Equipped with the "high-efficiency" Schneider Xenotar or Zeiss Planar f/2.8 lenses the Rolleiflex 2.8 C offers a new and higher degree of photographic performance. To the already well known and distinctive conveniences of the Automatic Rolleiflex are now added new constructional features, designed to meet the most exacting professional demands. Truly, a new Rollei leader has arrived.

The following pages contain a fully detailed description, with illustrations, of the operation of the camera. A careful reading should serve to speed the new Rollei owner on his way to acquiring an easy proficiency in the practical use of his camera. Helpful rules and hints are also included.

We hope that this book will serve to help open new paths so that the many possibilities of the Rolleiflex 2.8 C may be easily and fully explored.

FRANKE & HEIDECKE
BRAUNSCHWEIG

THE QUICK BASIC PRINCIPLE

TO LOCATE THE MOST IMPORTANT PARAGRAPHS QUICKLY

This Rolleiflex instruction book offers you the basic information necessary for the use of the camera. Practical matters of technique are adequately discussed, usually in the form of concise tips covering the most important phases of picture taking. Easy to use, highly informative tables are also included. It will therefore remain a source of information of permanent value to you.

Important: Before attempting to use or handle the camera we urge you to read carefully pages 12, 16, 24 and 28.

THE ROLLEI PRINCIPLE

I. A BRIEF ROLLEIFLEX-ANATOMY

The Automatic Rolleiflex is a camera characterized above all by two special design features: the rigid construction of the twin lens reflex and the automatic film transport mechanism. These technical advantages do not form merely a basis for very high performance but at the same time contribute materially to the simplicity and ease of use for which the Rollei is justly famous.

It takes but a glance at the construction of the camera to recognize the simple elements of its practical operation.

Construction of the Twin Lens Reflex

In the Rolleiflex two separate cameras are joined in a twin-camera with a common sturdy die-cast body; the bottom half is the

taking-camera, in which the film is exposed, and the upper half is the

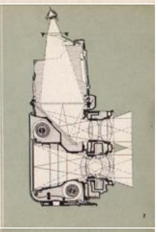
viewing-camera, which is designed on the mirror-reflex principle. Its special task is to make the focusing visible on the ground glass and to supply a control image essentially similar to that of the prospective picture.

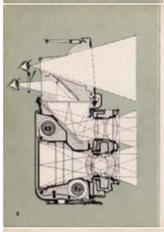
The image forming rays are transmitted by the fully open viewing lens, projected on to the ground glass screen via the mirror and the result is a right-side-up ground glass image, in the full size of the original picture. This viewing image is visible at all times and every detail of composition and framing may be watched even during exposure.

The ground glass screen is ruled with a number of vertical and horizontal lines making it possible to detect errors, such as lines which converge but should be parallel or a slanting horizon, in time to notice and correct them. It is easy to straighten or level the camera by means of the lines on the ground glass screen.

[illegible]

The focusing hood, [illegible]





by spring tension. It is equipped with a swinging **magnifier**, adjustable to the individual eye-sight. It offers at approximately 2.5 times magnification of the entire ground glass image, a still more precise means for focusing the camera.

If the front panel of the focusing hood is pushed inward, it is transformed into a **direct view finder** through which the subject may be seen in natural size making it particularly easy to follow fast action. In this case it is still possible at all times to maintain control over focus: this is made possible by means of a second, adjustable magnifier in the back of the focusing hood, and a diagonally mounted mirror. [illegible]

[illegible]

[illegible]

... and at the bottom it contains the tripod socket and the safety back lock. Its adaptability for the two picture sizes 2¼ × 2¼", and 24 × 36 mm is the result of the adjustable film pressure plate which can be set for 120 (B II 8)-film (with paper backing), or for 35 mm film (without paper backing) when used in conjunction with the Rolleikin 2 C attachment. In both cases a film channel is created with a width that corresponds to the thickness of the film being used. Thus the film can be properly held in the focal plane, and also can slide through without undue friction when advanced.

The Automatic Film Transport Mechanism

[illegible]

5. Engages film lock.

The shutter release and film advance crank are locked and unlocked alternately, thereby offering full insurance against double exposures or skipped frames.

For intentional double exposures the crank must be unlocked at the crank base. Turning the crank a full turn to the left cocks the shutter again without advancing the film.

Automatic stops limit the extent of crank swing. With the increasing thickness of the film on the take-up spool the crank swing decreases from ¾ of a turn in the beginning to just under 1/2 turn at the end

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II. THE ROLLEIFLEX 2,8 C IN OPERATION

The Ever Ready Case

deserves mention here since it is so often used with the camera.

To Open: lift the top by grasping the snap catch buttons at the rear and fold forward and down (1).

To Close: pull the top over the camera and push down to engage the snaps. (Simultaneous folding of the focusing hood is also possible with this movement.) Always return focusing knob to infinity position since the extended front may otherwise interfere with closing the case.

To Remove Camera From Case: pull up the metal clips located at the top of the sides of the case (2). Lift the crank a little way from the case, spread the sides and lift the camera forward and out (3).

Putting the Camera in the Case: pull up the clips and spread the case apart; then slip the crank through the large opening from the inside and lower the camera backwards into the case. Push the clips down through the chrome plated strap holder slots.

The Neck Strap

In order to be able to carry the camera slung from the neck without an ever ready case, a special black leather strap is available.

How to fasten it: hook the metal loop of the leather strap on the strap holder button (4a), pull locking slide up and push it into the strap holder slot as far as it goes (4b).

The Lens Cap

is foldable. The upper part is attached in front of the viewing lens by bayonet mounting and the lower part through friction fit.

Removal of Lens Cap: lift the lower part by the tab at the lower edge and fold it against the upper part (5). Remove cap from the bayonet by turning it counter-clockwise ¼ of a turn (6).

Attaching Lens Cap: fit the folded cap into the bayonet of the viewing lens — hinge pointing to the right (focusing knob) — and fasten it with a ¼ turn clockwise. Fold down the lower part and snap into place.

Holding the Camera

Basic rule: camera hanging around the neck with taut strap and the camera held firmly by both hands. The right hand grasps the camera at the bottom, the index finger on the shutter release, the thumb supporting the uplifted crank (quick handling of the film transport: p. 34). The left hand does the focusing (1). In this position diaphragm and shutter controls may be operated comfortably with two fingers.

The Carrying Strap is adjusted to a comfortable length, so that the camera may be carried on the shoulder when not in use. In order that the shutter may be released with taut strap to avoid camera movement, loop the strap around the right hand, thus shortening it to achieve normal viewing distance (2). Further shortening of the strap when using the magnifier can easily be effected by making use of the left hand in the same way (3).

Caution: a wrong or uncomfortable "grip" may cause you to lift inadvertently the hanging top of the everready case.

In order to assure solid contact when working with a tripod, do not use the ever ready case.

Waist-level or eye-level positions for the camera are considered normal for most pictures. The extremely flexible Rollei, however, readily permits exposures at or near floor level, overhead, shooting straight up or down, and occasionally, surprise snaps "around the corner". The illustrations (4–7) show a few possibilities for such pictures with the camera in different positions.

Focusing Hood

To Open: lift the rear edge of the focusing hood cover — Spring tension keeps it open (1).
To Close: pull back focusing hood (2).

The push-button at the rear of the focusing hood serves to hold the Rolleikin ground glass screen mask or the Rolleigrid lens.

Focusing Magnifier

To Raise: pull release lever in the open focusing hood upwards — the magnifier springs into position (3).

To Lower (before closing the focusing hood): push down magnifier flap by pressure on the side of the frame until it snaps into position (4).

Use of the Magnifier: use the magnifier as close to the eye as possible.

Direct View Finder

To Open (after raising the magnifier): push the direct view finder flap inwards until it snaps into place (5).

To Close: depress magnifier flap slightly — the direct view finder panel immediately returns to normal position (6).

The subject is viewed at eye-level through the direct view finder and focusing may be checked by means of the second magnifier.

Focusing Magnifiers for Added Convenience

Both magnifiers can also be focused by persons with faulty eye-sight, but not wearing glasses by tilting magnifiers out of their normal position: grasp magnifier at the sides, lift and focus critically on the ground glass screen lines.

Focusing

Focus the Rolleiflex by turning the focusing knob, at the same time critically observing the sharpness of the ground glass screen image. The footage scale serves also to indicate the depth of field, a matter which need not concern you too much at first. The magnifier facilitates the most critical focusing. Important:

Focus so that the greater degree of sharpness prevails at ratio subject distance.

The Diaphragm

The diaphragm controls the amount of light passing through the lens. It has a double effect:

Stopping down
increases the depth of field and reduces the effective amount of light

Therefore the exposure must be increased correspondingly at smaller diaphragm openings. The following table gives the ratio of exposure at the different openings:

Diaphragm	2.8	4	5.6	8	11	16	22
Exposure	1	2	4	8	16	32	64

Notice that each succeeding smaller stop requires exactly double the exposure of the preceeding one.

The diaphragm scale itself is easily seen, black figures, in the peep window above the viewing lens. The dot before f: 22 indicates the position for f: 16.

Setting the Diaphragm: turn the small knurled wheel while depressing the arresting slide simultaneously.

In Practice

After focusing, the near and far limits of the depth of field may be read off directly below the line marks indicating the diaphragm opening chosen.

The section of the footage scale bracketed between the marks representing the identical diaphragm opening indicates the exact zone of sharp focus.

1. Example: focusing to 12 ft with diaphragm opening 8 gives a depth of field 10 ft to 15 ft. Focusing to 12 ft with diaphragm opening f: 22 gives on the other hand a depth of field from 7,5 ft to 40 ft. approx. Stopping down improves the depth of field!

Considerable stopping down necessitates greatly increased exposure time. To obtain depth of field with the largest possible diaphragm opening, a different method of focusing must be employed.

2. Example: the subject requires sharpness from 6 ft to 15 ft. Other distances, if unknown, can be read directly off the scale after focusing separately to the limits required.) Procedure: the focusing knob is turned until both footage values are located opposite (**identical**) diaphragm openings, and in this way the **most favorable** diaphragm opening is obtained, in this case f: 11.

Since the sharp zone in the picture does not end abruptly, but gradually changes to something less sharp, it is generally sufficient to read the depth of field in round figures. With this in mind the scale on the focusing knob has been calibrated for quick and practical use.

If exact figures are desired, these may be found in the table on page 21.

The Depth of Field Table

For normal use the **upper** of the double row of diaphragm figures is used as in the case when an enlargement is to be made later from the entire 2¼ × 2¼ negative. These diaphragm openings are based on a circle of confusion of 1:1400 of the focal length.)

On the other hand if enlargements are to be made from a small portion of the negative (or Rollei negatives), it is advisable to go by the **lower** row of diaphragm openings (circle of confusion = 1:2500).

Explanation: the degree of sharpness required from a negative is exclusively dependent on the magnification of the prospective enlargement and its subsequent viewing distance.

In order to obtain a correct perspective impression at 30° (a comfortable viewing distance) a whole Rollei negative should not be enlarged more than 2¼ × 2¼". Enlargements of this size, viewed at 12", determine the basis for the minimum acceptable sharpness. With this in mind the size of the circle of confusion is computed and the limits of the depth of field ascertained. Negatives made in this way will permit enlargements also to larger sizes, while still retaining the same impression of sharpness. This is because the viewing distance is always correspondingly increased.

With enlargements from portions of Rollei negatives or from Rolleikin negatives, the requirements with regard to sharpness are more critical. In this case depth of field is calculated using a smaller circle of confusion. In practical use the required depth is obtained through the use of a smaller diaphragm opening.

The effectiveness of the scale on the camera itself may be extended in the same manner exactly by using the next smaller diaphragm opening than the one indicated for the desired zone.

If enlargements of very great size are to be made use a diaphragm opening two stops smaller than the one indicated.

Tripod Pictures:			Hand-held Pictures:			
Time Exposure	Slow Speeds		Fast Speeds			
B	1 1/2	1/5 1/10	1/25	**1/50**	1/100	1/200 1/400 sec.

Shutter and Shutter Release

The Synchro-Compur-shutter is a between-the-lens shutter and operates with the above mentioned speeds. 1/50th sec. stands as the most commonly used instantaneous shutter speed with little risk of camera movement. Shutter speeds longer than 1/25th sec. are in general possible only with a tripod. Avoiding unsharpness due to movement: see table p. 23.

The shutter speed values appear in the peep window as **red** figures — read them as denominators of the fraction values, i. e. 25 = 1/25th sec. Intermediate speeds may be set at any points between 1 sec. and 1/10th sec. and between 1/25th and 1/250th sec. Due to a supplementary spring, added resistance will be felt when setting to 1/50th sec. The shutter should be set to or changed from this highest speed **before** cocking by of crank action.

1/500th sec. — set speed first — then cock shutter!

The shutter release is safeguarded by an upward movement of the swinging release guard and unlocked by a downward movement. When the release button is pushed down the shutter opens only after overcoming a slight but distinct resistance. The depressed release button can also be locked in this position for long time exposures. — **A cable release** may be screwed into the release button and can be used whether the release is locked or not.

The camera may be attached to a **tripod** by means of the threaded socket on the bottom. **Caution:** the length of the tripod screw must not exceed 3/16", if longer, employ a washer or spacer to avoid damage to camera. For cameras with continental tripod sockets a reducing bushing is available.

Self-Timer

With cocked self-timer the shutter opens approximately 10 seconds after it has been released. With the exception of Bulb (B) and 1/500 seconds all shutter speeds, i. e. 1/25th to 1/250th sec. may be used.

Operation of Self-Timer (when shutter is cocked): cock self-timer lever until it stops (1), then release.

The shutter and self-timer may be left cocked even when the camera is laid away for short periods of time without weakening the power of the springs.

The Exposure

The correct exposure is dependent upon existing illumination (more exactly: subject brightness) and results from the selection of the proper diaphragm opening and shutter speed. Consequently the following relationship exists:

Depth of Field — Subject Movement
Brightness
Diaphragm Opening — Shutter Speed
Exposure

With the **Rolleiflex**, various settings of diaphragm openings and speeds may be combined as required to obtain the correct exposure. Only under unfavorable shooting conditions are these possibilities limited, so that a compromise solution is sometimes necessary. Nevertheless the following must be kept in mind: under-exposure results in hopelessly lost shadow detail, whereas over-exposure may be compensated for to a great extent by proper processing.

A golden rule for safe exposure:

Always expose for the shadows, rather a bit more than too little!

III. LOADING AND FILM TRANSPORT

The Rolleiflex is loaded with 2¼ × 2¼ roll-film 120 or 8 (1/8 120 cut cassette and delivers 12 exposures 2¼ × 2¼. (see page 29.)

The loading of the camera is confined to a few simple operations: open the back — insert the full film spool — thread the film — close the back. From now on the film transport follows automatically through crank action.

Back

To Open: swing aside the back locking lever at the bottom of the camera (1), lift the clip (2), open back (3), using the clip as a handle.

To Close: with the flat of the hand push the back closed, fold down the clip and return locking lever to full forward position.

Film Pressure Plate Must be Positioned Correctly!

When roll film is employed, the inscription 2¼ × 2¼" must be visible below the film pressure plate. When changing from 120 roll film to 35 mm film, or the reverse, an adjustment must be made according to the film type being used.

To adjust the film pressure plate (1): Press the plate against the back and push it up or down until it stops. When released it must spring forward completely into the normal plane!

Threading the Film (Paper-leader)

After inserting the new film-spool tear the tape seal open and remove it.

1. Thread the beginning of the backing paper **through the rollers** of the film feeder mechanism (important!) and draw it up to the take-up-spool, colored and printed side outwards (1).

2. Push the paper leader through the long slot of the take-up-spool as far as it goes (2).

3. Tighten the backing paper by one spool turn (= approximately ¾ crank turn), making sure that the paper is wound up properly on the take-up spool (3). Close back (with the film pressure plate adjusted according to instructions!).

Film Transport

The correct positioning of the film according to the first and following numbers of the exposure counter is accomplished exclusively by the crank. The correct operation of this is governed by stops:

Depth of Field

Most picture subjects require that acceptable sharpness extend somewhat before and behind the exact distance focused on. Landscapes, for instance, require considerable "depth of field". Two factors influence the extent of the sharp zone: distance actually focused on and diaphragm opening.

In contrast to close-up focusing the sharp zone is many times greater when the lens is focused on long distance:

1. The depth of field increases with the taking distance.

In any case, however, the sharp zone of the picture may be increased considerably by **stopping down** the diaphragm:

2. The depth of field increases when stopping down.

As a practical rule the second alternative is preferable and only in emergency cases should the taking distance be increased because of loss in image size.

The extent of the depth of field at any distance may be read off on the focusing knob.

Depth of Field Scale

On and next to the focusing knob two scales are visible, the movable focusing scale with figures indicating feet and the fixed depth of field scale with the diaphragm values. The diaphragm stops 4–32 are arranged in pairs symmetrically on both sides of the central focusing point ▼. The 5,6 positions are indicated by dots.

The center of each footage figure indicates the correct setting for that distance.

Depth of Field Table (distances in feet)

Diaphragm		5.6		4		5.6		8		11		16		22	
∞		107' 4"		151' 8"		92' 10"		65' 7"		47' 5"		33' 10"		24' 2"	
40		27' 11"	80' 4"	37' 4"	109' 8"	36' 10"	164' 4"	31' 8"	∞	28' 10"	∞	27' 8"	∞	26' 7"	∞
30		23' 11"	37' 4"	31' 4"	46' 8"	29' 10"	40' 2"	27' 8"	34' 4"	26' 10"	33' 2"	25' 8"	32' 4"	24' 7"	31' 8"
25		22' 11"	28' 1"	29' 4"	35' 4"	27' 10"	33' 8"	25' 8"	30' 10"	24' 10"	29' 10"	23' 8"	28' 8"	22' 7"	27' 8"
20		20' 11"	23' 4"	26' 4"	29' 4"	24' 10"	27' 8"	22' 8"	25' 4"	21' 10"	24' 6"	20' 8"	23' 4"	19' 7"	22' 4"
17		19' 11"	21' 4"	25' 4"	27' 4"	23' 10"	25' 4"	21' 8"	23' 2"	20' 10"	22' 4"	19' 8"	21' 2"	18' 7"	20' 2"
15		19' 4"	20' 8"	24' 8"	26' 4"	23' 4"	24' 8"	21' 4"	22' 6"	20' 6"	21' 8"	19' 4"	20' 6"	18' 4"	19' 6"
12		18' 4"	19' 4"	23' 4"	24' 8"	22' 2"	23' 4"	20' 4"	21' 4"	19' 8"	20' 6"	18' 6"	19' 4"	17' 8"	18' 4"
10		17' 8"	18' 2"	22' 4"	23' 2"	21' 4"	22' 2"	19' 8"	20' 2"	19' 0"	19' 8"	17' 10"	18' 6"	17' 0"	17' 8"
9		17' 4"	17' 10"	22' 0"	22' 8"	21' 0"	21' 8"	19' 4"	19' 10"	18' 8"	19' 2"	17' 8"	18' 2"	16' 10"	17' 4"
8		17' 0"	17' 6"	21' 6"	22' 2"	20' 8"	21' 2"	19' 0"	19' 6"	18' 4"	18' 10"	17' 4"	17' 10"	16' 6"	17' 0"
7		16' 8"	17' 2"	21' 2"	21' 8"	20' 4"	20' 10"	18' 8"	19' 2"	18' 0"	18' 6"	17' 0"	17' 6"	16' 2"	16' 8"
6		16' 4"	16' 8"	20' 8"	21' 2"	20' 0"	20' 4"	18' 4"	18' 8"	17' 8"	18' 0"	16' 8"	17' 0"	15' 10"	16' 2"
5		16' 0"	16' 4"	20' 4"	20' 8"	19' 8"	20' 0"	18' 0"	18' 4"	17' 4"	17' 8"	16' 4"	16' 8"	15' 6"	15' 10"
4.5		15' 10"	16' 2"	20' 2"	20' 6"	19' 6"	19' 10"	17' 10"	18' 2"	17' 2"	17' 6"	16' 2"	16' 6"	15' 4"	15' 8"
4		15' 8"	16' 0"	20' 0"	20' 4"	19' 4"	19' 8"	17' 8"	18' 0"	17' 0"	17' 4"	16' 0"	16' 4"	15' 2"	15' 6"
Diaphragm		5.6		4		5.6		8		11		16		22	

Speed of Moving Subjects and Shutter Speeds

Miles per hour approximately						
2 mph	4 mph	12 mph	30 mph	40 mph	120 mph
Examples: Pedestrians	Runners Moving car	Bicycles Windy	Light Athletics Stormy Surf	Automobiles Railway Trains Racing	Motor Racing

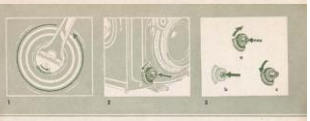
Distance (yards)	2 mph	4 mph	12 mph	30 mph	40 mph	120 mph	Distance (yards)
40	1/25	1/50	1/100	1/200	1/250	1/400	40
15	1/25	1/50	1/100	1/200	1/250	1/400	15
8	1/25	1/50	1/100	1/200	1/250	1/400	8
4	1/25	1/50	1/100	1/200	1/250	1/400	4

Moving Objects require short shutter speeds in order to be reproduced sharply. For this purpose the table contains computed minimum shutter speeds depending on the factors: speed, distance and direction.

Taking distance: the particulars on the **left** stands for sufficient sharpness (1:1400), the particulars on the **right** for increased sharpness (1:2500). In spite of these normally correct figures, it is often possible in actual photography to use longer shutter speeds. This is because the eye tolerates slight unsharpness by giving an added impression of speed.

Direction of movement: (see illustration)

A short arrow → taking direction ↳ up to 10°, ↗ up to 30° and ↑ up to 90° to the direction of movement).



Setting the shutter speed: turn the small, knurled wheel while depressing the arresting slide simultaneously.

Cocking the shutter with the film transport automatically through crank action (page 28).

Cocking without film transport (for double exposures, possible only when camera is loaded with roll-film; if plate adapter is used: cock shutter in the usual way): turn release ring at crank base as indicated by arrow, then turn crank one **complete** left revolution until it stops (1).

Instantaneous Exposures: unlock release button and depress it gently until it stops (2).

Time Exposures: set shutter to "B", unlock release, push it in, and keep it depressed for the duration of the exposure. For exposures from three seconds onwards: use a cable release!

Long Time Exposures: set shutter to "B", depress release button slightly (without opening the shutter!) and lock it in this position (3a). Exposure: depress release completely (3b). Release safety guard to terminate the exposure (3c).

The Exposure Table

The table on the back of the camera is based on the speeds of the two most commonly used types of film: the upper scale is used with films rated at 100 ASA (21/10° DIN), and the lower scale is used with film rated at 50 ASA (18/10° DIN). Conversion of the table for use with other film speeds is possible, if it is remembered that half the ASA rating (or minus 3/10° DIN) means that double the exposure is required (see page 22).

For the two months immediately bracketing the summer months or if the sun is lower in the sky or if the sky is overcast, double the indicated exposure. If more than one of these conditions prevail, double the exposure for **each** factor.

Exposure in the wintertime around noon: with snow — use the normal values of the table, without snow — multiply exposure by 4.

The table, although not always exact, has nevertheless proved itself so good that serious exposure errors are generally avoided. In difficult cases or for greatest accuracy, it is advisable to use a photoelectric exposure meter.

Film Reminder in Focusing Knob

In order to know with which film material the camera was last loaded two adjustable discs, located in the front part of the focusing knob, are rotated by means of a coin in the center. If turned to the **right** (1) it indicates the **speeds** 8 to 160 ASA (10/10° to 23/10° DIN), if turned to the left (2) it indicates the **film types** Ortho, Pan, Color daylight film 3) and Color artificial light film 12..

The back is generally removed only when replaced by the plate adapter.

To Remove: open back fully (4) and swing the locking lever on the right side back hinge (crank side) in the same direction until it stops (5). Slip back out of the upward hinge (6).

To Attach: insert detached back first into the left and then into the right hinge (with locking lever in the upper position).

Protect the open camera against prevailing dust and dirt and clean it occasionally with a soft camel's hair brush!

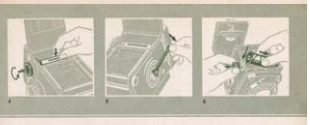
Never change film in direct sunlight, utilize at least your own body's shadow!

Note: for the Rolleiflex the following adapter accessories are also available: **Rolleikin 2** C Attachment for 36 exposures 24 × 36 mm on 35 mm film. **Film Back Adapter** for separate exposures 2¼ × 2¼" on plates or cut films 2¼ × 2¼".

Inserting the Film Spool

In the factory-new camera the empty spool (take-up spool) is already in position. After removal of the exposed film the just emptied spool becomes a take-up spool, and must be transferred to the upper spool-chamber. The end with the slot goes to the right engaging the winding key of the film transport mechanism (5).

Both spools are held on the left hand side by spool knobs. The bearing pins are withdrawn when changing spools by pulling out the knobs.



The upper knob (for the take-up spool) also serves as a Rolleikin counter knob (further details in the pamphlet "Rolleikin-Instructions").

To insert the Empty Spool: first fit the spool over the winding key on the right (crank side) and pull out the guide knob (7). Push the spool down on the left applying slight pressure, so that the knob may snap back into place fully (8). It is then necessary to turn the crank until the long slot in the empty spool comes uppermost (9).

Note: when using the adapter the empty 120 (or 8 2) spool is removed from the camera. However, it must be handy retained especially on trips, since otherwise a new roll-film cannot be loaded into the camera.

To insert a Full Film Spool: in the same way as applies to the take-up spool (6). The pointed end of the backing paper must point in the direction of the take-up-spool chamber, so that the colored side of the backing paper remains on the outside.

Threading the Film (Paper-leader)

After inserting the new film-spool tear the tape seal open and remove it.

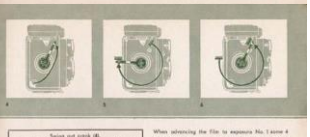
1. Thread the beginning of the backing paper **through the rollers** of the film feeder mechanism (important!) and draw it up to the take-up-spool, colored and printed side outwards (1).

2. Push the paper leader through the long slot of the take-up-spool as far as it goes (2).

3. Tighten the backing paper by one spool turn (= approximately ¾ crank turn), making sure that the paper is wound up properly on the take-up spool (3). Close back (with the film pressure plate adjusted according to instructions!).

Film Transport

The correct positioning of the film according to the first and following numbers of the exposure counter is accomplished exclusively by the crank. The correct operation of this is governed by stops:



Swing out crank (4), turn it until it stops with one continuous swing (5) and then back again until the next stop (6).

It is now locked, until the automatically-cocked shutter is released. The simple rule then reads:

If the crank can be turned, it must be turned — once in each direction until it stops, until it locks!

When advancing the film to exposure No. 1 come 4 to **5 complete** crank turns are required. During the last turn a slight resistance of the mechanism must be overcome as the counter moves from 0 to 1. If it should happen that the crank revolves starting position when it stops, reverse direction one full turn, as that it locks!

During continued film transport the amount of crank travel decreases gradually to about a half turn.

1 2 3

When making exposures in rapid succession it is unnecessary to fold down the crank each time. It remains locked in its starting position, ready for the next film advance, with a slight pressure of the thumb keeping it against its stop.

If longer intervals occur between exposures the question could arise, has the film already been advanced and the shutter cocked? The crank gives the answer immediately:

Only if locked is it "ready to shoot"!

To Remove the Film

After the 12th and last exposure four complete crank turns are enough to wind off the rest of the backing paper (1).

To Remove: open the back in the shade, pull out upper spool knob and remove the film from the same side (2). Fold under a good portion of the backing paper (for easier opening when developing) and seal (3). Put the exposed film back into the light-proof protective cover of the original package!

IV. FLASHLIGHT TECHNIQUE

In modern flashlight technique the camera shutter takes over the task of firing the bulb electrically at the right moment. In this way instantaneous flash exposures are possible with a hand-held camera.

The Synchro-Compur shutter in the Rolleiflex is, for this purpose, equipped with electrical contacts. The contact may be adjusted to the required delay of the flash lamps by means of the Synchro-lever:

the **X-contact** presents the simplest type of contact (zero-delay). It is required for zero-delay electronic flash units (without relay) and a few flash lamps.

The **M-contact** means full synchronization. It works with most flash lamps and the electrically fired flash powder (capsule flash). The most important advantage of the M-contact: with certain flash lamps it may be employed at the shorter shutter speeds even including 1/500th sec. Due to the full synchronization the shutter is always open when the flash emitted by the lamp reaches its peak intensity.

Thus all types of instantaneous flash exposures are possible with the Rolleiflex.

The selection of flash lamp-type depends on the light output required by the subject. Many makes are available in three groups (normal, medium and high light output). The selection is dependent on the taking conditions, especially as to whether a room of shallow or great depth is to be illuminated.

Selection of M-X lever position, applicable speed range and exposures can be learned from the instructions of the different flash light products. For the best known makes the table on page 36 contains the necessary information and the permissible shutter speeds.

Connecting Flash Unit: push flash cord plug into the socket on the camera.

To Remove Flash Cord: move locking lever up or down and pull out the flash cord plug.

When setting contacts X or M:
Swing Synchro-lever a full 180° until it stops!

Flash-Contact and Permissible Shutter Speeds

Flash light source	Contact	Shutter Speed: Fastest / Recommended / Slowest
I. Electronic Flash	X	1/250
II. Flash Lamps	X	1/100
	X	1/50
	X	1/25
	M	1/25
	M	1/50
	M	1/50
	M	1/25
	M	1/25
III. Capsule Flash	M	1/25

Explanation of the Table

The "Contact" column indicates the correct setting of the M-X lever for each lamp type.

The "Shutter Speed" column shows the permissible speed range:

Center: the recommended shutter speed includes practically the entire light output of the flash lamp. This assures the maximum illumination as well as the smallest diaphragm (for greater depth of field). The following applies as a general rule:

Use the standard recommended speed together with the correct setting of the M-X lever for the lamp in use.

Left: the fastest speed indicates the limit to which the shutter may be set. For lively action or sports subjects, the faster speeds are employed.

Right: the exposure time may be increased to the slowest speed (1 second or even time exposures), if, in addition to the flash, it is desired to make use of existing light. In such cases the total amount of light from all sources must be considered in choosing the diaphragm opening.

The Effective Exposure Time (as indicated in the table by means of **colored** ink) is not in each case identical to the shutter speed, but depends on the portion of the flash lamp light output utilized.

With X-Contact the duration of the flash itself is actually shorter than any of the permissible shutter speeds. Therefore, the duration of the flash (figure shown in parenthesis) is the effective appropriate exposure time and the diaphragm opening must be the same regardless of the shutter speed selected.

With M-Contact the shutter speeds, from "fastest" to "recommended" fall within the duration of the flash, they therefore represent the actual exposure time and if the shutter speed is increased, the diaphragm must be opened accordingly. Only when slower shutter speeds are employed is the fully utilized light output equal to the actual exposure time, and this is the same as the recommended speed.

The illustration should make the utilization of the available flash light still more obvious: the white symbols represent the flash, and their size, the utilized light at the shutter speed employed.

How the Flash Contacts Work

[illegible]

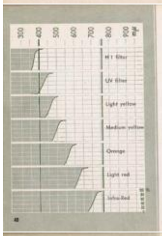
Tips on Flashlight Photography

[illegible]

fact that the picture is being taken "against-the-light", in full sunlight. The fill-in light must be kept at a lower intensity level than the main source of illumination, otherwise the strong flash will give an unnatural effect, not at all like daylight. Too strong a flash might even cause an apparent underexposure of the sky or the area not reached by the light. Electronic flash units are particularly well suited for use as fill-in lights when shooting color sports pictures. Use smaller lamps or keep them at greater distance.

7. Reducing the blinding effect of flash: [illegible]

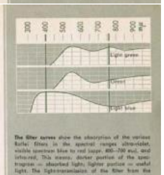
Rolleiflash



V. TIPS ON PICTURE-TAKING

Landscapes

[illegible]



Portraits

[illegible]

Children

[illegible]

Animals

[illegible]

Snapshots

[illegible]

1/100 sec.	Diaphragm opening f:8	
Short distances	Medium distances	Long distances
12 ft.	20 ft.	30 ft.

[illegible]

Sports

[illegible]

Theatre and Music-Hall

[illegible]

Night

[illegible]

Copying

[illegible]

Rolleipol

Shiny Surfaces

[illegible]

Plants

[illegible]

Color Photography

[illegible]

Multiple Exposures

The possibility of cocking the shutter without advancing the film (page 25) permits double or multiple exposures. Here are a few trick possibilities: multiple portrait images of the same person. Pictures of "doubles". Penetrations: technical apparatuses in closed and open presentation.
Action studies with flash: moving machine parts in various working positions. Publicity: photographs super-imposed on text, combination photos.

Tone separations: multiple exposures with different filters. Time and growth studies: phototropism, crystallization. When pictures are taken from the same position: completely steady tripod, immovable position of camera. Cable release! Dark, unlighted background simplifies photographing objects which are placed side by side (reduces the danger of interfering background). To facilitate composition, fashion paper masks for ground glass.

Panorama Pictures

Special landscape pictures of distant views, which include a large portion of the horizon, are made possible with the panorama head when used in conjunction with a tripod. Either a few succeeding exposures can be made for normal panorama purposes or up to ten can be taken in order to cover the complete (360°) horizon. The separate pictures can be joined so that nothing is missing. When exposing: watch for any change in illumination and take pictures quickly if clouds are moving briskly.

Rolleigrid Lens

Covering the ground glass screen with this new field lens (Fresnel type) will considerably brighten the image at the edges. Critical focusing is easily accomplished through the clear center portion of the grid.

To install: place the Rolleigrid with the narrow front edge against the ground glass screen, let it slide forward under the retainer tab, then drop the rear end and fasten by means of the push-button at the rear of the focusing hood (p. 16). The condenser must be placed on the ground glass with the grooved side down. — **To remove:** turn the camera over, push the button, letting the Rolleigrid fall out of the hood.

Pictures Through the Microscope

When a microscope is focused by someone with normal eyesight, the eye sees the image as if it were at infinity. Consequently, the Rollei, also focused at infinity, can simply take the place of the eye over the microscope in order to record the image on film.

Microscope and camera should be mounted on firm stands, without mechanical connections. Place the camera so that taking lens, focused at ∞, is brought as close as possible to the ocular. Check optical axis carefully: film plane should be parallel to surface being photographed. For full coverage of 2¼ × 2¼ use wide angle ocular, however, sufficient coverage for Rolleikin negative is to be had in any case. Framing through view finder is unnecessary. Do not stop down since this has no effect on exposure. Factors affecting exposure are illumination and transmission of the objective, to be ascertained through tests. Apochromatic micro-lenses are best, particularly with color film. In shooting black and white with these lenses, use ortho material and green filter. Generally interesting are micro-pictures of crystallized chemicals through Rolleipol filter in conjunction with another pola-filter over microscope condenser.

Care of the Rolleiflex

A precision camera demands care in handling. Protect it against moisture, dust, sand, strong sunshine, hard blows or falls. First safeguard: the ever ready case. Second safeguard (when not in use while traveling): a rubber bag to guard against water, sand or snow. Carry camera around neck to minimize transportation shocks. Keep all parts clear and clean lenses with a soft camel's hair brush or doeskin. Although the mechanism is not unduly sensitive to cold, some condensation may form on the lenses when the camera is brought in to a warm room from outside in cold weather. Do not wipe off — let moisture evaporate. In the tropics arrange to keep the camera, when not in use, in an air-tight container.

In Case of Damage to the Rolleiflex

The task of repairing major or minor damage is the special province of the expertly trained mechanic. Franke & Heidecke maintain their own special workshop in which all repairs are done with precision at nominal prices. Abroad, apply to photo dealers and factory representatives for full information.

Speed of Photographic Emulsions

(Comparison values approximated)

Relative exposure	DIN	Scheiner (Europe)	ASA (BS)	General Electric	Weston
8	7/10	18	4	4,5	3
7	8/10	19	5	—	4
5	9/10	20	6	7,5	5
4	10/10	21	8	9	6
3,3	11/10	22	10	12	8
2,7	12/10	23	12	15	10
2	13/10	24	16	18	12
1,7	14/10	25	20	24	16
1,3	15/10	26	25	30	20
1	16/10	27	32	36	24
0,8	17/10	28	40	48	32
0,67	18/10	29	50	60	40
0,5	19/10	30	64	75	50
0,4	20/10	31	80	100	64
0,33	21/10	32	100	120	80
0,25	22/10	–	125	150	100
0,2	23/10	–	160	200	125
0,17	24/10	–	200	250	160

The characteristics of the different rating systems do not permit a direct mathematical conversion. However, the approximate comparison values of the table offer sufficient information for most practical purposes.

The Practical Accessories for the Rolleiflex 2.8 C

Code:		Code:	
Berse	Ever Ready Case for Rolleiflex 2.8 C	Frozze	Complete Plate Adapter Equipment comprising: 1 Plate Adapter, 3 Slides, 1 Focusing Screen Slide, 1 Leather Case for 2 Slides
Coobe	Lens Hood	Faapt	Plate Adapter
Ceiba	Rollei Yellow Filter, light	Fosli	Slide
Ceimi	Rollei Yellow Filter, medium	Fopla	Cut-Film Sheath
Celin	Rollei Green Filter, light	Focos	Leather Case for 2 Slides
Ceeon	Rollei Green Filter	Fofoc	Focusing Screen Slide
Cesky	Rollei UV Filter	Rolco	Rolleikin 2 C
Coora	Rollei Orange Filter	Foead	Panorama Head
Coubi	Rollei Red Filter, light	Fehod	Extension Hood
Cobla	Rollei Blue Filter, light	Fogri	Rolleigrid Lens
Cehaz	Rollei H 1 Filter (UV Filter for Daylight Color Photography)	Cedis	Rollemeter C Range Finder
Cefir	Rollei Infra-Red Filter	Cooyn	Rolleiflash C Attachment (Flash-Comb.
Cotuu	Rolleisoft 0	Boein	Basic Case for 1 Rolleiflash + 1 Rollei-
Ceton	Rolleisoft 1	Cekab	Extension Cord for Flash-Attachment 10 ft.
Cetur	Rolleipol	Flaco	Extension Flashholder Rolleiflash-Comb. with Connecting Cord 80 in.
Copun	Rolleinar Lenses, set 1 (40-18½ in.)	Tribo	Extension Cord for Rolleiflash-Comb. 10 ft.
Coodo	Rolleinar Lenses, set 2 (20-12½ in.)	Bliko	Flash Connecting Cord 32 in.
Koeco	Leather Case containing: 1 Lens Hood, 2 Sets of Rolleinar Lenses and your choice of 5 Filters		
Ceiee	Leather Case (without contents)		

To avoid errors when ordering accessories please specify camera-number.

Full information on the use of Rollei accessories in the booklet "The Practical Accessories".

Table of Rollei Filters

The filter factors indicate average values which, however, may be changed according to the particular type and make of film used and the light conditions.

Rollei Filter	Use	Filter Factor Ortho	Filter Factor Pan
Light yellow	Landscapes, snow, clouds. Renders yellow and green lighter, blue darker.	3 x	2 x
Medium yellow		4 x	3 x
Light green	Landscapes, snow, clouds. Renders green lighter, red (complexion) and blue darker. For pan emulsions.	3 x	2 x
Green		4 x	3 x
Orange	Hazy distant views. Renders yellow-red lighter, blue darker, distant objects clearer.		3–7 x
Light red	Hazy distant views. Renders red lighter, blue-green darker. Gives stronger effects than Orange Filter.		4–10 x
Light blue	Artificial light. Renders red darker. For ultra-pan emulsions.	1.5x	1.5 x
UV	High altitudes above 6000 feet. Seascapes. Eliminates ultra-violet rays which reduce contrast.	1.5 x	1.5 x
Infra-Red	Special filter for infra-red emulsions. Transmits dark red above 700 mμ and infra-red.	*)	
H 1	UV-Filter, especially designed for long distance color photography. Absorbs ultra-violet rays, subdues predominance of blue and cuts aerial haze in distance shots.	No increase of exposure	

*) Exposure depends on the type of emulsion used and must be determined by tests

Focal Length and Focusing-Range with Rolleinar Lenses

Rolleinar Lenses	–	1	2
Focal Length	80 mm	75 mm	72 mm
Focusing-Range (in inches)	∞–40	39½–18½	19¾–12½

Field-Size and Scale of Reproduction

Focused Distance	31½ in.	19¾ in.	13 in.
Field-Size (in inches) 2¼x2¼	22x22	13¾x13¾	8¾x8¾
Field-Size (in inches) Rolleikin	9x13½	5½x7¾	3¾x5¼
Scale of Reproduction approx.	1:10	1:6,5	1:3,9

Depth of Field with Rolleinar Lenses

Rolleinar	1		2		f/Stop
Focused Distance (in inches)	31½	25½	19¾	13¾	
from / to	29½ / 33½	22½ / 24¾	18¼ / 20½		5,6
from / to	28¾ / 34½	22¼ / 25¼	18¾ / 20¾	13½ / 14¼	8
from / to	28 / 35¾	21¾ / 26	18¼ / 21¼	13 / 14¾	11
from / to	26¾ / 38½	20¾ / 27¼	17¾ / 22	12¾ / 17½	16
from / to	25½ / 41½	20 / 28¾	16¾ / 22¼	12½ / 15¾	22

Depth of Field (in inches)

Taking-distance measured from lens panel to object. Permissible circle of confusion in this special case (due to the large image and less need for enlarging) — approx. 1/1000. For increased sharpness further stopping down is required.

FRANKE & HEIDECKE
BRAUNSCHWEIG

Rolleiflex Rolleicord

Printed in Germany

Rolleiflex

2.8C

IN PRACTICAL USE