



This manual is for reference and historical purposes, all rights reserved.

This page is copyright© by M. Butkus, NJ.

This page may not be sold or distributed without the expressed permission of the producer

I have no connection with any camera company

On-line camera manual library

This is the full text and images from the manual. This may take 3 full minutes for the PDF file to download.

If you find this manual useful, how about a donation of \$3 to: M. Butkus, 29 Lake Ave., High Bridge, NJ 08829-1701 and send your e-mail address so I can thank you. Most other places would charge you \$7.50 for a electronic copy or \$18.00 for a hard to read Xerox copy.

This will allow me to continue to buy new manuals and pay their shipping costs.

It'll make you feel better, won't it?

**If you use Pay Pal or wish to use your credit card,
click on the secure site on my main page.**

Contaflex

rapid



Instruction Book

ZEISS
IKON

The

Contaflex

rapid

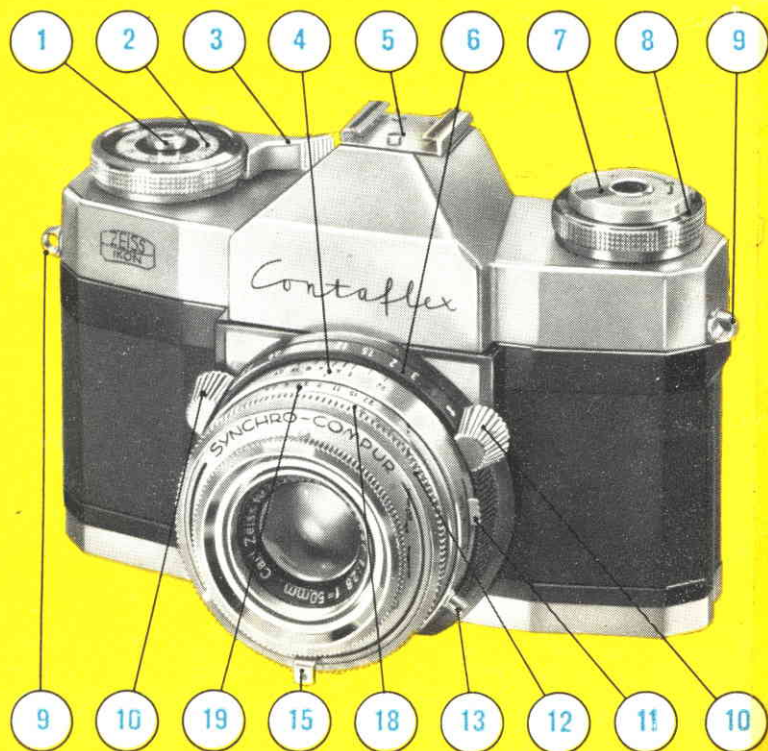
made by ZEISS IKON AG., Stuttgart, is a single-lens 24x36 mm miniature reflex camera. Based on years of experience in miniature camera design, it is an instrument which provides discriminating amateurs, professional photographers, scientists and technologists with the means of solving all their photographic problems. It would be impossible for us to list all its possible uses in this small booklet.

With these instructions we aim to give you a survey of the features of the CONTAFLEX rapid, its optical and mechanical equipment and to explain its operation so as to make you familiar with your CONTAFLEX by the shortest route possible. Apart from the usual type of pictures, the CONTAFLEX with its accessories enables you to undertake highly specialised branches of photographic work.

Controls and components of the CONTAFLEX rapid

- | | |
|---|---|
| 1 Release knob | 11 Lever for flash synchronization and delayed action |
| 2 Frame counter disc | 12 Setting ring for aperture and shutter speed |
| 3 Rapid wind lever | 13 Flash contact |
| 4 Setting mark for distance, aperture and shutter speed | 14 Lock for flash-synchronization lever |
| 5 Accessory shoe | 15 Locking pawl for front lens element |
| 6 Distance scale | 16 Exposure value setting knob |
| 7 Rewind knob with crank | 17 Exposure value scale |
| 8 Film type indicator | 18 Shutter speed scale |
| 9 Eyelets for carrying strap | 19 Aperture scale |
| 10 Setting knobs for focusing | |

The figures refer partly to the illustration on the inside back cover.



On pages 30–35 you will find comprehensive details of the CONTAFLEX-System.

However, before you load your camera to take your first pictures, we would strongly advise you to practise the necessary operations without a film, to help you gain the skill necessary for success.

Now, please unfold the inner cover page of this booklet for further reference to the position and operation of the various controls described in the following sections. If you are still in doubt and want further advice – perhaps with regard to some specialised tasks or accessories – please contact your dealer for free advice.



The picture on page 2 was taken with the CONTAFLEX; exposure $\frac{1}{125}$ sec. at f/8 on 17° DIN film.

The technical data of the CONTAFLEX rapid

Type of camera: Single-lens miniature reflex camera.

Format: 24 x 36 mm cartridges or cassettes for 20 and 36 exposures can be used.

Film advance: Rapid wind lever opens the diaphragm, tensions the shutter, advances the film, operates the frame counter and opens the shutter for viewing the image. Double exposures and blanks are excluded.

Shutter: Synchro-Compur with exposure values, dust excluded when changing lenses. Shutter speeds "B", 1-1/500 sec. "X" and "M" fully-synchronized flash contact. Built-in delayed action device running for 8 seconds. Pre-set spring diaphragm.

Lens: ZEISS TESSAR f/2.8, 50 mm. Front element interchangeable for:
PRO-TESSAR f/4.85 mm
PRO-TESSAR f/4.35 mm
PRO-TESSAR M 1:1

ZEISS Monocular attachment
8x30 B (equivalent to f/14,
400 mm tele-lens)

STERITAR B, stereo-attachment
for distances from infinity to
8 feet.

CLOSE-UP STERITAR-B for dis-
tances from 8 feet to 26 in.
PROXAR supplementary lenses
for close-ups down to 3½ in.

Rangefinder: Two different indicators:
split-image rangefinder and
fine screen ring.

Viewfinder: Reflected image through the
taking lens completely free
from parallax no matter
which lens is used. Upright
and laterally correct image
of almost natural size by
means of a mirror and a
penta-prism. Fresnel lens
makes the image bright and
sharp right up to the edges.

General features: Frame counter – film type
and speed indicator – acces-
sory shoe – semi-automatic
film unlocking for rewinding
– rewind knob with counter-
sunk crank – tripod bush for
1/4" thread.

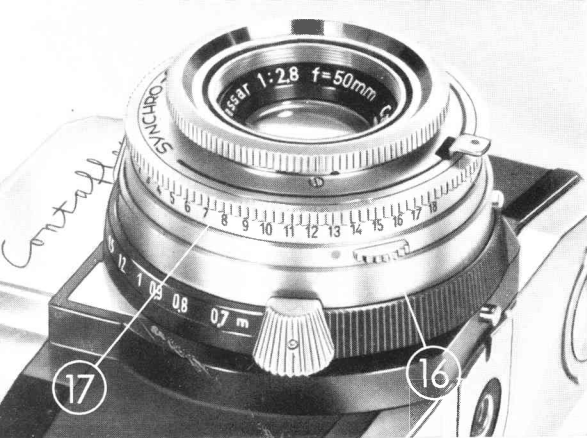


Fig. 1

Operation

Setting the Exposure Values

By pressing knob (16) towards the body of the camera, the adjacent red dot should be moved until it coincides with the required value on the red exposure value scale (17); intermediate or half values can be set (fig. 1). As the ring with the red dot can only be moved to a limited degree, it will sometimes be necessary to move the aperture and shutter speed setting ring (12) as well, in order to set the exposure value required.

The effect of the exposure depends on the size of the aperture and the length of the exposure time. One exposure value embraces all "pairings" of apertures and shutter speeds which give the same

the scale (18) indicate fractions of a second $60 = 1/60$ th second etc.). At the green "B" setting the shutter remains open as long as the release knob (1) remains depressed. The green figures indicate whole seconds; these cannot be set to the setting mark. Their significance will be explained later.

Aperture

The aperture setting is governed by the depth-of-field required (see page 14). The smaller the aperture figure the larger is the lens opening, and also the smaller is the depth-of-field. The aperture is set with the same setting ring as the shutter speed. The desired aperture value on scale (19) must be set to the setting mark (4).

After setting the exposure value it only remains to select a combination of aperture and shutter speed, any one of which will give the same overall exposure. The setting ring (12) can only be turned sufficiently to allow the setting mark (4) to indicate the final value of either the aperture or shutter speed scales. The final value at the right-hand end of the speed scale is "B".

The exposure value shutter sets the shutter speeds from $1/500$ th to 1 second automatically. Longer exposure times must be obtained by setting the ring to "B" and counting in seconds. Such time exposures should be made from a tripod with a cable release. "B" stands for an exposure of

2 seconds; if it is desired to use longer exposure times (green figures) the exposure required must be set to "B". The "B" setting and the appropriate aperture setting should then be set to the setting mark (4) and the appropriate time exposure made. The exposure value must be re-set when it is desired to make instantaneous automatic exposures once again.

The correct exposure value

- 11 can be found from an exposure table, or, more accurately, measured with the ZEISS IKON IKOPHOT photo-electric exposure meter (Fig. 3). The use of an exposure meter is especially important with colour film, since the exposure for colour materials must be very accurate. The exposure value depends on the speed of the film, the prevailing light and, when using colour filters, on the appropriate filter factor (see page 35).

A rule of thumb

Outdoor pictures by bright sunlight:

40 ASA (17° DIN) film, Exposure Value 13.

Outdoor pictures in bright, cloudy weather:

40 ASA (17° DIN) film, Exposure Value 11.

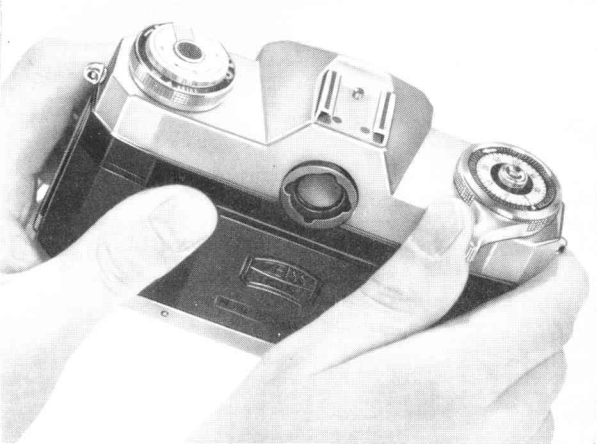


Fig. 3

Tensioning the shutter

The Synchro-Compur shutter is tensioned by swinging round the rapid wind lever (3) with the right thumb until it butts hard against the stop (fig.3). In this way the film is advanced by one frame and the lens diaphragm opened fully for sighting. The coupling of these operations excludes blanks and double exposures. Setting the shutter may take place either before or after the film is transported. The shutter may remain tensioned for a long time without suffering any damage.

One of the advantages of the rapid film wind lies in the fact that the camera need not be removed from the eye for shutter tensioning. The lever must always pressed home completely since the shutter cannot be released if the lever has not

completed its full turn. In this case, additional pressure on the lever should be applied, and no exposure will be lost. The rapid wind lever (3) automatically springs back into its initial position.

Focusing

The CONTAFLEX rapid is equipped with two range-finder systems: the split-image rangefinder and the fine screen focusing ring. When sighting through the finder (23) you will see in the centre of the image field a clear circular area enclosed within a fine-screen ring and divided into halves by a horizontal line (illustration on the left). The subject distance can now be ascertained and focused in two different ways:

1. Focus on a vertical line of the subject within the clear circle (the split-image rangefinder). Usually, the image in the upper half-circle is displaced in relation to that of the lower half-circle. Adjust the distance setting by turning the focusing knobs (10): the two lines will move until they form one continuous line, at which point the lens is focused at the correct distance. When horizontal lines predominate in the subject, the CONTAFLEX rapid should be held in an upright position for focusing.
2. If the subject has no distinct lines at all, observe its image in the fine-screen ring encircling the split-image finder. Turn the focusing

Fig. 4

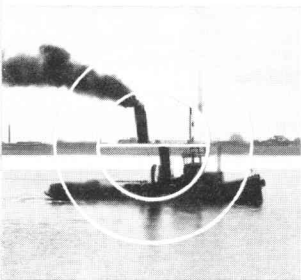
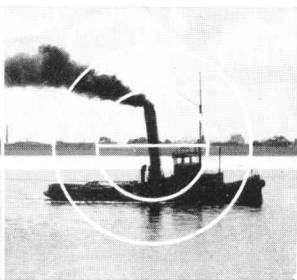


Fig. 5



knobs (10) to and fro until the image appears perfectly sharp within this fine-screen ring.

By means of either of these two methods, the lens is focused on the correct distance which can now be read off the scale (6).

14

Depth-of-field scale

The lens does not only define sharply those objects which are at the exact focusing distance but also those lying either in front or behind it. This zone of sharp definition (depth of field) is comparatively narrow at full aperture ($f/2.8$); it becomes greater the more the lens is stopped down.

The depth-of-field scale, which is next to the distance scale (6), shows the range of the depth of field at various apertures and distances. Engraved f /numbers can be found to the left and right

of the distance setting mark (4). The distance figures on the distance setting scale (6) opposite the chosen f/numbers represent the far and near limit of the zone of sharp definition (depth of field).

For example, when focusing on a distance of 8 ft. (Fig. 6) with the aperture at f/8, you will see that the left-hand figure 8 is about 13 ft. and the right-hand figure 8 is about 6½ ft. This means that when the camera is focused on 8 ft. at f/8, everything between 6½ ft. and 13 ft. will be sharp. Exact values can be found in the table on page 41. If a definite depth-of-field zone is required, the nearest and the farthest points of the zone to be recorded sharply should be measured with the rangefinder, after which the appropriate stop should be determined with either the depth-of-field scale or the table. Do not stop down more than actually required for a certain depth of field, because you may otherwise need long exposure times and increase the risk of camera shake.

Fig. 6





Fig. 7

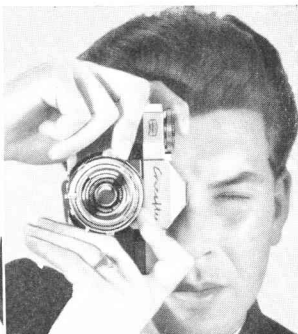
Taking pictures

Holding the camera

The CONTAFLEX rapid should rest on both palms, firmly encircled by your fingers (Fig. 7). The thumbs are pressed against the camera back and the middle fingers should rest on the focusing knobs (10). Use the index finger of the right hand to operate the shutter release (1). Press the elbows lightly against your body (Fig. 8). It is quite immaterial whether you use the left or the right eye for sight-

16

Figs. 8, 9



ing through the finder. This is the normal position for taking horizontal photographs.

For upright pictures, turn the CONTAFLEX rapid through 90 degrees so that the right hand grips the camera from above, and press it lightly against the forehead. The middle finger should again rest on the focusing knob (10), the index finger operates the shutter release knob (1). The left hand should support the camera from below. You may use either the index or middle finger of your left hand to operate the other focusing knob (10, Fig. 9). When taking upright pictures, the left hand can grip the camera from above and the shutter may be released with the right thumb after the distance had been set.

17

Releasing the shutter

The shutter is released by gently depressing the shutter release knob (1) with either the tip of the index finger (Fig. 10), or the first joint of this finger (Fig. 11). This method of releasing the shutter is the best for avoiding camera shake during ex-

Figs.10,11



posure. If the shutter release cannot be operated, it is most likely that the rapid wind lever has not been fully wound.

The viewfinder

The finder image only becomes visible after the film has been advanced by means of the rapid wind lever (3), which also tensions the shutter. This operation simultaneously flips down the mirror inside the camera body. As soon as the image can be seen in the finder, the camera is ready for action.

The lens diaphragm remains wide open to facilitate focusing and viewing. In this way, a very bright image is obtained and focusing is made extremely easy. On pressing the release knob, the diaphragm springs back to its pre-selected value just before exposure takes place.

The finder image is completely free from parallax and always shows the exact field of view covered, even when using PRO-TESSAR lenses for telephoto or wide-angle pictures, the PRO-TESSAR M 1:1, the ZEISS monocular attachment 8x30 B or the supplementary lenses for close-up work. Since the image in the finder is upright and the right way round, it is very easy to follow the movement of the subject with the camera.

The black ring on the eyepiece mount can be used for inserting correction lenses for spectacle wearers. When ordering this aid for defective eyesight,

please quote your optician's prescription for distance glasses. Moreover, the angle finder attachment for making unobserved shots, can be fitted to the eyepiece directly. And, by the way, almost all spectacle wearers can view the entire image field without difficulties.

Snapshot setting

So as to be ready for rapid action, we advise you first to set the required exposure value and then set the aperture to $f/8$ and the distance to 20 ft. Both these values are marked in red figures. As a result, everything between 10 ft. and ∞ will then be recorded sharply.

- 19 Another useful way of dealing with moving subjects is as follows: besides setting both the aperture and shutter speed, focus the lens at the most

Fig. 12



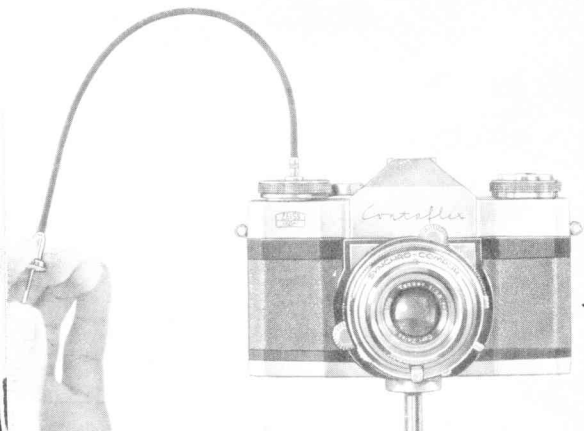
favourable distance and approach the subject with the camera at eye level until the split-image finder lines coincide or the image is sharply defined in the fine screen ring. As soon as definition and framing are satisfactory, release the shutter.

Tripod exposures

The CONTAFLEX rapid can be mounted on a tripod by means of its 1/4 in. English standard bush (Fig. 13). A ball and socket head must be used for taking upright photographs. To avoid camera shake, use a cable release screwed into the thread of the release knob (1). Exposures requiring speeds slower than 1/30 second or time exposures should always be made from a tripod or some similar support. A ZEISS IKON cable release with locking screw is recommended for time exposures.

20

Fig. 13



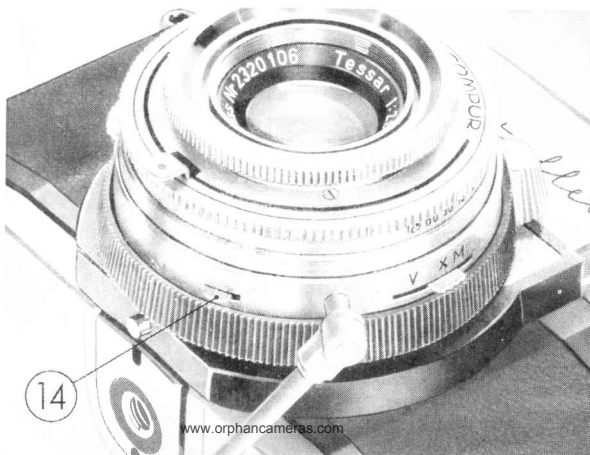
Flash and delayed action exposures

The fully-synchronized Synchro-Compur shutter can be used with any type of flash equipment. It is also provided with a built-in delayed-action release (selftimer). The synchro-lever (11) can be set to any of three different positions; whenever you want to change its position, make sure to depress the lock (14, Fig. 14), which is there to prevent accidental exposures.

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 with the "X" setting.

- 21 **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 for the various flashbulbs and flash capsules will be

Fig. 14



Flashbulb	Synchro-Lever set to	
	X or V	M
Osram		
XM 1, XM 5, SO, SO blue	1— $\frac{1}{30}$	$\frac{1}{60}$ — $\frac{1}{500}$
XM 1 B, XM 5 B	1— $\frac{1}{30}$	$\frac{1}{60}$ — $\frac{1}{125}$
Philips		
PF 1, PF 5, PF 60	1— $\frac{1}{30}$	$\frac{1}{60}$ — $\frac{1}{500}$
F 1/blue, PF 5/blue		
PF 60/blue	1— $\frac{1}{30}$	$\frac{1}{60}$ — $\frac{1}{125}$
PF 100, PF 100/blue	1— $\frac{1}{15}$	$\frac{1}{30}$ — $\frac{1}{60}$
General Electric and Westinghouse		
5, 8, 11, 22, M 5	1— $\frac{1}{30}$	$\frac{1}{60}$ — $\frac{1}{500}$
M 5 B	1— $\frac{1}{30}$	$\frac{1}{60}$ — $\frac{1}{125}$
M 2, M 2 B, M 25 B	1— $\frac{1}{60}$	—
SM	1— $\frac{1}{125}$	—
50	1— $\frac{1}{15}$	$\frac{1}{30}$
Sylvania		
No 0, No 2, Bantam 8,	1— $\frac{1}{30}$	$\frac{1}{60}$ — $\frac{1}{500}$
Press 25, 40, M 5	1— $\frac{1}{30}$	$\frac{1}{60}$ — $\frac{1}{125}$
M 5 B	1— $\frac{1}{60}$	—
M 2, M 2 B, M 25, M 25 B,	1— $\frac{1}{60}$	—
SF	1— $\frac{1}{125}$	—
3	1— $\frac{1}{15}$	$\frac{1}{30}$
Electronic flash	1— $\frac{1}{500}$	—

found in the maker's instructions and also in our table.

At the "V" setting the delayed-action release (or selftimer) is brought into action. When the release knob (1) is depressed, a retarding mechanism is set in motion which opens the shutter at about 8 seconds. Time exposures ("B" setting) cannot be made with the selftimer. If flash lamps are connected to the shutter, set to "V", the delayed-

action mechanism will fire the flash as with "X" setting. The synchro-lever (11) can be set to "V" only when the shutter is tensioned and after the lock (14) has been depressed. After exposure, the lever returns automatically to "X" and must, if necessary, be re-set for each consecutive delayed-action exposure.

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

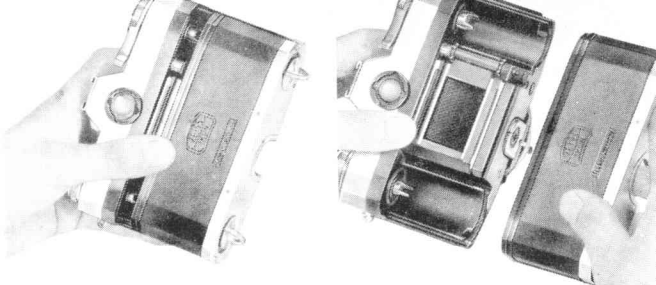
Loading and Unloading

23 Opening the camera

Hold the CONTAFLEX rapid in your left hand with the lens pointing downwards as seen in Fig.15. Use your right hand to lift up the locking keys (20,



Fig. 15



Figs.16,17

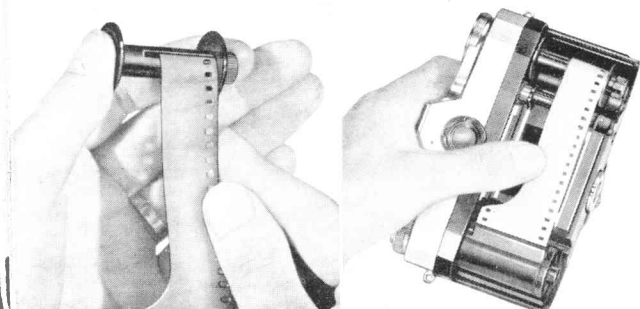
22) at the base of the CONTAFLEX and turn them either to the right or left. First slide the back of the camera along in its grooves, then lift it off (Fig. 16 and 17).

Loading

The beginning of the film should be inserted in the larger slot of the take-up spool and hooked to the small lug by a perforation hole (Fig. 18). The film will then be secured safely. When using bulk film, the beginning of the film must be cut obliquely (Fig. 25). When doing this, it is of no consequence whether you hold the cassette in your hand or place it into the camera. What matters, however, is that the cassette or cartridge as well as the

24

Figs.18,19



take-up spool is correctly inserted into the respective spool chamber, so that the prongs engage the cores of the spools (Fig. 19).

Now wind the film on to the take-up spool until the transport sprocket engages the perforation on both sides of the film (Fig. 20). Whilst holding the film with the left thumb, so that the teeth remain engaged with the perforations, replace the camera back in its grooves (Fig. 21) and slide it up to close the camera completely. The locking keys (20, 22) in the base of the camera must be turned against each other and then folded flat. The keys can only be folded flat when the back is properly in position.

25 Ready for action

In order to transport unexposed film on to the film gate, the shutter of the CONTAFLEX rapid must be tensioned and released twice in succession. As the film is wound on, the rewinding knob (7) should rotate freely in the opposite direction to the arrow; this indicates that the film is being advanced properly. When using short lengths of bulk

Figs. 20, 21



film with less than 36 exposures, the film may partially unwind inside the cassette or cartridge, in which case the rewind knob will not rotate for the first few frames. If this happens, the rewind knob must be turned in the direction of the arrow until a distinct resistance is felt, which shows that the film is now wound tightly around the core and the film transport can now be controlled. In the same way, it will be possible to check whether there is any film in the camera at all.

When the CONTAFLEX rapid is correctly loaded, the frame counter disc (2) should be turned in the direction of the arrow to "0" by its milled rim. As soon as you have tensioned the shutter, the frame counter will automatically show the "1" for the first exposure.

26

Fig. 22

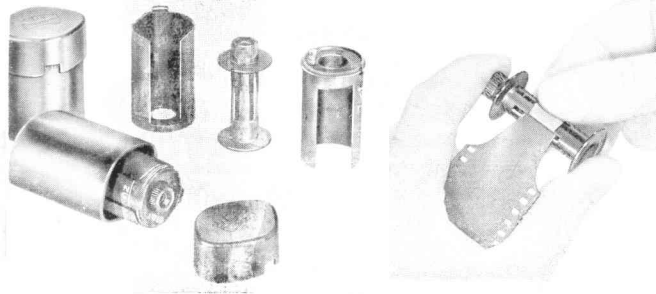


It is also advisable to set both film type and speed on the film type indicator (8); by moving the set-mark on the small knob against the speed figure of the film in use (Fig.22).

Cassettes

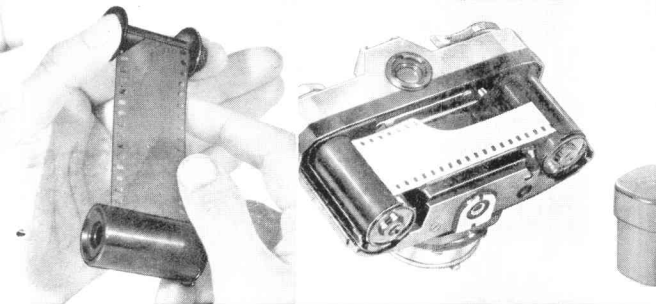
27 The CONTAFLEX rapid will take the same cassettes as used in the Contax. You can work either from cassette to cassette or from cartridge to cassette; film types can be interchanged at any time in this way, and after any number of exposures. For this purpose, you should further expose two blanks and only then open the camera. When unlocking the back, the cassettes are automatically closed light-tight. By loading the camera with a film of different type and feeding it into a spare cassette, it is again possible to change the film type at any desired time.

Load the cassette with daylight or darkroom refills or bulk film. The cassette consists of two shells and a centre spool. To open it, press down the locking button, turn the inner and outer shell in opposite directions until their slots coincide when you can pull it apart (Fig.23). Before loading a cassette with bulk film, you must decide whether you wish to rewind it or feed it into another cassette, the film need only be hooked to the spool of the feed cassette (Fig.18). When re-winding, the end of the film must be properly secured in the spool (Fig.24) by threading its



Figs. 23, 24

shaped end into the small slot of the spool so that it protrudes through the larger slot and then secured by sticking its end again into the small slot. Hold the film in this position with your thumb and start winding the film while pulling it tight. 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. Now turn the inner and outer shell until they are tightly locked and the word "zu" becomes visible. When inserting the cassettes into either the feed or take-up chambers of the CONTAFLEX rapid, make sure that the locating pegs of the cassettes engage in the corresponding grooves in the camera body (Fig. 26). Turning the locking keys (20, 22) on the back of the camera automatically opens or closes the cassettes. Darkroom refills or bulk film should, of course, only be loaded into cassettes in a darkroom.



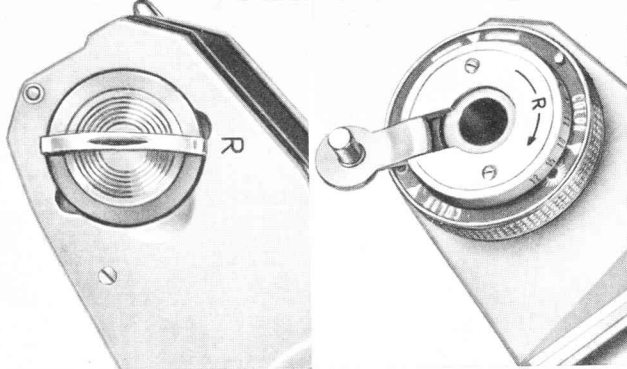
Figs. 25, 26

29

Every cassette is supplied in a special container, the lid of which has a small window. This lid can be fitted in two positions: when storing an exposed film, fit the lid so that the marking "Exp" shows in the window.

Unloading

Exposed films in standard commercial cartridges have to be rewound into their cartridges after exposure. For this purpose one of the locking keys on the camera back (marked "R") must be lifted and turned so that its bar points to the "R" (Fig. 27). This operation frees the transport mechanism inside the camera. Fold out the countersunk crank (Fig. 28) from the rewind knob (7) and turn it in the direction of the arrow until the film is completely rewound into the feed cartridge. The end of this operation can be judged by the resistance felt when the film finally leaves the take-up spool. After removing the back, the



Figs. 27, 28

cartridge can be removed. Dust or particles of film inside the camera should be removed at once with a soft brush.

30

The CONTAFLEX SYSTEM

Exchanging the converter lenses

Tele, wide-angle and stereo-pictures as well as 1:1 sized close-ups can be taken with the CONTAFLEX rapid when the front element of the standard lens is exchanged for a converter lens. To remove the front element, hold the CONTAFLEX in your left hand (fig. 29) and press the lock pawl (15) in the direction of the lens with your thumb. The milled front ring of the standard lens is then turned with the right hand to the left until



Fig. 29

31

it comes to a stop after a slight resistance has been overcome. Then lift the front element upwards from its bayonet mount.

When re-inserting, the red dot on the lens unit must be opposite the red dot of the lock pawl. The lens unit is then pressed home with a right turn until an audible click indicates the correct position. All lens units of the CONTAFLEX rapid – with the exception of the ZEISS Monocular Attachment – are inserted in this way:

When inserting: red dot to red dot – turn right.
When removing: press lock pawl (15) – turn to left and lift out.

In order to safeguard the highly vulnerable glass surfaces, refrain from touching them!

The following converter lenses are available for the CONTAFLEX rapid:

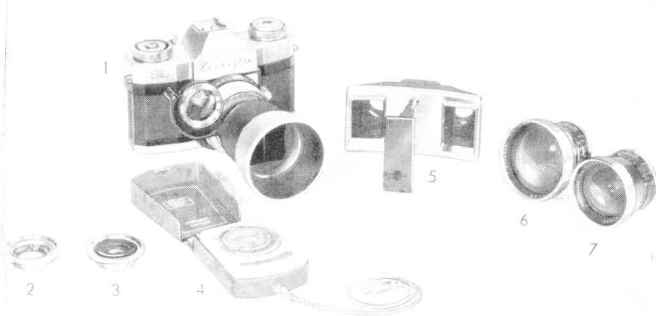


Fig. 30 1. CONTAFLEX rapid with close-up STERITAR-B (with Proxar $f = 0.5$ m in the swung-out filter trap)
 2. Front element of TESSAR $f/2.8$, 50 mm, which is part of the basic camera equipment.
 3. PRO-TESSAR M 1:1
 4. IKOPHOT
 5. STERITAR-B with separator
 6. PRO-TESSAR $f/4$, 85 mm
 7. PRO-TESSAR $f/4$, 35 mm

Pro-Tessar $f/4$, 35 mm (angle of view 62°)

This wide-angle lens covers a much wider field of view and is an invaluable aid for interior and architectural shots. Generally, the red dot setting (snapshots) benefits from the considerably deeper zone of sharp definition which results from the short focal length of this lens.

Pro-Tessar $f/4$, 85 mm for tele-shots (angle of view 28°)

This lens is particularly useful for portraiture and landscape photography, as well as for press photography of such events as sports, games,

etc., which normally have to be watched from a distance. The telescopic effect of the tele-converter results in a larger image scale.

Pro-Tessar M 1:1

This is a three-component front element, which, when inserted into the camera, will make a 6-element lens focused to a 1:1 image scale. It is primarily intended for making either transparencies from negatives or negatives from transparencies when the natural 1:1 size is required.

Steritar B for stereo photography

33 This part of the ZEISS IKON Stereo System covering the range from ∞ to 8 ft. opens up a highly interesting and specialised field of CONTAFLEX photography. The two half-images, 16x23 mm in size, lie side-by-side within the normal image field. Without having to cut them apart, the twin-pictures are bound like normal slides merely by using the ZEISS IKON stereo masks. They can be viewed immediately in the ZEISS IKON O-stereo viewer or projected with the ZEISS IKON stereo projectors.

Close-up Steritar B

A stereo attachment like the STERITAR B, but designed for the distance range from 8 ft. to 27 ins. Using ZEISS PROXARS $f = 1$ m, $f = 0.5$ m and $f = 0.3$ m close-ups can be taken from as close a distance as 11 in. The ZEISS PROXAR $f = 0.2$ m

can also be used, but in this case the so-called "frame condition" can no longer be maintained, that is to say, very close objects or parts of them will protrude from the framing. If care is taken to keep such objects in the centre of the picture, well away from the edges, this effect will not be disturbing to the viewer. The great depth of field, which is so important in close-ups, requires the lens to be stopped down to at least $f/8$. A table listing the values of the PROXAR lenses in conjunction with the close-up STERITAR-B can be found on page 44. Stereo pictures should always be focused on the object nearest to the camera. The close-up STERITAR-B should always be used with a lens hood.

34

The Zeiss Monocular Attachment 8 x 30 B

is a complete prism-monocular and can be used as a telescope. However, it can also be attached to the CONTAFLEX rapid (after removing the eyecup), making it possible to take pictures with an outsize tele-lens $f/14$, 400 mm. The speed is determined by the prism monocular. Of the stops of the camera, only the last ($f/16$ and $f/22$) can be used. The front element remains in the camera. Filters can be inserted between the front lens and the monocular attachment.

Supplementary lenses for close-ups (Zeiss Proxars)

The CONTAFLEX Tessar $f/2.8$, 50 mm lens can be

focused to any distance down to 27 in. For closer distances, coated supplementary lenses (PROXARS) can be slipped on to the lens (28.5 mm ϕ). The parallax-free viewfinder will still show the exact image field covered and the picture is focused in the same way as described before. 5 PROXAR lenses are available:

$f = 1$ m	(down to 20 in)
$f = 0.5$ m	(20 in to 12 in)
$f = 0.3$ m	(12 in to 8½ in)
$f = 0.2$ m	(8½ in to 6½ in)
$f = 0.1$ m	(6½ in to 3½ in)

See also the tables on pages 42 and 43. Distances should be measured from the front rim of the supplementary lens mount to the subject. To provide sufficient depth of field, the lens should be stopped down to at least $f/8$.

Colour filters

Black-and-white film converts natural colours into grey tones. Good brands of film give a conversion which almost corresponds to our visual impression; this can be improved or altered by using colour filters. ZEISS IKON supply precision filters with coated surfaces in the colours yellow, green, orange and red, besides a U.V. filter and the IKOLOR A, B, C and F filters for colour photography. The effect of colour filters on the image can be seen from the diagrams on page 36. The exposure must be increased by the filter factor. This can be allowed for when using either an

Without filter



The subject taken on black-and-white film without a filter

Yellow filter filter factor 2



The sky in our subject has become darker, the clouds are emphasized. This filter should almost always be used for open-air photography

Green filter filter factor 2



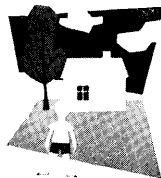
The green tree and the meadow are lighter, the red of the roof is darker, the clouds stand out boldly

Orange filter filter factor 5



The blue sky has become darker still, all reds are lighter, hair and skin tones also

Red filter filter factor 8



Dramatized effect, deep dark sky, menacing clouds, hair and skin tones getting paler. A good filter for distant views, since it eliminates haze

exposure table or by consulting an exposure meter; it is also possible to subtract the filter factor from the exposure value. This gives the following values:

Filter factor	1.5	2	3	4	6	8
Subtract from exposure value	-0.5	-1	-1.5	-2	-2.5	-3

The filters are screwed into the lens mount. Their diameters are as follows:

TESSAR f/2.8, 50 mm; PRO-TESSAR M 1 : 1; STERITAR B and Close-up STERITAR B : 27 mm.

PRO-TESSAR f/4, 35 mm: 49 mm.

PRO-TESSAR f/4, 85 mm: 60 mm.

In order to be able to use these two PRO-TESSARS with a filter, an intermediate ring is supplied with the PRO-TESSAR f/4, 35 mm permitting the use of 60 mm ϕ filters.

Contapol Polarizing Filter

The CONTAPOL Polarizing Filter, screwed into the f/2.8, 50 mm TESSAR lens mount, eliminates disturbing reflections from shiny, non-metal objects. By rotating the CONTAPOL its effect can be observed in the viewfinder. A 28.5 mm diameter lens hood or supplementary lens (or both together) can be used with the CONTAPOL. The CONTAPOL can also be used in bright sunshine for landscape photography and will eliminate the prevailing blue cast whilst darkening the colour of the sky at the same time. For further details see the instructions issued with the CONTAPOL.

Lens Hood

The use of a lens hood prevents flares and fog in against-the-light shots. It also protects the lens against rain and snow in bad weather. ZEISS IKON lens hoods can be mounted on top of filters and PROXAR lenses: For TESSAR f/2.8, 50 mm use a slip-on lens hood A 28.5 mm diameter; for PRO-TESSAR f/4.85 mm use a screw-on lens hood S 60 mm diameter. Wide-angle lenses should always be used **without** a lens hood. For both the TESSAR f/2.8, 50 mm and the PRO-TESSAR M 1:1 a flexible screw-in lens hood S 27 mm diameter is available which can remain on the lens even when the ever-ready case is closed. Also available is a practical leather case for carrying the lens hoods and a combination leather case for the A 28.5 mm lens hood and three 27 mm colour filters.

38

Defective Eyesight

Into the ring on the eyepiece (23), a special mount can be screwed to accept correction lenses to compensate for defects of vision, so that focusing and framing can be performed without the aid of glasses. When ordering correction glasses, please quote your optician's prescription for distance glasses.

Cable Release

It is advisable to use a cable release (fig. 13) for work at slow shutter speeds and for time ex-

posures. The cable release should be screwed into the threaded socket in the release knob (1). The ZEISS IKON cable release is fitted with a lock to keep the shutter open for long time exposures.

Copying and Photomicrography

The CONTAFLEX rapid can be fitted to either the table copying unit or the CONTAX copying outfits. Two extension tubes are required to connect the camera to a microscope. Focusing is made easier by the use of a right-angle finder attachment screwed into the viewfinder eyepiece.

Flashlight Pictures

39

The IKOBLITZ 4 capacitor flashgun is a handy unit made of almost unbreakable plastic material, which can be carried along fixed to the strap of the ever-ready case. A few operations only make it ready for immediate use. Lift its cover (which remains on the strap), slip it into the accessory shoe and open the reflector. After connecting the flashlead to the flash contact (13) in the camera shutter, the flashgun is ready for action.

Leather Cases

Camera Ever-ready Case:

To guard against external damage, the CONTAFLEX rapid should always be carried in its stylish ever-ready case. The camera is screwed to the case and need not be removed for taking exposures. Moreover, the CONTAFLEX rapid, with a

screwed-in filter or the flexible hood in position, are easily accommodated in this case, the lid of which will also hold two filters (ϕ S 27 mm), without their original containers.

Leather Cases for Converter Lenses

An attractive leather 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" for holding the removed front element of the lens, a PROXAR lens and the lens hood (ϕ A 28.5 mm). Pockets in the lid of the case will hold two filters (ϕ 60 mm). A case for the close-up STERITAR-B including its lens hood is also available.

To enable you to carry the CONTAFLEX rapid without its case, a carrying strap has been provided. This is fitted with safety hooks securely gripping the eyelets (9) on the camera. The safety catches on the two hooks prevent their unintentional opening.

By now, you should feel quite at home with your CONTAFLEX rapid. As far as possible, the designers of the ZEISS IKON AG have relieved you of technical and mechanical difficulties. Everything has been done to create a precision camera of the highest quality and you are provided with an outstanding apparatus for making outstanding pictures. We wish you great pleasure and success with your CONTAFLEX rapid.

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

Dis- tance	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"-∞	11'6 1/2"-∞	8'6"-∞
20'	15'4"-28'9"	14'-35'6"	12'6"-51'7"	10'83/4"-162'5"	9'2"-∞	7'4 1/2"-∞	5'113/4"-∞
10'	8'8 1/2"-11'9"	8'3"-12'8"	7'83/4"-14'3"	7'1/2"-17'5"	6'4 1/4"-24'3"	5'5 1/2"-71'4"	4'8"-∞
7'	6'4 1/4"-7'9 1/2"	6'1 1/2"-8'2 1/4"	5'10"-8'9 1/2"	5'5 1/4"-9'10 1/2"	5'1/4"-11'8"	4'5 1/2"-17'	3'11 1/4"-37'4"
5'	4'8"-5'4 1/2"	4'6 1/2"-5'63/4"	4'43/4"-5'93/4"	4'2"-6'3"	3'11 1/4"-6'11"	3'7"-8'5"	3'3"-11'5"
4'	3'9 1/2"-4'23/4"	3'8 1/2"-4'4"	3'7 1/4"-4'6"	3'5 1/2"-4'9"	3'3 1/2"-5'1 1/4"	3'3/4"-5'10"	2'93/4"-7'1"
3'	2'103/4"-3'1 1/2"	2'103/4"-3'2"	2'9 1/2"-3'3"	2'8 1/2"-3'4 1/2"	2'7 1/4"-3'6 1/2"	2'5 1/2"-3'10 1/2"	2'33/4"-4'4 1/4"
2.5'	2'5"-2'7"	2'43/4"-2'7 1/4"	2'4 1/4"-2'8"	2'3 1/2"-2'9"	2'23/4"-2'10 1/4"	2'1 1/2"-3'1 1/2"	2'1/2"-3'33/4"

The depth of field is measured from the film plane.

**Table for using ZEISS PROXAR supplementary lenses
with 50 mm. f/2.8 Tessar lens**

	Lens set to	Subject Distance	Re- duction 1:	Field size
PROXAR lens $f = 1 \text{ m}$	∞	3'3 $\frac{1}{2}$ "	19.0	1'5 $\frac{1}{4}$ " $\times$ 2'2 $\frac{1}{4}$ "
	20'	2'10"	16.2	1'2 $\frac{3}{4}$ " $\times$ 1'10 $\frac{1}{4}$ "
	10'	2'5 $\frac{3}{4}$ "	14.1	1'3 $\frac{1}{4}$ " $\times$ 1'7 $\frac{1}{2}$ "
	7'	2'2 $\frac{1}{2}$ "	12.7	1'1 $\frac{1}{2}$ " $\times$ 1'5 $\frac{1}{2}$ "
	5'	2'	11.4	10 $\frac{1}{4}$ " $\times$ 1'3 $\frac{1}{2}$ "
	4'	1'9"	9.9	9" $\times$ 1'3 $\frac{1}{4}$ "
	3'	1'6"	8.4	7 $\frac{1}{2}$ " $\times$ 1'1 $\frac{1}{2}$ "
	2.5'	1'4"	7.5	6 $\frac{3}{4}$ " $\times$ 10 $\frac{1}{4}$ "
PROXAR lens $f = 0.5 \text{ m}$	∞	1'8 $\frac{1}{4}$ "	9.8	8 $\frac{3}{4}$ " $\times$ 1'1 $\frac{1}{2}$ "
	20'	1'6 $\frac{5}{8}$ "	9.0	8 $\frac{1}{4}$ " $\times$ 1'1 $\frac{1}{2}$ "
	10'	1'5 $\frac{1}{4}$ "	8.2	7 $\frac{1}{2}$ " $\times$ 1'1 $\frac{1}{4}$ "
	7'	1'4 $\frac{1}{4}$ "	7.7	7" $\times$ 10 $\frac{1}{2}$ "
	5'	1'3"	7.3	6 $\frac{1}{2}$ " $\times$ 10"
	4'	1'2"	6.6	6" $\times$ 9"
	3'	1'5 $\frac{1}{8}$ "	5.8	5 $\frac{1}{4}$ " $\times$ 8"
	2.5'	1'1 $\frac{5}{8}$ "	5.4	4 $\frac{3}{4}$ " $\times$ 7 $\frac{1}{2}$ "
PROXAR lens $f = 0.3 \text{ m}$	∞	1'13 $\frac{3}{8}$ "	6.4	5 $\frac{3}{4}$ " $\times$ 8 $\frac{3}{4}$ "
	20'	1'5 $\frac{5}{8}$ "	6.0	5 $\frac{1}{2}$ " $\times$ 8 $\frac{1}{4}$ "
	10'	1'1 $\frac{1}{8}$ "	5.7	5 $\frac{1}{8}$ " $\times$ 7 $\frac{1}{8}$ "
	7'	1'1 $\frac{1}{2}$ "	5.4	4 $\frac{7}{8}$ " $\times$ 7 $\frac{1}{2}$ "
	5'	10 $\frac{7}{8}$ "	5.2	4 $\frac{3}{4}$ " $\times$ 7 $\frac{1}{8}$ "
	4'	10 $\frac{3}{8}$ "	4.8	4 $\frac{1}{4}$ " $\times$ 6 $\frac{5}{8}$ "
	3'	9 $\frac{5}{8}$ "	4.4	4" $\times$ 6"
	2.5'	9"	4.1	3 $\frac{3}{4}$ " $\times$ 5 $\frac{5}{8}$ "

	Lens set to	Subject Distance	Reduction 1 :	Field size
PROXAR lens $f = 0.2 \text{ m}$	∞	$8\frac{1}{8}"$	3.9	$3\frac{1}{2}" \times 5\frac{3}{8}"$
	20'	$7\frac{7}{8}"$	3.8	$3\frac{3}{8}" \times 5\frac{1}{4}"$
	10'	$7\frac{5}{8}"$	3.6	$3\frac{1}{4}" \times 5"$
	7'	$7\frac{1}{2}"$	3.5	$3\frac{1}{8}" \times 4\frac{7}{8}"$
	5'	$7\frac{1}{8}"$	3.4	$3" \times 4\frac{5}{8}"$
	4'	$6\frac{7}{8}"$	3.2	$2\frac{7}{8}" \times 4\frac{3}{8}"$
	3'	$6\frac{5}{8}"$	3.0	$2\frac{3}{4}" \times 4\frac{1}{8}"$
	2.5'	$6\frac{1}{4}"$	2.9	$2\frac{5}{8}" \times 4"$
PROXAR lens $f = 0.1 \text{ m}$	∞	$4\frac{1}{8}"$	2	$1\frac{3}{4}" \times 2\frac{3}{4}"$
	2.5'	$3\frac{1}{2}"$	1.6	$1\frac{1}{2}" \times 2\frac{1}{4}"$
	Depth-of-field based on a circle of confusion of $\frac{1}{500}$ -inch			
	Aperture		Depth-of-field in inches	
	$5, 6$		$\pm \frac{3}{64}"$	
	8		$\pm \frac{1}{16}"$	
	11		$\pm \frac{1}{8}"$	
	16		$\pm \frac{5}{64}"$	
	22		$\pm \frac{5}{32}"$	

The field size is calculated for a useful image area of $23 \times 35 \text{ mm}$.

The subject distances are measured from the front rim of the Proxar lens.



Table for using ZEISS PROXAR supplementary lenses with close-up Steritar-B

	Lens set to	Subject Distance	Reduction 1:	Field size*
PROXAR lens $f = 1 \text{ m}$	∞ 20' 10' 7' 5' 4' 3' 2.5'	$3'3\frac{1}{2}"$ $2'10"$ $2'5\frac{3}{4}"$ $2'2\frac{1}{2}"$ 2' 1'9" 1'6" 1'4"	19.0 16.2 14.1 12.7 11.4 9.9 8.4 7.5	$1'5" \times 1'1\frac{1}{4}"$ $1'2\frac{1}{2}" \times 10\frac{1}{4}"$ $1'1\frac{1}{2}" \times 8\frac{5}{8}"$ $11\frac{1}{4}" \times 7\frac{6}{8}"$ $10" \times 6\frac{3}{4}"$ $8\frac{3}{4}" \times 5\frac{7}{8}"$ $7\frac{1}{4}" \times 5"$ $6\frac{1}{2}" \times 4\frac{1}{2}"$
PROXAR lens $f = 0.5 \text{ m}$	∞ 20' 10' 7' 5' 4' 3' 2.5'	$1'8\frac{1}{4}"$ $1'6\frac{5}{8}"$ $1'5\frac{1}{4}"$ $1'4\frac{1}{4}"$ 1'3" 1'2" $1'5\frac{5}{8}"$ $11\frac{5}{8}"$	9.8 9.0 8.2 7.7 7.3 6.6 5.8 5.4	$8\frac{1}{2}" \times 5\frac{7}{8}"$ $8" \times 5\frac{1}{8}"$ $7\frac{1}{4}" \times 4\frac{3}{4}"$ $6\frac{3}{4}" \times 4\frac{3}{8}"$ $6\frac{1}{4}" \times 4\frac{3}{16}"$ $5\frac{3}{4}" \times 3\frac{15}{16}"$ $5" \times 3\frac{9}{16}"$ $4\frac{1}{2}" \times 3\frac{1}{8}"$
PROXAR lens $f = 0.3 \text{ m}$	∞ 20' 10' 7' 5' 4' 3' 2.5'	$1'13\frac{3}{8}"$ $1'5\frac{5}{8}"$ $1'1\frac{1}{8}"$ $11\frac{1}{2}"$ $10\frac{7}{8}"$ $10\frac{3}{8}"$ $9\frac{5}{8}"$ 9"	6.4 6.0 5.7 5.4 5.2 4.8 4.4 4.1	$5\frac{5}{8}" \times 4"$ $5\frac{3}{8}" \times 3\frac{3}{4}"$ $5" \times 3\frac{1}{2}"$ $4\frac{3}{4}" \times 3\frac{3}{8}"$ $4\frac{1}{2}" \times 3\frac{1}{4}"$ $4\frac{1}{8}" \times 3"$ $3\frac{7}{8}" \times 2\frac{3}{4}"$ $3\frac{5}{8}" \times 2\frac{1}{2}"$
PROXAR lens $f = 0.2 \text{ m}$	∞ 20' 10' 7' 5' 4' 3' 2.5'	$8\frac{1}{8}"$ $7\frac{7}{8}"$ $7\frac{5}{8}"$ $7\frac{1}{2}"$ $7\frac{1}{8}"$ $6\frac{7}{8}"$ $6\frac{5}{8}"$ $6\frac{1}{4}"$	3.9 3.8 3.6 3.5 3.4 3.2 3.0 2.9	$3\frac{3}{8}" \times 2\frac{1}{2}"$ $3\frac{1}{4}" \times 2\frac{5}{16}"$ $3\frac{1}{8}" \times 2\frac{3}{16}"$ $3" \times 2\frac{1}{8}"$ $2\frac{7}{8}" \times 2"$ $3\frac{3}{4}" \times 1\frac{15}{16}"$ $2\frac{5}{8}" \times 1\frac{13}{16}"$ $2\frac{1}{2}" \times 1\frac{3}{4}"$

* with reference to the near point plane

Care of the CONTAFLEX rapid

From time to time, the film track, the spool chambers and the inner side of the back of the CONTAFLEX rapid should be carefully cleaned with a soft brush.

Note! Do not damage the capping plate by undue force. Gently wipe the lens with a soft, well-washed piece of linen (not leather!), after having removed the dust with a soft brush. However, the lens should only be cleaned when absolutely necessary. Polish the external chromium-plated fittings also with a soft linen rag.

Serial Numbers

On both the back and the body as well as on the lens mount there is a serial number (a letter preceding the figures) engraved on every CONTAFLEX. You are advised to make a careful note of these numbers, as they may be of great help in establishing ownership in cases of loss or theft. You should also note the number on the lens in case you should lose the front component. When ordering replacement you must quote this number.

Subject to changes in the interest of technical progress.

Explanations to cross section

- a) Pentaprism
- b) Viewfinder eyepiece
- c) Fresnel field lens
- d) Film pressure plate
- e) Film
- f) Capping plate
- g) Mirror
- h) Iris diaphragm and shutter

Controls and components of the CONTAFLEX rapid

- 20 Camera back locking key and film rewind "unlocking catch
- 21 Tripod bush
- 22 Camera back locking key
- 23 Viewfinder eye-piece

