

Canon 312XL-S CANOSOUND

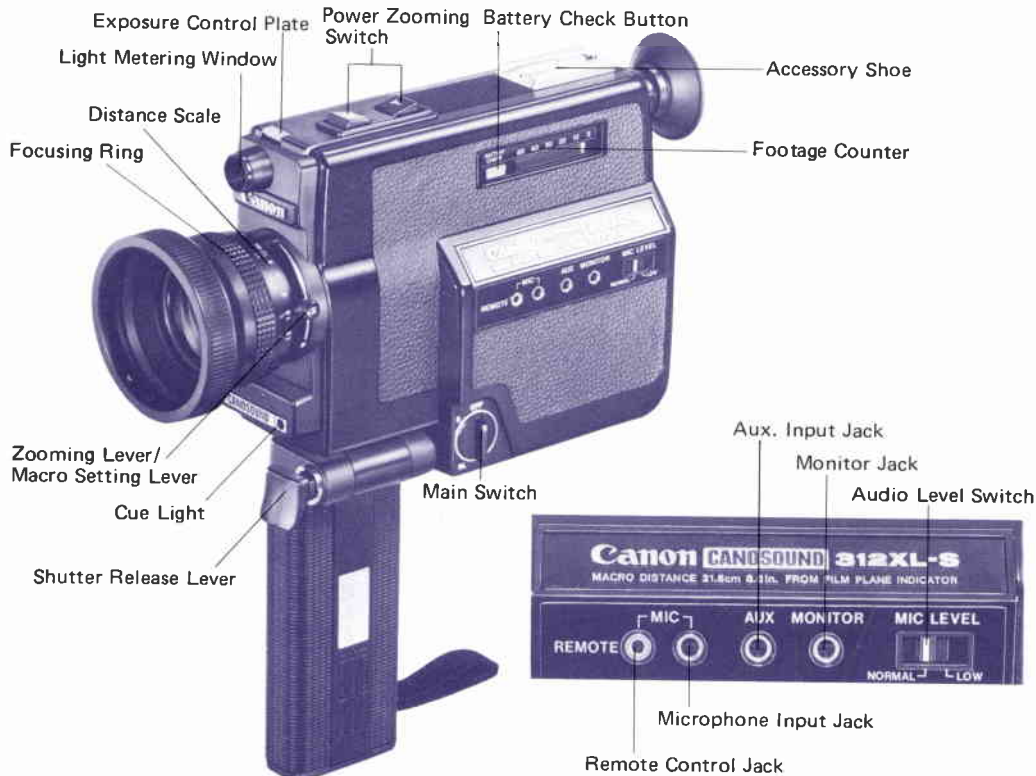


E

INSTRUCTIONS

Contents

	Page		Page
OUTSTANDING FEATURES	4	Film Transport and Film End Warning ...	24
SPECIFICATIONS	6	Removing the Film Cartridge	24
GENERAL OUTLINE	10	Changing a Partly-used Cartridge	25
Built-in Rubber Hood	12	Macrocinematography	26
Hand Grip and Strap	12	Running Lock	28
Rubber Mat	12	Remote Control Shooting	28
Battery Loading	13	Finder Cover	29
Battery Life and Battery Check	14	SOUND FILMING	31
Eyepiece Adjustment	15	Microphone	31
Main Switch	15	Earphone	31
Shutter Release Lever	16	Windscreen	32
Viewfinder	16	Position of the Microphone	32
Framing	16	Audio Level Switch	33
Zooming	16	Recording from an External Audio Source (AUX)	33
Focusing	18	Attaching the Microphone and Remote Control Filming Using the Microphone ...	34
Use of the CCA Filter Switch	19	Recording Confirmation(Sound Monitor) .	35
Film Loading	20	Filming	37
Checking Film Advance	21	Mixing	38
Footage Counter	21	Cleaning the Recording Head	38
How to Hold the Camera	22	Hints in Filming Titles	39
Checking the Exposure	22	Accessories	41
Cue Light	23	CAMERA MAINTENANCE	44
Film Speed and Exposure Control Plate ..	23		
Exposure Adjustment when Shooting Against the Light	23		



This 8mm movie camera makes use of the latest electronic technology for completely reliable sound and silent filming. The Canon 312XL-S incorporates all the best features of sound movie cameras as well as a high-precision zoom lens, a macrocinematography mechanism and the XL system for filming in dim light. At the same time, it maintains the compactness and maneuverability of a silent movie camera so that all users, amateur or professional, can make sound films of the highest quality.

Outstanding Features

Automatic level control mechanism with Canon's ALC circuit

The volume level is automatically controlled by an ALC (Automatic Level Control) circuit. Since this ALC circuit has a special control system based on the duration of sound as well as the tone level, it affords the most suitable recording system for sound 8mm filming.

Audio Level Switch for recording loud sounds without distortion

It is also possible to reduce the sensitivity of the ALC circuit in order to record loud sounds without distortion.

Mixing techniques for better sound effects

Using both the Aux. input and the microphone input jacks, mixing can be performed to enhance effects.

Lightweight and compact for excellent maneuverability

Though it is capable of extremely high quality performance as a sound 8mm camera, this camera's design is very compact. The controls are located on the side of the body and the grip is collapsible for even easier operation, with the same portability as silent movie cameras.

Large aperture f/1.2 zoom lens with macrocinematography mechanism

The 312XL-S has a large aperture zoom lens with wider filming applicability due to the inclusion of a macrocinematography mechanism. It offers superb performance from regular filming to close-ups, titles, and filming under dim light. Minimum field size in macrocinematography is 84mm x 118mm at the closest focusing distance.

Highly sensitive XL mechanism for indoor filming

Combining the shutter opening angle of 220° and fast lens, the highly sensitive meter and high speed film, it is possible to film in a dimly lit room and outdoors at night. The bright viewfinder proves excellent for this kind of filming, too.

Bright viewfinder information

This SLR viewfinder is very bright and includes such information as recording level indicator, battery check/film end warning lamp, film transport indicator, underexposure warning mark and macro indication.

Super wide-angle filming with the Wide Attachment Lens

When the Wide Attachment Lens 43 is attached to the front of the lens, the focal length becomes fixed at about 5.5mm and it performs super wide-angle filming with an angle of view of 73.5°. This lens is particularly effective for filming indoors.

Specifications

Type: SLR type Super 8 for sound and silent XL filming.

Size of Picture Frame: 5.8 x 4.2 mm

Lens: 8.5 – 25.5 mm f/1.2, 3X zoom ratio.

Lens Construction: 13 elements in 10 groups, Spectra Coating; filter thread size: 43 mm; lens cap size: 45 mm; rubber hood: built-in.

Macrocinematography Mechanism: It can be switched to wide-angle macrocinematography by the macro setting lever.

When the distance scale is set to ∞ , the shooting distance becomes: 215 mm from the film plane indicator and the field size, 84 x 118 mm.

Focusing Adjustment: Rotating front component.

Distance Scale:

ft.	4	5	10	30	∞	
m.	1.2	1.5	2	3	5	10

Zooming: Power zooming by electric motor, also manual zooming. Power zooming speed is about 6 seconds.

Viewfinder: Single lens reflex aerial image system. Information: recording level indicator, battery check/film end warning lamp, film transport indicator, under-exposure warning mark and macro indication.

Dioptic Adjustment: Dioptically adjustable from -4 to $+2$ dpt.; with eyecup.

EE Mechanism: Automatic exposure mechanism coupled to ASA film speed. Light measurement by a CdS photocell through the light metering window above the main lens. Exposure Control Plate is built-in.

Light Metering Range: ASA 250, f/1.2, 18 fps. to ASA 25, f/45, 18 fps.

Film Speed:

Artificial light: ASA 40 160 250

Daylight: ASA 25 100 160

Film ASA Setting: Automatically set when cartridge is loaded.

Color Temperature Conversion Filter: Built-in. Automatic cancellation when daylight-type film cartridge is inserted. Manual removal is also possible by switch located on the camera body.

Shutter Release Mechanism: Electromagnetic release system; remote control is possible.

Filming Speed: 18 fps.

Angle of Shutter Opening: 220°

Main Switch: Positions for "OFF", "R" (Running), "RL" (Running Lock). A red mark confirms that power is on.

Power Source: The power source that is used for the film drive system, power zooming, exposure metering, and recording, consists of six 1.5V penlight batteries which are located in the grip.

External power source can be used (D.C. 9V)

Battery Check: A red LED lamp lights in the viewfinder to confirm battery power when the battery check button is pressed.

Battery Life: Under normal temperature conditions, batteries are serviceable for more than 10 cartridges.

Footage Counter: Counts exposed film footage and automatically returns to "S" upon cartridge removal.

Cue Light: A red LED lamp at the lower right on the front of the camera lights up while filming.

Film End Warning: The film end warning lamp lights in the viewfinder about 2 ft. before the end of the film.

Sound Recording System: Magnetic stripe recording with Super 8 sound cartridge (continuous film transport via capstan).

Capstan Motor: With AC tacho generator

Recording Level: Automatic Level Control (ALC), two settings, Normal and Low.

Input Monitor: By earphone and recording level indication.

Microphone Input: Input impedance about $3k\Omega$, 3.5 mm ϕ mini jack, minimum input sensitivity -80 dBv (0 dBv = 1V).

Microphone: Impedance 500Ω (Dynamic Microphone), sensitivity -78 dB (0 dBv = $1V/\mu$ bar 1 kHz).

Aux. Input: Impedance more than $100k\Omega$, 3.5 mm ϕ mini jack, minimum input sensitivity -20 dBv.

Earphone Output: Impedance 8Ω .

Remote Control: With remote control switch or microphone switch (mini jack 2.5 mm ϕ). Self-Timer E can also be used.

Film Compartment: Accepts sound and silent cartridges. Opened by film compartment opening knob.

Grip: Collapsible; serves as battery compartment.

Accessory Shoe: For attaching the Boom Microphone BM70/BM50 and Lighting Adaptor LA-1.

External Power: 9V D.C. with External Power Pack.

Dimensions and Weight: 195(L) x 136(W) x 64(H)mm (7-11/16" x 5-3/8" x 2-1/2") (when grip is folded); 1,420g (3 lbs. 2 oz) (including batteries)

Accessories: Soft Case, 45 mm Lens Cap, Dynamic Microphone DM30R (with wind-screen, stand and clip), Earphone E, Finder Cover, Rubber Mat, Head Cleaner and Neck Strap 8.

Optional Accessories: Boom Microphone BM70, Boom Microphone BM50, 43 mm Filters, C-8 Wide Attachment Lens 43, Self-Timer E, Power Pack 9V, Connecting Cord C300L, Microphone Extension Cord E450L, Lighting Adaptor LA-1, Headphone HP-M, and Remote Switch 60.

Subject to change without notice.



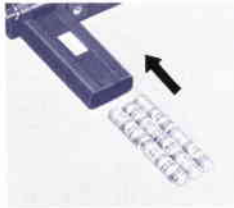
GENERAL OUTLINE

CANON 312XL-S

- Unfold the grip.



- Load batteries.



- Check the battery charge. (With the main switch at "R")



- Adjust eyepiece.



Preparations
Before Filming

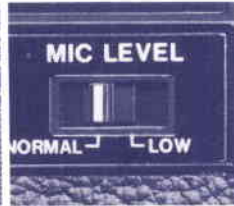
- 5 Connect the microphone.



- 6 Connect the ear-phone.



- 7 Set the Audio Level Switch to "Normal".



- 8 Zoom manually.



Zoom manually.

- 9 Decide composition and focus.



Decide composition and focus.

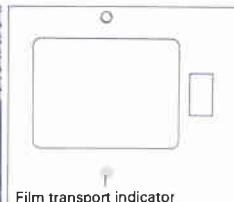
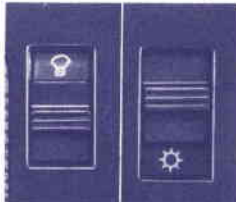
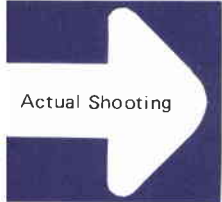
SOUND FILMING

1 Insert the sound cartridge.

2 Check CCA Filter.

3 Set the main switch to "R".

4 Check film advance.



SILENT FILMING

Insert the silent cartridge.

Check CCA Filter.

Set the main switch to "R".

Film transport indicator

Check film advance.

Confirm the exposure and recording level by pressing the shutter release lever in halfway. (Concerning sound monitor, refer to page 35.)

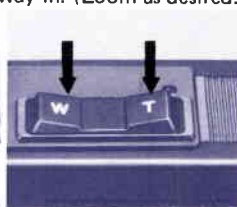
10



Confirm the exposure by pressing the shutter release lever in halfway.

11

After setting the microphone switch to "ON", begin shooting by pressing the shutter release lever all the way in. (Zoom as desired.)



Begin shooting by pressing the shutter release lever all the way in. (Zoom as desired.)



Built-in Rubber Hood

This is used to avoid extraneous light while shooting and is made of collapsible rubber. To use, simply pull it out.



Hand Grip and Strap

The hand grip also functions as the battery compartment and is collapsible. When unfolded all the way, it clicks into position ready for use. Please be sure to loop the strap around your hand and grasp the grip for safety.

It can be collapsed by pressing the grip locking lever and folding the grip up against the body.

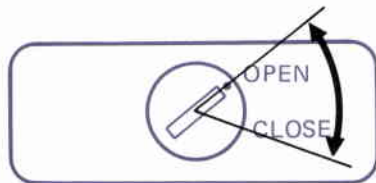
Rubber Mat

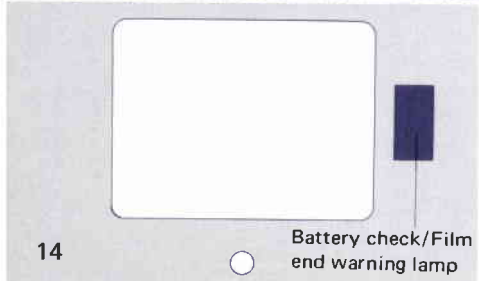
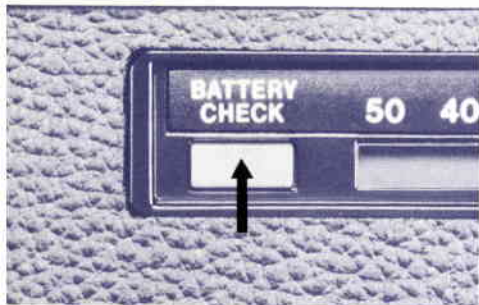
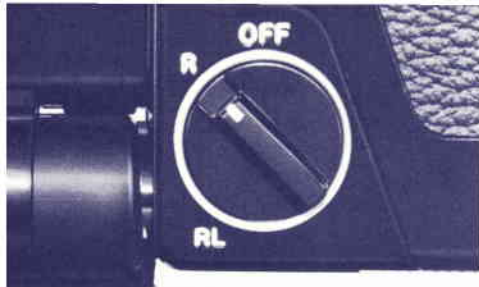
This rubber mat protects your hand from the tripod socket and makes holding the grip easier.

Battery Loading

As this camera will not operate without batteries, batteries must be loaded before checking its operation. Six penlight batteries (size AA) loaded in the grip are all that are needed for film drive, light metering and recording. To load the batteries, insert the edge of a coin into the slot on the bottom part of the grip and rotate to "OPEN". The battery compartment cover will come off. Load the batteries according to the diagram on the outside of the grip. Make sure their poles are in the right directions. Incorrect loading of the batteries can lead to dangerous short-circuits. Replace the cover, making sure it is in the right direction, and turn to the "CLOSE" position. If the cover is facing the wrong way, it cannot be locked. DO NOT force the lock past the "OPEN" or "CLOSE" position. When changing batteries, replace all at the same time with 6 new batteries, all of the same brand.

For shooting in cold places, Alkaline or Ni-Cd batteries are highly recommended. When you shoot in temperatures below 0°C, Ni-Cd batteries are especially recommended. The External Power Pack, which can be kept warm in your pocket, can also be used.





*If the camera will not be used for a long period of time, unload the batteries to prevent possible damage to the camera by battery leakage.

Battery Life

When new manganese batteries (size AA) are used under normal temperatures, regular shooting of more than 10 cartridges is possible.

*This may vary slightly depending on the frequency of zooming or use of sound film.

Battery Check

You cannot film correctly when the batteries become weak. It is particularly necessary to check the batteries when the camera is used in cold places, after it has not been used for a long time, after you have filmed about 10 cartridges, and when the batteries are changed. Set the main switch to "R", look into the viewfinder, and press the battery check button. If the red lamp on the right side of the viewfinder lights, there is enough power. If it doesn't light, replace the batteries with new ones.

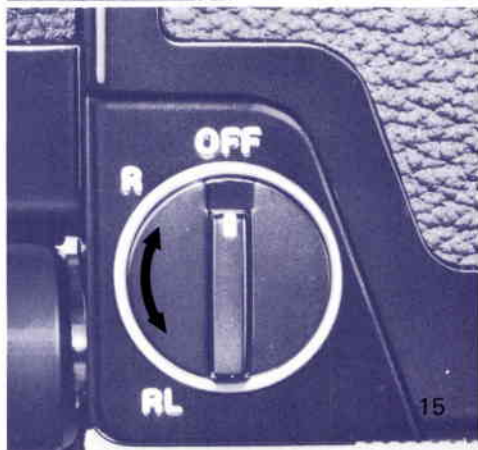
Eyepiece Adjustment

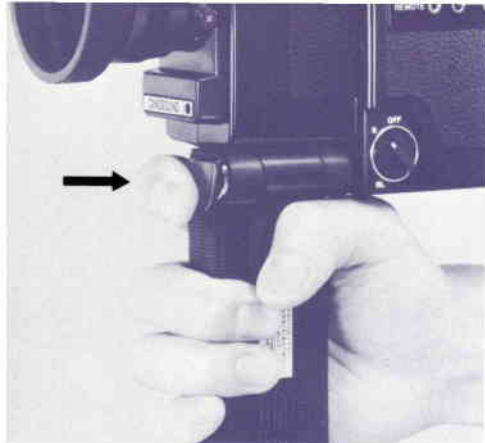
Eyepiece adjustment is indispensable, because blur will result if the eyepiece is not adjusted to the user's eyesight. Turn the focusing ring to infinity. Turn the dioptic adjustment ring until you can see distant subjects perfectly clearly. The eyepiece adjustment range is from -4 to $+2$ diopters.

Main Switch

The switch has "OFF", "R" and "RL" positions. To start filming, set the main switch to the "R" position and press the shutter release lever. "RL" stands for running lock and locks the shutter release lever for continuous shooting. The switch cannot be turned clockwise from the "OFF" to "RL" position.

* Current is being consumed at any position other than "OFF", so be sure to set the switch to "OFF" when the camera is not in use in order to avoid wasting the batteries. The red mark which appears on the main switch at any position other than "OFF" is a safety feature to let you see at a glance that the power is on.



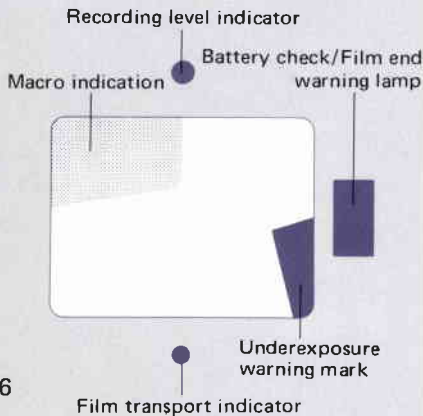


Shutter Release Lever

After setting the main switch to "R", depress the shutter release lever to start shooting. This shutter release lever has two steps. The first step is for light metering and sound monitoring, the second for filming.

Viewfinder

The viewfinder contains all information necessary for shooting, such as the recording level indicator at the top, the battery check/film end warning lamp on the right and the film transport indicator below. An underexposure warning mark in the lower right corner and macro indication in the upper left corner are also included.



Framing

Since the viewfinder has no parallax, the viewfinder image is the same as the film image.

You can change the subject's size either by moving closer to or away from the subject or by zooming.

Zooming

As the zooming lever is rotated, the size of the image in the viewfinder will continuously change while the focus stays the same. This is called "zooming", and the change in magnification results

from a change in focal length caused by rotating the zooming lever. Zooming is most effectively used for creating special effects. This camera offers both power and manual zooming.

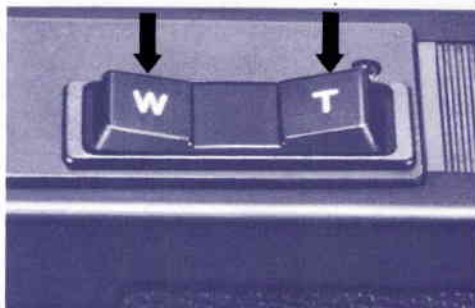
Power Zooming

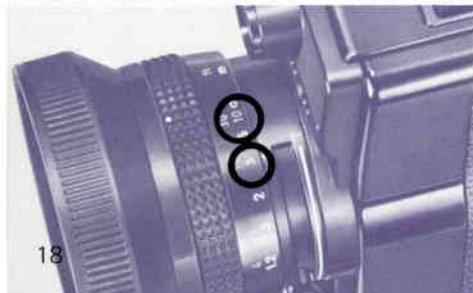
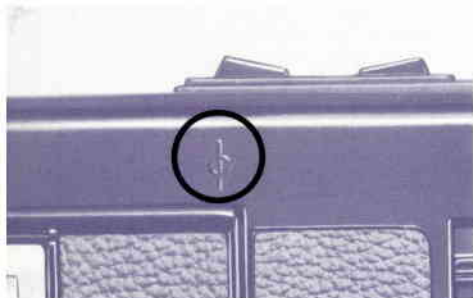
When either power zooming switch is pressed while pressing the shutter release lever, zooming will automatically start. When "T" is pressed, the focal length changes to telephoto making the image larger. Pressing "W" will change to a shorter focal length giving a wide-angle view. The former operation is known as "zoom-up" and the latter as "zoom back". Zooming time is about 6 seconds. Power zooming makes zooming quite smooth.

*Be careful not to cover the light metering window with your hand while power zooming.

Manual Zooming

Manual zooming can be performed with the manual zooming lever which can easily be rotated with fingertip. It is generally used to control picture composition and to control zooming time when you want slower or faster zooming than that offered by power zooming. Since the manual zooming lever doubles as the macro setting lever, don't lift it up or you will switch to macrocinematography by mistake.





Focusing

The Canon 312XL-S can focus as close as 1.2 meters, but distance must be estimated. After determining the distance between camera and subject, turn the focusing ring until the proper distance is aligned with the index in order to focus correctly. The focusing ring may be set at or in between the numbers. The row of white numbers represents the distance in meters and the row of green numbers represents the distance in feet.

Film Plane Indicator

When precision focusing is required, measure the exact distance between subject and film plane indicator and adjust the distance scale accordingly.

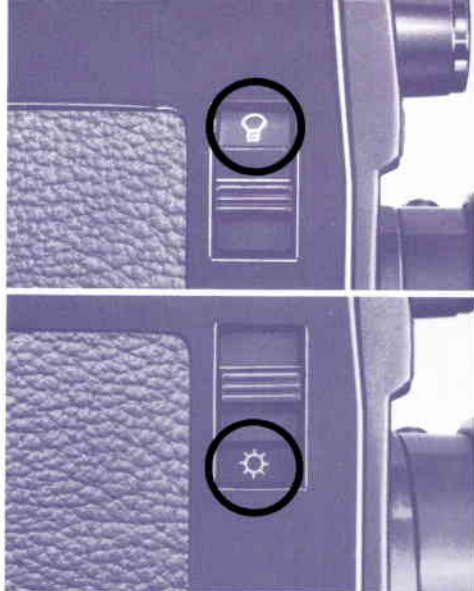
Using the Zone Focusing

When filming outdoors under a clear sky, the depth of the field is increased and you can simply use the 3 or 10 red zone markings without focusing exactly. For close shooting of up to about 7 meters, set the distance ring at 3; for shooting subjects farther away set the distance ring at 10.

Use of the CCA Filter Switch

This camera is designed so that tungsten type (artificial light) film may be used under all conditions. Since tungsten film is meant to be used with artificial lighting, this camera comes equipped with a CCA filter which converts the film's color temperature for use under daylight conditions as well. This is absolutely necessary to insure natural color balance.

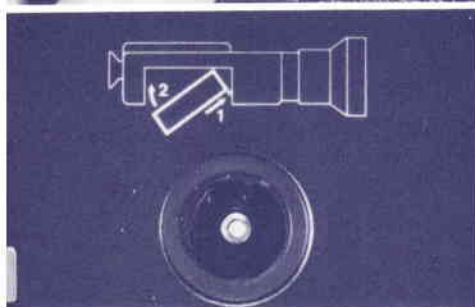
The CCA filter switch is located on the side of the main body. When shooting with Type A (tungsten type) film indoors under artificial light, set the switch to the "💡" mark. This removes the CCA filter from the optical path. When using Type A film for daylight shooting, set the switch to the "☀️" mark. This places the filter into the optical path of the lens to convert the color temperature. When Type G film for both daylight and artificial light or daylight type film is loaded in the camera, the filter is automatically cancelled no matter what the position of the filter switch is.



CCA Filter Settings

Film Type \ Light Source	Daylight	Artificial Light
Type A (Tungsten Type)	☀️	💡
Type G or Daylight Type	Either position may be used.	

* Take care that you don't mistake the film type indicated on the package.



Film Loading

Pull out the film compartment opening knob and turn in the direction of the arrow. Then pull the cover open. Hold the film cartridge with the label facing towards you and insert the end where the film can be seen first as the chart in the film compartment indicates. Then press the cartridge in until it snaps into place and lays flat. Take care not to release the shutter when inserting the sound cartridge as this can scratch the film. The film speed is set automatically.

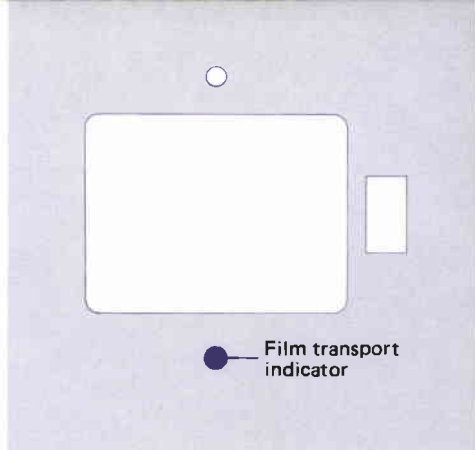
*When the main switch is at the "RL" position, a sound cartridge can not be inserted or removed.

Checking Film Advance

With the main switch at "R", press the shutter release lever all the way in while looking through the viewfinder. If the film transport indicator moves up and down, the film is being transported correctly. If it doesn't, take out the cartridge and turn its spindle clockwise to remove any film slack. Then load it again.

Footage Counter

This functions during photography to count the amount of exposed footage. It automatically returns to "S" when the cartridge is taken out.





How to Hold the Camera

Some ways of holding the camera will cause blurred and out-of-focus movies, so make sure the camera is held correctly. The fundamentals of holding a camera are to put your right hand through the strap and hold the grip with your index finger on the shutter release lever. Use the left hand to control the zooming switch on the top of the camera and for holding the upper part of the camera body while shooting. Press your right elbow firmly against your body to steady the camera. Keep your feet slightly apart. If you are panning, do so by turning the upper body only from side to side, without moving your lower body. The ideal, when possible, is to use a tripod and cable release in order to avoid blurring.

Checking the Exposure/Underexposure Warning Mark

If a red mark does not appear in the lower righthand corner of the viewfinder when you press the shutter release lever halfway, exposure is correct. If the red mark does appear, it means your subject is too dark and the film will be underexposed. Correct this by applying more light to your subject.



Underexposure
warning mark

Cue Light

A cue light on the lower front of the camera indicates that the camera drive is in operation so the subject will know when filming has begun.

Film Speed and Exposure Control Plate

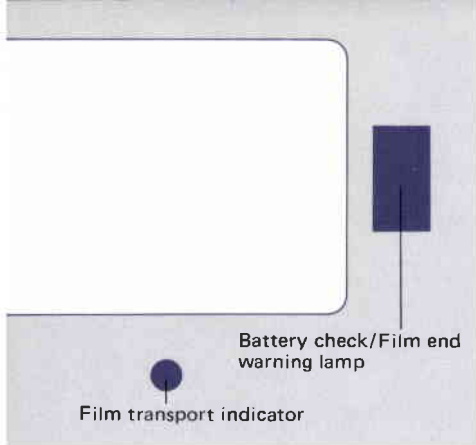
This camera is an XL camera. When high speed film is used in XL cameras for filming outdoors during the daytime, there is a tendency to overexposure caused by the XL mechanism. Therefore, when filming outdoors in the daytime, please use low speed film. If a high speed film has to be used, attach the Canon filter ND-4 and pull the exposure control plate located just above the light metering window fully out. The compensation of this exposure control plate is two f/stops.

*Do not use an ND filter together with a UV or Skylight filter.

Exposure Adjustment when Shooting against the Light

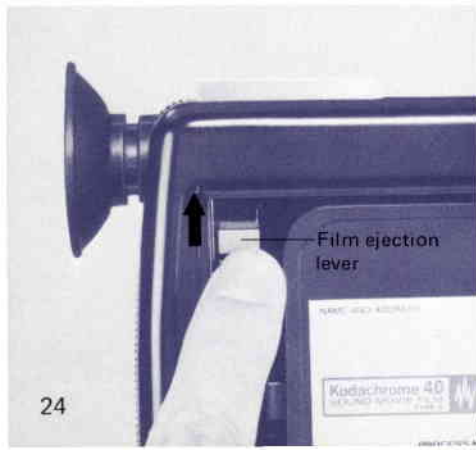
The exposure control plate is also used to attain correct exposure when shooting against strong light such as when the sun is behind the subject. When shooting a subject with a window in the background or under ordinary light conditions, exposure adjustment is not necessary.





Film Transport and Film End Warning

While shooting, the film transport indicator moves up and down to indicate normal film transport. About 2 ft. before the end, the film end warning lamp on the right side of the viewfinder will light up. When the film ends, the film transport indicator ceases to move. Then, stop shooting and take out the film cartridge.



Removing the Film Cartridge

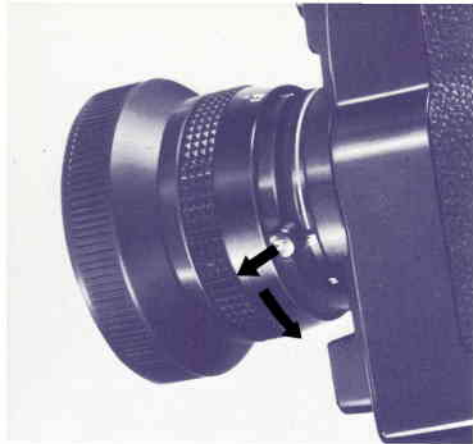
Set the main switch to "OFF" and open the film compartment cover. When the film ejection lever on the upper left of the film compartment is moved in the direction of the arrow, the film cartridge will pop up to be removed. The exposed film has a cut on the perforated edge and "EXPOSED" written on it to distinguish it from new film. The exposed film should be developed as soon as possible.

*The main switch must be off before removing the cartridge. A safety mechanism designed to protect the recording head will prevent removal of a sound cartridge when the main switch is at "RL".

Changing a Partly-used Cartridge

Since Super 8 film comes in a cartridge, you can change to different types of film before one cartridge is totally finished. Footage wasted by changing cartridges is only about 6 frames (silent cartridge) or 30 frames (sound cartridge) which includes that part exposed to the light and a few frames before and after.

Since, upon reloading the partly-used cartridge to finish it up the footage counter automatically returns to "S", the best way to tell the film has ended is by looking at the film transport indicator.



Macrocinematography

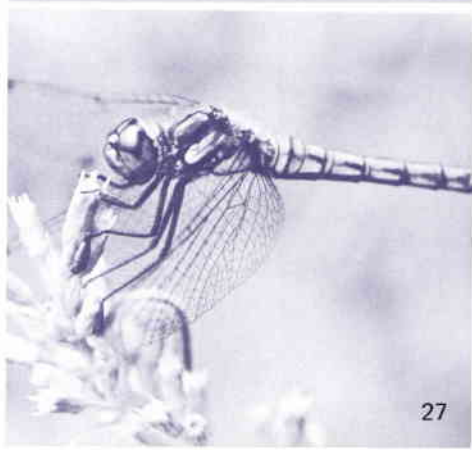
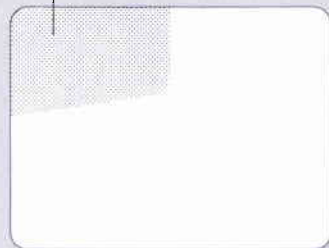
The Canon 312XL-S has a built-in macrocinematography system which enables tilting or close-up shooting by simply moving the zooming lever. In macrocinematography, focus is at 215mm from the film plane indicator.

1. To set the camera for macrocinematography, rotate the macro setting lever to the "W" position, then pull it up and rotate it further to the "M" position. While performing macrocinematography, a yellow mark will appear in the upper left of the viewfinder.
2. Set the distance scale on the focusing ring at infinity.
3. Measure 215mm from the film plane indicator to the subject. If you wish to use the wrist strap for this measurement, first measure the distance from the film plane indicator to the tip of the strap. Judge any remaining distance by eye. Since the depth of field becomes extremely shallow in macrocinematography, make sure to determine the distance from the film plane indicator to the subject accurately.
4. To cancel macrocinematography, lift up and turn the macro setting lever clockwise to the "W" position.



*In macrocinematography, it is better to use a copy stand or tripod and a remote control switch to avoid blur. When you shoot without looking through the viewfinder, please be sure to attach the finder cover.

Macro indication





Running Lock

The running lock locks the shutter release lever for continuous shooting. Press the shutter release lever and then rotate the main switch to the left all the way to "RL". When you remove your finger from the shutter release lever, the camera will continue to run. To release the running lock, return the main switch from the "RL" position. This running lock is used for remote control shooting with the Remote Switch 60 or with the microphone switch.

*Please put the finder cover on before filming by remote control so that light does not enter through the eyepiece and affect the film.

Remote Control Shooting

When the remote control switch is used:

1. Set the main switch and remote switch to "OFF", and insert the remote switch plug into the remote control jack on the camera.
2. Set the main switch to "RL", pressing the shutter release lever all the way.
3. Press the remote switch button to begin advancing the film. Slide the button in the direction of the arrow for running lock, which will provide continu-

ous shooting even after your finger has been removed.

4. To release the remote control, first rotate the main switch to "R" and then unplug the Remote Switch. If the Remote Switch is unplugged first, the running lock will still be on and the film will continue to run.

Finder Cover

The finder cover should be attached to the eyepiece whenever you are filming while not looking through the viewfinder—when filming by remote control or when using a tripod, for example. The cover will prevent light from coming through the eyepiece and spoiling the film. It is particularly necessary when filming with the light at your back and your eye is not to the eyepiece.





SOUND FILMING

Using a sound film cartridge, recording and filming are performed simultaneously. Since the quality of the recording varies according to the way the microphone is used and the setting of the recording level, it is necessary to fully understand how each part is controlled.

Microphone

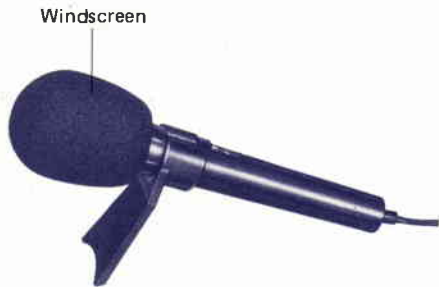
The dynamic microphone is for recording sound and it is connected to the microphone input jack of the camera. To start simultaneous recording and filming, switch the microphone on and depress the shutter release lever. By means of the Microphone Extension Cord E450L (4.5 m), you can extend the reach of the microphone's cord. About 3 microphone extension cords may be used together.

*When making a sound movie without an assistant, it is convenient to use one of the optional Canon Boom Microphones.

Earphone

The earphone is used to monitor the recording and is connected to the monitor jack.





Windscreen

When making movies outdoors on a windy day, the sound of the wind on the microphone is recorded, too. Attaching the microphone's windscreen will reduce wind noise. This windscreen may be kept on all the time.

Position of the Microphone

The sound should be monitored with the earphone to decide the position of the microphone. Since the standard microphone is omnidirectional, it picks up the sound of the film drive if it is placed close to the camera. It should be placed at least 1 m in front of the camera and should be close to the sound source for faithful reproduction. When filming with simultaneous sound recording, it is best to have someone hold the microphone in order to obtain good sound quality. If you film by yourself, attach the microphone to the camera bag or to a tree or pole, depending on the situation. Use the microphone clip. When you place the microphone on something, please make sure to use the microphone stand. Be careful not to hit the microphone or pull the cord while filming, or the noise will be recorded.

Audio Level Switch

Since an ALC (Automatic Level Control) circuit is built into this camera, the sound level is automatically controlled for recording at the right level.

NORMAL: For normal recording.

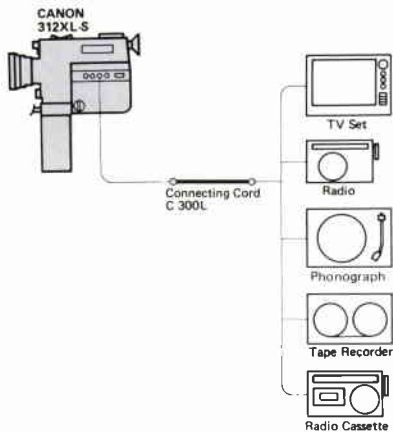
- LOW:**
- When making movies in noisy places, this setting can record the sound while avoiding the surrounding noise (for interviews on the streets, etc.).
 - When you want to record a particularly loud noise (such as jet planes or trains) without distortion.

Recording from an External Audio Source (AUX)

When filming while recording sound from a tape recorder, phonograph or TV, please use the Canon Connecting Cord C300L for direct recording, because recording with the microphone will pick up other noises.

1. Connect the output terminal of the audio equipment (or line out/earphone jack) to the AUX jack on the camera using the Canon Connecting Cord C300L.
2. First switch the audio equipment on, and then depress the shutter release lever halfway to monitor the sound.





*The level of sound is automatically controlled by ALC. If the sound is too low or distorted when monitored, adjust the level of the sound source.

3. Depress the shutter lever all the way to start filming.

Attaching the Microphone and Remote Control Filming Using the Microphone

With this camera, remote control filming is possible by means of the microphone.

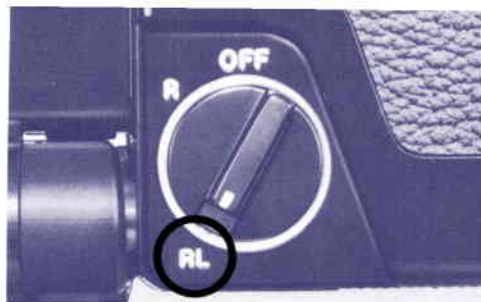
1. Turn both the main switch of the camera and the microphone switch off.
2. Insert the microphone plug into the camera.
3. Depress the shutter release lever halfway to monitor sound with the earphone.
4. Depress the shutter release lever all the way, and set the main switch to "RL". To start filming, switch the microphone on. Look at the cue light to confirm that remote control filming is taking place.

*Please be extremely careful when you operate the microphone switch in order to avoid noise.

*Please make sure to change the position of the main switch from "RL" before pulling the microphone cord out. If you pull the cord before you do so, film will be wasted.



- * If the microphone cord is too short, please use the Microphone Extension Cord E450L (4.5m).
- * Don't forget to attach the finder cover when your eye is not to the eyepiece.



Recording Confirmation (Sound Monitor)

For best possible recording results, please make sure to monitor the sound before filming. Monitoring is possible when the shutter release lever is pressed halfway. There are 2 ways to monitor sound—by looking at the recording indicator in the viewfinder or by earphone or headphone.

The recording level indicator in the viewfinder



Recording level indicator



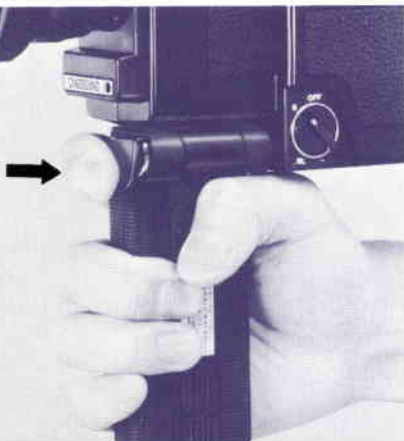
Film transport indicator



blinks on and off when the sound signal comes in. It should particularly be used for monitoring when filming close to loud noises since this is difficult to do with an earphone. The indication stays on for a loud sound. This sound may be distorted. If you want to record without distortion, you should set the Audio Level Switch to "LOW".

Since the recording level indicator registers extraneous noise as well, make sure to monitor normal sound with an earphone or headphone. If you hear excessive noise over the earphone, reposition the microphone to obtain the best recording sound.

*Normally, monitoring is not possible unless a sound film cartridge is loaded. If, for some reason, you wish to monitor the sound when no cartridge is loaded, it is possible if you press the sound magazine coupling switch (refer to P. 46).



Filming

Filming begins with full pressure on the shutter release lever. Use of the Canon Boom Microphone is recommended if you want to move while filming.

The sound for a given frame is recorded 18 frames before. This means that, for editing purposes, you should continue filming one or two additional seconds before and after each cut so that filming duration matches the sound track to be recorded. This is especially important when filming conversations, explanations and announcements where important parts cannot be cut. For editing, please use a regular 8mm sound film editor and make sure to monitor the sound while editing to avoid cutting out necessary parts of the film.

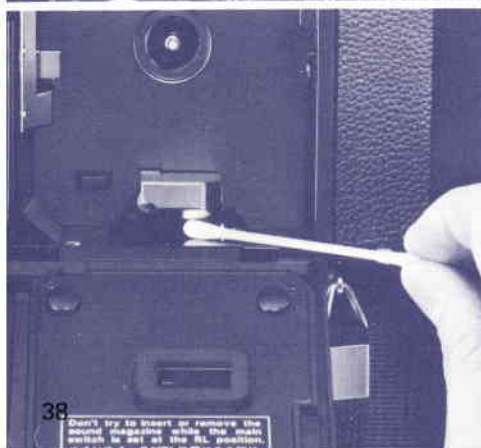
* If you don't wish to film and record simultaneously while using a sound film cartridge, the microphone must be disconnected.





Mixing

When you use both the microphone input jack and the AUX. jack together, the sound coming in through the microphone and the sound from an external audio source can be effectively recorded on the same track. This is called mixing. Sound monitoring is possible before filming, so please adjust the volume of the audio source as you like.



Cleaning the Recording Head

Since film passes through the head pinch roller and capstan, these parts become dirty and the picture image or sound quality can be affected. The recording head should be cleaned at least after every 5 cartridges. The included head cleaning stick should be used for cleaning.

*Please be careful not to touch other parts with alcohol or the swab.

Hints in Filming Titles

The Canon 312XL-S is equipped with a macrocinematography mechanism that gives it the capability to do close-ups and copywork. It can also be used to film titles and thus avoid the frustrations of spliced film.

The title, of course, has many purposes. Main and end titles for explaining the purpose of the film and winding it up are necessary at the very least. Intermediate titles to introduce new concepts and a credit title to introduce the director add a professional touch. Or you can substitute the producer's mark or product initials for the credit title and add it to the main title.

Giving careful consideration to the use and usage of titles will add to your enjoyment of this camera.





Accessories

Boom Microphone BM70

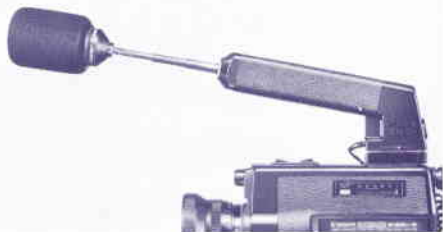
Use of this microphone is recommended when you film without an assistant or when you desire more freedom of movement. This microphone is unidirectional and can be rotated in eight 30° steps for a total of 240°. It can even be directed at sound sources coming from other than where the camera is aimed.

Boom Microphone BM50

This popular unidirectional microphone was developed to be a counterpart to the Canon Boom Microphone BM70. Although its direction cannot be changed, it is lighter and more compact than the BM70.

Power Pack 9V

This pack is an external power source (D.C. 9V) of 6 Size "C" batteries. It is for filming in cold conditions or if camera batteries should fail.





C-8 Wide Attachment Lens 43

This is an attachment lens for super wide-angle shooting. By only adjusting the macro setting lever to the macro position, you can easily perform super wide-angle shooting with the fixed focal length of 5.5mm.



Self-Timer E

Connect the Self-Timer E to the remote control jack, setting the main switch to "RL". Press the self-timer button and 10 seconds' filming will follow a 10 second lag.



Headphone HP-M

This set of headphones can be used for both Canon 8mm sound movie cameras and the Sound Projector PS-1000 to monitor recording and playback. Since it is a low impedance type, it cannot be used with a middle or high impedance type camera or projector.

Lighting Adaptor LA-1

This accessory is used to attach a movie light to Canon 8mm sound movie cameras. Although this adaptor is attached to the accessory shoe on the camera body, a Boom Microphone, as well as a movie light, can still be attached.

*Do not insert a movie light directly into the camera's accessory shoe.

Connecting Cord C300L

This cord connects the camera's auxiliary input jack to the recording (REC), line out or earphone jack of an external sound system for recording sound directly from an external source.

Microphone Extension Cord E450L

If the microphone cord is not long enough, use the Microphone Extension Cord E450L to connect the microphone jack and Dynamic Microphone DM30R.

43 mm Filters

Use 43 mm filters for both color films and black and white films.

Type: UV, Skylight, ND-4.



Connecting Cord C300L



Microphone Extension Cord E450L



CAMERA MAINTENANCE

However fine a camera is, it cannot function optimally unless it is correctly taken care of. Please observe the following practices to keep it in best possible operating condition.

Cleaning

The camera must be kept clean. Use a blower brush to periodically remove dust, which will otherwise smudge the film, from the film gate on the inner lefthand side of the film compartment. A blower brush is also recommended for removing dust from the lens. By all means, refrain from touching the lens. If fingerprints should accidentally appear on the lens, use the blower brush and then wipe it lightly with a clean, soft cloth or with lens cleaning paper slightly moistened with a couple drops of lens cleaner. A silicon cloth is recommended for cleaning the body only. Salt and sand are the camera's worst enemies. Clean it well after using it on the beach.

Storage

First unload the batteries and then store the camera in a dry place free from dust. You

should avoid drawers containing camphor or naphthalene. Problems can arise if the camera is not used over a long period of time. It is a good idea to periodically release the shutter without film. The lens can get mildewy, so it has to be checked every once in a while. If it does get mildewy, it should be taken to a service center.

When the Camera is not in use

When not in use, be sure the camera is switched "OFF" to avoid wasting the batteries.

High Temperature

Do not leave the camera in hot places such as the rear window or trunk of a car or on top of a radiator.

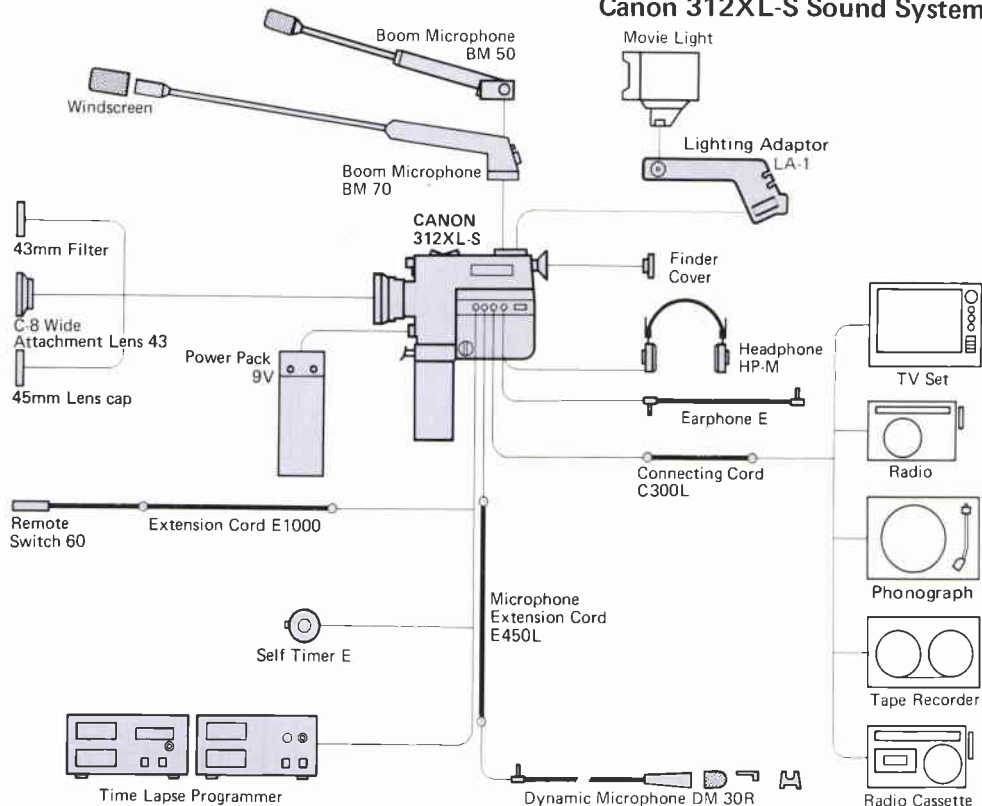
Caution with the Head

Please avoid touching the head with anything metallic. Sound films should also be kept away from anything magnetic.

If the Camera is dropped in the water

If the camera is dropped in water it is not easily repairable, but should be taken immediately to a service center.

Canon 312XL-S Sound System







Canon

CANON INC. 11 28, Mita 3 chome, Minato ku, Tokyo 108, Japan

- USA ————— **CANON U.S.A., INC. HEAD OFFICE**
10 Nevada Drive, Lake Success, Long Island, N.Y. 11040, U.S.A.
CANON U.S.A., INC. MANHATTAN OFFICE
600 Third Avenue, New York, N.Y. 10016, U.S.A.
CANON U.S.A., INC. ATLANTA SERVICE STATION
160 Peachtree Street, N.W., Atlanta, Georgia 30303, U.S.A.
CANON U.S.A., INC. CHICAGO OFFICE
140 Industrial Drive, Elmhurst, Illinois 60126, U.S.A.
CANON U.S.A., INC. LOS ANGELES OFFICE
123 Paularino Avenue East, Costa Mesa, California 92626, U.S.A.
CANON U.S.A., INC. LOS ANGELES SERVICE STATION
3407 West 6th Street, Los Angeles, California 90020, U.S.A.
CANON U.S.A., INC. SAN FRANCISCO SERVICE STATION
776 Market Street, San Francisco, California 94102, U.S.A.
CANON U.S.A., INC. HAWAII OFFICE
Bldg B 2, 1050 Ala Moana Blvd., Honolulu, Hawaii 96814, U.S.A.
- CANADA ————— **CANON OPTICS & BUSINESS MACHINES CANADA, LTD.**
HEAD OFFICE
3245 American Drive, Mississauga, Ontario, L4V 1N4, Canada
CANON OPTICS & BUSINESS MACHINES CANADA, LTD.
MONTREAL OFFICE
3070 Brabant Marineau Street, St. Laurent, Quebec, H4S 1K7, Canada
CANON OPTICS & BUSINESS MACHINES CANADA, LTD.
VANCOUVER OFFICE
5900A, No. 2 Road, Richmond, B.C. V7C 4R9, Canada
- EUROPE AFRICA
& MIDDLE EAST ————— **CANON AMSTERDAM N.V.**
Gebouw 70, Schiphol Oost, Holland
- CENTRAL &
SOUTH AMERICA ————— **CANON LATIN AMERICA, INC. SALES DEPARTMENT**
P.O. Box 7022, Panama 5, Rep. of Panama
CANON LATIN AMERICA, INC. REPAIR SERVICE CENTER
P.O. Box 2019, Colon Free Zone, Rep. of Panama
- SOUTHEAST ASIA ————— **CANON INC. HONG KONG BRANCH**
5th Floor 2 6, Fui Yiu Kok Street, Tsuen Wan, New Territories, Hong Kong