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INSTRUCTIONS FOR USING

Ihagee »Auto-Ultrix«

Two-size Auto-Ultrix

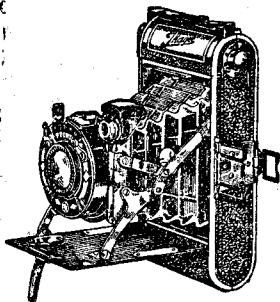
No. 2860 for 6x9 (2 $\frac{1}{4}$ x3 $\frac{3}{4}$ ins.)
and 4,5 x 6 cm. (1 $\frac{3}{4}$ x 2 $\frac{5}{16}$ ins.)
Roll-Film

Popular Auto-Ultrix

No. 4860 for 6 x 9 cm. (2 $\frac{1}{4}$ x
3 $\frac{1}{4}$ ins.) Roll-Film

Auto-Ultrix with Plate Back

No. 3860 for 6x9 cm. (2 $\frac{1}{4}$ x
3 $\frac{1}{4}$ ins.) Roll-Film and 6,5x9 cm.
(2 $\frac{1}{2}$ x 3 $\frac{1}{2}$ ins.) Plates



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Notice!

Auto-Ultrix No. 3860 equipped for both plates and roll films—see first page 8.

Opening the Camera. — Hold the camera in the hand and press with the thumb on the knob "a" below the film winding key, then the baseboard will spring open and the camera is automatically focused for "infinity". It is advisable to tilt the camera slightly towards the front so that the baseboard will come out far enough to allow the bosses "b" of the side struts to snap into place.

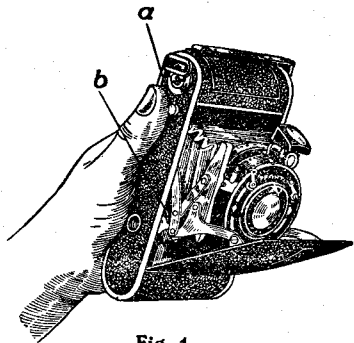


Fig. 1

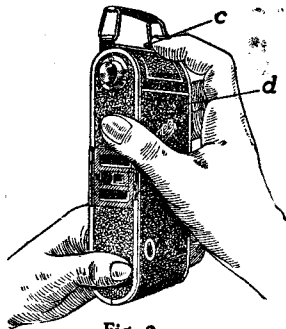


Fig. 2

Loading and Unloading. — Be sure that the shutter is closed before putting in the film. It is further necessary to decide whether one prefers eight 6×9 cm. ($2\frac{1}{4} \times 3\frac{1}{4}$ ins.) or sixteen 4.5×6 cm. ($1\frac{3}{4} \times 2\frac{5}{16}$ ins.) exposures on a 6×9 cm. ($2\frac{1}{4} \times 3\frac{1}{4}$ ins.) roll film. If the 6×9 cm. ($2\frac{1}{4} \times 3\frac{1}{4}$ ins.) size is preferred, remove the mask in the gate after opening the camera, as described below. The pointer below the clearance is then set to "A" so that the mask can easily be lifted below and removed from the body. For subsequent insertion of the mask the top groove is placed into the slot above the gate, the mask slightly pressed on below and the pointer set to "Z". Then hold the camera, handle upwards, as shown in Fig. 2, press the knob "c" in the direction of the pointer and open the back "d". Place the roll film compartment and press the spool lightly into the camera. As shown

in Fig. 3, draw the pointed paper straight over the rollers and between the guides "e" up to the empty spool, insert the pointed end of the paper in the wide slot of the core, give the key two to three turns to prevent the paper from slipping out again, and close the back.

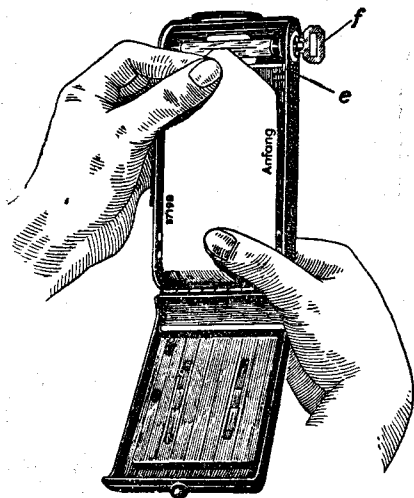


Fig. 3

Wind the film only when the camera front is open! Turn the winding key "f" in the direction of the arrows, after a few turns a hand, an arrow or a few dots appear in the red window as warning signals. For 6×9 cm. ($2\frac{1}{4} \times 3\frac{1}{4}$ ins.) exposures use the lower window only. Keep on turning slowly until the figure 1 appears. The first film is now ready for exposure. Make it a habit to wind the film after each exposure to prevent double exposures.

For making exposures of 4.5×6 cm ($1\frac{3}{4} \times 2\frac{5}{16}$ ins.) insert the film as usual after the mask having a 4.5×6 cm. ($1\frac{3}{4} \times 2\frac{5}{16}$ ins.) clearance has been placed in the gate. The back of the Two-size Auto-Ultrix has

two film windows and the approaching appearance of the first film section is signalled by a hand an arrow, or a few dots at first in the lower window. After noticing this sign keep on turning slowly. When the figure 1 is visible in the lower window, stop turning, as the first film is now ready for exposure. After exposure turn the film again until the figure 1 appears in the upper film window. After exposure of this section keep on turning until the figure 2 is visible in the lower window. When this film is exposed also, bring No. 2 to the upper window. This manipulation is repeated until the 16th film section has been exposed. The ingenious arrangement of the two film windows makes it possible to expose

in view of the printed number in the lower window at first one-half of the large film section, and then by turning this printed number to the other window the second half can be exposed. After all exposures (8 times 6×9 ($2\frac{1}{4} \times 3\frac{1}{4}$ ins.) or 16 times 4.5×6 ($1\frac{3}{4} \times 2\frac{5}{16}$ ins.) have been made, continue to wind until there is no more red paper visible in the window. The back is opened as described, and the film key is moved in the winding direction and, simultaneously, slightly pulled out. On the opposite side, pull

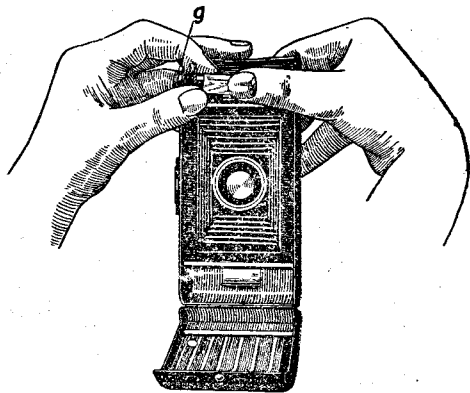


Fig. 4

up the metal film spool holder to lift the spool which can then be removed. Use the strip furnished for the purpose to seal the spool to prevent it from unrolling. The empty lower spool is then taken out and inserted in top chamber. Pull out the spool holder in the upper compartment and place the spool with the round opening on the pin. Prior to this operation the film key should be turned and drawn outwardly, so that the spool can be correctly inserted in the compartment when the holder is pushed back into the film chamber. Then turn the key again in winding direction while slightly pressing it inwardly to cause it to recede and to engage the recess of the spool. During the last few rotations the spool must already turn uniformly. Before putting in a new film, examine the film rollers and see they are perfectly clean to prevent scratches.

The Shutter. — (See pages 9—13 of this pamphlet.)

Exposure. — Before making an exposure one should ascertain the correct time for it by means of an exposure meter or the table printed at the end of these instructions. Moreover, do not hold the camera in your hand except for snapshots. If the time of exposure exceeds $\frac{1}{25}$ th second, screw the camera on to a stand or

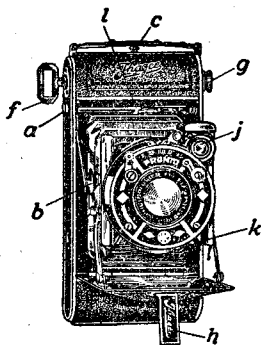


Fig. 5

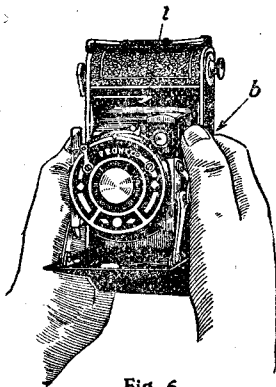


Fig. 6

put it on a table. For this purpose the camera is provided with a bottom support "H" which can be turned down and with two bushes for upright and oblong pictures. If the distance of the object to be taken is equal to approximately two hundred times the focal length, exposures are made by focussing for infinity, the focal length being the distance from the centre of the lens to the film and, in "Auto-Ultrix" 6×9 cm. ($2\frac{1}{4} \times 3\frac{1}{4}$ ins.), measuring $4\frac{1}{4}$ in. (10,5 cm.). For nearer subjects focus by means of the helical focussing mount of the lens, which is operated by the lever above the lens. By moving the lever to the right (if seen from the rear) the pointer is set to the number of feet or metres required, such as 3 by 3 m, etc. (1 m is equal to about three feet). Observe the picture to be taken, through the finder "j" attached to the upper left side of the front. For vertical work the finder remains in its normal position, but for taking horizontal pictures is turned 90° to the left upon its own axis.

Instead of the brilliant finder the very practical frame finder which is attached to one side wall of the camera body may also be used. Both frames are turned up so as to be parallel, and the image can be seen through the rear frame as outlined by the front one. For 6×9 cm. ($2\frac{1}{4} \times 3\frac{1}{4}$ ins.) pictures this applies only to the outer frame of the front finder portion, for 4.5×6 cm. ($1\frac{3}{4} \times 2\frac{5}{16}$ ins.) pictures only the middle portion of the front frame. When the desired view is seen in the finder, the shutter can be released.

The Diaphragm. — Every shutter is fitted with a diaphragm or stop actuated by the lever "K", the moving of which will reduce or enlarge the lens aperture (area of stop). The reduction of the diaphragm results in better depth of field, which is especially required for great depths where far and near points are equally sharp. If objects being, respectively, 3 and 6 metres (about 10 and 18 feet) distant from the camera are to appear equally sharp in the same picture, stopping down is necessary. It is advisable to choose a middle course and stop down to 12—18, though it should be taken into consideration that the smaller the stop is, the longer must be the exposure. Therefore, very little stopping down will be possible for instantaneous exposures, and small stops always involve fine exposures.

Closing the Camera (Fig. 6). — Before closing the camera, return the finder to its normal position and turn the lens back to infinity, by moving the lever "I" to the right (when seen from the front). Depress with the thumbs lightly the bosses "B" to release the side struts and press the baseboard on to the camera until the catch "L" snaps audibly into position.

Popular Auto-Ultrix No. 4860

for 6×9 cm. ($2\frac{1}{4} \times 3\frac{1}{4}$ ins.) roll film

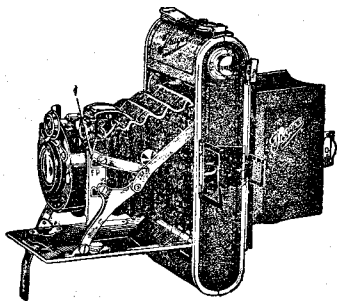
The Popular Auto-Ultrix is operated like the Two-size Auto-Ultrix, but is equipped for 6×9 cm. ($2\frac{1}{4} \times 3\frac{1}{4}$ ins.) size only. Focussing by front lens. On the mount of this lens the various meter or feet data are found, and the lens is turned so that the desired distance is opposite the white line of the black web on the left, 10 being equal to 10 metres; 5, to 5 m.; 3, to 3 m., etc. It is particularly necessary to examine the focussing prior to each exposure.

Before closing the camera set the focus to infinity.

Auto-Ultrix No. 3860

for 6,5 × 9 cm. (2 1/2 × 3 1/2 ins.) plates
and 6 × 9 cm. (2 1/4 × 3 1/4 ins.) roll film.

Above all, be sure that the objective is in proper position. As the plates register is somewhat farther away from the lens than for roll films, this difference must be compensated by setting the lens to the left and right on the struts to "P" when working with plates, and to "F" when working with roll films (1). To do so take the camera in the left hand and grip with the thumb and forefinger of the right hand the vertical lens plate located behind the objective, press slightly upwards and let the entire front of the camera snap back either into the clearances (1) marked "P" for



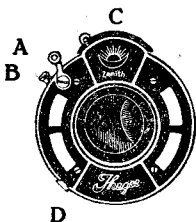
plates or "F" for roll film. Be sure that the front rests securely on the left and right in the same pair of clearances.

The working with roll film has been described already, and it is only necessary to point out that prior to inserting a film, the back of the camera must be fitted with the metal plate with the small film window, whereas in case of plates the focussing screen is used (see illustration). When plates are to be used, turn up the light

hood and focus on the screen. Near focussing has been described already. If the image is sharp enough, close the shutter remove the focussing screen and replace it by a dark slide holding a dry plate or a film pack adapter. You can then withdraw the cover of the darkslide and release the shutter. To ensure against leakage it is advisable to draw out the cover completely so that the hair of the plush strips can come into better engagement. Immediately after exposure close the darkslide which can then be removed and kept until ready for developing.

Shutters for Ihagee Cameras

The shutters used in connection with our cameras are briefly described below:



Shutter for time and instantaneous exposures $\frac{1}{25}$ - $\frac{1}{100}$ sec. The **Zenith Shutter** shown is of the automatic type i. e.: it is always ready and need not be set. Exposure is made by depressing the finger release A or, if preferred, the wire release which can be screwed into the small nut B.

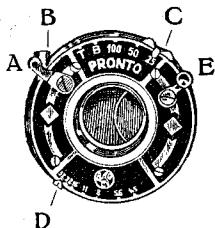
If **longer time exposures** are desired, adjust the lever C so that the letter Z snaps into the notch. The shutter will now open by pressure on the release and remain open until a second pressure. When the release has been pressed after the shutter is set to Z, the latter is opened for long time exposures as often required for indoor work.

For **short time exposures** set the lever to B. If the release is pressed down now, the shutter will open but close again as soon as the pressure ceases so that both very short and longer exposures can be made.

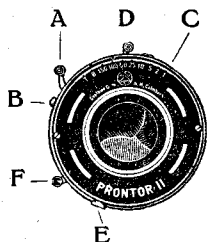
When making **instantaneous exposures** or snapshots observe the following: The instantaneous shutter speeds stated are parts of a second; 25, for example, means $\frac{1}{25}$; 50, $\frac{1}{50}$; and 100, $\frac{1}{100}$ sec. According to the time of exposure ascertained, one of these three speeds should be chosen by adjusting the lever so that the pointer indicates the speed desired. Then depress the finger or wire release, whereupon the shutter will open, remain open for the time set, and close again automatically. The exposure is made now.

The **Diaphragm Scale** will be found below the lens. A small pointer D can be displaced to the right and left and easily set to the correct diaphragm in each case.

The **S-Pronto Shutter** shown here with automatic release resembles in construction the Zenith shutter already described except for the delayed action release. To take a picture of one-self, screw the camera on to a stand or place it on a table, etc., by turning down the small support. According to the time of exposure as



again for **normal** exposures and for another delayed exposure the red lever "E" must be set again. —



The **Prontor II** Shutter shown here can be used in different ways. For exposure, either the small lever A is pressed down or a wire release screwed into the nut B.

All exposures require previous setting of the shutter by pushing the lever D to the left before release is possible.

For **time exposures of longer duration** turn the milled disc C so that the red mark is opposite the letter T. Pressure upon the

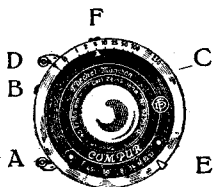
release causes opening of the shutter which closes only after a second pressure, so that time exposures of unlimited duration can be made. For **short time exposures** set the disc with the red mark to B. A slight pressure applied to the shutter will open it, the shutter remaining open until the pressure ceases. In this way, very short as well as longer exposures are possible.

For **instantaneous and short time exposures** of definite duration set the disc to the corresponding speed as indicated by one of the numbers. 1 is equal to 1 second, 2 to $\frac{1}{2}$, 5 to $\frac{1}{5}$, 10 to $\frac{1}{10}$ sec., etc. Set the pointer to one of these figures, according to the time of exposure desired, and press the release, the shutter of course having been previously set. The shutter will then open, remain open for the time desired, and close again automatically.

For instantaneous speeds the **delayed time mechanism** (automatic release) can be employed. After tensioning set the time desired

and depress the red lever F. When the release is then pressed the mechanism delays the release of the shutter so that the actual exposure is delayed for a few seconds. The shutter is then set again for normal work without delayed release, and each further actuation of the delayed mechanism requires renewed tensioning of the red lever F.

The **Diaphragm Scale** is positioned above the lens. The small pointer E can be displaced to the left and right and easily set to the correct diaphragm in each case.



The **Compur Shutter** is an ingeniously designed clockwork and should be treated as such. Above all, never use force and do not fail to read the instructions carefully. Exposure is made by pressing the finger release A or, if preferred, the wire release which can be screwed into the small nut B.

Explanation of Letters: Lever A serves for releasing the shutter. The wire release is screwed into the small nut B. By turning the disc C the various speeds are adjusted. By means of the lever D the shutter is set for snapshots, and the pointer E serves for setting the diaphragm. By being pushed back **after the shutter has been set** the button F will disengage the lever D for a second additional setting whereby the delayed action release is set. However, the button F is found only on shutters provided with automatic release. Shutters lacking this device contain all the parts described with the exception of the button F.

Time Exposures: The shutter need not be set. For longer time exposures the outer ring C is turned until the letter T is at the point marked. Pressure on the finger release A or on the wire release will open the shutter which remains open until the release is pressed again. In case of time exposures of shorter duration the letter B is moved to the marked point, and when the finger release A or the wire release is pressed, the shutter will open and remain open as long as the pressure lasts. This procedure is followed if exposures exceed 1 second.

Instantaneous Exposures: For instantaneous and short time exposures up to 1 second, turn the outer ring C until the desired exposure time is at the marked point when the shutter will close

automatically if opened. The figures marked on the ring, with the exception of 1, indicate fractions of a second, 2 being equal to $\frac{1}{2}$, 5 to $\frac{1}{5}$, 10 to $\frac{1}{10}$, etc., while at 1 the shutter will remain open a full second. When the desired time coincides with the marking, push up the tension lever in the direction of the arrow until it clicks. The shutter is now set and ready for exposure. Pressure on the finger release A or the wire release will cause the shutter to unwind by opening automatically, remaining open for the time set, and closing again. The shutter is then ready again for time exposures after the ring has been set to T or B, while every instantaneous exposure requires previous setting.

Correct Position of the ring C is Important! The Compur shutter is constructed so that if the letters T and B are on the index line, the tension lever D is locked, and in case of speeds ranging from 1 second to maximum, the time mechanism (T-B) is disengaged, an arrangement which prevents failures even if the camera is handled carelessly. The speeds increase without interruption from 1 second to $\frac{1}{100}$ sec., and it is possible to obtain intermediate speeds by setting between two figures, (for example, between $\frac{1}{50}$ and $\frac{1}{100} = \frac{1}{75}$ sec.). No intermediate speeds are possible between $\frac{1}{100}$ and maximum speed ($\frac{1}{200}$, $\frac{1}{250}$, $\frac{1}{300}$) or between B and 1 second. For maximum speeds arrange the time before setting the shutter, as it will be hardly possible after setting.

Delayed action Release applies only to shutters which are fitted with an advance mechanism and the button F. If you wish to appear in the picture to be taken, set the shutter as described and push back the knob F located on the edge, whereby additional tensioning of the lever D is made possible and the automatic release will be set. Release takes place in the regular way by depressing the lever A or the wire release, whereupon the automatic release will operate the shutter in about 12 seconds and exposure be made according to the time set. The shutter is now set again for normal work, and it is necessary to proceed as described if one wishes to take a picture of oneself. The automatic release can be employed for all instantaneous speeds stated with the exception of the maximum ones ($\frac{1}{250}$ to $\frac{1}{300}$).

Directions for use

In column A look for the month and hour respecting the exposure concerned. In column B you find the number for the object to be photographed or for the subject concerned, in table C the number for lighting, in table D the number for the sensitivity of the film, and in column E the number of aperture. The sum of these figures states in table F the time of exposure*.

Example: To make an exposure at 11 o'clock A. M. in May of a street of medium width at slightly clouded sky on a normally sensitive film of $\frac{10^0}{10}$ DIN at a diaphragm opening of F/8, one will find:

Table A: May 11 A. M. number 1.

Table B: for streets of medium width number 6.

Table C: for slightly clouded sky number 2.

Table D: for a film of $\frac{10^0}{10}$ DIN number 8.

Table E: for the diaphragm number 5.

The sum of these numbers is 22 equal to $\frac{1}{2}$ sec. exposure time in column F.

* Negative figures like -1, -2 etc. must be deducted during addition.

Exposure Table

A. Month and Hour

A. M.	P. M.	July June	August May	September April	October March	November February	December January
12	—	1	1	2	2	3	4
11	1	1	1	2	3	4	5
10	2	1	2	2	3	4	5
9	3	2	2	3	4	5	6
8	4	2	3	4	5	6	—
7	5	3	4	5	6	—	—
6	6	4	5	6	—	—	—
5	7	6	6	—	—	—	—

B. Subject

Water or Snow without foreground	Snow with dark foreground	Beach and Shore Distant views		Dunes	Broad Squares, Landscapes with bright foreground	Bright broad Streets
1	4	2		3	4	4
Streets of medium with	Narrow dark Streets	Large and bright gardens without trees	Smaller gardens and landscapes with dark foreground	Under trees with little foliage	Under trees with dense foliage	
6	8	5	8	10	14	
Portraits by diffused light				Indoors		Dark rooms and corridors
In the open air	Indoors distance from window			Bright rooms	Well-lighted indoor rooms with dark walls	
	0	1	2	3 metres		
9	12	14	16	18	20	24
						30

C. Illumination

Sun without clouds	Sun with white clouds	Heavily clouded sky	Medium clouded sky	Cloudy weather	Very cloudy or fog
1	0	2	3	4	5

D. Sensitivity of Films

DIN°	$\frac{10}{10} - \frac{11}{10}$	$\frac{12}{10} - \frac{13}{10}$	$\frac{14}{10} - \frac{15}{10}$	$\frac{16}{10} - \frac{17}{10}$	$\frac{18}{10} - \frac{19}{10}$	$\frac{20}{10} - \frac{21}{10}$
	8	6	4	2	0	-2

E. Diaphragm = Lens aperture

Rel. aperture:	F/1,9	F/2,8	F/3,5	F/4	F/5,6	F/8	F/11	F/16	F/22
	-3	-1	0	2	3	5	7	9	11

F. Exposure time

Seconds:	$\frac{1}{1000}$	$\frac{1}{800}$	$\frac{1}{600}$	$\frac{1}{400}$	$\frac{1}{280}$	$\frac{1}{200}$	$\frac{1}{125}$	$\frac{1}{100}$	$\frac{1}{60}$	$\frac{1}{50}$	$\frac{1}{40}$	$\frac{1}{25}$
Total:	4	5	6	7	8	9	10	11	12	13	14	15
Seconds:	$\frac{1}{18}$	$\frac{1}{12}$	$\frac{1}{8}$	$\frac{1}{6}$	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1,5	2	3
Total:	16	17	18	19	20	21	22	23	24	25	26	27
Seconds:	4	6	8	12	15	25	30	50	Minutes: 1		1,5	2
Total:	28	29	30	31	32	33	34	35	36		37	38
Minutes:	3	4	6	8	12	15	25	30	50	60	90	120
Total:	39	40	41	42	43	44	45	46	47	48	49	50

Set shutter to speed closest to the exposure time ascertained.