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# LIGHTOMATIC



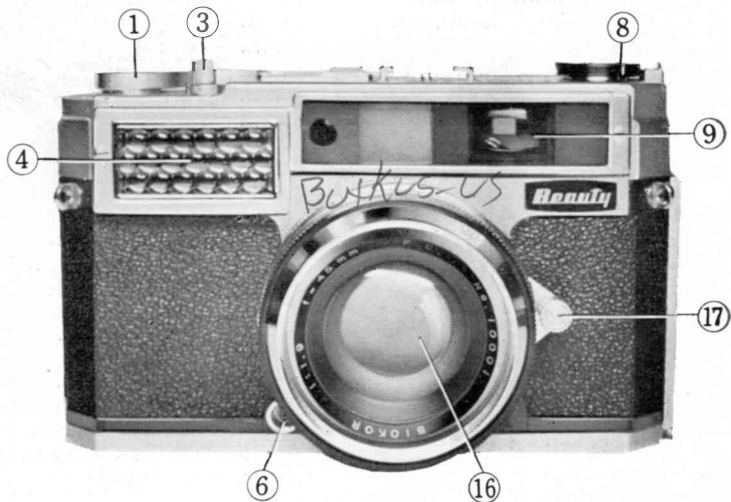
**INSTRUCTIONS**

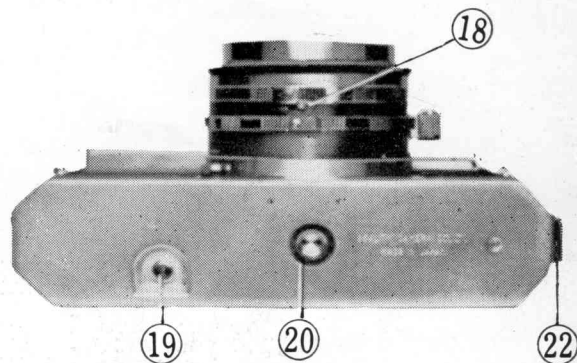
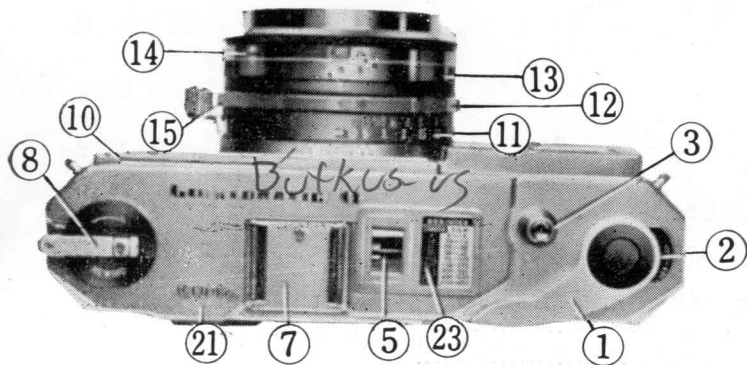
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# LIGHTOMATIC II

## 1) PART OF THE CAMERA





- ① Winding and Shutter Cocking Lever
- ② Automatic Exposure Counter
- ③ Shutter Release Button
- ④ Photo-cell
- ⑤ Exposure Meter
- ⑥ Synchronizer Plug
- ⑦ Accessory Shoe
- ⑧ Film Rewinding Knob
- ⑨ Combined Range and View-finder Windows
- ⑩ Depth-of-Field Scale
- ⑪ Distance Scale
- ⑫ Aperture Scale

- ⑬ Shutter Speed Scale
- ⑭ Film Sensitivity Scale
- ⑮ MX Adjusting Lever
- ⑯ Taking Lens
- ⑰ Focusing Lever
- ⑱ Self-timer
- ⑲ Film Rewinding Button
- ⑳ Tripod Socket
- ㉑ Film Plane Mark
- ㉒ Back Cover Positive Lock
- ㉓ ASA Index

## 2) INTRODUCING THE "LIGHTOMATIC II"

The Camera everybody has been dreamed of ..... Lightomatic II is the answer for it. There has been no camera like Lightomatic which is equipped with the most outstanding features as this. A sleek, functional beautiful body. Super Brain Fully coupled electric exposure meter built-in. Amazingly sensitive photo-electric-cell gives an electric motive force which is strong enough to adjust circuit under any light condition.

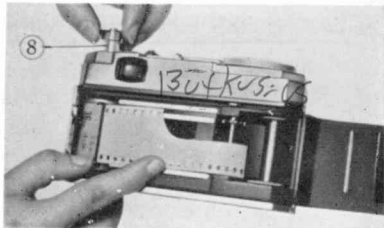
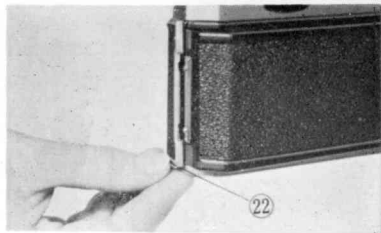
Extra large coupled Range-viewfinder window. Bright target frame which moves automatically to correct parallax. Hard coated F1.9 Lens 45mm with 6 elements which gaurantees extra-sharp pictures with both black & white or color film. Newest Copal SV Shutter has conventional shutter and diaphragm settings for eleven speeds to 1/500 sec, plus bulb. Built-in MX Synchronization. Rapid depth-of-field scale. Helicoid focusing lever adjusts from 2.7 ft(meter), to infinity. Built-in Self-timer.

Now read and follow the instructions carefully. You will be surprised to find yourself a first-class photographer with Lightomatic II.

### 3) LOADING THE FILM

#### ① To Load The Camera

1. Pull down the Back Cover Positive Lock ②, then open the back cover to a fully opened position.
2. Rotate the fixed Winding Spool ②8 by the milled flange until the film slot faces up.
3. Pull the Film Rewinding knob ⑧ as far out as it will go.
4. Insert the new film cartridge, preferably in subdued light, even your own shadow will help.
5. Hold the cartridge in place with your thumb.
6. Push in the Film Rewinding knob ⑧, rotating it slightly to make sure that the slot at its end grips the slot on the film spool.
7. Pull out the end of the film and push it in the

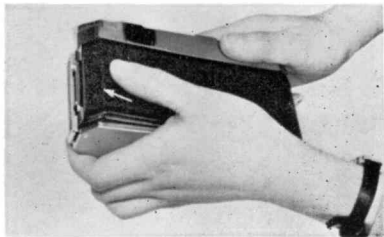
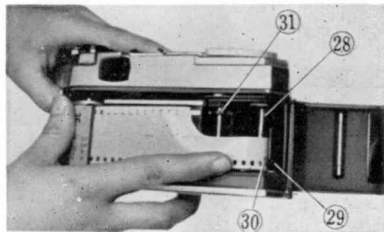


slot of the Winding Spool ⑳.

8. Guiding the film with your forefinger, wind the film on the Winding Spool ⑳ by turning it slowly by its milled flange until the full width of the film covers the full length of the film guide rail.
9. Engage the perforations of the film ㉓ in the cogs of the Sprocket ㉑.
10. Close the camera back and lock it by pressing with both thumb.

## ② Setting The Exposure Counter

Before taking picture with a newly loaded film, you have to wind the first of the film by making two preparatory shots i.e., turn the Lever Winder ① as far as it goes and when the lever returns to its working position press the Shutter Release Button ③. Repeat this operation.



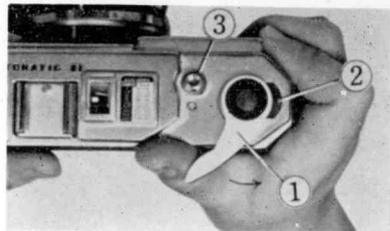
At the third full stroke of the Lever Winder ①, the Automatic Exposure Counter ② indicates No. 1 and now you are ready to take the first picture.

While making these two preparatory shots, make sure that the disc under the Film Rewinding knob ⑧ rotates in the counter direction indicated by the arrow on the Film Rewinding knob ⑧.

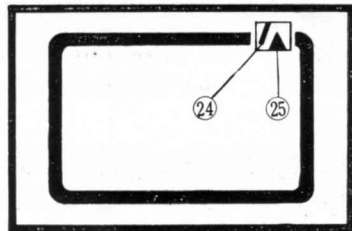
If the disc does not rotate, it means that the film was not loaded correctly. Then load it again.

#### 4) TAKING THE PICTURE

Lightomatic's super coupled electric exposure-meter thinks for you and saves you the trouble to select the proper Shutter Speed and Lens Opening, which is adjusted only by coinciding the needle of meter ②4 with the Center Mark ②5 in the window ⑤ on camera-top. The specially made photo-electric-cell ④ gives on electric motive force according to the brightness of the picture subject. And, within the wide range of brightness (from 4 to 32000 cd/m<sup>2</sup>), the electric motive force is



balanced by the variable electric resistance which is changed by turning the Film Sensitivity Scale ⑭, Shutter Speed Scale ⑬ and Lens Opening Scale ⑫ when the needle of meter ⑳ indicates the center position ㉕.



This is not only a way to adjust but the image of Needle ㉔ and Center Mark ㉕ also appear in the upper corner of the View-finder too! You can adjust the rings ⑫ ⑬ in viewing the subject through the View-finder. This is the remarkable special features of this camera, which enables you to re-check your adjustment at the moment of shooting.

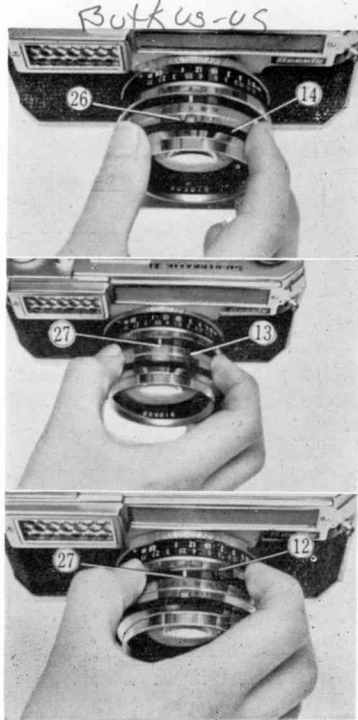


## ① How to adjust the Shutter

1. Slightly draw out the ASA Ring ⑭ and turn it until the ASA number of loaded film is found in the Film Sensitivity Scale Window ⑳.
2. Direct camera exactly toward the subject to measure the brightness of the subject.
3. To adjust the Shutter, Turn the ASA Ring ⑭ coupled to the Speed Scale ⑬ and then set it to any shutter speed you wish.
4. Turn the Lens Opening Scale ⑫ until the meter instrumental needle ㉔ coincides with the Center Mark ㉕.

Now you have the proper speed and opening for your picture subject and ready to shoot.

To adjust Exposure Needle, it is better to use Opening Ring than Speed Ring. If it is absolutely necessary to use Speed Ring, make sure to have opening scale mark right on Speed scale mark and do not adjust between the marks, such as between B and 1 or between 1 and 1/2sec., etc. This irregular adjusting will cause bad effect to Shutter.



## ② How to shoot

Cock the shutter by turning the Winding Lever ① as far as it goes and return it to the working position

ⓑ.

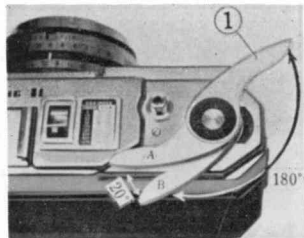
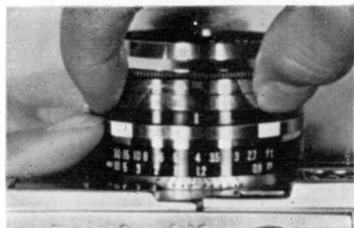
(The first 20° of the Lever Winder ① are free for cocking and advancing where the lever is stopped by click stop which is the working position ⓑ).

Holding the camera firmly in both hands, view the subject through the Viewfinder Window ⑨ and coincide the double images exactly.

Then press down the Release Button ③ gently and you will have the proper exposure.

## ③ Important

1. Even after the Lens Opening Scale ⑫ is set, still you can change either Shutter Speed or Lens Opening by turning the ASA Ring ⑭ which accompanies the Speed and Opening Scales ⑬ ⑫ together as you wish without missing the coincidence of the needle, i.e., you can get another combination of speed and opening under constant light value.



2. If you wish to shoot under constant Lens Opening, adjust the Opening Scale ⑫ after the ASA Scale ⑭ is set and then turn the ASA Scale ⑭ which accompanies the Speed Scale until the needle of meter ⑳ coincides with the Center Mark ㉕.

In this case, the Opening Scale ⑫ must be disconnected by a slight pressure with other finger.

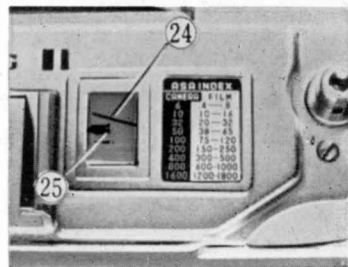
3. If the needle does not coincide with the Center Mark ㉕ even you turn it as far as it goes, it means that the first adjustment of speed or opening is not proper for the brightness of subjects.

In this case, it is necessary to re-set the first adjustment by one or more step.

4. To adjust by the Opening Scale.

It is not necessary to align the figures of Opening exactly to the index. When the needle coincide exactly with the Center Mark, any position of scale is good for the most proper exposure.

This is the excellent speciality of Lightomatic II compared with the same type of the other models which proves "Lightomatic II" is the most precisely built meter coupled camera ever made.



### 5. Adjusting by Speed Scale.

It is necessary to align any figures to the index when it stops by click.

In this case, it is often impossible to coincide the needle ⑭ with the Center Mark ⑮ exactly, but, as far as the needle ⑭ comes within the Center Mark ⑮, it means the exposure can be done within the allowance of less than 0.5 step of light value which means to be within the tolerance of the Film Sensitivity ⑭.

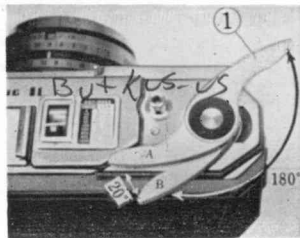
### 6. When the Winding Lever ① is in its folding position after winding it, the Shutter Release Button is locked for safety.

Therefore, when you shoot, you must to pull out the Lever to its working position ② (20°) and press down the Button.

### 7. Guide for the Direction of Adjusting.

A. Needle locates at the Center Mark, or locates at the right side of the Center Mark in the Viewfinder Image.

Turn the Opening Scale ⑫ to the left, or turn the ASA and the Speed Scales ⑭ ⑬ to the right in holding the Opening Scale ⑫ as shown by arrows. Then the needle will move towards the Center Mark.



B. Needle locates downward, or left side.

Turn either Scales to the above mentioned directions as shown by arrows.

After you tried every possible combinations of F & T, and you still can not have the needle coincides with the Center Mark ②5, it means the subject is so dark that you have to use flash light or so bright that you have to use filters.

8. Open Scenery with a Bright Back Ground and a Dark Foreground and distant part has to be well reproduced.

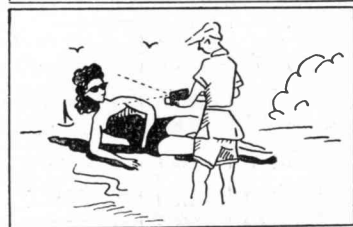
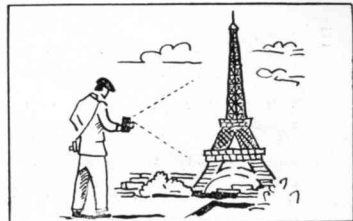
Take your readings against the Background. But the Foreground has to be well reproduced, take your readings with the camera inclined slightly forward.

Portrait. Take your readings from the most required part.

For instance, to take a person in front of a very bright sky, reading has to be taken from the face.

Close-ups, i.e., Ornaments, Flowers, etc.

Taking your hands as stand-in, hold your hand about "4" from the Exposure Meter and not your shadow fall on the subject.



④ ASA (DIN) Speed Index

For the following film's ASA (DIN) index, please use the ASA Speed Index ② of Lightomatic II as shown in the table.

There is allowance of  $\oplus 40$  in ASA (DIN) speed for any film.

Speed Index		Name of Film	ASA Index of Lightomatic II
ASA	DIN		
10	11	Kodachrome	10
25	15	Ansochrome Tungsten used in daylight	32
32	16	Kodacolor	32
32	16	Ansochrome daylight	32
80	20	Plus-X	100
100	21	Super Ansochrome	100
125	22	New Ektachrome Hight Speed (Tungsten)	100
160	23	New Ektachrome Hight Speed (Daylight)	200
200	24	Tri-X (Daylight)	200
400	27	H P S	400
800	30		800
1600	33	Isopan Record	1600
1600	33	Royal-X Pan	1600

## ⑤ Focusing

Focusing is obtained by helicoid motion in using Focusing Lever ⑰.

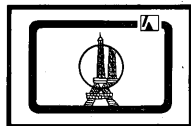
Combined Range and View-finder Windows ⑨ gives both composition and focusing at the same time through a window.

Correct focus is secured when the double images in the center circle of the Viewfinder coincides exactly.

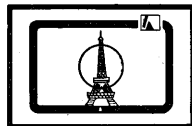
The focusing distance between camera and the subject may be found out by reading the figure on the Distance Scale when the coincidence occurred.

Distance Scale is given in feet and meter: 2.7 feet (0.8m) to 30 feet (10m) and  $\infty$ .

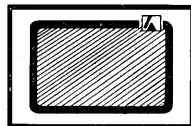
By the focusing motion, the trimming frame in the viewfinder moves automatically as to correct the parallax.



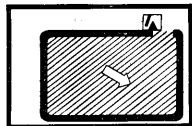
Out of Focus



In Correct Focus



$\infty$



In close distance

## ⑥ Composing the Picture

1. HORIZONTAL POSITION- Hold the camera steadily in both hands. Keeping your elbows pressed to your sides. Use right hand forefinger to operate the Shutter Release Button ③ and left hand forefinger and middle finger to compose and focus the object through the view finder.
2. VERTICAL POSITOIN- Hold the camera with your right hand and support it with your left hand as shown in the right picture. Release the shutter with your right hand's forefinger in keeping your right elbows close to your body.



## 5) HOW TO READ THE "DEPTH-OF-FIELD" SCALE

### ① What is "Depth-of-Field"

When you focus your camera toward a picture subject, you will find a zone both in front and back of the picture subject within which everything is still in acceptable focus.

On the other hand, images of object outside of this zone become progressively blurred.

This zone of acceptable sharp focus is called the "depth-of-field" and is particularly important to beginners when focusing at very close distance.

### ② Relation between Aperture or Lens Opening and "Depth-of-Field"

Broadly speaking, the "depth-of-field" is influenced by (1) the distance of the picture subject from the lenses and (2) the aperture or lens opening. For fairly distant object, the "depth-of-field" is generally adequate but when focusing at very close distance, there is surprisingly little "depth-of-field" and the photographer must be very carefull about focusing his main subject correctly.

The aperture or lens opening is another factor which determines the amount of "Depth-of-field" available.

Small aperture (high number) gives greater "depth-of-field" whereas a larger aperture (low number) will result in decreasing this zone of sharpness.

③ The "Depth-of-Field" Scale on the "Lightomatic II"

Firstly, it is necessary to know that the "Depth-of-Field" Scale indicates approximate values.

The following is the procedure for reading the "Depth-of-Field" Scale.

On the "Depth-of-Field" Scale, there are two sets of equal numbers to the left and right of the distance index.

1. Read the aperture number. (for instance 8)
2. Read the distance number. (In the illustration, this is 3 feet)
3. Now read on the Distance Scale two sets of the figures opposite the figure 8. (In the illustration they are about "2.7" and "3.5")
4. This means that the depth-of-field for this particular "shot" is approximately between 2.7 feet and 3.5 feet; which is to say that any image falling inside this zone will be acceptably sharp in focus.



## 6) UNLOADIN THE FILM

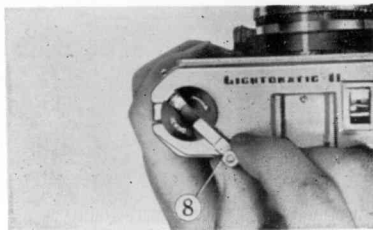
When your Automatic Exposure Counter ② indicates that you have made 36 exposures (or 20 at the case may be), it is time to unload the film.

Since the exposed film has been wound on the fixed spool in the camera, it is necessary to rewind it back to the spool of the film cartridge.



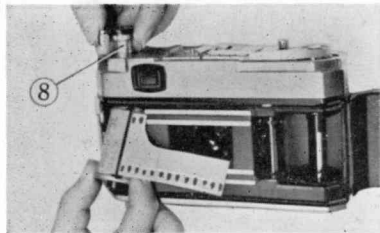
This is performed by the following procedure:

1. Raise up the Crank Handle on the Rewinding Knob ⑧ to winding position.
2. Turn the Crank Handle ⑧ clockwise after pressing the Film Rewinding Button ⑱ on the bottom of the camera.
3. When the exposure film has been completely



rewound on the cartridge spool, open the back cover and remove the film cartridge.

The film Rewinding Button ⑱ on the bottom of the camera will return to its original position by winding after loading new film.



## 7) FLASH SYNCHRONIZATION

The Copal-SV shutter is incorporated on the "Lightomatic II".

It is possible to use M class bulbs or an electronic flash at any shutter speed.

Change of synchronization can be done by MX Adjusting Lever ⑮ as follows:

1. When the MX Adjusting Lever ⑮ is set at X, the synchronization is such that the shutter is fully open at the time of flash.

In this case, it is fully synchronized with an electronic flash at all shutter speed.

2. When the MX Adjusting Lever ⑮ is set at M, the shutter is wide open 18 milliseconds after the flash starts.

In this case, M-type bulbs are synchronized at all shutter speed.

But, you cannot use the Self-timer ⑱.

3. With F-type bulbs, synchronization is done between 1/60 and 1 second, the MX Adjusting Lever ⑮ being set at X.

The self-timer ⑱ may be used only when the MX Adjusting Lever ⑮ is set at X.

## 8) GENERAL INFORMATION

1. Don't touch the lens with fingers. Keep the lens always clean.

When it gathers dust, wipe and clean it carefully with soft brush or cotton cloth.

2. Don't forget to replace the cap when the camera is not in use.
3. Don't give dangerous shocks to the camera.
4. When your film has come to the end, the lever winder no longer operates or stops halfway or so.

In this case, push the film rewinding button and let the lever winder turn slightly, and then the lever will return to the original position.

5. Don't load or unload the film under direct sunlight.
6. Don't leave the film loaded in the camera for a long time after it has been completely exposed. Develop it within a week.



**BEAUTY CAMERA CO., LTD.**

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