Canon A-1

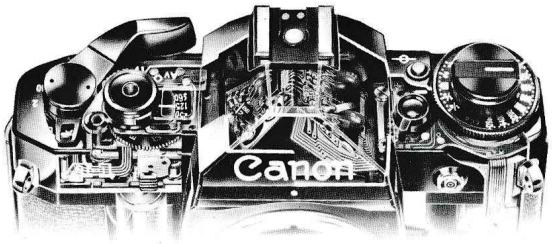
Code No.	Item
C12-1601-882	Canon A-1 w/lens FD 50mm f1.8
C12-1601-862	Canon A-1 w/lens FD 50mm f1.4
C12-1601-842	Canon A-1 w/lens FD 50mm f1.2
C12-1601-211	Canon A-1 body only

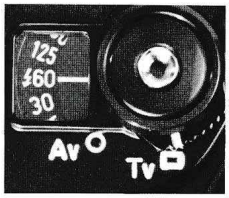
Six-mode exposure control. System versatility. Newer electronics for wider applications.

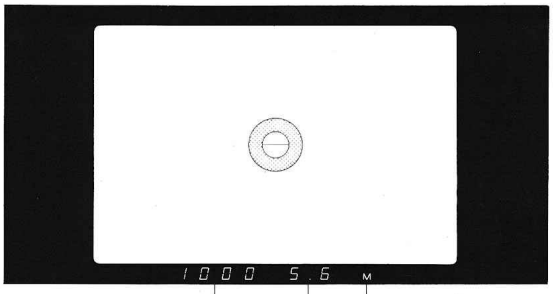
SPECIFICATIONS

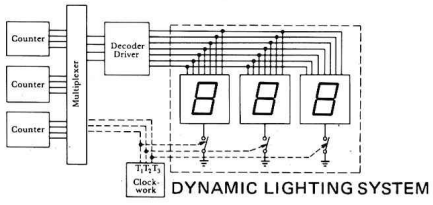
- **Type:** 35mm single-lens reflex AE (Automatic Exposure) camera with focal plane shutter
- **Picture Size:** 24 x 36mm
- **Function of Lenses:** FD lenses: full aperture and stopped-down metering, coupled with automatic diaphragm and AE operation. FL lenses: stopped-down metering, coupled with automatic diaphragm and AE operation; R lenses: stopped-down metering, manually-operated diaphragm and AE operation.
- **Viewfinder:** Fixed eye-level pentaprism
- **Field-of-View:** 93.4% vert. and 95.3% hor. of actual picture area; 0.83 magnification at infinity with standard 50mm lens
- **Finder Information:** Shutter button depressed slightly activates meter circuit and enables viewing of following information applicable for **shutter priority AE mode, aperture priority AE mode, programmed AE mode, stopped-down AE mode; flash AE mode,** and **manual mode;** shutter speed and aperture stop by red LED digital readouts below the finder field; flashing readouts indicate light is outside meter coupling range or under- and over-exposure warnings; for lens with minimum aperture of more than f/16, the meaning ascribed to flashing aperture readouts is either overexposure or reminder that the lens' minimum aperture is more than f/16; red "M" indicates camera is in manual mode; "bulb" or "bu" in case the shutter is at bulb setting; "F" in case the condenser charge is complete when Canon dedicated Speedlites are attached. "EEEE EE" in case of user-error in camera controls. Except for the last error mark, all information can be turned off by using viewfinder display switch.
- **Focusing Screen:** Center split-image rangefinder surrounded by microprism ring and ground glass/fresnel field
- **Eyepiece Shutter:** Built-in
- **Eyepiece Accessories:** Angle finders, magnifier, 10 strengths of dioptric adjustment lenses, eyecup
- **Mirror:** Extra-large, shockless instant-return type
- **Shutter:** Focal-plane shutter with speeds electronically controlled from 30 to 1/1,000 sec. and B; X synchronization at 1/60 sec.
- **Shutter Speed Dial:** Replaced by AT dial which also functions as **aperture dial. Shutter speed** visible when set at **Tv** (time value)
  P: Block in the green base ("P" is for programmed AE)
  1 to 1/1000 sec; white marking on black base
  2 to 30 sec; yellow marking on black base
- **Aperture scale** visible when set at **Av** (aperture value).
  1.2 to 22 with intermediate settings for every half stop: black marking on yellow base.
- **Exposure Adjustment:** Variable aperture (shutter-priority) AE, variable shutter (aperture-priority) AE, programmed AE with FD and stopped-down AE with both FD and FL lenses; manual operation mode.
- **Meter Sensitivity Pattern:** Central emphasis metering gives an average reading of the screen brightness with more emphasis on the center portion, utilizing wide range Silicon Photocell.
- **Metering Range:** EV—2 (f/1.4, 8 sec.) to EV 18 (f/16, 1/1,000 sec.) with ASA 100 film for all AE modes.
- **Film Speed Range:** ASA 6—12,800
- **Power Source:** One 6V silver oxide battery (#544)
- **Battery Check:** By depressing the battery check button besides the ASA setting dial, LED besides the shutter button flashes.
- **Memory Lock:** Subject brightness may be locked in by pressing the exposure memory switch.
- **AE Reading Override:** Settings for +2 f/stops and −2 /stops in 1/3 stops.
- **Flash Synchronization:** X synchronization at 1/60 sec. or below.
- **Flash:** Built-in flash shoe has direct contacts for Canon dedicated Speedlites. Conventional PC outlet provided.
- **Multiple Exposures:** Operation repeatable any number of times
- **Self-Timer:** Electronically controlled; for gaining 2 or 10 sec. delay.
- **Depth-of-Field Preview:** Possible with stop-down lever after winding the shutter and then removing the ring of the lens off 'A'.
- **Lens Mount:** Canon breech-lock mount
- **Back Cover:** Removable to accommodate the Data Back A.
- **Winding Lever:** Single or multiple stroke, 120° throw, 30° standoff
- **Coupler for Automatic Winding:** Hole in the camera base plate for attaching Motor Drive MA and Power Winder A.
- **Size:** 141(W) x 47.5(D) x 91.5mm(H) body only; 5-9/16"(W) x 1-7/8"(D) x 3-5/8"(H) body only
- **Weight:** 620g (22 oz.) body only. 855g (1 lb. 14-5/16 oz.) with FD 50mm f1.4 lens.

SELLING POINTS

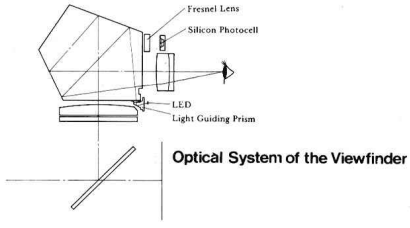






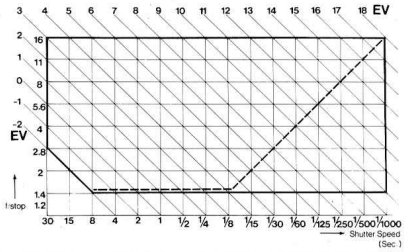


DYNAMIC LIGHTING SYSTEM



Optical System of the Viewfinder

Coupling Range of Built-in Exposure Meter



Application of the Most Advanced Electronics for the First SLR Ever to Have Five AE Modes

The inclusion of programmable logic array in the program unit has enabled, for the first time in the world, the production of a multi-mode AE camera over which camera users can exercise their choice for every conceivable picture-taking situation. The selection of automatic exposure systems over which you can pick your choice with a simple flip of a switch are: (1) shutter-speed priority AE, (2) aperture priority AE, (3) programmed AE, (4) stopped-down AE, and (5) electronic flash AE.

The AT Dial and Its Ramifications

One of the first things you will notice about the A-1 is its absence of a shutter-speed dial. This has been replaced by the AT dial, an all-purpose device. The dial has two settings: Tv (time value) and Av (aperture value). The former is for shutter-speed priority and the latter for aperture priority. The selection among AE modes is a very simple operation — a matter only of adjusting the AE mode selector and AT dial. A complete micro-computer used in the A-1 with a microprocessor and a program unit possesses operational and program storage functions. And depending on the photographer-selected AE mode, shutter speed, aperture and all important information pertaining to exposure, including warnings and reminders, appear in the form of digital displays and alphabetical letters for instant readouts.

The Viewfinder

The use of LED digital readouts in the A-1's viewfinder (split-image/microprism rangefinder as a focusing aid) enables a lot of photographic information to be displayed, below the field of view and out of the photographer's way. This information includes: shutter speed, aperture, 'F' indicating condenser charge completion when using Canon dedicated Speedlites, "bulb" spelled-out when using Bulb setting, 'M' indicating manual operation and EEEE EE indicating incorrect stop-down operation.

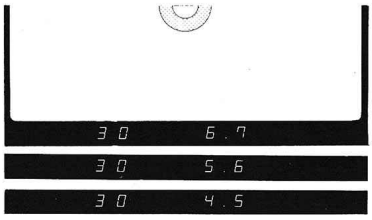
In addition, the aperture or shutter-speed indicator will start flashing if the settings the user has chosen result in under- or overexposure. The shutter speed indicator will flash when aperture priority AE is in use, and vice versa.

Divided into seven segments, the degree of illumination of these displays changes in four levels to provide consistency in brilliance under contrasting lighting conditions. The displays appear the instant the shutter release button is depressed half way or the exposure preview button pushed. However, if you do not care to see the displays at all, there is a switch to cancel all the readouts. This is one of the ways to concentrate on composing the picture, unhindered.

Expanded Metering Range

The A-1 meter uses a silicon photocell placed above the eyepiece. Its range of EV −2 to 18 for f/1.4 lens and ASA 100 film speed is much greater than that of the conventional CdS cell. For a lens with the maximum aperture of f/1.4 used with ASA 100 film, a low-light limit of the metering range is 8 seconds at f/1.4 irrespective of the AE mode selected. The chart at the left show the entire meter coupling range using an FD 50mm f/1.4 lens. The dotted line, for the programmed AE, shows that when the lighting level reaches the maximum opening of the particular lens in use (in this case f/1.4), only the shutter speed will keep on changing for the correct exposure.

SELLING POINTS



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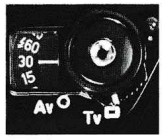

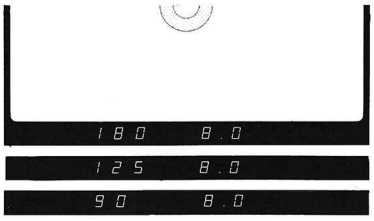

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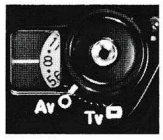

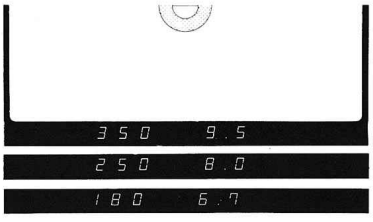

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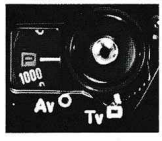

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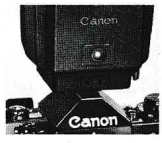

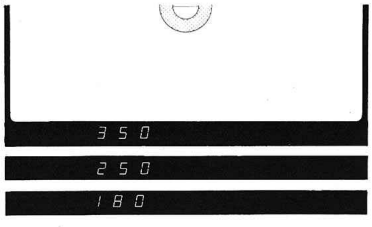

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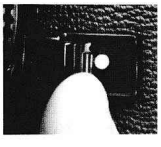

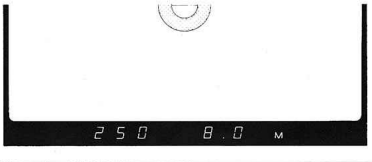

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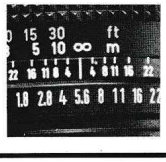


Six-Mode Exposure Control

1. Shutter-Speed Priority

Shutter-speed priority is especially useful for stopping motion in fast-action photography. It also helps the novice prevent blur caused by camera shake or cause blur for creative effect.

This AE mode is obtained by leaving the lens' aperture ring on the 'A' mark and setting the AE mode selector on Tv (time value). The photographer sets the shutter speed and the aperture is automatically adjusted for proper exposure. In the viewfinder, the shutter speed readout will stay the same while the one for aperture will change with the lighting conditions. Available shutter speeds range from 1/1000th sec. all the way to 30 seconds.

2. Aperture Priority AE

When the photographer wishes to easily control his depth-of-field, aperture priority is recommended. With the lens' aperture ring on 'A' and the AE mode selector switched to the Av position, the photographer selects the desired aperture and the shutter speed is automatically adjusted for proper exposure. The aperture readout in the viewfinder indicates the aperture selected, while the shutter speed readout changes.

3. Programmed AE

To obtain programmed AE, the aperture ring must be left on 'A' and the AE mode selector switched to Tv. Then the shutter speed scale must be set to 'P', located above the 1/1000 sec. speed setting. Focus and shoot photography is the result as both shutter speed and aperture are automatically adjusted to give optimum exposure. Both digital readouts will change with the subjects' brightness. However, once the aperture is fully open, only the shutter speed indicator will continue to change. Extremely wide-range programmed AE is great for beginners as well as professionals, allowing the photographer to concentrate on the subject without worrying about exposure control.

4. Electronic Flash AE

To take full advantage of this mode, the more powerful Canon dedicated Speedlites, such as the 199A shoe-mount and 533G and 577G handle-mount units are recommended. They offer three-f-stop range selection, bounce-flash capability and greater light output for better results under a wide variety of conditions. Attaching any Canon dedicated Speedlite to the A-1 automatically sets the camera for flash photography. A special control on the above-listed Canon Speedlites allows the A-1 to be used automatically for flash photography at speeds below 1/30th second for combination flash/time exposures.

5. Stopped-Down AE

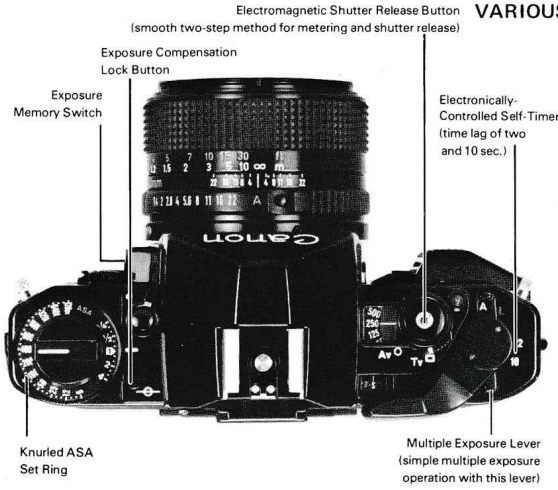
This unique mode enables AE photography with FL lenses in addition to FD lenses and this mode is also used when non-coupling accessories for photomacrography or photomicrography are placed between body and lens. When the Stopped-Down lever is pressed, the lens aperture ring is taken off 'A' and set to the desired aperture. The AE mode selector can be left in either the Tv or Av positions, as the proper shutter speed will be automatically selected in either case. In this mode, only the shutter speed readout will appear in the viewfinder. Proper exposure may be obtained by using any lens or accessory that can be physically attached to the A-1.

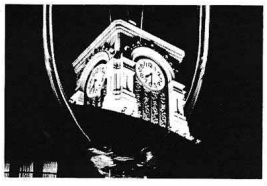
6. Manual Photography

For manual photography, the AE mode selector should be set to the Tv position and shutter speeds selected manually. The aperture ring of the lens should be moved from the 'A' position to the desired aperture. Although all functions are controlled manually, the viewfinder will provide readouts of the shutter speed selected, and the *suggested aperture setting for proper exposure.*

SELLING POINTS

VARIOUS CONVENIENT FEATURES FOR THE ADVANCED USER





ASA Film Speed Setting

Pictures can be taken in unlimited fashion with an ASA film speed range from ASA 6 to 12,800 in 12 steps click stopped in one-third increments between the calibrated figures. Fast ratings of ASA 800 and above are especially convenient for pushing high-speed films, when the situation demands use of fast shutter speeds in low-light conditions. The inclusion of ASA 6 and other slow ratings should be of interest to those using slow duplicating films.

Easy Exposure Compensation

The A-1 offers exposure compensation of ±2 f/stops by means of a large, easy-to-use dial. With 1/3-stop increments between each f/stop, precise compensation for special techniques such as low- and high-key shots and against-the-light photography is possible.

Exposure Memory Switch

Another device that facilitates exposure compensation is the exposure memory switch. The photographer takes a reading on the subject and holds in the switch while taking the photograph. The memory feature of the A-1 is unique and the camera stores exposure value data. This leaves the photographer with a complete freedom to adjust shutter speed and f/stop while holding in the memory switch, for example, from 1/500 f/2.8 to 1/30 f/11 for the same exposure by rotating the Tv or Av dial.

Energy-Saving Design

Only one silver oxide battery runs the A-1 for an entire year. This is possible because every part of the camera is designed to save power, from its sequence circuitry to Pure I^2L and combination magnet.

Lightweight, Compact and Totally Foolproof

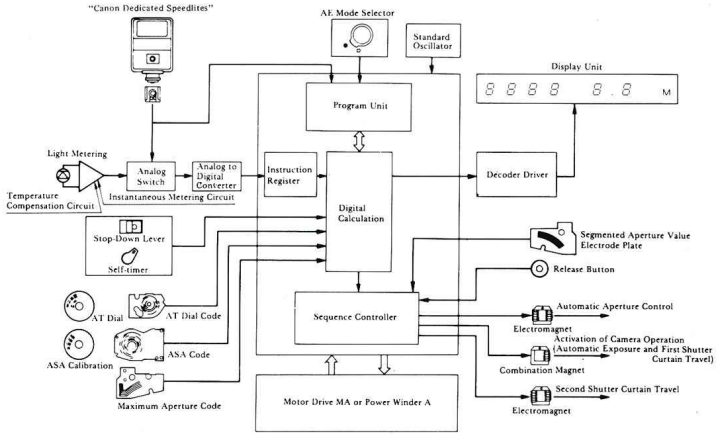
Extensive use of electronics has enabled the A-1 to do many things, but yet remain as compact as and just a little heavier than the AE-1. And many of the camera's controls are equipped with locking devices to prevent accidental movement.

Total Accuracy and Reliability

Accuracy and reliability have been trademarks of Canon for many years. Because it employs the most up-to-date technology, the A-1 actually improves on these two points.

Control System Block Diagram

The diagram below shows the electronic circuitry of the camera's control system.



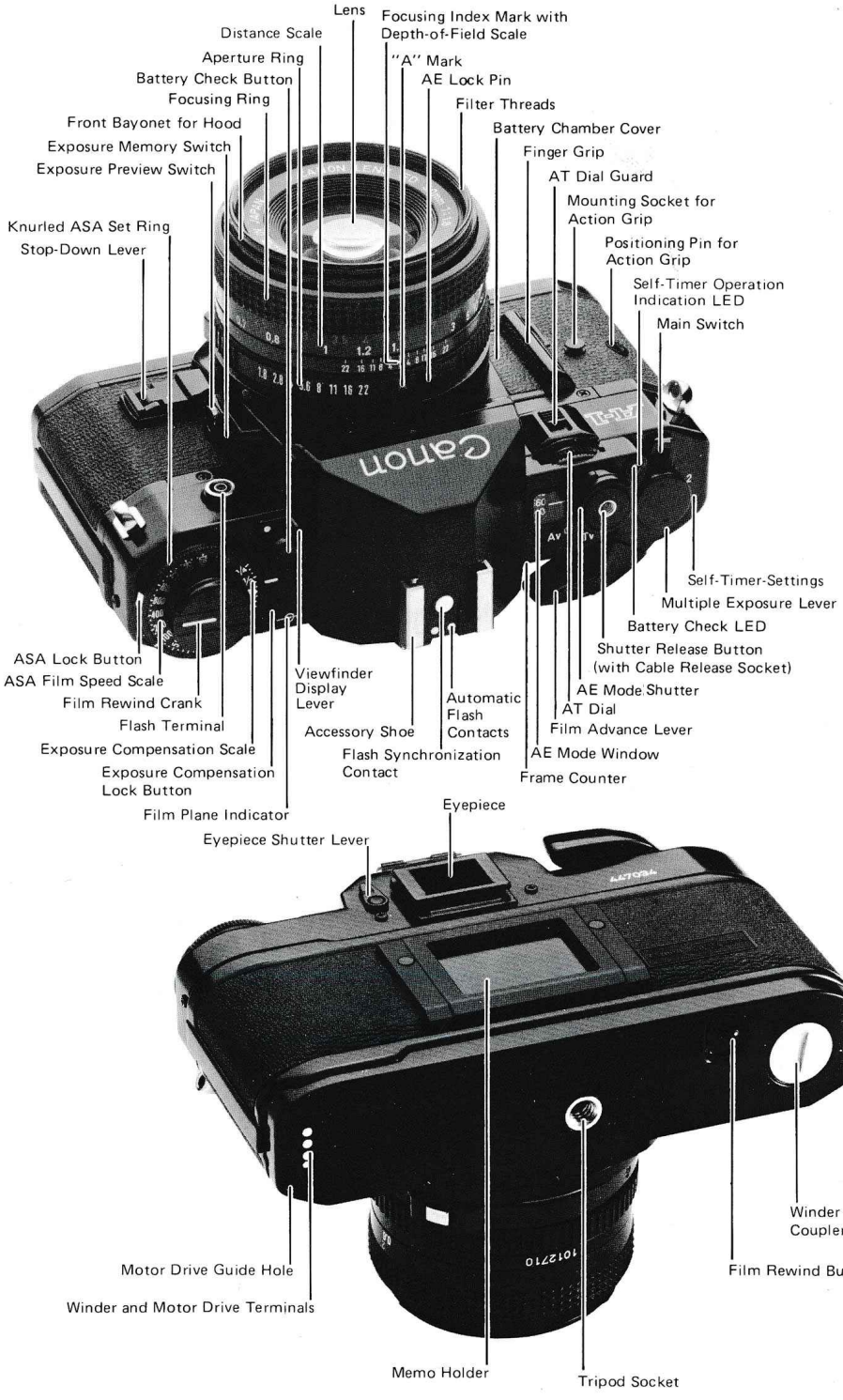
Technology that Made the A-1 Possible

The A-1 is a unique camera because it employs the latest technology such as PLA (programmable logic array) available from the electronics world. Both input and output information are in the form of pulse signals, thus enabling a digital computer to be used for information input, calculation, storage, display and exposure control. And with its pure I^2L, used for the first time in a camera, many times the amount of information can be processed than has been previously possible. All this information is arranged in correct order by a PLA, making possible the digital displays in the viewfinder.

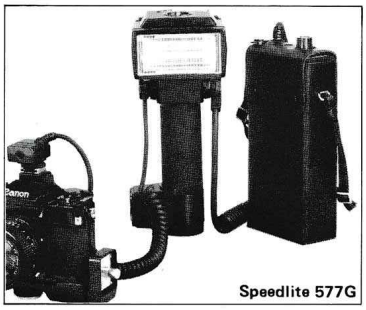
Digital Control

With the A-1, a full-scale digital control micro-computer with a programmable logic array has been incorporated into the camera body. Transfer of data is done by means of digital controls (quantified values by pulse signals) coupled with the programmed arithmetic functions which provide answers to conditional requirements such as lighting levels and thus takes complete control over the exposure system in each AE mode.

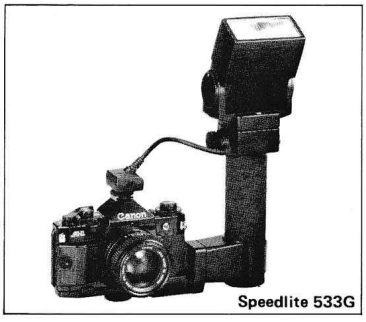
NOMENCLATURE



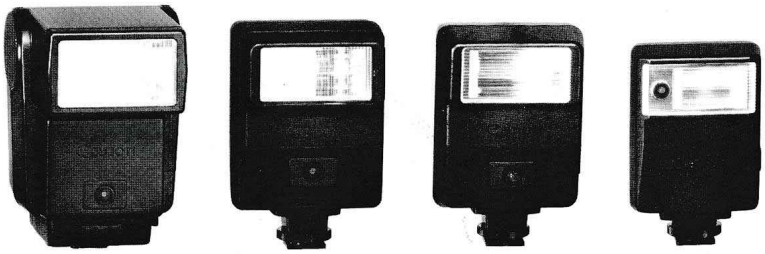
MAIN ACCESSORIES



Speedlite 577G



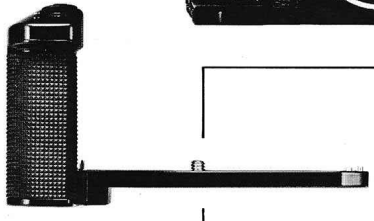
Speedlite 533G



Speedlite 199A | Speedlite 177A | Speedlite 155A | Speedlite 133A

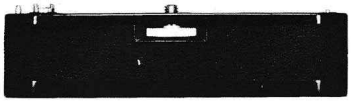
Data Back A

- Simultaneous recording of data with each exposure
- Provision for manual imprinting of data
- Maximum data capacity of 6 digits and use of some letters in the alphabet in combination
- Selection switch to assure clear impression of data for different film-types



Motor Drive MA

- Couples to the base of A-1 camera with simple and sure operation
- Shutter release button provided for holding the camera in horizontal position



Power Winder A

- Quick, accurate attachment to the A-1 and connection to its automated controls
- Continuous shooting at speed of up to two frames per second
- Sequence or frame-to-frame shooting control by simple pressure on the camera's shutter release button

Ni-Cd Pack MA

- Couples to the base of Motor Drive MA with simple and sure operation
- Light-weight compact design with neat lines
- Three shooting modes of high speed (4 frames per sec.), low (3 fps) speed and single-frames
- Two shutter release buttons provided for holding the camera in vertical as well as horizontal positions
- Shooting capacity of more than 60 rolls in normal temperature and more than fifteen rolls in cold temperature for 36-exposure films
- Remote control operation from distance possible

Battery Pack MA

- Couples to the base of Motor Drive MA with simple and sure operation
- Three shooting modes of high speed (5 frames per sec.), low (3.5 fps) speed and single-frames
- Two shutter release buttons provided for holding the camera in vertical as well as horizontal positions
- Shooting capacity of more than 60 rolls in normal temperature and more than five rolls in cold temperature for 36-exposure films
- Remote control operation from distance possible
- Instant high-speed feature for switching from single-frame or low speed mode

Canon FD Lenses

- World-renowned for sharp pictures with high resolution
- Faithful color rendition with Spectra and Super Spectra Coatings
- Canon Breech-lock mount for quick lens changes
- Compact, lightweight design for easy handling
- Wide selection for all purposes in photography

Speedlite 577G

The Canon Speedlite 577G is an extremely powerful handle-mount flash unit with external power supply designed expressly for professional use. The 577G is an energy-saving, thyristor-type flash unit featuring three automatic flash ranges plus automatic bounce flash and a high guide number of 157 with ASA 100 film. A remote flash sensor mounts on the camera's accessory shoe to provide accurate automatic exposure control regardless of the position or bounce angle of the flash, even when it is used off-camera or aimed away from the subject, eg: into a flash umbrella, etc.

Speedlite 533G

The handle-mount Speedlite 533G is a powerful, professional-type flash unit designed for serious amateur and professional photography. The 533G is an energy-saving, thyristor-type flash featuring three automatic flash ranges plus automatic bounce flash and a high guide number of 118 with ASA 100 film. A remote flash sensor mounts on the camera's accessory shoe to provide accurate automatic exposure control regardless of the position or bounce angle of the flash, even when it is used off-camera or aimed away from the subject, eg.: into a flash umbrella, etc.

Speedlite 199A

The most powerful shoe-mount Canon Speedlite featuring a Guide No. of 100 with ASA 100 film, the 199A is a thyristorized bounce flash that features three automatic ranges plus Manual. Providing sufficient light for almost any photographic situation, the 199A is the ideal match for the Canon A-1.

Speedlite 177A

The Canon Speedlite 177A features a powerful Guide No. of 82 with ASA 100 film, and offers two automatic ranges for creative control of depth-of-field. Energy-saving thyristor circuitry offers almost instantaneous recycling on automatic.

Speedlite 155A

The 155A is a compact automatic flash unit featuring a Guide No. of 56 at ASA 100. The 155A offers the photographer two automatic flash ranges plus Manual.

Speedlite 133A

The most economical Canon Speedlite provides the photographer with two auto apertures and is light and small enough to be carried anywhere. Adequate for most in-home photography.

For complete specifications and additional information about Canon Dedicated Speedlites, please see page SG3-D3

Canon Motor Drive MA Unit (Exclusive for the A-1) Specifications

Motor Drive MA

Structure: Composed of a motor for film winding, an electromagnetic clutch, a set of gears, a release button for connection to the camera base, shutter release button for horizontal position shots.
Size and Weight: 151mm W x 67mm D x 80mm H, 200g

NiCd Pack MA

Structure: Consists of a motor control circuit, including an automatic stopping circuit, NiCd battery, a vertical position shots release button, and a selector switch.
Shutter Speed Coupling Range: All speeds
Shooting Mode: Three changeable modes of H (4 frames/sec.), L (3 frames/sec.) and S (single frame).
Conveyable Number of Film Rolls (H mode with 36-exposure film):
Normal Temperature: 60 rolls or more
Low Temperature: 15 rolls or more (20-sec. interval between 3-sec. shootings)
Operable Temperature Range: $-20^{\circ}C$~$+40^{\circ}C$
Power Source: Built-in NiCd battery, 14.4V
Size and Weight: 151mm W x 61mm D x 29mm H, 205g (including batteries)

Battery Pack MA

Structure: Consists of a motor control circuit, including an automatic stopping circuit, AA size batteries loaded in a battery magazine, a vertical position shots release button, an instant high speed mode button, and a selector switch.
Shutter Speed Coupling Range: All speeds
Shooting Mode: Three changeable modes of H (5 frames/sec.), L (3.5 frames/sec.) and S (single frame)
Conveyable Number of Film Rolls (H mode with 36-exposure film):
Normal Temperature: 60 rolls or more
Low Temperature: 5 rolls or more (20-sec. interval between 3-sec. shootings)
Operable Temperature Range: $-10^{\circ}C$~$+45^{\circ}C$
Power Source: 12 AA size batteries, 18V
Size and Weight: 151mm W x 67mm D x 40mm H, 395g (including batteries)

Canon Power Winder A Specifications

Winding Speed: Up to two frames per second for sequence shooting. Single-frame winding for intermittent shooting possible.
Operation: Activated by the shutter release button.
Shutter Speed Coupling Range: 1/60 to 1/1000 sec. for AE sequence shooting. "B" or 2 to 1/1000 for single-frames. No AE photography at "B".
Frame Counting: Frame counter of the camera shows the number of frames run.
Safety Circuit: When the film is completely wound or when the battery power fails, the Power Winder A automatically stops and its LED flashes.
Power Source: Four AA size batteries (over 20 rolls of 36-exposures films under normal temperature and with fresh batteries).
Attachment: The Power Winder A fastens to the tripod screw at the bottom of the camera.
Size: 141mm W x 42mm D x 34mm H
Weight: 300g (including batteries)
Accessories: Carrying case and Battery Pack A (spare)

Canon Data Back A Specifications

Attachment: To camera's back after removal of the back cover.
Data Setting: Done by three rotating dials.
Right Dial: 32 figures and blank (0 to 31 and □).
Center Dial: 39 figures and blank (0 to 31, A to G and □).
Left Dial: 39 figures and blank (0 to 9, 78 to 89, Roman numerals to X, a to g, and □).
Data Imprinting: By special synchronization cord and built-in lamp. Manual imprinting of the data with the manual imprint button.
Exposure Adjustment: Three different positions. Black and white and 2 color positions.
Color 1: ASA 64 to 160 color films.
Color 2: ASA 25 to 50 color films.
Indicator Lamp: LED lamp indicates data imprinting.
Power Source: One 6V silver oxide battery #544; good for 5,000 flashes or one year use.
Size: 145mm W x 33mm D x 54mm H
Weight: 160g (including battery)
Accessories: Special synchronization cord and case.
