

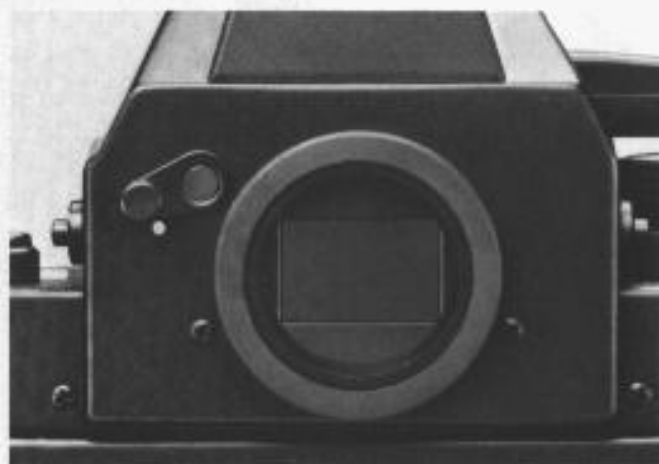
Self-timer



1. First make sure the film is advanced to the next frame.
2. Turn the self-timer/lock lever to "S."
3. Focus the subject and take a meter reading. Do not set the shutter dial to "B" because the self-timer will not function on this setting.
4. Press the shutter button. A "beep-beep" sound will be emitted. The shutter will be released automatically ten seconds later. At two seconds before shutter release, the camera will begin to beep at a faster rate.
5. Following exposure, turn the lever back to "A" or "L" unless you want to use the self-timer for the next shot.

Notes

1. In shutter-priority AE, the camera is designed to reflect any last-second changes in lighting and will not set the exposure until an instant before the shutter itself is released.
2. In aperture-priority AE, the camera sets the shutter speed the moment you press the shutter button. Therefore, do not stand in front of the lens while you press the shutter button or exposure may be incorrect.
3. If you have started the self-timer and wish to cancel its operation, press the battery check button.



Eyepiece Shutter

If your eye will not be to the eyepiece during shutter release, close the eyepiece shutter to prevent stray light from entering and causing underexposure. This is particularly important in self-timer AE photography, and also applies to remote control and night photography.

To close the eyepiece shutter, push the lever clockwise. The red dot is a reminder that the eyepiece shutter is in place.







Multiple Exposures



The F-1's provision for multiple exposures allows you to easily make two or more exposures on the same frame for creative effect.

1. First advance the film to the next frame.
2. Then take up any film slack. To do this, *unfold* the rewind crank and gently turn it in the direction of the arrow until it stops.





3. Focus, compose your subject and take the picture.
4. Turn and press down the rewind lever in the usual manner; the film will now remain stationary for multiple exposures.
5. Gently turn the film advance lever. This will cock the shutter for the next exposure.

You can make any number of exposures on the same frame simply by repeating steps 3, 4 and 5 above in the proper order. Each time you turn the film advance lever, the camera's frame counter will advance once. There is, however, a possibility of slight movement of the film if you make an excessive number of exposures on the same frame.

If you have engaged the rewind lever for multiple exposure and wish to cancel it, lightly press the shutter button *before* turning the advance lever. Note that it is not advisable to make multiple exposures on the first or last several frames due to possible film curl which may adversely affect image registration.

Note

Multiple exposures are also possible when the AE Power Winder FN or AE Motor Drive FN is attached to the camera. To release the shutter, use either of the two shutter buttons of the power drive. To return to normal shooting, cap the lens and take a blank shot using the camera's shutter button.

Flash Photography



I. AE Flash Photography with Speedlites 133A, 155A, 166A, 188A, 199A, 533G and 577G.

Once the Speedlite is attached to the camera and its pilot lamp is glowing, the camera switches automatically to the X sync speed of 1/90 sec. provided the shutter dial is not on "B."

Exposure in Multiple Exposures

Generally, the first exposure of a series should be of a relatively dark subject so that the image in the next exposure will show up clearly. For best results, it is advisable to decrease the exposure for each shot. Depending on the situation, there are several ways to do this. One way is to change the ISO setting to a higher value as described earlier. In this method, you must first decide how many exposures you want to make on the same frame. If a double exposure, make both exposures at twice the

normal ISO rating; if a triple exposure, make all three exposures at three times the normal ISO rating, and so forth.

Another way to correct exposure is to use the exposure compensation dial. This method is the same as that of changing the ISO. That is, for a double exposure, set the dial to "1/2" for both exposures; for a triple exposure, at the setting between "1/2" and "1/4", and so on. Both methods described above are merely guidelines, and your technique will benefit greatly from practice.

Number of Multiple Exposures	Exposure Compensation Scale
Double	1/2
Triple	Between 1/2 and 1/4
Quadruple	1/4



In addition, the meter needle points simultaneously to the aperture which you have set on the back of the Speedlite. Thus you do not have to take your eye away from the viewfinder; as soon as the meter needle points to the auto working aperture, the flash is ready. Now simply turn the lens' aperture ring until the aperture needle aligns with the meter needle.

With the AE Finder FN attached and the shutter dial on "A," the camera will switch automatically to the X sync speed of 1/90 sec. and the meter needle will point to the right of 1/60 sec. Set the same aperture on the lens as that set on the Speedlite.

With the power winder or motor drive attached and the lens' aperture ring set to the "A" mark for shutter-priority AE, the camera will automatically switch the shutter speed to 1/90 sec. and the aperture to the f/stop which you have set on the Speedlite as long as the shutter dial is not on "B."

After the shutter is released, the camera automatically switches back to the speed actually set on the shutter dial until the Speedlite's pilot lamp glows again.

II. Slow-sync Flash Photography

With Speedlites 199A, 533G and 577G, you can select a shutter speed slower than 1/90 sec. The advantage of slow-sync flash photography is that the background in the picture will be lighter. You can choose among three working apertures on each of these Speedlites for optimum control of depth of field. For this technique, first set the AUTO/MANU switch of the Speedlite to "MANU." Then turn the camera's shutter dial to any speed from 1/60 sec. to 8 seconds. The picture will be taken at the speed you have set on the shutter dial and the flash will fire at the release of the first shutter curtain. If the shutter dial is set to a speed from 1/2000 to 1/125 sec. or "1/2," the shutter speed will automatically switch to 1/90 sec. As in normal AE flash photography, the meter needle will point to the aperture which you have set on the Speedlite as soon as the pilot lamp lights up. Simply turn the aperture ring until the aperture needle matches the meter needle.

With the motor drive or power winder attached and the lens' aperture ring set to the "A" mark, the aperture will be controlled automatically as well.

IMPORTANT

Before mounting a flash unit, make sure its power switch is OFF.

Note

If using a viewfinder which does not have an accessory shoe, such as the Waist-Level Finder FN, connect the Speedlite to the camera's PC socket via a synchronization cord. Then turn the shutter dial to "1/2" (1/90 sec.) and set the same aperture on the lens as that set on the flash unit.

Synchronized shutter speeds	1/2000	1/1000	1/500	1/125	1/60	1/30	1/15	1/8	1/4	1/2	1	2	4	8	1/90	B
FP						▲	●	●	●	●	●	●	●	●		●
M & MF						▲	●	●	●	●	●	●	●	●		●
Electronic Flash (X)					●	●	●	●	●	●	●	●	●	●	●	●

● = okay ▲ = possible unevenness in picture depending on bulb

CAUTION

It is recommended to use a Canon flash unit on this camera. Using a flash or flash accessory of another make may cause the camera to work improperly or even possibly damage the camera itself. If you use a non-Canon flash, turn off the unit before you attach it to or remove it from the camera's hot shoe. Before removing the flash, press the flash test button if it has one to discharge any power remaining in the capacitor. Or, better still, attach the flash unit through the camera's PC Socket. These are merely precautions; following these steps will not necessarily prevent the camera from being damaged by the flash unit.



When shooting with a flash bulb or a manual flash unit, calculate the aperture with a guide-number formula or with the calculator dial if the flash unit has one. Turn the lens' aperture ring to that aperture.

$$\text{Aperture} = \frac{\text{Guide Number}}{\text{Shooting Distance}}$$

When calculating, make sure that the guide number and shooting distance are both in the same unit, whether meters or feet.

Manual flash photography is possible with Speedlites 155A, 188A, 199A and 577G. With any of these flash units, the shutter speed will switch automatically to 1/90 sec. as soon as the pilot lamp lights up, provided the shutter dial is not on "B." The meter needle, however, will not point to the auto working aperture as in normal AE flash; instead, it will point to the overexposure warning zone. Since the meter needle does not indicate that the flash is charged, check the pilot lamp to make sure it is glowing before you shoot. Following the procedure above, manually set the aperture on the lens.

For more details, see the instructions of the flash.

III. General Flash Photography

When using an automatic flash unit other than a Canon Speedlite, first turn the shutter dial to "1/90" (1/90 sec.). Then turn the aperture ring to the same aperture which you have set on the flash. With the shutter dial on "1/90," other types of electronic flash units can be synchronized either through the hot shoe or via the PC socket on the side of the camera. These allow two separate flash units to be fired simultaneously. Set the shutter dial according to the information in the table on the following page.



Infrared Index Mark

Infrared light has longer wavelengths which focus on a plane slightly behind that of ordinary visible light. It is necessary, therefore, to slightly adjust the focus of the lens when using black-and-white infrared film. The infrared index mark engraved on the lens is used for this purpose. After focusing in the usual way, note the small red dot engraved on the lens barrel to the right of the distance index, and turn the focusing ring to align the focused distance with this dot. For instance, if the focus is at 10m on the distance scale, turn the focusing ring to align the 10m mark with the red dot. After making this correc-

tion, you can release the shutter.

When using black-and-white infrared film, visible light must be kept out by means of a deep red filter, such as an R1 or Kodak Wratten 87. The position of the infrared index mark has been computed for the use of infrared film with peak sensitivity at 800nm, such as Kodak IR 135.

For further details, refer to the film manufacturer's instructions.

Shooting with Close-up Accessories





With few exceptions (noted in the instructions for the accessory), stopped-down metering is necessary whenever you insert an accessory between the camera and lens for close-up photography.

1. If you insert an accessory designed for **AUTOMATIC** diaphragm control, such as the Auto Bellows or Bellows FL, between the camera and ANY lens, follow the steps for stopped-down metering.
2. If you insert an accessory designed for **MANUAL** diaphragm control, such as M Extension Tubes or Bellows M, between the camera and a **NON-FD** lens, follow the steps for stopped-down metering. Turn the A-M ring of an FL lens to "M" for taking the shot (not necessary if Canon Macro Auto Ring and Double Cable Release are used).
3. If you insert an accessory designed for **MANUAL** diaphragm control between the camera and an **FD** lens, unless you use the Canon Macro Auto Ring and Double Cable Release, first set the lens for manual diaphragm control before mounting it on the accessory. Then follow the steps for stopped-down metering.

Note

The instructions with the accessory will tell you whether or not manual diaphragm control is necessary. The procedure differs according to the type of lens. See pp. 78–79.



Manual Diaphragm Control

FD Lenses without Chrome Mount Ring except for FD Macro Lenses

1. Insert the slot of the accessory manual diaphragm adapter over the tip of the automatic aperture lever at the rear of the lens. Push the lever counterclockwise and lower the adapter into the groove.



2. Mount the lens on the accessory. The diaphragm blades will now open or close as you turn the aperture ring. When the manual diaphragm adapter is attached, never mount the lens directly on the camera or on an accessory designed for automatic diaphragm control, such as the Auto Bellows or Bellows FL.



FD Lenses with Chrome Mount Ring and FD Macro Lenses (except for FD 200mm f/4 Macro Lens)

1. Push the automatic aperture lever at the rear of the lens counterclockwise until it automatically locks.
2. Mount the lens on the accessory.

Note

Some of these lenses have an additional lock lever. With these lenses, push the automatic aperture lever fully counterclockwise, then push the lock lever to "L."

Be sure to reset the automatic aperture lever to its normal position before mounting the lens

directly on the camera. In the case of a lens with a lock lever, switch it back to the position of the white dot.

Film Plane Indicator

This mark, engraved on top of the camera body, indicates the exact position of the film plane. It is useful for measuring the exact shooting distance from film to subject in close-up photography. Distances on the lens' distance scale are calibrated from this mark. It is not used in general photography.

Note

The aperture ring of an FD lens must be removed from "A" before you mount the lens on any of these close-up accessories except for FD-U Extension Tubes and Extenders FD 2x and FD 1.4x, which are designed for normal full-aperture metering.



System Accessories



1. Canon AE Motor Drive FN

The AE Motor Drive FN is designed as an integral part of the Canon F-1 system. Attached to the camera, this accessory redefines the meaning of automatic in motorized SLR photography by providing you with automatic film winding and power rewinding as well as shutter-priority AE, the ideal exposure mode for sports, action and candid photography. Three separate power sources, the Battery Pack FN, Ni-Cd Pack FN, and the High Power Ni-Cd Pack FN, are available to suit your preference and the shooting situation. With Battery Pack FN or High Power Ni-Cd Pack FN,

sequential shooting at up to five frames per second is possible; Ni-Cd Pack FN enables film advance at 4.5 frames per second. The motor drive is equipped with two shutter buttons for maximum ease of operation when shooting in either the horizontal or vertical format, and a remote control socket.



2. 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 power winder has two shutter buttons for horizontal or vertical shots. A socket is provided for any of the various remote control devices.



3. Canon Film Chamber FN-100

The Film Chamber FN-100 is one of the system accessories designed for the Canon F-1. Used in conjunction, the AE Motor Drive FN and film chamber provide continuous or single-frame shooting capability of up to 100 frames, as well as shutter-priority AE. Yet it is sufficiently light and compact to afford hand-held shooting, making it ideal for sports, documentary and action photography where utmost mobility is desired. A special grip and shutter button on the film chamber ensure maximum ease of handling.



4. Canon Data Back FN

The Canon Data Back FN is a data-recording accessory designed for use with the Canon F-1. In addition to the year, month, and day, the letters A to G in both upper and lower case and Roman numerals I to X may be imprinted in up to six characters on the film. Not only can this accessory be used for recording the data on photographs, it may also be used to code them for scientific and other purposes. The data back's special direct contact enables data recording in perfect synchronization with exposure.



5. Canon Wireless Controller LC-1

This remote control device uses infrared light to control cameras from a distance. The LC-1 is particularly useful in sports and wildlife photography, news coverage and numerous other fields. The Wireless Controller consists of a transmitter and a receiver. Up to three cameras can be operated on three different channels.

Specifications

Type: 35mm single-lens reflex (SLR) camera

Format: 24 x 36mm

Interchangeable Lenses: Canon FD (for full-aperture metering) and Canon FL, R and non-FD (for stopped-down metering) series lenses.

Standard Lenses: FD 50mm f/1.2L, FD 50mm f/1.2, FD 50mm f/1.4 and FD 50mm f/1.8

Lens Mount: Canon breech-lock mount.

Exposure Modes: Match-needle and stopped-down manual exposure. Shutter-priority AE possible by attaching AE Power Winder FN or AE Motor Drive FN and setting lens' aperture ring to "A." Aperture-priority AE and stopped-down AE possible by attaching AE Finder FN and setting shutter dial to "A." AE flash possible with specified Canon Speed-lites.

Viewfinder: Interchangeable eye-level pentaprism as standard. 97% vertical and horizontal coverage of actual picture area with 0.8x magnification at infinity with a

standard lens. Aperture scale with f/stops from f/1.2 to f/32, overexposure and underexposure warning marks, meter needle, aperture needle and battery check/stopped-down metering index are displayed to the right of the field of view. Shutter speed displayed below aperture scale. Speeds include 1/2000 to 1 sec, "½" and "B" in green; full seconds of 2, 4 and 8 are in orange.

Viewfinder Illuminator: Provided; illuminates aperture scale and shutter speed for 16 seconds when meter mode selector is set to "LIGHT" and shutter button pressed halfway.

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

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

Focusing Screen: Standard split-image/microprism rangefinder. Twelve other types of interchangeable screens are optionally available.

Light Metering System: Through-the-lens (TTL) metering by silicon photocell (SPC). Metering area is determined by special optical element incorporated in each focusing screen. Center-weighted average, selective-area and spot metering are optionally available by changing the focusing screen.

Meter Coupling Range: EV -1 (4 sec. at f/1.4) to EV 20 (1/2000 sec. at f/22) with ISO 100 film and FD 50mm f/1.4 lens.

Exposure Preview: By pressing shutter button halfway.

Meter Mode: At "NORMAL," meter activated as long as shutter button is pressed halfway. At "HOLD," meter, once activated, stays on for 16 sec. At "LIGHT," meter, once activated, stays on for 16 secs. and viewfinder information is illuminated. Cancellation possible.

Exposure Compensation Dial: ± 2 f/stop range in 1/3 f/stop increments: 1/4 .. 1/2 .. 1 .. 2 .. 4

Shutter: Horizontal-travel, titanium focal-plane shutter with four spindles. Electromechanical hybrid control. Mechanically controlled at speeds from 1/2000 to 1/125 sec., "Z" (1/90 sec.) and B. Electronically controlled at speeds from 1/60 to 8 secs.

Mechanical Shutter Operation: By removing battery from battery chamber. Only mechanically controlled speeds can be used.

Mirror: Instant-return type with shock-absorbing mechanism.

ISO (ASA) Film Speed Scale: ISO 6-6400.

Shutter Dial: 1/2000 to 8 sec., "A" (for aperture-priority AE or stopped-down AE with AE Finder FN), "B" (bulb) and "Z" (1/90 sec.). Shutter speeds from 1/2000 to 1 sec., "Z" and "B" are in white, 2 to 8 secs. in yellow and "A" is in red.

Shutter Button: Two-step button with electromagnetic release. Mechanical release when battery is removed from the camera. Pressing it halfway activates meter circuit, pressing it fully releases the shutter. Can be locked by setting self-timer/lock lever to

working aperture in the viewfinder as soon as Speedlite's pilot lamp glows. Aperture controlled automatically when AE Power Winder FN or AE Motor Drive FN is attached and lens' aperture ring set to "A" mark.

Slow-Sync Flash Photography: Possible with Speedlites 199A, 533G and 577G. Flash synchronizes with shutter speed set at slow settings from 1/60 to 8 secs. Camera switches automatically to 1/90 sec. when shutter dial is set from 1/2000 to 1/125 sec. or "1."

Camera Back: Opened by pressing safety stopper while pulling up rewind knob. Removable for attaching Data Back FN or Film Chamber FN-100. With memo holder.

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

Film Advance Lever: Single-stroke 139° throw with 30° stand-off. Ratchet winding possible.

Frame Counter: Additive type. Automatically resets to "S" upon opening camera back. Advances during multiple exposures.

Film Rewinding: By turning rewind lever clockwise and pressing it down and turning rewind crank. Rewind lever automatically resets when camera back is opened and when shutter button is lightly pressed.

Other Safety Devices: Camera will not function when power level is insufficient or when lens' aperture ring is set to "A" and the power winder or motor drive is not attached. Film winding impossible while shutter is in operation.

Dimensions: 146.7 x 48.3 x 96.6 mm (5-3/4" x 1-7/8" x 3-3/4") body only.

Weight: 795g (28 ozs) body only 1,030g (36-5/16 ozs) with FD 50mm f/1.4.

Subject to change without notice.



"L." With cable release socket.

Self-timer/Lock Lever: Three positions: "A," "L," and "S." At "L," the shutter button is locked as a safety feature. "S" position is for self-timer operation.

Self-timer: Electronically controlled. Self-timer/lock lever set to "S." Activated by pressing shutter button. Ten-second delay with electronic "beep-beep" sound. Number of beeps emitted per second increases two seconds before shutter release. Cancellation possible.

Stop-down Slide: For depth-of-field preview or stopped-down metering.

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

Battery Check: By pressing battery check button. Battery power is sufficient if the meter needle registers above the battery check

index.

Cancellation of Camera Circuit: By pressing battery check button. Cancels shutter operation, self-timer operation, meter reading and viewfinder illumination.

Multiple Exposure: Possible by engaging rewind lever before winding film advance lever to recock the shutter. Cancelled by lightly pressing shutter button.

Flash Synchronization: Speeds up to 1/90 sec. with electronic flash; FP- and M-sync at 1/30 sec. or slower. Direct contact at accessory shoe for hot-shoe flash. Threaded PC socket (JIS-B type) for cord-type flash or multiple flash photography. Accessory shoe has contact for normal automatic flash and special contact for AE flash with specified Canon Speedlites.

Automatic Flash: New Canon Auto Tuning System (New CATS) with specified Canon Speedlites. Shutter speed is automatically set to 1/90 sec. with shutter dial at any setting except B. Meter needle indicates auto

Caring for your Camera

As with any precision instrument, proper care and maintenance involve a few simple rules in addition to common sense. Observing these few rules will keep your Canon F-1 in top condition at all times.

1. The best thing you can do for your camera is to use it regularly. In the event that you must store it for quite a while, first remove it from its case or camera bag. Remove the battery. Wrap the camera in a clean, soft cloth and place it in a cool, dry, dust-free place. If you store the body and lens separately, attach both the body and rear lens caps.

2. Keep the camera and lens out of direct sunlight and away from "hot spots," such as the trunk, rear window shelf or glove compartment of a car. Do not store the camera in a laboratory or other such area where chemicals may cause corrosion.

3. To keep the camera in top condition during prolonged storage, occasionally insert the battery and take several blank shots to "exercise" the mechanisms. Check the operation of each

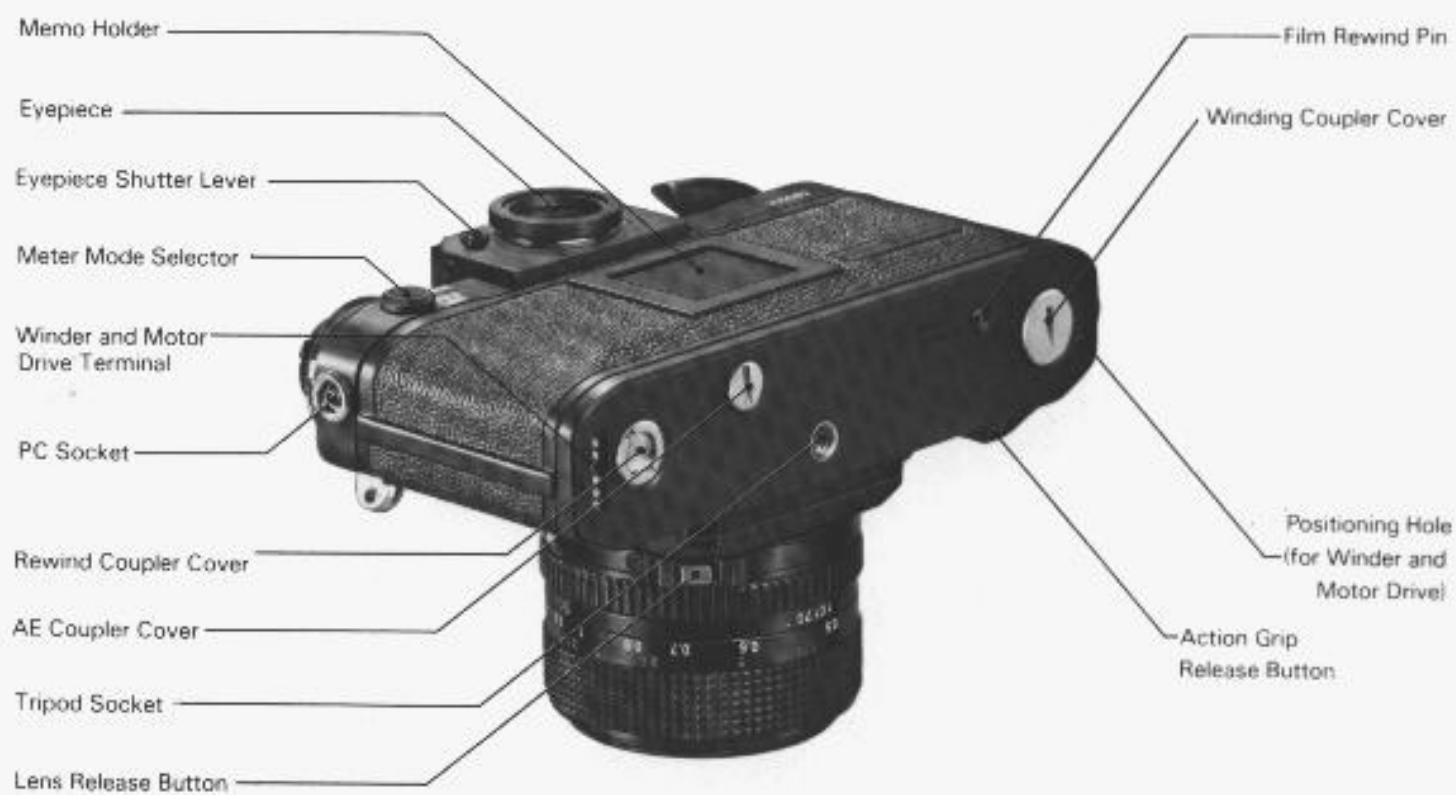
part before you use the camera following storage.

4. Reliable under normal use, your camera can be damaged by water, excessive spray or humidity, sand and shock. Clean it especially well after you use it in an area with excessive dust or saltwater spray. If you accidentally drop it in water, it may be irreparable but take it immediately to an authorized Canon service facility for inspection.

5. To clean the exterior of the camera body, first blow off dust with a blower brush. Wipe off smudges with a silicone cloth or chamois leather. If smudges remain on the eyepiece after using a blower brush, wipe it lightly with lens-cleaning tissue which has been moistened with a couple of drops of lens cleaner.

6. If the lens surfaces are clean, yet the viewfinder appears dusty, the picture will not be affected by the dust in the viewfinder. If the mirror gets dirty, it will not affect pictures but it may make viewing difficult. Dust it very gently with a blower brush. If further cleaning is

Nomenclature





necessary, take the camera to the nearest authorized Canon service facility.

7. The film chamber needs cleaning from time to time to remove film dust which may scratch the film. Gently dust it out with a blower brush, being careful not to press on the film rails, shutter curtain and pressure plate.

8. To clean the lens surfaces, use only a blower brush, cleaning fluid and tissue made specially for cleaning camera lenses. Carefully follow the lens' instructions.

Using the Camera at Very Low Temperatures

When you use the F-1 in cold conditions, try to protect it from outside air and avoid extreme temperature changes. Condensation forming on a camera and lens taken from subzero outside temperatures into a warm room may cause corrosion. To avoid this, place the camera in a plastic bag while still outdoors. Then seal the bag and take it indoors, leaving the camera in the bag until it gradually reaches room temperature. Generally, this takes about

one-half hour.

Also, remember that at temperatures below 0°C (32°F), battery power may decrease or fail. Please see page 9 for tips on battery care when shooting in cold conditions.

If you are using the camera in conjunction with the motor drive, the High Power Ni-Cd Pack FN is the most reliable power source for uninterrupted shooting at low temperatures. It can be used as the sole power source for both the camera and the motor drive by attaching the Battery Cord C-FN.

Neckstrap

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



Canon

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データバック FN , A

使用説明書

Data Back FN and A

Instructions

Dos-dateur FN et A

Notice d'emploi

Datenrückteil FN und A

Bedienungsanleitung

Tapa clasificadora FN y A

Instrucciones

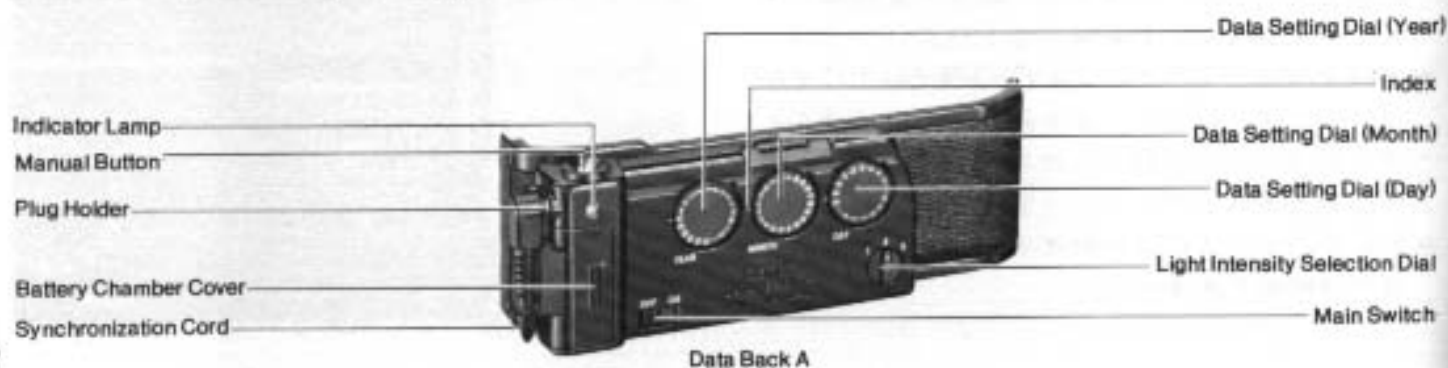
Canon



Instructions

Canon Data Backs FN and A are data-recording accessories which replace the back covers of Canon SLRs. Data Back FN is designed for use with the New Canon F-1; Data Back A is for the Canon A-1, AE-1 PROGRAM, AE-1 or AT-1. In addition to the year, month, and day, the letters A to G

in both upper and lower case and Roman numerals I to X may be imprinted in up to six characters on the film. Not only can these accessories be used for recording the date on photograph; they may also be used for scientific and other coding purposes.



Specifications

Compatible with: New Canon F-1 (Data Back FN); Canon A-1, AE-1 PROGRAM, AE-1 or AT-1 (Data Back A)

Attachment: By exchange with camera's back cover.

Data Setting: By rotation of three data dials.

Data Setting Dials:

Right Dial (Day)	32 digits and two blanks. (□□*, 0—31)
Central Dial (Month)	39 characters and one blank (□, 0—31, A—G)
Left Dial (Year)	39 characters and one blank (□, 0—9, 82—93, I—X, a—g)

• □ denotes a blank on film.

Data Recording: Data are automatically recorded in lower right-hand corner of frame by a built-in flash unit at shutter release. A separate button is provided for manual data exposure.

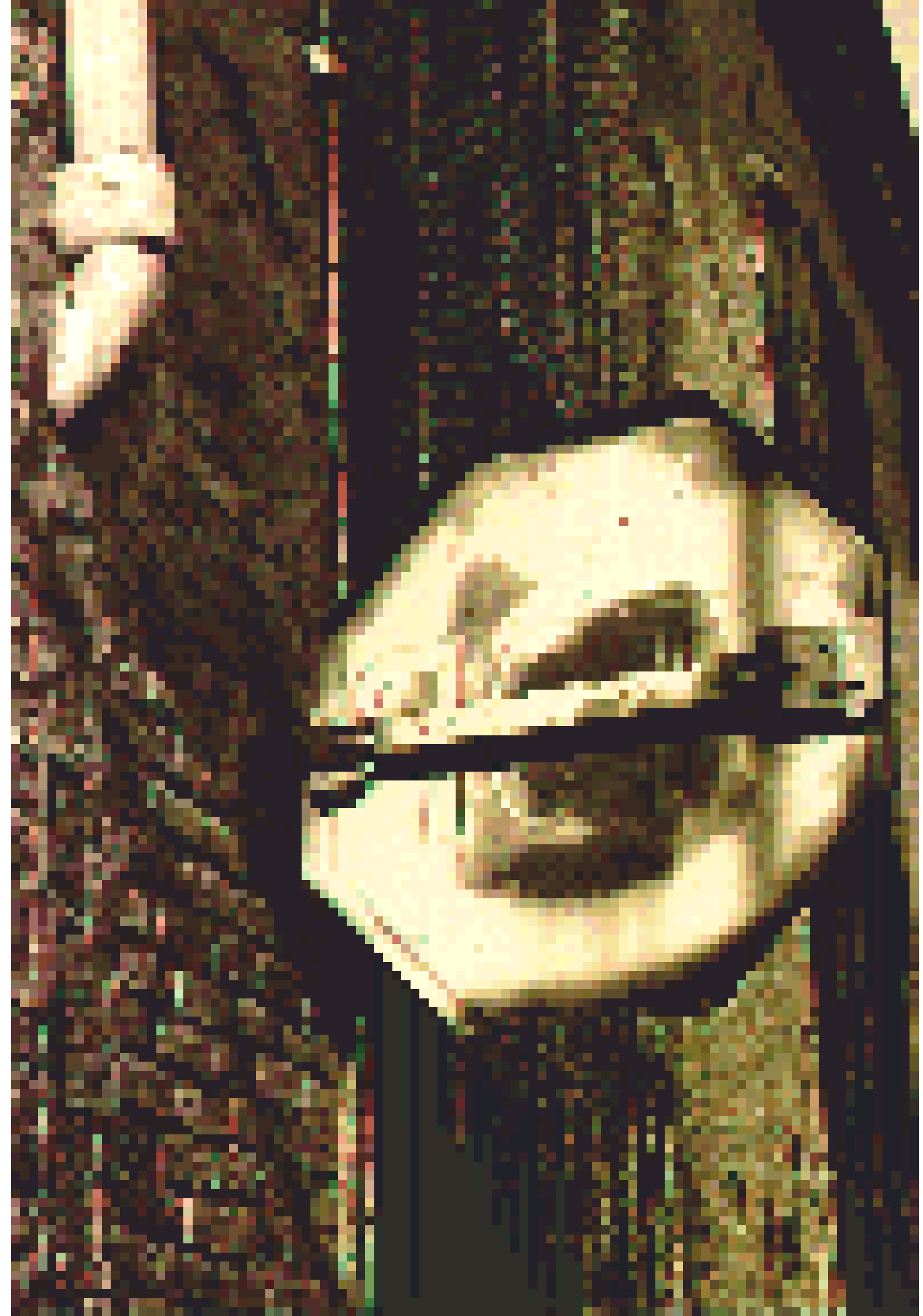
Synchronization: Data Back FN—Cordless; automatic at shutter release via a direct contact. Data Back A—Automatic at shutter release with connection of synchronization cord.

Adjustment of Light Intensity: By setting dial to one of three positions according to type of film.

Indicator Lamp: Neon pilot lamp lights up to indicate data back is ready for firing.

Power Source: One 6V alkaline-manganese (Eveready [UCAR] No. A544), lithium (Duracell PX28L) or silver oxide (Eveready [UCAR] No. 544) battery.

E



Battery Life: Approximately 2,000 flashes. Approximately 1,000 flashes when using a power winder for sequential shooting at 2 fps. (Using new alkaline-manganese battery at normal temperatures.)

Main Switch: OFF-ON. When set to OFF, indicator lamp goes out and no data will be recorded.

Dimensions and Weight: Data Back FN—101.9mm (W) × 47.9mm (H) × 13.8mm (D) [4" × 1-7/8" × 9/16"] 170g [6 ozs.] (including battery). Data Back A—103mm (W) × 48.5mm (H) × 14mm (D) [3-15/16" × 1-15/16" × 9/16"] 160g [5-5/8 ozs.] (including battery).

Accessory: Case

Subject to change without notice.

Loading the Battery

Use one new 6V alkaline-manganese, lithium or silver oxide battery (examples are given in the Specifications, p. 13). Before loading the battery, wipe its contacts with a clean, dry cloth to prevent corrosion from dirt or fingerprints.

1. Press the battery chamber cover latch in the direction of the arrow and remove the cover by sliding it to the left.



2. Insert the battery so that its terminals are in the directions indicated by the diagram inside the battery chamber.
3. Slide the cover along the guide rails until it locks in place.

Attaching the Data Back to the Camera

1. Make sure there is no film loaded in the camera.
2. Then open the back cover of the camera and, pushing down the hinge release pin, swing the cover's upper end outward and pull out the lower end. To attach the data back, follow the reverse procedure. First insert its lower hinge into the lower socket. Then, depressing the hinge release pin, align the upper socket and release the pin to lock it in place.

3. After the data back is attached, load the film as usual and close the data back. Data Back FN is ready to be used.
4. DATA BACK A ONLY. After loading the film and closing the data back, pull the synchronization cord out of its holder and insert it into the camera's PC socket.

Note: Data Backs FN and A are removed exactly as the camera's back cover was removed.



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Light Intensity Adjustment

The data back's recording mechanism is essentially a small flash which records data through the back of the film. The flash intensity required, therefore, varies according to the thickness of the film base and the characteristics of the film's anti-halation backing.

To adjust the light intensity to the film, set the intensity selection dial according to the information in the following table. The settings recommended in this table are general guidelines. For optimum light intensity adjustment, it is recommended to test-shoot the particular film you are using, changing the setting of the selection dial.

Setting on Dial		1	2	3
Film				
Color		ISO/ASA 200-400	ISO/ASA 64-160	ISO/ASA 25-50
Black & White		ISO/ASA 125-400	ISO/ASA 25-100	—





Setting the Data

To set the data, turn each of the three data dials until the desired data are aligned with each index. The dials are marked left to right as "Year," "Month," and "Day." The order, however, will actually be reversed to day-month-year on the photo. For example, to set the date of March 29, 1984, adjust the dials as shown in photo (A). The date will be shown on the print as in photo (B). Because both the "Month" and "Day" dials have numerical settings from 0—31, the month or day may be set on either dial. If you wish to reverse the order, attach the "Month" and "Day" stickers below the corresponding dials as a reminder.

In addition to numbers, the "Year" and "Month" dials have both capital and small letters and Roman numerals. These symbols are very handy for coding prints for a variety of purposes.

Each dial also has at least one blank (□ symbol). When the dial is set to the □ symbol, the space for that particular data will be left blank on the photo. If all three dials are set to the blanks, nothing will be recorded on the picture even if the data back's main switch is ON and the indicator lamp is glowing.

Position of Recorded Data

The data are recorded in the lower right-hand corner of the photograph. The characters are imprinted within three rectangular areas. With the Data Back FN, each area is 0.7mm (H) by 0.9mm (W) on the film frame. With the Data Back A, each area is 0.8mm (H) by 1 mm (W) on the film frame.

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Notes

1. Turn the main switch OFF when the data back is not in use; otherwise, the battery will be drained.
2. When the battery is removed from the camera, the New F-1 automatically switches to mechanical operation.
Automatic recording becomes impossible because the necessary signal will not transmit to the Data Back FN.
However, the data can be recorded manually by pressing the manual button.
3. Remove the battery from the data back if it will not be used for about three weeks or longer.

Manual Recording

The Data Backs FN and A are provided with a button for manual data recording. This button may be pressed to record the data whenever the indicator lamp is glowing. Use of this button enables data recording with the New F-1 even when there is no battery in the camera.

It may also be used if, after taking a picture without recording any data, you decide you want to record data after all. In this case, switch the data back ON and, after the indicator lamp glows, press the manual button before advancing the film.



Use with Flash

1. Flash Photography with Data Back FN (New F-1)

A direct contact provides the necessary coupling between the Data Back FN and the camera and allows synchronous data recording. Automatic data recording is possible when using the Data Back FN with direct contact-type flash units (e.g. Canon Speedlites). Moreover, automatic data recording also takes place when using the data back with cord-type flash units connected through the camera's PC socket. With the above two types of flash units, the Data Back FN will automatically record data when the shutter button is released, provided the data back is ON and its indicator lamp is glowing.

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2. Flash Photography with Data Back A (A-1, AE-1 PROGRAM, AE-1, AT-1)

Automatic data recording is possible with the Data Back A when using direct contact-type flash units (e.g. Canon Speedlites). Insert the data back's synchronization cord into the camera's PC socket as usual, and follow the normal procedures for automatic data recording.

Automatic data recording with a cord-type flash is possible only by inserting the optional Hot Shoe Adapter between the camera's hot shoe and the flash. Plug the synchronization cord of the flash into the camera's PC socket and the data back's synchronization cord into the Hot Shoe Adapter's socket or vice versa. Data imprinting takes place automatically with the flash when the shutter button is released, provided the data back is ON and its indicator

lamp is glowing.

Be careful not to press the flash test button when a flash unit (either the direct contact type, or the cord type attached to the hot shoe via the Hot Shoe Adapter) is mounted on the hot shoe and the data back is turned ON. By pressing the flash test button with this connection, data imprinting will take place. Also, please note that a direct contact flash having a negative central terminal is unusable.

You may also use the Data Back A with cord-type flash units without the Hot Shoe Adapter attached, but data recording must be done manually. Plug the flash's synchronization cord into the camera's PC socket. Return the data back's synchronization cord to its holder so that it does not get in the way. Now follow the procedure for manual recording.

Use with a Power Winder at Low Temperatures

Data Backs FN and A couple completely with Canon Power Winders in both single-frame power winding and continuous shooting at about two frames per second at normal temperatures. Continuous shooting, however, is impossible at temperatures below 0°C (32°F) due to a decline in battery performance. Single-frame power winding with automatic imprinting is possible, though, once the indicator lamp lights up. It is advisable to load a new battery when shooting at low temperatures. However, do not throw the original battery away. Alternate the two batteries, keeping the one that is not in use warm.



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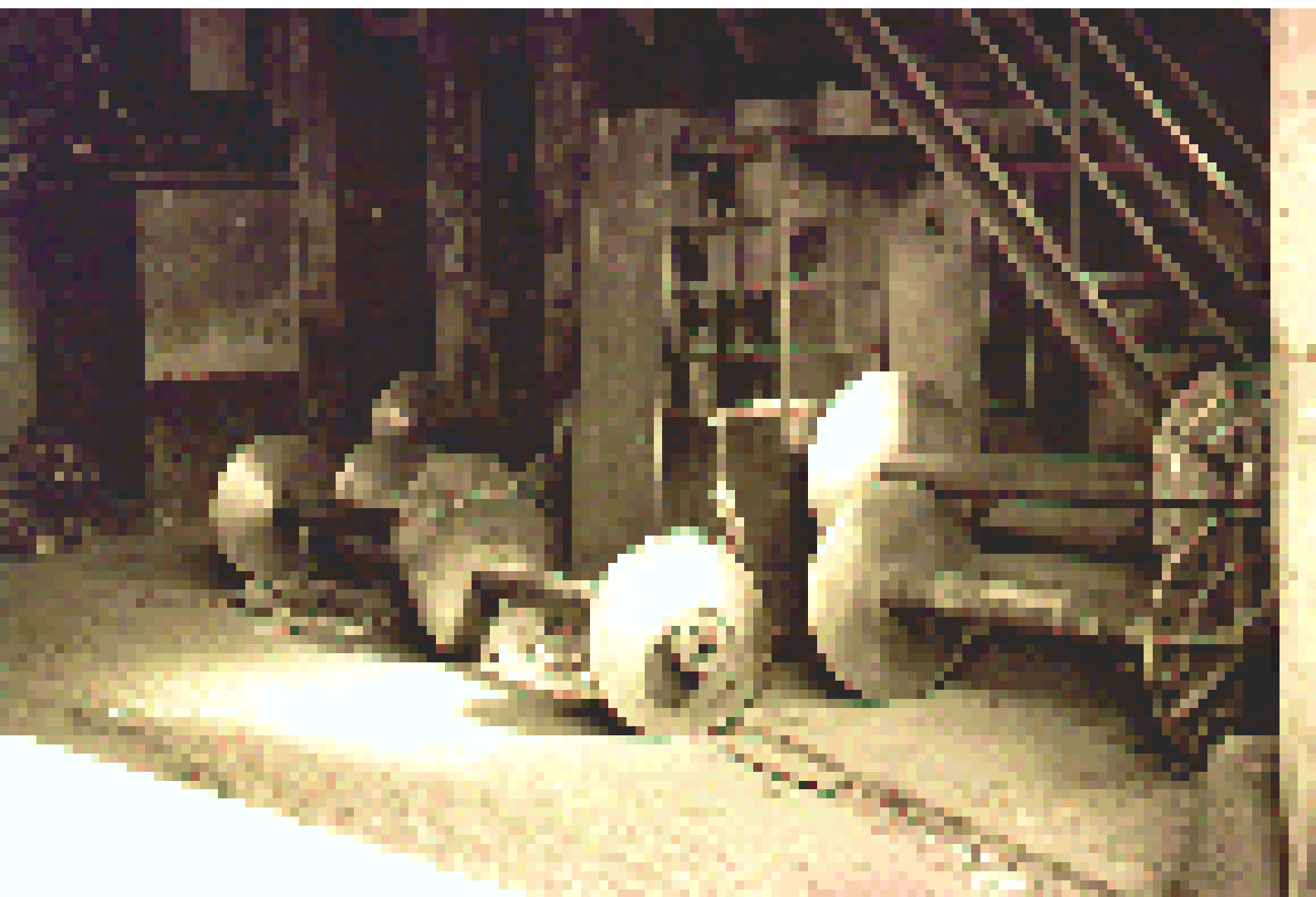
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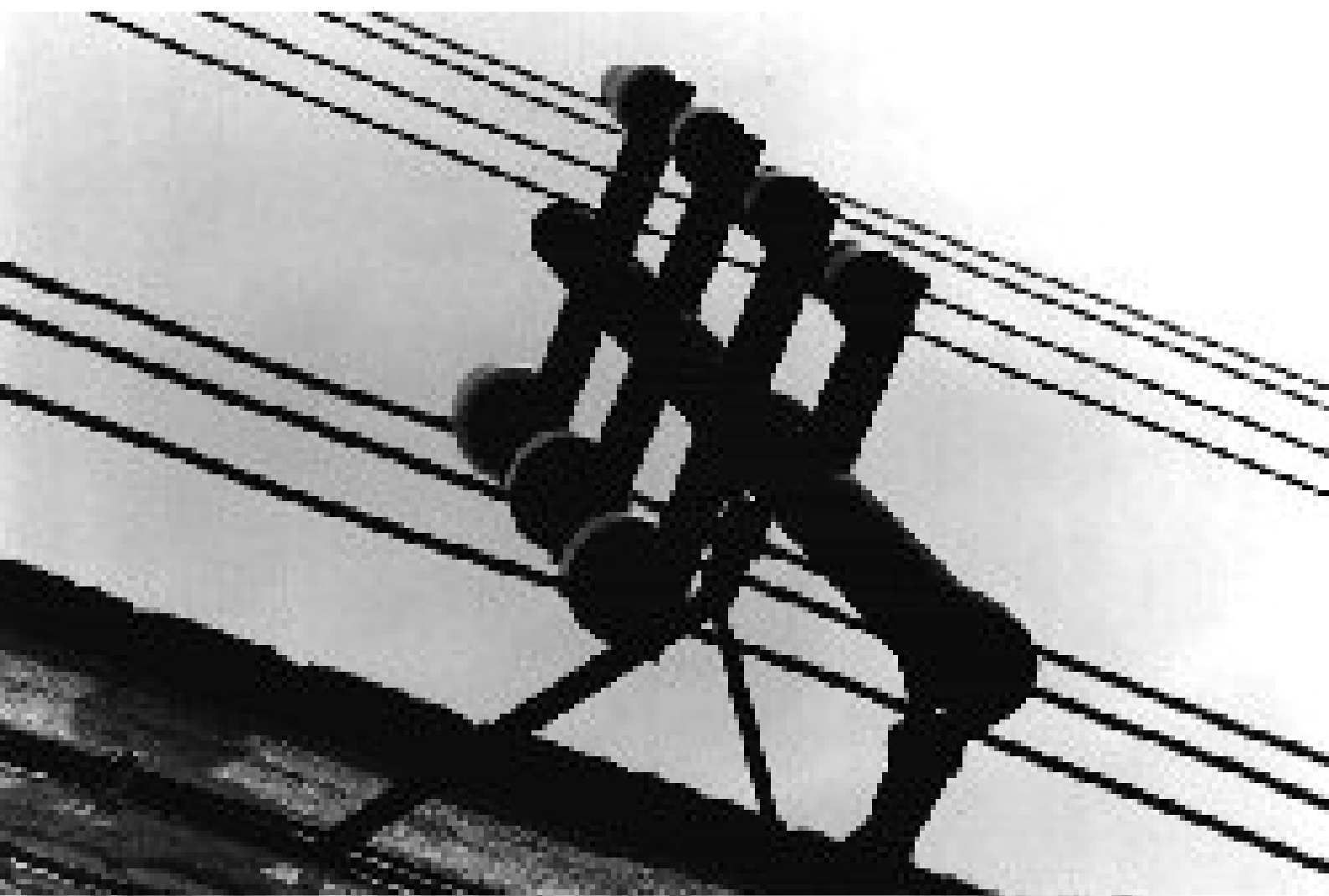
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Canon *Data Memory Back 90*



E

Instructions

The Data Memory Back 90 is an interchangeable camera back designed for exclusive use with the Canon T90. Simple operations allow you not only to imprint certain types of data automatically on the film, but also to store the various data of your picture and, more, you can check the data after shooting, on the LCD panel.

It's a good idea to acquaint yourself with the Data Memory Back 90 by first taking some pictures with test film. Load the camera with film once you feel comfortable with all operations. In case you take some pictures with no film loaded, the data of the previous exposure are displayed on the Data Memory Back's LCD panel, but they are not stored in the memory.

Features:

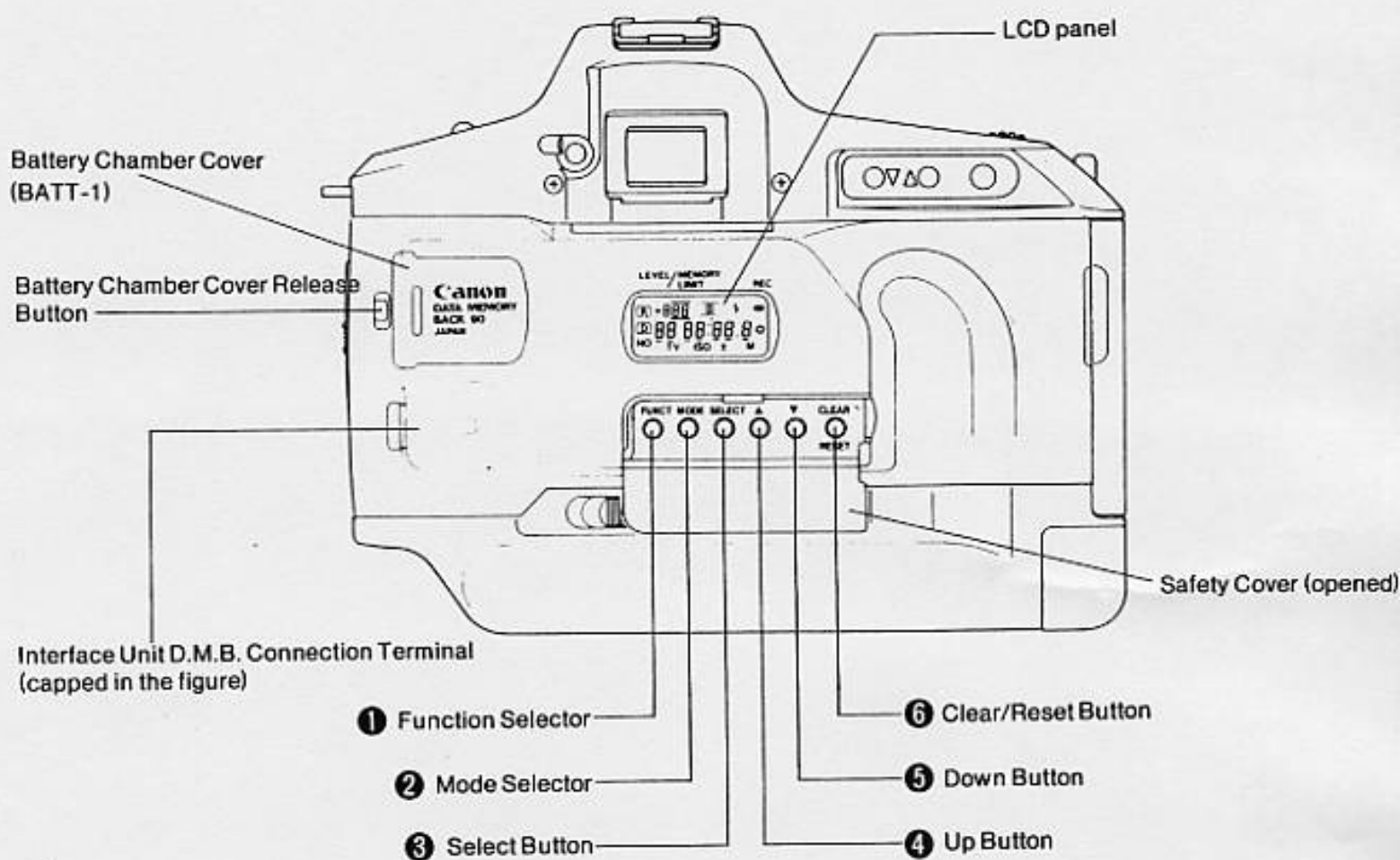
1. Memory Function

- 1) Stores 13 types of exposure data in standard capacity mode (for 156 exposures, or four rolls of 36-exposure film), or 6 types of exposure data in reduced capacity mode (for 338 exposures, or nine rolls of 36-exposure film).
- 2) Displays the shutter speed and aperture value of the previous exposure on the LCD panel.
- 3) Stored data can be checked on the LCD panel.

2. Data Function

- 1) Prints the auto date up through the year 2099.
 - Leap years and long and short months are automatically compensated for.
 - Any of three sequences (month/day/year, day/month/year, or year/month/day) may be selected.
- 2) Prints the day/hour/minute in a 24-hour format.
- 3) Prints a frame number (4-digit number from 0001 to 9999).

1. NOMENCLATURE



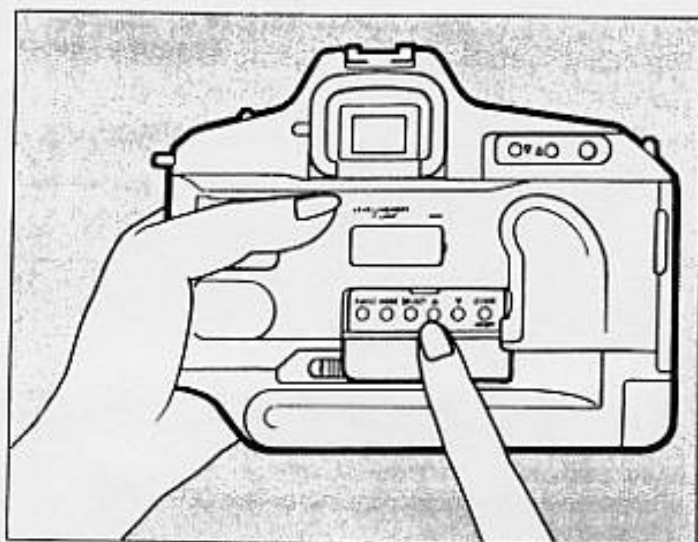
2. Basic Functions of Control Buttons

The basic functions of the Data Memory Back's various controls buttons are as follows:

- ① **Function Selector** — selects the memory function or data function.
- ② **Mode Selector** — selects the mode in either memory function or data function.
- ③ **Select Button** — checks the stored data, sets the lens data, selects the memory capacity, or makes the data ready to clear in the memory function.
 - marks the correction position in the data function.
- ④ **Up Button** — searches the stored data in the memory function.
- ⑤ **Down Button** — sets the desired numbers or compensates the exposure level of data imprinting in the data function.
- ⑥ **Clear/Reset Button** — clears the stored data in the memory function.
 - resets the number to 00 in the data function.
 - checks Battery-1.

Note:

Pressing four or more buttons at once will cause a malfunction or clear the data.





3. Function Displays

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

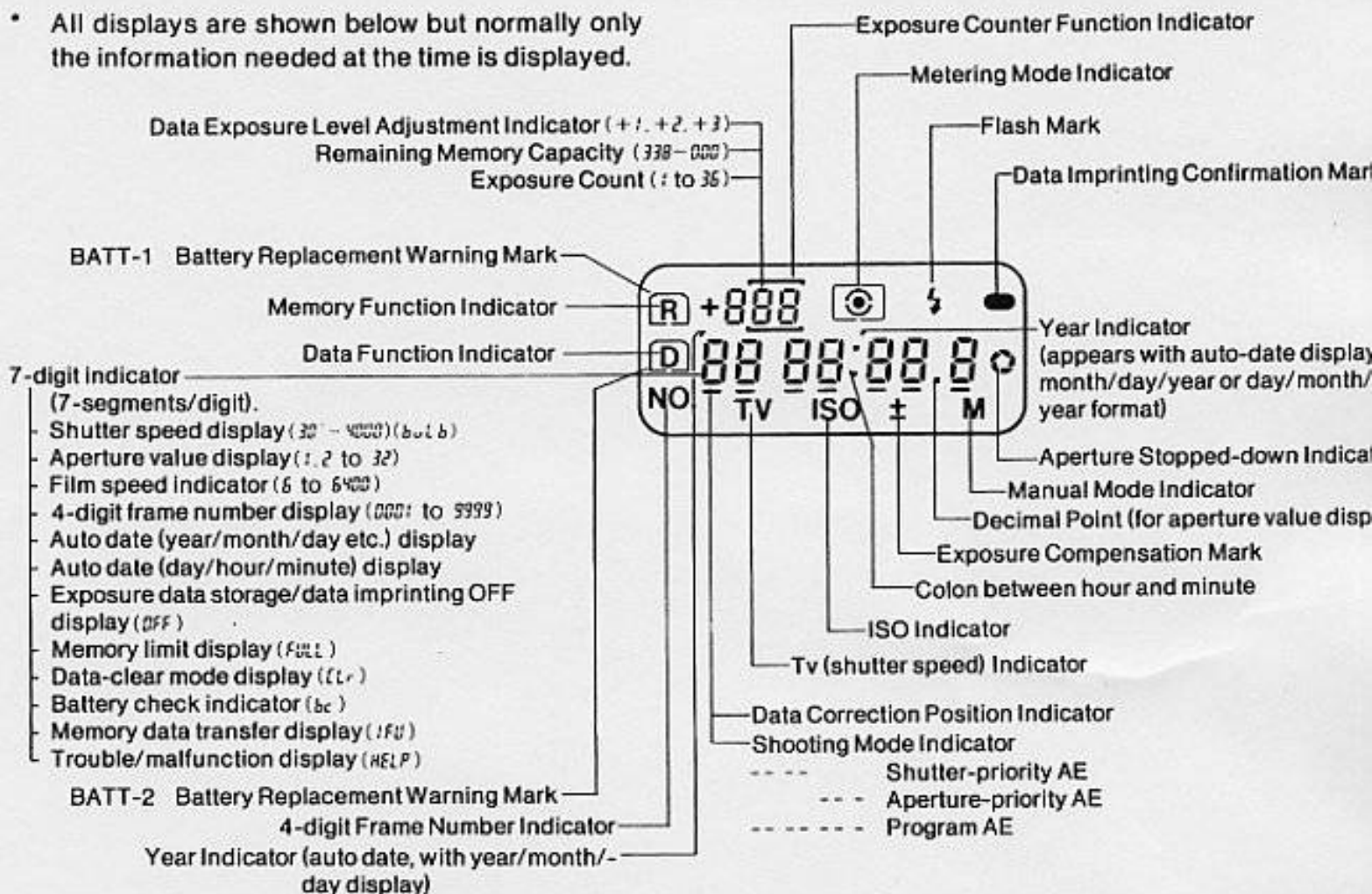
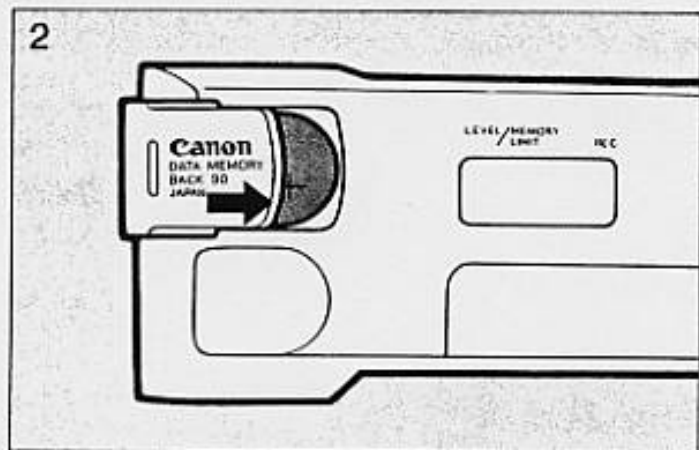


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3. Replace the battery chamber cover (illus. 2).
4. Press the clear/reset button **6** and check that "bc" appears on the LCD panel and immediately after that the date display appears.

Upon completion of these procedures the Data Memory Back 90's settings will be as follows.

Function: Memory Function and Data Function ("R, D" is displayed)

Storage capacity: Standard capacity mode

Memory: Cleared

Date: January 1, 1985

Time: 00 00:00

4-digit frame number: 0001

Notes:

- The Data Memory Back 90 will not function and nothing will appear on the LCD panel if the batteries are loaded incorrectly.
- If a faulty display appears after loading the battery, remove and reload it once. After removing the battery and before reloading it, wait at least one minute.

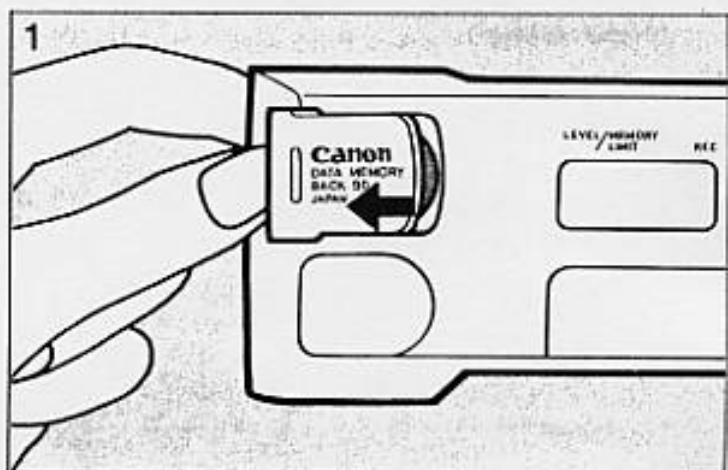
4. Battery Loading

The Data Memory Back 90 uses two CR2025 lithium batteries:

BATT-1 — The battery in the external battery chamber is the main power source providing power to operate the electronic circuits.

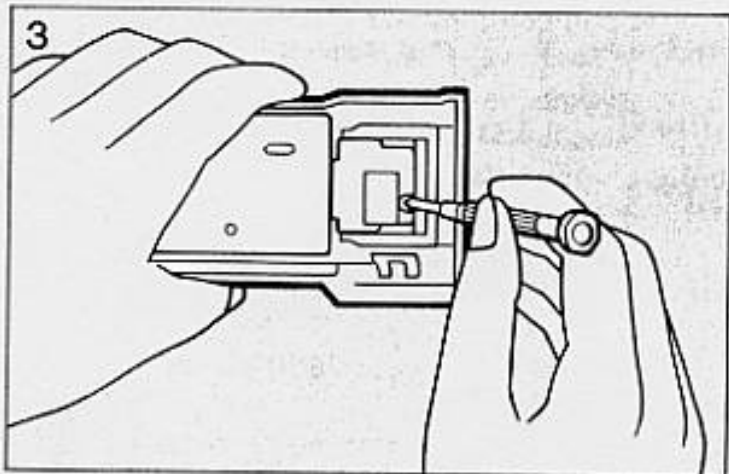
BATT-2 — The battery inside supplies power for imprinting data on the film and for memory back-up.

The batteries are loaded into the battery chamber with insulating sheets when purchased. Before using the Data Memory Back 90 for the first time, remove these sheets and reload the batteries as follows.



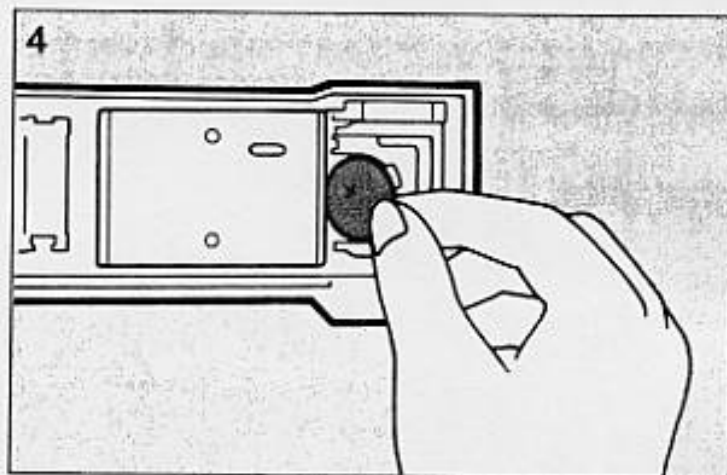
A) Loading the main power source battery (BATT-1) in the external chamber.

1. While pressing the battery chamber cover release button, slide the battery chamber cover to the left and remove it (illus. 1).
2. After taking the insulating sheet off, reload the battery in the battery chamber so that its terminals face in the directions indicated in the chamber.

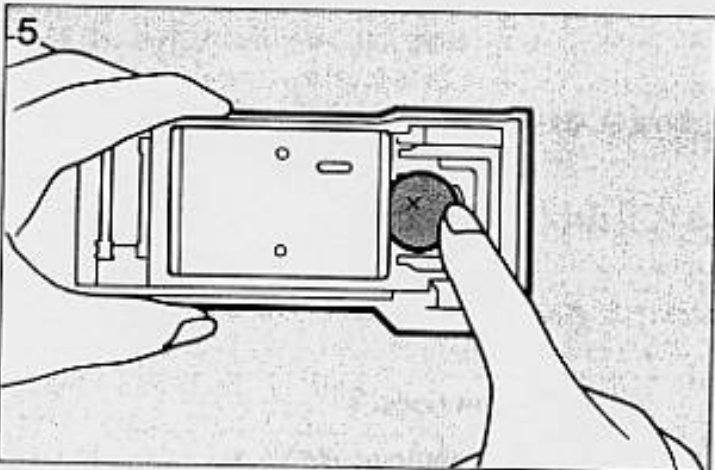


B) Loading the battery (BATT-2) for data imprinting and memory back-up in the inside chamber.

1. Using a philips-head screwdriver, unscrew the retaining screw to remove the battery chamber cover (illus. 3).
2. Insert the tip of the screwdriver into the chamber and then push the battery to the left. The battery will pop up.



3. After removing the insulating sheet, load the battery with the "+" side facing out.
4. To load the battery, first insert one side into the chamber and then press it to the left with your finger until it will go no further (illus. 4).



5. Finally, slide the battery slightly to the right and lock it into place (illus. 5).
6. Retighten the retaining screw.

There is no button for checking BATT-2. If the "⏏" mark around the "D" on the LCD panel disappears when the shutter button is released for imprinting data for the first time, battery power is sufficient.

If the "⏏" mark does not disappear, battery power is low or the battery is incorrectly loaded.

Replacing the Battery

The battery life of BATT-1 is approximately one year, and for BATT-2, approximately 4 years (approx. 3 months without BATT-1 loaded).

When the " ☐ " mark appears around the "R" or "D" on the LCD panel, battery power has become low. At this time, replace the battery promptly as instructed below.

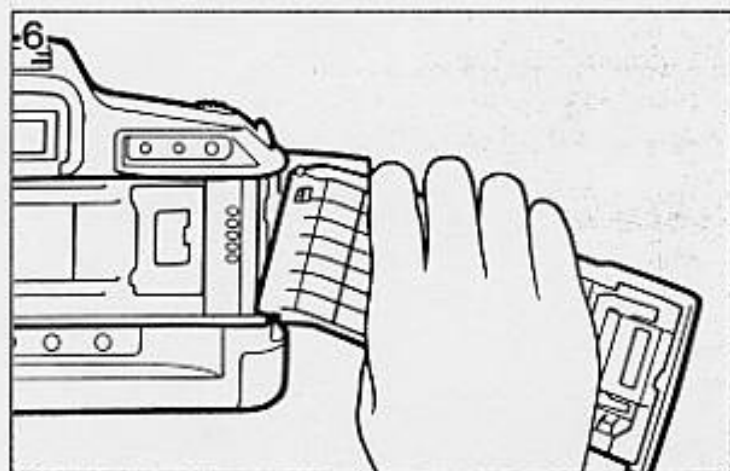
	BATT-1	BATT-2	Instructions
Battery Power	insufficient	insufficient	after replacing BATT-1 replace BATT-2; all data is cleared
	insufficient	sufficient	replace BATT-1 only
	sufficient	insufficient	replace BATT-2 only

- When replacing both BATT-1 and BATT-2 at the same time, all set data is cleared. In this case set the date and time again. (Refer to page 20.)

Precautions:

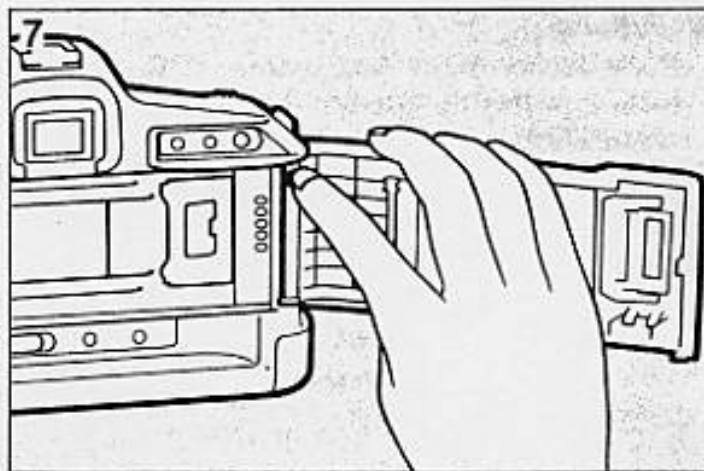
- At low temperatures (less than -10°C , or 22°F), data imprinting may not function properly.
- Battery power is reduced at low temperatures (0°C , or 32°F), but don't throw away batteries that have become temporarily unusable because of cold weather. Once they have been restored to room temperature, you may be able to use them again.
- Do not remove the battery chamber cover except when replacing the battery.
- Keep the batteries away from children. If swallowed, contact a physician immediately.
- Replacement batteries must be new.
- Wipe dirt and fingerprints off the battery to prevent corrosion.
- Life of the BATT-1 is about one year, and BATT-2 about four years. When replacing both at the same time, please load BATT-1 first.

5. Attaching the Data Memory Back 90 to the Camera



Be sure that there is no film in the camera before attaching the Data Memory Back 90. 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 it.
2. To attach the Data Memory Back, insert its lower hinge into the lower socket first while opening the palm wing of the T90 (illus. 6). Then depress the hinge release pin, align it with the upper socket and let go to lock it on (illus. 7).



Note:

- If the contacts of the camera and the Data Memory Back are dirty, the data may not be properly imprinted or stored. If this is the case, "HELP" will appear on the LCD panel when the shutter button is pressed. Then wipe the contacts with a clean, dry cloth to ensure proper connection.

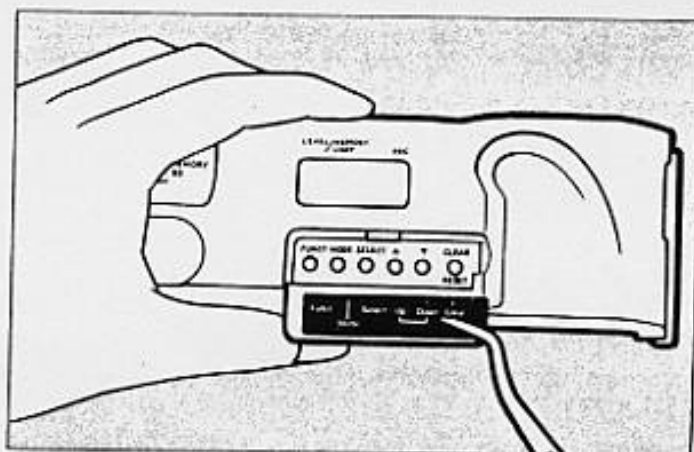
HELP

6. Liquid Crystal Display

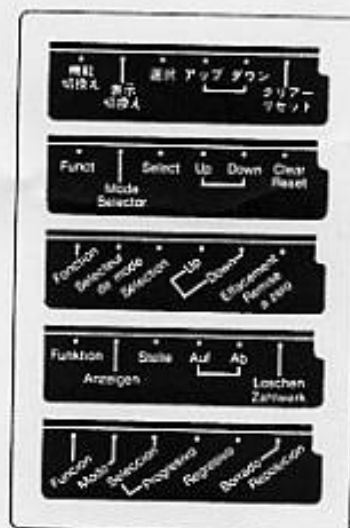
Liquid crystal is used in the display, and in other places for data imprinting. There is a possibility that a lack of contrast or blur in the digital display may occur after about five years of normal use. If this should occur, please contact an authorized Canon service facility for replacement. (Replacement will be at the owner's expense.)

Note:

- All displays flashing on the LCD panel indicates a malfunction. Please contact a Canon Service Facility.



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





7. Basic Operation for Making Mode Settings

1) Selecting a Function

You can control both the memory function and the data function at the same time. Selecting one or neither of them is also possible. You can confirm which function the camera is in on the LCD panel.

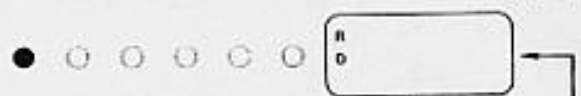
the function is displayed on the LCD panel in the rotating sequence:

→R, D → OFF → D → R→

- "R" indicates the memory function, "D" the data function, and "R, D" both functions.

Control Buttons

1. Memory Function and Data Function Display (R, D)



2. Both Functions OFF (OFF)



3. Data Function Display (D)



4. Memory Function Display (R)



• indicates button is pressed

2) Mode Settings in Data Function

You can select each of the three data modes of the data function: (1) Date Mode, (2) Time Mode, and (3) 4-Digit Frame Number Mode.

Mode settings in data function are possible when "R, D" or "D" is displayed on the LCD panel.

Each time the mode selector ② is pressed, the mode display of the data function changes in the following sequence.

Control Buttons

1. Date Mode Display
(year/month/day)



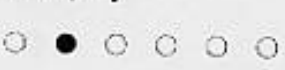
86 1 5

2. Time Mode Display
(hour/minute/second)



5 20:35

3. 4-Digit Frame Number Mode Display



26 36

3) Mode Settings in Memory Function

You can select one of the four modes of the memory function: (1) Data Checking Mode, (2) Lens Data Set Mode, (3) Data-Clear Mode, and (4) Memory Capacity Select Mode.

Mode setting with this function is possible only when "R" is displayed on the LCD panel.

Each time the mode selector ② is pressed, the mode display of the memory function changes in the following sequence:

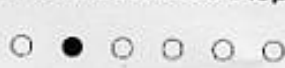
Control Buttons

1. Data Checking Mode Display



155 40 00 F2.8

2. Lens Data Set Mode Display



155 35 - 7.0

3. Data-Clear Mode Display

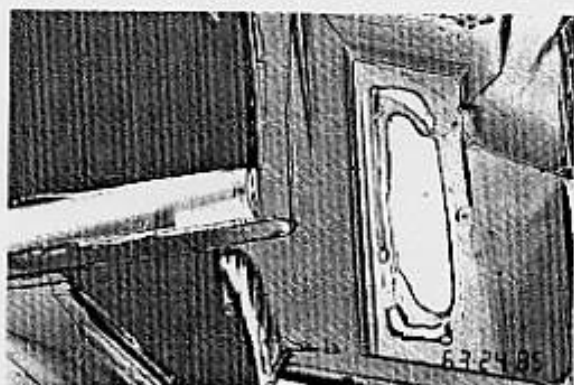


155 CL

4. Memory Capacity Select Mode



155 100 1
NO. - FV - ISO - S - M



(1) Basic Operation for Setting Display Numbers

1. To set the number you wish, press the select button **③**. The bars appear under the number you can change and each time the button is pressed, the bars move, indicating the correction position.
2. When the bars come to the position you wish to change, press the up button **④** or down button **⑤** until the desired number appears.
3. Press the select button once more to make the bars disappear.
 - Each depression of the up button or down button increments or decrements the numeral by one. If the button is held down in step 2, the number will advance rapidly.
 - If the clear/reset button **⑥** is pressed while the bars appear, the number will be cleared in the following way:

year	→ '85
month and day	→ 1
hour	→ 0
minute, second, and other numerals	→ 00

8. Setting Each Mode of the Data Function

General Information and Notes

1. The data are automatically imprinted upon shutter release when the data function ("D") or both the memory and data functions ("R, D") are selected.
2. The data are imprinted in the lower right-hand corner of the picture.
3. If the data have been imprinted correctly, a "●" mark will appear in the upper right-hand corner of the LCD panel and light up for about 1.5—2 secs. In the viewfinder of the T90, the shutter speed and the aperture value displayed under the viewfinder will change into LED bars.
4. When you do not want to imprint anything, be sure to set the display to "OFF" with the function selector.
5. It is impossible to imprint more than one mode at a time. (For example, the date and time.)
6. It is impossible to imprint data while the correction position indicator (bar) appears.
7. If the background of the data imprinting 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 imprinting area.
8. When using color film, if the background of the data imprinting area is orange, the data may not appear clearly, as the data are printed in orange.
9. In continuous shooting with the T90, the frame advancing rate may be slowed by data imprinting.
10. Auto calendar starts from 00 hour, 00 minutes, 00 seconds on January 1, 1985 at the same time that the main power source battery is loaded. (Refer to page 8.)
The auto calendar is programmed from 1985 to 2099.

(2) 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:

Control Buttons

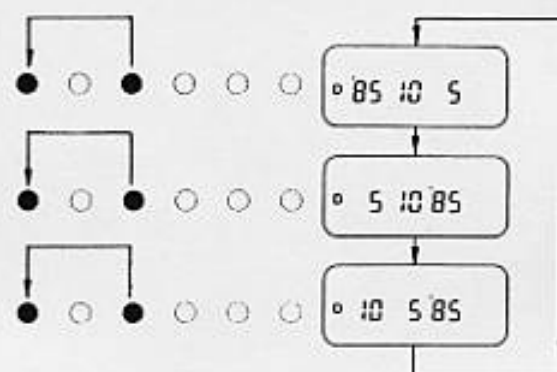
1. Select the data function ("D" or "R, D") by pressing the function selector **1**.



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



3. Each time the function selector **1** is pressed while pressing the select button **3**, the display rotates in the sequence: year/month/day → day/month/year → month/day/year. Select one of those three displays.



● indicates button is pressed

EXAMPLE

You want to change the date from January 1, 1985 to December 14, 1988. (The display has already been changed to month/day/year.)

1. Select the data function ("D" or "R, D") by pressing the function selector 1 .	● ○ ○ ○ ○ ○ ○
2. Select the date mode (month/day/year) by pressing and releasing the mode selector 2 .	○ ● ○ ○ ○ ○ ○ 1 1'85
3. When the select button 3 is pressed, the bars appear under the year '85.	○ ○ ● ○ ○ ○ ○ 1 1'85
4. Press the up or down button, 4 or 5 , until '88 appears.	○ ○ ○ ● ○ ○ ○ 1 1'88
5. Correct 2 (month) to 12 and then 1 (day) to 14 following the same procedure as in steps 3 and 4.	○ ○ ● ○ ○ ○ ○ 1 1'88 ○ ○ ○ ● ○ ○ ○ 12 1'88 ○ ○ ○ ○ ● ○ ○ 12 14'88 ○ ○ ○ ○ ○ ● ○ 12 14'88
6. Press the select button 3 again to make the bars disappear.	○ ○ ● ○ ○ ○ ○ 12 14'88

● indicates button is pressed.

(3) Setting the Time

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

1. Select the data function ("D" or "R, D") by pressing the function selector ❶.
2. Select the time mode by pressing and releasing the mode selector ❷.
3. When the select button ❸ is pressed once, the "day" display changes to "seconds", with two bars underneath.
4. Press the clear/reset button ❹ once at the time of the tone given on the radio, telephone or television. The "seconds" display is restored to 00, then the "seconds" counter begins counting up again.

EXAMPLE

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

- | |
|--|
| 1. Select the data function ("D" or "R, D") by pressing the function selector ❶. |
| 2. Select the time mode (day/hour/minute) by pressing and releasing the mode selector ❷. |
| 3. When the select button ❸ is pressed once, 14 (day) changes to "seconds" display with two bars underneath. When pressed again, the bars move under 30 (min). |
| 4. Press the up ❹ or down ❺ button until 45 appears. |
| 5. Correct 10 (hour) to 17 following the same procedures as in steps 3 and 4. |
| 6. Press the select button ❸ to erase the bars, and "seconds" display changes back to 14 (day). |

● ○ ○ ○ ○ ○	○
○ ● ○ ○ ○ ○	◻ 14 10:30
○ ○ ● ○ ○ ○	◻ 23 10:30
○ ○ ● ○ ○ ○	◻ 24 10:30
○ ○ ○ ● ○ ○	◻ 28 10:45
○ ○ ● ○ ○ ○	◻ 29 10:45
○ ○ ○ ● ○ ○	◻ 33 11:45
○ ○ ● ○ ○ ○	◻ 14 11:45

● indicates button is pressed.

Notes:

- Changing the day is possible only when in the date mode.
- The "seconds" display can be restored to 00, but the number you wish cannot be set.
- The "seconds" display is neither imprinted nor stored.

(4) Setting the 4-Digit Frame Number

You can imprint the frame number on the film in sequence from 0001 to 9999.

At the same time you load the batteries, the 4-digit frame number is automatically set to 0001, and it automatically counts to 9999 regardless of the function or mode set at the Data Memory Back 90. But if you want to change the frame number, follow these steps:

EXAMPLE

You want to change the frame number from 0001 to 2

- | | |
|--|--|
| 1. Select the data function ("D" or "R, D") by pressing the function selector ❶. | |
| 2. Select the 4-digit frame number mode by pressing and releasing the mode selector ❷. | |
| 3. When the select button ❸ is pressed, the bar appears under 0. | |
| 4. Press the up ❹ or down ❺ button to set 2. | |
| 5. Correct 1 to 2 following the procedure in steps 3 and 4. | |
| 6. Press the select button ❸ again to erase the bar. The frame number reading automatically advances with the frame counter of the camera, as each exposure is made. | |

● ○ ○ ○ ○ ○	D
○ ● ○ ○ ○ ○	D 00 01 NO
○ ○ ● ○ ○ ○	D 00 01 NO
○ ○ ○ ● ○ ○	D 20 01 NO
○ ○ ● ○ ○ ○	D 20 01 NO
○ ○ ○ ● ○ ○	D 20 02 NO
○ ○ ● ○ ○ ○	D 20 02 NO

● indicates button is pressed.

Notes:

- 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 number reading on the second roll of film. The sequential number is set automatically since the frame number reading on the LCD panel does not advance during automatic film loading. The frame number reading from 0001 to 9999 can be automatically set and imprinted in this manner.
- If you want to start the frame number reading from 0001 again on the second roll of film, reset to 0001 again.
- Imprinting of the frame number cannot follow continuous shooting with the T90. Single exposure mode must be set with the frame number mode.



(5) Compensating Light Intensity of Data Imprinting

It is unnecessary to set the film speed on the Data Memory Back 90 since the DX data of the film is automatically transmitted from the T90. The light intensity is varied automatically according to the film speed. But if light intensity compensation is necessary, operate as follows:

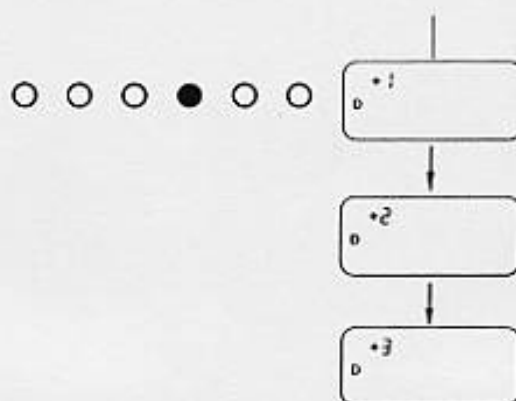
Control Buttons

1. Select the data function ("D" or "R, D") by pressing the function selector **1**.



2. Press and release the up button **4**. The amount of compensation is displayed in the following sequence:

+1 → +2 → +3



Press the down button **5** to return.

● indicates button is pressed.

- When only the data function ("D") is selected, the light intensity compensation value is displayed constantly, while when both the memory function and data function ("R, D") are selected, the light intensity compensation value appears alternately with memory capacity remaining display.



Notes:

- The light intensity compensation value is displayed on the LCD panel, but it is neither imprinted on the film nor stored in the Data Memory Back.
- Exposure compensation is necessary for data imprinting on the films below:
 Sakura Film SR-series  1 step brighter
 AGFA Film XR-series  1 step brighter
- The data is imprinted through the back of the film. The light intensity required varies according to the thickness of the film base and the characteristics of the film's anti-halation backing.
 For optimum light intensity adjustment, taking a few trial shots is recommended.

9. Setting Each Mode of the Memory Function

General Information and Notes

1. The exposure data are automatically stored in the Data Memory Back's memory upon shutter release when the memory function ("R") is selected.
2. Before storing the exposure data by releasing the shutter, select the memory capacity and set the lens data in use.
3. When both memory and data functions ("R, D") are selected, data of the data function is displayed on the LCD panel. If you want to operate both functions, therefore, first select the memory function ("R") to set the memory capacity and lens data, and then set the Data Memory Back to both functions ("R, D").
4. If there is no film in the camera, exposure data cannot be stored, so it is impossible to check the exposure data.

To acquaint yourself with the memory function of the Data Memory Back 90, we strongly recommend loading practice film before reading this section.

(1) Selecting the Memory Capacity

The Data Memory Back 90 has the following two data storage modes:

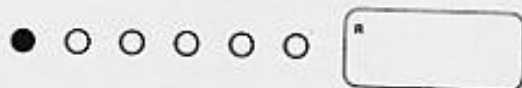
- In the standard capacity mode, the following 13 types of data can be stored for 156 exposures (about four rolls of 36-exposure film):
 1. shutter speed
 2. aperture value
 3. metering mode
 4. shooting mode
 5. use flash or not
 6. aperture stopped-down or not
 7. use exposure compensation or not
 8. number of exposures made
 9. ISO film speed
 10. use manual exposure or not
 11. 4-digit frame number
 12. auto calendar (date and time of exposure)
 13. lens data in use

- In the reduced capacity mode, the following 6 types of data can be stored for 338 exposures (about nine rolls of 36-exposure film).

- | | |
|---------------------------------|-------------------------------|
| 1. shutter speed | 4. number of exposures made |
| 2. aperture value | 5. use manual exposure or not |
| 3. aperture stopped-down or not | 6. 4-digit frame number. |

Control Buttons

1. To select the memory function ("R") press the function selector ❶.



2. To enter the memory capacity select mode press the mode selector ❷.



3. Each time the select button ❸ is pressed, the memory capacity alternates between standard capacity mode and reduced capacity mode. Select each capacity mode you wish.



Notes:

- If the memory capacity becomes full, "FULL" appears on the LCD panel and no more exposure data can be stored. However, as long as only "D" appears on the display panel, the data function will still be usable.
- The memory capacity can also be changed during shooting. If you find the memory capacity near full when using the standard capacity mode, switch to the reduced mode, and you will have more space to store the exposure data.
- Remaining storage capacity is only approximate. When shooting with spot metering remaining storage capacity may decrement by two frames.
- When the batteries are loaded for the first time, the memory capacity is automatically set to the standard capacity mode.

(2) Setting the Lens Data

You can store up to eight pieces of lens data information in the Data Memory Back 90. If you select the lens data that matches the lens you are using before shooting, the data will be stored together with other exposure data.

Lens Data:

- | | |
|---------------|-----------------|
| 1. __ (blank) | 5. 35—70 (mm) |
| 2. 28 (mm) | 6. 35—105 (mm) |
| 3. 50 (mm) | 7. 75—200 (mm) |
| 4. 135 (mm) | 8. 100—300 (mm) |

Note:

- Lens data can be set only when the memory capacity is in standard mode.

Control Buttons

1. To select the memory function ("R") press the function selector ❶.



2. To enter the memory capacity select mode press the mode selector ❷. To select the standard capacity mode press the selector button ❸.

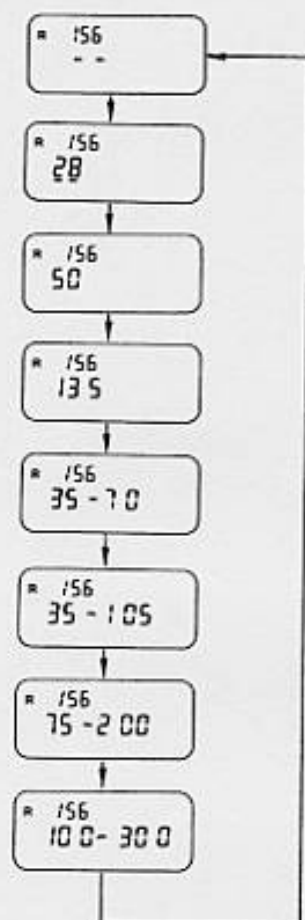


3. To select the lens data set mode press the mode selector ❷.



4. To select the lens data
press the select button

③



After completing (1) and (2), please take
some pictures to practice storing the
exposure data.

- If you don't find your own lens in the seven lens data above, select -- (blank), and no lens data will be stored.

(3) Checking the Stored Data

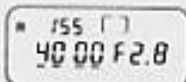
When only the memory function ("R") is selected, exposure data stored during the previous exposure is always displayed on the LCD panel. When both the memory function and the data function ("R, D") are selected, imprinted data is constantly displayed, but the stored data is not. However, data stored in memory can be checked as follows:

1. **Checking data for the frame currently displayed on the LCD panel (the previous exposure)**

The types of the stored data change according to the selected memory capacity. (Refer to page 28.)

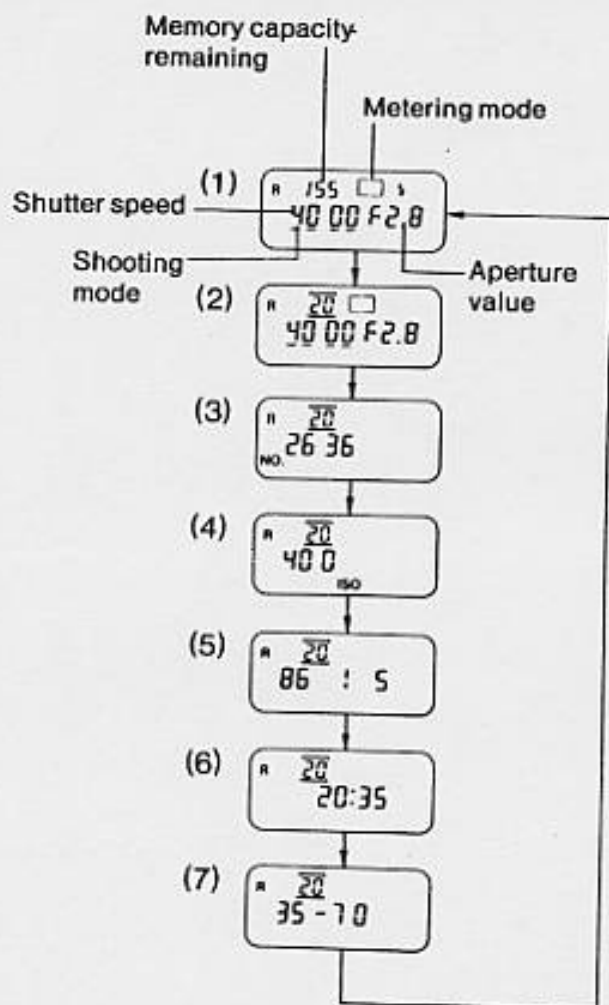
Control Buttons

1. Press the function selector **1** to select the memory function ("R"). In this state, the data checking mode appears; you will find the shutter speed, aperture value and other data of the previous exposure displayed on the LCD panel.



2. Each time the select button **3** is pressed, the remaining stored data of the previous exposure is displayed in the following sequence:

- In the standard capacity mode:
 - (1) memory capacity remaining
shutter speed
aperture value
metering mode
shooting mode
use flash or not
use manual exposure or not
aperture stopped-down or not
 - (2) numbers of exposures made
 - (3) 4-digit frame number
 - (4) ISO film speed
use exposure compensation or not
 - (5) date
 - (6) time
 - (7) lens data



- In the reduced capacity mode:
 - (1) memory capacity remaining
shutter speed
aperture value
use manual exposure or not
aperture stopped-down or not
 - (2) numbers of exposures made
 - (3) 4-digit frame number

Note:

- You can see all displays on page 6.

2. Searching the exposure data for other than the previous exposure:

When data (2) — (7) is displayed, pressing the up button **4** or down button **5** changes the exposure number indicated on the LCD panel and automatically displays the data stored for that exposure. It is thus possible to search the data for any exposure.

Refer to the inserted leaflet about all functions of control buttons.

(4) Clearing the Stored Data

If the memory capacity becomes full, you can clear all the stored data:

1. To select the memory function ("R") press the function selector **1**.



2. To enter the data-clear mode press the mode selector **2**.



3. Press the select button **3**. Bars appear under the letters, indicating that clearing data can be done.



4. To clear the data press the clear/reset button **6**.



Note:

If you want to cancel clearing data after pressing the select button **3** in step 3, press the select button again.

10. Combining the Data Memory Back 90 with the Interface Unit D.M.B. and an MSX Personal Computer

The Interface Unit D.M.B. (optionally available) is developed for exclusive use with the Data Memory Back 90. It is a device which relays communications between the Data Memory Back and an MSX computer.

1. When used together with the monitor, all exposure data stored in the Data Memory Back 90 can be displayed on the screen.
2. When an MSX printer is connected, all data can be printed out.
3. When an ordinary cassette tape recorder is connected, all data can be recorded on tape.
4. The following data can be manually set into the Data Memory Back by the keyboard.
 - 1) 6-digit imprinting data
 - 2) 7-digit lens data (up to 4 lenses)
 - 3) after setting the imprinting data set in 1), the shutter can be released.

With the tape software (accessory) you can control the camera or input the data in the MSX personal computer.

Use an MSX personal computer of more than 16 K-bytes with the Interface Unit D.M.B. We recommend the Canon V10 or V20 with the MSX-system, and Canon V25 or V30F with the MSX2-system. For further information about the MSX personal computer or printer, please contact an authorized Canon service facility.

MSX and **MSX2** are trademarks of Microsoft, Inc., USA.



SPECIFICATIONS

Used with: Canon T90

Attachment: Exchanges with camera's back cover.

Type: Fully automatic data back with LCD panel, quartz digital auto-calendar and electronic exposure data storage function.

Memory function

Based on exposure control signals from the T90.

(1) Shutter speed, (2) Aperture value, (3) Metering mode, (4) Shooting mode, (5) Use flash or not, (6) Aperture stopped-down or not, (7) Use exposure compensation or not, (8) Number of exposures made, (9) ISO film speed, (10) Use manual exposure or not.

Based on the Data Memory Back 90's built-in functions. (11) Frame number (a 4-digit up-counter coupled to exposure), (12) Auto calendar (Year/month/day, hour/minute), (13) Manually set lens data (8 program settings)

Storage modes and memory capacity (2 K-byte RAM):

(1) **Standard capacity mode:** Stores data for 156 frames (4 rolls of 36-exposure film). In this mode, all 13 types of data above are stored.

- (2) **Reduced capacity mode:** Stores data for 338 frames (9 rolls of 36-exposure film). In this mode, (1) Shutter speed, (2) Aperture value, (3) Aperture stopped-down or not, (4) Number of exposures made, (5) Use manual exposure or not, (6) Frame number are stored.
- (3) **Remaining storage capacity can be displayed by a decrementing digital indicator.** When memory becomes full, "FULL" is displayed.
- Remaining storage capacity is only approximate. When shooting with spot metering, remaining storage capacity may decrement by two frames.

Storage data display:

After exposure, data for that exposure is displayed on the LCD panel. Data for a specific exposure can also be retrieved and displayed.

Clearing stored data:

Data can also be cleared by pressing the clear button after selecting the Data-clear mode.

Data function

When using together with the T90, any one of the following data can be imprinted on the film.

- (1) Year/month/day (switchable to day/month/year or month/hour/minute)
- (2) Day/hour/minute
- (3) 4-digit frame number (from 0001 to 9999)
- (4) OFF (no data imprinted)

External display of data:

Using a 7-segment, 6-digit LCD display that shows what is imprinted on the film. (OFF is displayed on the LCD panel when neither function is selected.)

Position and size of data:

Imprinted in the bottom right corner of horizontal frame and is horizontally arrayed. Character height on negative is approx. 0.7 mm.

Imprinting system:

Projected onto the film through a transmissive type LCD. It is coupled to the camera's exposure mechanism, thus exposure of characters is made automatically.

Exposure confirmation indicator:

- (1) An exposure confirmation mark (an LCD indicator) lights on the monitor panel for 1.5–2 seconds after the exposure has been made.

- (2) Seven-segment LED bars light under the viewfinder of the T90.

Adjustment of light intensity:

- (1) Automatically switched between four levels according to the speed of the film used (ISO 25–1600, DX code).
- (2) Light intensity compensation up to three steps brighter is possible.

Auto-calendar function:

Programmed for all dates from 1985 to 2099. Correction for long and short months and leap years is made automatically.

Digital clock accuracy:

Accurate to within ± 15 seconds per month at 10°C–30°C and 60% RH.

Memory and Data functions in combination:

Can be used in combination. (1) Both memory function and data function, (2) Both functions OFF, (3) Data function, and (4) Memory function

Power Supply:

- (1) Type — two CR2025 button-type lithium batteries.
 - a) BATT-1: Main power supply (supplies power to the electronic circuit)
 - b) BATT-2: Power supply for data imprinting on film and memory back-up.

(2) Battery check:

- a) Manual check: BATT-1 can be checked by pressing the battery check button.
- b) Automatic checks: BATT-1 is automatically checked simultaneously with exposure; BATT-2 is automatically checked simultaneously with imprinting of data on the film.

(3) Battery life (at normal temperatures)

- a) BATT-1: about 1 year, for 50,000 exposures.
- b) BATT-2: about 4 years, for 50,000 exposures.

Signal transfer terminals;

Signal exchange with the T90 body takes place through 5 electrical contacts.

Safety mechanisms:

Bad contact/communication error warnings.

Dimensions: 148.4 (W) × 58.4 (H) × 34 (D) mm
(5-13/16" × 2-5/16" × 1-5/16")

Weight: 110 g (3-7/8 ozs) including batteries.

Subject to change without notice.

Data Memory Back 90, Interface Unit D.M.B. and the MSX computer are not available in North America and some other areas.

Canon

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