

Before using
the **EXAKTA-**
KAMERA

4x6,5 cm

**please carefully study the
instructions in this booklet**



Exakta-Kamera models A and B and Exakta-Junior

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Thagee

CAMERA WORKS

STEENBERGEN & CO

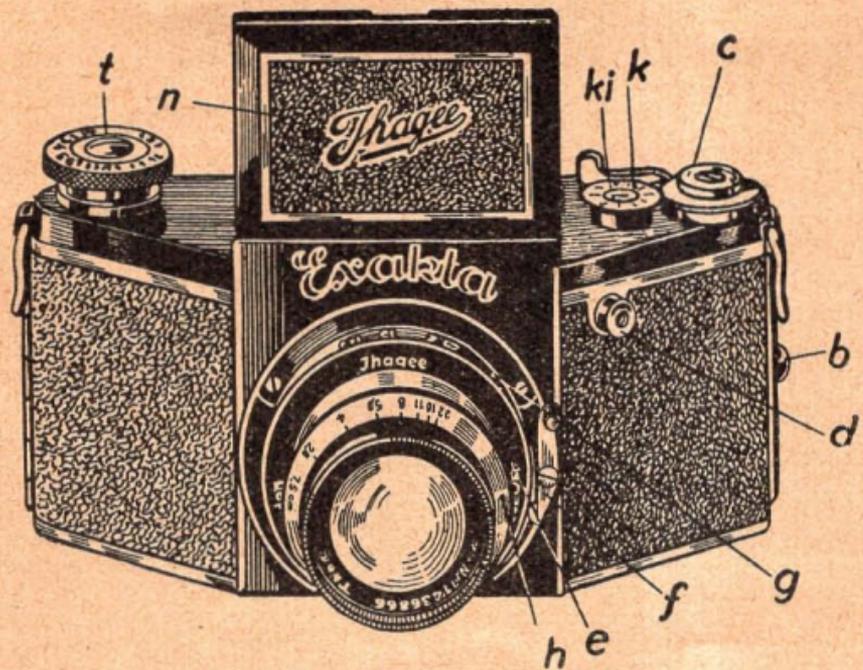


Fig. 1

- a = Window in the camera back for observing the film number.
- b = Knob to open the back of camera
- c = Winding on knob with lever connected to it
- d = Shutter release
- e = Rotating ring for focussing
- f = Lever stopping the focussing ring at infinity
- g = Focussing scale
- h = Iris diaphragm scale
- ki = Speed pointer
- k = Moving knob for the short exposures
- l = Catch holding down the focussing hood
- m = Button for releasing the focussing magnifier
- n = Mirror inside the focussing hood
- o = Rear part of the frame finder
- p = Button releasing the mirror in the focussing hood
- q = Back wall of the focussing hood
- r = Right wall of the focussing hood
- s = Left wall of the focussing hood
- t = Time regulating knob for slow speeds (in Model B only)

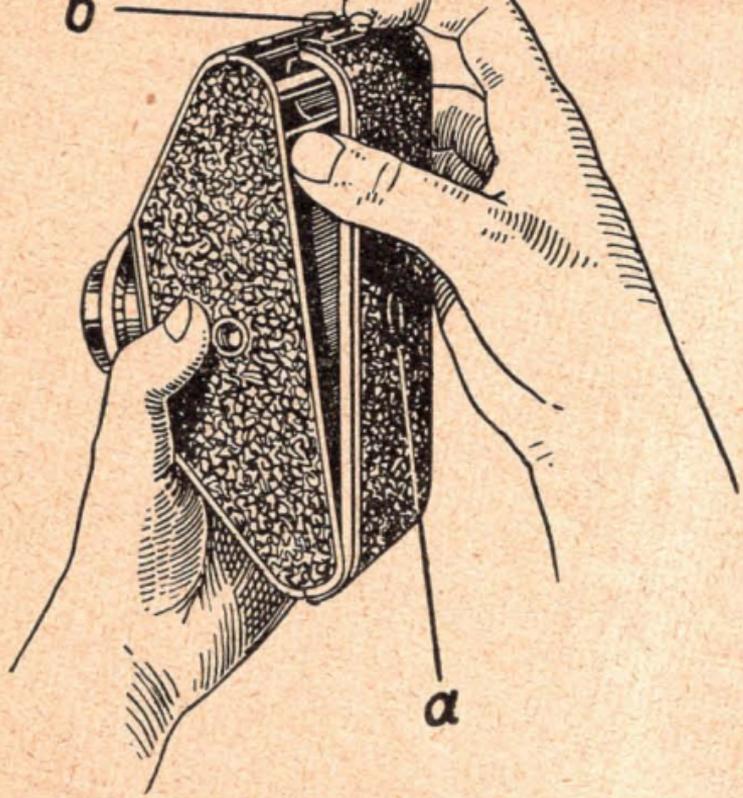


Fig. 2

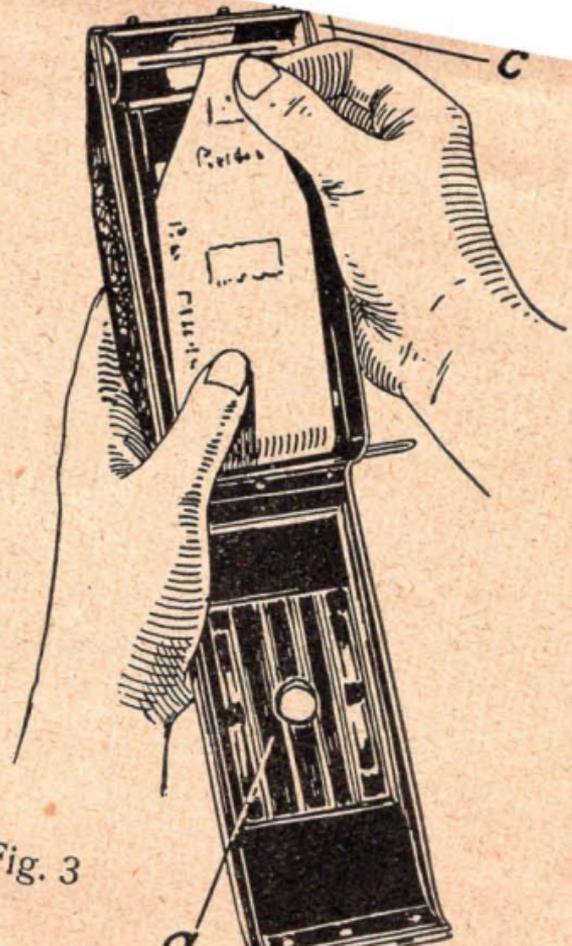


Fig. 3

Introduction. The Exakta-Camera is a precision instrument and although all the movements are extremely simple to understand, it is necessary to study the directions in this booklet before beginning to use the camera.

Inserting the film. The loading of a film into the camera is done in the ordinary way. Holding the camera in the left hand, as shown in figure 2, press with the right forefinger knob B in the direction of the arrow, pulling the camera back away from the main body with the thumb and middle finger. The back will now open, and the film is inserted as usual in the lower empty spool-chamber. Care should be taken that the two spool ends fit properly into the spring sockets provided. With the right hand, the backing paper is now pulled out so that it stretches as far as the other spool, as shown in figure 3. When doing this, the thumb of the left hand should press on the full spool of film in the lower spool chamber, so that the film does not unwind or it will become fogged. The pointed end of the paper is pushed as far as possible into the slit of the empty spool and the latter turned one or two revolutions by means of the winding-on lever connected with the knob C. The paper will now be held in the empty spool and the back of the camera closed. The film winding lever can now be moved until the figure 1 appears in the red window on the back of the camera. This lever is moved in the direction of the arrow as far as it will go, and then allowed to spring back to its former position. This movement is repeated until the correct number appears in the red window A. The lever need not be moved over the full distance of its travel but should be worked until the number is in the correct position. It will always spring back against the camera-body. The protecting cover for window of back, through which the number on the film is seen, is held back whilst number is read, by the thumb, and automatically returns and covers red window when pressure is released.

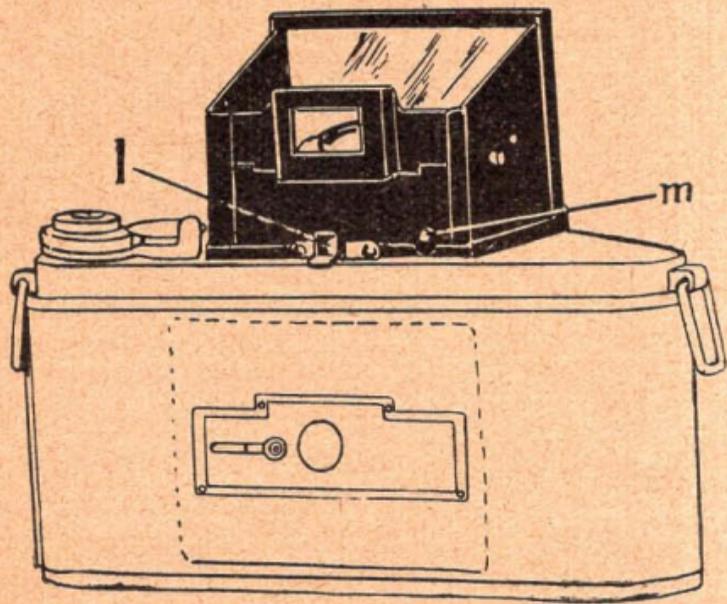


Fig. 4

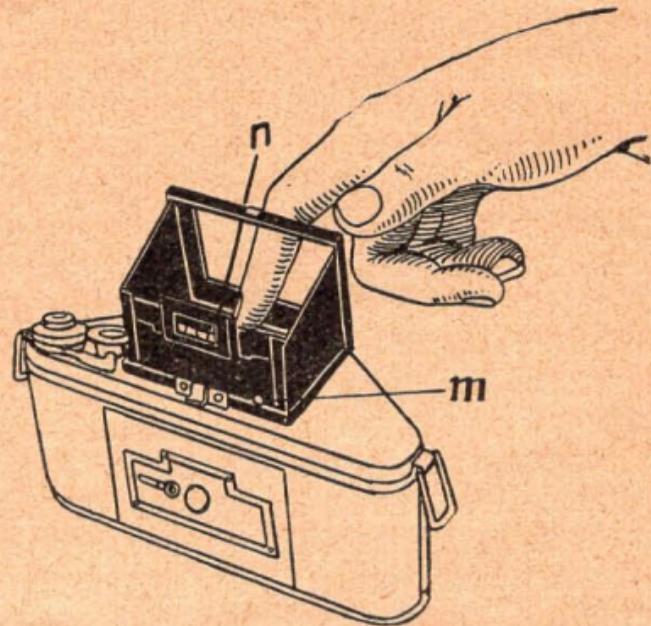


Fig. 5

The winding on of the film automatically sets the shutter at the same time, and after the shutter is completely set it will be noticed that the ratchet noise ceases, and more resistance is felt whilst completing the winding of film to the next number. This is caused by a brake mechanism coming into operation which ensures that the shutter is not over-wound, and no notice need be taken of it.

The loading of film into the camera (the correct size is the standard V. P. $4 \times 6,5$ cm) must be done very carefully. Hasty and inaccurate insertion of the backing paper into the empty spool is liable to cause trouble later on, and this may be avoided by using care to begin with.

As soon as the number 1 appears in the red window A, the first picture is ready to be taken. The focussing mount is now turned until it locks and at this point the lens is focussed at infinity.

The Reflex Finder. One of the most useful points is the large number of ways in which the finder may be used.

Position 1. By pressing lightly on the lever *l*, the finder hood springs into the „open“ position, so that the ground glass screen is seen. On this the picture can be seen up to the moment of pressing the shutter release. When the light is poor, or where critical focussing is necessary, it is convenient to use the magnifying lens, which springs forward from the back wall of the finder hood by pressing the small knob *m*. The lens springs into the correct position and needs no further attention. (see figure 4).

Position 2. When the magnifying lens springs into position it brings with it the back portion *o* of the frame finder. By now pressing down the mirror *n* until it catches, the front portion of the frame finder is opened, as shown in figure 5, which is very useful for taking pictures at eye level.

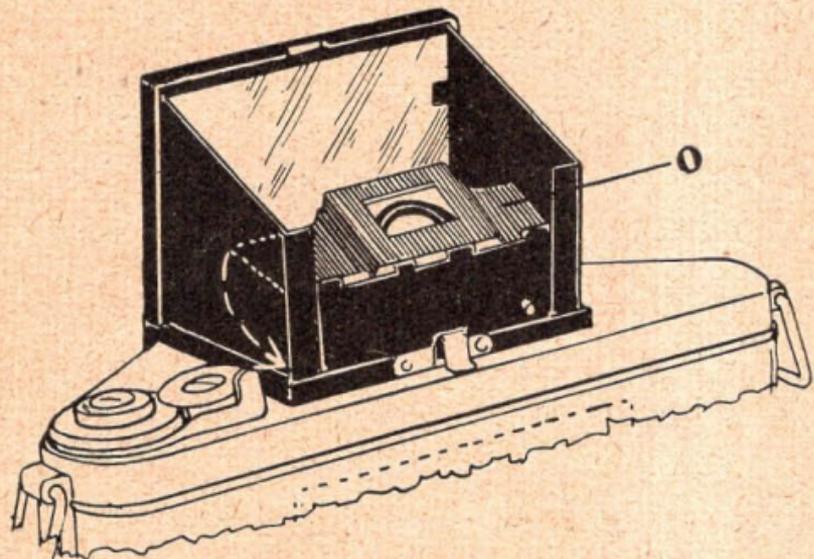


Fig. 6

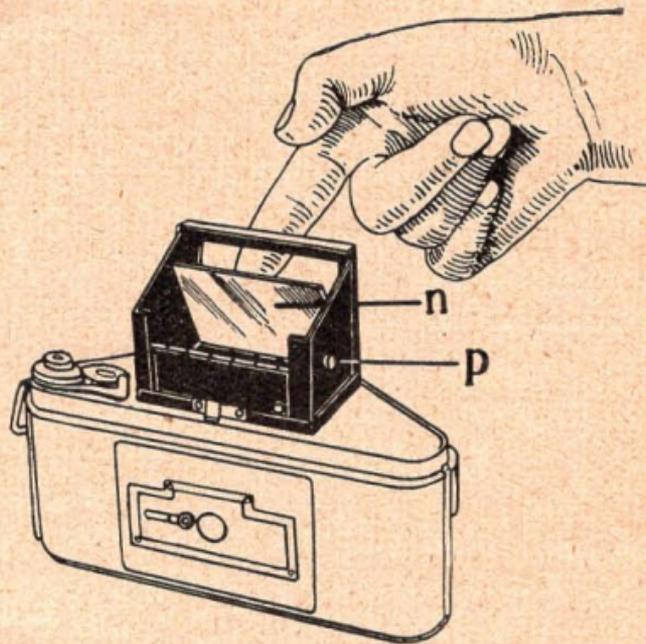
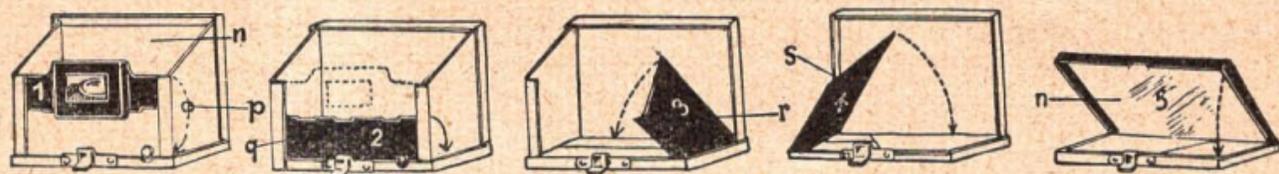


Fig. 7

When this finder is used, however, it is necessary to focus accurately either by the focussing scale or by looking first on the ground glass screen. The field covered by the camera is accurately seen if the eye is brought as near as possible to the rear frame of the finder. The frame of the front of the finder will then show the amount covered by the camera.

Position 3. It is also possible to see the ground glass screen while using the camera at eye level. This is easily done by allowing the mirror *n* to come back to its original position by pressing the small lever *p*. The magnifying lens together with the rear part *o* of the frame finder must then be pressed down inside the hood until it catches in position (see figure 6). The mirror is now pressed downwards and backwards once more but only until the first catch (figure 7). The ground glass screen may now be easily seen through the mirror *n*.



Closing the finder hood cannot be done until the mirror *n* has been allowed to spring back into its upright position by pressing the small lever *p*. The magnifying lens and the rear frame *o* of the frame finder must then be folded back, as shown in figure 6, until it snaps into position. The walls of the finder hood can now be folded down in the order *q*, *r*, *s*, and finally, the covering frame holding the mirror *n* is closed on top of them. These movements are shown in the five small pictures of figure 8, in which position 1 shows the lowering of the magnifying lens and the rear part of the frame finder.

The Focal-Plane Shutter. As has been said, the shutter has been already wound up by winding on the film. When the shutter has been released, no picture can be seen on the ground glass, because the mirror in the camera has risen upwards in order to stop any light reaching the film that has not come through the lens. When the film is wound on once more, the mirror sinks into the correct position for focussing. The camera is then ready for the next picture, and this simple mechanism makes it impossible to give two exposures on one section of the film.

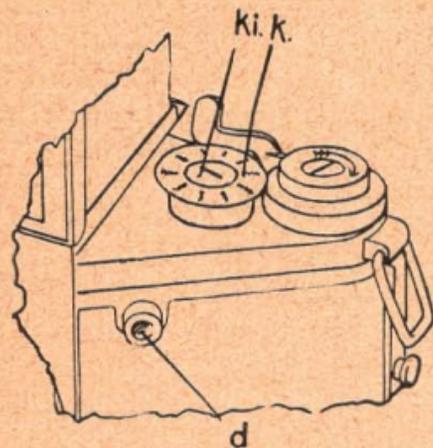


Fig. 9

The setting of the shutter speed is arranged by lifting the knob *k*, and turning it (while in the lifted position) until the required speed is opposite the red dot on the inner knob *ki* (see figure 9). The outer knob *k* is then lowered until flush with *ki*. The numbers on this knob give fractions of a second. Short „time“ exposure of any required length may be made by turning knob *k* so that the red dot on *ki* is opposite „B“. The shutter will now remain open as long as the shutter release *d* is pressed, and closes as soon as pressure is released. For long „time“ exposures, *z* on the knob *k* should be placed against the red dot on *ki*. In this position one pressure on the shutter release *d* opens the shutter, which then remains open until the release *d* is pressed a second time. For the convenience

of camera users the shutter release *d* is provided with a socket into which a wire release may be screwed.

Only the wire release supplied by us is suitable. When making exposures that are longer than $\frac{1}{25}$ th of a second, the camera should be screwed on to a tripod. A bush for the tripod screw will be found on the bottom of the camera body.

The Lens and Focussing. The lens, as the eye of the camera, is extremely sensitive and fragile, and must always be handled with great care. In particular, care must be taken that the fingers do not soil it. The glass may always be cleaned by wiping with a soft dry washleather, but too frequent use of this will spoil the polish of the glasses. On this account, the lens should always be covered by its cap when the camera is not in use, and should never be touched with the fingers when focussing.

The lens is mounted in a ring which, when turned to the left, (hold the ring *h* when turning) screws forward the lens on a helical thread. Other short or long focus lenses can be substituted for the standard lens, but these will need different settings for focussing since the focal lengths may vary slightly from the focal length of the original lens.

Before the lens can be focussed, it is necessary to turn the ring until a stop is felt. The lens is brought into this position by holding the outer ring *e* (shown in figure 10, with the word „lhagee“ on it) and turning it in an anti-clockwise direction up to the stop. In this position the lens is focussed

at infinity, and at the same time the lock on the shutter is released. This shutter lock stops the camera being used before the lens is in the proper position. For all objects beyond 65 feet the lens will be correctly focussed when the scale reads infinity ∞ .

In order to focus at nearer distances, the small stop lever *f* is pressed down lightly, and it is then possible to screw out the helical mount still further. The picture may then be focussed either

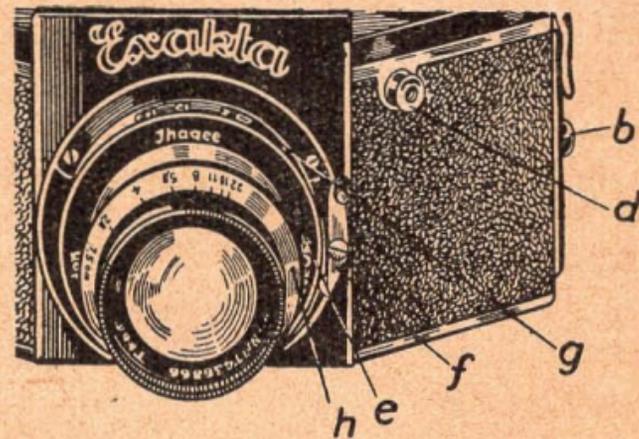


Fig. 10

on the ground glass screen, or else by the scale, which reads distances from the camera to the object photographed. On the helical mount is a mark which moves along the scale of distances as the lens is screwed outwards, and shows accurately the distance at which the lens is sharply focussed.

The iris diaphragm of the lens should not be undervalued, for it is often very useful. If, for example, it is desired to have objects in the foreground sharp, as well as objects in the background, the diaphragm must be adjusted accordingly. The alteration is effected by moving the nickelled ring H, on which the various lens apertures are marked, and as the aperture is made larger or smaller, so the depth of field is lessened or increased. The rule is simple to remember, and runs — The smaller the lens aperture, the greater the depth of field, but the longer the time of exposure. When making instantaneous exposures, large apertures should be used, but when time exposures are given, the aperture should be reduced in size.

Exakta model B (figure 11)

By means of the special shutter supplied with the Exakta, exposures between $\frac{1}{10}$ th and 12 seconds may be given. If this mechanism is used (the range is $\frac{1}{10}$ th to 12 seconds normally, or $\frac{1}{10}$ th to 6 seconds if the „delayed action mechanism“ is used) the shutter control *k* and *ki* must be set either to *B* or *Z*. Before setting the shutter speed, the winding on lever for the film must be moved on to bring the next exposure into position. The knob *t* must then be wound up to its fullest extent, and the necessary time of exposure adjusted. The outer ring of the knob *t* is lifted up and turned until the desired exposure time is against the mark on the central part of the knob. The outer ring is then allowed to drop back into place. Black figures show the times of exposure for normal work, and red figures show those possible when the „delayed action mechanism“ is being used. In the latter case the various times of exposure will be given approximately 12 seconds after the shutter release is pressed. If the instantaneous exposures engraved on the knob *k* ($\frac{1}{25}$ th to $\frac{1}{1000}$ th) are to be used with the „delayed action mechanism“, the shutter is set to the desired exposure (for example to $\frac{1}{200}$ th of a second) while the knob *t* is placed with the mark opposite any of the red numbers on the

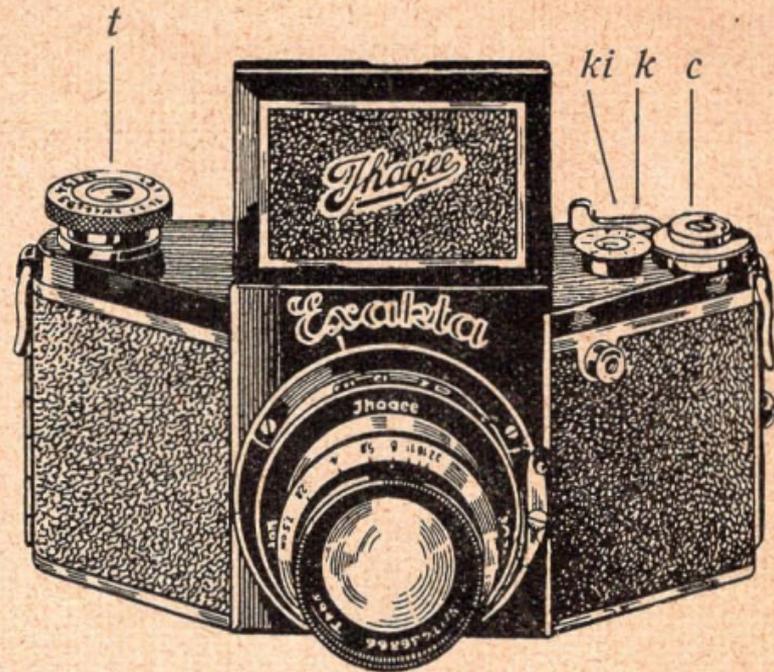


figure 11

ring. It should be noted that it is always necessary to adjust knob *k* whether the knob *t* is being used or not. Longer exposures than 12 seconds may be given by the normal method of setting the shutter to *B* or *Z*, but in this case the time should be noted with a watch. It is difficult to count seconds accurately without much practice.

The Exakta Junior

Loading the film. See instructions for model A, but note that with this model the winding on knob C must be turned by hand, as no special lever is provided.

The Reflex Finder. See instructions for model A.

Shutter. See instructions for model A, but note that the Exakta Junior has only the highest shutter speed of $\frac{1}{500}$ th of a second.

Focussing the Lens. In most points the lens fitted to the Exakta Junior works exactly like that of model A. The Exakta Junior, however, has a lens which focusses by means of movement of the front lens. First, the lens tube is turned lightly in a clockwise direction and pulled out until it stops. To do this the lens should be held by the ring with the apertures marked on it, and when in this „pulled“ out position it is focussed on infinity. As before (see instructions for model A) all objects further than 65 feet from the camera will be found to be in focus on the ground glass, always assuming that the focussing mark on the front lens is opposite the infinity mark on the ring. Focussing for nearer distances is arranged by turning the front lens until the mark is against the appropriate figure on the scale of distances. It is also possible, of course, to do the focussing by examining the picture on the ground glass screen.

When the lens is to be pushed back again into the rear position, a gentle turn to the left will allow it to slide back into the camera, while this closing of the lens will also lock the shutter to avoid accidental exposure. Again the lens should be handled by the ring marking the lens apertures.

The iris diaphragm is worked as in model A by turning the ring, and the figures are clearly seen from above.

For enlarging negatives taken by the Exakta it is best to use the Exakta-Lumimax enlarger.

The lens of every Exakta camera may be screwed out and removed. By turning to the left (anti-clockwise) and, in the case of the Junior model, pulling out the lens tube from the camera body, the lens and its mount comes away from the body and can be used in the Lumimax enlarger as an enlarger lens. The Lumimax enlarger is very reasonable in price, and is a necessary accessory for every owner of an Exakta camera. We should be glad to send you particulars.

Directions for use of Exposure Table*

Select the object to be photographed, with its corresponding number in table 1, according to the character of the light available. In table 2, the day of the month and hour of day are given and these numbers must be added to that of table 1. In table 3 the sensitivity of the film, also the extra value if a Filter is used; this number is added to that of tables 1 and 2. Then on table 4, the sum of the three numbers must be taken and set against the value of the Diaphragm stop in use. The necessary exposure will then be found in the vertical column under the „Stop“ figure.

Flash Light Exposures. For Flashlight work, add together the figures found from tables 1 A, 3 and 4; the sum of these figures will be the number of grammes of Flash powder necessary. If a diffusing screen is used, the quantity must be increased by half.

Examples (1) To take a group of people in shade during July at 2 p. m. with light clouds in the sky, a light yellow filter, and a film of 17⁰ Scheiner. In table 1 we find the number 12, in table 2 the number 1, and in table 3 the number 2. These are added together, making 15 in all, and by referring to table 4, the exposure is seen to be $\frac{1}{12}$ th second at f/4.5.

(2) Flash light-photograph with plate of 19⁰ Scheiner, the object being 3 meters (10 feet) from the flash. In table 1 A, we find the number 19, and in table 3 the number 2, the sum of which is 17. According to table 4 the amount of flash powder required for an aperture of f/8 is half a gramme-approximately a well-filled teaspoonful.

* System: Jos. Schneider & Co., Optical Works, Kreuznach/Rh 1.

Table 1. Subjects in direct sun-light				Subjects in diffused day-light			
Subjects	S-k v			Subjects	S k v		
	sunny	slightly overcast	strongly overcast		sunny	slightly overcast	strongly overcast
monuments standing free	3	5	6	monuments bright in the shadow	6	8	9
" on places	4	6	7	" dark in the shadow	10	12	13
" in streets	5	7	8	architectures bright in the shadow	6	8	9
narrow streets	9	11	12	" dark in the shadow	9	11	12
architectures bright	5	7	8	groups in the shadow	10	12	13
" dark	8	10	11	" under trees	14	16	17
ships on sea	4	6	7	interiors bright sun-side	19	21	22
open landscape	3	5	6	" dark sun-side	23	25	27
landscape with bright fore-ground	4	6	7	" bright shadow side	23	25	27
" with dark fore-ground	6	8	9	" dark shadow side	27	30	33
" with dark trees	7	9	10	portraits in the shadow	10	12	13
portraits & groups in the open air	8	10	11	" in studios	13	15	16
snow, landscape, sea	1	3	4	" in a bright room	15	17	19
ditto with accessories	2	4	5	" in a dark room	19	20	22
sea-shore-scenes	3	5	6	reproductions at the window	10	12	13
street-scenes bright	5	7	8	street-scenes bright in the shadow	7	9	10
" dark	8	10	11	" dark in the shadow	10	12	13
forest interior bright	12	14	15	portraits bright under trees	13	15	16
" dark	16	17	18	" dark under trees	15	17	18
clouds & water falls	0	1	2	" in a room at the window	14	16	17

Table 2. Hour Fore 1 noon After		Jan. Dec	Febr. Nov.	March Oct.	April Sept.	May Aug.	June July
12		5	4	3	2	1	1
11	1	5	4	3	2	1	1
10	2	6	4	3	2	2	1
9	3	7	6	4	3	2	2
8	4	9	7	6	4	3	2
7	5		9	7	5	4	3
6	6			9	7	6	4
5	7				8	7	6

Table 3. Scheiner °		13	14 15	16	17 18	19	20 21	22	23 24	25	26 27
H. & D. °		133	190	276	400	570	830	1170	1680	2400	3050
without yellow screen		2	1	0	-1	-2	-3	-4	-5	-6	-7
light		5	4	3	2	1	0	-1	-2	-3	-4
medium		6	5	4	3	2	1	0	-1	-2	-3
dark		8	7	6	5	4	3	2	1	0	-1

1a Flash-light-photos	
distance of objects from the flash-light	
in yards	additional-numbers
1	12
2	16
3	19
4	20
5	22
7	23
9	24
11	25
13	26

In this case the values found on table 4 are the required quantity of flash-light powder in grammes.

Tab 4.	f 20	2.9	3.5	4.5	5.6	6.3	8	11	16	23	32	* seconds	
												parts of seconds	minutes
1	1/	3600	2500	1500	1000	750	500	250	120	60	30		
2	5000	2500	1600	1000	650	550	400	200	100	50	25		
3	3500	1700	1200	700	500	350	250	120	60	30	15		
4	2800	1400	900	600	400	300	200	100	50	25	12		
5	1700	900	600	350	250	180	120	60	30	15	8		
6	1400	700	450	300	200	150	100	50	25	12	6		
7	907	450	300	180	120	100	60	30	15	8	4		
8	700	360	250	150	100	75	50	25	12	6	3		
9	450	250	150	100	60	50	30	15	8	4	2		
10	360	180	120	75	50	40	25	12	6	3	1 1/2		
11	250	120	90	50	30	25	15	8	4	2	1		
12	180	90	60	40	25	20	12	6	3	1 1/2	1 1/2		
13	120	60	40	25	15	12	8	4	2	1	2		
14	90	45	30	20	12	8	6	3	1 1/2	1 1/2	3		
15	60	30	20	12	8	6	4	2	1	2	4		
16	45	20	15	8	6	4	3	2	1 1/2	1 1/2	3		
17	30	15	10	6	4	3	2	1 1/2	1 1/2	3	6		
18	20	10	7	4	3	2	1 1/2	1 1/2	3	6	12		
19	15	7	5	3	2	1 1/2	1	2	4	8	15		
20	10	5	3	2	1 1/2	1	1 1/2	3	6	12	25		
21	7	3	2	1 1/2	1	1 1/2	2	4	8	15	30		
22	5	2	1 1/2	1	1 1/2	1	3	6	12	25	50		
23	3	1 1/2	1	1 1/2	2	3	4	6	12	15	30		
24	2	1	1 1/2	2	3	4	6	12	25	50	1 1/2		
25	1 1/2	1 1/2	2	3	4	6	8	15	30	1	2		
26	1	2	3	4	6	8	12	25	50	1 1/2	3		
27	1 1/2	3	4	6	8	12	15	30	1	2	4		
28	2	4	5	8	12	16	25	50	1 1/2	3	6		
29	3	5	7	12	15	25	30	1	2	4	8		
30	4	7	9	15	25	32	50	1 1/2	3	6	12		
31	5	9	15	25	30	50	1	2	4	8	16		
32	7	15	20	32	50	1	1 1/2	3	6	12	25		
33	9	20	30	50	1	1 1/2	2	4	8	16	30		
34	15	30	45	1	1 1/2	2	3	6	12	25	50		
35	20	45	1	1 1/2	2	3	4	8	16	30	60		
36	30	1	1 1/2	2	3	4	6	12	25	50	1		
37	45	1 1/2	2	3	4	6	8	16	30	60	1		
38	1	2	3	4	6	8	12	25	50	1	2		
39	1 1/2	3	4	6	8	12	16	30	60	1	2		
40	2	4	5	8	12	16	25	50	1	2	4		
41	3	5	7	12	16	25	30	60	1	2	4		
42	4	7	9	16	25	30	50	60	1	2	4		
43	5	9	15	25	30	50	60	1	2	4	8		
44	7	15	20	30	50	60	1	2	4	8	16		
45	9	20	30	50	60	1	2	4	8	16	30		
46	15	30	45	60	1	2	4	8	16	30	60		
47	20	45	60	1	2	4	8	16	30	60	1		
48	30	60	1	2	4	8	16	30	60	1	2		

*For flashlight powder quantities in grammes.

