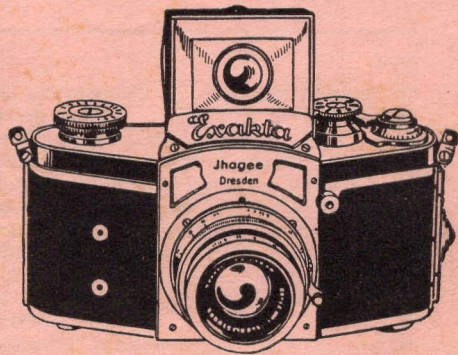


Instructions for using

the

**KINE-
EXAKTA**

(taking negatives $1 \times 1\frac{1}{2}$ " - 24×36 mm.)



Contents

	page		page
IMPORTANT NOTE	2	11. Special accessories for the Kine-Exakta:	32
Introduction	3	Extension tubes	33
1. The outer controls of the camera	4	Ball and socket tripod head	33
2. Inside the camera	6	Reproduction and copying stand	33
3. The focal-plane shutter and its operation	10	Supplementary lenses for close work	33
4. Loading the camera with film cartridges	15	Finder hood extension	34
5. Focussing	18	Microscope attachment	34
Changing the lens	19	Interchangeable lenses	35
The frame finder	21	Lens hoods	36
6. Exposing	22	Colour filters	37
7. Removing the exposed film from the camera	26	Polarisation filters	38
8. The special knife in the camera back	27	Aero shutter release	39
9. Loading with daylight-loading spools	28	Photo flash-bulb attachment	39
10. Hints for practical work	30	12. Enlarging the negative	39
		The Lumimax projector-enlarger	40
		The Exakta Lumimax enlarger	40

Important note

The Kine-Exakta is a high-quality camera of precision workmanship. Because of the fine limits to which it is constructed, and because of the smooth manner in which all its parts work, it is essential that the handling of the instrument shall be just as careful and precise if the best possible results are to be obtained. Every buyer of the camera will expect perfection from it, and it is equally certain that the camera can give these results.

There is one essential condition that must be fulfilled, though:

IT IS ESSENTIAL THAT THE FOLLOWING INSTRUCTIONS FOR OPERATING AND LOADING THE KINE-EXAKTA ARE READ CAREFULLY THROUGH FROM BEGINNING TO END, THAT ALL THE ADVICE AND HINTS GIVEN ARE CORRECTLY FOLLOWED, AND THAT ALL THE MOVEMENTS OF THE CAMERA (WHICH ARE SO NECESSARY FOR THE PERFECT WORKING OF THE INSTRUMENT) ARE PRACTISED REPEATEDLY ACCORDING TO THE INSTRUCTIONS LAID DOWN.

A precision camera of the Kine-Exakta class, though extremely robust, necessarily contains sensitive mechanism inside it, which is made up of many small parts that must intermesh

with each other with extreme accuracy if all the functions of the camera are to be perfectly carried out. It is this fact which must be kept in mind by the amateur who takes the camera in his hands for the first time. The reader is urgently requested not to play with the controls, however rich in experience he may be, but to adopt the following procedure:

READ THE INSTRUCTIONS FROM BEGINNING TO END. Only this process can give the necessary information about the working of the camera. Without it, mere "intuition" is useless, and the camera cannot possibly give the satisfactory results which are obtained when it is handled with full understanding of its parts, action, and range of service.

Introduction

The Kine-Exakta is a high-quality miniature reflex camera, and it is not in the least difficult to handle so long as its controls are properly understood by the photographer.

The camera is loaded with normal 35-mm. cinema film, which may be obtained in all civilised countries of the world. This film may be obtained in long rolls of 100 feet, 33 feet, or 16 feet in tin boxes (which must only be opened in the dark-room), in light-tight "cartridges" containing 63 inches of film for 36 exposures, or as daylight-loading spools with the same content.

Orthochromatic and panchromatic grades of film are available. The Kine-Exakta is designed to take all the film cartridges on the market and also the daylight-loading spools ("Contax spools") available.

The simplest form in which to use film is probably the "cartridge". Here the film is wound after exposure on the spare spool core delivered with the camera. After all the 36 exposures have been made, the film is rewound into the cartridge once more (the camera remaining closed), after which process the cartridge can be removed in daylight. The use of a daylight-loading spool (see page 28) is equally simple.

The beginner is advised to procure from his photographic dealer a cartridge that is over-dated and thus useless, which may be used to try out the movements of the camera as described in this booklet so that he may become accustomed to them. As soon as the working of the instrument is thoroughly understood (and this need only take a quarter of an hour) the camera may be loaded with a genuine film, and the first 36 exposures made with it.

1. The outer controls of the camera

Place the Kine-Exakta on the table, with its lens turned to face you (fig. 1). On the lens mount itself will be seen two controls: the aperture ring which alters the lens aperture as it

is turned by making the iris diaphragm larger or smaller, and a larger ring which is used to focus the lens on different distances. The stop lever *F* serves to hold the lens correctly in its bayonet mounting. All these controls will be more fully explained later, and it is only necessary here to draw attention to them.

Diagonally above the lens, on the right, will be seen the shutter release button *D*. With the camera hood closed, this is out of action and nothing happens when it is pressed. Directly over the lens, on top of the camera, is the hood of the view-finder and focussing screen. In fig. 1 this is closed, in which position a small magnifying glass is seen in a circular mount in its centre. To the right of the closed hood, two metal knobs are seen on top of the camera. That next to the hood (marked *KiK*) has a milled edge, and is used to

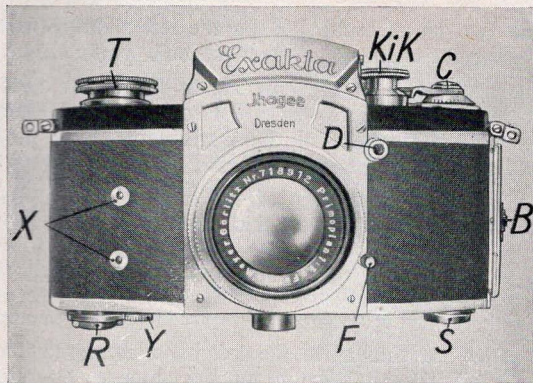


fig. 1

set the shorter exposure times. The other knob **C** which is fitted with a long metal lever, has a scale of numbers engraved round its base, and is the picture or exposure counter.

On the left of the camera top is another milled knob **T**, rather larger in size, which controls the longer exposure times and the self-portrait device.

The two metal sockets **X** on the left slanting front of the camera are contact points for connecting the camera to the flash-bulb outfit.

On the bottom of the camera, in the centre, will be found the screwed bush for the tripod. To left and right of this are two semicircular keys **R** and **S**, which may be lifted to stand vertical to the base of the instrument. Near the left-hand key **R** is a small screwed knob **Y**, that operates the knife inside the camera which cuts the film off after exposure (see page 27).

On the right-hand edge of the camera is a sliding button **B**, which opens the back of the instrument. By pressing this button the back swings open and may be removed.

2. Inside the camera?

Holding the camera in the left hand as shown in fig. 2, the button **B** is pushed to the left (i. e. towards the bottom of the camera) to release the back. The latter is then taken off and placed on one side. The camera is now open, and the back will appear as in fig. 3.

In the centre of the open back is a rectangular aperture, which is covered by a black curtain of rubberised silk fabric. This is the picture aperture of the camera, through which the film is exposed, and it is exactly 24×36 mm. ($1 \times 1\frac{1}{2}$ "") in size. The black curtain is a part of the focal-plane shutter. The two smooth metal rails above and below the picture aperture serve as supports for the film as it moves through the camera.

The film, whether in a cartridge or on a spool, is placed in the chamber (at present empty) on the right-hand side of the camera, and it runs to the left across the picture aperture on the rails on to the sprocket *Z* which is at right angles to its travel. The teeth of the sprocket engage in the perforations of the film, and draw it onwards to the "take-up" spool *V* which is placed in the left-hand film chamber and winds up the film it receives from the sprocket.

To show the action of the camera, the spool *V* may be turned. To this end, place the left thumb on the right-hand side of the long film winding lever *A* and swing this lever to the left on its axis (which is the knob *C*) as far as it will go. The thumb is now removed, and the lever will spring back into its former position.

This action will turn the take-up spool round, and at the same time other portions of the mechanism inside the camera move as well.



fig. 2

In the picture aperture the black curtain will move from right to left, thus indicating that the shutter has been wound up. The sprocket counter **C** will all turn simultaneously to the

left; indicating that if the camera had been loaded with film, the latter would have been moved on the distance of one picture as the shutter was wound.

Since the shutter is now wound up, though no film is actually in the camera, press the shutter release knob **D** on the front of the camera. Nothing happens, for the button cannot be pressed. Actually, it is locked in place to avoid accidentally exposing the film. The camera is only fully ready for use when the hood of the view-finder is raised, and when the photographer can see the image on the ground glass. Unless this hood is raised (and it is at present in the lowered position) the shutter is locked, and the camera cannot make an exposure.

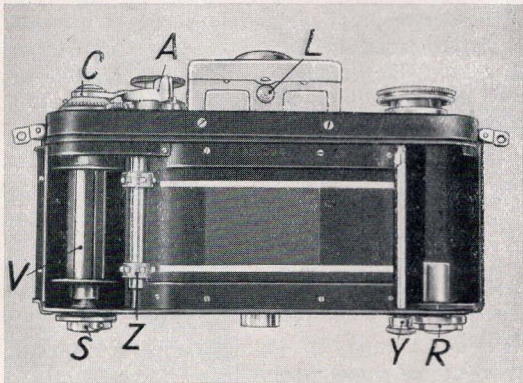


fig. 3

The finder hood must thus be released by pressing on the small knob **L** in the centre of the camera back, at the top. The hood will immediately spring open, and if one looks downwards from above, the image can be seen on the ground-glass screen. (It is necessary to remove the lens cap, if this has not already been done.) The camera is consequently now ready for use, and the shutter release can be operated.

By pressing on the shutter release **D**, the shutter will move back and make an "exposure". (It is useful to go through these movements several times to accustom oneself to them: fold down the finder hood, wind up the shutter with the lever **A**, open the finder hood again, and press the shutter release **D**.)

Another point should be noted here: by turning the small milled knob **Y**, which has already been mentioned, a few times to the left, and by pulling it downwards from the camera, a small steel knife appears and moves from the top of the camera to the bottom. When the camera has a film loaded in it, this knife would cut the film in two. By pushing the knob **Y** back towards the camera the knife moves in the reverse direction to the top of the camera, and the knob **Y** can be locked in place again by turning it to the right a few times.

After examining the interior of the camera, the back is once more replaced. Holding the camera in the left hand as shown in fig. 4, the back is held in the right hand and replaced. Care must be taken that the circular peg inside the camera connected to the key **R** is pushed firmly into the interior of the camera by the ball of the left thumb. The camera back can

then be held with the button *B* upwards, its lower end hooked carefully into the groove on the body of the camera, and the back itself pressed lightly towards the body until the button *B* snaps into its locked position.

Not also that the key *R* must now be allowed to catch in the camera back so that it is clamped to the camera and cannot be pulled out when the back is closed.



fig. 4

3. The focal-plane shutter and its operation

The action of the Kine-Exakta shutter is best observed when the camera is **not** loaded with film.

As we have already noted, the shutter release is locked as a protection against accidental exposure when the finder hood is folded against the top of the camera, since it is clearly unnecessary to unlock the shutter release unless the picture can be focussed and composed.

The camera back is therefore detached and the finder hood allowed to spring open by pressing the small knob *L* (fig. 3). The camera will then look as in fig. 5 when viewed from the top.

The long lever *A* which winds the shutter has already been noted, and the shutter is wound up first of all by moving it in a clockwise direction as far as it will go. (This automatically moves the film on one picture at the same time.) On releasing lever *A* it springs back to its original position.

The exposure time is now adjusted. Taking the outer milled ring *K* of the knob *KiK*, on which are engraved a series of numbers and the letters *Z* and *B*, between the thumb and forefinger, lift it (against the spring) over *KiK* and turn it in the direction of the arrow engraved on it until the number "25" (i. e. $\frac{1}{25}$ th of a second) is against the small dot engraved on the inner disc *Ki*. Release the outer ring, and it will drop into place. The shutter is now set to $\frac{1}{25}$ th second exposure time.

If the eye now is placed behind the camera, opposite the picture aperture, and

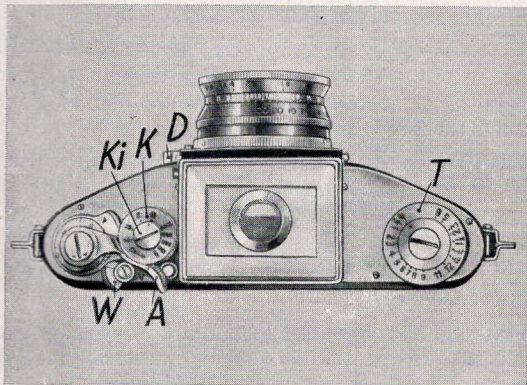


fig. 5

the shutter release **D** pressed, the shutter blind or curtain will be seen to run down from left to right. Careful observation will show that light reaches the film in the camera through a slit in the blind, which also moves from left to right across the picture. Through this slit the exposure is made.

In the same way, the outer ring **K** can be set—always turning it in the direction of the arrow—to any other snapshot exposure time in the series $\frac{1}{50}$ th, $\frac{1}{100}$ th, $\frac{1}{150}$ th, $\frac{1}{250}$ th, $\frac{1}{500}$ th, and $\frac{1}{1000}$ th of a second, and also to the letters **Z** and **B**. (Intermediate values for shutter speed cannot be set with this shutter.)

When set to Z, a single pressure on the shutter release **D** will open the shutter fully, and it will remain open until the release **D** is pressed a second time. This action is useful for long time exposures.

When set to B, the shutter will open fully when the release **D** is pressed, but will close again as soon as the finger is removed from the release. This action is useful for short time exposures.

A second larger speed regulating knob T is placed on the other side of the finder hood. This is used to set the longer exposure times of the following series:

Engraved in BLACK: $\frac{1}{10}$ th, $\frac{1}{2}$, 1, 2, 3, 4, to 12 seconds. To adjust for these speeds the following procedure is necessary.

1. Wind up the shutter with lever *A* as usual.
2. Set the knob *KiK* to either "Z" or "B". (This is important.)
3. Turn the larger knob *T* **strongly** to the right as far as it will go.
4. Raise the outer ring of knob *T* and set the black dot on the inner disc to the desired black engraved exposure value on the outer. Then release the outer ring and let it fall into place.
5. Release the shutter by pressing *D*, as usual.

This should be practised a number of times until the sequence of operations is thoroughly known.

The numbers in RED are used where the delayed-action mechanism used for self-portraits is required to operate. In this case, the procedure is exactly the same as* that indicated above for the black values, except that the black dot on the inner disc of *T* is set against one of the **red series of numbers** $\frac{1}{10}$ th, $\frac{3}{4}$, $1\frac{1}{2}$, 2, 3, 5, or 6 seconds.

After pressing the shutter release *D* some twelve seconds will elapse, after which the shutter will automatically give the exposure time indicated on the red series of values to which it has been set.

Short snapshot exposures with the self-portrait mechanism (i. e. between $\frac{1}{25}$ th and $\frac{1}{1000}$ th second) are set as follows:

The knob *KiK* is set in the normal manner to the exposure time required (as, for example, to $\frac{1}{150}$ th second), and the knob *T* then wound up as far as it will go, and the black dot set

against **any one of the red values** on its outer ring. On pressing the release **D**, twelve seconds will elapse, and after that the shutter will automatically give the time to which **KiK** has been set—in this case $\frac{1}{150}$ th of a second.

This device is of the greatest value when the photographer desires to include himself in the picture. In the twelve seconds which elapse between pressing the shutter release and the actual exposure, he has ample time to take up the correct position in front of the camera at the distance on which the lens has been focussed. The camera should be placed on a firm support, preferably on a tripod.

IMPORTANT: The knob **T** must always be wound after the shutter has been wound (lever **A**) and must always be wound up as far as it will go. If this is not done, completely incorrect exposure times will be given.

The shutter will go wrong if the following mistake is made: when the shutter is set at "**Z**" (Time) and opened by pressing the release **D**, and the outer ring **K** then turned to give a snapshot exposure of perhaps $\frac{1}{25}$ th or $\frac{1}{50}$ th of a second. If, in this position, the release **D** is pressed a second time, the shutter does not close, but stops work completely.

The trouble may be put right by turning the ring **K** again until the black dot on **Ki** is opposite **Z** or **B**. In the second position the shutter closes automatically, and in the first it will close if the release **D** is pressed again.

4. Loading the camera with film cartridges

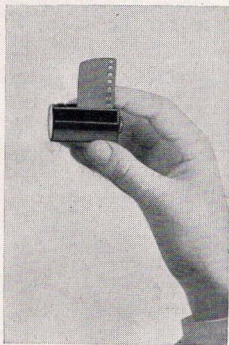


fig. 6

As already mentioned in the introduction, the beginner is recommended to use film cartridges in the Kine-Exakta.

Before attempting to load the camera, make sure that the small button *W* (shown in fig. 5) on the top of the camera is turned so that the letter "V" can be seen. Having made sure that this is so, the camera is opened by removing the back. The film cartridge is held in the right hand as shown in fig. 6: the circular hole in its base, in which its cross-peg is placed, is on the left. This position can easily be found by observing the manner in which the film projects from the cartridge.

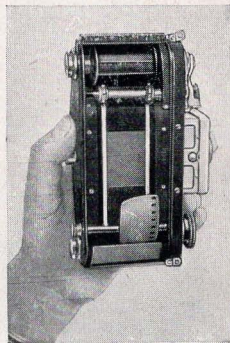


fig. 7

The key *R* (fig. 3) is now raised and with its aid the circular peg which holds the cartridge in place is pulled outwards as far as it will come. The camera is now taken in the left hand, as seen in fig. 7, and the cartridge placed

in the lower chamber, the key **R** pressed once more towards the camera to push the circular peg inwards, and the flap of **R** bent over once more. The left thumb is then placed on top to the cartridge to hold it firmly in place, while the right hand pulls carefully about 4-4½ inches of film from it. The free end of the film is secured under the spring tongue on the spool **V** that is delivered with every Exakta and must be situated in the upper chamber*), next to the sprocket. This spool may easily be turned on its axis, so that it is a simple matter to place it in a convenient position to attach the free end of film to its core. The hand holds the spool still while the film is pushed as far as possible under the metal tongue. As soon as

the film end has been attached to the take-up spool, make sure that the film perforations are correctly engaged in the teeth of the sprocket **Z** (fig. 8), and then close the camera as described in section 2, by replacing the back.

The following procedure will then be necessary:

1. Press button **L** to open the finder hood.

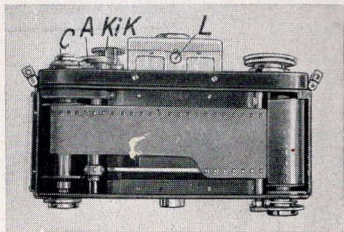


fig. 8

*) If it should be necessary to remove the take-up spool from the camera, the key **S** is raised vertical to the base of the camera and pulled outwards. While it is in this outward position, the spool may easily be taken out and replaced.

2. Make sure that the knob **KiK** is set to any value except "**Z**", and alter the setting if necessary.
3. Press lever **A** to the left **twice**, releasing the shutter each time it has been wound, and taking it right to the end of its travel each time. This action implies that the film has been moved forward in the camera by the width of two pictures: the film protruding from the cartridge had been struck by light and fogged, so that it had to be wound on the take-up spool and fresh unexposed film pulled from the chamber of the cartridge. Moving on the film by the width of two pictures is sufficient to bring this fresh unexposed film into the picture aperture of the camera. The first exposure can now be made.
4. The shutter is now wound (by lever **A** as before) a **third** time, to pull the film tight. After winding, the picture or exposure counter is set to the number "**1**", in order that the exposures are all counted correctly. Therefore:
5. The bevelled ring surrounding the spindle **C** of the winding lever **A** which has a series of numbers from 1 to 36 engraved on it is turned in the direction of the arrow to the left until the first mark, indicating "**1**", is opposite the small black triangle*). The exposure counter is now correctly set, and the first exposure can be made.

*) If this bevelled ring is accidentally turned too far to the left, it must on no account be turned back again to the correct position, but turned round completely again until the number "**1**" is against the triangle.

The exposure counter automatically moves on each time the shutter and film are wound, and when the triangle is opposite the number "36", the last exposure is in the camera, assuming that a normal cartridge or daylight-loading spool is in the camera.

5. Focussing, changing the lens, and the frame finder

To examine the image on the ground-glass focussing screen, the finder hood must be released by pressing the button *L* (fig. 3). In this position the ground glass may be examined from above.

If no image is seen, the reason is that the shutter is not wound. The winding of the shutter places the mirror in position, so that if no image is seen it is a sign that the camera is not ready for use. The shutter is thus wound up by lever *A*.

This action causes a small mirror to drop into position under the ground glass, inclined at 45° to the latter, so that an image from the camera lens is thrown on to the focussing screen. (This screen is called a ground-glass screen for brevity, though it is actually one side of a special plano-convex lens.

All this will be perfectly clear to the beginner if he examines the mechanism, and this can be done by removing the lens from the camera.

Removing the lens. Holding the lens firmly in the left hand as shown in fig. 9, press the stop lever *F* lightly with the right hand and simultaneously turn the lens firmly to the left. After turning through a small angle, it will be found that the lens is free and can be lifted out bodily.

Through the lens mount the interior of the camera can now be examined. As the shutter is wound, the mirror will be seen to drop into position, and if the lens were in place an image would appear on the ground glass. On pressing the shutter release *D*, the mirror will be observed to spring back again out of the way, and the slit of the shutter will travel across the picture aperture immediately after it has moved.

The lens is replaced by reversing the above procedure. The lens is lowered into the tubular mount on the camera, care being taken that the red dot on the lens is opposite the red dot on the camera body, and the entire lens and mount turned firmly to the right until the stop lever *F* is heard to slip into the catch.

Returning to the earlier point of **focussing**, the image on the ground glass may be observed after winding up the shutter. This image, however, must be fully sharp, for the negative will

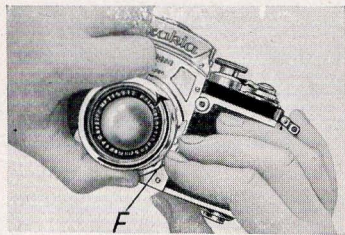


fig. 9

be identical to the image on the ground glass, and if the latter is not in focus the negative—and the enlargement later on—will not be sharp either.

The image on the focussing screen appears twice the size of the actual negative image because the lens, the lower side of which is matted to form a ground-glass screen, has the effect of a powerful magnifier. There is thus no difficulty in focussing the image as sharply as may be desired.

The action of focussing is done by holding the focussing ring of the lens between two fingers of the right hand, this ring being distinguished by bearing a scale of focussing distances on it. Those with short sight may remove their glasses to focus if they wish.

More accurate focussing still is obtained by using an additional magnifier as well as the lens forming the ground-glass screen. Such a special magnifier is provided in the finder hood, on the front wall, and when the hood is erect, it will be in a vertical plane. The magnifier is pressed backward from the front of the finder hood with the finger, together with its mounting plate, and down towards the focussing screen. In the correct position it will slip under a catch and remain horizontal over the other lens. (See fig. 10). Looking down into this magnifier, the photographer then sees the central portion of the negative image on a much enlarged scale, and this portion may be focussed extremely accurately and easily. (Those with long-sight may remove their glasses, since the magnifier serves an identical purpose.) In this way, the miniature negative of the Kine-Exakta may be sharply focussed with extreme ease and certainty.

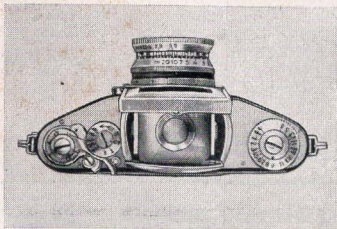


fig. 10

The frame finder. The magnifier is pushed down until it is horizontal over the focussing screen (fig. 10) and the camera lifted up in both hands (fig. 11) so that one eye is just behind the small rectangular aperture *O* in the back wall of the finder hood and one can see

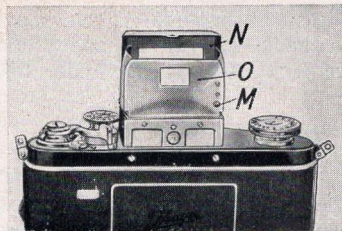


fig. 11

through this aperture the frame *N* in the front wall of the hood. This frame is revealed when the magnifier is pushed backwards and pressed downwards into its working position.

This frame and back aperture forms a direct-vision frame finder, and can be used for all those exposures that must be made at eye-level, or on occasions where the subject of the photograph is better followed directly with the eye rather than on the focussing screen.

In particular, the frame finder is specially useful for all kinds of sporting work, the focussing being set beforehand either on the focussing screen or by the distance scale on the lens mount.

The small magnifier is released from its horizontal position by moving the small button *M* in the back wall of the finder hood slightly to the right, and it will then spring upwards into the front wall of the finder hood once more. (*M* is shown in fig. 11.)

6. Exposing

The beginner, who has never photographed before, should obtain and study a good yet simple handbook of photography in order to obtain some knowledge in the basic principles of the craft. Such knowledge must be taken for granted in the present booklet on account of lack of space.

The Kine-Exakta should be slung round the neck for the easiest handling, and it may be carried either on a sling strap round the neck (at chest level) or else in an ever-ready leather case. The camera will have been loaded with a film cartridge, and will be ready for exposure, the exposure counter set correctly to "1"—the first picture.

(The cap must also be removed from the lens before making an exposure.)

First of all, use an exposure meter—the photo-electric type is the most reliable of all—to ascertain the exposure time and lens aperture to use. After this, the shutter is wound and the correct speed set.

Then the finder hood is raised and the subject focussed (using the second magnifier if necessary) with the lens at full aperture. When the subject has been focussed, the lens aperture may be shut down to the value used for exposure, and the depth of focus examined to see whether it is sufficient.*)

The camera is then held rigid and stationary in both hands, at chest level, the focussing screen examined for a moment again to make sure the image is correctly composed and sharp, and the shutter release gently pressed with the left forefinger. The exposure is then made.

The shutter is then wound again, which moves on the film for the next picture and prevents two exposures being made on one section of film.

Taking pictures of rapidly-moving objects. Cars, ski-jumpers, horses, and so on are best taken by using the frame finder when they are in rapid movement. The camera is focussed beforehand on a particular point that the moving object must pass, and the frame finder raised. The moment the moving object, as seen through the finder passes the focus on which the camera is focussed, the shutter release is pressed.

*) For a detailed explanation of the term depth of focus, the photographic text-books should be consulted. The actual range (depth) of sharp focus, which depends on the focal length of the lens, the distance on which it is focussed, and its aperture at the time, may be found in the depth of focus tables issued by the makers of lenses for miniature cameras if it is not possible to examine the position on the focussing screen itself.

It is always advantageous in sporting work of this type to look through the frame finder with one eye, and to look at the subject direct with the other, or at least to keep the other eye open. After a little practice this will be found quite simple.

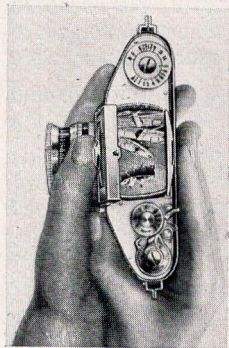


fig. 12

Upright pictures. These are usually taken as follows: the camera is first focussed on the subject while it is in the normal position at chest level. Then it is raised to eye level, and held as shown in fig. 12, so that the focussing screen is vertical and the eye examines the image on it from the side. The lens rests in the space between the left thumb and forefinger, and the right thumb operates the shutter release. The lens is directed towards the subject taken, while the photographer himself looks in a direction at right angles to this, so that he is actually photographing "round the corner".

A second method of taking upright pictures depends on the use of the frame finder. If this is erected by pressing the magnifier down over the focussing screen, the subject may be accurately focussed and the camera then held in front of the eye in the manner shown in fig. 13.

It is exceedingly important that the Kine-Exakta should be held perfectly still during the exposure. Any movement of the camera when

the shutter is open will result in a more or less blurred picture (the fault can only be seen with the naked eye when it is present to a great extent) which again will result in an unsatisfactory enlargement. Thus, the **beginner** should follow the rules below:

NEVER GIVE A SLOWER SHUTTER SPEED THAN $\frac{1}{100}$ th SECOND TO BEGIN WITH. AND KEEP THE LENS APERTURE CORRESPONDING WIDER OPEN. Nervous people can easily move the camera during a shutter speed of $\frac{1}{25}$ th second.

Practice and a little self-control help matters enormously, and there are plenty of experienced photographers who can give half a second exposure with the camera in the hand, yet without any trace of the instrument having moved during exposure.

The general rule for the less experienced is that exposure of $\frac{1}{25}$ th second and faster can be taken with the camera in the hand, but the instrument must be held firmly and steadily, steadied on the chest, and the breath held at the moment when the release is pressed.

All longer exposures than these should be made with the camera placed on a firm support, preferably a good and stable tripod.



fig. 13

7. Removing the exposed film from the camera

Thirty-six exposures can be made on the strip of film which is in the film cartridge, and after the 36th has been taken, the entire film is exposed and must be taken out of the camera. This is done as follows:

1. The small button **W** (fig. 5) which changes the direction of the film from forwards to backwards is moved over so that the letter "**R**" (reverse) is seen.
2. The key **R** on the bottom of the camera (fig. 3) is raised (but **not** pulled out from the camera), and twisted in a clockwise direction between the thumb and forefinger of the right hand. This action winds the exposed film inside the camera from the take-up spool **V** into the film cartridge. Continue winding back until the end of the film is felt to have come loose from the take-up spool and slipped inside the cartridge.
3. The camera is opened by removing the back.
4. The key **R** is pulled out from the camera as far as it will go, and
5. The exposed cartridge of film taken out of the right-hand chamber.
6. The small button **W** is then moved back until the letter "**V**" can be seen, and the mechanism is set for "forward". **THIS MUST NOT BE FORGOTTEN.**

The new film cartridge can now be inserted in the chamber of the camera, and the film loaded as described above.

8. The special knife in the camera back

If one has made a number of exposures which must be developed immediately, without waiting for the rest of the strip of film to be exposed, the small knife in the back of the Kine-Exakta may be put to good use.

The small milled knob *Y* (fig. 3) is unscrewed, and pulled downwards from the bottom of the camera as far as it will go. This will move the knife in the camera across, and cut off the exposed film from the unexposed film.

The camera must be opened in the dark-room after this, for the exposed film is not protected from light and would be spoiled if the back of the camera were opened in daylight. After removing the exposed film from the take-up spool *V*, the end of the unexposed film is slipped under the metal tongue on the core of this spool and the camera closed. The rest of the film strip can then be exposed in the normal manner.

9. Loading with daylight-loading spools

Daylight-loading spools (usually called "Contax Spools") must not be confused with film cartridges. The spools start with about 20 inches of red or green paper, which is perforated at the edges and serves to protect the 36 exposures on the film strip following it from light. All these daylight-loading spools, which are made by numerous makers and in the widest possible range of orthochromatic and panchromatic grades, will fit the Kine-Exakta camera, and—as their name implies—can be loaded into the camera in daylight, though not in direct sunlight.

Loading the spool into the camera. The camera is first opened as before by removing its back, and the key **R** is pulled out from the camera. The spool is then placed in the right-hand chamber, the key **R** is pressed back to hold it in place, and after the gumstrip holding the end of the paper on the spool has been broken, the end of the paper is drawn across the camera back and attached to the take-up spool **V**. This spool is now turned until the black line across the backing paper of the spool, which is indicated by a black arrow on the paper, lies exactly over the top of the sprocket **Z**, as shown in fig. 14. The paper must naturally be adjusted so that the teeth of the sprocket engage correctly in its perforations. The camera back is then replaced in the usual way, and the camera closed.

The backing paper on the spool must now be wound through the camera until the actual film is in the picture aperture. This is done as follows:

1. Raise the finder hood.
2. Set the shutter to "B".
3. Hold one finger of the left hand hard down on the shutter release *D* continually, while . .
4. The right hand moves the long lever *A* **twelve** times completely across. After counting these twelve pictures, release *D*. The backing paper of the film, corresponding in length to 12 pictures, will now be wound on the take-up spool.
5. The shutter is wound once more, and this will bring a section of the film itself in front of the picture aperture in the camera back.
6. The exposure counter is set to "1".

The daylight-loading spool is exposed in just the same way as the film cartridge.

After the 36 exposures have been made, the spool is rewound just as in the case of the film cartridge.

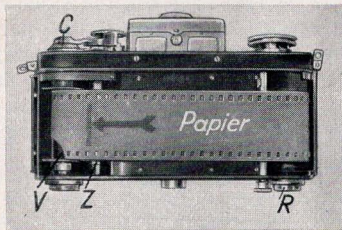


fig. 14

IMPORTANT: When the exposed daylight-loading spool has been wound back and the camera is opened to remove it, the paper must on no account be allowed to unwind or to become loose on the spool, or light may penetrate it from the side.

The end of the backing paper must be secured to the spool by a small rubber band, or else by sticking it down with stamp-paper. If these precautions are not taken, the spool may not be light-tight and the film may be fogged.

NOTE: Contax spools usually have a second length of backing paper or "trailer", which is used to wind on to the take-up spool so that there is no need to rewind the entire spool. We recommend, however, that such spools are always rewound, since the combined effect of two strips of paper and the film strip proper is to make the take-up spool so thick that there is not always space for it in the left-hand chamber of the camera. It is thus better to rewind, as described above.

10. Hints for practical work

The Kine-Exakta may be used to take photographs "round the corner" with the greatest of ease. We have already noted that this position is used when the camera is turned for upright pictures and the focussing screen is held vertical at eye level. (See fig. 12.) This fact may be utilised to take pictures of people when they do not realise that the camera is pointing at them, for the photographer appears to be interested in objects at right angles to the direction in which the camera is actually pointing.

Holding the camera at arm's length in this position, and using one finger to press the shutter release, it is a simple matter to photograph round the corner of a wall or building, as in fig. 15, or sideways through a series of bars, as in fig. 16. The image on the focussing screen is used as a view-finder, as will be clear from the two illustrations.



fig. 15

The camera may also be inverted, and used over the head. In this case it is best to use both hands, and to stretch them vertically upwards. The head is tilted back to look upwards into the finder hood as shown in fig. 17. In this position an upright picture is seen on the focussing screen, which can be composed and focussed without difficulty.

Double exposure, which is sometimes used by experienced workers in trick photography, is quite simple with the Kine-Exakta. The shutter can be wound without moving on the film to the next picture merely by turning the milled ring **K** (which is used to set the shutter speed) with the left thumb and forefinger in the direc-



fig. 16

tion of the arrow, as far as it will go. The outer ring is **not** lifted over the inner disc for this purpose, and the inner disc **Ki** will turn with **K** and wind up the shutter without moving on the film.

The Kine-Exakta may also be made to move on the film without winding the shutter. For this purpose a screwdriver is placed in the slot of the screw **C** over the exposure counter, and this screw turned to the right. The film will then move on one picture without the shutter being wound. This movement will hardly be used often, but it is an example of the wide range of possibilities given by the Kine-Exakta camera.



fig. 17

11. Special accessories for the Kine-Exakta

Exposures on small objects (such as postage stamps, coins, beetles, and so on) can be made at close range with the Kine-Exakta in the most simple and convenient manner, for in this field of work the single-lens reflex camera is more convenient than any other in the matter of focussing and composing the image.

Special **Extension Tubes** are made for the camera, which are of different lengths, and these are interposed between the camera and lens. These tubes can be made into extension tubes of any suitable length merely by screwing them into each other, and for use two special rings—one bearing a bayonet joint and the other the corresponding bayonet socket—hold the lens at one end and fit into the mount of the camera body at the other. The camera extension is thus increased to any desired extent by using a suitable combination of tube lengths, while the image is perfectly focussed and composed even when the objects are so near the lens that the negative image is the same size, slightly smaller, or slightly larger, than the object itself. Parallax error, which is always troublesome at short range when the camera lens and view-finder are not in the same position, is entirely absent in the Kine-Exakta, since the image on the focussing screen is identically the same as that which is shown later on to the negative film.

For work at short distances, a small tripod is convenient to use, particularly when fitted with the special **Exakta ball and socket head**. The experienced worker who wishes to take copies of pictures, letters, printed matter, and documents of all kinds will find that the **Exakta Reproduction and Copying Stand** is most valuable. This device lightens the work enormously, and all kinds of micro-photographs may be made in ease and comfort with its help.

At short range, too, special **supplementary lenses** are recommended, for these shorten the focal length of the Exakta lens, and thus make it possible to approach nearer the subject for

the exposure. When used in combination with the extension tubes noted above, an extremely high degree of enlargement of the original subject can be obtained, yet the image is composed and focussed without the least difficulty. This type of exposure is also made much easier by using the **finder hood extension**, made of leather and including a built-in magnifier, which we supply for use with the camera. This extension should always be used where the focussing must be really accurately adjusted.

Photo-micrography is a special field of work in which the Kine-Exakta will be found to be of great value by the specialist. The **microscope attachment** is used in conjunction with the camera and microscope for this work, and it consists of two tubes, the upper of which is hinged and carries the camera.

The lens is first removed from the camera, for only the lenses of the microscope itself need be used, and the upper tube of the microscope attachment placed in the special ring that fits the bayonet lens mount of the camera. When using a microscope with a draw-tube, the latter must be fitted with a rubber ring in order to ensure that the weight of the camera does not alter the length of tube drawn out, and if the focussing rack of the instrument moves very easily, the adjusting screws should be tightened so that the camera does not move the focussing. (These screws are noted in the instructions supplied with the microscope.) The clamping screw of the attachment is now loosened, the eyepiece of the microscope removed, and the lower tube of the attachment placed over the draw-tube of the microscope. The clamping screw is now tightened, and the microscope eyepiece can be replaced. By opening

the finder hood, the image on the focussing screen can be seen. In focussing and lighting, it is important that the entire field should be evenly illuminated, and the brightness of the focussing screen image gives a useful indication of the exposure required.

If the image is too large, and cannot all be included within the area of the negative, a less powerful eyepiece is required, while should the image be too small, a more powerful eyepiece must be inserted. When lighting the specimen, no light should reach the microscope stage, since reflection from it is liable to cause a fogged image.

The eyepiece alone need be changed during the course of the work to vary the magnification, and the camera is very easily swung out of the way on its hinge for this purpose without the need to undo any screws. (Cf. fig. 18.) After changing the eyepiece, the camera is replaced in the position for exposure, shown in fig. 19.

Interchangeable lenses, quickly attached to the bayonet joint of the camera in place of the standard lens, are available to suit the special fields of the portrait photographer, the pressman, the sporting photographer, the scientist, and the technical photographer, as well as all the multifarious sides of amateur photography. This range of lenses increases the field of work of the camera to that of a **universal miniature instrument**.

In particular, a considerable number of first-class branded lenses are available for the camera, from telephoto types of very long focus to the fastest short-focus anastigmats with apertures of $f/1.9$. So far as the lenses are concerned, therefore, the entire field of photography is

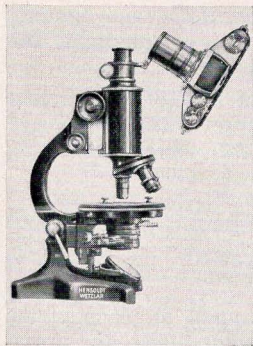


fig. 18

covered, from long-distance scientific work to night snapshots for the illustrated press. More important still, the Exakta camera requires no special range of view-finders, since the image on the ground-glass screen is identical with that given by the lens on the negative. Focussing and composition are equally simple with any lens in the range provided.

In exposures taken against the light it is highly important that no direct sunlight shall strike the front glass of the lens, since this would lead to internal reflection in the glasses and fog the negative. Thus, in all exposures in sunlight or artificial light in

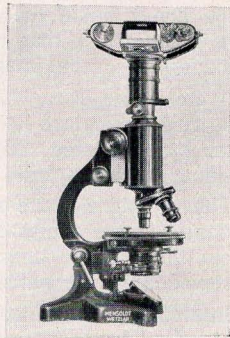


fig. 19

which there is a possibility of direct light reaching the lens, the latter should be protected by a **lens hood**. The hood protects the lens from light reaching it from the side, and is also a valuable protection against raindrops. Lens hoods may be obtained for all the lenses of the Kine-Exakta (when ordering, the name and full aperture of the lens should be given) and may be arranged to fit on to the mounting ring that holds colour filters.

Colour filters specially made for the Kine-Exakta are available in the following grades:

Yellow filters for both orthochromatic and panchromatic films, which are too sensitive to blue and violet. The yellow filter holds back the blues and violets and increases the effect of the yellows and greens.

Yellow-Green filters are identical in effect on orthochromatic films to yellow filters, and are particularly suitable for giving a fully corrected colour rendering on normal panchromatic material with depressed red sensitivity.

Green filters are suitable for giving fully correct rendering on panchromatic material with a high red sensitivity.

Blue filters are only used in artificial light with panchromatic material of high red sensitivity. The blue filter holds back the reds (this colour is strongly present in half-watt light) and prevents red objects from appearing too light in tone in the print.

Red filters are used with panchromatic or infra-red film, and increase enormously the relative effect of the red rays. Their use is consequently valuable in distance photography, where an over-corrected result must be produced, or (with a deep blue sky) for the production of night effects in full daylight, since the blue of the sky is reproduced as dark grey or black.

These filters are made in various diameter mounts to suit the different lenses of the Kine-Exakta. When ordering, the name and full aperture of the lens on which they are to be used must be mentioned.

Since all filters absorb a portion of the light which passes through them, the exposure given to the film must be increased correspondingly when they are used. General values for the increase are hard to give, since the figures involved depend on the sensitivity of the film to colours and on the composition of the light ruling at the time of exposure. The following values are approximate only:

Light yellow filter	= 2 times normal exposure,
Medium yellow filter	= 4 times normal exposure,
Deep yellow filter	= 6 times normal exposure,
Yellow-green filter	= 3 times normal exposure,
Green filter	= 4 times normal exposure,
Blue filter	= 2 times normal exposure,
Red filter	= 8 times normal exposure on panchromatic film, or 30 times normal exposure on infra-red film.

Polarisation filters, such as the Herotar of Carl Zeiss, can be used to best advantage in the Kine-Exakta, since the effect of these filters must be observed by carefully rotating them until they are correctly oriented. In a true reflex camera with a single lens, the examina-

tion of the effect of the filter (which is useful in such fields as portrait work as well as in purely technical exposures) is extremely simple, and no user of the Kine-Exakta will find the least difficulty in using one to good advantage. (When ordering state the name and full aperture of the lens on which it is to be used.)

The **Aero Shutter Release** is screwed into the normal shutter release **D**, and since it enlarges the surface of the release considerably, it is a very much easier matter to operate the camera with thick gloves on. Under such conditions it is almost indispensable.

The **Photo-flash bulb attachment** for the Kine-Exakta, for use with which the two contact sockets **X** are provided on the left-hand sloping front of the camera, is arranged to be connected with the camera and to fire the flash-bulb as the shutter opens. The device for synchronising the flash and shutter makes it possible to give an exposure for $\frac{1}{100}$ th second during the time that the flash is burning. A special instruction leaflet is issued regarding the attachment and is enclosed in the box with it.

12. Enlarging the negative

The negative of the Kine-Exakta must naturally be enlarged before it can be seen to its best advantage.

Those amateurs who make their own enlargements really get the most enjoyment out of their miniature, and the keen owner of the Kine-Exakta will therefore feel compelled to buy an enlarger which is specially made to use with his camera. The special

LUMIMAX PROJECTOR-ENLARGER

is designed for this purpose. It is made throughout of metal, and any lens used on the Kine-Exakta camera can be used in conjunction with it. The instrument is not only a first-class enlarger taking negatives up to $2\frac{1}{4}$ " square (6×6 cm.), but can also be used as a projection lantern for showing slides among the family circle. A special leaflet describing the Lumimax Projector-Enlarger may be obtained without cost.

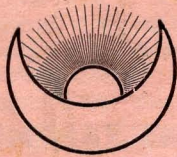
A simpler instrument, at a correspondingly lower price, is the

EXAKTA LUMIMAX ENLARGER.

This enlarger also uses the lens of the Kine-Exakta, and gives excellent service. A leaflet describing it is also available.



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