



IKOFLEX picture by Corbett (Cover 23) 7 mm. 1/50 sec. f/8.

The IKOFLEX is a reflex camera with a fully synchronized shutter and a fully automatic exposure control. It is a 35mm camera with a lens of 50mm focal length and a maximum aperture of f/8. The camera is designed for ease of use and portability. It features a built-in viewfinder and a rangefinder for focusing. The camera is available in two models: the IKOFLEX I and the IKOFLEX II. The IKOFLEX I is a more basic model, while the IKOFLEX II is a more advanced model with additional features.



- COMPONENTS AND CONTROLS**
1. Finder hood
 2. Thread for cable release
 3. Eyepiece for carrying strap
 4. Automatic frame counter
 5. Film wind knob with film type indicator
 6. Standard wheel for setting the frame counter
 7. Shutter releasing lever
 8. Diaphragm control window
 9. Flash control
 10. Body shutter release
 11. Setting lever for flash synchronization and delayed action shutter
 12. Focusing magnifier
 13. Control frame panel of finder hood
 14. Frame of front panel of finder hood
 15. Cover flap of exposure meter
 16. Viewing lens
 17. Shutter speed control window
 18. Diaphragm setting lever
 19. Taking lens
 20. Shutter speed setting ring
 21. Upper film speed holder
 22. Depth-of-field scale
 23. Focusing knob with distance scale
 24. Exposure meter copper disk
 25. Lower film speed holder
 26. Locking catch for camera back
 27. Locking pin for finder hood
 28. Film window
 29. Tripod hook
 30. Frame finder eyepiece

OPENING AND CLOSING THE FINDER HOOD

To open the finder hood, depress the locking pin (27) in the hood. It will then open automatically. For critically sharp focusing, swing up the focusing magnifier (12) which is fixed inside the front of the finder hood (1). To close the hood, first fold back the magnifier, and then the front of the hood. In this way the finder hood will fold up flat.

transmission of the viewfinder system, the ground glass is evenly illuminated right into the corners, so that the framing is indicated exactly and the definition can be judged with precision.

For focusing, turn the focusing knob (23) by turning through 180° all distance settings from 3 feet to infinity (∞) can be covered. As the focusing knob is turned, the lens acts by varying distances from the camera can be coming into sharp focus one after another. Thanks to the ground glass screen focusing system, the IKOFLEX makes it easy to find the critical point of sharpness. Even when the diaphragms of the taking lens is stopped down,

the image obtained by the viewing lens will always remain in full brightness. The depth of field of the normal-focus taking lens can easily be read off from the depth-of-field scale (22).

To facilitate really critical focusing, the magnifier (12) can be swung into position by pressing gently against the control panel of the finder hood frame (13). When using the focusing magnifier, the eye must be brought as close as possible and directly above the center of the magnifier. To assist the avoidance of converging lines and other distortions, the ground glass screen is divided into squares.

DEPTH-OF-FIELD SCALE

The depth-of-field scale (22) indicates the focusing knob (23). The divisions on the depth-of-field scale indicate the range of sharp definition for individual diaphragm stop (aperture setting). The center of the scale shows sharp definition at any given diaphragm setting can be read off from the distance scale by means of the sharp definition figures to the right and left of the distance setting mark. If the distance setting mark is set to the red dot (see page 10) and a diaphragm setting of f/8 has been chosen, everything between 12 and 41 feet will be recorded sharply. If stop f/16 is used, the range of sharp definition will extend from 9 feet to ∞, whereas when the largest stop f/3.5 is used (indicated by the scales on either side of the setting scale), the range will only extend from 18 to 36 feet. In this way the extent of the depth-of-field range can always be determined at a glance. For exact depth-of-field values, see table on page 12.

FOCUSING

The special feature of the IKOFLEX is its reflex viewing system, by which the viewing lens shows an exact replica of the subject to be taken. The viewing lens, which has the same focal length and speed as the taking lens, projects, via an inclined mirror, a brilliant upright image on to a ground glass screen. The final picture will be depicted sharply on the film when it appears sharply focused on the screen. On account of the high light-

It is at any particular setting, the triangular mark is set to any figures between 12 and 50 (white figure on black ground glass screen) also appearing on the exposure meter scale should not be used under any circumstances.

When the camera is loaded with a film rated at 70°/20° DIN (ISO ASA) and if the exposure meter on the focusing knob is set to 1/16 sec. at an exposure meter scale marked at 1/16, 1/32 sec. the green figures 20 and 40 which are also visible will result in over exposure.

Basic rule:

If the triangular mark 2 points to figures between 2 and 11 (black figures on white ground), all values shown on the second scale can be used.

If the triangular mark 2 points to figures between 12 and 50 (white figure on black ground), the green white second scale will always result in excessive over exposure and should not be used.

For exposure with films of other factor, e.g. 2 (yellow film) should be set instead of the triangular mark 2 against the figure indicated by the exposure meter.

APERTURE SETTING

Lever (18) is used for setting the diaphragms to the correct lens aperture, which can be read off from the little window (8). The larger the aperture figure, the smaller is the actual diaphragm opening which necessitates longer exposure times but also provides a larger depth-of-field zone. "Stopping down" (making the lens aperture smaller) will extend the zone of sharp definition further. However, you should avoid stopping down to such an extent that over-long exposure times become necessary, for which the camera can no longer be safely employed without tripod. Since the focusing screen of the IKOFLEX permits continuous focusing control, it is better to use shorter exposure times with larger lens apertures.

DEPTH-OF-FIELD TABLE

Table with columns for Aperture, Distance, and Depth of Field. Includes a diagram of the camera's focusing knob and a small table for aperture settings.

SHUTTER

The IKOFLEX is equipped with a fully synchronized Prontor S/S shutter with self-timer. The shutter speeds range from 1/500 sec. to 1 second and are set by means of the setting ring (20). Furthermore, over exposures of any length are also possible, the speed to which the shutter is set can be seen in the window (17). The figures appearing here represent fractions of seconds, e.g. 1/2" means 1/2 second.

If the required exposure time exceeds 1 second, the shutter should be set to "∞" with the result that the shutter remains open as long as the shutter release is depressed. For time exposures it is strongly recommended to work with a cable release to eliminate any danger of camera shake; the use of a tripod or other firm support is also advised. The built-in self-timer cannot be used when the shutter is set to "∞".

THE ZEISS ICON CARTRIDGE RELEASE is equipped with a plunger catch, making longer time exposures much more convenient to take. The cable release is inserted into the thread (2) on the camera body. For all instantaneous and short time exposures, press the small plunger "B" towards the sleeve "A" and turn it slightly, whereupon it will lock in the position. For longer time exposures the plunger "B" should be set against "C". In this case a gentle pressure on the plunger "A" will lock it in the depressed position and will also exert a second pressure on

RED DOT SETTING

One way of benefiting from the large depth of field provided by small taking lens apertures can be particularly useful when the lighting conditions are good. By setting the diaphragm setting lever (18) and the focusing knob (23) to the red dot, i.e. at approximately 25 feet and between f/8 and f/11, everything beyond approximately 13 feet will be rendered sharply without further focusing. Framing and composition can be done on the ground glass screen, whilst fast action shots will be made much easier by using the direct vision frame finder. Using a film rated at 17°/10° DIN (17 ASA), an exposure time of 1/500 sec. will be correct if the lighting conditions are excellent on 1/500 sec. if the light is only reasonably good, and 1/300 sec. if it is rather poor.

FRAME FINDER

For taking pictures at eye level there is a built-in frame finder. From the front panel of the finder hood (13) it is possible to look through the frame of the hood (14) and see the subject through the viewfinder (10) at the rear as a frame finder. Correct framing is ensured when the edges of the eye piece coincide with the inner edges of the frame. Focusing can also be done in advance on the ground glass screen or by using the "Red Dot Setting". This device is especially suitable for taking sports events and rapid action snapshots.

LOADING THE CAMERA

Before loading the camera, first make sure that the automatic film lock is released. It will be indicated if the film load has already been advanced beyond the seventh frame No. 12. Drawing in the frame counter (4), as soon as the film wind knob (5) has been turned indefinitely without encountering further resistance.

If, for some reason, the film lock is still engaged, the film wind knob must be wound on until the fig. 12 has passed the frame counter window. To do this, tension the shutter release and while keeping the release knob depressed turn the film wind knob until fig. 12 appears in the frame counter window. As soon as the fig. 12 has passed the window, the film lock will be automatically released.

Open the camera back by pushing the locking catch (26) in the direction of the arrow, then hinge the back downwards and pull out the upper film speed holder (21), turning it in that direction in which it is locked in the withdrawn position. The entry take-up spool is then inserted into

the upper speed chamber so that the prong of the film wind knob (5) engages the slot in the spool. Turn back the upper film speed holder (21) and allow the prong to snap into the hole of the spool, which can be retained easily by means of the film wind knob (5).

To empty the same way, the new spool of film is inserted into the lower speed chamber (22); tear the seal and check the tension of the backing paper until the upper and lower take-up spools are pulling a strand across the film window. Turn the film wind knob (5) until the upper and lower take-up spools are pulling a strand across the film window. Turn the film wind knob (5) until the upper and lower take-up spools are pulling a strand across the film window. Turn the film wind knob (5) until the upper and lower take-up spools are pulling a strand across the film window.

MAKING AN EXPOSURE

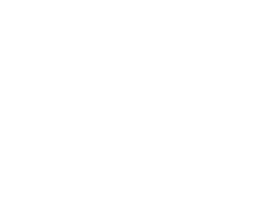
When taking hand-held exposures, the IKOFLEX should hang from its carrying strap, adjusted to a comfortable length for opening the subject in the finder hood. The aperture and shutter speed required should be read off from the exposure computer disk (24) on the focusing knob (23). Set the diaphragm setting with the left forefinger and the aperture with the thumb, both thumb and forefinger should be used to operate the focusing knob (23) for distance settings. Make sure that the film wind knob (5) has been wound on correctly, i.e., until it comes to a stop. Check the shutter (20) and set the film transport release (16) into position. Compose the picture and focus it sharply on the ground glass screen. The gold patterns will help you in aligning both the vertical and the horizontal lines of the subject. As soon as the scene is in focus just look right, make the exposure by giving a gentle pressure on the release knob (20). NEVER jerk the knob abruptly. Although the release knob (20) must be depressed as far as it will go, the camera must be kept absolutely still at the moment of exposure. After every picture, the film transport knob (5) should be wound on fully in order to be ready for the next shot.

For exposures longer than 1/500 second a tripod should be used. The tripod should be secured into the tripod hook (29) at the side of the camera. It is a good plan to use a cable release, which should be secured into its appropriate thread (2).

FILM WIND LOCK AND FRAME COUNTER

After each exposure the film is advanced by turning the film wind knob (5) until it comes to a stop. The film can be advanced even in the dark; there is no need to watch the numbers in the frame counter. The number of the last frame taken is shown in the frame counter. In this way the frame counter is ready for exposure apparatus automatically in the window (8). As long as the shutter release (16) is folded back, the film is not advanced. To advance the film in order to release the shutter, the lever must be swung into the operational position.

The film can be wound on only after the shutter has been released and the next exposure cannot be made until the film has been advanced to the next frame. Double exposures or blanks are therefore eliminated completely.



UNLOADING THE CAMERA

After the twelfth exposure, the film wind lock is automatically disengaged. Open the film window (28) and turn the film wind knob until the end of the loading paper can be seen passing the window a few more turns will wind the film tightly on to the take-up spool. Open the back of the IKOFLEX, and the film, pull out the upper film spool holder (25) and remove the spool from the chamber. Straight away remove the empty loading spool from the lower spool chamber and replace it in the upper one. Care must be taken to ensure that the prong of the film wind knob (7) engages the film in the spool. The camera is now ready for a new film.



This window and spool holder are the back of the IKOFLEX

SELF-TIMER ("V" SETTING)

For taking pictures with the self-timer, the shutter speed should be set to "V" and the shutter released. Then set the synchro-lever (11) to the "V" mark. The delayed action mechanism starts to operate when either the cable release or the body shutter release (10) is depressed. After approximately 10 seconds, the shutter will be automatically released, the exposure time being that which was set beforehand.

The use of the self-timer is recommended in all cases when the shutter speed is slower than 1/30 second, as it acts as a safeguard against camera shake. Whilst the delayed action mechanism is raising the camera can be firmly held with both hands, or three even longer exposure times can be used successfully without a tripod provided that the photographer does not move during the actual exposure.

The self-timer cannot operate when the shutter is set to "B" (time exposure) or when the synchro-lever (11) is set to "M" or "X" marks.



Turning the synchro-lever to the "V" mark (set the shutter speed to "V")

PICTURES WITH FLASHLIGHT

The fully synchronized shutter of the IKOFLEX can be used with both expendable flashbulbs and electronic flash. The flash is fired by the shutter release and is synchronized to operate at the most effective moment. To take flash photographs, slip the tip of the connecting lead over the contact spring (29). The fully synchronized shutter will operate for long exposures or the exact amount the shutter was set to, during the exposure.

PICTURES WITH INSTANTANEOUS FLASH ("X" SETTING)

Before making exposures with electronic flashes, the synchro-lever (11) should be set to "X" and the shutter speed between 1 sec. and 1/50 sec. may then be used. This setting may also be used for flashbulbs, but only at shutter speeds between 1 sec. and 1/50 sec. For flash pictures with the self-timer, set the synchro-lever to "V", the flash will be fired as soon as the delayed action mechanism has raised the shutter and will operate in the same way as when the "X" setting has been used. It is one of the remarkable features of the Prontor SYN shutter that the three settings, "V" (use self timer without delay), "X" (for instantaneous lighting) and "M" (for pre-ignition), can be operated or disengaged selectively whether the shutter is cocked or not.

PICTURES WITH DELAY-TO-PEAK FLASH ("M" SETTING)

At this setting all shutter speeds up to 1/500 sec. may be employed when using expendable flashbulbs. The exposure times suitable for particular flashbulbs can be obtained from the table on the following page. The synchro-lever (11) must be set to "M". The shutter is cocked and released as usual.

In contrast to electronic flash tubes, flashbulbs of the "M" class need suspension to retain their greatest intensity. For this reason the actual firing of the flashbulb has to commence slightly before the release of the shutter, if shutter speed faster than 1/500 sec. are used. When "M" setting is in use, the delayed action release mechanism first ignites the flashbulb and then opens the shutter. This is why the self-timer cannot be used with the "M" setting. Electronic flash lamps cannot be used when the shutter is set to "M".



Setting the lever for flash synchronization with delay to peak (use only at 1/500 or 1/300)

SHUTTER SPEEDS FOR FLASH EXPOSURES

Type of flashbulb	Set synchro-lever (11) to "M"	
	X or V	M
Chemical	1/500	Yes/Yes
	1/1000	Yes/Yes
	1/2000	Yes/Yes
	1/4000	Yes/Yes
	1/8000	Yes/Yes
Flash	1/500	Yes/Yes
	1/1000	Yes/Yes
	1/2000	Yes/Yes
	1/4000	Yes/Yes
	1/8000	Yes/Yes
Electronic	1/500	Yes/Yes
	1/1000	Yes/Yes
	1/2000	Yes/Yes
	1/4000	Yes/Yes
	1/8000	Yes/Yes
Electronic Flash	1/500	Yes/Yes
	1/1000	Yes/Yes
	1/2000	Yes/Yes
	1/4000	Yes/Yes
	1/8000	Yes/Yes
Electronic Flash	1/500	Yes/Yes
	1/1000	Yes/Yes
	1/2000	Yes/Yes
	1/4000	Yes/Yes
	1/8000	Yes/Yes

ACCESSORIES FOR THE IKOFLEX 1c

FILTERS are particularly useful with black and white film for they allow natural colours to be reproduced in the most effective tones of grey. Filters 1/2 mm narrow in filters or 27 mm slip-on filters can be attached to the lens of the IKOFLEX. The use of precision-made ZEISS IKON filters is recommended, since they do not impair the resolution of the taking Zeiss lens.

LENS HOODS (sunshades) are indispensable for back-light photography. The ZEISS IKON lens hood, which can be slipped on to the lens mount or even over a filter, prevents rays from the light source striking the lens directly.

The **IKOPROF** is a close-up attachment with supplementary lenses for fitting to both the viewing and the taking lens of the IKOFLEX when taking close-up pictures (less than 3 ft. 3 in.). It compresses automatically for the parallel between the viewfinder image and the image produced on the film, which has to be allowed for when taking close-ups.

The required lens settings, image scales and sizes of the field covered by the camera may be found on the table on page 29.

The **IKOPOL**, an attachment with coupled polarizing filters for both viewing and taking lenses, eliminates to a considerable degree troublesome reflections on glass, water, wet pavement, etc. In many cases, pictures with good definition and contrast can only be made with the aid of polarizing filters. Colour photographs which are usually rather subdued when the sky is overcast will gain in colour saturation when the IKOPOL polarizing filter is used. When the IKOPOL is employed three times the normal exposure should be given.

The **ZEISS-RADEX CASE** protects your precious IKOFLEX from accidental impact and damage without hindering your picture-taking.

On the bottom of the case ready case there is provision for attaching a ZEISS IKON flash lamp, when using a tripod. However, the camera must be removed from the case for carrying the tripod to the tripod lock (29).

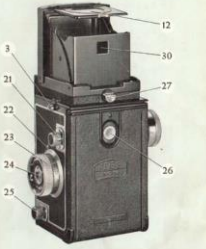
With the **IKOFLEX**, our flash gun for flashbulbs, or the **IKOFLEX**, the ZEISS IKON electronic flash unit, pictures can be taken in poor light or even in complete darkness.



TABLE FOR USING THE IKOFLEX CLOSE-UP ATTACHMENT

Close-up attachment	Distance (ft.)	Magnification	
		Viewfinder	Image on film
None	∞	1:1	1:1
	10	1:10	1:10
	20	1:20	1:20
IKOPROF	∞	1:1	1:1
	10	1:10	1:10
	20	1:20	1:20
IKOPROF + IKOPOL	∞	1:1	1:1
	10	1:10	1:10
	20	1:20	1:20

The distance between camera and subject must be measured from the front of the IKOFLEX. The magnification on the viewfinder is 1/3 the magnification on the film. The magnification on the film is 1/3 the magnification on the viewfinder.



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INSTRUCTION BOOK

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