

Canon

Directions for using
35mm CANON CAMERAS



MODELS

II-D

III-A

IV-S

CANON CAMERA MODEL IV-S2 and SPEEDLIGHT UNIT

Speedlight unit (zero delay only) can be used with the Canon Model IV-S2 camera by merely setting the Slow Shutter Speed Dial to "X" and keeping the High Shutter Speed Dial at 1/25 sec. Do not use other speeds.

The speedlight unit is connected with a Canon Extension Cord "A" through a Canon Self-Extension Adapter fitted to the flash bracket of the camera.

- NOTE:
1. Flash bulbs are used in the same manner as the Canon Model IV-S camera.
 2. Do not press the Shutter Release Button although the shutter is not wound when the speedlight unit is connected or flash bulb is inserted.

CANON CAMERA CO., INC.

TOKYO, JAPAN

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Practice these steps thoroughly before loading film

- ❶ Remove the Lens Cap.



See page 7

- ❷ Pull out the Lens and Lock it, if collapsible type (50 mm f: 1.9 & f: 3.5).



See page 7

- ❸ Set the Lens Aperture Scale (f-stop).



See page 10

- ❹ Focus by rotating the Focusing Lever.



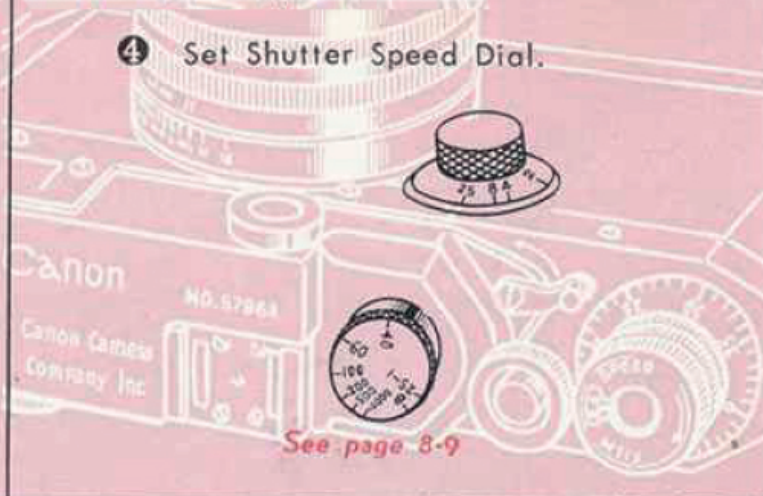
See page 13

- ③ Turn the Film Winding Knob.



See page 7

- ④ Set Shutter Speed Dial.



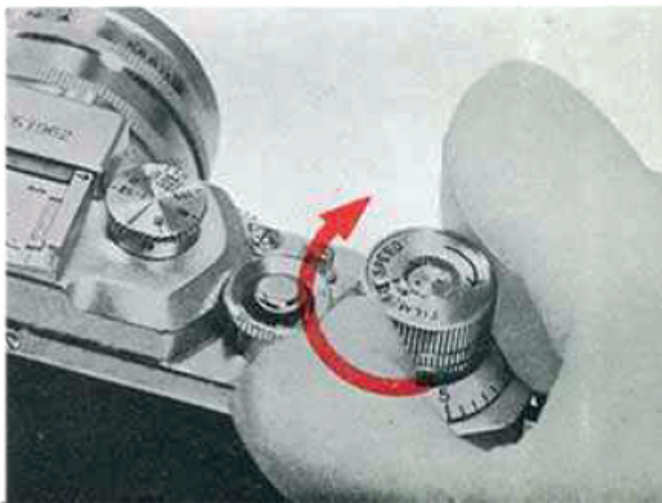
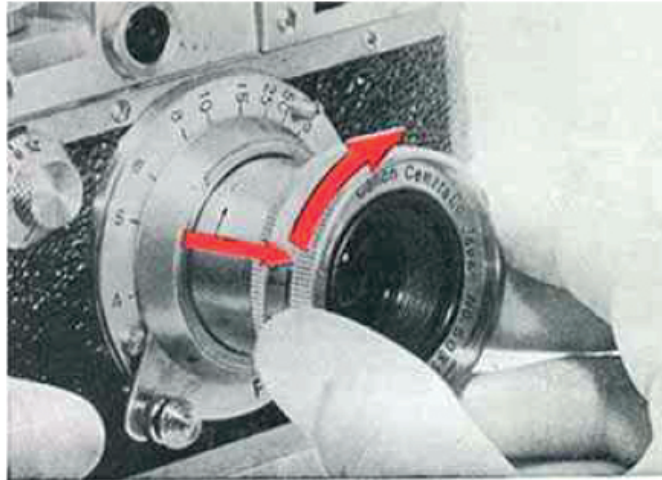
I. HOW TO OPERATE THE CAMERA

Read the directions carefully. You can learn how to use your camera in a few minutes.

1. Remove the Lens Cap.
2. If you have a collapsible lens (SERENAR 50mm f:1.9 or f:3.5) pull out the lens to the mark on the barrel and lock by turning as illustrated. The Standard lens (SERENAR 50mm f:1.8) on the Model III-A and IV-S cameras is non-collapsible.
3. See that the Reversing Lever is at the "A" position (Advance). Then turn the Film Winding Knob one complete turn when it will stop. Each time the Film Winding Knob is turned the Exposure Counting Dial automatically registers the next number.

NOTE: This dial should be turned to one (1) each time a new film is loaded, and ready to make exposures (see page 25).

NOTE: Always wind the Film Winding Knob just before taking a picture. Do not leave it wound over long periods as this may weaken the Shutter Spring and may cause accidental exposure if the Shutter Release Button is pressed by mistake.



HIGH SHUTTER SPEED DIAL On the Model II-D, III-A and IV-S cameras there are two Shutter Speed Dials.

High: for speeds between 1/25-1/1000 second (1/500 on II-D) & B (Bulb).

Slow: for speeds between 1/25-1 second & T (Time).

On the Model II-A camera there is one Shutter Speed Dial giving you speeds between 1/25-1/500 second and B (Bulb)

INTERMEDIATE SPEEDS CANNOT BE USED

Correct exposures are best obtained with an exposure meter or by following the instructions supplied with the film.

To operate the camera at any of the speeds shown on the High Shutter Speed Dial, first turn the Film Winding Knob. The Shutter Speed Dial will not select the desired speed unless this has been done. Raise the dial with thumb and forefinger and turn until the speed required is exactly opposite the Index Mark and let the dial fall.

For 1/1000 sec., the dial drops only half the distance of the other speeds.

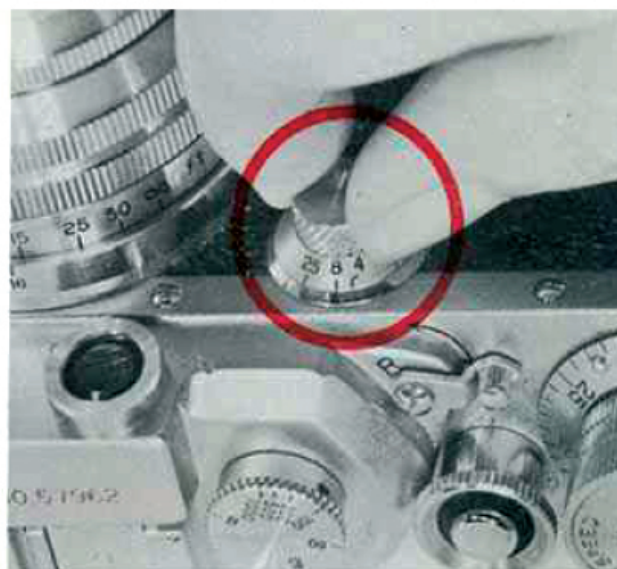
Press the Shutter Release Button and the Shutter operates at the selected speed.

NOTE: When the High Shutter Speed Dial is used the Slow Shutter Speed Dial must be set at 25 (1/25 sec.)



SLOW SHUTTER SPEED DIAL The Slow Shutter Speed Dial (not mounted on the Model II-A camera) will record speeds between 1/25-1 sec. and T (Time) by turning the dial to the correct position so that the required speed registers uppermost opposite the index mark. Be sure that you have first turned the Film Winding Knob one complete turn and the High Shutter Speed Dial is set at 25-1 (1/25 sec.)

NOTE: *Speeds intermediate between the 25, 1/8, 1/4 and 1 sec. may be obtained by setting the dial to the estimated position.*



TIME EXPOSURES LONGER THAN ONE SECOND A time exposure may be obtained by using the B (Bulb) position on the High Shutter Speed Dial. The shutter remains open from the time you press the Shutter Release Button until the pressure is removed. The use of a Cable Release is recommended for this purpose.

You may also obtain a time exposure with the Slow Shutter Speed Dial at T (Time). Press the Shutter Release Button and the shutter will open and remain open until you turn the Slow Shutter Speed Dial to 1 or until you turn the Film Winding Knob. (The latter method is

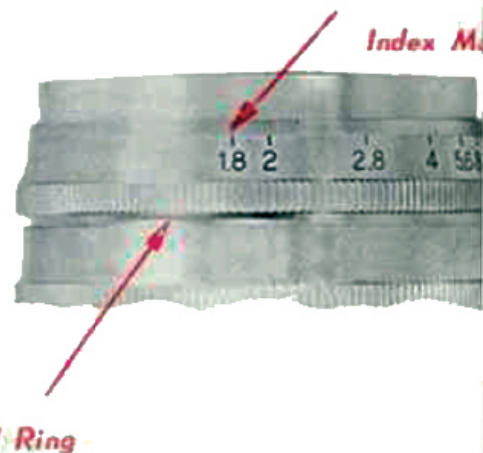
recommended only for microphotography etc.). The shutter will close only when either of the two methods given above are used.

NOTE: For speed slower than 1/25 sec. a solid tripod is essential and preferably a Canon Camera Holder.

IMPORTANT: When using Flash Unit with the Model IV-S camera and making exposures with the High Shutter Speed Dial precise flash synchronization will be affected if the Slow Shutter Speed Dial is not set at 25. See pages 30-35.

LENS APERTURE SCALE The Lens Aperture controls the amount of light entering the lens and also the Depth of Focus. Set the Lens Aperture (f-stop) by turning the Aperture Scale (knurled ring, see illustration) to the proper position. This is best determined with an exposure meter or following the instructions given with the film.

NOTE: The more light you want to enter the lens, the larger must be the Lens Aperture. Rotate the Knurled Ring whilst looking into the lens and see the movement of the diaphragm.



When the Lens Aperture is closed by one stop, the amount of light entering the lens is decreased by one half; two stops, by one quarter and so on. Therefore you should adjust the Lens Aperture in conjunction with your shutter speed. Suppose your exposure meter indicates a speed of 1/200 sec. at f:5.6. If you want to expose for a slower speed, say 1/100 sec., than you must close down the Lens Aperture to f:8. In other words, as you have doubled the time of the shutter opening, you must reduce the amount of light entering the lens by half to obtain the correct exposure.

The table below gives you the relation between the Lens Aperture and the relative time of exposure for Canon Camera.

Lens Aperture	1.8	2.0	2.8	3.5	4.0	5.6	8.0	11	16
Relative Exposure Time	0.8	1	2	3	4	6	12	32	64

DISTANCE SCALE When accurate focus (see page 13) has been made on any object, the actual distance from the plane of the film to the object is shown by the Distance Scale (see next page) which is marked from 3.5 to infinity (∞) in feet. Lenses with meter scales are provided when specially ordered.

DEPTH OF FOCUS SCALE See illustration below. A little study will show how to plan the exposure you want. The Distance Scale and the Depth of Focus Scale are used together.



Depth of Focus means the range of objects which will be in focus on your film. This range varies with the distance of the object of sharp focus and the Lens Aperture (see page 11). It extends from in front of the object of sharp focus to beyond it. The greater the Lens Aperture, the less will be the Depth of Focus. Depth of Focus also diminishes in proportion to decrease in distance the object of sharp focus is from the film plane.

The illustration shows the Lens Aperture at $f:1.8$ and the Distance Scale at 25 feet. An object at 25 ft is in sharp focus. The Depth of Focus Scale shows that the nearest object also in focus is approximately 21 feet and the farthest object in focus is approximately 30 feet. If the Lens Aperture Scale is set at $f:11$ the object in focus will extend from 12 feet to infinity (∞).

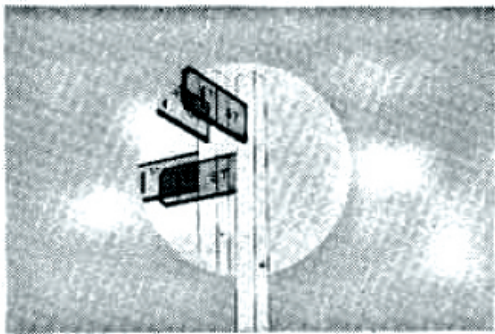
FOCUSING It is recommended that the camera be held as illustrated. It should rest comfortably on the heel of the left hand and be balanced by the right hand. Hold the camera to your cheek to keep it steady whilst sighting through the Range-View Finder Eyepiece. Manipulate the Focusing Lever with either your left or right forefinger whichever is more comfortable. More precise focusing is possible by setting the Magnification Selector at 1.5x (see page 17) and rotating the Milled Focusing Ring as shown in lower illustration.

NOTE: The Focusing Lever is released from the Infinity Catch on the lens by depressing the knob and turning.

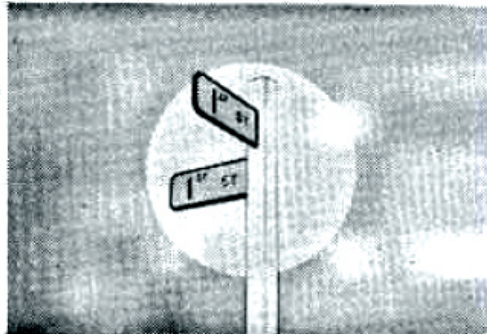




Out of focus



Out of focus



In correct focus

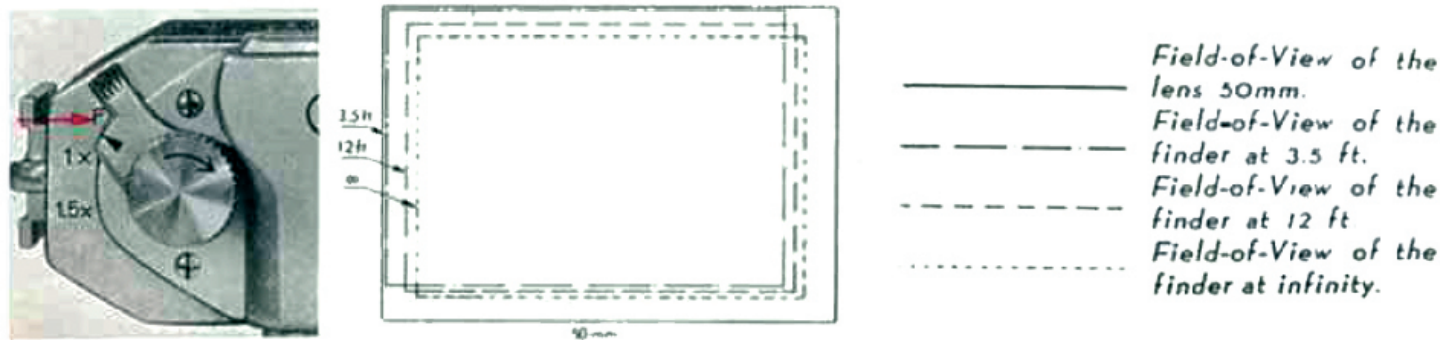
As you look through the Range-View Finder Eyepiece and rotate the Focusing Lever you will see two images of the same object. The images will move apart or together as the lever is rotated. Turn the Focusing Lever until the two images of the object on which you are focusing coincide exactly. Your lens is now in sharp focus on the object. At the same time all objects in the range shown on the Depth of Focus Scale will also be in focus at the f-stop you select for the exposure.

MAGNIFICATION SELECTOR There are three positions for the Magnification Selector; F, 1x, and 1.5x. When really sharp focusing is required, turn the Selector to 1.5x when the object will be magnified 1.5 times. Remember however, the actual image recorded on the film will be the picture seen at F position of the Selector.

The 1x position corresponds to the image seen and recorded by any CANON-SERENAR lens with a focal length of 100 mm. The 1.5x position shows the image for any CANON-SERENAR lens of focal length of 135 mm.

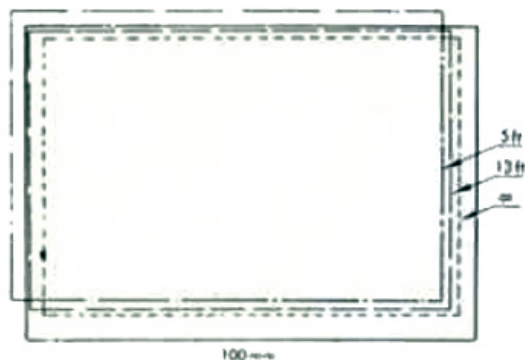
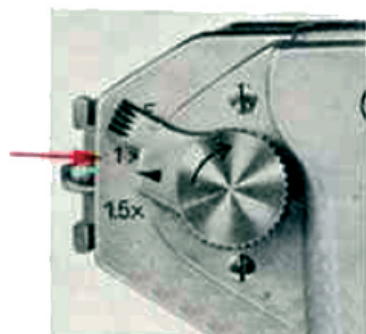
A certain difference between the picture seen through the Range-View Finder Eyepiece and the image recorded by the lens is inevitable. For normal photography the difference is immaterial being so slight. But for certain work compensation should be allowed.

The diagram shows the difference, or parallax, when the Selector is at F for a 50 mm lens.



The diagram below shows the parallax when the Selector is set at 1x for SERENAR lenses with focal length of 100 mm. Note that when the object distance is less than 13 feet a special viewfinder with parallax compensation adjustment should be used.

NOTE: *Specially designed Viewfinders to compensate for parallax are available for all CANON-SERENAR LENSES except for the Standard 50 mm.*

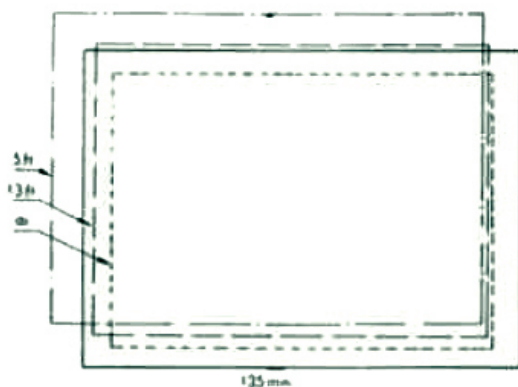
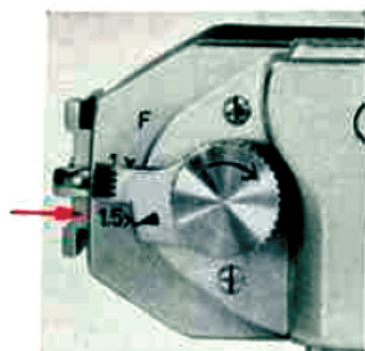


Field-of-View of the lens (100 mm)
Field-of-View of the finder at 5 ft.

Field-of-View of the finder at 13 ft.
Field-of-View of the finder at infinity.

At 1.5x for 135 mm SERENAR lenses the parallax will be as shown below. For distances less than 14 feet it is essential to use the special viewfinder available for each type of accessory lens.

ACCESSORY CLIP This is used for fitting any attachments such as the Special Viewfinder, Universal Viewfinder etc.



- Field-of-View of the lens (135 mm).
- - - - - Field-of-View of the finder at 5 ft.
- · · · · Field-of-View of the finder at 13 ft.
- · · · · Field-of-View of the finder at infinity.

EXPOSURE and COMPOSITION To expose and compose your picture are the last steps and perhaps the most important. Be sure that the main object in the scene you are photographing is in sharp focus.

For 50 mm SERENAR lenses, the image recorded on the film will be the one seen through the Eyepiece with the Magnification Selector at F. Having composed your picture gently press the Shutter Release Button with your forefinger. Never jerk whilst making an exposure. The slightest movement for an exposure made at 1/25 sec. or slower will give you a blurred picture.

By pressing the camera to your cheek, keeping your elbows into your side and by holding your breath





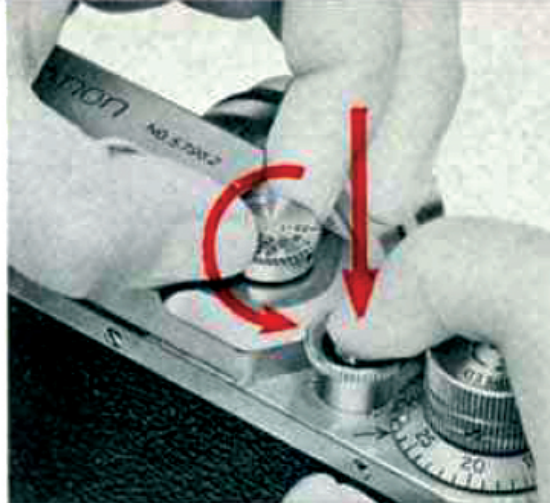
just before and during the actual instant of exposure you will get an extremely sharp picture.

There are two ways to hold the camera. One is for horizontal pictures as shown in the preceding page and the other is for vertical pictures as shown here. For vertical pictures the Shutter Release Button is press by your thumb instead of forefinger.

NOTE: Make sure your finger does not touch the High Shutter Speed Dial as it will alter the correct speed. Give particular attention to this when gloves are worn.

DOUBLE EXPOSURES Double exposures are normally quite impossible on the CANON CAMERA, but for special effects they are sometimes needed. Expose the first picture as usual. Then whilst keeping the Shutter Release Button pressed down, turn the High Shutter Speed Dial COUNTER-CLOCKWISE without lifting the Dial until you hear a "Click" and the Dial turns no further. Release the Shutter Release Button first then the Dial. The Shutter is now completely rewound and the second exposure may be made.

This action may be repeated any number of times. After each exposure the High Shutter Speed Dial may be adjusted to another speed, if required.

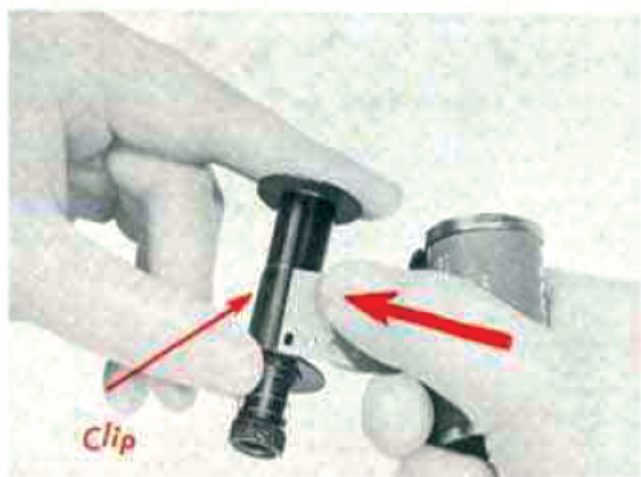
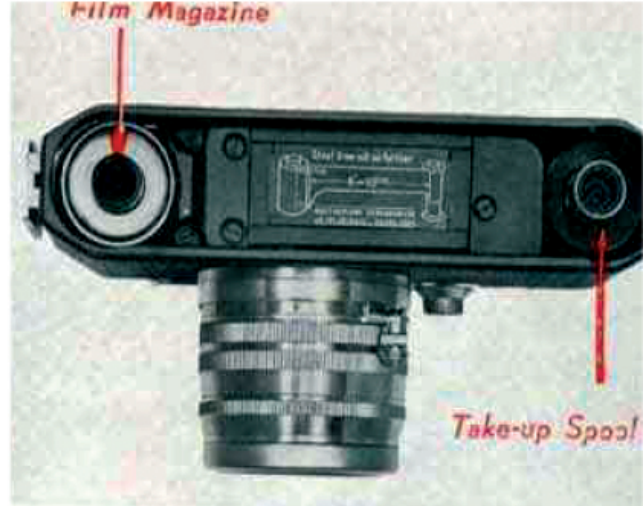


II. LOADING AND UNLOADING YOUR CAMERA

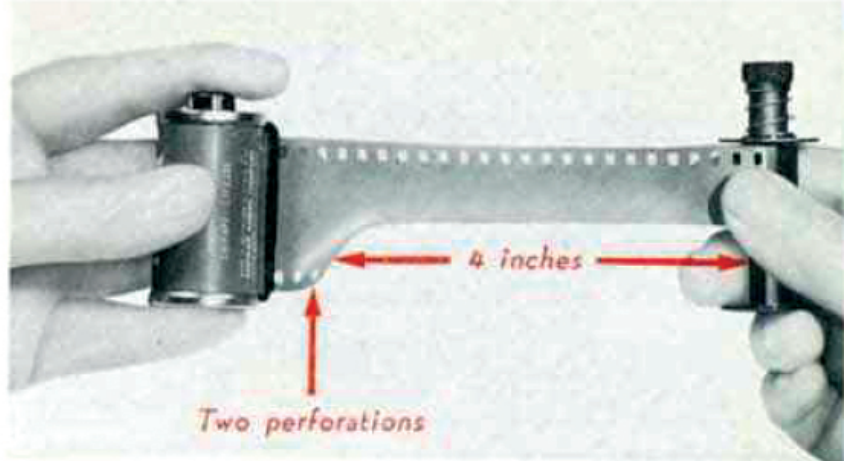
LOADING Always load in subdued light. Before you begin loading, set the Reversing Lever to "A" (Advance) and turn the Film Winding Knob until it stops. Press the Shutter Release Button. Keep the Lens Cap in place.

Open the Baseplate by lifting the lock handle and turn it in the direction shown by the arrow, from "Close" to "Open."

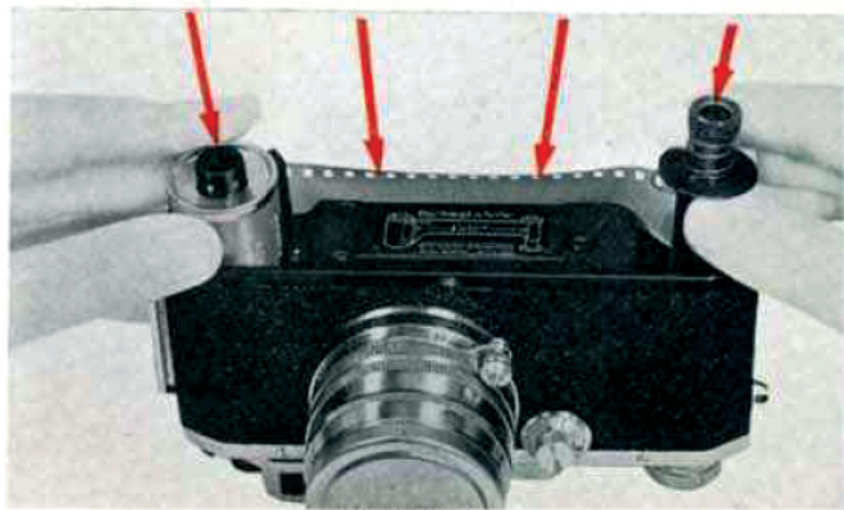
Pull out the Take-up Spool, and slide the ready cut leader end up under the Take-up Spool Clip as far as it will go. The glossy side of the film should face the spool. Make sure that the perforated edge of the film is flush with flange of the Take-up Spool. Do not wind the film around the spool.



With the Take-up Spool in your left hand and the film magazine in your right hand, draw out the film about four inches so that the first two perforations are showing. See diagram plate inside the camera



Slide both the film magazine and the Take-up Spool evenly and gently into their correct chambers, all the way down. The dull (emulsion) side of the film should be facing the lens.





Turn the Film Winding Knob slightly to engage the sprockets in the film perforations as shown.

The red line as shown in the diagram indicates the film path when correctly loaded.

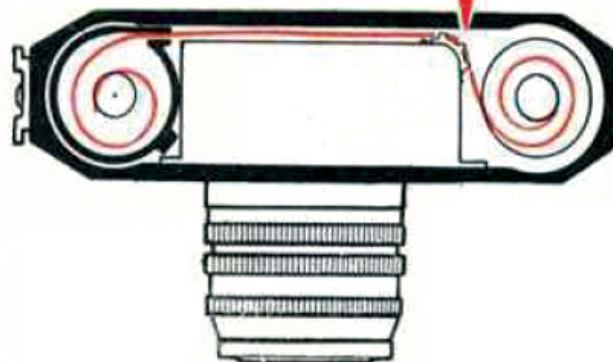
Not correct

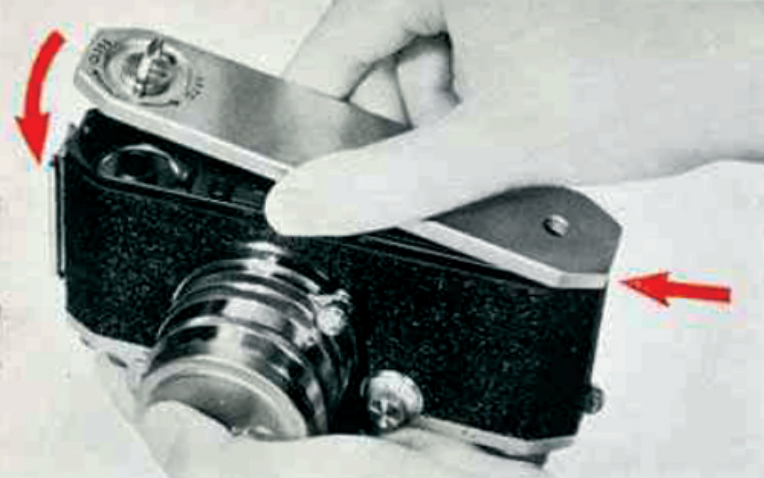


Correct



Sprockets





Replace the Baseplate by hooking it into the lug first and lock the Baseplate.

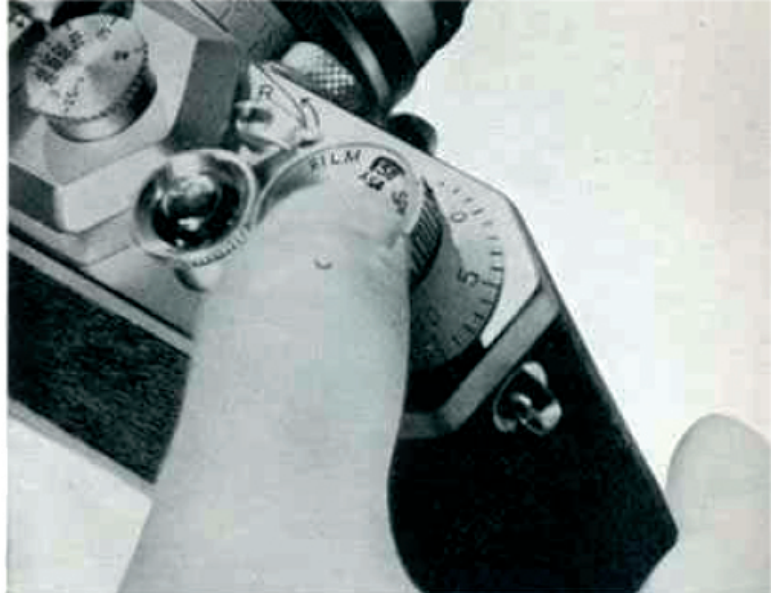
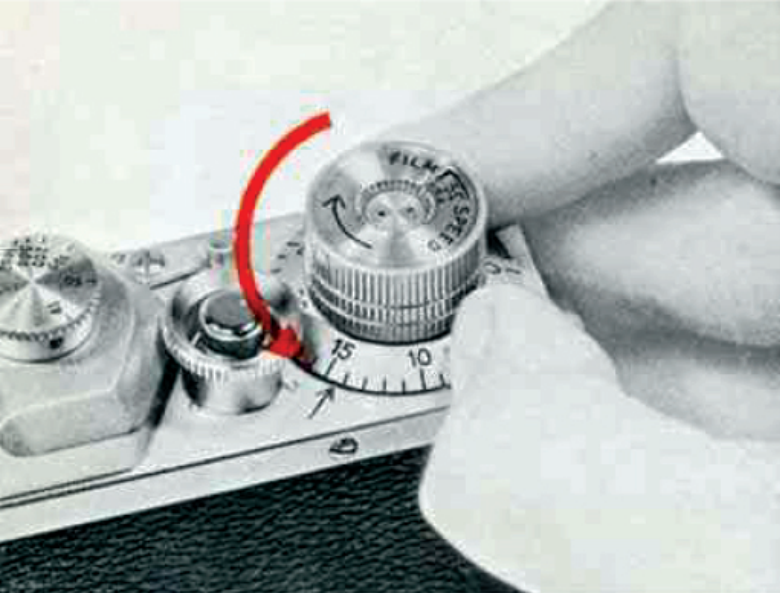
Keep the Reversing Lever still at "A". Pull up and turn the Rewinding Lever gently in the direction shown by the arrow in the diagram.

When it will not turn taken up the slack film in the m.

Lastly, turn the Film Winding Knob and press the Shutter Release Button. Repeat this process once again. By doing this you ensure that you will not use the first two frames which have been exposed to light whilst you were loading. Please turn to page 26 to verify that you have correctly loaded the film.

your film is taut, having





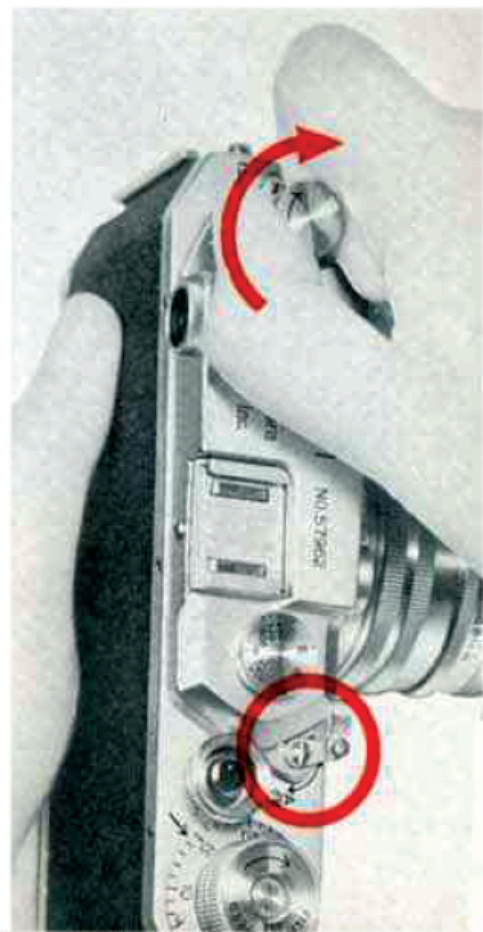
Remember to set Exposure Counting Dial at the base of the Film Winding Knob to "1" by turning it counterclockwise with your thumb nail catching one of the lugs on the Dial. Set the Film Speed Indicator at the top of the Film Winding Knob to the speed of your film. This will serve as a reminder that your camera is loaded and will show speed of the film you are using.

NOTE: Each time the Winding Knob is turned the Rewinding Knob rotates in a reverse direction. This indicates that the film is properly passing to the Take-up Spool for the next exposure, provided you have taken care to make the film taut by tightening the film wound in the magazine. Should the Rewinding Knob not turn, obviously the sprockets are not engaging the film perforations. You should then rewind the film until it disengages the Take-up Spool, open the baseplate and reload.

IMPORTANT: THE LEADER CAN BE PREVENTED FROM DRAWING COMPLETELY INTO THE MAGAZINE BY STOPPING THE REWINDING MOTION (SEE NEXT PAGE) AS SOON AS THE REVOLVING OF THE SHUTTER RELEASE BUTTON CEASES.

UNLOADING When the Film Winding Knob will no longer turn, you have come to the end of your film roll. NO NOT FORCE IT. Turn the Reversing Lever from "A" to "R" (Rewind). Raise the Rewinding Knob and rewind the whole film back into its original magazine. When you have done this, you may open the Baseplate and take out the film magazine. The film is now ready for developing.

During the rewinding operation the Shutter Release Button turns and stops the moment the film leader is pulled off from the Take-up Spool. Rewind a few more turns so that the leader will be drawn completely into the magazine.



III. HOW TO CHANGE YOUR SERENAR LENSES

DISMOUNTING Place your CANON CAMERA in your hand. Grip the base of the lens barrel by the Lens Focusing Lever and twist counter-clockwise. The lens will unscrew without difficulty. The Lens Focusing Lever should be kept locked in the Infinity Lock all the while.

Immediately the lens has been taken off, place it into a clean container (Canon Leather Lens Case or Canon Plastic Lens Case) to prevent the lens elements being scratched or contaminated by dirt or finger marks.



MOUNTING Before fitting the new lens in to place be sure to unscrew the Lens Base Cover. First turn the lens counterclockwise a little way and then clockwise. You will find the thread will be introduced more easily. Do not hold the lens by any part other than the base but the Milled Ring or the Lens Focusing Lever. Take care not to force if the thread binds whilst turning, as you have crossed the threads.

NOTE: *During the interchange, do not face the Lens Flange of the camera to strong light. It is recommended that you shield the Flange whilst the new lens is being prepared.*

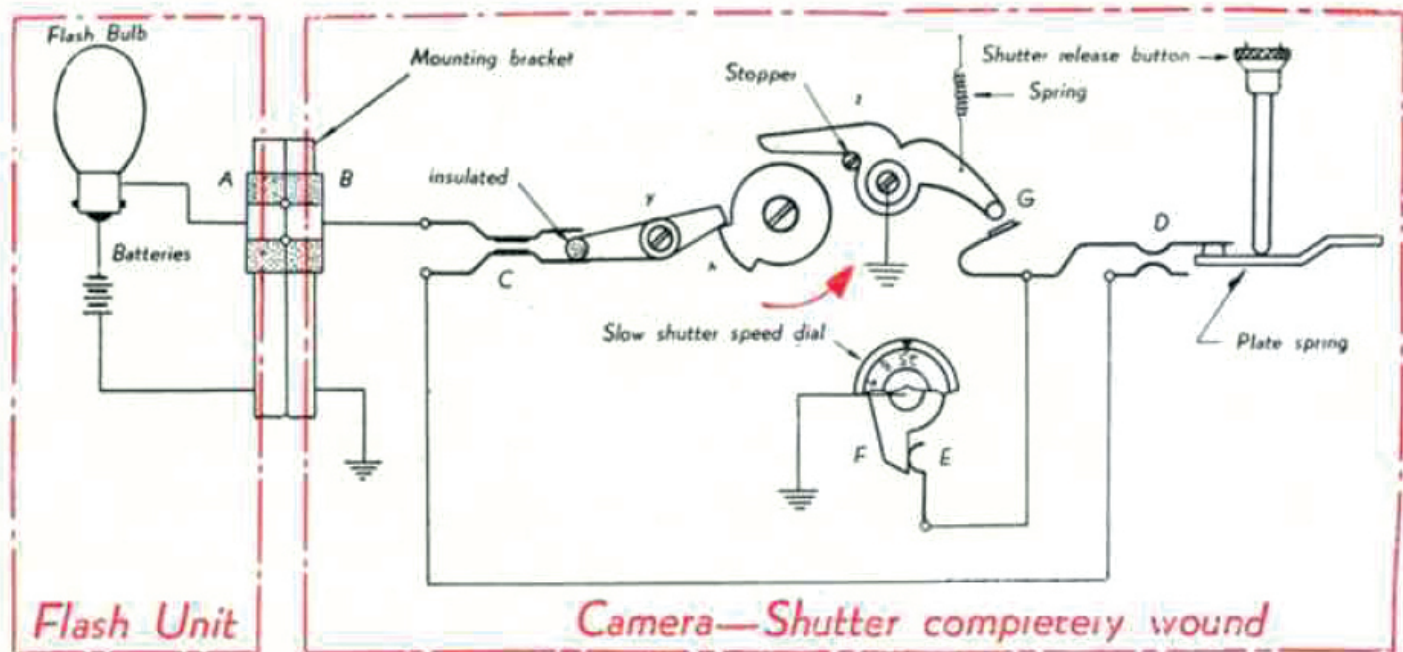


IV. BUILT-IN FLASH SYNCHRONIZER

Within the body of the CANON Model IV-S camera, there is incorporated in the mechanism a special unit which permits perfect synchronization of the opening of the shutter with the duration of the flash of a bulb.

The Canon type built-in synchronizer is actually of two electric circuits. One for the High Speed Shutter and the other for Slow Speed Shutter.

Speedlight (strobo-light) units work satisfactorily with the Canon Model IV-S at 1/8 sec., provided the unit used is devised to delay the discharging time by not less than 5 milliseconds. Flash Unit and flash unit accessories as well as focal-plane flash bulbs are manufactured by Canon Camera Co., Inc. The operation of Canon Flash Unit is described in a separate booklet which comes with the Flash Unit.

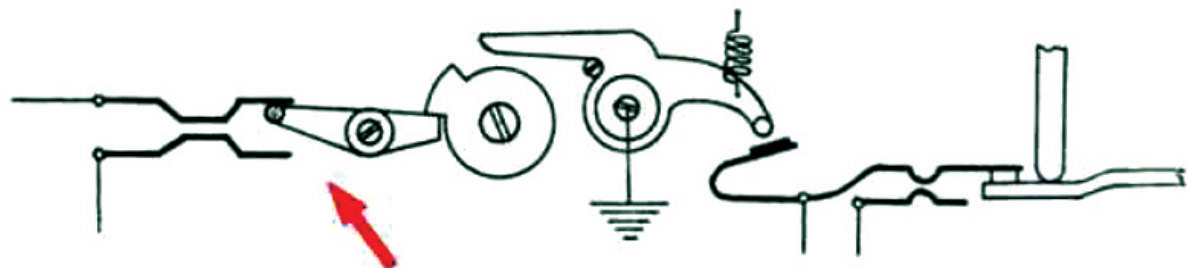


Schematic Diagram
of
Canon Model IV-S
BUILT-IN FLASH SYNCHRONIZER *

Legend

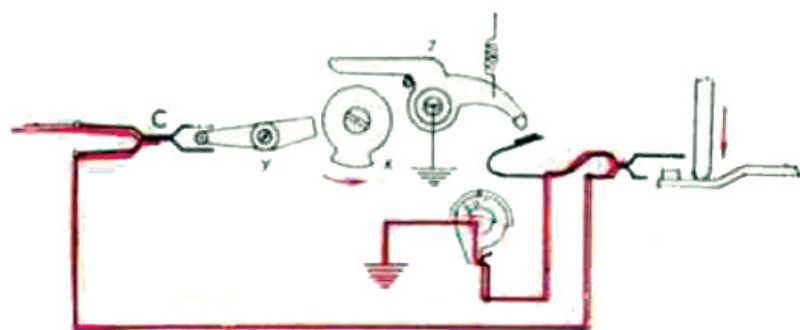
- x. Cam—connected direct to shutter shaft (shaft of High shutter speed dial).
- y. Lever—set in free into its axis.
- z. Lever—pulled against stopper with fine spring.
- A. Terminal—to be connected to synchronizer.
- B. Terminal—to be connected to flash unit.
- C. High shutter speed contact—closes instantly with its own tension when lever "y" is freed the moment the cam "x" begins its rotation.
- D. Safety device—switches off by plate spring of shutter release button and, switches in instantly with its tension prior to shutter movement when shutter release button is slightly pressed and plate spring pushed away. During the cocking motion, although contact "G" and "C" close successively by clockwise rotation of cam "x", flash bulb will not discharge as this contact is open.
- E. Terminal—when ground through "F" the high shutter speed circuit will be established, and when cut off the slow shutter speed circuit will be established.

- F. Automatic circuit selector—coupled with slow shutter speed dial. When this dial is set to 25 for high shutter speeds the selector contacts "E" and high shutter speed circuit will be set up; when set to 8 or beyond, the selector will be isolated from E automatically and slow shutter speed circuit will be set up.
- G. Slow Shutter speed contact—closes instantaneously when lever "z" is kicked by cam "x" after about 2/3 of its total rotation.



Shutter completely released

HIGH SHUTTER SPEED SYNCHRONIZATION A diagram of this system is shown below. The electric circuit for speeds from 1/25 to 1/1000 second is shown by the red line. When the Shutter Release Button is pressed contact "C" is closed at the precise instant the first curtain moves due to the rotation of shutter shaft to which cam "x" is connected. The flashbulb is discharged simultaneously and the second curtain follows, thus the exposed frame receives light during the peak duration of the flashbulb.



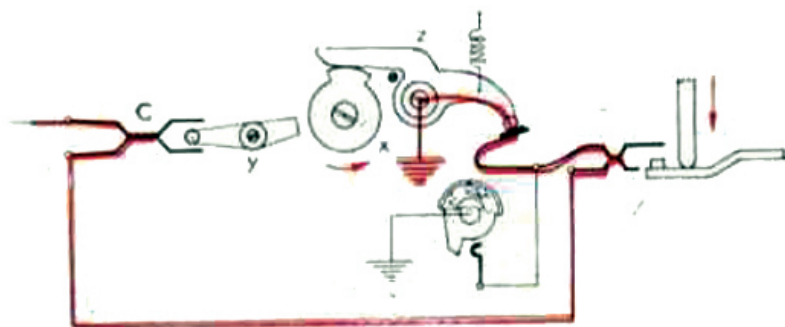
High Speed Synchronization

NOTE: Flash bulbs that can be used for these shutter speeds and Micro Sync settings (the function of which is described in the instruction booklet for Canon Flash Unit) are indicated on Photoflash Guide Numbers Cards which come with the Flash Unit instruction booklet.

SLOW SHUTTER SPEED SYNCHRONIZATION See the Photoflash Guide Numbers Cards for proper flash bulbs to be used for shutter speed of $1/8$ sec. (or slower).

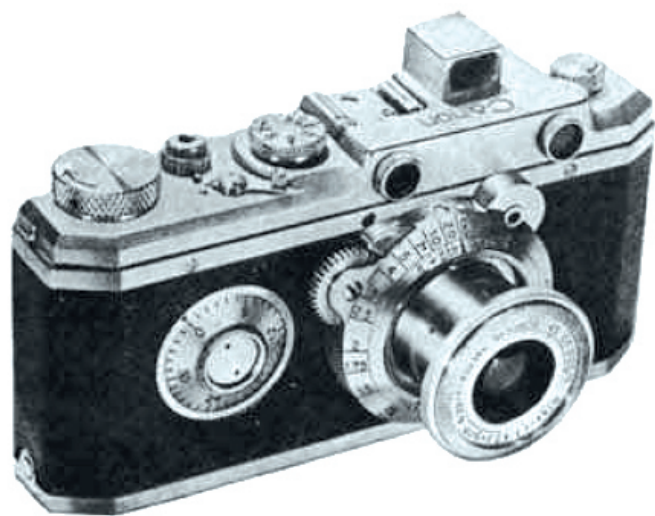
The circuit for synchronization at slow speeds is shown by the red line in the diagram below.

NOTE: As the built-in flash synchronizer of the Canon Camera is operated by the curtain movement, testing appliances measuring milliseconds are employed by the factory technicians to obtain perfect synchronization with flashbulbs. Do not tamper with the built-in synchronizer, and it will remain in perfect condition.



Slow Speed Synchronization

V. EVOLUTION OF CANON CAMERAS

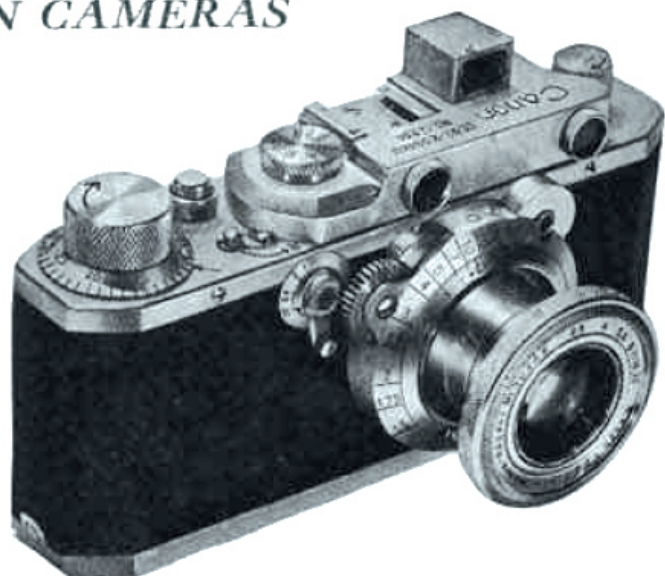


1935 to 1937

Model : Original

Shutter Speeds : 1/20 to 1/500 sec. & B

Lens : Nikkor 50 mm f : 4.5



1937 to 1939

Model : S

Shutter Speeds : 1 to 1/500 sec. & B

Lens : Nikkor 50 mm f : 2.8



1939 to 1942

Model : S

Shutter Speeds : 1 to 1/500 sec. & B

Lens : Nikkor 50 mm f : 2



1942 to 1945

Model : S

Shutter Speeds : 1 to 1/500 sec. & B

Lens : Serenar 50 mm f : 3.5



1945 to 1947

Model : J

Shutter Speeds : 1/20 to 1/500 sec. & B

Lens : Serenar 50 mm f : 3.5



1947 to 1948

Model : S-II

Shutter Speeds : 1 to 1/500 sec. & B

Lens : Serenar 50 mm f : 3.5



1948 to 1950

Model : II-B

Shutter Speeds : 1 to 1/500 sec. & B

Lens : Serenar 50 mm f : 2



1950 to 1952

Model : III

Shutter Speeds : 1 to 1/1000 sec., B & T

Lens : Serenar 50 mm f : 1.9



1950 to 1952

Model: IV

Shutter Speeds: 1 to 1/1000 sec., B & T
Built-in Flash Synchronizer

Lens: Serenar 50 mm f:1.9



1952 to

Model: III-A

Shutter Speeds: 1 to 1/1000 sec., B & T

Lens: Serenar 50 mm f:1.8



1952 to

Model: IV-F (later renamed as IV-S)

*Shutter Speeds: 1 to 1/1000 sec., B & T
Built-in Flash Synchronizer

Lens: Serenar 50 mm f:1.8



1952 to

Model: II-A

Shutter Speeds: 1/25 to 1/500 sec. & B

Lens: Serenar 50 mm f:3.5

ACCESSORIES

CANON FLASH UNIT MODEL X



1952 to

Model : II-D

Shutter Speeds : 1 to 1/500 sec., B & T

Lens : Serenar 50mm f:3.5



CANON INTERCHANGEABLE SERENAR LENSES



28 mm
f : 3.5

35 mm
f : 3.5

35 mm
f : 3.2

35 mm
f : 2.8

50 mm
f : 3.5

50 mm
f : 3.5

50 mm
f : 1.9

50 mm
f : 1.8

50 mm
f : 1.5



85 mm
f : 2

85 mm
f : 1.9

85 mm
f : 1.5

100 mm
f : 3.5

100 mm
f : 4

135 mm
f : 4

135 mm
f : 3.5

CANON CAMERA HOLDER



The Canon CAMERA HOLDER is an ideal accessory for close-up, telephoto and long exposure shots. It is designed to hold the camera sturdy in a balanced position when using a tripod. The camera can be easily seated either vertically or horizontally. Spirit Level assures accurate composition of subject. Additional tripod sockets may be used for mounting the Canon Side Lighting Units.

CANON CAMERA MODEL IV-S2 and SPEEDLIGHT UNIT

Speedlight unit (zero delay only) can be used with the Canon Model IV-S2 camera by merely setting the Slow Shutter Speed Dial to "X" and keeping the High Shutter Speed Dial at 1/25 sec. Do not use other speeds.

The speedlight unit is connected with a Canon Extension Cord "A" through a Canon Self-Extension Adapter fitted to the flash bracket of the camera.

- NOTE:
1. Flash bulbs are used in the same manner as the Canon Model IV-S camera.
 2. Do not press the Shutter Release Button although the shutter is not wound when the speedlight unit is connected or flash bulb is inserted.

CANON CAMERA CO., INC.

TOKYO, JAPAN



CANON CAMERA COMPANY, INC. TOKYO, JAPAN

No. 197 (JMC-4) 3T K-9-52

Daito