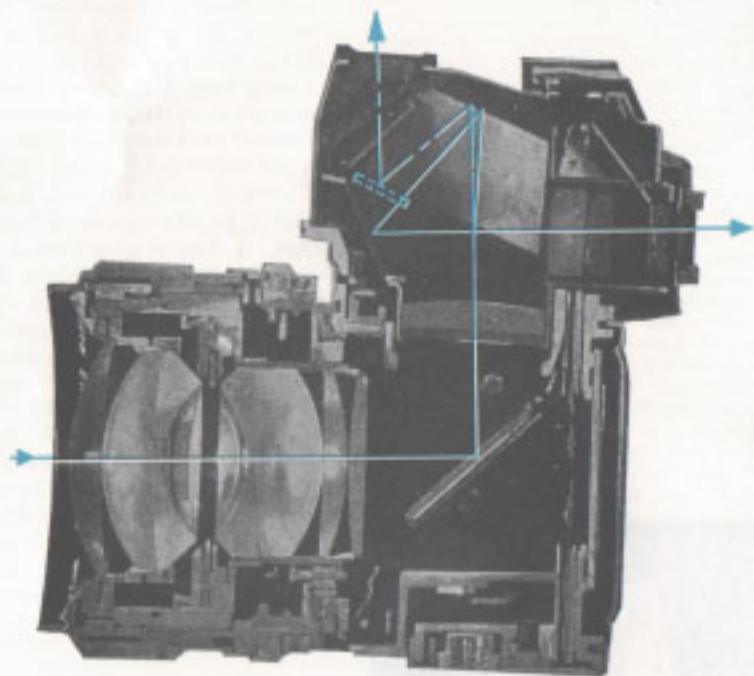


Up and Over Camera

RICOH TLS 401



INDEX

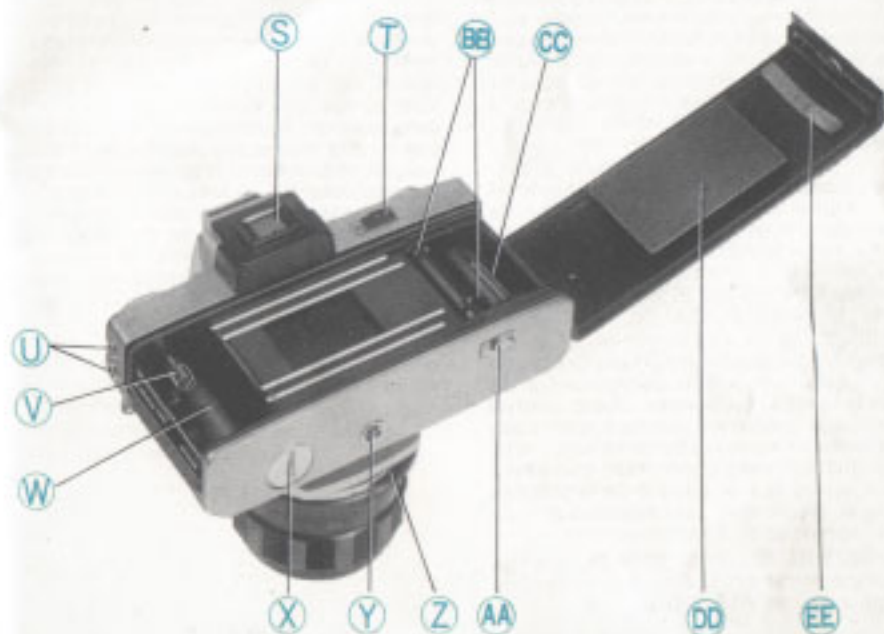
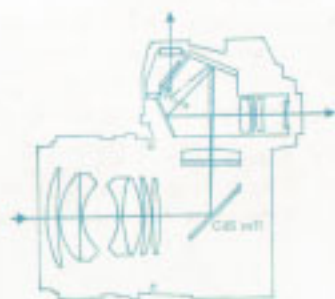
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SUMMARY OF FEATURES

1. **Dual Viewing System** offers flip-of-a-switch selection between conventional eye-level and top-viewer viewing. New Ricoh exclusive hollow prism with internal moving mirror assures bright precision viewing & focusing with both systems. Rapid critical focus is facilitated by the micro-prism, critical focusing, viewfinder image.
2. **Dual Light Measurement System** mounted directly on the reflex mirror are two CdS sensors, one which covers the entire mirror gives a full screen "average" light reading; the second CdS sensor covers just the center of the mirror and gives a "spot" reading. The area of the "spot" is defined in the viewfinder by a center circle. The viewfinder also displays A and S marks to indicate which system you are using. Both systems work with any lenses and accessories used.
3. **Highspeed Focal Plane Shutter** of new design, moves across the film more rapidly than previous shutter designs, giving sharper pictures at all speeds. Also permits the use of higher shutter speeds when using flash bulbs or electronic flash, thereby eliminating "flash ghosts".
4. **All Metal Shutter** construction eliminates shutter "burn through" when the sun's rays are concentrated by the lens. Shutter speeds from 1 sec. to 1/1000 sec. are more accurately governed than previous designs permitted.
5. **Single Stroke Film Advance** lever also cocks shutter, counts exposures and turns the light measuring systems on and off automatically.
6. **High Speed Rikenon Lenses** are designed for true color transmission and superior corner to corner sharpness. There is a broad range of Rikenon lenses from which to choose, including ultra wide-angle to extreme telephoto, including closeup and zoom telephoto lenses, plus the accessories which professional photographers find most useful.

KNOW YOUR CAMERA ...

- A) Film-wind Lever
- B) Film Counter
- C) Shutter Release Button And Cable Release Socket
- D) Exposure Meter Signal For "Switch On" And "Film-Wound"
- E) Neck Strap Eyelet (2)
- F) Eye-level/Top-viewer Change-Over Knob
- G) Film Speed Selector
- H) Shutter Speed Dial
- I) Self-Timer Lever
- J) F-Stop Ring
- K) Distance Scale
- L) Focusing Ring
- M) Depth of Field Scale
- N) Exposure Meter On/Off Switch
- O) Film Reference Dial
- P) Film Rewind Knob: Plus Back Opening Release
- Q) Top-viewer Eyepiece
- R) Accessory Shoe
- S) Eye-level Eyepiece
- T) Average/Spot Selector Switch
- U) Flash Socket (2)
- V) Rewind Shaft
- W) Film Chamber
- X) Exposure Meter Battery Compartment Cover
- Y) Tripod Socket
- Z) Preview Switch And Automatic/Manual f stop control
- AA) Film Rewind Button
- BB) Sprocket Teeth (2)
- CC) Take-Up Spool
- DD) Film Pressure Plate
- EE) Cartridge Retaining Spring



FILM LOADING

Always load your camera in the shade, never in bright or direct sunlight. Use good quality standard 35mm (20 or 36 exposure) film, color transparency, color negative, or black and white.

Press Shutter Release Button (C) . . . pull Film Rewind Knob (P) until the camera back clicks open. Swing open camera back and place the film cartridge into the Film Chamber (W), push the Rewind Knob back to its original position . . . be certain Rewind Shaft (V) engages film cartridge.

Pull the tapered end of the film across the back of the camera, insert it into and through the Take-up Spool and position it to engage the raised gear tooth on the Take-up Spool through a sprocket hole in the film (CC). This will prevent the film from slipping off the spool. Rotate the Take-up Spool in the direction of the arrow to take up the slack film . . . check to see that the sprocket holes in the film have engaged both sets of sprocket teeth. (BB) (Fig. 1)

Close the camera back and snap it shut. Advance the Film-wind Lever (A) twice, depressing the Shutter Release Button (C) each time. If you want to take a picture at this time, advance the Film-wind Lever once more and the Film Counter (B) will be automatically set to "1". The camera will be ready for your first picture.

Set the exposure meter for the film you are using by pulling out the Film Speed Selector (G) and rotating it until the ASA number of your film is opposite the green indicator line. (Fig. 2) Also turn Film Reference Dial (O) and set the type of film you are using to the indicator line.

This will help to remind you of the film you are using. Check the instruction sheet packaged with your film for the correct ASA rating for that particular film.

If you are using European film, please refer to Fig. 3 for the relationship between ASA and DIN.

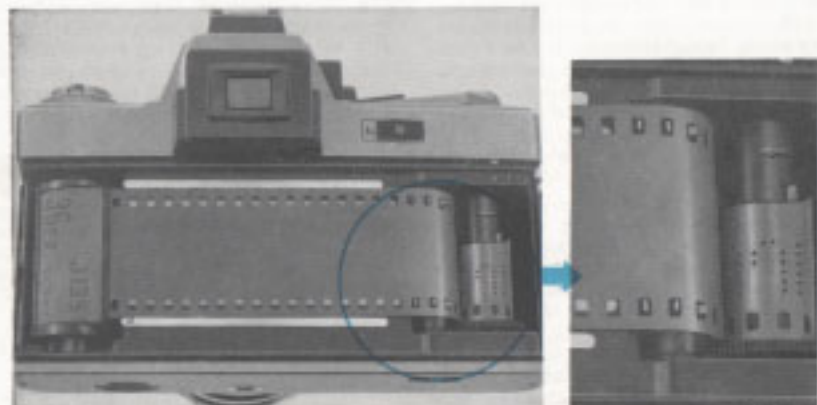


Fig. 1



Fig. 2

ASA	25	32	40	64	100	120	160	200	250	320	400	500	640	800	1000	1280	1600	
DIN	15	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33

Fig. 3



CORRECT EXPOSURE

Correct exposure is achieved by setting the lens (f stop) and shutter speed in correct combination for the film, subject, and light conditions. Because the RICOH TLS 401 camera has a built-in, through-the-lens system, CdS exposure meter, you can adjust the exposure with a high degree of accuracy in the following manner:

1. Unscrew Exposure Meter Battery Compartment Cover (X) with a coin and place a battery with (+) end up. (Fig. 4) The battery should last for about a year. For replacement use Eveready EPX 625, Mallory RM 625R, or equivalent.
2. Check that the correct ASA film rating number is set on the Film Speed Selector (G).
3. Set the Shutter Speed Dial (H) according to the instructions which are given later in this book.
4. Turn the Exposure Meter Switch (N) to "ON" by pushing it upward. (Fig. 5) The Exposure Meter Switch is the main switch of the light sensing system. When you advance the Film-wind Lever (A) a separate micro-switch connected to the film-wind Lever is turned ON automatically. When you press the Shutter Release Button (C), this micro-switch is automatically turned off. When the main switch is left at ON position and the shutter is left unreleased, the Exposure Meter Battery is being used. Always make sure that the main switch is at the OFF position whenever the camera is not in use for a long period of time or make it a rule to always carry the camera with the shutter released. When the film lever is advanced, i.e., switched on, the green sign is in the window (D). With the release of the shutter, i.e., switched off, it turns to red. This procedure will greatly extend the life of the Exposure Meter Battery. When the color showing in the window (D) is red, the Exposure Meter is OFF. When green is showing, the exposure Meter is ON, provided the main meter switch (N) is also ON.
5. Generally, it is best to set the shutter speed dial (G) first and make the final light adjustment with the f stop ring (J); read "Setting the

E-4



Fig. 4

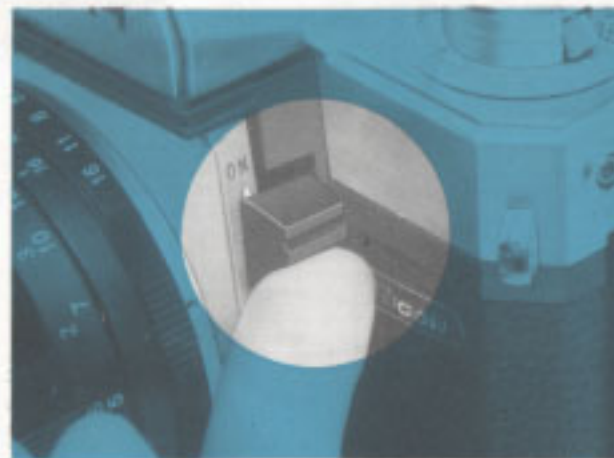


Fig. 5



Shutter" and "Setting the Lens" sections.

If there is not enough light to be able to focus the camera after the f stop ring has been set, it will be helpful to turn the main exposure control switch (N) to OFF position for focusing. The lens will then open to its brightest viewing position, but during the actual instant of exposure the lens will close automatically to whichever number you have set on the f stop ring. The main exposure control switch should then be turned to the ON position again before setting the camera for the next photograph.

- G. To make exposure adjustment with the built-in automatic systems use either eye-level or top-viewer viewing. While looking at the subject through the viewfinder, rotate either the shutter speed dial (H) or the f stop ring (J) until the exposure meter needle at the right side of the viewfinder comes to a horizontal position between the guide marks. When the needle is between the guide marks, the correct exposure is set. If the exposure meter needle is above the horizontal position, the subject will be overexposed. To correct the exposure, change the shutter speed to a faster speed or use a smaller lens opening so that the correct combination of shutter speed and f stop is made. However, if the exposure meter needle is under the horizontal position indicating underexposure, you must use a slower shutter speed or bigger lens opening (f stop). (Fig. 7)

7. When the exposure indicator needle fails to respond to adjustment:
- check to be certain that the meter switch is ON.
 - make certain the film advance lever has been advanced. (green signal showing in window)
 - If needle remains in over-exposure position, select a higher shutter speed and/or a smaller f stop setting.
 - If needle is in under-exposure position, select a slower shutter speed and/or a larger f stop opening.
 - the procedure for setting the correct exposure is the same for both the "spot" and "averaging" systems.



Fig. 6



Overexposure



Correct exposure



Underexposure

Fig. 7



Fig. 8

SETTING THE F STOP

Rotate F Stop Ring (J) until the f stop number you want is opposite the red mark. (Fig. 9). Click stops are provided to prevent accidental movement from the setting made.

The lens opening (f stop) determines the **amount of light** entering the lens and striking the film. The smaller the f stop number the wider is the lens opening, and the greater is the amount of light entering the lens.

The higher the f stop number (f/11 vs. f/8), the less the amount of light entering the lens. As the lens opening is moved, for example, f/11 to f/8 (a smaller number), the amount of light entering the lens is doubled.

These instructions are the same regardless of which Ricoh lens is used, except the f/2.8 55mm lens.

The f/2.8 55mm lens with TLS 401 camera requires special setting.

As per Fig. 10, you will find f-stop numbers on the f-stop ring on two sides, "AUTO" and "MANUAL".

The "AUTO" is for automatic diaphragm control, while the "MANUAL" is for pre-setting diaphragm control. The latter device is necessary when you take special effect photograph using a Bellowscope or an Extension Ring, where automatic diaphragm control is not available.

Three f-stop numbers are substituted by dots, which are those underlined:

2.8 4.0 5.6 8.0 11 16 22



Fig. 9



Fig. 10

SETTING THE SHUTTER

Turn the Shutter Speed Dial (H) until the desired shutter speed number is set opposite the black indicator line. Be certain the Dial is set at a click stop (Fig. 11)

The shutter speed setting governs the **length of time** the film is exposed to light. "60" (1/60-second) is recommended for subjects not in motion. Where motion exists, shutter speeds ranging from 1/125 to 1/1000 should be used . . . 1/1000 second speed will "freeze" extremely fast action.

To get maximum "depth of field" (area of sharp focus in front of, and behind subject) or when shooting in poorly lit areas, speeds ranging from 1/30 to 1 second and "B" (bulb) are available. When using these slower speeds, use a tripod or other firm support to prevent movement of camera and blurred pictures. When set at "B" the shutter will remain open as long as the Shutter Release Button (C) is depressed (preferably by a cable release accessory). The "B" setting is used for long exposures, for example; when using street lights or electric signs as a light source, or under poor light conditions when flash is not being used.



Fig. 11



Fig. 12



Fig. 13



Fig. 14

AVERAGE AND SPOT LIGHT MEASURING

One light measuring system will not handle all photographic situations. When photographing a scene which is evenly lighted, that is, no extremes of light and shadow, as when the sun is behind you or the light is diffused as in an overcast day, or in shade, an average light reading will produce the best results.

To take an "Averaging" exposure reading, operate the Film-Wind Lever (A) and move the Exposure Meter Switch (N) up to the "ON" position. Move the Average/Spot Selector Switch (T) so that "Av" shows (fig. 12). Look through either viewfinder and note that in the lower left corner a signal has been set opposite "A" (fig. 12). Now proceed to set either the lens or shutter speeds according to previous instructions.

The spot exposure system is used to find the correct exposure for a particular portion of the picture and when the scene is mixed with bright objects and dark ones. For example, when the light is coming from behind the person you are photographing, you should make a "Spot" reading of the person's face; or if in the same situation the light is behind you and your portrait is of a subject wearing white (which reflects a lot of light), again make the "Spot" reading right on the subject's face. In any scene you are going to photograph if there is one point of particular interest, it is always best to take a "Spot" reading of that object.

To make a spot reading, move the Average/Spot Selector Switch to "Sp" (fig. 13) and proceed with setting the lens and shutter as previously outlined. The indicator in the viewfinder will now be pointing to "S".

The area being measured by the "Spot" light measuring system is the white circular area you can see in the viewfinder (fig. 14). The "Spot" reading is 15° with the normal lens.

The operation of average and spot readings is the same with both Top Viewer and Eye Level viewfinder systems.





IN FOCUS



NOT IN FOCUS

Fig. 15



Fig. 16



Fig. 17

VIEWING AND FOCUSING

Look into Viewfinder Eyepiece (either 1 or 2) to compose your picture, and focus the lens. Rotate Focusing Ring (L) until subject becomes clear in the micro-prism image viewfinder (Fig. 15). When your subject appears sharpest in the micro-prism image viewfinder, your picture is sharply focused. To take the picture, hold the camera as steady as you can and press the Shutter Release Button (C) slowly and smoothly (Fig. 16). Since you are viewing through the lens . . . what you see in the viewfinder will appear in your picture. Even when you shoot close-ups, there is no danger of accidentally cutting off a portion of the picture.

DEPTH OF FIELD

An area in front of and behind your subject will also be in sharp focus. How much of an area will be sharp in your final picture can be determined in two ways:

Depth of Field Previewer

Setting the Preview Switch (Z) at "M" (Manual) (Fig. 17) will set the lens at the opening you have set on the F Stop Ring. This will enable you to preview the area of sharpness in the picture before you take it.

The preview Switch (Z) may be moved back to "A" (Automatic) position before you press Shutter Release Button (C). The lens will reopen and remain open until you take your picture, closing only during the actual exposure.





Fig. 18

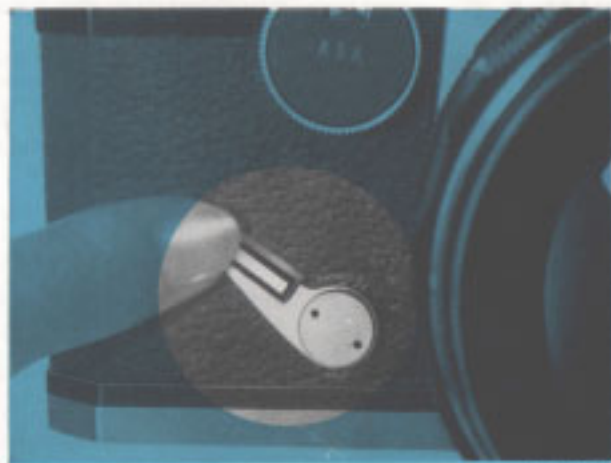


Fig. 19

Depth of Field Scale

After you have set the lens opening and have focused the camera, the area of sharpness in front of, and behind your subject can be determined on the Depth of Field Scale (M). Locate, on the Depth of Field Scale, the two f numbers corresponding to the f stop you have set on the F Stop Ring (J). The distance shown on the Distance Scale (K) between these two f stop numbers will be the area of sharpness in your picture.

For an example, in (Fig. 18) the f stop ring is set at 5.6; by referring to the depth of field scale (M) you can read on either side of the red mark, the place where 5.6 would be, that is, between the two 4's and the two 8's. Then look at the figures on the distance scale (K) to learn that with the distance scale set at 5 feet everything from 4 feet 9 inches to about 50 feet 3 inches will be in focus.

Notice that as smaller f stops (larger numbers) and greater distances to the subject are set, the depth of field grows greater and a greater area is in sharp focus.

THE SELF-TIMER

To get into the picture yourself, place the camera on a tripod or other firm support. Adjust and focus the camera, then move the Self-Timer Lever (I) in a downward motion away from the lens. (Fig. 19). Press the Shutter Release Button (C). There will be an eight-second delay before the picture is taken, which will permit you to include yourself in the picture.





CHANGING LENSES

Your camera is equipped with an interchangeable "standard lens" which is the proper focal length for general-purpose picture taking. You may also use wide-angle lenses to include a greater area in the picture, and telephoto lenses to obtain close-up pictures of distant subjects. To remove the lens, turn the lens in a counterclockwise direction until it can be removed. (Fig. 20)

To insert another lens, turn the lens in a clockwise direction until it is secured in position.

FLASH PICTURES

Your camera has synchronization designed to permit flash pictures with most types of flash bulbs and also electronic flash. The flash connecting cord from your flash gun or electronic flash is connected to one of the two flash sockets (U).

Connect Flash Cord To Flash Socket "X" . . . when using an electronic flash.

Connect Flash Cord To Flash Socket "M" . . . when using Flash Bulbs M3, M3B, 25, 25B, M5, M5B, M2, M2B, AG1, AG1B, 6, 6B, and flash cubes.

Shutter Speed From 1/30 to 1/125 second may be used with electronic flash, No. 5, 5B, M5, M5B flash bulbs.

Shutter Speed From 1/30 to 1/125 second may be used with electronic flash, No. 6, 6B flash bulbs.

Shutter Speed From 1/30 to 1/60 second may be used with No. M2, M2B, AG1, AG1B flash bulbs.



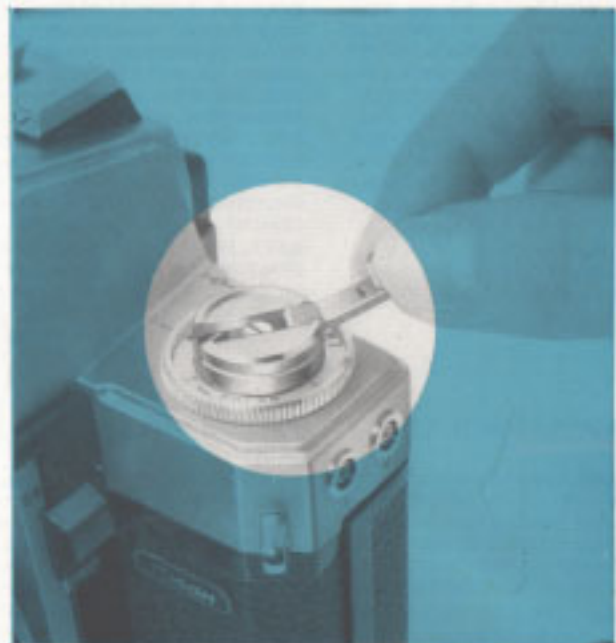


Fig. 21

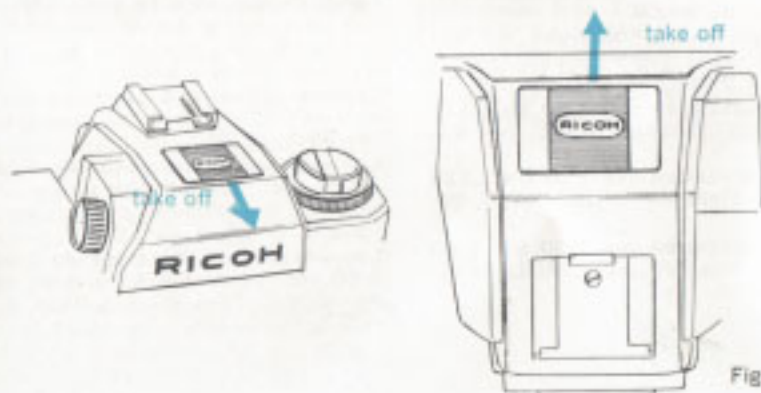


Fig. 22

UNLOADING FILM

Always unload your camera in the shade, never in bright light.

After the last picture on the roll has been taken, press Rewind Button (AA). Lift up crank on Film Rewind Knob (P). (Fig. 21) **Be sure not to pull up on the Rewind Knob (P).** Turn crank slowly in a clockwise direction until the entire roll has been rewound—tension on the crank will decrease noticeably. Now open the camera back by pulling up the Film Rewind Knob and remove the film cartridge.

Have film processed as soon as possible.

TIPS FOR BETTER PICTURES

Read the instruction booklet carefully. Before you go on a trip or photograph a special event, shoot a practice roll of film.

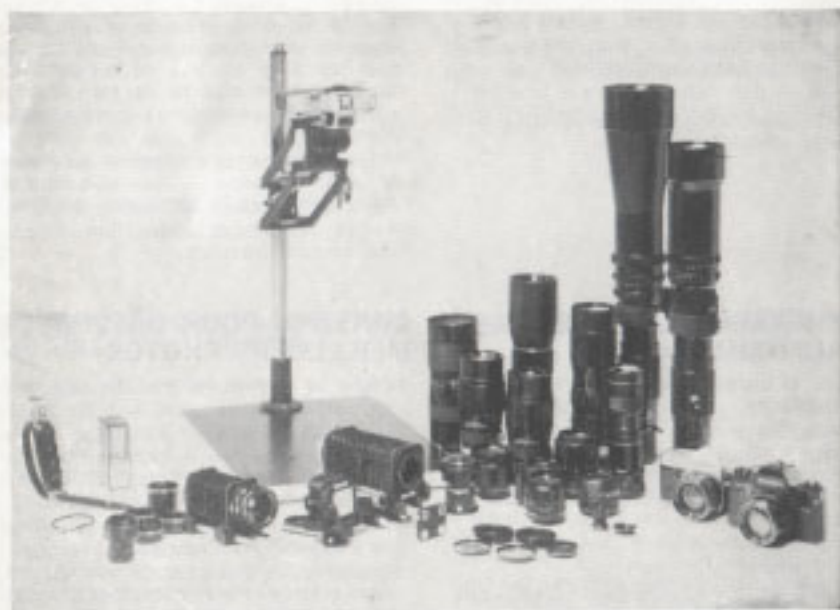
Keep fingers and neckstrap clear of the camera lens.

When you reach the end of the roll of film (check Exposure Counter), the film Wind Lever becomes harder to advance . . . don't try to get just one more shot"; you may pull the film out of the light-tight cassette. It's time to rewind and re-load.

Protect your camera from dust, dirt . . . and rough handling . . . Do not exposure camera or film to excessively high temperatures.

In order to keep the Top-viewer free from dust, use of the cover is recommended. (Fig. 22)





ACCESSORY RIKENON LENSES FOR YOUR RICOH TLS 401 CAMERA

21mm	f3.8	automatic
24mm	f2.8	automatic
28mm	f2.8	automatic
35mm	f2.8	automatic
55mm	f1.4	automatic
50mm	f1.7	automatic
55mm	f2.8	automatic
135mm	f2.8	automatic
200mm	f3.5	automatic
300mm	f5.5	automatic
400mm	f6.3	automatic
500mm	f8.0	
600mm	f8.0	preset
800mm	f8.0	preset
90-190mm Zoom	f5.8	automatic
70-230mm Zoom	f4.5	automatic
60mm macro lens	f2.8	preset
Fisheye	f3.5	preset

Bellows Attachment Has focusing knob for maximum sharpness at extremely close distances . . . shoot many objects actual size and even larger, excellent for copying of photographs too.

Extension Ring Set This is used to photograph objects at extremely close distances. Rings can be used separately or in combination depending upon distance from object you desire to photograph.

Microscope Attachment Allows camera to be attached to microscope for photographing objects utilizing microscope magnification.

Plus a broad line of other photographic accessories.