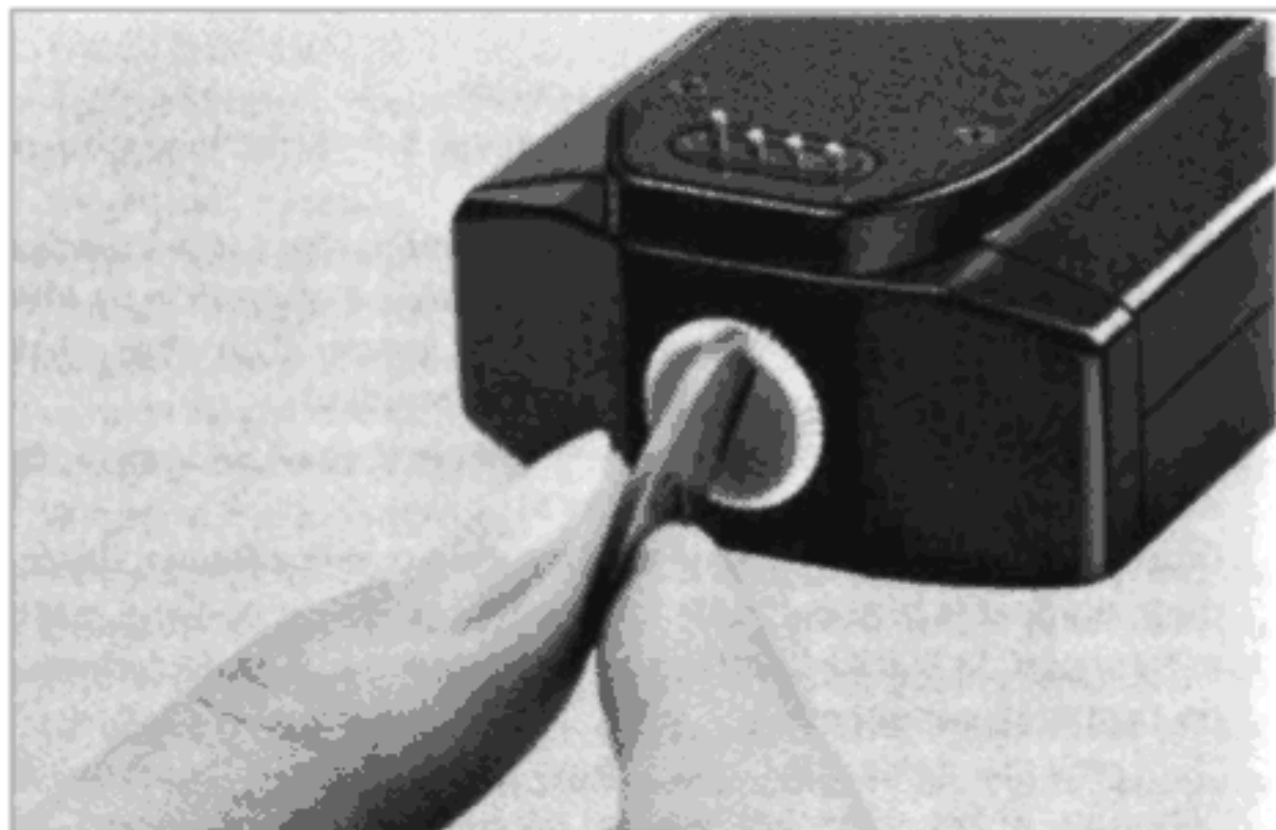
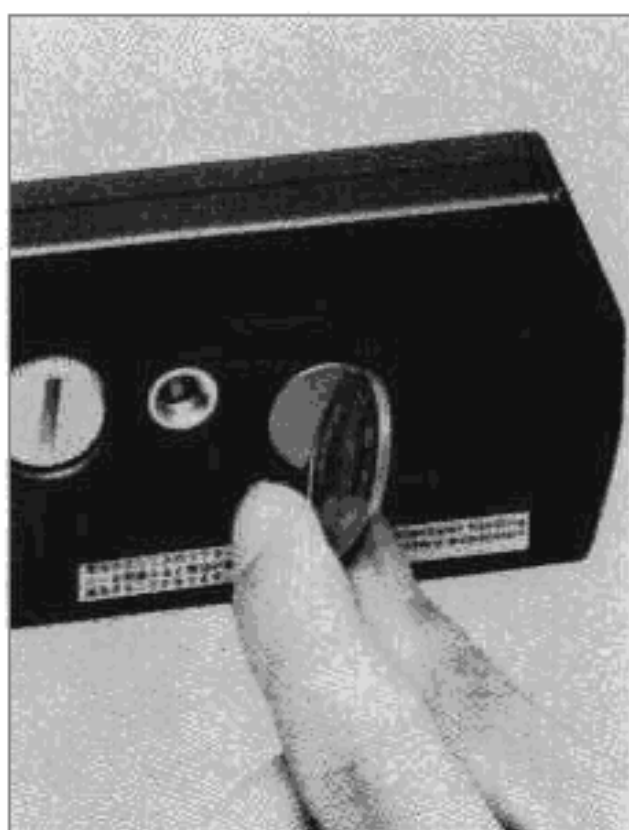




1. Loading the Batteries

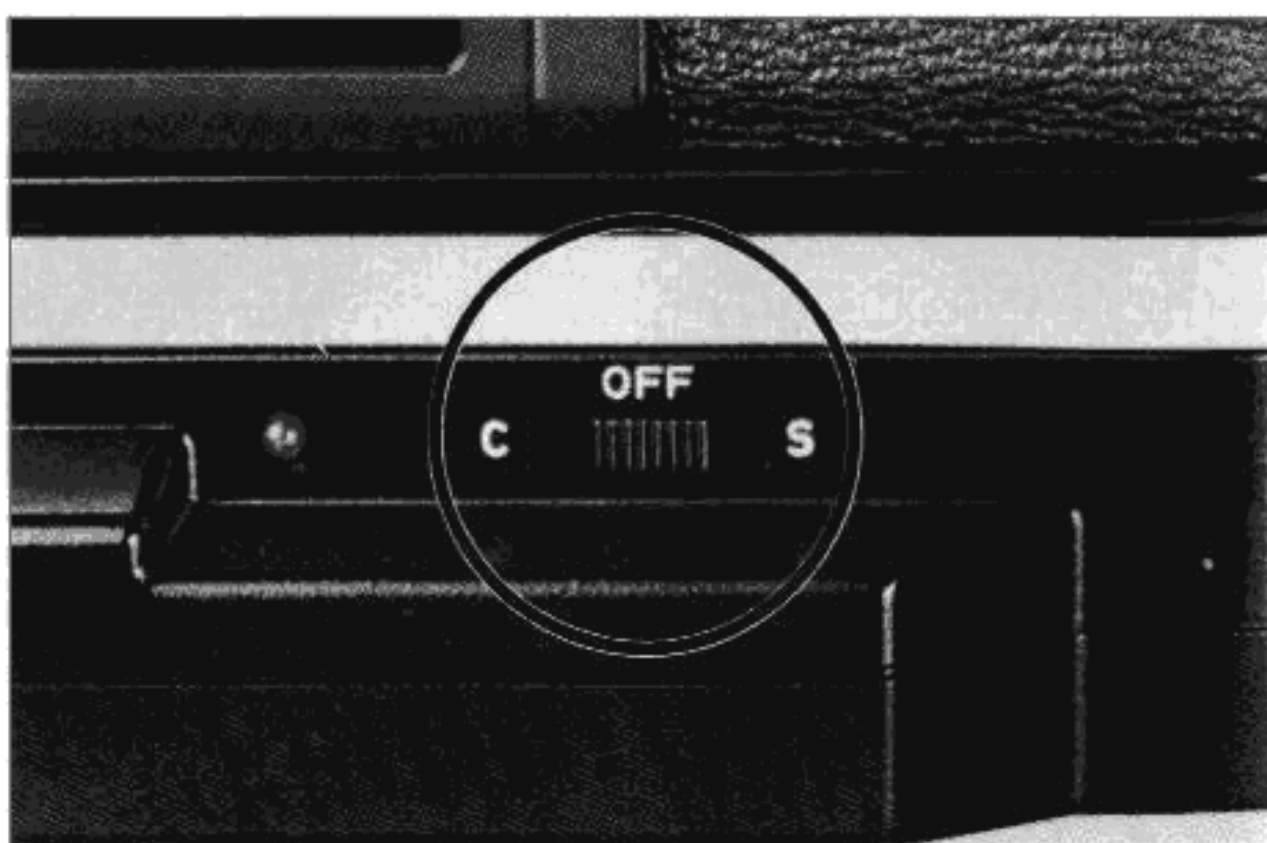
Turn the fastening screw counterclockwise with a coin to remove the battery chamber cover. Use four new AA size batteries of the same type and brand. The batteries' contacts should be wiped with a clean, soft cloth before loading to avoid possible corrosion due to dirt or fingerprints. Insert the batteries as indicated by the diagram on the bottom of the power winder, and attach the chamber cover by turning the screw with a coin. In general, new alkaline batteries will be able to wind about 40 rolls and carbon-zinc about 20 rolls of 36-exposure film continuously under normal temperature.

- * AA size Ni-Cd batteries can be used in the Power Winder A2. Use fully-charged batteries and follow the manufacturer's instructions. Fully-charged Ni-Cd batteries will wind about 60—80 rolls of 36-exposure film.
- * Load the batteries correctly. If incorrectly loaded, the batteries may burst and leak, damaging the winder.
- * If the Power Winder A2 will not be used for about three weeks or longer, remove the batteries from the battery chamber lest they should leak.



2. Affixing the Power Winder to the Camera

- Remove the winder coupler cover of the camera by unscrewing it with a coin. In order not to lose the cover, screw it into the winder coupler's cover holder on the power winder (except the AL-1).
- Make sure the power winder's main switch is set to "OFF."
- Before attaching the Power Winder A2 to the camera, clean the winder's and camera's terminals with a soft cloth to ensure proper contact.
- Attach the Power Winder A2 to the camera by turning the fastening screw clockwise with a coin to secure the power winder to the camera. If it takes a while to fasten the power winder to the camera while the main switch is set at "C" or "S," there is a possibility that the warning lamp will light up and the winder may not function; this does not mean it is out of order. In this case, manually wind the film advance lever once.

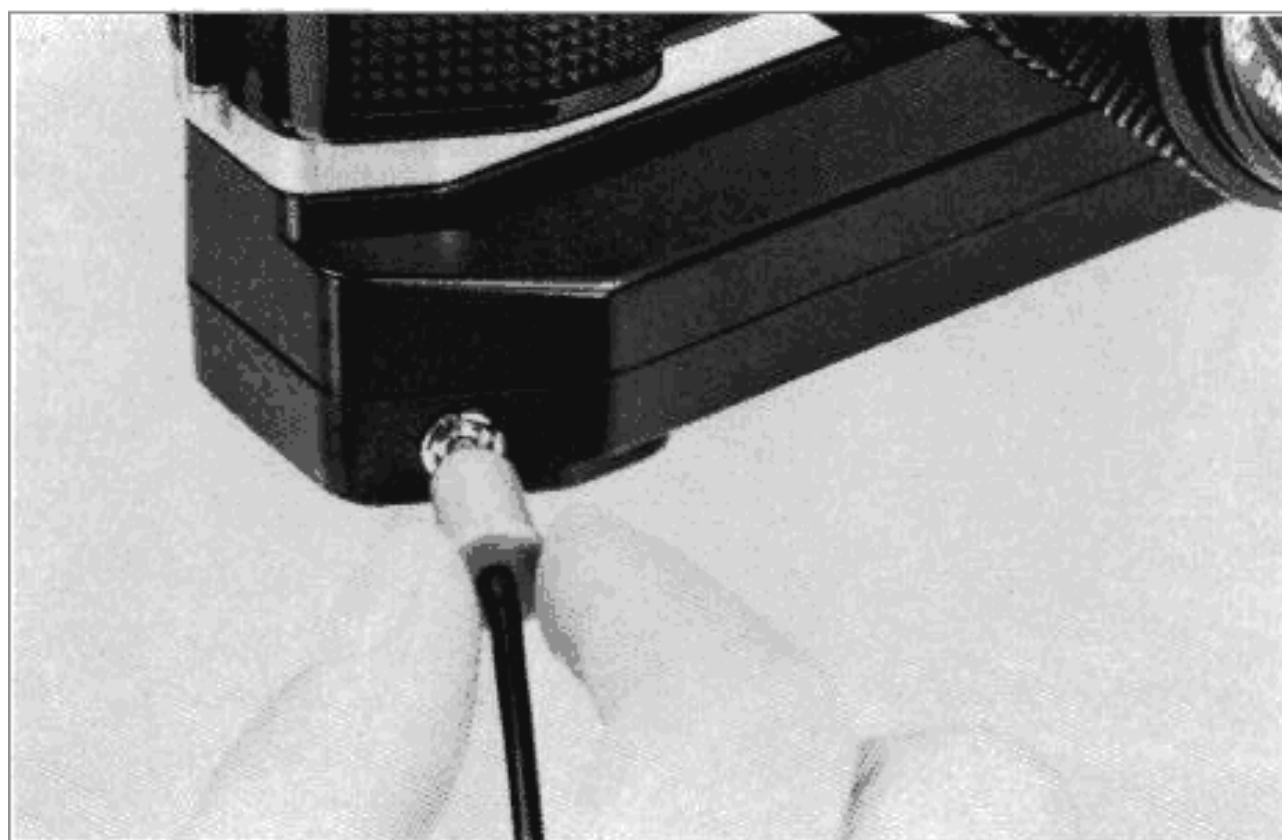


3. Setting the Shooting Mode (Continuous or Single Frame Shooting)

- When using the Canon A-1 or AE-1 PROGRAM with the power winder, the changeover of continuous or single frame shooting is performed by the main switch. Set the main switch at "S" for single frame shooting or "C" for continuous shooting.
- When the power winder is mounted on an AL-1, AE-1, AV-1, or AT-1 camera, continuous photography is possible on either the "C" or "S" setting as long as you press the shutter button down. For single frame shooting with the main switch at "C" or "S", press the shutter button down once, then remove your finger from the button.
- * In general, the film will be advanced at a rate of about two frames per second.
- * When the main switch is turned to "OFF," the film can be advanced manually with the film advance lever.
- * The main switch should be set to "OFF" whenever the power winder is not in use.

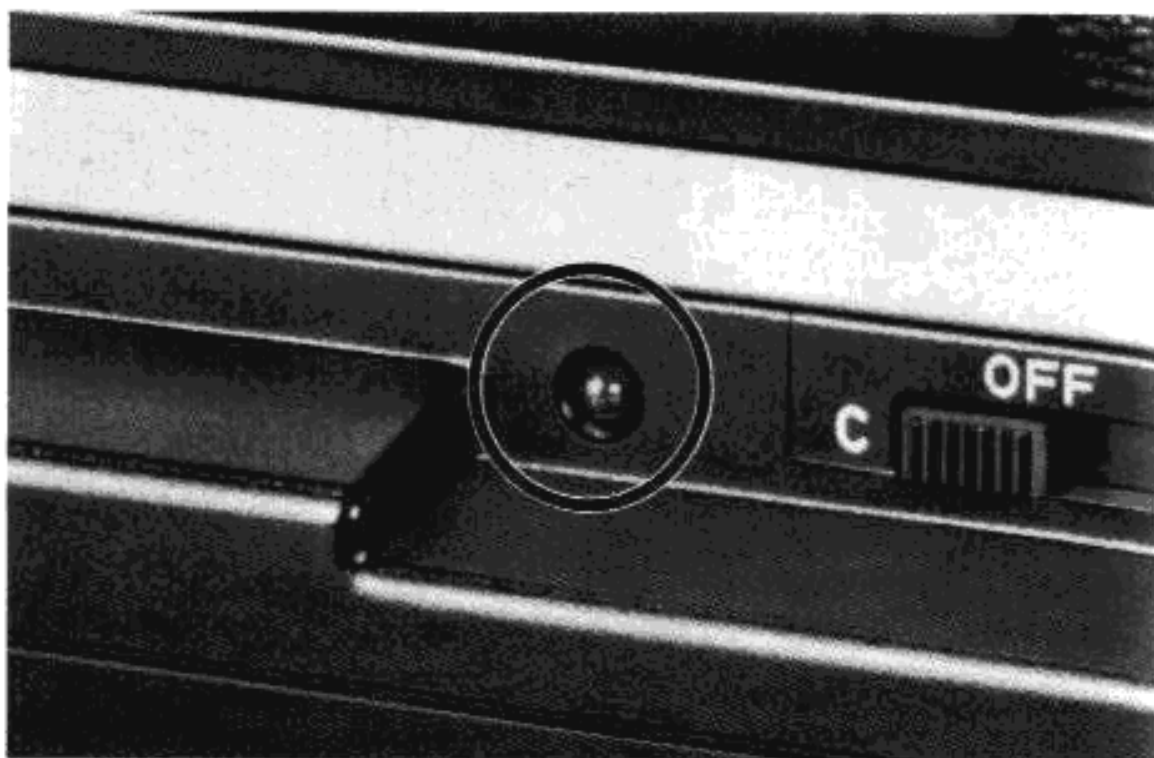
4. Selecting the Shutter Speed and Shooting

- When you perform continuous photography, use a shutter speed of 1/60 to 1/1000 second.
- For single frame photography, any shutter speed can be used.
- * If using the AE-1 PROGRAM with the shutter speed selector dial set to "PROGRAM" (programmed AE), sequential shooting is possible if the aperture indicated in the viewfinder is 4 or smaller, i.e., 5.6, 8, 11, etc.
- * When the Power Winder A2 is used with the Canon A-1, sequential shooting is not possible when in the stopped-down AE mode.
- * The main switch of the Power Winder A2 must be turned off to make multiple exposures with the Canon A-1.



7. Remote Control Shooting

- Since the Power Winder A2 has a remote control socket for use with the A-1 and AE-1 PROGRAM, shooting from a distance is possible via the socket with Remote Switch 3 or 60, or Wireless Controller LC-1, or Interval Timer TM-1 Quartz (optional accessories).
- Make sure the winder's main switch has been turned to "OFF" before connecting the accessory. (The shutter might be released once if the accessory is connected when the winder's main switch is at any setting other than "OFF").
- When the Power Winder A2 is mounted on an AL-1, AE-1, AV-1 or AT-1, remote control shooting is not possible.



5. Warning Lamp for Completion of Winding

When the film roll ends or winding stops incompletely, the warning lamp lights up. Turn the main switch to "OFF." Do not turn the main switch to any other position.

- * There may be a rare case when the warning lamp does not light up.

6. Rewinding the Film

After pressing the film rewind button at the bottom of the winder, rewind the film as usual, turning the camera's rewind crank in the direction of the arrow until the film is completely rewound.



Precautions

Interruptions in Winding Due to Reduced Battery Power

When the batteries are almost exhausted and it takes over one second for one frame of the film to be wound, the batteries must be replaced after the main switch has been turned off. Also check the power of the battery in the camera. If the camera's battery has insufficient power, the winder will not function.

- * When the Power Winder A2's batteries are exhausted, replace them with four new ones of the same type.

Avoiding Blurred Images

When a telephoto lens is in use, slight vibration may cause image blur. To avoid possible blurred images during hand-held shooting, the minimum shutter speed should be faster than the reciprocal of the focal length of the lens. For a 100mm lens, for instance, use a shutter speed of 1/125 sec. or faster. Even when a tripod is used, choose the fastest shutter speed possible.

Use of the Power Winder A2 in Cold Climates

In very low temperatures, the batteries' power is reduced and regular photography cannot be performed. Under these conditions, it is best to carry a spare set of batteries in an inside pocket to keep them warm.

Ni-Cd batteries are also recommended as an effective power source in low temperatures.

A NEW GENERATION

Canon
A-1

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



Focusing Screen D (Matte/Section)

Similar to C screen, but has horizontal and vertical reference lines. Recommended for architectural photography and copy work in which accurate image placement is essential. Especially useful with TS 35mm (Tilt and Shift) Lens.

Focusing Screen E (Split-Image/Micropism)

Matte/Fresnel field with split-image rangefinder spot surrounded by micropism collar. Precise focusing may be performed using any part of screen. Suitable for general photography using any type of lens.

Focusing Screen F (Micropism/Large Aperture Lenses)

Similar to Focusing Screen A, but angle of micropisms contained within rangefinder spot is designed to work especially well with lenses having maximum apertures of $f/1.2 - 2.8$. Unsuitable for small aperture lenses, because rangefinder darkens.

Focusing Screen G (Micropism/Small Aperture Lenses)

Similar to Focusing Screen A, but angle of micropisms contained within the rangefinder spot is designed to work especially well with lenses having maximum apertures of $f/3.5 - 5.6$. Perfect for telephoto lenses. Unsuitable for large aperture lenses, because of focusing inaccuracy.

Focusing Screen H (Matte/Scale)

Matte/Fresnel field with fine matte center plus horizontal and vertical scales in millimeters. Recommended for close-ups, macrophotography, copy work and architectural photography where it is useful to know the size of the subject or the magnification involved.

Focusing Screen I (Double Cross-Hair Reticule)

Matte/Fresnel field with 5mm clear center spot containing double cross-hair reticule. To focus, move your eye left to right. If cross-hairs stay in same position on subject, then subject is in focus. Recommended for photomicrography, astrophotography, or other applications requiring high magnifications.

- When changing focusing screens, put the one you remove with fresnel side (the lower side when attaching to the camera) up to avoid marring.

フォーカシングスクリーンD (方眼マット式)

中央マット面、周囲はフレネルマット面で方眼がつけてあります。

接写、複写、アオリレンズ使用時に構図がきめ易い特長があります。

フォーカシングスクリーンE (マイクロスプリットプリズム式)

中央にBタイプのスプリットプリズムを配し、その周囲にAタイプのマイクロプリズムを配したもので、その外側はフレネルマット面です。

撮影者の好みや被写体の方向性に応じてスプリット、マイクロ、マットの3通りの自由な測距ができます。

フォーカシングスクリーンF (マイクロプリズム式大口径用)

Aタイプと同じマイクロプリズムの配し方ですが、 $f/1.2 \sim 2.8$ の明るいレンズを使用したとき適し、ピントが合わせ易く、ボケが早いために測距精度が高くなります。しかし暗いレンズを使用するとマイクロプリズムのかげりが出ます。

フォーカシングスクリーンG (マイクロプリズム式小口径用)

Aタイプと同じ配し方ですが、レンズの明るさとしては $f/3.5 \sim 5.6$ の範囲に適しており普通の望遠レンズには欠かさないものです。しかし明るいレンズを使用したときは、像のボケがゆるいため測距精度がわるくなります。

フォーカシングスクリーンH (目盛線入りマット式)

Dタイプの方眼を目盛線にしたもので、目盛単位は1mmです。被写体の大きさ、倍率を知るために役立ち、接写拡大、複写、建築写真などに最適です。中央マット面、周辺はフレネルマット面です。

フォーカシングスクリーンI (十字線入りマット式)

中心の直径5mmの素通し部に十字線がつけてあり周囲はフレネルマットです。

ピント合わせは目を左右にふったとき、素通しの像が十字線に対して動かなければピントが合ったことを示します。顕微鏡や天体写真の撮影に適しています。

- 取り換えのためにフォーカシングスクリーンを置く場合には、フレネル面（カメラに取付けたとき下になる面）を上にして置き、傷をつけないよう注意してください。

CANON INC.

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キヤノン株式会社

キヤノン販売株式会社

〒108 東京都港区三田 3-11-28

カメラ販売企画部 (03) 455-9353



What the A-1 offers

Five automatic exposure modes and manual

- * Shutter priority AE
 - * Aperture priority AE
 - * Programmed AE
 - * Stopped-down AE
 - * Electronic Flash AE
 - * Manual control of exposure
- Operation made extremely easy by the AT dial and the AE mode selector

Viewfinder showing unobstructed view of picture image

- * Photographic information in dynamic digital display posing no obstruction to viewing
- * On/off viewfinder display switch

Further expansion of photographic possibilities

- * Metering range from EV -2 to EV 18
- * Shutter speeds from 1/1000 of a second to 30 seconds
- * Usable film sensitivity range from ISO/ASA 6 to ISO/ASA 12800
- * Exposure compensation in 12 different settings
- * Exposure memory based on storage of the amount of light itself
- * Multiple exposures
- * Two-speed self-timer
- * Reliability and high-quality performance ensured by the incorporation of the most recent developments in optics and electronics
- * Complete digital computing process to make possible a remarkably compact and lightweight camera, which is also extremely easy to operate

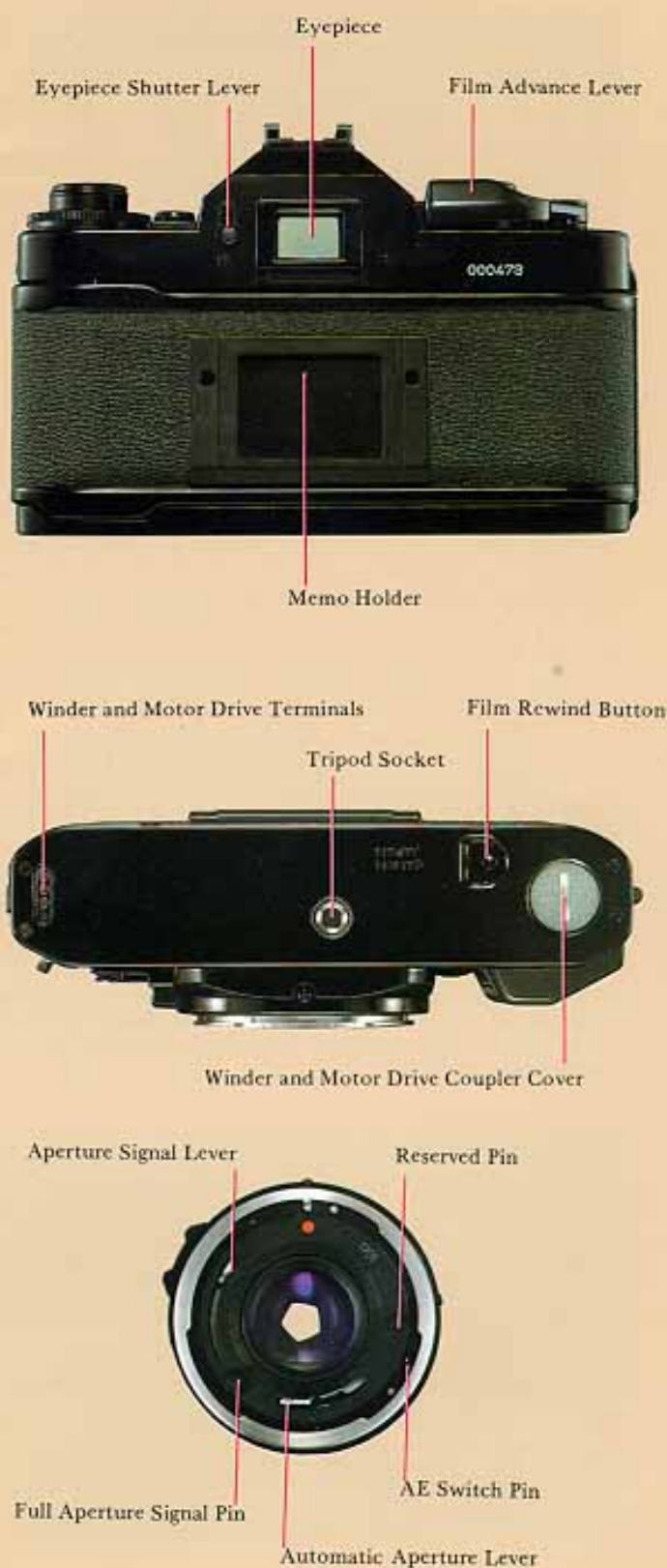
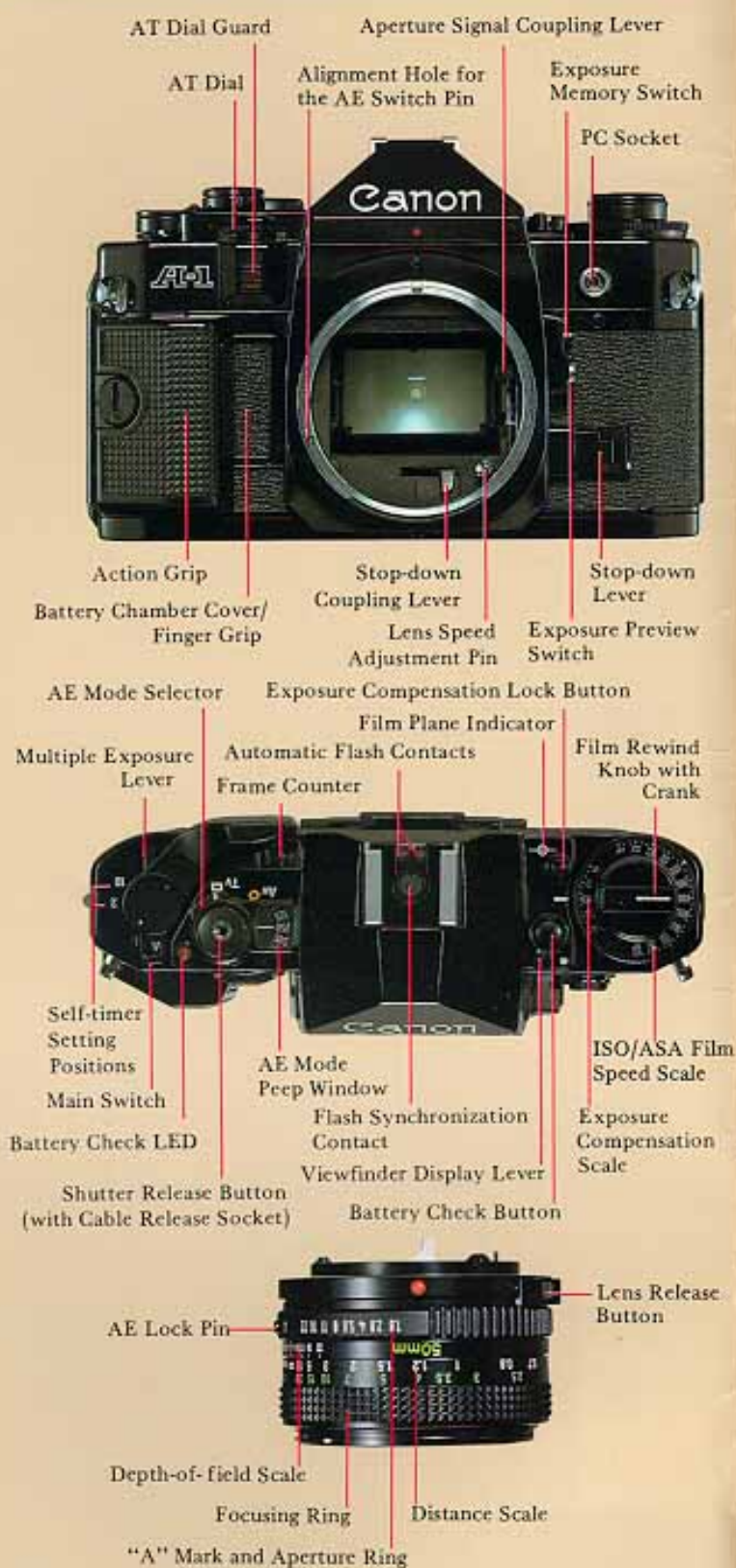
Extended system photography

- * Motor Drive MA for automatic film advance at up to 5 frames per second
- * Wireless Controller LC-1 for remote control shooting
- * Power Winders A2 and A also usable with the AE-1 PROGRAM and AE-1
- * Acceptability of the Speedlite 577G, 533G, 199A, 188A, 166A, 155A, 011A and 277T for automatic exposure with flash
- * Data Back A acceptable for classifying photographs
- * A fully comprehensive assortment of system accessories and attachments for all conceivable photographic purposes

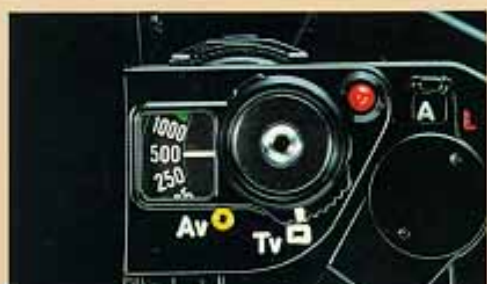
Full use of the potentialities of the FD lenses

- * Perfect acceptability of all the Canon FD lenses without any adjustment

Nomenclature



5 AE Modes and Manual



Shutter-priority AE



All-out digital computerization has made possible the automation of five exposure control modes in the Canon A-1, while simplifying their use, beginning with shutter-priority AE. Upon the input of a given shutter speed, the camera's micro-computer circuitry meters light, converts the EV into digital input, analyzes factors such as film speed and maximum aperture of the lens, and processes them to automatically determine the aperture for correct exposure.

Fast moving subjects, expressions of a child or an adult un-awares, sports, all kinds of action, and sudden shutter chances are the occasions for shutter priority.

The A-1 improves even further such advantages of shutter priority by eliminating camera shake effects when using telephoto lenses, and by affording the possibility of intentionally blurring an image for a creative effect. It is easy to tell what shutter speed is appropriate for a given situation, and once you set it the camera takes over the whole process of exposure.

The AT dial of the camera has been designed so that adjustments take a mere fraction of a second. The shutter speed setting can be seen immediately in the viewfinder's dynamic display, reflecting its input into the micro-processor where it becomes the basis for all calculations. The mode selector has two basic positions, "Av" and "Tv". You choose "Tv" for shutter priority and everything in the A-1 is ready for you to simply point and shoot.



Aperture-Priority AE



Preference for aperture-priority over that of shutter speed had, up to now, divided professionals and experts into two sides. Indeed, for still subjects, architecture and landscapes, portraits, family reunions and other memorabilia, better results can be obtained by setting a fixed aperture and leaving the determination of shutter speed to the camera's automatic exposure capabilities. Once the aperture is set on the AT dial, the camera's micro-computer processes light, film speed and other factors to provide the exact shutter speed needed for correct exposure. You press the shutter button and the electromagnetic release gives you a splendid photograph.

Everything that the supporters of aperture-priority look for is perfectly obtained, and even enhanced by other functions.

When depth of field is of particular importance, the aperture-priority AE mode places you on a vantage point. You can see at all times clearly displayed in the viewfinder the different shutter speeds that the A-1 is computing according to the changes in exposure value. You can always be able to tell exactly what the shutter speed is before you press the button. This feature allows you to make photographs respond to your own intention, an invaluable advantage that only the A-1 can offer.

The AT dial is your steering wheel to stay on the right path all the time, and changing from one AE mode to the other is just as easy as it was to set your initial choice.



5 AE Modes and Manual



Programmed AE

3

The Canon A-1 offers the most comprehensive range of functions among SLR cameras, embracing an entire system of photography. Yet it also offers a programmed AE mode in the manner of the easy snapshot camera, but with all the assurance of an electronic SLR.

In the hands of a top-ranking professional, the A-1 affords unlimited possibilities for outstanding work and creative experiments. For the person without any experience, its electronic marvels are available simply by using the programmed AE mode. Both shutter speed and aperture are left then to the camera's own arithmetic so that, when your instruction for shutter release is given, the photograph will be correctly exposed.

Correct exposure is also assured even in very dim light. Then, the A-1's almost magic capabilities work so that if the subject is too dark for the lens to cope with it at its maximum aperture, it automatically switches to slower shutter speeds until the balance for correct exposure is obtained. The very beginner can find in the Canon A-1 the key to photography with interchangeable lenses and all the other advantages offered by SLR cameras.



Stopped-down AE

4

Additional definition in the bordering areas of the picture field, and the possibility of checking the depth of field when using FD lenses, are advantages of stopping down the lens which can be fully exploited with the Canon A-1's automatic exposure controlled by the most advanced electronic circuitry in the camera world today.

This is particularly effective in close-ups, photomicrography, and photomicrography, which are photographic fields usually reserved for the professional and the expert.

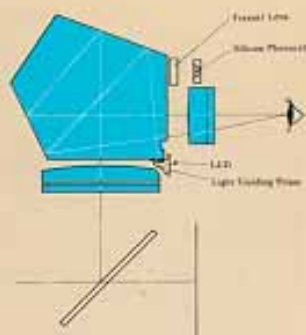
Once you disengage the lens from the "A" mark and push the stop-down lever on the front of the camera body, the camera's computer circuitry determines the correct shutter speed. Even if you are not familiar with this type of photography, you can now rely on computerized accuracy, and use accessories for close-ups or photomicrography or even perform photomicrography.



Matte Screen

Shutter Speed Aperture Value Manual Control Indication

The value of a viewfinder's design lies in the way it can show what the naked eye would see. The A-1 offers a clear, bright viewfinder image without any obstruction because all photographic information appears in alphanumeric form, below the image field, in dynamic LED digital display.



The first light pressure on the shutter release button, or with the exposure preview button, or with the exposure memory button, will place before your eyes the priority settings and the changing values, flash readiness, manual override, and possible exposure errors in segmented LED characters, perfectly clear and legible at all times.

Whenever there may be overexposure, or underexposure, or when the subject is outside of the exposure meter's coupling range the viewfinder display will give you the proper warning. A viewfinder display lever is available for turning the display off, if you prefer.

The viewfinder has been designed to make focusing extremely easy. The Central Emphasis Averaging metering method is employed, and the split-image micropism rangefinder together with the bright matte screen facilitates focusing accuracy.

500 2.8

In the shutter-priority AE mode, the viewfinder keeps the selected speed on display while it shows aperture changes according to the changes in brightness.

250 1.4

In the aperture-priority AE mode, aperture remains the same, and the display shows the shutter speeds computed against brightness.

60 F 5.6

When one of the specified Canon Speedlites is used, battery charge completion is indicated by an "F" signal.

1.25 5.6

In the programmed AE mode, both shutter speed and aperture vary according to the brightness of the subject. The aperture becomes fixed when it reaches the lens' maximum aperture.

3.0

In the stopped-down AE mode the viewfinder shows the appropriate shutter speeds. Incorrect exposure warnings are flashed in the dynamic display.

1000 8.0 M

When the camera is set for manual control of exposure, an "M" and the metered aperture value are shown as a convenient reference at all times.

E E E E E E

An error mark (EEEE EE) appears and the shutter button is locked when the AE mode is not correctly set. The camera's circuitry is restored by using the multiple exposure lever.

5 AE Modes and Manual



Electronic Flash AE

5

When the A-1 is used with the specially designed Speedlite 199A, 188A, 166A, 155A, 011A, 277T or the 533G or 577G, there is no need to make any adjustments on the camera. The adjustments made on the flash couple with the A-1's processing circuitry, a red "F" LED signal in the viewfinder indicates battery charge completion, and the problem of light is electronically solved.

The amount of light and flash duration are regulated automatically no matter what the setting of the mode selector is.

The signal from the electronic flash unit changes the shutter speed to the X sync. at 1/60 of a second, and the aperture is adjusted according to the aperture range adjustment made on the electronic flash unit out of the fully comprehensive choice it offers. Synchronization speed and the automatic aperture you have set on the flash unit are also shown, and in manual flash photography, the letter "M" is displayed.

The marvellous Speedlite 199A and other automatic flashes are best suitable with the A-1's automation system, to keep you from ever losing your way in the dark.



M

Manual Control of Exposure

When you want to take over completely and forget about the advantages of automatic exposure, the Canon A-1 can easily be shifted to manual control.

The metered aperture value is displayed in the viewfinder to guide you while you are on your own.

Further expansion of photographic possibilities

Wide metering range: The A-1's meter sensitivity extends all the way from EV -2 to EV 18 thanks to the introduction of an IC with great capacity and the conversion of the metered light into digital input. Sealed together with the photocell is the IC employed by the log amplifier for amplifying signals, and the discharge circuit for improving response. For the highest accuracy, the Central Emphasis method is employed.

Three methods of exposure compensation: The A-1 offers two exposure compensation mechanisms and compensation by manual aperture control. The ISO/ASA speed dial shows the 12 compensation settings provided for fine adjustments. An exposure memory switch expands the exposure compensation procedures. Manual aperture adjustments afford as much compensation as you can require.

Photography in the dimmest light: The Canon A-1 can meter accurately all the way down to about the limit of dim light in which it is possible to focus by looking through the viewfinder.

For ordinary photography with full aperture metering, or for high-magnification photomicrography using a bellows, or in photomicrography, with the camera set for AE control, the A-1 delivers with the same accuracy. It is always possible to read the display data.

Multiple exposures at will: Exposing the same frame many times is now a matter of the flick of a finger. When the multiple exposure lever is set, the film advance lever cocks the shutter, but film does not advance and the frame counter does not move.



A close look at the "instrument panel"

With a 30° stand-off angle provided for the sake of readiness in action photography, this film advance lever has a short 120° stroke to allow quick winding in succession. It is contoured to excellently fit the thumb's movement with a molded plastic tip.



The battery check button serves the double purpose of activating the charge level indicator LED, and cancelling the self-timer's operation. The viewfinder display lever can turn the alphanumeric display completely off.

Exposure compensation can be easily performed over a range of ± 2 gradations of the aperture scale marked in 1/3 increments opposite the ISO/ASA scale. The flick of a finger gives you just the increase or decrease in exposure you may desire, with utmost accuracy.



The exposure memory switch, located above the exposure preview switch, stores the exact exposure value in the micro-computer system. It can be used for manual exposure compensation among other things. Exposure preview is possible immediately after pressing the switch for the purpose, and the viewfinder LED digital display is also activated.

The multiple exposure lever, on the left below, allows you to expose the same frame as many times as you want. Both film and frame counter remain stationary.



The AT dial, on the right above, is the command center for setting the AE mode, except stopped-down metering AE and flash AE. By means of a sliding switch, the dial guard can be applied to prevent unintentional movement or recede for easy fingertip setting.

If the AE-1's finger-grip support was considered a landmark of functionality, the A-1's large action grip provides an even better, steadier hold to afford great one-hand portability. Besides, it is detachable.



The eyepiece shutter shuts out all extraneous light. For special fields of photography, it is an added safeguard against the possibility of unwanted light ruining a photograph.

The self-timer has two settings, for a 2-second and a 10-second time lag. The 2-second lag can be used instead of a cable release. You can rely on the utmost accuracy of either of the two settings.



The LED signal beside the self-timer lever keeps you informed of what is going to take place and when. It blinks at a certain speed when set for 10 seconds and blinks faster when there are only 2 seconds left before shutter release so that you may be able to know the exact instant of exposure.

Only one, very small 6V lithium, silver oxide or alkaline manganese battery is required to power the A-1's entire electronics. One of the great advantages of the circuitry employed is that a new battery will last for one year under normal use.



A memo holder on the back of the A-1 is available for many practical uses. For always having a handy reference of the type of film you are using, or the location, or a given work, the film end tab, or a similar memo, can be inserted into it. Introduced with the AE-1, it was very highly praised.

The command post of the A-1's versatility

The AT dial is used to set the various AE modes, except the stopped-down AE and flash AE, which function regardless of the setting. By moving it to the "Av" or the "Tv" positions, the micro-computer controls camera operation accordingly. A programmable logic array (PLA) has made the AT dial the command post of the A-1's modes of automatic exposure control. Operational ease was given the utmost importance in its design, to place it at thumb's reach and ready to obey your orders immediately. Canon's design engineers conceived the AT dial in the place and with the shape that best conform to natural, effortless motion. Furthermore, no lens adjustment is required when you change from one priority to the other, not for programmed AE or Speedlite Flash AE. Stopped-down AE, of course, requires changing the lens' aperture ring setting to a position other than the "A" mark.



"Av" settings indicate aperture-priority AE and are marked in black over a yellow field. "Tv" settings, for shutter-priority AE, are marked in white from 1/1000 of a second down to 1 second, and from 2 to 30 seconds in yellow, both over a black field. A green "P" inside a square is the programmed AE setting. Aperture and shutter speed are input in the form of digital pulse signals into the camera's think-tank circuitry by means of this one dial. Operation could not be simpler, and both accuracy and immediate response are enhanced.



There is no longer room for discussion about which is better, aperture-priority or shutter-priority, since the A-1 gives you both and lets you dial your choice at any time.

The most advanced electronics were employed to make such a high degree of automation possible and to warrant the utmost accuracy.

The AT dial is a functional breakthrough reflecting the resourcefulness of the camera, otherwise hidden to your eyes except for the results when film is developed and the print is made.





Film is advanced at a rapid 2 fps by connecting either the Power Winder A2 (shown) or A. The A2 has a continuous/single frame switch and takes four penlight alkaline or Ni-Cd batteries. Attaching the Wireless Controller LC-1 to the A2 enables remote control operation.

Specifications

Power Winder A2

Winding Speed: About 0.5 second. **Operation:** Activated by the shutter release button of the camera. **Shutter Speed Coupling Range:** 1/60 to 1/1000 second for continuous photography. "B" to 1/1000 second for single frame photography. **Source:** Four AA size 1.5V alkaline, carbon-zinc or Ni-Cd "C" for continuous shooting and "S" for single frame shooting. **Automatic Cut-off Circuit:** At the time of completion of a roll of a film, or when battery power is insufficient, the Power Winder A2 automatically stops and its LED glows. **Power Source:** Four AA size 1.5V alkaline, carbonzinc or Ni-Cd batteries. **Size:** 140.8 (W) x 27.5 (D) x 53.4 (H) mm (5-9/16" x 1-1/16" x 2-1/8") **Weight:** 275g (9-11/16ozs.) including batteries.

Power Winder A

Winding Speed: About 0.5 second. **Operation:** Activated by the shutter release button of the camera. **Shutter Speed Coupling Range:** 1/60 to 1/1000 second for continuous photography. "B" to 1/1000 second for single frame photography. **Shooting Modes:** Continuous shooting possible when you keep the shutter button pressed down. Single frame shooting possible when the finger is removed from the shutter button each time you press it down once. **Automatic Cut-off Circuit:** At the time of completion of a roll of a film, or when battery power is insufficient, the Power Winder A automatically stops and its LED glows. **Power Source:** Four AA size 1.5V alkaline or carbon-zinc batteries. **Size:** 141 (W) x 42 (D) x 34 (H) mm (5-9/16" x 1-5/8" x 1-5/16") **Weight:** 300g (10-9/16 ozs.) including batteries.

Just the right light, automatically yours

The A-1 has eight electronic Speedlites, the 199A, 188A, 166A, 155A, 011A, and 277T hot-shoe units, the 577G and 533G with quick release bracket and the Macrolite ML-1. The 199A has three auto apertures and bounce flash capability. The two-headed Macrolite ML-1 is especially suited for close-up photography. The 188A has two auto apertures and an optional 28mm wide adaptor. The 277T has eight apertures between f/2 and f/22, responding to a wide range of illumina-

tions. The professional 577G and 533G are the most powerful with heads for bounce flash and optional wide adaptors. Though smaller, the 166A, 155A assure the same reliable results as the larger Speedlites. The 011A is slim and compact enough to carry in a shirt pocket and is ideal as a second flash.

Specifications

Speedlite 199A

Guide Number: 30 (ISO 100/21°, ASA 100 • m) or 50 (ISO 25/15°, ASA 25 • ft.). **Recycling Time:** 0.2-10 sec. with alkaline batteries and 0.2-6 sec. with Ni-Cd batteries on auto. **Number of Flashes:** More than 100 with alkaline batteries and more than 50 with Ni-Cd batteries on auto. **Flash Duration:** 1/500-1/50000 sec. **Aperture Choices:** f/2.8 (red), f/5.6 (green) and f/11 (yellow) at ISO/ASA 100, and manual. **Auto Coupling Ranges:** 1.5-10.6m (1.5-6.3m with Wide Adaptor) at red "A". 1.5-3m (1.3-2m with Wide Adaptor) at green "A". 0.5-2.6m (0.5-1.6m with Wide Adaptor) at yellow "A". **Flash Coverage:** Covers 35mm lens. With Wide Adaptor, covers 24mm lens. **Size:** 79 (W) x 83 (D) x 116 (H)mm. (3-1/8" x 3-1/4" x 4-1/2"). **Weight:** 490g (1 lb. 1-5/16 ozs.) including batteries.

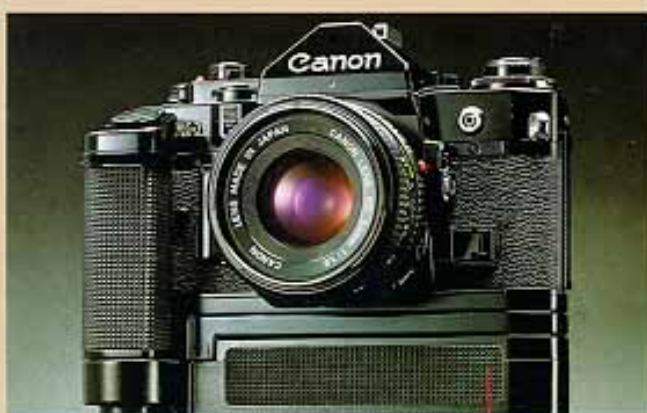
Speedlite 188A

Guide Number: 25 (ISO 100/21°, ASA 100 • m) or 41 (ISO 25/15°, ASA 25 • ft.). **Recycling Time:** 0.5-8 sec. with alkaline batteries and 0.5-6 sec. with Ni-Cd batteries on auto. **Number of Flashes:** More than 200 with alkaline batteries and more than 70 with Ni-Cd batteries on auto. **Flash Duration:** 1/700-1/40000 sec. **Aperture Choices:** f/2.8 (red) and f/5.6 (green) at ISO/ASA 100 and manual. **Auto Coupling Ranges:** 1.0-9.0m (1.0-5.6m with Wide Adaptor) at red "A". 0.5-4.5m (0.5-2.8m with Wide Adaptor) at green "A". **Flash Coverage:** Covers 35mm lens. With Wide Adaptor, covers 28mm lens. **Size:** 68 (W) x 52 (D) x 103 (H)mm. (2-11/16" x 2-1/16" x 4-1/16"). **Weight:** 290g (10-1/4 ozs.) including batteries.

Speedlite 166A

Guide Number: 20 (ISO 100/21°, ASA 100 • m) or 33 (ISO 25/15°, ASA 25 • ft.). **Recycling Time:** 0.5-7 sec. with alkaline batteries and 0.5-5 sec. with Ni-Cd batteries. **Number of Flashes:** 250-2500 times with alkaline batteries and 80-800 times with Ni-Cd batteries. **Flash Duration:** 1/1000-1/50000 sec. **Auto Apertures:** f/2.8, f/5.6 at ISO/ASA 100. **Auto Coupling Range:** 0.5-7 m (1.6-22 ft.) at ISO/ASA 100. **Flash Coverage:** Covers 35mm lens. **Power Source:** Four AA size alkaline or Ni-Cd batteries. **Size:** 66 x 49.5 x 98 mm (2-5/8" x 1-15/16" x 3-7/8"). **Weight:** 260g (9-3/16 ozs.) including batteries.

Readiness for every shutter chance



Ni-Cd Pack MA



Instant High-speed Button

Battery Pack MA

The Motor Drive MA extends the photographic capabilities of the A-1 to fast sequence shooting at up to 5 frames per second. Two different power sources are available, the Battery Pack MA and the rechargeable Ni-Cd Pack MA. It has two lockable shutter release buttons and can also be activated by the camera's. The Ni-Cd Pack MA is very compact and does not affect the A-1's remarkable handling ease. A warning signal lights up at film end. Besides, if you photograph with the camera in a vertical position, you will find that there is a shutter release provided specially for that purpose. For improving accuracy, only electrical signals are exchanged between the camera's circuitry and the Motor Drive. Single frames and two-speed continuous shooting

There is a choice of three speeds, H (5 frames/second), L (3.5 frames/second), and S (Single frame) with the Battery Pack MA. Wireless Controller LC-1

This accessory affords remote control with the Motor Drive MA for single frames or sequences at distances up to 60m.

Mode Selection Dial
Shutter Button for Vertical Position



Specifications

Motor Drive MA Unit

Motor Drive MA

Structure: Grip type, composed of a motor for film winding, an electromagnetic clutch, a set of gears and a shutter release button. Dimensions and Weight: 151mm (W) x 67mm (D) x 80mm (H) (5-15/16" x 2-5/8" x 3-1/8"), 200g (7 ozs.).

Ni-Cd Pack MA

Structure: Consists of a motor control circuit with an automatic stop circuit, Ni-Cd battery, a vertical position shutter release button and a selector switch. Shooting Modes: Three changeable modes: H (4 frames/sec.), L (3 frames/sec.) and S (single frames). Battery Life: (H mode with 36 exposure film) Normal Temperatures: 60 rolls or more. Low Temperatures: (-10°C): 15 rolls or more. Operable Temperature Range: -20°C ~ +40°C. Power Source: Built-in Ni-Cd batteries, 14.4V. Rechargeable. Dimensions and Weight: 151mm (W) x 61mm (D) x 29mm (H) (5-15/16" x 2-3/8" x 1-1/8"), 205g (7 ozs.).

Battery Pack MA

Structure: Consists of a motor control circuit with an automatic stop circuit, a battery magazine for penlight (size AA) batteries, a vertical position shutter release button, an instant high speed mode button and a selector switch. Shooting Modes: Three changeable modes: H (5 frames/sec.), L (3.5 frames/sec.) and S (single frames). Battery Life: (H mode with 36 exposure film) Normal Temperatures: 60 rolls or more. Low Temperatures: (-10°C): 5 rolls or more. Operable Temperature Range: -10°C ~ +45°C. Power Source: 18 volts (12 penlight size AA batteries). Dimensions and Weight: 151mm (W) x 67mm (D) x 40mm (H) (5-15/16" x 2-5/8" x 1-9/16"), 395g (13 ozs.) including batteries.

Wireless Controller LC-1

Transmitter

Power Source: Two penlight alkaline manganese batteries. Recycling Time: One second or less. Number of Channels: Three. Indications for CH1, CH2, and CH3. Light Wavelength: Approx. 700nm or more. Size and Weight: 49mm (W) x 120mm (D) x 37mm (H) (1-15/16" x 4-3/4" x 1-1/2"), 172g (6 ozs.) including batteries.

Receiver

Power Source: One 006P battery (DC 9V). Recycling Time: 0.5 sec. or less. Wavelength of Receiving Light: Approx. 900nm (peak value). Number of Channels: Three. CH1, CH2, CH3. Switch: S, C. Sliding type. (S: single. C: continuous). Attachment: Onto the camera's accessory shoe. Size and Weight: 35mm (W) x 62mm (D) x 84.5mm (H) (1-3/8" x 2-7/16" x 3-5/16"), 153g (5 ozs.) including batteries.

Subject to change without notice.

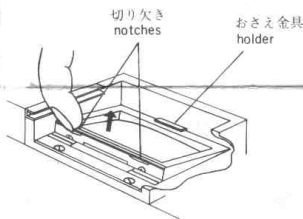
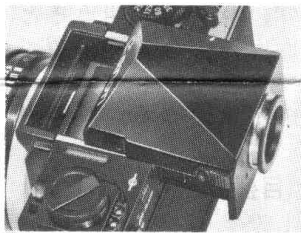


Canon FOCUSING SCREENS

CANON FOCUSING SCREENS

The Canon F-1 uses a unique Central Area Metering System. Each Canon interchangeable focusing screen has a condenser lens with beam-splitting mirror in the center for through-the-lens (TTL) metering. This mirror directs a portion of the light to the CdS cell, which is located directly below the eyepiece. The metering area is clearly defined by a slightly darkened rectangle comprising approximately 12% of the screen. The entire screen is not read by the CdS cell, so place your main subject within the darkened rectangle to obtain proper exposure.

To change a focusing screen, follow this procedure: first remove the finder by depressing both attachment buttons and sliding it off. Next, insert your thumbnail into one of the notches and lift out the screen. Insert the un-notched side of a new screen under the holder and push down until the screen drops into a fully-seated, horizontal position.



- Handle a focusing screen by its edges only.

Focusing Screen A (Microprism)

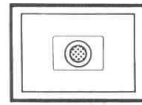
Matte/Fresnel field with microprism rangefinder spot in center of screen. Suitable for general photography with most lenses. Supplied as standard equipment with the F-1.

Focusing Screen B (Split-Image)

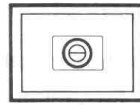
Matte/Fresnel field with split-image rangefinder spot in center of screen. Ideal for use with 15mm fish-eye, super wide-angle, and wide-angle lenses and for subjects having straight lines. Unsuitable for close-up and macro-photography and for use with lenses having small maximum apertures or requiring stopped-down metering, because one-half of rangefinder darkens.

Focusing Screen C (All Matte)

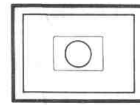
Matte/Fresnel field with clear matte center spot. For viewing and focusing without distraction in the center. Especially recommended for macro and telephoto photography.



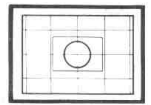
Focusing Screen A
(Microprism)
フォーカシングスクリーンA (マイクロプリズム式)



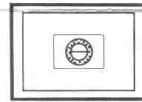
Focusing Screen B
(Split-Image)
フォーカシングスクリーンB (スプリットイメージ式)



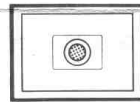
Focusing Screen C
(All Matte)
フォーカシングスクリーンC (全面マット式)



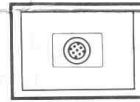
Focusing Screen D
(Matte/Section)
フォーカシングスクリーンD (方眼マット式)



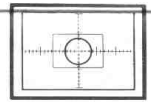
Focusing Screen E
(Split-Image/Microprism)
フォーカシングスクリーンE (マイクロスプリットプリズム式)



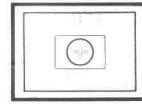
Focusing Screen F
(Microprism/Large Aperture Lenses)
フォーカシングスクリーンF (マイクロプリズム式大口径用)



Focusing Screen G
(Microprism/Small Aperture Lenses)
フォーカシングスクリーンG (マイクロプリズム式小口径用)



Focusing Screen H
(Matte/Scale)
フォーカシングスクリーンH (目盛線入りマット式)



Focusing Screen I
(Double Cross-Hair Reticule)
フォーカシングスクリーンI (十字線入りマット式)

キヤノン・フォーカシングスクリーン

標準用として、マイクロプリズム式のものがありますが、別に8種あり、用途および好みに応じて交換使用できます。全種類ともハーフミラーコンデンサー(半透明鏡)つきでTTL測光ができます。

着脱のしかた

1. アイレベルファインダーは着脱ボタンを押しながら後方に引抜きます。
2. ミラーボックス内に取付けてあるフォーカシングスクリーン後方2カ所の切り欠きに爪先を入れ、上方にもち上げると外せます。
3. 交換したいフォーカシングスクリーンの突起の部分ボディ側ミラーボックス内のおさえ金具の下にさしこんでから、後側を下に押して、平らに落としこみます。

フォーカシングスクリーンA(マイクロプリズム式)

中央にマイクロプリズム距離計をもち、周囲はフレネルマット面になっています。絞り込んだ場合にも見えが良く最も広く用いられています。

フォーカシングスクリーンB(スプリットイメージ式)

中央に2コのプリズムからなる上下像合致式距離計つきです。レンズの明るさに左右され、レンズを絞り込んだり、暗いレンズをつけた場合片側が真黒になり距離合わせがやりにくくなります。逆に明るいレンズの開放時には、像の分離が明瞭で、正確迅速にピント合わせができます。

フォーカシングスクリーンC(全面マット式)

距離計部がないため、視野全体が均一で絞りこんでも全面が見られ、接写、望遠撮影などに有利です。中央部マット面、周囲はフレネルマット面です。

A Lens System Worthy of the A-1



The improvements incorporated in Canon's FD lens range enable you to take full advantage of the A-1's - and your own - creative potential. Lighter and more compact, the FD lenses feature such innovations as ultra low-dispersion (UD) glass, the Canon Floating System and extensive application of aspherical and fluorite elements, all of which provide improved sharpness and excellent, uniform color balance. Another major advantage of the system is the wide choice available - over 50 lenses in all. Lenses which can bring a distant object nearer or a close subject seem farther away. Or portray it exactly as it is in reality. With special lenses, it's even possible to make a round picture, magnify a small subject or manipulate perspective.

Wide Angle Lenses

If a lens with a focal length of around 50 or 55mm is generally considered a normal lens because it results in a picture which looks closest to the scene you saw, any lens with a focal length below 50mm is a wide-angle lens. A wide-angle lens takes in more of a particular scene and makes objects within the scene smaller than does a normal lens from the same shooting distance. For sweeping landscapes and for fitting a large group of people in a picture indoors, this is the kind of lens to pull out of your grab bag. A good place to start looking for just the right one is with a 28mm lens, which is the most popular wide-angle focal length.



FD 28mm f/2.8

Telephoto Lenses

It's easier to take pictures of sports and animals with a telephoto lens. It's also much easier to grab shots of people without their noticing. That's because a telephoto lens, like a telescope, magnifies the subject, so whether by necessity or design, you can shoot a subject from quite a distance and still fill the picture with it.

Telephoto lenses are those which have a focal length longer than 55mm. The longer the distance at which you usually shoot, the longer the focal length you need. The 135mm focal length is very popular for its convenience and suitability in a wide variety of typical situations.



FD 135mm f/3.5

Zoom Lenses

Once you've focused, you can actually change the focal length of a zoom lens and still have your subject in focus. Turning a ring on the lens or pushing the lens in and out is all it takes to zero in on your subject from an overall view. Or the other way around. When you don't have time to move back and forth or to change lenses to compose your picture exactly the way you want it, only a zoom lens can do the trick. Be sure to check out the FD 100-200mm f/5.6 lens. Its compactness, easy handling and reasonable price make it a real winner. Then there's the high-performance FD 24-35mm f/3.5L, a short zoom with a two-group zoom system. One of the few lenses with an aspherical element for distortion-free images at full aperture, a Floating System prevents any increase in curvature of field at close shooting distances.



FD 100 - 200mm f/5.6

Speedlite 155A

Guide Number: 17 (ISO 100/21°, ASA 100 • m) or 28 (ISO 25/15°, ASA 25 • ft.). **Recycling Time:** 0.5-7 sec. with alkaline batteries and 0.5-5 sec. with Ni-Cd batteries on auto. **Number of Flashes:** More than 300 with alkaline batteries and 90 with Ni-Cd batteries on auto. **Flash Duration:** 1/1000-1/50000 sec. **Aperture Choices:** f/2.8 (red) and f/5.6 (green) at ISO/ASA 100, and manual. **Auto Coupling Ranges:** 0.5-6m at red "A", 0.5-3m at green "A". **Flash Coverage:** Covers 35mm lens. **Size:** 70 (W) x 51 (D) x 105 (H)mm. (2-3/4" x 2" x 4-1/8") **Weight:** 300g (10-9/16 ozs.) including batteries.

Speedlite 011A

Guide Number: 14 (ISO 100/21°, ASA 100 • m) or 23 (ISO 25/15°, ASA 25 • ft.). **Recycling Time:** 0.5 - 9 sec. with alkaline batteries and 0.5 - 6 sec. with Ni-Cd batteries. **Number of Flashes:** 150 - 1500 with alkaline batteries and 70 - 700 with Ni-Cd batteries. **Flash Duration:** 1/1000 - 1/100000 sec. **Film Speed Switch:** ISO/ASA 100 and ISO/ASA 400. Also functions as main switch. **Auto Coupling Ranges:** 0.5 - 3.5m at ISO/ASA 100 and 1 - 7m at 400. **Flash Coverage:** Covers 35mm lens. **Size:** 19 (W) x 112.5 (H) x 64.5 (L) mm (3/4" x 4-7/16" x 2-9/16") **Weight:** 155g (6-7/8 ozs.) including batteries.

Speedlite 277T

Guide Number: 25 (ISO 100/21°, ASA 100 • m) or 41 (ISO 25/15°, ASA 25 • ft.). **Recycling Time:** 0.5 - 8 sec. with alkaline batteries and 0.5 - 6 sec. with Ni-Cd batteries. **Number of Flashes:** 200 - 2000 with alkaline batteries and 65 - 700 with Ni-Cd batteries. **Flash Duration:** 1/700 - 1/50000 sec. **Apertures:** f/2, 2.8, 4, 5.6, 8, 11, 16, 22 **Auto Coupling Ranges:** 0.5 - 12.5 m (1.6 - 41 ft.) at ISO/ASA 100. **Flash Coverage:** Covers 35mm lens. With Wide Adaptor, covers 28mm lens. **Size:** 66(W) x 97(H) x 64.5mm (2-5/8" x 3-13/16" x 2-9/16") **Weight:** 280 g (9-7/8 ozs.) including batteries.



Speedlite 577G

Guide Number: 48 (ISO 100/21°, ASA 100 • m) or 80 (ISO 25/15°, ASA 25 • ft.). **Recycling Time (on automatic):** 0.2 - 18 sec. with alkaline-manganese batteries. 0.2 - 7 sec. with Ni-Cd batteries. **Number of Flashes (on automatic):** 100 - 1,000 with alkaline-manganese batteries and 75 - 750 with Ni-Cd batteries allowing 30 sec. between each firing. **Flash Duration:** 1/400 - 1/50,000 sec. **Auto Apertures:** f/2.8, f/5.6 and f/11 at ISO/ASA 100. **Auto Coupling Ranges:** 2.5 - 17m at red "A" (f/2.8, ISO/ASA 100) with-

out Adaptor. At green "A", 1.5-8.5m and at yellow "A", 1-4.3m without Adaptor. **Flash Coverage:** For 35mm format, covers an angle of view of 35mm lens. With Wide Adaptor, adequate coverage for 20mm lens. With Tele Adaptor, covers 100mm lens. **Bounce:** Maximum upward tilt of 120° with detents at 0°, 60°, 75°, 90°, and 120°. 120° shift to both left and right with detents at 0°, 60°, 75°, 90°, 105° and 120°. **Power Source:** 6 C-size alkaline-manganese batteries or Ni-Cd Pack TP in the Transistor Pack G. **Size:** 99 (W) x 107 (D) x 245 (H)mm (2-7/8" x 4-1/4" x 9-5/8") **Weight:** 600g (21-3/16 ozs.) without batteries.

Speedlite 533G

Guide Number: 36 (ISO 100/21°, ASA 100 • m) or 60 (ISO 25/15°, ASA 25 • ft.). **Recycling Time:** 0.2 - 10 sec. with alkaline-manganese batteries. 0.2 - 5.5 sec. with Ni-Cd batteries. **Number of Flashes (on automatic):** 120 - 1,200 with alkaline-manganese batteries and 55-555 with Ni-Cd batteries allowing 30 sec. between each firing. **Flash Duration:** 1/800 - 1/50,000 sec. **Auto Apertures:** f/2.8, f/5.6 and f/11 at ISO/ASA 100. **Auto Coupling Ranges:** 2.5 - 12.8m at red "A" (f/2.8, ISO/ASA 100) without Adaptor. At green "A", 1.5 - 6.4m and at yellow "A", 1 - 3.2m without Adaptor. **Flash Coverage:** Adequate for 35mm lens on a 35mm format. With Adaptor, adequate coverage for 20mm lens. With Tele Adaptor, covers 100mm lens. **Bounce:** Maximum upward tilt of 120° with detents at 0°, 60°, 75°, 90°, and 120°. 120° shift to both left and right with detents at 0°, 60°, 75°, 90°, 105° and 120°. **Power Source:** 6 AA-size alkaline-manganese or rechargeable Ni-Cd batteries or 6 C size alkaline-manganese batteries or Ni-Cd Pack TP in the Transistor Pack G. **Size:** 93 (W) x 104 (D) x 248 (H) mm (3-11/16" x 4-1/8" x 9-3/4") **Weight:** 655g (23-1/8 ozs.) without batteries.



MacroLite ML-1

Guide Number: 16 (ISO 100/21°, ASA 100 • m); 9.5 (ISO 100/21°, ASA 100 • m) with Wide Adaptor. **Flash Duration:** 1/500 - 1/50000 sec. **Aperture Selection Switch:** Three auto apertures which differ with ISO/ASA; f/5.6, f/11 and f/22 for ISO/ASA 100 and MANU. **Auto Shooting Range:** 0.6 - 2.8m (2 - 9.3 ft.) depending on auto aperture. Less with Wide Adaptor. **Dimensions and Weight:** Flash Unit: 131 (W) x 39.7 (D) x 99 (H)mm (5-3/16" x 1-9/16" x 3-7/8") 170g (6 ozs.), Control Unit: 50 (W) x 59 (D) x 38.6 (H)mm (2" x 2-1/4" x 1-1/2"), 70g (2-7/16 ozs.), Battery Case: 77.4 (W) x 35.6 (D) x 162 (H)mm (3-1/16" x 1-7/16" x 6-3/8"), 560g (1 lb. 3-3/4 ozs.) including batteries.

A system for classifying photographs



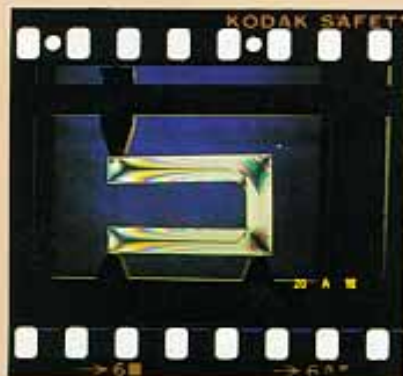
The Canon Data Back A imprints data on film at the very instant exposure takes place. It amounts to a real system of classifying photographs since the Data Back A imprints dates, letters of the alphabet and Roman numerals and offers three sets of data arrangements to choose from.

Specifications

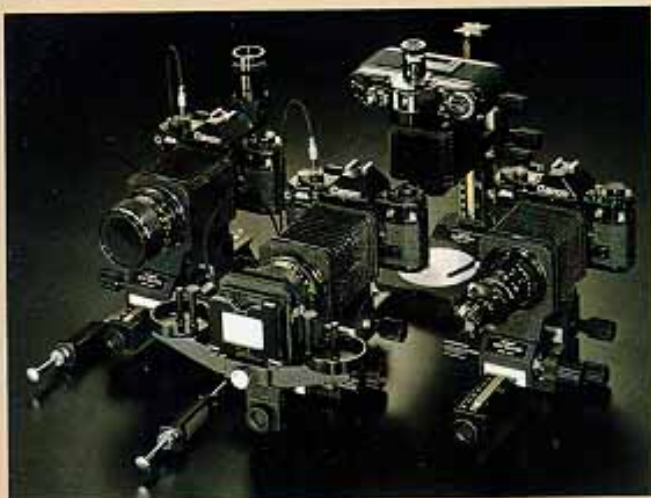
Data Back A

Attachment: In place of the back cover of the A-1, AE-1 PROGRAM, AE-1 and AT-1. **Data Setting Dials:** Right dial: 32 figures (0 to 31) and two blanks. Central dial: 39 figures (0 to 31; A to G) and a blank. Left dial: 39 figures (0 to 9; 79 to 90; I to X; a to g) and a blank. **Data Imprinting:** Special synchronization cord connection. The built-in lamp imprints the necessary data on the film from the back. By pressing the manual button, the data can be also imprinted. **Exposure Adjustment:** Three different positions to choose from according to the film type and its sensitivity. **Indicator Lamp:** An LED indicates data imprinting. **Power Source:** One 6V silver oxide battery (Eveready or UCAR No. 544 or Mallory PX28) or alkaline battery (Eveready or UCAR No. 537 or Mallory 7K13) which is good for more than 8,000 exposures. **Size:** 100mm (W) x 48.5mm (D) x 14.5mm (H). (3-15/16" x 1-15/16" x 9/16"). **Weight:** 160g (5-5/8 ozs.) including battery. **Accessories:** Special synchronization cord and case.

Subject to change without notice.



The Exciting World of Close-up Photography



With the A-1, you don't have to be content with taking a picture of a whole bed of flowers when what you really want is to fill the picture with just one or maybe even only a very small part of it. Close-up photography is a fascinating, unusually rewarding field, and it's yours with the A-1 and the right Canon accessories. Canon just recently updated and expanded its close-up system to include over thirty ultra-modern, simple accessories. With them, it's possible to shoot a subject at anywhere from about one-tenth to many times its actual size. Up that close, flowers, insects, small art objects and even miniature tools, mechanical objects and electronic chips reveal stunning beauty and enchanting secrets. Discovering them is among the most pleasurable experiences you can have with the A-1.



FD 100mm f/4 Macro f/8

Specifications

Type: 35mm SLR (Single-Lens-Reflex) camera with electronically controlled, multiple-mode AE (automatic exposure) and focal plane shutter.

Format: 24 x 36mm.

Photographic Modes: Six modes, including 5 AE modes: shutter-priority AE, aperture-priority AE, programmed AE, full AE flash photography with specified Canon electronic flashes, and stopped-down AE, as well as manual override.

Interchangeable Lenses: Canon FD lenses (usable with 4 full aperture metering AE modes and with stopped-down AE); Canon FL lenses (usable with stopped-down AE).

Standard Lenses: Canon 50mm lenses.

Viewfinder: Fixed eye-level pentaprism.

Field of View: 93.5% vertical and 95.3% horizontal coverage of the actual picture area.

Magnification: 0.83X at infinity with a standard 50mm lens.

Focusing Screen: Standard split-image micropism rangefinder.

Viewfinder Information: Displayed in the form of LED digital readout below the visual field. Includes shutter speed, aperture, flashing warning of incorrect exposures and settings, bulb indication, charge completion indicator with specified Canon flash units, manual aperture control signal, error indication for incorrect stopping-down operation. Shutter speed and aperture data displayed in 1/2 step increments. Viewfinder information can be cancelled by turning off the viewfinder display switch.

Dioptric Adjustment: Built-in eyepiece is adjusted to standard -1 diopter.

Eyepiece Attachments: Angle Finders A2 and B, Magnifier S, 10 different Dioptric Adjustment Lenses S for eyesight correction and Eyecup 4S.

Eyepiece Shutter: Built-in. Keeps out extraneous light during self-timer or remote control operation.

Mirror: Instant-return type with shock-absorbing mechanism. No image cut-off in the viewfinder even with the FD 400mm telephoto.

AE Mechanism: Electronically controlled. Employs 3 LSIs with 1²L, one Linear LSI and one Bi-MOS IC for light metering.

AE Mode Selection: By means of the AE mode selector. Two main settings: TV for shutter priority AE, Av for aperture priority AE.

Light Metering System: Through-the-lens (TTL) Central Emphasis Averaging metering by silicon photocell located just above eyepiece lens. Light reaches the silicon photocell after passing through a Fresnel lens condenser.

Film Speed Scale: ISO/ASA 6 to ISO/ASA 12800 in 1/3 step increments. With lock.

Meter Coupling Range: EV - 2 to EV 18 at ISO/ASA 100 with FD 50mm f/1.4 lens. In the programmed AE mode, meter coupling range depends on the programmed shutter speed and aperture combinations.

Exposure Compensation: ± 2 f/stop scale gradations in increments of 1/3 of a gradation, with 1/4, 1/2, 1, 2, and 4 markings.

Exposure Memory: EV is stored and locked when the exposure memory switch is pressed. When pressed, the shutter-speed/aperture combination can be changed for the same EV stored in the memory.

Exposure Preview: Viewfinder digital readout activated by pressing the shutter button halfway, or by pressing the exposure preview switch or the exposure memory switch.

Stop-down Lever: Operates when pushed in. Stopping-down an FD lens is possible only when the aperture ring is disengaged from the "A" mark.

Manual Override: Possible by disengaging the FD lens from the "A" mark and setting the AE mode selector to Tv. Aperture manually controlled with aperture ring; shutter speed

with AT dial.

Shutter: Cloth focal plane shutter with four spindles. Electronically controlled, stepless, from 30 sec. to 1/1000 sec. Shock and noise damper mechanisms are incorporated.

Shutter Speed Scale: B, 30, 15, 8, 4, 2, 1, 2, 4, 8, 15, 30, 60, 125, 250, 500, 1000 plus P (with the AE mode selector at Tv). "P" setting is required for programmed AE mode. Intermediate speeds not on the scale cannot be set.

Aperture Scale: 1.4 2 2.8 4 5.6 8 11 16 22 (with the AE mode selector at Av).

Shutter Release Button: Oversized, 2-step button with electromagnetic shutter release. Pressing it halfway activates meter circuit; pressing it all the way sets shutter in operation. Can be locked by setting the main switch to "L" to prevent accidental shutter release. With cable release socket.

Power Source: One 6v alkaline-manganese (Eveready [UCAR] No. A544, IEC 4LR44), silver oxide (Eveready [UCAR] No. 544, IEC 4SR44, Duracell PX 28), or lithium (Duracell PX 28L) battery. Battery lasts about one year under normal use.

Battery Check: A red LED on top of the camera flashes on and off to indicate power level when the battery check button is pressed. Flashing frequency decreases with power level.

Main Switch: 2 positions: "A" and "L". At "L" all circuits are off and the shutter button is locked as a safety feature. Doubles as self-timer lever.

Cancellation of Camera Circuit: Shutter and self-timer operation cancelled by setting main switch to "L" or by pressing battery check button.

Multiple Exposure: Possible by setting multiple exposure lever before winding film advance lever to recock shutter. Frame counter does not advance. Unlimited.

Self-timer: Electronically controlled. Activated by pressing shutter button. A choice of 2 or 10 seconds time lag is available. Red LED flashes on and off to indicate its operation. Flashing frequency increases 2 sec. before shutter release.

Flash Synchronization: X-synch at 1/60 sec., FP- and M-synch at 1/30 sec. and slower.

Flash Coupling: Accessory shoe has contacts for directly coupled flash units and automatic flash control contacts for automatic exposure. JIS-B (PC) type flash terminal with shock preventive rim on front of the body.

Automatic Flash: Full AE flash photography with Canon Speedlites. Shutter speed automatically set. Aperture automatically controlled according to the flash settings.

Back Cover: Opened by pulling up rewind knob. Removable for attaching Data Back A. With memo holder.

Film Loading: Easy film loading with multi-slot take-up spool.

Film Advance Lever: Single-stroke 120° throw with 30° stand-off. Winding with several short strokes is possible. Automatic winding possible by mounting Canon Motor Drive MA, Power Winder A, or A2.

Frame Counter: Additive type. Counts back frames as film is rewound. Automatically resets to "S" upon opening back cover. Does not advance during multiple exposure.

Film Rewinding: By pressing the rewind button and cranking the rewind knob. Rewind button automatically resets when the film advance lever is turned.

Other Safety Devices: Camera will not function when power level is insufficient. Use of self-timer is impossible with shutter speed set at "B". Film winding is impossible while shutter is in operation. Lockable controls.

Size: 141 x 91.5 x 47.5mm (5-1/2" x 3-5/8" x 1-7/8") body only.

Weight: 640g (22-9/16 ozs.) body only, including battery.

With the 50mm f/1.8 lens: 810g (28-9/16 ozs.).

With the 50mm f/1.4 lens: 875g (30-7/8 ozs.)

Subject to change without notice.

Canon

AE パワーワインダー FN

使用説明書

キヤノンF-1用

AE POWER WINDER FN

Instructions

For the Canon F-1

MOTEUR D'ARMEMENT EA FN

Notice d'emploi

Pour le Canon F-1

POWER WINDER AE FN

Bedienungsanleitung

Für die Canon F-1

**BOBINADOR
MOTORIZADO FN PARA AE**

Instrucciones

Para la Canon F-1



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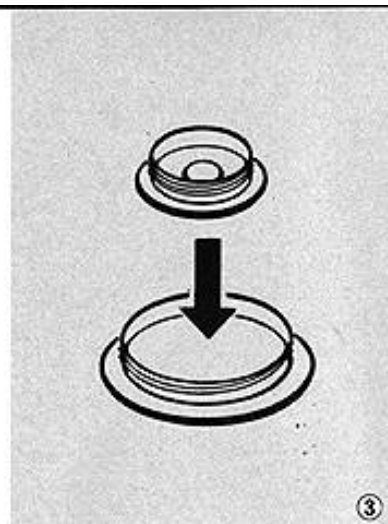
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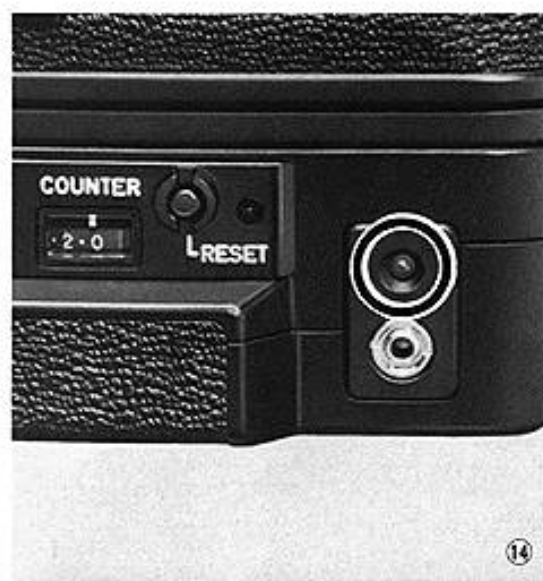
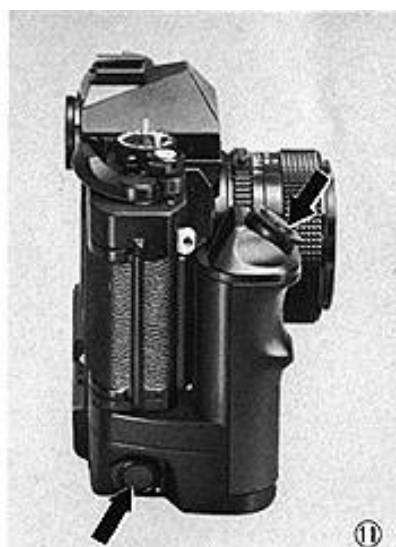
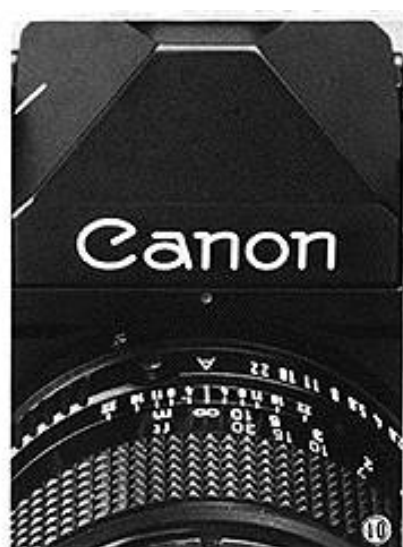
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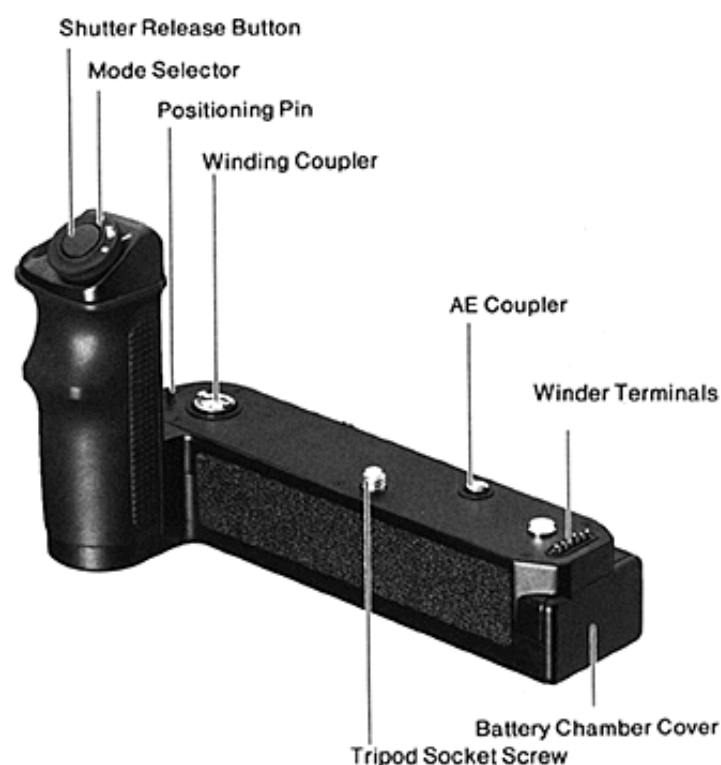
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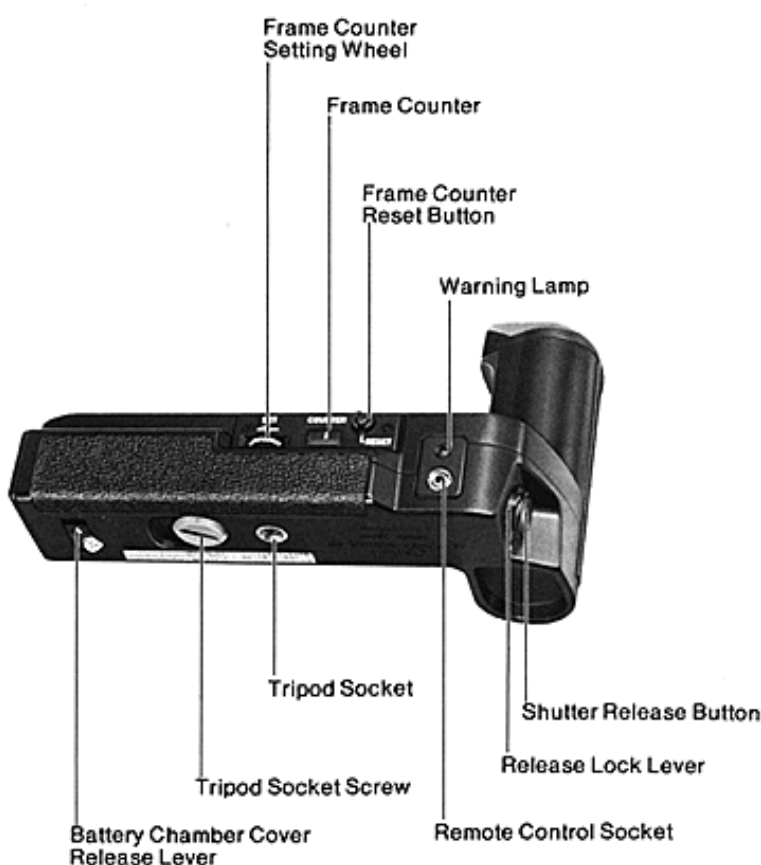


Canon AE Power Winder FN

Designed to increase the versatility of the Canon F-1, the AE Power Winder FN advances the film automatically in single-frame or continuous shooting at a maximum two frames per second. In addition, it converts the camera to shutter-priority AE, the ideal exposure mode for sports, candid and action photography. The power winder has two shutter release buttons for convenient shooting in either the horizontal or the vertical format, and a remote control socket.



Unfold front and back pages for easy reference while reading.



Specifications

Compatible with: Canon F-1

Type: Electromotive film winding device with a provision for converting the camera to shutter-priority AE.

Shutter-Priority AE: By attaching the power winder to the camera and setting the aperture ring of an FD or New FD lens to the "A" mark.

Attachment: By using tripod socket on the camera after removing the winding coupler cover and AE coupler cover on the bottom of the camera.

Shutter Release: Three shutter buttons (horizontal and vertical format plus camera's) are available. With release button locks. Safety circuit prevents shutter release when camera's or power winder's battery power is insufficient and when warning lamp lights up.

Film Driving Speeds: Set with mode selector. "C" for continuous shooting at a maximum 2 fps. (Shutter continuously released and film automatically wound as long as the shutter button is pressed.) "S" for single-frame shooting. (Shutter released when the shutter button is pressed and film automatically wound when finger is removed from shutter button.)

Manual Film Advance: By turning off mode selector and using the camera's advance lever.

Shutter Speed Range: 8 secs. to 1/2000 sec.

Power Source: Four size-AA 1.5V carbon-zinc or alkaline batteries. Ni-Cd batteries may also be used.

Battery Life: Approximately 20 rolls of 36-exposure film with new carbon-zinc batteries at normal temperatures.

Frame Counter: Reverse-counting type. Functions inde-

Canon *AT-1*



E

English Edition
INSTRUCTIONS

Notes

1. Be sure to load the batteries correctly. If incorrectly loaded, the batteries may leak, damaging the winder.
2. When changing batteries, replace all at the same time with four new ones of the same brand.
3. Remove the batteries if the power winder will not be used for about three weeks or longer.
4. Size-AA Ni-Cd batteries are recommended for use in cold weather. When purchasing Ni-Cd batteries, make certain they are compatible with the power winder.
5. About 20 rolls of 36-exposure film can be wound continuously at normal temperatures using new carbon-zinc batteries.

Attaching the Power Winder to the Camera

Using a clean, dry cloth, wipe the winder terminals on the bottom of the camera and the contact pins on the power winder to ensure proper contact.

1. Make sure the mode selector on the power winder is OFF.
2. Then align the power winder's attachment screw and positioning pin with the tripod socket and positioning hole on the bottom of the camera. Using a coin, tighten the attachment screw to secure the power winder to the camera ⑥.

When mounting the power winder, make sure the camera's neckstrap ring does not lie between the camera body and the power winder's grip.

Note:

Make it a rule to turn OFF the mode selector when mounting or dismounting the power winder and when it is not in use.

pendent of camera's frame counter. Automatically stops at "0" and warning lamp lights up.

Frame Counter Setting: By setting wheel. Counter automatically resets to "S" when reset button is pressed.

Film Rewinding: Using rewind crank on camera.

Warning Lamp: Lights up when frame counter reaches "0" or when power winder's battery voltage drops below operating level.

Remote Control: By using Remote Switch 3 or 60, Wireless Controller LC-1, or other external control devices connected to 2.5mm-diameter remote control socket on the power winder.

Interval Photography: By using Time Lapse Programmer A and B units or Interval Timer TM-1 Quartz.

Dimensions and Weight: 157.2(W) × 101.3(H) × 76.5(D) mm (6-3/16" × 4" × 3"); 400g (14-1/8 ozs.) including batteries.

All data are based on Canon's Standard Test Method.

Subject to change without notice.

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Loading the Batteries

The battery in the camera cannot be removed once the power winder is attached. Therefore, always check the condition of the camera's battery before mounting the power winder. Refer to the instruction manual of the Canon F-1 for procedures on checking the battery.

Use four new size-AA carbon-zinc, alkaline, or fully-charged Ni-Cd batteries. Before loading the batteries, their contacts should be wiped with a clean, dry cloth to prevent corrosion due to dirt or fingerprints.

1. Using a coin, unscrew the winding coupler cover and AE coupler cover from the bottom of the camera ①.

CAUTION:

Do not remove the rewind coupler cover or, if film is loaded in the camera, this may expose the film to light.

2. Then slide the battery release lever in the direction of the arrow ② and remove the battery chamber cover. Stack the two coupler covers, placing the AE coupler cover on top of the winding coupler cover ③, and insert them in the cover storage section provided in the battery chamber to prevent losing them ④. Be careful not to drop the coupler covers inside the battery chamber.
3. Insert the batteries as indicated by the diagram inside the battery chamber.
4. With the notched portion of the battery chamber cover facing up, align the cover with the batteries ⑤ and push it in until it locks in place. It can be inserted in only one direction.

Setting the Frame Counter

1. Press the frame counter reset button before loading the film. This will return the frame counter to "S" ⑦.
2. Open the camera back and load the film. Insert the film leader into one of the slots of the take-up spool and, using the camera's film advance lever, advance one frame of film. Make sure the film perforations are engaged with the sprocket teeth.
3. Close the camera back and take two blank shots. The frame counter will read "36."
4. When loading a roll of film with fewer exposures than 36, such as 24 or 12, first follow the steps above. Then push in and turn the frame counter setting wheel in the direction of the arrow until "24" or "12," for example, is aligned with the counter index ⑧.

Notes

1. The frame counter setting wheel will turn only in the direction of the arrow. If you turn past the number you intend to set, press the reset button and start over from "S."
2. Do not set the frame counter to a number larger than the number of frames on the film. If the counter is set to a larger number and the film ends before the frame counter reaches "0," the film perforations may be torn.
3. The frame counter of the power winder is a reverse-counting type while that of the camera is an additive type. Consequently, their readings will not be the same.

Shooting

Set the desired film driving speed by pulling up and turning the mode selector until "S" or "C" is aligned with the index ⑨.

At the "S" position, a single exposure is made when you press any of the three shutter release buttons, and the film is automatically advanced when you remove your finger from the button. At the "C" position, continuous photography at about two frames per second is performed as long as you press any of the shutter release buttons.

1. Shutter-priority AE Photography

One of the primary functions of the AE Power Winder FN is to convert the F-1 to shutter-priority automatic exposure (AE). This AE mode is possible only when using an FD lens. Note that center-weighted average metering is recommended in general for AE photography.

1. Turn the aperture ring of the lens, while pressing the AE lock pin, until the "A" mark is aligned with the distance index ⑩.
2. Set the F-1's shutter dial to the desired shutter speed. Shutter speeds from 8 secs. to 1/2000 sec. can be used; the "B," "1/2" and "A" settings on the dial cannot be used in the shutter-priority AE mode.
3. Look into the viewfinder and lightly press one of the shutter buttons to get a meter reading. The meter needle will point to the f/stop the F-1 has selected automatically. For correct exposure, the meter needle should not be in either the over- or underexposure warning zone. If it is in either zone, turn the shutter dial until the meter needle moves out of the warning zone.

4. Press the shutter button all the way down to take the picture.

Notes

1. If there are no batteries in the power winder, or if they are loaded and their voltage drops below operating level, shutter-priority AE photography is impossible. In this case, setting the lens' aperture ring to the "A" mark will lock all shutter buttons, thus preventing shutter release. To use the camera in the manual exposure mode, simply remove the lens' aperture ring from the "A" mark and set an aperture in the usual manner.
2. Shutter-priority AE photography is possible even if the mode selector is OFF, as long as the lens' aperture ring is on the "A" mark. In this case, the film will not be advanced automatically and the shutter must be released with the camera's shutter button or the winder's vertical-position shutter button.
3. For self-timer photography or for releasing the shutter with a remote control device, close the built-in eyepiece shutter of the camera to prevent light from entering the eyepiece and adversely affecting automatic exposure.

II. Manual Override

The Canon F-1 functions as a manual-exposure camera when the lens, aperture ring is moved from the "A" mark. Then simply determine correct exposure in the usual manner by setting both shutter speed and aperture, matching the meter and aperture needles in the viewfinder. For further details, refer to the instruction book of the camera.

Note:

Press the shutter button on the camera when shooting with the shutter dial on "B." If either of the power winder's shutter buttons is pressed, the shutter speed will switch automatically to 1/1000 sec.

III. Mechanical Operation

When the battery is removed from the camera, the F-1 switches to mechanical shutter control. In this case, only single-frame photography is possible even if the mode selector on the power winder is set to "C." Only the shutter release button on the camera can be used to release the shutter. The mechanically controlled shutter speeds are 1/2000 to 1/125 sec., " $\frac{1}{2}$ " (1/90 sec.) and "B." If the camera's shutter dial is set to a shutter speed slower than 1/90 sec., the speed will switch automatically to 1/90 sec. For further details, please refer to the instruction book of the camera.

Shutter Release

Two shutter release buttons are provided on the power winder for maximum ease of handling ⑪. For horizontal shots, use the shutter button on top of the grip. Use the shutter button on the side of the power winder for vertical shots. Of course, the camera's shutter button can also be used.

The shutter release buttons are provided with release button locks. The shutter button on top of the grip can be locked by pulling up and turning the mode selector to OFF. The shutter button of the camera or the vertical-position shutter button of the power winder will still release the shutter when pressed. However, in this case automatic film advance will not occur. To lock the vertical shutter button, turn the lock lever so that the red "L" is aligned with the white dot. This is recommended to prevent accidental shutter release when carrying the camera.

The three shutter release locking devices function independently one another. Even if the camera's shutter release lock lever is aligned with the "L," for example, either of the power winder's shutter release buttons can still be used to release the shutter.

Note:

Do not depress the film rewind lever on the camera during power winder operation unless you wish to take multiple exposures (see p. 22).

The shutter will not operate in the following cases:

1. When the camera is used in the shutter-priority AE mode and the power winder has no batteries installed or, if installed, their voltage is insufficient. In this case, replace the batteries.
2. When the camera's battery does not have enough voltage to power the camera. In this case, replace the battery in the camera.
3. When the power winder's warning lamp lights up. In this case, rewind the film immediately.

Rewinding the Film

Film winding stops automatically and the warning lamp lights up when the frame counter reaches "0." Rewind the film immediately or turn OFF the mode selector on the power winder after the lamp lights up. Otherwise, the warning lamp will remain on and eventually drain the batteries.

1. First press the frame counter reset button ⑫.
2. Then turn the rewind lever on the camera clockwise and press it down ⑬.
3. Unfold the rewind crank and turn it in the direction of the arrow. As you turn the rewind crank, you will hear a sound which indicates the film is being rewound. When you no longer hear the sound, the film is rewound completely. If the mode selector has not been turned OFF, the warning lamp will stay on. After rewinding the film, turn the film advance lever until it stops; the light will go out ⑭. Then open the camera back and remove the film from the camera.

Notes

1. If the film is rewound without first pressing the frame counter reset button, the warning lamp will stay on and the power winder will not operate when you press the shutter button because the counter is still at "0." In this case, press the counter reset button and turn the film advance lever.
2. The film will not advance if the camera's rewind lever is engaged. Before loading the next film, be sure to lightly press the camera's shutter button to disengage the rewind lever.
3. After removing the power winder from the camera, do

not forget to remove the lens' aperture ring from the "A" mark. Otherwise, the camera's automatic safety circuit will prevent shutter release if there is a battery in the camera.

E

Multiple Exposures

Multiple exposures are possible when the AE Power Winder FN is attached to the camera. The film must be taut before making the first exposure. To take up any slack in the film, unfold the camera's rewind crank and gently turn it in the direction of the arrow until it stops. Then turn and press the camera's rewind lever in the usual manner; the film will now remain stationary for multiple exposures. The mode selector can be set to either the "S" or "C" position. To release the shutter, press either shutter button of the power winder. The frame counters of both the camera and the power winder will advance each time the shutter is released.

You can make any number of exposures on the same frame simply by pressing one of the power winder's shutter buttons. However, there is possibility of a slight movement of the film if you make an excessive number of exposures on the same frame. Also note that, depending on the number of exposures made on the frame, exposure compensation is necessary to prevent overexposure. Refer to the camera's instruction book for further details.

To return to normal shooting, cap the lens and take a blank shot, using the camera's shutter button.

Notes

1. To check the tension of the film, the rewind crank must be unfolded before it is turned; otherwise, it will turn freely.
2. It is not advisable to make multiple exposures on the first or last few frames of the film.

Remote Control

A 2.5 mm socket is provided on the AE Power Winder FN for connecting accessories for remote control and interval-timer photography.

Remote Switch 3 or 60, the Wireless Controller LC-1, the Interval Timer TM-1, or other remote control devices may be plugged into this socket.

With the mode selector on OFF, connect the accessory to the remote control socket ⑮. If the mode selector is not OFF, the shutter may be released, thus wasting one frame. After connecting the accessory, turn on the power winder's mode selector or remote control will be impossible.

Note:

There is no viewfinder display when a remote control device or interval timer is used with the power winder.



CANON MOTOR DRIVE MA SET

キヤノンモータードライブMAセット

INSTRUCTIONS
使用説明書



Canon Motor Drive MA

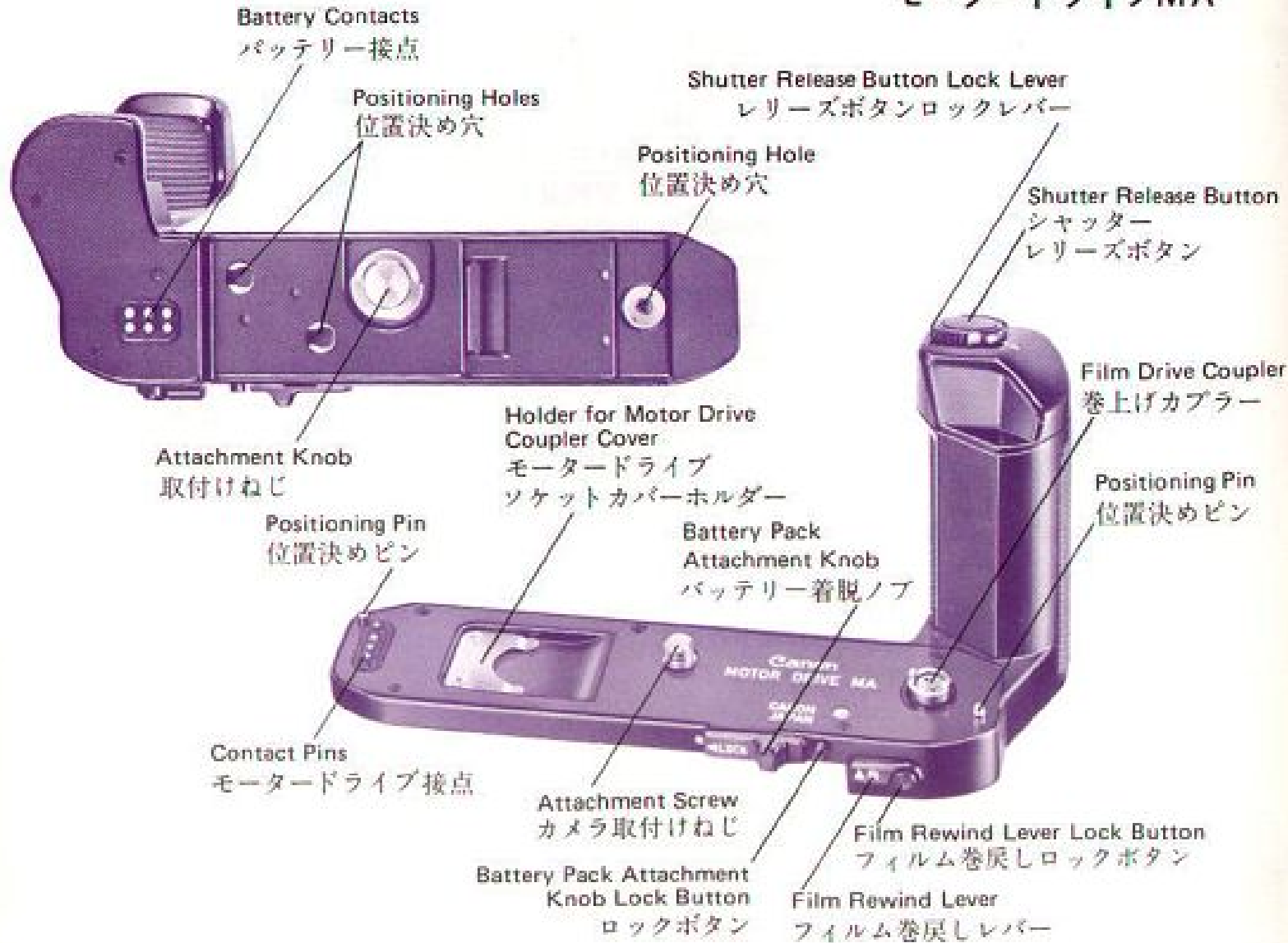
The Canon Motor Drive MA is an accessory for the Canon A-1 and AE-1 PROGRAM designed to wind the film automatically. Two separate power sources, the Battery Pack MA or the Ni-Cd Pack MA are available for the Motor Drive MA. With Battery Pack MA, sequential shooting at up to five frames per second is possible and an instant high speed button permits instant access to the highest speed for fast-breaking shots. Ni-Cd Pack MA is remarkably small, requires no batteries and is rechargeable. Three automatic film drive speeds, including single frame shooting, are provided along with two shutter buttons for maximum ease of operation depending upon the position of the camera. An integral part of the A-1's pulse-controlled, digital computer system, it is amazingly compact and flexible for the most wide-ranging applications.

キヤノンモータードライブ MAセットのお買いあげありがとうございます。

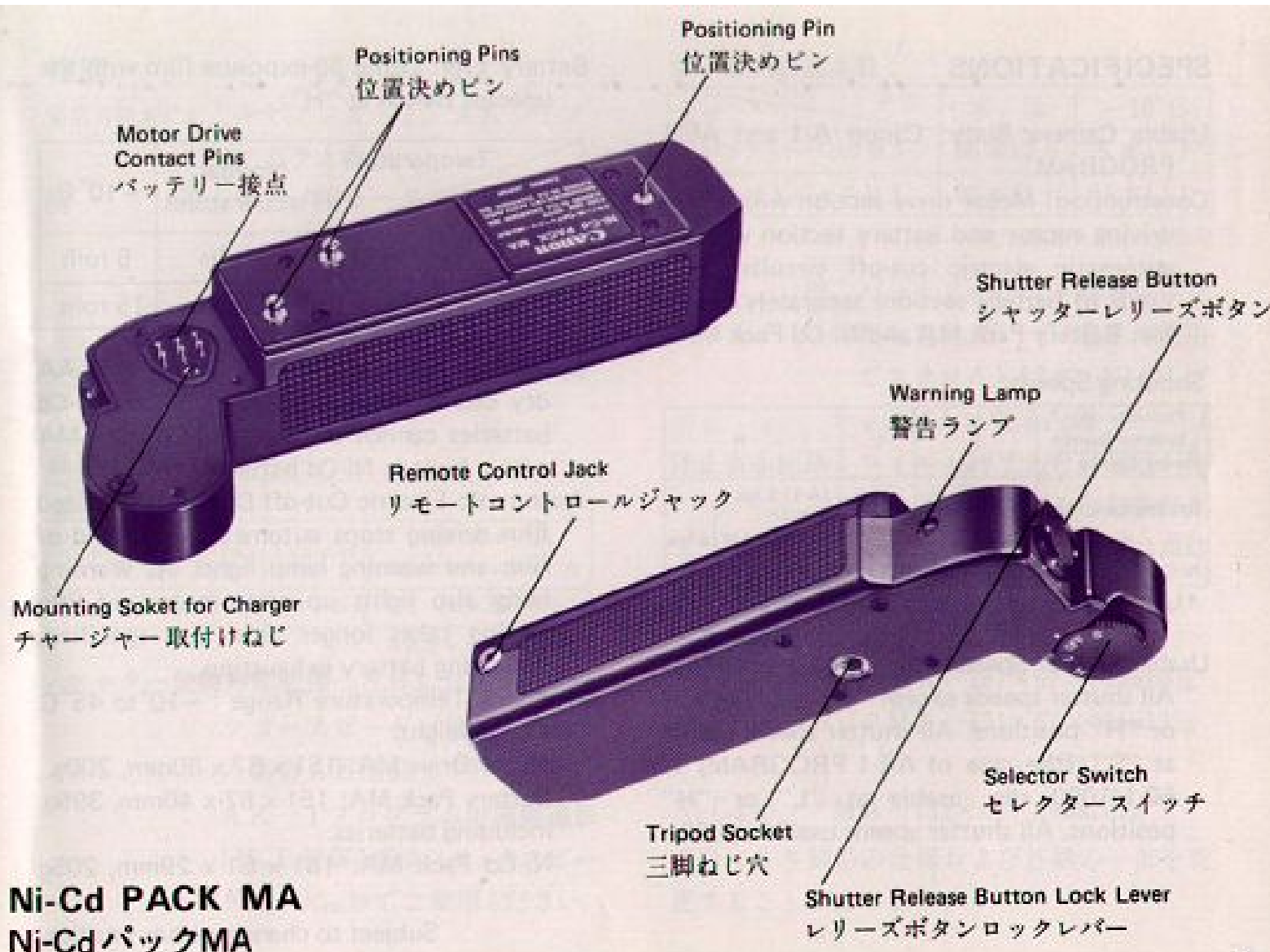
このモータードライブはキヤノン A-1, AE-1 プログラムのために設計された、小型軽量モータードライブです。最高速5コマ/秒を可能とする撮影スピード、撮影目的や操作性に合わせて選べるバッテリー、構え方に合わせて選べるシャッターリリースボタンの採用など優れた特長を備えています。またキヤノンモータードライブシステムはワイヤレスコントローラー LC-1をはじめ、豊富に用意されています。

Nomenclature 各部名称

**MOTOR DRIVE MA
モータードライブMA**







Ni-Cd PACK MA
Ni-CdパックMA

性能

使用可能ボディ：キヤノンA-1、AE-1プログラム専用

構造：巻上げ用モーター内蔵のモータードライブ部と自動停止回路を含むバッテリー部で構成（バッテリー部はバッテリーパックMAとNi-CdパックMAの2種有）

撮影スピード：

電源	S	L	H
バッテリーパックMA	1コマ	3.5コマ/秒	(A-1)5コマ/秒 (AE-1プログラム)4コマ/秒
Ni-CdパックMA	1コマ	3コマ/秒	4コマ/秒

※新品マンガン電池使用

シャッター使用可能範囲：S.H.L.位置で全シャッタースピード（但し、バルブの場合AE連動せず）

AE-1プログラムの連続撮影（H、L位置）ではシャッタースピード $\frac{1}{60}$ ～ $\frac{1}{1000}$ 秒でご利用ください。

フィルム給送本数：

電源	温度	常温	-10°C
バッテリーパックMA		60本以上	5本以上
ニッカドパックMA		60本以上	15本以上

Hモードで36枚撮りフィルム使用

電源：バッテリーパックMAは単三型乾電池（Ni-Cd電池は使用できません）12本、Ni-CdパックMAは電池内蔵

停止表示回路：フィルム終了または電池が作動電圧以下になると自動停止し、警告ランプ（LED）点灯

使用可能温度範囲：-10°～45°

大きさ・重量：

モータードライブMA—151×67×80mm200g

バッテリーパックMA—151×67×40mm395g
（含・電池）

Ni-CdパックMA—151×61×29mm205g

都合により製品の仕様および外観の一部を変更することがあります。

SPECIFICATIONS

Usable Camera Body: Canon A-1 and AE-1 PROGRAM.

Construction: Motor drive section with a film driving motor and battery section with an automatic electric cut-off circuits. Two kinds of battery sections separately available: Battery Pack MA and Ni-Cd Pack MA.

Shooting Speeds:

Positions on Selector Switch Power Source	S	L	H
Battery Pack MA*	Single frame	3.5 fps	(A-1) 5 fps (AE-1 PROGRAM) 4 fps
Ni-Cd Pack MA	Single frame	3 fps	4 fps

* Using new manganese batteries.

Usable Shutter Speed Range: (the case of A-1)

All shutter speeds except "B" usable at "L" or "H" positions. All shutter speeds usable at "S". (the case of AE-1 PROGRAM) 1/60-1/1000 sec. usable at "L" or "H" positions. All shutter speeds usable at "S".

Battery Life: Using 36-exposure film with the selector switch at "H":

Battery \ Temperature	Normal Temperatures	-10°C
Battery Pack MA	60 rolls	5 rolls
Ni-Cd Pack MA	60 rolls	15 rolls

Power Sources: Battery Pack MA for size AA dry cell batteries (size AA dry cell Ni-Cd batteries cannot be used); Ni-Cd Pack MA with a built-in Ni-Cd battery

Automatic Electric Cut-off Circuit: Motorized film driving stops automatically at end of film and warning lamp lights up. Warning lamp also lights up when motorized film driving takes longer time than specified, indicating battery exhaustion.

Operable Temperature Range : -10° to 45° C.

Size and Weight:

Motor Drive MA: 151 x 67 x 80mm, 200g.

Battery Pack MA: 151 x 67 x 40mm, 395g, including batteries.

Ni-Cd Pack MA: 151 x 61 x 29mm, 205g

Subject to change without notice.



Loading the Batteries

Before mounting the battery pack onto the motor drive, load the batteries. The poles should be wiped with a clean, soft cloth before loading to avoid corrosion of the contacts.

1. Slide the battery magazine release knob in the direction of the arrow and remove the battery magazine.
2. Following the diagrams on the inside and outside of the battery magazine, load 12 size AA dry cell batteries. Make sure the poles are facing in the correct directions. Incorrect loading may lead to corrosion or explosion.

取付け前の準備

(電池装てん)

バッテリーパックからバッテリーマガジンを拔出し、電池を入れてください。

- (1)バッテリーマガジン取りはずしノブを矢印方向に押し、バッテリーマガジンを引出します。マガジンを装てんするときは押込むだけです。
- (2)電池はバッテリーマガジンの内側と外側に記されているような $\oplus$ $\ominus$ の向きに入れてください。



USE OF MOTOR DRIVE MA WITH BATTERY PACK MA

If Battery Pack MA is already attached to the Motor Drive, remove it by sliding the battery pack attachment knob on the Motor Drive to the right while pressing in the battery pack attachment knob lock button. A red dot will appear, and the battery pack can now be pulled out from the bottom.



バッテリーパックMA

モータードライブMAと、バッテリーパックMAがセットされている状態でお求めになられた方は、取付ける前にそれぞれに分けてください。

モータードライブMA本体のロックボタンを押しながら、バッテリー着脱ノブを右方向にロックされるまで押しつけます。

バッテリー着脱ノブの左脇に赤マークが表示され着脱が可能になります。はずすときはバッテリーパックMAを下に引張ってください。



3. When all batteries are loaded, push the battery magazine back into the Battery Pack MA until it is again in its fully-seated position. It can be inserted in only one direction.

*When replacing batteries, replace all at the same time with 12 new (size AA) dry cell batteries, all of the same brand. The batteries should be removed whenever the Battery Pack will not be used for an excessively long time.

*Do not load size AA dry cell Ni-Cd batteries.

⊕⊖の向きをまちがえると破裂したり、電池漏液になることがありますので、ご注意ください。

※電池交換をするときは同一銘柄の新品電池を用意し、12本同時に交換してください。電池の製造年月は、側面に82-10などというように記されています。82は年を表わし、10は月を表わします。

※長時間使用しないときは必ず電池を抜取って保管してください。

※単三型Ni-Cd電池は使用できません。



Mounting Motor Drive MA onto the A-1 or the AE-1 PROGRAM

1. If camera's action grip is attached, remove it.
 2. Using a coin, unscrew the motor drive coupler cover on the bottom of the camera body. Insert the coupler cover into the holder on the Motor Drive MA to prevent losing it.
 3. Position the attachment pins of the Motor Drive over the attachment holes on the bottom of the camera body and tighten the Motor Drive attachment knob.
- *Always attach Motor Drive MA to the camera body first and then attach the battery pack.

(モータードライブMAの取付け方)

カメラのバームグリップとモータードライブソケットカバーをはずしたうえで、モータードライブを取付けてください。取りはずしたソケットカバーはモータードライブのソケットカバーホルダーに差込んで保管してください。

1. モータードライブMAをカメラに取付けます。取付けはモータードライブの取付けねじを回して行なってください。



Mounting Battery Pack MA onto Motor Drive MA

1. Make sure that the battery pack's selector switch is off and that the battery pack attachment knob on the Motor Drive is slid all the way to the right with the red dot showing. If the knob is not already in this position, slide it to the right while pressing in the battery pack attachment knob lock button.



2. バッテリーパックMAを取付ける準備をしてください。

モータードライブのロックボタンを押しながら、バッテリー着脱ノブをロックされるまで右に押付けます。バッテリー着脱ノブの左に赤マークが表示され、バッテリーパックの着脱が可能になります。

3. バッテリーパックMAを取付けます。

バッテリーパックを取付けるときは、セレクトスイッチをOFFにしておいてください。モータードライブ下部の位置決め穴に、バッテリーパックの位置決めピンを合

2. Align the battery pack's positioning pins with the positioning holes on the bottom of the Motor Drive. Push the battery pack in and press the battery pack attachment knob lock button to lock the battery pack onto the Motor Drive. Double check to make sure they are properly locked together.

•The terminals and contacts should be wiped prior to attachment.

Set the Selector Switch

The selector switch functions as both a main switch and as a film driving speed selector switch. The speeds available are:

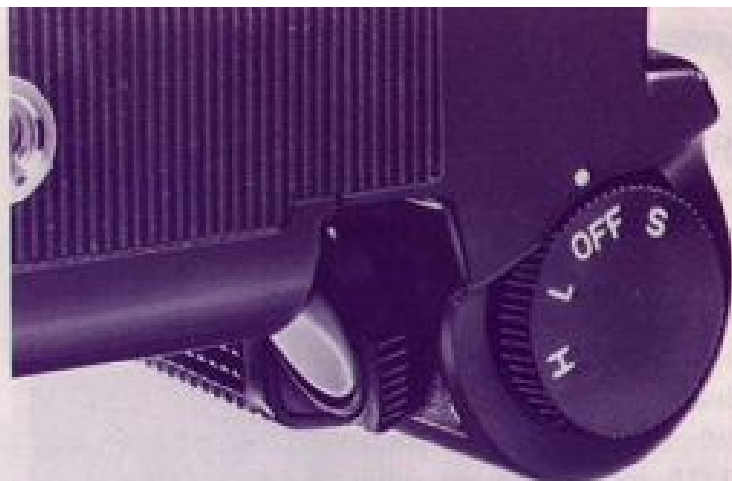
S: single frame shooting.

L (low): 3.5 frames per second.

H (high): 5 frames per second. (In case of the AE-1 PROGRAM, 4 frames per second).

At the "S" position, a single exposure is made when the shutter button is depressed, and the film is automatically advanced when your finger is removed from the shutter button. At the "L" and "H" positions, sequential photography is performed as long as you press the shutter button. To set a speed, pull up on the selector switch and turn it until the desired speed click stops at the index.

All shutter speeds except for "B" can be used at any of the three speed settings. ("B" can be



わせて押付けながら、モータードライブのロックボタンを押します。着脱ノブが作動してバッテリーパックが固定されます。

※取付けたならば必ずバッテリー着脱ノブを押して取付けを確認してください。

取付け前にカメラとモータードライブのモータードライブ接点およびバッテリーのバッテリー接点を拭いてください。汚れていると作動しないことがあります。

4. 撮影コマスピードをセットします。

バッテリーパックのセレクトスイッチはメインスイッチと撮影コマスピードの切換えスイッチを兼ねています。

used when the selector switch is set to "S"). However, when the Motor Drive MA is mounted on a tripod, its operation may cause slight vibration. To avoid blurred images, use a minimum shutter speed of at least 1 divided by the focal length of the lens. For a 200mm lens, for instance, use a shutter speed of at least 1/250 sec.

When using a slow shutter speed of perhaps 1/15 sec. or slower when the selector switch is at "H", you will hear a slight sound of motor rotation. Although this will not affect the camera's or motor drive's operation, you may want to lower the speed to "L" if you find the noise bothersome.

When the selector switch is off, the film can be manually advanced as usual. The selector switch should always be off when the Motor Drive MA is not in use. The camera's main switch should also be turned to "L" when finished shooting.

- * It is not possible to shoot sequentially with the Motor Drive MA when in the stopped-down AE mode using an FD lens.
- * Multiple exposures are not possible when the Motor Drive MA is mounted and in operation.

撮影コマスピードをセットするときはセレクトースイッチを引張りながら回してください。

S.....1コマ(シャッターレリーズボタンを押すと撮影が行なわれ、指を離すとフィルムが巻上げられます。)

L.....3.5コマ/秒	}	(シャッターレリーズボタンを押している間、連続撮影、ただしBは除く)
H.....5コマ/秒 (A-1)		
H.....4コマ/秒 (AE-1プログラム)		

※使用しないときはセレクトースイッチをOFFにすると同時にカメラのメインスイッチをL位置にセットしてください。

※セレクトースイッチをOFFにするとカメラの巻上げレバーで、フィルムの巻上げが可能となります。



Shutter Release

Two shutter release buttons are provided for maximum ease of handling. When holding the camera in a horizontal position, use the shutter button on the top of the grip. Use the shutter button on the side of the battery pack when holding the camera in a vertical position. Of course, the camera's shutter button can also be used.

The shutter release buttons are provided with lock levers. When the index of the lock lever is aligned with the small red dot, the shutter button cannot be pressed and shutter release is impossible. This is handy to prevent accidental shutter release when carrying the camera.

シャッターリリースボタン

このモータードライブはカメラの構え方に合わせて使用できる、シャッターリリースボタンを備えています。

カメラを普通に構えたときはグリップ先端のリリースボタンが使用でき、縦に構えたときはバッテリーパック側面のリリースボタンが使用できます。尚カメラのシャッターリリースボタンでも撮影が可能です。



Instant High Speed Button

When the selector switch is at "S" or "L", it is possible to switch to "H" instantly simply by pressing this instant high speed button. This means sequential shooting at the rate of up to five frames per second is instantly accessible for fast-breaking shots. The instant high speed button also has a lock lever which, when turned to the red dot, prevents use of the instant high speed.

- * Please note that you must hold in the instant high speed button while pressing the shutter button for as long as you want to use this instant high speed. The instant high speed button does not lock.

インスタントハイスピードリリースボタン

インスタントハイスピードリリースボタンを押せばセレクトースイッチがSまたはL位置でも、H(高速)で撮影が行なわれます。

インスタントハイスピードリリースボタンは単独で押しても作動しません。必ず他のリリースボタンと一諸に押してください。



Film End and Rewinding

At the end of a roll of film, the Motor Drive MA automatically stops and the warning lamp lights. Check the frame counter to make sure the film is indeed at its end (see first note on p. 18). Switch off the selector switch to avoid battery waste.

To rewind the film, first push the Motor Drive's film rewind lever upwards while pressing in the film rewind lever lock button. Once you have pushed the rewind lever upwards, you can remove your finger. Now turn the A-1's film rewind crank to rewind the film.



リリースボタンのロック

シャッターリリースボタン周りのリリースボタンロックレバーを回して白指標を赤指標に合わせると、シャッターリリースボタンがロックされますので、持ち運びの際などに利用してください。

フィルムの終了と警告ランプ

フィルムが終了すると巻上げが停止し、警告ランプが点灯します。

停止した場合はフィルムカウンターを確認し、



セレクトースイッチをOFFにして電池消耗を防いだ後、フィルムを巻戻してください。このときON、OFFを繰返すとフィルムが切れたりすることがありますので、ご注意ください。

また警告ランプは電池が消耗して、規定より巻上げ時間がかかるようになった場合にも点灯しますので、この場合もセレクトースイッチをOFFにして電池交換をしてください。

フィルムの巻戻し

撮影終了後はフィルムを巻戻してください。フィルム巻戻しレバーは巻戻しレバーのロックボタンを押しながら押上げないと動きませんので、フィルムを巻戻すときは指の腹でロックボタンを押しながら、巻戻しレバーを押上げてください。

- * The warning lamp may light up before the end of a film to indicate battery exhaustion when motorized film driving takes longer than the specified time. If this happens, switch off the selector switch and replace the batteries.
- * Playing with the selector switch before rewinding may cause the film to be torn off.



Remote Control

Sequential shooting by the Wireless Controller LC-1 or remote control is possible by using the Motor Drive MA/Battery Pack MA with the Remote Switch or a similar product. Insert the remote control device into the remote control jack on the back of Battery Pack MA while the selector switch is off. If the selector switch is not off, the shutter may be released wasting one film frame.

リモートコントロール撮影

ワイヤレスコントローラーLC-1やリモートスイッチを使用した遠隔操作をする場合は、リモートコントロールジャックに差込んで使用してください。プラグを差込む時はセレクトスイッチをOFFにして差込んでください。OFF以外の状態で差込むと1回シャッターが切れることがあります。

※モータードライブを使用して多重露出はできません。またFDレンズを使用した絞り込みAE撮影時はモータードライブでの連続撮影はできません。

望遠レンズを使用すると、ブレの影響が多くなりますから、三脚使用時でもできる限り速い目盛を選んでください。一般に使用レンズの焦点距離と同じ数値以上のものが選ばれています。たとえば100mmレンズなら、 $\frac{1}{125}$ 秒、200mmレンズなら $\frac{1}{250}$ 秒といった具合です。



USE OF MOTOR DRIVE MA WITH Ni-Cd PACK MA

The power supply of the Ni-Cd Pack MA is built-in. There is no need to load batteries. To mount Motor Drive MA on to the A-1 or the AE-1 PROGRAM:

1. If camera's action grip is attached, remove it.
 2. Using a coin, unscrew the motor drive coupler cover on the bottom of the camera body. Insert the coupler cover into the holder on the Motor Drive MA to prevent losing it.
 3. Position the attachment pins of the Motor Drive over the attachment holes on the bottom of the camera body and tighten the Motor Drive attachment knob.
- *Always attach Motor Drive MA to the camera body first and then attach the Ni-Cd pack.



Ni-CdパックMA

モータードライブMAを取付ける前にカメラのバームグリップと、モータードライブソケットカバーをはずしてください。

モータードライブソケットカバーはモータードライブのソケットカバーホルダーに差込んで保管してください。

1. モータードライブMAをカメラに取付けます。
取付けはモータードライブの取付けねじを回して行ないます。



Mounting Ni-Cd Pack MA onto Motor Drive MA

1. Make sure that the battery Pack's selector switch is off and that the Ni-Cd pack attachment knob on the Motor Drive is slid all the way to the right with the red dot showing. If the knob is not already in this position, slide it to the right while pressing in the battery pack attachment knob lock button.
2. Align the Ni-Cd Pack's positioning pins with the positioning holes on the bottom of the Motor Drive. Push the Ni-Cd Pack in and press the battery pack attachment knob lock button to lock the Ni-Cd Pack onto the Motor Drive. Double check to



2. 次にNi-CdパックMAを取付ける準備をしてください。

モータードライブのロックボタンを押しながら、バッテリー着脱ノブをロックされるまで右に押付けます。バッテリー着脱ノブの左に赤マークが表示されれば、Ni-Cdパックの着脱が可能になります。

3. Ni-CdパックMAを取付けます。

Ni-Cdパックを取付ける際はセレクタスイッチをOFFにしておいてください。

モータードライブMA底の位置決め穴に、Ni-Cdパックの位置決めピンを合わせて押付けながら、モータードライブMAのロッ



make sure they are properly locked together.

- *The terminals and contacts should be wiped prior to attachment.

Set the Selector Switch

The selector switch functions as both a main switch and as a film driving speed selector switch. The speeds available are:

S: single frame shooting.

L (low): 3 frames per second.

H (high): 4 frames per second.

At the "S" position, a single exposure is made when the shutter button is depressed, and the film is automatically advanced when your finger is removed from the shutter button. At the "L" and "H" positions, sequential photography is performed as long as you press the shutter button. To set a speed, pull up on the selector switch and turn it until the desired speed click stops at the index.

クボタンを押します。着脱ノブが作動して Ni-Cd パックが固定されます。

※取付けたら確認のため、必ずバッテリー着脱ノブを指で押付けてください。

取付け前にカメラとモータードライブのモータードライブ接点およびバッテリーのバッテリー接点を拭いてください。汚れていると作動しないことがあります。

4. 撮影コマスピードをセットします。

Ni-Cd パックのセレクタースイッチはメインスイッチと撮影コマスピードの切換えスイッチを兼ねています。

撮影コマスピードをセットするときはセレクタースイッチを引張りながら回します。それぞれのコマスピードは次のようになります。

All shutter speeds except for "B" can be used at any of the three speed settings. ("B" can be used when the selector switch is set to "S"). However, when the Motor Drive MA is mounted on a tripod, its operation may cause slight vibration. To avoid blurred images, use a minimum shutter speed of at least 1 divided by the focal length of the lens. For a 200mm lens, for instance, use a shutter speed of at least 1/250 sec.

When using a slow shutter speed of perhaps 1/15 sec. or slower when the selector switch is at "H", you will hear a slight sound of motor rotation. Although this will not affect the camera's or motor drive's operation, you may want to lower the speed to "L" if you find the noise bothersome.

When the selector switch is off, the film can be manually advanced as usual. The selector switch should always be off when the Motor Drive MA is not in use. The camera's main switch should also be turned to "L" when finished shooting.

*It is not possible to shoot sequentially with the Motor Drive MA when in the stoped-down AE mode using an FD lens.

*Multiple exposures are not possible when the Motor Drive MA is mounted and in operation.

S1コマ撮影(シャッターリリースボタンを押すと撮影が行なわれ、指を離すとフィルムが巻上げられます.)

L3コマ/秒 } (シャッターリリースボタンを押している間、連続撮影
H4コマ/秒 } ただしBは除く)

シャッターリリースボタン

このモータードライブはカメラの構え方に合わせて選べる、シャッターリリースボタンを備えています。カメラを普通に構えたときはグリップ先端のシャッターリリースボタンを使用し、縦に構えたときはNi-Cdバック側面のシャッターリリースボタンを使用してください。

※使用しないときはセレクトスイッチをOFFにすると同時にカメラのメインスイッチをL位置にセットしてください。



Shutter Release

Two shutter release buttons are provided for maximum ease of handling. When holding the camera in a horizontal position, use the shutter button on the top of the grip. Use the shutter button on the side of the Ni-Cd Pack when holding the camera in a vertical position. Of course, the camera's shutter button can also be used.

The shutter release buttons are provided with lock levers. When the index of the lock lever is aligned with the small red dot, the shutter button cannot be pressed and shutter release is impossible. This is handy to prevent accidental shutter release when carrying the camera.

※セレクトースイッチをOFFにするとカメラの巻上げレバーでフィルム巻上げができます。

シャッターリリースボタンのロック

シャッターリリースボタンの縁にはリリースボタンロックレバーがありますので、持運びの際などの安全ロックとして使用してください。リリースボタンロックレバーを回して白指標を赤指標に合わせると、押せなくなります。



Film End and Rewinding

At the end of a roll of film, the Motor Drive MA automatically stops and the warning lamp lights. Check the frame counter to make sure the film is indeed at its end (see first note below). Switch off the selector switch to avoid battery waste.

To rewind the film, first push the Motor Drive's film rewind lever upwards while pressing in the film rewind lever lock button. Once you have pushed the rewind lever upwards, you can remove your finger. Now turn the A-1's film rewind crank to rewind the film.

*The warning lamp may light up before the end of a film to indicate battery exhaustion when motorized film driving takes longer

フィルム終了と警告ランプ

フィルムが終了すると巻上げが停止し、警告ランプが点灯します。

停止した場合はフィルムカウンターを確認した後に、セレクタースイッチをOFFにして電池消耗を防ぎ、フィルムを巻戻してください。このときON、OFF操作を繰り返さないでください。フィルム切れを生じることがあります。また警告ランプは電池が消耗して、巻上げ時間が規定よりかかる場合にも点灯しますので、この場合は充電してください。

(27頁参照)



than the specified time. If this happens, the Ni-Cd Pack MA should be recharged.

* Playing with the selector switch before rewinding may cause the film to be torn off.

Remote Control

Sequential shooting by the Wireless Controller LC-1 or remote control is possible by using the Motor Drive MA/Ni-Cd Pack MA with the Remote Switch or a similar product. Insert the remote control device into the remote control jack on the back of Ni-Cd Pack MA while the selector switch is off. If the selector switch is not off, the shutter may be released, wasting one film frame.

フィルムの巻戻し

撮影終了後はフィルムを巻戻してください。フィルムを巻戻す際はフィルム巻戻しレバーロックボタンを指の腹で押付けながら、フィルム巻戻しレバーを押上げ、フィルムを巻戻してください。

リモートコントロール撮影

ワイヤレスコントローラーLC-1やリモートスイッチを使用して遠隔操作をする場合は、リモートコントロールジャックに差込んで使用してください。プラグを差込む際はセレクトスイッチをOFFにして行なってください。OFF以外で差込むと1回シャッターが切れることがあります。

※モータードライブを使用して多重露出撮影はできません。またFDレンズを使用した絞込みAE撮影時はモータードライブでの連続撮影はできません。



望遠レンズを使用すると、ブレの影響が多くなりますから、三脚使用時でもできる限り速い目盛を選んでください。一般に使用レンズの焦点距離と同じ数値以上のものが選ばれています。たとえば100mmレンズなら、 $\frac{1}{250}$ 秒、200mmレンズなら $\frac{1}{250}$ 秒といった具合です。

Recharging the Ni-Cd Pack MA

To recharge Ni-Cd Pack MA, use the Canon Ni-Cd Charger MA, specified for this purpose.

Refer to the individual instructions for the Ni-Cd Charger MA for details on recharging and storage of the Ni-Cd Pack MA.

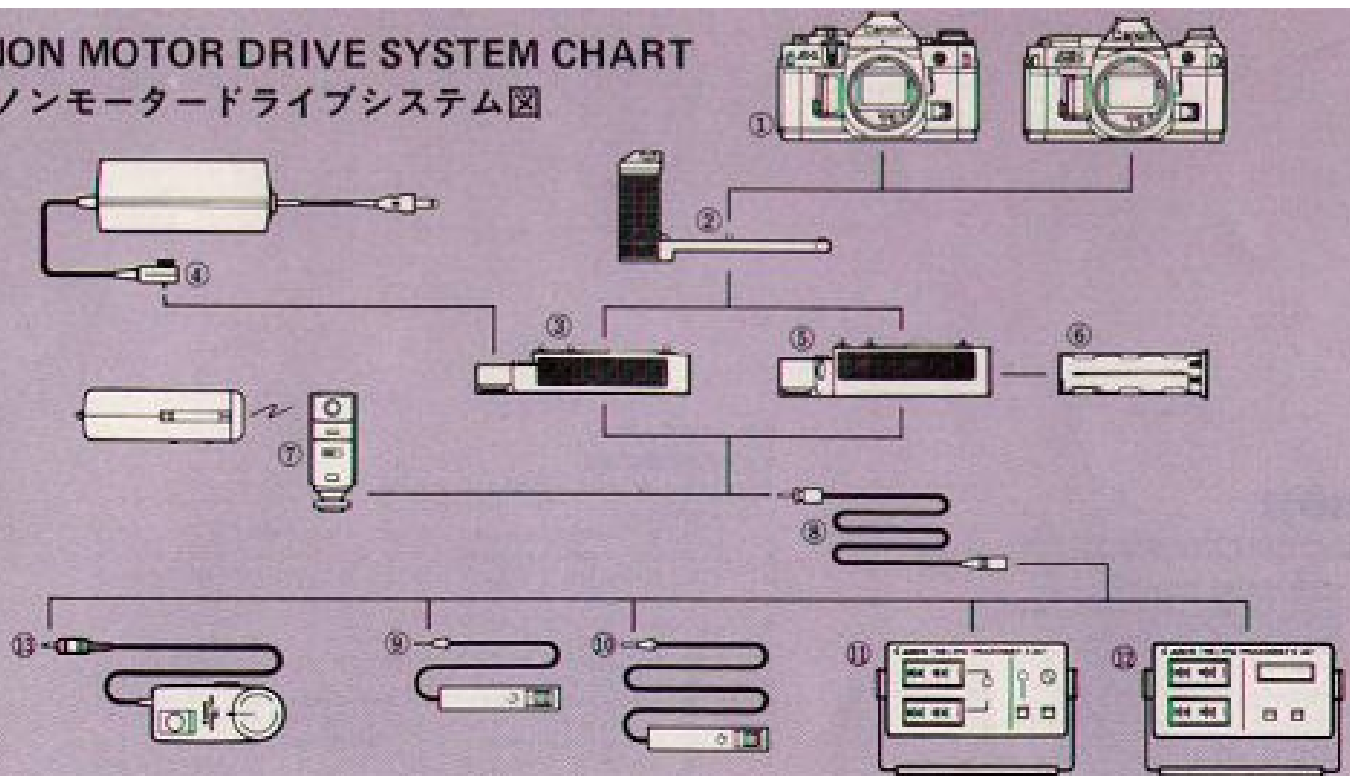
Ni-CdパックMAの充電

Ni-Cd電池が消耗した場合は専用充電器キヤノンNi-CdチャージャーMAを使用して充電してください。

充電、保管などに関してはNi-CdチャージャーMA、Ni-CdパックMAの使用説明書を参照してください。

CANON MOTOR DRIVE SYSTEM CHART

キャノンモータードライブシステム



- ① Canon A-1,
AE-1 PROGRAM
- ② Motor Drive MA
- ③ Ni-Cd Pack MA
- ④ Ni-Cd Charger MA/FN
- ⑤ Battery Pack MA
- ⑥ Battery Magazine MA
- ⑦ Wireless Controller LC-1
- ⑧ Extension Cord E1000

- ⑨ Remote Switch 60
- ⑩ Remote Switch 3
- ⑪ Time Lapse Programmer
A-Unit
- ⑫ Time Lapse Programmer
B-Unit
- ⑬ Interval Timer TM-1 Quartz

- ① キヤノン A-1,
AE-1 プログラム
- ② モータードライブ MA (本体)
- ③ Ni-Cd パック MA
- ④ Ni-Cd チャージャー MA/FN
- ⑤ バッテリーパック MA
- ⑥ バッテリーマガジン MA
- ⑦ ワイヤレスコントロー
ラー LC-1
- ⑧ エクステンションコード E1000

- ⑨ リモートスイッチ 60
- ⑩ リモートスイッチ 3
- ⑪ タイムラプスプログラマー
A ユニット
- ⑫ タイムラプスプログラ
マー B ユニット
- ⑬ インターバルタイマー
TM-1 クォーツ

INSTRUCTIONS
English Edition

Command Back 70/80/90

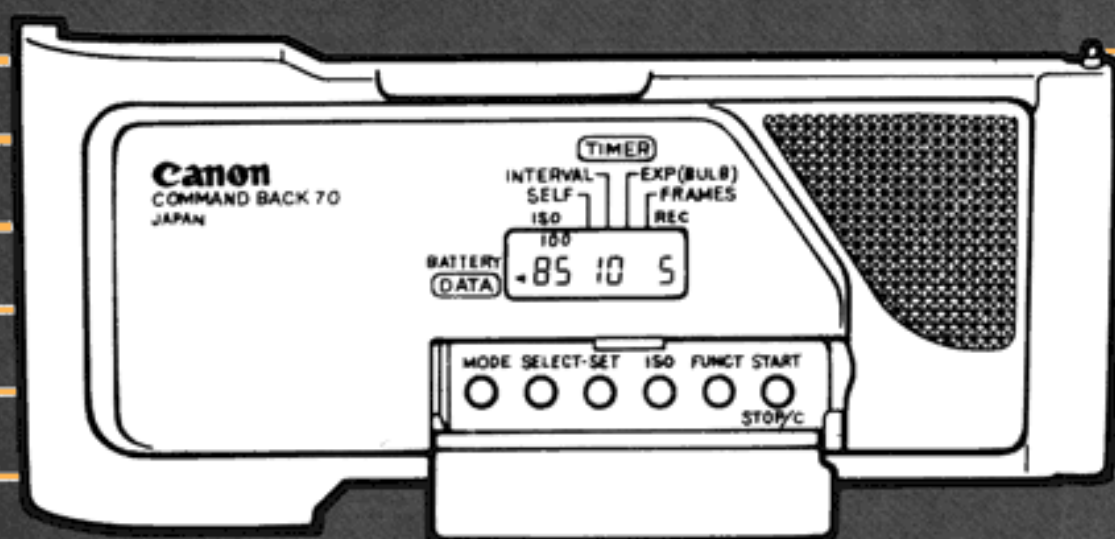


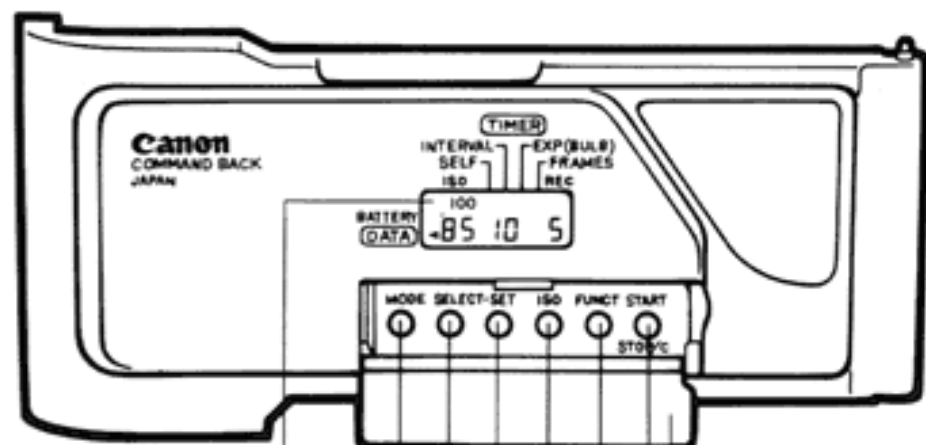
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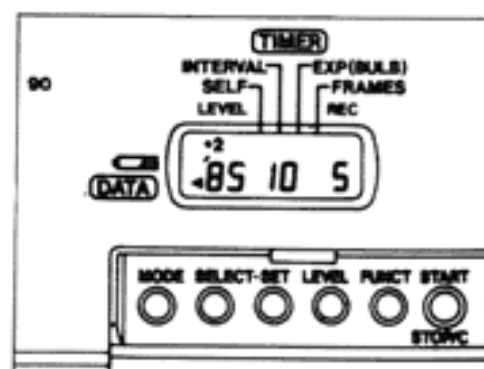
1. NOMENCLATURE

When reading these instructions, unfold the flap of this booklet for easy reference to the command back's function.

Command Back 70 and 80



Command Back 90



- 8 LCD Panel
- 1 Mode Selector
- 2 Position Selector
- 3 Number Set Button
- 7 Safety Cover (opened)
- 6 Start/Stop/Clear Button
- 5 Data/Timer Selector
- 4 Film Speed Selector (Command Back 70 and 80)
- 4 Exposure Level Adjust Button (Command Back 90)



Designed exclusively for the Canon T70, T80 and T90 respectively, the Canon Command Back 70, Command Back 80 and Command Back 90 are special data backs which open up an amazing variety of automatic operations. As their names indicate, the Command Backs are equipped with command functions to control the camera in various timer modes, as well functions which allow you to record certain types of data automatically on the film.

Features:

1. Data Recording Function

- 1) Built-in automatic date recording mode programmed up through the year 2029.
 - automatically compensates for long and short months and leap years.
 - any of three sequences (Month/day/year, day/month/year, and year/month/day) may be selected.
- 2) Built-in automatic quartz digital clock mode with 24-hour display (Day/hour/minute is recorded.).
- 3) Automatic recording of an arbitrary 6-digit code of numbers and the letters A through F.
- 4) Automatic recording of a 4-digit frame counter number from Fc 00 01 up to Fc 99 99.

2. Timer Control Function

- 1) Self-timer mode
 - the shutter is released once after a fixed period of time.
- 2) Interval timer mode
 - the shutter is released at fixed intervals.
- 3) Long release timer mode
 - the shutter is released and held open for a fixed period of time.
- 4) Frame counter setting (number of exposures setting) mode
 - the number of exposures to be made can be set and operation stops automatically after the set number of exposures has been made.

1), 2) and 3) can be set in 1-sec. units to any value from 1 sec. to 23 hrs., 59 mins., 59 secs.

4) can be set to any value in the range from 1 up to 99.

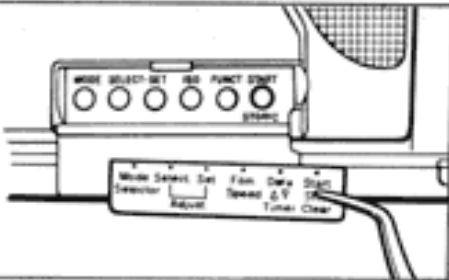
- The Command Backs can be programmed by combining the modes of the timer control function and using them together with the data recording function.

2. Basic Functions of Control Buttons

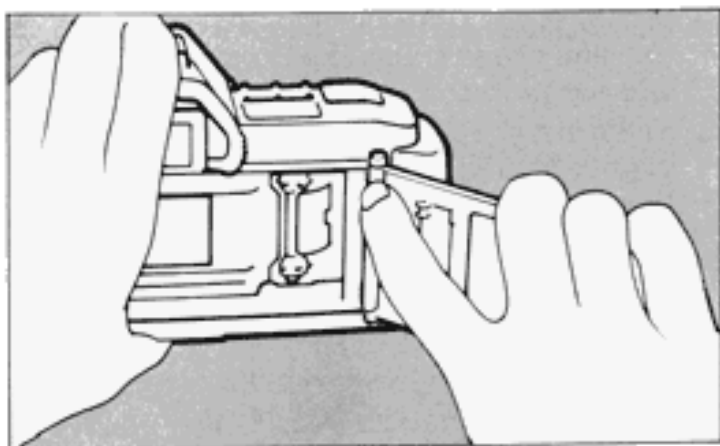
The basic functions of the Command Back's various control buttons are as follows:

1	Mode Selector—Selects the modes in either the data recording function or the timer control function.	4	• Command Back 70 and 80 Film Speed Selector—Sets data exposure brightness according to the film speed in use (3 levels). • Command Back 90 Exposure Level Adjust Button—Compensates the light intensity of data recording.
2	Position Selector—Selects the digit to be set or reset when changing numbers in the various modes.	5	Data/Timer Selector—Switches between the data recording function and the timer control function.
3	Number Set Button—Sets the desired numbers.	6	Start/Stop/Clear Button— • Starts operation in the timer control function. • Manually stops operation in the timer control function. • Clears values when the digit is flashing.

Labels in five languages are provided. Please attach the one in your language to the inside of the safety cover.

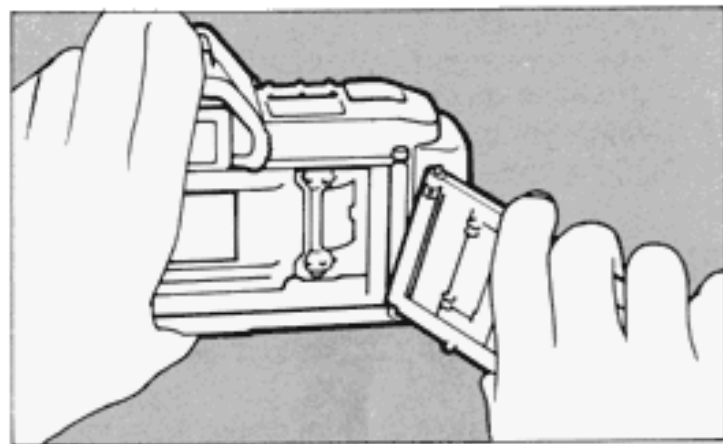


4. Attaching the Command Back to the Camera



Be sure that there is no film in the camera before attaching the Command Back. Otherwise, the film will be exposed when the regular camera back is opened.

- 1) Open the back cover of the camera and push the hinge release pin down to remove the back cover.



- 2) To attach the Command Back, insert its lower hinge into the lower socket first. Then depress the hinge release pin, align it with the upper socket and let go of the hinge release pin to lock it on.

Note:

Wipe the contacts of the camera and the Command Back with a clean, dry cloth to ensure proper contact. Otherwise the data may not be properly recorded.

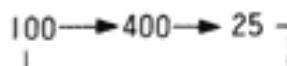
5. Setting the Film Speed

■ Command Back 70 and 80

To ensure correct data recording, the correct film speed must be set on these Command Backs. Set the film speed indicated by either "ISO" or "ASA" on your film box.

Be sure that the correct film speed is also set on the camera body.

- 1) Press and release the film speed selector. The film speed is displayed on the LCD panel in the rotating sequence: 100, 400, 25.

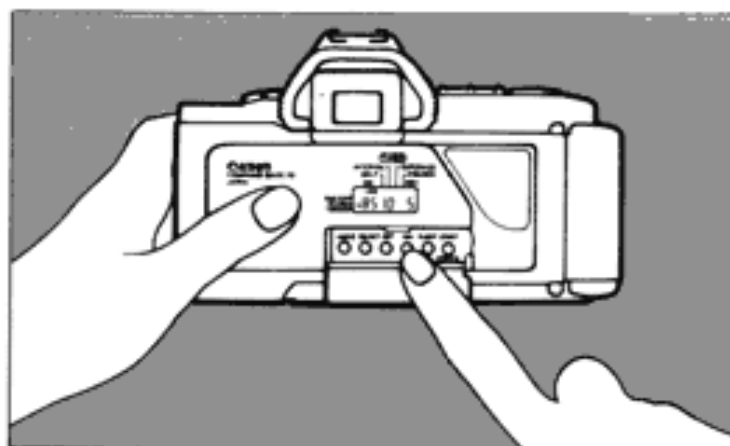


- 2) Set at 25, 100, or 400 depending on the speed of your film. Use the following table for reference.

- ISO 25—64: Set at 25.
- ISO 80—160: Set at 100.
- ISO 200—400 and ISO 1000: Set at 400.

Notes:

- The film speed set on the Command Back will not be recorded.
- There is a possibility that the data may be slightly blurred when ISO 1000 film is used.
- The film speed settings are guidelines. To determine the perfect setting, take a few trial shots, changing the film speed setting for each shot.

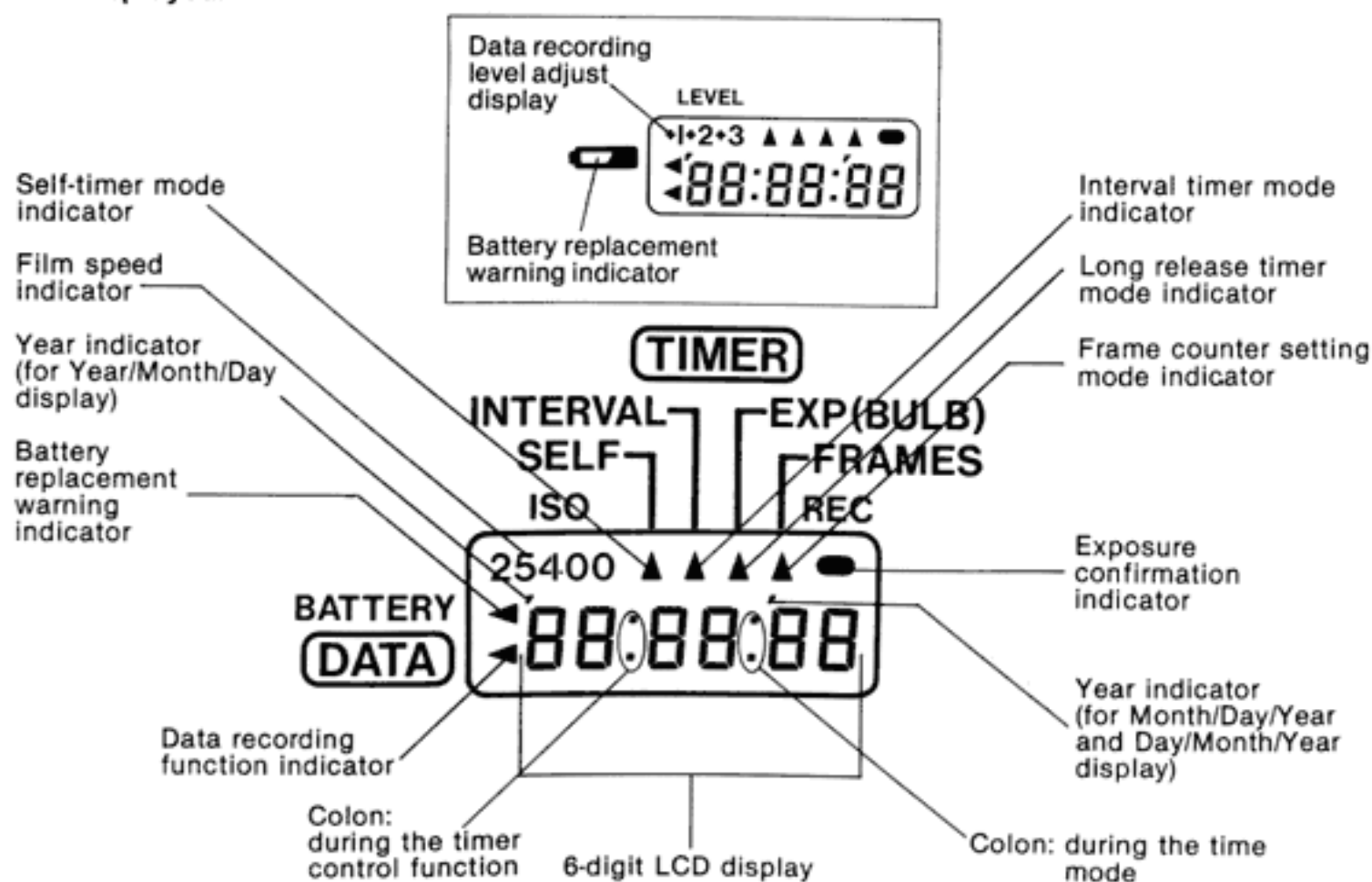


■ Command Back 90

It is unnecessary to set the film speed on the Command Back 90, since the DX data of the film is automatically transmitted from the T90.

3. Function Displays

- All displays are shown below but normally only the information needed at the time is displayed.



The light intensity is varied automatically according to the film speed.

Notes:

- The film speed is not displayed on the LCD panel.
- To compensate the light intensity of data recording, press the exposure level adjust button. Every time this button is pressed, the data recording exposure becomes one step brighter up to three steps. On the LCD panel +1, +2 or +3 is displayed.

When using ISO 80—ISO 160 film, you can compensate the exposure level only up to 2 steps, and when using ISO 25—ISO 64 film, you can compensate it only one step.

- Exposure compensation is necessary for data recording on the films below.

Sakura Film SR Series ISO 100, 400 or 1600

Agfa Film ISO 100 or 400

Agfa Chrome ISO 1000

Agfa Chrome RS Professional ISO 100 or 1000

—1 step brighter

Sakura Film SR ISO 200

Agfa Chrome RS Professional 200

—2 steps brighter

3. **Mode Settings in Timer Control Function**

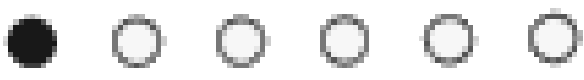
The mode display of the timer control function changes each time the mode selector is pressed. The camera is controlled according to these settings.

Control Buttons

1 Self-timer Mode Display



2 Interval Timer Mode Display



3 Long Release Timer Mode Display



4 Frame Counter Setting Mode Display
(Number of exposures is limited.)



6. Basic Operation for Making Mode Settings

1. Switching between the data recording function and timer control function

Operation is switched between the data recording function and the timer control function each time the data/timer selector is pressed. You can confirm which function the camera is in by looking at the "◀" mark on the LCD panel.

Control Buttons

1 Data Recording Function Display



2 Timer Control Function Display



● indicates button is pressed.

2. Mode Settings in Data Recording Function

The mode display of the data recording function changes each time the mode selector is pressed. These data are automatically recorded upon shutter release except when "OFF" is displayed.

Control Buttons

1 Date Mode Display (year/month/day)



2 Time Mode Display (hour/minute/second)



3 Arbitrary 6-digit Code Mode Display



4 4-digit Frame Counter Number Mode Display



5 (No data will be recorded.)



Note:

Be sure to set to "OFF" when you do not want to record anything on the film.

7. Basic Operation for Setting Display Numbers

1. Each time the position selector is pressed, a 2-digit unit starts flashing.
2. After the 2-digits you wish to change start flashing, press the number set button until the desired number appears.
3. Press the position selector until all the digits stop flashing.
 - Each depression of the number set button increments the flashing numeral by one. If the number set button is held down continuously in step 2, the number will advance rapidly.
 - If the start/stop/clear button is pressed while the number is flashing, the number will be cleared in the following way.

Command Back 70 and 80

Year	→ '83
Month and Day	→ 1
Hour	→ 0
Minute, Second, and other numerals	→ 00

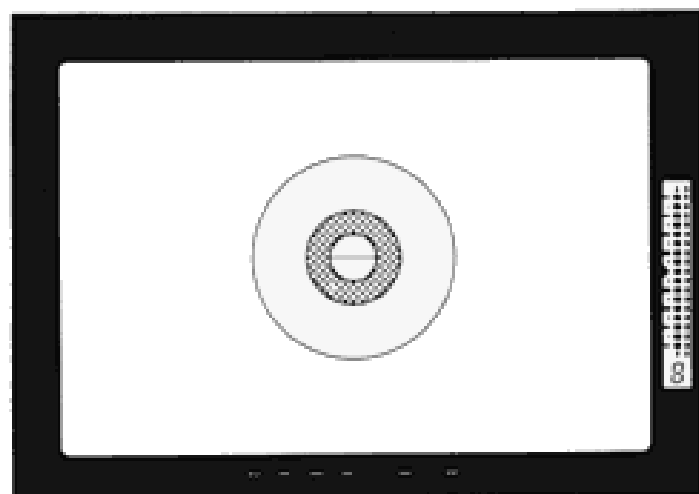
Command Back 90

Year	→ '85
Month and Day	→ 1
Hour	→ 0
Minute, Second, and other numerals	→ 00

8. Setting Each Mode of the Data Recording Function

General Information & Notes

1. The data are automatically recorded upon shutter release.
2. The data are recorded in the lower right-hand corner of the picture.
3. If the data have been recorded correctly, a "●" mark will appear in the upper righthand corner of the LCD panel and light up for about 1.5–2 secs. With the Command Back 90, the shutter speed and the aperture value displayed under the viewfinder of the T90 will change into LED bars.
4. When you do not want to record anything, be sure to set the display to "OFF."
5. It is impossible to record more than one mode at the same time. (For example: the date and time.)
6. It is impossible to record data if any part of the display is flashing.
7. If the background of the data recording area is bright, the data may not appear clearly on the picture. Be sure that a dark part of the subject lies within the data recording area.
8. When using color film, if the background of the data recording area is orange, the data may not appear clearly. This is because the data are printed in orange.
9. In continuous shooting with the T90, the frame advancing rate may be slowed by data recording.



(1) Setting the Date

Any of three formats (year/month/day, day/month/year, and month/day/year) may be selected in the date mode. The year/month/day display is initially set. If you want to change that order, follow these steps:

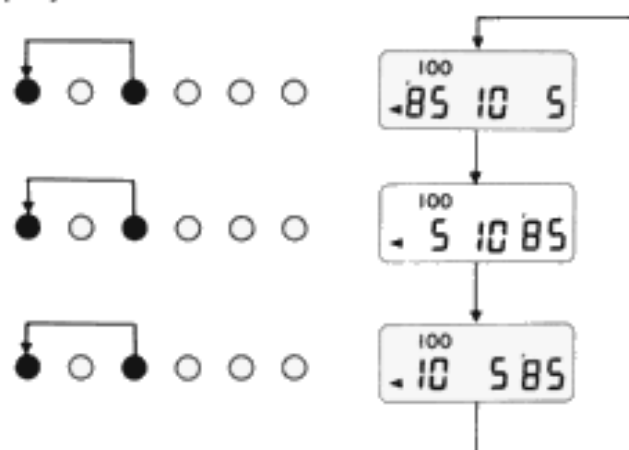
1. Select the data recording function by pressing the data/timer selector.



2. Select the date mode displayed in year/month/day by pressing and releasing the mode selector.



3. While pressing the number set button, press the mode selector. Each time the mode selector is pressed, the display rotates in the sequence: year/month/day, day/month/year, and month/day/year. Select one of those three displays.



● indicates button is pressed.

(2) Setting the time

To set the precise time, for example, to 12:00 noon, 00 seconds, follow these steps:

1. Select the data recording function by pressing the data/timer selector.
2. Select the time mode by pressing and releasing the mode selector.
3. When the position selector is pressed once, the colon will start flashing.
4. Press the number set button once at the time of the tone given on the radio, telephone, or television. The internal clock will immediately start counting at 00 seconds.

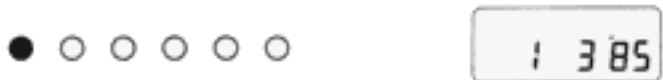
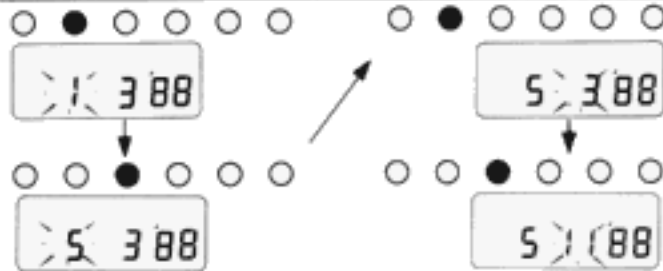
EXAMPLE

When you want to change the time from 10:30 to 17:45.

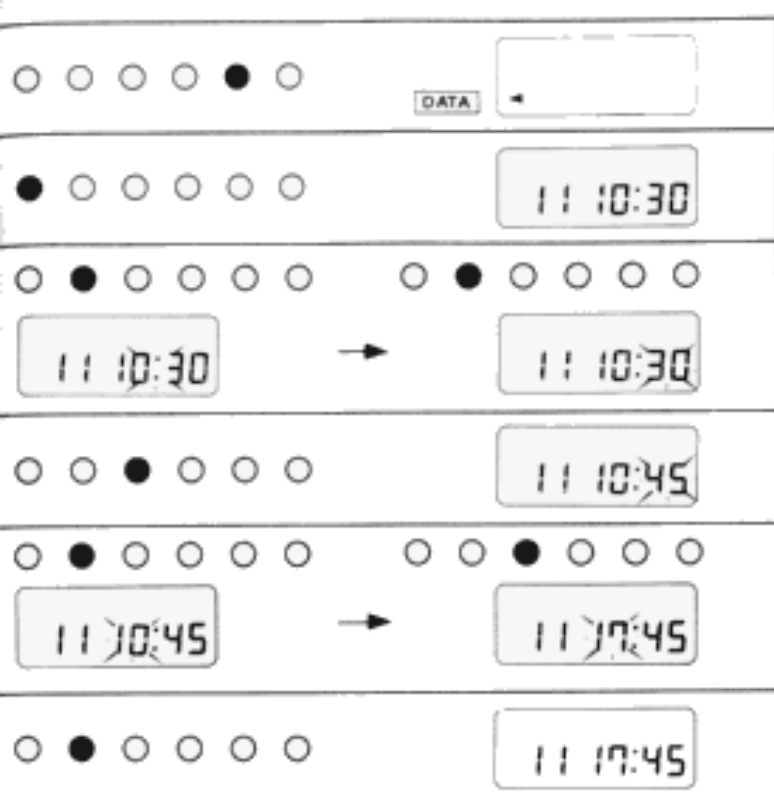
- | |
|--|
| 1. Select the data recording function by pressing the data/timer selector. |
| 2. Select the time mode (day/hour/minute) by pressing and releasing the mode selector. |
| 3. When the position selector is pressed once, the colon will start flashing. When it is pressed again, 30 (minute) will start flashing. |
| 4. Press the number set button while 30 is flashing until 45 appears. |
| 5. Correct 10 (hour) to 17 following the same procedures as in steps 3 and 4. |
| 6. Press the position selector once again to stop the flashing. |

EXAMPLE

When you want to change the date from January 3, 1985 to May 11, 1988. (Supposing that the display has already been changed to month/day/year.)

1. Select the data recording function by pressing the data/timer selector.	
2. Select the date mode (month/day/year) by pressing and releasing the mode selector.	
3. When the position selector is pressed, '85 (year) will start flashing.	
4. Press the number set button while '85 is flashing until '88 appears.	
5. Correct 1 (month) to 5 and then 3 (day) to 11 following the same procedures as in steps 3 and 4.	
6. Press the position selector once more to stop the flashing.	

● Indicates button is pressed.



● indicates button is pressed.

Note:

Changing the day is possible only when in the date mode. (Please see p. 13)

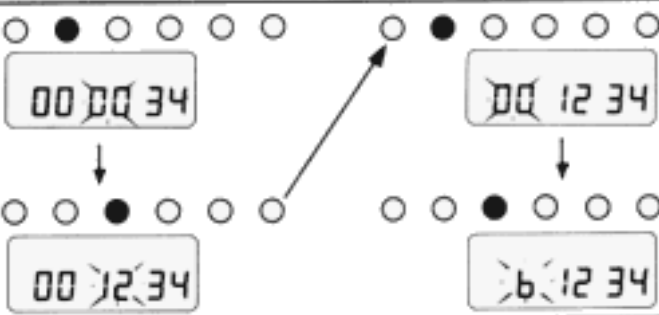
(3) Setting the Arbitrary 6-digit Code

You can set each 2-digit unit of the arbitrary 6-digit code from 00 to 99 plus the letters A through F. This mode can be used to order your pictures for easy filing.

Each 2-digit unit advances in the rotating sequence of 00→99→ (arbitrary number) →A→b→C→d→E→F→blank→00. If you want to set the number or the letter quickly, hold down the number set button continuously and the display will advance rapidly.

EXAMPLE

When you want to set "b 12 34".

1. Select the date recording function by pressing the data/timer selector.	
2. Select the arbitrary 6-digit code mode (00 00 00) by pressing and releasing the mode selector.	
3. When the position selector is pressed once, the "00" on the right will start flashing.	
4. Press the number set button while the "00" is flashing until 34 appears.	
5. Correct the 00 in the middle to 12 and then the 00 on the left to b following the same procedures as in steps 3 and 4.	
6. Press the position selector once again to stop the flashing.	

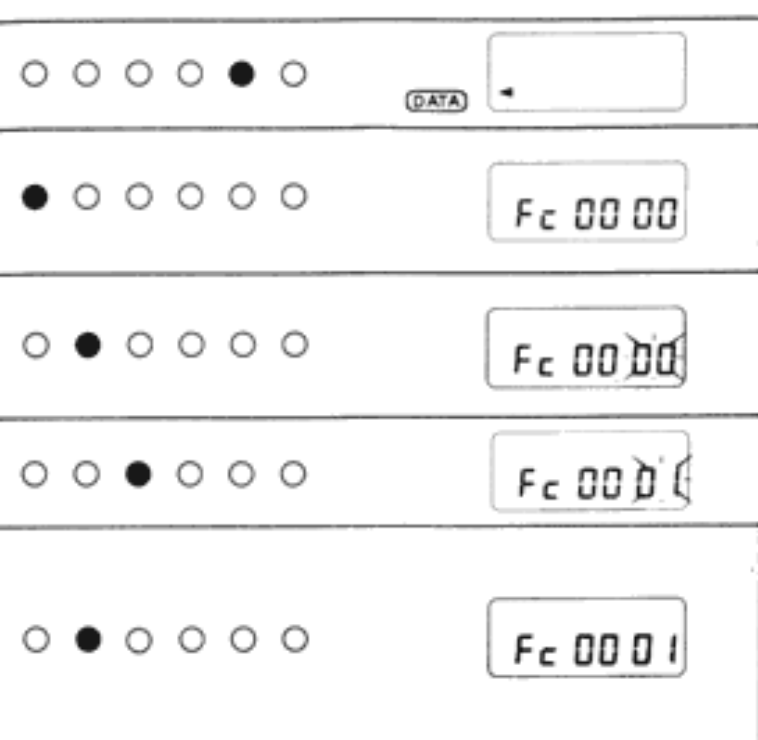
● indicates button is pressed.

(4) Setting the 4-digit Frame Counter Number

You can record the frame counter number from Fc 00 01 up to Fc 99 99 on the film in sequence.

EXAMPLE

1. Select the data recording function by pressing the data/timer selector.
2. Select the 4-digit frame counter number mode (Fc 00 00) by pressing and releasing the mode selector.
3. When the position selector is pressed once, the right 2 digits (00) will start flashing.
4. Press the number set button once while the 00 is flashing to set 01.
5. Press and release the position selector twice to stop the flashing. The frame counter reading automatically advances with the frame counter of the camera, as each exposure is made.



● indicates button is pressed.

Notes:

- If you want to start the frame counter reading from Fc 00 01 again on the second roll of your film, reset to Fc 00 01 again.
- If you want to continue the sequential numbering after your first roll of film has been finished, there is no need to reset the frame counter reading on the second roll of film. The sequential number is set automatically since the frame counter reading on the LCD panel does not advance during automatic film loading. The frame counter reading from Fc 00 01 to Fc 99 99 can be automatically set and recorded in this manner.
- When continuous shooting is done in this mode at low temperatures (below 5°C/37°F), the recorded number may not appear clearly.
- With the Command Back 90, recording of the frame counter number cannot follow continuous shooting.

9. Setting Each Mode of the Timer Control Function

General Information & Notes

1. Operation of the timer control function can only be started by pressing the start/stop/clear button. Pushing the camera's shutter button will not start timer control function operation.
2. Operation of the timer control function stops automatically after the specified operations have been completed. However, if you want to manually stop operation, press the start/stop/clear button once again.
3. Operation of the timer control function is possible only when a mode of the timer control function is displayed on the LCD panel. If a data recording function mode is displayed, the timer control function will not operate even when the start/stop/clear button is pressed.
4. To set the timer control function with the Command Back 90, set the T90 for continuous shooting.
5. Do not set the self-timer on the camera itself when the timer control function is used.
6. Be sure to check that "OFF" is set in the data recording function if you do not want to record any data.
7. If you want to take a picture manually during timer control function operation, it is possible to shoot by pressing the camera's shutter button. Please keep in mind that operation is in progress and the frame counter reading will move forward to the next frame when that mode is set. (See pp. 20-21)
8. Be sure to cover the camera viewfinder with the eyepiece cover to keep light from entering at the rear.

(1) Setting the Self-timer

The self-timer of the Command Back can be set in 1-sec. units to any delay from 1 sec. to 23 hrs., 59 mins., 59 secs.

EXAMPLE

When you want to take a picture after a delay of 2 hrs., 15 mins., 30 secs.

1. Select the timer control function by pressing the data/timer selector.		
2. Select the self-timer mode by pressing and releasing the mode selector.		
3. When the position selector is pressed, the 00 on the right will start flashing.		
4. Press the number set button while the 00 is flashing until 30 appears.		
5. Correct the 00 in the middle to 15 and then the 00 on the left to 02 following the same procedures as in steps 3 and 4.		
6. Press the position selector once again to stop the flashing.		
7. To start the self-timer, press the start/stop/clear button once.		

● indicates button is pressed.

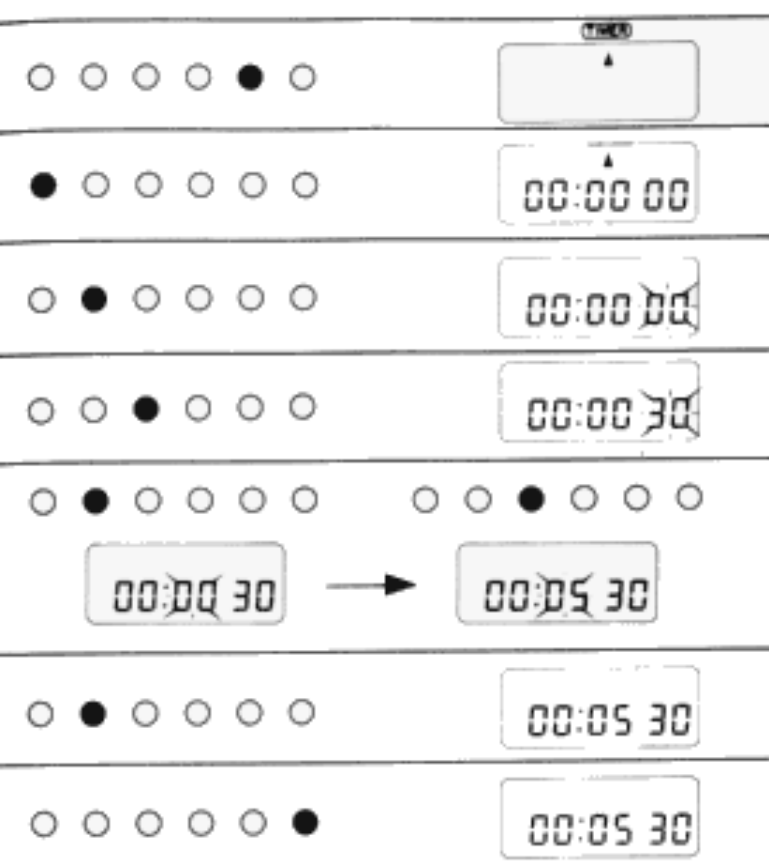
(2) Setting the Interval Timer

The interval timer can be set in 1-sec. units to any value from 1 sec. to 23 hrs., 59 mins., 59 secs.

EXAMPLE

When you want to release the shutter every 5 mins., 30 secs.

- | |
|--|
| 1. Select the timer control function by pressing the data/timer selector. |
| 2. Select the interval timer mode by pressing and releasing the mode selector. |
| 3. When the position selector is pressed, the 00 on the right will start flashing. |
| 4. Press the number set button while the 00 is flashing until 30 appears. |
| 5. Correct the 00 in the middle to 05 following the same procedures as in steps 3 and 4. (The 00 on the left should remain the same in this case.) |
| 6. Press the position selector once again to stop the flashing. |
| 7. To start the interval timer, press the start/stop/clear button once. |



● Indicates button is pressed.

Note:

- In the case of the Command Backs, the interval timer mode must be set longer than the sum of the shutter speed and the winding time. Otherwise, the camera will continue shooting regardless of the interval timer setting. When the T90 is set for single exposure shooting, the camera stops after a single exposure.

○ ○ ○ ○ ● ○	11:40
● ○ ○ ○ ○ ○	00:00 00
○ ● ○ ○ ○ ○ 00:00 00 → ○ ● ○ ○ ○ ○ 00:00 00	
○ ○ ● ○ ○ ○	00:15 00
○ ● ○ ○ ○ ○ 00:15 00 → ○ ○ ● ○ ○ ○ 04:15 00	
○ ● ○ ○ ○ ○	04:15 00
○ ○ ○ ○ ○ ●	04:15:00

(3) Setting the Long Release Timer

The long release timer mode can be set in 1-sec. units to any value from 1 sec. to 23 hrs., 59 mins., 59 secs.

Bulb must be set on the camera when using the long release timer mode.

When an AC lens is mounted on the T80, the long release timer mode can not be used, since it is impossible to set the camera to bulb when an AC lens is mounted.

EXAMPLE

When you want to keep the shutter open for 4 hrs., and 15 mins.

1. Set the camera to "buLb."
2. Select the timer control function by pressing the data/timer selector.
3. Select the long release timer mode by pressing and releasing the mode selector.
4. When the position selector is pressed twice, the 00 in the middle will start flashing. (The 00 on the right should remain the same.)
5. Press the number set button while the 00 is flashing until 15 appears.
6. Correct the 00 on the left to 04 following the same procedures as in steps 4 and 5.
7. Press the position selector once again to stop the flashing.
8. To start the long release timer, press the start/stop/clear button once.

(4) Setting the Frame Counter

The number of pictures to be taken can be set from 1 to 99.

EXAMPLE

When you want to take twelve pictures in succession.

- | |
|---|
| 1. Select the timer control function by pressing the data/timer selector. |
| 2. Select the frame counter setting mode (00) by pressing and releasing the mode selector. |
| 3. When the position selector is pressed once, 00 will start flashing. |
| 4. Press the number set button while the 00 is flashing until 12 appears. |
| 5. Press the position selector once again to stop the flashing. |
| 6. To start taking pictures, press the start/stop/clear button once. After the camera has finished taking the twelve pictures, operation will automatically stop. |

○ ○ ○ ○ ● ○	TIME ▲
● ○ ○ ○ ○ ○	▲ 00
○ ● ○ ○ ○ ○	✕ 00
○ ○ ● ○ ○ ○	✕ 12
○ ● ○ ○ ○ ○	12
○ ○ ○ ○ ○ ●	12

Note:

If the frame counter of the Command Back is set to 00, shooting is impossible even when the start/stop/clear button is pressed.

(5) Multiple Exposure: for the Command Back 90 only

When taking multiple exposures using the timer function, set the number of frames to "02". In this case, one extra frame will be exposed after shooting.

(6) Automatic Flash Photography: for the Command Back 90 only

The interval timer or self-timer can be used for automatic flash photography with the Speedlite 300TL or Macro Ring Lite ML-2, which are designed exclusively for the T90.

To prevent unnecessary battery consumption, set the main switch of the Speedlite 300TL or Macro Ring Lite ML-2 to the "SE" position. If the interval timer is set for longer than 5 minutes, the power to the flash unit is automatically cut off, and the signal is transmitted from the Command Back 90 to charge the flash one minute before shooting, so the power is automatically turned on.

10. Combining Various Modes

General Information & Notes

1. The Command Back can be programmed as desired by combining various modes.
 - 1) Combining all modes of the timer control function is possible.
 - 2) Any mode of the data recording function can be combined with any individual mode of the timer control function.
 - 3) Any mode of the data recording function can be combined with multiple modes of the timer control function.

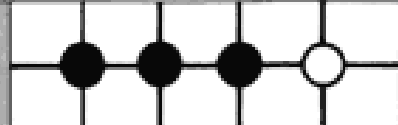
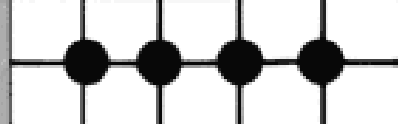
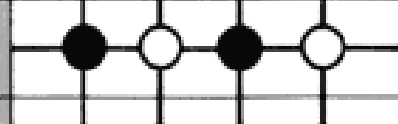
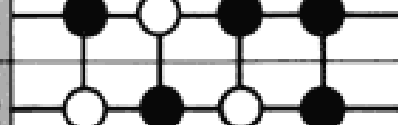
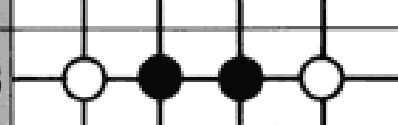
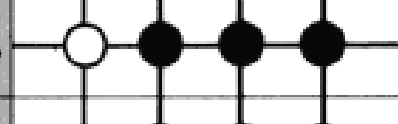
Therefore, there are 11 possible combinations in 1) above, 16 possible combinations in 2) and 44 complex combinations in 3). This is excluding the case of the OFF mode and regarding all three displays of the date mode as one mode. In the case of the Command Back 80, however, there are 4 possible combinations in 1), 12 combinations in 2) and 16 complex combinations in 3). This is because the long release timer mode can not be used when AC lenses are mounted on the T80. Refer to the table below on the type of exposure made with each combination.

ST: Self-timer
 IT: Interval Timer
 LRT: Long Release Timer
 FCS: Frame Counter Setting

	ST	IT	LRT	FCS	Operation	Application
1	●	○	○	○	Long delay self-timer.	Exposure starting time can be set as desired.
2	○	●	○	○	Basically the same as with past interval timers.	Flowers blooming, etc.
3	○	○	●	○	Automatic long exposure control.	Astrophotography, etc.
4	○	○	○	●	Exposure count control and auto-stop.	Limiting the number of continuous exposures.
5	●	○	○	●	Fixed number of exposures taken after a certain period of time.	Same as No. 1 with a limited number of exposures.
6	●	●	○	○	Photography at fixed intervals, starting after a certain period of time.	Allows starting time for interval exposures to be set as desired.
7	●	●	○	●	Limited number of exposures made at fixed intervals, starting after a certain period of time.	Same as No. 6, with addition of limitation on number of exposures.

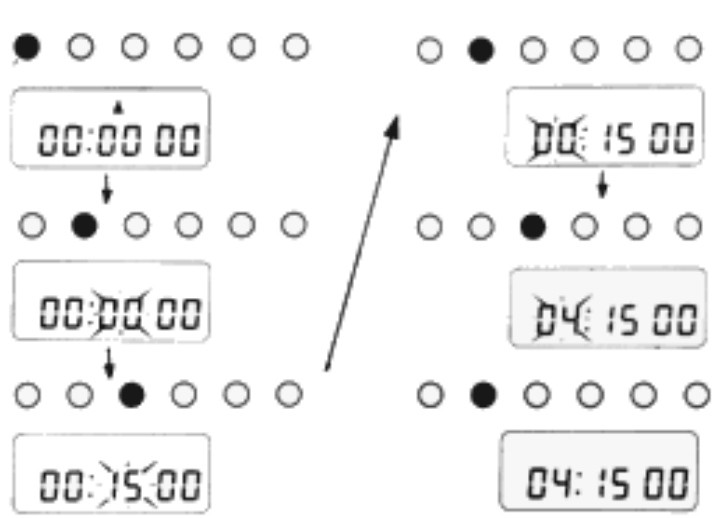
Notes:

- There are 52 effective combinations excluding Nos. 11 and 15.
- In the case of the Command Back 80 with the AC lens, there are 28 effective combinations including Nos. 1, 2, 4, 5, 6, 7 and 12.

8		Long release exposures made at fixed intervals, starting after a certain period of time.	
9		Limited number of long release exposures made at fixed intervals, starting after a certain period of time.	
10		Long release exposure made after waiting for a certain period of time.	Astrophotography
11		(Incorrect setting; operation is same as with No. 10).	Astrophotography
12		Limited number of interval time exposures made.	Flowers blooming, etc.
13		Long release exposures made at fixed intervals.	
14		A limited number of long release exposures made at fixed intervals.	
15		(Incorrect setting; operation is same as with No. 3).	Astrophotography

EXAMPLE 1

When you want to use the interval timer mode set at 4 hrs., 15 mins., and the long release timer mode set at 10 secs.

1. Set the camera to "buLb."	
2. Select the timer control function by pressing the data/timer selector.	 The diagram shows a row of seven circular buttons. The fifth button from the left is filled black, indicating it is pressed. To the right of these buttons is a rectangular button labeled "TIMER" with an upward-pointing arrow.
3. Select the interval timer mode and set it to 04:15 00.	 The diagram shows two columns of seven circular buttons each. In the left column, the first, second, and sixth buttons are filled black. Below the first column are three digital displays: "00:00 00", "00:00 00", and "00:15 00". In the right column, the second, third, and sixth buttons are filled black. Below the right column are three digital displays: "00:15 00", "04:15 00", and "04:15 00". An arrow points from the second button of the left column to the second button of the right column. The final state shows the interval timer set to 04:15 00.