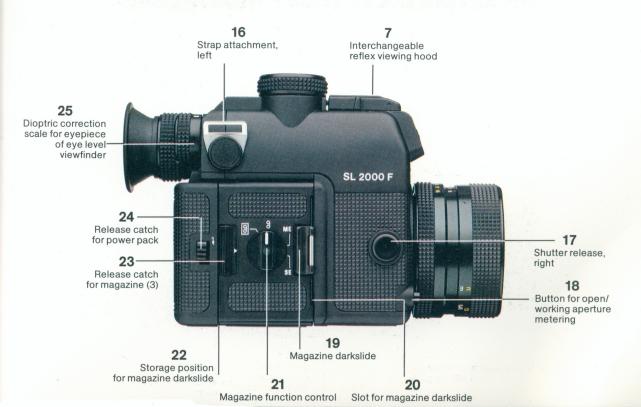
HANDBOOK • ROLLEIFLEX SL 2000 F • PRACTICAL HINTS



Rollei

THE ROLLEIFLEX SL 2000 F FROM THE RIGHT



THE ROLLEIFLEX SL 2000 F FROM THE LEFT

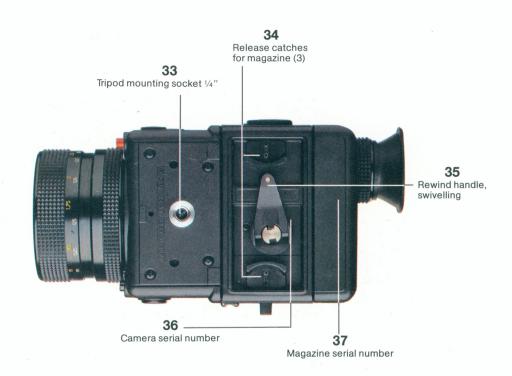


Electronic accessory socket

THE ROLLEIFLEX SL 2000 F FROM ABOVE



THE ROLLEIFLEX SL 2000 F FROM BELOW



THE ROLLEIFLEX SL 2000 F SYSTEM



THE MAIN FEATURES:

The design: Functional and easy to use.

Two integral reflex viewfinder systems: Eye level viewfinder and reflex viewing hood, interchangeable focusing screens, dioptric correction in case of eyesight weakness.

Interchangeable magazine: Built-in frame counter, integral ASA/DIN film speed setting and automatic film length stop coupled directly to the camera. Interlock mechanism cuts out the possibility of errors when changing magazines.

Built-in motor wind: Can be set for single exposures or continuous run at three frames per second. Also for multi exposure.

Interchangeable power pack: Designed to accept 5 x AA size rechargeable cells, special rapid charger available as an accessory. Manganese alkali batteries, size AA can also be used.

Metal focal plane shutter: 16 to 1/1000 sec. X and B flash synchronisation at 1/100 sec.

Automatic exposure: Aperture priority automatic metering system with full manual control.

Automatic flash system: Takes dedicated flashgun.

Extra features: Preset exposure overide, memory hold facility, fully automatic diaphragm, electronic shutter release. Alternative Zeiss or Rolleinar lenses, remote release, external power supply, system handgrip and range of accessories.

The Rolleiflex SL 2000 F camera is as versatile as the range of lenses designed for it. Select the appropriate lens from the incomparable Zeiss designed optics or the high-performance Rolleinar range.

The SL 2000 F system is designed with the professional photographer in mind and is backed by the Rollei Professional Service.

Please read this Rolleiflex SL 2000 F instruction manual carefully and your Rolleiflex SL 2000 F camera will reward you with constant reliability.



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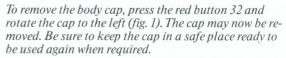
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FITTING AND CHANGING THE LENSES







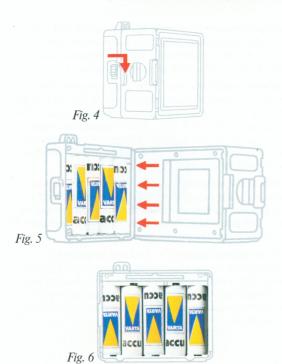


To fit the lens, first remove the backcap. Notice the red dot on the bayonet mount of the lens and the red dot on the inside of the bayonet mount on the camera. Align the two red dots and insert the bayonet mount of the lens into the bayonet socket on the camera and turn the lens clockwise until it is felt to locate against a firm stop. The lens is now coupled to all camera functions.

To remove the lens, press red button 32 and rotate the lens anti-clockwise. Never store lenses without the protective caps and ensure that the camera body cap is in place when no lens is inserted.



THE INTERCHANGEABLE POWER PACK



To remove the power pack, first press the button 24 both forwards and downwards, this will release the power pack at the right side and remove the power pack by pivoting it around the locating catches at the left (figs. 4 & 5). The power pack may now be removed from the magazine.

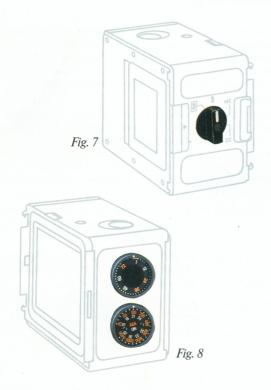
Insert 5 x AA size cells, preferably NiCad rechargeable cells. These will provide enough power for about 1200 exposures (at room temperature) and may be rapidly recharged, especially with the Rollei rapid charger. It is also possible to use non-rechargeable Manganese Alkali batteries, but their capacity is sufficient only for about 100–200 exposures, when using brand-new batteries.

Refit the power pack by locating it in the left rear corner of the magazine and gently but firmly closing down the right side until the catch locks.

Your Rolleiflex SL 2000 F is now ready for use and we recommend that before loading a film you thoroughly familiarise yourself with all its functions.

Note: Since all NiCad cells can discharge whilst not in use, it is advisable to re-charge them every 3 months.

THE INTERCHANGEABLE MAGAZINE

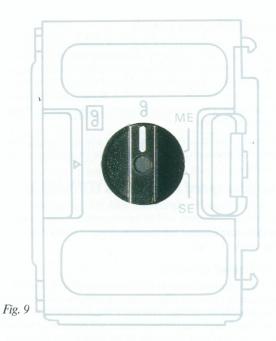


The most remarkable feature of the Rolleiflex SL 2000 F is the interchangeable magazine 3. It is at this time the only 35 mm SLR camera to permit the interchangeability of film without loss of pictures or film.

To remove magazine (fig. 7): Set magazine function 8 switch 21 to insert magazine darkslide 19 into its slot 20, ensure it is perfectly straight and push it fully home. Now turn function switch 21 to 3. Push forward the magazine release catch 23 forwards in the direction of the arrow, swing the right side of the magazine backwards and detach it from its mounting at the left.

To attach the magazine (fig.7): Locate it on to the body by means of the catches on the left side and swing the right side fully forward against the body where it will be felt to lock into place. Remove the magazine darkslide 19 and place it into the storage position 22.

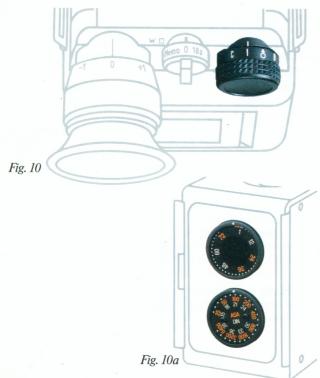
Built-in safety features (fig. 8): Each magazine is equipped with its own film speed setting 29, and frame counter 28. A magazine may therefore be attached very rapidly with no possibility of error. It is not possible to remove the magazine without first correctly inserting the darkslide, 19.



Note: The magazine may be detached from the camera body complete with the power pack still attached. It is recommended that where very fast magazine charge is required each magazine should be provided with its own power pack.

The function control switch 21 (fig. 9) has the following settings:

- Magazine removal. (The darkslide 19 must be correctly inserted in the slot 20 to allow the switch to be moved to this position.)
- **9** Position for **removal of magazine insert** while it is still attached to the body.
- ME Multiple Exposure. In this position any number of exposures may be superimposed without movement of the film. To switch from multiple exposure back to single exposure, the control switch should be moved to "SE" prior to the last exposure in the multiple sequence, otherwise the film will not be transported ready for the next exposure.
- SE Single exposure. After each exposure the film is automatically advanced one frame by the integral motor drive.



Familiarisation course

In order to familiarise yourself with the operation of the camera, you should first fit to the body the lens, an empty magazine and a charged power pack. Transfer the magazine darkslide 19 into the storage position 22. Turn the main switch 10 from "0" to "I" (fig. 10) and the magazine switch to SE. The camera may now be operated as though it were loaded with film.

The main switch 10 is self locking in the position "0" and should be pressed in before it is turned to another position.

The film speed setting dial (DIN/ASA)

29 should be set to correspond with the type of film in use, this information will be automatically transferred to the exposure control mechanism in the camera body (Fig. 10a).

The frame counter

28 is automatically set to start when the film is loaded and counts upwards. The frame counting is unaffected by changing the magazine. Therefore the film speed setting, film length stop and frame counter are particular to each magazine and thus there can be no error when changing.

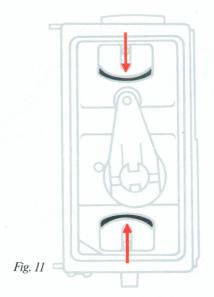
If no film cassette is loaded into the magazine, the counter will remain at start position.

When the camera is used in the multi exposure mode, the counter does not move except to record the first exposure in any sequence. The number of frames of film used will therefore be correctly recorded.

The Automatic Film Stop

Once the end of a film has been reached, the film transport will automatically stop. The red function signal "W" 9 will light up. Short flickering of the red "W" LED during shutter release shows that the film is being transported from frame 1 onwards.

THE FILM INSERT



The film insert is conventionally loaded with 35 mm films. A sophisticated system of rollers and pressure plate ensure that the film is perfectly flat.

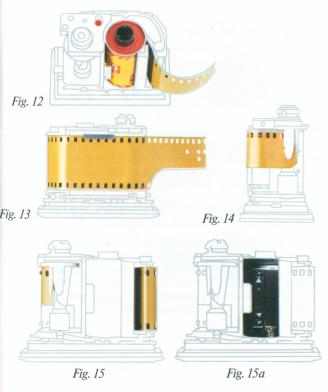
The length of film used can be selected up to a maximum of 72 frames. However, for acute focusing when using the somewhat thinner 35 mm film with 72 exposures, a special removable pressure plate is necessary, which is available as an accessory item.

Note: This pressure plate is only to be used with film length of 72 frames.

To Remove the Film Insert

First, put the function selector switch 21 to 8, the magazine does not have to be removed from the camera and the darkslide may remain in its storage compartment. Press the two release catches 34 towards each other and withdraw the insert (fig. 11).

Important! Ensure the film is fully wound back into the cassette before attempting to remove the insert, because if there should be loose film across the pressure plate it may foul the mechanism as the insert is removed.



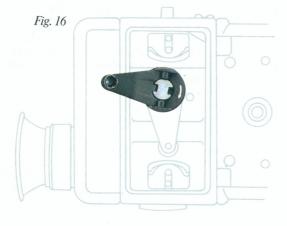
Loading the Magazine Insert

- Place the cassette in the insert as shown in fig. 12.
- Pull out about 8 cm of film.
- Thread the leading end of the film over the black pressure plate and under the right film guide (fig. 13).
- Lay the film over the sprocket and clip the tongue behind one of the white clips on the take up spool (fig. 14).
- Wind the grey-edged transport wheel about one turn of the take up spool (fig. 15). When the wind-on stops, depress the red knob (fig. 12) and release. Then turn the transport wheel again until it locks.
- Fit the loaded magazine insert into the magazine until it locks firmly into place.

Next, move the magazine function control switch 21 to "SE" and the main switch 10 to "I". Now press the release button several times, the motor will operate and the film counter will move from Start to "I" indicating that the film has been wound on to the first frame. Your Rolleiflex SL 2000 F is now ready for use.

Changing the Film Pressure Plate

In order to fit the special film pressure plate for use with 72 frame film length, the normal film pressure plate must first of all be removed. This is easily done by using the blunt end of a pencil, or a similar blunt object, to release the two guide pins (recognizable by arrow symbols in the film cassette compartment – see fig. 15a).



Rewinding the Film

Rewinding the film may be done with the magazine either attached to the camera or removed.

- Set magazine function control to 3, this disengages the transport and releases the pressure plate. At the same time the camera is switched off to avoid unintentional releasing.
- Fold out the rewind handle and turn clockwise until the catch locates in to the rewind spindle (fig. 16).
- Wind the film back until a light resistance is felt caused by the end of the film being held by the clip on the take up spool. Make one more complete turn of the rewind handle, this will allow the insert to be easily removed from the magazine and the very end of the film will be left just outside the cassette.

Note: All film is liable to be affected by extremes of temperature and humidity. It is therefore a wise precaution to protect loaded magazines from such extremes, especially by keeping the magazine and/or the whole camera warm where the ambiant temperature is below 0 degrees C. Cold film is very brittle and tears easily.

THE MAIN SWITCH

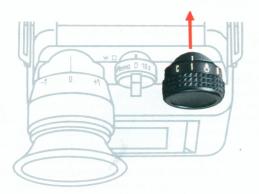


Fig. 17

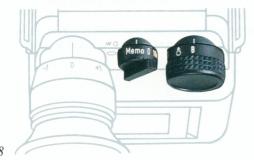


Fig. 18

The main switch 10 (fig. 17) controls the functions of: single exposure, continuous, run, brief time, long time exposure of any length, and off.

Position "0" (Off): All functions are switched off and locked. The switch should be pressed in before moving it to any other position.

Position "I" (Single exposure): This is for normal photography, the film is automatically wound on one frame after each picture is taken.

Position "C" (Continuous run): As long as the shutter release is pressed, pictures will be exposed and the film wound on continuously.

Position "B" (Long time): The shutter stays open as long as the shutter release is pressed.

Note: For very long exposures put the main switch to "B", press the shutter release, put switch 11 to "Memo" and release the shutter button. The shutter will remain open until it is cancelled by turning the memo switch 11 back to "0" (fig. 18).

When the main switch is in any operating position I, C or B, no power is consumed by the camera until one of the shutter releases is pressed or the memo switch is in use. However, it is recommended to turn the main switch to position "0" if the camera is not being used for any length of time.

THE MEMORY HOLD AND SELF TIMER SWITCH





Fig. 20

This switch 11 controls the following functions: memory hold, self timer, manual battery check.

Position "0": No function.

Position "10s" self timer (fig. 19): Set the switch to this position and there is an automatic delay of 10 sec. between the shutter releasing and firing. This delayed action timer has two main functions, firstly the straightforward delayed action and secondly the use of the delayed action, as a shutter release effectively reduces vibration under conditions where vibration must be kept to an absolute minimum. Correct operation of the self timer is indicated by the red LED on the front of the camera (fig. 20) which lights during the delay and goes out when the shutter fires.

To cancel a delayed action exposure; first turn the main switch to "0" and then return the self timer lever to "0".



Memo position (fig. 21); In difficult lighting conditions, for example, conditions of very high subject contrasts or backlit subjects, it is possible to take a specific light measurement and retain that value in the memory of the camera. Select a suitable aperture and automatic mode, align the meter measuring area with the desired part of the subject and turn the switch to the "memo" position (fig. 21). The speed selected in the position will now be held and used irrespective of any other influences on the camera. To remind the user that the camera is locked in "memo" mode, the shutter speed is indicated as normal, but the aperture display is extinguished. When the memo switch is returned to "0" operation of the camera returns to normal.

THE BATTERY CHECK

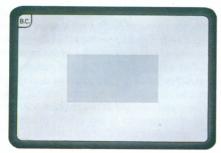


Fig. 22

The Rolleiflex SL 2000 F has a battery check built into the upper left corner of the viewfinder. It is in the form of an LED behind the letters "BC" as shown in fig. 22.

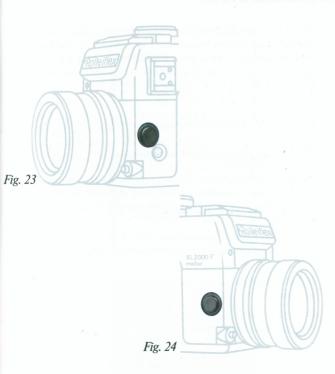
When the power in the NiCad cells is sufficient only for another 300 exposures, the battery check will automatically light when the shutter release is pressed.

It is also possible to check the state of charge manually. First set the main switch to "I", take the first pressure on one of the shutter releases and turn the switch 11 to "memo". If the NiCad cells are low in power the "BC" will light.

Should this be the case, the cells should be charged with the Rollei rapid charger so that there is no risk of the camera ceasing to function during the course of operation, due to discharged cells (batteries).

(See also: "Problem Location Table".)

THE SHUTTER RELEASES



The Rolleiflex SL 2000 F has a shutter release button on either side of the camera body, thus it may easily be used right or left handed and operated with either a thumb or finger, whichever is found to be the most convenient (fig. 23 & 24).

The shutter releases only work when the main switch is set to an operating position ("I, B or C"), and when the magazine functon control is set to "ME" or "SE".

The action of the shutter release buttons is a two stage operation:

Stage 1 = Light measurement: Take the first pressure on the shutter release button and this will activate the meter, aperture and shutter speed information is displayed in the viewfinder.

Stage 2 = Releasing: The exposure is completed by fully depressing the shutter release button; the camera will expose according to the data displayed.

Because of the positioning of the release buttons and the mode of operation, the handling of the camera is very smooth and this eliminates the possibility of many picture-taking faults.

See also: Long Time Release (fig. 15), self timer (fig. 16), shutter release through handgrip system (accessory) and remote release (accessory).

THE EYE LEVEL VIEWFINDER WITH DIOPTRIC CORRECTION



The eye level viewfinder of the Rolleiflex SL 2000 F is used in exactly the same way as the pentaprism of a conventional SLR camera. With the Rolleiflex SL 2000 F there is the additional facility of dioptric correction which allows you to adjust the eyepiece to correspond to your own eyesight (range \pm 4D).

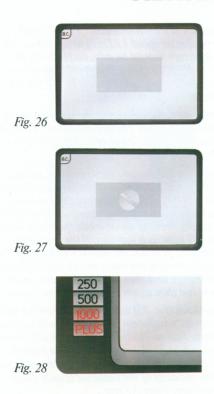
Set the dial knob 8 to shutter speed 1/15 sec. and aperture setting on the lens to f 5.6. Press the shutter release down to the first stop. The viewfinder now shows the data display for shutter speed "15" and aperture "5.6". Turn the eyepiece adjustment until the display is, at its sharpest. The eye level viewfinder is now at its optimum setting for your own use. Observe the position of the scale 13 and you can then readily re-adjust the camera to suit yourself if it is altered.

Note: Only dioptric correction is possible; in cases of astigmatism spectacles should be worn with the eye cup folded in.

When the reflex viewing hood is in operation, the eye level viewfinder is inoperative.

Please note that the figures on the eyepiece scale are for indication purposes only.

VIEWFINDER INFORMATION



The following information is instantly visible:

- Metering area
- Focusing aids
- Shutter speeds (with signal of under or over exposure)
- Aperture setting
- Battery check
- Flash control when using a dedicated flash system
- Memory hold

The measuring field of the exposure system is recognised by the light grey rectangle (fig. 26). 95% of all measurement takes place in this area, the remaining 5% in the outer area.

The focusing aids: The standard focusing screen has a diagonal split image wedge surrounded by a micro prism circle (fig. 27) which in turn is surrounded by a matt screen brightened by a fresnel screen. This screen will cater for the vast majority of applications, special screens are available for technical applications. See also "focusing screens", page 24.

The shutter speeds are indicated on the left of the viewfinder when the metering is activated (fig. 28). When in the automatic mode two values are indicated, then the camera is selecting an in-between speed.



Fig. 29



Fig. 30

Wrong exposure is shown when the "PLUS" signal or the whole row of shutter speed LEDs light up. When this occurs the aperture should be adjusted to bring exposure in line with the shutter speed. When the "memo" switch is being used, over exposure is shown by the "PLUS" sign and under exposure by the 16s sign.

The selected aperture is shown in the scale on the right of the viewfinder (fig. 29). The aperture simulator linkage on the lens serves also to indicate to the camera the range of apertures available.

When using older non meter coupled lenses and accessories, the stop down button 18 must be pressed. The shutter speed LEDs will then light but the aperture scale will not light. If you try to use a non meter coupled lens/accessory without engaging the stop down mode the entire array of indications will light as a warning. If the warning is ignored and the shutter pressed, the mirror will lock up. This may be freed by turning the main switch 10 to "0" which releases the mirror, and then back to "I", press in the stop down button and then again press the shutter release.

The battery check (fig. 30) will indicate when the NiCad batteries have only sufficient power for less than another 300 exposures. This will indicate automatically when the shutter release is pressed. When disposable batteries are being used, this indication will come on almost immediately as the capacity of the batteries is only about 100–200 exposures from the start.



Flash control (fig. 31). When using a dedicated flash system, a light signals that the camera is ready for use with the flash unit.

After the flash exposure, a signal indicates that the flash illumination was sufficient. More details can be seen from the instruction manual supplied with the dedicated flash system.

The "memo" function is indicated when only the shutter speed scale is illuminated.

On manual control, the aperture in use will be indicated as normal, the manually set speed will be indicated by a constant LED and the speed which would be set by the automatic system (if the camera was working on automatic) will be indicated by a flashing LED. It is thus possible to maintain either a chosen exposure value or a set difference from the theoretically correct exposure value under conditions of varying lighting.

Note: In certain specific conditions it is possible that either the indicated speeds will flicker, or that more than two indications will light. This is normally brought about by, for example, fluorescent lighting and it is due to the very rapid fluctuation in output of such light sources. In such cases it is advisable to use a relatively long shutter speed.

THE INTERCHANGEABLE FOCUSING SCREENS



Fig. 32

The image of the subject is formed on the focusing screen 6, which may be viewed by either the eye level viewfinder or the reflex viewfinder. The focusing screen is a precision optical component and the standard screen is sufficiently versatile to cover almost all normal applications. There are however several alternative screens available for specific purposes (see Accessories).

The standard screen allows three ways of focusing: by means of the diagonal split image, the micro prism circle, or the matt screen itself (fig. 27 or Page 44).

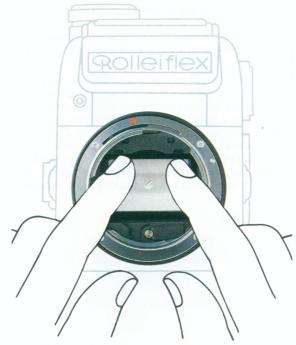


Fig. 33

Changing the focusing screen (fig. 33)

- First remove the lens.
- Using the nails of both index fingers simultaneously press in and downwards on the two grooved points which locate the screen holder.
- Allow the front of the screen to drop to an angle of 45 degrees and then take it out of the housing.
- Refitting the screen is the reverse of the above procedure. The front of the screen frame should be pressed up gently but firmly until it clicks into place at both sides.

Caution: The screen should only be held by the frame. Do not attempt to clean the screen by any method other than dusting with a fine hair brush or the use of a gentle air jet. On no account should chemicals be used.

THE INTERCHANGEABLE VIEWFINDER



Fig 34



Fig. 35

The reflex hood with magnifier.

There are occasions when the use of a reflex hood viewfinder is preferable to use of the eye level viewfinder. The Rolleiflex SL 2000 F has both systems.

• To use the reflex hood viewfinder lift up the flap (fig. 34) and the reflex hood is automatically erected. This action also cuts out the action of the eye level viewfinder. The subject may now be viewed from above, the image is upright but laterally reversed. The viewfinder data is also laterally reversed. For critical observation the viewfinder magnifier is swung into the horizontal position by its grip and the eye placed close to it. The screen may now be observed in great detail (fig. 35).



Fig. 36



 To close the viewing hood, first close down the magnifier and then fold the two side walls inwards. The hood will then close automatically.

• To remove the focusing hood: The hood must be in the closed position; grip the sides of the hood and draw it both forwards and upwards. This will allow the rear side of the hood to be released from its retaining clip and the hood should be lifted out from the rear. To replace the focusing hood: Locate the front of the hood in its retaining clip and gently press the rear of the hood downwards and slightly forwards. The rear retaining clip will click into place (fig. 37).

SHUTTER SPEED AND MODE CONTROL KNOB



Fig. 38

The vertical running metal focal plane shutter is electronically controlled over a speed range of 16 to 1/1000 sec.

Automatic operation:

Turn the control knob until it locks at position "A" (fig. 38). The shutter speeds are now controlled automatically having regard for the subject brightness, film speed in use and the chosen aperture.

Manual operation:

Depress the release button 15 and turn the shutter speed control knob to the desired film speed. Note: In manual mode shutter speeds are continuously variable, not being "click-stopped" to pre-determined values. This stepless control allows the setting of any desired speed.

Flash operation with Dedicated Flash System

When using a dedicated flash system and with the control knob at position "A", the shutter speed is automatically set at 1/100 sec. once the signal has appeared indicating ready for use with flash.

Apertures can be selected throughout the aperture range. If the flash illumination was not sufficient, a signal will appear in the viewfinder. More details can be taken from instruction manual for the dedicated flash system.

Use of other flash units

When using any standard flashgun, set the shutter speed control knob to "X". This setting gives a flash synchronisation speed of 1/100 sec. If for any reason a longer shutter speed is require, any manually set shutter speed between 1/100 sec. and 16 sec. may be used.

Exposure meter over-ride

It may occasionally occur that you wish to apply a constant over-ride factor to the exposure system, for example you may wish to use, for a specific purpose, films loaded in various magazines and to apply a uniform exposure over-ride to each on a specific assignment. In this case you should use the over-ride control 14 and set it to the desired value between -1 to +2 EV over-ride inclusive. The "+" setting will increase the exposure time while the "-" setting will reduce it.

Note: Ensure you return the over-ride control to "0" when no longer required.

THE MANUAL STOP DOWN/DEPTH OF FIELD PREVIEW CONTROL



Fig. 39

The stop down metering is provided to enable the automatic metering system to function in the following circumstances.

- Use of old Rollei lenses that do not have the aperture simulator linkage.
- Use of Rollei fitting lenses of other manufacture which do not have the aperture simulator linkage.
- Use of any type of adapter, extension ring or bellows apparatus which does not have the aperture simulator linkage.

Depth of field preview control

The stop down button 18 may also be used to close the iris diaphragm to the working aperture to assess the depth of field. Press the button 18 once more to return the iris function to normal. You may also choose to work at stop down metering even when using a modern lens intended for full aperture metering. In this case press the stop down button 18 and you will observe the darkening of the viewfinder associated with stop down viewing. The metering system will still function perfectly. This method of operation may be preferred in certain aspects of technical photography.

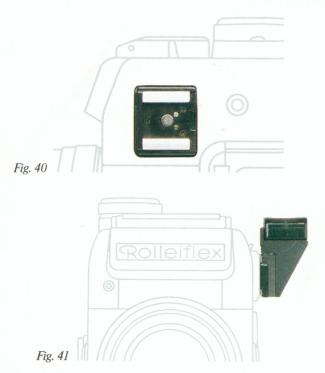
Do not forget to release the iris mechanism by once more pressing the stop down button when you have finished photography in this mode.

Use of non-Rollei lenses and adapters

With non-Rollei lenses and adapters that are Rollei fitting but do not incorporate the aperture simulator, use the camera in the stop down mode as previously described. A first pressure on the button 18 engages the stop down mode and a second pressure releases the stop down mode and returns the operation of the camera to normal full aperture metering mode.

Caution: The exposure system of the Rolleiflex SL 2000 F is primarily designed for use with full aperture metering lenses. Some deviation of metering measurement may occur when using stop down metering but this will not exceed +/- 1/2 EV.

THE FLASH SYNCHRONISATION



Your Rolleiflex SL 2000 F offers several possibilities for use with a flash unit. It is most convenient to use a dedicated flash system. It not only synchronises via the flash shoe contact, but also by means of two contacts with the camera (fig. 40). The flash unit can be connected directly to the camera or via the right angle flash connector (fig. 41), or via an adapter cable (accessory). In this case the shutter speed should be set to "A". Apertures can be selected throughout the aperture range relating to the flash system used. The correct synchronisation is automatically controlled by the camera by using its own sensor to measure the required flash energy output through the lens. This fully automatic synchronisation gives you optimum performance.

Any conventional flashgun with flash shoe contact may also be used. In this case, however, the shutter speed should be set to "X" (1/100 sec.) or to any chosen speed between 1/100 sec. and 16 sec. inclusive. For flashguns with synchro cable, the synchronisation socket 27 is used.

VIEWFINDER INFORMATION WITH DEDICATED FLASH



Fig. 42

When the dedicated flash unit is ready for use a green flash symbol is illuminated in the upper right of the view-finder (fig. 42). Should the flash output have been inadequate, this will also be indicated in the viewfinder which means that the flash unit had insufficient power in relation to the selected aperture. A wider aperture should be selected or the camera to subject distance reduced. (For further details please see in struction manual for dedicated flash system.)

FUNCTION SIGNAL "W"

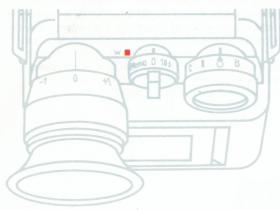


Fig. 43

The function signal "W" 9 (fig. 43), which can easily be seen by the photographer, indicates that

- the film transport has been carried out (short flickering during the transporting process from the first frame onwards);
- the end of a film has been reached (when shutter release is pressed, light is constant);
- magazine function control switch 21 is not correctly set at either "ME" or "SE" (light is constant, no shutter release possible).

THE INTERCHANGEABLE LENSES

Each camera system offers interchangeable lenses with various focal lengths and optical features. It is however most important that such lenses correspond to the quality of the camera and that a sufficient range of focal lengths is available for the photographer to choose from.

The Rollei SL 2000 F has an interchangeable lens system which allows the use of lenses with a wide range of focal lengths. It is obviously best to use the original Zeiss* lenses.

As an alternative, the whole range of Rolleinar lenses is also available.

Full details of the Rollei lenses available can be seen on pages 36/37, and further lenses are in preparation.

A further possibility is that standard screw lenses may be used by means of the M 42 intermediate adapter (available as an accessory).

* Manufacture and supply under licence Carl Zeiss, Oberkochen (West Germany).

CARL ZEISS INTERCHANGEABLE LENSES – TECHNICAL DATA

Lenses	No. of Components/ Elements	Aperture Range	Angle of Image	Range Setting	Image Scale	Filter Size	max.	max. Length	Weight in g
F-Distagon 2,8/16 mm HFT	8/7	2,8-16	180°	0,30 m	1:13 in mid image	Filter Dial w. 4 Filters	70 mm	68 mm	343
Distagon 2,8/25 mm Rollei-HFT*	8/7	2,8-22	80°	0,25 m	1: 6	E 49	62 mm	64 mm	310
Distagon 2,0/28 mm HFT	9/8 floating elements	2,0-22	74°	0,24 m	1: 4	E 55	63 mm	83 mm	530
Distagon 1,4/35 mm_ HFT	9/8 floating elements	1,4-16	61°	0,30 m	1: 5	E 67	70 mm	85 mm	471
PC-Curtagon 4,0/35 mm HFT, Schneider Kreuznach	7/6	4,0-22	64°/78°	0,30 m	1: 5	E 49	63 mm	56 mm	290
Planar 1,4/50 mm Rollei-HFT*	7/6	1,4-16	46°	0,45 m	1: 7	E 49	62 mm	50 mm	230
Planar 1,8/50 mm Rollei-HFT*	7/6	1,8-16	45°	0,45 m	1: 7	E 49	62 mm	47 mm	185
Makro-Planar 2,8/60 mm HFT	6/4	2,8-22	39°	0,27 m	1: 2 (1: 1 with ET)	E 55	68 mm	70 mm	570
Planar 1,4/85 mm HFT	6/5	1,4-16	29°	1,00 m	1:10	E 67	70 mm	72 mm	537
Sonnar 2,8/135 mm Rollei-HFT*	4/4	2,8-32	18°	1,60 m	1:10	E 55	63 mm	98 mm	450
Tele-Tessar 4,0/200 mm Rollei-HFT*	6/5	4,0-32	13°	2,50 m	1:10	E 67	76 mm	134 mm	750
Mirotar 4,5/500 mm	5/5	4,5/8/11 ND/Filter	5°	3,50 m	1: 4	Filter Dial	193 mm	235 mm	4.500
Mirotar 5,6/1000 mm	5/5	5,6/8/11 ND/Filter	2,5°	12,00 m	1: 9	Filter Dial	250 mm	420 mm	16.500

^{*} Licence Carl Zeiss, Oberkochen

ROLLEINAR INTERCHANGEABLE LENSES – TECHNICAL DATA

Lenses	No. of Components/ Elements	Aperture Range	Angle of Image	Range Setting (m)	Filter Size	max.	max. Length	Weight in g
Rolleinar-MC 3,5/14 mm (built-in filters)	10/7	3,5-16	180°	0,3 -∞	built-in	64 mm	56 mm	320
Rolleinar-MC 4/21 mm	9/8	4,0-16	90°	0,45-∞	E 58	63 mm	56 mm	245
Rolleinar-MC 2,8/28 mm	7/7	2,8-16	75°	0,3 −∞	E 58	63 mm	52 mm	245
Rolleinar-MC 2,8/35 mm	7/5	2,8-16	63°	0,4 -∞	E 52	63 mm	60 mm	235
Rolleinar-MC 2,8/85 mm incl. lens shade	4/4	2,8-16	28°	0,85-∞	E 52	63 mm	64 mm	270
Rolleinar-MC 2,8/105 mm incl. lens shade	4/4	2,8-16	23°	1,2 -∞	E 52	63 mm	69 mm	305
Zoom-Rolleinar-MC 3,5-4,3/35-105 mm, macro	16/13	3,5-22	63°-23°	1,6 -∞	E 55	64 mm	96 mm	445
Rolleinar-MC 2,8/135 mm incl. lens shade	4/4	2,8-22	18°	1,5 -∞	E 52	66 mm	97 mm	505
Rolleinar-MC 3,5/200 mm incl. lens shade	4/4	3,5-22	13°	2,3 -∞	E 58	71 mm	147 mm	590
Zoom-Rolleinar-MC 4,0/80–200 mm	12/9	4,0-22	30°-12°	1,9 -∞	E 55	65 mm	141 mm	580
Rolleinar-MC 5,6/400 mm	8/5	5,6-22	6°	4,0 -∞	E 72	78 mm	216 mm	950
Reflex-Rolleinar-MC 8/500 mm	7/2	8	5°	1,5 -∞	E 35,5	78 mm	95 mm	500

THE MOST IMPORTANT ACCESSORIES:



Fig. 44

For many years the world's best photographers could carry out most of their tasks with the legendary Rolleiflex Twin Lens Reflex cameras despite the limitation of a fixed lens. Equally much work can be completed with the Rolleiflex SL 2000 F with only its standard lens but careful use of the accessory programme will widen the scope and improve the handling of the camera for professional work.

The Rapid Charger (fig. 44)

The camera should be fitted with rechargeable NiCad batteries and a special rapid charger is available. This charger is designed so that the interchangeable power pack may fit on to it directly with the NiCad batteries in situ.

The charger has two indicator lights. A red light indicates rapid charge which operates for a period of approximately one hour, that is until the NiCad batteries have accepted about 70% of their charge capacity. At this time the charger automatically switches to normal charge, the red light stays dark but the green light indicates the state. Charging is complete after a total of about four hours.



Universal Handgrip

The universal handgrip system (fig. 45) allows great versatility of use. It may be attached as a pistol grip under the camera or as a hand grip on either side of the camera. A shutter release mechanism is incorporated into the grip. It is also possible to use the grip to mount various accessories e.g. a flashgun in a wide choice of positions. Further accessories are available to increase the versatility of the handgrip even more.

The universal handgrip system is designed for convenience of use which greatly assists both speed of use and stability. It is especially beneficial for action photography under adverse conditions and when using either long focal length lenses and for slow shutter speeds.

The interchangeable Magazine

One interchangeable magazine is supplied with the camera as standard equipment. The unique facility of the Rolleiflex SL 2000 F is that the magazine may be changed at any time without loss of film. Thus rapid changes of film type are possible by the use of additional magazines. Alternatively several magazines may be pre-loaded with similar film when rapid action photography is required.

Each magazine carries its own data as to film sensitivity and number of exposures taken, thus magazines may be changed without any adjustments to the camera. This reduces considerably the chances or errors being made.

A further advantage is that a loaded magazine may be removed from the camera for safe storage when not in use should the camera be subjected to undesirable external conditions, such as extremes of temperature or humidity.

The interchangeable power pack

In addition to the power pack supplied with the camera a spare fully charged power pack will ensure that there is an ample reserve of power. When several magazines are in use it is desirable to have one power pack for each, making the interchangeable of magazines much more convenient.



Remote power pack connection (fig. 46)

The remote power pack connection allows a charged power pack to be used at a remote distance from the camera. It is connected to the camera by means of a cable and allows the power pack to be kept in a warm place whilst operating under adverse conditions, particularly when using the more sensitive alkaline batteries which lose voltage in the cold.

Should it be necessary to use the camera for long periods in an inaccessible position a fresh power supply can be ensured by using the remote power pack.

The external power supply connection

For continuous use a connection is available which allows the camera to be connected to any suitable d.c.

The remote release

The Rolleiflex SL 2000 F, being electrically driven and electronically controlled, has the facility for an electric shutter release control. This is especially useful where vibration must be kept to an absolute minimum, or the camera must be operated from a distance. It is available in either short (0.5 m) or long (10 m) versions and it connects via the socket 31. The remote release incorporates two signal lights: the green light shows during exposure, and the red light during film transport.

The dedicated flash system

Any conventional flash unit can be used with the Rollei-flex SL 2000 F, however, to take advantage of the full potential of this camera we would recommend using the special dedicated flash system. Precise and easy to handle, this flash system is mounted onto the flash shoe on the camera body.

The right angle flash connector

This accessory turns the hot-shoe flash connection through 90 degrees allowing a flash gun to be mounted vertically. All connections are maintained with this adapter.

Bellows unit

For close-up and macro photography the bellows unit is recommended. For automatic metering purposes, the camera must be set at manual stop down control (see page 30).

Microscope adapter

An adapter is available to allow the Rolleiflex SL 2000 F to be mounted on a standard microscope eyepiece tube. With the stop down button pressed in, the exposure automation will be maintained.

Extension rings

A set of 4 extension rings (50, 30, 15 & 7.8 mm) is also available for close up photography. These may be used either on their own or in any combination. These extension rings maintain the automatic operation of the iris mechanism. Automatic metering is possible in the stop down mode.

Magnifier adapter

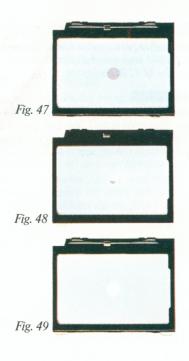
All standard magnifying lenses (Luminar, Photar) can be fitted to the SL 2000 F with this adapter. Here, it is also necessary to use the M 42 X 1 adapter.

The M 42 adapter

This adapter enables the use of all lenses with M 42 thread mount.

The stop down button must be used to retain automatic metering.

INTERCHANGEABLE FOCUSING SCREENS



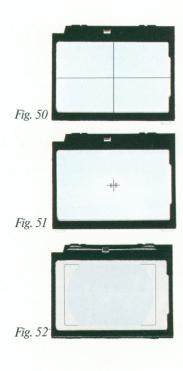
The Rolleiflex SL 2000 F is fitted with a universal focusing screen, suitable for the majority of subjects. Certain specific applications may, however, require special screens and the following is a list of screens which are available, together with a description and an indication of the purpose for which they are suitable.

• Universal focusing screen with central diagonal split image rangefinder within a microprism circle and surrounded by a matt screen brightened by a fresnel lens (fig. 47). This screen is a general purpose screen but with the advantage of the grid lines and is especially useful where composition is an important element, e.g. architectural photography with horizontal and vertical lines. It is also suitable for lenses with low light transmission or when using macro accessories.

 Focusing screen with central horizontal split image and plain matt surround, brightened by a fresnel lens (fig. 48). This screen is suitable for use when extremely

critical focus is required.

 Focusing screen with central microprism circle and plain matt surround, brightened by a fresnel lens (fig. 49). This screen is very suitable for rapid action photography where a minimum of distraction is required.



Completely matt screen with cross wires (fig. 50).
 This screen is of use where speed of action is secondary to critically accurate centering of the image. Very suitable for macro photography.

 Special matt focusing screen with clear centre spot incorporating a scale (fig. 51). The clear centre spot is ideal for focusing the aerial image produced by a microscope and other applications where a similarly narrow band of image forming rays have to be focused.

• Special focusing screen for use with endoscopy having clear centre field with cross marks (fig. 52).

THE ROLLEIFLEX SL 2000 F IN PRACTICE

GETTING A GRIP ON THE ROLLEIFLEX SL 2000 F

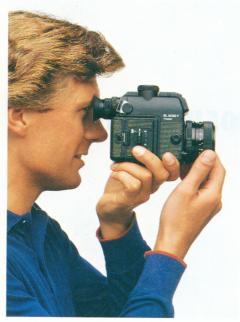


Fig. 53

The illustration shows just one way of holding your Rolleiflex SL 2000 F in an easy and comfortable position. By all means, do experiment to find the most convenient position for your individual requirements.

The universal handgrip system (fig. 45) optimises both speed of use and stability.

1. FOCUSING/BLURRING



Fig. 54

A first-rate camera, fitted with first-rate lenses, must be able to supply absolute picture sharpness, when this is required.

Thanks to its construction and the world-famous original Zeiss lens range, the Rolleiflex SL 2000 F can meet the demands of professional photography. There are, however, certain situations where the photographer would rather create a blurred effect.

Intentional blurring (fig. 54)

This effect creates a strong sense of movement. To prevent the subject appearing "positioned" or "frozen", the required relatively slow shutter speed is set manually and the aperture is adjusted accordingly. Then press the shutter-release one stop and the "correct" exposure time will flash, whereas the manually set exposure time will remain constantly lit. Now alter the aperture until both shutter speeds coincide with each other.





Fig. 55

Fig. 56

Depth Of Field

Even the best of lenses can only reproduce absolute sharpness on objects situated on one focal plane. Anything lying outside the limits of this focal plane will be out of focus (fig. 55 and 56). With stop-down metering the photographer can then get the areas in front of and behind this focal plane in full focus. This "depth of field" extends from approximately one third of the distance in front of the focal plane to two thirds behind it. It is determined by the position of the photographer and his selected focal length and aperture setting. The more one opens the aperture, e.g. f 1.4, the less scope there is for depth of field; the more one closes the aperture, for instance down to f 11, then the depth of field range becomes larger. This effect can be intentionally used to produce more creative photography. Portrait photography, for example, can be very effective with a blurred background whilst using a high f number for an opened-up aperture; whereas the blurred effect disappears once the photographer closes down the aperture. The depth of field table shows you the possibilities with each Rollei lens. By using the stop-down button for working aperture metering, you can comfortably assess the depth of field through the SL 2000 F viewfinder before shooting the picture.

Other Factors Affecting Image Sharpness

A blurred picture can also result from the film material that has been used. A highly sensitive 27 DIN film, for instance which has perhaps been "overstrained" to above 30 DIN, will never reach the focusing quality that a medium or less sensitive film would. This applies to both black and white and colour films.

The outside atmosphere can also have a strong influence on photography, sometimes resulting in relatively blurred, but above all dull pictures without contrast. When the heat of the day causes the air to "flicker", which can often be seen quite clearly on road surfaces, then this also happens where it is not perceptible to the human eye; it can occur in the open countryside, especially when working with long focal distances. The unsuccessful photographs (visual range) are neither due to the camera, nor to the lenses. The same applies to haze in the atmosphere which is hardly noticeable to the eye; likewise, tobacco smoke in bars or halls causes "dull" pictures.

Finally, even the best Zeiss lenses on the Rolleiflex SL 2000 F cannot work wonders if the film has become grained and blurred due to incorrect developing.

2. SELECTIVE EXPOSURE MEASUREMENT



Fig. 57

Most cameras meter the average light value of the whole subject area, but the Rolleiflex SL 2000 F has a selective metering system which allows you to very precisely measure the light from the most important part of the subject. The metering area may be seen in the viewfinder as a rectangular grev area. This selective metering system allows accurate readings to be taken from high contrast subjects (fig. 57) without them being unduly influenced by excessive highlights. At the same time the acceptance angle of the metering is broad enough to give a true reading, unlike some very narrow spot meters which are so influenced by minute variations as to give an unsatisfactory result. In practice it will be found that this selective metering is suitable for the vast majority of subjects. For the exceptions, extra selectivity is very simple and is achieved by use of the memory hold. This enables any specific measurement required to be held in the memory of the camera.

The basic rule of selective exposure evaluation applies. With negative film material (colour or black and white): measure the shadows. With colour slide material: measure the highlights.

The Rolleiflex SL 2000 F also has the facility for exposure over-ride by use of the control dial for exposure compensation.



3. USE OF THE MOTOR WIND



Fig. 59

It is generally considered that a motor driven camera is intended only for sequence photography. This is not so. In practice, the motor wind is a great asset to creative photography. It enables the photographer to concentrate on the subject and so take the picture at exactly the right time. The camera is again instantly ready for the next exposure. This is especially useful should the subject move when the first picture is being taken and there is a need to expose again immediately. The Rolleiflex SL 2000 F with its 3 frames per second capability is well-equipped for such occasions.

As the motor wind is an integral part of the camera, there is no need to carry bulky accessories.

Naturally, the motor wind allows rapid sequence photography (fig. 60) and a rate of three frames per second opens up a completely new dimension of photographic possibilities.

Although there may be an apparent waste of film in sequence photography, the results will enable the photographer to select the best from several pictures. This may not have been possible, if only a single exposure had been made. Surely a few extra exposures is of no consequence when there is an important photograph at stake.





Fig. 60

4. USE OF THE MULTI-EXPOSURE FACILITY

Extremely interesting effects can be achieved by the use of the multi-exposure facility. This is a genuine multi-exposure device and any number of images may be superimposed on the same frame in perfect co-ordination. Another effect may be achieved by photographing bright subjects under dark conditions, e.g. fireworks at night. The shutter may be held open for an extended period using the "B" and "Memo" settings in conjunction.

Correct exposure of multi-exposed subjects is determined to a large extent by the type of result required. Remember that each exposure will add to the latent image on the film. Thus, if you wish to superimpose two scenes with similar overall brightness, you should reduce each individual exposure by one stop (i.e. halve the exposure) for the resulting latent image to produce a negative or transparency of the correct density. However, if you are taking a number of totally separate luminous subjects against a dark background, then each exposure should be correct for the subject in question, as separate images on a black background will have no additive effect.

Multi-exposures may also be made with the use of a rapid electronic flash sequence with the camera set on a time exposure, or with the use of a flashgun in the conventional fashion with the camera set to multi-exposure. Do not forget to set the control 21 back to "SE" from "ME" prior to the last shot in any sequence, so that the film transport can be re-engaged. Should you forget to do this, you may re-engage the sequence by capping the lens, selecting a fast manual shutter speed, setting the control 21 to "SE" and operating the shutter release. In this way, the camera will be ready for the next exposure without loss of either film or picture.



5. FIELD OF VIEW AND PERSPECTIVE



Fig. 62

It is generally understood that telephoto lenses appear to bring the subject closer, and that wide-angle lenses increase the angle of acceptance, taking in a wider area of the subject. What is not so easily understood is the effects of various lenses on perspective (figs. 62 to 65).



Fig. 63

The standard lens is so called because it produces an image in which the perspective is very close to that seen with the human eye. Telephoto lenses produce a compressed perspective, an effect known as "foreshortening", and wide-angle lenses produce an extended perspective.



Fig. 64

Neither effect is in fact a distortion, for if prints are made from the images formed this way and viewed from the correct distance – a long way off for a telephoto shot and very close indeed for a wide-angle shot – then the perspective perceived by the eye would be identical to the original scene.



Fig. 65

Thus it is possible to totally change the effect of a particular scene by the choice of lens, and so wide-angle and telephoto lenses should be regarded as creative tools and not simply as a means of controlling the size of image recorded on the film. A zoom lens, being infinitely variable within its specified focal lengths, offers the photographer more versatility than fixed focal length lenses.

TECHNICAL DATA

Type: Single lens reflex camera 24x36 mm, with interchangeable film magazine, two integral viewfinder systems

and integral motor drive.

Lens Mount: Rollei QBM bayonet (Quick Bayonet Mount).

Electronics: Fully integrated analogue/digital interface circuits. Centralised control of all exposure measurement and

motor drive functions.

Shutter: Vertically travelling metal-laminate focal plane shutter. Electronically controlled.

Exposure Control: Aperture priority automatic shutter speed control or full manual operation (follow-up system).

Exposure Override: From -1 to +2 EV stops.

Exposure Times: 1/1000 sec. to 16 secs., automatically or manually adjustable. Long-time exposure B.

Flash synchronisation speed $\frac{1}{100}$ sec. to 16 sec. $X = \frac{1}{100}$ sec.

Exposure Measurement: Through the lens selective measurement. Exposure measurement field visible in viewfinder.

Measuring range EV 1–18 with 21 DIN (100 ASA) and f/1.4. Sensor: 2 silicon photo diodes.

Viewfinder Systems: 2 integral viewfinders. Eye-level viewfinder with adjustable ocular for dioptric correction and rubber

eye-cup. Folding reflex viewfinder hood with built-in magnifier.

Viewfinder Information: Apertures and speeds indicated by light emitting diodes (LEDs). Over and under exposure warning.

Battery state control. Flash control signal and under exposure control when using dedicated flash system.

Memo function.

Viewfinder Screens: Special interchangeable screens – standard screen with double diagonal split image, microprism and matt

outer area with fresnel screen.

Back Light Correction: Memory lock (memo) and override switch (-1 to +2 EV).

Delayed Shutter Release:

Electronically controlled with 10 sec. delay.

Aperture Operation: Fully automatic diaphragm linked to metering mechanism with automatic changeover when stop-down

metering is employed (e.g. working with adapter on microscope, mounting non-Rollei lenses with

M 42 adapter, etc.).

Reflex Mirror: Hard coated upper surface.

Electr. Shutter Release: On both left and right hand side of camera body.

Interchangeable Film

Magazine:

Rapid interchange of magazine, also with partly-exposed film. For 35 mm films up to 72 frames in length. Removal of exposed film possible from magazine when attached. Built-in safeguards against incorrect operation. Single and multiple exposures. Film speed setting from 15 to 39 DIN (25 to 6,400 ASA).

Frame counter only operating when loaded. Film packet memory holder.

Film Transport: Integral high performance motor. Single exposure or continuous run at about 3 frames/sec.

Power Supply: Rapid change battery compartment holding 5 rechargeable NiCad cells (Rollei accessory, see also Page 7),

Type AA (1.2 V) or as an alternative, 5 Alkali manganese batteries, Type AA (1.5 V). Provision to connect

external power supply.

Flash Connections: Standard hot shoe with additional contacts for dedicated flash system. Socket for cable connection.

Flash System: Through the lens exposure measurement by silicon photo diodes using dedicated flash system*.

The light emitted from the flashgun being measured and its duration regulated.

Automatic shutter speed synchronisation (1/100 sec.). Flash-ready signal in viewfinder and on flashgun.

Signal in viewfinder after sufficient flash output.

External Control: Multi-pin socket for remote accessories with facilities to monitor camera functions.

Safeguard System: LED warning system for incorrect operation. Override clutch for the motor drive. Built-in safeguards on

magazine to prevent incorrect operation.

Size: 89 x 111 x 159 mm incl. Planar 1.4/50 mm.

Weight: Approx. 1,250 g incl. Planar 1.4/50 mm, without NiCad cells.

Colour: Matt black.

Basic Equipment: Camera body with interchangeable magazine and battery compartment, protective body cap, reflex

viewfinder, interchangeable viewing screen, carrying strap, instruction manual.

Recommended

Standard Lens: Planar 1.4/50 mm Rollei-HFT

PROBLEM LOCATION TABLE

Symptom	Possible Cause	Solution				
Shutter release not operating, "W" LED	1. Magazine function control switch not set at either "ME" or "SE".	Switch to "ME" or "SE".				
signal lights up.	2. End of film reached.	Change film.				
	3. Power supply interrupted during (long-time) exposure.	Switch over from "SE" to "ME" and back				
	4. Film transport not fully operating due to battery voltage being inadequate, resulting in blockage of electrical film guide pick-up. Note: always use NiCad cells with adequate energy capacity.	Insert fully charged NiCad cells (or new batteries). Switch over from "SE" to "ME' and back. If "W" LED signal is still lit up, wind film back approx. one frame using rewind handle.				
Shutter release not operating, "W" LED signal is not lit up.	Main switch on "0" (Off).	Switch to selected function.				
	Self-timer in operation?	To avoid losing a frame: turn main switch to "0", return self-timer switch to "0", reset camera functions.				
	NiCad cells fully discharged.	Recharge NiCad cells.				
No change in viewfinder data display on shutter speed side when light conditions vary.	Memo switch is on.	Return memo switch to "0".				
View through eyepiece too dark.	Reflex hood viewfinder is erected.	Close reflex hood viewfinder.				

Rollei

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