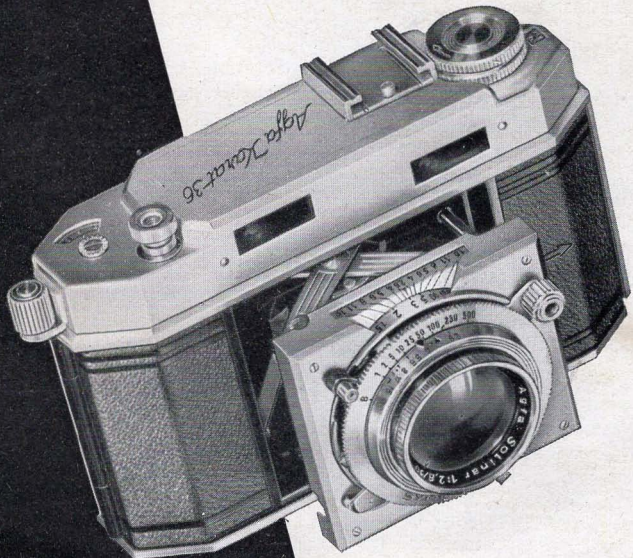
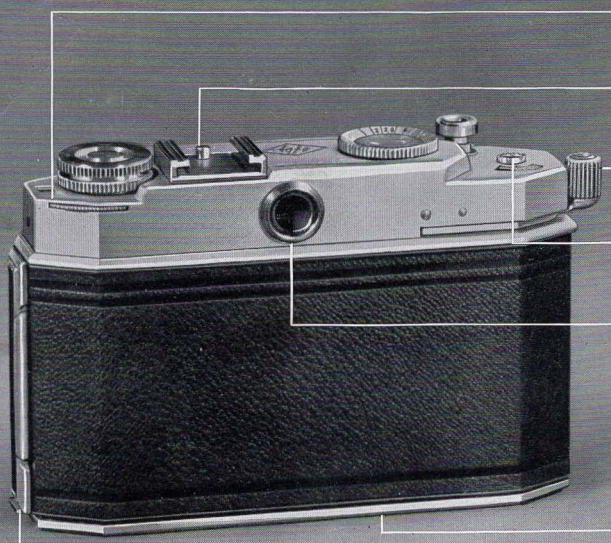


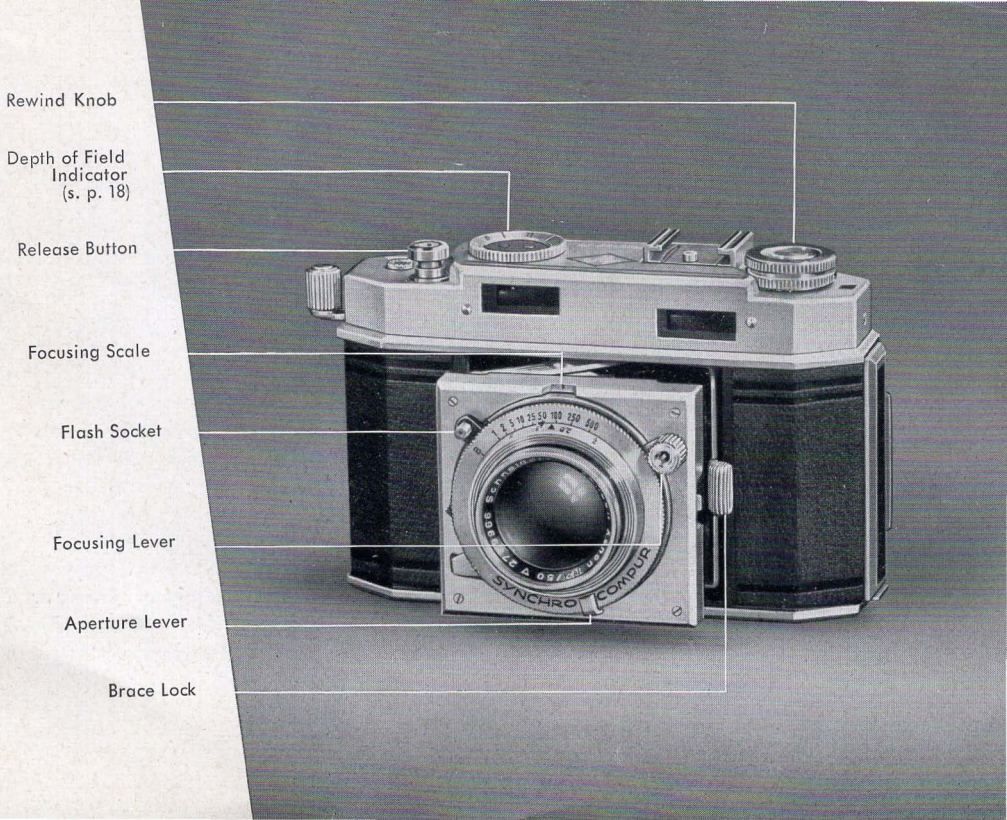
Agfa

MADE IN GERMANY

AGFA KARAT 36

SOLINAR 1:2,8


Film Indicator
Accessory Shoe
Rapid Winding Lever
Film Counter
Finder Eyepiece
Rewind Button
Lock for
Camera Back


Rewind Knob
Depth of Field Indicator (s. p. 18)
Release Button
Focusing Scale
Flash Socket
Focusing Lever
Aperture Lever
Brace Lock
SYNCHRO COMPUR

DEAR READER,

We would like you to make friends with your new Karat 36, and we therefore invite you to go carefully through this instruction booklet with us.

It will be well worth your while, for once you are familiar with the various operations of your camera, you will soon take successful pictures. The designers of the Karat 36 have tried from the outset to make the camera as fool-proof as possible. But remember, all the same, that you are handling a precision instrument which needs a certain amount of care in manipulation.

Devote a little time to your new companion right from the beginning. Start off without a film in the camera. Try focusing on various distances, and operate the rapid winder. After only a few attemps, you will be surprised at the feeling of confidence in handling the camera — so essential for taking actual pictures later on. Your Karat 36 uses the standard cassettes of 35 mm. film for 36 or 20 or 18 exposures 24×36 mm. (approx. 1×1½ inches).

OPENING THE CAMERA BACK

To open the camera back, pull out the small projecting latch (Fig. 1) in the direction of the arrow. This is easier if you press the back and body together in the same way as when closing the camera later on. Now open the back, preferably with the camera lying lens down on something soft.

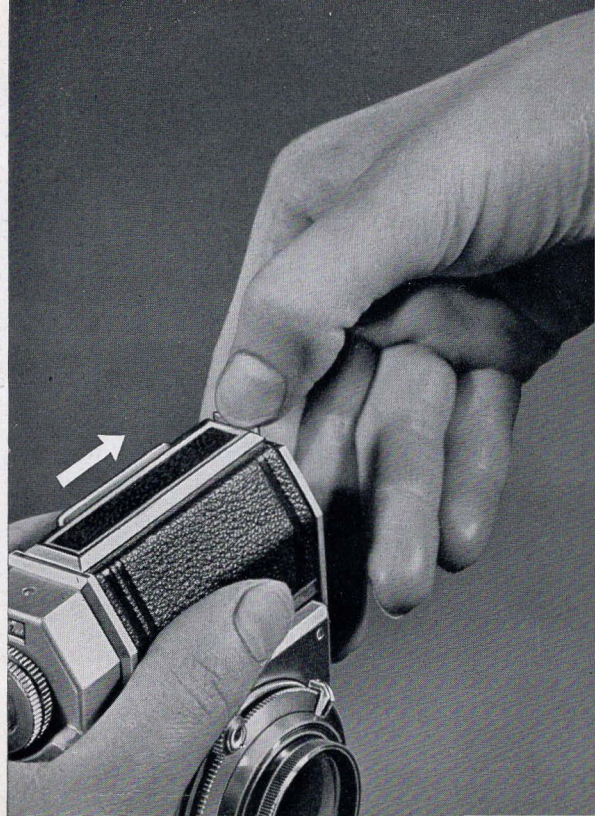


FIGURE 1

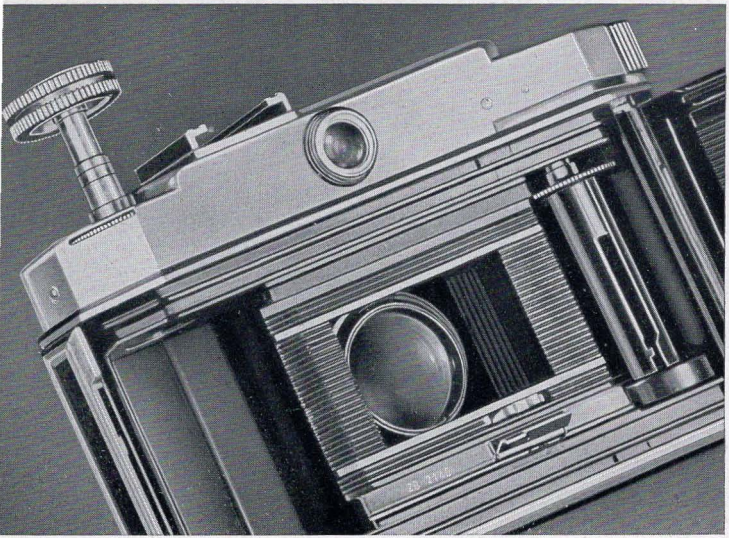


FIGURE 2

The two spool chambers are now visible (Fig. 2). The empty left hand chamber takes a standard 35 mm. miniature film cassette, not to be confused with the spool-less Karat 12 cassette for only 12 exposures. You cannot use this in the Karat 36.

The right hand spool chamber contains the built-in take-up spool. Before loading the film, turn this spool by its upper milled flange until the loading slit with the small tooth is on top as shown in Fig. 2.

Fold up the hinged flap (Fig. 2) over the sprocket wheel, and you are ready to load the film. When inserting the fresh cassette — preferably in subdued light — fully pull out the rewind knob. When the cassette is in position, push the knob back, turning it slightly at the same time so that it engages the core of the cassette spool (Fig. 3).

Now guide the narrow tongue at the beginning of the film into the slit of the take-up spool. Push in the film up to the second perforation hole, hooking the small tooth of the spool into the perforation to anchor the film.

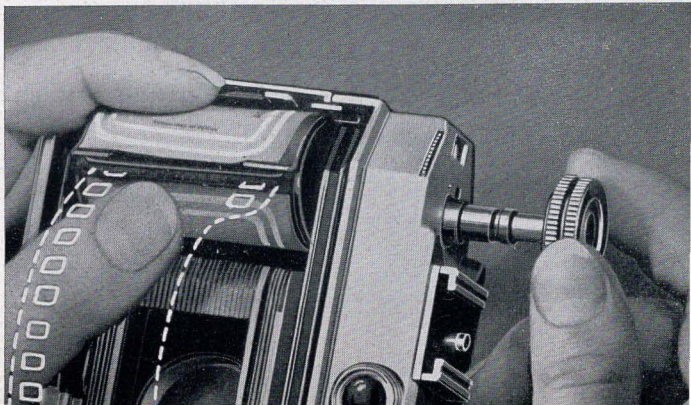


FIGURE 3

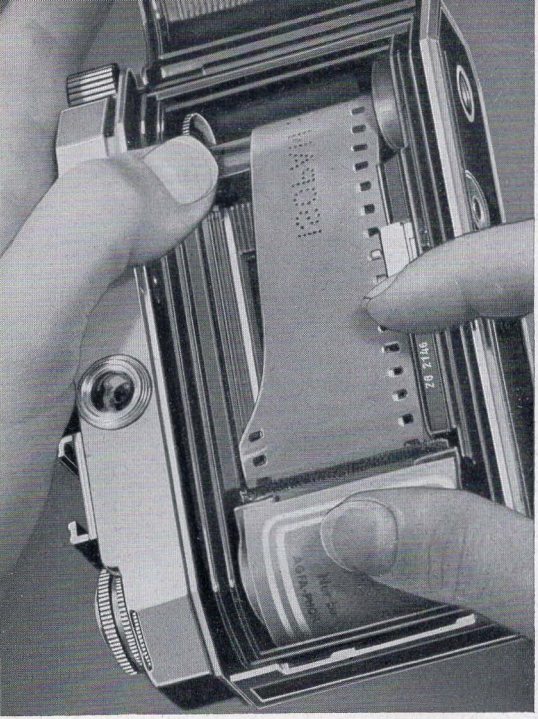


FIGURE 4

Turn the take-up spool until the film is taut (Fig. 4).

Only about a $^3/_8$ inch length of the *full width* of the film should protrude from the cassette.

Now you can close the camera back. *But first fold down the hinged flap* in the middle of the film track over the film. The film must be properly centred between the sides of the film channel, with the perforation holes engaging the teeth of the sprocket wheel.

Close the back by firmly (but not forcibly) pressing it against the body until the lock engages (Fig. 5).

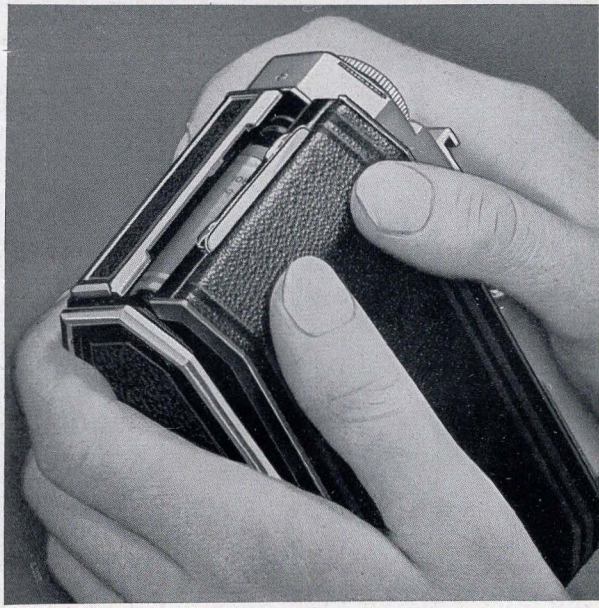


FIGURE 5

Finally, set the film counter to "A" by pressing a finger on the milled button and turning it clockwise (Fig. 6).

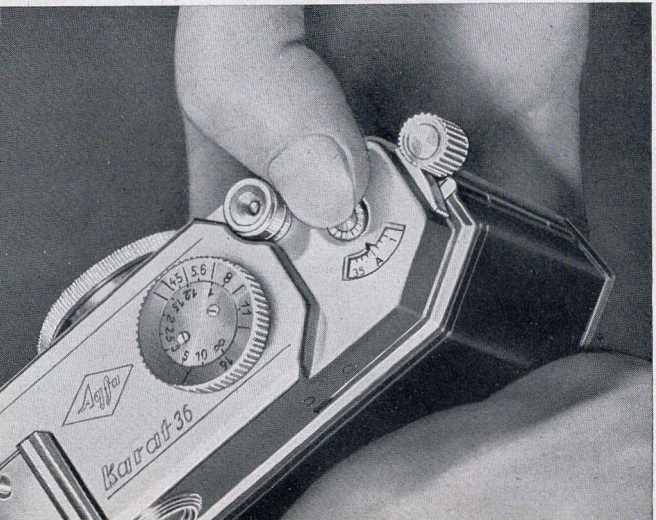
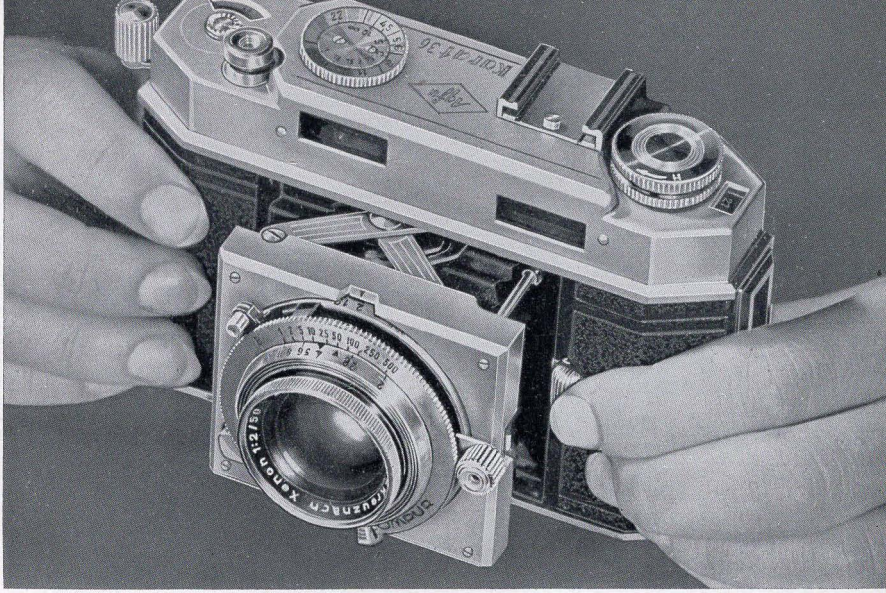


FIGURE 6

FIGURE 7



OPENING THE CAMERA. You can only work the rapid winder when the lens is extended in position for picture taking. Press the latch to allow the lens panel to spring out (in cold weather you may have to assist it by a gentle pull). See Fig. 7.

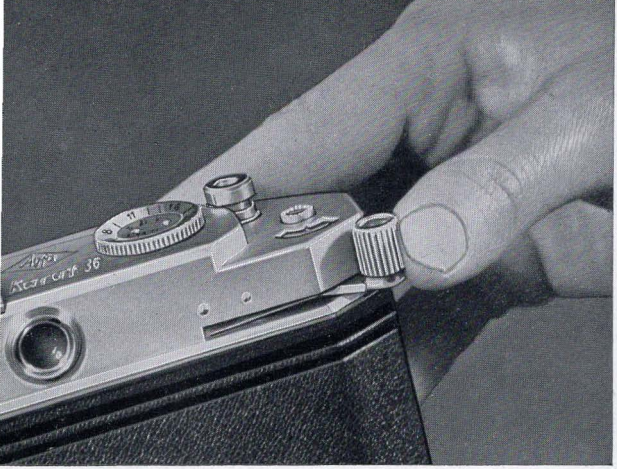


FIGURE 8

Now you can get the loaded film ready for the first exposure. Push back the rapid winder with your thumb or index finger as far as it will go (Fig. 8). This advances the film and at the same time automatically tensions the shutter. Fully depress the release button with the tip of your index finger (Fig. 9).

Make another blind exposure in the same way; i. e. wind and release. The film counter now points to the division before No. 1.

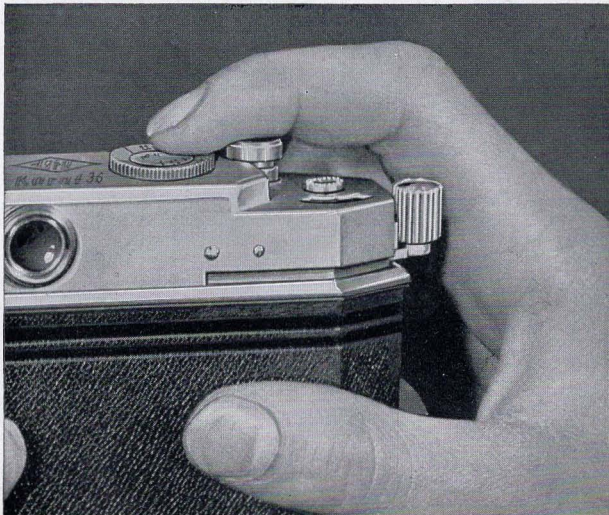


FIGURE 9

THE DOUBLE EXPOSURE LOCK

The Karat 36 contains a clever locking mechanism which prevents double exposures and blank frames. After every exposure the release button is locked, and only works again after the film has been advanced by one frame by means of the winding lever.

THE SHUTTER

The movement of the winding lever at the same time automatically tensions the Compur shutter. The shutter speed should therefore be set beforehand.

> This is essential for the $^1/_{500}$ second setting. Once the shutter is tensioned, the resistance of the built-in additional spring is very hard to overcome when setting the shutter speed to $^1/_{500}$ second.

To set the shutter speed, turn the outside milled ring with the figures 1 2 5 10 25 50 100 250 500 on it (Fig. 10). These numbers signify fractions of a second; for instance, 2 stands for a $^1/_2$ second, 50 for $^1/_{50}$ second, and so on. Set the required speed against the black triangular index mark on the neighbouring milled ring ($^1/_{50}$ second in our illustration). The "B" setting serves for time exposures with a tripod.

All the scales of the Karat 36 can, incidentally, be read off from above.

The Synchro-Compur shutter of the Karat is speed synchronized, and carries a flash socket for connecting a flash cable, as well as a synchronizing lever with two positions, "X" and "M" (see illustration on page 16). This allows the use of all types of flash at the fastest shutter speeds. How it works is described in detail in the special section on Speed Synchronization on page 26.

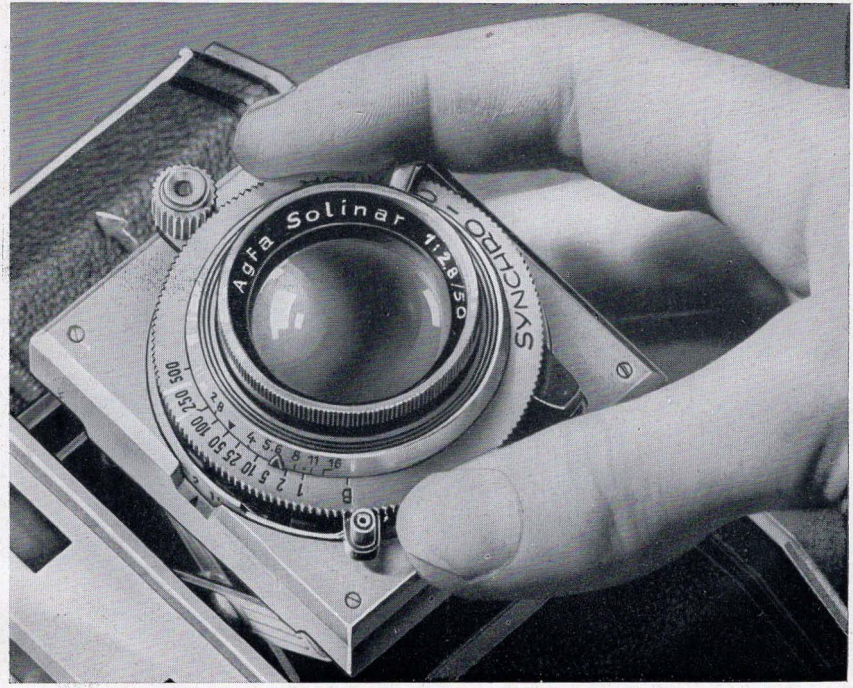


FIG. 10

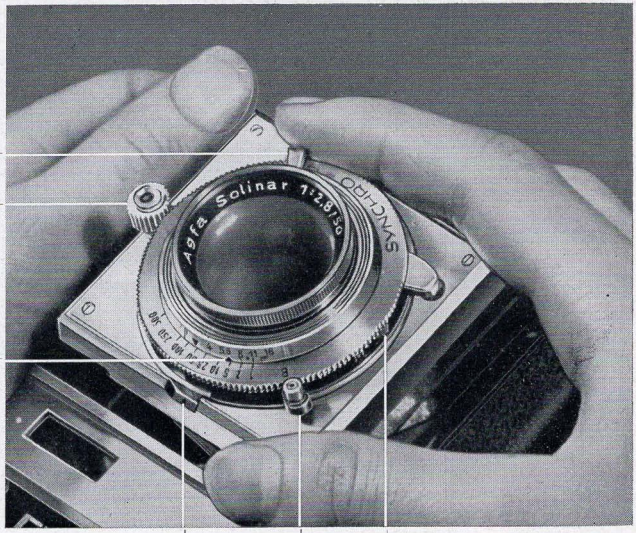

Aperture Lever
Focusing Lever
Aperture Setting Mark
Agfa Solinar 1:2,8/150
SYNCHRO
Synchronizing Lever X–M
Flash Socket
Focusing Scale

FIGURE 11

APERTURE — SHUTTER SPEED — DEPTH OF FIELD

To set the aperture, move the aperture lever (Fig. 11). This moves a small pointer over the aperture scale carrying the following aperture numbers: 2.8 4 5.6 8 11 16

APERTURES. Before choosing the right aperture we have to go into a little more detail about the way it works. The rays coming from the subject first meet the lens aperture which at a large opening lets through a lot, and at a small opening a little, of the light falling on it. The amount of light transmitted is, however, always only a fraction of that reaching the lens.

The figures on the aperture scale as listed above are so arranged that, beginning with the full opening f/2.8, each succeeding number halves the effective light passed.

EXPOSURE TIME. The amount of light required to reproduce a given subject on the film is fixed. The exposure time and aperture are therefore dependant on each other. In choosing the aperture and shutter speed we have to preserve this relationship:

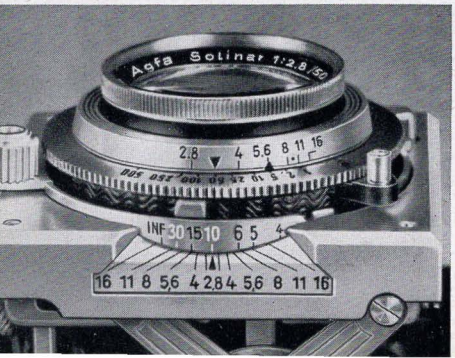
High aperture numbers call for slow shutter speeds (long exposure times) and low aperture numbers need fast speeds (short times).

For instance, your exposure table may indicate an exposure of $^1/_{25}$ second at aperture 8. If, however you want to use $^1/_{50}$ second to avoid camera shake, the aperture must let more light through to the lens to compensate for the shortened exposure time. Therefore set it to the lower number 5.6.

DEPTH OF FIELD. In addition to the exposure, the aperture also determines the zone of sharpness in front of, and behind, the focused distance. Small apertures (stopping down) appreciably increase this zone of sharpness, giving what is called great depth of field. The depth of field also increases the farther away the subject is from the camera. The aperture and the distance focused on are therefore the two factors governing the depth of field. The resulting zones of sharpness for the various settings are given in the table on page 35.

Contrary to the illustrations on the inner pages of this instruction booklet the new model of Karat 36 has, instead of a depth of field ring, a depth of field indicator as shown in the figure below.

Two sets of aperture numbers are arranged symmetrically to the left and right of the focusing mark. The corresponding divisions, pointing to the focusing scale, show the limits of the zone of sharpness at any setting. In our illustration the focusing scale is set to 10 feet.



By following the lines corresponding to the two figures 8, we thus see that the depth of field at aperture 8 extends from 6 to about 20 feet, or at aperture 11 from 5 to about 30 feet.

For the sake of clarity the indicator has been calculated for a circle of confusion of $1/500$ inch (0.05 mm.). The figures given are therefore on the generous side, and for more accurate work the values of the Depth of Field Table (page 35) should be used.

To increase the readiness for action of the Karat under good lighting conditions and to simplify the use of the aperture settings, the camera carries a TWO-POINT SETTING. If you set the pointer of the aperture lever to the red dot between 8 and 11, and the focusing scale to the 10 feet or 30 feet mark — also in red — you obtain the following depth of field zones:

Focus on 30 feet: Everything sharp from 15 feet to ∞.
Focus on 10 feet: Everything sharp from 7 to 15 feet.

GETTING READY TO SHOOT

THE COUPLED VIEW AND RANGEFINDER

The view and rangefinder is very easy to use. Hold the eye close to the eyepiece, and get hold of the focusing lever with the second and third fingers of the left hand (Fig. 12).

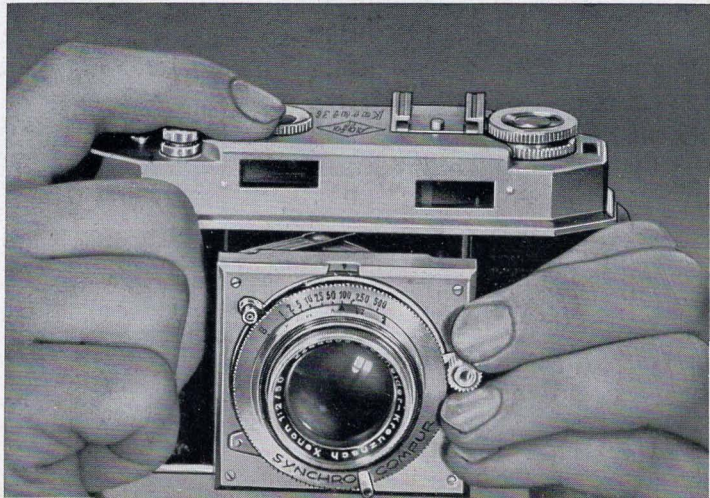


FIGURE 12

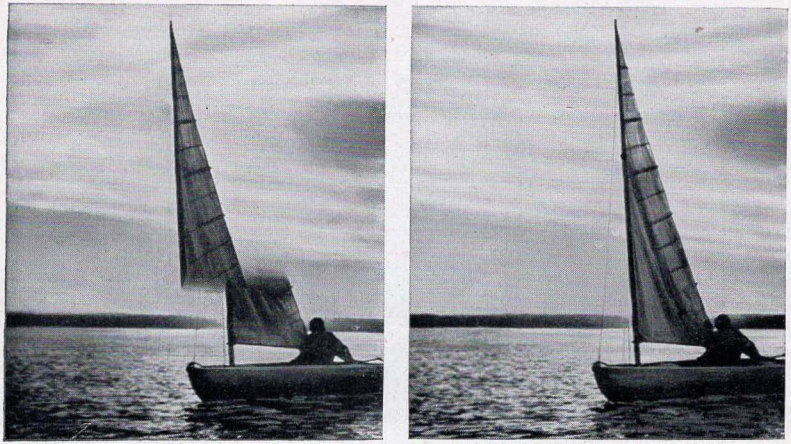


FIG. 13/14

If you pull this lever up or down, you will notice that the image seen through the eye-piece is split horizontally in the middle. As soon as the two halves join up, the camera is focused at the correct distance as shown by Figs. 13 and 14. The distance is also shown in the small cut-out on the lens panel. You can, of course, equally well focus in the reverse order: estimate the distance, set the lens, and check through the rangefinder whether the setting is correct. With horizontal shots focus on vertical lines, with vertical shots on horizontal lines of the subject.

THE PARALLAX ERROR. The finder shows a reduced image of the subject as it will appear on the film. With close-ups, however, the view of the finder does not correspond exactly with the film image, because the finder is situated above the camera lens. In practice this is only noticeable with subjects between 3 and 6 feets away. To compensate for the error, point the camera slightly up for horizontal shots, and turn it slightly in the direction of the finder for vertical pictures.

THE EXPOSURE

Just before taking the picture check the setting of the aperture, shutter speed, and distance. Pull out the rapid winding lever once more as far as it will go, as described on page 12. This advances the film counter to No. 1, tensions the shutter, and at the same time advances the film by one frame.

> The rewind knob turns every time you advance the film, do not therefore hold it while winding.

HORIZONTAL SHOTS

Fig. 12 shows the best way of holding the Karat 36. Grip the camera with both hands, leaving the right index finger free to operate the release button, while the finger tips of the left hand hold the focusing lever for any last-minute focusing adjustments that may be required.

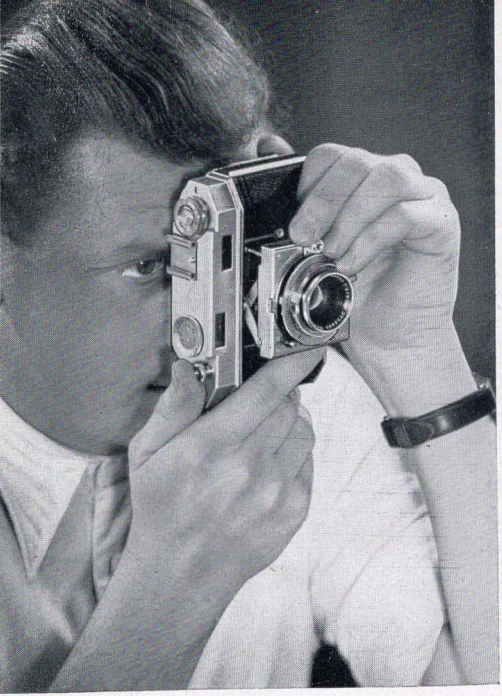
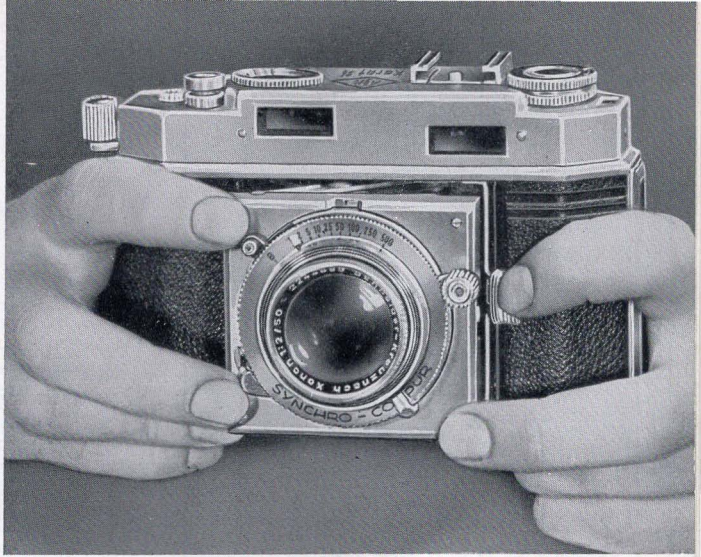


FIGURE 15

UPRIGHT SHOTS

Fig. 15 shows the most convenient position of the hands for upright pictures. Make sure that the left hand holds back the lid of the ever-ready case to prevent it from obstructing the lens. With both camera positions it is up to you whether you put the left or right eye to the finder eyepiece; the important thing is to stand firmly, hold the camera steady, and smoothly and gently press the release button right home.

FIGURE 16



CLOSING THE KARAT

Pull back the latch, and push the lens panel back into the body pressing evenly on the left and right hand edges (Fig. 16).

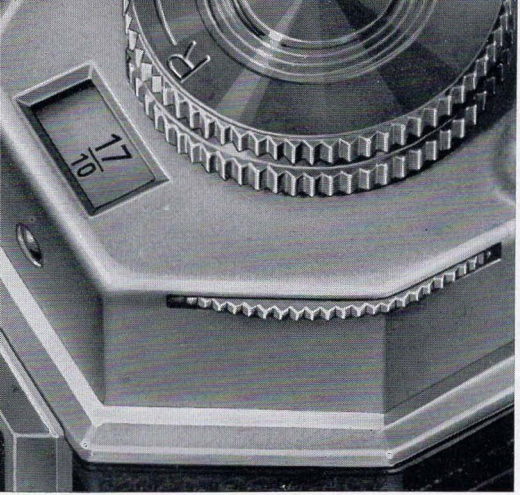


FIGURE 17

THE FILM INDICATOR

This feature is intended to aid your memory and to show what type of film you have in the Karat at any time. Make it a habit, therefore, to set the film indicator immediately after loading the camera. Turn the milled ring protruding from the edge of the body next to the rewind knob (Fig. 17). The following signs will then appear in turn in the little window:

8 40 100 160 ASA

film speeds. In addition there are also the following markings for the various types of Agfacolor film:

Col RD = Reversal colour, daylight type film

Col ND = Negative colour film, daylight type

Col RT = Reversal colour film, artificial light type

Col NT = Negative colour film, artificial light type

UNLOADING THE CAMERA

When the film counter indicates No. 36, the film has been advanced for the last exposure. To unload, remove the camera from the ever-ready case, after unscrewing the screw at the bottom.
The film now requires rewinding. To make this easier, half pull up the rewind knob to its first stop (Fig. 18).

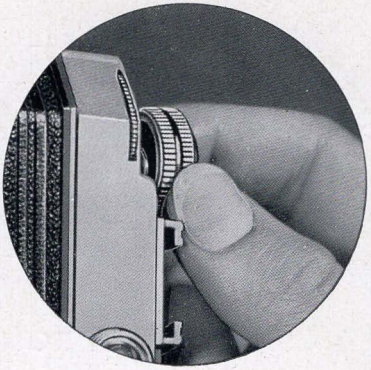


FIG. 18

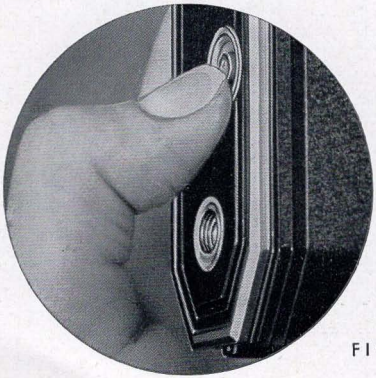


FIG. 19

Depress the rewind button in the bottom of the camera with the left thumb, and keep it depressed while turning the rewind knob clockwise until the film is fully rewound (Fig. 19).

This is noticeable by a slight resistance after a little while as the film leaves the take-up spool. Carefully continue rewinding, and at the same time try whether you can turn the rewind knob when you let go of the rewind button. Stop rewinding at this point. Remember that your photo dealer still has to develop the film, so do not let the beginning of the film disappear altogether in the cassette.

Now open the camera back as described on page 5. Fully pull out the rewind knob to its second stop to remove the cassette (see Fig. 3). Wrap it up in a light-tight packing straight away, and mark it appropriately as exposed. Before closing the camera back, *make sure that the hinged flap over the sprocket wheel is folded down.*

SPEED SYNCHRONIZATION

The different flash lamps available vary in the following characteristics:

1. Their flash duration,
2. Their light output,
3. The time taken from the moment of firing until they light up.

The speed synchronized shutter allows for these characteristics.

X-SYNCHRONIZATION

Where the synchronization is preset, the flash lights up at the moment when the shutter blades are fully open. This synchronization, known as X-synchronization, works, however, only with the slower shutter speeds, e. g. $^1/_{25}$ second.

In addition to this setting, speed-synchronized shutters have a second one, known as M-synchronization.

M-SYNCHRONIZATION

While the X-synchronization is preset, M-synchronization delays the opening of the shutter blades by several milliseconds, and thus allows the use of flash with the fastest shutter speeds. This technique uses powerful flash bulbs which require a certain firing delay before they reach their peak brightness. When set to M, the shutter makes the necessary allowance for this delay, and ensures that the full light of the flash falls within the period when the shutter is fully open even at the fastest shutter speeds.

APPLICATION

The previous remarks indicate that, at any rate in the beginning, X-synchronization is easier to handle. With a flash bulb like the Speed-Midget (SM) you can take synchronized flash shots at $^1/_{25}$ second. The short duration of the flash within a slightly longer shutter exposure time will also capture subjects with moderate movement, such as children at play.

Push the flash plug from the flash gun over the flash socket on the shutter. Set the little synchronizing lever to X or M; the shutter takes care of the rest. The table on page 29 gives full details of the required synchronizing settings and possible shutter speeds for X and M synchronization with most usual types of flash.

EXPOSURES

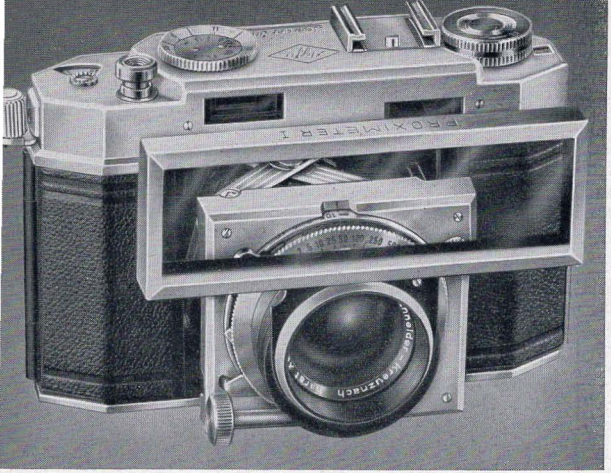
The exposure for a flash shot depends on the distance of the subjects as well as on the type of flash used. Refer to the data sheets enclosed with the flash lamps for further details.

The Karat 36 is fitted with an accessory shoe to take a flash gun.

Flash Data

Suitable shutter speeds and corresponding synchronizing settings with the Synchro-Compur shutter

Class	Flash bulbs Make	Type	X-Synchronization	M-Synchronization
–	Osram	F 0 – XP-XO-F 1-F 2	1—1/50	Not suitable
		F 1, F 2	1—1/25	
F	General Electric G. E. C. Mazda (B. T. H.) Westinghouse	SM	1—1/25	Not suitable
	Sylvania	SF		
M	Osram	S 2	1—1/10	1/25—1/100
		S 0, S 1	1—1/25	1/50—1/500
	Philips	PF 14, 25, 60		
	Stella	SF 14, 25, 60		
	General Electric G. E. C. Mazda (B. T. H.) Westinghouse	No. 5, 11, 22		
	Sylvania	Press 25, 40, 50, No. 0		
	Sylvania	No. 2	1—1/25	1/50—1/100
	Philips	PF 3 N		
S	Philips	PF 100	1—1/10	1/25—1/50
	Stella	SF 100		
	General Electric Westinghouse	No. 50		
	Sylvania	No. 3		
Electronic Flash Units			Exposure time longer than flash	Not suitable
Delay-free firing			1—1/500	
Relay fired with 5 ms. delay			1—1/100	



AGFA KARAT PROXIMETER I AND II

Order No. 6750. Size I: Focusing range 40 to 20 ins. (100—50 cm.).

Order No. 6751 Size II: Focusing range 20 to 13 ins. (50—33 cm.).

Size I and Size II: Focusing range 13 to 10 ins. (33—25 cm.).

In photographing close-ups of small subjects, Karat 36 owners have hitherto been limited by the nearest distance of the focusing scale — 3½ feet (1 m.).

The optical close-up focusing device AGFA KARAT PROXIMETER now ideally answers the numerous requests for supplementary lenses for the Karat, for it uses the view- and rangefinder in the normal way, without parallax, down to distances as close as 10 inches (25 cm.).

This is achieved by fitting a close-up lens in push-on mount over the camera lens, and a prism unit, connected with the close-up lens, in front of the two rangefinder windows. The Karat 36 thus remains instantly ready for action even at the closest subject distances. One glance through the finder shows the exact field of the subject, and ensures accurate focus as before.

OPTICAL EQUIPMENT

The Karat 36 is equipped with the Agfa Anastigmat Solinar f/2.8 lens, having a focal length of 2 inches (50 mm.). The lenses are coated to reduce reflections at the glass surfaces to a minimum. The advantages of this treatment are a certain gain in the effective speed of the lens, increased brilliance, and last not least, almost complete elimination of troubles caused by reflection from the lens surfaces (flare spots, scattered light, etc.).

To clean the outer lens surfaces use only a soft chamois leather or a well-washed linen rag. Either must be absolutely free from grease, soap residues, and dust. Breathing on the glass to facilitate cleaning will not cause any appreciable harm. Never unscrew the lens elements; if the interior should ever need cleaning, get an expert to do it so as not to upset the fine correction of these high-aperture lenses.

Remember that a lens that has steamed up owing to a sudden change of temperature will only clear when the whole camera body has reached the new room temperature.

FURTHER USEFUL HINTS

To use deformed and non-standard cassettes is asking for trouble. With all cassettes, particularly refilled ones, make sure that they are not bent or damaged, and that the film slides out easily.

If the film is too short, the rapid winding lever may lock half-way during its movement when advancing the film for the last exposure. The same may happen if you try to utilize the full length of the film to get more than 36 exposures on it. In such a case never try to force the lever forward or back. Instead, rewind a short length of the film as described on page 25, fully pull out the winding lever, and then rewind the whole film in the usual way.

FOR AGFA CAMERAS — AGFA FILTERS AND LENS HOODS

Agfa filters help to achieve accurate tone reproduction of the different colours.

We supply parallel ground filters, evenly dyed in the mass, to satisfy the most stringent requirements. They are available in the following depths:

Light yellow, medium yellow, yellow-green, and orange-red.

Colour filters naturally require increased exposures. These are best expressed by the filter factors, which, however, largely depend on the sensitivity of the film. Most film manufacturers therefore enclose factors for the most usual filters with their films.

Where no factors are quoted, the following data will serve as a starting point for panchromatic materials.

Light yellow filter	No. 1:	Factor 1.5 — 2 ×
Medium yellow filter	No. 2:	Factor 1.8 — 2.3 ×
Yellow-green filter	No. 71:	Factor 2 — 2.5 ×
Orange-red filter	No. 7:	Factor 4 ×

Ask your photo dealer for Agfa Filters in the modern transparent screw top cases, and for the efficient lens-hoods which can also be used together with the filters.

Film Speed Scales Compared

BSI and ASA Logarithmic Exposure Index	20°	21°	22°	23°	24°	25°	26°	27°	28°	29°	30°	31°	32°	33°	34°	35°	36°	37°
ASA and BSI Arithmetic Exposure Index	8	10	12	16	20	25	32	40	50	64	80	100	125	160	200	250	320	400
European Scheiner	23°	24°	25°	26°	27°	28°	29°	30°	31°	32°	33°	34°	35°	36°	37°	38°	39°	40°
DIN °/10	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Weston Nos.	6	8	10	12	16	20	24	32	40	50	64	80	100	125	160	200	250	320
Gen. Electric	10	12	16	20	24	32	40	48	64	80	100	125	160	200	250	320	400	500
European H & D	1300	1700	2100	2700	3500	4400	5600	7200	9100	11600								
Relative Exposure required	8.00	6.40	5.13	4.00	3.20	2.56	2.00	1.60	1.28	1.00	0.80	0.64	0.50	0.40	0.32	0.25	0.20	0.16

Speed figures corresponding to the same film speed are listed underneath each other in the vertical columns. The bottom row gives a comparison of the light required to expose films of different speeds. Thus a 26° BSI film needs twice as much light as one of 29° BSI (a difference of 3° BSI). In practice this means:

Either open up the aperture by one stop, or use the next slower shutter speed (double the exposure time).

Depth of Field Table For 50 mm. Agfa Solinar f/2.8 lens.

At Aperture	With the lens focused on				
	3 feet	3,5 feet	4 feet	5 feet	6 feet
	Everything will be sharp betwen these limits:				
f/2,8	2 f 10 3/4" – 3 f 1 1/4"	3 f 4 1/2" – 3 f 7 3/4"	3 f 10" – 4 f 2 1/4"	4 f 8 3/4" – 5 f 3 1/2"	5 f 7 1/2" – 6 f 5"
f/4	2 f 10 1/2" – 3 f 1 3/4"	3 f 3 3/4" – 3 f 8 1/2"	3 f 9 1/4" – 4 f 3 1/4"	4 f 7 1/2" – 5 f 5"	5 f 5 3/4" – 6 f 7 1/2"
f/5,6	2 f 9 3/4" – 3 f 2 1/2"	3 f 3" – 3 f 9 1/2"	3 f 8 1/4" – 4 f 4 1/2"	4 f 6" – 5 f 7 1/2"	5 f 3 1/2" – 6 f 11"
f/8	2 f 9" – 3 f 3 3/4"	3 f 2" – 3 f 11"	3 f 6 3/4" – 4 f 6 3/4"	4 f 3 3/4" – 5 f 11 1/4"	5 f 1 1/2" – 7 f 4 3/4"
f/11	2 f 8" – 3 f 5 1/4"	3 f 1/2" – 4 f 1 1/4"	3 f 5" – 4 f 10"	4 f 1 1/4" – 6 f 4 1/2"	4 f 9" – 8 f 1 1/2"
f/16	2 f 6 1/2" – 3 f 8 1/4"	2 f 10 1/2" – 4 f 5 3/4"	3 f 2 1/2" – 5 f 4"	3 f 9 3/4" – 7 f 3 1/2"	4 f 4 1/4" – 9 f 3 3/4"

At Aperture	With the lens focused on				
	10 feet	15 feet	30 feet	∞ (infinity)	
	Everything will be sharp between these limits:				
f/2,8	8 f 12" – 11 f 3 1/4"	12 f 10" – 18 f 1 1/2"	22 f 4 3/4" – 45 f 5 1/4"	87 f 10" – ∞	
f/4	8 f 7 1/2" – 11 f 10 3/4"	12 f 1" – 19 f 9 1/4"	20 f 2 1/2" – 58 f 3 1/2"	61 f 5 3/4" – ∞	
f/5,6	8 f 2" – 12 f 10 3/4"	11 f 2 1/2" – 22 f 7 3/4"	17 f 10 1/4" – 99 f 7"	43 f 11" – ∞	
f/8	7 f 7" – 14 f 8 1/2"	10 f 1 1/2" – 29 f – "	15 f 2 3/4" – 1019 f 4 1/4"	30 f 0" – ∞	
f/11	6 f 11 1/4" – 17 f 10 1/4"	9 f 1/4" – 44 f 7"	12 f 10 1/4" – ∞	22 f 4 1/4" – ∞	
f/16	6 f 1 1/4" – 27 f 9 1/4"	7 f 7 1/2" – 431 f 6"	10 f 2 1/2" – ∞	15 f 4 1/2" – ∞	

Circle of confusion: 0.03 mm.

This depth of field table is calculated for the highest standard of negative definition (for big enlargements). Usually there will therefore be an appreciable zone of acceptable definition outside the limits given in the table above.

AGFA CAMERA WERK MÜNCHEN

657 engl. - 0852 (EES)