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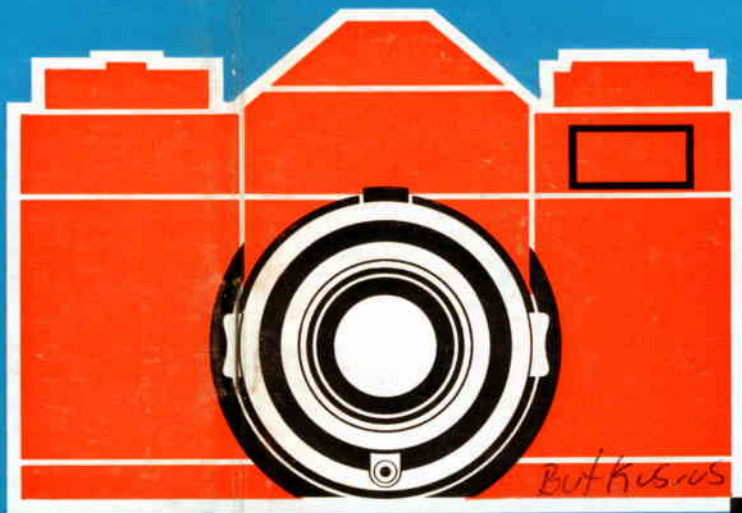
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Contaflex

prima

Zeiss Ikon AG. Stuttgart



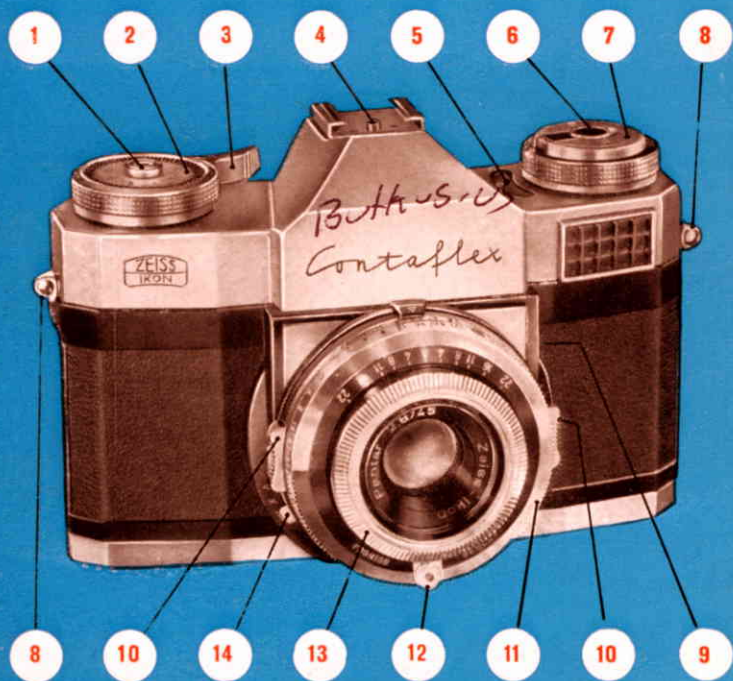
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GA. 10.1291 Printed in Germany, Author: Prof. Dr. J. Stüper 6 0861 3

2

Controls and components of the CONTAFLEX prima:

- | | |
|------------------------------|---|
| 1 Release knob | 9 Flash contact |
| 2 Frame counter | 10 Exposure setting disc |
| 3 Rapid wind lever | 11 Shutter speed/aperture rings |
| 4 Accessory shoe | 12 Locking pawl for front-lens element |
| 5 Exposure indicator | 13 Distance setting mark |
| 6 Rewind knob with crank | 14 Lever for X, M and V (selftimer) setting |
| 7 Film type indicator | |
| 8 Eyelets for carrying strap | |



The technical data of the CONTAFLEX prima

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. Double exposures and blanks are excluded.

Shutter: Prontor Reflex, dustproof when changing lenses. Shutter speeds "B", $1-\frac{1}{500}$ sec. Fully synchronised "X" and "M" contact. Built-in delayed action device (selftimer) running for 8 seconds. Pre-set spring diaphragm.

Lens: ZEISS IKON PANTAR f/2.8, 45 mm as standard lens. Front element of PANTAR interchangeable.
PANTAR f/4, 30 mm.
PANTAR f/4, 75 mm.
STERITAR D for stereo-pictures.

Exposure meter: Coupled to the shutter setting, indicator on the camera body. Compensated for temperature.

Rangefinder: Two different indicators in the viewfinder (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 finder-image of almost natural size by means of a mirror and a penta-prism. Fresnel lens makes the image particularly bright right up to the edges.

General Features: Frame counter - film type and speed indicator - filter corrector - accessory shoe - semi-automatic film unlocking for rewinding - rewind knob with countersunk crank.

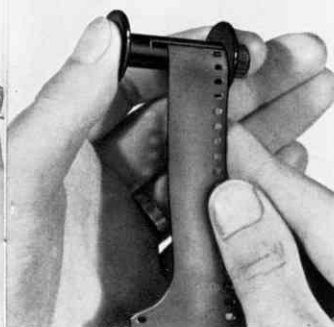


Fig. 1
Fig. 2
Fig. 3

Fig. 4
Fig. 5

Loading and unloading the camera

Opening

The CONTAFLEX prima should be held in the left hand, with the lens pointing downwards as shown in fig. 1. The locking keys (16 and 19) at the base of the camera should be folded outwards with the right hand and turned in the appropriate direction. Now the back is unlocked and can be removed (fig. 2).

Loading

To load the camera take a standard commercial cartridge of miniature film, for 20 or 36 exposures. First secure the beginning of the film in the larger slot of the take-up spool by hooking one perforation hole over the small lug, which will hold it in place. We leave it to you whether to hold the cartridge in your hand, as shown in fig. 3, or place it immediately in the camera. The cartridge and the take-up spool should then be inserted into the two film chambers so that the two prongs

for the feeding and the take-up mechanism engage the cores of the spools. Now wind the film on to the take-up spool (by rotating the latter manually with the right hand until the perforations of the film engage the teeth of the transport sprocket on both sides. Whilst holding the film in contact with the sprocket with the thumb of the left hand (fig. 4) so that the teeth remain engaged with the perforations, the camera back should be replaced by lowering it into the grooves of the camera from above (fig. 5). Then slide it back into the camera body. Turn the locking keys on the base in the opposite directions and fold them up. The keys can be fold only when the back is properly in position.

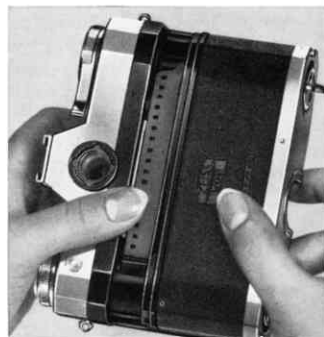
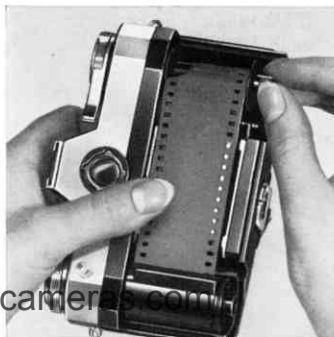


Fig. 6



Cassette

The CONTAFLEX prima can also be used with a cassette (fig. 6). The film can be wound from a commercial cartridge into a cassette, from a cassette into another cassette or from a cartridge or cassette on the normal take-up spool without any shell. When using cassettes the type of film can be changed at any time, even in broad daylight. This cannot be done, however, when you use one cassette (or cartridge) on the feeding side only and transport the exposed film to an open take-up spool. With two cassettes or one cassette (on the take-up side) and a cartridge (on the feeding side), you can open the back of the camera after any number of exposures on one type of film (say black-and-white film). To protect the last exposures, you should further expose two blanks and only then open the camera. When you turn the locking key to open the camera you also close the cassettes automatically. When you now load the camera with a colour film and wind it into a second cassette, you can also return the

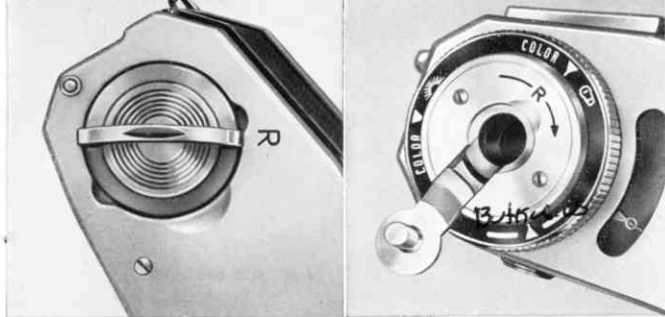


Fig. 7, 8

black-and-white film to the camera at any time and vice versa.

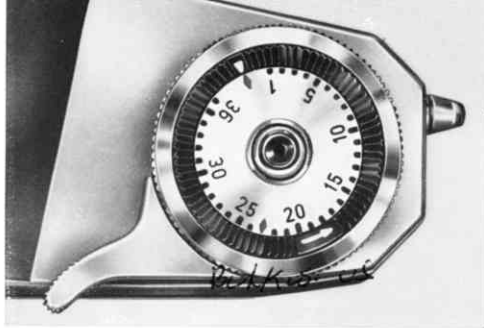
Unloading

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. 7). Fold out the countersunk crank (fig. 8) from the rewind knob 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 cartridge can be removed. Dust or particles of film inside the camera should be removed at once.

Ready for Action

After loading your CONTAFLEX prima is not quite ready for immediate action, since a few more operations are necessary.

Fig. 9



After loading the camera the film speed must be set on the automatic exposure control of the CONTAFLEX prima.

For this purpose the lever (18) is moved until the speed figure of the film in use is opposite the triangle setting mark (fig. 17). When using colour filters see page 21.

In order to check the number of frames available the CONTAFLEX prima has a frame counter. Turn the black ring of this frame counter in the direction of the arrow until the white mark is opposite one of the red marks on the counting disc. If you have a cartridge for 36 exposures in the camera the red mark between 1 and 36 must be chosen; with a 20 exposure cartridge set the white mark to the red mark on 23 (fig. 9). The rapid wind lever (3) should be swung around with your right thumb until it butts hard against the stop. Do this twice, but after each movement of the rapid wind lever release the shutter by depressing the release knob

(1) so as to wind the fogged leader film on to the take-up spool, away from the film gate.

As the film is advanced by operating the wind lever, the rewind knob (6) should rotate in the opposite direction. This indicates that the film is being advanced properly.

When using bulk film (see "Cassettes") or 20-exposure cartridges, the turns of the film may partially unwind; in this case the rewind knob will not rotate when the first frames are advanced. In this case unfold the small crank (counter-sunk into the rewind knob) and turn it in the direction of the arrow until a distinct resistance is felt (fig. 8). This is also a reliable indication whether there is any film at all in the camera. When the rapid wind lever is now operated once again the first film-frame will be ready for exposure. The frame counter will indicate the entire load, either 36 or 20 frames.

Focusing

When you sight your first subject through the viewfinder you will see in the centre of the finder image a circular area which is divided into two halves. The circular area is surrounded by a finely-ground ring. These two indicators, a split-image rangefinder and a finely-ground focusing ring, enable you to focus accurately and to have the correct distance setting under constant control.



Fig. 10

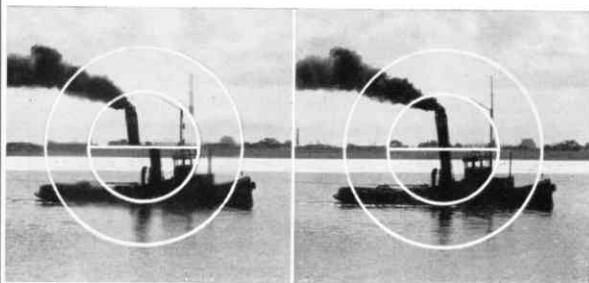


Fig. 11

Split-image rangefinder

In most cases focusing will be performed by using the split-image rangefinder. If you sight an object through the viewfinder and operate the focusing device (13, fig. 10), you will observe that the two images in the inner circle, separated from each other by a thin line, move in opposite directions (fig. 11). The distance is correctly set when the two partial images are exactly aligned and form one single unbroken image. It is advisable to look for a sharp perpendicular line within the subject, on which the correct alignment should be checked. When taking upright pictures a horizontal line should be chosen.

Ground-glass screen focusing

There are subjects which have no distinct vertical lines for your split-image rangefinder to work on. Then the finely-ground ring should be used for focusing in the same way as a normal ground-glass screen is used.

Both methods of focusing are equally good and which to choose depends solely on the nature of the subject.

The distance measured can be read off the distance setting scale (20) (fig. 12).





Fig. 12
Depth-of-field scale

Generally you will focus without even a glance at the distance scale. The automation of your CONTAFLEX prima makes it unnecessary to know the actual distance. There are cases, however, when a different method of distance setting should be chosen, particularly when the important details of the picture are staggered in depth. When looking at the scales (20) and (21) of your camera, you will see that there is a double-scale opposite the distance scale showing the range of

f /numbers to the left and the right of the distance setting mark. From this depth-of-field scale the stop required can be read off. 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, shows the range of the depth of field at various apertures and distances. At stop $f/8$ and the distance set to 7.5 ft the range of depth of field lies approximately between 5 and 13 ft; at $f/22$, however, the depth of field ranges from approximately 3 ft to ∞ . Exact values can be found in the table on page 29.

If a definite depth-of-field zone is required, the nearest and the furthest points of the zone to be recorded sharply should be measured with the rangefinder. Find both these distances on the distance setting scale and turn the setting ring (13) so that it is opposite equal stop-values on both sides. The distance is now set correctly for the appropriate stop, which latter must now be set on the scale (22).



Measuring the light

The light measurement should always be performed with the camera in the horizontal position; this applies also to upright pictures. Aim the camera at the subject and turn the exposure setting disc (10) so that the two pointers (5) of the exposure meter coincide. With the light measurement finished turn the ring (11) to set the most suitable shutter speed/aperture pairing and make the exposure.

Engraved on the diaphragm scale (22) are the aperture values from $f/2.8$ (largest aperture) to $f/22$ (smallest aperture). The black figures on the shutter speed scale (23) denote fractions of a second (e. g. $30 = \frac{1}{30}$ sec; $60 = \frac{1}{60}$ sec). The last figure of this scale is $1 = 1$ second. When set to the green "B" the shutter remains open as long as the release knob is depressed. The green figures are a calculating support and denote full seconds. If one of these values must be used together with a definite stop the exposure setting disc (10) must be re-set and the shutter speed setting turned to "B".

When the camera is not used for a longer period the shutter can be left tensioned without any risk of damage.

Snapshot setting

16 So as to be ready for rapid action, that is to say

"snapshots", the red-dot setting of the CONTAFLEX prima should be used. After the light measurement set the diaphragm to $f/8$ and the distance to 15 ft. For easier setting, both these figures are red. This combination results in everything between 8 ft. and ∞ being sharply recorded.

The CONTAFLEX System

Exchanging the converter lenses

Tele-, wide-angle and stereo-pictures can be taken with the CONTAFLEX prima 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. 13) and press the lock pawl (12) 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 it comes to a stop, after a slight



Fig. 13

resistance has been overcome. Then lift the front element upwards from its bayonet mount.

When inserting a converter lens, 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 prima are inserted in this way:

When inserting: red dot to red dot – turn right.

When removing: press lock pawl (12) – 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 prima:

PANTAR f/4, 30 mm, for wide-angle shots.

The wide-angle lens covers a much wider field of view and is an invaluable aid for interior and architectural pictures.

PANTAR f/4, 75 mm, for tele shots.

A telephoto lens which, acting like a telescope, gives a considerably larger image scale. Particularly useful for portraits and landscape photography.

STERITAR-D, for stereo-pictures; part of the ZEISS IKON stereo-system which opens up a new interesting field of photography for the CONTAFLEX prima. The two half-images, 16 x 23 mm in size, lie side by side within the normal image field of the CONTAFLEX. The twin-pictures are bound like normal slides without having to cut them apart, merely by using the ZEISS IKON stereo-masks. They can then be viewed immediately in a ZEISS IKON 0-stereo viewer or projected with one of the ZEISS IKON Stereo-Projectors.



Fig. 14



Supplementary lenses for close-ups (ZEISS-PROXARS)

The ZEISS IKON PANTAR lens f/2.8, 45 mm can be focused at any distance down to 40 ins. For shorter distances coated supplementary (PROXAR) lenses can be slipped on to the lens (28.5 mm ϕ). The parallax-free viewfinder will then also show the exact image field covered and the picture can be focused in the same way as described on page 13. Five Proxar lenses are available: focal length = 39½ ins. (100 cm) for subjects down to 21 ins.; 19¾ ins. (50 cm) for subjects down to 13½ ins.; 11¾ ins.; (30 cm) for subjects down to 10¼ ins.; 8 ins. (20 cm) for subjects down to 6¾ ins.; and 4 ins. (10 cm) for subjects down to 3½ ins. The tables supplied with the Proxar lenses give details of subject distances, the scales of reproduction obtainable and the field 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.

Filters

The tone values in black-and-white pictures can be improved by using filters. ZEISS IKON precision filters are available in the following colours: yellow, yellow-green, orange, red, IKOLOR-A, B, C and F, and U.V.-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 PANTAR f/2.8, 45 mm and the STERITAR-D and 60 mm for the PANTARS f/4, 30 mm and f/4, 75 mm.

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.

This increase in exposure time has to be taken into account by the automatic exposure control of the CONTAFLEX prima. This is done by setting the filter corrector before the light measurement. For this purpose the speed figure of the film in use is set opposite the figures 2 or 4 beside the DIN or ASA setting mark (fig. 17) by moving the lever (18). For different filter factors appropriate intermediate values should be chosen. Then measure the light.

When the filter is removed the film speed must be readjusted to the triangle setting mark. To bear in mind the film speed it is a good plan to set the film type indicator (7) to the speed and the type of the film in use immediately after loading the camera (fig. 15).

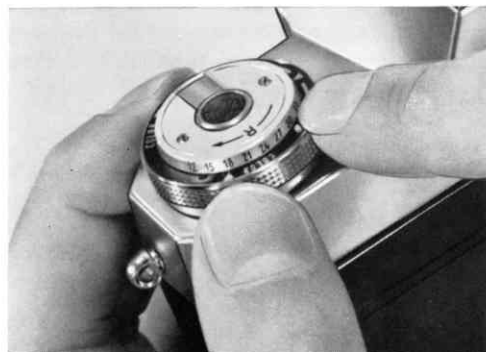


Fig. 15

Polarizing Filter CONTAPOL

The CONTAPOL polarizing filter, screwed into the ZEISS IKON f/2.8 45 mm PANTAR lens mount, eliminates disturbing 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.

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 PANTAR f/2.8 45 mm use a lenshood with slip-on mount, ϕ A 28.5 mm; for the PANTAR f/4 75 mm use the screw-in type, ϕ S 60 mm. No lenshood should be used with the wide-angle PANTAR f/4 30 mm.

A smart leather case is available in which to carry your lenshood.

For the PANTAR f/2.8, 45 mm a rubber lenshood is available which can remain on the lens when the ever-ready case is closed.

Defective Eyesight

22 Into the ring on the eyepiece (15), a special mount



Fig. 16

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. 16) for work at slow shutter speeds and for time exposures from a tripod. 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 (shutter setting "B").

Copying and Photomicrography

The CONTAFLEX prima can be fitted to either the

23

Fig. 17



table copying unit or the CONTAX copying out-fits. Two extension tubes are required to connect the camera to a microscope. Focusing is made easier by the use of a right-angle viewing telescope attachment screwed into the viewfinder eyepiece.

Flash and Delayed Action Shots

The fully-synchronized Prontor-Reflex shutter can be used with any type of flash equipment. It is also provided with a built-in delayed-action release.

There are two settings for flash: "X" and "M" (fig. 17). **When set to "X"** the shutter fires the flash at the moment the shutter blades are fully open. Electronic flash tubes should only be fired with 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 for the various flashbulbs and flash capsules will be found in the maker's instructions and also in our table on page 27.

The setting lever for flash synchronisation operates only when pressed downwards. **At the "V" setting** the delayed-action release (or self-timer) is brought into action. When the release knob 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 self-timer. 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 can be set to "V" only when the shutter is tensioned and the lever depressed.

For flash exposures, connect the flash lead of the gun to the flash contact (9) and only then insert the bulb. When the release knob (1) is depressed, the flash bulb will be fired synchronously with the opening of the shutter.

IKOBLITZ 4

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



Fig. 18, 19

the ever-ready case. A few operations 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 (figs. 18 and 19) in the camera shutter, the flashgun is ready for action.

Leather Cases

Camera Ever-ready Case: To guard against external damage, the CONTAFLEX prima 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 prima, with a screwed-in filter or the flexible lenshood in position, is easily accommodated in this case.

The lid of the case is rotatable so that it does not interfere when pictures are taken in the upright position. The upper part of the case accommodates two filters (ϕ 27 mm), without their original containers.

Leather Cases for Converter Lenses. An attractive leather case is available for both the f/4, 30 mm and the f/4, 75 mm PANTARS. There is also space for holding the removed front element of the PANTAR lens, a Proxar lens and the lenshood. A special leather case for the STERITAR-D is also available.

Table of Exposure Times for Flashbulbs

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,		
Press 25, 40, 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, M 25 B,	1— $\frac{1}{60}$	—
SF	1— $\frac{1}{125}$	—
3	1— $\frac{1}{15}$	$\frac{1}{30}$
Electronic flash	1— $\frac{1}{500}$	—

Comparison of Film Speed Systems

ASA Exp. Ind.	BSI ° Scheiner	° DIN
8	20	10
10	21	11
12	22	12
16	23	13
20	24	14
25	25	15
32	26	16
40	27	17
50	28	18
64	29	19
80	30	20
100	31	21
125	32	22
160	33	23
200	34	24
250	35	25
320	36	26
400	37	27

The speed criteria on which the usual film speed systems are based do not apply to reversal materials, since the result of the reversal process is a positive and not a negative image. The film manufacturers therefore advise that their black-and-white or colour reversal films are to be exposed like a negative film of the stated speed to yield the best results. 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.

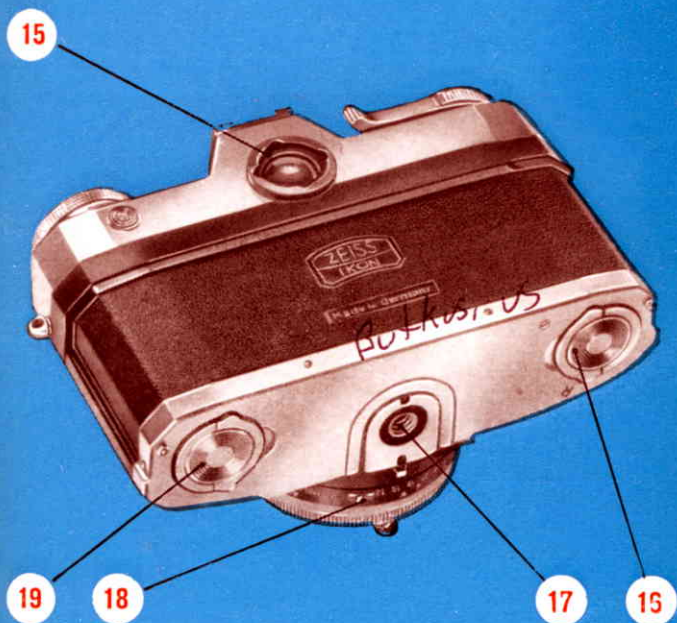
Depth - of - field table

Distance	APERTURE									
	f/2.8	f/4	f/5.6	f/8	f/11	f/16	f/22			
∞	47'8"-∞	33'2"-∞	23'10"-∞	16'9"-∞	12'3"-∞	8'4"-∞	6'2"-∞			
30'	18'6"-80"	15'11"-28'1"	13'5"-∞	10'10"-∞	8'9"-∞	6'8"-∞	5'2"-∞			
15'	11'6"-21'8"	10'5"-26'9"	9'4"-39'2"	8'-129'6"	6'10"-∞	5'6"-∞	4'6"-∞			
9'	7'7"-11'1"	7'1"-12'3"	6'6"-14'4"	5'10"-18'10"	5'2"-32'8"	4'4"-43'2"	3'4"-∞			
6'	5'4"-6'9"	5'2"-7'2"	4'10"-7'10"	4'6"-9'1"	4'2"-11'3"	3'8"-18'10"	3'2"-100'7"			
5'	4'7"-5'6"	4'5"-5'10"	4'2"-6'2"	3'11"-6'11"	3'8"-8'1"	3'3"-11'4"	2'11"-22'1"			
4'	3'9"-4'4"	3'7"-4'6"	3'6"-4'9"	3'3"-5'1"	3'1"-5'8"	2'10"-7'1"	2'8"-10'1"			

The smaller the aperture, the longer must be the exposure. The lens should, therefore, be stopped down only as much as is necessary to obtain the required depth of field, in order to avoid camera shake and blurred pictures due to your own motion or that of the subject.

Controls and components of the CONTAFLEX prima:

- 15 Viewfinder eye-piece
- 16 Camera back locking key and film rewind unlocking catch
- 17 Tripod bush
- 18 Film-speed setting scale
- 19 Camera back locking key



Maintenance of the CONTAFLEX prima

From time to time the film track, the film chambers and the back of the CONTAFLEX prima should be carefully cleaned with a soft brush. **(Do not force up the capping plate, as this might damage the mechanism!)** The lenses should be cleaned only when really necessary. Gently wipe the lenses with a soft, wellwashed piece of linen (but not leather)! after removing any dust with a soft brush. Polish the chromium-plated external fittings occasionally with a soft linen rag.

Serial Numbers

There is a serial number (a letter preceding a number) on the back of every CONTAFLEX camera and also on the mount of the built-in PANTAR. You are advised to make a note of both these numbers, as they may be of great help in establishing ownership in cases of loss or theft.

