Canon

F-1

for Professionals

SALES MANUAL

Features

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Foreword

Dr. Mitarai, President of Canon Inc., was awarded the Gold Award at the 1970 Photokina by West Germany, the sponsoring country. It was the contribution to the camera industry with the development of its F-1 System.

Canon F-1 is a super high grade single lens reflex system camera. With the development of the camera itself, 20 new lenses and 180 system accessories were also developed.

The entire system was planned from the beginning and the various lenses and accessories were not designed as the system expanded. They were all designed simultaneously. Whole new fields in photography have now been opened. The entire system is backed by Canon's highly reputed accuracy and reliability.

This F-1 Manual was made so that you can better understand the functions of the entire F-1 System to help you in your sales.

Features of F-1 System

10^4 System

The F-1 system is made up of 10,000 parts. This is equivalent to the total number of parts that go into making up 10 high grade cameras. The fact that all these parts were designed simultaneously is proof that this system was not designed at random.

The Original TEM System

The system was thoroughly studied and many new ideas were included. The Servo EE Finder, the Booster T Finder, and the Speed Finder are representative examples and their features were never before seen in cameras up to now. Moreover, systems centered around the Motor Drive Unit have been developed to the extent that unmanned photography is now a reality.

The letters TEM stand for the main features of this revolutionary system camera. T stands for TTL metering , E stands for Servo EE Finder and M stands for Motor Drive Unit. Thus, TEM is a word that represents the camera system of tomorrow.

High Reliability, High Quality

Reliability and quality of this camera system have been strictly maintained from all angles in design, production and quality controls for performance, accuracy, durability, interchangeability and operation.

Development Targets

(1) High performance, high quality, high reliability
(2) Complete interchangeability between camera body and accessories.
(3) Introduction of electronics techniques.
(4) Development of a series of high quality lenses with the use of a computer.

Classification of Systems

(1) Interchangeable lens system with the high performance FD lenses as the nucleus.
(2) Finder system in which the pentaprism section of the camera is interchanged.
(3) Continuous photography system using the Motor Drive Unit.
(4) Automatic flash system using an electronic flash unit.
(5) Close-up and macrophotography systems.
(6) Photomicrography and copy work systems.
(7) Electric power system.

New Functions of Camera Body

(1) The moving speed of the shutter screen was increased to obtain a fast shutter speed of 1/2000 sec.
(2) An ultra-thin titanium metal screen was adopted for the shutter screen.
(3) The gear train in the winding mechanism was decreased and film advance was made smoother and more accurate.
(4) The clockwise film winding was adopted to prevent cracks in very cold regions.
(5) Proper exposures are obtained by full-aperture metering with FD lenses.
(6) Stopped-down metering can be performed with FL lenses.
(7) Viewfinder information was increased.
(8) Utilization range was increased by interchanging finders.
(9) The focusing screen can be interchanged.
(10) FL lenses can also be used.
(11) The attachment/detachment mechanisms of accessories are designed for simplicity and accuracy.

New Photographing Functions

(1) EE photography with Servo EE Finder.
(2) Continuous photography with Motor Drive Unit.
(3) Unmanned automatic photography with Motor Drive Unit and Servo EE Finder.
(4) Long-length film photography with Film Chamber 250.
(5) Combination photography with Motor Drive Unit, Servo EE Finder and Film Chamber 250.
(6) Metering under extremely dim lighting conditions and timer photography with Booster T Finder.
(7) Automatic flash photography with exclusive electronic flash unit.

Guaranteed Quality

Quality underlines performance. Basic studies, such as material analysis before designing were conducted and scrutiny of processing methods fully carried out. Materials used were closely examined for quality, and high-grade materials were abundantly used. A special standard even more severe than the already strict Canon Standard is adopted to guarantee top quality. In the field of production, processing accuracy, assembly accuracy and adjustment accuracy are secured at a level one grade higher—to the point of micron orders. Production control is performed by electronic computer for systematic distribution, control, assembly, inspection and delivery of components to secure the highest quality.

Super-Durability

The various mechanical components have been strengthened in durability on an average of two to three times so that they will withstand the most rigorous use. Thus, the components are guaranteed to pass the most rigid durability test with flying colors. Environmental testing included vibration, shock and operational tests for extended periods in temperatures bebetween 60°C (140°F) and 30°C (22°F). The durability test was conducted with the camera body alone and together with the Motor Drive Unit for 100,000 exposures. These standards are very high for any camera.

Accuracy of Camera Body

(1) Mirror with shock-proof mechanism

Through analysis utilizing high-speed photography, the moving parts are constructed for stability.

(2) Prevention of light leakage

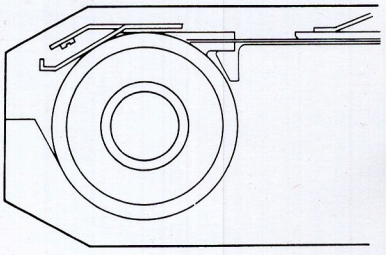
Internal reflection is completely eliminated by structural design and selection of material.

(3) Smooth functioning

Highest quality special alloy is used for the bearings. The high-speed rotation part is very smooth because ball gears are adopted.

(4) Decrease in noise of moving parts

Through analysis utilizing high-speed photography, the moving parts are rationally designed. Moreover, the camera body is made completely airtight.



(5) Stability of film plane

Stability is achieved with our original film magazine stabilizer, large-size pressure plate and clockwise winding mechanism.

(6) Increased accuracy of finder focus plane

Accuracy does not change even when focusing screens are interchanged. This enhances the film plane accuracy.

(7) Accurate mount

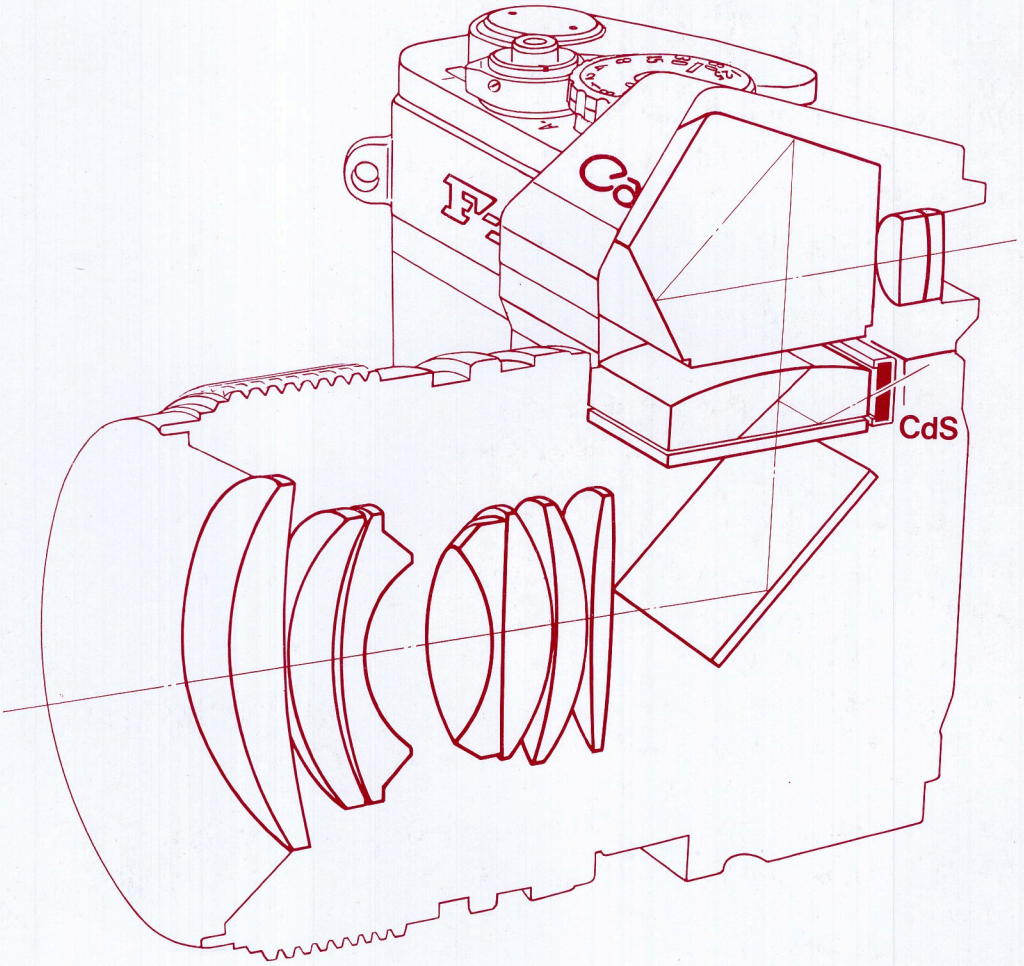
A distortion-free attachment position is selected and the standard plane of the mount is protected when mounting.

(8) Finish

The teeth of the shutter gear are carefully polished and the hole functions smoothly due to ball vanish.

(9) High grade grease

Highest grade grease is used.



Universal Light Metering System

– Full-aperture metering, stopped-down metering, automatic exposure control with Electric Eye, insufficient light volume metering unmanned automatic photography –

By combining different FD lenses with various accessories, a wide range of performance is possible:

1) Full-aperature metering is possible with the FD lenses.

2) Full-aperture EE metering with shutter speed priority is possible by using the FD lenses with the Servo EE Finder.

3) Stopped-down metering under dim lighting conditions is possible by using the FD lenses with the Booster T Finder.

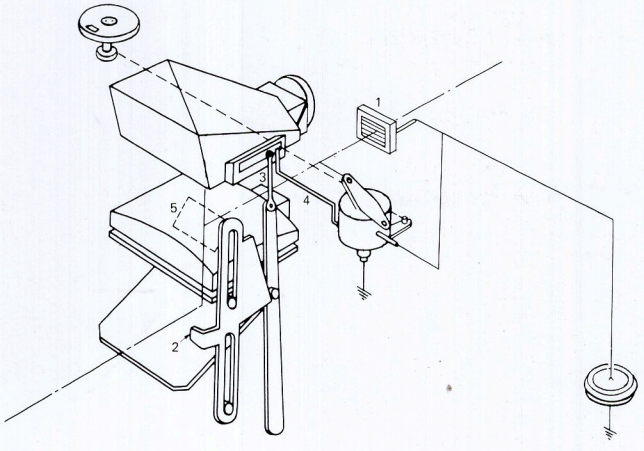
4) Stopped-down metering is possible using the FL lenses.

5) Unmmaned automatic photography is possible by using the Servo EE Finder with the Motor Drive Unit and Film Chamber 250.

Full-Aperture Focal Plane Metering Through-the-Lens Possible by Automatic f/stop Correction

The F-1 incorporates a full-aperture metering system by which metering is performed with the lens fully opened – a system newly developed by Canon. The F-1 provides all types of metering capability as it also incorporates necessary devices for stopped-down metering so that the already available FL series of lenses can also be used. It incorporates a behind-the-focal-plane metering system which eliminates error as the CdS element is located very close to the focusing plane. This system assures accurate f/stops, even if different lenses having different full-aperture opening f/stops are used and there is no need to compensate.

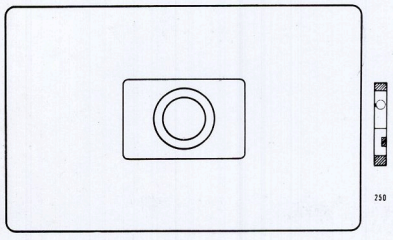
1. CdS
2. Aperture Signal Coupling Lever
3. Aperture Needle
4. Meter Needle
5. Beam-Splitting Mirror



Meter Information

The angle and pitches of microprism were based upon the structure of the human eye.
The reflecting ratio of the beam-splitting mirror in the condenser has been reduced to 45% of that for the FT model and the light transmitting rate of the taking lens has been increased through the development of a highly sensitive CdS photocell.
All the necessary meter reading information is readable through the detachable finder. A small pentagonal prism is fixed to a side of the pentaprism so that light is led through the light taking window situated on the top of the camera body.

Full-Aperture Metering



The meter needle is coupled to the shutter speed and ASA speed, and moves when the shutter dial is turned. It also moves when brightness of the subject changes. The matching needle is coupled to the preset aperture ring of the FD lens.
Proper exposure is obtained by aligning the two needles. Therefore, it does not matter whether the shutter speed or the aperture stop takes priority. Change the shutter speed when the two needles cannot be aligned.

Stopped-Down Metering

Exactly the same as the FT metering is performed by pushing down the metering lever. The matching needle will go out of the metering range and only the meter needle will remain. Therefore, turn the aperture ring and set the meter needle to the blue mark in the meter window to obtain the proper exposure. Stopped-down metering is also performed when extension tubes are mounted in between the lens and the camera body.

Out-of-Metering-Range Warning

The meter window turns red in case of slow speed.

Wide Brightness Range Special Highly Sensitive CdS Photocell

In order to increase the full aperture metering accuracy of the F-1, a special CdS photocell is used. Its sensitivity distribution of high/low brightness is ideally uniform. This CdS has also improved the optical system of the finder.

Viewfinder System

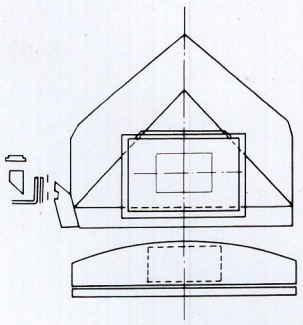
The viewfinder of the F-1 is of the interchangeable type.

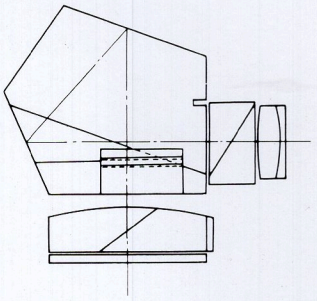
The following five interchangeable viewfinders are available for use according to purpose. These are the Servo EE Finder, Booster T Finder, Eye-Level Finder, Speed Finder, and Waist-Level Finder. The F-1 comes with the Eye-Level Finder attached.

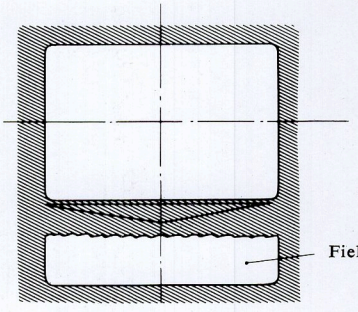
The viewfinder is easily detachable. It can be removed by pulling towards the rear while pressing the release buttons on the sides. When mounting the viewfinder, insert it from the rear along the rails on the upper part of the mirror box. It becomes locked when pushed all the way in.

The focusing screen is also interchangeable. The standard microprism screen, the same as that in the FT, is used. Three types including split-image, all-mat, and section type, are available for use according to purpose.

The focusing screen is attached with a condenser and is built into the entire frame. It has a beam-splitting mirror for directing light to the CdS. The focusing screen can be easily removed by inserting your fingernails into the two notches on the rear end and pushing upwards. When attaching the focusing screen, insert the forward claw under the stopper of the mirror box and then drop in the entire focusing screen horizontally. The Angle Finder B, Magnifier, Dioptric Adjustment Lens, and Eyecup can be attached to the eyepiece.





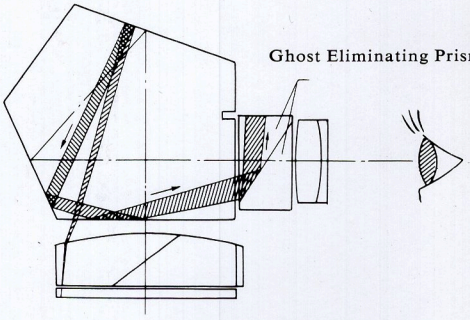


Bright and Easy to Focus Viewfinder

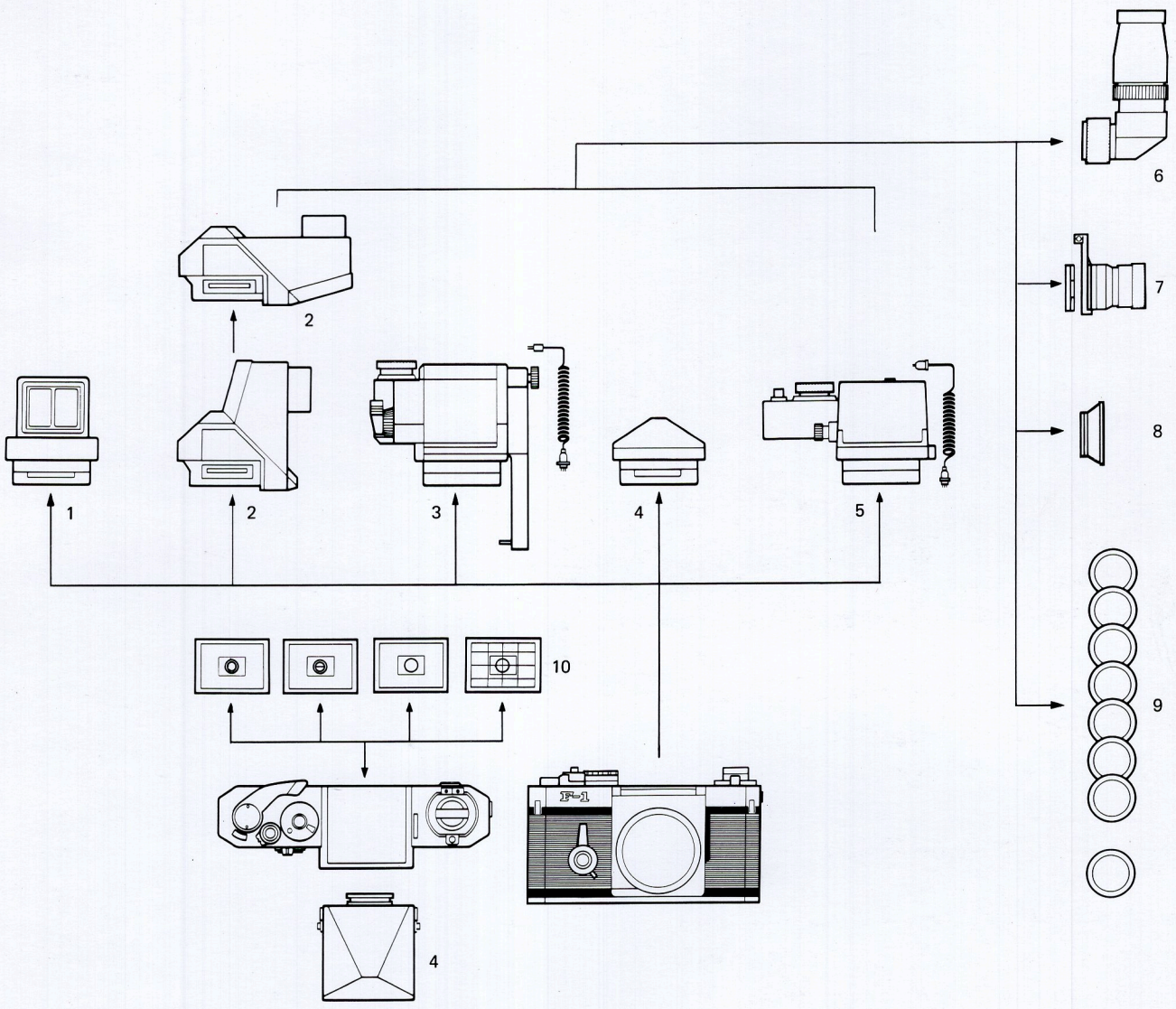
Focusing-screen readings and meter readings can be observed inside the viewfinder. The meter reading mechanism includes: meter needle and aperture needles, improper exposure warning marks, stopped-down metering/battery check mark, shutter speed scale, and meter coupling out-of-range warning.

By installing two prisms between the pentaprism and the eyepiece lens, total-reflection and clear visibility were enabled. Ghost effect which otherwise would appear in the lower part of the viewfinder, is thus eliminated.

The shape of the pentaprism's rear surface has been designed to reduce ghosts peculiar to the pentaprism.

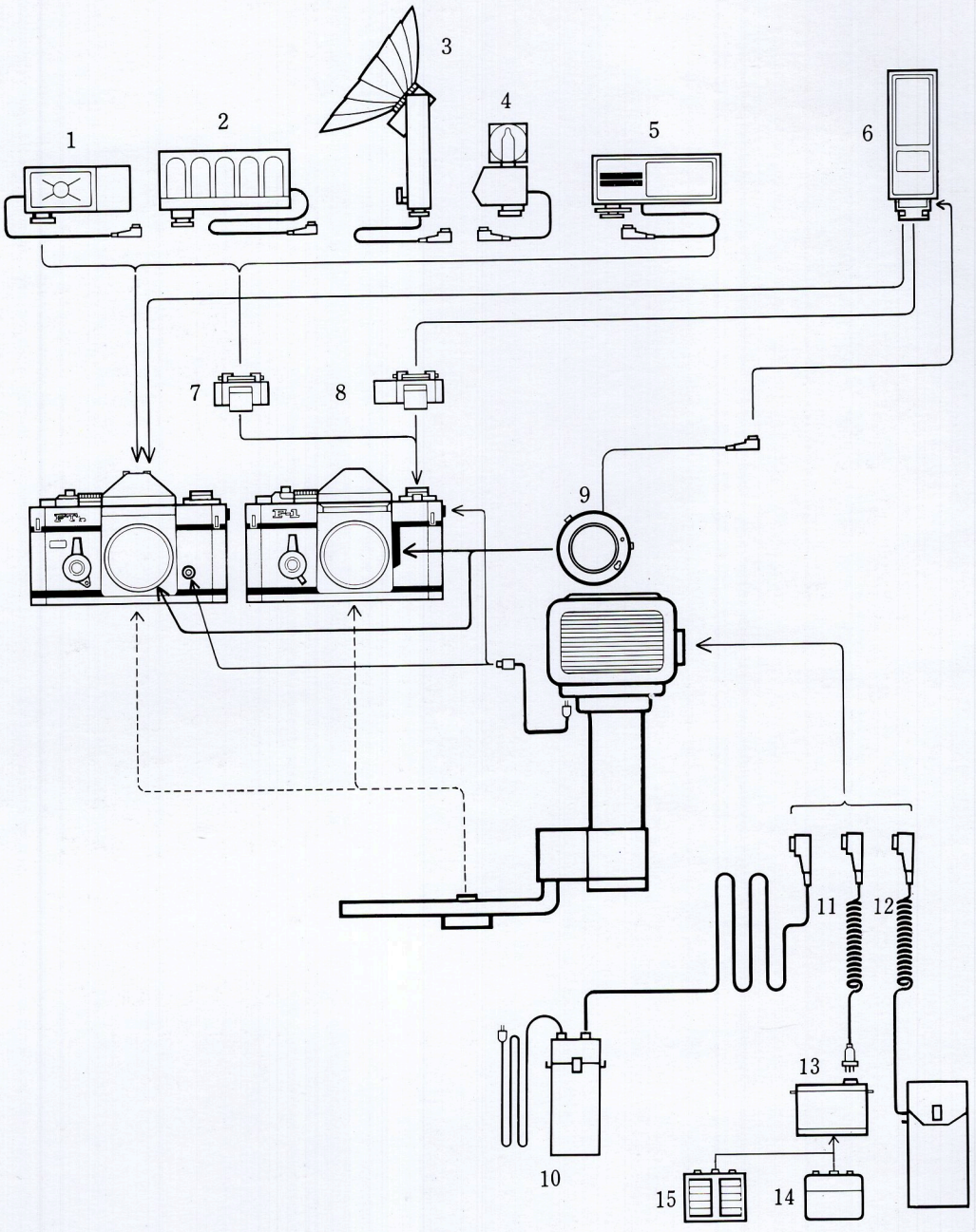


Finder System



1. Waist-Level Finder
2. Speed Finder
3. Servo EE Finder
4. Eye-Level Finder
5. Booster T Finder
6. Angle Finder B
7. Magnifier
8. Eyecup
9. Dioptric Adjustment Lenses
10. Focusing Screens

Flash System



1. Flash J-3
2. Flash Quint
3. Flash V-3
4. Cube Flash, Cube Flash D
5. Speedlite 102
6. Speedlite 133D
7. Flash Coupler D
8. Flash Coupler L
9. Flash Auto Ring A, B
10. AC Pack
11. Cord 12V 3S
12. Battery Case 500
13. Battery Case
14. Battery Magazine 12V
15. NiCd Battery 500FZ

CAT System–Matching-Needle-Type Automatic Flash Mechanism

Synchronized flash photography has now become an everyday affair with the rapid progress and popularization of electronic flash units and development of smaller flash bulbs.
Canon developed a very sophisticated device in which the EE has been incorporated into the electronic flash unit, adopted in the New Canonet marketed in 1969. This design policy was incorporated in the F-1. An automatic flash control mechanism was built in so that proper f/numbers can be determined by the matching needle method using the newly developed Speedlite 133D and a prescribed lens. Thus, synchronized flash photography is now possible with the same ease as metering manipulations.

1/2000 Second Shutter Speed – Durable for 100,000 Exposures.

The shutter mechanism of the F-1 is outstanding because of its extremely fast 1/2000 second shutter speed, greater exposure accuracy due to increased shutter screen speed, and increased durability with the use of a metalic shutter screen. More remarkable is the fact that Canon has produced a shutter mechanism of matchless quality, durable for 100,000 exposures. The fast shutter speed of 1/2000 second now makes possible the habitual use of high speed film and will also prove extremely effective in such high speed photography as shooting sports events.

Removing Back and Bottom Covers

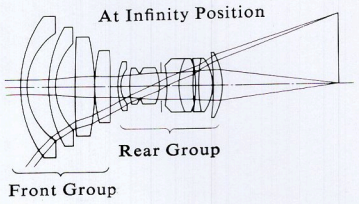
The back cover is easily removed by unscrewing cover of the mercury battery chamber, and pulling the bottom cover off. The back cover is removed by opening and pushing down the hinge pin.

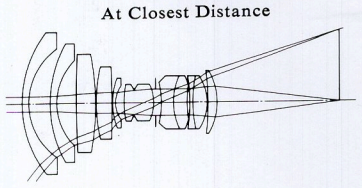
Camera Design – Exterior

Design of the camera body is based on principles of human engineering. Position and shape of the control levers, shutter button, and shutter dial were selected based upon such factors as ease in handling, function, etc. The matted black case color is universally popular, particularly among professional photographers. Camera weight has increased slightly as a result of the higher quality materials used and newly developed mechanisms, which has added to the camera's stability in handling.

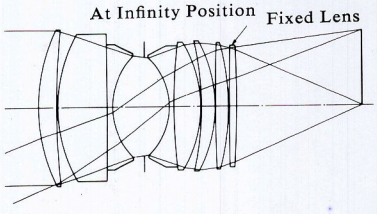
The aperture signal transmitting mechanism has been build in the FD series lenses for the full-aperture metering system of the F-1.
In order to strengthen the F-1 system, Canon Optics Department, utilizing computers, have at last realized the finest quality of FD lenses which will truly remain one of the best in the market for years hereafter.
Varieties of wide-angle lenses, having angle of view of 10 degree differnces and tele-photo lenses, having focal length of 100mm differences are now available. Aspherical lenses, F series lenses, the fish-eye lens and TS lens have also developed.
All lenses have high resolving power, high contract deliniation and the minimum aberration in every photographic distance. Outstanding performance of the FD lenses is due to asphere design, multi-layer coating, and focal point adjusting mechanism.

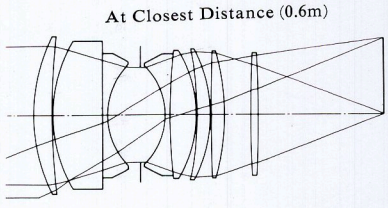
FD 17 mm F 4 Full Range Aberration Free System





FD 55 mm F 1.2 AL Full Range Aberration Free System





Development of New Lenses

1. Aspherical lenses

Canon has succeeded in developing a standard large aperture lens, the FD 55mm F1.2 AL which gives an excellent performance at full-aperture metering even at night. Aspherical tilt/shift lens, TS 35mm F2.8 AL was also developed because it was discovered that aspherical surface is effective in decreasing flares outside the optical axis in retro-focused wide-angle lenses.

2. FL-F Series of Lenses

The FL-F 1000mm F11 was newly added to the FL-F 300mm F5.6 and 500mm F5.6 series of lenses using artificial fluorite. The FL-F 1000mm F11 has a very short over-all length of 586mm compared to its focal length. The contiribution of the fluorite used is that it completely corrects chromatic aberration. It makes elimination of the secondary aberration easy and also reduces the telephoto ratio. FL-F series of lenses was awarded the 1969 Extraordinary Diploma of Honor by Interkamera.

3. Wide-Angle and Telephoto Series of Lenses

The world's shortest wide-angle lens with no distortion aberration, the FD 17mm F4, was newly developed together with the FD 24mm F2.8 and FD 35mm F2. A wide-angle series of lenses from 63° to 103° of view, at approximately 10-degree intervals, has been completed.
On the telephoto side, a series of lenses at 100mm intervals in focal length are now available. They are the FD 100mm F2.8, FD 135mm F2.5, FD 200mm F4 and FD 300mm F5.6, group of basic telephoto lenses, and FL

400mm F5.6, FL 600mm F5.6 and FL 800mm F8, FL 1200mm F11, the front group interchangeable compact lenses.

4. Special Lenses

A number of Fish Eye lenses, aspherical lenses and FL-F series of lenses are now under design.

5. Adoption of Focus Point Adjusting Mechanism

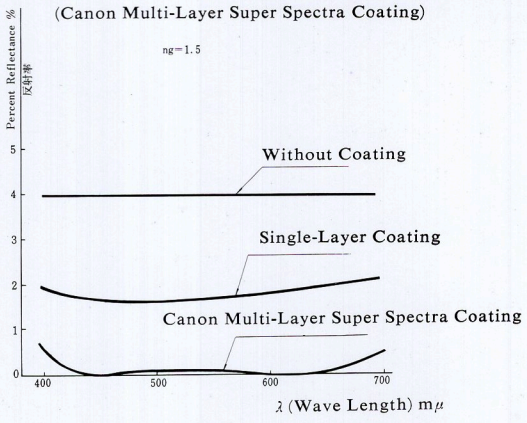
This mechanism was adopted to retro-focus wide-angle lenses and FD 55mm F1.2AL aspherical lenses in order to achieve superior quality photos in close-up photography. Good pictures are seldom obtained by a focusing system using a straight drive-double helicoid. This mechanism was therefore designed to change its lens intervals when focusing by using two different lens systems. Aberration occurring in the front lens group is corrected in the rear lens group, thus eliminating any distorted image.

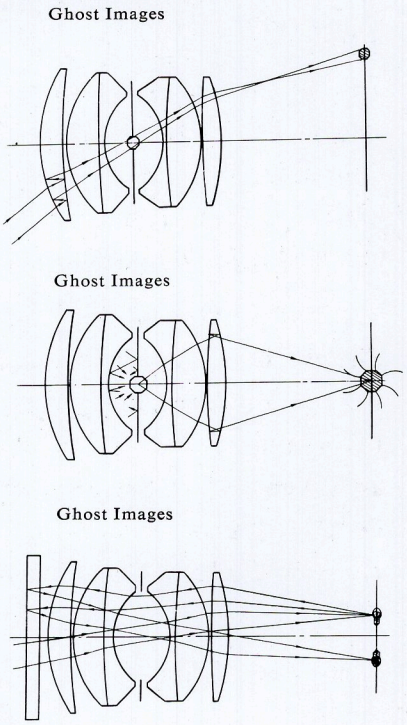
6. Super Spectra Coating

In order to obtain the highest fidelity in color photography, Canon lenses are treated with Canon's unique spectra hard coating. Canon has now developed a new, more sophisticated multilayer coating, the Super Spectra Coating, and will be applied to lenses according to the purposes.

Canon's Super Spectra Coating increases the effectivieness of reflection prevention throughout the entire range of visible light with its multilayer film of special material and construction. Residual reflection is only a small 0.3 percent.

A lens with this coating increases light transmission, decreases ghost formation and gives higher performance during against-the-light photography.





Signal Transmission of FD Lenses

1. Automatic Aperture Lever

This lever is of the same construction as that for the FL lenses. Completely automatic aperture is performed with power drive of the camera. Manual aperture is obtained when this lever is turned counter-clockwise.

* Manual aperture is not necessary with FT and Pellix cameras because stopped-down metering can be performed with the metering lever. However, with FX and R cameras, manual aperture is used in close-up photography and macrophotography. In these cases an accessory is used in between the camera body and the lens and the aperture lever is no longer coupled.

2. Preset Aperture Lever

This lever transmits the preset f/stop to the F-1 body. Driving the matching needle in full aperture metering is operated by turning the aperture ring. When performing Servo EE photography, the preset aperture position is decided by the camera with power drive of the Servo EE Finder.

3. Full Aperture Signal Pin

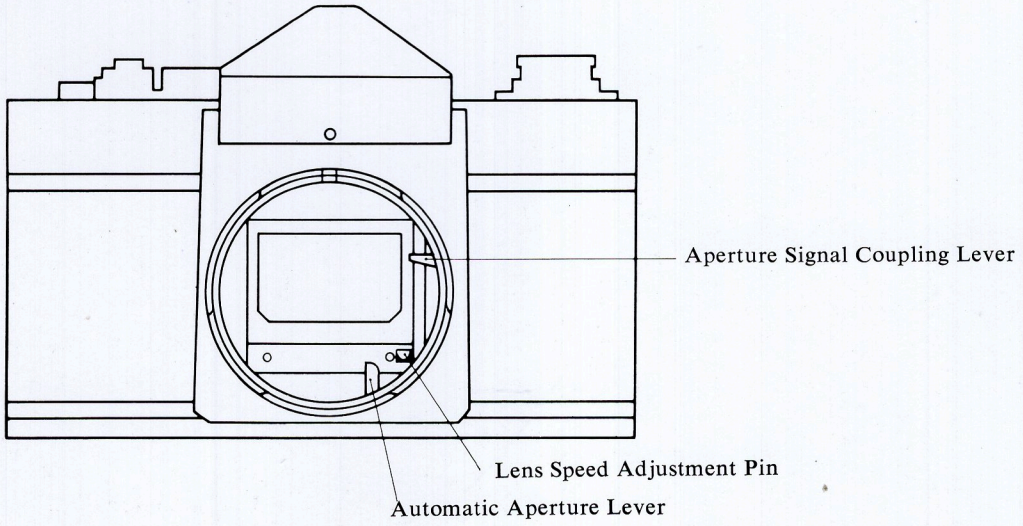
This pin transmits the full aperture f/number of the lens and corrects the error of the full aperture metering.

4. EE Switch Pin

This pin emits a signal when the aperture ring is set at the green (o) mark. It cannot be attached to cameras other than the F-1.

5. Spare Signal Pin

This pin acts as a differentiating signal between FD and FL lenses. It is a spare pin for future system accessories.



FD Lens and Mount

The mount for FD lenses is that which was first marketed in 1959 for the Canonflex. Its easy-to-attach features, interchangeability with each lens, and its durability satisfy all requirements. The following are its features:

1. Interchangeability

Not only the FD lenses but also the FL and R lenses and most accessories can be mounted.

2. Speedy Changing

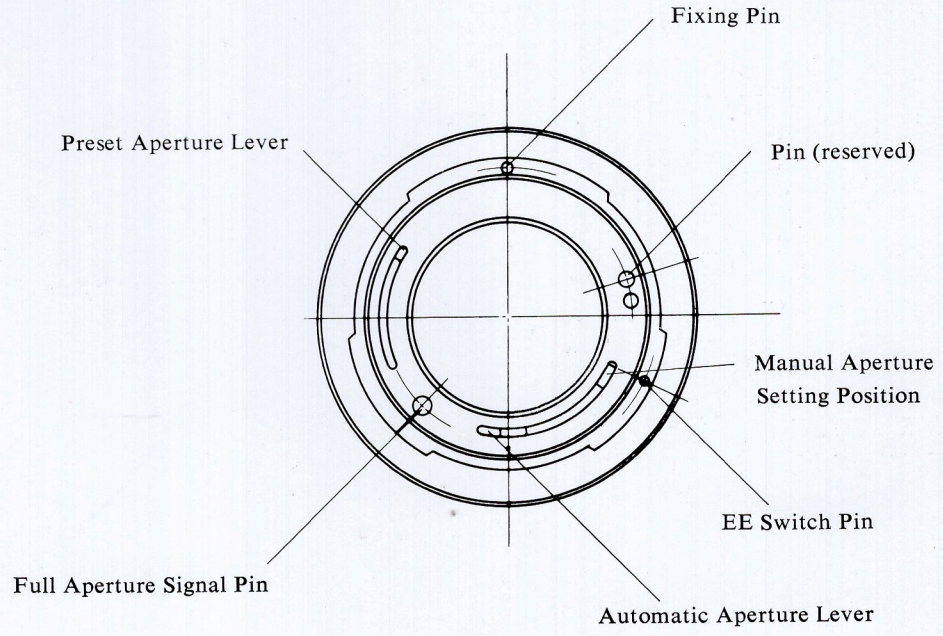
Changing time is much less than the screw-in or bayonet mount types. This mount can be changed in one-third the time required for changing a screw-in type mount. Changing operations are very easy even when interchanging large aperture or telephoto lenses. Complaints of bad focusing or trouble in attaching or detaching lenses due to the tightening ring have never been received.

3. Durability

Durability is guaranteed because brass is used on both the lens and camera body sides. The mount has superior corrosion-proof and abrasion-proof qualities because hard chrome plating is applied over nickel plating. The standard surface of the mount, which affects focusing, is closely attached and rubbing motion, which causes scratching, never occurs.

FD Lenses: Full aperture metering. Coupled with automatic aperture.
FL Lenses: Stopped-down metering. Coupled with automatic aperture.
R Lenses: Stopped-down metering. Manually operated aperture.

FD lenses are used on FT and Pellix cameras for stopped-down metering coupled with automatic aperture, on FX and FP cameras coupled with automatic aperture, and used with manual aperture when attached to the cameras of R series.



Type: 35mm single-lens reflex camera with focal plane shutter. Picture size; 24 x 36mm.

Lens: Interchangeable lens group of FD series with aperture signal lever.

Standard Lens: Canon FD 55mm F1.2, FD 50mm F1.4, FD 50mm F1.8.

Viewfinder: Remo vable pentagonal prism finder. Interchangeable with Servo EE Finder, Booster T Finder, Speed Finder, Waist-Level Finder.

Finder Attachments: Angle Finder B, Magnifier, Dioptric Adjustment Lenses, Eyecup.

Focusing Screen: Using Fresnel lens, standard focusing glass with microprism screen rangefinder and three other interchangeable kinds. With metering beam-splitting condenser.

Field-of-View: 97% of actual picture area. 0.77x with standard 50mm lens at infinity.

Finder Information: Meter needle and aperture needle, improper exposure warning red mark, fixed dot for stopped-down metering use and battery check mark, shutter speed scale, out of meter functioning range warning signal.

Dioptric Adjustment Lenses: Standard−1.2 diopter (R−1). Interchangeable with R+3, R+2, R+1, RO, R−2, R−3, and R−4.

Mirror: Quick return mirror with shock-absorbing mechanism. Mirror can be fixed in upper position. Aperture is manually operated when mirror is fixed in upper position.

Lens Mount: Bayonet type FD mount. FL and R series of lenses mountable.

Function: FD lenses; Full aperture metering, coupled with automatic diaphragm. FL lenses; Stopped-down metering, coupled with automatic diaphragm. R lenses; Stopped-down metering, manually operated diaphragm.

Shutter: Focal plane shutter using super thin titanium screen. Designed for elimination of functioning noise. Shutter release button can be locked.

Shutter Speed Dial: Single shaft non-revolving type with shutter scales and ASA film speed scales. Two coupling pins for setting attachments are provided.

Shutter Speeds: B, 1-1/2000. Multiple series. Equiinterval index. X contact at 1/60.

Film Speed Scale: ASA 25-2000.

Self-Timer: Built in. Activate with shutter release button. Approx. 10 sec. time lag. Self-timer lever is used in common as stopped-down functioning lever.

Exposure Adjusting Mechanism: Coupled to shutter speeds, film speeds and f/stop. Match needle type TTL full–aperture metering mechanism. Wide range, highly sensitive special CdS used as photo conductive elements. Semi-spot metering system with splitted condenser positioned in rear. Stopped-down metering possible. Fixed dot type metering using stopped-down functioning lever. Locking of the lever possible.

Exposure Meter Coupling Range: With ASA 100 film, EV2.5 (f/1.2 at 1/4 sec.)–EV19(f/16 at 1/2000 sec.). Meter information window turns red when outside of coupling range.

Meter Battery: One 1.3V M20 (#625) mercury battery used.

Battery Checker: Built in. Check at ASA 100, shutter speed at 1/2000 sec.

TTL Full Aperture Metering System EE: Uses Exclusive Servo EE Finder and Battery Case in combination. Full aperture metering with FD lens. Shutter priority type EE. Functioning range; with ASA 100 film, EV 2.5 (f/1.2 at 1/4 sec.)–EV19 (f/16 at 1/2000 sec.).

Ultra-low Illumination Metering: Metering possible between ASA 100 film EV1.5 (f/1.2 at 1/2 sec.) and EV–3.5 (f/1.2 at 15 sec.) with use of exclusive Booster T Finder.

Synchronized Flash: FP and X contact. Automatic time lag adjusting type.

Flash Socket: On side body. Two contacts on film rewind knob for flash circuit for directly connected adapter, and meter circuit.

Canon Auto Tuning (CAT) System: Diaphragm control by recharge completion signal and focusing distancce signal. Proper aperture is established by the meter matching needle system through the connection of the Speedlite 500A, Flash Coupler, Flash Adapter and prescribed FD 50mm F1.4, FD 50mm F1.8, or FD 35mm F2 lens.

Synchronizing Range: 1/2000-1/125 sec. and 1/30 or under; FP class. 1/60 sec. or under; Speedlite. 1/30 sec. or under; M, MF class.

Film Loading: With multislit film spool.

Film Winding: Short-stroke winding possible. Single operation 180° winding lever. Play; 15°.

Film Rewinding: Performed by rewind button and crank.

Double Exposure: Possible by operating film rewind button.

Back Cover: Crank pull-up type. Removable for Film Chamber 250.

Bottom Cover: Motor Drive Unit can be attached after removing bottom cover.

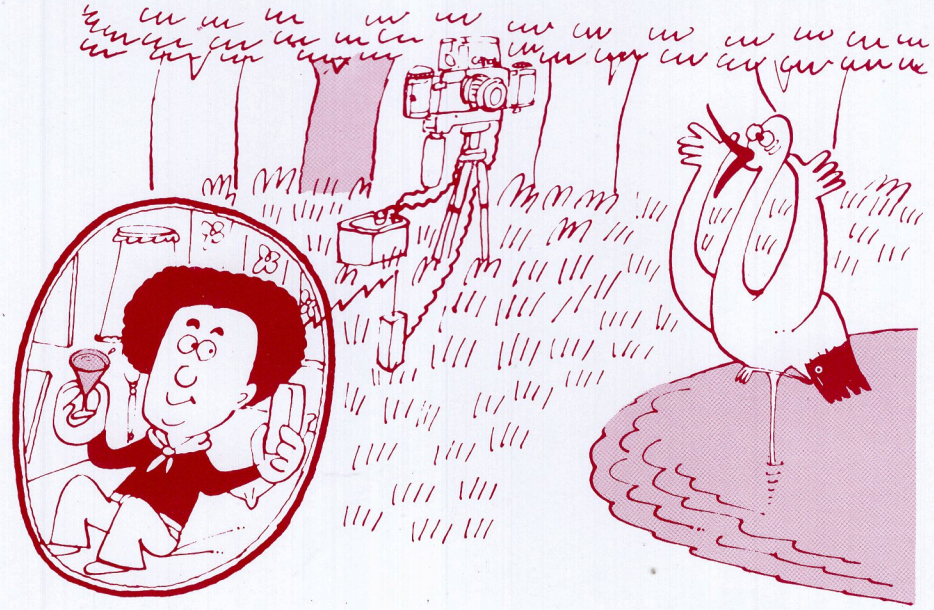
Frame Counter: Self-resetting type activated by opening back cover.

Accessory Shoe: Exclusive. Flash Coupler D and other couplers can be attached.

Size: 98.7x146.7x43mm (3-7/8"x 5-3/4"x 1-1/16").

Weight: Body; 820 g (1.80 lbs.). With FD 50mm F1.4 Lens; 1,180 g (2.60 lbs.).

Subject to alterations



Booster T Finder

Composition

Booster T Finder
Cord 6V 2V
Silver Oxide Battery No. 544
Finder Dust Cover
Eyecup F-1

Booster T Finder with Electronic Timer-Exposure Device for Insufficient Light Volume

The Booster T Finder, one of the most unique accessories of Canon F-1, is a finder attachment with a super-sensitive meter and an exposure timer, and is interchangeable with the pentaprism section of the F-1.
This booster's most significant use is with a single-lens reflex camera. The Booster T Finder is an electronic device which determines exposures with ease. It also supplies the proper exposure with the built-in timer during photomicrography, macrophotography, and indoor photography and when shooting night scenes under dim lighting conditions.

Features

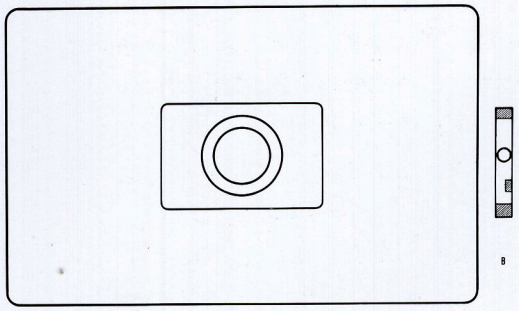
With an ultra-high-sensitive meter, used interchangeable with the F-1 prism housing, very dim lighting down to EV-3.5 can be measured. In addition, long time-exposure from 3 to 60 seconds can be made with an electronic timer.

The Booster T Finder is used for metering when shooting night scenes, during indoor photography, macrophotography, and photomicrography, and also when taking long time-exposure pictures.

It is suitable for schools, research laboratories, art, architecture, archaeology, etc.

1. Two CdS photocell are positioned on both sides of the eyepiece and average metering is performed with the central weighted avarage metering system.
2. Average metering catches the dispersed light sources well in night scenes.
3. In exposures of 3 seconds or longer, the electronic timer of the Booster T Finder functions and adjusts the exposure time.
4. While the timer is functioning, a lamp goes on and off at approximately one second intervals to indicate that the timer is functioning.
5. Under bright conditions, metering is performed on the camera side. Under dark conditions, it is switched over to the Booster T Finder side for continuous use.
6. If the eyepiece shutter is closed/when metering is performed with the Booster T Finder, the switch is switched on and shuts out reverse flowing light.
7. A lamp lights up in the meter window when metering is performed with the Booster T Finder. When metering is performed on the camera side, the meter information inside the viewfinder is illuminated from the outside.
8. External batteries can be used under cold conditions.





Meter: Highly sensitive pivot meter.

Metering Element: 2 CdS photocells.

Circuit Construction: 9 transistors, 2 diodes, 3 condensers, 2 variable resistors, 3 semifixed resistors, 21 fixed resitors, 2 lamps, 1 thermistor.

Metering System: Low illumination side (orange colored scale): Zero method stopped-down metering. Centrally-weighted averaging system. High illumination side (white colored scale): Full-aperture metering by camera.

Metering Range: ASA 100, EV10 (f/22 at 1/2 sec.) – EV–3.5 (f/1.2 at 15 sec.) with booster element. ASA 100, EV 15 (f/22 at 1/60 sec.) – EV3 (f/1.4 at 1/4 sec.) with camera element.

Switching of Metering Range: By turning shutter dial and eyepiece shutter knob.

Film Speed Scales: ASA 25–12800.

25 · · 50 · · 100 · · 200 · · 400 · · 800 · · 1600 · · 3200 · ·
(32, 40) (64, 80) (125, 160)(250, 320)(500, 640)(1000, 1250)(2000, 2500)(4000, 5000)
6400 · · 12800
(8000, 10000)

Shutter Speed Scales: Low speed (orange): 60, 30, 15, 8, 4, 3 sec. High speed (white): 1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60 sec. Coupled to Booster Timer on low speed side and to shuttter speed of camera on high speed side.

Timer: Low speed: 60–3 seconds continuous use possible. Exposure control by electronic timing device.

Timer Lamp: Proceeding element by blinking lamp.

Meter Reading: Zero method, with illumination lamp and battery check index mark.

Viewfinder: Eye-level using pentagonal prism. Dioptric adjustment lens interchangeable. Magnifier usable.

Viewfinder Information: Rangefinder, metering range.

Meter Information: When between 1/4 and 1/60 sec. at ASA 100, the camera side information appears illuminated on right side.

Power: One 6v #544 silver oxide battery. Use exterior power at low temperatures. Connect battery chamber and Battery Case with Cord 6V 2B. Battery Magazine 12V is used.

Battery Checker: Built in.

Shutter Release Socket: Built in.

Eyepiece Shutter: For retroincident light cutoff. Coupled to meter switch. Booster lamp lights up when eyepiece shutter is closed.

Attaching onto Camera: Set the shutter dial of the Booster at between 1/30 and 1 second and then attach onto camera. Connection is made

by turning shutter speed dial on Booster side.

Switching of Shutter Dial: Push the timer knob upwards at "3" second scale and turn the shutter speed dial to low speed scales. The shutter speed on the camera side is automatically set at "B", and the timer functions.

Safety Devices: Eyepiece shutter, timer knob, etc.

Safety Devices: Eyepiece shutter, timer knob, etc.

Size: 87 x 52 x 69mm (3-5/16" x 2-1/16" x 2-11/16").

Weight: 350 grams (12-3/8 oz.).

Accessories: Case, silver oxide battery #544, Battery Magazine 12V, Cord 6V 2B, Battery Case, Finder Dust Cover.

Subject to alterations

Servo EE Finder

Canon Servo EE Finder Set

Composition

Servo EE Finder
EE Coupling Arm
Cord 12V2E
Finder Dust Cover
Eyecup F-1

Full-Aperture Metering EE Device – Servo EE Finder

This is an EE functioning electronic device which presets the proper f/stop, with the aperture at full opening, by motor drive after coupling with the full aperture metering mechanism of the F-1.

It is much more vibration- and shock-resistant than a galvano meter. The proper f/stop is readable in the viewfinder, and differences in full aperture openings can be corrected from the outside.

Average metering is adopted for the metering system because of the EE. However, as the center section can be predominantly metered, a most satisfactory exposure can be obtained when shooting scenery that includes the sky. Unmanned continuous shooting is possible with EE through the combined use of the Motor Drive Unit. This has opened up a remarkable photographic field in observation and experiment recording.

Features

This is an EE functioning electronic device which is preset to the proper f/stop by the power drive of the Servo EE Motor. The aperture remains at full aperture opening, and is coupled to the full-aperture metering mechanism of the F-1.

The Servo EE Finder withstands vibrations and shocks because it does not use a galvanometer, and it has sufficient power drive.

It is of the average metering type, because the EE metering system has been adopted. However, because it uses the center-spot metering system, very satisfactory exposures can be obtained even when shooting scenery including the sky.

The most outstanding feature is that unmanned continuous photography can be performed when it is used in conjunction with the Motor Drive Unit.

1. It is an EE device with electronic circuit.
2. The aperture mechanism of the FD lens is unique, and presetting from inside the body is possible.
3. It resists vibrations and shocks because it does not use a meter, and its power drive is remarkable.
4. It performs full-aperture metering with shutter speed priority, and the aperture is automatically set.
5. Temporary metering, continuous metering lock and the manual aperture can be chosen by the switch.
6. The coupling range is the same as that of the camera.
7. The EE function is very smooth.

Technical Data

Circuit Construction: 19 transistors, 7 diodes, 6 condensers, variable resistor, 4 semifixed resistors, 31 fixed resistors, 1 motor, 1 lamp.

Metering Element: 2 CdS photocells. Situated on both sides of pentaprism eyepiece section.

Metering System: Centrally-weighted averaging system with full aperture metering.

Metering Range: With ASA 100 film, EV 2.5 (f/1.2 at 1/4 sec.) – EV 18 (f/11 at 1/2000 sec.).

Film Speed: ASA 25-2000.

25 · · 50 ··· 100 · · 200 · · 400 · · 800 · · 1600 ·
(32, 40) (64, 80) (125, 160) (250, 320) (500, 640) (1000,12500) (2000)

EE System: Shutter speed priority, controlled by Servo Motor. Preset to proper f/stop.

Shutter Speed: 1/2000-1 sec., B. (EE circuit is disconnected at "B".)

Manual Aperture Control: Possible with main switch.

Viewfinder: Eye-level using pentaprism. Dioptric adjustment adapter interchangeable. Eyecup, Angle Finder B, and Magnifier attachable. With eyepiece shutter. Magnification, 0.77 x with 50mm lens at infinity.

Meter Information: f/stop scale, aperture needle, warning marks.

Full Opening f/stop Correction: By lens speed adjustment dial. Indicated inside viewfinder.

Power Source: 8 or 10 penlight batteries, or the exclusive NiCd 500 FZ. Connected with Cord 12V 2E. Use Battery Connector MD when Motor Drive Unit is attached. With built-in battery checker.

Attaching: By removing the pentaprism section of the camera. EE Coupler used.

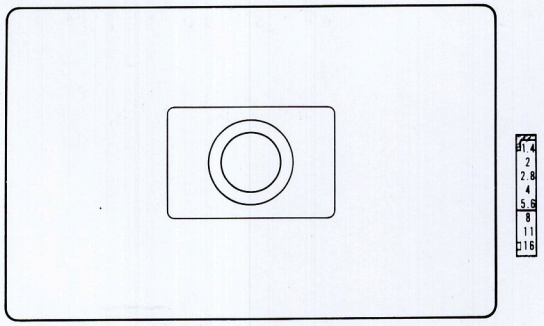
Size: 75 x 65 x 68mm (3" x 2-1/2" x 2.5/8").

Weight: 417 grams (14-3/4 oz.), with EE Coupler

Accessories: EE Coupler, Battery Case, Battery Magazine, Eyecup, Cord 12V 2E, Case, NiCd 500 FZ, Pentaprism Cover, Battery Connector MD (for Motor Drive Unit).

Subject to alterations





With Servo EE Finder

Motor Drive Unit

Canon Motor Drive Unit Set

Composition

Motor Drive Unit
Battery Case
Battery Magazine 15V (two)
Battery Connector MD
Battery Checker MD
Remote Control Switch
Extension Cord MD

Power Driven Film Winding Device/Canon Motor Drive Unit

The Canon Motor Drive Unit with its unique functions was developed by the adoption of electronics techniques and in close relation with other accessories for substantial expansion of the F-1 system.
As a result, Canon has completely met strong customer demand, not with an entirely new camera or a clumsy attachment, but with a completely interchangeable device that can be used on any F-1 and in combination with the Film Chamber 250 and still retain its high accuracy. It has the following outstanding features.

- It can be purchased and used as the demand arises.
- It is attachable to the bottom section of the F-1 and can be used for continuous shooting up to 36 exposures.
- Single-frame exposures and high-speed photography at three exposures per second.
- Built-in timer that can be set at seven intervals up to 60 seconds.
- Remote controlled photography is possible.
- Unmanned photography and automatic stopping after completion of shooting are possible with the combined use of the Servo EE Finder.

Features

This Motor Drive Unit can be attached to the camera merely by interchanging it with the bottom cover of the camera. It is the main accessory for unmanned photography in conjunction with Film Chamber 250 and Servo EE Finder. It is a unique electronics device which makes possible single-frame photography, continuous timer photography, continuous high-speed photography, and remote control operations.

1. Completely interchangeable. Remodeling and adjustment are not necessary.
2. With the combined use of accessories, the film feeding capacity is increased.
3. Attachment/detachment is very simple. Accurate connections can be made by interchanging it with the bottom cover.
4. Shutter release and windup are performed accurately due to the stabilized operations of two motors.
5. A wide range timer is built in. It is of the seven-stage control type.
6. Maximum speed photography of three frames per second is possible.
7. All shutter speeds, except B, can be used.
8. Remote control operations are possible with Remote Control Switch MD.
9. Unmanned photography is possible with the combined use of the Servo EE Finder and a cable release or Remote Control Switch MD.
10. Photography using long-length film is possible using Film Chamber 250.
11. The Motor Drive Unit automatically stops when windup has been completed after completion of photography.
12. Due to complete interchangeability, accessories can be added later on.
13. Due to the electronic device, there is no worry of breakdowns. The safety arrangements are perfect.
14. Various kinds of accessories for remote control use are now under development.

Circuit Construction: 5 transistors, 2 diodes, 5 condensers 1 SCR

Shooting Intervals: 13 sec. to 60 sec frame

Timer Scale: 7 stage, "O. OFF", 0,5, 1, 2, 5, 10, 60 sec. Time allowance, ±12%.

Relations Between Main Switch, Timer Ring, and Shutter Speeds

Main Switch	Timer Ring	Usable Shutter Speeds	Exposures
S	T. OFF	1 1/2000-1	One*
C	T. OFF	1/2000-1 30	Three per second
C	0.5	1/2000-1 8	Two per second
C	1	1/2000-1 2	One per second
C	2	1/2000-1	One every 2 seconds
C	5	1/2000-1	One every 5 seconds
C	10	1/2000-1	One every 10 seconds
C	60	1/2000-1	One every 60 seconds

Power Source: DC 15V. Exclusive NiCd 500 FZ, or 10 penlight batteries. Loaded in Battery Case and connected with Battery Connector MD.

Battery Check: By Battery Checker MD.

Photographing Capacity: NiCd 500 FZ: 36 frames x approx. 80 rolls at full charge. Penlight batteries, Alkaline, 36 frames x 80 rolls or more. Manganese, 36 frames x 50 rolls or more.

Frame Counter: Counts the number of the unexposed frames. Automatically stops at "0".

Remote Control: Connect the Remote Switch MD to the terminal on the Battery Connector. Length of cord is 5 meters. An extension cord (10 meters) is available. Ultrasonic Remote Switch. Wireless Remote Switch, Parallel Switch Box, Extended-time Timer are under development.

Unmanned Photography: By coupling with Servo EE Finder.

Shutter Release Button: With cable release socket.

Size: 150 x 170 x 34mm (5-15/16" x 6-11/16" x 1-5/16").

Weight: 720 grams (1.59 lb.).

Accessories: Battery Case, Battery Connector MD, Remote Switch MD, Film Chamber 250, Film Loader 250, Film Magazine 250, Extension Cord MD, Case, Battery Magazine 15V, NiCd 500FZ.

Subject to alterations

Operation by Two Stabilized Motors

Two motors are used for windup and release to increase operational stability and durability. Elastic return joints are used in the circuit switches of both to perform repeat operations such as to the release circuit at the time of windup completion and to the windup side at the time of release completion.

Single Frame Photography and Continuous Photography

In the case of single frame photography, it stops after releasing when the button is pressed and stops after windup is completed when the button is released.
In the case of continuous photography, release and windup are repeated during the time the button is pressed.
When the button is released, it stops after ocmpletion of windup. It is a very practical mechanism because in all cases, it stops after completion of windup.

Windup Completion Detection

The most difficult problem of developing the motor drive unit of a focal plane shutter type camera is the construction of this windup completion deterction mechanism.
Normally shutter cannot be released at times of incomplete windup. Unless the power of the windup coupler is eliminated at the time of windup completion, excessive power is loaded to the shutter charge mechanis. Therefore, a detection section of the load torque is installed in the windup system to detect windup completion. Also a windup mechanism to stop the supply of electricity to the windup motor and to eliminate the torque remaining in the windup coupler must be installed. Canon solved this problem by perfecting a control circuit and a brake mechanism. This made possible the high-speed advance of three frames per second.

Photographing Speed and Shutter Speed

Approximately 330ms is necessary for the Motor Drive Unit to complete one cycle operation from windup to shutter release and approximately 90ms is allowed for exposure time. This means that three frames per second can be photographed if a shutter speed faster than 1/15 second is used.
The timer is used in combination when the shutter speed is slower than 1/15 second.

Timer Mechanism

This is Canon's unique mechanism and the circuit is built into the bottom part of the grip. Photographing intervals can be selected in the seven stages of Timer. OFF (0.3), 0.5, 1, 2, 5, 10 and 60 seconds with one frame being photographed for each interval.
It can be used very effectively for recording experiments when used jointly with long-length film magazines and the Servo EE Finder.

Film Chamber 250

Canon Film Chamber 250 Set

Composition

Film Chamber 250

Film Magazine 250 (two)

Long-Length Roll Film Magazine – Canon Film Chamber 250

The Canon Film Chamer 250 was developed simultaneoulsy with the Motor Drive Unit in order to substantiate its continuous shooting functions. It is a long-length roll film magazine attachable exclusively to the F-1. It can be used for any number of exposures less than 250. Shooting is powered by the Motor Drive Unit, and shooting speeds can be set by a timer at seven stages from three exposures per second up to one exposure per minute. Single-frame exposures are also possible.

Features

Long-length film chamber for exclusive F-1 use. Expands the continuous photographing functions of the Motor Drive Unit.

1. Interchangeable with the back cover of the camera. Completely interchangeable with the camera body and Motor Drive Unit.
2. Direct-coupled with Motor Drive Unit.
3. Open/close device of back cover and magazine open/close are coupled.
4. Equipped with a safety device so that the Motor Drive Unit and circuit are not connected unelss the back cover open/close knob is closed.
5. Automatic stop mechanism functions when entire film has been exposed.
6. Durable and smooth functioning.

Technical Data

Circuit Construction: 1 motor, 1 lead switch.

Loading Capacity: 250 frames. 10 meters (33 feet).

Film Loading: 2 exclusive magazines used, one each for supply and take-up. Film Loader 250 is used for loading film into magazine.

Film Magazine: Film Magazine 250 for 35mm strip film.

Frame Counter: Counts the number of frames.

Drive System: Film advance with Motor Drive Unit and synchronized film take-up with built-in micromotor. Automatically stops when entire film is exposed.

Coupling of Motor Drive Unit: With 3-core, directly coupled connector.

Back Cover Interlock: Connected to open/close of film magazines, and Motor Drive Unit.

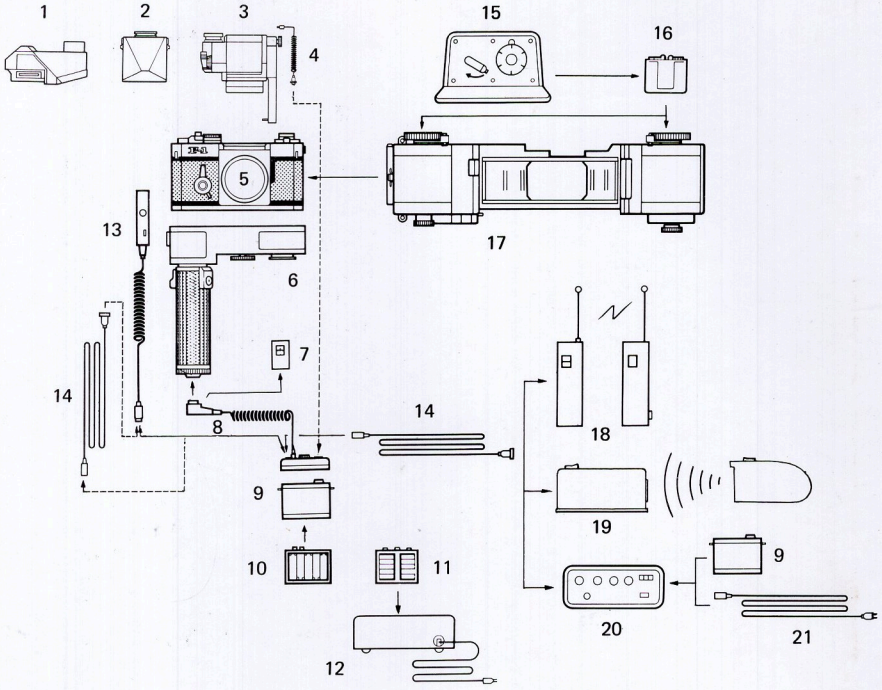
Size: 333x63x100mm (13-1/8"x2-1/2"x3-15/16").

Weight: 1,170 grams (2.58 lbs.). Power source, shooting speeds, shutter speeds, and remote control are the same as those for the Motor Drive Unit. Manual Windup Adapter will be available in near future.

Subject to alterations

Motor Drive System

1. Speed Finder
2. Eye-Level Finder
3. Servo EE Finder
4. Cord 12V 2E
5. F-1 Body
6. Motor Drive Unit
7. Battery Checker MD
8. Battery Connector MD
9. Battery Case
10. Battery Magazine 15V
11. NiCd Battery 500FZ
12. NiCd Charger 500FZ
13. Remote Switch MD
14. Extension Cord MD
15. Film Loader 250
16. Film Magazine 250
17. Film Chamber 250
18. Wireless Remote Control Unit
19. Ultrasonic Remote Control Unit
20. Timer
21. AC Cord



Power System

1. F-1 with Servo EE Finder
2. F-1 with Servo EE Finder and Motor Drive Unit
3. F-1 with Booster T Finder
4. Speedlite
5. Bracket
6. Cord 12V 2E
7. Battery Case
8. Battery Magazine 15V
9. Battery Magazine 12V
10. NiCd Battery 500FZ
11. Battery Checker MD
12. Battery Connector MD
13. Remote Switch MD
14. Extension Cord MD
15. NiCd Charger 500FZ
16. Cord 6V 2B
17. Cord 12V 3S

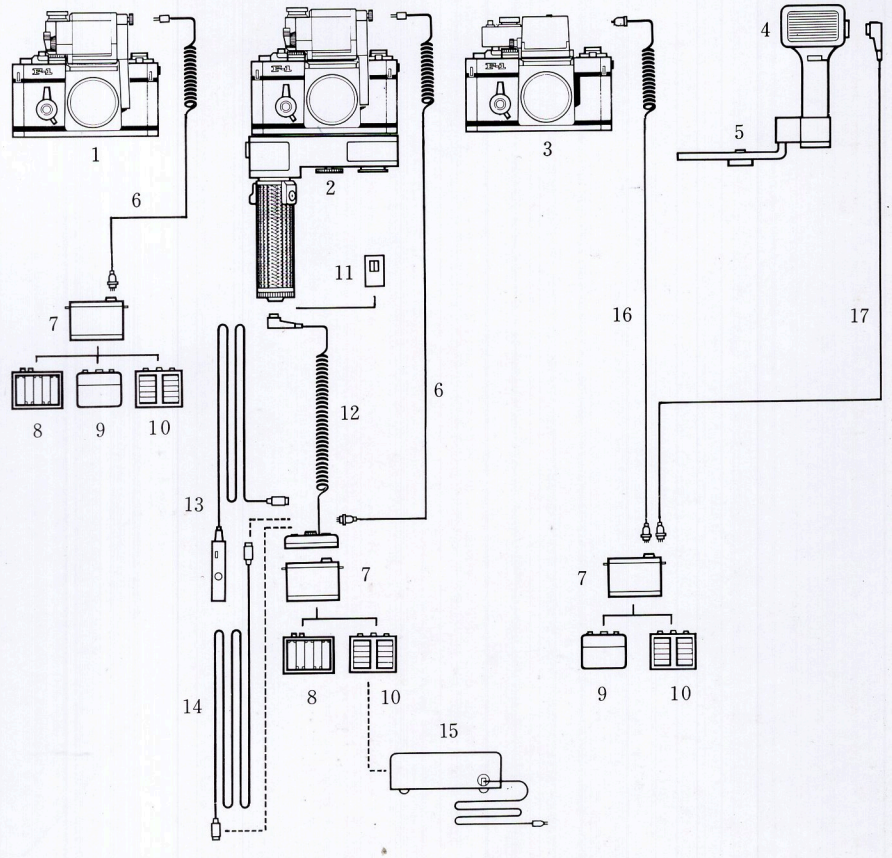


Table of Interchangeable Lenses for the Canon F-1 and Other Canon SLR Cameras

Lens	Type	Angle of View	Lens Mount Signal	Aperture System	Manual Aperture	Lens Construction	Minimum Aperture	Distance Scale		Attachment		Hood	Coating	Case	Focusing Adjustment	Coupling Pin to Speedlite	Length (mm)	Weight (g)
								In meter	In feet	Filter	Cap							
Fish Eye 7.5mm F5.6	Special	180°	–	Manual	–	8–11	22	–		Built in	Exclusive	—	Super Spectra	D	–	–	61.7	390
FD17mm F4	Super-wide-angle	104°	4	Auto.	Possible	9–11	22	∞3–0.25	∞10–0.9	72	75	–	Spectra	I	Straight drive double helicoid☆	–	56	490
FD24mm F2.8	〃	83°	4	〃	〃	8–9	16	3–0.3	10–1	55	C-55	BW-56B	〃	C	〃	–	52.5	410
FD28mm F3.5	〃	75°	4	〃	〃	7–7	16	3–0.4	10–1.5	55	C-55	BW-55B	〃	C	Straight drive double helicoid	–	43	290
FD35mm F3.5	Wide-angle	64°	4	〃	–	6–6	16	3–0.4	10–1.5	55	C-55	BW-55A	〃	C	〃	–	49	325
TS35mm F2.8AL	Tilt & Shift	79°/62.6°	–	Manual	–	8–10	22	3–0.3	10–1	58	C-58	Exclusive	〃	Ex.	Straight drive double helicoid☆	–	72	–
FD35mm	Wide-angle	62°	4	Auto.	Possible	8–9	16	3–0.3	10–1	55	C-55	BW-55A	〃	C	〃	Attached	60	420
FL50mm F3.5	Macro	46°	1	〃	〃	3–4	22	5–0.234	20–9.2	58	60	S-60	〃	Ex.	Straight drive double helicoid	–	56	295
FD50mm F1.8	Standard	46°	4	〃	〃	4–6	16	10–0.	30–2	55	C-55	BS-55	〃	C	〃	Attached	44.5	305
FD50mm F1.4	〃	46°	4	〃	〃	6–7	16	10–0.45	30–1.5	55	C-55	BS-55	〃	C	〃	〃	49	370
FD55mm F1.2	〃	43°	〃	〃	〃	5–7	16	10–0.6	30–2	58	C-58	BS-58	Super Spectra	I	〃	–	52.5	555
FD55mm F1.2AL	〃	43°	〃	〃	〃	6–8	16	10–0.6	30–2	58	C-58	BS-58	〃	I	Straight drive double helicoid☆	–	55	605
FD85mm F1.8	Long focus	29°	〃	〃	〃	4–6	16	20–1	60–3.5	–	–	–	Spectra	–	Straight drive double helicoid	–	–	–
FD100mm F2.8	Zoom	24°	〃	〃	〃	5–5	22	10–1	30–3.5	55	C-55	BT-55	〃	D	〃	–	57	430
FD135mm F3.5	〃	18°	〃	〃	〃	3–4	22	30–1.5	100–5	55	C-55	BT-55	〃	E	〃	–	83	480
FD135mm F2.5	〃	18°	〃	〃	〃	5–6	22	30–1.5	100–5	58	C-58	Built in	〃	E	〃	–	91	670
FD200mm F4	〃	12°	〃	〃	〃	5–6	22	30–2.5	100–8	55	C-55	〃	〃	J	〃	–	133	725
FD300mm F5.6	Long-telephoto	8.3°	〃	〃	〃	5–6	22	50–4	200–13	58	C-58	〃	〃	Ex.	Straight drive double helicoid★	–	173	1,155
FD55mm-135mm F3.5	Zoom	43–18°	〃	〃	〃	11–15	22	30–2	100–6	58	C-58	BS-58	〃	–	–	–	–	–
FD100-200mm F5.6	〃	24–12°	〃	〃	〃	5–8	22	30–2.5	100–8	55	C-55	Built in	〃	K	Rotary drive helicoid	–	173	805
FL85-300mm F5	〃	29–8°	〃	〃	〃	9–15	22	50–4	200–12	72	75	〃	〃	Ex.	〃	–	273.5	1,840
FL400mm F5.6*	Long-telephoto	6.2°	1	〃	〃	5–7	32	30–4.5	–	48	82	Ex. 82	〃	〃	Rack with pinion	–	338	–
FL600mm F5.6*	〃	4.1°	〃	〃	〃	4–5	32	50–10	–	〃	114	Built in	〃	〃	〃	–	448	–
FL800mm F8*	〃	3.1°	〃	〃	〃	5–7	32	50–17	–	〃	114	〃	〃	〃	〃	–	508	–
FL1200mm F11*	〃	2.1°	–	Manual	–	4–6	64	–37	–	〃	114	〃	〃	〃	〃	–	748	–

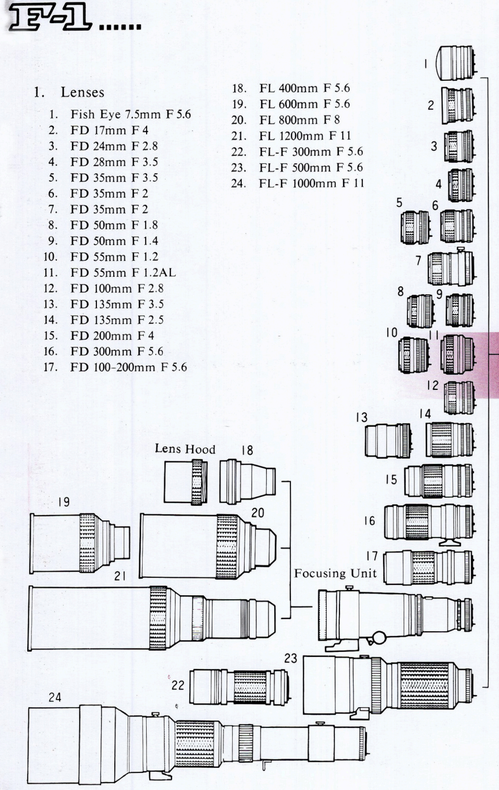
*Front component interchangeable type. Focusing adapter (1-component, 2-element, FL automatic diaphragm, with A-M ring). Filter is of insertion type with holder. Number of elements in chart are totals.

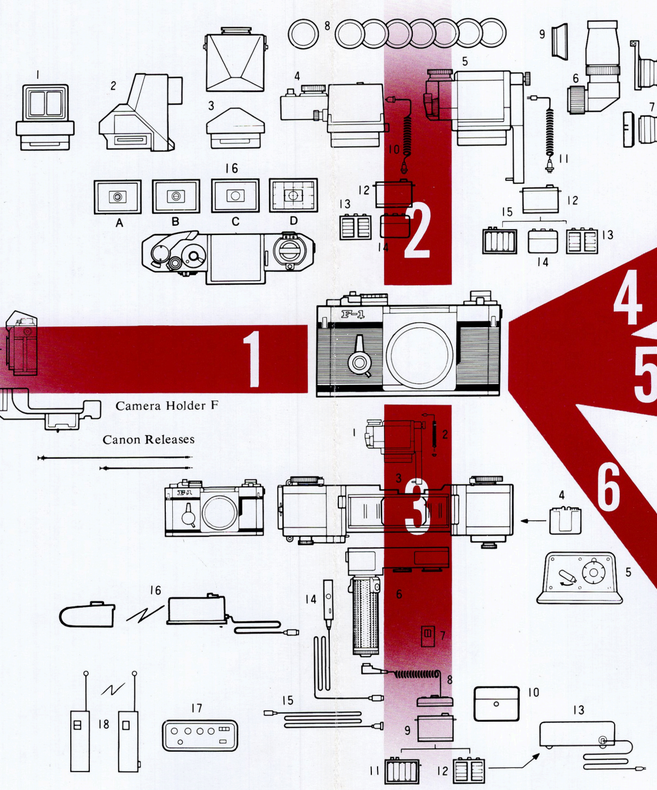
☆ Full Range Aberration-Free System ★ With temperature compensation Ex. – Exclusive Auto. – Automatic

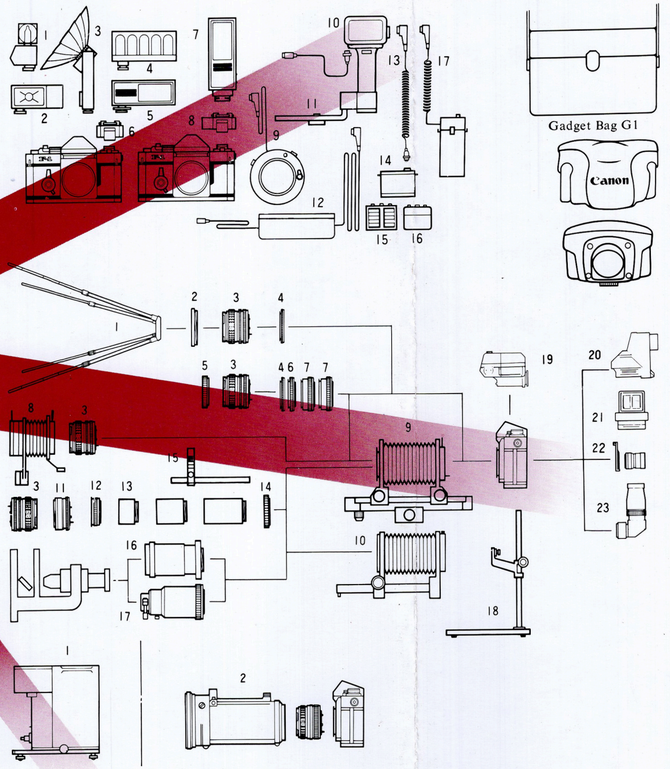
Canon F-1 .....

1. Lenses

1. Fish Eye 7.5mm F 5.6
2. FD 17mm F 4
3. FD 24mm F 2.8
4. FD 28mm F 3.5
5. FD 35mm F 3.5
6. FD 35mm F 2
7. FD 35mm F 2
8. FD 50mm F 1.8
9. FD 50mm F 1.4
10. FD 55mm F 1.2
11. FD 55mm F 1.2AL
12. FD 100mm F 2.8
13. FD 135mm F 3.5
14. FD 135mm F 2.5
15. FD 200mm F 4
16. FD 300mm F 5.6
17. FD 100-200mm F 5.6
18. FL 400mm F 5.6
19. FL 600mm F 5.6
20. FL 800mm F 8
21. FL 1200mm F 11
22. FL-F 300mm F 5.6
23. FL-F 500mm F 5.6
24. FL-F 1000mm F 11







2. Viewfinders

1. Waist-Level Finder
2. Speed Finder
3. Eye-Level Finder
4. Booster T Finder
5. Servo EE Finder
6. Angle Finder B
7. Magnifier
8. Dioptric Adjustment Lenses
9. Eyecup
10. Cord 6V 2B
11. Cord 12V 2E
12. Battery Case
13. NiCd Battery 500FZ
14. Battery Magazine 12V
15. Battery Magazine 15V
16. Focusing Screen A, B, C, D

3. Electronic Film Drive and Unmanned Photography

1. Servo EE Finder
2. Cord 12V 2E
3. Film Chamber 250
4. Film Magazine 250
5. Film Loader 250
6. Motor Drive Unit
7. Battery Checker MD
8. Battery Connector MD
9. Battery Case
10. Cold-Resistance Case
11. Battery Magazine 15V
12. NiCd Battery 500FZ
13. NiCd Charger 500FZ
14. Remote Switch MD
15. Extension Cord MD
16. Ultrasonic Remote Control Unit
17. Timer
18. Wireless Remote Control Unit

4. Flash Photography

1. Cube Flash, Cube Flash D
2. Flash J-3
3. Flash V-3
4. Flash Quint
5. Speedlite 102
6. Flash Coupler D
7. Speedlite 133D
8. Flash Coupler L
9. Flash Auto Ring
10. Speedlite
11. Bracket
12. AC Pack
13. Cord 12V 3S
14. Battery Case
15. NiCd Battery 500FZ
16. Battery Magazine 12V
17. Battery Case 500

5. Close-Up, Macrophotography and Photomicrography

1. Handy Stand F
2. F-Ring 55
3. Lens
4. Extension Tube M5
5. Close-Up Lens
6. Extension Tube M10
7. Extension Tube M20
8. Slide Duplicator
9. Bellows FL
10. Bellows M
11. Macrophoto Coupler FL
12. Lens Mount Converter B
13. Extension Tube 6mm-200mm
14. Lens Mount Converter A
15. Macrophoto Strut
16. Microphoto Hood
17. Photomicro Unit F
18. Copy Stand 4
19. Booster T Finder
20. Speed Finder
21. Waist-Level Finder
22. Magnifier
23. Angle Finder B

6. Oscillography

1. Continuous Recorder Model 3
2. Photo Oscilloscope Unit

Operating Instructions


Canon
F-1


Canon
F-1
CANON LENS MADE IN JAPAN
CANON LENS FD 55mm 1:1.2

Foreword

Canon F-1 was developed to meet the photographic needs of the future. The purpose of this system camera is to produce the highest quality pictures in the widest possible range.

The number of accessories was also increased, and there are many products incorporating new methods in their use.

The number of components is equivalent to the total number required for 10 high-grade cameras or 20 ordinary cameras. The 10^4 system appellation signifies that the system incorporates 10,000 components. Therefore, the number of components in the F-1 system will steadily increase.

No efforts were spared to improve performance and accuracy was exhaustively maintained. The overall theme was interchangeability and, therefore, all F-1 camera bodies, lenses and accessories are interchangeable. Even when selling the Motor Drive Units or Servo EE Finders afterwards, there is no worry about fittings. They are all interchangeable. This means that when one F-1 camera is sold to a customer, an entire system is waiting in the background for the customer to purchase. Therefore, in selling this camera, you must thoroughly understand the system and the various applications of the system.

If you do not know the interactions between the camera and the accessories, you cannot satisfy the inquiries of the customer.

Let's take the Battery Case, for example.

This is a very important component that is the power source for the Motor Drive Unit, Servo EE Finder, Booster T Finder and the Speedlite 133D, electronic flash unit. Therefore, if you are not throughly acquainted with the linkage methods you will not be able to make the best use of the Battery Case. As a result, it will be a loss to the customer, to the store and to Canon. Thus, to know which accessory is used for what kind of photography, and to actually know how to use it, is the key to increasing sales in the future of the new F-1 system.

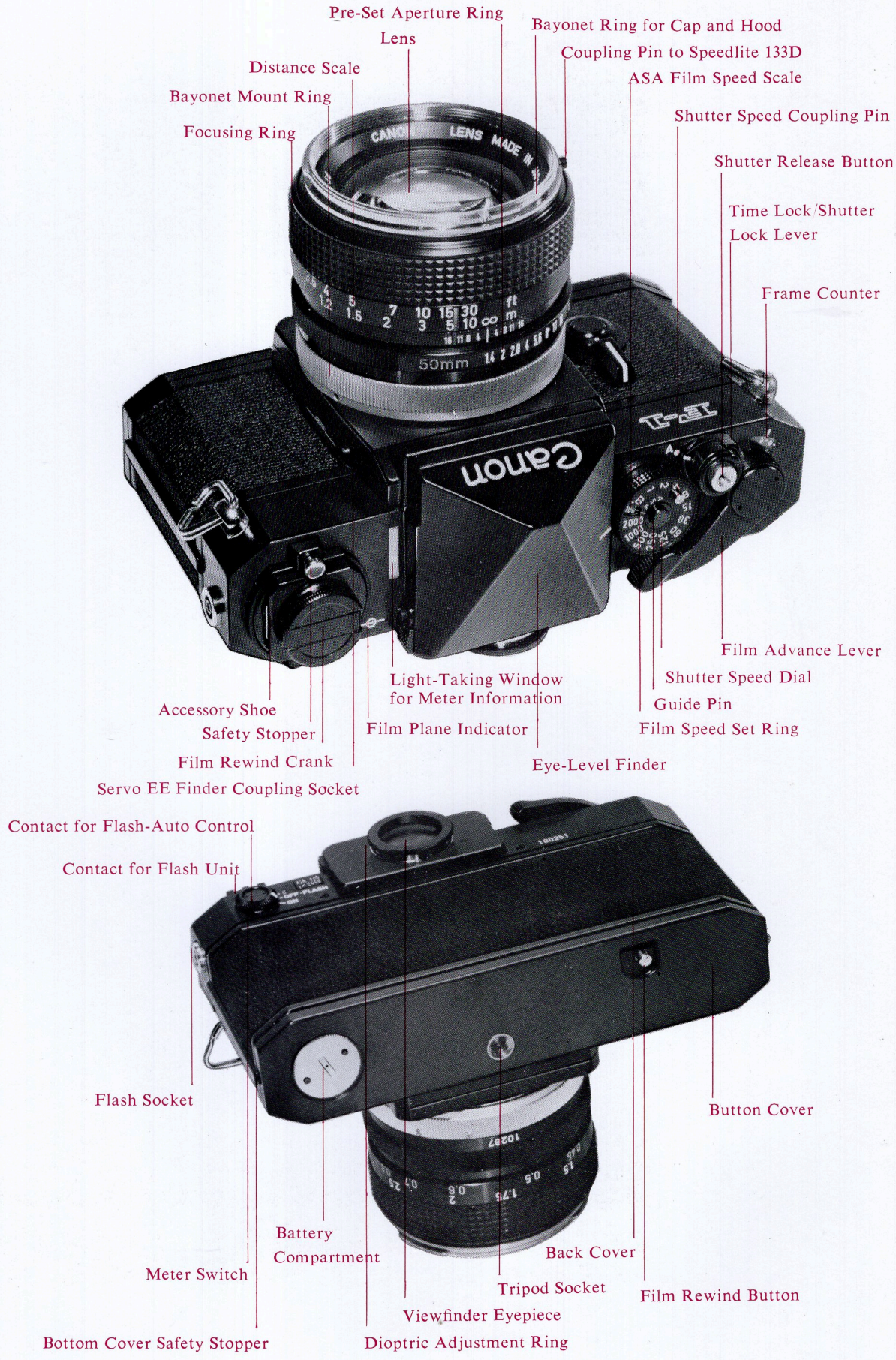
With this in mind, this sales manual gives a general outline on how to handle and use the F-1 camera and its accessories. As for the camera, explanations are given along the lines of those given for basic operations of the conventional Canon FT, with main emphasis laid on operations which differ and on precautionary measures. Explanations of the accessories are given in more detail. The most basic classifications are as follows:

1. Camera body
2. Lenses
3. Four main accessories

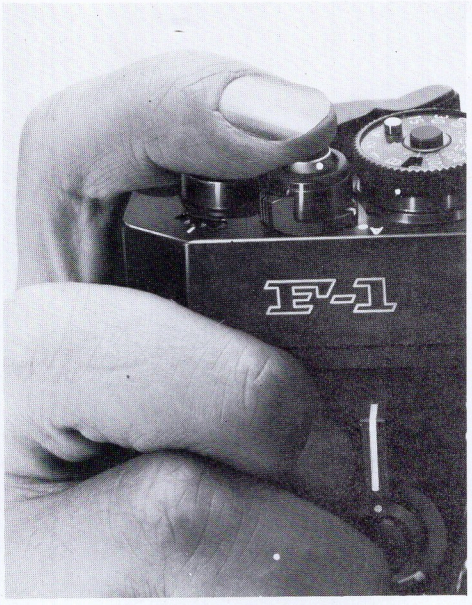
Motor Drive Unit
Servo EE Finder
Booster T Finder
Film Chamber 250

4. Viewfinder system
5. Close-up photography system
6. Flash photography system
7. Power system

This is also the order of importance. Materials indicating various functional combinations are also included in this sales manual for your reference.


Pre-Set Aperture Ring
Lens
Bayonet Ring for Cap and Hood
Coupling Pin to Speedlite 133D
Distance Scale
ASA Film Speed Scale
Bayonet Mount Ring
Shutter Speed Coupling Pin
Focusing Ring
Shutter Release Button
Time Lock/Shutter
Lock Lever
Frame Counter
Film Advance Lever
Shutter Speed Dial
Light-Taking Window
for Meter Information
Guide Pin
Accessory Shoe
Film Speed Set Ring
Safety Stopper
Film Plane Indicator
Film Rewind Crank
Eye-Level Finder
Servo EE Finder Coupling Socket
Contact for Flash-Auto Control
Contact for Flash Unit
Flash Socket
Button Cover
Battery
Compartment
Back Cover
Meter Switch
Tripod Socket
Film Rewind Button
Viewfinder Eyepiece
Bottom Cover Safety Stopper
Dioptric Adjustment Ring


A
S.O.
2000


F-1


Canon
CANON LENS
50mm
1:1.8
0.5
2000

Operations of the camera are performed basically along the lines of those for the FT. The following are explanations of operations which differ from those for the FT.

Winding operations

Single movement and multi-movement of the winding lever and the shutter button lock are operated in the conventional way. The winding operation, the pressing action of the shutter button, and the absorption of the shutter noise are all designed for best handling ease. Stress this point. It is also the opinion of a large nubmer of news cameramen.

Focusing

The lens design has been changed. The operation remains the same. The aperture ring is now in the rear, thus eliminating accidental turning during operation. The focusing ring is designed for easier turning.

Viewfinder

The microprism for focusing becomes almost transparent when in correct focus and so the vision through the viewfinder is clear. The reflectance of the metering range section is 70% less than that of the FT. Thus, the entire field of view is very clear, especially when viewing a bright subject. The field of vision of the viewfinder is uncluttered because the meter information is now in another window.

Film Loading

In order to accommodate a long-length roll film magazine, the QL mechanism was dropped and the film loading system using a multi-slit spool was adopted. Accompanying changes were made in the opening/closing of the back cover, removal of the back cover, and the film loading spool.

1. The back cover is opened by pulling up the rewinding knob. The rewinding knob, however, cannot be just pulled up because of the safety lock. It is pulled up while the release button is depressed. This can be performed by a one-stroke operation if held as shown in the photo.
2. The number of film insertion slits in the spool are increased for easy insertions. The film tip need be inserted into the slit up to approximately two perforations. Be sure to engage the film perforations with the teeth of the film advance sprocket.
3. The film takeup is of the successive winding type and so the operation has been improved.

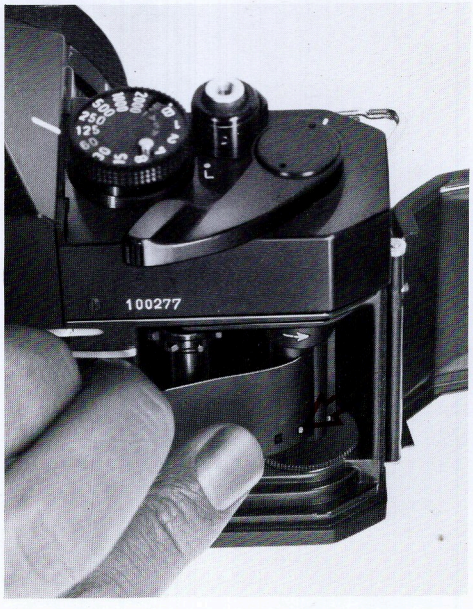
The successive winding system was adopted to prevent film cuts in very cold regions.

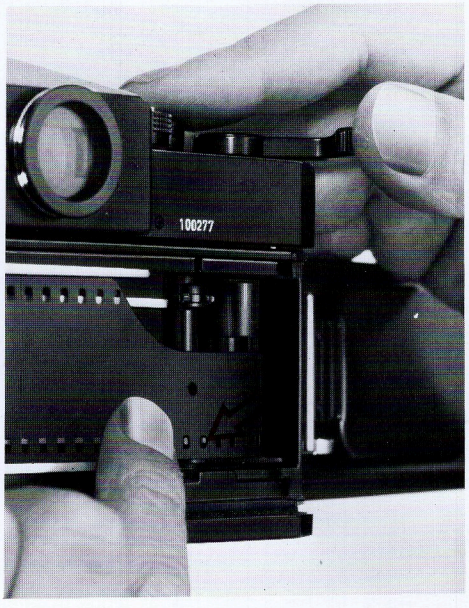
How to Open Back Cover

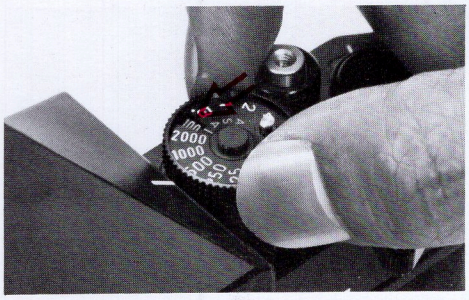


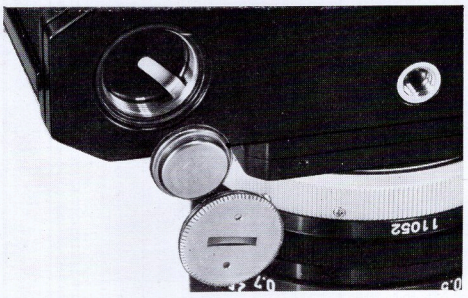
How to Load Film

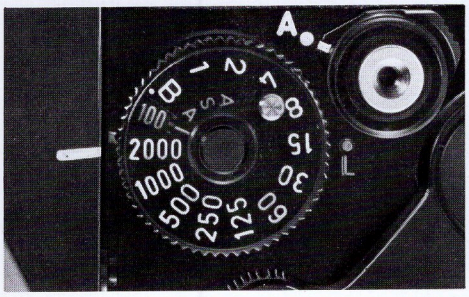


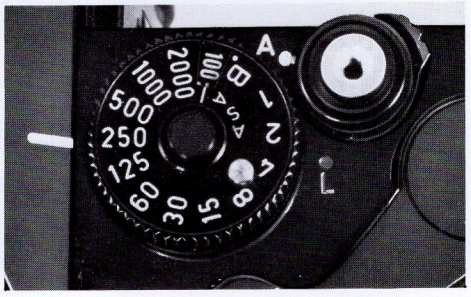


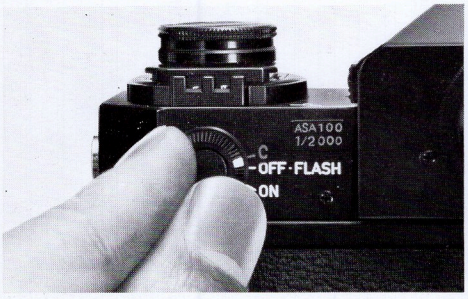


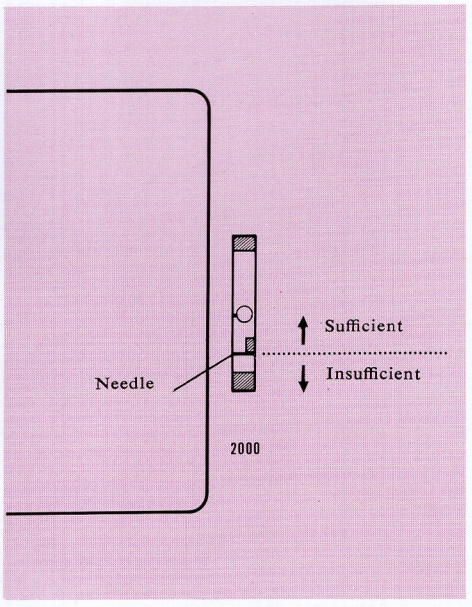


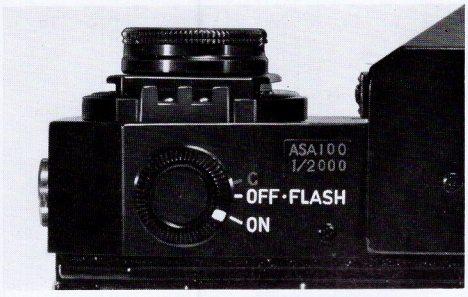




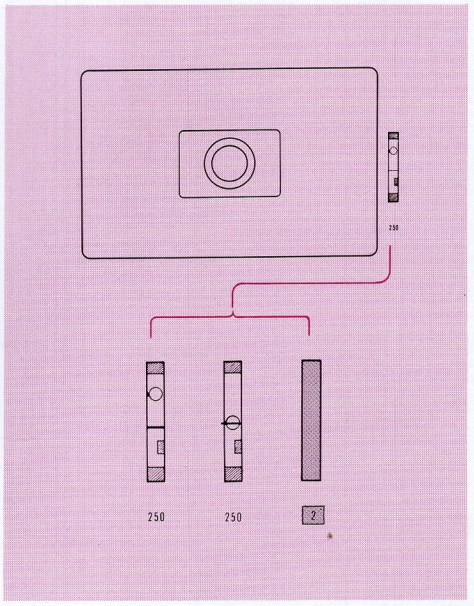












Incorrect Correct Beyond Coupling Range

Full-Aperture Metering

Full-aperture metering was accomplished. This is possible with FD lenses and stopped-down metering is done with FL lenses. Operations are the same as those for the FT. In the case of full-aperture metering, the full-aperture opening signal is built into the mount section. Thus, it is of simple design and requires no other operation.

1. Film speed setting is the same as with the FT. Lift and turn the film speed set ring around the shutter speed dial.
2. The location of the battery compartment has been changed to the bottom section. The method of loading the battery is the same as with all other cameras.
3. Battery check has been changed to ASA 100 and 1/2000 sec. This is because the swing angle of the meter needle, which changes according to the shutter speed, must be fixed. Turn the meter switch, situated on the back side of the camera, to the "C" mark. Look into the viewfinder, and, if the meter needle is not inside the blue mark, the battery must be replaced.
4. Be sure to set the switch at "ON" when performing full-aperture metering.
5. After setting the shutter speed, face the camera towards the subject and the meter needle will move. Turn the aperture ring and align the needle having the round mark with the meter needle.

The meter needle is coupled to the film and shutter speeds, and moves according to the brightness of the subject.

The aperture needle is coupled to the aperture ring. The exposure is decided by aligning the meter and aperture needles.

6. When the shutter speed is outside the metering range on the low brightness side, the meter reading window turns red as a warning (1/2 sec. or slower at ASA 100).

When the aperture needle cannot catch up with the meter needle, or when the meter needle enters the red warning mark, change the shutter speed.

Stopped-Down Metering

Exactly the same as with the FT. Stopped-down metering is performed by pushing down the metering lever and turning the aperture ring. The lever lock is also the same as with the FT. Set the lever lock at "L" position. Meter reading is also the same as with the FT. When the metering lever is pushed down, the aperture needle disappears outside the metering range, and the blue mark acts as the fixed point. Turn the aperture ring and set the meter needle at the fixed dot.

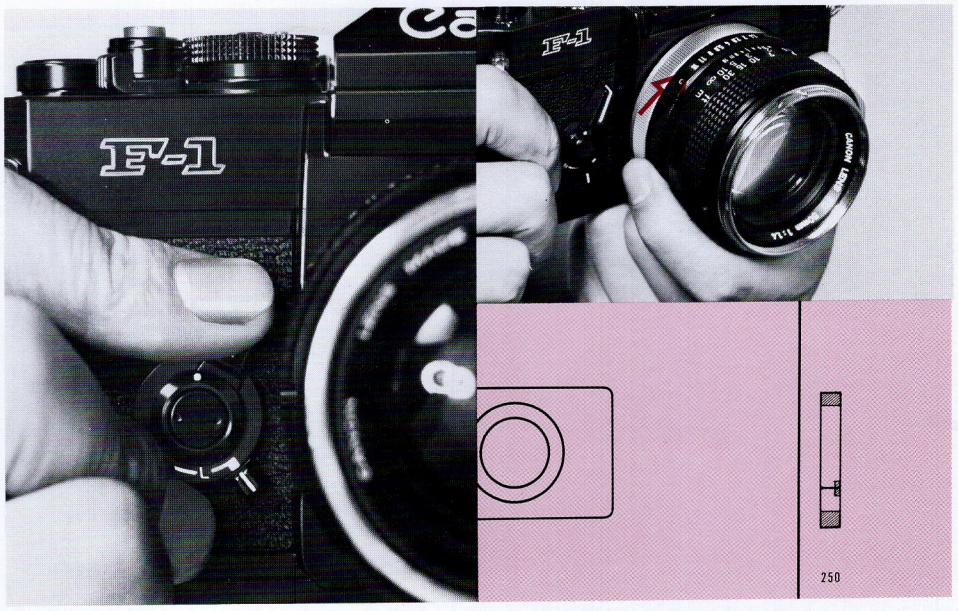
Lens Cap

Clip-on type. Depress the knobs on both sides of the lens cap when attaching or detaching.

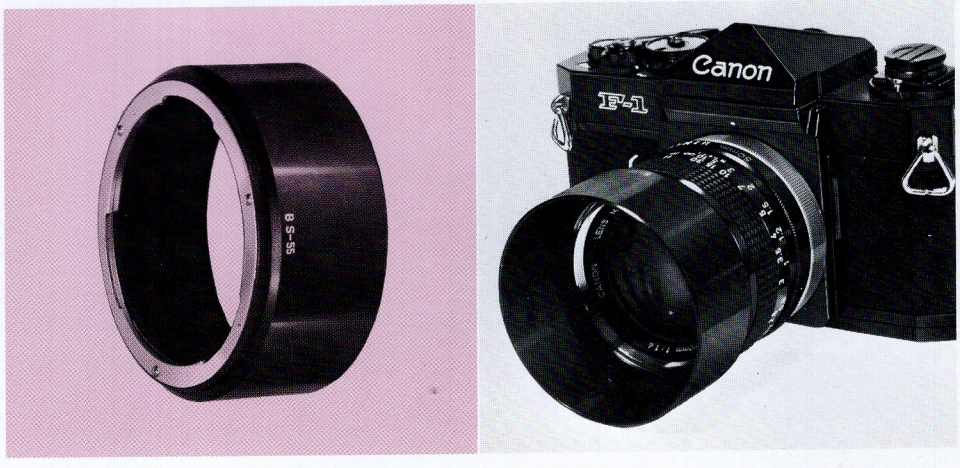
Lens Hood

When attaching the lens hood on the lens, align it to the bayonet ring on the tip of the lens and turn it clockwise. When attaching the lens hood reversed, align it with the bayonet ring and turn it counter-clockwise.

Stopped-down Metering















Manual Aperture Setting Position

Mounting/Unmounting FD Lenses

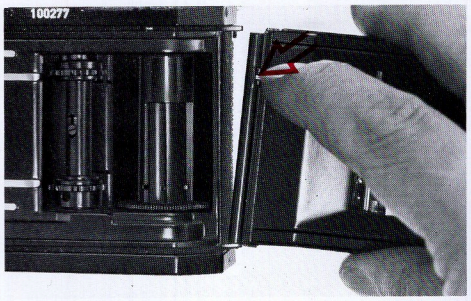
Mounting and unmounting of FD lenses is performed in the conventional manner. Turn the bayonet ring counter-clockwise until it stops. Then remove the lens. The connecting signals have been increased to four as compared to one in the FL lenses. Therefore, you must know the functions of each signal.

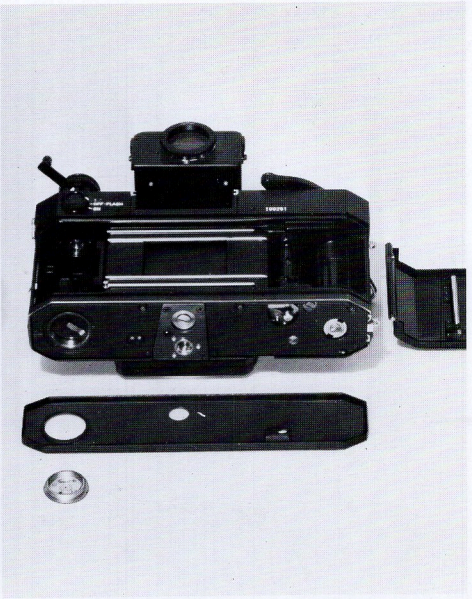
1. If the bayonet ring is not at the mounting position, the diaphragm mechanism of the removed lens will not function. Neither will the aperture signal lever move. Do not mistake these for a breakdown in the mechanism.
2. There is one aperture ring and no manual ring. However, a manually operated aperture can be performed. Push down the metering lever when closing down the aperture with the F-1. Then lock the lever. Manually operated aperture can then be performed. When an accessory that does not couple with the aperture is inserted between the camera and the lens, a manually operated aperture can be performed by clamping the automatic aperture lever to the right side. At this time, however, the bayonet ring must be turned to the mounting position before the aperture can actually be closed down. Please refer to Chapter 1 once more. The same can be said of the FX model and preceding cameras that do not have a metering lever.

Attaching/Detaching Various Accessories

The most outstanding features of this camera are that the four main accessories and the viewfinder accessories are interchangeable.
The methods for interchanging the main accessories are explained later. Here, we will explain the methods of attaching and detaching the parts attached to the camera.

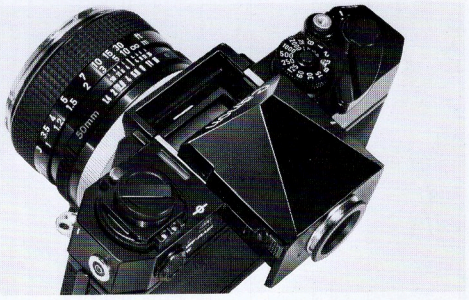
1. The back cover can be easily removed by opening the back cover and pushing down the hinge pin. This is for attaching Film Chamber 250.
2. The bottom cover can be easily detached from the metal fitting on the opposite side after the battery compartment cover is removed by unscrewing. The Motor Drive Unit is attached here. But before doing so, reload the mercury battery and replace the battery compartment cover. Otherwise, the meter will not function.
3. The penta prism section of the viewfinder can be removed by pulling to the rear while depressing the attachment/detachment buttons on both sides. The Servo EE Finder, Speed Finder, Booster T Finder and Waist-Level Finder are attached here. When attaching, be sure to push them in horizontally from the rear.
4. The focusing screen can be removed by inserting your fingernail into the notch at the rear end of the focusing screen and lifting upwards. To attach the focusing screen, insert the metal fitting on the tip, under the holder inside the mirror box, and then press down on the rear so that it drops into a horizontal position.
5. The penta prism eyepiece ring can be removed by turning it counter-clockwise. The interchangeable dioptric adjustment lenses can be attached here. The Magnifier and Angle Finder B can also be attached.

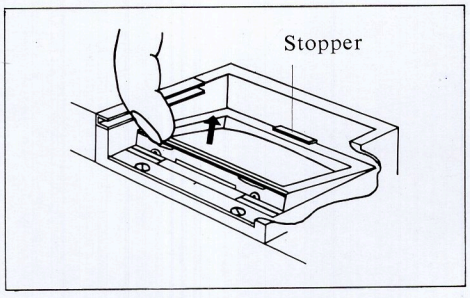


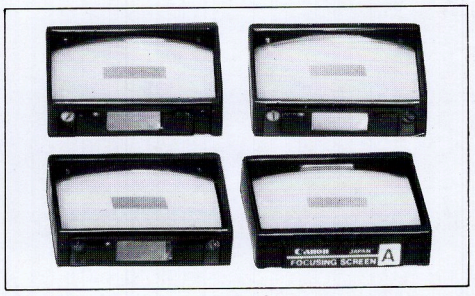


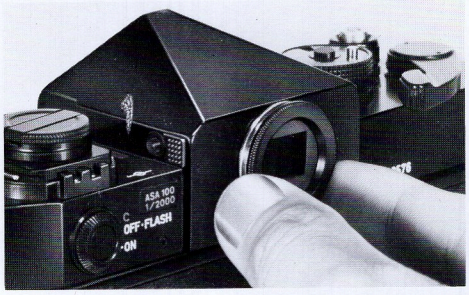


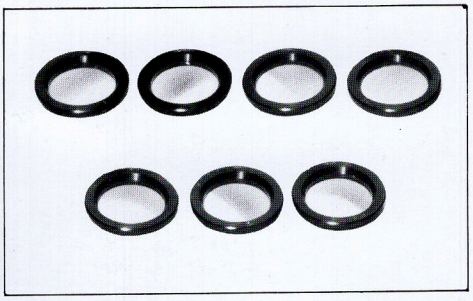










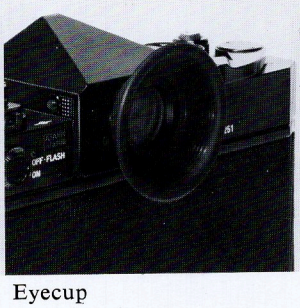




Angle Finder B

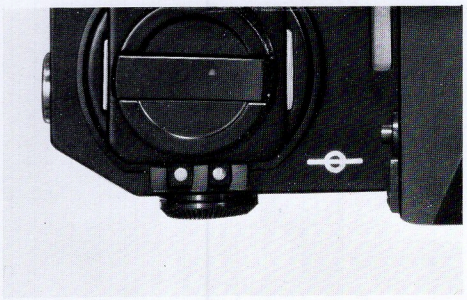


Magnifier



Eyecup

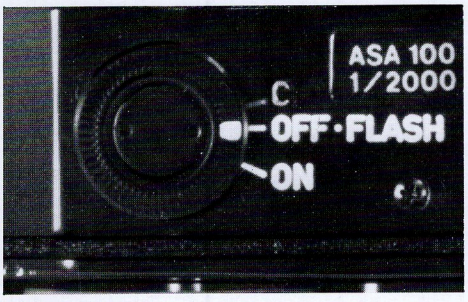
Flash Coupler D

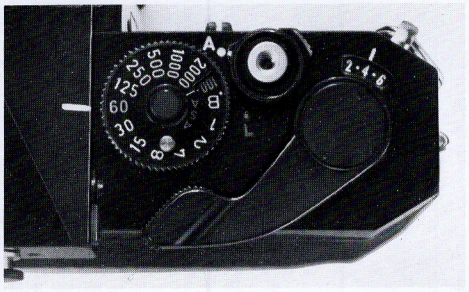


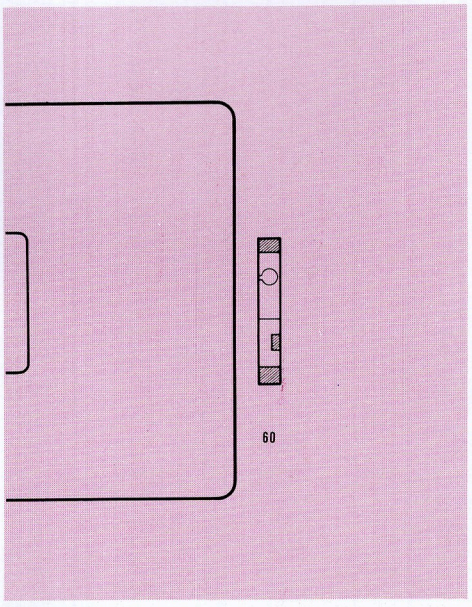




CAT System (Auto Flash)







Mirror Lock



Flash Unit

Instead of the conventional one, an exclusive bracket type accessory shoe has been designed on the rewinding section. For flash photography, the concept of an automatic flash by exclusive electronic flash unit was incorporated and two contacts were designed——one a direct-coupled contact and the other a flash contact. Furthermore, a flash terminal was separately provided so that ordinary flash units can also be used.

(1) When using an ordinary flash unit, insert Flash Coupler D into the accessory shoe from the rear. Then mount the flash unit onto this coupler and connect the cord to the flash socket of the camera.

(2) Canon Auto Tuning (CAT) System

The Speedlite 133D is an exclusive direct-coupled electronic flash unit which is performed automatic flash photography. By attaching the Speedlite 133D to the camera's accessory shoe using the Flash Coupler L, then connecting the Flash Auto Ring to the lens, proper exposure value is always determined according to the subject distance and to the charged power level of the unit.

The Flash Coupler L, having a direct-coupled contact, is connected to the accessory shoe and an exclusive electronic flash unit is inserted on top of this. The Flash Auto Ring is separately attached to the tip of the lens. This has a cord which is connected to the socket situated at the bottom part of the electronic flash unit.

(3) The meter circuit is cut off by setting the main switch at OFF.

(4) The shutter speed is set at 60 sec. (X contact).

(5) The charging level is transmitted to the meter needle and the meter needle moves.

When focusing is performed, the meter needle moves according to the distance.

Turn the aperture ring and align the aperture needle with the meter needle. Proper exposure is thus obtained.

* The Flash Auto Ring transmits the photographing distance to the meter circuit.

Locking Mirror Upwards

The mirror is locked in an up-position, when performing photography which requires completely eliminating mirror vibration, such as in photomicrography and copy work.

F-1 differs from the FT in that it has no special mirror lifting lever and that the metering lever is used for this as well.

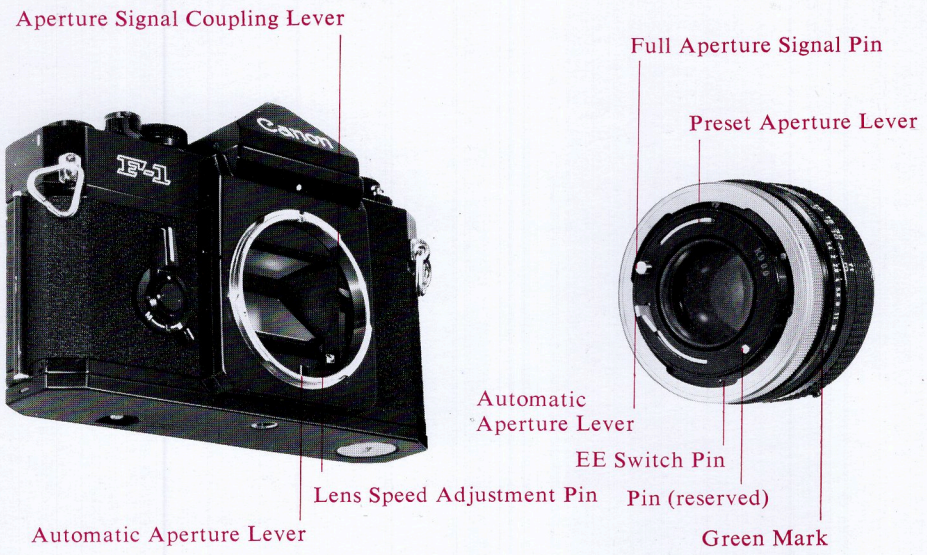
1. Push down the stopped-down metering lever, and lock the mirror by turning the lock lever.
2. Then turn the lock lever to "M" position.
3. When the mirror is in up-position, the aperture automatically converts to manual operation.
4. Perform this operation after completely locking the metering lever.

With the development of the F-1, the FD lenses have a built-in full-aperture metering signal and boast high performance. These high quality lenses with high resolving power will become the nucleus of future Canon single-lens reflex cameras.
These lenses possess greater operational ease with such improvements as completely new designs and changing the lens hood attachment to the bayonet type.

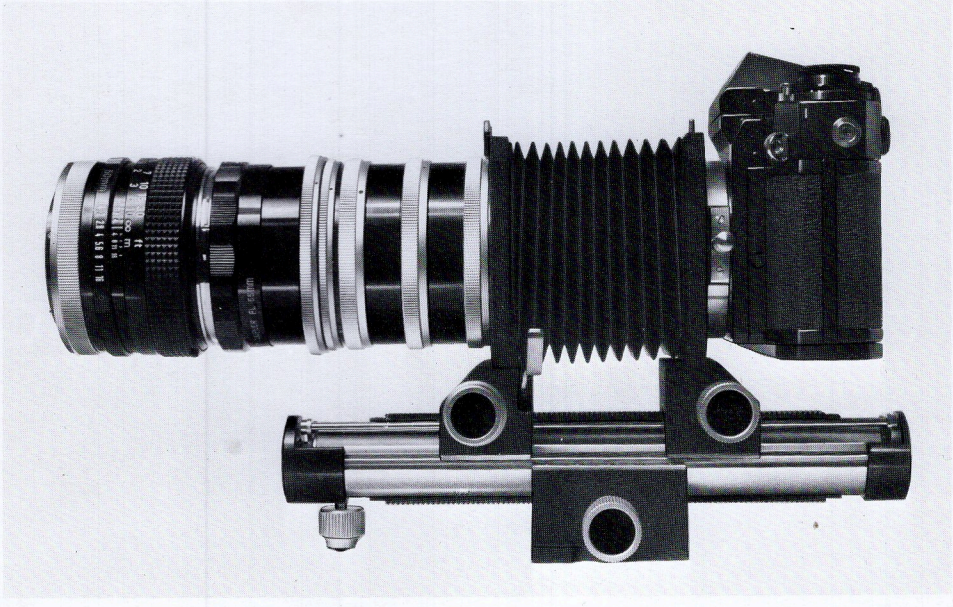
Interchangeable Lens System

1. The FD series of lenses are mounted on the F-1 camera and used for full-aperture metering. When these lenses are mounted on the FT and the Pellix, they are used with stopped-down metering.
2. In contrast, when the FL series of lenses are mounted on the F-1, they are used with stopped-down metering.
3. Special lenses, such as fish-eye and shift/tilt lenses, will be developed. The names and notations of special lenses without full-aperture metering signals have been changed. These lenses will be used with stopped-down metering on both the F-1 and FT.
4. The lens cap has been changed to the clip-on type. It is attached or detached by depressing the two knobs on both sides. The filter screw thread of the lens is used when attaching the lens cap.
Therefore, when a filter with an attachment screw thread is attached, the lens cap can be attached onto the screw thread.
5. The lens hoods for wide-angle and standard lenses have also been changed. They are of the bayonet type. Fit them into the bayonet ring on the lens and fix them into position by turning them clockwise. When storing the lens hoods in the camera case, fit them into the bayonet ring in the reverse direction and fix them into position by turning them counter-clockwise. Then put on the lens cap.
6. Mounting and unmounting of lenses is exactly the same as heretofore. The lenses can be removed when the bayonet ring is turned counter-clockwise until the red dot comes directly on top.
7. The preset aperture lever will not move when the lens is demounted. The aperture will not move even when the automatic aperture lever is turned. They will return to regular functioning condition when the bayonet ring is turned to the mounting position. For example, if the aperture ring is turned, the preset aperture lever will move correspondingly, and if the automatic aperture lever is moved, the aperture also moves.


CANON LENS FL 400mm 1:5.6
CANON LENS FL 800mm 1:8
CANON LENS FL 600mm 1:5.6
Canon
F-1


Aperture Signal Coupling Lever
Full Aperture Signal Pin
Preset Aperture Lever
Automatic
Aperture Lever
EE Switch Pin
Lens Speed Adjustment Pin
Pin (reserved)
Automatic Aperture Lever
Green Mark


Index
Focusing Ring
Infrared Index
Distance Scale
Preset Aperture Ring
Coupling Pin to Speedlite 133D
CANON
LENS MADE
50mm



8. When the automatic aperture lever is turned all the way to the opposite side, it becomes clamped and changes to a manually operated aperture. Thus, when the aperture ring is turned, the aperture blades move accordingly. However, in this case, too, the aperture blades will not move if the bayonet ring is not set at the mounting position. However, when the lens is mounted on the camera, the manually operated mechanism will function.

9. The manually operated aperture is mainly used when a bellows or an extension tube is mounted in-between the camera and the lens. There is no problem in the case of F-1 and FT cameras, which have a stopped-down metering lever, because the aperture can be closed down by pushing down the lever and without having to manually set the aperture on the lens. However, in the case of the FX and preceding cameras, which do not have a stopped-down metering lever, it becomes necessary when the lens is to be used for stopped-down metering.

10. In the case of the Macrophoto Coupler FL, in which the lens is mounted in inverse direction, the manually operated aperture will not function unless the bayonet ring is turned to the mounting position. This is because, as we stated before, the safety mechanism is functioning.

11. The green mark on the aperture ring is used when the Servo EE Finder is attached to the F-1 camera.

12. It cannot be used on cameras other than the F-1. Before mounting a lens on a camera other than the F-1, be sure to turn it to the aperture scale. If it is at the green mark, it cannot be mounted. It can be mounted even if it is slightly out of position, but the exposure will be incorrect. However, if it is correctly mounted, it cannot be turned to this mark.

13. The infrared mark has been changed from the "R" mark to a red dot.

14. The pin on the focusing ring of standard FD 50mm F1.4, FD 50mm F1.8 and wide-angle FD 35mm F2 lenses are used for CAT system electronic flash photography.

This is an accessory system in which the viewfinders and focusing screens with different properties can be freely interchanged according to the photographic needs, such as close-up photography, macrophotography, copy work, photomicrography, photochronography, telephotography, extended time recording, and photographing under dim light conditions. The pentaprism section is removed by pulling it towards the rear while depressing the attachment/detachment button. Various kinds of viewfinders can now be attached. All interchangeable viewfinders are attached in the same manner. They are aligned to the attachment rails and are slid in by pushing.

Waist-Level Finder

This is a finder which enables viewing from above. It has a 5X magnifier. The hood is opened by pressing the button in the rear. Next, when the magnifier raiser is pushed downwards, the magnifier springs up and the field of view is magnified.
For closing the hood, first return the magnifier to its former position and then push down the hood.
This viewfinder is very effective for low position photography and for focusing in copy work.

Speed Finder

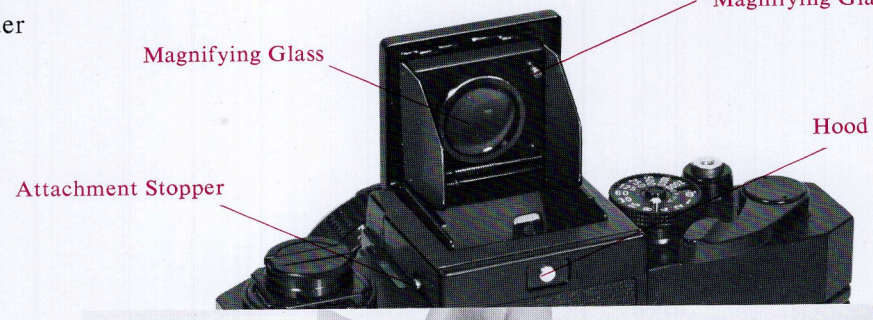
The eye point of the Speed Finder is located 60mm in back of the eyepiece. Therefore, the entire field of view of the viewfinder can be seen with the eye away from the eyepiece. Moreover, the rear section of the optical system can be quickly turned for interchanging between Eye-Level Finder and Waist-Level Finder. Thus, it can be used for all kinds of photography, from sports to copy work.

1. The field of view can be seen even while wearing goggles or helmets with windbreakers. Therefore, it is most suitable for aerial photography and photography by motorists and skiers.
2. The field of view can also be easily seen while wearing glasses, and the field of view can be easily checked when photographing moving subjects in sports events.
3. Various physical positions can be taken freely, according to the photographic needs, because the Eye-Level and Waist-Level Finders can be

Finder System

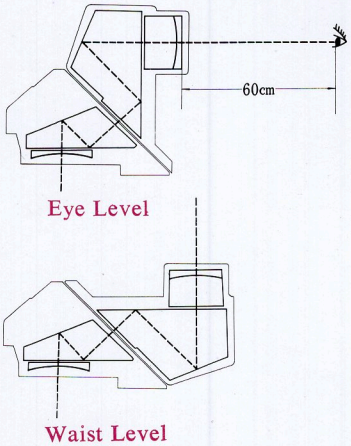


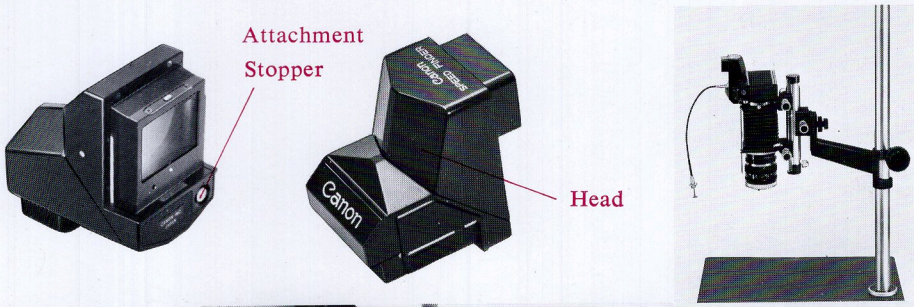
Waist Level Finder

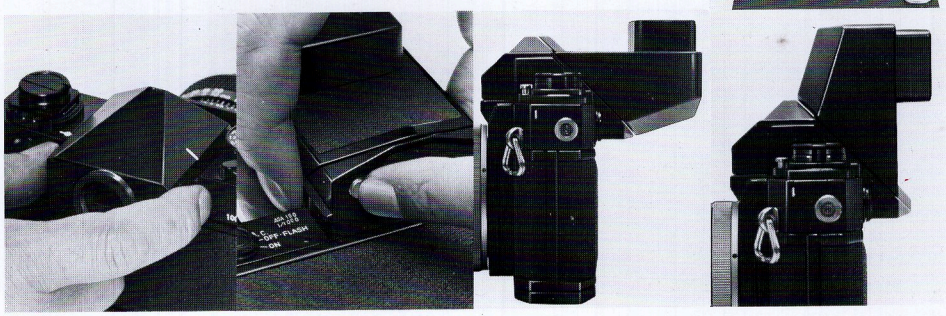




Speed Finder







quickly interchanged and because the Speed Finder can be used with the eye away from the eyepiece.

4. By using the Waist-Level Finder you do not need to get down on your stomach even when the camera is laid on the ground. You can also raise the camera high above your head with both hands and see the subject in reverse.

5. The viewfinder angle can be changed according to the conditions of all kinds of photography such as photomicrography, copy work, close-up photography and macrophotography. Also, it is not tiring even for continuous shooting because it can be used with the eye away from the eyepiece.

6. The meter information can be seen and metering can be performed.

7. For detaching, the attachment/detachment button, situated on the bottom, is used. Only this finder has its attachment/detachment button on the bottom.

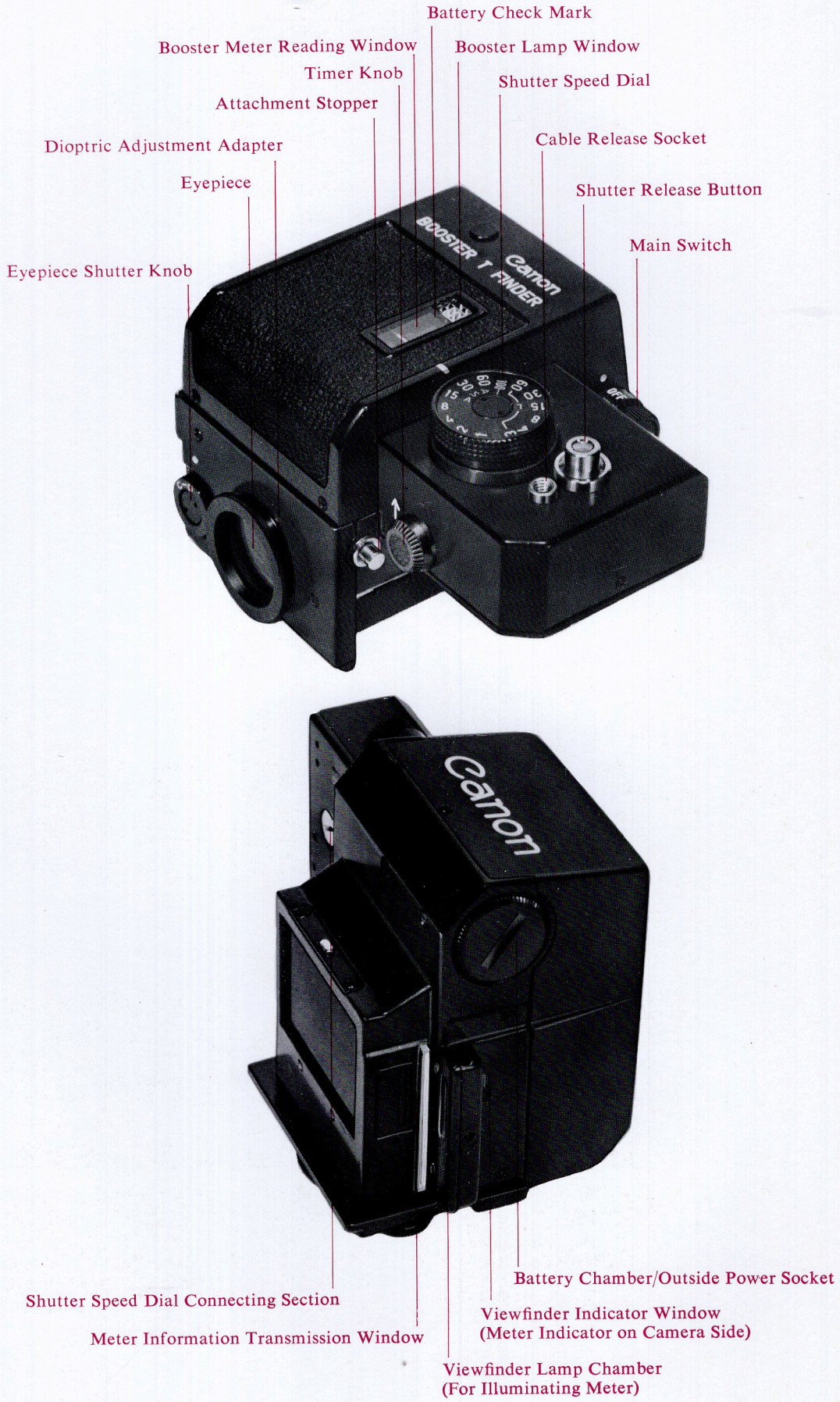


With Servo EE Finder

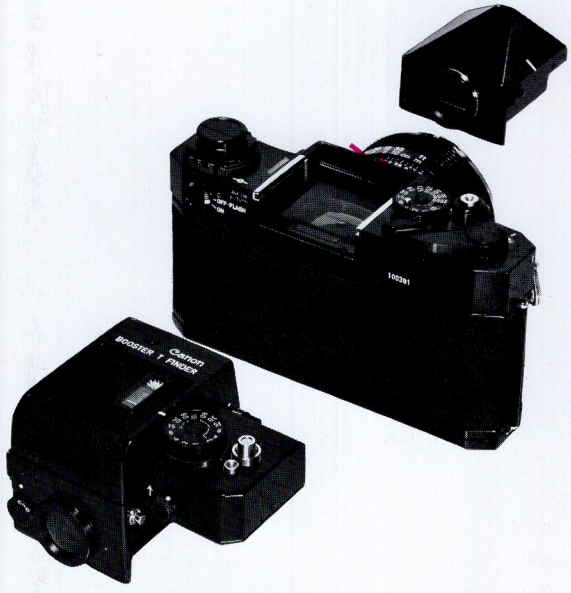


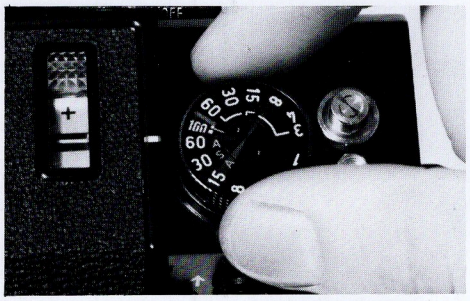
With Booster T Finder

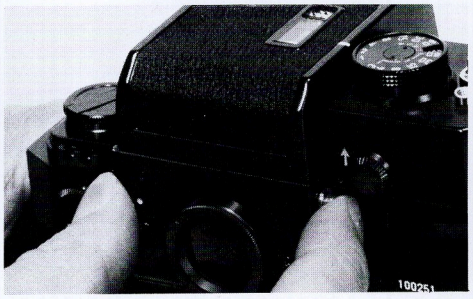

CANON LENS FD 55mm 1:1.2
55mm
1.2 2 2.8 4 5.6 8 11 16
Canon
Canon
BOOSTER T FINDER
OFF
T-90

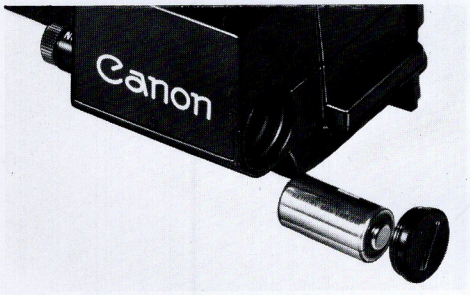

Battery Check Mark
Booster Meter Reading Window
Booster Lamp Window
Timer Knob
Shutter Speed Dial
Attachment Stopper
Cable Release Socket
Dioptric Adjustment Adapter
Eyepiece
Shutter Release Button
Main Switch
Eyepiece Shutter Knob
BOOSTER T FINDER
Canon
OFF
Canon
Shutter Speed Dial Connecting Section
Meter Information Transmission Window
Battery Chamber/Outside Power Socket
Viewfinder Indicator Window
(Meter Indicator on Camera Side)
Viewfinder Lamp Chamber
(For Illuminating Meter)

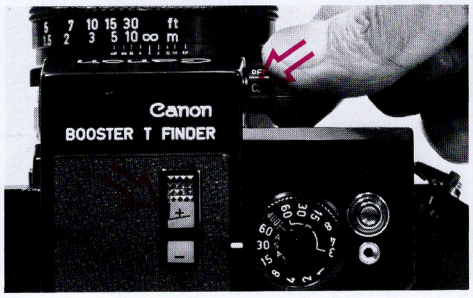

Canon
F-1


BOOSTER T Canon FINDER






Canon


Canon
BOOSTER T FINDER

Canon F-1

Booster T Finder

The Booster T Finder is a finder attachment with a super-sensitive meter, which measures dim lighting conditions that cannot be measured by the camera, and an electronic timer.
In dim light situations, this booster can measure down to EV -3.5 (F1.2, 15 sec.), which means that it can measure the brightness of an ordinary moonlit night. Thus, it is very effective in the fields of photomicrography, macrophotography and night photography in which exposures are difficult to decide.
The feature of this finder is that after it is attached, it becomes a stopped-down booster meter under dark conditions and, when the shutter release button is depressed, automatic exposure is performed with the timer. Under bright conditions, the metering function is switched over to the camera side for full-aperture metering up to EV 15 (f/22, 1/60 sec.). It is very convenient because metering from bright to dark conditions can be performed without having to remove the Booster T Finder.

Attaching

1. When attaching, set the film speed on both the camera side and the booster side.
2. Attach after setting the shutter speed of the camera at a speed slower than 1/30 sec.
3. After attaching, turn the shutter speed dial of the booster to either left or right and it will become geared with the camera side and coupled.

Loading the Battery

One No. 544 6v silver oxide battery is used. The cover of the battery chamber is removed by unscrewing, and the silver oxide battery is loaded with the (+) side facing outwards.

Checking the Battery

Turn the main switch to the "C" side and check the position of the needle in the booster meter window. If the needle swings over to the blue mark, it means the battery has sufficient voltage. Otherwise, replace the battery with a new one.

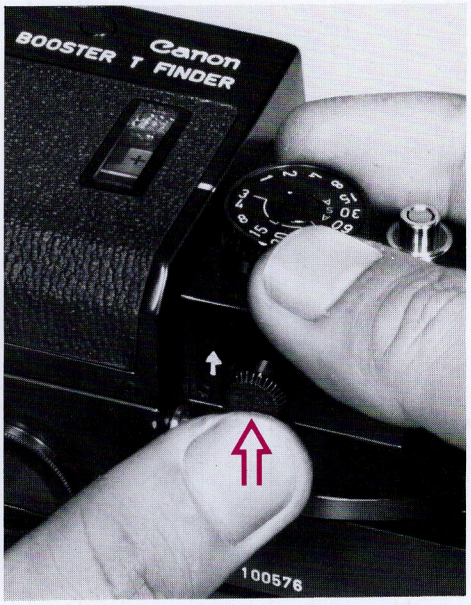
Metering on Booster Side

Metering on the booster side is used when extended time exposures of 3 seconds or longer are required for dimly lit subjects or when the aperture is opened and the shutter speed is made faster in photographing dark subjects.

The orange-colored scale on the shutter speed dial is used for extended time exposures of 3 to 60 seconds where the timer functions. Switching is performed at the 3-second position by pushing up the switch knob. The shutter speed dial on the camera side is set at "B". The white-colored scale is set corresponding to the scale on the camera side.

1. Set the meter switch at "ON".
2. When the shutter speed dial is turned to the orange-colored scale side, the dial stops at the 3-second position.
3. If it is turned further, while pushing up the timer switch knob, it can be set at the extended time scale. At this time, the shutter speed dial on the camera side is set at "B".
4. With the aperture at full opening, focus while looking through the viewfinder and decide the composition.
5. When the knob of the eyepiece shutter is turned upwards, the eyepiece shutter closes and the switch is set on the booster side. If this is forgotten, metering cannot be performed.
6. At the same time, the lamp in the top meter window lights up and indicates metering by booster.
7. Push down the metering lever of the camera to lock it. Then set it at stopped-down metering.
8. Turn the shutter speed dial or the aperture ring and make adjustments so that the needle points to the black band in the center. The plus (+) side indicates over-exposure and the minus (−) side indicates under-exposure.
9. When metering with booster, the response speed is slightly slower than ordinary metering due to the low light volume. Therefore, if the needle goes off after one adjustment, perform metering adjustment once more.
10. After the exposure has been decided, depress the shutter release button. The shutter release button becomes locked, the timer functions according to the shutter speed, and the film is exposed. Therefore, you can take your finger off the shutter release button.
11. The meter lamp lights up approximately once every second to indicate the amount of exposure time.
12. When exposure is completed, the shutter release button returns to its former position.


ON
OFF
Canon
R T FINDER


BOOSTER T FINDER
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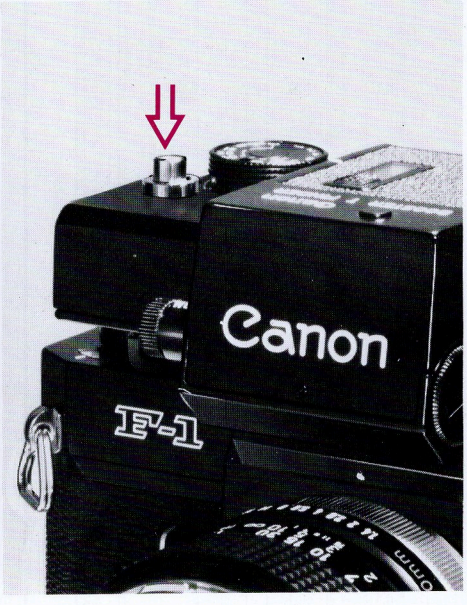
100576


ASA 100
1/2000
C.
OFF·FLASH
ON


F-1
CANON


Canon
BOOSTER T FINDER


Canon
F-1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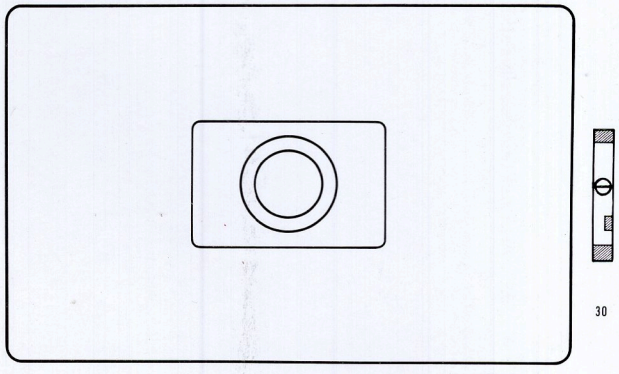
100381


Canon
50mm


BOOSTER T FINDER
ASA 100
1/2 000
OFF-FLASH
ON



30

Metering on Camera Side

Metering on the camera side is performed when the subject is brighter than the booster metering range.

1. Turn the shutter speed dial towards the high speed white-colored scale side. When it goes over "3", the camera and booster dials are geared once again.
2. When the metering range on the camera side is entered, the lamp in the meter window goes out and the finder lamp on the side of the booster lights up to indicate that the metering on the camera side is functioning.
3. At the same time, the meter information window, situated on the right side inside the viewfinder, is illuminated so that it can be seen.
4. Turn the knob of the eyepiece shutter to "O", return the metering lever to its former position, and obtain a full aperture metering condition.
5. The proper exposure can be obtained by ordinary full aperture metering operation (turn the aperture ring). This is done by aligning the aperture needle to the meter needle inside the field of view of the viewfinder.
6. Usable shutter speeds are up to 1/60 sec.

Increase/Decrease Metering

The camera can handle film speeds up to ASA 2000. With the use of the booster this film speed can be raised to ASA 12800. When increase/decrease metering is performed with the film speed of the booster, discrepancies arise on both sides.

Therefore, shoot the entire roll of film under the same condition. This means you must not perform metering with both the booster and the camera.

Using External Power Source

In low temperatures of 0°C or below, the performance of the battery decreases and consumption greatly increases. Therefore, use the standard battery case for external power source. A battery magazine containing eight penlight batteries of 12 volts or an NiCd 500 FZ is loaded into the battery case. Canon Cord 6V2B is used for connecting the battery case to the Booster T Finder.

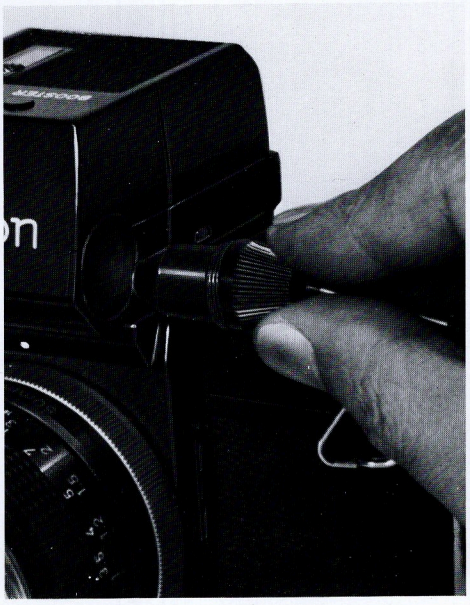
How to Connect the Cord

1. Take out the silver oxide battery from the Booster T Finder and screw in the terminal of the cord.
2. Plug in the cord connector to the battery case and screw tightly with the ring.

Precautions

1. When the shutter release button is depressed at the timer scale position before the camera is wound, the shutter release button becomes locked and the timer starts counting. Do not mistake it for exposure.
2. If the shutter release button is depressed when the main switch is set at "OFF", the shutter release button becomes locked. However, the shutter release button returns to its former position when the dial is turned to the high speed side.
3. Consumption of the silver oxide battery is fast. Therefore, always cut off the switch when the battery is not in use.

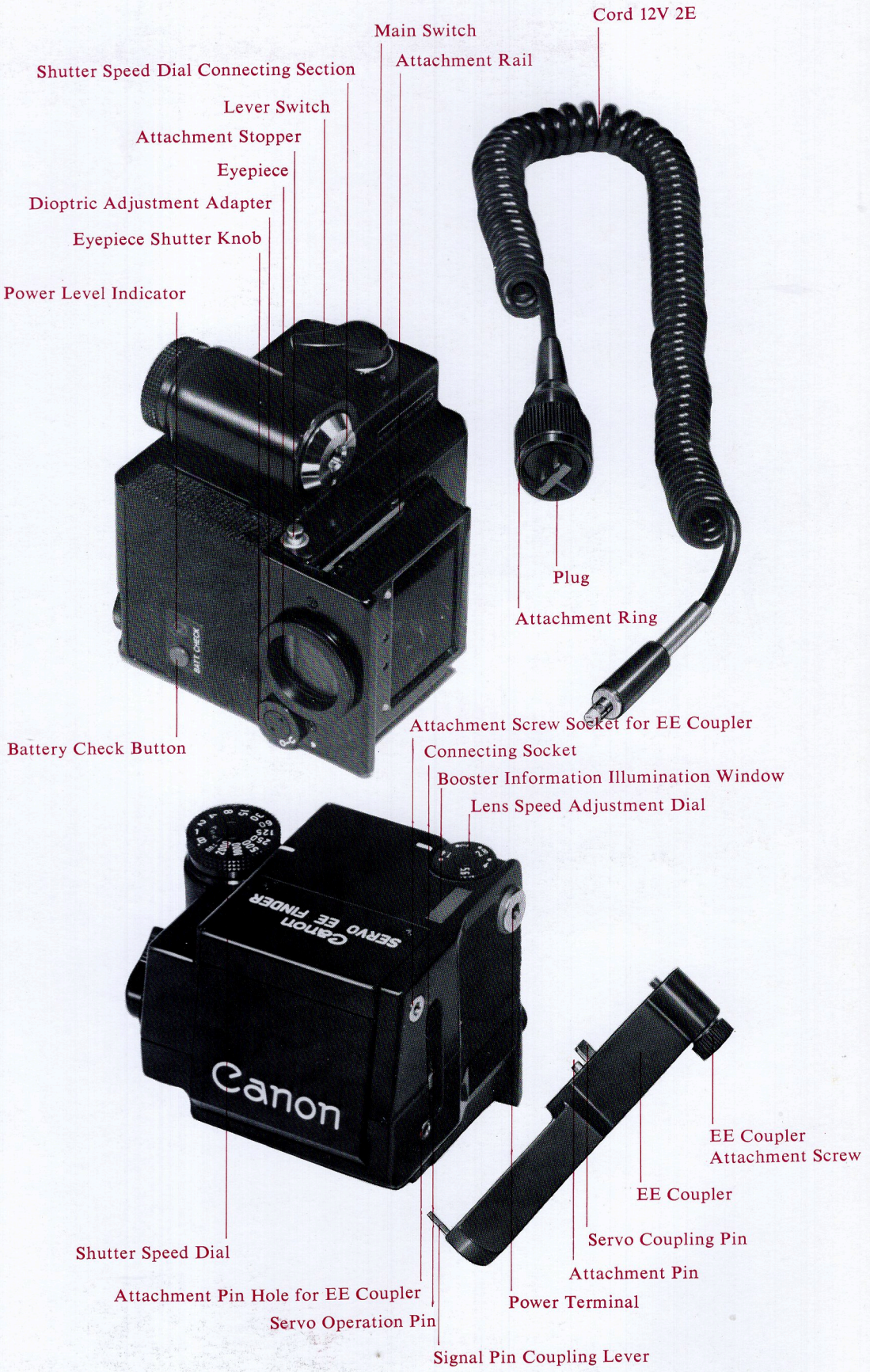

Canon
BATTERY
MAGAZINE






Canon


Canon
F-1
CANON LENS FD 55mm 1:1.2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Main Switch
Attachment Rail
Shutter Speed Dial Connecting Section
Lever Switch
Attachment Stopper
Eyepiece
Dioptric Adjustment Adapter
Eyepiece Shutter Knob
Power Level Indicator
Plug
Attachment Ring
Battery Check Button
Attachment Screw Socket for EE Coupler
Connecting Socket
Booster Information Illumination Window
Lens Speed Adjustment Dial
Canon
SERVO EE FINDER
Canon
EE Coupler
Attachment Screw
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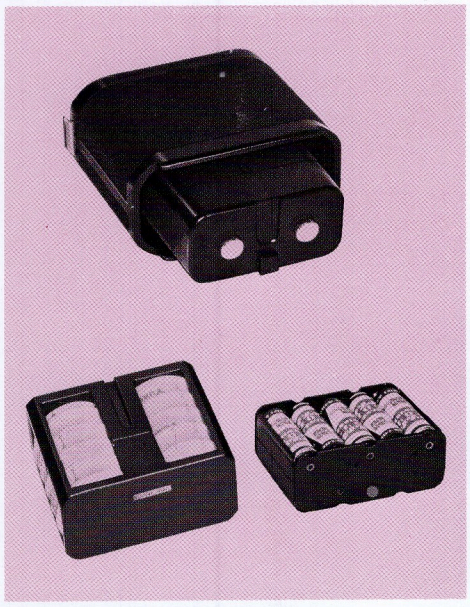
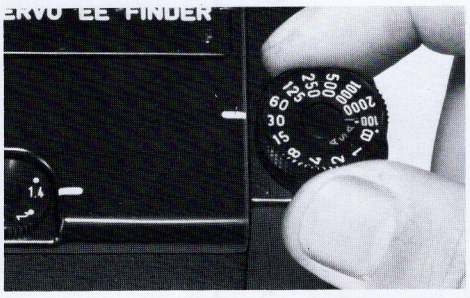
Servo Coupling Pin
Attachment Pin
Power Terminal
Shutter Speed Dial
Attachment Pin Hole for EE Coupler
Servo Operation Pin
Signal Pin Coupling Lever

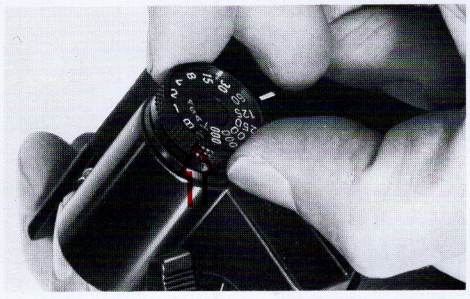


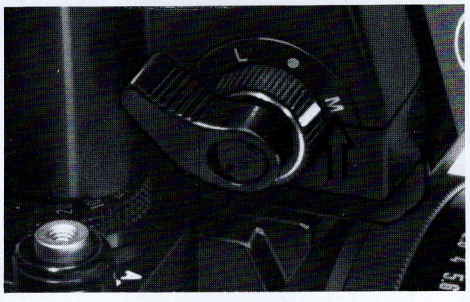

5 7 10 15 30 ft
1.5 2 3 5 10 ∞ m
Canon




Canon
SERVO EE FINDER


SERVO EE FINDER

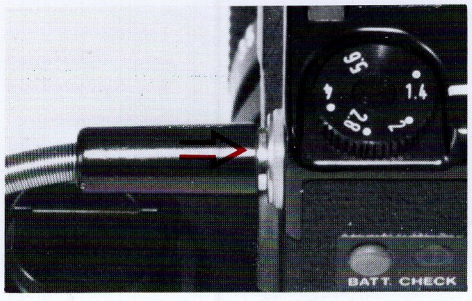



L
M




Canon


Canon


BATT. CHECK


BATT. CHECK

Servo EE Finder

The Servo EE Finder is an EE functioning electronic device which presets the proper f/stop, with the aperture at full opening, by motor drive after coupling with the full-aperture metering mechanism of the F-1. This accessory can be used in common with the Motor Drive Unit and Film Chamber 250. Therefore, it has opened up a new field in unmanned continuous shooting with EE.

Mounting

Set the green mark of the aperture ring of the lens at the index mark.

1. The Servo EE Finder is first mounted on the camera. If the shutter speed dial of the camera is set at a speed of 1/30 sec. or slower, the viewfinder can be mounted without setting the shutter speed dial on the finder side. The Servo EE Finder is mounted by sliding it in from the rear.
2. When the shutter speed dial of the finder is turned, it becomes geared with the shutter speed dial of the camera.
3. Then connect the power source.

The power source is a battery case which is loaded with Battery Magazine 12V or 15V, a battery magazine containing eight or ten penlight batteries, or an NiCd 500 FZ.

The cord is just plugged into the Servo EE Finder side. On the battery case side, however, plug in the cord and then screw tightly with the ring.

4. Set the main switch of the Servo EE Finder at "M".
5. The coupling lever inside the Servo EE Finder descends to its attachment position. If the EE Coupler is attached first, the attachment position will be incorrect. Therefore, be sure to follow the above procedure.
6. Open the cover of the direct-coupled socket situated on the side of the camera mirror box.
7. Tighten the EE Coupler with the attachment screw.
8. Set the lens speed indicator of the lens to be used. This changes the meter window indicator and the functioning range can be read.

Checking the Battery

Press the battery check button at the rear section of the Servo EE Finder. If the lamp lights up, it means the battery has sufficient voltage.

Basic Metering Operations

This metering system is average metering using two CdS photocells. Therefore, the metering range frame is not involved.

1. Set the ring switch at the red dot.
2. Decide the shutter speed.
3. Aim the camera at the subject.
4. When the lever switch is pressed, metering starts while emitting noise. Metering stops when it is set at the proper aperture. Therefore, remove your finger from the lever switch.
5. Next, depress the shutter release button.

How to Use the Switches

There are two switches, the ring switch and the lever switch.

1. Photography by manually operated aperture is performed with the ring switch set at "M" position. In this case, the aperture ring is set manually. However, battery power will be consumed because the circuit remains on.
2. The circuit is cut off when the ring switch is set at the red dot position. However, at this position, temporary metering can be performed because the circuit is switched on when the lever switch is depressed.
3. When the ring switch is turned to "L", it is locked for continuous metering and the shutter can be released successively. However, when the shutter speed is slower than 1/8 sec., metering will be cut off during the time the mirror is in an upward position and the exposure will be inaccurate. Therefore, use a shutter speed of 1/15 sec. or faster.
When using shutter speeds of 1/8 sec. or slower, use the lever switch metering described in 2.
4. When performing continuous shooting in conjunction with the Motor Drive Unit, all shutter speeds excluding "B" can be used by continuous metering described in 3.

Exposure Warnings

When the needle points to the upper warning zone, it means under exposure. When it points to the lower part it means over exposure. Therefore, change the shutter speed.

The auxiliary mark in the meter window is an exceptional mark when f/22 is indicated inside the meter window after the f number is corrected. At this time, it is used as a warning mark for lenses with f/stops stops of only up to f/16.

The four applicable lenses are FD 24mm F2.8, FD 28mm F 3.5, FD 35mm F 2, and FD 35mm F 3.5.

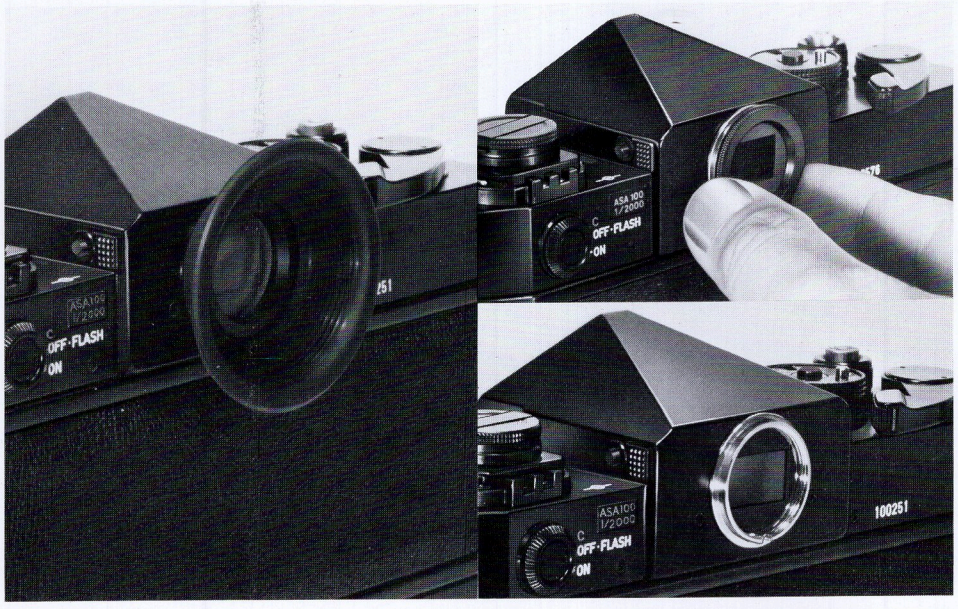
* The lower mark appears when set at F 2.8.


Canon
F-1





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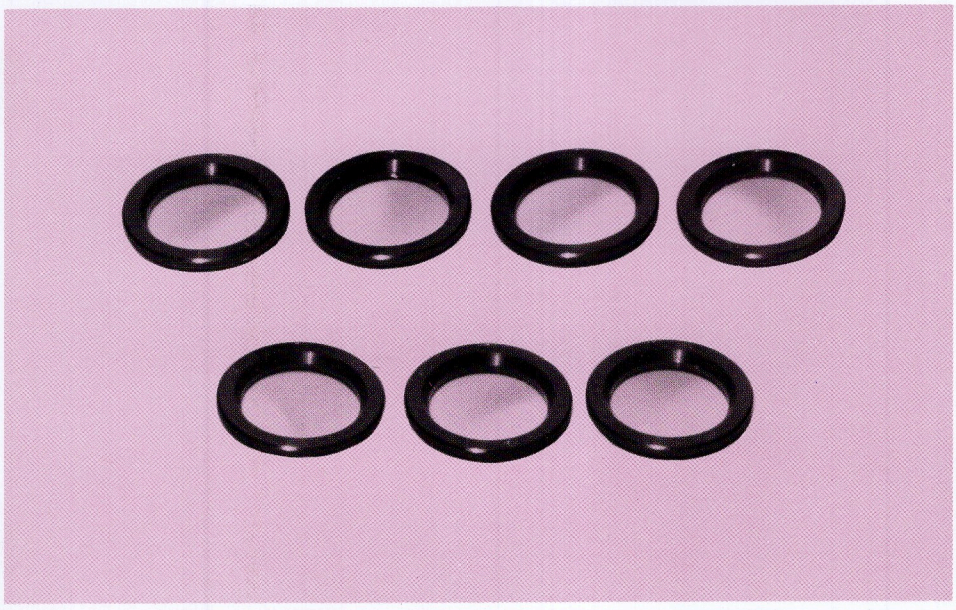
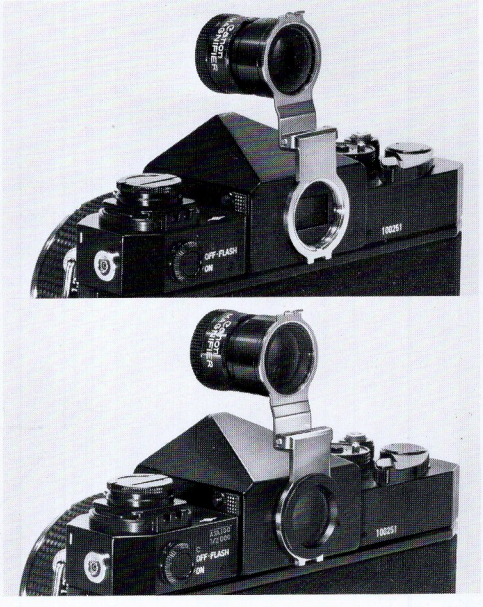



Canon
MAGNIFIER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Eyecup

Light shield for eyepiece. The eyecup is attached over the eyepiece ring.

Dioptric Adjustment Lenses

Besides the −1.2 standard ring that comes with the camera, there are four kinds of rings for near-sightedness and three kinds for far-sightedness. The diopter is the composite value when the dioptric adjustment lenses are mounted on the camera.
They are of the screw-in type.

1. Corresponding degrees to diopters.

Name of lens:	R + 3	R + 2	R + 1	R0	R − 1 (Standard ring)	R − 2	R − 3	R − 4	(diopter)
	13.12	19.68	39.37	0	−39.37	−19.68	−13.12	−9.84	(degree)

2. This ring is used when mounting the Magnifier.
3. It is removed when mounting Angle Finder B.
4. The eyecup is attached over the eyepiece ring.

Magnifier

The Magnifier is attached to the eyepiece of the F-1 Eye-Level Finder for magnifying the focusing section so that accurate focus can be obtained.
After use, it can be sprung upwards by a hinge. Therefore, focusing and deciding the field of view can be performed consecutively. It is convenient not only for ordinary photography but also for close-up photography, copy work and wide-angle photography.
Magnification is 2.5 times. Dioptric adjustment is +4 to −4 diopter. With the use of the FT Adapter, it can be attached to the square shaped eyepieces of the FT and Pellix.

The Magnifier is composed of an adapter for attachment to the F-1 Eye-Level Finder, clip-on type adapters for Servo EE Finder and Booster T Finder, and main body.

How to Use

1. The adapter is of the screw-in type and can be fixed to the Magnifier.
2. Unscrew the eyepiece ring of the Eye-Level Finder.

3. Open the hinge of the adapter, align and insert the protrusion of the adapter into the notch after the eyepiece ring has been removed, then screw in the previously-removed ring and tighten.

4. The field of view through the finder can be observed when the hinge of the Magnifier is folded into its former position.
5. Adjust the diopter by turning the dioptric adjustment ring so that the field of view information can be clearly seen.
6. Accurate focus cannot be obtained if the diopter is not accurately adjusted.
7. When the entire field of view is to be observed after accurate focus has been obtained, spring the Magnifier upwards with the hinge and clamp it.

Attaching onto Booster T Finder and Servo EE Finder
Even if the adapter for the F-1 Eye-Level Finder is attached, it cannot spring the Magnifier upwards because the top is blocked.
Therefore, interchange it with a clip-on type adapter. When observing the entire field of view, remove the clip-on type adapter.

In the Case of FT Type
Exchange with a different square-shaped adapter.
It is used by inserting from the top of the FT eyepiece section. In this case, too, the Magnifier can be used by springing it upwards.

Angle Finder B

Angle Finder B is screwed in after removing the eyepiece ring. Left and right, and top and bottom of the image can be seen as it actually is, and the entire field of view can be observed. Perform dioptric adjustment after attaching.

Magnifier





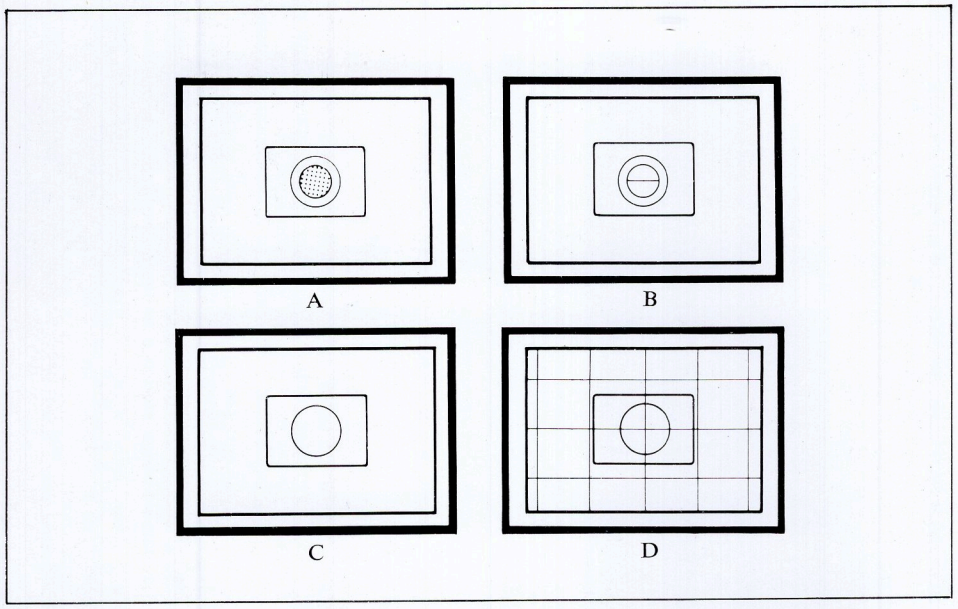


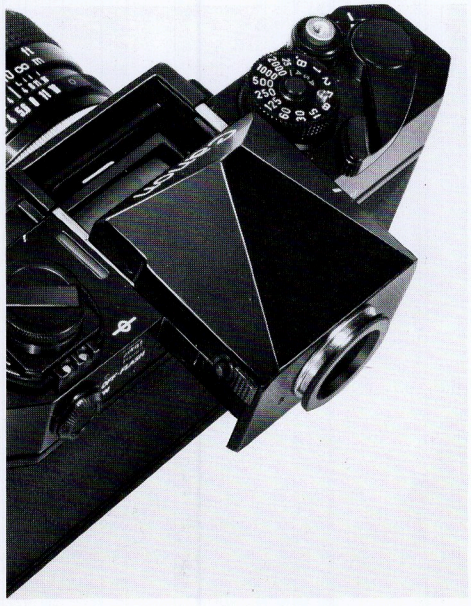


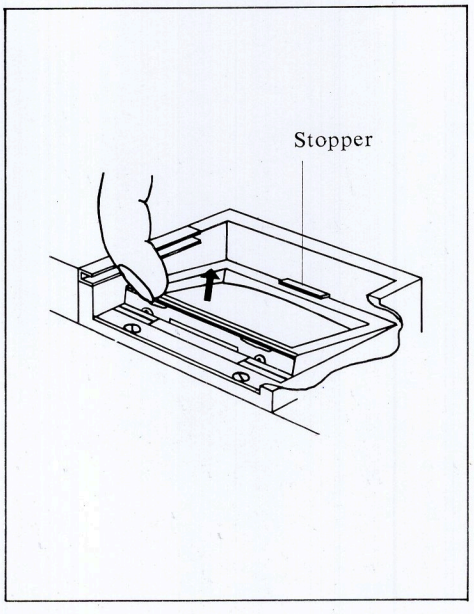


Angle Finder A




A
B
C
D




Stopper

Focusing Screens

The focusing screen of the FT model could not be interchanged because the prism housing was fixed. Now the prism housing of the F-1 can be removed and focusing screens can be freely interchanged. The focusing screen is inside a metal frame together with the cut condenser which guides the metering beam and is durably built.

1. The penta prism housing is removed by pressing in the attachment/detachment button.
2. Insert your fingernail into the notch on the rear end of the focusing screen and lift it.
3. When attaching the focusing screen, insert the protruding part of the focusing screen under the holder in the mirror box and then lower the rear end into a horizontal position.

Types of Focusing Screens

Four types, A, B, C and D, are available.

A: Microprism type. Standard type which is usually built into the camera at the factory.

B: Split image type. Upper/lower images aligning type. Easy to focus at full aperture opening. However, when the aperture is stopped down, one-half becomes difficult to see.

C: All-mat type. The entire field of view can be seen even when the aperture is stopped down. Therefore, it is advantageous for close-up photography and telephotography. The area surrounding the central mat is a Fresnel mat surface.

D: Section mat type. Section lines are crossed over the mat surface. Picture compositions can be conveniently and quickly performed with this focusing screen in close-up photography, copy work, and when using a shift/tilt lens.

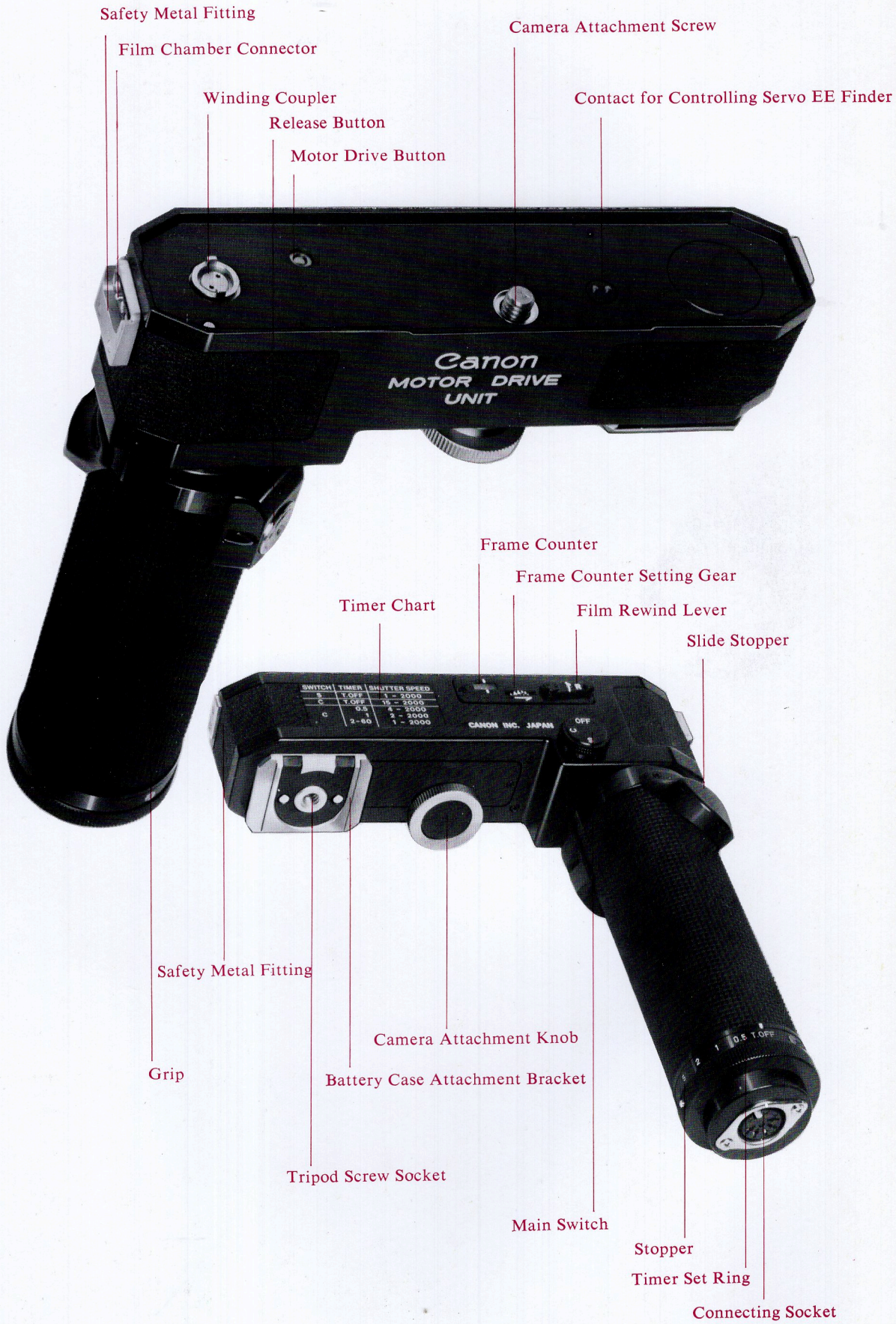






With Motor Drive Unit


Canon
F-1
LENS MADE IN JAPAN
CANON LENS FD 55mm 1:1.2
Canon
MOTOR DRIVE
UNIT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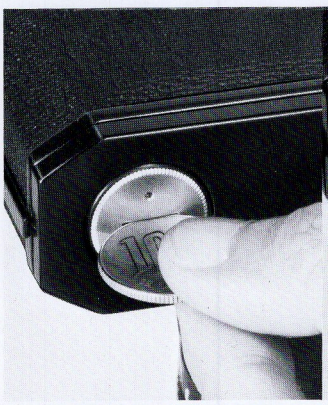
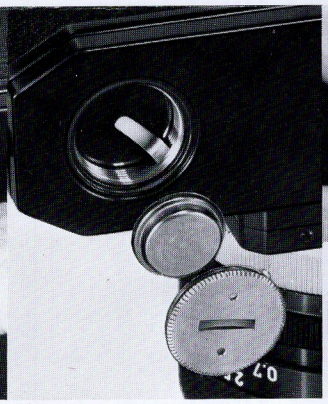
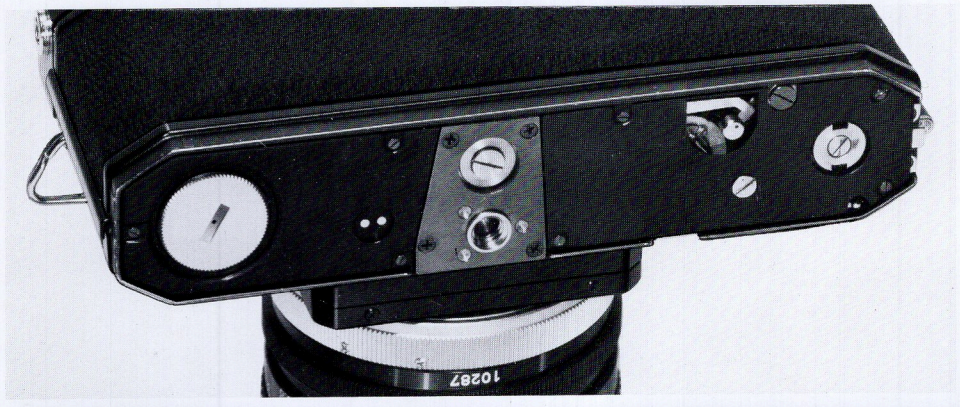
Film Chamber Connector
Winding Coupler
Release Button
Motor Drive Button
Camera Attachment Screw
Contact for Controlling Servo EE Finder
Canon
MOTOR DRIVE
UNIT
Frame Counter
Frame Counter Setting Gear
Timer Chart
Film Rewind Lever
Slide Stopper
SWITCH
TIMER
SHUTTER SPEED
CANON INC. JAPAN
OFF
Safety Metal Fitting
Camera Attachment Knob
Grip
Battery Case Attachment Bracket
Tripod Screw Socket
Main Switch
Stopper
Timer Set Ring
Connecting Socket


Canon
F-1





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SWITCH
TIMER
SHUTTER SPEED
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OFF


JAPAN
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S

Canon F-1

Motor Drive Unit

A certain newspaper has stated that the ideal single-lens reflex camera of the future is the TEM, and its article described the Canon F-1 as the pioneer in this TEM. What is the TEM? The first "T" is for TTL (through-the-lens). The "E" is for EE (electric eye). And the "M" stands for Motor Drive. In other words, this means that metering is performed by TTL, exposure is performed by EE, and film advance is performed by the Motor Drive Unit. The Motor Drive Unit for the Canon F-1 is the nucleus of this TEM. Because of its complete interchangeability, it can be attached to any F-1 and can be used in combination with any Film Chamber 250. By interchanging the Motor Drive Unit with the bottom cover of the F-1, continuous photography of up to 36 exposures, high speed photography of one or three exposures per second, and timer set photography in seven stages up to one exposure every 60 seconds, becomes possible. Another feature is that all shutter speeds, with the exception of "B" (bulb), can be used. When Film Chamber 250 is attached, the function of this Motor Drive Unit is expanded to long-length roll film photography of up to 250 exposures. And with the combined use of the Servo EE Finder, EE exposures become possible. Also, with the combined use of the remote control switch and cable release, unmanned continuous EE photography can be performed and an automatic stop after completion of photography is possible. These are unparalleled qualities.

Attaching

1. After removing the bottom cover of the camera, attach the Motor Drive Unit securely to the camera with the tripod screw. At this time, be sure to return the mercury battery into the battery chamber, before attaching the Motor Drive Unit. Otherwise, metering cannot be performed.
2. Set the switch at OFF position before connecting the power.

Battery Case

1. Battery Magazine 15V, containing 10 penlight batteries, or the sealed type NiCd 500 FZ is loaded into a standard battery case and used as the power source for the Motor Drive Unit. Battery Magazine 15V is inserted after aligning it to the green mark on the battery case. The bottom cover of the battery case is of the sliding type and can be pulled out to either the left or right sides.
2. The battery case and the Motor Drive Unit are connected by Battery Connector MD. The battery case is covered by Battery Connector MD which is tightly screwed into position.
3. After connecting Battery Connector MD and the battery case, attach the checker to the terminal of the connector cord before checking the battery. The battery is checked by pressing the button and checking the position of the needle.
4. Plug the connector cord into the socket at the bottom of grip of the Motor Drive Unit.
5. The battery case can be hung from the shoulders with a strap or it can be attached to a belt with a metal fitting.

How to Use

1. The power is cut off when the Motor Drive Unit switch is set at OFF.
2. Load the film and advance the film for two unexposed frames on the camera side. Do not release the shutter for the third frame.
3. Do not forget to set the number of frames on the Motor Drive Unit side. The setting of the counter is of the remaining frame type and is rotated by gear. The frame counter automatically stops when it reaches "O". If the frame counter should be set at 20 frames when using 36-exposure film, the frame counter will stop at the 20th frame. If it should be set at 36 when using 20-exposure film, the frame counter will not automatically stop even after the entire film has been exposed and will continue to take up the film. Therefore, the frame counter must always be set at an accurate number.

The "FC" on the scale is used when Film Chamber 250 is used. In this case the frame counter is released, the scale does not advance, and automatic stop does not occur.

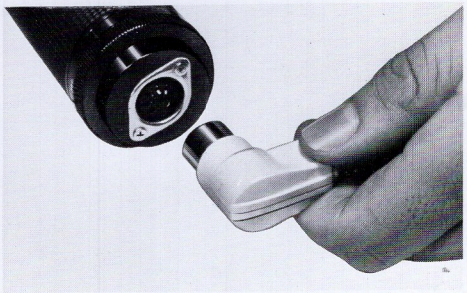
4. Set the Selector Switch

"S" is used for single frame and "C" is used for continuous photography. This switch is used in conjunction with the timer.

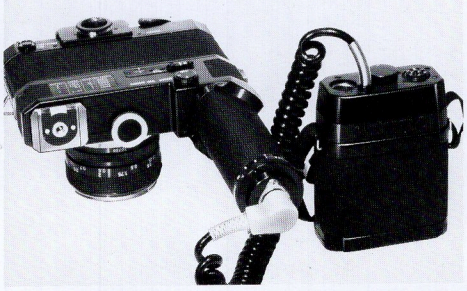
5. The timer can be set at seven stages of T/OFF and from 1/2 sec. to 60 sec. Turn the timer setting ring while pushing the stopper.

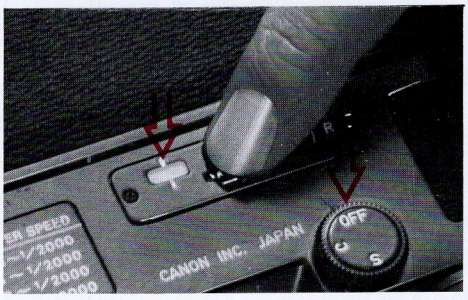








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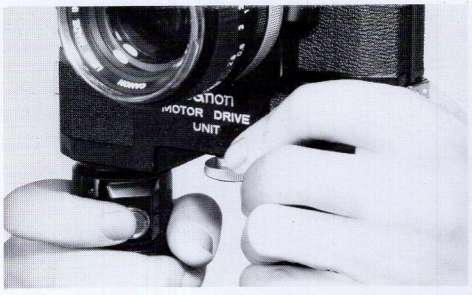
MOTOR DRIVE
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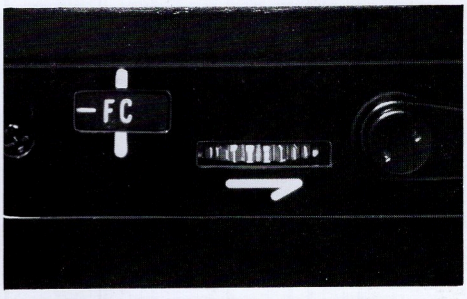
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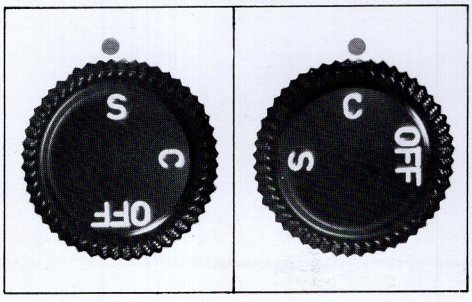
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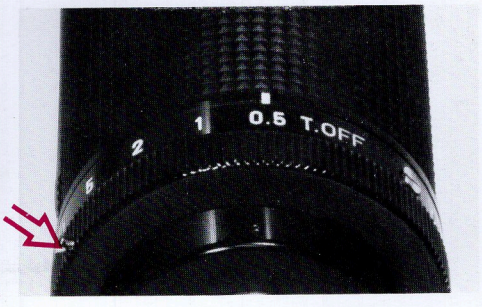
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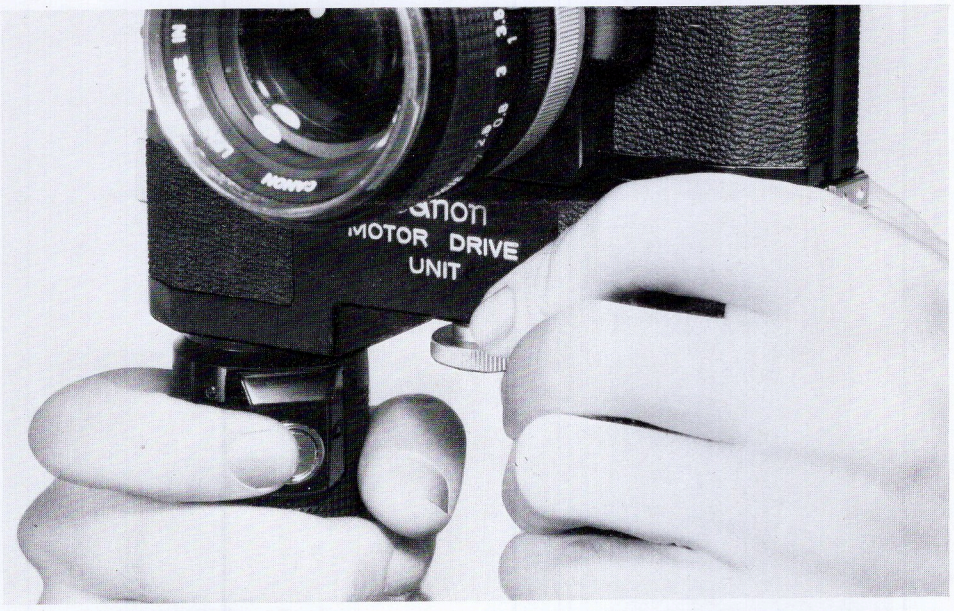
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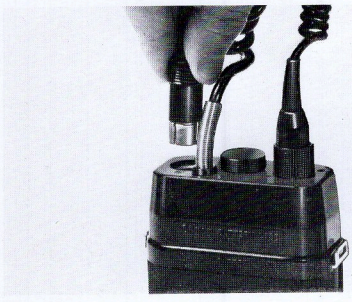

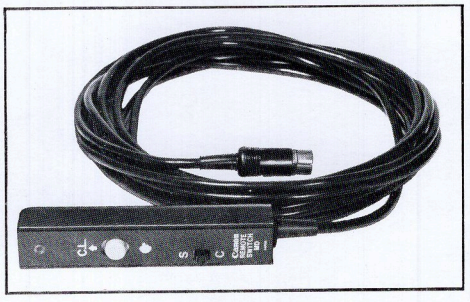
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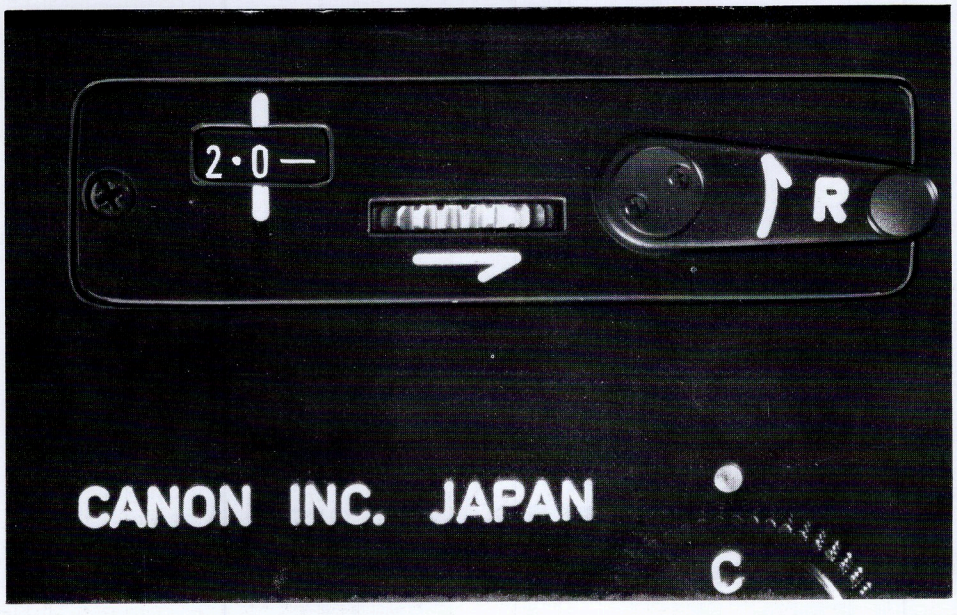
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C

6. Usage Chart

	Single frame photography	Continuous photography			
Switch	S	C	C	C	C
Timer Scale	T-OFF	T-OFF	0.5	1	2-5-10-60
Shutter Speed	1/2000-1	1/2000-1/30	1/2000-1/8	1/2000-1/2	1/2000-1
Filming Speed	Single frame	3 fps	2 fps	1 fps	1 frame per set sec.
Shutter Release Button	Press until exposure is completed	Press continuously			

7. The shutter release on the Motor Drive Unit side is used.

In the case of single frame photography, windup for the next frame takes place when the finger is released from the shutter release button. In the case of continuous photography, shooting continues during the time the shutter release button is being depressed and, when the finger is released from the shutter release button, windup for the next frame takes place.

8. When a cable release with lock is attached and the shutter release is locked during continuous photography, continuous photography can be continued even after the hand is taken away from the cable release.

9. Remote Control

When Remote Control Switch MD is connected to the remote control terminal, the Motor Drive Unit can be controlled with the buttons on the remote control switch. At this time, the Motor Drive Unit switch can be set at any position except the OFF position.

10. Remote Switch MD also has the same S and C switches as the Motor Drive Unit and it functions in exactly the same way,

The button can be locked. Therefore, with the switch set at "C", if the button is pressed down and slid in the direction of the arrow, it becomes continuously locked and capable of unmanned photography.

11. The frame counter automatically stops when it reaches "O".

12. Film rewinding is performed with the crank on the camera side after turning the rewinding lever in the direction of the arrow.

13. If a shutter speed slower than the usage chart or "B" is used, proper exposure cannot be obtained.

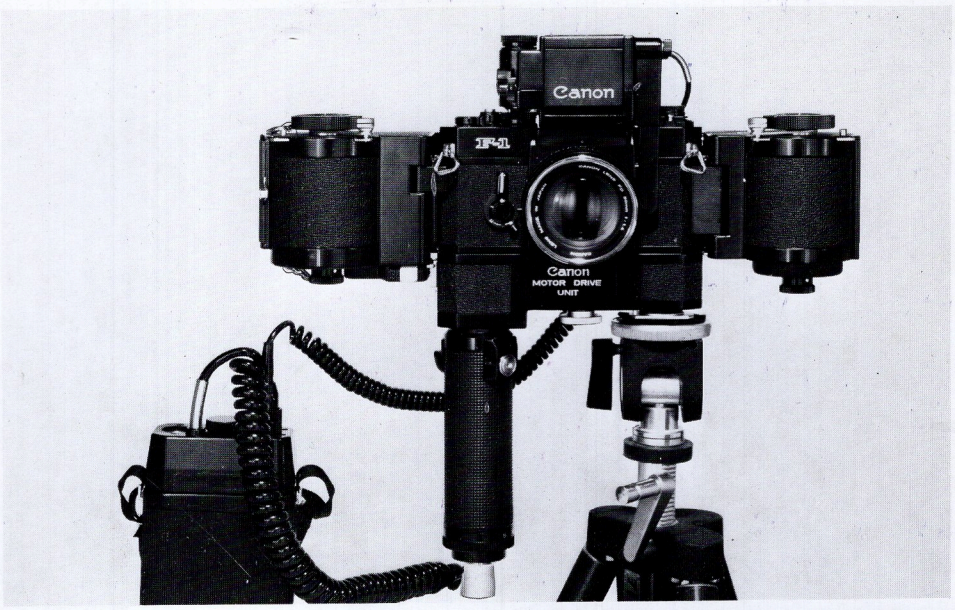
14. When using a self-timer, set the switch at "S" and use the shutter release on the camera side.

15. Keep the battery warm in case of temperatures of -10°C and under.

Joint Use with Servo EE Finder

When the Motor Drive Unit and the Servo EE Finder are jointly used, Cord 12V 2E is used to connect the Servo EE Finder to Battery Connector MD. The selection of the shutter speed applies correspondingly to the Motor Drive Unit side.

If the main switch of the Servo EE Finder is set at "C", continuous EE photography can be performed with the operation of the shuuter release button of the Motor Drive Unit. Moreover, if the shutter release button is locked with Remote Switch MD or the cable release, unmanned continuous EE photography can be performed.


Canon
F-1
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MOTOR DRIVE
UNIT




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F-1
LENS MADE IN JAPAN
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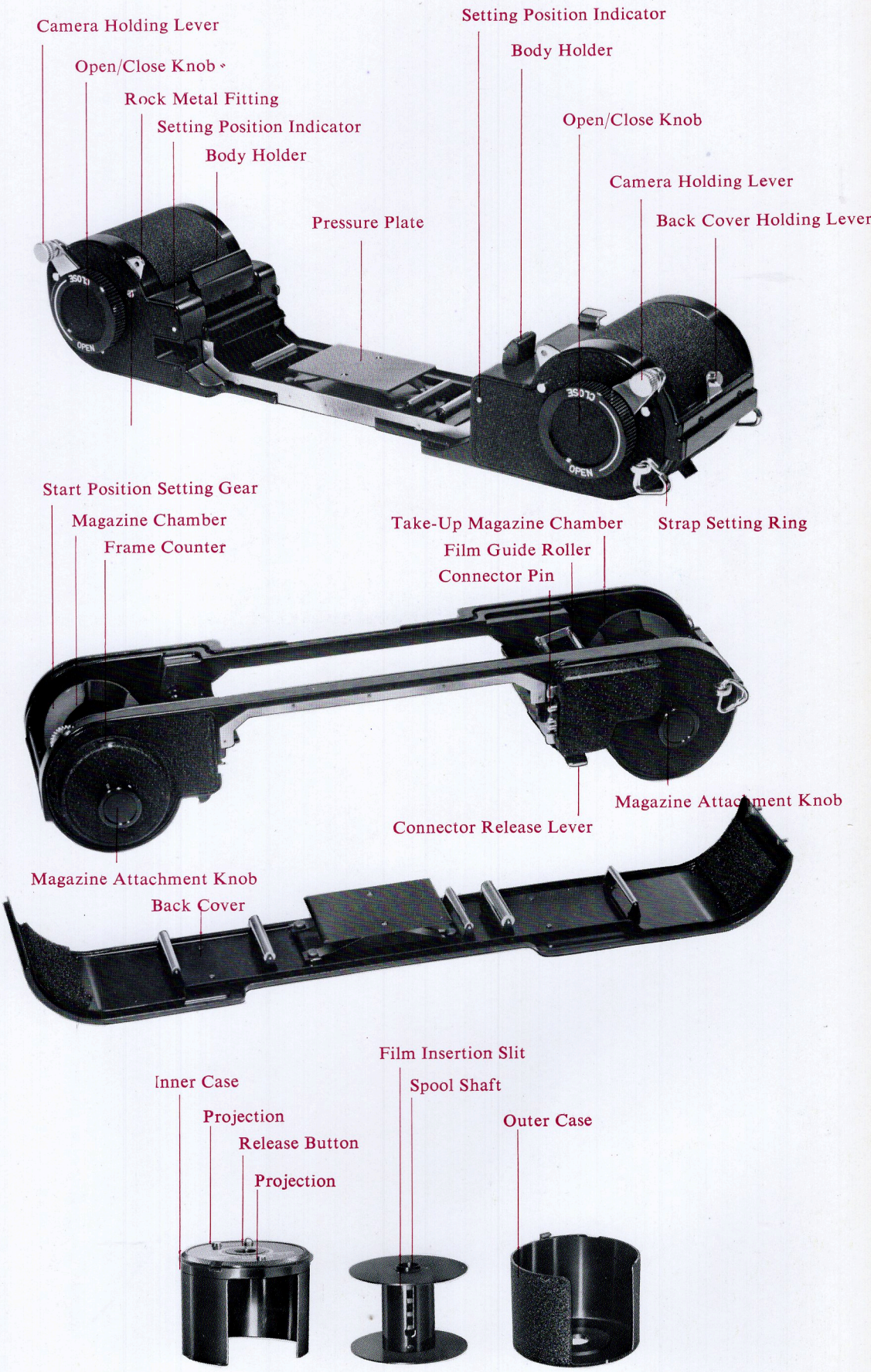
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Open/Close Knob
Rock Metal Fitting
Setting Position Indicator
Body Holder
Pressure Plate
Setting Position Indicator
Body Holder
Open/Close Knob
Camera Holding Lever
Back Cover Holding Lever
Start Position Setting Gear
Magazine Chamber
Frame Counter
Take-Up Magazine Chamber
Film Guide Roller
Connector Pin
Strap Setting Ring
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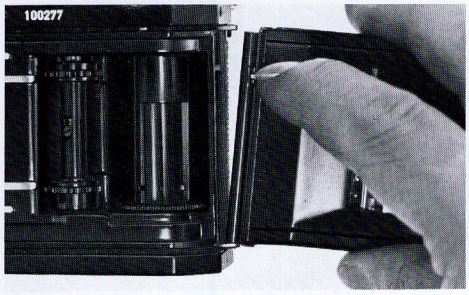
Back Cover
Film Insertion Slit
Inner Case
Spool Shaft
Projection
Release Button
Projection
Outer Case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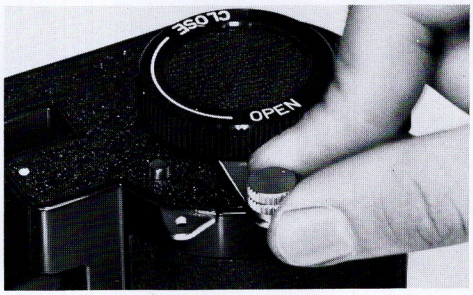
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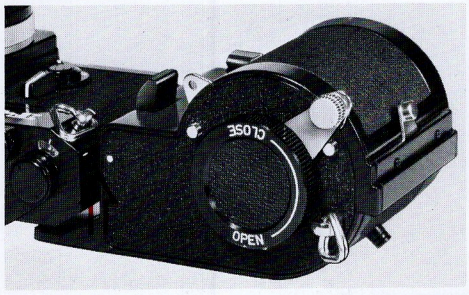
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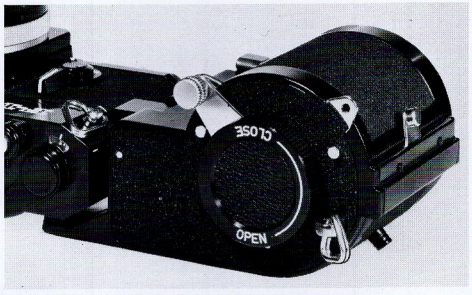
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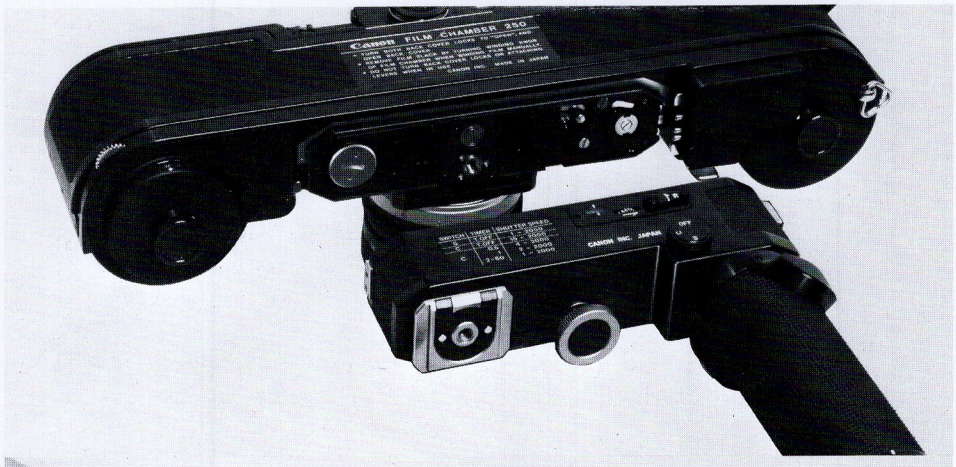
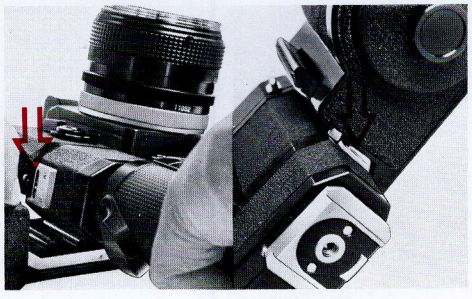

Canon FILM CHAMBER 250
CANON INC. JAPAN


LENS MADE IN JAPAN
Canon
MOTOR DRIVE
UNIT





Film Chamber 250

This is an accessory to expand the continuous photographing functions of the Motor Drive Unit. It is not only effective for shooting sporting events, but also advantageous for copying documents and for taking documentary pictures in which many continuous frames of film are necessary.

Attaching

1. Remove the bottom cover of the camera and then attach Film Chamber 250 onto the camera.
2. Lift up the two holder open/close knobs, situated at the top of Film Chamber 250, and release the lock. Then turn them towards the outside and open the body holder.
3. While fitting the groove for the back cover of the body to Film Chamber 250, push in the camera to the position where the index mark of the camera and the white dot of Film Chamber 250 align.
4. After moving the strap holder to a position where it will not get in the way, turn the open/close knob towards the inside, drop it into the lock metal fitting and fix the body.
5. The Motor Drive Unit can be attached more easily from behind Film Chamber 250. This is also true when detaching. The Motor Drive Unit can be attached or detached independently of Film Chamber 250. However, when the Motor Drive Unit is attached and Film Magazine 250 is to be attached, pull the direct-coupled connector operating lever of Film Chamber 250 and put the coupler in a released position. In this position, insert the stabilizer of the Motor Drive Unit slantwise under the receiving claw situated on the opposite side of the connector. When detaching, exactly the same operations must be performed after pulling the connector operating lever.
6. Connect the Motor Drive Unit to the power source.

How to Use Film Magazine 250

1. Film Chamber 250 uses two separate magazines. Both of them are identical, and one is used for supply while the other is used for take-up. In other words, this is a double magazine system.

2. Taking out spool.

Turn the inner and outer cylinders, while depressing the release button on the top side of the inner cylinder, and align the openings of the inner and outer cylinders. The inner cylinder and spool can then be taken out.

3. Loading film into Film Magazine 250.

Film Magazine 250 is composed of an inner cylinder, an outer cylinder and a spool. It can hold the necessary number of frames of long-roll strip film up to a maximum 250 frames. Film Loader 250 is used when loading film into Film Magazine 250.

If the desired number of frames is set, Film Loader 250 is mechanically designed to automatically stop at "O" position.

4. Film winding.

Film winding is performed in a darkroom. Long-roll film is taken out and wound on the supply shaft of Film Loader 250. Fuji and Sakura films are wound after inserting into the attached large size spool. Kodak film can be wound as it is.

5. The tip of the film is cut at a downward slant and then inserted into the slit of the take-up spool and wound two or three times around the take-up spool. At this time, it is important not to bend the tip of the film. The spool has symmetrical upper and lower slits, and either one can be used.

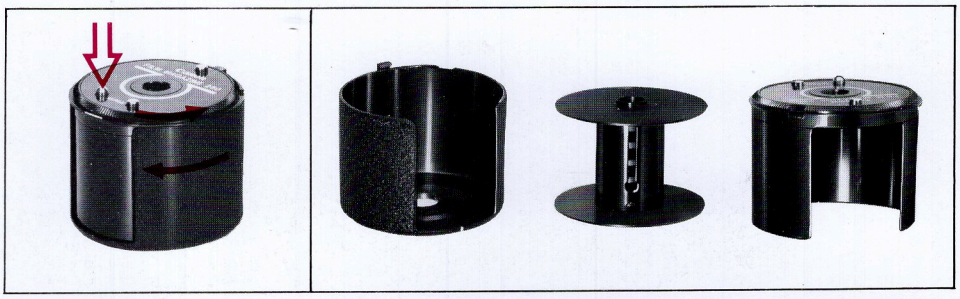
6. After engaging the film with the sprocket shaft in the center, push down the film holder.

7. Set the frame counter at the desired number of frames to be taken up.

One graduation of the frame counter is equivalent to 10 frames and figures are graduated for every 50 frames.

8. Turn the take-up handle clockwise until it stops. It will stop when the frames and figures are graduated for every 50 frames.

9. When the film automatically stops, cut off the film, remove the spool and load it into Film Magazine 250.




Canon
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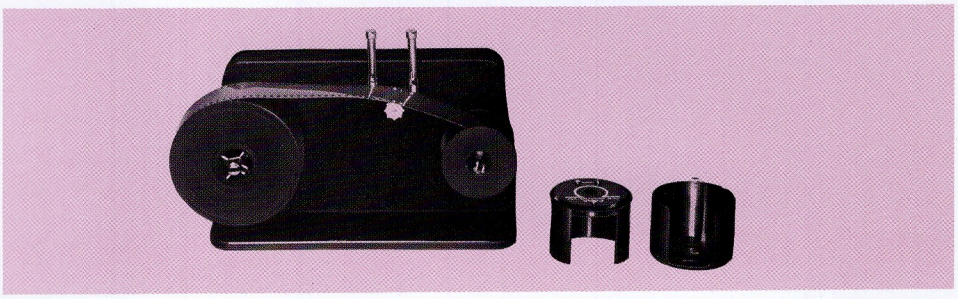

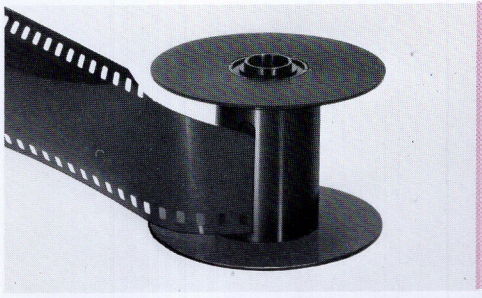

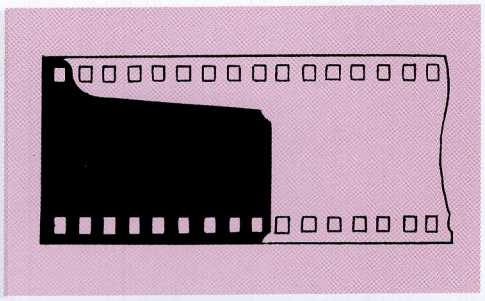

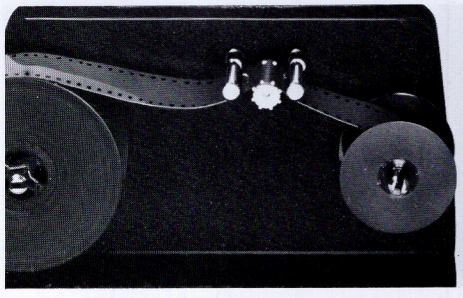


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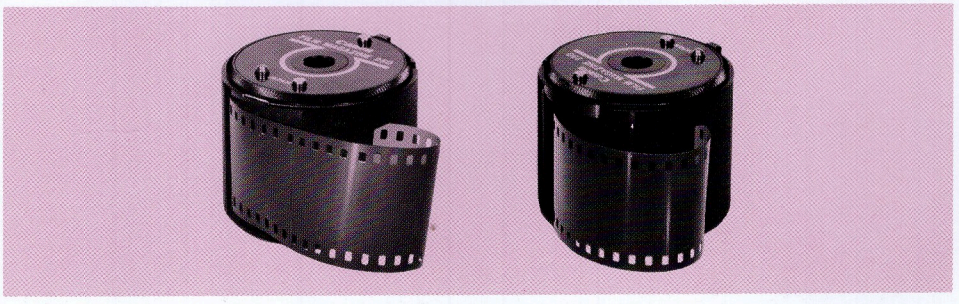

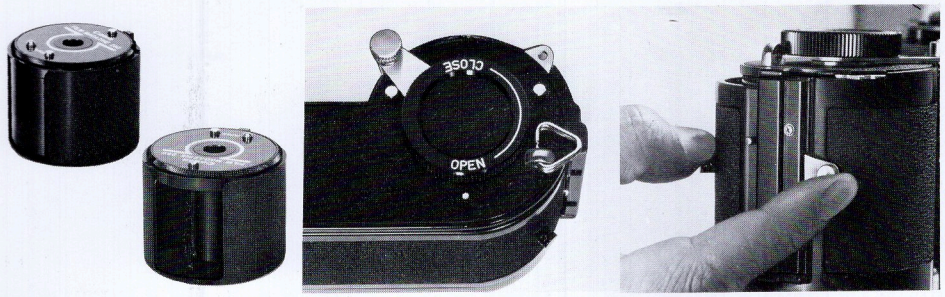
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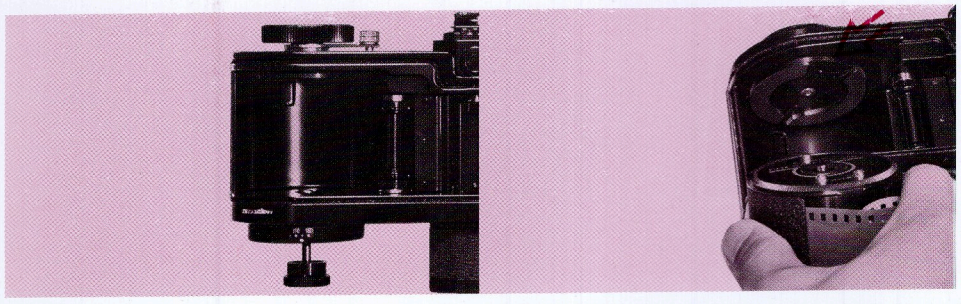

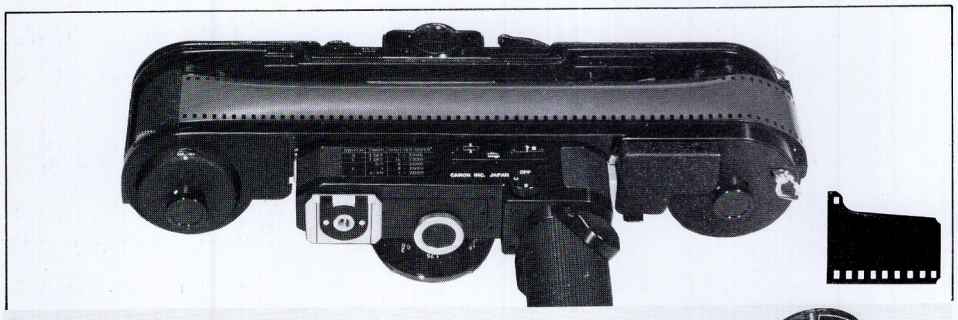
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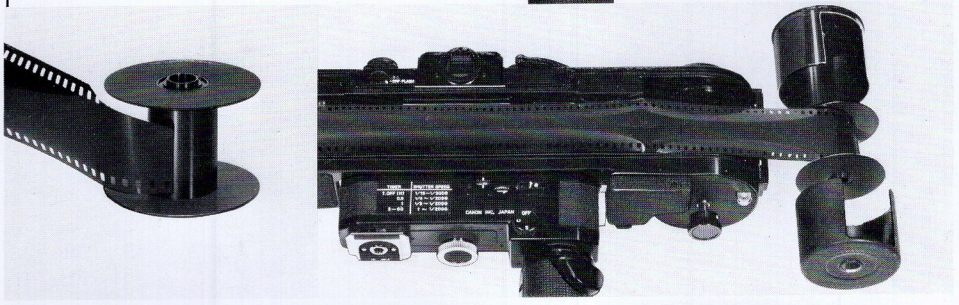

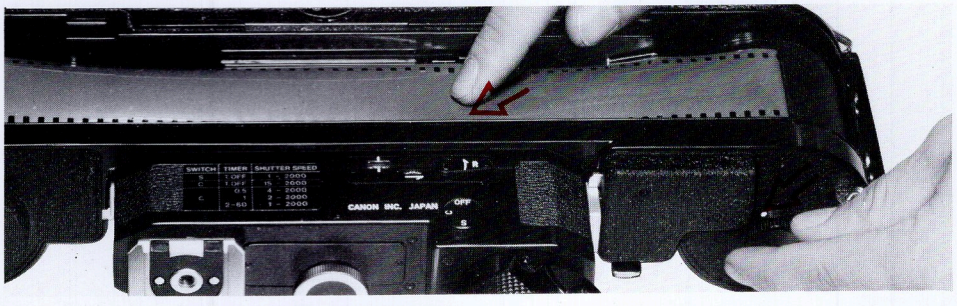
SWITCH
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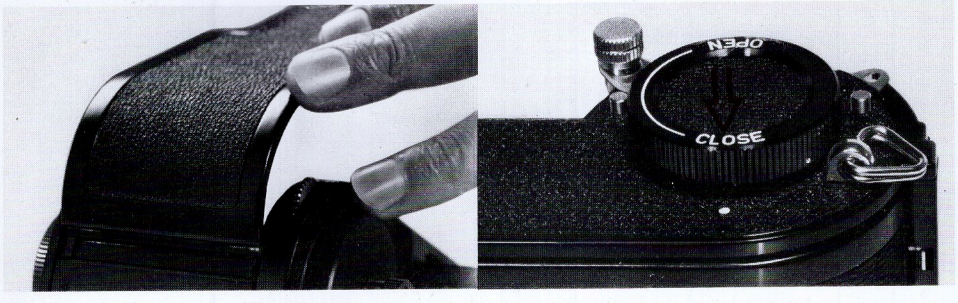
OPEN
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10. Loading film into Film Magazine 250

10-1 The film should be wound on the spool counter-clockwise, and it should be loaded into the inner cylinder with the tip of the film protruding approximately 10 centimeters (about 4 inches).

10-2 Next, align the openings of the inner and outer cylinders and then put in the inner cylinder together with the spool.

10-3 When the inner cylinder is turned clockwise, the stopper becomes geared with a clicking sound. The inner cylinder cannot be put into position if turned counter-clockwise.

11. Cut off the tip of the film slantwise.

12. Return the remaining film to the can.

13. It is necessary to repeatedly practice the magazine operations until you become accustomed to them.

Loading Film Into Film Chamber 250

1. Remove the back cover of Film Chamber 250. This is done by turning the two magazine knobs and setting them at OPEN and then pushing up the back cover open/close lever.

2. Pull out the magazine attachment knob, and then put in the supply magazine. At this time, fit the two protrusions on the top side of the magazine into the notches on the upper part of the magazine chamber. Do not turn the open/close knob to CLOSE at this position. If it is so turned, the magazine would open and the film will be wasted.

3. Pull out the film from the supply magazine for approximately 30 centimeters (approx. 1 ft).

4. Take out spool from the take-up magazine, insert the tip of the film into this spool and wind the film around the spool approximately three times.

5. After making sure that the film will not come loose from the take-up spool, put it into the take-up magazine.

6. Put this take-up magazine into the take-up magazine chamber, in the same manner as the supply magazine was put into the supply magazine chamber, and push in the attachment knob.

7. Turn the attachment knob on the take-up magazine side to take up the slack in the film and to check and see that the film is correctly engaged in the sprocket.

8. Put on the back cover. When putting on the back cover, fit the tip of the back cover into the groove on the supply magazine chamber side, and then push in the entire back cover.

9. When the two open/close knobs of the magazines are set at CLOSE, the openings inside the magazine chambers open and are ready for film winding. The Motor Drive Unit and the circuit are not connected unless these knobs are set at CLOSE.

* The back cover is intentionally curved from the standpoint of design.

Photographing Operations

1. Set the frame counter of the Motor Drive Unit at "FC".
2. Advance the film by six unexposed frames with the release on the Motor Drive Unit side. Wind up the seventh frame.
3. Set the frame counter of Film Chamber 250. The Motor Drive Unit side frame counter has priority in controlling exposure counting. Therefore, if the Motor Drive Unit side is set at 36, the frame counter will automatically stop at the 36th frame. It is for this reason that the "FC", which frees the automatic stopper mechanism, was incorporated.
4. The frame counter of Film Chamber 250 is set by turning while pressing down on the gear. This frame counter will not automatically stop even when "O" is reached. If you make a mistake in the number of frames, you will not be able to accurately gauge the remaining number of frames.
5. The frame counter automatically stops after all exposures have been taken and the entire film has been advanced.
6. Open the back cover and take out the film magazine.
7. When the film has been cut off midway, start shooting again after advancing the film for six unexposed frames.
8. When detaching the magazine, still loaded with film, from the camera, be sure to set the magazine open/close knob at OPEN.


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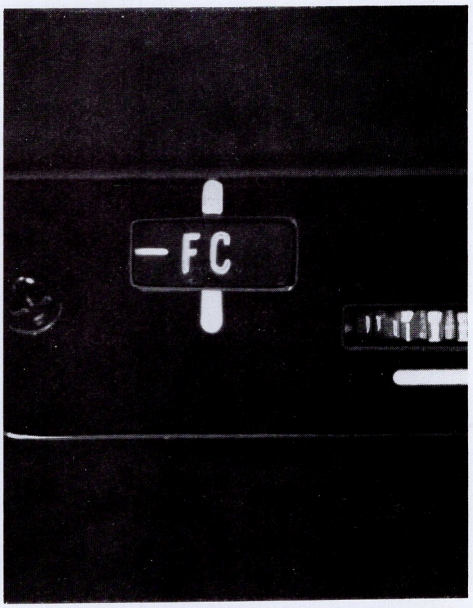
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CANON
MOTOR DRIVE
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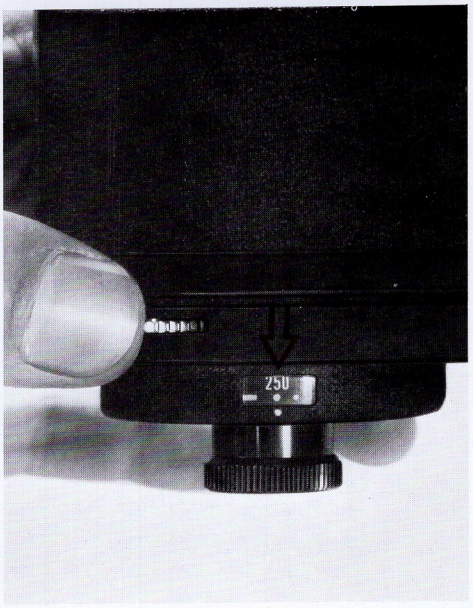
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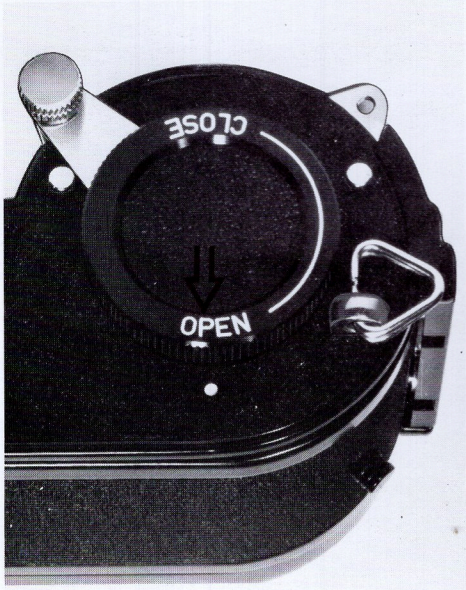
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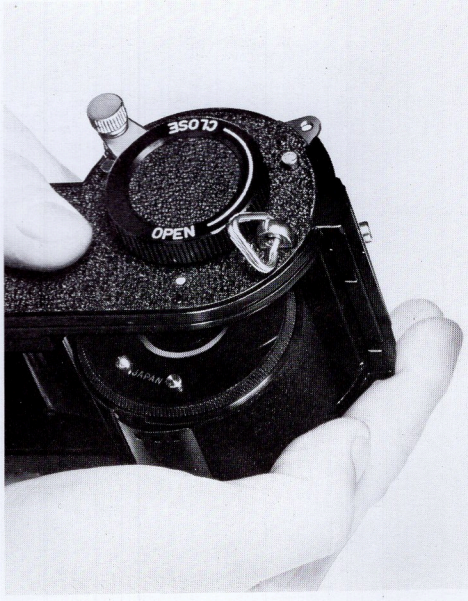
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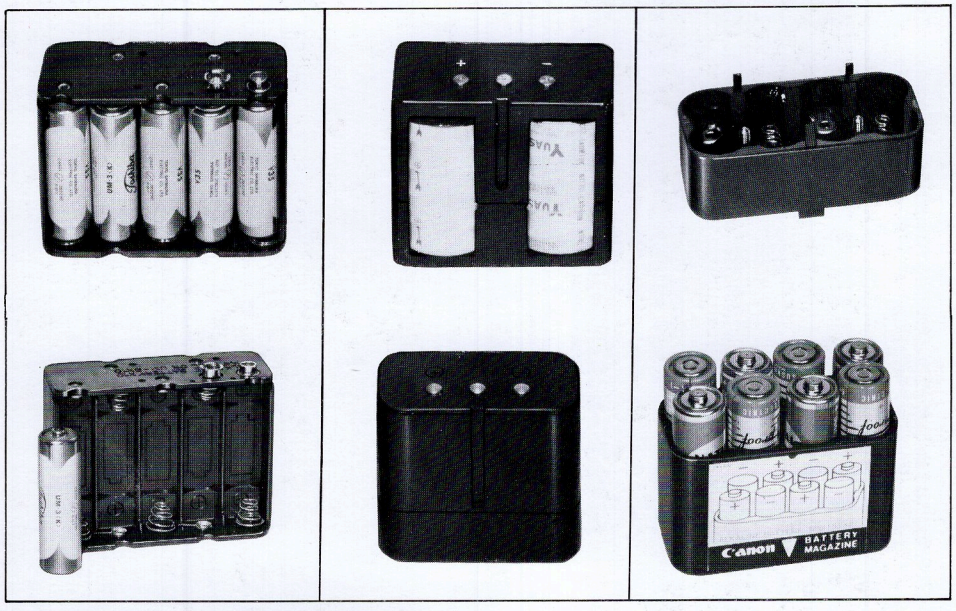
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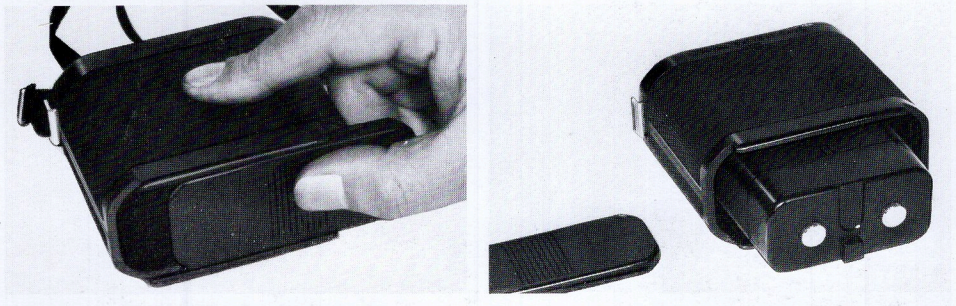
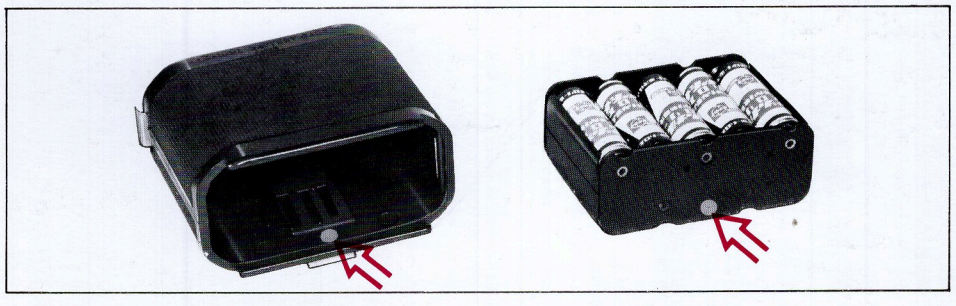




Power System

The power system of the F-1 is composed mainly of a common battery case. Each accessory is connected to this battery case with a cord corresponding to its input voltage. The cord-connecting section of the battery case can be used by all. To connect, fit the T-shaped terminal part, plug in, and then screw on with the attachment ring. However, terminals for remote control are different and can be used merely by plugging in.
There are three kinds of power sources that are put into the battery case. Battery Magazine 15V is the main source of power only for the Motor Drive Unit. The various connections are as follows:

Product	Cord	Length	Power Source Magazine
Booster T Finder	6V 2B	1.2m (3 11-3/16")	Battery Magazine 12V (8 penlight batteries) NiCd 500 FZ
Servo EE Finder	12V 2E	1.2m (3' 11-3/16")	Battery Magazine 12V (8 penlight batteries) NiCd 500 FZ
Motor Drive Unit	Battery Connector MD	1m (3' 3-3/8")	Battery Magazine 15V (10 penlight batteries NiCd 500 FZ

Loading Batteries into Magazine

1. Two sealed-type NiCd batteries. Recharging type permanent batteries.
2. Battery Magazine 12V. Loaded with eight penlight batteries.

Loosen the two tightening screws, remove the top cover and load the batteries according to the pattern of (+) and (-) marks shown in the diagram.

3. Battery Magazine 15V

Push in the (-) side first, according to the (+) and (-) instructions, and then insert the (+) side into the socket. When removing, too, remove the (+) side after pressing against the (-) side.

Loading Battery Magazine into Battery Case

1. The bottom cover of the battery case can be pulled out to either left or right.

2. Face the battery contact towards the rear. Battery Magazine 12V and the NiCd battery are inserted according to the insertion guide.
3. Battery Magazine 15V is inserted in the direction in which the green mark inside the battery case and the green mark of the battery magazine are aligned.
4. Put on the bottom cover.

Battery Connector MD

Battery Connector MD is used for connecting the Motor Drive Unit to the battery case. Without this connector the Motor Drive Unit cannot be used. This connector also has connector sockets for Servo EE Finder and remote control uses.

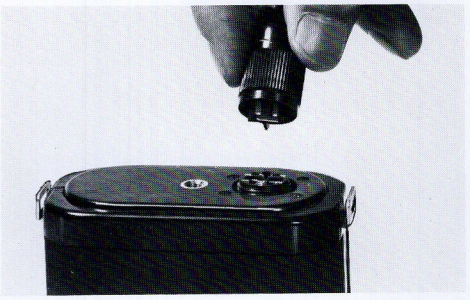
Battery Checker MD

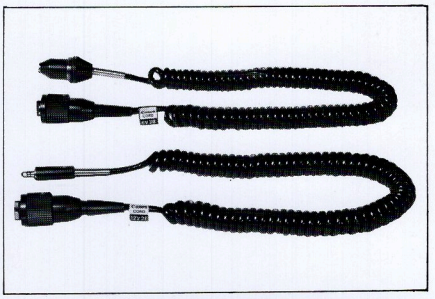
Battery Checker MD is used for checking the voltage when the Motor Drive Unit is being used. Checking is performed by plugging it into the connector cord and then by pressing the button.

Battery Check

When the power level is insufficient, replace the batteries with new ones of the same brand. Recharge the batteries in the case of NiCd batteries.

Battery Connector MD

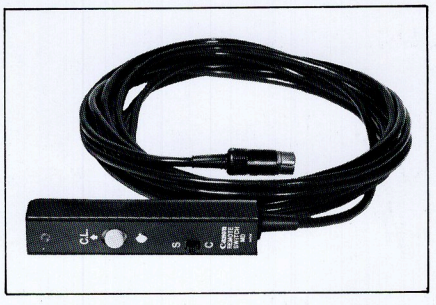






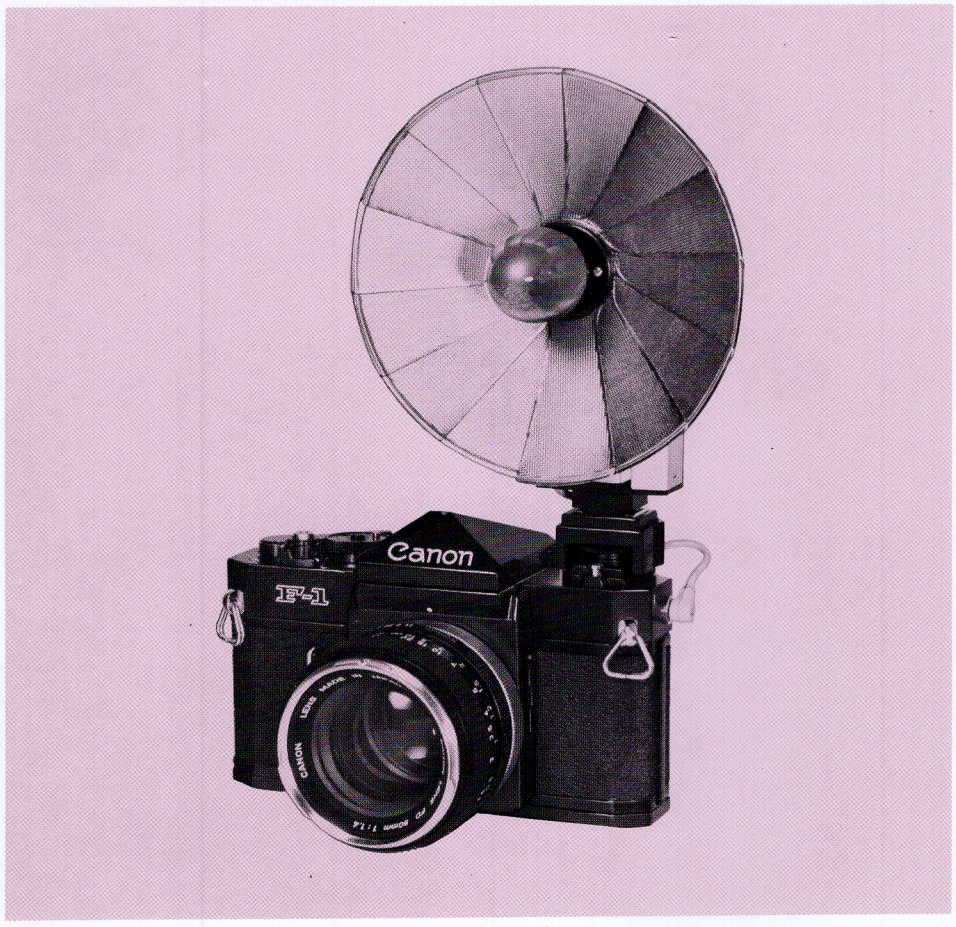






Battery Checker MD




Canon
F-1

Canon F-1 Flash System

Canon F-1 is designed so that two flash photography systems can be connected to it. They are the match needle type automatic flash photography, using a direct-coupled type exclusive electronic flash unit, Canon Speedlite 133D, and the synchronizing flash photography using an ordinary flash unit.

The former is called the Canon Auto Tuning (CAT) System. The three lenses that can be used for the CAT System are the FD 50mm F1.4, FD 50mm F1.8 and FD 35mm F2.

In connecting the Speedlite 133D, the Flash Coupler L is attached to the rewinding knob section, and the 133D is inserted into this accessory shoe. This connects the synchronizing contact and the voltage charge signal contact. Since exposure changes according to the photographing distance, a Flash Auto Ring for distance transmission purposes is separately attached to the tip of the lens. This Flash Auto Ring changes the rotating angle of the distance ring, during focusing, into electrical signals for transmission. This connection is made by connecting the cord of the Flash Auto Ring to the Speedlite 133D. It sounds difficult when explained, but actually it involves only the following simple operations.

1. Set the shutter speed of the camera at 60 sec. (exclusive).
2. At this setting, the voltage level of the charged electronic flash unit and the photographing distance are entered into the meter as signals. Therefore, aim the camera at the subject and focus.
3. The proper f/stop can be set by just turning the aperture ring and aligning the aperture needle to the meter needle.
4. Press the shutter release button.

When performing ordinary flash photography, use Flash Coupler D instead of the Flash Coupler L. Then attach a flash unit onto Flash Coupler D and connect the cord to the synchronizing socket. Exposure is decided in the ordinary way. Divide the guide number by the photographing distance and obtain the f/stop.

Even when using an exclusive electronic flash unit, calculate the f/stop from the guide number when exclusive lenses are not used.

Synchronizing Range

Type		Synchronized Shutter Speeds
Flash	FP class (#6, Press 26)	1/125 or faster 1/30 or slower
	M class (M3, #5, Press 25)	1/30 or slower
	MF class (AG-1, AG-3, M2, Flashcube)	1/30 or slower
Electronic Flash Unit	Speedlite	1/60 or slower

Canon F-1 Close-Up Photography System

All Canon FT and Pellix system accessories can be used with the Canon F-1. Close-Up Lenses, Bellows FL and M, Extension Tubes M and FL have all greatly expanded the photographic possibilities in this field.

Close-Up Photography

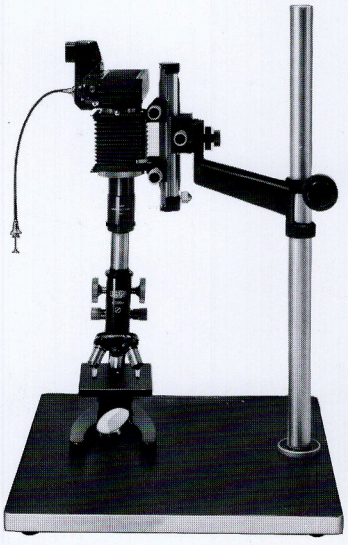
Close-up photography up to life-size can be easily obtained with the combined use of close-up lenses and Extension Tube M and FL sets.

Macrophotography

Life-size or larger photography can be easily obtained with Bellows FL and Bellows M as the nucleus and with addition of extension tubes and Macrophoto Coupler FL. Macro Lens FL 50mm F3.5 and FL 100mm F4 are available for high resolving power in this field.

Photomicrography and Copy Work

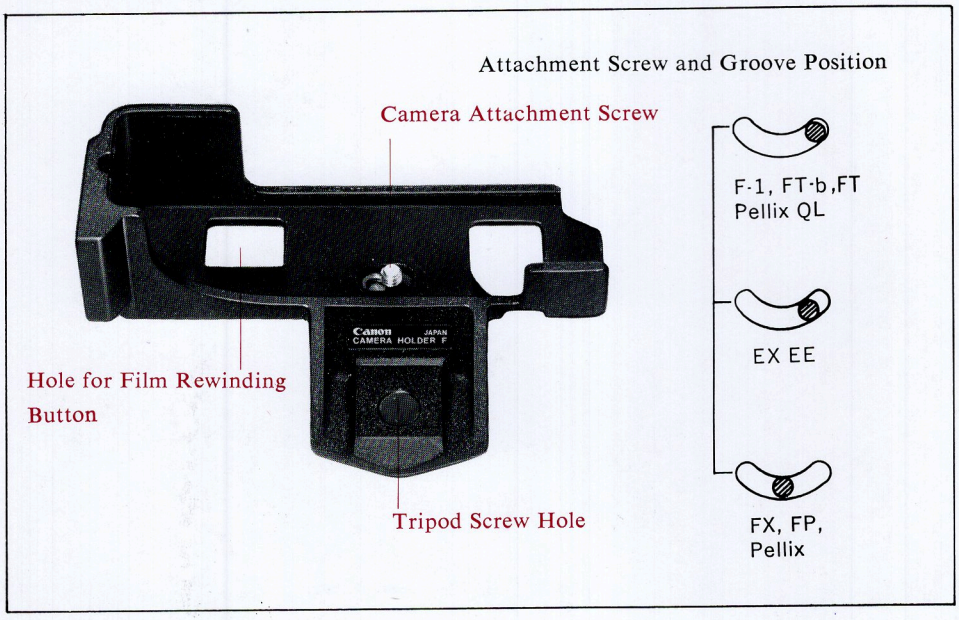
Ordinary copy work and macrophotography can be easily performed with the combined use of Copying Stand 4 and the above-mentioned close-up photography and macrophotography accessories.
Ordinary photomicrography is possible with the combined use of a copying stand and a microphoto hood or with the use of an independent Photomicrophoto Unit F.
For connections with the various attachments, please refer to the diagrams.

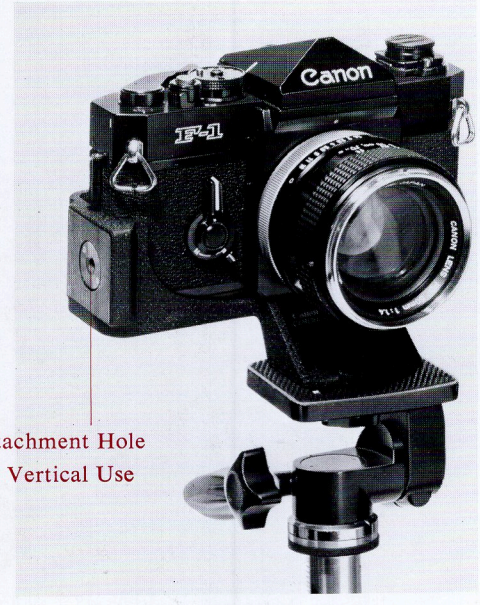



Canon
CANON MICROTEN
Canon
BELLOWS FL

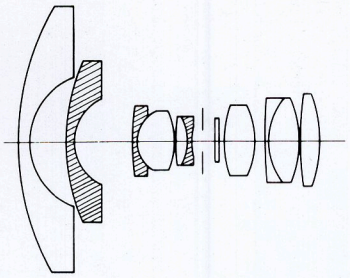
Camera Holder F

Camera Holder F is used for telephotography and copy work.
Camera Holder F can be used not only for the F-1 but also for all Canon single-lens reflex cameras after and including the Canon FX model. The attachment screw of the camera holder is designed so that it can move according to the different positions of the screw holes on the various cameras. Changing the camera to a horizontal or vertical position is easy.



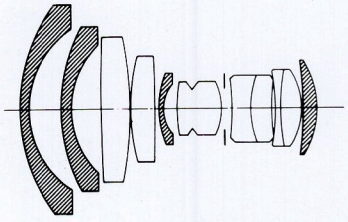


Accessories



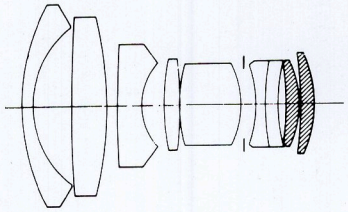
Canon Lens Fish Eye 7.5mm F5.6
with Case D

This is a special lens developed for the purpose of strengthening the Canon F-1 System together with the FD series of lenses. Its picture size is 23mmϕ, and it covers an angle of view of 180 degrees, with all images at equal distance. Moreover, it can be used without fixing the mirror because it is of the retrofocus type. Its size is also the same as a standard lens and boasts superb performance and operation. It has an 8-component 11-element construction with 6 built-in filters.



Canon Lens FD 17mm F4
with Case I

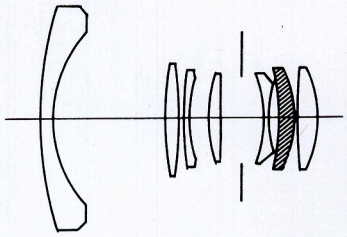
Among the interchangeable lenses with long optical back focal distance for single-lens reflex camera use, this lens has no distortion. As a super-wide-angle lens for normal delineation, it has the world's shortest focal length.
Generally, retro-focus type lenses have the shortcoming of inferior picture quality at close distance photography. This lens, however, changes its air distance of the lens system of close distance photography and prevents aberration breakdowns between infinity and close distance. It incorporates the Full Range Aberration-Free System that maintains high performance.



Canon Lens FD 24mm F2.8
with Case C

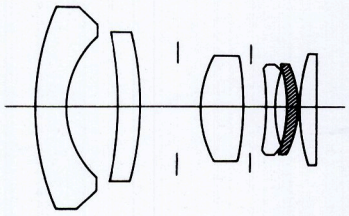
This is a high-performance retro-foucs type lens that has a very fast lens speed for a super-wide-angle lens. It incorporates the Full Range Aberration-Free System.

Canon Lens FD 28mm F3.5
with Case C



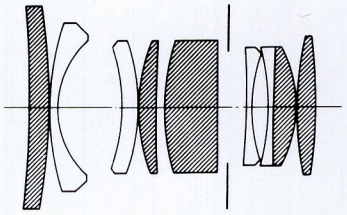
This lens is designed for compactness and light weight while still taking clear and sharp pictures. Convenient wide-angle photography is possible with its 75-degree angle of view.

Canon Lens FD 35mm F3.5
with Case C



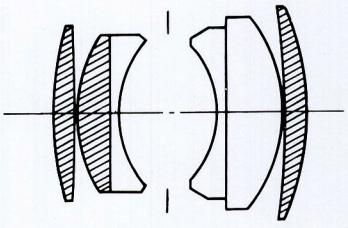
This is an easy-to-use compact lens designed for taking snapshots. With proper power positioning, including rate earth glasses, it boasts high performance and the elimination of the various aberrations is sufficient. It also has high contrast and superior resolving power. Therefore, it takes sharp images throughout the entire picture even at full-aperture opening.

Canon Lens FD 35mm F2
with Case C

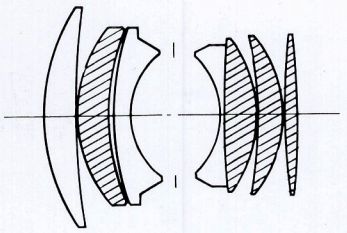


This lens makes high contrast. As in the case of super-side-angle lenses, it also incorporates the Full Range Aberration-Free System. Therefore, it assures extremely high resolving power at a photographic distance of 30 centimeters.

Canon Lens FD 50mm F1.8

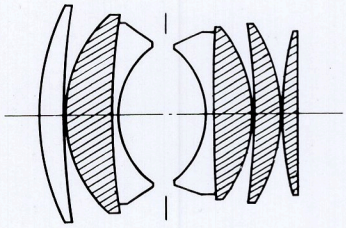


This lens uses the optical system of the standard FL 50mm F1.8 lens, the most popular of all Canon lenses, and is added to the FD series. After several improvements, its image plane characteristics are now highly reputed.
Especially, it boasts superior angle of view characteristics from the middle to the outer edges and excellent stopped-down effects. It is a universal lens which has stabilized delineation power even during close-up photography.



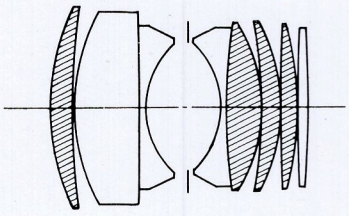
Canon Lens FD 50mm F1.4

This lens uses the optical system of the world-renowned FL 50mm F1.4 standard lens. Its high resolving power and high contrast delineation power are outstanding.



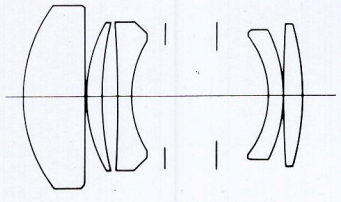
Canon Lens FD 55mm F1.2

This lens, similar to but more advanced than the FD 50mm F1.4, has the fastest lens speed of the FD series of lenses. Its performance has been demonstrated by the FL lens. Despite its large aperture, it is highly reputed for its high contrast during full-aperture opening and for high resolving power.
This lens, like the FD 50mm F1.4, was added to the FD series after a scrupulous recheck of its optical design.



Canon Lens FD 55mm F1.2AL
with Case I and Hood BS-58

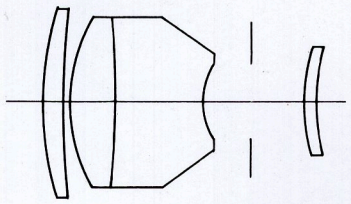
This is a perfect large aperture standard lens with aspherical surface. It provides maximum delineation power not only during night photography with full-aperture opening but also during normal daylight photography and close-up photography. Flare elimination is very high, despite its large aperture of F1.2, because it adopts the aspherical surface. Images with good contrast can also be obtained at full-aperture opening during night photography. This lens is also designed so that its resolving power does not decrease even at small aperture openings and is aberration-corrected during close-up photography by a unique focusing mechanism. Therefore, a stabilized image is obtained at all distances.



Canon Lens FD 100mm F2.8
with Case D and Hood BT-55

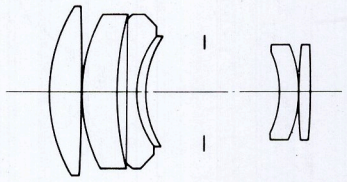
This is a fast speed 100mm lens which inherits the high performance of the FL100mm F3.5 lens which is the sharpest of all Canon telephoto lenses. Its telephoto ratio is very small and has an overall length of 57mm, which is almost equal to the length of standard lenses. The outstanding feature of this lens is that it boasts high performance despite its standard lens length. The various aberration corrections are almost perfect and this lens has pre-eminent image-forming qualities.

Canon Lens FD 135mm F3.5
with Case E and Hood BT-55



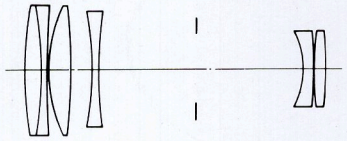
This is a small size lightweight telephoto lens. It is a high performance lens that meets the demands of camera fans and is ideal for shooting sport events, portraits and mountain scenery.

Canon Lens FD 135mm F2.5
with Case E

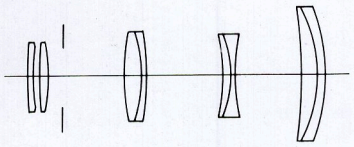


This lens was made as a result of improving the optical system of the FL 135mm F2.5 lens, a highly regarded lens in the FL series. It possesses the fastest lens speed of the FD telephoto lenses. Its focal length makes this lens very useful over a wide range.

Canon Lens FD 200mm F4
with Case J

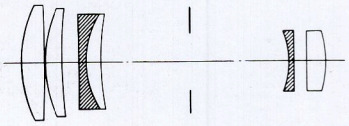


This lens is an improved version of the conventional FL200mm F3.5 lens that has enjoyed an excellent reputation.



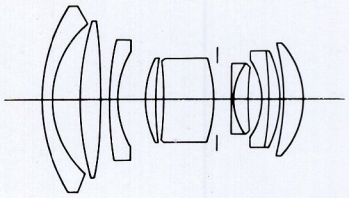
Canon Lens FD100 – 200mm F5.6
with Case K

Universal zoom lens for shooting scenery and snapshots. It is small in size and lightweight and is designed so that even beginners can easily take zoom pictures. Due to the optical correction system, magnification change is obtained by just pulling out the lens.



Canon Lens FD 300mm F5.6
with exclusive Case

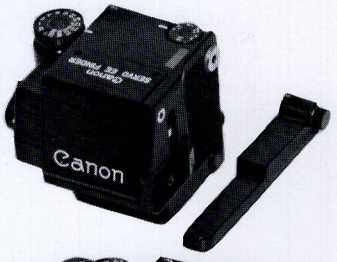
This lens was developed for the purpose of turning a long focal length of 300mm into a high performance, compact lens which would be most convenient and advantageous for telephotography. It is a lens that is certain to fulfill expectations because Canon succeeded in making it compact without the use of the costly and special material, artificial fluorite.
The telephoto ratio of this lens was shortened to 1:0.72. At the same time, an almost perfect aberration correction was performed on this lens. For these reasons, sharp delineations of high contrast and high resolving power are obtainable.



Canon Lens TS 35mm F2.8AL

This is a special lens in which shift and tilt are simultaneously possible. It is a high performance lens which strengthens the F-1 system. Perspective correction can be performed by shifting, while at the same time, depth of field can be controlled by tilting the lens. The AL lens was used for positive elimination of flare because it was necessary to cover an image circle of 28mm.

Main Accessories



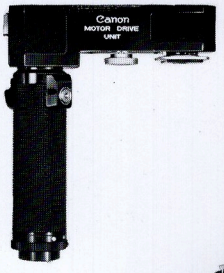
Servo EE Finder

Full-aperture metering EE device.



Booster T Finder

Dim light metering device with electro-timer.

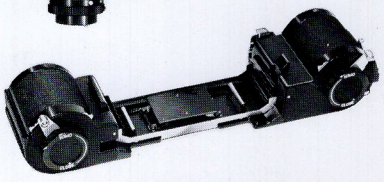


Motor Drive Unit

Power driven photographing device with a timer.

Film Chamber 250

A film chamber for 250-exposure long-length film.



Film Loader 250

A windup device for loading strip film into the maganize for Film Chamber 250. Attached with an automatic stop mechanism which is set by a counter.



Film Maganize 250

For Film Chamber 250. A maximum of 250 exposures can be wound.





Battery Case

An external power source for power drive accessories of the F-1: the Motor Drive Unit, Servo EE Finder, Booster T Finder and Speedlite 133D. According to the diversified purpose, this battery case can use the Battery Magazine 15V containing 10 penlight batteries, the Battery Magazine 12V containing 8 penlight batteries, or NiCd Battery 500 FZ(two).



Battery Connector MD

A connector with a cord to connect the Motor Drive Unit to the Battery Case. It also has sockets for the Servo EE Finder and Remote Control Switch.



Attery Checker MD

Checks Power level of the Battery Case. It is connected to the cord of Battery Connector MD.



Cord 12V 2E

Cord for connecting the Servo EE Finder to the Battery Case or to Battery Connector MD.



Cord 6V 2B

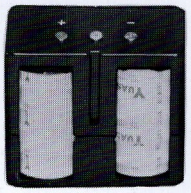
Cord for connecting the Booster T Finder to the Battery Case. Mainly employed when Battery Case is used as an external power source in times of low temperature.



Battery Magazine 12V

A magazine with 8 penlight (size AA) batteries. This is the main power source of the Battery Case.

NiCd Battery 500 FZ



Rechargeable and can be used as power source for all accessories.

NiCd Charger 500 FZ

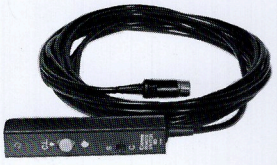
Chager for NiCd Battery 500 FZ.

Battery Magazine 15V



A magazine with 10 penlight (size AA) batteries. Used for Motor Drive Unit.

Remote Control Switch MD

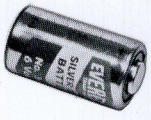


Remote control switch when photographing with Motor Drive Unit. Single frame, continuous and unmanned continuous photographies are possible. Connected to the Battery Connector MD. Cord length is 5 meters.

Extension Cord MD

For the Remote Control Switch MD. Cord length is 10 meters. Connected between the Battery Connector MD and Remote Control Switch MD.

Silver Oxide Battery No. 544



Power source for the Booster T Finder.

Viewfinders



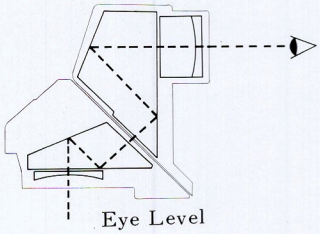
Speed Finder

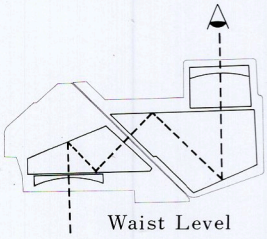
Summary

Ordinarily photography is performed with the camera held at eye level. However, sometimes this is not convenient because the photographing position is not always the same.

But, the waist-level, too, like the eye-level finder, can be looked into from only one direction. In other words, both of these finders have only a single function. The Speed Finder developed for the F-1 is a two-way revolving type view finder. Moreover, it is designed so that the entire field of view can be confirmed with the eye 60mm away from the eyepiece, making it very effective for shooting sport events. It is a unique viewfinder in which the meter information can also be easily read.

Thus, it is a universal view finder which can be used for all kinds of photography, such as close-up photography, copy work, macrophotography, photomicrography, snapshots and shooting sport events.





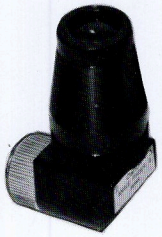
Specifications

Type:	Both eye-level and waist-level use.
Eye Point:	60mm behind rearmost surface of eyepiece lens.
Eyesight:	–1 diopter.
Magnification:	0.53 x with 50mm lens set at infinify.
Finder Information:	Equipped.



Waist-Level Finder

Interchangeable viewfinder with 5x magnifier. Ideal for waist-level shots and low angle shots.

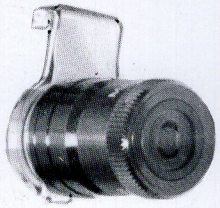


Angle Finder B

A waist-level viewfinder which is attached after removing the eyepiece ring. Images in actual condition can be seen with the use of a prism.

Magnifier

A 2.5x magnifier which is screwed on with the eyepiece ring or dioptric adjustment lens. It can be sprung upwards by a hinge so that the entire field of view can be observed. This can also be attached onto the Servo EE Finder and Booster T Finder.



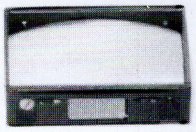
Dioptric Adjustment Lenses

There are seven kinds of dioptric adjustment lenses from +3 to -4 diopter. They are interchanged with the standard eyepiece ring.



Focusing Screen

There are four types of focusing screens which can be interchanged to suit the user's desire.
A: Microprism type. B: Split-image type. C: All-mat type. D: Section type.
A beam-splitting condenser for metering is included.



Eyecup F-1

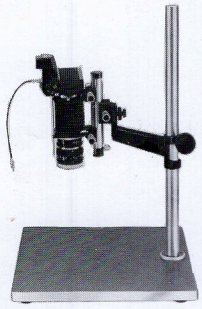
An eyepiece hood which can be used by users wearing or not wearing glasses.



Finder Dust Cover

For protection of the prism surface.

Accessories for Copy Work and Other Uses



Copy Stand 4

Composed of a base plate, pole and arm and holds the camera securely during copy work, close-up photography, macrophotography and photomicrography.



Macrophoto Coupler FL55

An accessory for attaching the lens in a reverse direction when performing macrophotography. It has a protrusion capacity of 13mm. It is mainly used in conjunction with bellows and extension tubes. It is designed for use with FD50mm F1.4 and F1.8 lenses and other lenses with 55mm screw diameter.



55mm Close-Up Lens 240

A high performance lens for close-up photography. With the distance scale set at infinity, the lens focuses on a subject at 240mm from the front end of the lens.



55mm Close-Up Lens 450

A high performance lens for close-up photography. With the distance scale set at infinity, the lens focuses on a subject at 450mm from the front end of the lens.



Canera Holder F

Used not only for the F-1 but also for FT, Pellix and FX cameras. Changing the camera to a horizontal or a vertical position can be performed easily.



Gadget Bag G-1

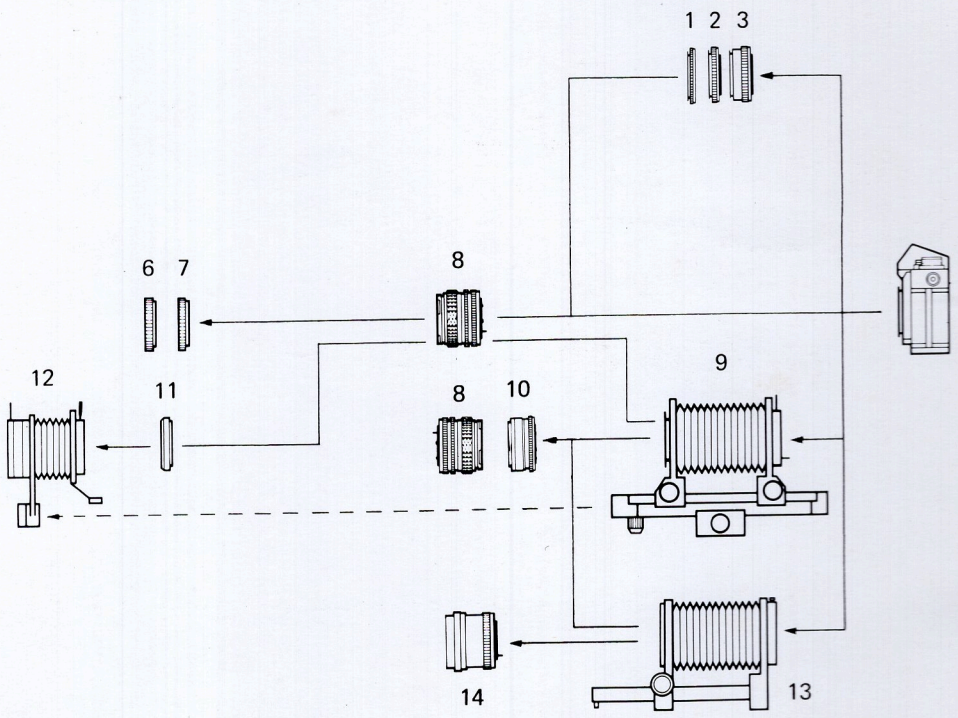
Highest quality gadget bag.

Case for Canon Lens FD 300mm F5.6
Case for BS-58 Hood

Lens Soft Case SA
Lens Soft Case SB
Lens Soft Case SC

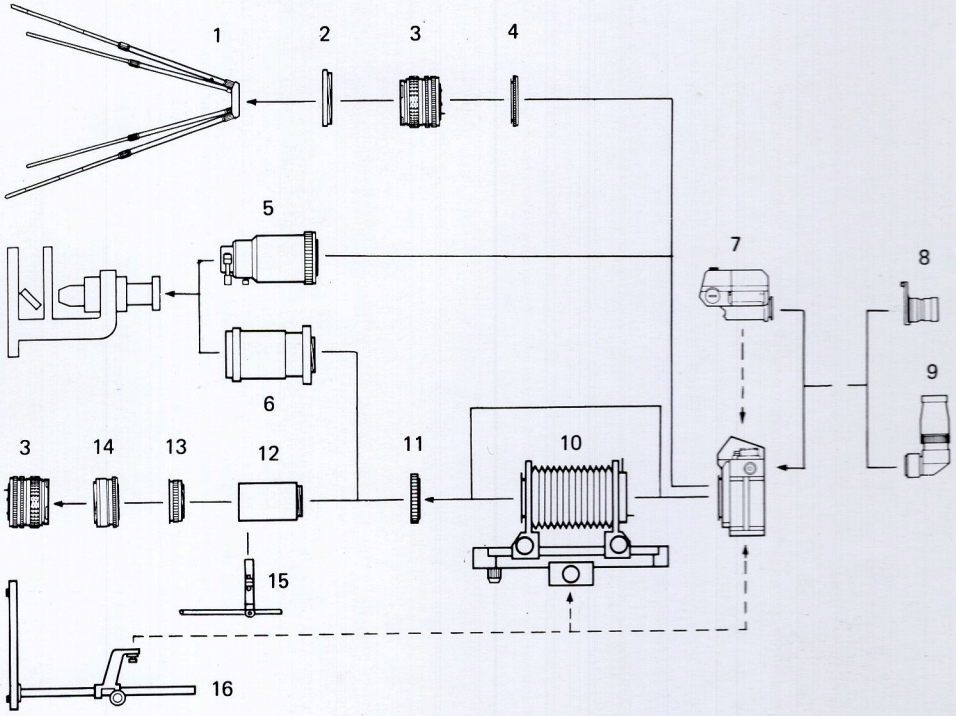
Close-Up Photography

1. Extension Tube M5
2. Extension Tube M10
3. Extension Tube M20
6. Close-Up Lens 450
7. Close-Up Lens 240
8. Lens
9. Bellows FL
10. Macrophoto Coupler FL
11. Attachment Ring
12. Slide Duplicator FL
13. Bellows M
14. Macro Lens



Macrophotography and Photomicrography

1. Handy Stand F
2. F Ring
3. Lens
4. Extension Tube M5
5. Photomicro Unit F
6. Microphoto Hood
7. Booster T Finder
8. Magnifier
9. Angle Finder B
10. Bellows FL
11. Lens Mount Converter A
12. Extension Tube 6mm–200mm
13. Lens Mount Converter B
14. Macrophoto Coupler FL
15. Macrophoto Strut
16. Copy Stand 4



Answers to All Your Questions

A. Planning

1. Why was this camera developed?

It was developed to meet all photographic needs. It has many interchangeable lenses and accessories. Thus, it can be used for ordinary photography, scientific photography, news photography and all other uses.

2. What about the quality of this new camera?

It is the world's finest SLR system camera. The performance and precision of the camera, lenses and accessories are superb.

3. How many years did it take to develop this system?

Approximately five years. However, this was backed by Canon's 35 years of research and development experience in the camera field.

4. What does the F-1 mean?

The "F" stands for "flex" and the "1" stands for the #1 camera in our 35mm SLR camera line.

5. How much does it cost?

It differs according to country, but it is approximately 50 percent higher than the FT.

6. Do similar cameras from other makers exist?

There are similar cameras. But Canon has designed its F-1 for the future. Thus, other manufacturers probably cannot keep up with this system. The F-1 system is also superior in precision and performance.

7. How does it compare with the Leica, Nikon and Minolta?

One can compare them using their respective performance charts. However, these charts do not indicate the precision and operating features. Therefore, it is best to compare the cameras themselves. Functioning is smoother than the other cameras, and its noise is very low.

8. Are you going to put out a metallic finish camera?

No, because we want to continue the black finish concept of the F-1.

9. What will become of the FT?

We shall continue parallel sales of the FT.

10. Can the FT be made to perform full-aperture metering?

No. We plan to leave the FT as it is.

11. Can the FT be remodeled to perform full-aperture metering?

No, because the full-aperture opening signal and transmission mechanism are not built in on the FT's body. To meet the above requirements, Canon developed the Canon FTb, which incorporates the full-aperture metering system developed for the F-1.

12. Can the already-sold interchangeable lenses and accessories be used with the F-1?

Yes, the FL series of interchangeable lenses and other accessories, excluding the Canon Booster and eyesight adjustment lenses, can be used with the F-1. The F-1 was developed to be able to use already-owned interchangeable lenses and accessories as part of the F-1 system.

13. Will there be any new developments in the 7S?

There are many restrictions caused by the viewfinder, and redesigning it as an SLR camera would be complicated. Therefore, there will be no new developments.

14. How many accessories can be attached?

At present, we are planning 180 attachable accessories. Macrophotography, oscillography and photomicrography can be performed with these accessories.

15. The F-1 is called the world's first TEM system camera. What do the letters "TEM" mean?

The letters "TEM" stand for the main features of this revolutionary system camera. T stands for TTL metering, E stands for Electric Eye of the Servo EE Finder and M stands for Motor Drive. The system camera of tomorrow was desired above-mentioned targets. In this meaning, the F-1 can be called the world's first TEM system camera. In addition to the perfect light metering which incorporates both full-aperture metering and stopped-down metering, the Servo EE Finder, Booster T Finder and Speed Finder provide features never before seen in cameras up to now. Moreover, the F-1 system, centered around the Motor Drive Unit, is so advanced that unmanned automatic continuous photography is now a reality.

B. Main Features

1. What kind of metering system?

It has full-aperture, center-spot metering system. Moreover, stopped-down metering is also possible.

2. Why was the full-aperture metering system adopted?

There were demands from camera fans. Another reason was that Canon was successful in designing a full-aperture metering mechanism which was as accurate as the stopped-down metering.

3. Which is superior full-aperture metering or stopped-down metering?

Accuracy is easier to obtain in stopped-down metering, and operation is easier in full-aperture metering. This camera is convenient because both methods can be used.

4. Has the mount been changed?

No. It is same as that of the FTb and FT.

5. Can full-aperture metering be performed with FL lenses?

No, because there are no signal pins. Stopped-down metering must be performed. However, it is very accurate.

6. What about durability?

Its shutter can withstand a minimum of 100,000 releases.

7. How is the environmental tests to the F-1 at extremely high and low temperature?

All parts, as well as the body mechanism, were subjected to the comprehensive and rigid durability and environmental tests for operability at temperatures ranging between 60°C (140°F) and −30°C (−22°F).

8. Why wasn't the QL mechanism attached?

The main reason was because of the Film Chamber 250. The QL cannot be installed because the Film Chamber 250 has a film holder. For this reason, a multislit spool was adopted to facilitate easy and accurate loading.

9. Can it be converted into a QL?

No. The construction is such that it cannot be converted.

10. Why doesn't the F-1 have a built-in EE mechanism?

Shutter speed priority EE photography becomes possible by attaching the Servo EE Finder.

11. Why wasn't an electronic shutter adopted?

The majority of fans, who use high grade cameras, desire cameras with shutter speed priority. Furthermore, we adopted the mechanical shutter because Canon's shutter mechanism is the most reliable.

12. What is the accuracy for the shutter speed of 1/2000 sec.?

Calculated in terms of EV, an error is within ±0.4. This value is more accurate than the Canon Standard.

13. How does the shutter release noise comparing to other makes?

It is very low and quiet. Those of other makes are loud and metallic.

14. What is the shutter speed at X contact?

It is 1/60 sec.

15. How about mirror shocks?

This is suprisingly small. It is one of the features of the F-1. The mechanism of the mirror is shock-proof, designed for high-speed photography.

16. What kind of material is used for the shutterscreen?

Titanium. The shutter screen is very strong because it is made of metal.

17. How is the Motor Drive Unit attached?

It is just screwed on after removing the bottom cover of the camera.

18. Are there any changes in the viewfinder?

The pentaprism section was made interchangeable and various kinds of viewfinders have been made available. The focusing screen can also be interchanged. The prism screen was changed to a type with which focusing can be performed more easily. The CdS photocell was specially designed so that metering can be performed with 45% less light volume. Therefore, the field of view inside the viewfinder is very clear.

19. Why is the camera a little heavy?

Because we laid stress on quality of material, high performance of the mechanism and durability. We also gave serious consideration to the elimination of blurring when holding the camera. You will discover its superb stability when you depress the shutter release button. But its weight is not heavy as compared to the other makes.

	Body	Body with standard 50mm lens
F-1	820 gram	1,180 gram
Nikon F	860 gram	1,135 gram
TOPCON RE	840 gram	1,210 gram

20. Why was the safety lock mechanism attached to the back cover?

At the suggestion of news cameramen, the back cover was designed so that is would not open accidentally.

21. The majority of single-lens reflex cameras have reverse film winding. Why does this camera use ordinary film winding?

If the flatness of the film plane can be maintained, it doesn't matter whether it is ordinary film winding or reverse winding. Ordinary film winding was adopted in this camera to avoid damaging the film in subzero regions. The maintenance of film flatness in this camera has been designed to perfection.

22. Why is winding angle large?

Winding weight was decreased and winding was made smoother.

23. Why is the battery checked under the condition of ASA 100 at 1/2000 sec.?

It is of the meter rotating type. Therefore, the swinging angle of the needle at the time of checking differs according to the position of the shutter dial. For this reason it is necessary to conduct checks at a fixed position.

24. Why is the movement of the frame counter dial reverse of the FT?

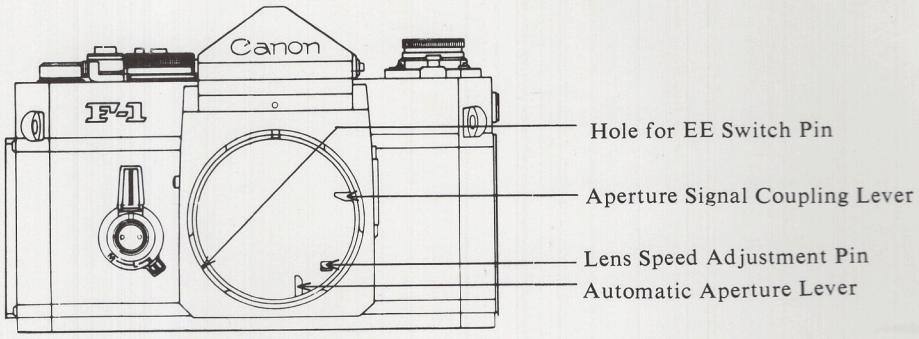
Because the governor brake mechanism was changed.

25. Why is the raising of the mirror possible only after locking the aperture?

Because nothing can be seen through the viewfinder, it will prevent shock and is more sensible in stopping down the apperture.

26. What are levers on the mount section which can be seen at unmounting the interchangeable lens?

They are levers that transmit the lens signal.



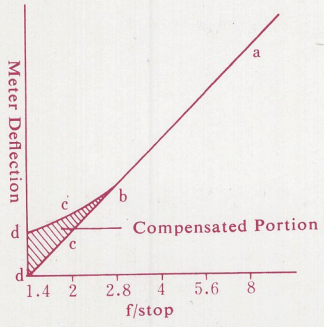
27. Does focusing error occur when interchanging the viewfinder screen?

This is no problem at all. The FD 55mm F1.2 lens will take care of any such error because of its depth of field.

28. Why was the meter information put outside the field of view?

In order to keep the field of vision of the viewfinder clear. It was also because the focusing glass is interchangeable.

29. What is full-aperture opening correction?



Originating from the metering position of the CdS photocell of a through-the-lens camera, a large-aperture lens develops an error in the vicinity of a full aperture opening between the f/stops and meter deflection characteristics.

When using a lens with an f/stop in this compensated range, corrections for match-needle deviation and the f/stop for just this curved section becomes necessary. This is called full aperture opening correction or full aperture opening f/stop correction.

If this correction is not performed in large-aperture lenses, the stopped-down side generally indicates over-exposure.

30. Why was the eyepiece lens designed in a round shape?

Because it makes sure of attaching the viewfinder accessories such as the Magnifier and dioptric adjustment lenses, etc.

31. Can dioptric adjustment be performed?

Yes. A standard -1.2 dioptric adjustment ring is attached to the viewfinder, while four kinds of dioptric adjustment lenses for far-sighted and three kins for near-sighted are available as optional attachments. Dioptric adjustment lenses are used when the magnifier is attached to the Eye-Level Finder.

32. Are there any eyecup for the F-1?

Yes. There is a covering type eyecup. This eyecup can be attached to the ring section.

33. When compared with the FT, what points have been changed or improved?

1. Many accessories can be attached by removing the pentaprism section or the back cover.
2. Full-aperture metering.
3. 1/2000 sec. shutter speed.
4. Improved lens coating, beam-splitting mirror, increased light transmission rate, brighter viewfinder.
5. Large size pressure plate. Cassette stabilizer – stabilization of film plane.
6. Effective elimination of shutter noise.

34. Where is the accessory shoe of the F-1?

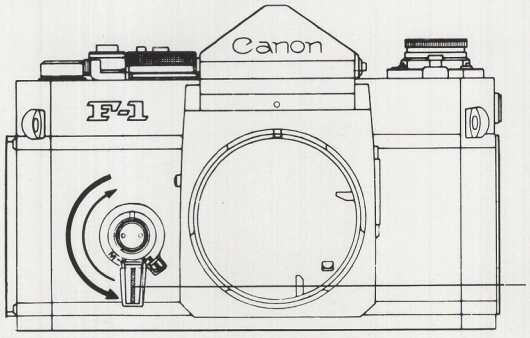
It is on the film rewind section. When inserting the Flash Coupler L to the accessory shoe, matching needle type automatic flash photography can be performed with the combined use of the Speedlite 133D and Flash Auto Ring. When using ordinary flash unit and the Flash Coupler D instead of Flash Coupler L, proper f/stop should be calculated according to the guide number.

35. Where is the self-timer?

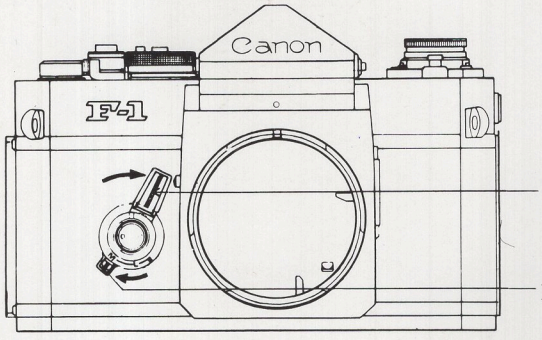
It is incorporated. When turning Self-timer in the direction of the arrow (counter-clockwise) until it stops, it is set. After depress the shutter release button, the shutter will be actuated approximately 10 seconds later. This self-timer lever can also be used as the stopped-down functioning lever, as soon as it returns to its original position.

36. Can the mirror fixed upwards?

Yes. In performing super-wide or photomicrography, the mirror can be locked in the up-position after the picture has been composed in the viewfinder, in order to eliminate mirror vibration. Push down the stopped-down functioning lever lock to "M". and the mirror is locked in the up-position. If the self-timer lever is set while the mirror is in an upward position, the mirror-up position is released. Therefore, always set the mirror in an upward position after setting the self-timer.



Stopped-down Functioning Self-Timer Lever



Stopped-down Functioning Lever

Lever Lock/Mirror Lever

C. FD Series of Interchangeable Lenses

1. Has the optical system of the FD lens been changed?

The optical system, such as the FD 50mm F1.4, has been retained completely. But eighty percent of the lenses in the FD series are newly designed. Their optical performances such as high resolving power and elimination of flare and ghost have been greatly increased.

2. How was the lens changed for the full-aperture metering?

In the mechanism, only the number of signal pins was increased. The basic construction, such as the mount and automatic diaphram, remain unchanged.

3. Can the FD lenses be used on cameras sold prior to the present time?

Yes, except for the FTb and only for stopped-down metering.

4. Can full-aperture metering be performed by mounting FD lenses on the FT?

No, because there is no signal pin on the FT. (Stopped-down metering must be performed.)

5. Why were FD lenses introduced?

In order to accomplish for full-aperture metering in the F-1, which required the signal pin.

6. How many FD lenses will be available?

We are planning over 20 kinds, including special lenses.

7. Are there any new unique lenses?

Yes.

1. The FD 17mm F4. It is an advanced lens of the FL 19mm F3.5 lens and the world's highest grade distortion-free short focal-distance lens. Straight lines are not distorted when the camera is held straight.
2. The FD 55mm F1.2 AL. It is a large aperture aspherical lens. It gives superb performance during full aperture opening, and its focus is sharp at any focusing distance.
3. The TS 35mm F2.8. Tilting and shifting can be performed with this lens.
4. Fish-Eye 7.5mm F5.6, which is a 180 degree fish-eye lens. Its entire field of view can be seen inside the viewfinder.
5. Long telephoto lenses FL 400, 600, 800 and 1200mm. They are all compact and of the front lens group interchangeable type. Except for the 1200mm, they have automatic diaphragms.

8. What are the features of the FD lens group?

High resolving power. Sharp at all distances. Sharpness superior to ordinary lenses is maintained even at close distance with wide-angle lenses due to a special focusing mechanism.

9. What are the new mechanisms for the FD lenses?

An aberration correction mechanism has been adopted for close-distance photography for the retrofocus type wide-angle lens and FD 55mm F1.2 AL lens. When focusing, the interval in a section of the lens system changes and the image is not distorted even in close-distance photography.

10. What is meant by special lenses?

These are lenses which are used for unusual shooting requirements. For example, the fish-eye lens and tilt and shift lens.

11. When will all the lenses become available?

Initially, eight lenses will be put on sale with the majority of the other lenses to follow within one year. 80 percent of the lenses are scheduled to be marketed.

12. What is the difference between FD lenses and FL lenses in resolving power?

The FD lenses have the highest resolving power, but the FL lenses have very high resolving power, also.

13. Can the FL lenses available up to now be used on the F-1?

Yes, of course. In this case, they are for stopped-down metering.

14. Are the FD lenses multicoated?

We are planning to apply multicoating to those lenses that require it from the standpoint of design. We are not planning to apply it to all lenses at full-aperture opening.
(The feature of multicoating is that 99.7% of the surface reflections within all wavelengths can be prevented.)

15. How are aspherical lenses effective?

They are effective in increasing the performance of large apperture lenses at full-aperture opening.

16. How effective are lenses using artificial fluorite?

They are very effective in eliminating chromatic aberration. They are also effective in decreasing the telephoto ratio. However, it is difficult to obtain large crystals of fluorite. Canon FL-F lenses have received 1969 Extraordinary Diploma of Honour by Interkamera.

17. Are you going to make mirror lenses?

We already have super telephoto lenses 2000mm, 1000mm and 800mm which are mirror lenses. If there is a demand, we are willing to make mirror lenses with short focal lengths.

18. What about 85mm and zoom lenses which are not on the list?

We already have super telephoto lenses 2000mm, 1000mm and have been completed.

19. What about FL-F lenses?

In addition to the already marketed FL-F 500mm F5.6 and FL-F 300mm F5.6, we are planning to develop a compact 1000mm lens also in the super telephoto series.

20. What is a TS lens?

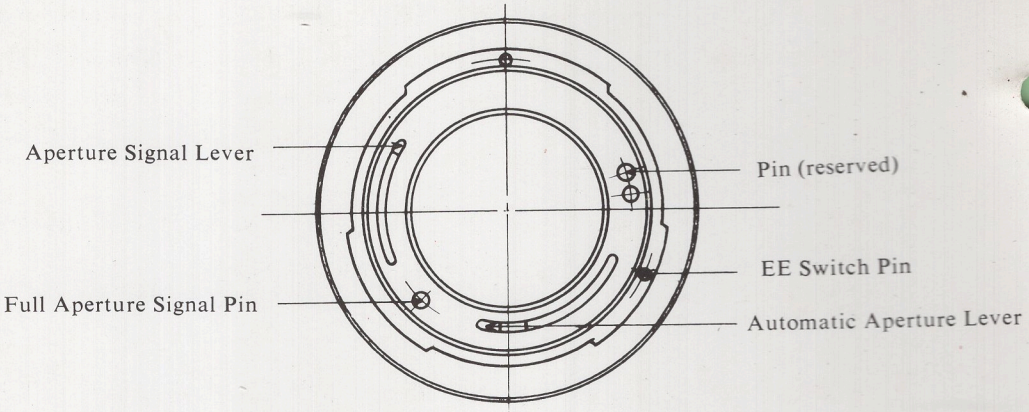
This lens is used for tilt and shift photography. Ordinarily, perspective correction alone can be performed by shifting only, but the TS 35mm F2.8 AL is a revolutionary lens with which depth of field correction also is possible by tilting.

21. What are the features of the Fish Eye 7.5mm F5.6?

It is a unique lens with a 180° angle of view and with which photography can be performed without a rising mirror. The field of view can be seen through the viewfinder.

22. What is the role of the pins and levers in the FD lens?

1. The aperture signal lever transmits the pre-set f/stop to the F-1 camera body. This lever performs 1 to 1 movement with the pre-set aperture ring.
2. The full-aperture signal pin transmits the full-aperture opening f/stop of the lens. This pin is used for correcting the error of full-aperture metering of the F-1.
3. The automatic/manual aperture lever stops down the aperture to the pre-set position.
4. The EE switch pin emits a signal when the pre-set aperture ring is set at the green mark for EE use. When the aperture ring is set at the green mark, this pin can be used for EE photography using Servo EE Finder.
5. The reserved pin is for the system accessories which will be developed from now on.



23. Why was the diameter of filters set as 55mm?

Because we wanted to make them as small as possible and also to maintain uniformity. Only those for which it could not be helped were made 58mm.

24. Why was the lens hood changed to the bayonet type?

The conventional screw-in type is more trouble-some to attach and detach and drops off more easily. We changed it to the bayonet type in response to the demand of our customers.

25. What is the green dot on the aperture ring?

It is for use with the Servo EE Finder. When the Servo EE Finder is attached to the F-1 and aligned to the green dot, the aperture becomes minimum and the coupling between the aperture ring and aperture signal lever is released and aperture setting can be performed from the camera side. If the Servo EE Finder is not aligned to the green dot, it is possible to use the aperture up to the prescribed f/stop.

26. Why does an aperture ring come for the signal transmission?

The FD lens has an aperture ring. Because the F-1 enables manual aperture setting by locking the light metering lever. It is not necessary to use the manual aperture ring. Some of the already-sold cameras have no above-mentioned mechanism. Therefore the FD lens incorporates a manual aperture ring.

27. How is the manual aperture operated?

In the case of the F-1, FTb and FT: just push down the self-timer lever. In the case of the FX: remove the lens, move the automatic apreture lever to the stopped down side for locking, and then re-attach to the camera.

28. What is the pin near the bayonet on the front section of the lens barrel?

It is the automatic flash adapter pin. When the Speedlite 133D is attached, automatic flash control with the F-1 becomes possible.

D. Accessories

1. What are the four main accessories for the F-1?

Among over 180 accessories, the Motor Drive Unit, Film Chamber 250, Servo EE Finder and Booster T Finder are called the four main accessories of the F-1 system. Because these accessories are the key devices for the expanded range of photography activities.

2. What are the features of the Motor Drive Unit?

Sustaining high precision, it can be attached to any F-1. High speed photography of three exposures per second is possible. Both single-frame photography and continuous photography can be performed. It has a seven-stage timer with a maximum interval of one exposure per minute. All shutter speeds with the exception of B (bulb) can be used with this timer. Remote controlled photography is also possible. Photography using long roll film is possible with the attachment of Film Chamber 250. The Motor Drive Unit is compactly designed as a result of Canon's sophisticated electronics technology.

3. How many exposures can be taken when Film Chamber 250 is used?

A maximum of 250 exposures.

4. How is unmanned photography performed?

The Motor Drive Unit, Servo EE Finder and cable release are operated by remote switch. The Motor Drive Unit is equipped with a timer and thus photographing intervals can also be changed.

5. Why isn't the battery the built-in type?

An external power source is used because the timer is built in and in order to transmit electricity safely, accurately and powerfully. In the future, we are planning to make available an external direct-connect type.

6. How many rolls of film can be fed using four penlight (size AA) batteries?

It differs according to batteries and films, but over 30 rolls of monochrome XX class 36-exposure film and 6 rolls of 250-exposure film for Film Chamber 250 can be fed in.

7. Can the Motor Drive Unit, Servo EE Finder, Booster T Finder and various viewfinders for the F-1 be remodeled for use on the FTb?

No. In the case of the Motor Drive Unit, the bottom cover of the FT-b cannot be removed. Not only that, the FT b has no film-winding detection circuit. Thus, it is mechanically impossible.

8. What are the features of the the Servo EE Finder?

It is driven by a servomotor and full-aperture metering can be performed. EE photography with shutter speed priority is possible. Unmanned photography is possible when jointly used with the Motor Drive Unit. It is durable against vibrations and shock. The viewfinder information is readable.

9. Why isn't the CdS photocell for F-1 used?

The Servo EE Finder is driven by servomotor and cannot use the meter of the F-1. Therefore, it is equipped with its own CdS photcell.

10. What are the features of the Booster T Finder?

1. It is a dim light metering device with electronic timer for long time-exposure.
2. Dim lighting down to EV-3.5 can be measured. In exposures of 3 seconds or longer, the electronic timer functions and adjusts the exposure time.
3. With the Booster T Finder, metering mechanism is automatically changed on the camera side. Therefore the light metering range is expanded from ASA 100 film EV15 to EV-3.5.
4. The electronic timer can be used continuously between 3 and 60 second exposure. So proper f/stop can be easily obtained.

11. How do the features of the F-1's booster compare to the FTb's booster?

Incorporating the penta prism, electronic timer and meter, the Booster T Finder performs light metering on both the camera and the booster itself. The FTb's booster performs on the camera only.

12. Why doesn't the Booster T Finder use the CdS photocell contained in the F-1 body?

To improve the overall accuracy and response characteristics, the Booster T Finder has its own original exposure meter for measuring especially dim light.

13. The F-1 and Servo EE Finder use the full-aperture metering system, but why does the Booster T Finder use the stopped-down metering system?

The reasons why the stopped-down metering system was used are: readings are taken on the outside, metering times are long, and photography is performed under dark conditions.

14. Is there an exclusive electronic flash unit?

We recommend the powerfull Speedlite 133D which was newly designed for the F-1. In this case, automatic flash control is possible with the F-1, using the CAT (Canon Auto Tuning) System.

15. How is the Speedlite 133D used?

The proper f/stop can be decided inside the viewfinder without calculations if the Flash Coupler L and Flash Auto Ring are used. The battery charge and focusing signals are transmitted to the meter needle. Therefore, the proper exposure can be obtained by turning the aperture ring and matching the needles. We call this the CAT System.

16. What is the CAT System?

CAT is the abbreviation for Canon Auto Tuning. It is an automatic flash control mechanism that automatically transmits to the circuit the guide number which changes according to the charging power level of the battery.

				370				230	Photographic Distance	208		230			320				
	240 360	192 288	144 216	120 180	96 144		72 108	48 72	Size of the Subject (mm)	24 36		12 18			6 9				
		1.25×	1.35×	1.44×	1.56×		1.78×	2.25×	Exposure Factor	4×		9×			25×				
	1:10 0.1	1:8	1:6	1:5 0.2	1:4		1:3	1:2 0.5	Magnification	1:1 1.0		2:1 2.0			4:1 4.0				

FD Standard Lens

FD Standard Lens

FD Standard Lens Bellows FL

FD 55mm F1.2 Lens·Bellows FL

Macro Lens·

Extension Tube·Bellows FL

Micro Lens

Extension Tube M·Bellows FL

FD Standard Lens·Extension Tube M

FD Standard Lens in Reversed Direction

Macrophoto Coupler·Bellows FL











Close-Up Lens·FD Standard Lens

FD Standard Lens in Reversed Direction· Macrophoto Coupler FL·
Extension Tube FL Extension Tube M·Bellows FL

Slide Duplicator·FD Standard Lens· Bellows FL

FD Standard Lens in Reversed Direction·
Macrophoto Coupler FL

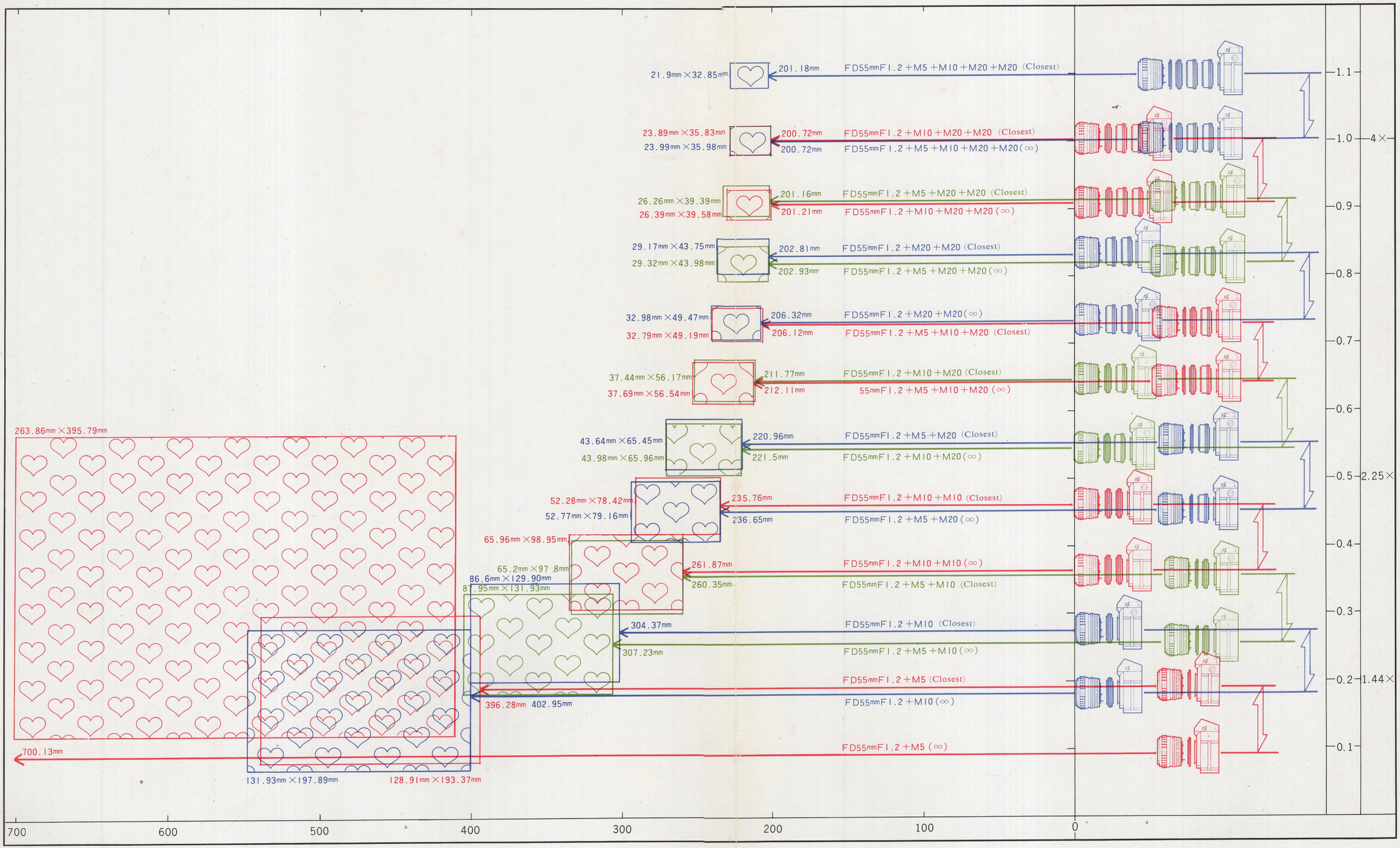
Retrofocus FD Standard Lens· Macrophoto Coupler·Extension Tube
Lens Mount Converter A·Bellows FL

Macro Lens

Macro Lens·Life-size Adapter

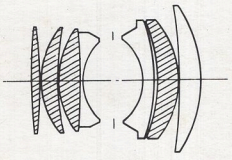
Photomicro Unit F·Microscope

Combination of FD 55mm F 1.2 and M Tubes

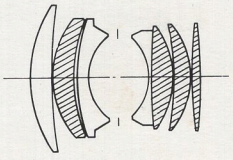


E R R A T A

1-12 line 12	For "asphere" read "aspherical"
1-22 line 4	For "resitors" read "resistors"
1-31 line 19	For "deterction" read "detection"
2-7 line 3	For "for" read "of"
2-35 lines 20-26	*Replace two praragraphs. The camera can handle film speeds up to ASA 2000. With the use of the booster this film speed can be raised to ASA 12800. When using film speeds over ASA 2000, the indication of the camera meter will not be correct; therefore the shutter speed must be kept within the booster meter range, or the camera meter reading must be changed to match the film speed.
2-36 lines 21-22	*Replace a paragraph. The drain on the silver oxide battery is high, therefore, always cut off the switch when the meter is not in use.
3-2 line 9	For "rate" read "rare"
line 15	For "super-side-angle" read "super-wide-angle"
*Fourth chart	

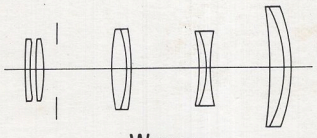


Wrong



Correct

3-5 *First chart	



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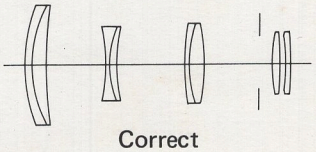

Correct

3-7 line 11	For "Attery" read "Battery"
3-9 line 21	For "infinify" read "infinity"
3-11 line 3	For "and" read "which"
line 20	For "Canera" read "Camera"
4-1 Eighth question	*Replace the answer to question. The F-1 is designed primarily for professional and advanced amateur photographers. Since most of them prefer an unobtrusive camera, we make the F-1 in black finish only.
4-3 Second question	For "There were demands from camera fans." read "To answer the demands from photographers."

4-5	21th question	* Replace the answer to question. The F-1 has the best film transport system in any 35mm camera. The combination of the extra-large pressure plate, film magazine stabilizer and normal winding not only assure extreme film flatness, but also the smoothest possible film winding and also elimanates the problem of emulsion cracking in cold weather caused by the extra strain of reverse winding.
4-6	30th question	For "Because it makes sure of attaching" read "So that it could be attached to"
4-7	32th question	For "Are" read "Is"
4-10	11th question	Put four words, "in the near future" after "marketed'.
4-11	18th question	* Replace the answer. These lenses are scheduled for production in the near future, upon completion of lenses now in production. For "Pin (reserved)" read "Reserved Pin"
4-12	Chart 26th question	* Replace the question. Why is there an aperture ring for the signal transimission?
4-14	Sixth question	* Delete the word "four" in the question and replace the answer. It differs according to batteries and film. By using 10 penlight batteries, over 50 rolls of monochrome XX class 36-exposure film and 7 rolls of 250-exposure film for the Film Chamber 250 can be fed in.
4-15	Nineth question	For "for F-1 used?" read "used in the F-1?"