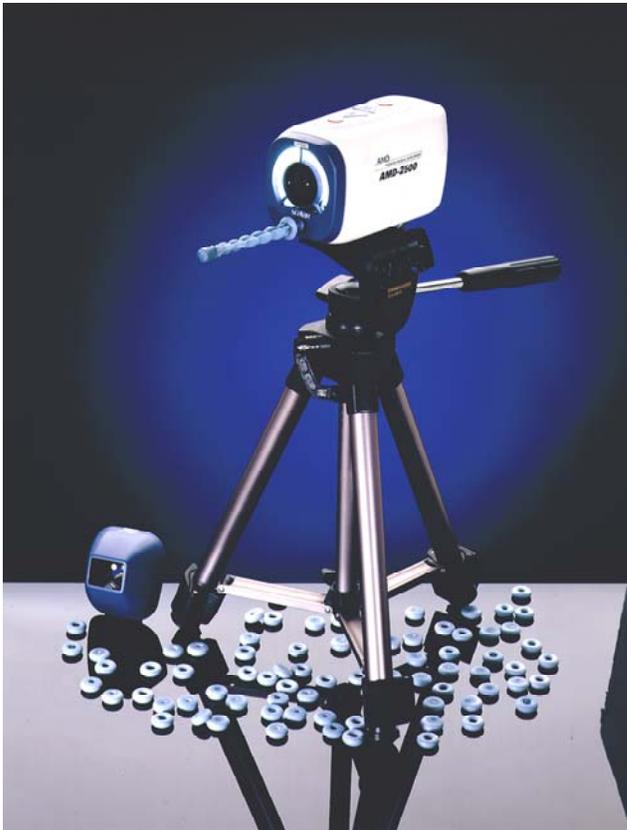
Elimination of surface skin reflection allows camera to see further into epidermal layers.

• Touch and View

The AMD-2500 includes manual or automatic iris control to maximize image brightness.

AMD-2500 General Exam Camera

The multi-specialty camera with built-in freeze-frame & polarization



Options

- Contact 100x polarized lens
- Tripod
- Disposable tip covers for 50x lens
- Table Mount

Specifications

- **Magnification:** Auto-zoom from 1-50X
- **Polarization:** Push-button
- **Zoom:** Push-button
- **Image Device:** 1/4" CCD
- **Horizontal Resolution:** Greater than 470 lines (NTSC); Greater than 460 lines (PAL)
- **Signal to Noise Ratio:** Greater than 50dB
- **Output Signal:** Composite and S-Video
- **Output Format:** NTSC or PAL
- **Integrated Freeze-Frame:** Push-button
- **Color Adjustments:** Auto white balance
- **AGC:** Full iris control
- **Lighting:** Fluorescent
- **Operating Temperature Range:** 0°C - 40°C
- **Operating Humidity:** Less than 90%
- **Power Consumption:** 5W
- **Voltage Range:** 110/220VAC \pm 10%, 50/60 Hz, or 12VDC
- **Dimensions:** 2.2" W X 3.7" D X 2.9"H
- **Weight:** 0.5lbs
- **Lens:** General purpose lens, close focus
50 x polarized lens



AMD-2500 General Examination Camera

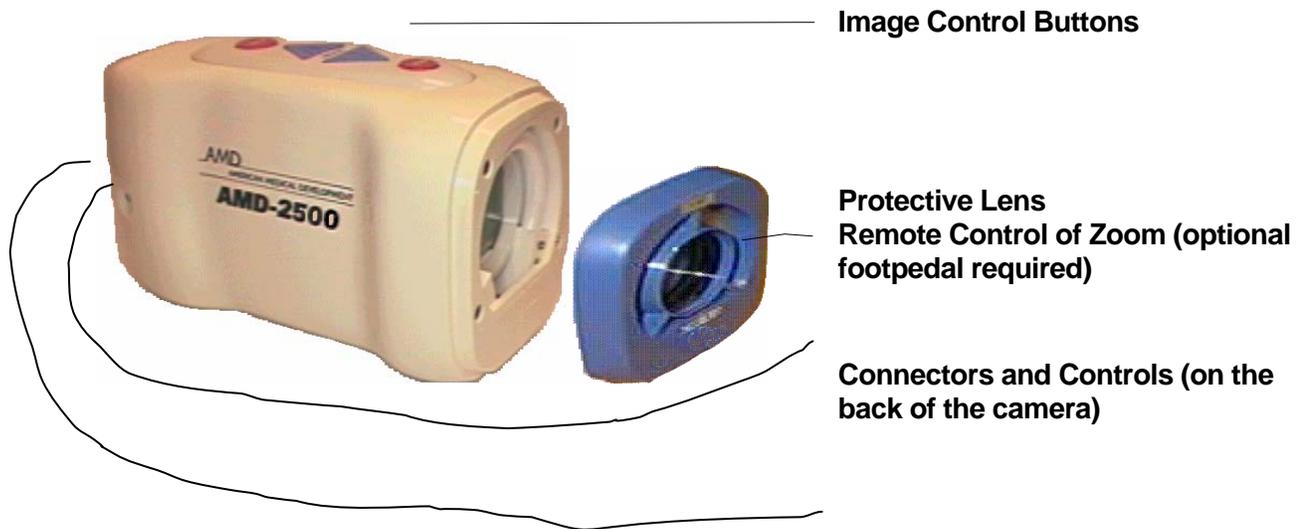


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Introducing the AMD-2500 General Examination Camera

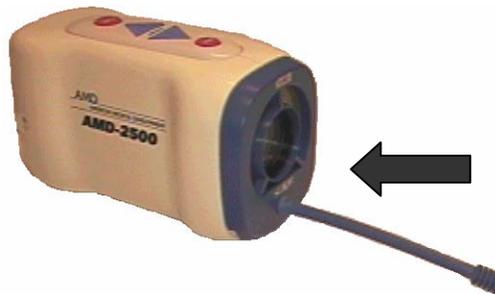
The AMD-2500 General Examination Camera can be used during video-conferencing to examine objects in fine detail. This hand-held camera is compact and lightweight, with all the controls located on the camera; no auxiliary remote control is required. The camera is multi-purpose, and can be used for many applications, including dermatology and dentistry. The small size and built-in controls allow for unobtrusive examination of various areas of the body.



For detailed information about the parts of the AMD-2500, refer to “Sorting Out the Details”.

Zoom Lens

The AMD-2500 has a 50x Zoom Lens. For more information about the Zoom Lens, refer to “Sorting Out the Details”.



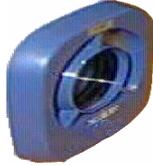
Notes:



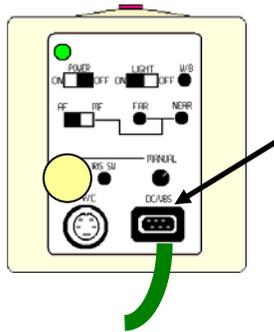
Using the Camera

Setting up the Camera

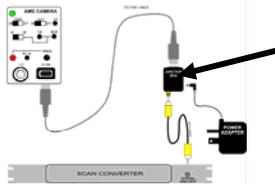
If the AMD-2500 is not set up:



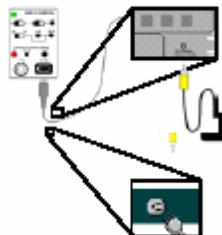
1. If necessary, change the camera lens. For more information, refer to "Sorting Out the Details".



2. On the back of the AMD-2500, make sure that the DC/VBS cable is secure.

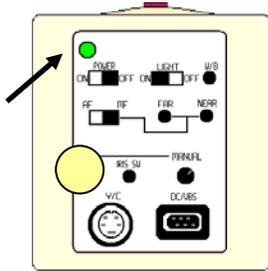


3. Plug the following 3 cables into the AMD junction box:
 - a. DC/VBS cable
 - b. RCA video cable
 - c. Power adapter cord



4. Plug the RCA connector of the video cable into an auxiliary video input port on the video conference system.
5. Plug the power adapter cord into an outlet. The AMD-2500 must only be used with the power supply that ships with the product to ensure labeled safety standards are met. This power supply is manufactured by Jerome Industries, part #WSA112M.

Notes:



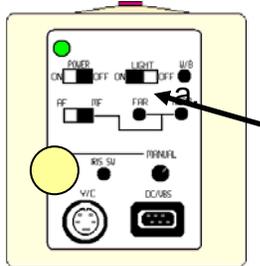
6. Move the POWER switch to ON, move the LIGHT switch to ON and verify that the green power indicator light is on.
7. The AMD-2500 should be inspected for proper operation daily. The AMD-2500 should be cleaned/disinfected after each patient contact (at a minimum of daily).

Notes:

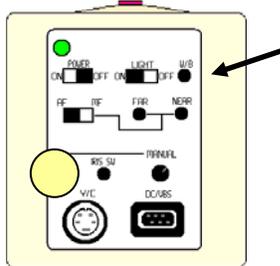


Displaying an Object

1. Every time the AMD-2500 is turned ON, adjust the White Balance.

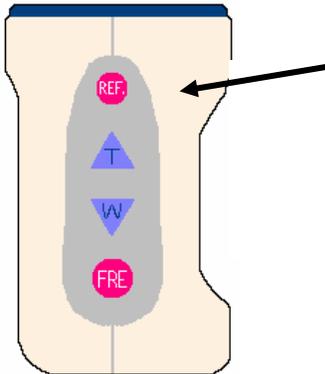


- a) Turn ON the **Ring-Light**, using the LIGHT switch on the back of the camera.
- b) Focus the camera on a white sheet of paper. Fill the screen completely with the image of the white sheet.
- c) Press and hold the **WB** button on the back of the camera and hold still for three seconds.



The colors are automatically rebalanced, for more information about White Balance, refer to “Sorting Out the Details”.

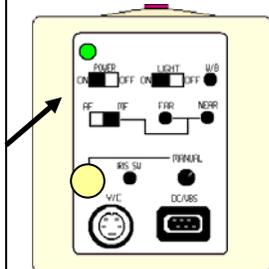
2. Aim AMD-2500 at the object.



- 3. If necessary, adjust the image using the image control buttons on the top of the AMD-2500, as described in “Sorting Out the Details”.

4. When you are finished using the AMD-2500:

- a. Turn the AMD-2500 POWER OFF and turn the LIGHT OFF.



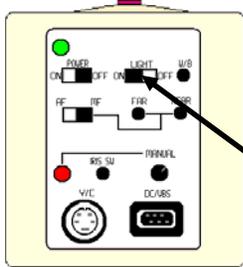
- 5. The AMD-2500 should be inspected for proper operation daily. The AMD-2500 should be cleaned/disinfected after each patient contact (at a minimum of daily).

Notes:



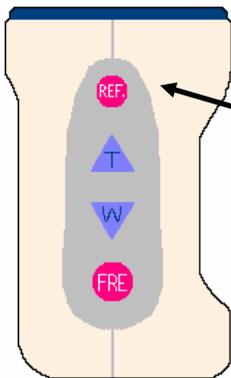
Adjusting the Image

If the image is affected by glare...



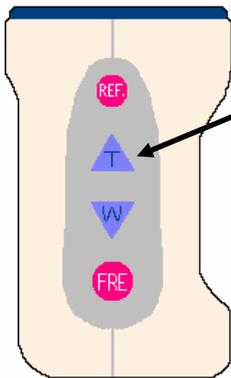
If the image is affected by glare caused by light reflection off of the object, or if there is not much definition in the image:

1. Turn ON the **Ring-Light** using the switch on the back of the AMD-2500.



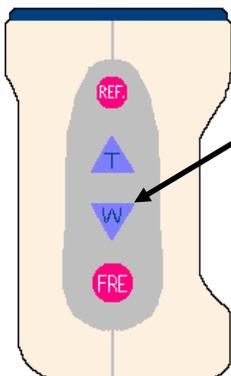
2. Press the **REF** button on the top of the AMD-2500 to toggle the Reflection mode **ON** and **OFF**.

If the image is too small...



1. Center the object in the image window.
2. Zoom in by pressing the **T** button on the top of the AMD-2500.

For more information about the Zoom Lens, refer to "Sorting Out the Details".



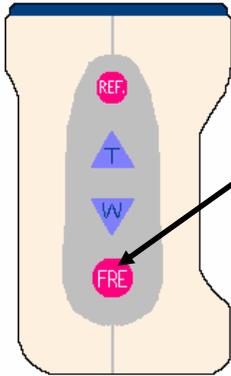
If the image is too large...

1. Zoom out by pressing the **W** button on the top of the AMD-2500.

Notes:



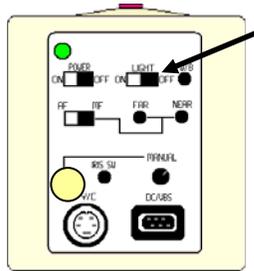
If the image is shaky...



It may be difficult to maintain a still image on the screen due to the movement of the camera. To capture a freeze-frame of the image on the screen:

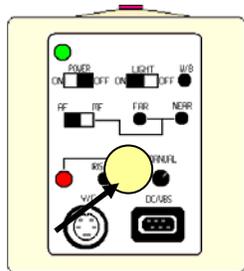
1. Press the **FRE** button on the top of the AMD-2500.

To unfreeze the image shown on the monitor, press the **FRE** button again.



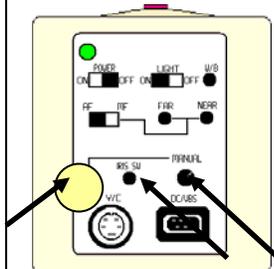
If the image is too dark...

1. Turn ON the Ring-Light using the LIGHT switch on the back on the Examination Camera.



2. If the image is still too dark, make sure that the AMD-2500 is using Automatic Iris control.

The iris indicator light on the back of the Examination Camera should be OFF.

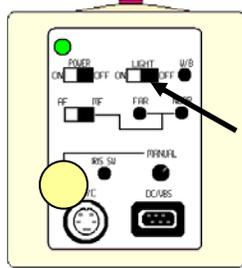


3. If the image is still too dark:
 - a. Press the **IRIS SW** button to disable Automatic Iris Control.
 - b. Turn the Manual Iris dial counter-clockwise to brighten the image.

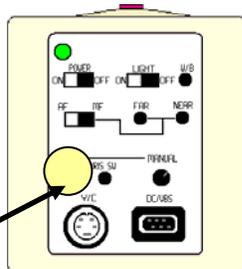
Notes:



If the image is too pale...

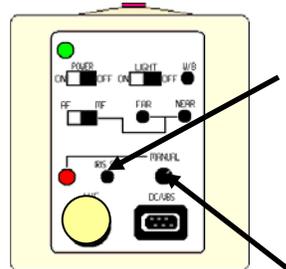


1. Turn **OFF** the **Ring-Light** using the switch on the back of the AMD-2500.



2. If the image is still too pale, make sure that the AMD-2500 is using Automatic Iris Control.

The iris indicator light on the back of the AMD-2500 should be OFF.



3. If the image is still too pale:

- a. Press the **IRIS SW** button to disable Automatic Iris Control.

The iris indicator light on the back of the Examination Camera should come ON.

- b. Turn the Manual Iris dial clockwise to darken the image.

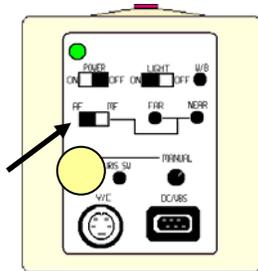
Notes:



If the image is fuzzy...

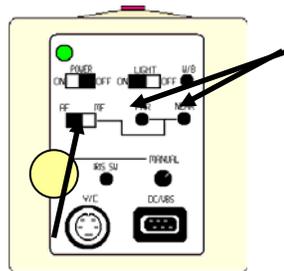


1. If you are using the Zoom Lens, position the object at the end of the flexible rod.



2. Make sure that the AMD-2500 is using Automatic Focus control.

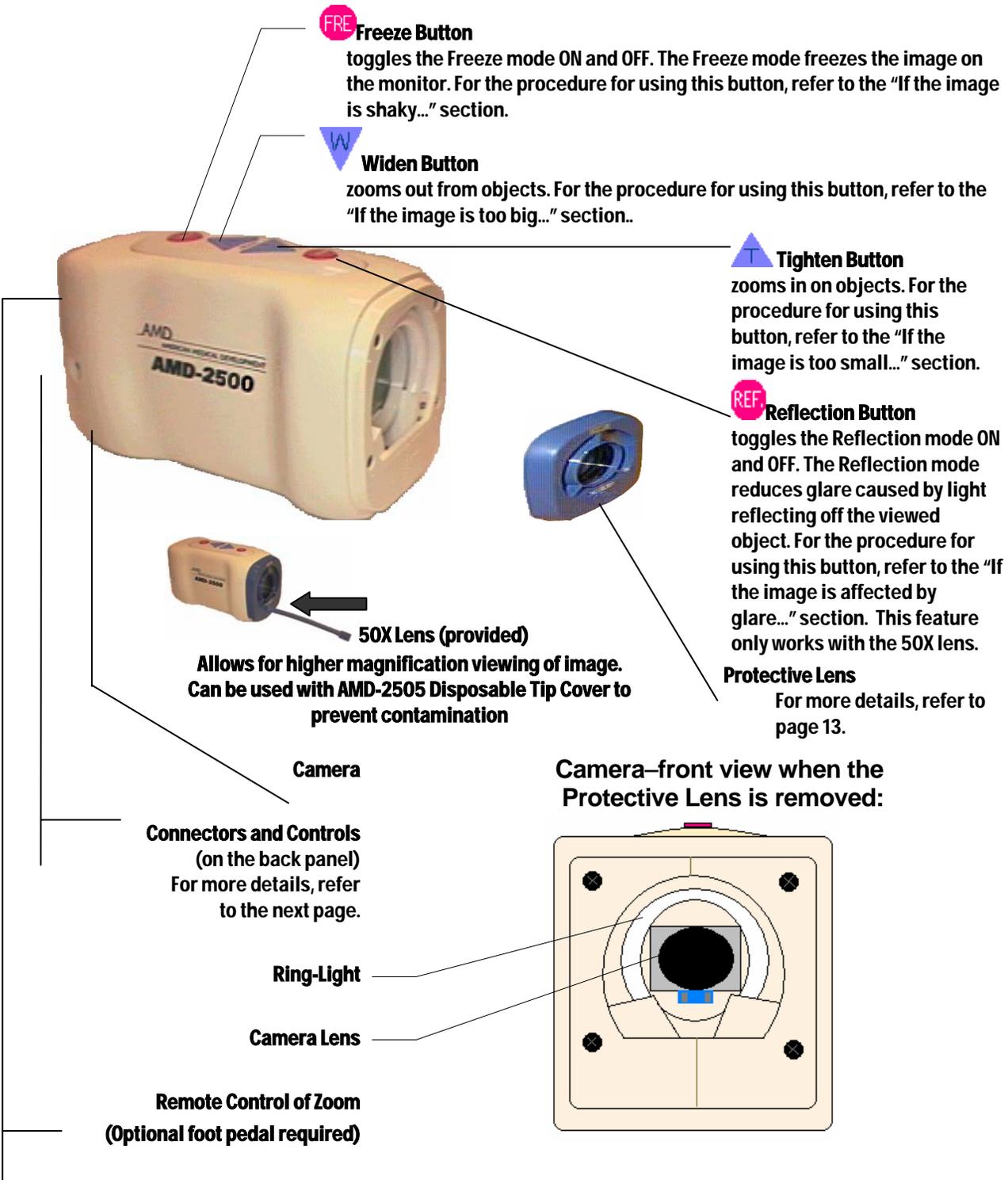
The Focus switch should be set to **AF**.

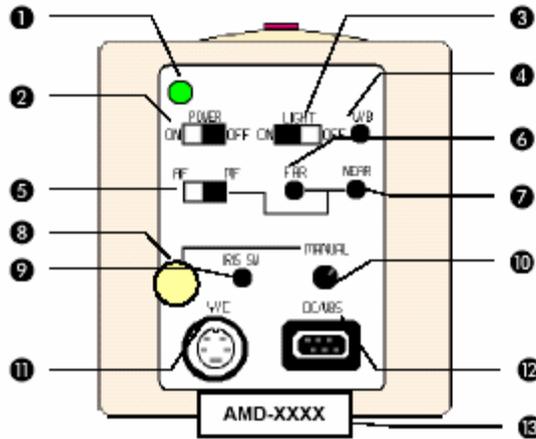


3. If the image is still fuzzy:

- a. Move the Focus switch to **MF** to enable Manual Focus Control.
- b. To manually focus distant objects, press the **FAR** button. To manually focus close objects, press the **NEAR** button.

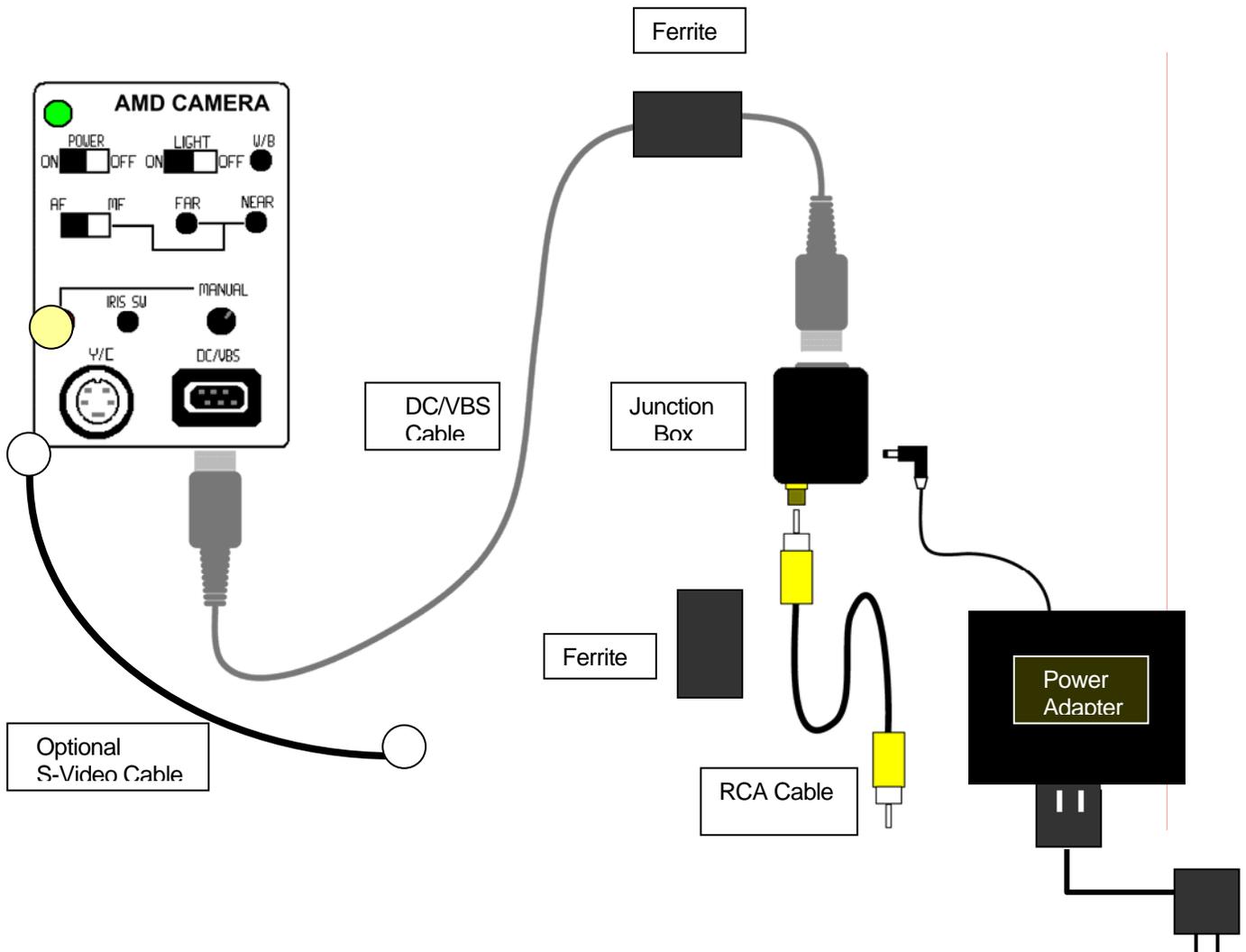
Sorting out the Details





1. **Power Indicator** is illuminated (the green light is ON) when the camera is ON.
2. **Power Switch** turns the camera ON and OFF. The camera should be turned OFF when it is not being used.
3. **Light Switch** turns the fluorescent ring-light on the front of the camera ON and OFF. For the procedure for using this switch, refer to the sections “If the image is too dark...” and “If the image is too pale...”.
4. **White Balance** button automatically rebalances the primary video colors (red, blue, and green) to compensate for different lighting types. If your image has a reddish or bluish tint, you should correct the White Balance. For the procedure for using this button, refer to “Displaying an Object”.
5. **Focus Switch** switches between Automatic Focus (**AF**) and Manual Focus (**MF**). When set to Automatic Focus, the camera focuses on objects automatically. When set to Manual Focus, the **FAR** and **NEAR** buttons are used to focus on objects.
6. **FAR** manually focuses the camera on distant objects.
7. **NEAR** manually focuses the camera on close objects.
8. **Manual Iris Indicator** is illuminated (the yellow light is ON) when Manual Iris Control is ON.
9. **Iris Button** switches between Automatic Iris Control and Manual Iris Control. When set to Automatic, the camera automatically controls the iris. When set to Manual, the Manual Iris Dial is used to control the iris.
10. **Manual Iris Dial** manually controls the iris, allowing you to adjust the brightness or darkness of the image. For the procedure for using this dial, refer to sections “If the image is too dark...” and “If the image is too pale...”.
11. **Y/C Port** is used with a videoconference system requiring an S-VHS input. (optional cable required)
12. **DC/VBS Port** supplies power to the camera and sends video signals from the camera to the videoconference system. For connection details, refer to “Cable Connections” on the next page.
13. **Serial number of product:** Unique number identification of product.

Cable Connections



The AMD-2500 is attached with a **DC/VBS** cable to a **junction box**.

There are two additional connections from the junction box; the RCA cable plugs into the **external video input** of the videoconference system, and the **power supply** plugs into a power cord, which plugs into an electrical outlet.

For details on connecting the cables, refer to the procedure outlined in "Setting up the Camera".

Zoom Lens

The AMD-2500 has two interchangeable lens:



The Protective Lens provides protection for the camera lens and the ring-light.

The **50x Zoom Lens** provides 50x magnification for a closer look at objects. This lens has a flexible rod that indicates the focal point of the lens. When you use this lens, place the tip of the rod gently on the object to be viewed, and the camera will maintain focus as the camera zooms in or out.

The AMD-2505 Disposable Tip Covers can be used to protect the flexible tip of the 50x lens against contamination. These tip covers should be replaced/ disposed of properly as local rules govern after each patient contact. These tip covers “roll out” condom-style for installation.

* Local rules may require these contaminated tip covers to be treated as hazardous waste.

To remove a lens:



1. Place your fingers in the indent on the lower left corner of the lens.
2. Pop the lens off.

To attach a lens:



1. Position the lens on the front of the camera.
2. Snap the lens in place.

AMD-2500 Product Specifications

There are no user serviceable or repairable parts inside the unit. The unit must be returned to AMD for repair.

Magnification (14" screen)	Zoom 1-50x (auto focus), 200x (optional)
Light Polarization	Yes
Pixels	½ inch; 410,000 pixels
Resolution (horizontal)	>430 lines
Signal-to-Noise Ratio	>48 db
Output format	NTSC
Output signal	Composite NTSC (BNC) & S-VHS
On-board freeze	Yes
Color adjustments	Auto white balance
Auto Gain Control	Full iris control
Lighting	Built-in fluorescent
Operating temperature	0°-40° C
Operating humidity	< 90%
Power Supply Output Power	12VDC 1.25 A.
Power Supply Input Voltage	100-240 VAC 50-60Hz, 40VA
Power Supply Rating	Approved to UL 544/2601.1, cUL(CSA)22.2#125/601.1, TUV EN60601.1 + CE LVD The AMD-2500 must only be used with the power supply that ships with the product to ensure labeled safety standards are met. This power supply is manufactured by Jerome Industries, part #WSA112M.
Camera Dimensions (w x d x h)	2.2" x 3.7" x 2.9"/5.588cm x 9.398cm x 7.366cm
Camera Weight	0.5 lbs./ .23kg
Camera Cleaning/Disinfection	Camera surface and lens can be cleaned using a cloth moistened with a mild detergent, or a cloth dampened with Ethyl alcohol. The AMD-2505 Disposable Tip Covers can be used to protect the flexible tip of the 50X lens against contamination. These tip covers should be replaced/disposed* of properly after each patient contact. The tip covers "roll out" condom style for installation.
Maintenance	There are no user serviceable or field repairable circuits, return to factory for repair
Optional Equipment: AMD-2510	200x Zoom lens attachment, clip-on style for use when higher magnification is required
AMD-2505 (500/box)	Disposable tip cover (sheath) for 50x lens
AMD-2525	Tripod for fixation of camera

* Local rules may require that these contaminated tip covers be treated as hazardous waste.

Power Supply Safety Ratings



Type



Read all instructions provided



Class



Indoor

Connecting the AMD-2500 General Examination Camera

Follow the diagram below to connect the AMD-2500 Camera to your Video System.



AMD-2500



Video System



Camera cable

Junction Box

Video cable



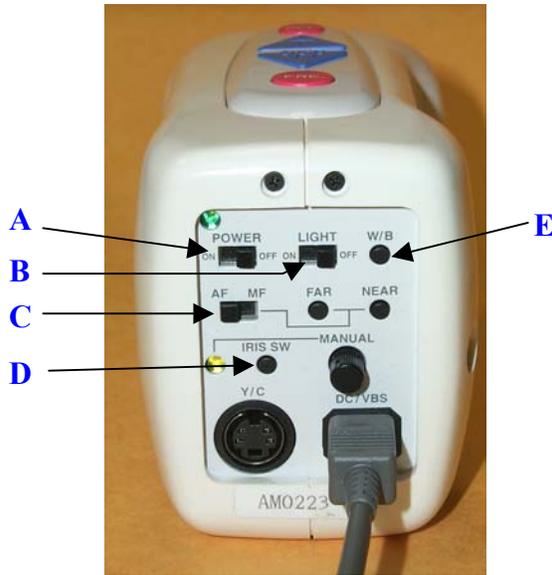
AC 110-220V, 50-60Hz

Power cable



Power Transformer

Start-Up and Operation Procedure AMD-2500 General Examination Camera



AMD-2500 Back view



AMD-2500 Top view

Start-up Procedure

1. Turn **POWER** switch to “ON” (A)
2. Turn **LIGHT** switch to “ON” (B)
3. Set **AF/MF** switch to “AF” (C)
4. Be sure that **IRIS SW** light is “OFF” (D)
5. On the telemedicine workstation, select the “Patient Camera” video source
6. It is best to show the image from the Patient Camera as the large picture on your screen, not as the Picture-in-Picture (PIP)
7. Zoom all the way out by holding down the blue **W** button (H)
8. Point the camera at a blank sheet of white paper and hold approximately 13 cm (5 inches) away. Press the **W/B** button then hold the camera still for 3 seconds (E)

Operation Procedure

10. Zoom out to view the image at sufficient distance to show a good overall view (H)
11. Freeze the image by pressing the red **FRE** button (I)
12. To unfreeze the image, press the red **FRE** button again (I)
13. Zoom in at small increments by pressing the blue **T** button (G)
14. The light polarization feature that eliminates glare will default to “ON”
15. To better view surface structures, press the red **REF** button to turn the light polarization “OFF” (F)

