

Canon AV-1



E

INSTRUCTIONS

MAIN FEATURES

If you don't yet know what this camera can do, reading the following will give you a quick idea. The AV-1:

GIVES YOU GREAT PICTURES EVERY TIME

- With Canon FD lenses
- With Canon FL lenses
- With Canon accessories for getting closer to little things
- Even with light behind your subject

All you do is turn the aperture ring on the lens to set an aperture, focus and press the shutter button. The camera does all the rest. Your photo will have just the right brightness—not too light, not too dark—and beautiful detail. When light is behind your subject, you only have to push an extra switch.

GIVES YOU BEAUTIFUL PICTURES INDOORS

- With Canon Speedlite 133A
- With Canon Speedlite 155A
- With Canon Speedlite 177A
- With Canon Speedlite 199A

You slip one of these flashes onto the AV-1, set an aperture on the flash, and set that same aperture on the lens. The flash will give just the right amount of light for your subject.

SHOOTS CONTINUOUSLY AT ABOUT TWO FRAMES PER SECOND

- With Canon Power Winder A

All you do is attach this compact accessory to your AV-1 and shoot as usual.

EXPANDS ITS RANGE

- With nearly fifty Canon FD lenses
- With special lenses
- With close-up accessories
- With many other system accessories

IMPORTANT—READ THIS NOTICE

You are the new owner of a Canon AV-1. The AV-1 is an aperture priority automatic exposure (AE), single-lens reflex (SLR) camera. What this means is that this camera is simplicity itself to operate while it gives professional-looking pictures. All you have to do is:

- 1) Mount the lens (pp. 12-14).
- 2) Load and check the battery (pp. 16-18).
- 3) Follow the simple steps in the chapter entitled "General Usage".

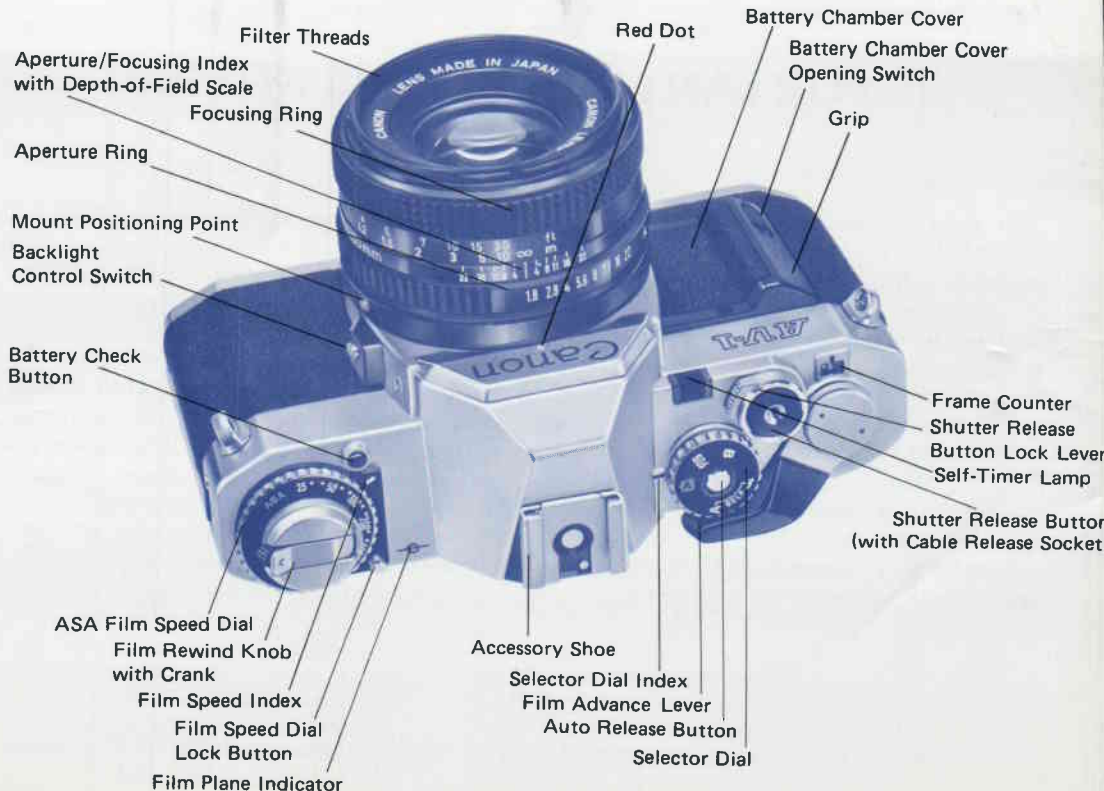
Once you have done these three things, you will know all you absolutely have to know to take beautiful pictures.

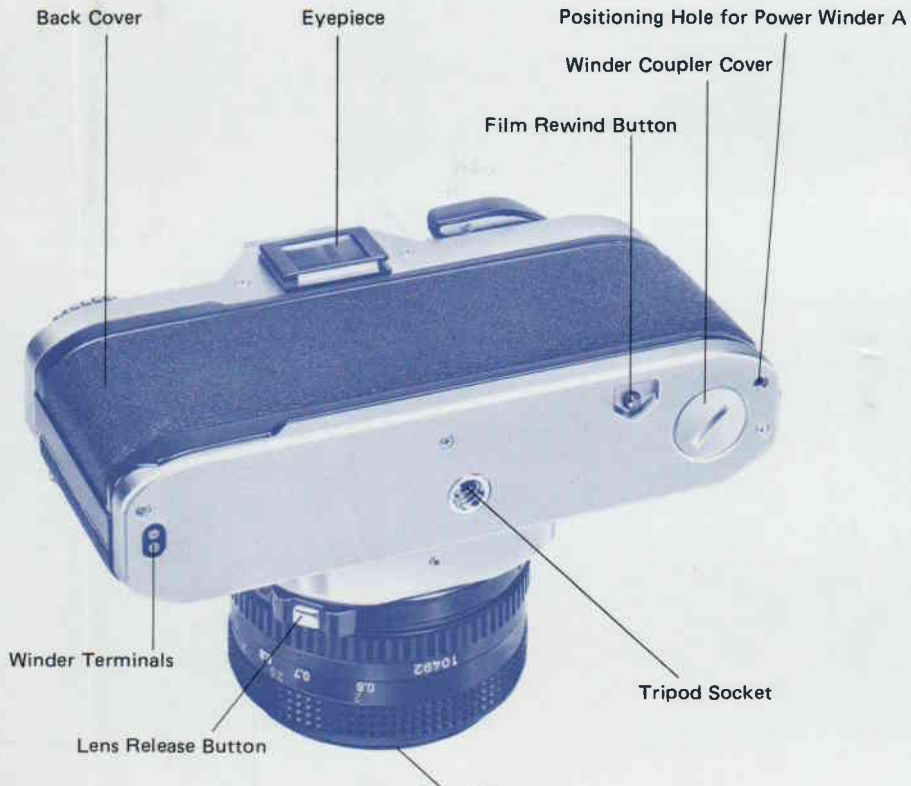
The chapter entitled "Applied Usage" is for reference when you want to do something special or when you want to know a little more about photography. Use it as you need it.

To avoid wasting good film, it is a good idea to play with the camera a little before loading your first roll. Operate the shutter release button and the film advance lever (page 19) and practice holding the camera properly (page 30) until everything seems natural.

Now dig in and, above all, enjoy yourself. Welcome to the Canon world of photography.

Fold out both front and back nomenclature pages for easy reference while reading the instructions. 







Whether you want to shoot a large number of people in a small room or a bird's nest at a far distance, there is a Canon FD lens to solve your problem. You can fill your picture with a small flower or insect using some combination of over thirty close-up accessories. If you have a special problem with viewing or focusing, there are accessories to make that easier too.





1

Load the battery. (See page 16)



2

Check the battery power level.
(See pages 17-18)



3

Turn the shutter button lock level to "A". (See page 19)

SIMPLE STEPS FOR NORMAL SHOOTING

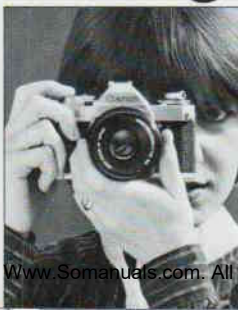
Set an aperture by turning the lens aperture ring. (See page 26)

7



Look into the viewfinder. Compose the picture and focus. (See page 32)

8



Press the shutter release button halfway to check the exposure.

9

(See pages 28-29)

Out of focus



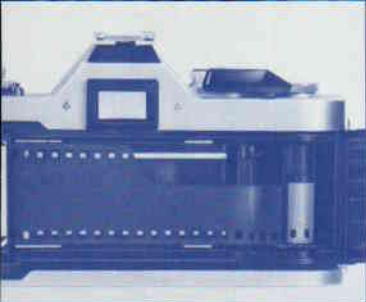
In focus

Overexposure



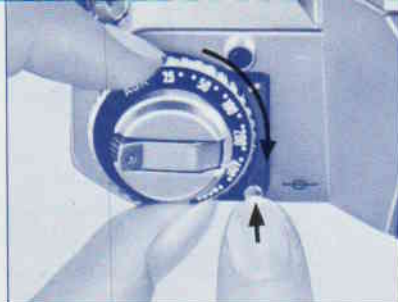
Camera shake likely

Underexposure



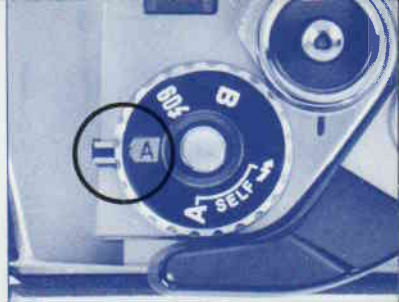
4

Load the film and advance it to the first frame. (See pages 22-23)



5

Set the ASA film speed. (See page 24)



6

Set the selector dial to **A**. (See page 25)

Use this outline for quick reference after you have read "General Usage."
These twelve simple steps are all you have to do.

Press the shutter release button all the way for shutter release.

10 (See page 34)

Wind the film to the next frame. (See page 34)

11

At the end of the roll, rewind the film. (See page 35)

12



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Preliminary Preparations



Plastic Insert

Sharply pull up the film rewind knob to open the camera's back cover. Remove the plastic insert, which is attached to the pressure plate, and snap the back cover shut. The insert is no longer necessary and may be thrown away.

This camera is designed for use with Canon FD and FL lenses. Shooting with FD lenses is described in the chapter entitled “General Usage”. For instructions on how to shoot with an FL lens, please see page 57.



HANDLING THE LENS

Lens Cap and Rear Dust Cap

The front and rear lens caps should always be on the lens when the lens is not on the camera. For protection when the lens is mounted on the camera but not in use, please see to it that the front lens cap is attached.

Lens Cap

Most Canon lenses are provided with a clip-on front lens cap which is easily attached and removed from the front of the lens by pressing in the tabs on both sides of the cap. This type

of cap may also be attached to a Canon filter screwed into the lens.

Rear Dust Cap

The rear dust cap must be removed before mounting the lens.

Operation with an FD lens which lacks a chrome Breech-lock mount ring: Removal from Lens

1. Turn the cap counterclockwise until it stops.
2. Pull the cap out.



Reattachment

1. Align the arrow on the cap with the red dot at the rear of the lens.
2. In that position, apply slight pressure to the cap and turn it clockwise until it is tight.

The rear dust cap for this type of lens has serrated edges. Do not mount a rear dust cap which lacks the serrated edges.

Operation with an FD lens which has a chrome Breech-lock mount ring or with an FL lens:

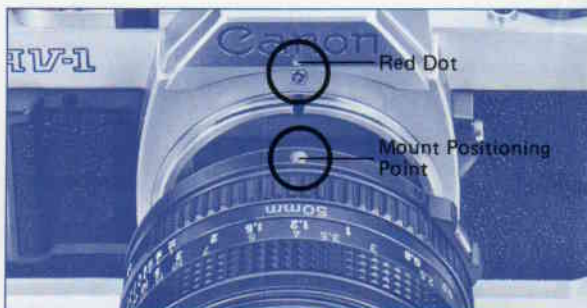
Removal from Lens

1. Turn the lens' mount ring clockwise until it stops.
2. Pull the cap out.

Once the rear cap is removed, the Breech-lock mount ring is locked so that it cannot be turned. (The diaphragm blades are also locked and will not move even if the aperture ring is rotated.)

Reattachment

1. Make sure the mount ring is locked so that it cannot be turned.
2. Align the arrow on the cap with the red dot on the lens' mount ring.
3. In that position, push lightly down on the cap and turn the mount ring counter-clockwise until it is tight.



Hood

When shooting into bright light, light rays entering the lens may form defects on the image called ghost and flare. Attaching a hood onto the lens helps to prevent this. Bayonet-mount hoods are available as optional accessories for most Canon lenses. Please use only that hood which is specified for the lens concerned. This type of hood fits into the bayonet mount at the front of the lens where it is fixed by turning until it is tight. Some hoods for wide-angle lenses require proper positioning before mounting. Align the red dot on this type of hood with the notch in

the bayonet mount at the front of the lens. Then lightly push the hood into the mount and turn it until it is tight.

Mounting on the Camera and Dismounting

Before mounting an FD lens, check the setting of the lens' aperture ring. If it is set to the "A" mark on the aperture scale, remove it from that mark by rotating the aperture ring to any other position while pressing the AE lock pin (see page 27 for explanation).



Operation with an FD lens which lacks a chrome Breech-lock mount ring: Mounting

1. Remove the lens' rear dust cap and the camera's body cap.
2. Align the projecting red mount positioning point on the lens with the red dot above the camera mount.
3. In this position, apply slight pressure to the lens, and simply rotate the whole lens clockwise until it stops and the lens release button pops out with a click.

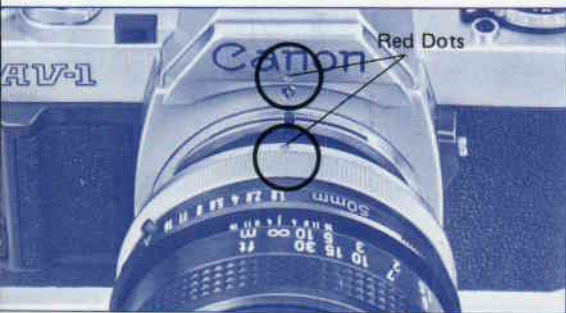
Do not press the lens release button while mounting the lens. Only when this button pops

out can you be sure that the lens is properly mounted and that it will function properly. It is also possible to mount this type of lens when it is not perfectly aligned with this camera. To facilitate mounting when it is very dark or when you are in a great hurry, the mount positioning point is rounded. Simply find this point with your finger and align it as closely as possible with the red dot on the camera. Turn the lens slightly back and forth while applying slight pressure until it drops into position and continue with step 3 above. Excessive sloppiness will make mounting impossible; please be as-accurate as possible.

Dismounting

1. Turn the lens counterclockwise until it stops while pressing the lens release button.
2. Pull the lens out.

When the lens is dismounted, the diaphragm blades are locked in a half-closed position and will not move even if you turn the lens aperture ring.



Operation with an FD lens which has a chrome Breech-lock mount ring or with an FL lens:

Mounting

1. Remove the lens' rear dust cap and the camera's body cap.
2. Make sure the mount ring is locked so that it cannot be turned.
3. Align the red dot of the Breech-lock ring with the red dot on the camera body above the camera mount.
4. In this position, fit the rear of the lens into the camera body and turn the Breech-lock ring clockwise until it is tight.

Dismounting

1. Turn the Breech-lock ring counterclockwise until it stops.
2. Pull the lens out from the camera body.

When removing a lens, take special care not to damage the protruding pins and levers on the rear. With the exception of the Fish-eye 7.5mm lens, always put a lens down with the rear facing up.

For more information on general use and care of the lens, please see the lens instruction booklet.

Note

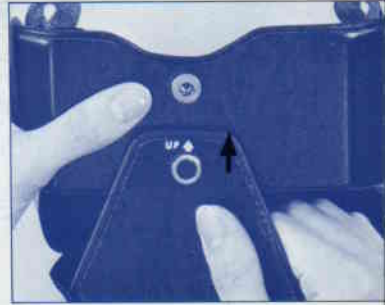
Since the following two FL lenses might cause damage to the camera, they cannot be mounted on the AV-1:

FL 19mm f/3.5, FL 58mm f/1.2.

The following two FL lenses may be mounted, but, for technical reasons the camera's built-in meter becomes unreliable and is unusable:

FL 35mm f/2.5, FL 50mm f/1.8.

One of these lenses may be mounted only after the film has been completely advanced.



Carrying the Camera (Neckstrap and Semi-hard Case)

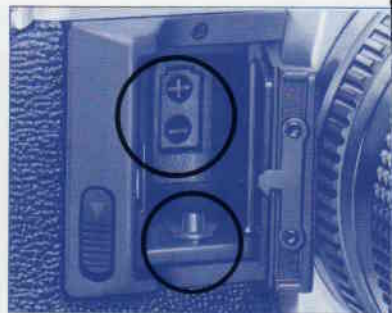
Thread the tips of the neckstrap through the corresponding rings on the camera so that the tips are on the inside. Then adjust the strap to the length most comfortable for you.

To protect the camera while carrying it, insert it into its semi-hard case. The two straps on the case go around the neckstrap and snap into position. Be sure to slip the neckstrap over your neck or shoulder or wrap it around your hand to prevent the camera from falling and turn the shutter button lock lever to "L" to prevent accidental shutter

release.

You can easily shoot with the camera still in the case by turning the top cover down. If you wish to remove the top cover, turn it down, slide it straight up in the direction of the arrow and pull it out as indicated in the photo. To replace the top cover, insert its hook into the corresponding hole in the case and pull the cover straight down. The lens' focusing ring should be turned to infinity (∞) for closing the top cover.

The lens hood can be reversed onto standard and some wide-angle lenses in which case even the hood will fit perfectly into the semi-hard case.



Loading the Battery

This camera will not function unless a battery is loaded. Use one brand-new silver oxide or alkaline-manganese battery as specified in the table below or an equivalent battery of another brand.

Usable Batteries	
Silver Oxide Battery (6V)	Eveready (UCAR) No. 544, JIS 4G13, Mallory PX 28
Alkaline-manganese Battery (6V)	Eveready (UCAR) No. 537 Sony Eveready A544

Always wipe the battery poles and camera contacts with a clean, dry cloth before insertion to prevent any corrosion and damage to the camera due to dirt or fingerprints.

To load the battery:

1. Push the battery chamber cover opening switch in the direction of the arrow. The battery chamber cover will flip open.
2. Following the diagram on the inside of the battery chamber, load the battery negative pole first, pushing it downwards in the chamber. Make sure the poles are facing in the correct directions.

To unload the battery, simply tip the positive end forwards and pull it out from the top.



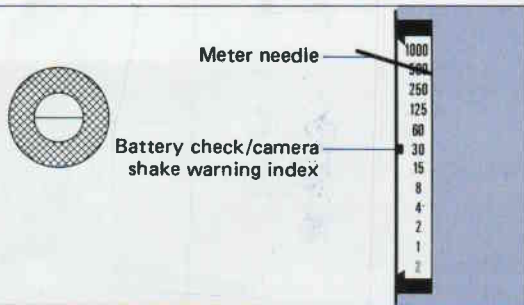
The battery should be removed if the camera is not to be used for a very long time.



Checking the Battery

Life of the battery in normal use is approximately one year. Using the camera frequently at slow shutter speeds (small apertures), at the “B” setting of the selector dial or in very low temperatures takes more battery power and requires replacing the battery more often. The battery requires checking under the following circumstances:

1. When a new battery is loaded.
2. If the shutter will not function when the shutter button lock lever is at “A”.
3. When long exposures are frequently made.
4. When the camera is used very frequently.
5. When the camera is used after it has been



Position of Meter Needle	Power Level
At or above battery check/camera shake warning index	Good
Below battery check/camera shake warning index	Not enough. Change the battery.

When the battery is exhausted, a picture will not be taken when you press the shutter release button.

stored for a very long time.

- When the camera is used in very low temperatures.

Check the power level of the battery as follows:

- Look into the viewfinder while pressing the battery check button on the top of the camera. When the battery check button is pressed, the meter needle in the viewfinder swings up.
- The condition of the battery depends on where the meter needle comes to rest according to the chart on the above right:

It is a good idea to carry a spare battery when you expect to use the camera continuously for a long time, such as on a vacation, when you plan to use the "B" setting of the selector dial often, or when the camera is to be used in very low temperatures (0°C, 32°F). Please see page 69 for recommendations concerning the battery when shooting in low temperatures.



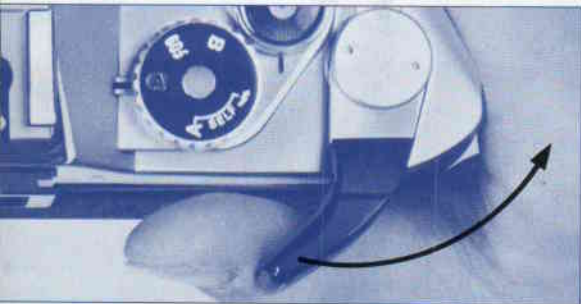
Film Advance and Shutter Release

Around the shutter release button is a lock lever. When it is turned to "L" (LOCK), the shutter button is locked. This lever should always be in the "L" position to prevent battery consumption and film wastage by accidental shutter release when the camera is not in use, such as when it is in a camera case.

When the shutter release button lock lever is turned to "A", the shutter release button can be operated. This shutter release button turns on the camera's meter and releases the shutter to take a shot. Being electromagnetic,

it requires only very gentle pressure for blur-free pictures. When it is pressed lightly only halfway, the camera's meter turns on and gives a reading inside the viewfinder. When it is pressed all the way down, the shutter is released.

Once the shutter has been released, the film advance lever can be advanced. To advance the lever, first lightly push it away from the camera body to its 30° stand-off position. In this position, it can easily be advanced with the tip of your thumb. Advance it either by pushing it all the way to the right in a single throw or with several short strokes



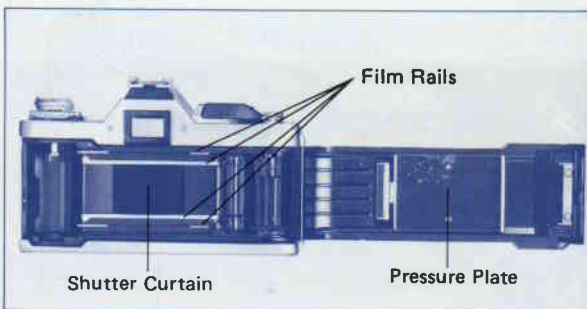
until it stops. When film is loaded, this action will wind the film to the next frame. Once advanced, the lever will automatically return to its stand-off position in readiness for the next winding.

This camera does not have a multiple exposure mechanism. To prevent an unintentional double exposure, the shutter release button is locked after the shutter is released until the film is wound to the next frame. Then the film advance lever locks until the shutter is once again released.



General Usage

All You Need to Know to Take Beautiful Pictures

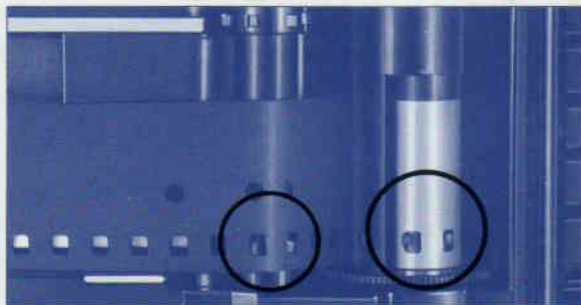
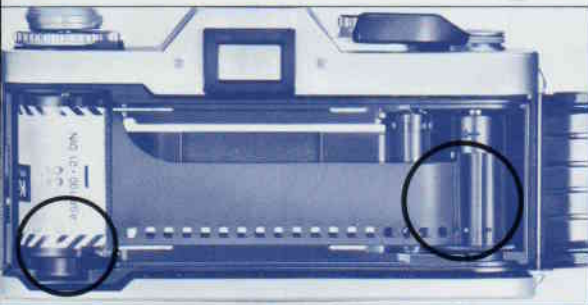


Film Loading

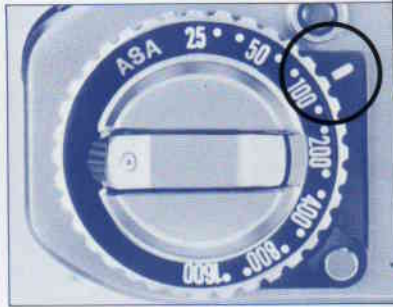
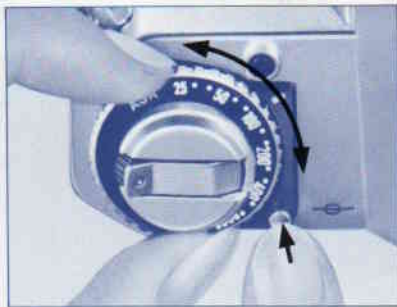
Color or black and white film in standard 35mm cartridges can be loaded. When loading and unloading film, avoid direct sunlight and take care not to touch the shutter curtain, the film rails or the pressure plate.

To load the film:

1. Unfold the rewind crank and pull sharply up on the rewind knob. The camera's back cover will pop open.
2. Place the cartridge in the film cartridge chamber so that the protruding end of the cartridge is on the bottom.
3. Push the rewind knob down and rotate it until it drops into position to keep the cartridge in place.
4. Now pull the film leader across the camera and insert its tip into any slot of the multi-slot take-up spool.
5. Advance the film once. Make sure the film perforations are engaged with the teeth of the film transport sprocket.
6. Gently turn the rewind crank in the direction of its arrow until it stops. This takes up film slack.
7. Close the back cover and fold the rewind crank.



Now take two blank shots, turning the film advance lever and releasing the shutter, so that the frame counter advances from “S” to “0”. While doing this, keep an eye on the rewind knob. If it rotates, the film is properly loaded. If it does not rotate, unfold the rewind crank and turn it again gently in the direction of the arrow to take up possible slack. Advance the film once more. If the rewind knob still does not rotate, open the back cover and reload the film. Chances are that the film perforations have not engaged properly with the teeth of the take-up spool and the film transport sprocket.



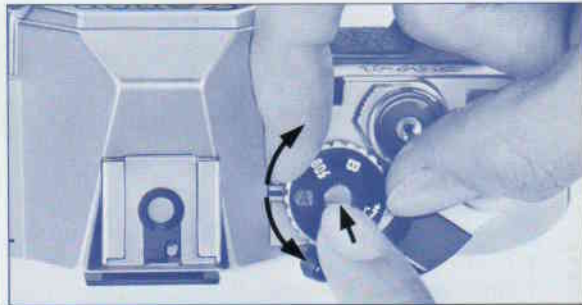
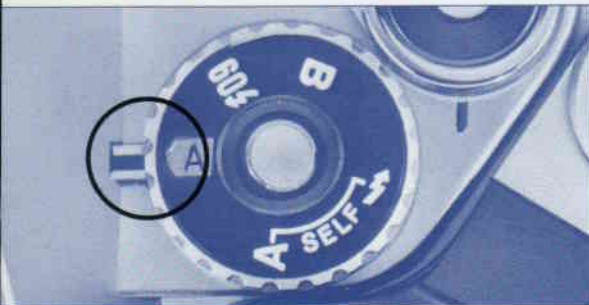
Setting the Film Speed

Each film has a film speed. The film speed is usually stated in two ways: ASA, the American standard, and DIN, the German standard. These values can be found on the film packaging or on the data sheet which comes with the film. This camera uses the ASA value.

The ASA film speed must be set on the camera or your pictures will not be exposed correctly. The table on the right shows the ASA ratings which can be set on the AV-1. Figures in parentheses are film speeds which are indicated by dots on the film speed dial.

To set the ASA film speed, turn the film speed dial, while pressing the film speed dial lock button, until the ASA film speed of your film click-stops at the white index. You must reset the ASA film speed each time you load a film which has a different ASA rating. For more information concerning film speed and film in general, please refer to page 44.

ASA25	(32)	(40)	(64)	(80)	(125)	(160)	(250)	(320)	400
	(500)	(640)	(1000)	(1250)	1600				



Setting the Selector Dial

The selector dial has five settings. For normal photography, this dial must be set to **A**. The dial automatically locks in this position which also allows automatic flash photography with the Canon Speedlite 133A, 155A, 177A or 199A.

The other positions on the dial are all for special uses and will be explained in more detail later. Briefly, they are:

60 \hookrightarrow = for flash photography with flashes other than the four above Canon Speedlites. See page 56.

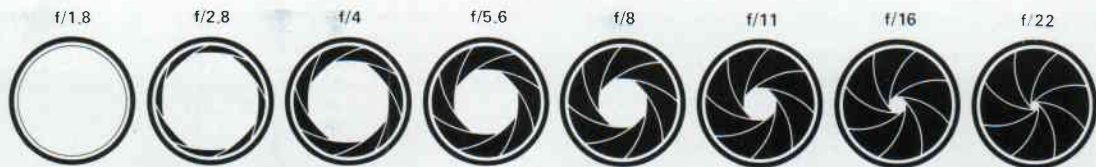
B = for exposures longer than 2 seconds.

See page 49.

Self \hookrightarrow = for self-timer photography with flashes other than the four above Canon Speedlites. See page 52.

A Self = for normal self-timer shooting and for self-timer flash photography with one of the four above Canon Speedlites. See page 51.

To remove the selector dial from **A** to set one of these positions, turn it while pressing the auto release button. The dial can be turned freely between the other positions.



Setting the Aperture

An image is formed on the film when the film is exposed to the light at shutter release. The total amount of light allowed to strike the film is controlled by the aperture and the shutter speed. Since the AV-1 is an aperture priority AE camera, you set the aperture while the camera will automatically select the shutter speed for correct exposure. The aperture is an opening formed by diaphragm blades inside the lens. Each size aperture is given a numerical value called an f-number or f/stop. You can find these numbers on the lens aperture scale. The numbers on the scale differ according to the lens. A typical scale might look like this: 1.8 2.8, 4, 5.6, 8, 11, 16, 22. Note that the smaller numbers indicate larger apertures and are called large f/stops while the larger numbers on the scale indicate smaller apertures and

are called small f/stops.

To set an aperture:

With the selector dial at **A**, simply turn the lens aperture ring until the desired f/stop is aligned with the aperture index. The aperture ring can also be set between f/stops. The camera will automatically select the shutter speed, according to the f/stop you have set, the film speed and lighting conditions, for correct exposure.

Choosing an f/stop

Use the following table as a guide when ASA 100 film is loaded.

Lighting Condition	f/stop		
Indoors	1.8	2	2.8
Outdoors, Cloudy	4	5.6	
Outdoors, Bright sunlight	8	11	



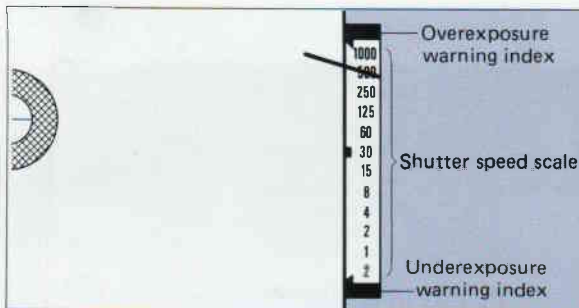
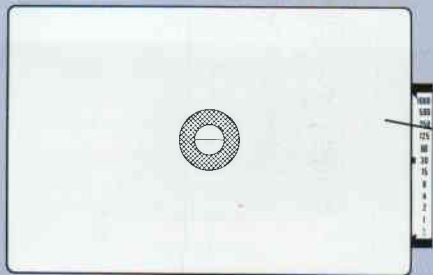
Also remember the following general rules:

1. If you want to make your subject stand out by blurring the foreground and background, use a large f/stop , such as $f/2.8$.
2. If you want the foreground and background to be in good focus, choose a small f/stop , such as $f/11$.
3. If your subject is moving and you wish to prevent blur, generally choose a large f/stop , such as $f/4$.

Caution

On the aperture scale of an FD lens, you will also find a green "A" or a green circle. The aperture ring can be turned to or from this

mark by pressing the AE lock pin while turning the ring. When the aperture ring is set at this mark, the frame will be exposed at the smallest aperture of the lens. Although the camera will automatically select the correct shutter speed for proper exposure, that shutter speed will probably be very slow. This will probably lead to a blurred picture, and, since there is very little reason to use this setting, it is recommended to keep the aperture ring off this mark at all times. Please note that some FD lenses lack an AE lock pin and the aperture ring can be turned directly to the green circle. In this case, special care must be taken not to turn the aperture ring to the green circle.



Checking the Exposure



Look into the viewfinder. On the extreme right is a scale with shutter speeds from $\frac{1}{1000}$ sec. to 2 sec. All solid black numbers are reciprocals of the real shutter speed so that 500, for instance, stands for a shutter speed of $\frac{1}{500}$ sec. Only the black-outlined "2" at the bottom of the scale is a whole number standing for 2 sec. Above 1000 is a red overexposure index. Below the last number 2 is the red underexposure index.

Now gently press the shutter release button halfway. The meter needle will jump up to indicate the shutter speed the camera has

set for the aperture you have chosen. Notice that the meter needle quickly changes position as the light conditions change or as the camera is moved. To assure exact exposure, the camera controls the shutter speed steplessly and will not fix it until the shutter button is pressed.

If the meter needle points to the red index at the top or bottom of the shutter speed scale when the shutter button is pressed halfway, exposure will be incorrect. Correct the exposure according to the chart on the right.

Check the exposure according to the following chart.

Position of Meter Needle	With Aperture Ring At	Exposure
Not touching any red mark	Any f/stop	Correct.
Touching Underexposure Index 	Any f/stop	Incorrect. Turn the aperture ring to a larger f/stop.
	Largest f/stop	Incorrect. Switch to flash, add light or use a film with a higher ASA rating
Touching Overexposure Index 	Any f/stop	Incorrect. Turn the aperture ring to a smaller f/stop.
	Smallest f/stop	Incorrect. Attach an ND filter or use a film with a lower ASA rating.

- ND filters, which reduce the light coming into the lens but do not affect color, are available as optional accessories.
- If there is light behind your subject, exposure may not be correct even if the meter needle is not touching a red mark. See page 47 for correction.
- Remember: A large f/stop is a small number on the aperture scale. A small f/stop is a large number on the aperture scale.

Battery check/camera
shake warning index



Meter needle



Camera shake
likely

If the meter needle points to or below the camera shake warning index when the shutter button is pressed halfway and you are using a 50mm lens, there is a good chance of camera shake which will blur the picture.

Correct as follows:

1. Select a larger f/stop.
2. Use a flash. Or
3. Attach the camera to a tripod and use a cable release.

Of course, if you are as steady as a tripod, you can try hand-held shooting.

If you are not using a 50mm lens, see page 41 for steps in preventing camera shake.



Holding the Camera

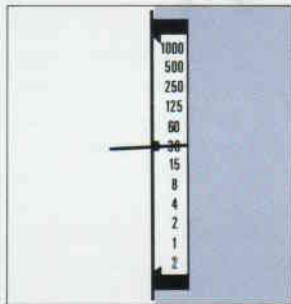
Camera shake can ruin your picture with blur. Although the best precaution in preventing camera shake is to press the shutter release button gently, it is also helpful to hold the camera properly. Before focusing and taking your shot, please read the following suggestions.



When the meter needle points above the camera shake warning index when using a standard lens:

1. Grip the camera firmly in both hands with some right fingers on the finger grip and with the left hand supporting the lens.
2. Press at least one elbow firmly against your body, and press the camera firmly to your cheek or forehead.
3. Spread your feet slightly apart with one a little ahead of the other and relax.

Lean against a steady support, such as a wall or a tree, if one is available.

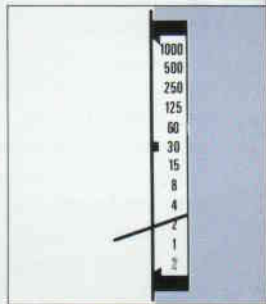


When the meter needle points at or below the camera shake warning index when using a standard lens:

Choose a larger f/stop or use a flash and hold the camera as described above. If the aperture ring is at the largest f/stop and you do not have a flash, use a tripod and a cable release (see page 50).

Not using a standard lens:

See page 41.



Composing

Look into the viewfinder eyepiece and compose your picture so that your subject is where you want it to be. The subject will be recorded on the film exactly as you see it in the viewfinder. While composing, keep in mind that the AV-1 uses the Central Emphasis Metering method of exposure measurement which reads the entire viewing area with emphasis on the central portion. As long as the subject is pretty well centered in the image, this method normally assures very accurate exposure.

Focusing

To focus, rotate the focusing ring as you look through the viewfinder. The focusing screen inside the viewfinder has three focusing aids: a split-image rangefinder, which is the horizontal line in dead-center, a microprism ring, which surrounds the split-image rangefinder, and a surrounding matte screen.

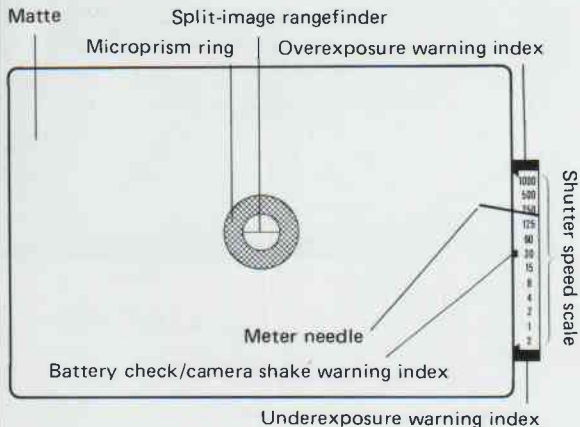
1. The split-image rangefinder "tells you" that the image is in focus when the image, which is divided horizontally when out of focus, merges to become one complete image.

2. The microprism ring presents a clear, steady image when in focus but a broken, shimmering image when not accurately in focus.
3. The surrounding matte screen is foggy when the subject is out of focus and becomes clear when in focus.

When your desired subject is sharp, you know that the focus is set correctly. You can focus with any of these three focusing aids as you like depending on the subject and personal preference.

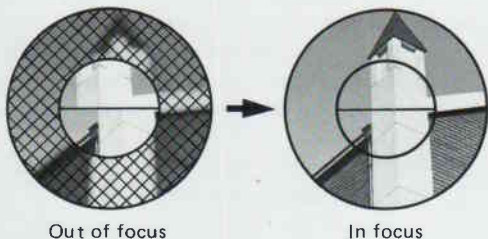
(Canon offers several viewing and focusing aids. See ACCESSORIES at the end of this booklet.)

Viewfinder Information Display



Double-check Before Shooting

1. Have you checked the battery power level?
2. Have you set the correct film speed?
3. Is the film properly loaded?
Each time you advance the film, the rewind knob should rotate.
4. Is the shutter release button lock lever set to "A"?
5. Is the selector dial set to the **A** position?
6. Is the aperture ring off the "A" mark?

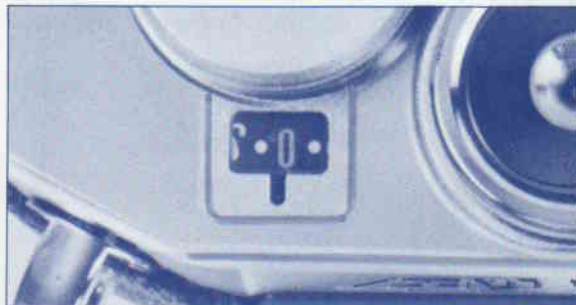


Shutter Release

Once you have set an aperture on the lens, checked the exposure, composed and focused your picture, you are all set to take your shot. Simply press the shutter release button gently all the way down to set the shutter in motion for exposure. Once you have pressed it all the way you may withdraw your finger.

For proper function of the camera and the least camera shake, it is very important to press the shutter button gently. Chances of camera shake will also be reduced if you make a habit of pressing the shutter button as you exhale. Following shutter release, advance the film advance lever to wind the film.

Pressing the shutter button will not make an exposure if the film is only partially advanced or if battery power is too low.



Frame Counter

Each time the film is wound, the AV-1's frame counter advances to the next frame, indicating the number of frames already exposed. It will not advance higher than 38. The numbers 0, 20 and 36 are marked in orange to indicate usual starting and ending points of films. Don't be surprised if, at the end of the film, the frame counter indicates fewer or more frames than the film is supposed to have; it depends on how economically you loaded the film.

The frame counter automatically returns to "S" when the back cover is opened.



Rewinding the Film

If, after shutter release, the film advance lever cannot be turned or stops before the end of its stroke, the film has reached its end. DO NOT force the film advance lever or the film will tear or become detached from the cartridge. In this case, rewinding would be impossible and you would have to unload the film in complete darkness. DO NOT open the camera's back cover before rewinding or most or all of your film will be ruined.

To rewind the film:

1. Press in the film rewind button on the base of the camera. Once you have pressed it you can remove your finger.
2. Unfold the film rewind crank and turn it in the direction of the arrow. Keep cranking until you feel no further pressure on the rewind crank.
3. Then pull the rewind knob up sharply to open the back cover and remove the cartridge. It is preferable to place the exposed cartridge back in its canister and to have it developed as soon as possible.



Applied Usage

Special Functions and Hints

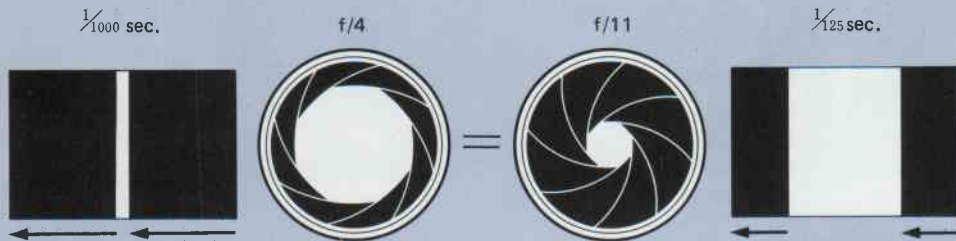
f/stop	1.2	1.4	1.8	2	2.8	3.5	4	5.6	8	11	16	22
Brightness ratio	3	2	1½	1	½	¼	¼	⅛	⅛	⅓₂	⅓₄	⅓₂₈

EXPOSURE

What's going on when you turn the aperture ring? Each time you move from one f/stop to the next smaller f/stop (larger number), the aperture becomes only half as big and the exposure is halved.

While the amount of light allowed to strike the film for exposure is controlled by the aperture size, the shutter speed regulates the time the light strikes the film. Like f/stops, each time the shutter speed changes from one speed to the next faster speed, the exposure is halved.

However, the total amount of exposure necessary in any particular situation is fixed. This means that if you select the next smaller f/stop, the camera will automatically reduce the shutter speed one step to give the same exposure. By extension, you can see that several different combinations of aperture and shutter speed give the same exposure.



The Finer Points of Selecting an Aperture

If correct exposure is your only concern, you may simply select any f/stop as long as the meter needle does not point to one of the exposure warning indices. However, even if the image is exposed correctly, the feeling of the photo will vary greatly depending on which aperture you select.

Depth of Field

Aperture has great influence on depth of field. The depth of field is the area in front of and behind the subject which is in focus at the same time as the subject. The smaller the

f/stop, the greater the depth of field, i.e., the wider the range of sharpness from fore to background. Depth of field is greater at f/11, for instance, than it is at f/4. Depth of field is also governed by lens focal length and shooting distance. If the aperture and shooting distance remain the same, depth of field is greater the shorter the focal length. With aperture and focal length constant, depth of field is greater the greater the shooting distance. Generally, depth of field is also greater in the back than in the foreground.

Taken at f/11.



Taken at f/1.8.



Using a small f/stop such as f/11, will give pretty sharp overall focus and is very effective in landscape photography and any other kind of shot where this is preferable. A large f/stop, such as f/1.8, on the other hand, will throw the background and foreground out of focus to have the effect of emphasizing the subject. This is very effective in portraiture and for special effects. Please compare the two photos.

You can check the depth of field by using the depth-of-field scale which is a series of f/stops repeated on each side of the distance index on the lens barrel. The scale differs according to the lens. First focus your subject.

Find the two f/stops on the depth of field scale which correspond to the aperture you have set for the exposure. Draw imaginary lines from these two f/stops to the distance scale. The effective depth of field extends between those two distances. For example, using a standard 50mm lens focused at 3m (10ft.) with the aperture set at f/8, depth of field extends from 2.4m (8ft.) to 4.5m (15ft.). Any subject from 2.4m to 4.5m away will be in reasonably sharp focus in the image.



Shutter Speed

Lest it be forgotten, the aperture will also have a great effect on shutter speed. For some shots, the shutter speed which corresponds to the aperture you have selected may not be suitable. This is the case, for instance, when you want to take a hand-held shot and the meter needle points at or below the camera shake warning index.

The shutter speed is most often used for freezing or emphasizing action. While a slowly walking person may be frozen at a shutter speed as slow as $\frac{1}{60}$ sec., faster moving subjects require correspondingly higher shutter speeds. On the other hand, you may want to blur the image intentionally to emphasize the movement. You can do this either by using a slow shutter speed of perhaps $\frac{1}{30}$ sec. to blur the subject or by following the subject in a panning technique to blur the background.

If you want to forego a tripod with a telephoto lens and try hand-held shooting, the minimum shutter speed should, generally-speaking, be equal to or faster than the reciprocal of the

focal length of the lens. With an 85mm lens, this means $\frac{1}{125}$ sec., with a 200mm lens, $\frac{1}{250}$ sec. This rule can also be applied generally to all other focal length lenses. In some cases, perhaps slightly slower shutter speeds may be used with wide-angle lenses.

In any case, don't forget that you have complete control over shutter speed with your AV-1. Simply turn the aperture ring to a smaller f/stop to reduce the shutter speed or to a larger f/stop to raise the shutter speed. You can easily confirm the shutter speed in the viewfinder by pressing the shutter button halfway.

Meter Coupling Range

The abbreviation EV stands for "exposure value" and indicates the total amount of exposure obtained with a certain combination of aperture and shutter speed. The meter coupling range is expressed in terms of EV and is limited by the limits of the aperture and shutter speed scales and the film speed. The AV-1's meter is capable of metering for automatic exposure within a range of EV1 (f/1.4 at 1 sec.) to EV18 (f/22 at $\frac{1}{500}$ sec.)

when using ASA 100 film and a lens with an aperture scale of f/1.4 to f/22, such as the FD 50mm f/1.4 lens. This means that, when using this film and lens, you can get the largest total amount of auto exposure with a combination of f/1.4 at 1 sec. If the meter needle still points to the underexposure index with this combination, it means that the lighting is too dark. If the meter needle still points to the overexposure index with a combination of f/22 at $\frac{1}{500}$ sec., the lighting is too bright. See page 29 for further details. Please refer to the graph for the meter coupling range with other film speeds and aperture ranges.

AE Meter Coupling Range at Various Film Speeds

Shutter Speed (sec.) 

EV	2	1	1/2	1/4	1/8	1/15	1/30	1/60	1/125	1/250	1/500	1/1000
0	f/1.4	1.2										
1	2	1.4	1.2									
2	2.8	2	1.4	1.2								
3	4	2.8	2	1.4	1.2							
4	5.6	4	2.8	2	1.4	1.2						
5	8	5.6	4	2.8	2	1.4	1.2					
6	11	8	5.6	4	2.8	2	1.4	1.2				
7	16	11	8	5.6	4	2.8	2	1.4	1.2			
8	22	16	11	8	5.6	4	2.8	2	1.4	1.2		
9	32	22	16	11	8	5.6	4	2.8	2	1.4	1.2	
10		32	22	16	11	8	5.6	4	2.8	2	1.4	1.2
11			32	22	16	11	8	5.6	4	2.8	2	1.4
12				32	22	16	11	8	5.6	4	2.8	2
13					32	22	16	11	8	5.6	4	2.8
14						32	22	16	11	8	5.6	4
15							32	22	16	11	8	5.6
16								32	22	16	11	8
17									32	22	16	11
18										32	22	16

Films and Filters

The ASA speed of the film, which must be set on the camera, is one of the important factors in choosing film. The higher the ASA film speed, the more sensitive the film is to light. If you wanted to try shooting in dim light without flash, for instance, ASA 400 film might be a likely choice. On the other hand, the faster the film, generally the grainier the results, so for fine detail in a photo of autumn colors, for instance, a film with a rather low ASA rating might be a better choice. Films also differ in several other ways, including color rendition, exposure latitude and color temperature.

Of course, you have the basic choice between black and white or two types of color film — color slide film or color negative film for prints.

Due to the nature of films, there is some chance of underexposure and color shift when using very slow shutter speeds of 1 sec. or slower. This is due to reciprocity failure which is a particular problem with slide films. You can obtain more information concerning

reciprocity failure and how to correct it from the data sheet that comes with the film or from the film manufacturer.

A little knowledge about film will go a long way in increasing your appreciation of the AV-1's abilities. Please always pay careful attention to the information in the data sheet that comes with the film.

Some films, such as black and white infrared film, require a certain filter. Others may require a color conversion filter under certain lighting conditions. Again, you will find this information in the film data sheet. Filters can also be used to emphasize certain colors for more clarity or special effects. Canon offers a wide variety of filters for both black and white and color films. Most filters screw into the filter thread at the front of the lens but gelatin filters can also be used in Canon's Gelatin Filter Holder which can be attached to most lenses. Since the AV-1 has a through-the-lens meter, there is no need to make an exposure correction for light loss with filter factors when a filter is attached.

Canon Filters

Filter Type	Filter Type	Filter Factor	Filter Uses and Effects
For color and black and white films	UV Clear Ultra Violet (SL37)	1X	Absorbs only ultraviolet rays and has no effect on other colors. Effective for cutting out haze on beaches and in high mountains where ultraviolet rays are strong.
	Skylight (Light Pink)	1X	Used with daylight type film for shooting under fair weather conditions. Cuts short wavelengths. Reduces the bluish tinge of sky and sea and prevents the shades of foliage from turning excessively green. In other words, this filter prevents blue and green from being unnaturally emphasized.
	*ND4-L, ND4 Neutral Density	4X	Has no effect on colors. Reduces light volume entering lens under strong light conditions. Useful when using high speed film in bright sunlight.
	*ND8-L, ND8 Neutral Density	8X	Performs same function as ND4 filter, but two times stronger. Reduces light volume to $\frac{1}{8}$.
For color films	CCA4 (Amber)	1.5X	Used with daylight type film for shooting under cloudy or rainy weather conditions or in the shade under fair weather conditions. Eliminates bluish tinge.
	CCA8 (Amber)	2X	Used for more natural color when shooting in the morning or evening light with tungsten type film.
	CCA 12 (Amber)	2X	Used with tungsten type film for shooting under sunlight (or other light source with daylight color temperature) to obtain normal color tones.
	CCB4 (Blue)	1.5X	Used with daylight type film for shooting in the morning or evening light to eliminate reddish tinge.
	CCBB (Blue)	2X	Used with daylight type film for shooting at night or indoors with clear flash bulbs.
	CCB 12 (Blue)	3X	Used with daylight type film for shooting under artificial lighting to obtain natural color tones.
For black and white films	Y1 Light Yellow (SY44)	1.5X	Absorbs colors ranging from ultraviolet to violet. Adjusts color tone of the sea and brings out the whiteness of clouds by darkening the blue sky.
	Y3 Yellow (SY50)	2X	Similar to Y1, but more effective. Increases contrast of distant scenes.
	G1 Light Green (G55)	3X	Transmits green best. Holds back colors ranging from ultraviolet to blue and red. Good for outdoor portraits using ordinary film for natural reproduction of brightness of sky and face. Also good for natural reproduction of foliage.
	O1 Orange (SO56)	3X	Absorbs colors in a wide range from ultraviolet to green. Blue becomes fairly dark and yellow and red appear brighter than seen with the naked eye. Especially effective for emphasizing contrast of distant landscapes.
	R1 Red (SR60)	6X	Absorbs colors ranging from ultraviolet to yellow. Used for both ordinary and infrared films. Blue is reproduced as black and red as white. In some cases, daylight scenes look like night scenes. Very effective for distant shots.

* The new L-type ND filters are manufactured using a special process to give extra high-quality performance.

Subject to change without notice.



SHOOTING WITH LIGHT BEHIND YOUR SUBJECT (AND OTHER LIGHTING PROBLEMS)

Like all metering systems, the AV-1's metering system is designed to give correct exposure under normal lighting conditions. What is not normal? Not normal is a situation in which your subject is backlit with strong window, sun or artificial light behind it. In this case the camera will be influenced by this light into choosing a shutter speed which will underexpose your subject. The metered exposure must be increased. The same holds true if your subject is surrounded by a bright beach or snow and the latter is

taking up the major part of the viewing area. In general, some correction may be necessary if your subject is not centered in the viewing screen or if you wish to overexpose the image intentionally for a high-key shot.

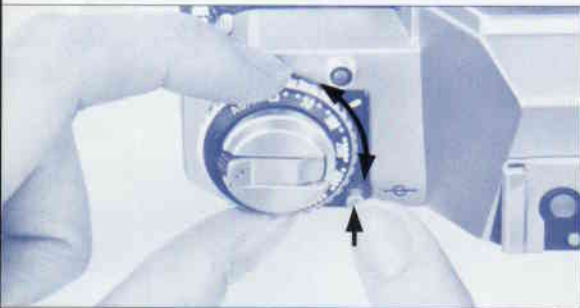
On the other side of the coin, the camera may be fooled into choosing a shutter speed which will overexpose your subject if it has a very dark background, such as in stage photography and concerts; or you may wish to underexpose your subject intentionally for a low-key shot.



Backlight Control Switch

When you press this switch, the camera will automatically reduce the shutter speed $1\frac{1}{2}$ steps to increase exposure. This will be useful in all those cases described above in which you would like to give your subject a little more exposure, such as in backlit situations. Since the shutter speed will be considerably reduced, make sure to check the shutter speed in the viewfinder before shooting to make sure there is no chance of camera shake and that the meter needle does not point to the underexposure index. It may be necessary to turn the aperture ring to a larger f/stop for hand-held shooting and

correct exposure. Please note that you must keep pressing this switch until after you press the shutter release button. It does not lock.



Changing the Film Speed

In comparison with a film with a given film speed, another film with an ASA rating twice that of this film requires only half the amount of light for correct exposure. Consequently, you may make an exposure correction on a particular frame by changing the recommended ASA rating. For instance, if you have ASA 200 film loaded and you wish to overexpose the image for a backlit situation only 1 f/stop, simply set the film speed dial to ASA 100. The camera will automatically reduce the shutter speed one step for overexposure. Again, it is advisable to check the shutter speed the camera sets to be sure there is no

chance of camera shake. On the other hand, if you wish to underexpose the image 1 f/stop for a low-key shot, reset the film speed dial to ASA 400.

This method of exposure correction is useful when you wish to give more or less overexposure than the backlight control switch permits, and it is the only way to make an exposure correction for a low-key shot.

By all means, do not forget to reset the correct ASA film speed on the dial or the entire remainder of the film will be correspondingly over or underexposed.



SHOOTING AT NIGHT (TIME EXPOSURES)

When you set the selector dial to “B” for “bulb”, you can make exposures longer than the slowest shutter speed of two seconds. The shutter will remain open as long as you press the shutter release button. Of course, you are now in complete control of the exposure. You cannot rely on the AV-1’s meter, because you yourself are controlling the shutter speed as well as the aperture. Although the meter needle will point to a shutter speed when the shutter button is pressed halfway, this reading has no meaning.

Using the “B” setting is the recommended procedure for recording multiple bursts of fireworks on a frame. You may also use it when it is so dark that the meter will not couple. You will have to determine the length of exposure either by a separate exposure meter or by experimentation.

If you use this setting often, more battery power will be used than usual, so it is wise to have a spare battery handy.

When using such slow shutter speeds, you may have problems with reciprocity failure. Please refer to page 44.



Tripod and Cable Release

A tripod and cable release will be indispensable whenever the shutter speed is very slow such as in night shooting and indoor shooting without flash. Unless you are using a suitable shutter speed for hand-held telephoto shooting (see page 41), a tripod at least should also be used with a telephoto lens.

A cable release is a device which screws into the camera's shutter button and allows the shutter to be released without your having to touch the shutter button itself.

Tripod Adapter A



If the camera platform of the tripod is quite large, it may be difficult to turn the focusing and aperture rings unless Tripod Adapter A is inserted between the camera and the platform. Tripod Adapter A is an optional accessory.

If you don't have a tripod and a cable release, you might get satisfactory results by placing the camera on a steady support, such as a railing or a table, and using the camera's self-timer to release the shutter (see page 51).

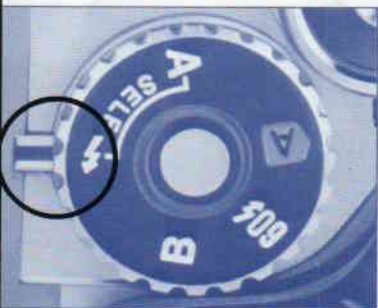


INCLUDING YOURSELF IN THE PICTURE (SELF-TIMER)

The AV-1 has a self-timer which allows you to include yourself in the picture. It may also be used instead of a cable release in many instances when you would normally use a cable release. To use the self-timer for normal photography or for automatic flash with the Canon Speedlite 133A, 155A, 177A or 199A, set the selector dial to "A Self". Set an aperture as usual, check the exposure, slide the viewfinder cover into the eyepiece grooves and press the shutter button.

Since the camera sets the exposure as soon as the button is depressed, do not stand in front of the camera while you press the shutter button or exposure will be incorrect.

The shutter will be released automatically ten seconds after you press the shutter button. During the first eight of those seconds, the self-timer lamp will blink on and off at a rate of two flashes per second to indicate that the self-timer is working. During the last two seconds the blinking rate will increase to eight



times per second to warn of impending shutter release.

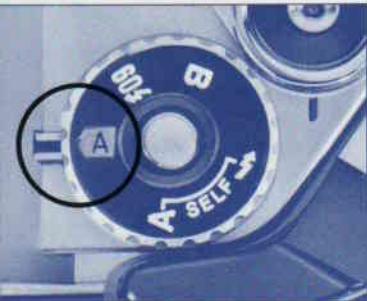
For self-timer shooting with flashes other than the four Canon Speedlites, set the selector dial to “Self \downarrow ” and proceed as above. The selector dial click-stops at the “A” and “ \downarrow ” positions of the “Self” setting. Do not set the dial between those two positions.

Cancellation

The self-timer can be cancelled before shutter release by pressing the battery check button.

Viewfinder Cover

The viewfinder cover should be slipped over the eyepiece whenever pictures will be taken when your eye is not to the eyepiece. Otherwise stray light entering the viewfinder through the eyepiece may cause underexposure. This applies to self-timer shooting and often to tripod or copy stand work and is especially important in night shooting. When not in use, the viewfinder cover may be slipped into the camera's accessory shoe.



Speedlite 133A



Speedlite 155A



Speedlite 177A



Speedlite 199A



SHOOTING INDOORS (FLASH)

Of course, you can often take pictures indoors without flash, but usually it is too dark. Generally, if the meter needle points to or below the camera shake warning index when you check the exposure, the best thing to do is to mount a flash.

With Canon Speedlite 133A, 155A, 177A or 199A (**A**)

Automatic flash photography is possible with the Canon Speedlite 133A, 155A, 177A or 199A when the selector dial is set to **A**.

The procedure with the Speedlite 155A is as follows:

1. Load the batteries into the flash. The battery poles and flash contacts should be wiped with a clean, dry cloth before loading to prevent possible corrosion or damage to the flash.
2. Insert the Speedlite into the camera's accessory shoe.
3. Set the ASA film speed on the flash.
4. Make sure the AV-1's selector dial is at **A**. (This will automatically set the shutter

- speed to the X-synchronization speed of $\frac{1}{60}$ sec. when the pilot lamp glows).
5. Set the AUTO/MANU. switch to either the green or red AUTO position and read the corresponding aperture from the calculator dial.
 6. Set that same aperture on the lens aperture ring.
 7. Switch the flash on.
 8. Focus the subject and check the lens' distance scale to make sure you are within the auto working range. This is the permissible range of shooting distances which the flash indicates for the aperture you have chosen.
 9. Wait for the pilot lamp to glow. At that point, the meter needle in the viewfinder will automatically point to the shutter speed of $\frac{1}{60}$ sec. (when the shutter button is pressed halfway).
 10. Press the shutter button all the way for flash exposure.

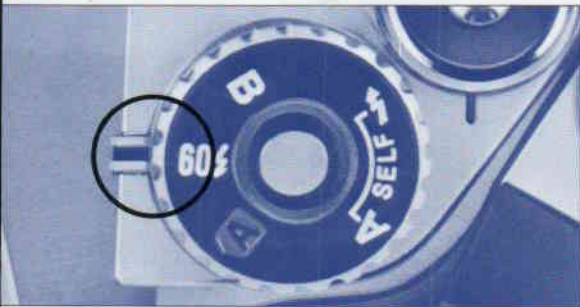
The camera reverts to normal aperture-priority AE photography during flash intervals when

the pilot lamp goes out. This allows you to shoot continuously while automatically switching from flash shooting to normal shooting. When the flash is switched off, you can also shoot normally while the flash is still mounted on the camera.

Automatic flash photography is also possible when the selector dial is set to "B". In this case, the shutter will remain open as long as you press the shutter button and the flash will be synchronized with the opening of the first shutter curtain. This is useful for lightening the background of the subject. At this setting, the camera will not automatically switch to normal aperture priority AE during flash intervals.

Use of the 133A, 177A and 199A on the AV-1 is very similar. Setting the 199A's shutter speed selector switch to MANU. for the use of slower synchronization speeds is not possible with this camera. For further details, please refer to the instructions for these flashes.





With Other Flash Units (60 $\frac{1}{2}$)

The flash must be designed to synchronize with the camera's shutter at a speed of $\frac{1}{60}$ sec. Set the AV-1's selector dial to 60 $\frac{1}{2}$. This will set the shutter speed to $\frac{1}{60}$ sec. For special effects, the selector dial may be set to "B" instead of 60 $\frac{1}{2}$. Please see page 54 for further details.

When using an automatic electronic flash, set the lens aperture ring to the same f/stop set on the flash unit. Follow the flash instructions.

Manual flash photography is also possible with the AV-1. Follow the instructions of the flash.

Note

- Flashbulbs cannot be used on this camera.
- It is recommended to use a Canon flash unit on this camera. Using a flash or flash accessory of another make may cause the camera to work improperly or even possibly damage the camera itself.



SHOOTING WITH FL LENSES, OTHER NON-FD LENSES AND CLOSE-UP ACCESSORIES

Stopped-down Metering

When an FD lens is mounted directly on the camera, you will notice that the diaphragm remains fully open at the maximum lens aperture until you press the shutter button. At that point it closes or “stops” down to the “working” aperture, i.e., the aperture you have set on the lens. Following shutter release, it automatically reopens to full aperture. Even though metering is done at full aperture, the meter knows which aperture you have set on the lens because it is given that informa-


tion by one of the levers at the rear of the lens. Consequently, the camera is able to set the shutter speed according to the “working” aperture even when the diaphragm is fully open. This is called full-aperture metering.

Whenever you use an FL lens or any other non-FD lens, such as the TS 35mm lens or the Fish-eye 7.5mm lens, full-aperture metering is not possible. It is also not possible whenever any accessory is inserted between the camera and any lens for extending the lens focal length

or for increasing lens extension in close-up shooting. In these cases, in order for the camera to set the correct shutter speed, the lens must actually be stopped down to the working aperture while metering. This is called stopped-down metering. The only exceptions to this rule are the intermediate accessories, Extenders FD 2x-A, FD 2x-B and Extension Tubes FD-U, which permit normal full-aperture metering.

When an FL or other non-FD lens is mounted directly to the camera, stopped-down metering is automatic. That is, the diaphragm opens or closes to the working aperture for metering as you turn the aperture ring. You will notice this as a lightening or darkening in the viewfinder as you turn the aperture ring. The same thing will happen when an automatic accessory is inserted between the camera and lens. When using a manual accessory or a macrophoto coupler with an FD lens, however, the diaphragm will not open and close with rotation of the aperture ring until the lens is set for manual diaphragm control. See page 59.

Even though metering takes place at the work-

ing aperture, the shooting procedure is exactly the same as for normal AE photography as described in "General Usage". Simply set an aperture on the aperture ring, and the camera will set the shutter speed automatically for correct exposure. No special setting is necessary on this camera for stopped-down metering. For normal shooting, the selector dial should be set to . All other positions on the selector dial are usable as briefly described on page 25.

When using an FL lens on this camera, with or without close-up accessories, always set the A-M ring on the lens to the "M" position.

For easier focusing in stopped-down metering, whether with FL and special lenses or with close-up accessories, set the aperture ring to the largest f/stop for focusing and then set it to the f/stop you want for metering and taking your shot.

Note that, when the lens is stopped-down, you can visually check the extent of depth of field by simply inspecting the subject through the viewfinder at the working aperture.



When using the AV-1's through-the-lens meter, no exposure correction is necessary when using close-up accessories.

Manual Diaphragm Control

The insertion of manual accessories or a macrophoto coupler between the camera and an FD lens requires setting the lens for manual diaphragm control before stopped-down metering is possible. The instructions for the various accessories involved will tell you whether or not this is necessary.

All FD lenses which lack a chrome mount ring, with the exception of the Macro lenses, are set for manual



diaphragm control as follows:

1. Before mounting the lens, insert the slot of the accessory manual diaphragm adapter over the tip of the automatic aperture lever at the rear of the lens. Push the lever to the right and lower the adapter into the groove to lock the lever in that position.
2. Mount the lens onto the accessory. The diaphragm will now open and close as the aperture ring is rotated.

When the manual diaphragm adapter is attached on the rear of one of these lenses, never mount the lens directly on the camera or directly on accessories designed for automatic diaphragm control, such as the Auto Bellows



All chrome-mount-ring FD lenses and FD Macro lenses are set for manual diaphragm control as follows:

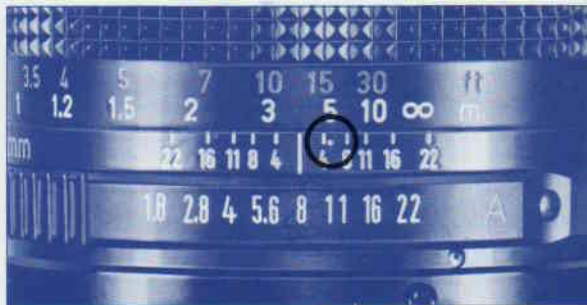
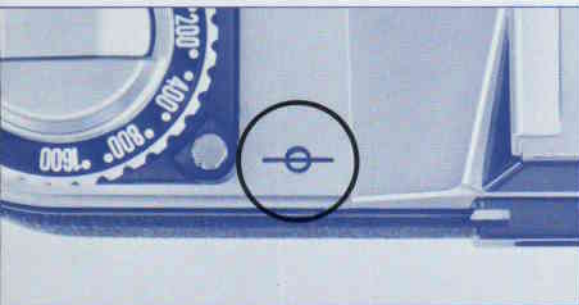
1. Before mounting the lens, push the automatic aperture lever at the rear of the lens to the right where it automatically locks.
2. Mount the lens onto the accessory as usual. The diaphragm will now open and close as the aperture ring is rotated.

Some of these lenses have an additional lock lever. With these lenses, the automatic aperture lever must be pushed fully to the right and the lock lever pushed to "L" to hold the automatic aperture lever in that position.

When using a macrophoto coupler, the Macro Hood must also be mounted onto the rear of the lens.

You may avoid setting the lens for manual diaphragm control when using manual accessories or a macrophoto coupler by attaching the Canon Macro Auto Ring and/or Double Cable Release.

Be sure to reset the automatic aperture lever to its normal position before using the lens once more in direct contact with the camera. In the case of a lens with a lock lever, switch it back to the position of the white dot.



OTHER FEATURES

Film Plane Indicator

This mark is engraved on the top of the camera just to the right of the rewind knob to indicate the exact position of the film plane. It is not used in general photography, but it is helpful in close-up photography for obtaining the exact shooting distance from film to subject.

Infrared Index Mark

Since infrared light rays have longer wavelengths which focus on a plane slightly behind that of ordinary visible light rays, it is necessary to slightly adjust the focus of the lens when using black and white infrared film. The infrared index mark engraved on the lens barrel is used for this purpose. After focusing the same as usual, note the tiny red dot engraved on the lens barrel just to the right of the distance index, and turn the focusing ring to align the focused distance with this

red dot. For instance, if the focus is at 5m on the distance scale, turn the focusing ring to align the 5m mark with the red dot. After that focusing correction, you can release the shutter.

When using infrared black and white film, visible light rays must be kept out by means of a deep red filter (R1) over the lens. When using infrared color film, there is no need to make a focusing correction. Follow the detailed instructions of the film manufacturer.

The position of the infrared index mark has been computed for the use of infrared film with peak sensitivity at 800nm (such as Kodak IR 135) and a red filter such as Wratten 87.

FD 35mm f/2 with red filter (R1), AE f/8,

High Speed Infrared film

A-Series System Accessories

The AV-1, along with the A-1, AE-1 and AT-1, is one of Canon's A-series cameras. Like these cameras, it accepts most of the A-system accessories. These are the Speedlites 133A, 155A, 177A and 199A and the Power Winder A. With these accessories, the AV-1 will do its best in poor lighting and fast-action shooting.

Speedlite 155A



ACCESSORIES

Speedlites 133A, 155A, 177A and 199A

Any of these flashes slips easily into the AV-1's accessory shoe where it permits automatic flash photography. The shutter speed is set automatically while you simply set the same aperture on the lens as you have set with the flick of a switch on the flash. With only one flash aperture, f/4, for films having a speed of ASA 80, 100 or 400, use of the Speedlite 133A is especially easy. Both the Speedlite 155A and 177A offer a choice of two apertures, f/2.8 and f/5.6, with ASA 100 film while the Speedlite 199A offers one more,

f/11, with ASA 100 film. All of these Speedlites employ a unique light sensing system which reduces excessive reflection from the central area to give better overall exposure.

The Speedlites 133A, 155A, 177A and 199A have guide numbers of 16m, 17m, 25m and 30m (ASA 100) respectively. The Speedlite 199A also offers bounce flash and coverage of a 24mm lens field with its wide angle adapter. Speedlite 177A, too, has an adapter for covering the angle of view of a 28mm lens. For more details on the use of these flashes, see page 53.



Power Winder A

The Power Winder A attaches to the AV-1 with a turn of a screw where it matches the camera's compactness to a tee. It gives a choice of two modes: single-frame shooting with automatic film winding or continuous shooting in which the film is wound and the shutter recocked automatically at about two frames per second. Either way, the power winder couples with the AV-1 at any shutter speed from 2 sec. to $\frac{1}{1000}$ sec. This is an extremely popular accessory which is especially handy for taking sequential action shots, as in sports and fashion photography.



SLR System Accessories

As you become more familiar with the AV-1, you may find your interest in photography growing and feel like expanding a bit. After a while, you may be searching for a new look in your photos. As simple as the AV-1 is to use, it is a full-fledged SLR camera and accepts most of Canon's SLR system accessories. Besides a choice of nearly fifty FD and special lenses, all of which are world-renowned for their high performance, you have the pick of about thirty more accessories for close-ups, photomacrography and photomicrography. From close-up lenses to three bellows units, copy stands to Photomicro Unit F, Canon offers all the equipment you need for unparalleled results. It's easy to expand with the AV-1.

When you find yourself in unusual shooting situations, Canon again has all the answers. In problematic viewing situations, Angle Finder A2 or B may come in handy. Angle Finder A2 shows the image in reverse left-to-right; Angle Finder B's image is completely correct. A Dioptic Adjustment Lens S is

a big advantage for eyeglass wearers. When very precise focusing is important, try Magnifier S. Cable Release 30 or 50 or the Double Cable Release would be a good, inexpensive accessory to have on hand, and take a look into Canon filters. A UV or Skylight filter, in particular, would be an excellent, general-purpose lens accessory. Explore the Canon world of photography.

ACCESSORIES

- * 1. Angle Finder A2 and B
- * 2. Eyecup 4S
- * 3. Magnifier S
- 4. Macrophoto Coupler FL52 and FL 58
- 5. Lens Hood BS-52 and BS-58
- 6. Microphoto Hood
- 7. Photomicro Unit F
- 8. Slide Duplicator
- 9. Handy Stand F
- 10. Gadget Bag 4-type
- 11. Gadget Bag G-1
- 12. Canon Release 30
- 13. Canon Release 50
- 14. 52 mm filters
- 15. 58 mm filters
- 16. 52-55 Step-up Ring
- 17. 52 mm Close-up Lenses (240, 450)
- 18. 58 mm Close-up Lenses (240, 450)
- 19. Macrophoto Lens 20 mm f/3.5
- 20. Macrophoto Lens 35 mm f/2.8
- 21. Duplicator 8
- 22. Duplicator 16
- 23. Duplicator 35
- 24. Focusing Rail
- 25. Macro Stage
- 26. Double Cable Release





27. Macro Auto Ring
28. Copy Stand 5
29. Copy Stand 4
30. Auto Bellows
31. Bellows M
32. Bellows FL
33. Extension Tube M Set
34. Manual Diaphragm Adapter
35. Extension Tube FD 15-U, FD 25-U and FD 50-U
36. Extenders FD 2x-A, FD 2x-B
- *37. Dioptric Adjustment Lens (10 kinds)
38. Speedlite 133A
39. Speedlite 155A
40. Speedlite 177A
41. Speedlite 199A
42. Speedlite 533G
43. Speedlite 577G
44. Power Winder A
45. Gelatin Filter Holder with Filter Holder Adapter and Hoods
46. Macrolite ML-1

* Since Angle Finders A2 and B, Magnifier S and Eyecup 4S overlap the AV-1's back cover, the accessory must be removed before opening the back cover. Do not open the back cover when a Dioptric Adjustment Lens S is attached or the cover may be scratched. Push the Dioptric

CARE OF THE CAMERA

The AV-1 is a rugged, high-quality camera. It will work properly if operated and cared for properly. Never force anything. If you have a problem that is not answered in the instructions below, follow the advice of your nearest Canon serviceman. We recommend taking the AV-1 to an authorized Canon service facility at least once every three years for a complete checkup.

Storage

The best thing you can do for your AV-1 is to use it regularly, but in the event that it won't be used for quite a while, first remove it from any camera bag or soft case. Then remove the battery to prevent possible corrosion to the terminals. Recap the lens, and if the body is stored separately from the lens, put the body cap and the rear lens cap on. Wrap it in a clean, soft cloth and store it in a cool; dry, dust-free place. Avoid storing it in the rear window shelf, glove compartment or other "hot spots" of an automobile, in a place such as a laboratory where chemicals

could cause corrosion and rust, or in a dusty, damp, or hot place. Keep it out of direct sunlight. Before using the AV-1 after it has been stored for a long time, carefully check the operation of each part.

Cleaning

First blow off dust on the camera with a blower brush. You may use a silicone cloth or chamois leather to wipe smudges off the camera body. Do not use such cloths on the lens surface, eyepiece or inside the camera body. To clean the eyepiece, first blow dust off with a blower brush, then put a drop or two of lens cleaning fluid on camera lens tissue and wipe off any smudges. If the mirror gets dirty, it will not affect the picture although it may make it hard to see. NEVER touch the mirror. Blow off dust very gently with a blower brush. If more cleaning is necessary, do not attempt to do it yourself but take the camera to an authorized Canon service facility. The film compartment also requires occasional cleaning with a blower brush to

remove accumulated film dust particles which might scratch the film. While doing this take special care NEVER to press on the shutter curtain, the rail surfaces or the pressure plate. For details on how to clean the lens, follow the lens instruction booklet very carefully. Only use cleaning fluid and lens tissue manufactured especially for camera lenses.

Salt and sand are your camera's worst enemies. After using it on a beach, clean it thoroughly. If you accidentally drop it in the water, it will probably be irreparable but take it immediately to an authorized Canon service facility.

USING THE CAMERA IN EXTREMELY LOW TEMPERATURES

In extremely low temperatures, always protect the camera from outside air and try to finish shooting as quickly as possible. In temperatures below 0°C (32°F), the battery may be affected, so you may want to carry a spare. Keep the camera and spare battery close to your body or in a pocket to keep them warm until you are ready to take a picture. Although the battery may not function well in low temperatures, don't throw it away. It may work perfectly again when you use the camera in warmer temperatures.

Avoid extreme temperature changes. Condensation forming on a camera and lens taken from cold temperatures into a warm room may cause corrosion. Let the camera gradually adjust to the temperature change by placing it in a completely sealed plastic bag for awhile.

SPECIFICATIONS

Type: 35mm SLR (Single-lens Reflex) camera with electronically controlled AE (Automatic Exposure).

Format: 24 x 36mm.

Usable Lenses: Canon FD (for full aperture AE) and most FL (for stopped-down AE) series lenses.

Lens Mount: Canon Breech-lock mount.



Viewfinder: Fixed eye-level pentaprism.


Field of View: 92% vertical and 93% horizontal coverage of the actual picture area.

Magnification: 0.87X at infinity with a standard 50mm lens.

Viewfinder Information: Split-image/microprism rangefinder, shutter speed scale and meter needle, red over and underexposure warning indices, battery check/camera shake warning index.

AE Mechanism: Aperture priority AE control.

Selector Dial: Five positions:  for normal aperture priority AE and automatic flash with Canon Speedlite 133A, 155A, 177A or 199A, 60  for flash photography with other flashes, A Self for self-timer aperture

priority AE and self-timer flash with Canon Speedlite 133A, 155A, 177A or 199A, Self  for self-timer flash with other flashes, B (Bulb) for time exposures.

Shutter: Cloth, focal plane shutter with four spindles. Electronically controlled.

Shutter Release Button: Electromagnetic, two-step button. Pressing it halfway activates the meter; pressing it all the way sets shutter in operation. With lock and cable release socket.

Exposure Preview: Meter needle activated by pressing the shutter button halfway.

Shutter Speed: Automatically controlled, steplessly, from 2 sec. to $\frac{1}{1000}$ sec. Manual settings for B (Bulb) and X-synchronization speed of $\frac{1}{60}$ sec. with flashes other than Canon Speedlite 133A, 155A, 177A or 199A.

ASA Film Speed Dial: ASA 25 to ASA 1600. With lock.

Light Metering System: Through-the-lens, Central Emphasis metering by SPC (Silicon Photocell).

Meter Coupling Range: EV1 (1 sec. at f/1.4) to EV18 ($\frac{1}{500}$ sec. at f/22) with ASA 100 film and the FD 50mm f/1.4 lens.

Exposure Correction: Shutter speed is automatically reduced $1\frac{1}{2}$ steps to increase exposure by pressing backlight control switch.

Mirror: Large instant-return type with shock-absorbing mechanism.

Self-timer: Electronically controlled. Ten-second time lag activated by pressing shutter button. Red LED blinks to indicate operation; flashing frequency increases two sec. before shutter release. Cancellation possible by pressing battery check button.

Flash Synchronization: At $\frac{1}{60}$ sec. Set by switching selector dial to $60\frac{1}{2}$ for flashes other than the Canon Speedlite 133A, 155A, 177A or 199A. Direct contact at accessory shoe.

Automatic Flash Control: With Canon Speedlite 133A, 155A, 177A or 199A. With

selector dial at \boxed{A} , shutter speed set to $\frac{1}{60}$ sec. automatically. Aperture set manually on aperture ring to same aperture set on flash.

Back Cover: Fixed. Opened by pulling up rewind knob.

Film Loading: Via multi-slot take-up spool.

Film Advance Lever: Single-stroke 120° throw with 30° stand-off. Winding with several short strokes possible. Automatic winding possible with optional Power Winder A.

Frame Counter: Additive type. Automatically resets to "S" upon opening back cover.

Film Rewind: By pressing rewind button and cranking rewind knob.

Power Source: One 6V silver oxide (Eveready (UCAR) No. 544, JIS 4G13, Mallory PX28) or alkaline manganese (Eveready (UCAR) No. 537, Sony Eveready A544) battery.

Battery Check: Meter needle/power level index method. By pressing battery check button.

Dimensions: 139 x 85 x 47.5mm (5- $\frac{1}{2}$ " x 3- $\frac{3}{8}$ "
x 1- $\frac{7}{8}$ ").

Weight: 490g (17- $\frac{5}{16}$ ozs.) body only, including
battery.

660g (23- $\frac{1}{4}$ ozs.) with FD 50mm f/1.8

725g (25- $\frac{9}{16}$ ozs.) with FD 50mm f/1.4
lens.

Subject to change without notice.

For your own convenience in the event of loss or theft, you may want to use this form to fill in the serial numbers of your AV-1 equipment.

Name of the Camera: **Canon AV-1**

Body Number:

Lens:	mm.	1:	No.	mm.	1:	No.
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	mm.	1:	No.
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Name:

Telephone Number:

Address:

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