

Instructions for use

STERITAR: A, B, D

stereo attachments for

**Contaflex I, II, III, IV
and Contina III**

Stereo photography - simplicity itself

When Zeiss Ikon AG. started to develop their equipment for stereo photography they aimed at the greatest possible simplification of this field of photography. Owners of one of the four Contaflex models or the Contina III will soon find out that there is no difficulty in taking up this interesting special hobby. They will be surprised how easy it is to handle these devices. The Steritar attachments, like all other lens accessories for these cameras, can be attached quickly and easily and the few indispensable laws of stereoscopy which have to be observed will be obeyed automatically by the devices themselves without the aid of the owner. There are no operations other than those necessary for taking flat pictures. All the advantages of the camera, such as the high speed of the

precision-made lenses, the immediate readiness for candid shots, convenient film advance, etc., are retained and there is no reason why flat shots and stereo-pictures should not be made on the same film strip.

However, it is not only the taking of stereo-pictures which involves no difficulties whatever, there are also the evaluation, the mounting, the viewing and the projection of the stereo transparencies, which are all related to a simple, well thought out stereo system.

When using the Steritar, two stereo half-images will be produced on one normal film frame 24x36 mm; these lie directly side by side and are upright pictures 16x23 mm in size. They are produced by **one** common lens, the standard lens of the camera. In other cameras the half images are produced by stereo taking attachments with

two lenses (Contax with Stereotar C). This, however, yields quite a different sequence of half-images.

The viewing and projection equipment is designed so that it conforms with the optical features of the taking camera. This makes it necessary to distinguish the correlated devices and slides by special markings in order to prevent confusion. According to the number of lenses used for taking the stereo picture the symbols o or oo are used and, correspondingly, the slides are called one-ring and two-ring slides.*) **The Steritar taking attachments for the Contina III and the four Contaflex models supply one-ring o-stereo pictures.**

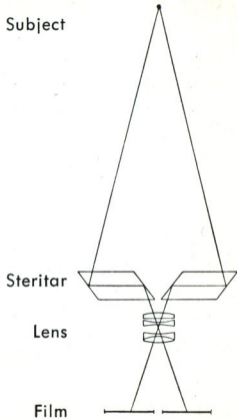
Every Contina or Contaflex photographer will soon master the few simple operations described in these instructions and by adhering

* Previously, the two types were called according to the relative position of their half-images, exchanged and nonexchanged stereo-slides.

strictly to the general notes for the actual practice of stereo photography on pages 21 to 29, he will ensure good stereo-photos right from the beginning. Any further advice necessary will be given willingly by your photographic dealer.

The Steritar

The Steritar stereo attachments consist of two prisms which are designed so as to space the two stereoscopic half-images produced by the single lens of



the camera with an apparent distance of approx. 65 mm apart (taking base = interpupillary distance) — fig. 1. For the various abovementioned cameras different stereo attachments should be used according to the lens employed:

Steritar A: (Order No. 812) for Contaflex I and II
with f/2.8, 45 mm Tessar

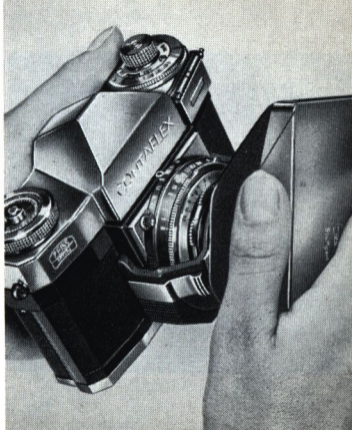
Steritar B: (Order No. 813) for Contaflex III and IV
with convertible f/2.8, 50 mm Tessar

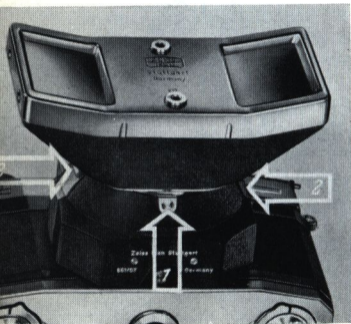
Steritar D: (Order No. 814) for Contina III
with convertible f/2.8, 45 mm Pantar

Each Steritar is supplied with two cover-lids which must be removed before attaching it to the camera, and a separator shield. The three attachments differ in their optical design and in their different connecting pieces to the individual cameras.

Operation

Steritar A: To attach the Steritar-A to the camera the same bracket is used as for fixing the Zeiss Ikon Teleskop 1.7 x. The bracket should be slipped into the grooves on either side of the front panel of the Contaflex I and II from below and pushed upwards until it snaps in audibly. If filters have been used previously they must be removed from the camera lens. The Steritar-A can now be screwed into the thread of the bracket until it locks (fig. 2).





To remove the Steritar-A the small button on the underside of the bracket (arrow 1, fig. 3) should be depressed and the Steritar-A unscrewed. The bracket can be removed by pressing the grooved catches (2) and pulling it downwards. If desired, however, the bracket may remain on the camera even when the ever-ready case is closed.

When looking through the viewfinder the two stereoscopic half-images (also called homologues) can be seen side by side and it is easy to determine the composition of the desired picture.

Fig. 3

Correct focusing is achieved by means of the ground-glass screen rangefinder (in the usual way) which is coupled to the lens. The split-image rangefinder cannot be used for stereo pictures.

Steritar B: First and foremost the front-element of the standard lens must be removed from the camera. To do this the Contaflex III or IV should be held with the left hand (same position as in fig. 4). The thumb depresses the locking pawl with the red dot towards the lens, whilst the right hand turns the milled front ring of the lens to the left until, after overcoming a slight resistance, it stops. The front element of the lens can then be pulled upwards and removed.

When inserting the Steritar-B the red dot on the Steritar should coincide with the red dot on the locking pawl of the camera (fig. 4).

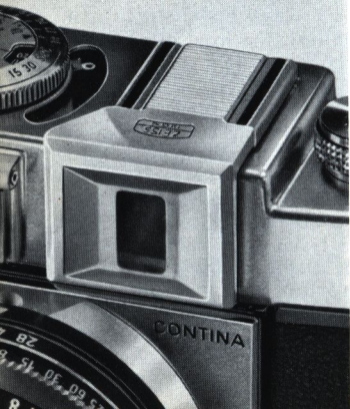


Then press the attachment firmly downwards and turn it to the right until it snaps in audibly. The framing of the picture and the distance setting should be done in the same way with Contaflex III and IV as with the Contaflex I and II and the Steritar-A.

Steritar D: The front element of the Pantar lens in the Contina III should be removed in the same way as the front element in the Contaflex III and IV. The camera is held with the left hand, the thumb depresses the locking pawl with the red dot (similar

to the position shown in fig. 4 for the Contaflex). The front element is turned to the left until it stops, after overcoming a slight resistance and then removed.

When inserting the Steritar D its red dot should coincide with the red dot on the locking pawl of the camera. Then press the attachment firmly downwards and turn it to the right until it snaps in audibly. Furthermore, the covering mask for the viewfinder should be slipped from the front on the accessory shoe of the Contina (fig. 5). When looking through the viewfinder the correct framing of the picture will be seen. The distance should be set by means of the grooved levers on the side of the Steritar D and then read off. At the shortest possible distance of 9 ft all objects beyond 8 ft (the beginning of the stereoscopic taking range) will be within the range of the depth



of field (see page 16).

There is also a special viewfinder for the Contina (order no. 426), which shows not only the image fields of the three focal lengths of the Pantar of 30 mm, 45 mm and 75 mm but also that for stereo pictures. The two brackets in the central rectangle of the brightly luminous frame lines show the image field of the stereo picture (fig. 6). In order to compensate for the viewfinder parallax the small lever in the foot of the viewfinder must be set to "infinity" when the taking dis-

Fig. 5

tance is more than 13 ft and to the double-dot when the distance is shorter than 13 ft. The one-dot setting mark applies only to flat pictures.

The Exposure

Attention should be paid to the fact that, for stereo pictures, the camera should never be tilted or even turned through 90 degrees. The taking position should always be as near horizontal as possible and not tilted. The Steritars have been designed for a taking range reaching from 8 ft to infinity (see also page 21).

The diaphragm can be set to any f/number of the scale. It should be

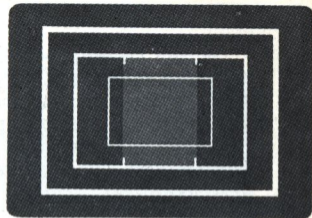


Fig. 6

chosen so that everything is sharp from the nearest point of the taking range to infinity. The most suitable stop can easily be determined by using the tables on page 16 or 17, which contain all the values of possible settings for the Steritars. With the Contaflex the stop can be read off from the depth-of-field scale of the camera. Some subjects may be suitable also for pictures with a blurred background.

When the highest possible readiness for action is required, the red-dot focusing system can be used (stop $f/8$, distance 20 ft with the Contaflex, 15 ft with the Contina), which gives a depth of field over almost the entire taking range.

If the lighting conditions are unfavourable or the movements too rapid so that a stop larger than $f/5.6$ becomes necessary, the separator shield, supplied with the Steritars, should be inserted into the two bushings in the prism attachment (fig. 7), in order to obtain

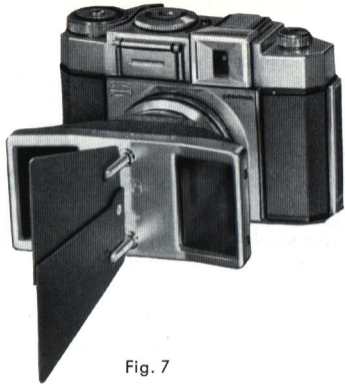


Fig. 7

a satisfactory separation of the half-images even when the contrasts are extremely high.

The exposure time can be determined most conveniently by using the exposure meter built into the camera or with the Ikophot Rapid Zeiss Ikon photoelectric exposure meter. The exposure time should

Depth-of-field table for stereo-exposures with Contaflex III and IV (focal length of lens 50 mm)

Distance in feet	Depth of field in feet at stop						
	2.8 *	4*	5.6	8	11	16	22
8	—	—	—	22'9" - ∞	16'8" - ∞	11'6 1/2" - ∞	8'6" - ∞
20	15'4" - 28'9"	14' - 35'6"	12'6" - 51'7"	10'8 3/8" - 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"	7'1/2" - 17'5"	6'4 1/4" - 24'3"	5'5 1/2" - 71,4"	4'8" - ∞

* Use separator shield

Depth-of-field table for stereo-exposures with Contina and Contaflex I and II (focal length of lens 45 mm)

Distance in feet	Depth of field in feet at stop						
	2.8*	4*	5.6	8	11	16	22
8	-	-	-	16'9''-∞	12'3'' -∞	8'4''-∞	6'2'' -∞
20	14'2''-34'1''	12'7''-48'11''	10'11''-117'	9'3''-∞	7'11''-∞	6' -∞	4'10''-∞
15	11'6''-21'8''	10'5''-26'9''	9'4'' -39'2''	8' -129'6''	6'10''-∞	5'6''-∞	4'6'' -∞
10	8'4''-12'6''	7'9''-14'1''	7'2''-16'10''	6'4''-23'10''	5'7'' -50'3''	4'8''-∞	3'11''-∞

* Use separator shield

be generous rather than too short. The value indicated by the meter is, as usual, transferred to the camera shutter. The delayed action release and flashlight can also be used, of course.

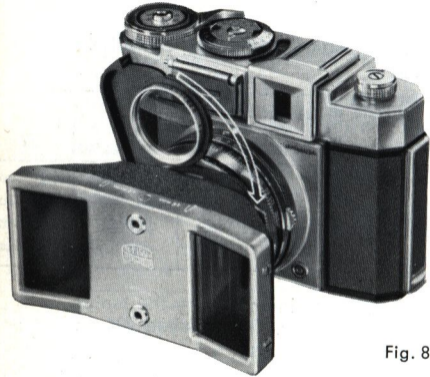


Fig. 8

Accessories

Zeiss Ikon precision filters

The same filters as used for the standard lenses of the following cameras are used for Steritar B for Contaflex III and IV and the Steritar D for the Contina III (order no. of filters no. 382). They are inserted into the swivelling filter holder (fig. 8) from the front and screwed in. The filter holder should then be

folded back until it snaps in.
For the Steritar A for Contaflex I and II there are coated precision filters in a special plug-in mount (order no. 313 yellow and UV). They should be plugged from behind into the prism attachment (see fig. 9). The Steritar A can then be screwed into the bracket without difficulty.

Leather case

A special leather case is provided for the Steritar (order no. 1291). This case





accommodates also the separator shield and, in the case of the Steritar D for the Contina, also the viewfinder mask (fig. 10). The lid has ample space to accept the removed front element of the standard lens.

Maintenance of the Steritar

The accessible glass components of the prism attachment should be handled with the same care as the lens of the

Fig. 10

camera. Dust should be removed by means of a soft brush. Only when it is absolutely necessary should the glass surface be wiped with a clean, frequently washed linen rag. The Steritar should always be stored with the two protection caps attached. It is a good plan to remove the front cap only after the Steritar has been fixed to the camera.

The Technique of Stereo Photography

The boundaries of the stereo picture

As a spatial guide for the human eye the framing of the stereo picture is of the greatest importance. It is advisable, therefore, to form this frame so that in the standard stereo photograph all objects appear as if seen through a window and behind it.

If the mounting is carried out by using the Zeiss Ikon high precision stereo masks (see page 24) this effect is easily achieved when the minimum taking distance of 8 ft has been adhered to.

If, however, subjects are photographed which are much nearer to the camera than 8 ft the parts closest to the camera will appear in front of the frame. For special effects, parts of the subject can, therefore, be placed so that they protrude from the „window“ when seen through the viewer, but in such cases care must be taken to ensure that on no account are the close subjects cut off by the framing.

Depth of field

In general, the depth of field in stereo photographs should be as

great as possible. This can be achieved by selecting a suitable aperture and taking distance. The simplest way is to use the red-dot setting, which ensures a sharp picture over a wide range (see page 14), but the aperture and distance can also be set, of course, according to the prevailing taking conditions.

Illumination

Stereo pictures should be well illuminated over the entire image field. Large areas of dark shadows usually impair the impression of space. It is, therefore, well worth while to use a bright illumination without high contrasts. Flashguns, such as the Zeiss Ikon capacitor

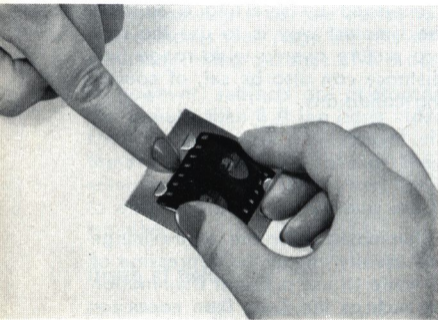


Fig. 11

units Ikoblitz 0 and folding Ikoblitz can often be used with advantage.

Mounting stereo pictures

Stereo pictures can be viewed through a viewer in the old-fashioned way or projected on to a screen. For both these purposes, the two half-images must be arranged in a correct position relative to each other (correct distance be-

tween them and absolutely equally high). It is the special advantage of the Zeiss Ikon stereo system that the two half-images are on one film strip together side by side and need neither be separated nor separately mounted.

Those pairs of our photographs which have come out satisfactorily are cut out together from the film strip and temporarily inserted

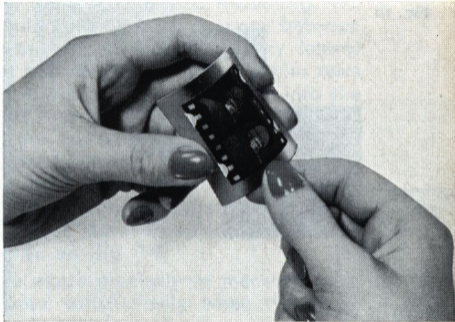


Fig. 13

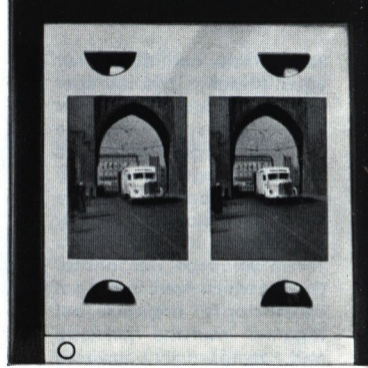
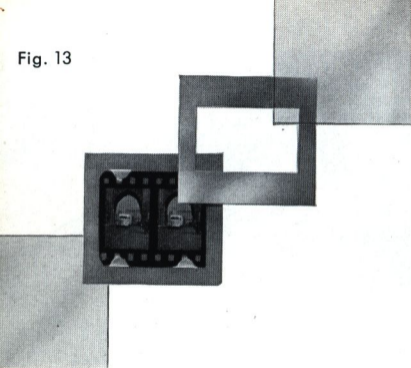
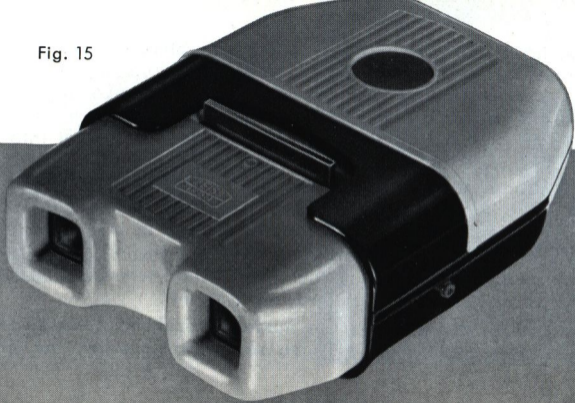


Fig. 14

into the holders of the Original Zeiss Ikon Stereo Mask (fig. 11). The central bar of this mask should cover the blank space between the two half-images. Should it be necessary to make any lateral adjustments, the mask should be bent slightly so that the film rests on the outer curve; in this way it will be easy to slide it into the correct position (fig. 12). The next step is to bind the transparency; the film, sandwiched between the stereo mask and the accompanying cover mask (ill. 13), is placed between the usual commercial 2" x 2" (5 x 5 cm) cover glasses in the same way as a normal transparency. The ring-symbol (o) should then be attached on the white strip to the lower left-hand corner of the slide when the image is laterally correct and the right way up (fig. 14).

The Zeiss Ikon Stereo Masks are made precisely to measure since they can only serve their purpose satisfactorily when the given

Fig. 15



measurements are adhered to strictly. The masks can be obtained in sets of 20 (order no. 1503) from all photo dealers dealing in stereo equipment.

Viewing and projection

For viewing stereo pictures made by means of a Steritar the o-stereo viewer (order no. 1427) should be used. The Zeiss Ikon o-stereo viewer has two double-magnifiers with particularly large eyepieces, which, in conjunction with a built-in image-field lens, will compensate for the differences in the interpupillary distance of the observers.

This also facilitates viewing by wearer of glasses. The o-stereo viewer should be held against any light source (daylight or artificial light). Viewing is, however, greatly improved if the illumination unit (order no. 1427/01) is used (fig. 15). It can be plugged into

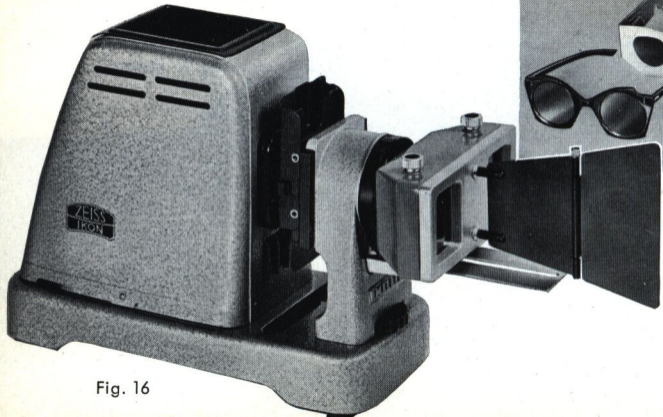


Fig. 16



Fig. 17

the viewer. The necessary current is obtained either by batteries or via a small transformer (order no. 1317), which can be connected to the mains supply (**A. C.** 110—130 volts or 220—240 volts **only**).

For projection the efficient Ikolux projectors fitted with special stereo accessories can be used. These projectors can also be employed without any other accessories for the projection of oo-stereo pictures taken with the Contax camera and the Stereotar C. (fig. 16).

Since stereo pictures are projected with polarised light a screen with a metallic surface (the so-called silver screens) must be used. For viewing the pictures, polarising spectacles are necessary, which are quite inexpensive and can be obtained with either cardboard or plastic frames (order nos. 1500 and 1501).

Particulars of the Ikolux projectors can be obtained from your photographic dealer.

Further technical development may require slight changes on the devices as compared with this description.



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