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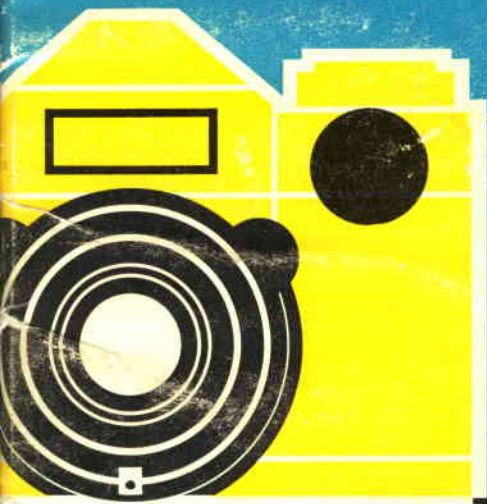
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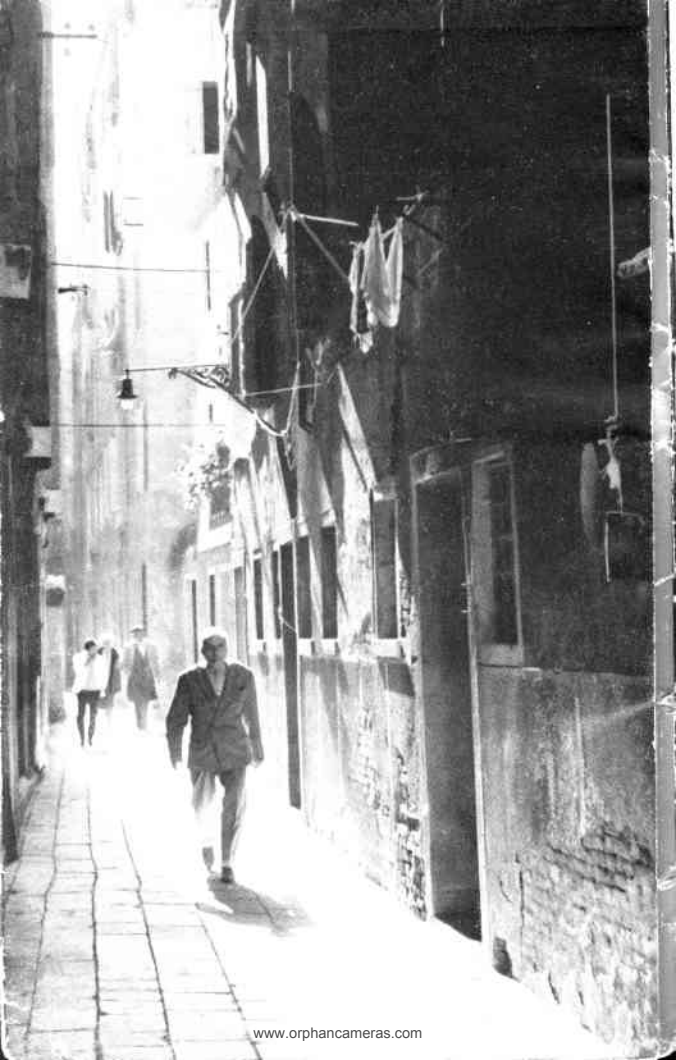
Contaflex

super



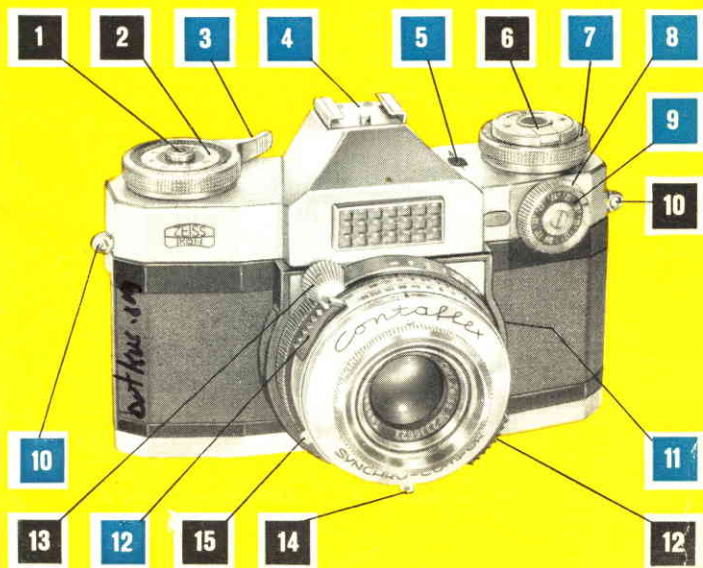
Instruction Book

ZEISS
IKON



Controls and components of the CONTAFLEX super

- | | |
|---------------------------------------|--|
| 1. Release knob | 9. Film speed setting |
| 2. Frame counter | 10. Eyelets for carrying strap |
| 3. Rapid wind lever | 11. Flash contact |
| 4. Accessory shoe | 12. Shutter speed setting knob |
| 5. Window of exposure meter pointer | 13. Focusing knob |
| 6. Rewind knob with countersunk crank | 14. Locking pawl for front element of lens |
| 7. Film type indicator | 15. Lock for flash lever |
| 8. Light selector disc | |



The

Contaflex

super

made by ZEISS IKON AG. Stuttgart is a single lens miniature reflex camera for the popular 24x36mm miniature format. Behind this achievement lie years of experience in the manufacture of precision cameras. The CONTAFLEX super was originally designed for the advanced amateur, but its amazing versatility has rapidly made it indispensable for professional, scientific and technical photographers. It is impossible to list all the photographic tasks to which the CONTAFLEX super can be applied.

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This booklet is compiled to give you a complete survey of all the features of the CONTAFLEX super, particularly the built-in and coupled measuring instruments, and to explain its operation so as to make you familiar with the camera as

quickly as possible. Further, we want to show you how to use this precision camera to obtain pictures which will give you lasting pleasure and make you cherish your CONTAFLEX super for years.

Even under awkward conditions the CONTAFLEX super will provide you with good pictures. For this purpose the CONTAFLEX super has been used as a basis of a real CONTAFLEX-System, with a large range of useful accessories.

- 5** Before reading further, turn out the inner leaves of the cover for further reference and practise operating the various controls and levers before loading the camera. Play around a while with your CONTAFLEX super, take imaginary pictures without a film and get generally familiar with your beautiful camera. You'll soon have the necessary knack of operating it properly. If you are in doubt, do not hesitate to ask your photo-dealer for advice.

The picture on page 2 was taken with the CONTAFLEX on 17° DIN film, f 4, 1/125 sec.

The technical data of the CONTAFLEX super

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 lever wind, opens diaphragm, tensions the shutter and advances the film. Double exposures and blanks excluded.

Shutter: Synchro-Compur, dustproof when changing lenses, shutter speeds "B", 1-1/500 sec. "X" and "M" synchronised flash contact. Built-in delayed action device running for 8 seconds. Spring-loaded pre-selector diaphragm.

Lens: ZEISS TESSAR f/2.8, 50 mm as standard lens. Front element interchangeable for:
PRO-TESSAR f/4, 85 mm (tele lens).
PRO-TESSAR f/4, 35 mm (wide-angle lens).
PRO-TESSAR M 1:1
ZEISS Prism Monocular 8 x 30 B (as camera attachment equivalent to f/14, 400 mm tele-lens).

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

Close-up STERITAR-B for distances from 8 feet to 26 ins.

Automatic exposure control:

Coupled to the shutter. Compensated for temperature variations. Indication according to zero-method, visible on the camera body or in the viewfinder.

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 pentaprism. Fresnel lens makes the image bright and sharp right up to the edges.

General features:

Frame counter – film type indicator – filter corrector – accessory shoe – semi-automatic film unlocking for re-winding – rewind knob with countersunk crank – ZEISS PROXAR lenses for close-ups down to 3½ ins.

The special features of the CONTAFLEX super

These special features are its built-in and coupled light and distance measuring instruments. By coupling this measuring equipment to the lens and the shutter the operation of the camera has been automatized in a very high degree. Once the distance is measured, the lens is correctly focused on the subject no matter which lens is used.

The light selector disc of the automatic exposure control is then operated with one finger which causes a pointer inside the viewfinder to coincide with a definite mark. Once this is done the shutter is set automatically. The only thing to do is to select the aperture/shutter speed pairing most suitable for the subject to be photographed. The exposure meter, by the way, is the result of twenty years of experience in making exposure meters. The first camera ever to incorporate a built-in exposure meter was a ZEISS IKON camera!

The spring loaded pre-selector diaphragm keeps the iris diaphragm always at full aperture for sighting, no matter which aperture it is set to for taking. The moment the release knob is depressed, the iris automatically springs to the stop chosen beforehand. This feature ensures a bright finder image even under poor lighting conditions.

When you have made the acquaintance of the whole CONTAFLEX system, you'll be delighted by the large bright viewfinder image, which is always free from parallax no matter which interchangeable converter lens you use or how close you approach your subject.

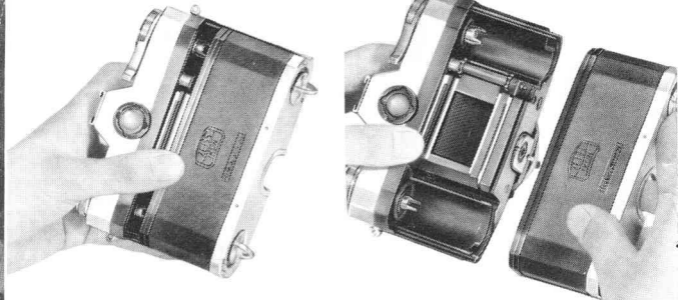
Loading and unloading the camera

Opening

9 The CONTAFLEX super should be held in the left hand, with the lens pointing downwards as shown in fig. 1. The locking keys (17 and 20) at the bottom of the camera should be folded outwards with the right hand and turned to the right or to the left respectively. Now the back is unlocked.



Fig. 1



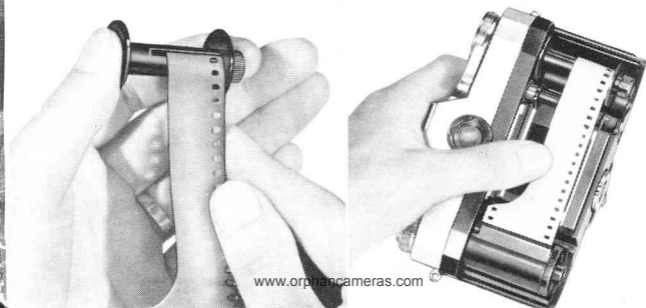
Figs. 2, 3 With your left thumb push the back of the camera downwards (fig. 2) and lift it off with the right hand (fig. 3.)

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. 4 or place it immediately in the camera as in fig. 5. Try both ways and choose the most convenient for you. The film is now fixed to the

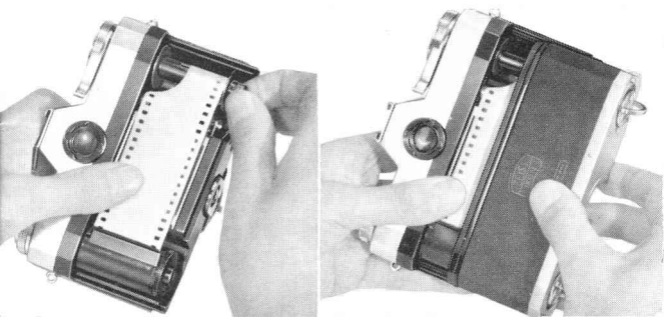
10

Figs. 4, 5



take-up spool. The cartridge and the take-up spool should then be inserted into the two film chambers as shown in fig. 5. It is a good plan to look at the two prongs for the feeding and the take-up mechanism in the film chambers since this will convey to you immediately in which way the two spools must be inserted. Now wind the film on to the take-up spool (by rotating the latter manually) until the perforations of the film engage the teeth of the transport sprocket on both sides (fig. 6). Whilst holding the film in contact with the sprocket with the thumb of the left hand 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. 7). 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 folded only when the back is properly in position.

Figs. 6, 7



Ready for action

After loading, the camera is not quite ready for immediate action. The rapid wind lever (fig. 8) should be swung around with your right thumb until it butts 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.

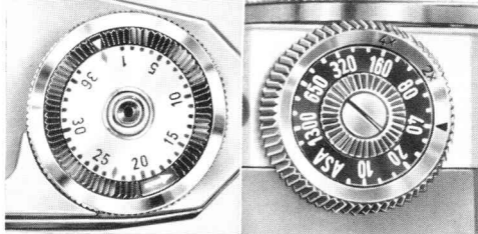
As the film is wound on, the rewind knob (6) should rotate in the opposite direction to the engraved arrow: this indicates that the film is being advanced properly. When using bulk film (see "Cassettes") or 20-exposure cartridges, the turns of the film may partially unwind; in this case the rewind knob will not rotate when the first frames are advanced. In this case unfold the small crank (countersunk into the rewind knob) and turn it in the direction of the arrow until a distinct resistance is felt (fig. 17). This is also a reliable indication whether there is any film at all in the camera.

The CONTAFLEX super has a frame counter which

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Fig. 8





Figs. 9, 10

shows the frames remaining (fig. 9). After loading set the white mark to the red mark between 1 and 36, if you have a cartridge for 36 exposures in your camera. With a 20 exposure cartridge set the white mark to the red mark between 20 and 25. Cock the shutter twice and release it after each movement of the rapid wind lever. The white mark is then opposite 36 and/or 20 and will indicate the number of frames available.

13

The speed of the film in use should then be transferred to the automatic exposure control of the camera. Press the speed scale in the light selector disc (fig. 10) inwards and turn it until the figure ASA required coincides with the black stroke. Setting the type of film and its speed on the film type indicator is not essential for the functioning of the CONTAFLEX super, but it may prove a useful reminder for you.



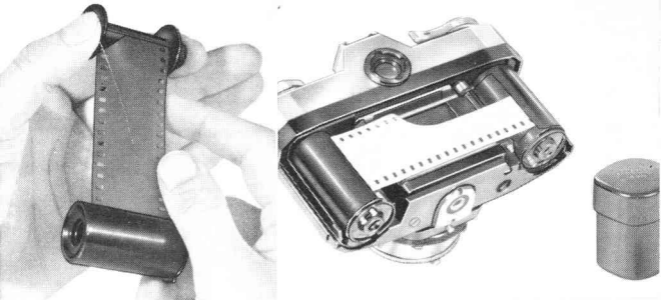
Fig. 11



Figs. 12, 13

Cassettes

The CONTAFLEX super can also be used with cassettes. 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



Figs. 14, 15

the camera with a colour film and wind it into a second cassette, you can also return the black-and-white film to the camera at any time and vice versa.

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When working from cassette to cassette, the feeding cassette can be loaded with darkroom or daylight refills or with bulk film. With two cassettes, there is no need to rewind the film. When using bulk film, the method of fixing the film to the feeding spool depends on whether you want to rewind the film or not. If you want to rewind the film after exposure, thread the shaped end of the film (fig. 13) twice into the centre slot of the spool; if you do not intend to rewind, hook the first perforation hole of the obliquely cut beginning of the film on the lug as shown in fig. 14. After winding the film on the spool, 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 in the

shells. Now turn the inner and outer shell against each other until they snap in and lock. The German word "Zu" (closed) will then appear. When inserting the cassettes into the film chamber of the camera, make sure that the locating cams of the cassettes engage properly in the appropriate grooves of the camera body (fig. 15). Turning the locking keys of the camera back automatically opens or closes the cassettes.

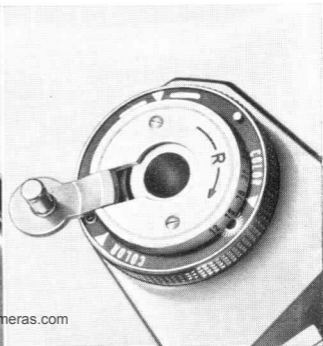
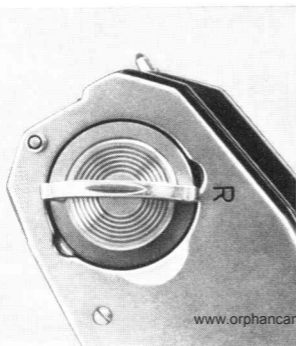
Every cassette is supplied in a special plastic container, the lid of which has a small recess. The lid can be fitted in two positions. When storing an exposed film in the container, fit the lid in such a way that the marking "EXP" (exposed) is visible in the recess.

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Unloading

If the camera is loaded with a standard commercial cartridge, the film must be rewound before unloading. For this purpose one of the locking keys on the back, the one marked "R", is folded

Figs. 16, 17 up and set against "R" as shown in fig. 16. Fold



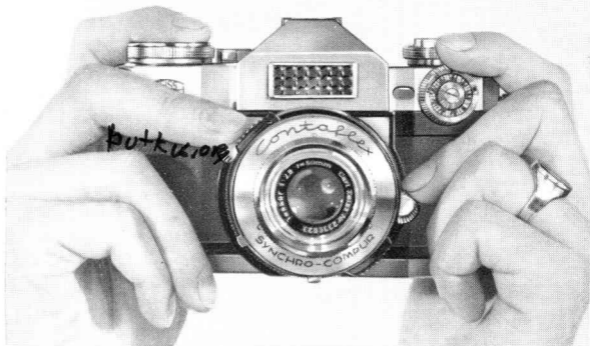


Fig. 18

17

out the countersunk crank from the rewind knob (6, fig. 17) and turn it in the direction of the arrow until the film is rewound into the feed cartridge. Then remove the back and take out the cartridge. Dust or film particles left inside the camera should be removed immediately.

Setting the distance

The camera is now loaded and ready for action. 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 fine screen ring. These two indicators, a split-image rangefinder and a fine screen focusing ring, enable you to focus accurately and to have the correct distance setting under constant control.

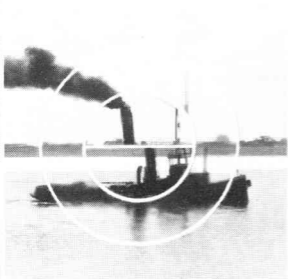


Fig. 19

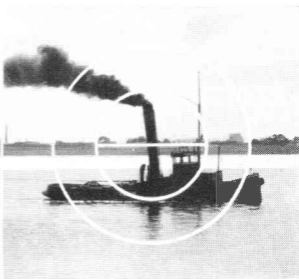


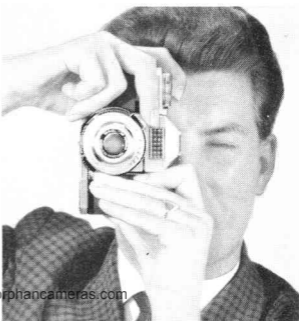
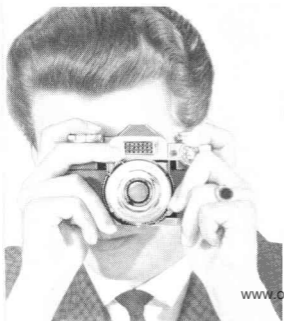
Fig. 20

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. 18), you will observe that the two images, separated from each other by a thin line, move in opposite directions (fig. 19). The distance is correctly set when the two partial images are exactly aligned and form one

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Figs. 21, 22



single undistorted image (fig. 20). It is advisable to look for a sharp perpendicular line within the subject, a tree or the edge of a house, on which the correct alignment should be checked. When taking upright pictures (fig. 22), a horizontal line should be chosen.

Ground-glass screen focusing

There are subjects, however, which have no distinct vertical lines – say, a wide expanse of water – for your split-image rangefinder to work on; or the subject may be moving too rapidly. Then the fine screen ring should be used for focusing in the same way a normal ground-glass screen is used.

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

If you want to take flash pictures and wish to calculate the necessary stop with the aid of the guide number for your flashbulb or unit, the flash-subject distance can be read off from the distance scale (21) on your CONTAFLEX super.

Depth-of-field scale

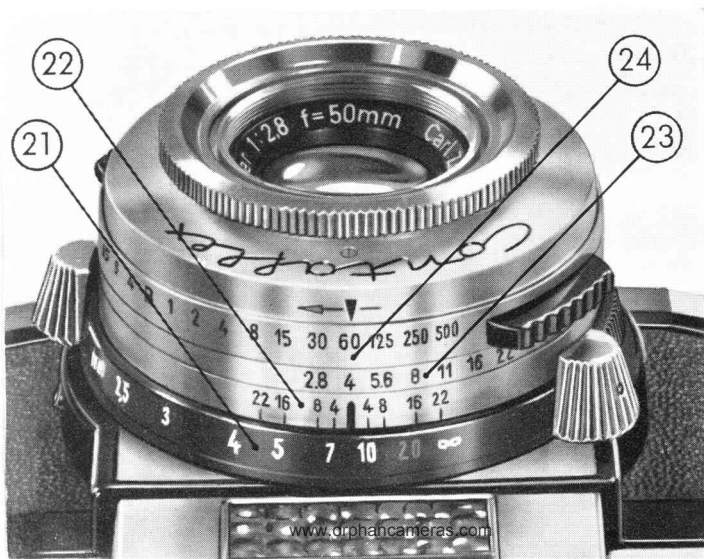
Generally you will focus without even a glance at the distance scale. The automation of your CONTAFLEX super makes it unnecessary to know the actual distance. There are cases however, when a different method of distance setting should be

chosen, particularly when the important details of the picture are staggered in depth. When looking at the scales (21) and (22) 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 sharp definition of the lens is not limited to objects of the exact focused distance, but also covers a certain range nearer and farther from this point. This zone of sharpness is comparatively small at full aperture ($f/2.8$), but increases as the lens is stopped down. This is to be seen on the scale of fig. 23. An aperture of $f/4$ will just cover the zone from 7' to 10' while an aperture of $f/22$ will be found to cover the zone from about 4'6''

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Fig. 23



to infinity. A depth-of-field table showing the various sharpness zones for each aperture has been given on page 41. Now measure with your CONTAFLEX the shortest and the farthest distance of the most important parts of the picture to be taken, that is to say, the zone which shall be reproduced sharply. The requisite aperture can be read off from the depth-of-field scale and set against the aperture scale (23).

Measuring the light

The shutter speed ring

21

bears a scale (24) with two series of figures, which are separated from each other by the letter "B". The figures to the right of "B" denote fractions of a second ($60 = 1/60$ sec., etc.). If, after measuring the light, the lens is stopped down until the shutter speed indicator points to "B", an exposure time of 2 seconds will be required. The series of green figures to the left of "B" denotes the exposure time required in full seconds. When set to a green figure the shutter will operate as if set to "B": it opens when the release knob (1) is depressed and closes only when the pressure on the knob is relaxed.

It is recommended, but not absolutely necessary that the light measurement is performed when the shutter is tensioned.

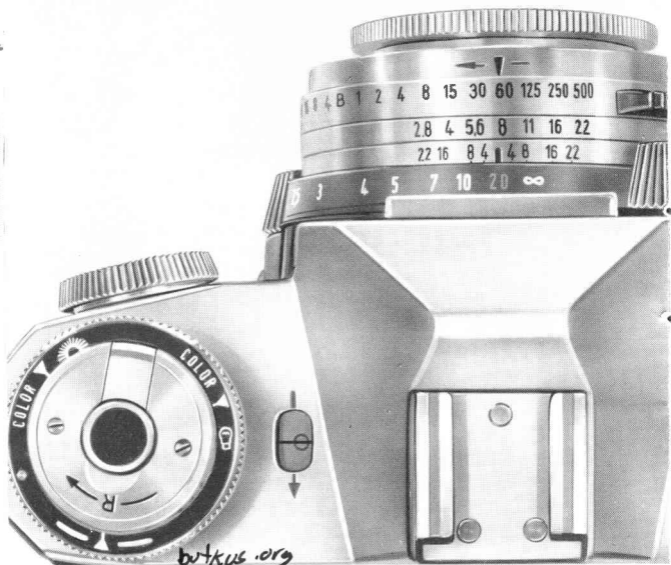


Fig. 24

The automatic exposure control

Since the setting of the film speed indicator (9) has already been performed when the camera was loaded, the automatic exposure control is ready for action. Point the camera towards the subject and observe the pointer deflection in the window on top of the camera body (fig. 24). The pointer should swing approximately within the circular mark. The yellow direction arrows both

on the exposure meter window on the body and on the shutter-speed setting mark indicate in which direction the setting should be corrected.

If the pointer must deflect in the direction of the arrow to reach the circular mark, the shutter speed setting ring should also be turned in the direction of the yellow arrow and vice versa. You need not worry if the aperture scale (which rotates automatically in the opposite direction) soon reaches its final value, you continue turning.

23 This pre-selection of the shutter speed can be estimated roughly, since it is almost always possible to correct it accurately for six aperture stops by means of the light selector disc (fig. 10). However, you should select full values only, not intermediate values. If you now sight your subject through the viewfinder, you will see the reflected pointer on the right in the viewfinder. Turning the light selector disc (8) will move the pointer to the setting mark in the centre of the recess. This is the correct setting which is automatically transferred to the shutter; now you can take the picture.

It is a good idea, however, to compare the previously set aperture/shutter speed pairing with the requirements of the picture. After making the light measurement you can select the most suit-

able aperture/shutter speed combination by turning the shutter speed ring (12). If your subject possesses considerable extension in depth, a stop as small as possible ensures greater depth of field; if, on the other hand, your subject is moving rapidly a faster shutter speed is more important. When making your choice the only thing to be taken into account is that the limits of the diaphragm scale, that is, $f/2.8$ and $f/22$, are not exceeded, since this will tend to nullify the light measurement and change the basic setting entirely.

You will always obtain a correct light measurement when the camera is held horizontally even when a vertical picture will be taken.

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Now a few hints for picture taking under unusual conditions. Suppose you want to take a picture by rather dim light and your camera is loaded with a 27° DIN = 400 ASA film. The light is so bad that you can no longer measure it, but you know by experience that 2 seconds at $f/2.8$ may just be correct. So you set the shutter to "B" and discover with dismay that it is impossible to set the aperture ring to an aperture higher than $f/8$. This is not a fault since the automatic exposure measurement system has been introduced with the definite intention of preventing photographers from trying to make normally nonsensical ex-

posures. But if such a setting is desperately needed, it is only necessary to put the automation out of adjustment by setting the light selector disc (8) to a lower film speed, e. g. 12° DIN = 12 ASA. Don't forget, however, to re-adjust this incorrect setting when you want to use the automatic system.

Generally, pictures can be taken with the hand-held camera at $\frac{1}{60}$ second without running the risk of camera shake. Rapidly-moving subjects, however, or pictures in which a high standard of definition is required should be taken at faster shutter speeds.

The snapshot setting

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The saying goes that the most simple cameras with only one shutter speed and two stops are easier to handle and always ready for action. The simple lens of a box camera is always stopped down to a small aperture to obtain satisfactory image quality. In this way **a great depth of field** is obtained which makes distance setting **superfluous**. Now let us see if we cannot work as quickly and accurately with our CONTAFLEX as the snapshotter with his box camera.

When working with the red dot setting of your CONTAFLEX you are taking pictures under the same conditions as the box camera user: set the distance to 20 ft. and the aperture with the knobs for the shutter speed setting (12) – after measuring the



Fig. 25

light – at $f/8$ (both red figures). Now, everything between 10 feet and infinity will be recorded sharply (fig. 25).

Flash and delayed action shots

The fully synchronised Synchro-Compur shutter can be coupled to any type of flash equipment and will close the flash contacts and fire the flash just at the right moment. Attention should be paid to the "X" and "M" settings (fig. 26).

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 setting ("X" or "M") for the various flashbulbs and flash capsules will be found in the makers' instructions, and also in the table on page 43.

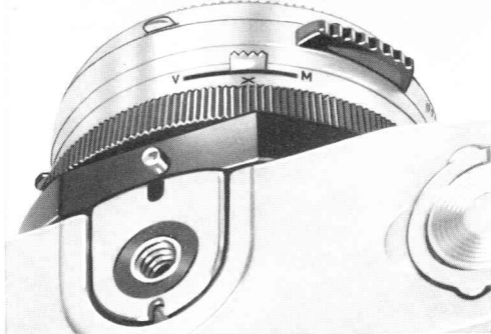


Fig. 26

In order to avoid unintentional displacement of the lever (19), it can be operated only when the lock (15) is depressed simultaneously.

At the "V" setting a delayed action release (or selftimer) is brought into operation, which operates the shutter release about 8 seconds after the shutter release knob has been depressed. The selftimer can be set only when the shutter is cocked and the lock (15) is depressed. Time exposures ("B" setting) cannot be made with the selftimer. With the shutter set to "V" flash lamps of any type will be fired as at the "X" setting.

It is advisable to connect the flash lead first to the flash contact (11) and only then insert the flashbulb. When the release knob (1) is depressed the selftimer will run off normally and fire the flash synchronously.



The CONTAFLEX System

Exchanging the converter lenses

Tele, wide-angle and stereo-pictures can be taken with the CONTAFLEX super when the front element of the standard lens is exchanged for a converter lens. To remove the front element of the TESSAR hold the CONTAFLEX in your left hand (fig. 27) and press the lock pawl (14) 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; a slight resistance has to be overcome. Then lift the front element upwards from its bayonet mount.

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

All lens units of the CONTAFLEX super (with the exception of the ZEISS Monocular Attachment) are

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Fig. 27



inserted in this way: red dot to red dot- turn right. For removing, press lock pawl, turn to left, and lift out. In order to preserve the efficiency and high-quality performance of the valuable lenses, their surfaces should never be touched.

The following converter lenses are available for the CONTAFLEX super:

PRO-TESSAR f/4,35 mm

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.

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PRO-TESSAR f/4,85 mm

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.

The **STERITAR-B** for stereo-pictures; part of the ZEISS IKON stereo-system covering the range from ∞ to 8 feet. 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.



Fig. 25

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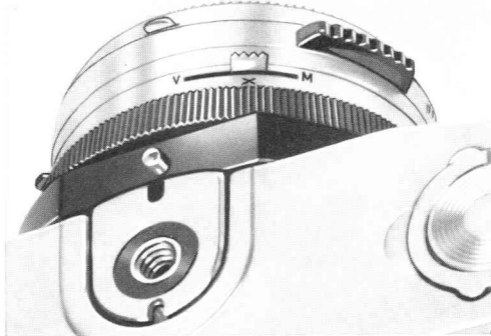


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Tele, wide-angle and stereo-pictures can be taken with the CONTAFLEX super when the front element of the standard lens is exchanged for a converter lens. To remove the front element of the TESSAR hold the CONTAFLEX in your left hand (fig. 27) and press the lock pawl (14) 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; a slight resistance has to be overcome. Then lift the front element upwards from its bayonet mount.

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

All lens units of the CONTAFLEX super (with the exception of the ZEISS Monocular Attachment) are

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Fig. 27



inserted in this way: red dot to red dot- turn right. For removing, press lock pawl, turn to left, and lift out. In order to preserve the efficiency and high-quality performance of the valuable lenses, their surfaces should never be touched.

The following converter lenses are available for the CONTAFLEX super:

PRO-TESSAR f/4,35 mm

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.

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PRO-TESSAR f/4,85 mm

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.

The **STERITAR-B** for stereo-pictures; part of the ZEISS IKON stereo-system covering the range from ∞ to 8 feet. 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.

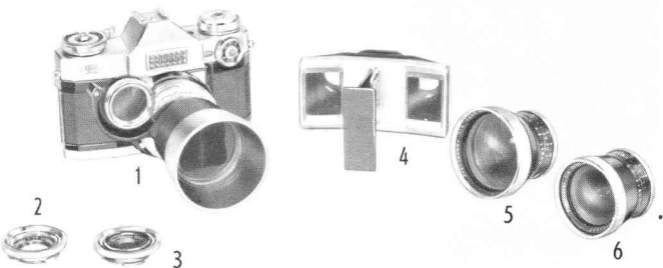


Fig. 28

1. CONTAFLEX super 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. STERITAR-B with separator
5. PRO-TESSAR $f/4$, 85 mm
6. PRO-TESSAR $f/4$, 35 mm

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They can then be viewed immediately in a ZEISS IKON O-stereo viewer or projected with a ZEISS IKON stereo projector.

The **Close-up STERITAR-B** is a stereo attachment like the STERITAR-B but designed for the distance range from 8 ft. to 27 ins. When ZEISS Proxars $f = 1$ m, $f = 0.5$ m and $f = 0.3$ m are added, close-ups can be made from as close a distance as 11 ins. The ZEISS Proxar $f = 0.2$ can also be used

but in this case the so-called "window effect" can no longer be maintained, that is to say, very close objects or parts of objects will protrude from the frame. 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 high definition, 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.

Focusing stereo pictures should always be performed on the object nearest to the camera. It is advisable always to use the Close-up STERITAR-B with the lens hood, since in stereo pictures it acts as a definite protection against sidelight.

The ZEISS Monocular Attachment 8x30 B is a complete prism-monocular and can be used as a telescope. However, it can also be attached to the CONTAFLEX super (after removing the complete eyepiece, consisting of the rubberized upper member and the adapter ring), making it possible to take pictures with an outsized tele-lens, $f/14$, 400 mm. The speed of this combination is determined by the prism monocular. Of the stops of the camera, only the last ($f/16$ and $f/22$) can be used. When the monocular is used as a tele-lens, the front element of the $f/2.8$, 50 mm Tessar remains in the camera and should not be

removed. Hunters and naturalists will be delighted by this additional instrument.

PRO-TESSAR M 1 : 1 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 black-and-white negatives from colour transparencies, but can be used in every case where the natural 1 : 1 size is required.

Supplementary lenses for close-ups (ZEISS Proxars)

The CONTAFLEX Tessar lens f/2.8, 50 mm can be focused at any distance down to 27 ins. For shorter distances coated supplementary (ZEISS Proxars) 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 17. Five Proxar lenses are available: focal length = 39½ ins. (100 cm) for distances down to 21 ins; 19¾ ins. (50 cm) for subjects down to 13½ ins; 11¾ ins. (30) 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 on pages 42 and 43 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.

Colour filters

When looking at colours in nature and comparing them with a black-and-white picture of the same subject, you will see that there are actually two ranges of colours: a polychromatic and a monochromatic range. In nature these two ranges are always combined, one superimposed on top of the other, that is to say, each and every colour will appear in all possible hues, e. g. red can vary from the most subtle pink to a vigorous dark red, etc. However, the black-and-white picture shows the monochrome hues only from white via all values of grey to black. What is required of our films is a satisfactory representation of colour in terms of grey tones, in such a way that colours are represented on a print in terms of their apparent brightness to the eye.

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Good films from well-known manufacturers nowadays guarantee a high degree of correctness in representing tonal values, but the mood of, say, a landscape may be lost completely in a black-and-white picture, since it is primarily dependent on colours. There is, however, a means of restoring this mood and even exaggerating it beyond that of the original: the colour filter.

ZEISS IKON precision filters with coated surfaces are available in the following colours: yellow, yellow-green, orange and red; there are also a U.V-filter and the IKOLOR A, B, C and F filters for col-

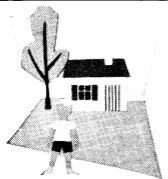
Without filter



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

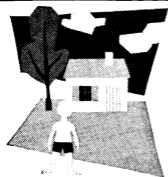
filter factor 2



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

Orange filter

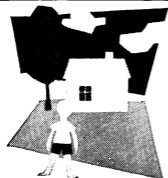
filter factor 5



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.

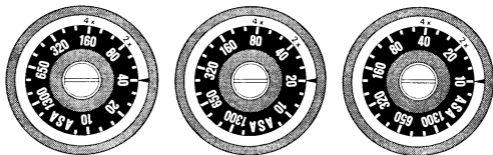


Fig. 29 Three settings of a film of 40 ASA

our photography. The effect of the filters on the pictures is shown on the next page.

The use of filters makes it necessary to increase the exposure by the filter factor, which is engraved on the mount of every ZEISS IKON precision filter. This is also performed automatically by setting the film speed against the filter factor (fig. 29) on the filter corrector of the light selector disc. When the filter is removed the film speed must be readjusted to the actual setting mark.

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The filters are screwed into the lens mount. Their diametres are as follows: For TESSAR $f/2.8$, 50 mm. PRO-TESSAR M 1 : 1, STERITAR-B and close up STERITAR-B 27 mm. For PRO-TESSAR $f/4$, 35 mm 49 mm. For PRO-TESSAR $f/4$, 85 mm 60 mm. Owners of both the PRO-TESSAR 85 mm and the PRO-TESSAR 35 mm can screw an intermediate ring into the mount of the wide-angle lens which permits the use of the 60 mm filter for this lens also.

CONTAPOL Polarizing Filter

The CONTAPOL polarizing filter, screwed into the $f/2.8$, 50 mm TESSAR lens mount, eliminates disturbing reflections from shiny and reflecting surfaces of non-metal objects. You can observe the effect in the viewfinder. A 28.5 mm diameter lens-

hood 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.

Lens hoods

They prevent flare and fog in against-the-light shots. In bad weather they also protect the lens against rain and snow. The ZEISS IKON lenshoods can also be mounted on top of filters or PROXAR lenses.

For TESSAR f/2.8, 50 mm, slip-over mount A 28.5 mm;
For PRO-TESSAR f/4, 85 mm, screw-on mount S 60 mm.
An adapter ring will permit the use of the lenshood with 60 mm. screw-on mount for PRO-TESSAR f/4, 85 mm on the wide-angle lens PRO-TESSAR f/4, 35 mm.

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For both the TESSAR f/2.8, 50 mm and the PRO-TESSAR M 1:1 a common rubber lens hood is available. It has a screw-on S 27 mm mount and can remain on the lens when the ever-ready case is closed.

Fig. 30



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

Eyesight correction lenses

Into the ring on the eyepiece (16), a special mount can be screwed to accept correction lenses to compensate for defects of vision, so that focusing and composition can be performed without the aid of glasses. When ordering correction glasses, please enclose your optician's prescription for distance glasses.

Cable Release

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At slow shutter speeds and for time exposures a cable release is advisable (see fig. 30). This screws into the threaded socket in the release knob. 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 adapter is available for using the CONTAFLEX super with either the Table Copying Stand or the CONTAX Copying Outfits. Two extension tubes are required to connect the camera to a microscope. To make focusing easier, a right-angle viewfinder can be screwed over the viewfinder eyepiece.

Flash light pictures

The capacitor IKOBLITZ 4 flashgun is a handy unit of almost unbreakable plastic material, which can be carried along fixed to the strap of the ever-ready case. This unit needs only a few operations to make it ready for action. Pull it out of its cover (which remains on the strap), slip it into the accessory shoe of the camera and unfold the reflector. After connecting the flash-lead to the camera shutter, the flashgun is ready for action (figs. 31 and 32).

Leather Cases

Camera Ever-Ready Case: To guard against damage, the CONTAFLEX super should always be carried in its smart ever-ready case. The camera is screwed to the case and need not be removed from its case for exposures. Moreover, the CONTAFLEX super together with a screwed-on filter or the rubber lens hood, are easily accommodated in the case, the lid of which will also hold two filters (ϕ S 27 mm). The flap of the case can be removed.

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Figs. 31, 32



Leather cases for the converter lenses

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 inset holding the front element of the removed standard TESSAR f/2.8 50 mm, the appropriate PROXAR lens and the lens hood (ϕ A 28.5 mm). Two filters (ϕ S 60 mm) for the PRO-TESSAR can be slipped into the pockets in the lid.

A further leather case for the close-up STERITAR-B and a lenshood is also available.

Carrying strap

To enable you to carry the CONTAFLEX super without the ever-ready case, a carrying strap is also available. This is fitted with safety hooks to hook into the eyelets (10) on the camera.

Comparison of Film Speed Systems

ASA Exp. Ind.	BSI \circ Scheiner	\circ 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

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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 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
∞	6'4" - ∞	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"	10'8 3/4" - 162'5"	9'2" - ∞	7'4 1/2" - ∞	5'11 3/4" - ∞
10'	8'8 1/2" - 11'9"	8'3" - 12'8"	7'8 3/4" - 14'3"	7'1 1/2" - 17'5"	5'1/4" - 11'8"	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" - 5'6 3/4"	4'4 3/4" - 5'9 3/4"	4'2" - 6'3"	3'11 1/4" - 6'11"	3'7" - 8'5"	3'3" - 11'5"
4'	3'9 1/2" - 4'2 3/4"	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"	2'9 3/4" - 7'1"
3'	2'10 1/4" - 3'1 1/2"	2'10 3/4" - 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"	2'3 3/4" - 4'4 1/4"
2.5'	2'5" - 2'7"	2'4 3/4" - 2'7 1/4"	2'4 1/4" - 2'8"	2'3 1/2" - 2'9"	2'2 3/4" - 2'10 1/4"	2'1 1/2" - 3'1/2"	2'1/2" - 3'3 1/4"

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	Reduction 1:	Field size
PROXAR lens $f = 1 \text{ m}$	∞ 20' 10' 7' 5' 4' 3' 2.5'	3'3 1/2'' 2'10'' 2'5 3/4'' 2'2 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 1/4'' \times 2'2 1/4'' 1'2 3/4'' \times 1'10 1/4'' 1'3/4'' \times 1'7 1/2'' 11 1/2'' \times 1'5 1/2'' 10 1/4'' \times 1'3 1/2'' 9'' \times 1'3/4'' 7 1/2'' \times 11 1/2'' 6 3/4'' \times 10 1/4''
PROXAR lens $f = 0.5 \text{ m}$	∞ 20' 10' 7' 5' 4' 3' 2.5'	1'8 1/4'' 1'6 5/8'' 1'5 1/4'' 1'4 1/4'' 1'3'' 1'2'' 1'5/8'' 11 5/8''	9.8 9.0 8.2 7.7 7.3 6.6 5.8 5.4	8 3/4'' \times 1'1 1/2'' 8 1/4'' \times 1'1 1/2'' 7 1/2'' \times 11 1/4'' 7'' \times 10 1/2'' 6 1/2'' \times 10'' 6'' \times 9'' 5 1/4'' \times 8'' 4 3/4'' \times 7 1/2''
PROXAR lens $f = 0.3 \text{ m}$	∞ 20' 10' 7' 5' 4' 3' 2.5'	1'13/8'' 1'5/8'' 1'1/8'' 11 1/2'' 10 7/8'' 10 3/8'' 9 5/8'' 9''	6.4 6.0 5.7 5.4 5.2 4.8 4.4 4.1	5 3/4'' \times 8 3/4'' 5 1/2'' \times 8 1/4'' 5 1/8'' \times 7 7/8'' 4 7/8'' \times 7 1/2'' 4 3/4'' \times 7 1/8'' 4 1/4'' \times 6 5/8'' 4'' \times 6'' 3 3/4'' \times 5 5/8''
PROXAR lens $f = 0.2 \text{ m}$	∞ 20' 10' 7' 5' 4' 3' 2.5'	8 1/8'' 7 7/8'' 7 5/8'' 7 1/2'' 7 1/8'' 6 7/8'' 6 5/8'' 6 1/4''	3.9 3.8 3.6 3.5 3.4 3.2 3.0 2.9	3 1/2'' \times 5 3/8'' 3 3/8'' \times 5 1/4'' 3 1/4'' \times 5'' 3 1/8'' \times 4 7/8'' 3'' \times 4 5/8'' 2 7/8'' \times 4 3/8'' 2 3/4'' \times 4 1/8'' 2 5/8'' \times 4''

	Lens set to	Subject Distance	Reduction 1:	Field size
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 x 35 mm.

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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	$1-\frac{1}{500}$	—

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

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

* with reference to the near point plane

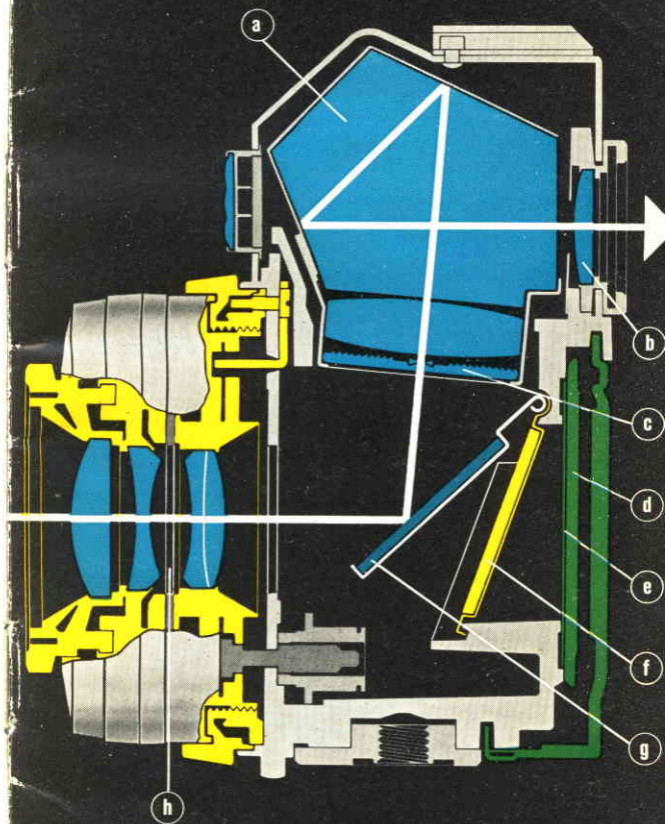
Care of the CONTAFLEX super

From time to time, the film track, the film chambers and the back of the CONTAFLEX super 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.

Serial Numbers

There is a serial number (with a letter preceding the number) on the back and body of every CONTAFLEX camera, and also on the mount of the standard 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. You should also note the lens number in case you should lose the front component of the TESSAR lens; quote this number if you order a replacement front-component.

Subject to changes in the interest of technical progress.



Explanations to cross section

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

Controls and components of the CONTAFLEX super

16. Viewfinder eyepiece
17. Locking key for camera back and film unlocking
18. Tripod bush
19. Setting lever for M-X flash contact and V (selftimer)
20. Locking key for back





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