A FOUNTAIN PHOTOBOOK

Rollei

MANUAL

by
ALEC
PEARLMAN
FIBP · FRPS · FRSA

3RD EDITION

THE COMPLETE
BOOK OF TWIN-LENS PHOTOGRAPHY

CHAPTER I

THE SCOPE OF THE ROLLEI

COMPLETE understanding between the photographer and his camera is an essential, and this book is written in an endeavour to give one of the largest bodies of camera users in the world the necessary knowledge for complete confidence in and respect for his apparatus.

All the models of the world-famous Rolleiflex and Rolleicord cameras have the same governing principles, a square format, a reflex viewing screen accurately coupled to the taking lens, a between-the-lens shutter, an eye level or direct vision viewing system. They are precision built instruments designed for years of trouble-free service and it is astonishing indeed to find just how many of the earliest models are still in regular use. Their optical systems are all sound, well tried formulae, and no flights of fancy have been allowed to interfere with the sane judgment of the manufacturers. Their guiding principle has always been that only the best should be considered good enough for the 'Rolleis' as they have come to be affectionately known by the countless thousands of Rolleiflex and Rolleicord devotees.

Before discussing the various characteristics of the camera, it should be thoroughly understood that the perfect camera has never been, and will never be, invented. What pleases one owner would not please another; what one man wants to do with a camera, another finds a waste of time. Furthermore there is no such thing as a universal camera and the Rolleis are *not* universal cameras, but I can emphatically state that they will tackle a larger number of different assignments than any other single camera.

The scope of any instrument from miniature camera to view camera will be increased by its various accessories, and I will go still further and say that with comparatively few accessories the Rollei will do twice as many jobs as any other instrument with a larger number of 'bits and pieces' weight for weight and bulk for bulk.

There are many spheres in which the camera would prove itself a poor tool, and no man would choose it for the job if given a choice. But I have seen astonishing results of almost impossible subjects taken with the Rollei only because it happened

Fig. 1

The Modern Rolleiflex Automat with built-in Exposure Meter.

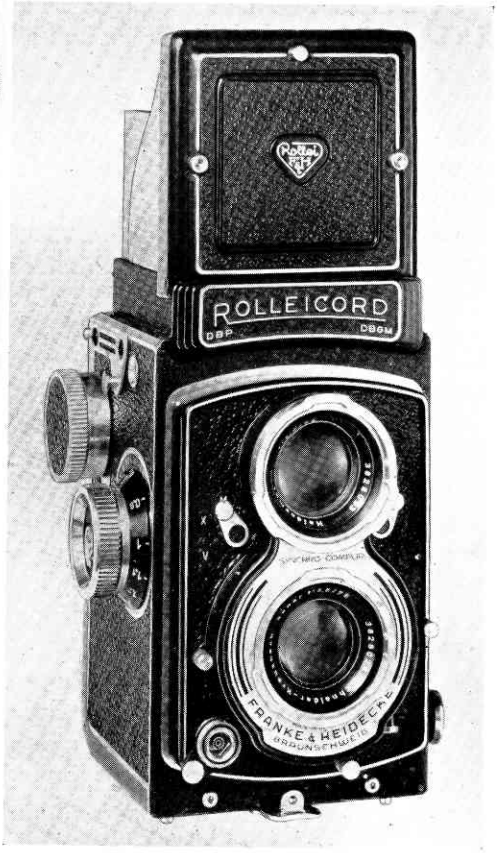


Fig. 2

The Rolleicord V.

to be the photographer's one camera and he was compelled to carry out the work there and then with his available equipment. In all such situations the Rollei can be relied upon to give as good an account of itself, if not a better one, than any other general camera designed for conventional work. It might prove boring to give a list of unusual uses but two recent examples might be quoted: (1) the amazing series of under-water flashlight colour photographs taken under the sea by both Dr. Hans Hass and Commandant Jacques-Yves Cousteau, at depths up to 300 ft.; (2) the fact that a Rolleiflex accompanied the expedition which conquered Mount Everest in 1953 under the leadership of Brigadier Sir John Hunt of the British Army.

Format

The Rollei takes a square picture – or almost. The actual measurements of the negative of the modern instrument are 59 × 55 mm., generally referred to as $2\frac{1}{4}'' \times 2\frac{1}{4}''$ or 6 × 6 cm. The square format, and this size in particular, is being adopted by more and more of the world's best-known manufacturers and by now it does not need to justify itself or have any excuses made for it. There are in fact more cameras of the square format being produced to-day than any other shape.

The 'old school' which was largely brought up on a one to one-and-a-half relation between the horizontal and vertical sides of their negatives and who at one time argued so strongly against the square negative, are now as convinced of its advantages as the box camera user who insists on 12 pictures on a roll of film because of economy and because of simplicity in using the camera. Now that we have superb quality in photographic emulsions, the enlarged print is the order of the day and the large contact print is fast disappearing. It is a matter of general agreement that some enlarging will be carried out and the final trim and format is often decided at a later date – perhaps even long after the negative was exposed.

Even with the bulkier $3\frac{1}{2}'' \times 2\frac{1}{2}''$ instruments which have to be turned for each change of view, many are the times that their users will admit that they have taken a vertical 'piece' out of a horizontal negative or that only the centre of a vertical negative had been used to produce a 'landscape' print. Just how important the square format can be when taking the unexpected shot or the ever-changing group or view can be readily appreciated. Even when the whole negative is used, the square or almost square picture can be very pleasing and for some subjects which do not compose well as verticals or horizontals, it is an essential compromise.

Rollei Sizes

Apart from a number of smaller cameras produced between 1931 and 1939, all Rollei models take the $2\frac{1}{4}'' \times 2\frac{1}{4}''$ or 6 × 6 cm. size. The above-mentioned few were generally known as 'Baby' Rolleiflex's and then later, as the taking aperture widened to f/2·8, became known as the 'Sports' Rollei. These smaller cameras used 127, 27, or

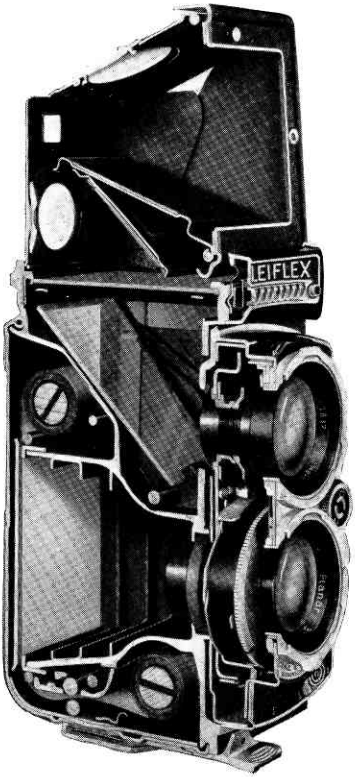


Fig. 3

Cut-away view showing the interior of the Rolleiflex and the arrangement of film, mirror, screen and viewfinders.

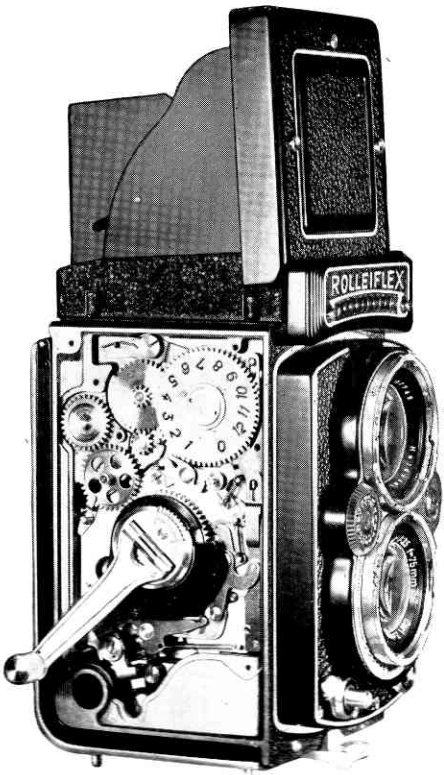


Fig. 4

The Rolleiflex Automat with side panel removed showing some of the intricate winding, numbering and spacing mechanism.

A-8 size film and took 12 pictures 4 × 4 cm. or $1\frac{5}{8}'' \times 1\frac{5}{8}''$ (actually 41 × 39 mm.). The standard size camera, of course, takes 12 pictures on the 120, 20, or B-2 film, except the earliest models which were made to use the old 117, 17 or B-1 size film which carried only six exposures. Although this size of film has not been in production for many years, large numbers of these early cameras continue to give good service in various modified forms. Some have had their take-up key and film spindles altered to accommodate the slimmer 620 size film and now produce the usual 12 pictures just like their proud successors.

The Reflex Screen

One of the most satisfactory ways of sighting through a camera is to see the image on a ground-glass screen at the back of the apparatus, in the same position as the plate or film would normally occupy. This method, however, has the great disadvantage that the screen must be removed and a plate substituted before a photograph can be taken, with the consequent loss of time, necessity for a tripod, and the possibility of a change in position, and therefore in focus, of the subject viewed. The evolution of camera design produced the single lens reflex camera as the practical answer to this drawback, and in this type of apparatus the sensitized material was ready for exposure, whilst the view was seen and focused on a ground-glass screen at the top of the camera. Between this and the lens was interposed a 45° angle mirror, the lens-plate distance equalling the lens-mirror-screen distance. At the moment of exposure, the mirror swung upwards out of the field of the lens and at once obscured the ground-glass screen, releasing the shutter after a brief delay. This system was a great improvement on the earlier method, except for certain mechanical and psychological problems which were then introduced. An element of shock and vibration was caused in the camera, which often resulted in unsharp pictures due to vibration and more disturbing still, at or before the most important moment the photographer was robbed of his view and was left contemplating a black square. Then followed an 'empty space' of time before the shutter was actually fired. This method, though still in use in many refined forms, continues to suffer from most of these disadvantages.

The Rolleiflex and Rolleicord cameras use the reflex principle, but there is no disappearing image and no crash of the swinging mirror. The view is seen on a hooded screen before, during and after exposure, and with such continuity, the photographer can choose the moment of release exactly to his requirements. He need not take his eye off the screen and can quietly and decisively proceed to the next picture without any appreciable time lag to produce, if necessary, a whole series in a picture story. This 'magic' is made possible by the twin lens technique. This is, in effect, two cameras (see Fig. 5), the first being a simple camera composed of the lower or taking lens and the film in a light-tight box; the second consisting of the viewing lens, the mirror and

Diagrams showing the paths of light through the taking and viewing systems in both screen and direct vision viewing and focusing of the Rolleiflex.

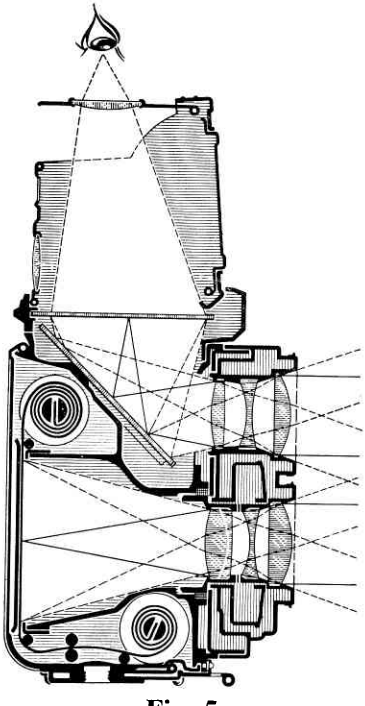


Fig. 5

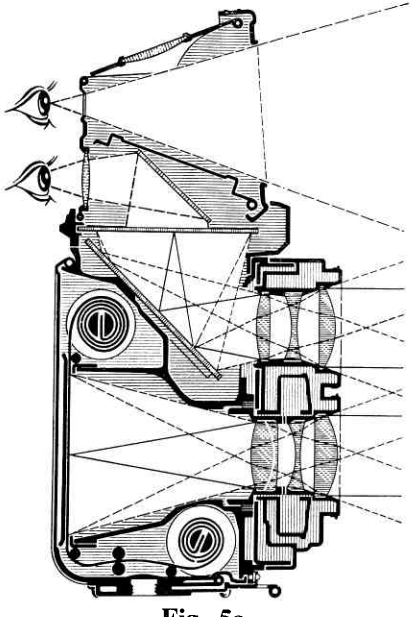


Fig. 5a

the ground-glass screen, just like our old-type reflex camera. The lenses of these two 'cameras' are placed very close together and are in permanent mesh and move in and out of focus together. They are also accurately matched for focal length and for 'progression' of focus, and it is in these most important points that many would-be imitators of the Rollei principle have failed. The Rollei cameras use lenses that are so accurately matched that the degree of error between them is less than 1 per cent. Such accuracy is only possible because the manufacturers insist on a very high specification and small tolerance limits in both taking lenses and viewing lenses, and this fact, coupled with very high standards in their inspection departments during manufacture, is in fact the key to the Rollei supremacy.

Parallax

Because the viewing lens is placed above the taking lens, a very slight displacement of image takes place when one view is compared with the other at the closer distances. This is called parallax error and becomes very noticeable at the closest distances; it does, of course, exist in all rangefinders, or optical viewfinder types of cameras, but is

very rarely considered unless the camera is working at 3 ft. or less from the subject. Because, however, the Rollei cameras can be used as close as 32 inches without accessories, some provision has to be made, and in all recent models this is corrected automatically on focusing, by a sliding mask which gradually alters the position of the image on the top of the screen as the focusing knob is turned. This method has been used in one form or another since approximately 1936. The earliest models, however, used a screen the size of which was some 3 mm. smaller in vertical dimension than the actual picture taken, so that a little more appeared on the negative than was seen on the screen at normal distances. At close distances, therefore, adequate correction was automatically given.

Focusing

The actual screen of the Rollei cameras is of very fine grain hand-ground glass, ruled with fine lines for easy composition and for giving scale to images viewed. A 4× magnifier is built into the wall of the hood which springs to a horizontal position over the centre of the screen at a touch. This enables the eye to be brought into position over the magnifier and at a turn of the focusing knob the subject can be accurately focused on the fine screen.

It is often said that in this type of system uncertainty can arise as to when an image is really sharply focused because of the depth of field (see page 83) of the viewing lens. Whilst it is true that a sharp image will persist over approximately ·025″ of forward or backward travel of the camera front, the possibility of error has been reduced to the point where it makes no material difference by (a) making the viewing lens of wider aperture than the taking lens and (b) by hooding the top of the camera to exclude extraneous light, so giving greater contrast to the image viewed, and (c) in the latest models by coating the viewing system. This reduces internal lens reflections and gives a brighter and still more contrasty image on the screen.

Automatic Action

Apart from the very earliest models all the Rolleiflexes have a greater or lesser degree of automatic operation, from the earlier model with its film wind to a frame stop, to the most recent interlocked, shutter-set and film advance models with light value scale and built-in Exposure Meter. The present series of both 'Flexes' and 'Cords' now load their films with the minimum of attention from the photographer: one has simply to thread the film in the prescribed manner and wind the knob or crank the handle. Without any special attention of hand or eye to the camera, No. 1 frame of film comes automatically into the focal plane. All models of the Rolleiflex 'Automat' are, of course, the most advanced in design and their loading through a 'feeler' mechanism is almost magical in its precision and accuracy. The film is merely threaded and after

a few turns of the crank handle it is ready to expose with the numbering mechanism at No. 1 and the shutter cocked for immediate action.

Similarly, at the end of the roll of film the mechanism automatically disengages itself after picture No. 12 has been taken and the film can be wound off and reloaded with a fresh one in the space of only a few seconds.

Plate and Cine Film Equipment

For the specialist in various fields, the Rollei offers the use of a great variety of sensitized materials. It is not confined only to the use of roll films, but plates and flat film can be used for both black and white and colour photography by means of the Plate Back attachment. This permits the use of a back ground-glass focusing screen for very exacting work and single metal dark slides can carry all types of special emulsions. Once this special back is in position, roll films can be used alternatively with the plates by means of a cleverly designed pressure plate slide which avoids the necessity of changing backs in work of a mixed or varying nature.

All types of 35 mm. cine film can also be used in the camera by means of the cine film attachments which have now been marketed for many years and which can in fact be used on all $2\frac{1}{4}'' \times 2\frac{1}{4}''$ (6 × 6 cm.) models, except the earliest Rolleiflex, although various modifications have been made in the design from time to time. The earlier models need a special back but the more recent models have the dual purpose back already incorporated and with these, only finder and frame masks are needed as well as interchangeable spool holders. Once these accessories are in position, a still wider variety of emulsions in black and white and colour materials become available to the Rollei owner. The use of cine film can be indispensable for many specialized applications, including nature work, series pictures and microfile copying, as well as such subjects as portraiture, where the long-focus effect given by the 3″ (75 mm.) lens on a $1'' \times 1\frac{1}{2}''$ (24 × 36 mm.) frame, coupled with the possibility of up to 36 exposures, is of special advantage.

Filters, Rolleinars, Rolleipars, etc.

Special filters of good quality glass, square lens hoods and close-up lenses have been marketed since the first Rolleis appeared, but since 1937 all Rollei accessories for the lenses have been made on a bayonet principle so that they cannot fall or be knocked off accidentally whilst in use, however rough may be their treatment. Filters, close-up lenses, parallax compensating devices for these, soft focus lenses (Rolleisofts) and lens hoods all lock securely into position and stay wherever they may be placed indefinitely – yet with half a turn and a light pull, one or all can be removed in a fraction of a second. This applies to both the viewing and the taking lenses and their various accessories. All these accessories are now ground, polished, coated and mounted under the same roof as the cameras and the highest quality is thereby assured.

Disadvantages

It has already been stated that the Rollei, like any other camera, is not a universal camera; in fact such a thing – even in these enlightened times – is still unknown. There are, therefore, certain subjects which are outside the scope of the Rollei and should not be attempted with it. For example, in view of the fact that the Rollei has no rising front or swing movements, true architectural work should not be attempted, although some small degree of rise, cross and drop front can be simulated by the correct use of the Rolleipar (see page 122). Better correction of converging verticals can be carried out at the enlarging stage and this has its limitations. Contrary to the usually held view, the Rollei can be used for photomicrography in conjunction with a microscope, simply by placing the camera lens as close as possible to the eyepiece. Low power macro work can also be carried out very successfully with the assistance of the close-up lenses and the enlarger.

The Rollei has no interchangeable lenses, with the exception of the Tele-Magnar f/9 which was only produced for a very limited period in 1939 and no great number were ever marketed. This also applied to the Duonar 2× produced in 1953 by the Carl Zeiss Organization in Jena and marketed by Franke and Heidecke for quite a short period. Their use is very limited and although full details are given on pages 143-4, generally speaking the camera must be considered as having only one taking lens.

This, of course, has a number of advantages, as well as disadvantages – there are no spare lenses to lose or damage when they are carried on location, no time or pictures are lost whilst changing lenses and there is no fumbling or indecision as to which lens should be used. Furthermore, no dust or grit is able to enter the camera via the lens panel and there are no lens mounts to wear and alter their focus.

Rollei Lenses

Rollei lenses are all high quality anastigmats, made to work at a wide aperture and the fairly wide angle of view of 53°, but because of the high quality of these lenses and the extraordinary resolving power of which they are capable, it is possible to use small portions of the negatives and still obtain the finest possible results. The limit is in fact set by the grain of the film, and not by the resolving power of the lens. The writer has often used an area of $1'' \times \frac{3}{4}''$ (25 × 18 mm.) and enlarged that area to no less than $20'' \times 16''$ (50 × 40 cm.) and produced prints to the highest exhibition standards. This represents the approximate equivalent of using a 17 cm. lens, so one can safely say that the standard Rollei lens covers an angle of acceptance from 53° to about 20°; and even a smaller angle can be assumed and a still smaller part of the negative used, provided large 'blow-ups' are not required.

Any camera can only be as good as its lens and this indeed is one of the finest points of all the Rollei cameras. The manufacturers have very wisely set themselves a

very high standard in the quality of the lenses which they have accepted for inclusion in their products. For these they have gone to the finest lens-manufacturing houses in Germany – Messrs. Carl Zeiss and Josef Schneider, and specified their requirements within very small tolerances – both in taking and viewing lenses. Whilst in every sphere of lens manufacture these tolerances are usually quite wide, only the best has been considered good enough for the Rolleis and as a result a Rolleiflex Tessar, Planar, Xenotar or Xenar, or a Rolleicord Triotar or Xenar can be depended upon to give a very fine performance, even under the most exacting conditions. The Xenotar or Planar fitted to the Rolleiflex Automat work at an aperture of f/2·8 and give the same high performance even at open aperture. Lenses, of course, like other commodities in constant use, may suffer from the ravages of inexpert handling, or natural climatic conditions, and if any doubt is entertained as to the performance of a Rollei lens, then either the manufacturers, their agents, or an optical firm of high repute should be asked to undertake the testing and reporting on its performance, and if necessary cleaning and overhauling.

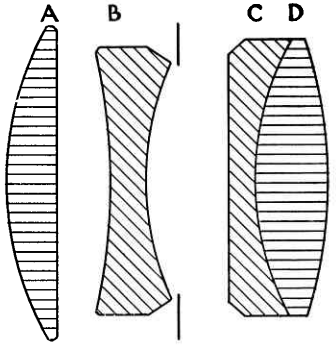


Fig. 6

The construction and glass types of the Zeiss Tessar and Schneider Xenar four element lenses: (A) dense barium crown; (B) light flint; (C) telescope flint; (D) dense barium crown.

One of the most critical parts of your Rollei camera is the setting and synchronization of the taking and viewing lenses. These are adjusted to a very high degree of accuracy (*actually 1/2000th inch or less*) and under no circumstances should they be tampered with by the photographer, however experienced he may be, either as a photographer, or as a mechanic. The smallest inaccuracy in these vital parts may mean that the object focused sharply on the screen, may not be sharply focused on the film. When your camera leaves the factory, these lenses are in perfect adjustment one with the other, both at infinity and at the closest distance but should they be tampered with, or accidentally damaged, then this critical adjustment may be upset and most reports of poor results can be usually attributed to this cause. The remedy is to return the instrument to a Rollei agent or other organization specializing in optical adjustments.

The Rollei lenses are divided into three main groups, those of the four component Tessar type, those of the three component air-spaced Triplet type, and the newest five element Xenotar and Planar of the Gauss type, which, although of recent development, were originally produced about 1941 for aerial work. The first group are of apertures of f/4·5, f/3·8, f/3·5 and f/2·8 and the main construction of these are as shown in Fig. 6.

The second type of 3-component lenses are made in apertures f/4·5, f/3·8 and f/3·5 and so far only the Zeiss Triotar fitted to the Rolleicords has appeared, and these are constructed as shown in Fig. 7.

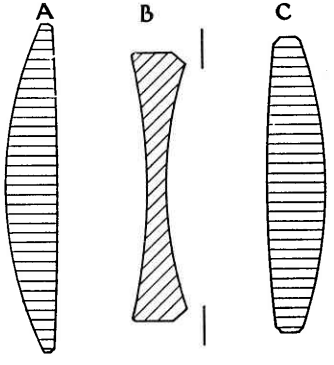


Fig. 7

The construction and glass types of the three element Zeiss Triotar lens: (A) dense barium crown; (B) dense flint; (C) dense barium glass.

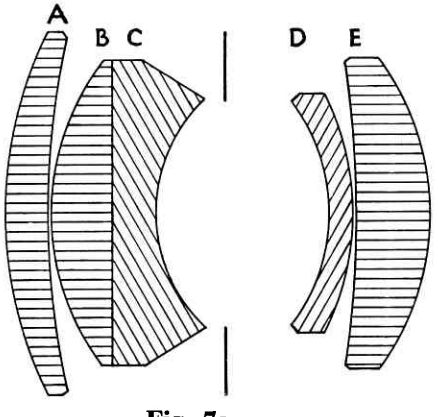


Fig. 7a

The construction and glass types of the Schneider Xenotar five element lens: (A), (B) and (E) dense barium crown; (C) light flint; (D) dense flint.

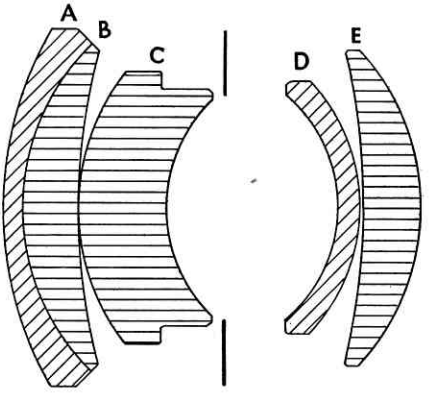


Fig. 7b

The construction and glass types of the Carl Zeiss Planar five element lens: (A) dense flint; (B), (C) and (E) dense barium crown; (D) dense flint.

The third type is available in apertures of f/2·8 and f/3·5 and is shown at Fig. 7a as developed by Josef Schneider in the Xenotar, at 7b as developed by Carl Zeiss in the Planar.

Shutters

As with the lenses fitted to the camera, so also with the shutters, the next most important part of the instrument. The shutters fitted to every model of the Rolleiflex and Rolleicord have been manufactured by the world-famous firm – Deckel of Munich, and the name Compur, or Compur Rapid, is recognized by photographers the world over as the finest shutter which can be fitted to any camera.

The normal Compur fitted to the early models had speeds of 1 second, ½, 1/5th, 1/10th, 1/25th, 1/50th, 1/100th, 1/300th second, T and B. Later, Compur Rapid shutters were used in the lever-wind models and the Automat models and finally in the Rolleicords IIA and III, these substituted the 1/300th for 1/250th, and added the extra 1/500th second. In the Automat model and some 'Cords IIA the 'T' has been eliminated and Time Exposures are made using the B (Bulb) setting with a time-lock cable release. All models produced since 1950 have been fitted with the Rapid Compur which has inbuilt contacts for flash photography and an outlet accommodating a standard co-axial plug is fitted to the front panel. The latest Rolleiflex Automats and Rolleicords are fitted with the new 10-speed 'X.M.' Synchro Compur Rapid shutter which has a variable delay allowing all types of flash bulbs and electronic flash equipment to be used as well as having interlinked stop and speed values.

All Automats and 'Cords produced since 1954/5 have been equipped with the latest Light Value Scale shutter having interlinked speeds and apertures. In this there are ten speeds, viz. 1 second, 1/2, 1/4, 1/8th, 1/15th, 1/30th, 1/60th, 1/125th, 1/250th, 1/500th second, and the 1/250th and 1/500th speeds are now readily interchangeable.

All the Automat models since 1937 are fitted with either Compur Rapid or Synchro Compur shutters, have a delayed action device built in to the shutter and this is actuated by a small button or lever on the front focusing panel. This device allows the photographer some twelve seconds in which to place himself within a group being photographed, or as a figure in a landscape picture.

Size and Weight

The Rolleiflex and Rolleicords are not small cameras, they are not slim and pocketable and cannot be folded up to slip into a handbag. These features may perhaps be considered as disadvantages but in terms of rigidity, strength and ever present precision are unquestionable advantages. There are no bellows to hold dust or become perforated and to let in light, no front lens panel precariously poised on a lazy-tong

mechanism to receive the light knock or pull which puts it permanently out of alignment; no collapsible tube to forget or which can wear and give uncertain focus. No, the Rolleis are solid, lumpy instruments but no larger than the average box camera and heavy enough to hold in the hand or up to the eye for even long exposures like 1/8th second with little fear of camera movement. They can be gripped firmly and held securely, the entire 'feel' of the camera being solid and sure – a feeling which inspires confidence and certainty at every exposure.

CHAPTER II

THE EVOLUTION OF THE ROLLEI CAMERAS

TO those who are interested in history, the development of the Rolleiflex is a fascinating subject: a story of diligent craftsmanship and attention to the smallest detail: a constant eye to the future, and an awareness of technical developments throughout the half-century of evolution of the world's most popular camera.

It was as far back as 1908 that Dr. Heidecke built his first prototype stereo camera. At that time stereoscopic photography was gaining interest and many manufacturers were turning their attention to this type of apparatus but the first Heidoscop stereo plate cameras, using the reflex mirror principle were only in large-scale production after the foundation of the firm of Franke and Heidecke in 1920. Dr. Heidecke and his partner Franke, a financial genius, were quick to seize on the growing popularity of the roll film as an idea for the stereo camera and this produced the first Rolleidoscope in 1923, using the reflex mirror idea. After much experimenting came the first roll film reflex camera using the twin-lens principle for non-stereo work and this was the forerunner of the Rollei cameras as we know them to-day. This was quite a revolution in camera design and the Rolleiflex was the first in the field in 1928. The first Rolleiflex, fitted with an f/4·5 Zeiss Tessar lens and taking the $2\frac{1}{4}''$ (6 cm.) square picture, was an instant success and at once the firm began to prosper, and a year later new factories had to be built to cope with the production of the 'new toy'. By 1931 the first of the Baby $1\frac{5}{8}'' \times 1\frac{5}{8}''$ (4×4 cm.) Rolleiflexes with a lever wind were in production. Both large and small models captured the hearts of photographers all over the world because of their beautiful workmanship, finish and precision manufacture, quite apart from the surprisingly fine work of which the camera was capable. In 1932 and 1933 the enterprising manufacturers began producing books and magazines for the devotees of their cameras. First came the Rolleiflex Book and then the Rolleiflex Journal and with the advent of the lower priced Rolleicords in 1933, the cameras in use began to reach astronomical figures and by 1935 were so popular that the manufacturers were able to launch world-wide Rolleiflex/Rolleicord competitions. By this

time more than 180,000 cameras were in use. At the same time they kept the photographic public agog with at least one new model per year either of the 'Flex or the 'Cord or both. Lens apertures became wider, the Sports or Baby Rollei reaching f/2·8. Improvement after improvement crept in and now some fifteen distinct models of the Rolleiflex and nine different models of the cheaper Rolleicord have been manufactured. The year 1937 saw the introduction of the first Automat fitted with most of the attributes of the present-day model, the automatic part being the ingenious and almost magical 'feeler' mechanism which, after simple threading takes the film straight to exposure number 1; also the mere act of winding the film by the crank handle, set the shutter, actuated the film counter and interlocked against double exposure. The same year this camera took the Grand Prix at the Paris World Exhibition and this again put the Rollei well ahead of all others who had attempted to plough the same furrow with the many copies thought-up and marketed at an attractive price to bathe in the Rollei's reflected glory. In this year and with this model, the now famous bayonet principle of attaching accessories was introduced.

To-day the Rolleiflex and Rolleicord cameras are sleeker and smarter and have more labour-saving devices than ever before but they are still essentially the same camera as produced in 1928. 1953 saw the introduction of the Automat 2·8C, the specialist's model, with almost every advantage which could be wanted already built in. This model was equipped with f/2·8 lens of Gauss type construction, the new Schneider Xenotars and Carl Zeiss Planars, adjustable magnifiers, multiple exposure provision and many other refinements. In the same year the 'Cord IV appeared with X.M. Synchro. Compur shutter, double exposure prevention and other improvements. 1954-55 saw the introduction of the light value scale and the new compur shutter with ten speeds on 2·8D, Automat and Rolleicord V. In 1956 both Rolleiflex models were equipped with built-in Exposure Meters calibrated to correspond with the light values of the new shutters. Now, not far short of a million Rolleis are in use and very few have ceased to function in this long span of years, with the possible exception of those lost at sea or blown up in battle – because the Rolleis were turned from peaceful plough-shares into bloody swords in the service of propaganda on all fronts and on both sides of the 1939-45 struggle. This period was a sad one indeed for Franke and Heidecke who had so many friends both in Britain and the United States. In 1950 Herr Paul Franke passed away – a sad loss to the world of photography – but not before he had renewed his long-standing friendship with British agent, Hunter – in the early years of peace when Germany was occupied but already struggling for a place in the post-war world. At 75, Dr. Rheinhold Heidecke still takes an active part in the technical development of all Rollei equipment, but direction of the Company's policy is under the energetic control of Horst Franke, and he is indeed well equipped to carry on the great Rollei tradition.

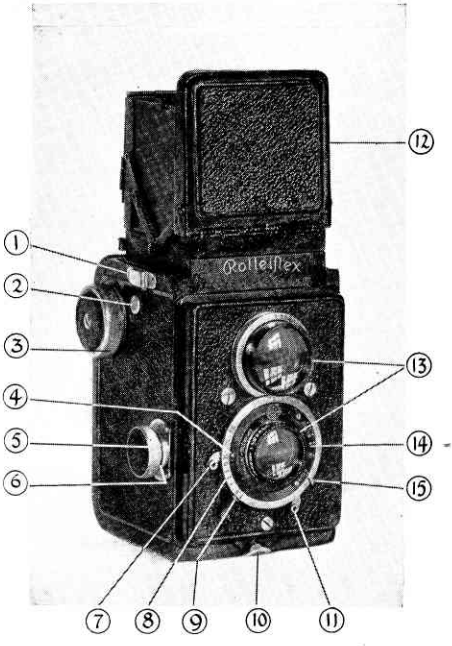


Fig. 8

Original Rolleiflex, front view: (1) Neck strap eye; (2) Neck strap anchor; (3) Film wind knob; (4) Shutter speed indicator arrow; (5) Focusing knob; (6) Focusing scale; (7) Shutter setting lever; (8) Shutter speed scale; (9) Cable release socket; (10) Base clip; (11) Shutter release lever; (12) Focusing hood; (13) Push on lens mounts; (14) Aperture scale; (15) Iris adjusting lever.

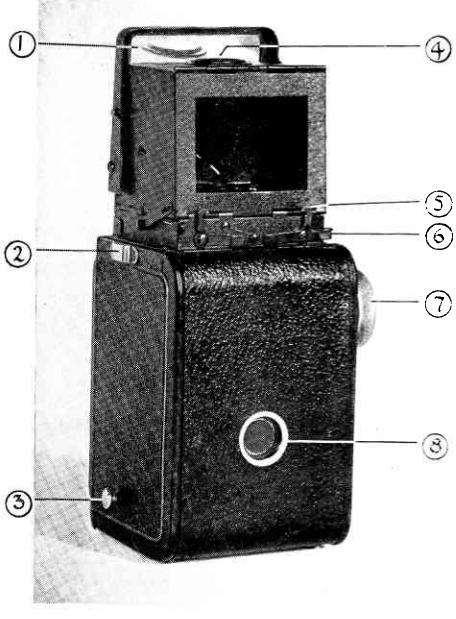
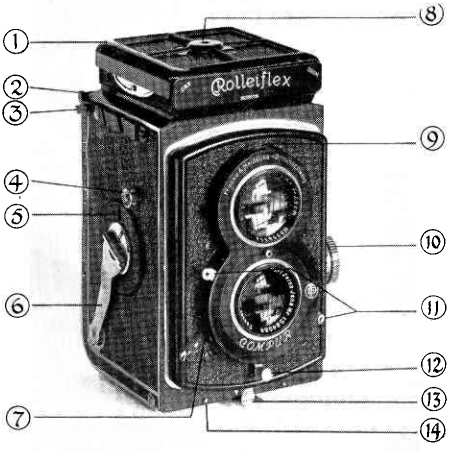


Fig. 9

Original Rolleiflex, back view: (1) Eye level focusing mirror; (2) Neck strap eye; (3) Neck strap anchor; (4) Screen magnifier; (5) Hood retaining catch; (6) Hood release lever; (7) Film wind knob; (8) Film numbering peep window.

Fig. 10

Lever Wind Rolleiflex, front view: (1) Focusing hood, closed; (2) Back hinge; (3) Back hinge release lever; (4) Film numbering trip; (5) Film number peephole; (6) Film transport lever; (7) Cable release socket; (8) Diopter finder, closed; (9) Shutter speed and lens aperture window; (10) Focusing knob; (11) Speed and aperture setting levers; (12) Double action shutter set and release button; (13) Base clip; (14) Locating studs.



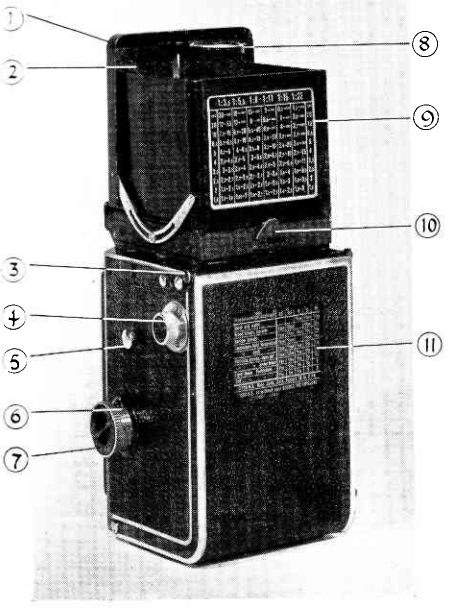


Fig. 11

Lever Wind Rolleiflex, back view: (1) Focusing hood; (2) Collapsing frame; (3) Back hinge; (4) Take-up spool retaining knob; (5) Neck strap anchor; (6) Focusing knob; (8) Screen magnifier; (9) Depth of field scale; (10) Double purpose hood catch; (11) Exposure chart.

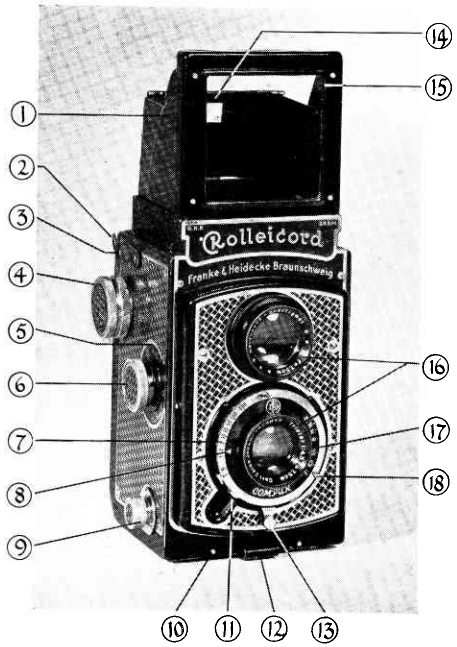


Fig. 12

Metal Plated Rolleicord, front view: (1) Focusing hood; (2) Back hinge; (3) Neck strap eye; (4) Film wind knob; (5) Focusing scale; (6) Focusing knob; (7) Shutter speed dial; (8) Speed indicating arrow; (9) Feed spool retaining knob; (10) Locating studs; (11) Cable release socket; (12) Base clip; (13) Double action shutter set and release button; (14) Direct vision finder peep-hole; (15) Finder frame; (16) Push-on lens mounts; (17) Aperture scale; (18) Iris adjusting lever.

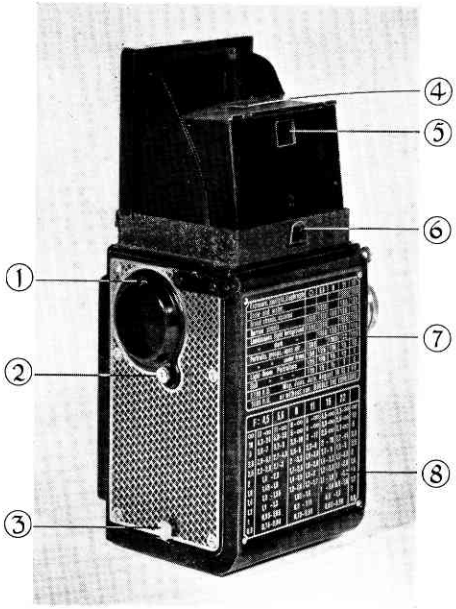


Fig. 13

Metal Plated Rolleicord, back view: (1) Film numbering aperture; (2) Film numbering trip; (3) Neck strap anchor button; (4) Screen magnifier; (5) Direct vision finder peep-hole; (6) Focusing hood retaining catch; (7) Exposure chart; (8) Depth of field scale.

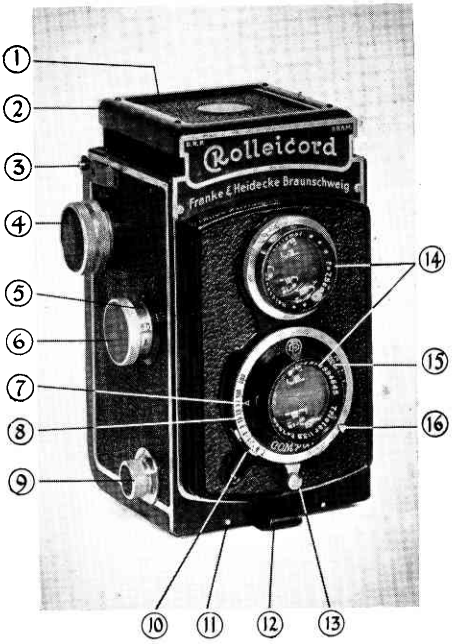


Fig. 14

Rolleicord Model I, front view: (1) Collapsing panel of eye level finder; (2) Focusing hood closed; (3) Back hinge; (4) Film wind knob; (5) Focusing scale; (6) Focusing knob; (7) Speed indicating arrow; (8) Shutter speed dial; (9) Feed spool retaining knob; (10) Cable release socket; (11) Locating studs; (12) Base clip; (13) Double action shutter setting and release lever; (14) Push on lens mounts; (15) Aperture scale; (16) Iris adjusting lever.

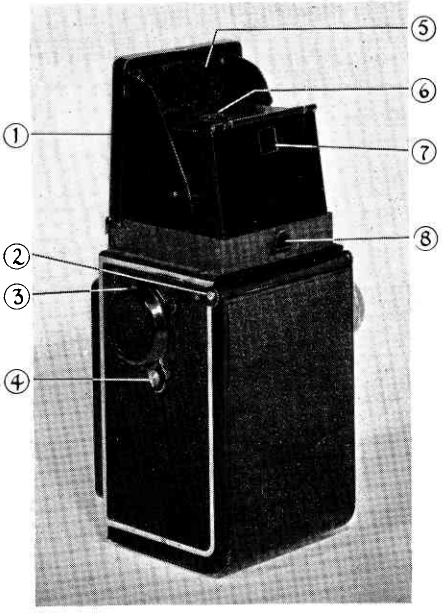


Fig. 15

Rolleicord Model I, back view: (1) Focusing hood; (2) Back hinge; (3) Film numbering peep window; (4) Film numbering trip; (5) Direct vision finder collapsing panel; (6) Screen magnifier; (7) Direct vision finder peep window; (8) Hood retaining catch.

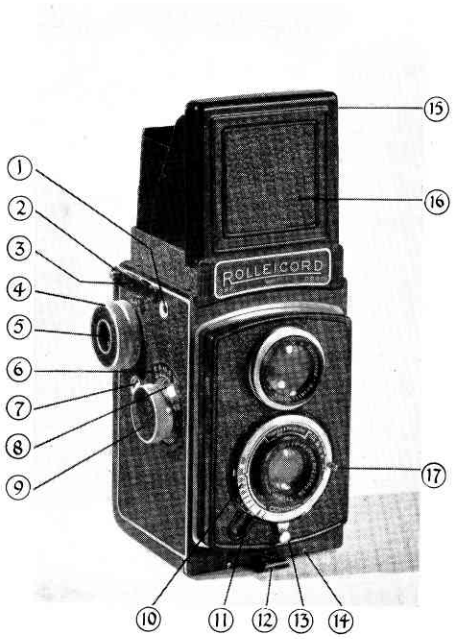


Fig. 16

Rolleicord IA, front view: (1) Film numbering peep window; (2) Back hinge; (3) Neck strap, loop and anchor; (4) Film wind knob; (5) Frame stop release; (6) Depth of field scale; (7) Film starter trip; (8) Focusing scale; (9) Focusing knob; (10) Shutter speed dial; (11) Cable release socket; (12) Base clip; (13) Double action shutter set and release button; (14) Locating studs; (15) Focusing hood; (16) Collapsing finder plate; (17) Iris adjusting lever.

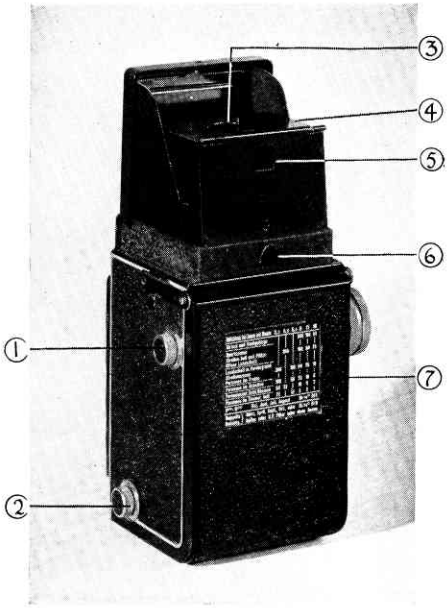


Fig. 17

Rolleicord IA, back view: (1) Take-up spool retaining knob; (2) Feed spool retaining knob; (3) Screen magnifier; (4) Hood flap; (5) Direct vision finder peep window; (6) Focusing hood retaining catch; (7) Exposure chart.

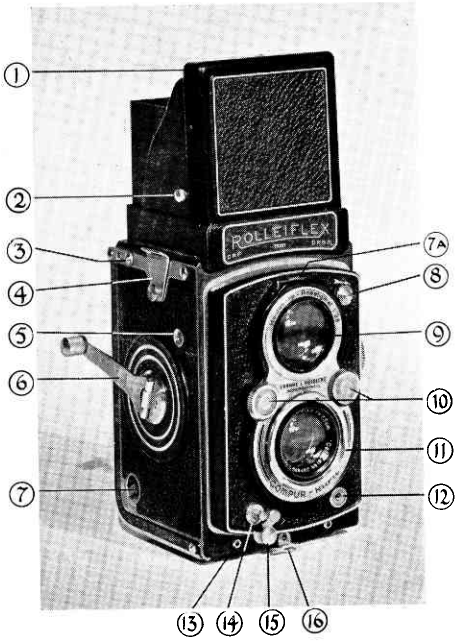


Fig. 18

Rolleiflex Automat Single Bayonet Model, front view: (1) Focusing hood; (2) Eye level finder mirror setting lever; (3) Back release catch; (4) Neck strap eye and anchor; (5) Film numbering peep window; (6) Crank handle; (7) Crank handle stowage; (7A) Shutter speed and lens aperture peep window; (8) Delayed action release button; (9) Push-on lens mount; (10) Shutter speed and lens aperture setting wheels; (11) Bayonet lens mount; (12) Cable release socket; (13) Locating studs; (14) Shutter release; (15) Shutter release guard; (16) Base clip.

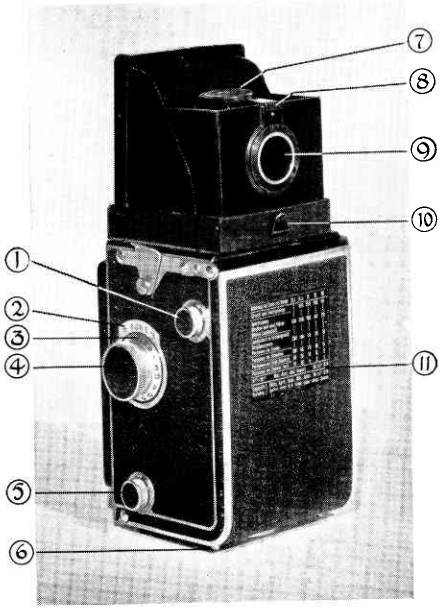


Fig. 19

Rolleiflex Automat Single Bayonet Model, back view: (1) Take-up spool retaining knob; (2) Depth of field scale; (3) Focusing scale; (4) Focusing knob; (5) Feed spool retaining knob; (6) Levelling feet; (7) Screen magnifier; (8) Magnifier erecting lever; (9) Eye level focusing magnifier; (10) Hood retaining catch; (11) Exposure chart.

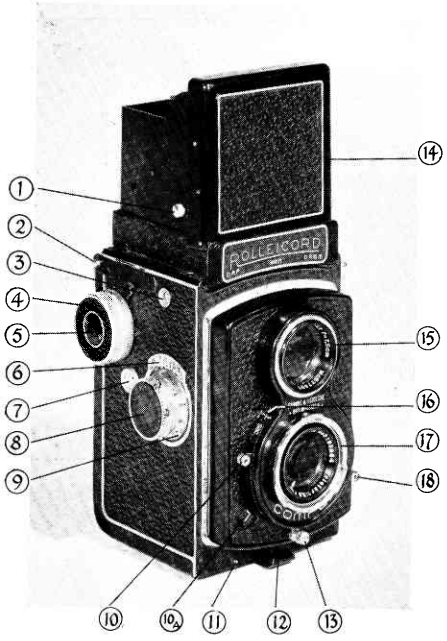


Fig. 20

Rolleicord II, front view: (1) Eye level finder mirror setting lever; (2) Back hinge; (3) Film numbering peep window; (4) Film wind knob; (5) Frame stop release; (6) Depth of field scale; (7) Film starter trip; (8) Focusing knob; (9) Focusing scale; (10) Shutter speed setting lever; (10A) Cable release socket; (11) Locating studs; (12) Base clip; (13) Double action shutter setting and release lever; (14) Focusing hood; (15) Push-on lens mount; (16) Shutter speed peep window; (17) Bayonet lens mount; (18) Lens aperture setting lever.

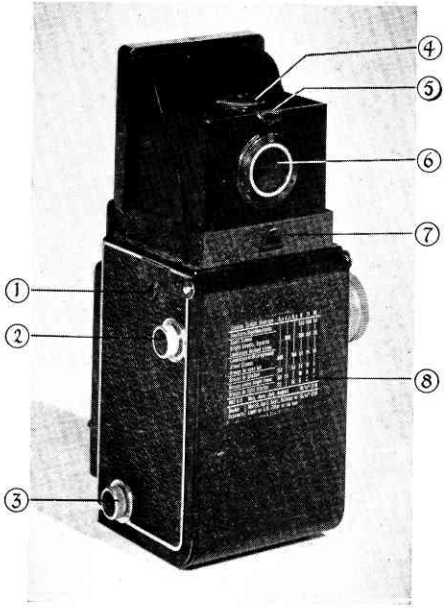


Fig. 21

Rolleicord II, back view: (1) Neck strap eye and anchor; (2) Take-up spool retaining knob; (3) Feed spool retaining knob; (4) Screen Magnifier; (5) Magnifier erecting lever; (6) Eye level focusing magnifier; (7) Hood retaining catch; (8) Exposure chart.

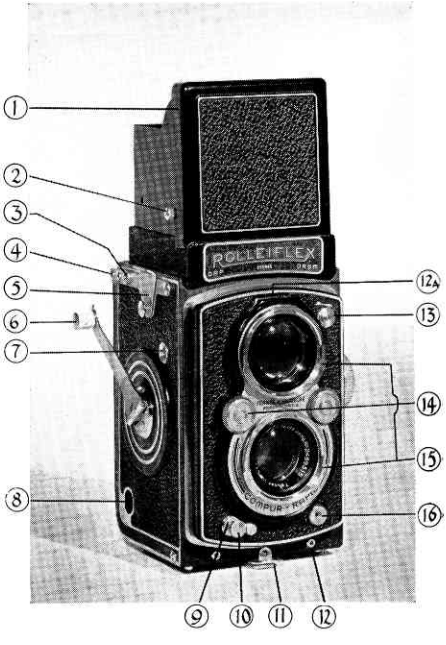


Fig. 22

Rolleiflex Automat Double Bayonet Model, front view: (1) Focusing hood; (2) Eye level mirror setting lever; (3) Back release catch; (4) Back hinge; (5) Neck strap eye and anchor; (6) Crank handle; (7) Film numbering peep window; (8) Crank handle stowage; (9) Shutter release; (10) Shutter release guard; (11) Base clip; (12) Locating studs; (12A) Shutter speed and lens aperture peep window; (13) Delayed action release button; (14) Lens aperture and shutter speed setting wheels; (15) Double bayonet lens and mounts; (16) Cable release socket.

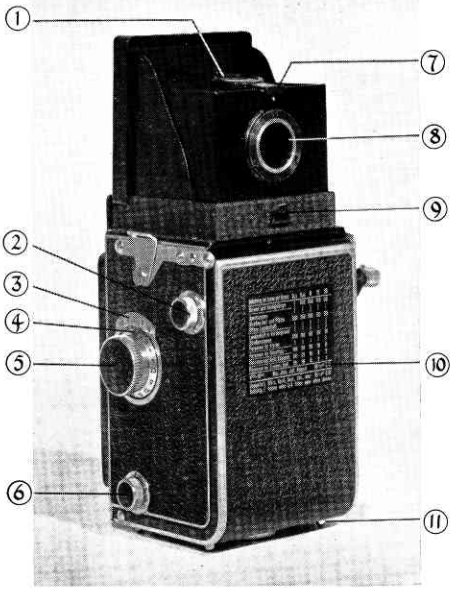


Fig. 23

Rolleiflex Automat Double Bayonet Model, back view: (1) Focusing magnifier; (2) Take-up spool retaining knob; (3) Depth of field scale; (4) Focusing scale; (5) Focusing knob; (6) Feed spool retaining knob; (7) Screen magnifier erecting lever; (8) Eye level focusing magnifier; (9) Hood retaining catch; (10) Exposure chart; (11) Levelling feet.

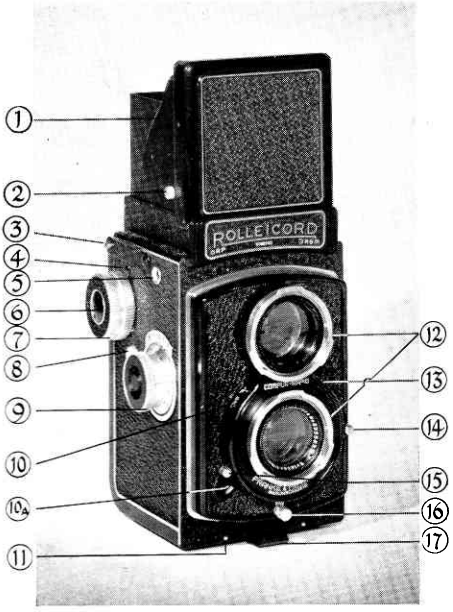


Fig. 24

Rolleicord IIA, front view: (1) Focusing hood; (2) Eye level mirror setting lever; (3) Back hinge; (4) Neck strap eye and anchor; (5) Film numbering peep window; (6) Frame stop release; (7) Film wind knob; (8) Film starter trip; (9) Focusing knob; (10) Shutter speed peep window; (10A) Cable release socket (not always fitted). (11) Locating studs; (12) Double bayonet lens mount; (13) Lens aperture peep window; (14) Lens aperture adjusting lever; (15) Shutter speed adjusting lever; (16) Double action shutter set and release lever; (17) Base clip.

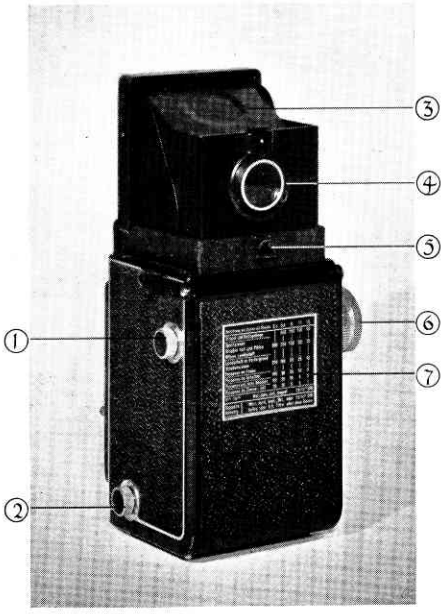
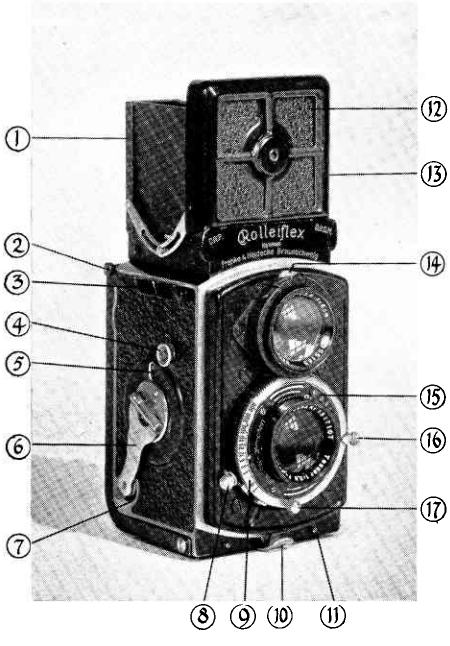


Fig. 25

Rolleicord IIA, back view: (1) Take-up spool retaining knob; (2) Feed spool retaining knob; (3) Eye level focusing hood cover; (4) Eye level focusing magnifier; (5) Hood retaining catch; (6) Focusing knob; (7) Exposure chart.

Fig. 26

Baby Rolleiflex 4 × 4 cm., front view: (1) Focusing hood; (2) Back hinge; (3) Neck strap eye; (4) Film numbering trip lever; (5) Film numbering peep window; (6) Crank handle; (7) Crank handle stowage; (8) Double action shutter set and release lever; (9) Shutter speed scale: (10) Base clip; (11) Locating studs; (12) Collapsing frame of diopter finder; (13) Frame finder; (14) Shutter speed and lens aperture peep window; (15) Aperture scale; (16) Lens aperture adjusting lever; (17) Shutter speed adjusting lever.



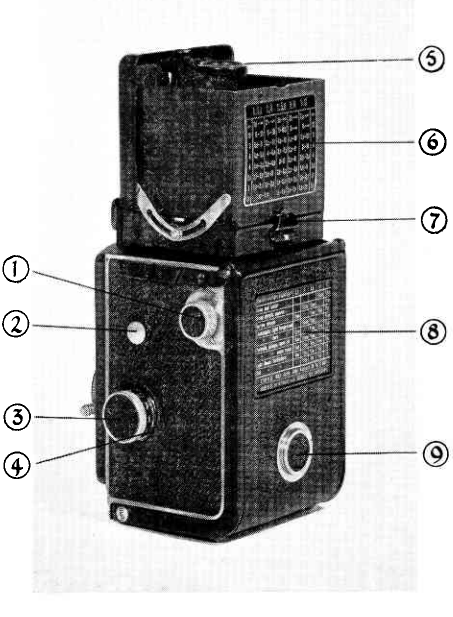


Fig. 27

Baby Rolleiflex 4 × 4 cm., back view: (1) Take-up spool retaining knob; (2) Neck strap anchor; (3) Focusing knob; (4) Focusing scale; (5) Screen magnifier; (6) Depth of field scale; (7) Double purpose hood catch; (8) Exposure chart; (9) Film number peep window with cover.

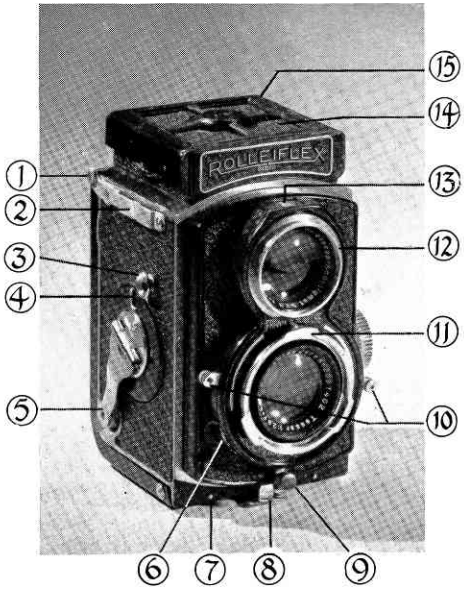


Fig. 28

Sports Rolleiflex 4 × 4 cm., front view: (1) Back hinge; (2) Neck strap eye; (3) Film numbering trip lever and neck strap anchor; (4) Film numbering peep window; (5) Crank handle; (6) Cable release socket; (7) Locating studs; (8) Base clip; (9) Double action shutter set and release lever; (10) Shutter speed and lens aperture setting levers; (11) Bayonet lens mount; (12) Push-on lens mount; (13) Shutter speed and lens aperture peep window; (14) Collapsing panel of diopter finder; (15) Focusing hood.

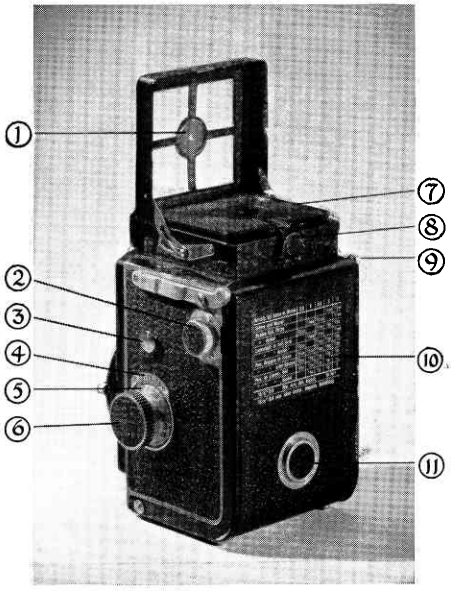
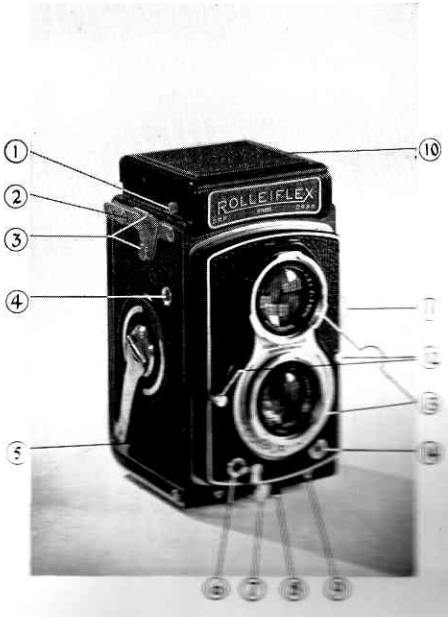


Fig. 29

Sports Rolleiflex 4 × 4 cm., back view: (1) Diopter finder mirror; (2) Take-up spool retaining knob; (3) Neck strap anchor; (4) Depth of field scale; (5) Focusing scale; (6) Focusing knob; (7) Collapsing hood panel; (8) Double purpose hood catch; (9) Back hinge; (10) Exposure chart; (11) Film number peep window with cover.

Fig. 30

Rolleiflex New Standard, film wind view: (1) Eye level mirror setting lever; (2) Back retaining catch and hinge; (3) Neck strap eye and anchor; (4) Film numbering peep window; (5) Crank handle in stowed position; (6) Shutter release; (7) Shutter release guard; (8) Base clip; (9) Locating studs; (10) Focusing hood closed; (11) Focusing knob; (12) Shutter speed and aperture control levers; (13) Double bayonet lens mounts; (14) Cable release socket.



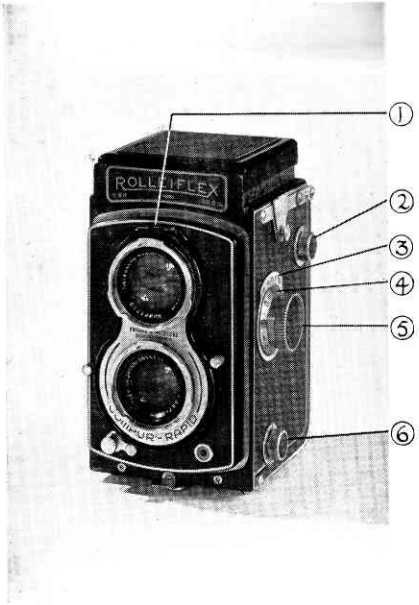


Fig. 31

Rolleiflex New Standard, focusing side view: (1) Shutter speed and lens aperture peep window; (2) Take-up spool retaining knob; (3) Depth of field scale; (4) Focusing scale; (5) Focusing knob; (6) Feed spool retaining knob.

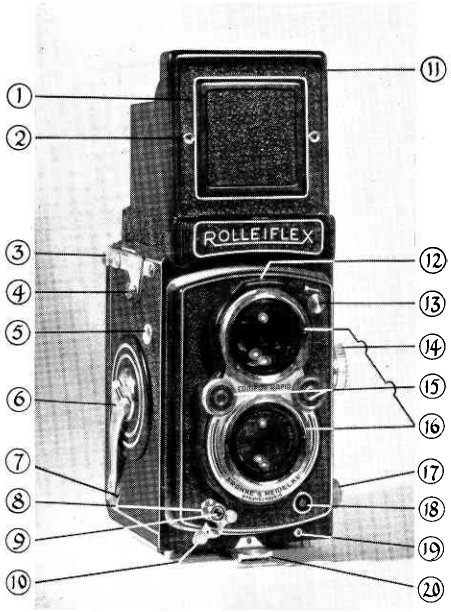


Fig. 32

Intermediate Model Rolleiflex Automat, front view: (1) Direct vision finder collapsing panel; (2) Cine film finder mask studs; (3) Back hinge and release catch; (4) Neck strap eye and anchor; (5) Film numbering peep window; (6) Crank handle; (7) Crank handle stowage; (8) Shutter release; (9) Cable release socket; (10) Shutter release guard; (11) Focusing hood; (12) Shutter speed and lens aperture peep window; (13) Delayed action release; (14) Focusing knob; (15) Aperture and speed setting wheels; (16) Double bayonet lens mount; (17) Feed spool retaining knob; (18) Flash socket; (19) Locating studs; (20) Base clip.

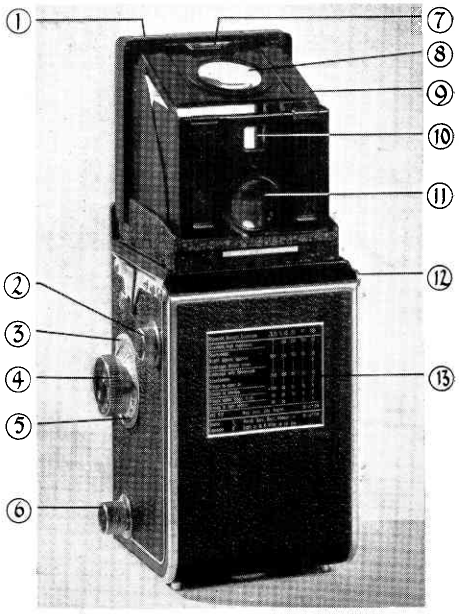


Fig. 33

Intermediate Model Rolleiflex Automat, back view: (1) Hood erecting thumb marks; (2) Take-up spool retaining knob; (3) Depth of field scale; (4) Focusing knob; (5) Focusing scale; (6) Feed spool retaining knob and cine film rewind knob; (7) Screen magnifier erection stud; (8) Screen magnifier; (9) Light deflector plate; (10) Eye level finder peep window; (11) Eye level focusing magnifier; (12) Back hinge; (13) Exposure chart.

The 'Lever Wind' Models of the Rolleiflex

This chapter would not be complete without some descriptions of the principal parts of the most popular of the early models and by far the largest number of any individual type still in regular use is the 'Lever Wind' with its various lens apertures. These were produced from about 1933 to 1937 and all retained a standard form; apart from very minor alterations the only difference lay in the aperture of the taking and viewing lenses. The first ones were fitted with the f/4·5 Tessar, then followed the f/3·8 Tessar, and the final models were fitted with the f/3·5 Tessar, all of 3″ (75 mm. focal length). The shutter also reached the highest speed of 1/500th second in a Compur Rapid shutter.

Viewing System

These models were all fitted with the usual Rollei screen and hood which springs into a vertical position on all four sides as soon as the retaining catch at the back of the camera top (Fig. 11 No. 10) is released. Against the inside of the front flap lies a focusing magnifier (No. 8) which, on being raised by the finger, or nail, under the projection provided, springs into a horizontal position over the centre of the screen. These screens were the first to be etched with the characteristic vertical and horizontal lines and some were also fitted with a levelling bubble on the underside and in one corner of the screen.

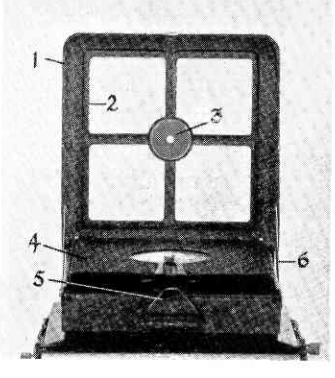


Fig. 34

The Diopter finder fitted to Lever Wind, Baby and Sports Models: (1) Outer hood frame; (2) Confines of picture; (3) Pierced concave mirror; (4) Collapsing flap; (5) Double purpose hood catch; (6) Hood struts.

The above-mentioned retaining catch (Fig. 34 No. 5) was in reality a double catch, half of it being capable of holding down the solid part of the hood's lid (No. 4). This can be folded down separately from the outside frame, leaving revealed the skeleton top with cross-members and, as seen from the back, a small concave mirror with tiny central aperture built into the point of inter-section of these cross-members.

(Fig. 34.) This frame and mirror was actually a direct vision finder, known generally as the 'Diopter Finder'. Its method of use is quite unique in the photographic field and is as follows: With the camera steadied against the face the eye is brought into position where it can see itself reflected and enlarged in the concave mirror. When the pupil of the eye can be seen in the very centre of the mirror and in register with the tiny central hole, then the entire scene viewed through and confined by the outer framework, is the picture which will be recorded on the negative.

Loading and Unloading

This model is loaded in the conventional manner, threading the film from spool chamber to winding chamber, closing the camera back, then cranking the handle back and forth until Figure 1 appears in the red window in the base of the camera. This peep window is then closed and not opened again until the next film is being loaded. (N.B. Some of the earlier models of this camera were also fitted with an extra red window at the back-centre of the camera under the exposure chart (as Fig. 27 No. 9). This was used with the old 117, 17, or B-1 film which only contained six exposures. These early models were not fitted with the sliding cover for the red window in the base but had screw-in covers.)

As soon as the 'No. 1' appears the small button (Fig. 10 No. 4) on the right-hand side of the camera (when looked at from the back) above the film wind crank handle, is depressed to bring the counter (No. 5) to '1'. Then after each exposure the crank handle is turned forward until a stop is felt, and then back to another stop, which brings a fresh frame into position in the gate and shows the next number in the window at No. 5. This procedure is followed until the figure 12 disappears after the final exposure and then the film is wound off by further forward and backward movements of the crank handle. To remove the spool, the film retaining knob (Fig. 11 No. 4) is pulled out and a half turn retains it in the 'out' position, allowing the spool to be withdrawn. To remove the empty spool from the feed spool chamber, press on the small lever at the side inside the base.

Shutter Operation

This model was the first to use the setting or cocking system on the same lever as the shutter release – another speciality of the Rollei cameras. This innovation was soon to be incorporated in the various models of the Rolleicords. (None of these, however, was fitted with a shutter interlocked with the film wind until the first Automat in 1937.) To load this shutter, the one main lever (Fig. 10 No. 12) is pulled to the right with one fingertip (when holding the camera in the normal operating position) and then the direction of the finger is gently reversed to the left to release it. For the T and B settings the shutter lever was simply pushed to the left once for 'Bulb' and twice for 'Time'.

These models were the first to be fitted with aperture and speed dials on the top of the viewing lens (Fig. 10 No. 9) in such a position that they could be clearly seen from the normal operating position whilst the photographer watches the focusing screen. These are altered by side levers (No. 11), the left lever for the apertures, the right for shutter speeds. From the front of the camera these positions would, of course, appear reversed.

Accessories

Before 1937, and whilst these models were in production, all types of the Rolleiflex and Rolleicord, except the original model, used a standard 28·5 mm. diameter lens mount for both viewing and taking systems, regardless of the aperture of the lens. All filters, close-up lenses, and other accessories were of this size and used the simple push-on close-fit method of attachment. The lens shade or hood of this period had a small lever grip which prevented it from being turned on its mount – an essential with a square opening, and this is considered the most efficient for the shape of the negative.

During this period special Rollei filters, Duto soft focus lenses, close-up lenses and an adjustable iris diaphragm for the viewing lens, were introduced. All these can still be used on subsequent models, including the present-day types except recent f/2·8 Models which are, of course, designed for the larger bayonet fitting accessories. This means that a photographer changing his camera from the old model to a new, does not find it necessary to change his accessories unless he feels so inclined.

Rolleicord, 'Metal Plated', Models I and IA

The original Rolleicord (Figs. 12 and 13) known generally as the 'Metal Plated' model was first introduced in 1933 and it was followed a year later by a very similar model, but covered in grained leather and known as the Rolleicord I. These cameras had the usual hood and screen but were fitted with a simple direct vision finder, which was revealed when the central part of the front hood was pushed in, and this clipped into position at the back of the hood (see Fig. 12). A screen magnifier for critical focusing was hinged to the back of the hood and swung upwards and over and clipped into a horizontal position. These models were fitted with the Rolleiflex type of shutter set and release as mentioned on page 32.

About 1935 came the Model IA with the first semi-automatic measuring system of film winding which was continued for many years, in fact well into the post-war period. In these, the film is wound to 'No. 1' in the red window and thereafter comes to a definite stop for each frame. Apart from this introduction, this model really had very little more to offer than the previously mentioned Model I. Viewing was identical to Models I and Metal Plated both in direct vision and screen focusing. The main difference of this model was the innovation of the above mentioned automatic film wind.

Loading

All these models are loaded with great simplicity and only differ very slightly from each other; in all models the film is placed in the spool chamber and backing paper-leader taken over the rollers into the empty spool in the film wind chamber. After closing the back, the red window in the base of the camera is watched while the film wind knob is being turned until No. 1 comes into position. At this stage, the sequence of operation is divided according to type. Models I and 'Metal Plated' are clicked to 'I' by a downward pressure on the button (Fig. 15 No. 4) and then an engraved figure 'I' appears on the rotating numbering disc which shows in the aperture (No. 3). Thereafter winding to the number for each picture is carried out at this position and no further reference made to the red window, but there is no frame stop. Models IA and II and later models up to the introduction of the present Rolleicord III need two operations to bring No. 1 into position in the new film numbering aperture now placed on the other side of camera (Fig. 16 No. 1). First the button at (No. 7) must be pressed down and then the centre portion of the film wind knob (No. 5) must be pushed in. These operations are carried out together when the automatic numbering device comes into operation and the frame number shows in the window at (No. 1). After the first exposure the central portion of the film wind knob *only* is depressed in order to allow the next frame to be wound into position but the finger is removed as soon as winding has commenced. This winds to a definite stop and there is no need to look at the counter or the red window.

The shutter is now cocked and released as mentioned on page 32 and the remainder of the exposures on the film are carried out in like manner until No. 12 is reached. After the 12th exposure has been taken (in all models) the film can be wound off without any interference from the stop mechanism or the counter mechanism which in both models returns to zero.

Shutter Operation

Metal Plated and No. I Models were fitted with the normal Compur shutter and all of them appeared with one double action setting and release lever for the various shutter speeds but the 'T' or 'B' setting needed no cocking, as for the Rolleiflex Lever Wind Models and described on page 32. Lens aperture and speed dials were in the usual place on the front of the exposed ring of the Compur shutter.

Rolleicord II

This model appeared first in 1937 as a partner to the first bayonet fitting Rolleiflex – the first Automat – and was similar in all respects to the Rolleicord IA described above with the addition of a shutter cover plate and setting levers as in the Lever Rolleiflexes described on page 31, and the new focusing hood of the Automat, described below.

The peep windows showing speeds and apertures were not, however, on the top of the viewing lens as in the Rolleiflex but on the upper sides of the shutter-cover bulge around the taking lens (Fig. 20 No. 16). These scales were, of course, visible from the focusing position above the hood, as in the Rolleiflex models. The main difference, however, was the provision for bayonet type filters, lens hoods and other accessories on the taking lens. A second version of this camera, popularly known as the IIA, appeared in 1939 and the only difference is that the bayonet fitting has here been extended to both viewing and taking lenses; in some models the 'B' setting must be cocked in the same manner as the other shutter speeds, by the normal pull of the setting lever to the right. Some of the later models included a Compur rapid shutter containing the 1/500th second speed, and exchanging the 1/300th for 1/250th second. In this model too the 'B' or Bulb must also be cocked. The 'T' or Time setting has, however, been completely eliminated. Many of these later type shutters at present in use have no accommodation for a cable release and the usual socket is not supplied.

Rolleiflex Automat

This model, which also appeared in 1937, was the culmination of many years of intensive research and was considered in its time as the biggest step forward in camera design of the half-century and it is still the basis of present day Automats although various small differences have appeared periodically since then. Many thousands of these cameras are in use to-day by both amateur and professional photographers all over the world. A great deal of highly successful fashion, illustrative and industrial photography is done with these instruments as well as a very large slice of the world's pictorial work, and a much fuller description is therefore called for than has so far been given so that the new users of these almost indestructible cameras may learn how to use them and get their full measure of reward and pleasure. The writer used one of these models for many years and a large number of the pictorial and commercial illustrations in this volume have been made with this particular model.

Because of its similarity to the 1939 model, with the double bayonet as the only difference, these two cameras are treated as one. They were produced throughout the war years and as and when various commodities became short due to the sacrifices of war, so temporary alterations were made, but all these were of a minor nature and apart from the introduction of internal flash contacts, it was essentially the same camera until 1950, after which date major changes began to be made. Naturally after thirteen years of great popularity, there are, and will be many thousands of these cameras in constant use for years to come and no excuse need therefore be made for the succeeding pages of detailed instructions.

General Description

The camera follows closely the trend of all Rolleis and is a further modification of the

previously discussed 'Lever' models. Speed and aperture settings continue to appear above the finder lens but instead of being operated by levers they are now operated by milled-edge rotating knobs. The hood has no direct vision system but instead there is an eye-level viewing and focusing system, through a 45 degree angle mirror which reflects the screen and its image to the eye.

A new and more secure safety catch was added to the base, and feed spool chamber pivots have been incorporated. The greatest advance, however, was in the film winding and shutter setting mechanism. The camera in fact becomes completely automatic and quite true to its name as, after loading, the film is wound to No. 1 and stops automatically, whilst each succeeding crank of the handle, winds the film, cocks the shutter and counts the frames. A delayed action device has also been built in and is located at the top right of the panel when looking at the front of the camera (Fig. 18 No. 8). Around the taking lens, which is of standard 28·5 mm. diameter, is fitted a strong metal framework formed into a bayonet mount. This is made to accept various accessories both inside and outside it by an easy fitting and quick locking device. After some two years of great popularity this bayonet fitting was extended to the viewing lens also and in this form the Automat continued in production for a further period of eleven years, which of course accounts for the large number of these cameras at present in use.

Viewing System

The focusing screen is exposed by pressing down on the release-catch (Fig. 19 No. 10) when the spring mechanism allows the hood to erect itself and shade the screen on all four sides. The focusing magnifier is now located on the inner back wall of the hood and is brought into the horizontal position by pressing downwards and outwards on the milled edge (No. 8).

To use the eye-level focusing finder, stow the magnifier again by pressing on it lightly when it will spring back against the inside of the hood; then press upwards with the forefinger on the chrome plated lever (Fig. 18 No. 2) located at the right hand side of the hood as seen from the operating position (or left hand as seen from camera front). This will clip into position a 45° angle mirror hidden in the front part of the hood, at the same time a cover plate comes into position above both screen and mirror to exclude extraneous light and give a bright image. To sight the subject, look through the magnifying eye-piece situated at the rear of the hood (Fig. 19 No. 9). The image will now be seen inverted but it can be viewed and focused almost as well as on the screen itself.

Focusing

In this model, the view finder lens is of the very wide aperture of f/2·8 and is a simple triplet giving the sharpest definition in the centre of the field which is of course, directly

under the focusing magnifier. Focusing is effected by turning the knob (Fig. 19 No. 4) located on the left hand side of the camera body when in the normal operating position, with the left hand. This is turned forward and back until the main subject matter appears as sharply defined as possible. It is always best to choose some fine detail with plenty of contrast to facilitate this, such examples as the eyelashes in a portrait, the material pattern in clothing on a figure, the brickwork of a building, or the branches of a bush in a landscape, may be chosen. Because of the wider aperture of the viewing lens than of the taking lens, depth of field (see Fig. 44) is greater on the negative than it is on the screen, and this ensures needle-sharp focusing on every occasion. At this stage it is sufficient to say that all the photographer need remember in actual practice is that depth of focus increases as the aperture is stopped down and also that the sharp area is greater behind the plane actually focused than in front of it (see page 85).

Depth Scale

The focusing knob (Fig. 19 No. 4 and Fig. 43) is engraved in either feet or metres, depending upon the market for which the camera was originally intended, although during the first years of its life only metric engravings existed in this model Automat. This knob is rotated against a depth of focus scale from which the depth of field can be read off at a glance. It is only necessary to notice which measurements are included between each of the two like apertures shown at either side of the central position (see Fig. 43). In cases of quick action and snapshooting often done from the hip if one has to photograph unobserved, this is an invaluable feature. First ascertain the smallest stop usable (see pages 87-88) then set the focusing knob against the scale so that the anticipated depth through which the action will take place is set between the two like aperture-markings. For example, if an aperture of f/8 can be used and the depth of the action is between 4 and 10 metres (12–30 ft.) then the central point on the depth scale should be set against the 6 metre (20 ft.) mark, and it will be seen that the two figure 8's on the depth scale indicate 4 metres (12 ft.) on one side and 10 metres (30 ft.) on the other.

Shutter Speeds

These are shown as figures which appear in the top peep window (Fig. 18 No. 7A) situated above the viewing lens, those nearest to the camera body are the speeds and are indicated as fractions of a second except the figure 1 which of course represents an exposure of one second's duration. The speeds available are 'B' for Bulb, or Brief Time, 1 sec., $\frac{1}{2}$ sec., 1/5th, 1/10th, 1/25th, 1/50th, 1/100th, 1/250th and 1/500th of a second. These speeds are varied by turning the milled knob (No. 10) at the right (or crank handle side) of the camera. Intermediate speeds can be judged and used between any of the marked values except between 1/10th and 1/25th second and also

between 1/250th and 1/500th second. A special warning is given in the case of the 1/500th second which cannot be engaged after the shutter has been cocked (see page 40) and under no circumstances should the milled knob be turned past the 1/250th mark until the release button (Fig. 18 No. 14) has been depressed. This shutter is only fitted with Bulb or Brief Time mechanism which, after cocking by means of the crank handle, opens the shutter at a pressure of the release and closes it when the pressure is released. For long Time exposures, a time-lock cable release must be screwed into the cable release socket at Fig. 18 No. 12 and the lock engaged.

Lens Apertures

The left hand milled knob on the 'focusing' side of the camera is used for setting the apertures which are in the front part of the same peep window. These are marked f/3·5, 4, 5·6, 8, 11 (16), 22. The aperture f/16 has been omitted because of lack of space for the engraving but is indicated by a dot. Any intermediate stop can be used and although every one of these apertures can be utilized as the occasion demands (see page 85), wide aperture lenses like those fitted to the Rolleiflex and Rolleicord give their finest definition between f/5·6 and f/11. This, of course, is only considered relevant when the ultimate in definition is required, or when enormous blow-ups may be needed from only small portions of the negative.

Whichever aperture may be selected for use in taking the picture the viewing lens always uses the widest aperture of which it is capable unless of course it is desired to check the actual depth of focus on the screen. In such cases the iris diaphragm accessory may be brought into use (see page 136) over the viewing lens and the aperture on it made to correspond with the taking lens aperture.

Loading the Camera: Opening the Back

Whenever possible, a spot away from bright sunlight should be chosen, but if this is not possible then provide some shade with the body, and the lens cap should always be in position during this operation. Place the camera face down on a flat surface, or alternatively on its 'head' for this. Looking at the camera base (Fig. 47), turn the safety catch (No. 2) to the left in the direction of the arrow, then lift the catch (No. 1). In the former case swing up the back so that it rests against the hinge, or in the latter swing it down so that it rests on the flat surface.

Inserting the Spool

Now that the back is open, turn the crank handle in a clockwise direction until the winding key (Fig. 45 No. 2) is in a vertical position. Pull out the retaining knob (No. 8) at the other end of the spool chamber and give it a half turn; it will then remain fixed in the 'out' position. Take an empty spool from a No. 120, 20 or B-2 film and insert it with the key-way vertical and to the right, so that it engages the

winding key of the camera then let the spool fall comfortably into the spool chamber. Give the retaining knob (No. 8) another half turn, until it drops back into position and engages the other end of the empty spool.

Inserting the Film

The feed spool chamber (Fig. 46 No. 1) is located at the opposite end of the open camera. First pull out the knob at Fig. 45 No. 10 and take a spool of film, size 120, 20 or B-2 with the seal still unbroken and insert it key-way to the left this time on to the pivot inside the right hand corner of the spool chamber. Let it fall into position, holding it down against the spring leaf, then give a further half turn to the knob No. 10 and allow it to return to its normal position. It will then engage the spool and hold it in position. Now break the seal of the film remove all loose gummed paper and pull out a short length of the backing paper. There is no danger of the film unwinding and being fogged by light as it is firmly held by the leaf spring (No. 11).

Threading the Film

Now bring the paper leader *underneath* the roller (Fig. 46 No. 11) then over the film gate rollers and film gate and insert the end in the wide slot of the empty take-up spool. Push it right through until it appears in the narrow slit on the other side of the spool and then turn the crank handle slowly until one complete revolution of the take-up spool has been made. At the same time, centre the paper backing so that it is riding comfortably between the shoulders of the spool and is not riding up on one side and leaving a space at the other.

This operation should always be done carefully and for the first few times some special reminder should be made to assure yourself that the film leader has really gone *under* the measuring roller. This is quite contrary to the loading of any other camera to which the photographer may have become accustomed as in these the film is always led *over* any existing rollers. Unless this point is carefully followed the film will not stop automatically at the first exposure but instead it will be wound uselessly right through to the end and be wasted.

Closing the Camera, and Winding to 'No. 1'

Now swing the camera back into the closed position, push home the clip (Fig. 47 No. 1) and fasten the safety lock (No. 2) by turning it to the right against the arrow and pushing it home. Turn the camera again to its normal handling position and wind the crank handle in a clockwise direction until a definite stop is felt. Do not be deceived by the first gentle pressure as this is the point at which the 'feeler' mechanism is encountering the double thickness of film and backing paper and brings the automatic mechanism into operation. This halts the film some three inches further on at No. 1 which is indicated in the peep window (Fig. 18 No. 5).

Shutter Setting

As soon as the definite stop is felt, reverse the handle in an anti-clockwise direction until a second stop is felt – this cocks the shutter and prepares the camera for the first exposure. You can now turn the crank handle over on its hinge and stow it in the space provided at (Fig. 18 No. 7). The camera is now ready for action, and the shutter speed milled knob (No. 10) should be turned to show an appropriate speed in the peep window (No. 7A). To make an exposure, press the release (No. 14) and after making it, repeat the forward and backward movement of the handle. This will bring a new frame of film into position in the gate, set the shutter for the next exposure, bring the No. 2 into the window (No. 5) and interlock the shutter against double or missed exposures. Now continue in this manner right through the roll of film until the twelfth exposure has been made, when it will be found the crank handle can be wound without a stop for several turns. This will take all the backing paper on to the take-up spool. A clicking sound of paper trailer against metal will indicate this.

The Top Speed of 1/500th Second

It has been mentioned above that as soon as the crank handle is wound and reversed, the shutter is cocked. This applies for all speeds and 'B' which are interchangeable and can be altered at will after cocking the shutter. The 1/500th second, however, cannot be engaged once the shutter has been set or the crank handle wound and under no circumstances should any attempt be made to force the speed adjustment from 1/250th to 1/500th second.

To engage the fastest shutter speed, this must be moved into position in the peep window at No. 7A *before* the crank handle is wound and the shutter cocked. Similarly it cannot be disengaged and a slower speed brought into position except when the shutter is free and uncocked. If it is necessary to use the 1/500th and if for example, the 1/100th is already in position and the shutter cocked, then a single frame of film must be wasted by pressing the release, the speed dial re-adjusted to the 1/500th and then the crank wound and reversed (the shutter reloaded) for this speed.

Those who may be using a Rolleiflex Automat for the first time may be concerned about the fact that in normal use the shutter always remains in the cocked or set position. The photographer can be reassured, however, as this has no ill effect on the Compur shutter mechanism even when it is allowed to remain cocked for long periods. It is unwise, however, to have the 1/500th second engaged and cocked for long periods and not the least reason is because a longer exposure time is more likely to be needed on the next occasion that the camera is required.

Removing the Exposed Film

When the film has been wound off, open the camera back again as described on page 38, pull out the retaining knob (Fig. 19 No. 1) at the same time steadying the roll with

the finger, withdraw it first from the left side, and seal down the film with the adhesive paper provided. Occasionally this sealing strip may be caught up behind the pressure plate.

Delayed Action

The delayed action release button (Fig. 18 No. 8) which allows twelve seconds delay before actually firing the shutter, permits the photographer himself to be included in the picture either as part of a group or as a figure in a landscape. This control is situated at the right hand top corner of the front panel and as the crank handle is used to wind the film and cock the shutter, so the delayed action mechanism is pre-set every time and is always ready.

For use, place the camera on a tripod, or towards the front edge of a steady table (so as not to cut off the lower part of the picture area as this may not be visible on the viewing screen). Now adjust the shutter speed and diaphragm setting to the prevailing light conditions and push the button (No. 8) towards the right, i.e. towards the edge of the camera in the direction of the engraved arrow, a burring sound will be heard as pinion wheels are actuated by a strong spring mechanism. Immediately the photographer should take up his position as pre-arranged and pre-focused and he has twelve seconds in which to reach the position and arrange himself. At the end of this time the tell-tale click of the shutter will indicate that the exposure has been made.

Size and Weight

This model measures $5\frac{1}{2}''$ high, $3\frac{1}{2}''$ wide and $3\frac{5}{8}''$ deep overall ($14 \times 9 \times 9$ cms.) and weighs 2·2 lb. (1 Kg.) without ever-ready case.

The New Standard Model

Of similar proportions and performance is the New Standard Model (see Figs. 30 and 31), produced concurrently with the Double Bayonet Model described above, as a lower priced alternative, and it was almost identical to it. Almost the only difference is the simplified method of loading the film which is, in fact, just as for the Lever Wind Model described on page 31.

There is a red window located in the base, and in order to wind the film to the first exposure, the crank handle is wound until number '1' appears in this. The base lock (Fig. 47 No. 2) is not pushed home until this number appears. When this lever is finally pushed home, the red window automatically closes, and it is not opened again until the next film is to be reloaded. It will now be found that a figure '1' has appeared in the peep window on the side of the camera at Fig. 30 No. 4. From this point on, the operation of the camera is exactly as for the Automat described above. Other slight differences between this model and the Automat are the speed and aperture settings,

which in this instance are controlled by setting levers (Fig. 30 No. 12) instead of milled wheels, and inside the camera there are, of course, no 'feeler' rollers.

The Sports Model Rolleiflex

This model which was introduced in 1937 is a development of the earlier Baby models, and in its final form was the last of all the 'Babies'. It is, in fact, what one might call a cross between the Lever Wind Model and the Rolleicord II, as it has a bayonet lens mount and the hood is of the same type as the Lever, but of course on a reduced scale. The final form of this model was introduced in 1939 with a double bayonet fitting, as were the 1939 Automats. The film used is 27, 127, or A-8 size, on which twelve exposures each $1\frac{5}{8}''$ square (4 × 4 cms.) are taken. This model is fitted with f/2·8 Tessar lens of 60 mm. focal length and a Compur Rapid shutter with speeds up to 1/500th second. The bayonet lens mount accepts the same standard bayonet accessories as the Rolleicord II and the Automat such as lens shade, filters, Dutos, Rolleinars, etc. There was at one time a special plate-back manufactured for this model and its predecessors, but this has now been discontinued for some time. The plates used were $1\frac{5}{8}'' \times 2\frac{1}{4}''$ (4·5 × 6 cm.) but in every other way this accessory resembled the 6 × 6 Plate Back described on page 103. However, no Rolleikin 35 mm. Cine Back has ever been made for this model.

Loading the film, shutter setting and release is as for the Lever Wind Models described on page 31. Focusing is also similar to this model and the direct vision finder is again of the Diopter type described on page 32. The film wind window for taking the first frame of film to No. 1, is situated in the centre of the camera back under the exposure guide panel (Fig. 27 No. 9).

CHAPTER III

THE MODERN ROLLEIFLEX AND ROLLEICORD

AT the beginning of the post-war period, the last described models with the exception of the 4 × 4 Sports Model were still in regular production, in spite of serious shortages of raw materials, greatly depleted staffs and a partly demolished factory. Undeterred by difficult conditions, the manufacturers immediately started to produce improved models, but their plans were not allowed to materialize until 1951. Meanwhile, small improvements began to creep into what can only be described as 'intermediate' models. First came the coated or 'bloomed' lenses, both in the Zeiss Tessars and Triotars, and then in the Xenars, made by Schneider – newcomers to the Rollei range. Already well known, the Schneider lenses proved to be so successful that they are now retained as four element alternatives for the Rolleiflex and standard equipment in the Rolleicord. The next important introduction was the flash contacts built into the shutter. The outlet plug was first located in a central position on the camera front, midway between the shutter release and the cable release aperture. After these intermediate models came the Rolleicord III, IV and V, the Automat II, the 1954 Improved Model, and the Automat 2·8, the Light Value Models and the Exposure Meter Models. For the sake of accuracy this order is therefore retained in the following detailed instructions for the modern cameras.

The Rolleicord III and IV

These models appeared in 1951 and 1953 respectively and followed closely the lines of the earlier Rolleicords II and IIA but with several additional refinements. The most important introductions were the f/3·5 Schneider Xenar four-element lens, a well-known system of proved quality over many years: both this and the viewing lens are hard coated to give freedom from inter-lens reflections, greater contrast, and the ability to pass more light both to screen and to film. There was an improved method of loading the film, which made it virtually automatic, a new focusing hood, with direct vision finder and the addition of the base lock and safety catch of the Automat.

Various other small improvements, including a flash synchronized shutter, and built-in cine film back, have also been incorporated.

Focusing Hood

The focusing hood is now entirely re-designed, and, as in the Automat II, there is no locking catch; to open it, all that is needed is a little upward pressure on the thumb marks at the back of the hood (Fig. 37 No. 1) and after being erected a little way by hand, the hood then springs into the vertical position on all four sides. A large focusing magnifier is brought into position over the centre of the screen as soon as light pressure is applied with the finger to the top or front plate of the hood (No. 15). A little further pressure on this same plate, pushing it inwards and upwards until it clicks into the horizontal position, now reveals a new type open frame finder with a sighting window on the back flap (Fig. 38 No. 5). This is a return to the highly successful frame finder of the Rolleicord I and IA. On the outside of the back flap, a small chrome plated button (No. 6) is located and a light pressure on this releases the top plate, which at once flies back into position to allow focusing again on the fully hooded screen.

Focusing

As in the earlier model Rolleicords, focusing is effected by turning the large milled knob (Fig. 37 No. 8) at the right side and towards the front of the lens panel of the camera, when viewed from the normal operating position. By observing the screen through the magnifier mentioned above and turning this knob forward and back, the subject will appear sharp at one particular setting. This is easiest if some fine detail is chosen on which to focus. Because of the wider aperture of the viewing lens than of the taking lens, depth of field (see Fig. 44) will be greater on the negative than it is on the screen and this, of course, always ensures needle sharp focusing.

Depth Scale

The focusing knob (Fig. 37 No. 8) is engraved in either feet or metres, according to the market for which it was designed, and it is rotated against a depth of focus scale (see Fig. 43) from which the focal depth can be read off at a glance. It is only necessary to notice which measurements are included between the two like apertures shown at either side of the central position (see pages 83-84).

Shutter Speeds

The shutter speeds and lens apertures appear in the peep windows on the upper sides of the taking lens cover and these can be seen from the normal operating position above the camera. The shutter speeds appear in the right hand window (No. 17) below it. The following range of speeds are available: 1 second, $\frac{1}{2}$ second, 1/5th, 1/10th, 1/50th, 1/100th, 1/250th, 1/500th second; 'T' for Time exposures (Rolleicord III only) and 'B' for Bulb or Brief time. Intermediate speeds can be judged and used

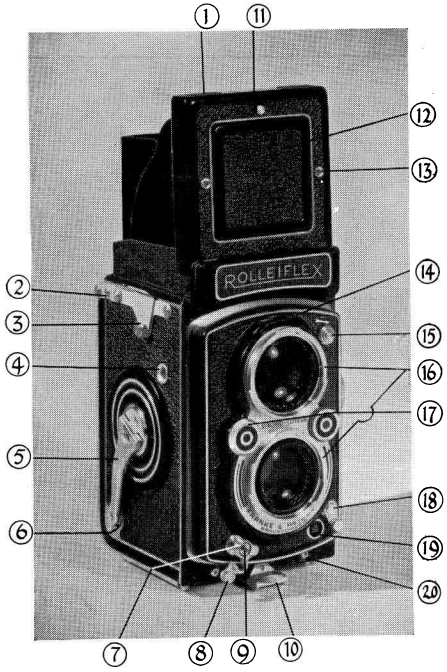


Fig. 35

Rolleiflex Automat II, front view: (1) Hood erecting thumb marks; (2) Back hinge and release catch; (3) Neck strap eye and anchor; (4) Film numbering peep window; (5) Crank handle; (6) Crank handle stowage; (7) Shutter release; (8) Shutter release guard; (9) Cable release socket; (10) Base clip; (11) Focusing hood; (12) Direct vision finder collapsing panel; (13) Cine film finder mask studs; (14) Shutter speed and lens aperture peep window; (15) Delayed action release; (16) Double bayonet lens mounts; (17) Shutter speed and lens aperture setting wheels; (18) X and M flash adjusting lever; (19) Flash socket; (20) Locating studs.

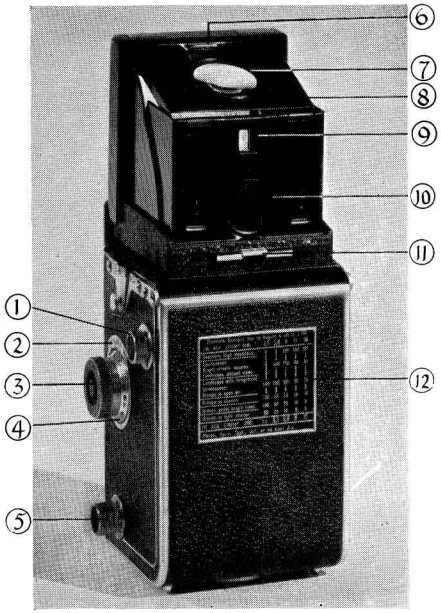


Fig. 36

Rolleiflex Automat II, back view: (1) Take-up spool retaining knob; (2) Depth of field scale; (3) Focusing knob; (4) Focusing scale; (5) Feed spool retaining knob, and cine film rewind knob; (6) Screen magnifier erection stud; (7) Screen magnifier; (8) Light deflector plate; (9) Direct vision finder peep window; (10) Eye level focusing magnifier; (11) Screen accessory retaining clip; (12) Exposure chart.

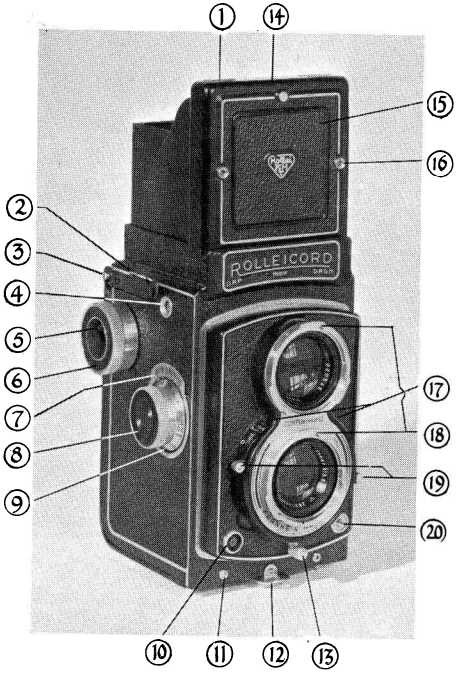


Fig. 37

Rolleicord III, front view: (1) Hood erecting thumb marks; (2) Neck strap eye and anchor; (3) Back hinge; (4) Film numbering peep window; (5) Frame stop release button; (6) Film wind knob; (7) Depth of field scale; (8) Focusing knob; (9) Focusing scale; (10) Flash socket; (11) Locating studs; (12) Base clip; (13) Double action shutter set and release lever; (14) Focusing hood; (15) Direct vision finder collapsing panel; (16) Cine film frame finder studs; (17) Shutter speed and lens aperture peep windows; (18) Double bayonet lens mounts; (19) Shutter speed and lens aperture setting levers; (20) Cable release socket.

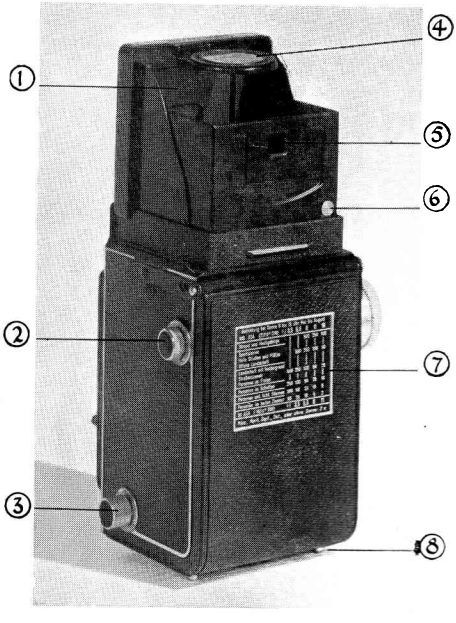
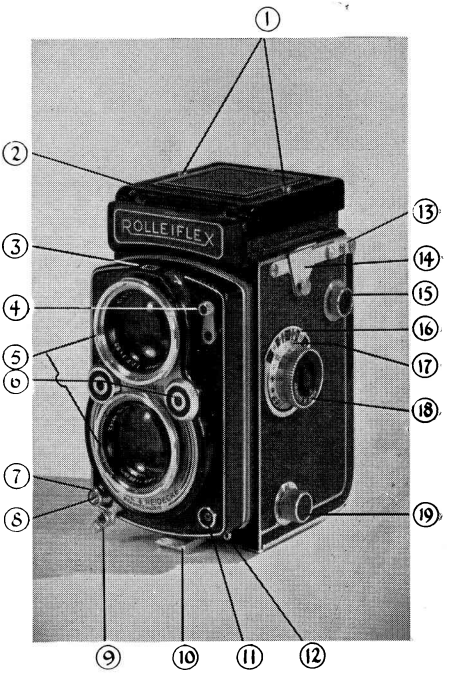


Fig. 38

Rolleicord III, back view: (1) Focusing hood; (2) Take-up spool retaining knob; (3) Feed spool retaining knob, and cine film rewind knob; (4) Screen magnifier; (5) Eye level direct vision finder peep window; (6) Collapsing panel release button; (7) Exposure chart; (8) Levelling feet.

Fig. 39

Rolleiflex Automat f/2·8, front view: (1) Cine film frame finder studs; (2) Focusing hood; (3) Shutter speed and lens aperture peep window; (4) Delayed action setting lever; (5) Double bayonet lens mounts; (6) Shutter speed and lens aperture setting wheels; (7) Shutter release; (8) Cable release socket; (9) Shutter release guard; (10) Base clip; (11) Flash plug; (12) Locating studs; (13) Back hinge and retaining catch; (14) Neck strap eye and anchor; (15) Take up spool retaining knob; (16) Depth of field scale; (17) Focusing scale; (18) Focusing knob; (19) Feed spool retaining catch and cine film rewind knob.



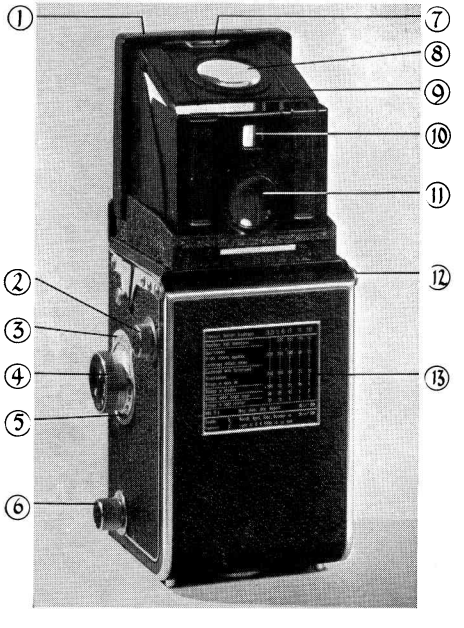


Fig. 40

Rolleiflex Automat f/2·8, back view: (1) Hood erecting thumb marks; (2) Take-up spool retaining knob; (3) Depth of field scale; (4) Focusing knob; (5) Focusing scale; (6) Feed spool retaining knob and cine film rewind knob; (7) Screen magnifier erection stud; (8) Screen magnifier; (9) Light deflector plate; (10) Eye level finder peep-hole; (11) Eye level focusing magnifier; (12) Back hinge; (13) Exposure chart.

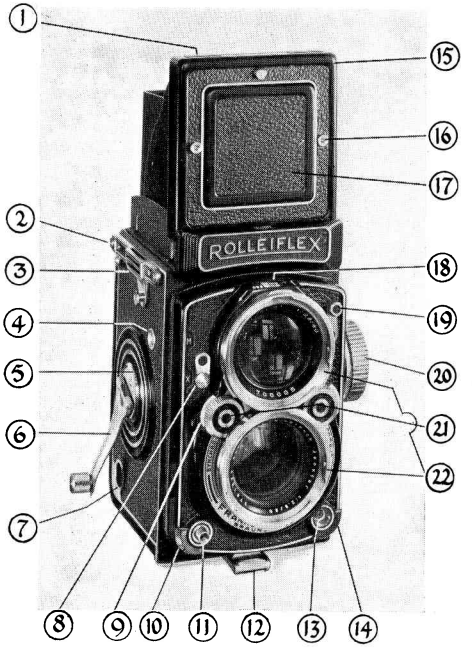


Fig. 41

Rolleiflex Automat 2·8c, front view: (1) Thumb grips; (2) Back hinge; (3) Neck strap eye and anchor; (4) Film numbering peep window; (5) Interlocked film wind release lever; (6) Crank handle; (7) Crank handle stowage; (8) Flash setting lever; (9) Speed setting wheel lock release; (10) Shutter release lock; (11) Shutter release and cable socket; (12) Base clip; (13) Flash plug; (14) Flash connector lock; (15) Focusing hood; (16) Cine film viewfinder-mask studs; (17) Eye level finder collapsing frame; (18) Lens aperture and shutter speed peep windows; (19) Delayed action lever; (20) Focusing knob; (21) Speed and aperture setting wheels; (22) Large size double bayonet lens mounts.

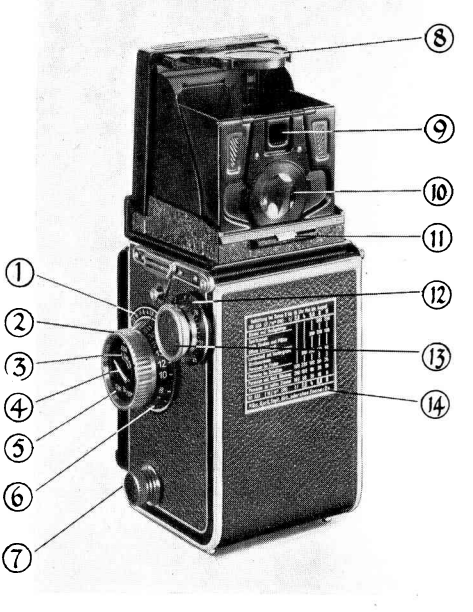
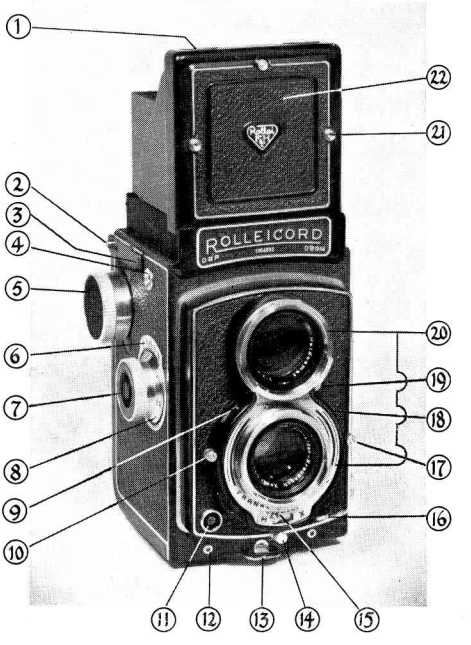


Fig. 42

Rolleiflex Automat 2·8c, back view: (1) Depth of field scale; (2) Focusing knob; (3) Film type reminder panel; (4) Film type and film speed reminder setting lever; (5) Film speed reminder; (6) Focusing scale; (7) Feed spool retaining knob, and cine film rewind knob; (8) Adjustable focusing screen magnifier; (9) Eye level viewfinder peep window; (10) Eye level focusing adjustable magnifier; (11) Screen accessory retaining clip; (12) Cine film counter; (13) Take-up spool retaining knob and cine film release knob; (14) Exposure indicator.

Fig. 42a

Rolleicord IV, front view: (1) Hood erecting marks; (2) Back hinge; (3) Neckstrap eye and anchor; (4) Film numbering peep window; (5) Film wind knob; (6) Depth of field scale; (7) Focusing knob; (8) Focusing scale; (9) Shutter speed window; (10) Shutter speed setting lever; (11) Flash socket; (12) Locating studs; (13) Base clip; (14) Shutter setting and release lever; (15) X and M flash adjusting lever; (16) Cable release socket; (17) Lens aperture setting lever; (18) Lens aperture window; (19) Optional double exposure release; (20) Double bayonet lens mounts; (21) Cine film frame finder studs; (22) Direct vision finder collapsing panel.



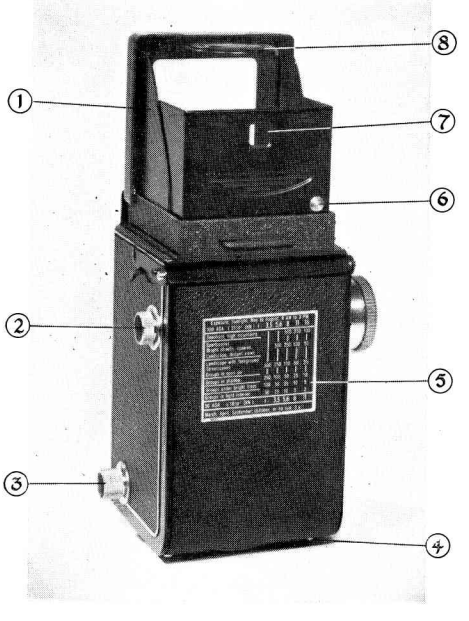


Fig. 42b

Rolleicord IV, back view: (1) Focusing hood; (2) Take-up spool retaining knob; (3) Feed spool retaining knob and cine film rewind knob; (4) Levelling feet; (5) Exposure chart; (6) Collapsing panel release button; (7) Eye level direct vision finder window; (8) Screen magnifier.

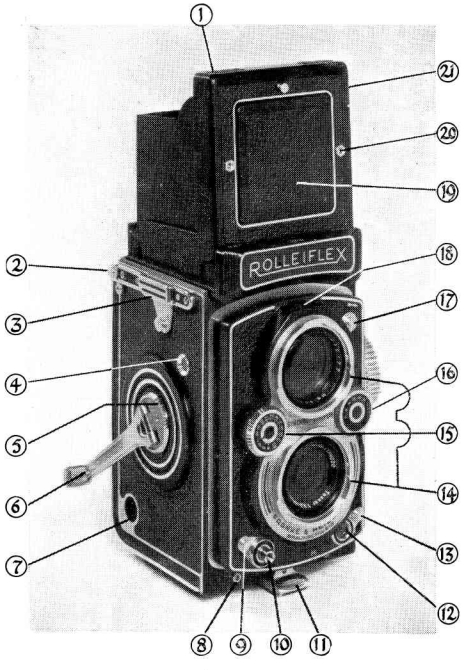


Fig. 42c

Rolleiflex Automat with Light Value Scale, front view: (1) Thumb grips; (2) Back hinge; (3) Neckstrap eye and anchor; (4) Film numbering peep window; (5) Interlocked film wind release lever (for double exposure); (6) Crank handle; (7) Crank handle stowage; (8) Locating studs; (9) Shutter release lock; (10) Shutter release; (11) Base clip; (12) Flash socket; (13) X and M flash adjusting lever; (14) Double bayonet lens mounts; (15) Shutter speed adjusting wheel with light value scale; (16) Lens aperture and light value adjusting wheel; (17) Delayed action release; (18) Speed and aperture peep window; (19) Collapsing panel; (20) Cine film frame finder studs; (21) Focusing hood.

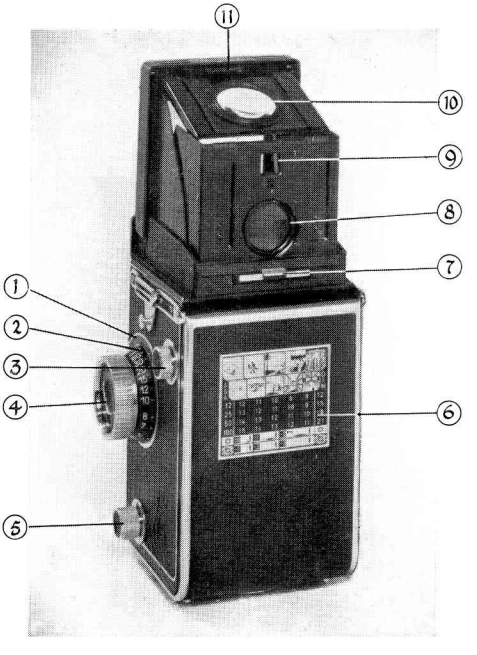
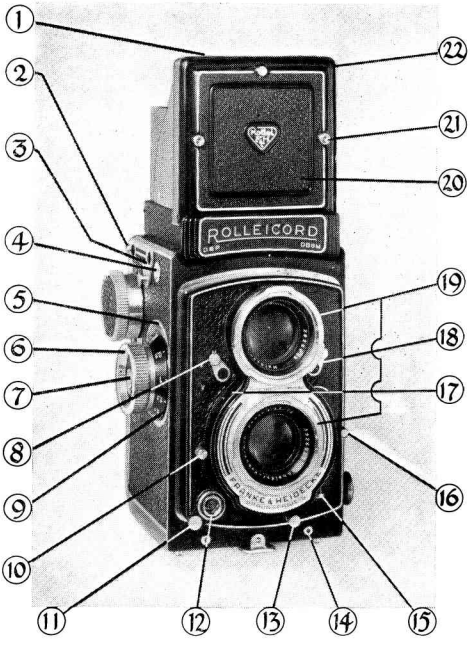


Fig. 42d

Rolleiflex Automat with Light Value Scale, back view: (1) Depth of field scale; (2) Focusing scale; (3) Take-up spool retaining knob; (4) Focusing knob with film speed and type reminder panels; (5) Feed spool retaining knob and cine film rewind knob; (6) Light value table; (7) Screen accessory retaining clip; (8) Eye level focusing magnifier; (9) Eye level viewing window; (10) Screen magnifier; (11) Screen magnifier erecting clip.

Fig. 42e

Rolleicord V, front view: (1) Thumb grips; (2) Back hinge; (3) Neckstrap eye and anchor; (4) Film number peep window; (5) Depth of field scale; (6) Focusing knob; (7) Film speed reminder; (8) Flash and delayed action setting lever; (9) Focusing scale; (10) Speed dial and light value scale adjusting lever; (11) Flash cable lock; (12) Flash plug; (13) Shutter setting and release lever; (14) Locating studs; (15) Cable release socket; (16) Aperture setting lever; (17) Speed, aperture and light value peep windows; (18) Double exposure release; (19) Double bayonet lens mount; (20) Eye level finder collapsing frame; (21) Cine finder mask studs; (22) Focusing hood.



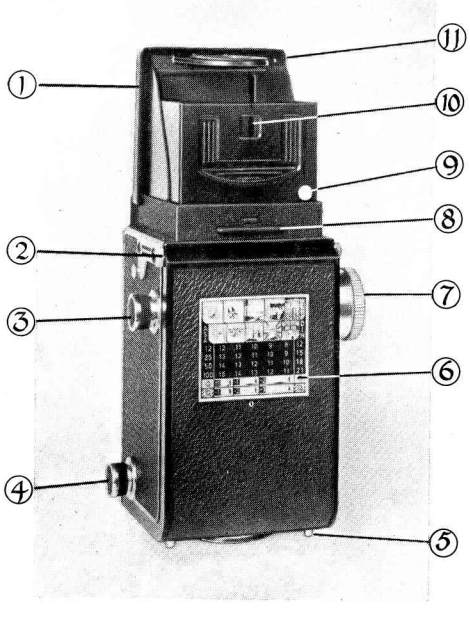


Fig. 42f

Rolleicord V, back view: (1) Focusing hood; (2) Back hinge and release; (3) Take-up spool retaining knob; (4) Feed spool retaining knob; (5) Levelling feet; (6) Light value table; (7) Film wind knob; (8) Screen accessory retaining clip; (9) Collapsing panel release button; (10) Eye level direct vision window; (11) Screen magnifier.

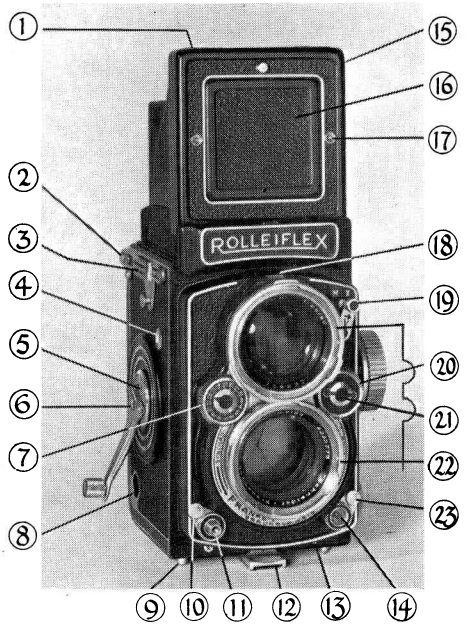


Fig. 42g

Rolleiflex Automat 2·8D, front view: (1) Thumb grips; (2) Back hinge and lock; (3) Neckstrap eye and anchor; (4) Film numbering window; (5) Interlocked film wind release; (6) Crank handle; (7) Speed setting wheel with light value scale; (8) Crank handle stowage; (9) Levelling feet; (10) Shutter release lock; (11) Shutter release and cable thread; (12) Base lock; (13) Locating studs; (14) Flash socket; (15) Focusing hood; (16) Collapsing panel; (17) Cine frame finder studs; (18) Speed and aperture peep window; (19) Delayed action and flash adjusting lever; (20) Lens aperture and light value adjusting wheel; (21) Light value uncoupler; (22) Double bayonet mounts; (23) Flash plug release.

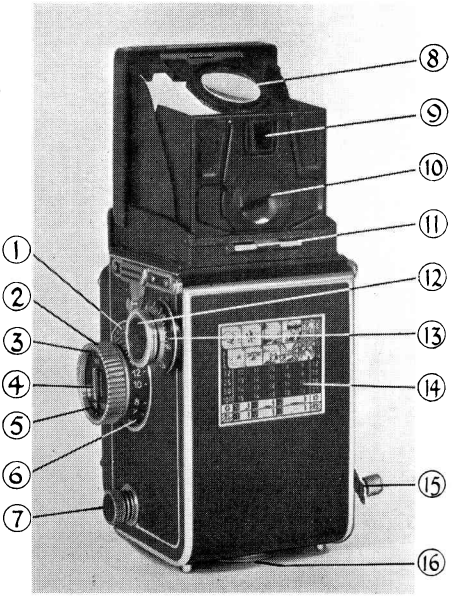
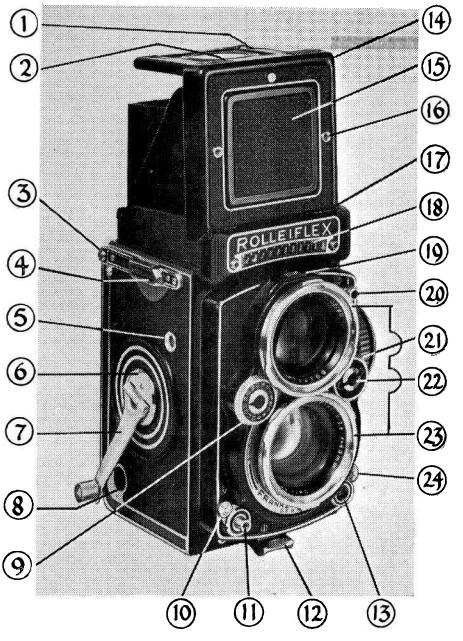


Fig. 42h

Rolleiflex Automat 2·8D, back view: (1) Depth of field scale; (2) Focusing knob; (3) Film speed reminder; (4) Film speed and film type adjustment; (5) Film type reminder; (6) Focusing scale; (7) Feed spool retaining knob and cine film rewind knob; (8) Screen magnifier; (9) Eye level viewing window; (10) Eye level focusing magnifier; (11) Screen accessory retaining clip; (12) Take-up spool retaining knob and cine film release knob; (13) Cine film counter; (14) Light value table; (15) Crank handle; (16) Base hub with tripod bush.

Fig. 42i

Rolleiflex Automat 2·8E, front view: (1) Screen magnifier; (2) Thumb grips; (3) Back hinge and lock; (4) Neckstrap fixing; (5) Film numbering window; (6) Interlocked film wind release lever; (7) Crank handle; (8) Crank handle stowage; (9) Speed setting wheel with light value scale; (10) Shutter release lock; (11) Shutter release with cable thread; (12) Base lock; (13) Flash socket; (14) Focusing hood; (15) Collapsing panel; (16) Cine frame finder studs; (17) Exposure meter baffle release; (18) Exposure meter photo cell; (19) Speed and aperture peep window; (20) Delayed action and flash adjusting lever; (21) Lens aperture and light value adjusting wheel; (22) Light value uncoupler; (23) Double bayonet mounts; (24) Flash plug release.



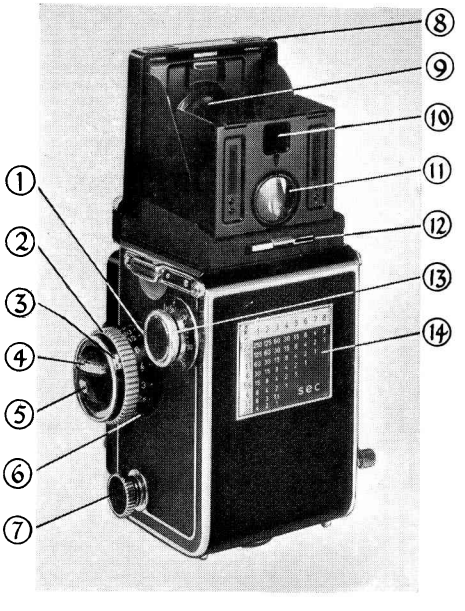


Fig. 42j

Rolleiflex Automat 2·8E, back view: (1) Depth of field indicator; (2) Focusing knob; (3) Exposure meter light value indicator; (4) Exposure meter scale and needle; (5) Film speed reminder; (6) Focusing scale; (7) Feed spool retaining knob and cine film rewind knob; (8) Focusing hood; (9) Focusing magnifier; (10) Eye level finder window; (11) Eye level focusing window; (12) Screen accessory retaining clip; (13) Take-up spool retaining knob and cine film release knob; (14) Long exposure calculator.

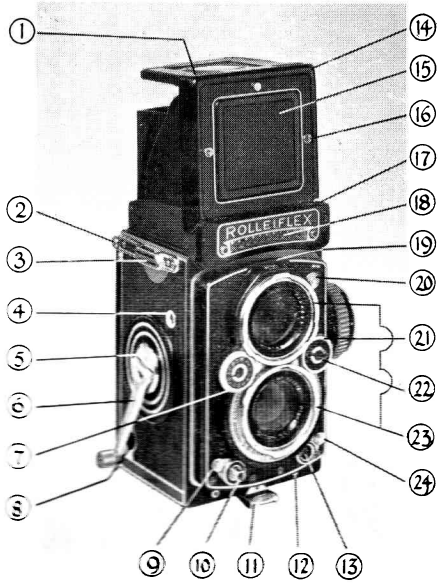


Fig. 42k

Rolleiflex Automat Exposure Meter Model, front view: (1) Thumb grips; (2) Back hinge and lock; (3) Neckstrap fixing; (4) Film numbering window; (5) Interlocked film wind release lever; (6) Crank handle; (7) Speed setting wheel with light value scale; (8) Crank handle stowage; (9) Shutter release lock; (10) Shutter release with cable thread; (11) Base lock; (12) Locating studs; (13) Flash socket; (14) Focusing hood with screen magnifier erected; (15) Collapsing panel; (16) Cine frame finder studs; (17) Exposure meter baffle release; (18) Exposure meter photo cell; (19) Speed and aperture peep window; (20) Delayed action release; (21) Lens aperture and light value adjusting wheel; (22) Light value uncoupler; (23) Double bayonet mounts; (24) Flash plug release.

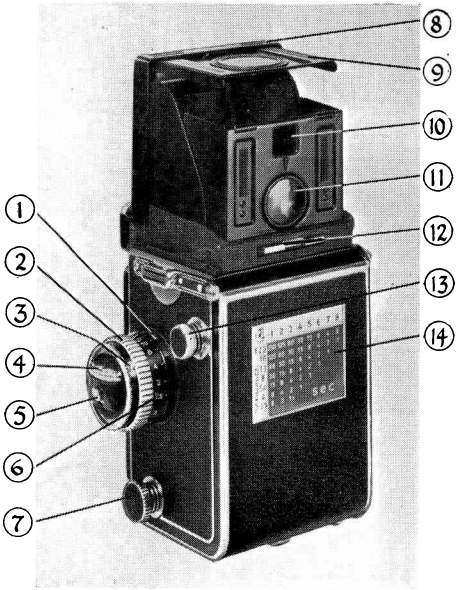


Fig. 42l

Rolleiflex Automat Exposure Meter Model, back view: (1) Depth of field indicator; (2) Focusing knob; (3) Exposure meter light value indicator; (4) Exposure meter scale and needle; (5) Film speed reminder; (6) Focusing scale; (7) Feed spool retaining knob and cine film rewind knob; (8) Focusing hood; (9) Focusing magnifier; (10) Eye level finder window; (11) Eye level focusing window; (12) Screen accessory retaining clip; (13) Take-up spool retaining knob; (14) Long exposure calculator.

between any of the marked values except between 1/10th and 1/25th second and also between 1/250th and 1/500th second. The model IV, however, has no 'T' position.

Lens Apertures

These appear in the left hand peep window (No. 17) and are changed by the lever (No. 19) beneath it. These are marked f/3·5, 4, 5·6, 8, 11, ⊙, 22. Any intermediate stop can be used as the occasion demands. Whichever aperture may be selected for use in taking the picture, the viewing lens always uses the widest aperture of which it is capable.

Loading the Camera – Opening the Back

Whenever possible, a position away from bright sunlight should be chosen, but if this is not feasible, then some shade should be provided with the body. The lens cap should always be in position during this operation. Place the camera face down on a flat surface or alternatively on its head, and looking at the base of the camera (Fig. 47) turn the safety catch (No. 2) to the left in the direction of the arrow, then lift the catch (No. 1), swing up the back so that it rests against the hinge or in the latter case swing it down so that it rests on the flat surface.

Inserting the Spool

Now that the back is open turn the winding knob (Fig. 37 No. 6) in a clockwise direction until the winding key (Fig. 45 No. 2) is in a vertical position. Pull out the retaining knob (No. 8) at the other end of the spool chamber and give it half a turn. It will then remain fixed in the 'out' position. Take an empty spool from a No. 120, 20 or B-2 film and insert it with the key way vertical and to the right so that it engages the winding key of the camera, then let the spool fall comfortably into the spool chamber, give the retaining knob (No. 8) another half turn until it drops back into position and engages the other end of the empty spool.

Inserting the Film

The feed spool chamber is located at the opposite end of the open camera. Take a spool of film, size 120, 20 or B-2 and with the seal still unbroken, insert it with the key way to the left, on to the pivot inside the right hand corner of the spool chamber. Pull out the retaining knob (No. 10) and push the roll into a horizontal position against the leaf spring (No. 11) letting the knob then return right home, when it will engage the end of the roll. Now break the film seal, remove all traces of the gummed paper and pull out a few inches of paper leader.

Now lead the end pennant over the 'gate' and over both rollers and insert the end into the wide slot of the take-up spool. Push it right through until it appears in the narrow slit at the other side of the spool and then turn the winding knob (Fig. 37

No. 6) at the same time centreing the film between the shoulders of the take-up spool so that it lies comfortably and does not ride up at one side. Turn it a few inches further until the arrows or triangles printed on the backing paper appear opposite the two red dots at the side of the gate (Fig. 45 No. 1).

Closing the Camera. Winding to 'No. 1'

Now swing the back into the closed position. Push home the clip (Fig. 47 No. 1) and fasten the safety lock No. 2 by turning it to the right against the direction of the arrow and pressing it right home. Turn the camera to its normal operating position and continue turning the film wind knob in a clockwise direction until a definite stop is felt. At this point No. 1 will be seen to have appeared in the film counter window at Fig. 37 No. 4. The starter trip of the earlier model has now been omitted as has the red window in the base which is no longer necessary.

Shutter Operation Rolleicord III

The Rolleicord III is now ready for action and to operate the shutter choose a convenient speed in the peep window (No. 17) (other than 'T' or 'B'). With the camera in the normal operating position, pull the shutter setting lever (No. 13) to the limit of its travel towards the right with the right forefinger (see Fig. 51). The shutter is now cocked and ready for release at once or at a later time as required. To make an exposure, press this same lever gently but firmly to the left until a definite click is felt when the exposure is made. The film winding knob can now be turned to the next definite stop by pressing in the centre of the winder knob, and bringing the next frame of film into the gate. Proceed in like manner through the remaining eleven exposures and after No. 12 has been exposed it will be found that no stop will be encountered and the film can be wound right off.

Loading the Rolleicord IV

This camera is also loaded, the film and spools inserted and the film wound to number one, as in the Rolleicord III. After this the new interlock comes into operation. This is actuated by a small stud (Fig. 42a No. 19) located over the aperture scale between the two lenses. When in the upper position, a small silver spot can be seen below this stud and in this position the film wind is interlocked with the shutter mechanism. Once the film has been wound to No. 1 in the peep window at (No. 4) the shutter is operated as described above for the Rolleicord III.

Provision for Double Exposures

At any stage during the run of the film through the model IV, double or multiple exposures can be made by depressing the stud (No. 19) so that a small red spot appears over it. In this position the shutter setting lever (No. 14) can be set and released as many times as required without the necessity of winding on the film. However, as

soon as an adequate number of trick exposures have been made, the lock should again be engaged by clicking up the stud (No. 19), having first of all wound the film to the next frame. Now further single exposures can be made until a double exposure is again required. In both cases, after the 12th frame has been reached, the film wind knob should be turned until the click of paper against the metal indicates that all the backing paper has been wound on to the take-up spool. The film is, of course, removed from the camera as for the previous model III.

Time and Brief Time Exposures

For exposures of longer duration than one second, the shutter scale should be set at 'B' and for this it is still necessary to cock the shutter. After this, push the shutter release lever to the left, hold it there for the required length of time and then allow it to return to its normal position when the shutter blades will close. In some of the 'Cord III's there is a 'T' position and for long time exposures of say half a minute or longer, set the shutter to 'T' and in this position the blades are opened at one pressure of the release lever to the left, they will then remain open until a second pressure is given in the same direction. This may be some time afterwards, perhaps even an hour in the case of night photographs at a small aperture. For both these speed settings, a cable release should be screwed into the socket at Fig. 37 No. 20 and the camera placed on a tripod or other firm support. There is however no 'T' setting on the Rolleicord IV.

Removing the Exposed Film

When the film has been wound off, open the camera back again as described on page 55, pull out the retaining knob (Fig. 45 No. 8) at the same time steadying the roll with the finger, withdraw it first from the left side, and seal down the film with the adhesive paper provided. (Occasionally this sealing strip may be caught up behind the pressure plate.)

Synchronized Shutter

The Compur shutter of the Rolleicord III is internally synchronized for flash photography (see Chapter XIV, Part II, 'Flash Photography'), and the standard outlet (Fig. 37 No. 10) to accommodate the normal Compur co-axial plug is situated at the bottom left of the focusing panel when looking at the camera from the front; electronic flash can be used at all shutter speed settings, short delay flash bulbs of the S.M. type can be used on all speeds up to 1/100th second, and long delay bulbs of the Phillips' P.F. Series, or the Sylvania Press Series can be used up to 1/25th second. With these later types, 1/50th second can be used, but only part of the light output of the flash bulb will be utilized. The Rolleicord IV is fitted with full X and M synchronization allowing all types of flash to be used on all speeds. The change over lever can be seen in Fig. 42a No. 15.

Cine Film Equipment

On the front of the open frame finder mentioned on page 44 are three locating studs (Fig. 37 No. 16 and Fig. 43 No. 21) which accommodate the direct vision finder mask for use with the Rolleikin II Cine Film Equipment (see page 115). To use 35 mm. cine film, it is no longer necessary to fit a separate back as the new combination back fitted to this model contains a special adjustable pressure plate (Fig. 45 No. 7). As in the Automat II, this has two positions which can be changed by pressing it down against its springs and then in a horizontal direction. When in one position, the figures $2\frac{1}{4}'' \times 2\frac{1}{4}''$ (6×6 cm.) are shown and in the other, $1'' \times 1\frac{1}{2}''$ (24×36 mm.) are revealed. It follows, of course, that the necessary film size in figures must be visible when that particular film stock is used.

The lower of the existing film spindles (Fig. 38 No. 3) now serves a double purpose, and for cine film only the upper spindle (No. 2) needs to be changed, the lower one acting as a rewind knob.

Changing the Back

Removal of the camera back for cleaning or for fitting the Plate Back Adaptor (see page 103) is effected by placing the camera on its face, swinging up the back to the limit, then raising the left back hinge (No. 3) with the finger nail about 1/10th of an inch, lifting the back out at this side, allowing the hinge to fall back into position again, then the camera back will come away from the second hinge. To replace it, it is only necessary to reverse these actions.

Cable Release

In the model IV the cable release socket has been repositioned. It is now in the base of the shutter housing under the aperture setting lever. It points downwards and slightly outward and, therefore, does not interfere with any lens accessory.

Ever-Ready Case

These models use the later type ever-ready case described on page 153 and illustrated at Fig. 100. There is a removable panel in this, around the take-up spool retaining knob which can be taken out when the new Rolleikin II is fitted, and this will then expose the new cine film exposure counter dial.

Size and Weight

These models measure approximately $5\frac{1}{2}''$ high by $3\frac{3}{4}''$ wide by $3\frac{3}{4}''$ deep ($14{\cdot}2 \times 9{\cdot}7 \times 9{\cdot}9$ cms.) and weighs 1 lb. $13\frac{1}{2}$ oz. or 830 grammes.

THE ROLLEICORD V

Early in 1955 appeared the Rolleicord V, the most advanced design in this the lower priced 'twin', Fig. 42e and 42f. It is now so automatic in its operation that it is rapidly catching up on the fully automatic Rolleiflex. It is similar in most external features to its predecessor, the Rolleicord IV, having the same focusing hood and direct vision finding arrangements, the same back and focusing method.

The main differences lie in the shutter which has now been fitted.

This is now the X.M. Synchro Compur with Light Value Scale, having interlinked speed and aperture dials. This shutter, as well as having X. and M. synchronization, has also a delayed action device incorporated. A new enlarged focusing knob has been fitted similar to the Rolleiflex, and similar neck-strap and back hinges have been used. The camera is loaded exactly in the same manner as the Rolleicord IV and the arrangement of take-up and feed spools is identical. The film spool retaining pivots have been slightly redesigned as can be seen from Fig. 42f.

The optional double exposure release has also been slightly redesigned and instead of being a sliding button, it is now a lever which rotates on a pivot, although the upper and lower positions correspond to the previous model, i.e. in the upper position the film is interlocked with the shutter mechanism, and double exposures can be carried out when in the lower position (Fig. 42e No. 18). Shutter setting and release is exactly as for the Rolleicords III and IV, as described on page 56.

Flash Synchronization and Delayed Action

At the other side of the lens panel between the two lenses, a new control lever has been fitted which changes over the X. and M. flash settings (Fig. 42e No. 8). This has a third position which is marked 'V' and which introduces for the first time into the Rolleicord series a delayed action mechanism in the shutter. This is set automatically when the shutter is cocked by the cocking lever which is in the usual position underneath the shutter housing (No. 13). Delayed action can also be used with flash on the 'X' position only, by setting the lever at 'V', plugging in the flash socket in the usual way and releasing the shutter. Not only can the photographer take up his position in the picture, but at the same time, as the shutter is released, the flash will take place.

The flash plug (No. 12) is now situated at the bottom left of the camera front and incorporates a plug lock. To open the lock it is merely necessary to flick up the locking lever (No. 11).

Light Value Scale

The previous exposure table at the back of the camera has been replaced by the light value table which operates in the same manner as that of the 1954 Improved Rolleiflex Automat described on page 69-70. The operation of the new 10-speed Compur

shutter is fully described on page 70 and the use of the light value table on page 91. The light value scale is controlled by the speed setting lever (No. 10) and the numbers appear with the lens aperture in the peep window at No. 17. Operation of the aperture setting lever is quite free and independent.

Film Speed Reminder Panel

This is incorporated in the front of the focusing knob and indicates the Din and A.S.A. speeds by turning the small central button. Size and weight of the camera is just as for the Rolleicord IV and described on page 58.

THE MODERN ROLLEIFLEX AUTOMAT

This model sometimes known as the Automat II, although not officially designated so by the makers, marks the culmination of their war-time ideas. A small number of these, produced during 1950/51 appeared with synchronized shutters but without the variable delay of the 'X.M. Synchro Compur' shutter with which all modern Automats are equipped. There are many small improvements and innovations in this Series and a number of major changes. Among these latter can be counted the improved light-trapping arrangements of the camera back, a new focusing hood which ensures completely trouble-free erection, a larger magnifier with light shade, an eye level direct vision finder with eye level focusing window adjacent to it, built-in cine film accessories and the before-mentioned fully synchronized shutter. The lens is either the f/3·5 75 mm. Zeiss Tessar or Schneider Xenar, both of which are factory coated. Another improvement in this camera is the introduction of anti-reflection light baffles inside the taking chamber, similar to those incorporated in the specialists' 2·8C Model, described later in this chapter. These were installed as from camera No. 1287500 (approx.).

Since late 1953 the base hub of the camera has been redesigned and now has a deep groove milled from its outer periphery. This is to accommodate the new mating device called the Rolleifix which is designed to remove the danger of the small single point tripod fixing screw in a camera of principally vertical distribution of weight (see page 157).

Bayonet Mounting of Accessories

As in the Automat I and the Rolleicord IIA, both viewing and taking lenses are equipped with a double bayonet fitting to accommodate various accessories. The lens hood is used on the outer bayonet and the Rollei filters, etc. on the inner bayonet. Full details of the method of attachment of these accessories are given in the chapters on the Accessories on pages 122 and 134.

Viewing System

At a pressure of the thumb on the ridges which appear at the rear of the folded hood cover (Fig. 35 No. 1) the front is raised a little and then a strong spring takes over and erects the whole of the hood on all four sides, so exposing the ruled ground-glass screen. A large focusing magnifier is stowed at the inside of the front flap (Fig. 36 No. 7) and this is erected by inserting the fingertip under the small chromium plate at No. 6. A light upward pressure flicks the large magnifier into a horizontal position over the centre of the screen. This is incorporated in the centre of a top flap which keeps out stray light and helps to give a very bright screen image under all conditions. A further downward pressure on this top flap clips it again into the stowed position.

Direct Vision Finder

With the magnifier erected, the centre of the front flap (Fig. 35 No. 12) collapses inwards at a light pressure of the finger, and on being pushed a little further, it clips into position at a 45-degree angle. At the same time, it pulls down the top flap to close a roof over what has become a new eye-level, direct-vision finder. The peep window for this is now located at the upper part of the back flap (Fig. 36 No. 9). Below this, another magnifier can be seen (No. 10) and on sighting through this the image can be focused at eye level on the centre of the field through a 45-degree angle mirror which had also been erected by the simple operation mentioned above. This mirror reflects to the eye the view seen on part of the ground-glass screen of the camera.

Light pressure on the top flap will release the mirror, close the D/V finder and return the screen magnifier to the horizontal position at a touch.

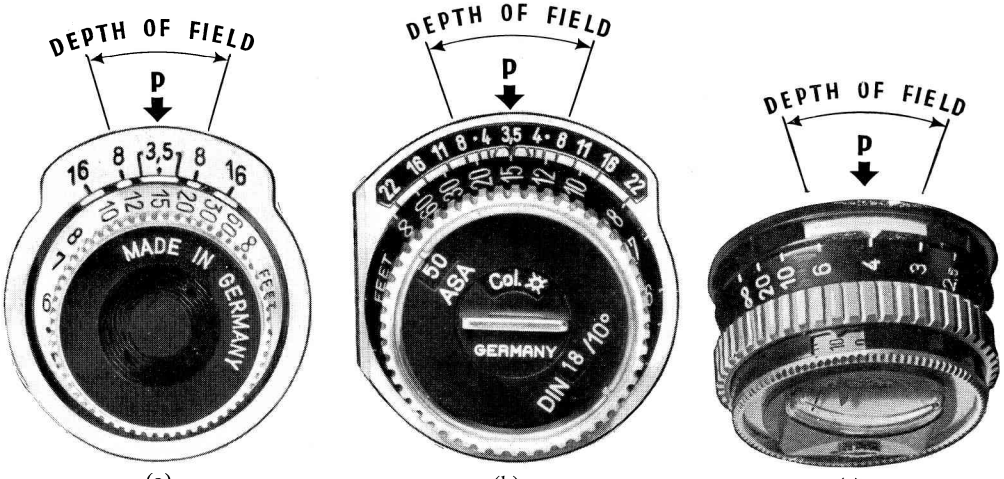
Focusing

As in the first Automat, focusing is effected by turning the knob at Fig. 36 No. 3 located on the left side of the camera body (when it is in the normal operating position). For this operation the left hand is, of course, used. This knob should be turned forward and back until the subject, when seen on the ground-glass screen through the focusing magnifier, appears as sharp as possible. Fine contrasty detail is always the easiest to focus upon.

Because of the wider aperture of the viewing lens than of the taking lens, depth of field (see Fig. 44) will be greater on the negative than it is on the screen and this, of course, always ensures needle sharp focusing.

Depth Scale

The focusing knob (Fig. 36 No. 3) is engraved in either feet or metres and it is rotated against a depth of focus scale (Figs. 36 and 43) from which the focal depth can be roughly read off at a glance.



(a) (b) (c)

Fig. 43

Focusing knobs and depth of focus scales on (a) the Rolleicord IV and earlier 'Flex and 'Cord models, (b) on the Rolleiflex Automat, 2·8C and D and Rolleicord V, (c) on the Exposure Meter Models.
Point P shows the actual point of focus, and depth of field at any aperture can be read off between any two like apertures.

It is only necessary to notice which measurements are included between the two like apertures shown at either side of the central position (see page 83).

Shutter Speeds

These are shown as figures which appear in the top peep window (Fig. 35 No. 14) situated above the viewing lens. Those nearest to the camera body are the shutter speeds and are indicated as fractions of a second, except the figure 'I' which represents an exposure of one second duration. The speeds available are 'B' for Bulb or Brief Time, 1 second, $\frac{1}{2}$, 1/5th, 1/10th, 1/25th, 1/50th, 1/100th, 1/250th, 1/500th second. These speeds are varied by turning the milled knob at the right or crank handle side of the camera towards the front of the lens panel (No. 17). Intermediate speeds can be judged and used between any of the marked values except between 1/10th and 1/25th second also between 1/250th and 1/500 second. A special warning is given in the case of the 1/500th second which cannot be engaged after the shutter has been cocked (see page 40). This shutter is only fitted with a Brief Time mechanism and for long time exposures a time-lock cable release must be screwed into the cable release socket at No. 9 and the lock engaged.

Lens Apertures

The left hand milled knob (No. 17) on the focusing side of the camera is used for

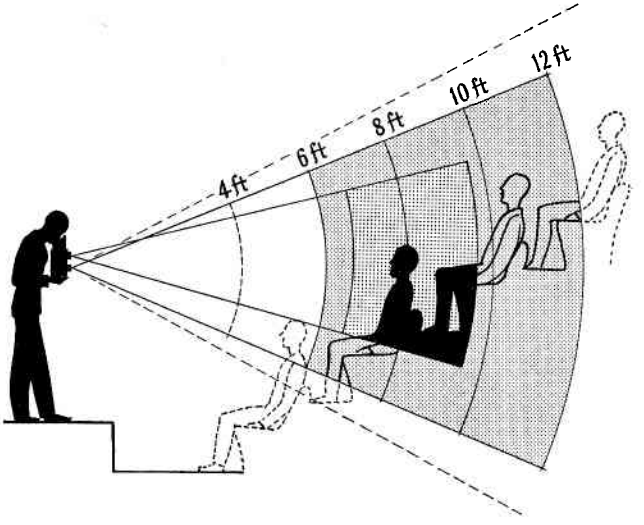


Fig. 44

This shows how the viewing lens has a much smaller depth of field than the taking lens. The solid area shows the depth of field as seen on the viewing screen, and the shaded area shows how the depth of field recorded on the film is much greater at any average working aperture.

setting the apertures which appear in the front part of the same peep window mentioned above. These are marked f/3·5, 4, 5·6, 8, 11, ⊙, 22. The aperture f/16 has been omitted because of lack of space for engraving but is indicated by a dot (·). Any intermediate position can be used and although any one of these apertures can be utilized as the occasion demands, wide aperture lenses like those fitted to the Automat give their finest definition between f/5·6 and f/11. Whichever aperture may be selected for use in taking the picture, the viewing lens always uses the widest aperture of which it is capable.

Loading the Camera: Opening the Back

Whenever possible choose a situation away from bright sunlight or studio lights but if this is not possible then provide some shade with the body and retain the double lens cap in position during this operation. Place the camera face down on a flat surface or on its head for this important procedure. Looking at the camera base (Fig. 47) turn the safety catch (No. 2) to the left in the direction of the arrow, then lift the catch No. 1. Swing up the back until it rests against the hinge or if on its head, swing it down until it rests on the flat surface. Make quite certain that the adjustable pressure plate is in the correct position and that the inscription $2\frac{1}{4}'' \times 2\frac{1}{4}''$ (6×6 cm.) can be seen (see page 58).

Inserting the Spool

Now that the back is open, turn the crank handle (Fig. 35 No. 5) in a clockwise direction until the winding key (Fig. 45 No. 2) is in a vertical position. Pull out the knob

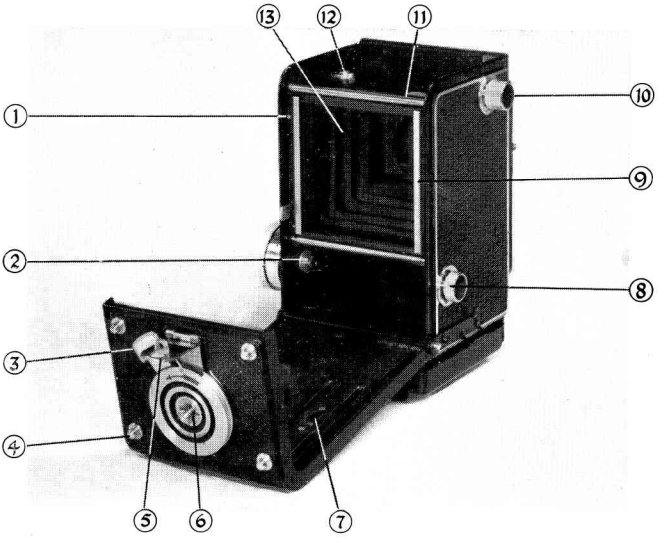


Fig. 45

Interior view, with the back of the Rolleicord IV in the open position; (1) Film loading indicator points; (2) Film wind key; (3) Base Lock; (4) Levelling feet; (5) Base catch; (6) Tripod bush; (7) Dual purpose adjustable pressure plate; (8) Take-up spool retaining knob; (9) Film gate; (10) Feed spool retaining knob and cine film rewind knob; (11) Pressure leaf spring; (12) Feed spool pivot; (13) Light baffles.

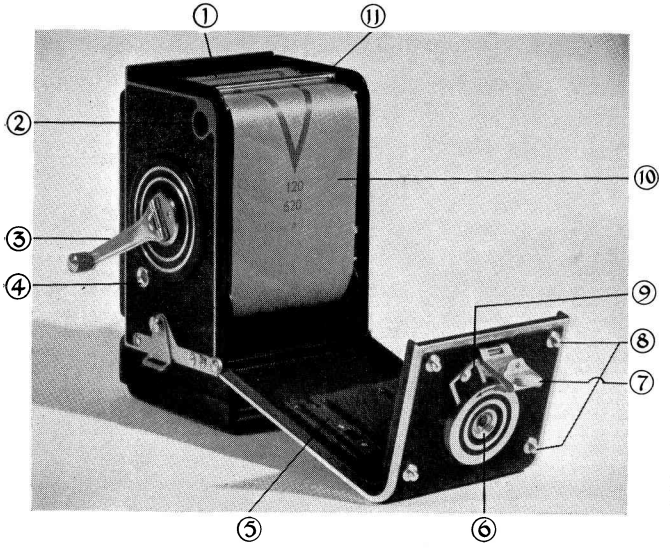


Fig. 46

Interior view of the Rolleiflex Automat II, with the back in the open position and film correctly threaded: (1) Feed spool; (2) Crank handle stowage; (3) Crank handle; (4) Film numbering peep window; (5) Dual purpose adjustable pressure plate; (6) Tripod bush; (7) Base clip; (8) Levelling feet; (9) Base lock; (10) Film backing paper threaded over gate; (11) Measuring roller. N.B. —Backing paper *must always* be threaded *under* this roller otherwise the automatic numbering mechanism will not function.

(No. 8) at the other end of the spool chamber and a half turn will hold it in the out position. Take an empty spool from a No. 120, 20 or B-2 film and insert it with the key-way vertical and to the right, so that it engages the winding key of the camera,

then let the spool fall comfortably into the take-up chamber, give the retaining knob (No. 8) another half turn until it drops back into position and engages the other end of the empty spool.

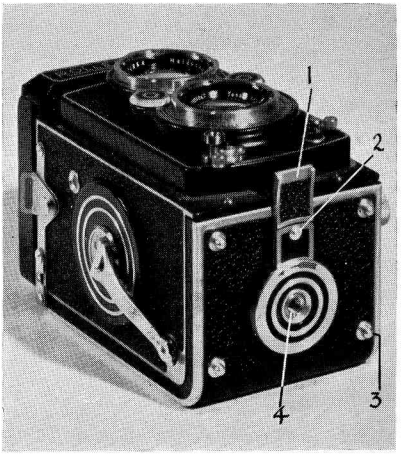


Fig. 47

Base view of camera: (1) Base clip; (2) Base lock, which is opened in the direction of the arrow; (3) Levelling feet; (4) Tripod bush.

Inserting the Film

The feed spool chamber is located at the opposite end of the open camera. Take a spool of film, size 120, 20 or B-2 with the seal still unbroken and insert it (key-way to the left this time) on the pivot inside the right hand corner of the feed spool chamber. Press it down against the leaf spring (Fig. 11) whilst pulling out the retaining knob at No. 10. Then allow this to return to its normal position, when it will engage the aperture at the other end of the spool. Now break the seal of the film, remove all loose gummed paper and pull out a short length of the backing paper. There is no danger of the film unwinding as it is firmly held by the leaf spring.

Threading the Film

Bring the paper leader *underneath* the roller (Fig. 46 No. 11) then over the film gate rollers and the film gate itself and insert the end in the wide slot of the empty take-up spool. Push it right through until it appears in the narrow slit on the other side of the spool and then turn the crank handle slowly until one complete revolution of the take-up spool has been made, at the same time centreing the backing paper so that it rides comfortably between the shoulders of the spool and is not riding up on one side and leaving a space at the other. Close attention should be given to this operation as it

is quite contrary to the loading of any other camera to which the photographer may have become accustomed as in these, the film is always led *over* all existing rollers. Unless this point is carefully followed the film will not stop automatically at the first exposure but instead it will be wound uselessly right through to the end and will be wasted.

Closing the Camera

Swing the camera back into the closed position, push home the clip Fig. 47 No. 1 and fasten the safety lock No. 2 by turning it to the right against the direction of the arrow and push it home. Now turn the camera again to its normal handling position and wind the crank handle in a clockwise direction until a definite stop is felt. Do not be deceived by the first gentle pressure as this is the point at which the feeler mechanism is encountering the double thickness of film and backing paper and brings the automatic mechanism into operation. This halts the film some three inches further on at No. 1, which is indicated in the peep window at Fig. 35 No. 4.

Shutter Setting

As soon as a definite stop is felt, reverse the crank handle in an anti-clockwise direction until a second stop is felt – this cocks the shutter and prepares the camera for the first exposure. You may now turn the crank handle over on its hinge and stow it in the space provided at Fig. 35 No. 6. The camera is now ready for action and the shutter speed knob (No. 17) should be turned to show an appropriate speed in the peep window (No. 14). (The fastest speed of 1/500th second must not be engaged at this stage, see below.) To make an exposure, press the shutter release at No. 7 after first removing the safety catch (No. 8) by swinging it downwards, and then repeat the forward and backward wind of the crank handle to a definite stop in each direction. This will bring a new frame of film into position in the gate, set the shutter for the next exposure, bring the No. 2 into the peep window at No. 4 and interlock the shutter against double or missed exposures. Now continue in this manner right through the roll of film until the twelfth exposure has been made when it will be found that the crank handle can be wound without a stop for several turns; this will take all the backing paper on to the take-up spool. A clicking sound of paper trailer against metal will indicate this.

The Top Speed of 1/500th Second

It has been mentioned above that as soon as the crank handle is wound and reversed, the shutter is cocked and once in this position the top speed cannot be engaged. Under no circumstances should any attempt be made to force the speed adjustment from

1/250th to 1/500th once the shutter has been set. To engage the fastest shutter speed, this must be moved into position in the peep window at No. 14 *before* the crank handle is wound and reversed. Similarly it cannot be disengaged and a slower speed brought into position except when the shutter is free and uncocked. If it is necessary to use the 1/500th and if, for example, the 1/100th second is already in position and the shutter cocked, then a single frame of film must be wasted by pressing the release, the speed dial re-adjusted to 1/500th and then the crank wound and reversed and the shutter reset for this speed.

Delayed Action

The delayed action release button (Fig. 35 No. 15) which allows 12 seconds delay before actually firing the shutter, permits the photographer himself to be included in the picture. This control is situated at the right hand top corner of the front panel and as the crank handle winds the film and cocks the shutter, so the delayed action mechanism is preset every time and is therefore always ready for action.

For use, place the camera on a tripod, or towards the front edge of a steady table. Adjust the shutter speed and diaphram setting to the prevailing light conditions and push the button (No. 15) towards the right, i.e. in the direction of the engraved arrow, and a burring sound will be heard as pinion wheels are actuated by a strong spring mechanism. The photographer should immediately take up his position as pre-arranged and pre-focused, and he has twelve seconds in which to reach his position. At the end of this time, the tell-tale click of the shutter will indicate that the exposure has been made.

Removing the Exposed Film

When the film has been wound off, open the camera back again as described on page 63, pull out the knob (Fig. 45 No. 8) at the same time steadying the roll with the finger, withdraw it first from the left side, and seal down the film with the adhesive paper provided. (Occasionally this sealing strip may be caught up behind the pressure plate.)

Flash Synchronization

The stud at Fig. 35 No. 19 takes the standard Compur co-axial plug which is fitted to the Rollei flash gun or is found on the majority of guns. The flash control button at No. 18 has two positions, 'X' and 'M'. The 'X' position is normally used for electronic flash, or for the short delay flash bulbs of the S.M. type, and these can be synchronized on all speeds up to 1/100th second. Electronic flash can be used on any speed. The 'M' position is used for the longer delay bulbs of the Philips' P.F. type, and synchronization can be obtained up to 1/500th second. Full details of flash synchronization are given in the chapter on Flash Photography.

Cine Film Equipment

On the front frame of the direct vision finder (the top of the camera), can be seen three locating studs (Fig. 35 No. 13). These accept the finder mask of the Cine Film equipment provided in the Rolleikin II outfit (see page 115). This model is also fitted with a dual purpose pressure plate in the back which makes it unnecessary to have a special back for use with cine film. By pressing on this ribbed pressure plate (Fig. 45 No. 7) both downwards and horizontally, the figures $1'' \times 1\frac{1}{2}''$ (24×35 mm.) are exposed. A further pressure on the pad in the reverse direction will again bring the figure $2\frac{1}{4}'' \times 2\frac{1}{4}''$ (6×6 cm.) into position and the film indicated can then be used.

The lower (feed spool) chamber film retaining knob (Fig. 36 No. 5) is now larger and cannot remain fixed in the 'out' position as in the Automat I. This is now a double action retaining knob both for standard roll film and for the Rolleikin equipment, and in the latter case it acts as a rewind knob. In this model, the screen mask for the $1'' \times 1\frac{1}{2}''$ (24×36 mm.) size is retained by a spring catch at No. 11 which controls two small size lugs which hold the mask in position over the screen.

1954/56 IMPROVED MODELS

The Automat II underwent various slight changes in 1954 which, in effect, are some of the more popular features of the Automat 2·8C described on page 71. The general design and operation of the camera remains exactly as described above, but it has several additional features.

Multiple Exposure Release

Although, as usual, the film wind is interlocked against double exposures, many workers demand the ability to make double or multiple exposures for use in photo-montage, etc. and this is provided for in this model. On the hub of the winding knob (Fig. 47b) a knurled wheel has been incorporated, which, on being turned forward in the direction of the arrow, allows a second exposure to be made on the same frame of film. To cock the shutter for the second exposure, the film wind crank is given a reverse turn only. The interlock mechanism will now operate normally unless the release wheel is again turned forward. This is also an invaluable feature in the event of a flash bulb failing to fire, when it is only necessary to release the interlock mechanism and re-cock the shutter in the same way.

Focusing Knob

As in the Automat 2·8C and following the success of the auxiliary focusing knob accessory, a new enlarged knob has now been incorporated (Fig. 42d No. 4) embodying the same easily read silver figures on a black ground, both on this and on the depth scale adjacent to it (No. 1). This knob also embodies the film type and speed

reminder panels as in the extension knob, but it is actuated by one single control. When this is turned anti-clockwise it allows the film type to be shown in the inner aperture at No. 4. This reads: Pan, Ortho, Daylight Colour, Artificial Light Colour. When it is turned clockwise it permits the film speed to be seen in the outer aperture in both ASA and DIN speed ratings. This second movement does not upset the first movement described above. For B.S. and European Scheiner speeds, add 10 to the DIN speed.

Neck Strap and Back Hinge Plate

This part of the camera has also been redesigned, and is now equipped to accommodate a neck strap with clips that permit easy removal and insertion into the special eyepieces provided (Fig. 42c No. 3). The special strap is supplied with the camera, and is firmly attached when the slip-locks on the strap ends are pushed down and they still allow the neck strap to ride back and forth in the space provided so that the camera always hangs in a level focusing position. To fasten the strap, hook the metal loop on the anchor button, pull locking slide down and push it into the strap holder slot as far as it will go. These new side plates end in the new type hinge which facilitates the removal of the camera back by simply turning the catch at No. 2 upwards and clockwise. With this fitting there is no danger of accidentally releasing the back panel. The film spool retaining knobs are automatically locked in position when the camera is closed so that they cannot be accidentally withdrawn, causing misalignment of the film.

Shutter Release and Guard

A new shutter release guard (Fig. 42c No. 9) has been devised which is enclosed within the front panel. It is only necessary to turn the chromium stud in a clockwise direction to lock the shutter release, which will ensure against accidental exposures. It can also be used to keep the shutter open for time exposures when set to 'B'. First depress the release half way, then turn the lock and press the release the rest of the way, when the blades will remain open until the lock is released.

The shutter release of this model has been specially balanced to open only after overcoming a slight but distinct resistance. The exact instant of exposure can, therefore, be gauged very accurately by feel. At the other side of the camera front, the flash plug with M and X positions (Fig. 12) has been redesigned and now incorporates a lock mechanism in the change-over lever. When in the vertical position midway between M and X, the lock is open, and turning it in either direction locks it.

Light Value Scale

This recent development in exposure control is engraved on the shutter speed setting wheel (No. 15). It actuates the speed and the aperture dials together so that an

increase in aperture is automatically compensated by a shorter exposure and vice versa. Speed settings, however, can be adjusted separately by holding the aperture wheel and turning the speed wheel. In the later versions of this model the speeds and apertures are permanently in mesh until the centre of the aperture wheel is depressed, when both become free. In 1956 this feature was again modified to allow permanent unmeshing when required. To release, it is only necessary to depress the central boss and then turn it out of register with the lines engraved upon the milled wheel (see Fig. 47a). To re-engage the Light Value Scale, the engraved lines should again be placed in register.

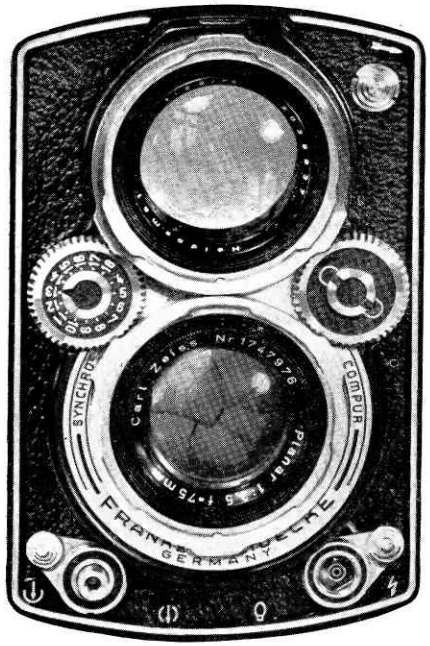


Fig. 47a

The front of the modern Automat showing light value scale engraved on speed adjusting wheel at left. The arrow in the centre is rotated by the aperture setting wheel at right. The centre of this wheel can be depressed to allow independent settings of speed and aperture. Turning it out of mesh with the engraved marks uncouples the light value interlinkage.

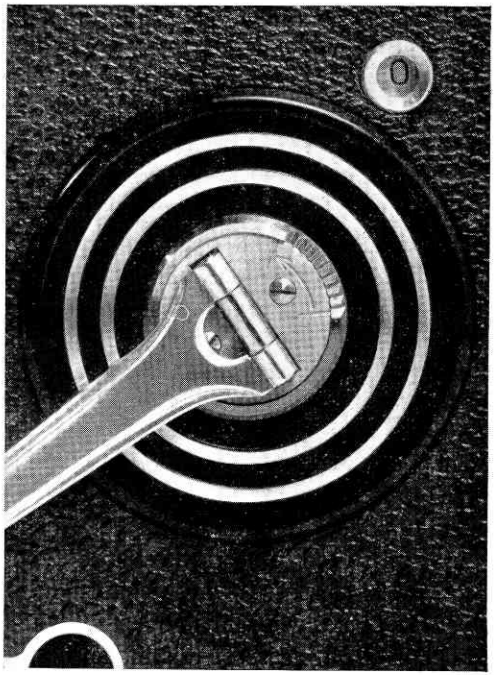


Fig. 47b

The Modern Rolleiflex film wind crank showing the optional double exposure release lock on the boss. The milled part is pushed in the direction of the arrow once for each extra exposure required on one frame of film.

Once set to the correct number, the speeds and apertures are altered together by turning the speed adjusting wheel. This is now equipped with click stops making it impossible to set intermediate positions between the marked shutter speeds. This is of special importance in colour photography where it is often necessary to repeat the same exposure to a high degree of accuracy.

New Compur Shutter

In order to correlate the light values, the shutter has been redesigned to give a range of speeds, each one of which is half the preceding speed and the following are now obtainable with this shutter, 1 second, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/125, 1/250 and 1/500th second. The slight differences between the 1/15th second and the correct 1/16th second and the 1/240 and 1/250th second, are so slight as to make no material difference in exposure, even with colour film.

Flash Plug

For use with the Rolleiflash or with the special connecting plug available, the lock (Fig. 42c No. 12) avoids any possibility of accidentally pulling it out. To open the lock and withdraw the plug, swing the lever (No. 13) to the central position. In either the M or X position, the plug can be inserted, but not withdrawn. For use of the M and X positions see page 67 and Chapter XIV.

Size and Weight

These models measure $5\frac{1}{2}''$ high, $3\frac{3}{4}''$ wide, $3\frac{3}{4}''$ deep overall (14·3 × 9·4 × 9·5 cms.) and weigh 2 lb. $2\frac{1}{2}$ oz. (1 kilogramme) without their ever-ready case.

THE ROLLEIFLEX AUTOMAT F/2·8 MODELS

About 1950 a new model appeared, fitted with an f/2·8 Zeiss Opton Tessar lens and later with Zeiss Jena Biometar and various other minor differences. The Tessar, however, was taken out of production after only a very short existence due to the extreme difficulty experienced in producing lenses of the necessary high quality. The Biometar, though a fine lens, was not generally available from the Jena works.

The bayonet lens mounts on these models are of larger diameter and special size II accessories are provided in lens hoods, filters etc. Those for the Tessar and Biometar, however, are of a different size to those for the f/2·8 Xenotar and Planar, which use size III. A few other minor alterations in design can be seen in the illustrations at Fig. 39 and 40 and these include the substitution of a lever in place of the usual delayed action release button. The camera is heavier than the standard model but its operation is exactly as for the Automat II described on pages 60 to 68.

Automat 2·8C and D

In 1953 the 2·8C fitted with f/2·8 Schneider Xenotar lens appeared and this model includes many new advantages and refinements. This Xenotar lens at last satisfied

the high standard set by the makers themselves and because of its new and interesting design (see Fig. 7a) it is worthy of special mention. The previous four-element f/2·8 Tessar type lens begins to sacrifice definition at the expense of the wide aperture in an objective of 80 mm. focal length covering a 6 × 6 cm. field. But the construction of this new objective of the Gauss type, using five elements and three air spaces gives a highly satisfactory performance even at wide open aperture. In 1954, the Carl Zeiss Planar of similar focal length and aperture, also of Gauss type construction, was introduced as an alternative (Fig. 7b).

The 2·8D, of similar design, appeared late in 1955 and is essentially the same as the 2·8C except that it includes the Light Value Scale 10 speed shutter described on pages 70 and 91, the optional linked or unmeshed Light Value Scale shutter and flash lock and shutter release lock as incorporated in the 1956 f/3·5 Automat (see page 71).

Operation

The general handling and operation of the model is exactly as for the Automat II and loading and unloading of the film is carried out in the same manner. The larger lens mounts require the use of the special Type III accessories. It is therefore only necessary to describe the new and additional features incorporated in the new models.

Camera Body

The interior of the camera body has been redesigned to prevent internal reflections and a series of light baffles are cast into the inside walls of the body.

The film spool retaining knobs are automatically locked in position when the camera is closed so that they cannot be accidentally withdrawn, causing misalignment of the film.

Multiple Exposure Release

Although like all automats, the film wind is interlocked against double exposures, many serious workers demand a camera on which double or multiple exposure montages can be made. On the hub of the winding knob (Fig. 47b), a knurled wheel has now been incorporated which, on being turned forward in the direction of the arrow allows a second exposure to be made on the same frame of film. To cock the shutter for the second exposure, the film wind crank is given a reverse turn only. The interlock mechanism will then operate normally unless the release wheel is again turned forward. This is an invaluable feature in the event of a flash bulb failing to fire, and can save a wasted frame when changing from 1/500th second to a slower speed by simply covering the lens and bringing the double exposure device into operation. This, of course, does not apply to the model D which has the new 10-speed shutter and in which there is complete freedom of movement between the 1/500th sec. and any other speed.

The flash control for X and M settings is at the upper left of the camera front (Fig. 41 No. 8) and the delayed action button replaced by a lever (No. 19).

Shutter and Diaphragm Setting Wheels

These milled wheels in the model C are equipped with a locking device or automatic arresting slide so that once set, they cannot be accidentally moved from their positions. To change the setting, it is merely necessary to turn the knurled wheel (No. 21) whilst depressing the arresting slide (No. 9) simultaneously. Once the finger is removed, this will fall back into a locked position opposite whichever setting has been chosen. This feature is not, of course, necessary in the Light Value Scale shutter of the model D.

Delayed Action

The delayed action lever (No. 19) on all f/2·8 models must be independently cocked each time it is used by turning it from a vertical to a horizontal position in a clockwise direction. The model D has a safety lock at the top of this lever. As soon as it has been cocked the shutter can be released for delayed action pictures.

Magnifying Eye Pieces

The screen magnifier on the top of the hood (Fig. 42 No. 8) and the eye level focusing magnifier (No. 10) are adjustable and can be accommodated to all eyes, but the users should not wear spectacles during operation, especially if these are equipped with negative lenses. It is merely necessary to pull the magnifying eye pieces forward or back, up or down, to suit individual eyesights.

Focusing Knob

Following the success of the auxiliary focusing knob, a new enlarged knob has been incorporated (Fig. 42 No. 2) embodying the same easily read silver figures on a black ground, on both this and the depth scale adjacent to it (No. 1). This knob also embodies the film type and speed reminder panels as in the extension knob, but it is actuated by one single control (Fig. 42 No. 4). When this is turned anti-clockwise it allows the film type to be shown in the inner aperture at No. 3 and when it is turned clockwise it allows the film speed to be shown in the outer aperture at No. 5 in both American and European speed ratings. This second movement does not upset the first movement described above.

Cine Film Exposure Counter

The take-up spool retaining knob (Fig. 42 No. 12) embodies the film exposure counter normally supplied with the Rolleikin II Outfit and this accessory is no longer needed and therefore ensures a quicker change-over to the cine film size.

Neck Strap and Back Hinge Plate

The camera is equipped to accommodate a neck strap with clips that permit easy removal and insertion into the special eye pieces provided (Fig. 41 No. 3). The special strap is supplied with the camera and is firmly attached when the slip-locks on the strap ends are pushed down and still allow the neck strap to ride back and forth in the space provided so that the camera always hangs in a level focusing position. To fasten the strap, hook the metal loop on the anchor button No. 3, pull locking slide down and push it into the strap holder slot as far as it will go. These new side plates end in the new type hinges which facilitate the removal of the camera back by simply turning the catch at No. 2 upwards and clockwise. With these fittings there is no danger of accidentally releasing the back panel.

Shutter Release Guard

The shutter release guard (Fig. 41 No. 10) on the model C is enclosed within the front panel. It is only necessary to turn the milled wheel in a clockwise direction to lock the shutter release, which will ensure against accidental exposures. It can also be used to keep the shutter open for time exposures when set to 'B'. The cable release socket threaded into the plunger can still, however, be used. On the model D this has been replaced by the standard f/3·5 type lock described on page 69.

Flash Plug

The flash plug connector of the model C locks into the camera once it is inserted into the socket at No. 13 by turning the small milled flange No. 14 upwards slightly while the plug is being inserted and then releasing it. It is then positively locked into position and will not accidentally pull out. To release flash socket press up the milled flange when it can easily be withdrawn. The model D incorporates the f/3·5 type flash plug and this is described on page 71.

Pressure Point Shutter Release

The shutter release of these models has been specially balanced to open only after overcoming a slight but distinct resistance. The exact instant of exposure can, therefore, be gauged very accurately by feel.

Accessories

All accessories for these models are of the extra large diameter bayonet now known as Type III, but a new Rolleinar close-up accessory has been designed for them. This is known as the Heidosmat Rolleinar for the upper or viewing lens and incorporates a built-in Rolleipar for parallax correction. These new close-up lenses are all hard coated for the elimination of reflections.

THE 1956 EXPOSURE METER MODELS 3·5 AND 2·8E

Late in 1956 the standard Automat f/3·5 model, as described on pages 68 to 71, and the 2·8D, described above, both equipped with the Light Value Scale, were modified further to include a built-in photo electric exposure meter (see Figs. 42k and l). For the first time, the f/3·5 model is now equipped with a five-element Gauss-type objective similar in all other respects to that fitted to the f/2·8 models. This is an f/3·5 Carl Zeiss Planar of extremely fine performance and combines all the advantages of a high performance, fully colour-corrected, lens of perfect covering power and correct light transmission for colour photography. There are also one or two other small improvements which are enumerated below. The same camera, however, is available with f/3·5 Xenotar five-element lens, but without exposure meter. All parts and necessary wiring are already in position so that the meter and photo-cell can be added at a moment's notice. The 2·8E is equipped with either the f/2·8 Planar or Xenotar just as the previous 2·8 models.

The exposure meter is calibrated in light values only, to correspond with the setting of the Light Value Scale, and this combination makes correct exposure with the Rolleiflex an extremely simple question. The use and operation of these cameras is exactly as described above for their predecessors, but with the following additions.

Built-in Exposure Meter

The photo-cell of this accessory is built into the nameplate on the camera front (Figs. 42i and k No. 18) and for normal outdoor operation is used in the closed position. For interiors or dull lighting conditions, a front interior baffle can be raised which gives a fifty-times more sensitive meter than with it closed. In some meters this is done by means of a "booster" cell, but in the Rolleiflex this is already very sensitive and is, in fact, masked down to one-fiftieth of its normal sensitivity for standard use out-of-doors.

To raise the baffle for indoor use, press down the lever on the front right edge of the nameplate (Figs. 42i and k No. 17) when a red dot will show. In this position all readings on the meter must be taken from the red scale. For use as an incident light meter, a white plastic diffuser fits over the photo-cell and is accommodated in the camera case when not in use.

Focusing Knob

A new focusing knob has now been designed which not only performs all the previous functions, but, in fact, now contains the meter portion of the photo-electric exposure meter. Apart from its normal use of focusing the camera and acting as a film type reminder panel, it contains a needle working against a scale on the front of it (Figs. 42j and l No. 4) and an extra scale calibrated in light values round its periphery. A

further extra scale in DIN and A.S.A. supplies the film speed to the meter and also acts as a reminder of the speed of film in use.

To use the meter, first set the film speed in A.S.A. or DIN (for Scheiner or B.S. add 10 to the DIN speed) by turning the outer milled edge to the limit of its free travel, then forward for a higher speed or back for a lower speed, and continue turning until the necessary film speed has been reached. Now point the camera at the subject to be photographed and turn the same milled edge round the front periphery until the red needle on the meter is opposite the datum line. This can be seen through the top transparent plastic housing. The light value indicated can now be read off on the black scale.

In dull lighting conditions or indoors, when it is necessary to remove the baffle by pressing the lever No 17 described above, the same operations are necessary, except in this case the light values will be read from the red scale on the meter.

Depth of Field Indicator

Previous models of the Rolleiflex have used a depth scale around the focusing scale, as shown in Figs. 43a and b. In these new models the depth scale has been omitted and in its place are a pair of black louvres which expose a small white central area almost like the camera iris itself. As the aperture setting wheel (No. 21) is altered to give a wider aperture, so these black covers move inwards towards the centre showing a smaller patch of white. The extent of this can now conveniently be read off against the distance scale marked on the focusing knob, thus giving the depth of field automatically at every aperture (see Fig. 43c).

Focusing Hood

This is unaltered in the f/3·5 models, but in the 2·8E the previous 2·8 hood with adjustable magnifiers has been discontinued in favour of the f/3·5 type magnifier with large light-excluding baffle.

Neckstrap

A new neckstrap has been designed and is fitted to these models only. This has a fork-type lock which, on being pushed into the eyelet and over the button, locks automatically on entry. To release the neckstrap, the two sides of the fork must be pressed together, and ensures against accidental release. This accessory has now been hinged just above the fork so that the camera can be allowed to swing in any direction without damaging the camera due to scratches, etc. This strap is also used as a case-strap, the new type case having none (see page 154).

Back Plate

A new plate now replaces the Light Value Scale chart on the back of the camera. This permits setting of the Light Value Scale shutter for longer exposures than

1 second which are not catered for in the Light Value Scale, but may be necessary when longer exposures are indicated by the exposure meter, when the "B" shutter setting is used.

Shutter Release Guard

This is exactly the same as the previous model, but a visual indication of when it is locked and when it is unlocked is now shown by the new symbols, ⌣↓ which shows that the shutter cannot be used and (↓) which shows that the shutter is free.

Flash Synchronization

This is exactly as the previous models, but new symbols have been used to indicate the "X" and "M" settings. The "X" setting is now visually shown by a flash or lightning mark, and the "M" setting is shown by a representation of a bulb.

Cine Film Re-wind Knob

This has been slightly modified in these models so as to form a larger operating surface (No. 7) and facilitate the winding of the cine film back into the cassette.

Fig. 48

Carrying the camera. Under no circumstances should your Rollei be permitted to swing uncontrolled from the shoulder, but should always be steadied by grasping the strap close to the case.

Care of Your Rolleiflex and Rolleicord

Your Rollei is a precision instrument with more than 300 separate moving parts in it, many of them unbelievably small and performing surprising functions. In spite of this

it is an exceedingly strong and robust camera capable of giving years of trouble-free service. Nevertheless it needs a certain modicum of care and attention but nothing more, to ensure continual functioning at a very high pitch of accuracy and efficiency.

Although the outer casing is of strong die-cast metal and it is normally carried in a heavy leather case, do not allow it to swing uncontrolled from the shoulder. Otherwise it may swing against a wall or gate as you turn a corner, or climb a stile; such a knock as may result with the full weight of the camera behind it, may be the cause of many troubles including the non-synchronization of taking and viewing lenses, if this blow should be at the front part of the instrument.

Always keep your Rollei in the case provided, as it is specially reinforced at the front and top – the most vulnerable parts and all controls project through the sides of the case, so that it is rarely necessary to remove it therefrom, except when changing films.

Care of the Lenses

Always keep the Rollei double lens cap in position over the lenses except when actually using the camera. Optical glass is really very soft, it tarnishes like silver and is easily attacked by weathering spots, caused by impurities in the atmosphere. These are more prevalent in the vicinity of towns and cities, but exist everywhere.

Remove any dust specks from the front surfaces of the two lenses occasionally and also from the back surface of the taking lens, with a very soft squirrel brush and only attempt more drastic cleaning if they are really marked by fingers or grease. In such a case the following procedure should be carried out: remove any dust with a squirrel brush, gently wipe over the surface with a clean piece of best quality lens cleaning tissue, such as 'Green's 105', supplied by Ilford Ltd. and others, then remove with the squirrel brush any tissue that may remain. Should you have any obstinate grease marks which still remain after this treatment, then proceed as above, but moisten a grit-free, well washed soft linen handkerchief with a good lens cleaning fluid, such as 'Opticol', gently wipe and dry off with the lens tissue. It is not advisable to use Xylene or similar solvents which may work down into the cemented components and attack the lens balsam.

Removing Dust, etc.

After a few rolls of film have been through the camera, open the back, take out the empty spool and carefully remove any dust or debris which may have accumulated; this may have come from film, backing paper or wooden cores. The corners of both spool chambers are always the worst offenders, but do not forget the back of the camera – the space behind the pressure plate, and the inner edges of the camera body.

In some models particularly the Rolleicords III, IV and V in which the film numbering is dependent on the measuring roller, it is unwise to make frequent dummy 'winding-on' motions with a take-up spool in position, as the toothed measuring wheel will grind enamel and even metal particles from the spool and deposit them in the spool chamber. These may find their way into the moving parts of the camera or on to the film, causing in the former case unnecessary wear or even jamming, and, in the latter case, spots or scratches on the film.

Never allow your camera to be sprayed by sea water and if this should happen, retire to a safe place and remove every vestige of salt water before it can attack metal, leather or soft optical glass. Sea water and even sea air of high salt content borne by a strong wind can attack the coating or 'bloom' on your lens.

Under no circumstances should oil be introduced on to any moving part and especially does this warning apply to the camera shutter. Should any fault develop do not attempt to repair it yourself, even if you are a handy man with a screwdriver. The tiny screws, spindles, and pinions in your Rollei can only be safely handled by the highly skilled, precision camera repairer who already knows his way about every part of your Rollei's anatomy. Moreover, burred screw-heads and deep scratches spoil the look of your camera and bring down its value, which it will always retain at a high level if kept in pristine condition.

Above all do not lend it to others who may not know how to use it, or be aware of all the tricks which you yourself have learnt and who, in any case, have not that pride of possession which only you, the Rollei owner, can possess.

1957 MODELS

ROLLEIFLEX 4 × 4

During 1957 a new model appeared called the Rolleiflex Automat 4 × 4 (Fig. 63a) which is very similar to the Sports model last produced in 1939 and illustrated on page 28 (Figs. 28 and 29). As the previous model, this new camera uses 127 (A-8) film on which 12 exposures, each $1\frac{5}{8} \times 1\frac{5}{8}$ (4 × 4 cm.) are taken. The essential differences are in the method of film winding and the focusing hood. The lens fitted is an f/3·5 Schneider Xenar of 60 mm. focal length in a Light Value Compur Rapid shutter with X.M. synchronization and delayed action built in. The camera is finished in two tones of grey.

Focusing Hood

This differs from other recent Rollei types in that it does not collapse into the body of the camera, but lies entirely over the focusing screen which, in this model, is of the plano convex type with matted under-side. The hood is of 'concertina' construction and folds inwards at both side and back. To erect the hood it is merely necessary to pull up the back portion as in other modern Rolleis already described. There is a direct vision aperture in the rear portion, and the front centre portion collapses for use with it as in the normal Rollei hood. A magnifier is built into the front portion and is erected at the first gentle push of the collapsing centre panel. When this is pushed in a little further, it locks in the horizontal position leaving clear the open frame finder. To return the hood to screen focusing, it is only necessary to press lightly on the right-hand side panel, when the collapsible front will return to the vertical position.

Focusing

This is effected by turning the large milled knob at the left side of the camera as in the modern standard model Rolleiflex, and both the knob and the depth of field scale are similar to that fitted to the Rolleicord V with film speed reminder panel built into the vertical face.

Shutter

The shutter fitted to this model is the standard 10-speed Light Value Compur Rapid shutter, but the light value and the aperture are adjusted by pressing and turning the metal release on the left-hand side of the shutter housing when seen from the normal viewing position. To alter the shutter speed, the outer milled ring of the shutter is turned in either direction until the required speed comes into position, whilst holding the above mentioned metal release in the free (depressed) position. The speeds and apertures in actual use are indicated against a small U-shaped piece of metal on the left side of the shutter housing. The shutter speed and aperture are always in mesh as in all light value shutters, except when the release is depressed.

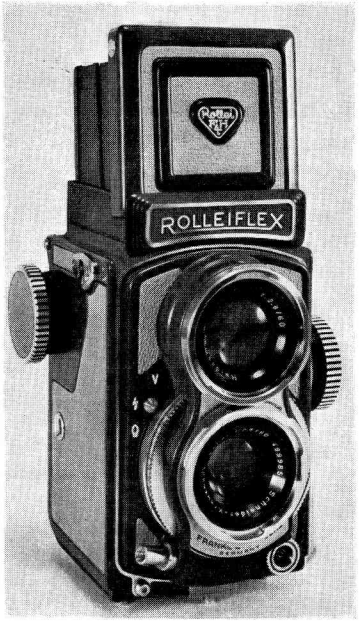


Fig. 63a

1957 Rolleiflex Automat 4 × 4.

Fig. 63b

1957 Rolleicord Va, showing removable numbering and spacing panel with counting mechanism.

Loading the Camera

The back is opened by the base lock in the same way as all other modern Rolleiflex and Rolleicord cameras and is shown clearly in Fig. 47. The back is now swung up and an empty spool placed in the take-up chamber. To do this the film wind knob on the right-hand side of the camera is pulled out, when the spool holder will immediately spring up into the loading position. The empty spool is now inserted in the grooves and the winding knob again pulled out whilst the spool and holder are pressed back. The winding knob is then allowed to spring home.

At the feed spool position, a red arrow will be seen showing the direction of film travel and before a film is inserted the finger should be allowed to press firmly on this arrow when the spool holder will spring out into the loading position. Now insert a roll of 127 or A-8 film and press firmly on the spool to return it and the film holder into the ready position. The film leader is now led over the rollers (N.B. not threaded through them) into the take-up spool in the usual way.

In this model the feeler mechanism is built into the side of the film gate and it is now only necessary to close the back, lock it and wind on the film until No. 1 comes automatically into the numbering window on the right-hand side of the camera under the film wind knob.

The film wind and shutter setting mechanism is fully automatic and fool-proof as in all standard Rolleiflex Automat cameras already described and the shutter is cocked as the film is wound on to the next exposure. Double exposure is impossible with this model.

Shutter Release

This is situated at the right-hand base of the camera front and is inclined at an angle for the forefinger. The shutter cannot be released when the focusing hood is closed and, therefore, no shutter release guard is necessary.

Flash Plug and Delayed Action

The flash socket is situated in the usual position at the left-hand base of the camera front and the flash plug is inserted in the usual way by pressing it in, when it immediately becomes locked. To detach the flash cable it is only necessary to turn the external milled wheel around it and pull out the flash plug. 'X' or 'M' synchronization (see Chapter XIV) is available by adjusting the chrome stud situated between the two lenses on the right-hand side, to the necessary sign. For delayed action this same button is pressed up to the 'V' position and the shutter released in the usual way, when approximately 12 seconds delay will be given.

Neckstrap and Camera Case

The Ever-Ready case for this camera is not fitted with a special strap as this is used for both the camera and the case as in the recent Automats described on

page 76. The Ever-Ready case, however, is of a new format and both front and rear portions collapse allowing the camera to be held only by the central base portion. To detach the neckstrap from the camera, the half round piece of metal below the side fixing should be depressed and the neckstrap end button slid out and downwards. To insert, it is only necessary to push the button upwards into position when it is immediately locked.

ROLLEICORD VA

This new version of the Rolleicord (Fig. 63b) appeared in July 1957 and is almost identical in every respect to the Rolleicord V described on page 59. The only difference in this model is the position of the focusing knob which is now on the left-hand side of the camera instead of the right, when looking at it from the normal taking position. Its place on the right-hand side of the camera has been taken by an interchangeable panel with numbering device. This panel is normally fitted with a 12 exposure numbering device and gives the standard 12 exposures on 120 (B-2) film. Accessories, however, are now available which permit 16 pictures $1\frac{5}{8} \times 2\frac{1}{8}$ in. ($4 \times 5{\cdot}5$ cm.) and $1\frac{5}{8} \times 1\frac{5}{8}$ in. (4×4 cm.) to be taken; or 24 pictures $1\frac{1}{8} \times 1\frac{5}{8}$ in. (28×40 mm.) and $1 \times 1\frac{1}{2}$ in. (24×36 mm.) in a horizontal format, thus for the first time it is possible with a standard Rollei camera and without using the 35 mm. cine film attachment, to obtain photographs of a suitable size for projection in standard 2×2 in. (5×5 cm.) projectors.

The Small Picture Accessories

These form two new accessory outfits in each of which are included a numbering mechanism panel with fixing screw, two screen masks, two direct vision hood masks, and two film gate masks. As already mentioned, the 16 picture accessory outfit, known by the code word 'COSUF', has both $1\frac{5}{8} \times 2\frac{1}{8}$ in. ($4 \times 5{\cdot}5$ cm.) and $1\frac{5}{8} \times 1\frac{5}{8}$ in. (4×4 cm.) masks, either of which are suitable for fitting into the American Super Slides or the Cenei 'C' type slides which give a very large picture area in a 2×2 in. (5×5 cm.) transparency (see page 376). The 24 picture accessory, code word 'COBAN' includes a numbering mechanism panel with fixing screw and two sets of masks $1\frac{1}{8} \times 1\frac{5}{8}$ in. (28×40 mm.) and $1 \times 1\frac{1}{2}$ in. (24×36 mm.).

Installation of Small Picture Accessories

The small picture accessory can only be installed before a film is loaded, and it is only necessary to unscrew the milled knob in the centre of the panel shown in Fig. 63b, remove the counter mechanism plate completely and replace it by a new counter mechanism plate of the required type. The screw must then be tightened and the camera is ready for use in the new size as soon as the gate and finder marks are inserted. It should be noted that the extra gate masks, size $1\frac{5}{8} \times 2\frac{1}{8}$ in. ($4 \times 5{\cdot}5$ cm.) and $1\frac{1}{8} \times 1\frac{5}{8}$ in. (28×40) are supplied with small cut-outs which are used for centreing in the various types of slide mounts at present on the market.