

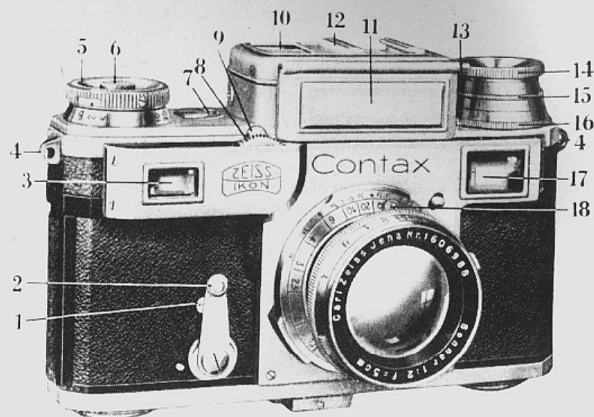


INSTRUCTIONS FOR USING THE
CONTAX CAMERA

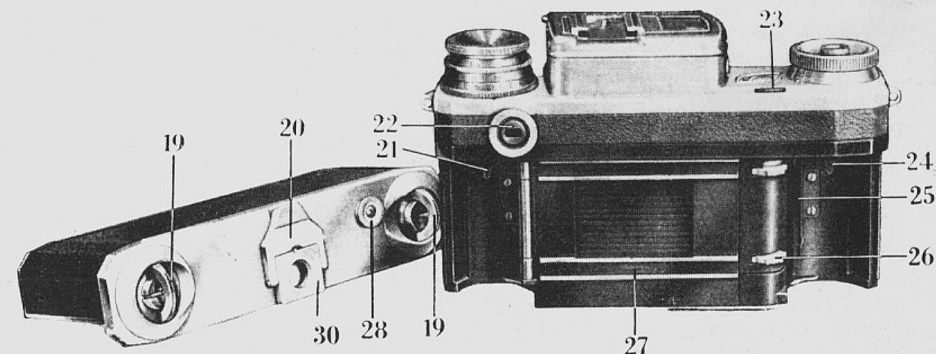
ZEISS IKON AG. DRESDEN

The Parts
of the Contax III:

- 1 = Release button for the delayed-action shutter release almost hidden by the lever 2
- 2 = Setting lever for the delayed-action shutter release
- 3 = Object glass of the distance meter
- 4 = Metal loops for carrying strap
- 5 = Shutter winding knob
- 6 = Shutter release button
- 7 = Window showing number of exposures made
- 8 = Milled wheel of the coupled distance meter
- 9 = Infinity stop for the distance meter
- 10 = Window of the exposure meter
- 11 = Prism window of the exposure meter with protective cover
- 12 = Finder shoe
- 13 = Knob for raising the cover 11 of the exposure meter
- 14 = Knob for rewinding film



- 15 = Rotating diaphragm scale of the exposure meter
- 16 = Adjusting ring of the exposure meter
- 17 = Object glass of the distance meter and view-finder
- 18 = Spring catch of lens-changing device



The Parts of the Contax III:

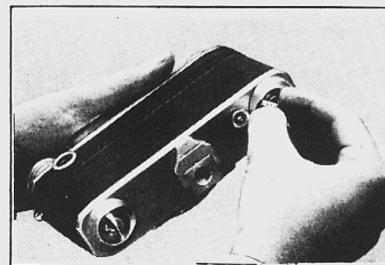
- | | |
|--|---|
| 19 = Locks for opening and closing the camera | 24 = Claw holding take-up spool |
| 20 = Base support for the camera | 25 = Spool retaining spring |
| 21 = "Free-wheeling" claw holding full spool of film | 26 = Film transport sprocket |
| 22 = Eyepiece of the distance meter and view-finder | 27 = Picture aperture |
| 23 = Wheel adjusting the film picture counter | 28 = Button releasing the film during rewinding |
| | 29 = Projecting piece of the cassette (see page 44) |
| | 30 = Tripod bush |

Important Note!

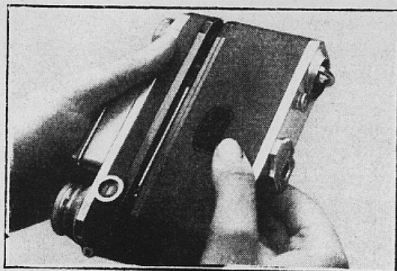
The Contax III is a precision miniature camera, the handling of which differs considerably from that required in ordinary types of cameras. With careful handling and intelligent use, the Contax will give excellent service and perfect photographic results, but it is essential that the instructions should be studied, and the various mechanical movements practised as described in the pages hereafter, before any attempt is made to use the camera with film in it. The instructions are consequently arranged to give all the information necessary for perfect service in practice. It is recommended in particular that the pages relating to the technique of exposure should be specially studied, and the handling of the camera practised without loading it with film. When an understanding of the Contax has been gained by this practice, the camera may be loaded with film and experience in practical work can then begin. The Contax spool of daylight-loading film is particularly recommended for use with all Zeiss Ikon miniature cameras, and when using it a film jam is absolutely impossible provided that it has been correctly inserted in the camera. Contax spools may be had loaded with either the Zeiss Ikon orthochromatic film, or with the special ultra-fast fine-grain Zeiss Ikon panchromatic film of speed $17/10^0$ DIN.

I. Loading the Camera with the Contax Spool

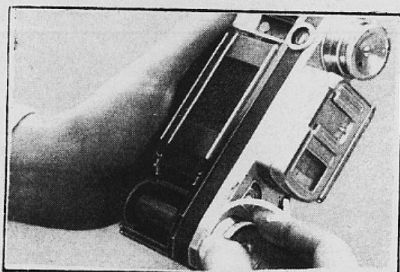
In order that the Contax spool should be made suitable for daylight loading a paper leader is attached to the beginning of the film and a paper trailer to the end. The film is thus protected from light, but when loading or changing the film it is still necessary to take precautions. These operations must be performed in subdued or diffused light, and on no account should direct sunlight be allowed to reach the spool of film.



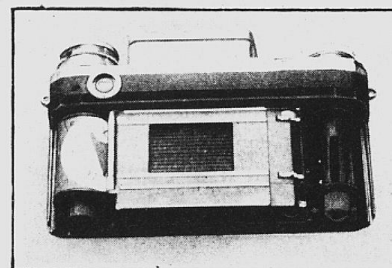
1. Open the camera by raising the two locking keys (19) on the camera base and giving them half a turn. In the open position the keys cannot be folded down against the camera body.



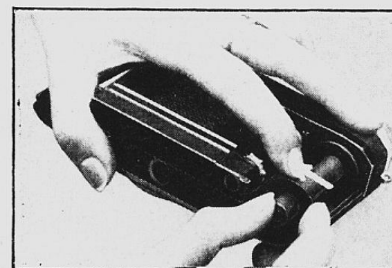
2. Draw the camera back slightly downwards, and then lift it away from the body of the instrument.



3. Wind up the shutter winding knob (5) as far as it will go in a clockwise direction, until a hard stop is felt. (A slight resistance does not mean that the shutter is fully wound, so that it is necessary to turn fully until the stop is reached.)



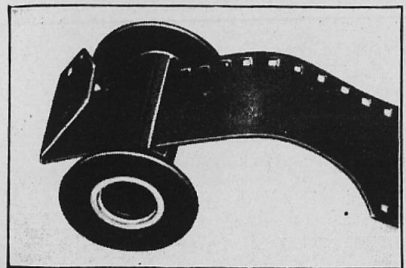
4. Place the Contax spool with its hollow end on the claw (21) of the left-hand spool chamber, and break the gumstrip that holds down the end of the paper leader.



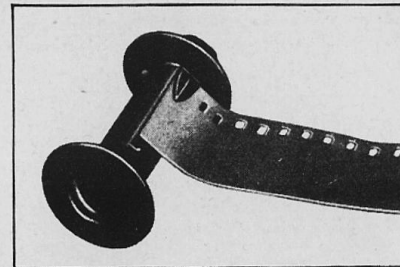
5. Pulling the leaf spring (25) towards the film sprocket with the left forefinger, take out the empty spool in the right-hand spool chamber.



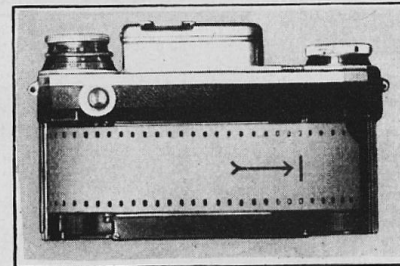
6. Attach the end of the paper leader strip on the full spool to the empty spool and replace the empty spool in right hand chamber with the claw (24) engaging in its hollow end.



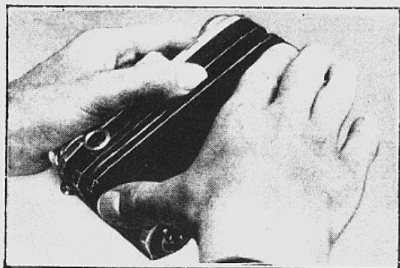
With metal cores the end of the paper leader strip (or the ready cut leading end of the film) must be thread into the wide slit of the empty spool. When about 1 inch projects through on the far side bend the end backwards so that the black inner side of the paper faces outwards.



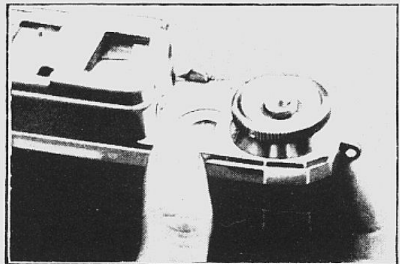
With composition spools the perforated paper leader or the ready cut leading end of the film must be slid under the tongue until the first or second perforation hooks on to the tooth which is to be found there. When the film is to be taken off the spool again, the end is torn out of the tooth by a moderate pull.



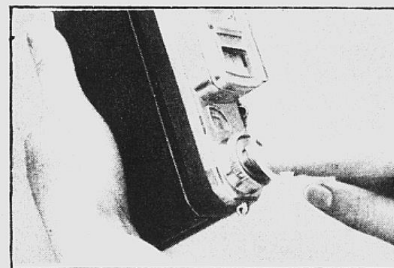
7. Turn on the empty spool until the line to which the arrow on the paper leader points lies over the teeth of the sprocket (26).



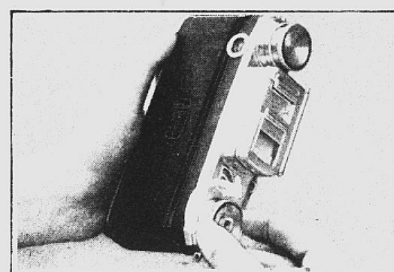
8. Now replace the camera back, holding the paper strip in contact with the teeth of the sprocket with the thumb of the left hand. The camera back is placed on the body (not slid on) as close as possible to the upper edge of the guiding grooves. When the back is flat on, slide it upwards to close the camera completely.



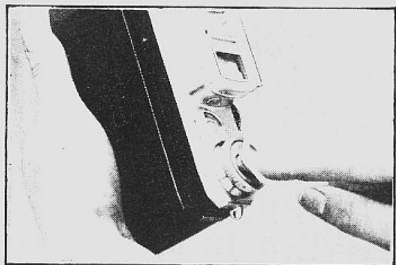
9. Give a half-turn to the locking keys on the under side of the camera to lock the back in place, and fold them flat once more.
10. By means of the milled wheel (23) set the red dot on the picture counting disc (next the number "27") to the small triangular indicator on the edge of the window above the disc (also marked with a red dot).



11. Press the shutter release button (6) lying in the centre of the shutter winding knob (this will work the shutter), and—holding it down—turn it in an anti-clockwise direction until a stop is felt. In this position the shutter button will stay permanently in the lower level.



12. Wind up the shutter winding knob nine times, until the picture counter shows the number "36". If the rewinding knob (14) does not rotate during this operation, there is something wrong inside the camera, and the back must be removed to find out the cause of the trouble.



13. By pressing the shutter release button (6), and turning it in a clockwise direction to its original position, it once more returns to the upper level. The red dot on the shutter button should now be opposite the red dot on the winding knob.

14. Wind up the shutter by the knob (5), and press the shutter release (6) until the picture counter disc shows "1" when the shutter is wound up ("1" comes after "0").

The camera is then ready for the first exposure.

Instructions for loading when using cassettes and cartridges are given on pages 40—44.

II. Unloading the Camera (after the 36 exposures have been made)

1. Press down the shutter release button and lock it as directed in I, 11. Then wind on the shutter winding knob (5) until the end of the paper trailer is reached. This point is found by noticing when the rewinding knob (14) no longer revolves when the shutter winding knob is turned.
2. Again release the shutter release button (6) as in I, 13.
3. Take off the camera back as in I, 1, 2.
4. Remove the full spool and stick down the end of the paper trailer with the gum-strip provided.
5. Transfer the now empty spool from the left-hand chamber to the right-hand chamber. Always hold the leaf spring (25) away from the spool when removing it from the camera.

III. The Distance Meter — View-Finder Combination

Focussing in the Contax III is done exclusively with the distance meter—view-finder combination, which guarantees sharp focus under all circumstances, since the distance meter is coupled to the lens. The view-finder field shows the camera



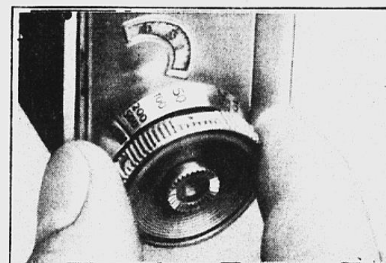
field when using the normal Contax lens of 2" (5 cm) focal length. For all other lenses special finders are used, that fit into the finder shoe (12) on top of the camera.

By looking through the eyepiece (22) of the distance meter and view-finder, a rectangular portion of the field in the centre of the picture will be seen to have a lighter shade, in which a double image of the object included in that portion of the field is easily detected. By turning the small wheel (8) one of these images will be seen to move sideways, and when the two images fuse into a single one, the lens is accurately focussed at the distance of the object seen in that portion of the field.



It should be noted that this adjustment must be made with the object on which focus is desired in the centre of the lighter rectangular field, and not at the left or right-hand edges.

The small lever (9) behind the focussing wheel (8) releases the infinity catch on the mechanism. When the wheel (8) is turned to focus, the catch is automatically pressed down and the focussing device is put into action.



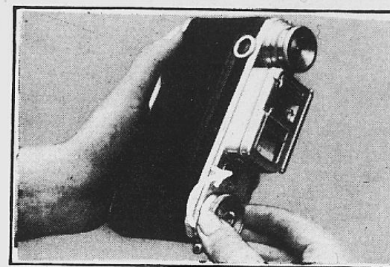
IV. The Focal-Plane Shutter

1. Setting the shutter speeds

Shutter speeds are set by adjusting the shutter winding knob (5). This is done by lifting the knob (5) against a strong spring and turning it (still in the raised position) until the

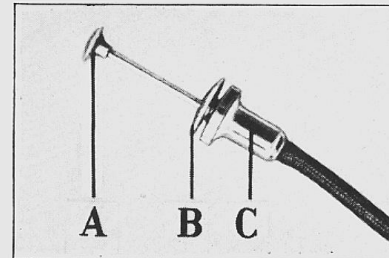
black dot on its periphery is opposite the exposure time desired. (The engraved numbers 2, 5, 10, 25, etc. indicate speeds of $\frac{1}{2}$, $\frac{1}{5}$, $\frac{1}{10}$, $\frac{1}{25}$ sec.) At this point the knob is released, and it will drop into position, since a catch (not seen) holds the knob against the exposure time that has been selected. The catches for the $\frac{1}{500}$ th and $\frac{1}{1250}$ th of a second speeds are very close to each other. The $\frac{1}{500}$ th speed is set by lifting the knob and turning forward from $\frac{1}{250}$ th second until the catch allows the knob to drop into position. When setting the shutter to $\frac{1}{1250}$ th second the knob is raised and turned as far towards the marking $\frac{1}{1250}$ as it will go, and in the correct position it drops into place as the catch is reached. By this means the correct exposure times are set with certainty.

When setting shutter speeds it is essential that the shutter is either fully wound up or fully run down. In both these positions the black dot may be set to the desired figure. It should also be noted that when changing from a slower speed to a higher one, a certain amount of resistance is felt when turning the knob. This is due to the spring loading of the shutter slit, which must be altered for the different speeds, and the knob must be wound against the extra tension. If it is desired to have the shutter open fully, set the knob to "B" and then lock the shutter release button down by pressing it to release the shutter and turning it in an anti-clockwise direction. The shutter may be closed later by turning the knob back in the clockwise direction until it rises to its normal working level.



2. Shutter and film wind

The shutter is wound up by turning the winding knob as far as it will go—a full turn. The knob must be wound up until a hard stop is felt. Winding the shutter simultaneously winds on the film for the next picture. The exposure is made by pressing the shutter release button (6).



3. Flexible wire release

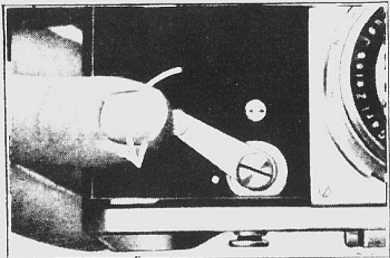
For long "Time" exposures a special flexible wire release is delivered with the Contax III which is screwed into the thread of the shutter release button (6). This release is different from ordinary types in having a moveable plate (B) between the pressure stud (A) and the socket (C). By setting the shutter to "B" and pressing the stud (A) of the wire release,

the shutter opens, and remains open until the plate (B) of the release is pressed with the thumb.

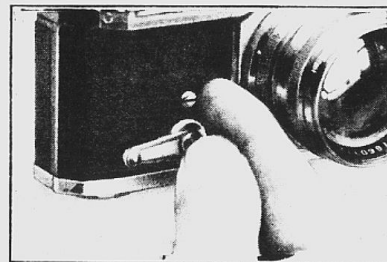
This wire release can be used for short time exposures and for ordinary snapshot exposures merely by turning the moveable plate (B) to the right, which presses it down into the socket (C). In this position the release works just in the same way as the ordinary type.

4. Delayed-action shutter release

The Contax III has a built-in delayed-action shutter release, which operates the shutter some ten seconds after the mechanism has been set in action. The shutter is first wound up in the normal way, and then the delayed-action mechanism is wound by pulling the lever (2) to the left (anti-clockwise) as far as it will go.



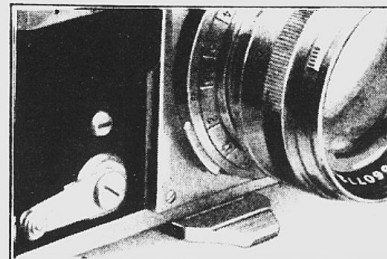
The clockwork is set going by pressing the release button (1) in the direction of the arrow engraved on it, and the same exposures may be given in the normal way. With the shutter set to "B", the delayed-action mechanism will give an exposure of approximately one second, and then close the shutter. Even

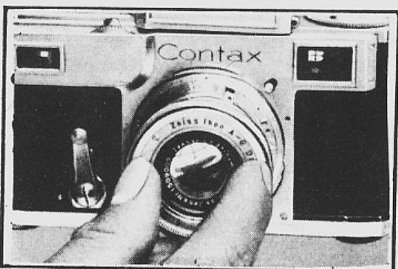
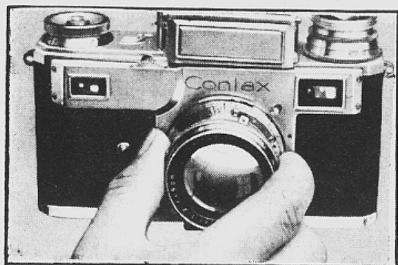


when the delayed-action mechanism is fully wound the shutter time may be set or the shutter wound up, but this can only be done with the delayed-action device either fully wound or else fully run down. In order to preserve the spring tension of the delayed-action mechanism, never leave it fully wound for any length of time.

5. Using the Contax III without a Tripod

On the rectangular camera bush of the Contax III is a hinged foot (20), which is usually folded backwards against the base of the camera. When, however, it is desired to hold the camera firmly, particularly when using the large-aperture Sonnar lenses, the foot may be turned over and pointed forwards, so that the camera will stand up on a table or other flat surface. When using the foot for this purpose the camera is quite firm and well balanced.

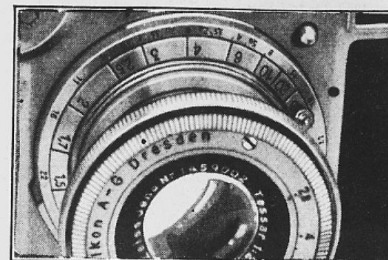




V. The Lens and the interchangeable Bayonet Mounting

When the camera is not in use, the collapsible 2" (5 cm) lenses—Tessar $f/3.5$, Tessar $f/2.8$, and Sonnar $f/2$ —are pushed backwards into the camera body, and before making an exposure they must be pulled forward into the correct position. This is simply done by holding the lens by the larger milled ring, pulling it out from the camera body as far as it will go, and then locking it into position by turning it to the right until a stop is felt. After exposure the lens may be turned to the left once more and pushed back into the body of the camera for convenience in carrying.

The adjustment of the lens aperture is made by turning the milled ring on the lens, which is made in different patterns in the various lenses. It is important to set the lens aperture before focussing, since the latter adjustment



may be altered by turning the lens aperture ring to adjust it correctly.

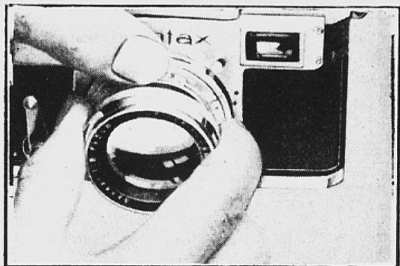
The camera has a scale of focussing distances for the 2" (5 cm) focus lenses. On either side of the focussing mark (a black dot or line) are also a number of aperture numbers that indicate the depth of focus. With this device the appropriate depth of focus for any particular aperture and focussing distance can be read off. For example: with the Tessar $f/2.8$ (2" = 5 cm) focussing on a distance of 8 feet, the depth of focus at $f/8$ lies between 12 feet and 6 feet. The depth of focus scale is based on a circle of confusion of $\frac{1}{500}$ inch. (See also the special tables of depth of focus used in miniature camera work.)

Changing the lenses

Lenses of 2" (5 cm) focal length are placed in the inner bayonet mounting of the camera, and all other lenses in the outer mounting.

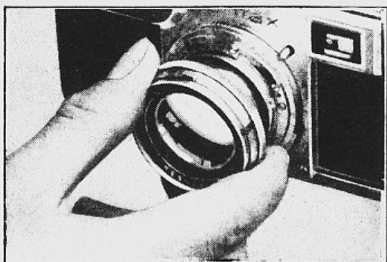
1. Removing the 2" (5 cm) lenses

The camera focussing mount is first set at infinity. Then the thumb is pressed on the

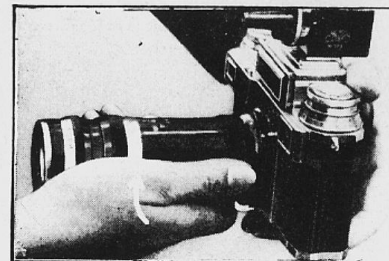


spring (18) so that the projection on the lens barrel, marked with a red dot, slides out of it. A slight turn of the lens in a clockwise direction releases it, and it may then be carefully drawn out of the helical focussing mount.

2. Replacing the 2" (5 cm) lenses

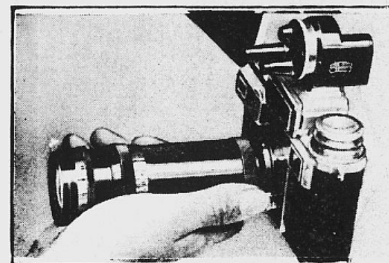


The lens is inserted into its mounting by reversing the operations mentioned above. It is important to remember that the lens will only fit easily into the mount when the two red dots are opposite each other, and when the lens is held in the same plane as the front of the camera. By slightly turning to the left, the lens slips past the catch (18) and the latter snaps back, holding the lens firmly in the infinity position.

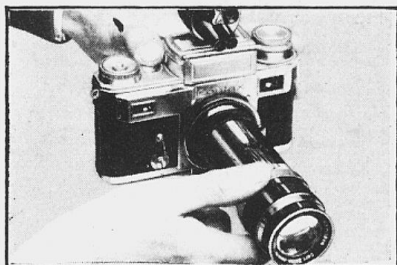


3. Inserting other lenses than 2" (5 cm) focal length

All lenses other than those of 2" focal length are placed on the outer bayonet mount. The lens is held so that the two red dots, one on the camera front and the other on the lens itself, are opposite each other, and the lens is then turned to the left until a stop is felt. The catch on the side of the lens will then be heard to snap into position.

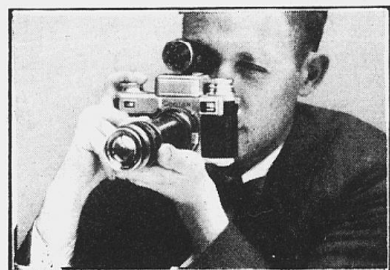


The removal of the lenses fitting the outer bayonet follows the procedure of inserting them. The side catch must first be lifted with the thumb, and then the lens is turned through 90° to the right, in which position it may be removed from the camera. The long-focus lenses are also coupled to the distance meter for focussing, and in order to make sure that the mechanism is working correctly, the focussing ring on the lens



should be turned. When this is done, the focussing wheel (8) on the camera should also revolve.

It is extremely important to note that when using long-focus lenses the focussing must be done by adjusting the ring on the lens and not by turning the usual focussing wheel (8) on the camera. The gear ratio of the mechanism is so high with these lenses that turning the usual wheel may damage the mechanism.



Since the centre of gravity lies in the lens when using a long-focus lens, it is desirable to hold the camera for exposure by grasping the lens with the left hand. This hand will then attend to the focussing, while the right hand steadies the camera and operates the shutter. The special finders for long-focus lenses are placed in the finder shoe on top of the camera, since the distance meter view-finder is not equipped with masks.

VI. The photo-electric Exposure Meter

Principle

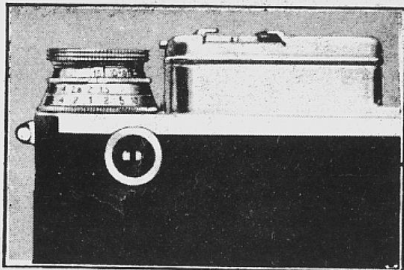
The exposure meter consists of a photo cell, an electric precision measuring instrument and a regulating resistance. The light that falls through the prism window (11) on to the cell produces an electric current, causing the needle of the measuring instrument to deflect to an extent varying with the intensity of brightness. The measuring instrument reacts instantaneously to the slightest change in the lighting conditions. Compensation for the variable brightness of the object, and incidentally the electric current, is obtained by the resistance connected to the exposure time scale (16). In this way, with only one marking position of the needle, it is possible to read off the exposure time for all diaphragms without using any conversion table.

Table of comparison for the most used film speeds

6	9	12	15	18	21	24	$/_{10}^{\circ}$ DIN
17	20	23	26	29	32	35	$^{\circ}$ Sch.
300	636	1300	2700	5600	11600	22000	H. & D.

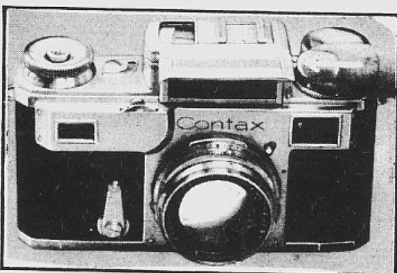
32

20cm

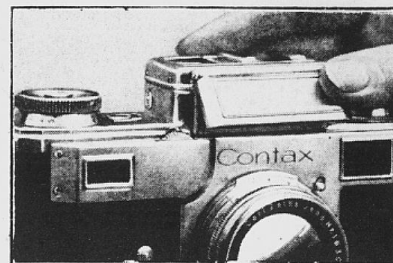


Manipulation

1. Set the black mark below the rectangular opening of the diaphragm scale (15) (between the lens stop Nos. 1.5 and 2) to the number corresponding to the speed of the film. Intermediate values are estimated.

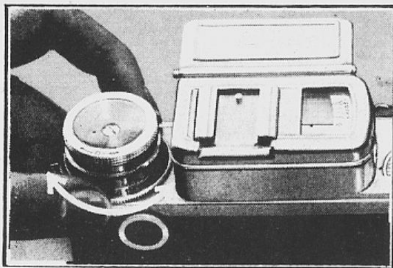


2. To use the exposure meter raise the cover (11) of the prism window by pressing on the knob (13). The cover will then remain in horizontal position.

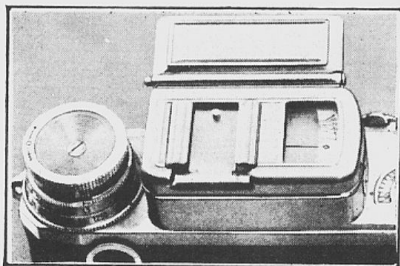


The cover is closed by pressure downwards until it snaps into place.

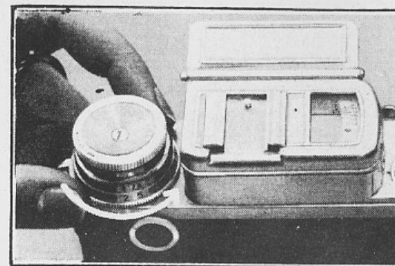
3. For ascertaining the exposure time, the camera should be pointed towards the centre of the subject to be photographed. If the degree of brightness varies considerably, or if a particularly good rendering of details in the shade is desired, it is advisable to aim the camera at the shaded parts and to approach as near as possible to them.



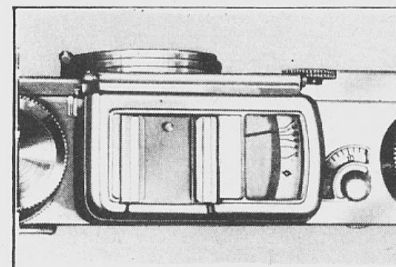
4. Rotate the ring (16) on which is engraved the exposure time scale, until the needle in the window (10) of the exposure meter is opposite the diamond-shaped mark \blacklozenge .



5. The exposure time corresponding to any lens stop, or the lens stop for any pre-selected exposure time can now be read off on the scale of the ring (16). The black numbers on the scale denote fractions of a second, e. g. 25 = $\frac{1}{25}$ th second, 2 = $\frac{1}{2}$ sec.; whereas the red numbers signify full seconds. Intermediate values can be obtained by setting the iris diaphragm accordingly.



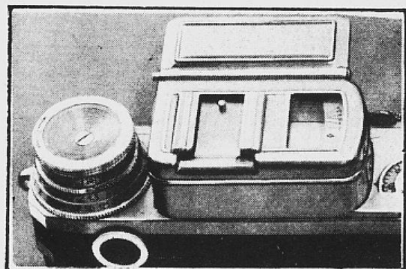
6. Where the intensity of brightness is very low, the needle cannot be brought to the indicating mark \blacklozenge even when the ring (16) has been turned to the left (in anti-clockwise direction) as far as it will go. With the ring in this position, the exposure time indicated on the scale (16) must be multiplied by a factor which is determined by the position of the needle on the scale visible in the window (10) of the measuring instrument between the zero point and the diamond mark.



The numbers 2, 5, 10, 20 and 40 on the scale denote that the indicated exposure times must be multiplied by 2, 5, 10, 20 or 40, as the case may be.

If the needle happens to be between the “multipliers”, the factor may be estimated. Example: If the needle is between the numbers 5 and 10, the factor = 8, or if the needle is between the diamond mark ♦ and 2, the factor = $1\frac{1}{2}$.

A condition for the accuracy of all measurements with “multipliers” is that the ring (16) must be turned in anti-clockwise direction to its left limit stop.



Example: If the needle points to the number 5 as in the accompanying illustration, and the exposure time shown for a film $18/10^0$ DIN at $f/5.6$ is $\frac{1}{5}$ th sec., it is necessary to multiply 5 by $\frac{1}{5} = 1$ sec.; or at $f/16$, the time shown on the scale, viz. 2 seconds, would have to be multiplied by the factor 5 = 10 seconds.

The principal conversions with the “multipliers” are given in the following table:

Readings on the exposure time scale	M u l t i p l i e r				
	2	5	10	20	40
50	$\frac{1}{25}$	$\frac{1}{10}$	$\frac{1}{5}$	$\frac{1}{2}$	1
25	$\frac{1}{10}$	$\frac{1}{5}$	$\frac{1}{2}$	1	2
10	$\frac{1}{5}$	$\frac{1}{2}$	1	2	4
5	$\frac{1}{2}$	1	2	4	8
2	1	2.5	5	10	20

Compensation values for special conditions

In daylight the exposure times indicated are equally correct for orthochromatic and panchromatic films.

In artificial light, when using Pan films, it will be found satisfactory in practice to apply exposure times shorter by one or two degrees than those indicated on the scale*. Since it is usual to make exposures in artificial light in quick succession, the trouble of converting the exposure time in every single instance may be avoided by altering the adjustment of the film speed. This is done by setting the index on the diaphragm scale, not to the daylight speed of the Pan film used, but to a speed that lies one or two degrees higher, e. g. instead of $15/10^0$ DIN, set to $18/10^0$ or $21/10^0$ DIN.

If, by way of exception, orthochromatic film should be used in artificial light, multiply by 4 the exposure time obtained when setting to the normal daylight speed of the film, or better still, set to a speed about one or two degrees lower than that given by the manufacturers of the film in question.

When photographing interiors in daylight, but not against the light (i.e. window at the rear), it is advisable to reduce the exposure time by one or two degrees. "Against the light" pictures, e. g. directed towards the sun or window, require one or two degrees longer time of exposure.

* Pan films with normal sensitivity to red—one degree shorter.
Pan films with ultra-sensitivity to red—two degrees shorter.

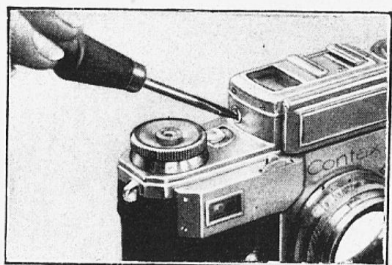
The exposure times of the Contax III exposure meter are adjusted for a normal exposure and development. In cases where shorter times of exposure are necessary, such as when taking rapidly moving objects, one half of the times indicated will be found just barely sufficient in order to get printable negatives, provided a rapid developer is used. If the films are developed in one of the special fine grain developers, it is essential to give at least double the time of exposure when taking the picture; in other words, one should set the indicator to the film speed one degree lower on the scale.

Manipulation

The exposure meter is a precision measuring instrument and must consequently be treated with care. It should not be subjected to knocks or jolts, and articles containing iron must be kept away from it. In order that the photo cell may preserve its high degree of sensitiveness, always protect it from light when not in use by closing the cover (11) of the prism window. Do not attempt to measure the brightness of the sun; it serves no purpose and the photo-electric cell will not be better for the experiment.

Adjustment

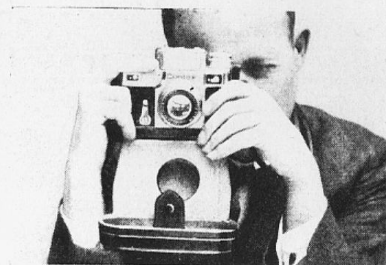
The zero point is the point at the beginning of the measuring instrument scale next to the multiplier 40. Through improper handling it might happen that the zero point position of the needle becomes displaced. In such an eventuality,



the exposure meter can be put right by a special adjustment which anyone can effect without difficulty.

The scale can be displaced by turning the screw at the side of the exposure meter casing with a screw driver; adjust the scale until the zero point lies exactly opposite the needle.

When carrying out the zero point adjustment, take care that no light whatever strikes the cell, so as not to impart any current to the measuring instrument. It is only under such conditions that a perfect adjustment of the zero point position can be effected. The exposure meter is so sensitive that the cover (11) does not suffice to shield the cell completely from light. The stray light that penetrates through the hinges and at the sides, although minute, is nevertheless sufficient to cause a slight deflection of the needle. When carrying out the adjustment, it is therefore necessary to take the instrument to some dark spot, on no account in the sun, and place a dark coloured cloth over the protecting cover (11). At the same time it is recommended to turn the ring (16) in clockwise direction to its limit stop.

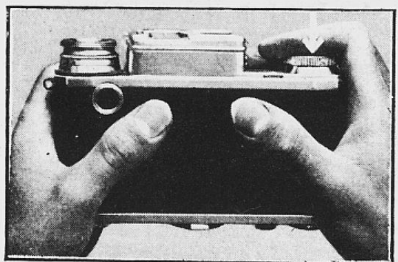
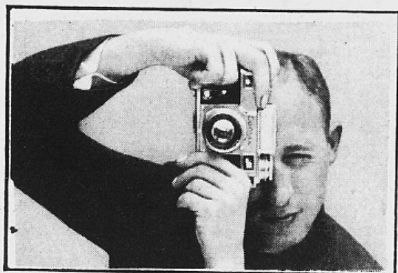


VII. Making the Exposure

In the open air, the ever-ready carrying case protects the Contax from dirt and moisture. If it is desired to hang the camera round the neck without using this case, the eyelets (4) may be used to attach the strap.

The camera should be held firmly, but not so firmly that the arms become cramped, in the hollow of the hands. Focussing is done by the middle finger of the right hand, while the forefinger of this hand operates the shutter release. This should be practised until one's technic is perfect, if only because the method given above does away with the hasty change of the forefinger from the focussing wheel to the shutter release, which is necessary if one finger is used for both controls. With practice and care it is quite possible to hold the camera still for the longer exposures of $\frac{1}{10}$ th, $\frac{1}{5}$ th, and even $\frac{1}{2}$ a second without incurring camera shake.

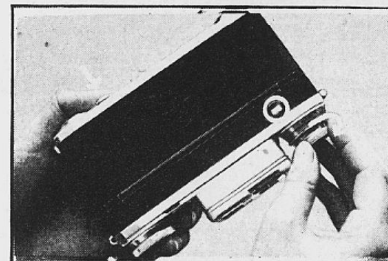
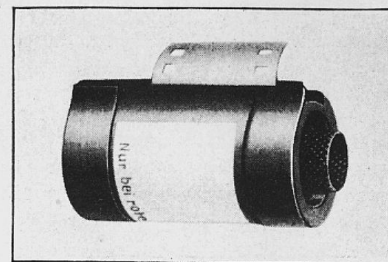
The illustrations show the correct way of hold-



ing the camera for both horizontal and vertical pictures. The illustrations also show that the shutter should be released, not with the tip, but with the ball of the finger, or better still, with the top joint (see illustration below). The person with large hands will find it more advantageous to release the shutter with the uppermost joint of the finger. In this position the camera can be held very steady when operating the shutter. It is also advisable to rest the camera on the palm of the hand.

The important points to observe for each exposure are:

1. Adjust the lens aperture to the desired number.
2. Set the time of exposure by the shutter winding knob.
3. Focus the object to be taken with the distance meter.
4. After each exposure wind up the shutter immediately, so that the camera is always ready for use.



VIII. Using Films made up in other forms than the Contax Spool

In addition to the Contax spool, a variety of other different forms of perforated cinema film may be obtained that are intended for use in miniature cameras, and which may be used with the Contax III. Only those kinds of chargers, cassettes, or cartridges can however be used that are small enough to fit the spool chambers of the camera comfortably, as otherwise it may happen that the film jams in the camera instead of winding on correctly. In particular, the knob of such spools or chargers must have a hollow in it that will fit the projecting stud in the revolving keys that lock the back of the Contax III into place.

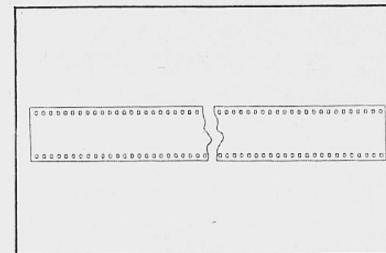
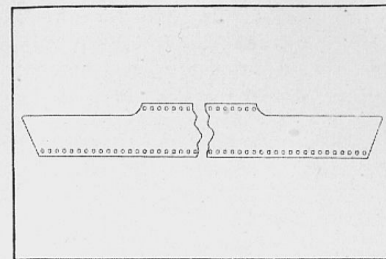
All film cartridges need to be rewound after the 36 exposures have been made. For this purpose, the rewind release knob (28) is pressed inwards and the film rewound into the

cartridge by turning the rewinding knob (14) in the direction of the arrow (see lower ill. page 37). Since nearly every kind of film made for miniature cameras is now available in the form of Contax spools, these should be used if possible, in order not to have to wind the film twice through the picture aperture of the camera.

Before inserting cartridges the shutter has to be wound up and the counter disc has to be set to No. 37.

The cartridge is now placed in the left-hand feeding spool chamber. The end of film projecting out of the cartridge is threaded through the large slot of the take-up core and bent backwards quite shortly (approximately $\frac{1}{8}$ in.). Then sufficient film is wound on the take-up core so that when placing it in the spool chamber, the teeth of the feeding sprocket engage with the perforations on both sides.

The camera is now closed in the usual way, the shutter wound and released twice. After having wound up the shutter again the first frame of the film which has not been exposed to the light is in the gate.

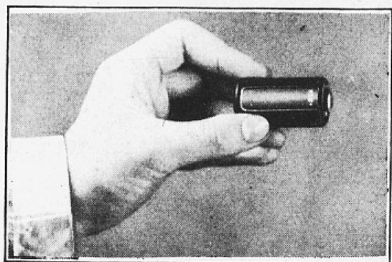


Naked cinema film may be obtained in lengths of approximately 16 feet, 32 feet, 50 feet, and 82 feet, from which lengths may be cut and loaded into the camera. The ends of the film must be cut to the correct shape with the Zeiss Ikon cutting guide (No. 541/16) and a length of $62\frac{1}{2}$ inches will give 36 exposures in the Contax. Ready-cut lengths of film for 36 pictures are also on the market, and these may be loaded into the cassette in the dark-room.

When using naked cinema film the end of the film is to be cut, as the picture shows.

Notice.

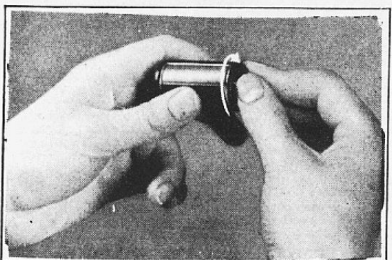
Newly loaded cassettes as well as cassettes with exposed film have to be kept covered in full daylight and should be carried about in their bakelite boxes provided for this purpose.



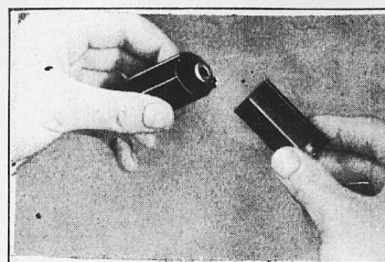
IX. Loading the Contax III with Cassettes

A. Loading the cassette with film

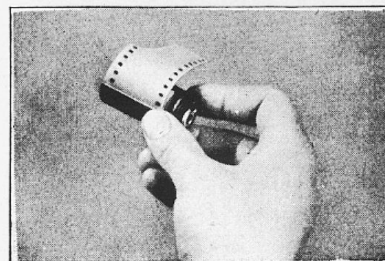
1. Cassette, empty, and closed.



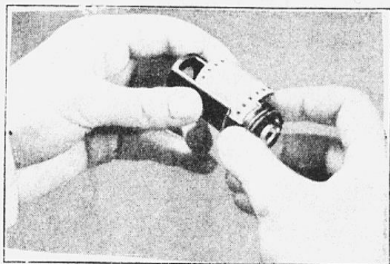
2. Press down the small nickered button and turn in direction of the arrow until the apertures in the two containers are over each other.



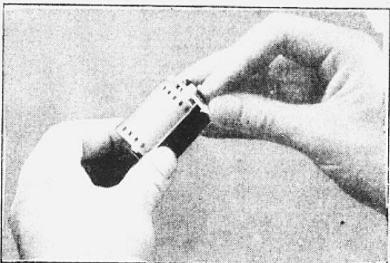
3. Draw the two containers apart.



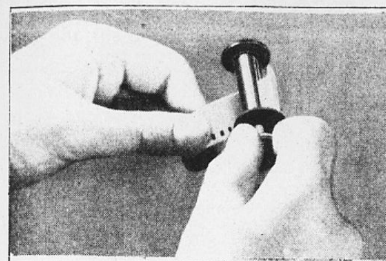
4. To attach the film to the core of the cassette bend it slightly (emulsion side inwards) and push it through the slot in the latter. This makes it easy for the film to run out of the core when unwinding. Wind the film completely on to the core, and place the latter in the inner container of the cassette.



5. Slide the two containers together, with the end of the film outside.

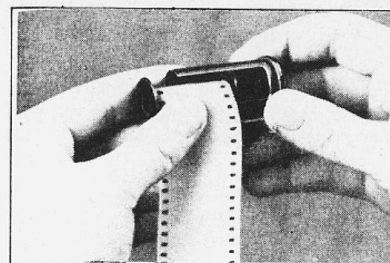


6. Close the cassette by giving half a turn in direction of the arrow. The word "zu" (= shut) should then be visible.

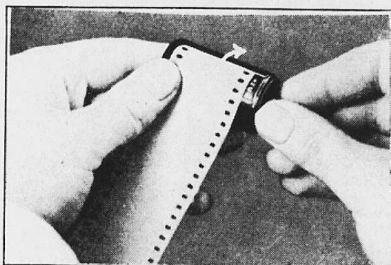


B. Attaching the film to the take-up cassette when loading the camera

1. Open and separate the containers as in A, 1 to 3.
2. Insert the end of the film in the core, bending over about $\frac{1}{10}$ th of an inch on the other side of the slot.



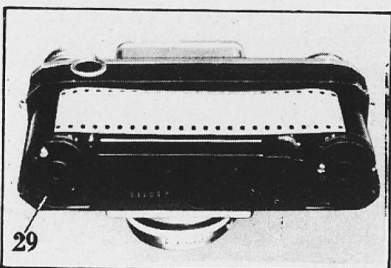
3. Slide the inner and outer containers over the core once more.



4. Close the cassette by turning until the word "zu" (= shut) is visible.

C. Loading the cassette into the camera and shutting the latter

Place the cassettes into the spool chambers so that the outer small projecting piece (29) lies in the channel cut in the spool chamber to receive it. (It is preferable to use two cassettes in the camera rather than one only.) When loading, the cassettes must always be shut—the word "zu" must be visible on them. When the camera back is replaced and the locking buttons (19) are turned, the action will open the two cassettes, and the film will run freely through the picture aperture and over the sprocket teeth.



X. Accessories for the Contax III

1. The Contax lenses:—

Wide-angle Tessar $f/8$ = focal length $1\frac{1}{8}"$ (2.8 cm)

	focal length
Orthometar $f/4.5$	$= 1\frac{3}{8}"$ (3.5 cm)
Biogon $f/2.8$	$= 1\frac{3}{8}"$ (3.5 cm)
Biotar $f/2$	$= 1\frac{9}{16}"$ (4 cm)
Tessar $f/3.5$	$= 2"$ (5 cm)
Tessar $f/2.8$	$= 2"$ (5 cm)
Sonnar $f/2$	$= 2"$ (5 cm)
Sonnar $f/1.5$	$= 2"$ (5 cm)
Triotar $f/4$	$= 3\frac{3}{8}"$ (8.5 cm)

	focal length
Sonnar $f/2$	$= 3\frac{3}{8}"$ (8.5 cm)
Sonnar $f/4$	$= 5\frac{3}{8}"$ (13.5 cm)
Tele-Tessar $f/6.3$	$= 7\frac{1}{8}"$ (18 cm)
Tele-Sonnar $f/2.8$	$= 7\frac{1}{8}"$ (18 cm)
Tele-Tessar $f/8$	$= 12"$ (30 cm)
Long-distance anastigmat	$f/8$ = focal length 20" (50 cm)

- Filters, either push-on or screw-in pattern:—
white (ultra-violet), yellow, orange, yellow-green, green, light red, red, deep red, black-red (infra-red).
- Push-on and screw-in lens hoods for all types of lenses.
- Proxar supplementary lenses of one or two dioptries, for push-on or screw-in fitting, to enable exposures to be made on distances nearer than 3 feet. The focussing distances involved are given in the following table:—

Proxar lenses on Contax III at stop $f/8$

Camera lens set to	Focus obtained with Proxar 1* Distance measured from the object to the supple- mentary lens	Focus obtained with Proxar 2*	Camera lens set to	Focus obtained with Proxar 1* Distance measured from the object to the supple- mentary lens	Focus obtained with Proxar 2*
∞	3' 2"	1' 8"	10	2' 5 $\frac{1}{4}$ "	1' 5"
100	3' 1 $\frac{1}{4}$ "	1' 7 $\frac{3}{4}$ "	9	2' 4 $\frac{1}{4}$ "	1' 4 $\frac{3}{4}$ "
60	3' 1 $\frac{1}{2}$ "	1' 7 $\frac{1}{2}$ "	8	2' 3 $\frac{1}{2}$ "	1' 4 $\frac{1}{2}$ "
50	3' 1 $\frac{1}{4}$ "	1' 7 $\frac{1}{2}$ "	7	2' 2 $\frac{1}{2}$ "	1' 4"
30	2' 10 $\frac{1}{2}$ "	1' 7"	6	2' 1"	1' 3 $\frac{1}{2}$ "
20	2' 9"	1' 6 $\frac{1}{2}$ "	5	1' 11 $\frac{1}{2}$ "	1' 3"
15	2' 7 $\frac{1}{2}$ "	1' 6"	4	1' 9 $\frac{1}{2}$ "	1' 1 $\frac{3}{4}$ "
12	2' 6 $\frac{1}{2}$ "	1' 5 $\frac{1}{2}$ "	3	1' 6 $\frac{1}{4}$ "	1' 3 $\frac{3}{4}$ "

* Push-on supplementaries are made for lenses of 27 and 42 mm diameter, and screw-in supplementaries for 25.5 and 40.5 mm diameter.

5. Plate back adapters and single dark-slides for exposures on plates in the 3×4.5 cm ($1\frac{1}{4} \times 1\frac{3}{4}$ ") size.
6. View-finders for various focal lengths of lens.
7. The Contameter—an optical near-focussing device for exposures at distances of 8 inches, 12 inches, and 20 inches without measurement of distances being required.
8. Reproduction devices of various kinds for all scales of reproduction between 1:1 and 1:18.
9. Micro-attachments for photo-micrography.
10. Enlargers: fixed focus, variable enlargement (hand adjusted), and variable enlargement (automatic focussing).
11. Developing tanks and accessories.
12. Various devices for printing transparencies.
13. Projection lanterns for monochrome and colour projection.
14. Various special accessories for scientific photographs.

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