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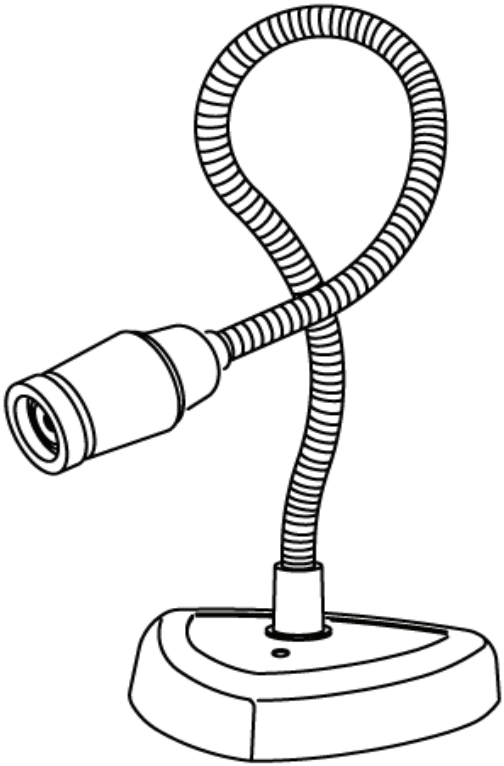
KNOWLEDGE THROUGH VISION

Video Flex 7000 Series

Instruction Manual
7100
7100P
7200HD
7300
7300P
7600
7600P



Thank you for your purchase of a Ken-A-Vision Video Flex® 7000 series camera! You have acquired a high resolution solution to any presentation need, be it classroom or conference room. Images captured by your camera will be transmitted directly to your TV/Monitor, Projector, or VCR or through your computer to a Projector, DVR, Flash Drive or other digital device. The 7600, 7600P, and 7610 may be used as an analog/video device, a digital device, or both simultaneously. The 7200HD is a high definition digital device designed to connect via a single USB cable.

As you unpack your unit it should include the following parts besides the camera itself.

7600/7600P

- 7600 Units Formatted for NTSC Operation
- 7600P Units Formatted for PAL Operation
- Appropriated Power Supply
- RCA Composite Video and Audio Cable
- S-Video Cable
- USB 2.0 Cable
- 28mm Microscope Adapter
- Applied Vision™ Software CD
- Applied Vision Manual
- Video Flex Instruction Manual
- Carrying Case

7610

- Same parts as 7600 with the followinng **exception**:
- Does NOT include Carrying Case

7200HD

- Attached USB Cable
- Powered by USB, No Seperate Power Supply Required
- 28mm Microscope Adapter
- Applied Vision™ Software CD
- Applied Vision Manual
- Video Flex Instruction Manual

If any components are missing, please contact your authorized Ken-A-Vision® dealer.

Setting up and using Your Video Flex® is as Easy as 1, 2, 3...

1. Connecting the Video Flex® to Power Supply

7600, 7600P, 7610:

First prepare your switching (automatically switches from 110v to 240v) power supply for camera use. Remove it from its packing, and select the appropriate male plug for your locality. (In USA it is a standard 2-prong plug) Put the 'box' of the plug in one hand, and then slide the appropriate male plug into position on the "box". (It will only go on in one direction without excessive force).
Now plug the small, round male plug at the other end of the power supply, into the Video Flex® camera, in the slot marked PWR, in the middle back of the unit.

Plug the Video Flex® camera unit into your power source. If unit was purchased or shipped to the country of use, the plug has the correct male adapter and is rated for the correct voltage.

Push the button on the top of unit and light comes on and your Video Flex® unit is now powered.

Should you need a replacement power supply, contact Ken-A-Vision or your dealer. When using internationally, be sure to use the correct AC input voltage either 110V, 220V, or 240V output voltage. For your Video Flex to operate

correctly, it should be operated at between 5V-16V with a minimum of 500mA. Substitution or use of non-Video Flex® parts may void your warranty.

7200HD:
This digital camera is powered by the attached USB connected to the unit, and in order to power the USB Plug must be inserted into the USB port of your computer. In general it is better to wait until you have loaded the Applied Vision™ Software on your computer before powering up your unit.

2. Connecting the Video Flex® to an Output Device:

7600, 7600P, 7610 analog/video connection:

Composite Connections;
Connecting the Video Cable (RCA type Composite, yellow is for video, red is for audio). Simply connect the yellow video composite connector into the "video-in" on your TV/Monitor, VCR or Projector (output device). Connect the other end of the composite cable to the yellow "C-VID" female plug on your Video Flex® camera unit (plug is located on back of unit, slightly left of center). If unit is powered up and red light of unit is on, the video image from camera should appear on your output device.

S-Video Connections:
The S-Video cable is a 4-pin cable which plugs into the rear of your Video Flex® camera unit. Simply connect S-Video connector into the "S-Video-in" on your TV/Monitor, VCR or Projector (output device). Connect the other end of the S-Video cable to the "S-VID" female plug on your Video Flex® camera unit (plug on back of unit, at the far left of center). If unit is powered up and red light of unit is on, video image from camera should appear on your S-Video output device.

- TV/Monitor
  Connect the composite (RCA type) yellow video cable or the S-Video cable from the Video Flex® camera into the "Video In" connector of the TV/Monitor. If no "Video-in" is available, you may need an RF Modulator or a VCR recorder. See owner's manual of TV/Monitor for operating procedures. (Commonly TV/Monitor must be set on "AUX" for auxiliary).

- VCR (Recorder)
  Connect the composite (RCA type) yellow video cable or the S-Video cable from the Video Flex® camera into the "Video-In" connector on the

VCR. Connect VCR cables from your VCR to TV. See owner's manual of VCR for operating procedures.

- Projector
  Connect the composite (RCA type) yellow video cable from the Video Flex® camera into the "Video-In" connector on the video projector. See owner's manual of video projector for operating procedures.

72000HD, 7600, 7600P, 7610 digital connection:
Prior to connecting the USB cable, you must first install the supplied software. Please see the Applied Vision™ Software booklet provided with the enclosed software CD.

Once the software is loaded onto your computer, connect the USB cable to the computer with the standard USB plug.

Click on the desktop icon for the software, follow simple instructions and the camera should show an image on your computer screen. See Applied Vision™ Software Manual if there are any problems with an image. You are ready to go!

Note[1]: Power supply must be connected even when 7600/7600P/7610 unit is connected via USB. The USB connection alone provides enough power to operate the 7200HD, and no additional power is required.

3. Capture and store images:

If you have are using an analog/video unit (7600/7600P/7610) on analog use only, you may record images to a VCR or other comparable analog unit. If you are using a 7200HD, or 7600/7600P/7610 connected digitally, images may be recorded to a computer, DVR, Flash Drive, CD or similar digital unit using Applied Vision Software. Applied Vision allows you to capture still images, a sequence of time lapse images, a time lapse movie, or a full motion movie. Images may also be captured and retained using the camera function on an Interactive White Board (IWB).

4. Picture quality adjustment

- Brightness/Contrast:
  7600, 7600P, 7610 (analog mode)
  The amount of light can be adjusted using the manual contrast controls on the base of the Video Flex®. There are two sunburst buttons that allow

you to adjust the brightness. Hold down the desired button until desired clarity is achieved.

Models 7600, 7600P, 7610 (digital mode), 7200HD
Brightness and contrast may be adjusted independently using Applied Vision™ Software. At the lower left corner of the image find a button entitled "Color Balance" Clicking on this button will open a set of sliding scales on bottom of image which will allow adjustment of Brightness, Contrast and Saturation. Slide these back and forth while watching the image to find the desired image quality.

- Positive/Negative Image:
  7600, 7600P, 7610 (analog mode)
  These units have a positive/negative switch located on the base which allows the video image to be reversed, like film negatives or a darkfield control on microscopes. This feature is excellent for multi-media applications and use in forensics. Use the contrast controls to adjust the contrast while in the negative/positive mode.

  Models 7600, 7600P, 7610 (digital mode), 7200HD
  On the 7600/7600P units, the switch on the base can be used even when the camera is in digital operation. But additionally the positive/negative image may be toggled on/off using the Applied Vision™ Software. (If your version of Applied Vision™ Software does not have this feature you may have an older version, download a newer version from the Ken-A-Vision web site).

- Fluorescent control:
  7600, 7600P, 7610 (analog mode)
  On these Video Flex® units a fourth button labeled "iris" can be used to help eliminate the image flicker found with certain fluorescent lighting conditions. When using this feature with a microscope, it may be necessary to adjust or filter the light on the microscope, for the correct amount of light. This can be accomplished with the iris on the microscope 5-hole diaphragm or by using frosted filters. Under prolonged fluorescent lighting conditions, color may slowly change.
  Please note that touching either contrast control button will disable this capability.

  Models 7600, 7600P, 7610 (digital mode), 7200HD
  Fluorescent control may be found in the Applied Vision™ Software. (If your version of Applied Vision™ Software does not have this feature you may have an older version, download a newer version from the Ken-A-Vision web site).

5. Video Flex® Lenses

Your Video Flex comes with a threaded C-mount 8mm lens. Optional lenses may be purchased separately from Ken-A-Vision, including a 4mm (VF4MM) for wide angle applications, 16mm (VF1614), 25mm (VF25MM) or 50mm (VF50MM) to increase focal distance. You can also use 35mm camera lenses, provided you have the appropriate adapter. An extension tube can be added for extra detail magnification. The C-Mount style camera lens provides a quick and easy method of changing from one lens to another.

- Changing the camera lens:
  A standard 8mm lens is assembled on each camera. To change the lens, simply extend the lens by rotating in a counter-clockwise rotation until fully extended. Apply a small amount of additional force in this same direction to free the lens. Screw on the new lens, and as threading seems to reach end of natural course, apply a **small** amount of additional force to lock it in place. Rotate the lens back in a counter-clockwise direction to ensure it extends, rather than unscrew. If it unscrews, re-tighten in a clockwise direction, adding an additional amount of force to lock it in place.

6. Focusing:

The Video Flex® uses the patented Quick Focus® C-mount lens. The focusing ring, located on the camera head, is similar to that of a 35mm camera. The new ergonomic design makes focusing with one hand a snap. Just a 1/4 turn of the focus ring adjusts focus from close-up to infinity.

When using the standard 8mm lens, the light will automatically be adjusted for optimum viewing conditions, depending on the available light and options in use. When using the optional 16mm manual iris lens (VF16MM), open the iris until you have sufficient light to show the image on the monitor. Then, adjust the focus ring until your image is crisp. Once you have a crisp image, you may want to readjust your manual iris, to achieve the best image possible.

7. Optional Polarizing Adapter:

- The Microscope Polarizing adapter kit (VFEAPKO) allows you to turn any microscope into a polarizing microscope. Place the polarizing eyepiece adapter over the microscope eyepiece and connect the Video Flex, slip the polarizing film between the slide and the light source, and rotate the polarizing eyepiece to reveal the polarizing light spectrum.

8. Connecting the Microscope Eyepiece Adapter:

The Video Flex® as shipped includes a 28mm microscope eyepiece adapter that allows your Video Flex® to be coupled with microscopes or other objects which have eyepieces. The 28mm adapter included will fit most compound microscopes. Using the Video Flex® without the adapter will fit most stereo (dissecting) microscopes (34.5 mm).

NOTE: Before installing the microscope eyepiece adapter, measure the size of the outside diameter of the microscope eyepiece to be sure the adapter will fit over the end of the eyepiece. Remove the rubber eyecup if present.

1. Place the microscope eyepiece adapter over one of the microscope's eyepieces. If there is a rubber eyecup on the microscope eyepiece, it should be removed first. If there are two eyepieces on your microscope, light entering the open eyepiece will not cause any problems with imaging.

2. Attach the Video Flex® to the eyepiece adapter by gently sliding the Video Flex® camera head onto the eyepiece adapter, aligning the microscope adapter with the inside opening of the Video Flex® camera (inside the knurled focusing ring).

Note: Use only genuine Video Flex® parts and accessories. All Ken-A-Vision parts provided are made specifically for the Video Flex® and failure due to use of non-Ken-A-Vision parts will void the warranty!

9. Lighting:

Your Video Flex® operates using ambient, room light. If using camera in a severely darkened room, supplement the light entering the camera by using a penlight, flashlight or small lamp near the camera, so that there is more local input light for the camera to work with.

Never point your Video Flex® at direct sunlight. Subjecting the Camera "eye" to direct sunlight will discolor the filter over the CMOS chip causing aberrant colors and or permanent focusing problems. It may even destroy the camera's ability to capture an image.

Video Flex® Specifications

Base	Triangular Poly-carbonate
Neck Length	25" (63.5 cm)
Head	Ball & Socket
Lens	8mm C-Mount 1/4 Quick FocusTM
Magnification	Approximately 50:1 at 1 (2.5cm) from object
Focal Distance	1/4" to infinity
Resolution	500 lines (7100/7100P, 7300/7300P, 7600/7600P 640 x 480 (7600/7600P Digital) 2048 x 1536 (7200HD)
Eyepiece Adapters	28mm & Built-in 34.5mm
Warranty	5 years

Video Flex® Accessories

Expand the capabilities of your Video Flex with accessories. Additional accessories are available on our website at www.ken-a-vision.com.

Replacement Parts

VFPSUSA.....Power Supply 1100
VFEA280.....28mm Eyepiece Adapter
VFC12AV.....12' Audio/Video Cable
VF8MM.....8mm Lens

Ken-A-Vision has over 65 years of history providing quality products to institutions world wide. We stand behind our workmanship and offer an unbeatable warranty. We offer products for education, lesson plan ideas, technical support and certified microscope repair. If you have questions about how our repair facility could serve your repair needs, please contact Ken-A-Vision at (816) 353-4787 or e-mail us at info@ken-a-vision.com.

To learn more about our company's products and services please visit our web-site: www.ken-a-vision.com.

Camera complies with Class A and B, part 15 of the FCC Rules.
Use only Ken-A-Vision Video Flex parts. The Power Supply and Charger are made exclusively for the Video Flex. Failure to use non-Video Flex parts will void your warranty.

INFORMATION TO THE USER Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio reception which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: Reorient or relocate the receiving antenna and/or increase the separation distance between the equipment and the receiver, and/or connect equipment into an outlet on a circuit different from that which the receiver is connected; and/or consult your dealer or experienced radio/ TV technician for help.

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