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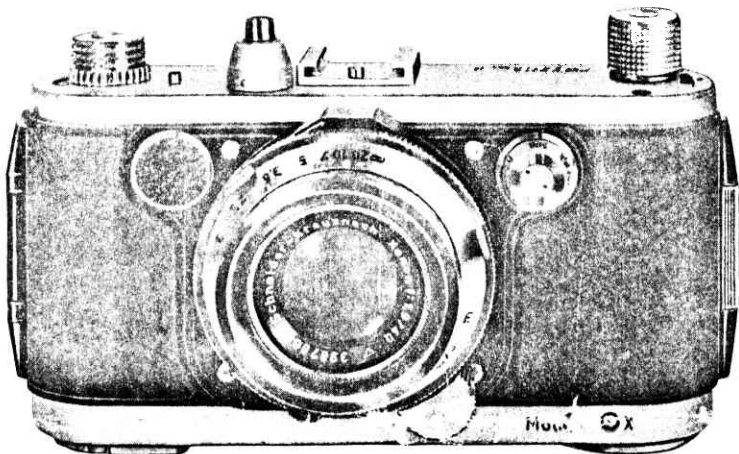
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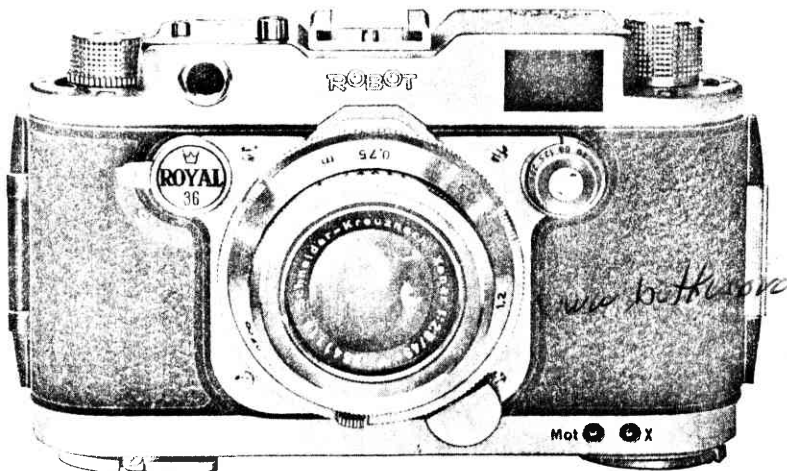
PHOTOGRAPHIC AUTOMATION WITH THE **ROBOT** ELECTRO-AUTOMATIC PHOTO-RECORDING SYSTEM

ROBOT - RECORDER and **ROBOT - ROYAL "a"** Automatic 35 mm cameras

Based on the "construction-unit" principle, the **ROBOT** Electro-Automatic Photo-Recording system is built around 2 basic industrial cameras with built-in motor, the **ROBOT-RECORDER** or **ROBOT-ROYAL "a"**.



ROBOT-RECORDER 24 (24 x 24 mm) recording camera without range-viewfinder.



ROBOT-ROYAL 36 a (24 x 36 mm) with rewind knob, kinographic sequence release, for registration and personal use.

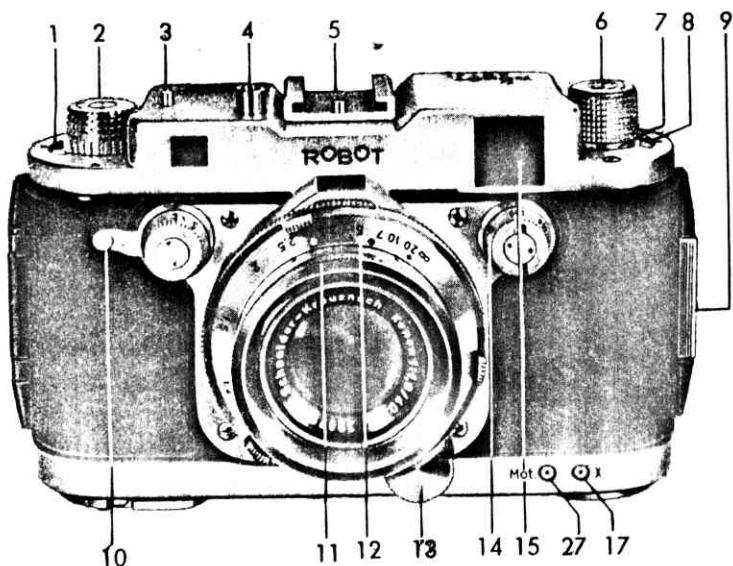
ROBOT records rationally

ROBOT records rationally

1

Both have the letter "a" behind the serial number, which means that they have the following characteristics:

- 1) Detachable camera back which can be replaced by the 30-ft or 200-ft magazine.
- 2) Gear below the take-up knob for coupling with the 30-ft magazine.
- 3) MOT-contact which is more powerful than the usual M-contact (for flashbulbs) and closes only after the shutter has been operated. The MOT-contact is used for driving the electric booster motor and is also suitable for a remote light or acoustic signal, confirming the exposure.
- 4) 2 notches in the exposure speed knob for coupling with the shutter speed knob of the **ROBOT-KULI II** (see page below).
- 5) Lever of bayonet lens mount without safety lock, so that the extension lever may be used (see also page 8).



ROBOT-ROYAL 24a — Universal camera for registration and handheld operation, negative size 24 x 24 mm.

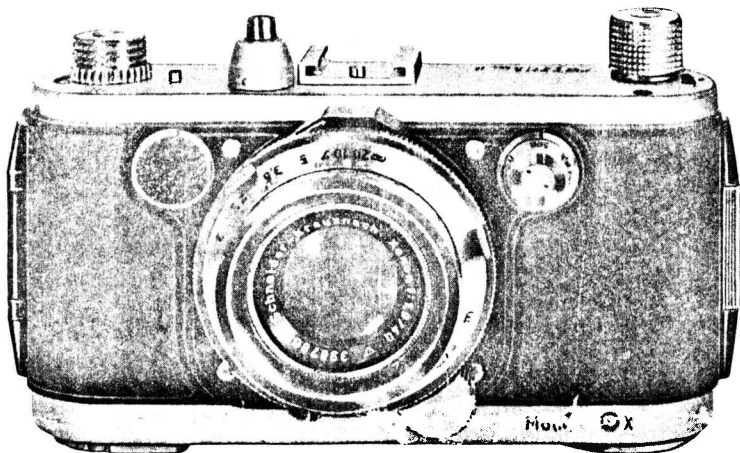
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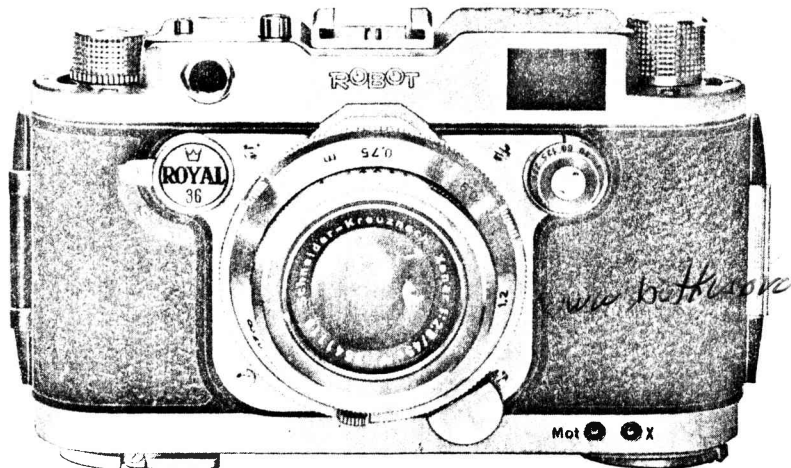
PHOTOGRAPHIC AUTOMATION WITH THE ROBOT ELECTRO-AUTOMATIC PHOTO-RECORDING SYSTEM

ROBOT - RECORDER and ROBOT - ROYAL "a" Automatic 35 mm cameras

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ROBOT-RECORDER 24 (24 x 24 mm) recording camera without range-viewfinder.



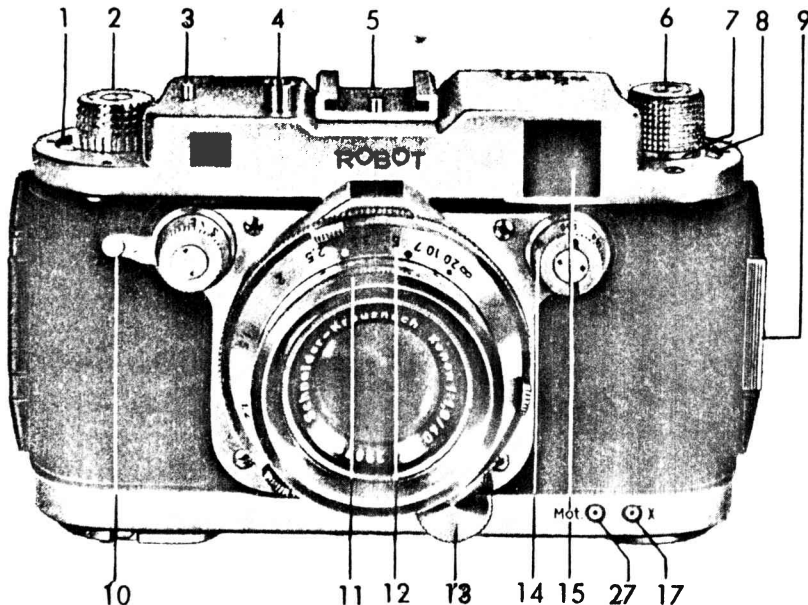
ROBOT-ROYAL 36a (24 x 36 mm) with rewind knob, kinographic sequence release, for registration and personal use.

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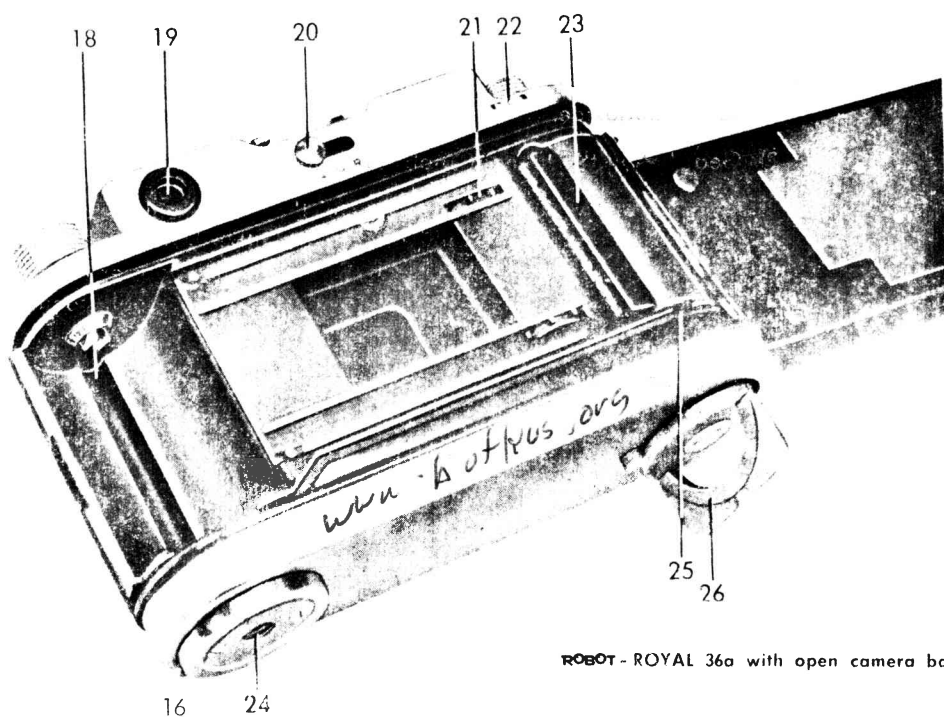
- 1) Detachable camera back which can be replaced by the 30-ft or 200-ft magazine.
- 2) Gear below the take-up knob for coupling with the 30-ft magazine.
- 3) MOT-contact which is more powerful than the usual M-contact (for flashbulbs) and closes only after the shutter has been operated. The MOT-contact is used for driving the electric booster motor and is also suitable for a remote light or acoustic signal, confirming the exposure.
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ROBOT-ROYAL 24a — Universal camera for registration and handheld operation, negative size 24 x 24 mm.

ROBOT records rationally

ROBOT records rationally



ROBOT - ROYAL 36a with open camera back

Controls:

- | | |
|---|---|
| 1) Exposure counter | 14) Shutter speed knob |
| 2) Take-up knob with gear | 15) Range-viewfinder |
| 3) Release pin to set exposure counter | 16) Camera support leg |
| 4) Shutter release button | 17) X-contact |
| 5) Accessory clip | 18) Film well for standard 35 mm cartridge or TR-cassette |
| 6) Rewind knob | 19) Viewfinder eyepiece |
| 7) Knurled ring for film type indicator | 20) Sliding lock for safety (red), rewind (R) and normal position (green) |
| 8) Film type indicator | 21) Film transport roller |
| 9) Lock for camera back | 22) Wheel for exposure counter |
| 10) Switch for automatic one-by-one shots (E) or kinographic sequence release (S) | 23) NR Take-up cassette |
| 11) F stop ring | 24) Tripod socket |
| 12) Distance setting ring | 25) Guide for positioning the NR take-up cassette |
| 13) Lens locking lever | 26) Winding key for spring motor |
| | 27) MOT-contact |

Instructions for use of the **ROBOT-RECORDER** and **ROBOT-ROYAL "a"** cameras

Loading the camera

- 1) Lift the grooved side of the latch, pull backwards and remove back.
- 2) Pull out the take-up knob (2), turn it in the direction against the arrow and lock it. Remove the NR take-up cassette (23).
- 3) Open the take-up cassette: Grip the inner shell of the cassette on its finger holes, turn both shells in opposite directions and pull out the inner from the outer shell.
- 4) Take out the spool and place the tongue of the film under the spring of the spool until the hook catches the second perforation of the film (see illustration A).
- 5) Re-insert the spool into the inner shell of the cassette, so that the slot of the spool engages accurately in the opening provided for it (see ill. A). Insert the inner shell into the outer shell by slowly turning it. (Do not merely press the two shells together, since this might damage the velvet light traps.)
- 6) Insert the cartridge with the unexposed film and the take-up cassette into the **ROBOT**. The cartridge should be inserted obliquely. The guide pins of the take-up cassette must properly engage into the guide slot (25). The emulsion side of the film must face towards the lens.
- 7) Turn the take-up knob (2) in the direction of the arrow until the film leader disappears completely in the take-up cassette. Press the film down with your thumb to ensure that the sprockets of the filmtransport roller (21) engage the perforations of the film on both sides and make sure that the film lies evenly and tightly on the film gate.
- 8) Close the back of the camera, pressing it firmly against the camera body (audible snap).
- 9) Fold out the key (26) and wind the motor completely, just like winding a watch. Return the key to its initial position.
- 10) The lock (20) of the ROYAL "a" must be set opposite the green dot. For cameras with 24x24 mm or 18x24 mm negative size, make three blind exposures, for cameras with 24x36 mm negative size, make two.
- 11) Rewind the spring motor once again. Depress the release pin (3) and turn the setting wheel (22) simultaneously until the frame counter (1) is set to "0". The camera is now ready for operation.

Special TR bulkloading cassette

The standard 35 mm cartridge can be replaced by the **ROBOT** TR bulkloading cassette. Its particular advantage – beside being more economical – is the completely free advance of the film, since the mouth of the cassette opens automatically when the camera back is closed. The TR-cassette is suitable for both daylight-refills and bulk film. When the TR-cassette is loaded, make sure that the central film spool is inserted into the inner shell of the cassette

ROBOT records rationally

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NR-cassette
(take-up cassette)

TR-cassette
(bulkloading cassette)

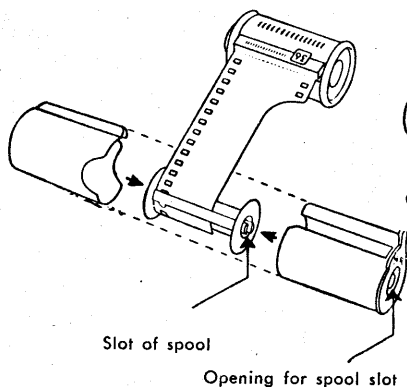


Illustration A

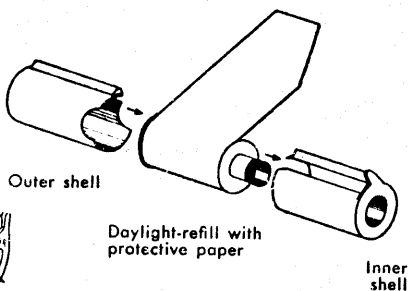


Illustration B

in such a way that the head of the spool protrudes from the button hole of the inner shell (see ill. B). Any chance of scratching the film is avoided this way.

Removing partly exposed film

If part of the film in the camera is to be removed for immediate development, two or three blind exposures should be made and then the camera opened. The film can now be cut and the remainder of the film fed to a second NR take-up cassette, while the exposed portion in the first NR take-up cassette is sent for developing.

Faulty film advance

If the automatic film transport does not properly operate, it is usually because of one of the following reasons:

1. The tongue of the film is not securely attached to the take-up spool.
2. The two shells of the NR take-up cassette are not joined to a complete fit, or they are bent.
3. Attempts to "tighten" the film in the camera between exposures by using the take-up knob (2).
4. Sliding lock (20) of ROYAL "a" is moved beyond the red dot, opposite "R" (rewind position), which causes overlapping of frames.

Take-up Spool

A take-up spool with cradle can be used instead of the NR-cassette. In this case the film must be rewound before developing.

Detaching the camera back

Open the back until it is at a right angle to the camera body and then press it gently away from you. The open hinge will let the hinge bar slip out. To replace the back, reverse procedure.

Interchanging lenses

1. Before inserting a lens make sure that it is set at infinity.
2. Move lens locking lever (13) to the left until it stops. Remove lens by lifting it straight out.
3. Check if bayonet locking lever (13) is in its leftmost position (viewed from the front). Place red dot on the lens opposite red dot on the camera body and insert lens. Now move locking lever into its regular position all the way to the right.

Setting the film type indicator

Turn the rewind knob (6) in the direction of the arrow, until it is all the way up, then turn the milled knob (7) underneath it to the right for the film type used. (Blue = color film for daylight, yellow = color film for artificial light, colorless = black-and-white film. The color must be fully visible in the window. Now turn the milled knob (7) to the left to set the film speed (black figures), the color of the dial remains unchanged. Reset the rewind knob by turning it in the opposite direction of the arrow.

Flash synchronization

The "X"-contact (17) can be used to synchronize any electronic flash units at all shutter speeds up to $\frac{1}{500}$ sec. M-type flash bulbs are synchronized at $\frac{1}{30}$ second or slower speeds.

Rewinding the film (unnecessary, when using NR take-up cassettes)

1. After all pictures have been taken (36 with the ROYAL/RECORDER 36, 55 with the ROYAL/RECORDER 24 and 74 with the ROYAL/RECORDER 18), pull out the take-up knob (2) and lock it by turning it in the direction against the arrow. Push the sliding lock (20) to "R". Now turn the rewind knob in the direction of the arrow pulling it slightly upwards while doing so. (The sliding lock should only be set to "R" for rewinding.)
2. Watch the frame counter when rewinding, as it counts the frames backwards. When the film is completely rewound, a resistance will be felt which should not be overcome by force: Now turn the rewind knob (6) in the direction against the arrow, until it has returned to its initial down position. Open the back of the camera, remove the exposed cartridge and the leader of the film from the take-up spool or cartridge. Make sure that spool or cassette and interior of camera are clean of possible accumulations of dust and/or film particles.

Attention

Do not try to take more than 36 pictures 24x36 mm, 55 pictures 24x24 mm or 74 pictures 18x24 mm, since it might make it difficult to move the sliding lock to "R". Furthermore, the perforations of the

film may be severely damaged. If the sliding lock cannot easily be moved to "R", open the camera in the dark and lift the perforations of the film from the teeth of the film transport sprockets. Close camera again and rewind the film.

- 3 **ROBOT-RECORDER** cameras with rewind knob: Press the rewind release button at the top of the body while rewinding.

Shutter speeds, f/stops and release button

1. Set the shutter speeds by turning the shutter speed knob (14) to the right or left, until it snaps into position opposite the desired speed. Intermediate settings cannot be set. For time exposures (T) set the shutter to "B": The shutter remains open, as long as the shutter release knob is depressed, for which you can use a cable release with time setting screw. "T"-setting can also be obtained at "B", if the sliding lock (20) is set opposite the red safety dot. The shutter remains open, until the lock (20) is slid back to the green dot.
2. Set the diaphragm by turning the diaphragm setting ring (11). For explanation of the color dots and respective f/stops, see "Focusing" below.
3. Release the shutter by depressing the release button (4).
4. Cameras with kinographic sequence release (S): Before pressing the release button, make sure that the switch (10) is in the desired position: Individual pictures (N) — Sequence pictures (S). The sequence release (S) permits 4-6 exposures per second at shutter speeds of $\frac{1}{60}$ second or faster (red figures on shutter speed dial).

Focusing with the handheld ROBOT-ROYAL

1. **Rangefinder.** Look through the eyepiece of the view/rangefinder (19) and turn the distance setting ring (12), until the double lines within the brighter rectangular RF-field in the center disappear, i. e. cover each other. The subject is now automatically in focus. Do not obstruct the second window of the rangefinder with your finger, etc. All interchangeable lenses for the **ROBOT-ROYAL** couple to the rangefinder.
2. The color-dot system is especially suitable for candid snapshots and keeps the camera always ready for immediate picture taking.

a) Zone focusing

The lines in identical colors on both sides of the distance setting mark ϕ indicate the zone of sharpness in relation to the f/stop in use, which bears the same color. By turning the distance setting ring (12) to the particular color dots and setting the f/stop of the same color, the lens can be focused for the corresponding zone of sharpness without using the rangefinder.

For instance, if a sharp zone is required reaching from 7 ft. to 23 ft. with the Xenar 38 mm f/2.8, the distance setting ring shows that this range falls between the two green lines, i. e. one of these marks

1
will be set opposite 7 ft. and the other opposite 23 ft. The corresponding diaphragm stop in green color to be set is f/8.

This focusing system is especially recommended to take pictures of moving objects, which could not be focused on fast enough with the rangefinder.

- b) Infinity-to-nearest point focusing – Hyperfocal Distance
If one of the color dots of the distance setting ring (12) is set opposite the $\diamond$ mark, the second one indicates the nearest point of sharp focus for the f/stop of the same color, i. e. the two color dots give the entire depth-of-field or zone of sharpness between infinity and a close distance.

ROBOT-ROYAL "a" and ROBOT-RECORDER cameras with built-in reticles (crosshair, etc. or according to sketch).

By inserting a plane-parallel glass plate into the camera, immediately ahead of the film plane, both angle of view and back focus of the lens are changed. The regular distance mark $\diamond$ engraved on the lens can no longer be used. Lenses for cameras with a built-in reticle must be especially ordered and are engraved with an additional mark ($\oplus$) to the right of the $\diamond$ mark. All distances must be set opposite this indicator. The **ROBOT** color-dot system cannot be used. Distances measured by the built-in rangefinder of the **ROBOT-ROYAL** at the figure $\diamond$ must be transferred to the new indication mark $\oplus$. Fixed distances can be set at $\oplus$ at once. If any of these lenses are used in connection with cameras without reticle, the normal indication mark $\diamond$ applies.

ROBOT-RECORDER 24d

This camera gives a negative size of 24 x 24 mm like the regular **ROBOT-RECORDER** 24, but has the same film advance of 24 x 36 mm as the **ROBOT-RECORDER** 36. It is usually supplied with rewind knob.

Accessories for the ROBOT camera body

Extension lever

The extension for the locking lever of the bayonet mount serves for fast and easy detaching and attaching of the camera when mounted in the KULI camera holder (see page 12).

Loosen the side screw of the extension lever to fit it over the milled knob of the lens locking lever. If the extension lever touches the KULI when locking the lens, turn it one or two teeth.

Protective Cover

The purpose of this cap is to protect the **ROBOT** all-metal rotary shutter, when the lens is removed. It should always be attached, whenever the camera body is removed from the KULI. The protective cover has the same bayonet mount as a lens and the two red dots have to be matched for inserting it.

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