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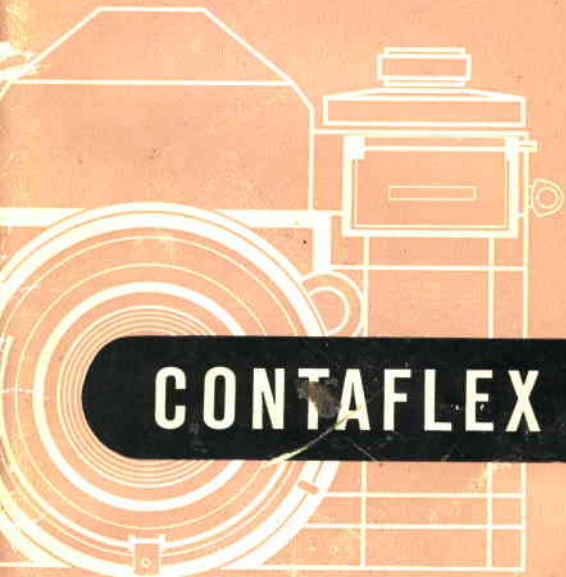
ZEISS IKON



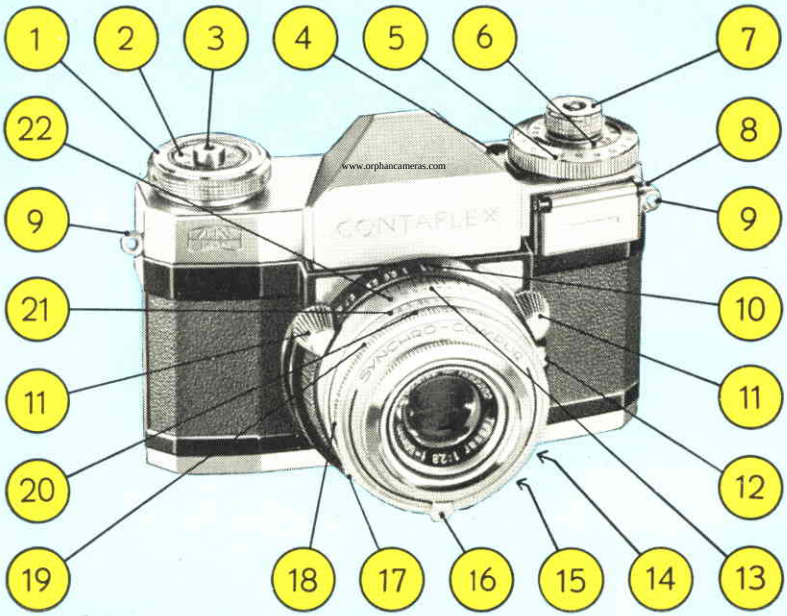
CONTAFLEX IV

INSTRUCTION BOOK

Controls of the Contaflex IV

1 Film wind knob
2 Frame counter
3 Shutter release knob
4 Pointer of exposure meter
5 Exposure meter computor disc
6 Film speed setting knob
7 Rewind knob
8 Knob operating exposure meter flap
9 Eyelets for carrying strap
10 Distance setting scale
11 Focusing knobs
12 Synchro-lever for flash and delayed-action mechanism
13 Setting mark for distance, aperture and shutter speed

For further camera controls see inside back cover.



The Contaflex IV

made by Zeiss Ikon AG. Stuttgart, combines all the advantages of the two most popular types of camera: miniature and reflex. Behind this achievement lie years of experience in the manufacture of precision cameras. The Contaflex was originally designed for the advanced amateur, but its amazing versatility has rapidly made it indispensable to professional, scientific and technical photographers.

We cannot promise the impossible: but we **do** boast that the Contaflex IV is fitted with every conceivable safeguard to ensure the success of your pictures. The built-in Zeiss Ikon Rapid photo-electric exposure meter, completely enclosed in the camera body for maximum protection, gives reliable exposure figures for all films, including colour. Two coupled rangefinder systems ensure accurate focusing of the world-famed Zeiss Tessar f/2.8 lens, with all its interchangeable converter units. The large, clear viewfinder image is unaffected by parallax at even the shortest distances. The Contaflex is a rapid action camera, thanks to the ingenious automatic coupling of many operations. With the extensive range of Contaflex accessories at your disposal (see the last pages of this booklet), there is virtually no limit to the fascinating subjects you can safely cover.

So that you can get the best out of your Contaflex and enjoy the pleasures of carefree photo-

graphy, please study this instruction book thoroughly. Open out the front and back covers and follow the manipulations with the aid of the detailed diagrams. Start by practising the various operations without a film in the camera. If you still have difficulties, see your photo dealer for free information.

We can only congratulate you on buying a Contaflex IV. You have made a wise choice – your camera will give you lifelong pleasure. We would like to share your enjoyment, and would appreciate it if you were to send us some of the most outstanding pictures you have taken with your Contaflex IV.

The picture inside the front cover was taken with the Contaflex against the light; exposure 1/60 sec. at f/5.6.

Contaflex IV features

The large, bright finder shows the final picture in almost natural size right up to the moment of exposure. The built-in Fresnel lens renders a finder image that is bright even in the corners; furthermore, it is seen at eye-level, upright and the right way round, thanks to the pentaprism. Another advantage of through-the-lens sighting is that the finder image is always free from parallax, even when supplementary lenses are used. **What you see, you take!**

The built-in Zeiss Ikon Rapid photo-electric exposure meter correctly indicates exposure settings even in poor light. Zeiss Ikon's twenty years of experience in making exposure meters ensure its unfailing accuracy.

The focusing system shows clearly in the viewfinder the point of sharpest definition by means of a split-image rangefinder and ground glass screen, both coupled with the lens.

The standard lens is the famous Zeiss Tessar f/2.8, 50 mm. By exchanging the front element for either the Pro-Tessar f/4, 35 mm or the Pro-Tessar f/4, 85 mm, the complete lens is converted to a wide-angle or tele-lens respectively. The Steritar-B stereo attachment can also be used as a front element. All these interchangeable elements are fitted with bayonet mounts. All optical components are coated and colour corrected, and yield high-definition photographs in monochrome or colour.

The Synchro-Compur Shutter, with delayed action release mechanism, is fully synchronized for flash and has a range of speeds from 1 to 1/500 sec. and a "B" setting for time exposures. It employs the exposure value system of coupled aperture settings and shutter speeds.
All scales can be clearly read from above. **The spring-loaded pre-set diaphragm** and the coupled film-wind and shutter tensioning mechanism make the camera ready for immediate action.
The camera takes 24 x 36 mm negatives on 35 mm miniature film, available in standard cartridges, daylight refills, darkroom refills or as bulk film. By using **special cassettes** the film can be changed in daylight after any number of exposures, without rewinding.
The removable back simplifies loading and unloading as well as cleaning of the camera.

Handling the Camera

Measuring the exposure

Before taking a picture, you should determine the exposure value, using the built-in photoelectric exposure meter (Fig. 1), which gives accurate readings even in the poorest light, for black-and-white or colour film, both negative and reversal.
First set the speed of the film in use. Turn the inner disc by means of the small knob (6) until the speed of the film in use appears opposite

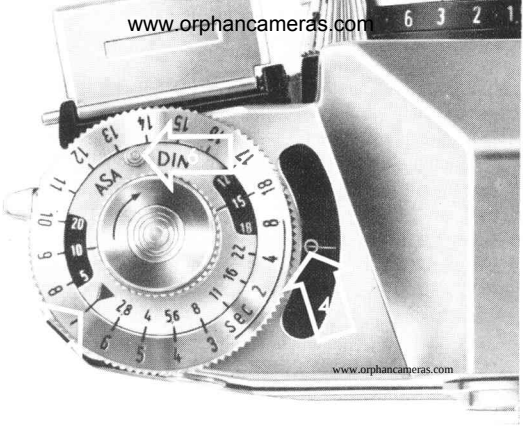


Fig. 1

the black stroke in the left-hand window (for films rated in ASA indices) or opposite the stroke in the right window (for films rated in DIN°). The disc can also be set to intermediate values. For more convenient handling, the rewind knob (7) may be pulled out slightly (see Fig. 27 on page 32).

When the film speed is quoted according to a rating other than the ASA or DIN systems, the corresponding equivalent can be found in the conversion table on page 9.

To measure the intensity of the light, first open the flap of the exposure meter by pressing knob (8) gently to the right (to close it, press the flap itself to the right with the left forefinger). The Contaflex IV should then be aimed at the

Conversion Table

of the most commonly used film-speed rating systems

ASA Exp.Ind.	Scheiner European	Scheiner USA	Weston	DIN $^{1}/_{10}°$
5	20	13	4	12
6	21	14	5	13
8	22	15	6	14
10	23	16	8	15
12	24	17	10	16
16	25	18	12	17
20	26	19	16	18
25	27	20	20	19
32	28	21	24	20
40	29	22	32	21
50	30	23	40	22
64	31	24	50	23
80	32	25	64	24
100	33	26	80	25
125	34	27	100	26
160	35	28	125	27
200	36	29	160	28
250	37	30	200	29
320	38	31	250	30

Since the speed of colour films cannot be measured in the same way as for monochrome material, manufacturers are obliged to advise that their films should be exposed "like a film of ... ASA or ... DIN". Generally this is perfectly reliable advice, but to be on the safe side, the conscientious photographer should calibrate his equipment by making a series of test exposures at various apertures and thus determine the actual speed of the film in question and the correct exposure meter setting.

subject so as to frame it in the viewfinder. The white pointer (4) will be seen to deflect; turn the computor disc (5) until the small white circular mark is exactly over the pointer when viewed from above (see Fig. 1). The exposure value to be used is the red figure on the computor disc opposite the red triangular mark on the film-speed setting disc. In poor light, the required exposure **times** in full seconds (green figures) can be read opposite the corresponding f/numbers (black figures on the inner disc to the right of the red triangle mark).
Once the exposure value or aperture and shutter speed required have been ascertained, they must be transferred to the shutter of the Contaflex IV.

Setting the exposure value

By pressing knob (17) towards the body of the camera, the adjacent red dot can be moved until it coincides with the desired value on the red exposure value scale (19) (see Fig. 2). It is also possible to set half exposure values.
As the ring with the red dot can only be moved through a limited radius, it will sometimes be necessary to move the aperture shutter speed setting ring (18) as well, in order to set the exposure value required.
By setting the exposure value, the diaphragm and shutter speed selector mechanisms are coupled. The amount of light necessary for correct exposure is controlled by the lens open-

Fig. 2

ing (aperture or f/number) and the time the film is exposed to light (shutter speed). The exposure value obtained, which can be read off from the setting mark (13) (see Fig. 3), represents a definite amount of light, that remains the same no matter what f/number or shutter speed is chosen. If, after having determined and set the exposure value, the shutter speed setting ring (18) is turned to a higher or lower value (20), the lens aperture (21) will be automatically re-adjusted to give the same exposure. The shutter speed is likewise re-adjusted automatically when the aperture is changed.

Shutter speed: The correct shutter speed to choose depends on whether or not the subject

Fig. 3

is moving, and if so, how rapidly. The faster the subject-movement, the shorter should be the exposure time. The black figures on scale (20) denote fractions of seconds (60 means 1/60th second, etc.). When set to the green "B", the shutter will remain open as long as the release knob (3) remains depressed (see page 20). The green figures denote full seconds, as on the computor disc of the exposure meter, and cannot be set against the setting mark (13); their significance will be explained later on.

Aperture setting: The correct aperture of the lens diaphragm, or "stop", for short, depends on the depth of field desired (see page 16). The smaller the f/number, the larger is the actual

aperture of the diaphragm opening. The required value on the scale (21) should be set against the setting mark (13). The aperture is set by the same operation as for setting the shutter speed.

So long as the correct exposure value remains set, any combination of shutter speed and lens aperture will result in a perfectly-exposed negative. The setting ring (18) can only be turned sufficiently to allow the mark (13) to be set against the final values of the aperture and shutter speed scales. The final value at the right-hand end of the shutter speed scale is "B".

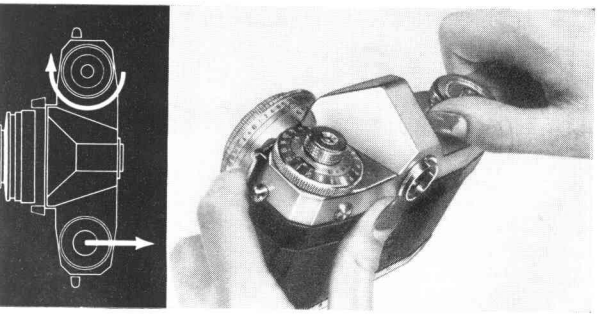
If, after setting the exposure value, the lens is stopped down until the shutter speed is set to the green "B", an exposure time of 2 seconds will be required. If it is necessary to stop down even further, the required exposure time in full seconds (green figures) can be read off opposite the selected aperture. Then set the diaphragm to the required figure; to do this, depress the knob (17) as when setting the exposure value. The exposure time can then be controlled by depressing the shutter release knob (3) for the required number of seconds. It is also possible in such cases to read off the exposure time directly from the exposure meter, as described on page 10. When changing from time exposures on "B" to automatic exposures, the exposure value must be reset.

Tensioning the Shutter

The Synchro-Compur shutter is tensioned by turning the film wind knob (1) in the direction of the arrow **as far as it will go.** This one operation also advances the film by one frame and makes the viewfinder image visible. This coupling makes double exposures and blank frames a thing of the past. It does not matter whether the shutter speed is set before or after advancing the film. Keeping the shutter tensioned does not harm it in any way.

A useful hint: when turning the film wind knob don't just twiddle it round with two fingers like a screw; a much more convenient method is to swing both hands in opposite directions, holding the camera body with one hand and gripp-

Fig. 4



unsharp

sharp

ing the winding knob with the other (Fig. 4). The saving in time is really surprising.

Setting the Distance

The built-in coupled rangefinder system automatically focuses the camera for the correct distance. When you look through the viewfinder eyepiece (26), you will see in the centre of the field of view a clear circular area enclosed within a ground glass ring. The clear circle is divided into two halves by a horizontal line (see illustr. on left). The subject distance can be measured in two ways:

1. Select a vertical line (such as the edge of a wall or a tree trunk) seen in the finder image. Then turn the rear black ring by the two knobs (11) on the left and right, adjoining the distance setting scale (10). Now you will see the image in the upper half of the circle move in relation to the lower half. When the two halves of the image are exactly aligned, the lens is set for the correct distance.

2. If the subject has no distinct vertical lines, observe the image in the ground glass ring.

Turn the two knobs (11) to and fro until the image appears perfectly sharp.
It is immaterial which method of focusing you use; in either case the lens is automatically set to the correct distance, which can be read off from scale (10).

Depth-of-field Scale

The lens does not only define sharply those objects at the exact focused distance; it will also produce a sharp image of objects a certain distance in front and behind. This zone of sharp definition, known as the depth of field, is comparatively narrow at full aperture (f/2.8) but becomes greater the more you stop down the lens.
The depth-of-field scale (22) shows the extent of this zone at various aperture settings and distances. Locate the aperture setting to be used from among the f/numbers to the right and left of the distance setting mark (13). The distance values on the distance setting scale (10) opposite the chosen f/numbers represent the near and far limits of the depth-of-field zone. For example: assuming you are using an aperture of f/8 and have focused on a distance of 5 ft. (Fig. 5), the figure 8 on the left is opposite 7 ft. while the figure 8 on the right is opposite 4 ft. This tells you that at a distance setting of 5 ft. and an aperture of f/8, everything will be sharp from 4 ft. to 7 ft. Exact values can be found in the table on page 18.

You can equally well measure with the range-finder the nearest and farthest points of the zone to be recorded sharply, and then select the appropriate stop on the depth-of-field scale. Do not, however, stop down further than is necessary to ensure the depth of field you require. Otherwise you may need long exposure times, which increase the risk of camera shake (see page 24).

Fig. 5

Depth-of-field table for the Contaflex with Tessar f/2.8 50 mm

Distance	Aperture f/2.8	Aperture f/4	Aperture f/5.6	Aperture f/8	Aperture f/11	Aperture f/16	Aperture f/22
∞	64'4"- ∞	45'1"- ∞	32'4"- ∞	22'9"- ∞	16'8"- ∞	11'6½"- ∞	8'6"- ∞
20'	15'4"-28'9"	14'-35'6"	12'6"-51'7"	10'8¾"-162'5"	9'2"- ∞	7'4½"- ∞	5'11¾"- ∞
10'	8'8½"-11'9"	8'3"-12'8"	7'8¾"-14'3"	7'½"-17'5"	6'4¼"-24'3"	5'5½"-71'4"	4'8"- ∞
7'	6'4¼"-7'9½"	6'1½"-8'2¼"	5'10"-8'9½"	5'5¼"-9'10½"	5'¼"-11'8"	4'5½"-17'	3'11¼"-37'4"
5'	4'8"-5'4½"	4'6½"-5'6¾"	4'4¾"-5'9¾"	4'2"-6'3"	3'11¼"-6'11"	3'7"-8'5"	3'3"-11'5"
4'	3,9½"-4'2¾"	3'8½"-4'4"	3'7¼"-4'6"	3'5½"-4'9"	3'3½"-5'1¼"	3'¾"-5'10"	2'9¾"-7'1"
3'	2'10¾"-3'1½"	2'10¾"-3'2"	2'9½"-3'3"	2'8½"-3'4½"	2'7¼"-3'6½"	2'5½"-3'10½"	2'3¾"-4'4¼"
2.5'	2'5"-2'7"	2'4¾"-2'7¼"	2'4¼"-2'8"	2'3½"-2'9"	2'2¾"-2'10¼"	2'1½"-3'½"	2'½"-3'3¾"

The depth of field is measured from the film plane.

Fig. 6

Taking the Picture

Holding the camera

Always hold the Contaflex IV perfectly steady whilst taking a picture. Support the body of the camera with the palms of both hands and grip it firmly with the fingers (Fig. 6). The thumbs should be pressed against the camera back, and the middle finger of both hands should rest on the focusing knobs (11). Use the index finger of the right hand to press the shutter release (3). Press your elbows lightly against your body (Fig. 7). You can use either the left or the right eye to look through the finder. This is the normal position for taking horizontal pictures with the Contaflex IV.

Fig. 7

Fig. 8

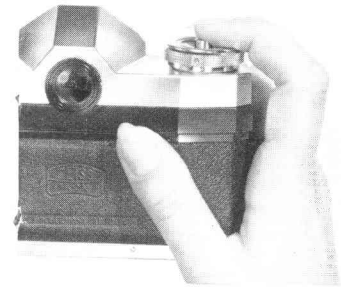
For upright pictures, turn the Contaflex IV through 90 degrees, and press it lightly against the forehead with the right hand. The middle finger rests on the right-hand focusing knob (11), whilst the index finger works the shutter release. The left hand supports the camera from below; it is also possible to use the index finger of this hand to operate the focusing knob (Fig. 8). Upright pictures can, of course, be taken with the camera supported by the right hand. In this case the shutter is released with the thumb.

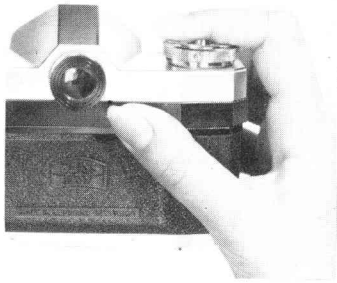
Releasing the shutter

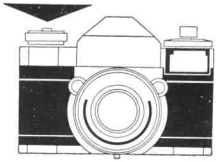
The shutter release knob (3) should be depressed **gently** with either the tip of the index

Fig. 9

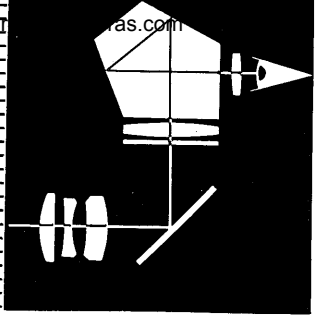
Fig. 10







finger (Fig. 9) or the first joint (Fig. 10). This method of releasing the shutter is specially recommended as being the least likely to cause camera shake. If, by any chance, the film wind knob (1) has not been wound to its fullest extent, meaning that the film has not been advanced by a full frame, the shutter cannot be released. This effectively prevents double exposures.



The finer points of the Contaflex IV

The viewfinder

The finder image is only visible after the film wind knob (1) has been turned to advance the film and tension the shutter. This operation simultaneously lets down the reflex mirror inside the camera; merely by glancing through the finder you can tell whether the camera is ready for action.

So long as you can see the large bright finder image, the lens aperture automatically remains fully open, permitting easy and accurate focusing. On pressing the release knob, the spring loaded diaphragm closes immediately to its preselected setting **before** the shutter opens to expose the film. The Contaflex is the first camera to utilize this ingenious systems.

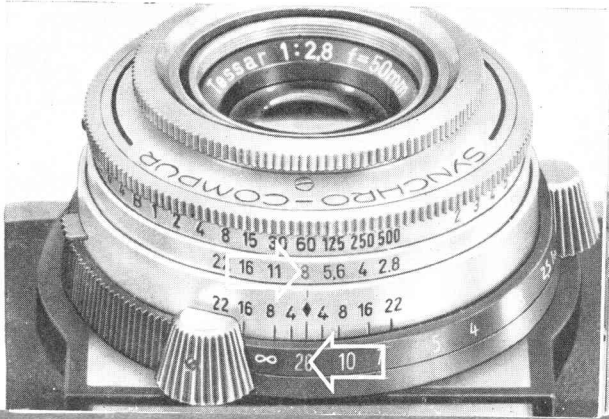
The finder image is completely free from parallax and always shows the exact field of view, even when using the Pro-Tessar for tele-or wide angle pictures or supplementary lenses for

close-ups. For rapid action shots you can easily follow the movement of your subject with the camera, since the image in the finder is seen at eye level, upright and the right way round. The black ring on the eyepiece mount (26) can be unscrewed for the insertion of correction lenses (Order No. 902) to compensate for defects of vision. Even if you normally wear spectacles you can frame and focus your pictures without the aid of glasses. When ordering, please quote your optician's prescription for distance glasses.

Snapshot Setting

So as to be ready for rapid action snapshots, first set the correct exposure value and then set the aperture to f/8 and the distance to 20 ft. (Fig. 11). For easier setting, both these figures are red. This combination results in everything between 10 ft. and ∞ being sharply recorded. Another useful way of dealing with moving

Fig. 11



subjects is as follows: if, for instance, you want to take a shot of children at play, set the aperture and exposure time and focus the lens at the most suitable distance. Now watch your subjects in the viewfinder and release the shutter when the two halves of the image in the range-finder field coincide, or when the image on the ground glass ring is sharp.

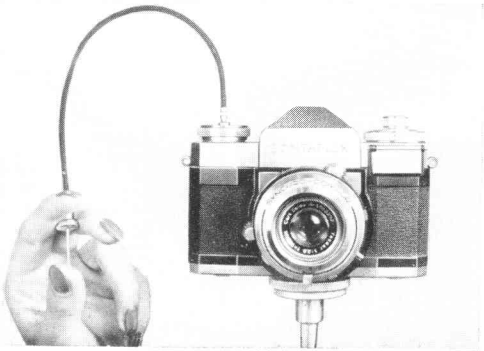
Tripod Exposures

The Contaflex IV can be mounted on a tripod (Fig. 12) by means of the tripod bush (25). A ball-and-socket head or similar tilting head will be required for upright photographs. To avoid camera shake, use a cable release (see page 41); this screws into the threaded socket in the release knob (3). Exposures requiring speeds slower than 1/30 second or time exposures should always been made from a tripod or similar solid support.

Flash and Delayed Action Shots

The fully-synchronized Synchro-Compur shutter can be used with any type of flash equipment.

Fig. 12



It is also provided with a built-in delayed-action release (self timer). The synchro-lever (12) can be set to three different positions; whenever you want to change its position, make sure to depress the lock (15) (Fig. 13).

At the "X" setting the shutter fires the flash automatically at the moment the shutter blades are fully open. Electronic flash tubes should only be fired on the "X" setting.

At the "M" setting the shutter opens after a very short delay, which corresponds to the delay-to-peak of most flashbulbs.

The correct settings ("X" or "M") for the various flashbulbs and flash capsules will be found in the makers' instructions and also in the table on page 26.

At the "V"setting the delayed-action release (or self-timer), is brought into operation. When the release knob (3) is depressed, a retarding mechanism is set in motion which opens the shutter after about 8 seconds. Time exposures ("B" setting) cannot be made with the self-timer.

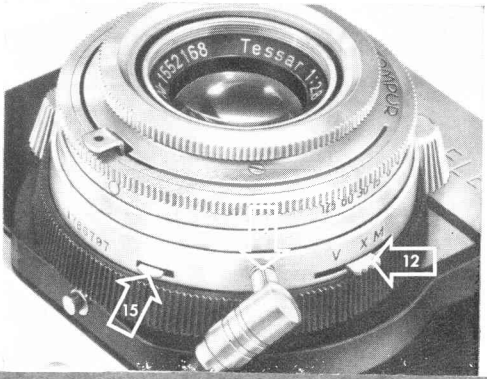


Fig. 13

If a flash lamp (of any type) is connected to the shutter while the synchro-lever is set to "V", the delayed-action mechanism will run off normally and the flash will be fired as at the "X" setting. The synchro-lever (12) can be set to "V" only when the shutter is tensioned and after the lock (15) has been depressed. After exposure, the lever returns automatically to "X" and must, if necessary, be re-set to "V".

For flash exposures, connect the lead of the flash gun to the flash contact (14) and then insert the flashbulb (Fig. 13). When the release knob (3) is depressed, the flashbulb will be fired synchronously with the opening of the shutter.

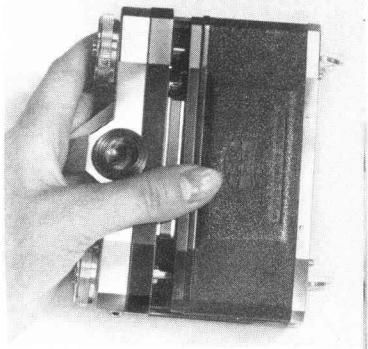
Flashbulb	Synchro-lever set to	
	X or V	M
Osram		
XM 1, S O	1—1/30	1/60—1/500
XM 1B, S OB	1—1/30	1/60—1/125
XP	1—1/60	—
XO	1—1/30	—
S 2	1—1/15	1/30—1/500
Philips		
Pf 1, Pf 3, Pf 14, Pf 25, Pf 60	1—1/30	1/60—1/500
Pf 100	1—1/15	1/30—1/60
General Electric		
No. 5, No. 11, No. 22	1—1/30	1/60—1/500
SM	1—1/125	—
No. 50	1—1/15	1/30—1/60
Sylvania		
Bantam 8, 0, 2, 25C, Press 40	1—1/30	1/60—1/500
Press 2B, 25, 25B, 40B	1—1/30	1/60—1/125
Press SF	1—1/125	—
Press 3, 3B	1—1/15	1/30—1/60
Electronic Flash Units	1—1/500	—

Loading and Removing the Film

Hold the Contaflex IV in your left hand with the lens pointing downwards, the viewfinder housing pressing against the palm of your hand and your thumb on the camera back (Fig. 14). Lift the locking keys (24) in the base of the Contaflex with your right hand and turn them in the appropriate direction. With your left thumb push the back of the camera downwards (Fig. 15) and lift it off with the right hand (Fig. 16).

Loading the Camera

First secure the beginning of the film in the longer slot of



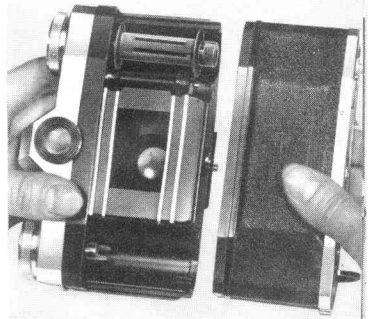
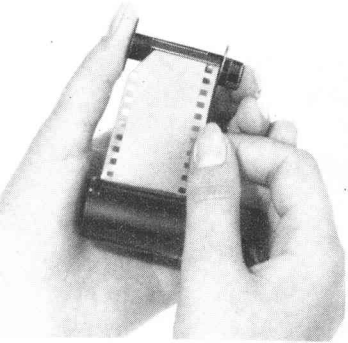
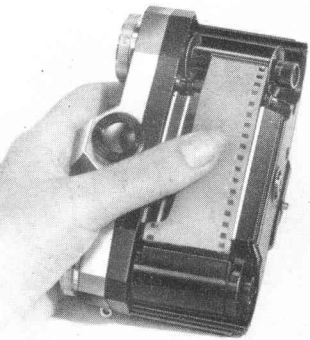


Fig. 14-16



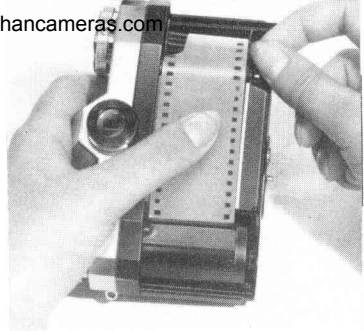


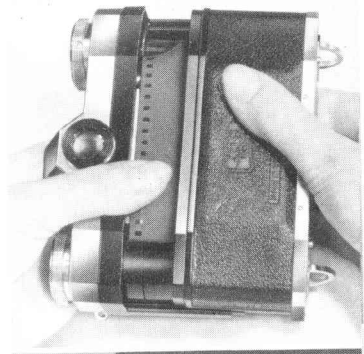
the take-up spool by hooking it under the pointed lug, which will hold it in place (Fig. 17). When using cassettes loaded with bulk film, the end of the film must be cut to fit the slot (Fig. 18). Next, insert the film cartridge or cassette in the lower chamber so that the prongs engage the core of the cassette spool. Insert the take-up spool into the upper chamber (Fig. 19); now wind the film on to the take-up spool until the transport sprockets engage the perforations on **both sides** (Fig. 20).

Whilst holding the film in contact with the transport sprocket with the left thumb, so that the teeth remain engaged with the perforations,

Fig. 17-19

replace the camera back in its grooves (Fig. 21) and slide it up to close the camera completely. Turn the locking keys (24) in the base of the Contaflex IV and fold them flat. The keys can only be folded when the back is properly in position. Finally, tension and release the shutter twice so as to wind the fogged leader film on to the take-up spool and advance a length of unexposed film into position in the film gate. As the film is wound on, the rewind knob (7) should rotate in the opposite direction to the arrow; this indicates that the film is being advanced properly. When using short length of bulk film or 20-ex-





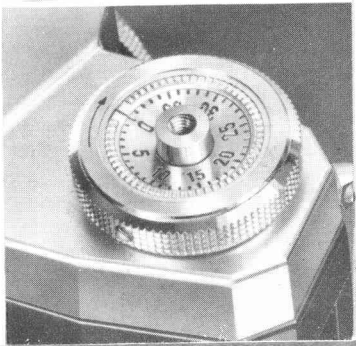


Fig. 20-22

posure cartridges, the turns of film may partially unwind inside the cassette or cartridge; in this case the rewind knob will not rotate for the first few frames. If this happens, turn the rewind knob in the direction of the arrow until a distinct resistance is felt. This will show whether the film has been loaded correctly, and is also an indication of whether there is any film in the camera at all.

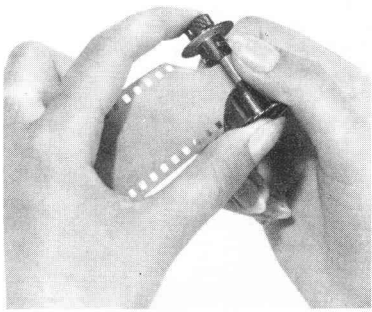
When the camera is loaded the frame counter disc (2) should be turned by its milled rim to "O" (Fig. 22). It does not matter in which direction the disc is turned. As soon as you have tensioned the shutter with the film wind knob (1), the Contaflex is ready for the first picture. The frame counter will automatically indicate "1".

Cassettes

The Contaflex IV will take the same special cassettes as used in the Contax. You can work either from cassette to cassette or from the cassette to the take-up spool. The cassette consists of two shells and a centre spool. To open it, press the locking button, turn the inner and outer shell against each other until their slots coincide and then pull apart (Fig. 23).

Load the cassette with darkroom refills, daylight refills or bulk film. When working from cassette to cassette, the film must only be hooked on to the spool of the feed cassette (Fig. 18). When rewinding, thread the shaped end into the small

slot of the spool so that it protrudes through the larger slot and secure the end by sticking it again into the smaller slot. Hold the film in this position with your thumb and start winding the film while pulling it tight (Fig. 24). Insert the full spool with its milled knob first into the inner shell of the cassette and push the outer shell over it. The leader of the film should then protrude through the superimposed slots of the shells. Now turn the inner and outer shell against each other until they lock and the word **"zu"** appears. When working with two cassettes (Fig. 25), there is no need to rewind the film. Moreover, it can be



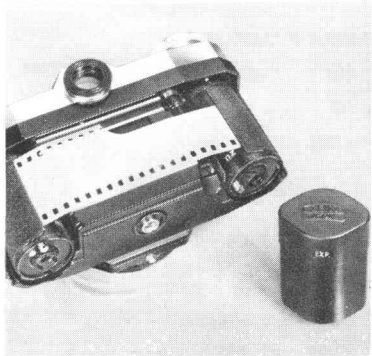


Fig. 23-25

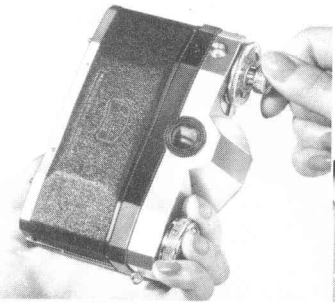
unloaded after any number of exposures, together with the take-up cassette, in broad daylight. But remember to advance and release the film twice before opening the camera. The two-cassette system is especially useful for changing over from black and white to colour film and vice versa.

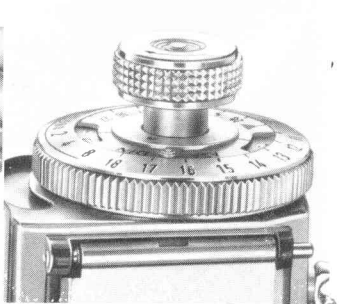
When inserting the cassettes in the feed or take-up chambers, make sure that the locating pegs of the cassettes engage in the corresponding grooves in the camera body. Turning the locking keys of the camera back automatically opens or closes the cassettes. Every cassette is supplied in a special container, the lid of which has a small window. The lid can be fitted in two positions. When storing an exposed film in the container, fit the lid in such a way that the marking "Exp" is visible in the window.

Unloading

If the camera is loaded with a standard commercial cartridge, the film must be rewound be-

Fig. 26, 27





fore unloading. Depress the reversing button (23) at the base of the camera, and rewind the film into the feed cartridge by turning the rewind knob (7) in the direction of the arrow (Fig. 26). For more convenient manipulation the rewind knob can be pulled out partly (Fig. 27). When advancing the film from a cartridge to a cassette or from a cassette into a cassette, the film need not be rewound before unloading. Either of these two methods permits the film to be changed after any number of exposures and in broad daylight. However, it is necessary to tension and release the shutter twice after the last exposure in order to advance the last exposed frame safely into the take-up cassette. Then open the Contaflex as described on page 27, take out the standard or special cassette with the exposed film and make sure immediately that no dust or film particles are left inside the camera.

The Contaflex System

Exchanging the lens units

The scope of the Contaflex is greatly widened by exchanging the front element of the lens for tele- or wide-angle units. A stereo-attachment can also be used. For removing the front element, hold the Contaflex in your left hand (Fig. 28), and press the lock pawl (16) in the direction of the lens with your thumb. The milled front ring

of the lens is then turned with the right hand until it comes to a stop; a slight resistance has to be overcome. Then lift the front element from its bayonet mount.

When re-inserted, the red dot of the lens unit in question must be opposite the red dot of the lock pawl. The component is pressed home with a right turn until an audible click indicates the correct position.

All lens units of the Contaflex IV are inserted in this way: red dot to red dot – right turn. But for removing, press lock pawl (16) and turn to left. In order to preserve the efficiency and high-quality performance of the valuable lenses, their surface should never be touched.

Since the taking lens is also the finder lens, the Contaflex is most suitable for taking photographs with various lenses. Regardless of the focal length of the lens in use, the viewfinder of the Contaflex will invariably show the absolutely parallax-free image field, whilst the distance

Fig. 28

Fig. 29

is established in the usual way using either the split-image or the ground glass screen range-finder by moving the two focusing knobs (11) on the camera.

For the Contaflex IV the following interchangeable lens units are available:

The Pro-Tessar f/4, 35 mm for wide-angle photography. It enables a much wider field of view to be covered from short taking distances: an invaluable aid for interior and architectural shots. Snapshot technique benefits from the considerably deeper zone of sharp definition which results from the short focal length of this particular lens unit (Ord.No. 1003).

The Pro-Tessar f/4, 85 mm is a telephoto lens which, acting like a telescope,will permit you to record far-away subjects as large a though they were "within your reach". The main fields for employing a telephoto lens are landscapes, portraiture and the recording of all those rapid-action events which we normally have to watch from a distance (Ord.No. 1004).

The Steritar-B is used for stereo photography by means of the Zeiss Ikon stereo system (Ord. No. 813). In this highly ineresting field, the Contaflex shows its enormous versatility. Since the two 16 x 23 mm half-images are in one frame of the film immediately side by side, they can be mounted in the special Zeiss Ikon stereo masks in the same simple way as normal transparencies and are then ready for immediate showing or viewing with the Ikolux projector with its stereo attachment or the Zeiss Ikon "O" stereo viewer respectively. The Ikolux can, of course, be used for the projection of normal transparencies.

Leather Cases

Camera ever-ready case: To guard against damage, the Contaflex IV should always be carried in its elegant ever-ready case. The camera is screwed to the case and need not be removed from its case for exposure. Moreover, the Contaflex, together with a screwed-in filter and the accessory shoe (see page 40), are easily accommodated in the case, the lid of which will also hold two filters (⌀ S 27 mm).

Pro-Tessar Case: an attractive leather carrying case is available for both the f/4, 35 mm and the f/4, 85 mm Pro-Tessars. There is also space for a special "insertion set" (Ord.No. 798/01) holding the front element of the removed standard Tessar f/2.8, 50 mm, the appropriate Proxar lens and the lenshood (⌀ A 28.5 mm). Two filters

for the Pro-Tessars can be slipped into the pockets in the lid.

Leather Cases for Stereo: The Steritar-B and a separator will fit neatly into this leather case.

Carrying Strap: To enable you to carry the Contaflex without the ever-ready case, a carrying strap is also available. This is fitted with safety hooks to hook into the eyelets on the camera (9). A safety catch prevents unintentional opening of the hooks.

Filter

Zeiss Ikon precision filters are available in the following colours: yellow, yellow-green, orange, red, Ikolor-A and B and UV filters, all of which will be of great assistance when special pictorial effects are wanted. They are screw-in filters with a diameter of 27 mm for the Tessar f/2.8, 50 mm and the Steritar-B, 49 mm for Pro-Tessar f/4, 35 mm and 60 mm for the Pro-Tessar f/4, 85 mm. Owners of both Tessars can be supplied with an additional intermediate ring (Ord. No. 1527) which fits the Pro-Tessar f/4, 35 mm, so that the ⌀ S 60 mm filter can also be used.

The use of filters makes it necessary to prolong the exposure time by the filter factor, which is engraved on the mount of all Zeiss Ikon precision filters.

Polarizing Filter Contapol

The Contapol polarizing filter, screwed into the f/2.8, 50 mm Tessar lens mount, eliminates dis-

turbing reflections from shiny and reflecting surfaces of non-metal objects. You can observe the effect of the polarizing filter in the finder. An A 28.5 mm diameter lenshood or supplementary lens (or both together) can be mounted on top of the Contapol. For further details see the full instructions enclosed with the polarizing filter.

Supplementary Close-up Lenses (Zeiss Proxars)

The f/2.8 50 mm Tessar lens of the Contaflex can be focused down to 39 inches. For subjects at shorter distances, coated Zeiss Proxar supplementary lenses should be slipped over the mount of the camera lens (diam. 28.5 mm). The finder will still show the correct field of view without any parallax error, and the Contaflex can be focused in the same way as described on page 15. Four Proxar lenses are available: focal length = 39 1/2 ins. (100 cm) for distances down to 18 1/2 ins.; 19 3/4 ins. (50) for subjects down to 11 3/4 ins.; 11 3/4 ins. (30 cm) for subjects down to 9 1/2 ins.; 8 ins. (20 cm) for subjects down to 6 3/8 ins. The table on page 39 gives details of subject distances, the scales of reproduction obtainable and the fields covered.

The distances should be measured from the front rim of the supplementary lens mount to the subject. An aperture of f/8 usually provides sufficient depth of field.

Table for using Zeiss Proxar Supplementary Lenses

	Lens set to	Subject Distance	Reduction 1 :	Field size
Proxar lens f = 1m	∞	4′1 1/2″	19.0	1′5 1/4″ × 2′2 1/4″
	20′	3′4″	16.2	1′2 3/4″ × 1′10 1/4″
	10′	2′11 1/2″	14.1	1′3/4″ × 1′7 1/2″
	7′	2′8″	12.7	11 1/2″ × 1′5 1/2″
	5′	2′4″	11.4	10 1/4″ × 1′3 1/2″
	4′	2′11 1/2″	9.9	9″ × 1′1 3/4″
	3′	1′10″	8.4	7 1/2″ × 11 1/2″
	2.5′	1′7 1/2″	7.5	6 3/4″ × 10 1/4″
Proxar lens f = 0.5 m	∞	1′8 1/4″	9.8	8 3/4″ × 1′1 1/2″
	20′	1′6 5/8″	9.0	8 1/4″ × 1′1 1/2″
	10′	1′5 1/4″	8.2	7 1 2″ × 11 1/4″
	7′	1′4 1/4″	7.7	7″ × 10 1/2″
	5′	1′3″	7.3	6 1/2″ × 10″
	4′	1′2″	6 6	6″ × 9″
	3′	1′5/8″	5.8	5 1/4″ × 8″
	2.5′	11 5/8″	5.4	4 3/4″ × 7 1/2″
Proxar lens f = 0.3 m	∞	1′1 3/8″	6.4	5 3/4″ × 8 3/4″
	20′	1′5/8″	6.0	5 1/2″ × 8 1/4″
	10′	1′1/8″	5.7	5 1/8″ × 7 7/8″
	7′	11 1/2″	5.4	4 7/8″ × 7 1/2″
	5′	10 7/8″	5.2	4 3/4″ × 7 1/8″
	4′	10 3/8″	4.8	4 1/4″ × 6 5/8″
	3′	9 5/8″	4.4	4″ × 6″
	2.5′	9″	4.1	3 3/4″ × 5 5/8″
Proxar lens f = 0.2 m	∞	8 1/8″	3.9	3 1/2″ × 5 3/8″
	20′	7 7/8″	3.8	3 3/8″ × 5 1/4″
	10′	7 5/8″	3.6	3 1/4″ × 5″
	7′	7 1/2″	3.5	3 1/8″ × 4 7/8″
	5′	7 1/8″	3.4	3″ × 4 5/8″
	4′	6 7/8″	3.2	2 7/8″ × 4 3/8″
	3′	6 5/8″	3.0	2 3/4″ × 4 1/8″
	2.5′	6 1/4″	2.9	2 5/8″ × 4″

The field size is calculated for a usefull image area of 23×35 mm

Lenshood

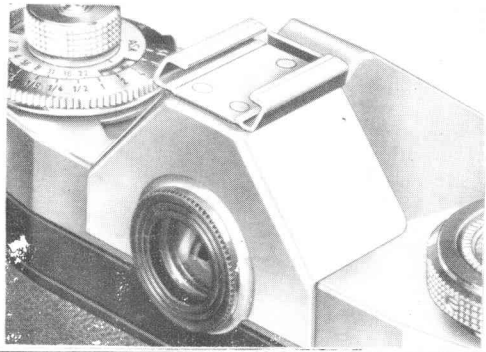
This prevents flares and fog in against-the-light shots. In bad weather it also protects the lens against rain and snow. The Zeiss Ikon lenshood can also be mounted on top of filters or Proxar lenses. For the Tessar f/8, 50 mm, use a lenshood with slip-on mount, ⌀ A 28.5 mm; for the Pro-Tessar f/4, 85 mm, use the screw-in type, ⌀ S 60 mm. No lenshood is required with the wide-angle Pro-Tessar f/4, 35 mm.

A smart leather case is available in which to carry your lenshood. There is also a combination leather case for the ⌀ 28.5 mm lenshood and three ⌀ 27 mm colour filters.

Accessory Shoe

An accessory shoe can be fixed to the Contaflex IV for mounting various accessories on the camera. Unscrew the black mount on the viewfinder eyepiece (26), place the accessory shoe over the eyepiece opening and screw the black mount back again to hold the shoe in place (Fig. 30).

Fig. 30



Care of the Contaflex

From time to time, the film track, the film chambers and the back of the Contaflex should be carefully cleaned with a soft brush. **Do not force up the capping plate, as this might damage the mechanism.** Gently wipe the lens with a soft, well-washed piece of linen (but not leather!), after removing any dust with a soft brush. The lens should only be cleaned when really necessary. Polish the chromium plated external fittings occasionally with a soft linen rag. Carefully brush the exposure meter window to remove any dust or grit.

Serial Numbers

There is a serial number on the back of every Contaflex camera, and also on the mount of the standard Zeiss Tessar lens. You are advised to make a careful note of both these numbers, as they may be of great help in establishing ownership in cases of loss or theft.

Further technical developments may involve slight changes in the design and construction of the camera as compared with these instructions.

ZEISS IKON

Cable Release

At slow shutter speeds and for time exposures a cable release is advisable (see Fig. 12 on page 24). This screws into the threaded socket in the release knob (3). The Zeiss Ikon cable release is fitted with a lock to keep the shutter open for long time exposures with the shutter set to "B".

Copying and Photomicrography

A special tripod head is available for using the Contaflex IV with either the Table Copying Unit or the Contax copying outfits. Two extension tubes are required to connect the camera to a microscope. To make focusing easier, a right-angle viewing telescope can be screwed over the viewfinder eyepiece.

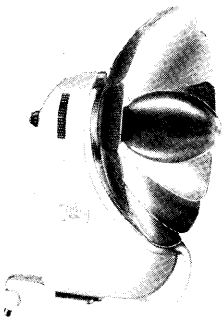


Fig. 31

Using Flash

The Zeiss Ikon capacitor flashguns, Folding Ikoblitz (Fig. 31) and Ikoblitz "O", can both be attached to the accessory shoe of the Contaflex IV. Both flashguns are remarkably effective in use. The reflector of the Folding Ikoblitz is collapsible when not in use; the entire outfit is then no larger than a normal soap box.

Controls of the Contaflex IV

14 Flash contact

15 Lock for flash synchro-lever

16 Lock pawl for changing lens units

17 Exposure value control knob

18 Aperture and shutter speed setting ring

19 Exposure value scale

20 Shutter speed scale

21 Aperture scale

22 Depth-of-field scale

23 Reversing button for rewinding

24 Locking keys for camera back

25 Tripod bush

26 Viewfinder eyepiece

The numbers refer partly to the illustration inside the front cover.