ZEISS IKON

INSTRUCTIONS FOR USE

ZEISS IKON

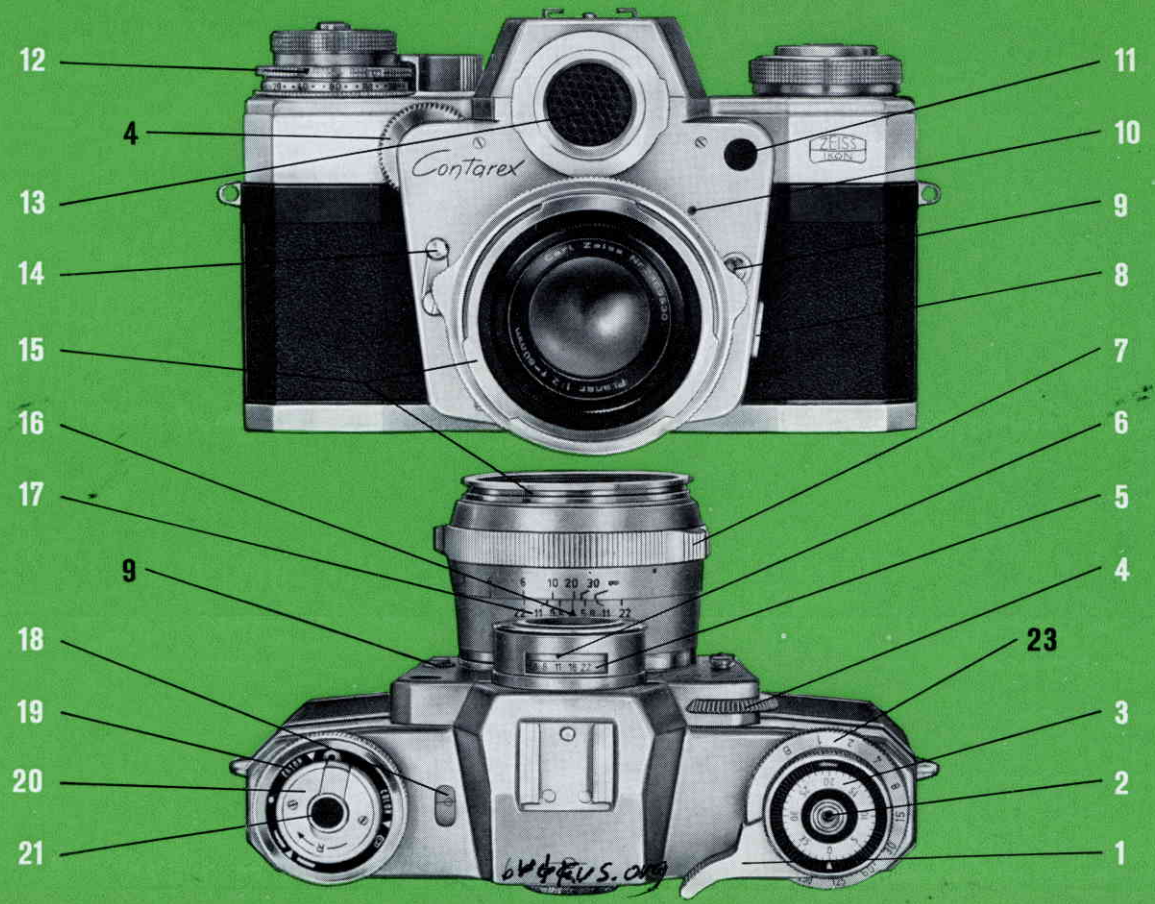
Contarex 35 mm

ZEISS BIOGON
f/4.5-21 mm

ZEISS DISTAGON
f/4-35 mm

ZEISS PLANAR
f/2-50 mm

Comparison of focal lengths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Contarex
ZEISS
IKON
Carl Zeiss
Planar 1:2 f=50mm

1 Rapid wind lever
2 Release knob with thread
3 Frame counting disc
4 Diaphragm ring
5 Aperture window
6 Mark for aperture
7 Setting ring on lens mount
8 Flash contact
9 Button for exchange of lenses
10 Red dot for exchanging lenses
11 Light window
12 Film-speed mark
13 Perforated disc (light baffle) of the exposure meter
14 Lever for delayed action release (selftimer)
15 Bayonet mount for filters or lens hood
16 Setting mark
17 Depth-of-field scale
18 External exposure meter window
19 Film-type indicator
20 Rewind disc
21 Folded crank
22 Shutter-speed mark
23 Shutter-speed ring
24 Eyelets for carrying straps
25 Viewfinder eyepiece
26 Locking bar for camera back
27 Accessory shoe
28 Focal plane
29 Tripod bush
30 Rewinding mark

The Contarex

by ZEISS IKON AG. Stuttgart is a single-lens miniature reflex camera for the 24 x 36 mm negative format. The camera has a parallax-free viewfinder, a photo-electric exposure meter coupled to the focal-plane shutter, a rapid film wind lever and interchangeable lenses.

The CONTAREX is a most suitable instrument for the professional photographer, the scientist, the press photographer, the technician and also for the discriminating amateur, all of whom will be able to obtain excellent photographs with it even under the most difficult conditions. The viewfinder will always show the upright and laterally correct image which will be depicted on the film no matter which lens is used. This applies also for close-ups, close-up magnifications, photo-micrographic and other specialised work. The reflected image seen through the taking lens will always be completely free from parallax.

Many practical accessories widen the scope of the camera in all fields of photography; in short, the CONTAREX is an extremely versatile camera which meets all requirements, since even the most difficult photographic problems can be solved with its aid, with amazing speed and simplicity.

These instructions for using the CONTAREX are intended to make the CONTAREX owner familiar with his camera, and show how this precision camera can be employed to yield good pictures with the greatest ease of operation. Further particulars will be found in the CONTAREX literature and if you are still in doubt, do not hesitate to ask your usual photo-dealer for advice.

The special features of the CONTAREX

All the advantages of both the famous ZEISS IKON cameras, the CONTAX and the CONTAFLEX are combined in the CONTAREX. The most popular features of the CONTAREX are these:

The all-metal die-cast body which ensures the highest possible precision and rigidity.

The built-in photo-electric exposure meter with its wide measuring range and colour-corrected photo-cell.

The automatic exposure control. The diaphragm and the shutter speed settings are coupled to the exposure indicator in such a way that, starting with one component, the other one is determined automatically. The indicator can be seen in the viewfinder adjacent to the actual finder image and, in addition, also on top of the CONTAREX.

The parallax-free reflex-viewfinder with its bright, large, uniformly-illuminated image field and two types of rangefinder: a split-image rangefinder and a micro raster ring, which are both coupled to the focusing device.

The interchangeable CARL ZEISS lenses which have been especially computed for the CONTAREX, are in rapid-change bayonet mounts. The range of interchangeable lenses extends from the 21 mm super-wide-angle lens to those of extremely long focal lengths. The CONTAREX lenses from 35 mm to 135 mm have pre-set spring-diaphragms which are coupled to the exposure meter.

The shutter speeds from 1 sec. to $^1/_{1000}$ sec. and „B" for time exposures can be set with a ring and are also coupled to the exposure meter.

The focal-plane shutter runs smoothly and is free from vibration. It is synchronised for both flashbulbs and electronic flash and automatically selects the correct moment of ignition if the shutter speed is correctly set for the type of flash in use. A delayed action device is built into the shutter.

All settings - distance, aperture, depth of field, shutter speed and exposure indication can be read off from above at a single glance.

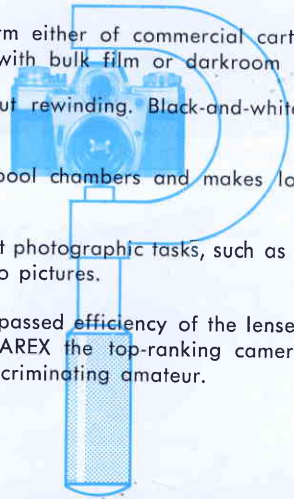
Standard 35 mm miniature film is used with the CONTAREX, in the form either of commercial cartridges or daylight-refills in CONTAREX cassettes, which can also be used with bulk film or darkroom refills.

The twin-cassette system makes it possible to remove the film without rewinding. Black-and-white and colour films can also be exchanged without rewinding.

The detachable back helps considerably in dusting and cleaning the spool chambers and makes loading and unloading an easy matter.

Only a few accessories are needed to simplify the mastering of difficult photographic tasks, such as close-ups, close-up magnifications, photomicrography, copying and tele-photo pictures.

The highest possible precision in the mechanical construction, the unsurpassed efficiency of the lenses and the absolute reliability of the built-in exposure meter make the CONTAREX the top-ranking camera for the professional photographer, the scientist, the technician and the discriminating amateur.

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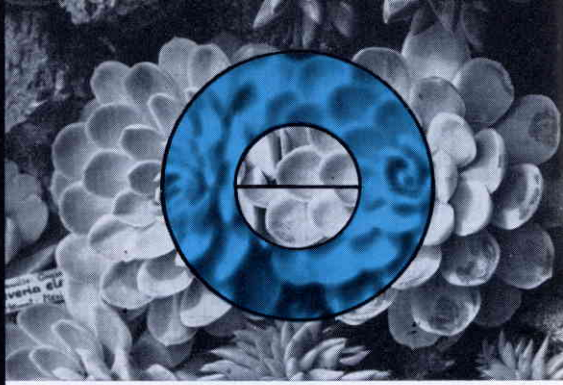


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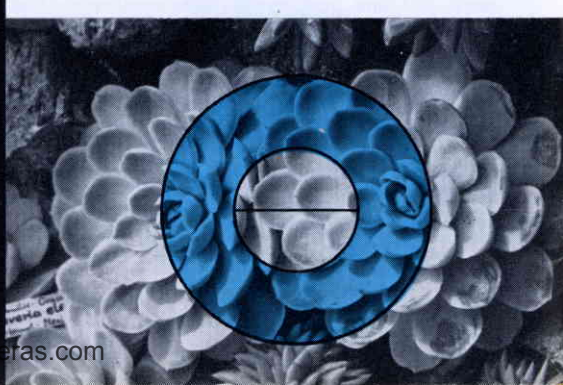


The controls

We advise you to practise operating the various controls and levers before loading the camera. Turn out the inner leaves of the cover for further reference, and generally get familiar with your camera.

Setting the distance. The correct distance should be set by operating the rangefinder within the finder image. In the centre of the finder image is a circular area which is divided into two halves (definition indicator). When a perpendicular line is sighted in the viewfinder and the focusing ring (7) is operated, the two images in the rangefinder will move in opposite directions and the vertical line will appear broken. The distance is correctly set when the two partial images are exactly aligned and form one single undistorted image. When taking upright pictures a horizontal line should be chosen.

The split-image rangefinder is surrounded by a micro-raster ring, which is similar to a ground-glass screen ring. The outlines of a subject will appear unsharp in this ring, when out of focus. The micro-raster ring should be used for focusing, therefore, in the same way as a ground-glass screen is used. This method of focusing should be used when the subject has no distinct vertical lines, especially when complex structures or patterns are to be photographed or the CONTAREX is used for copying. The CONTAREX lenses from 35 mm to 250 mm focal length can be focused with either the split-image rangefinder or the micro-raster ring (Fig. 1).

The area of the finder image outside the central ring is always bright and sharp and cannot be used for focusing.

Fig. 1

After focusing, the actual distance and the depth of field can be read off from the lens mount. On the setting mark (16) the focused distance is indicated. To the left and to the right of the setting mark the f/numbers of the apertures are engraved. The sharp zone, that is to say, the depth of field, reaches from the distance-figure which is opposite the set aperture-value on the left, to the distance which is opposite the same f/number on the right. Exact particulars of the depth of field can be found in the depth-of-field tables. As the plane of reference for the distances, the focal plane is marked by the circle (28) on top of the viewfinder eyepiece of the CONTAREX.

The distance can also be set by using the depth of field scale. Turn the lens so as to ensure the depth of field required at any given aperture setting and then set this aperture by means of the aperture setting ring (4). Further distance setting is then unnecessary (Fig. 2).

Fig. 2

Automatic exposure control

Correct exposure on a film of given speed is determined by the aperture and the shutter speed. For this reason the exposure-coupling of the CONTAREX is designed so that the photographer can start with either a shutter speed or an aperture, the other component then being set automatically by the exposure coupling and so ensuring correct exposure.

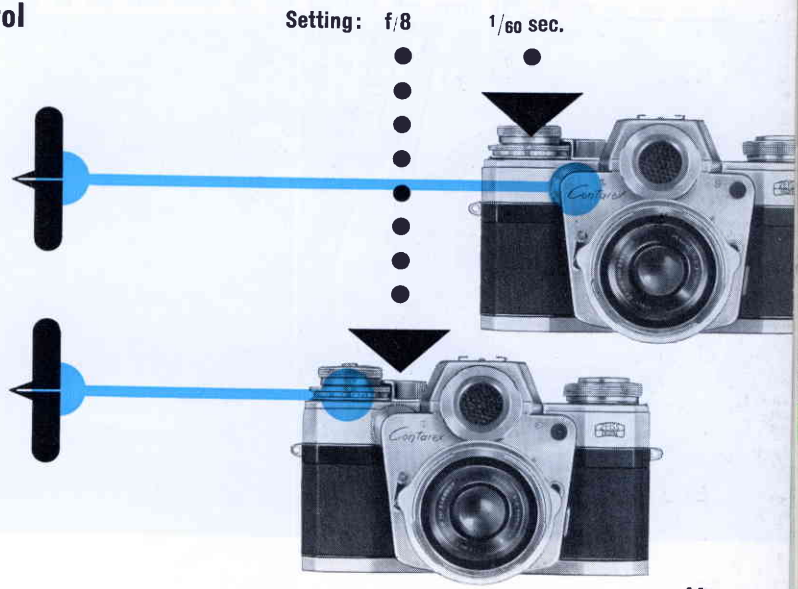


Fig. 3

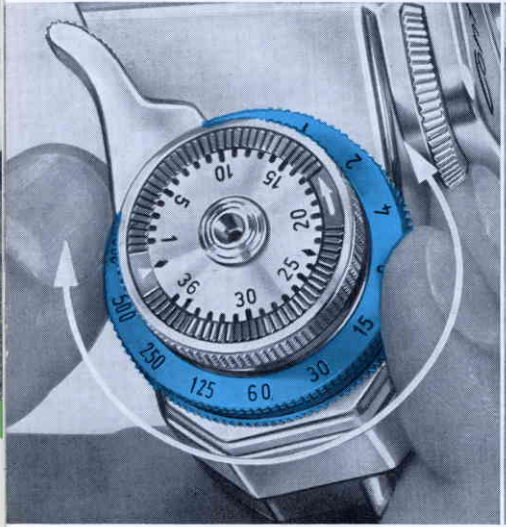


Fig. 4

When loading the camera the speed of the film must be set against the mark (12). Prior to taking a picture, most photographers will pre-select the shutter speed which takes into account the speed of the moving subject. For this purpose the shutter speed ring (23) should be turned so that the mark (22) is opposite the shutter speed required. This sets the shutter speed desired (Fig. 3). The figures on the shutter speed ring are simplified and denote fractions of a second (e. g. 60 = 1/60 sec.). With the hand-held camera and the standard lens, pictures can be made without camera shake at shutter speeds from 1/30 sec. to 1/1000 sec. Slower shutter speeds and time exposures should be employed only when the camera is screwed to a tripod. With lenses of longer focal lengths the shutter speeds should be considerably faster. Only full values can be chosen.

When sighting through the viewfinder, you will see a bright strip to the right of the finder image, which is provided with a central mark. The pointer of the exposure meter is reflected into this strip. When the aperture setting ring (4) is turned the pointer can be centered on the mark (Fig. 4). When the pointer is dead on the mark the correct aperture for the shutter speed determined beforehand is pre-set. This setting can be any intermediate aperture value. The pre-set aperture can be read off from the aperture scale (5). When the shutter is released the diaphragm inside the lens springs automatically to the pre-set aperture.

If the pointer cannot be centered on the mark by turning the aperture setting ring (4), the shutter speed chosen is either too slow or too fast for the prevailing lighting conditions and the speed of the film in use. A slower or faster shutter speed should then be selected.

Fig. 5

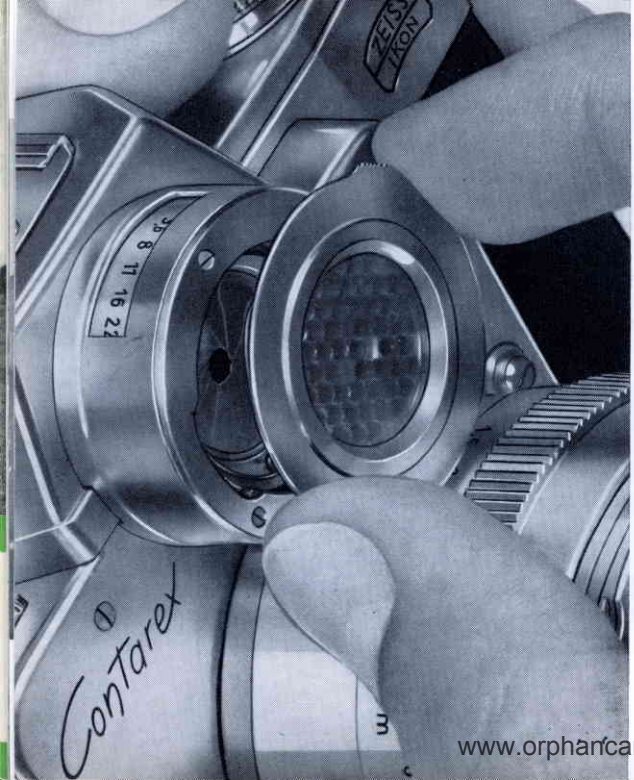
The indication of the exposure meter (18) can also be read off from the top cap of the CONTAREX. Here the pointer should be centered on the centre of the circle.

If an exposure is to be made with a pre-determined aperture, e. g. to obtain a definite depth of field, the aperture in question should be set by means of the aperture setting ring (4) so that the aperture figure in the aperture scale is opposite the mark. Now sight through the viewfinder and turn the shutter speed setting ring (23) so that the pointer in the viewfinder is centered on the mark. This sets the correct shutter speed in relation to the pre-selected aperture. In this case, however, only one shutter speed should be indicated which should correspond to the mark (22) and snap in distinctly. When an intermediate value is indicated, turn the ring (23) until it snaps in and then turn the aperture setting ring (4) until the pointer is exactly opposite the mark.

The exposure coupling involves a limit in the shutter speeds which can be set automatically for the various film speeds. For instance, with 12 ASA film, the slowest speed is 1 second, with 50 ASA film it is 1/4 sec., with 400 ASA film 1/30 sec. etc. Rigid stops ensure that these limits determined by the measuring range of the exposure meter cannot be exceeded, since this would result in incorrect exposures.

When it is required to use any combination of shutter speed and aperture independent of the coupling (e. g. for copying), the mark for the film speed (12) is set to the green dot at the beginning of the film-speed scale. Then all settings from "B" to 1/1000 sec. can be used without restriction (Fig. 5).

When, in poor lighting conditions, an ultra-high speed film is to be used, there is also a possibility of selecting the slow shutter speeds. For this purpose the perforated disc (light baffle) (13) on the front of



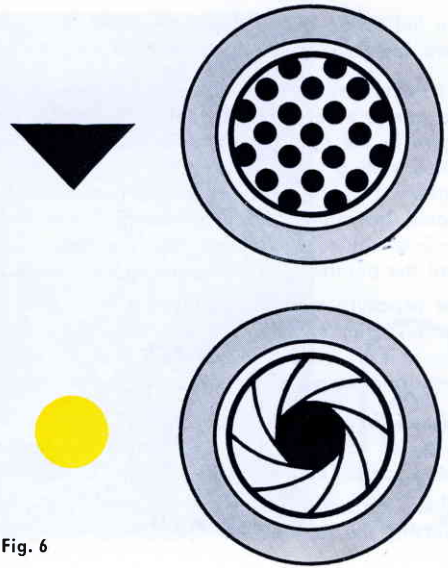


Fig. 6

the exposure meter should be removed. Turn the perforated disc with its two handles to the left and pull it out towards the front. Now a yellow dot will be visible. The film speed should now be set to the yellow dot and no longer to the black triangle (Fig. 6).

With the light baffle removed the exposure meter has been converted to "incident light measuring". This also changes the procedure of measurement: now the incident light falling on the subject must be measured, that is to say, the exposure meter should be directed from the subject towards the intended standpoint of the camera. With this method of measuring the sensitivity of the measurement is increased by four lens stops (x 16) and the measuring range now also embraces the slower shutter speeds.

This method (incident light measurement) can be employed also when the lighting conditions are difficult to assess (e. g. contre-jour shots, high contrasts, etc.) and for subjects having a very bright or dark background.

If, for working under normal conditions, the light baffle is replaced – push on and turn to the right – the film speed must once again be set so that the black triangle (12) points to the speed figure.

When setting the aperture according to the indication of the exposure meter, full f/numbers will not always be obtained but sometimes intermediate values. These intermediate values will be retained accurately when the pre-set spring diaphragm snaps in. This ensures absolutely correct exposure.

Correct light measurement should be made always with the camera in a horizontal position even when the actual exposure is to be made in the upright position.

Fig. 7

Fig. 8

The automatic exposure control of the CONTAREX is designed to operate with the following lenses: DISTAGON f/4, 35 mm; PLANAR f/2, 50 mm; SONNAR f/2, 85 mm; and SONNAR f/4, 135 mm. The indication of the exposure meter applies also to the BIOGON f/4.5, 21 mm and the SONNAR f/4, 250 mm. The stop read off from the aperture scale, however, should, in these cases, be set on the lens itself.

When using colour reversal film, the speed of which is usually given as a guide value (to be exposed as a X ASA film), it is advisable to make a few test exposures in order to establish the reaction of the colour film to the indications of the exposure meter.

When taking subjects of low contrast (overcast sky, dull weather) or under poor lighting conditions in interiors on reversal film, the film speed should be set, not to the black triangle mark (12) but to that marked "x 2".

The exposure (Fig. 7, 8)

When the pointer of the exposure meter is set to the mark inside the viewfinder or on top of the camera, correct exposure is ensured and the shutter can be released. The right-hand index finger should depress the release knob gently. Do not jerk, but squeeze the knob, taking up the slack in the release mechanism slowly. This will cause the mirror to flip upwards, the diaphragm to spring to the pre-set position and the shutter to run off at the pre-set speed. Then the mirror returns to the finder position whilst the diaphragm remains at the pre-set value in order to remind you that the next exposure can be made only when the rapid wind lever is operated. With the operation the film is advanced by one frame, the

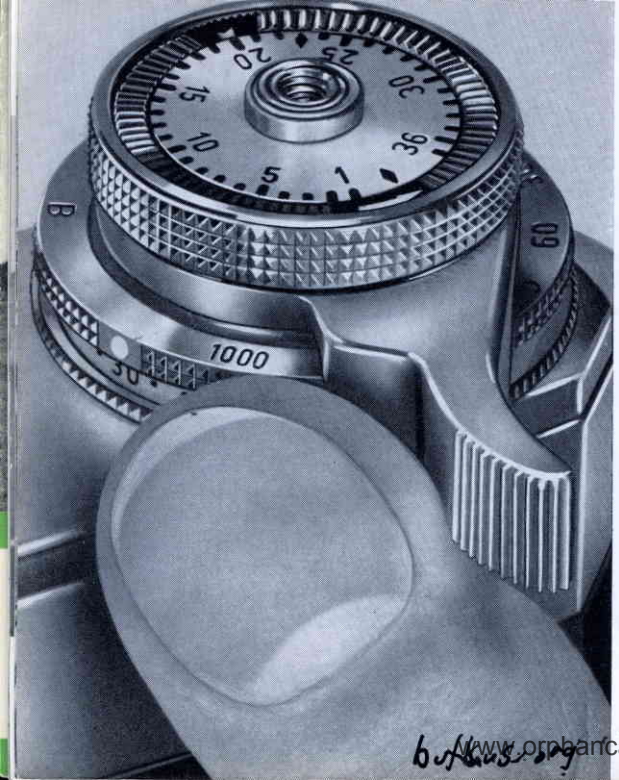
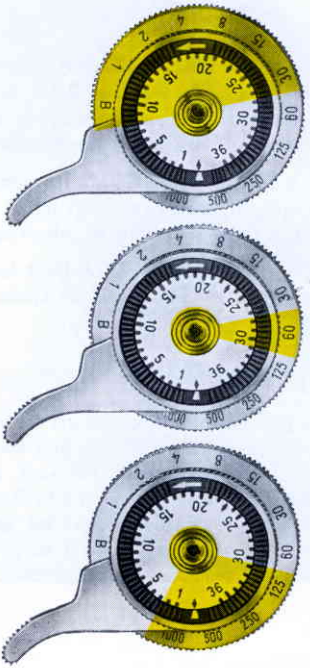


Fig. 9



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shutter is tensioned once again and the diaphragm opened to its full aperture. After exposure measurement and distance setting, the next exposure can be made (Fig. 9).

Flash exposures

The focal-plane shutter of the CONTAREX can be coupled to all types of flash lamp. Setting the shutter speed (23) will automatically adjust the corresponding flash contact so that the various flash bulbs or electronic flash units will be fired at the appropriate instance, always provided, however, that the shutter is set to the correct speed. The shutter speeds are marked by coloured figures. They are:

1 Black (1 – 1/30 sec. and "B") for firing fast-burning flashbulbs (class M) or electronic flashes.

2 Yellow (1/60 sec.) for firing electronic flashes.

3 Red (1/125 – 1/1000 sec.) for firing slow-burning flashbulbs (class FP), which are specially made for use with focal-plane shutters.

The apertures to be employed with the various types of flash unit are indicated in the tables provided with the flash lamps. The appropriate aperture should be set by means of the aperture disc according to the indication in the aperture window.

The delayed action device (self timer) can also be used for flash exposures with all shutter speeds from 1 – 1/1000 sec.

The flash lead should be connected to the flash contact (8) beside the lens (Fig. 10). The flash gun itself can be slipped either into the accessory shoe or screwed to the bracket which is fitted to the tripod bush.

Selftimer

The delayed action device (selftimer) should be tensioned by depressing the lever (14). When the release knob (2) is depressed, the device starts running and will operate the shutter automatically. The lever (20) should be operated only after the shutter has been tensioned. When the lever is depressed right down to its final position the delay will be approximately 12 seconds. Between the final and the initial position are notches into which the lever will click for intermediate delays. The selftimer can be used with all shutter speeds from 1 – 1/1000 sec.

Exposures from a tripod

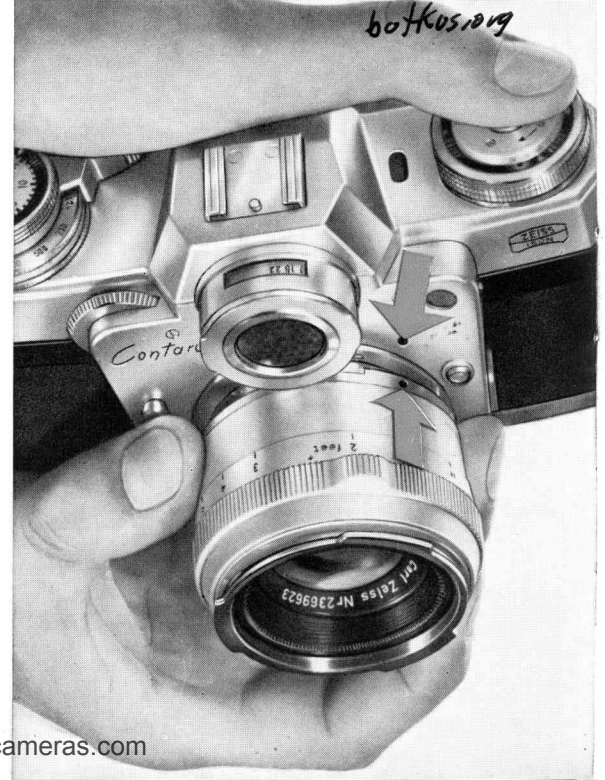
The CONTAREX is provided with a tripod bush (29) and can be screwed to a tripod or a copying unit. This is necessary when time exposures are to be made. A tripod should also be used when long focus lenses

Fig. 10, 11

are employed. The shutter should be released by means of a cable release which can be screwed into the thread of the release knob (2). The tripod bush (29) of the CONTAREX is countersunk into the camera body, which ensures perfect rigidity (Fig. 11).

Exchanging the lens

To ensure rapid and safe exchange of lenses, the CONTAREX lenses are provided with a bayonet and the CONTAREX body with a corresponding bayonet mount. To remove the lens from the CONTAREX, the knob (9) beside the lens should be depressed and the lens turned in an anti-clockwise direction until it stops. When this is done the red dot on the lens will be opposite the red dot (10) on the CONTAREX. In this position the lens leaves the bayonet mount automatically (Fig. 12).



To insert another lens, place the lens on the bayonet mount so that the red dot on the lens coincides with the red dot (10) on the CONTAREX. Turn the lens to the right until it snaps in. This will cause the knob (9) to jump out. The lens will be coupled automatically to the exposure meter as well as to the rangefinder. It does not matter whether the lens itself is set to "infinity" or any intermediate distance, or to which aperture the diaphragm is set. When the lens is inserted the measurement of the exposure meter is limited automatically to the speed of the lens in use.

The CONTAREX lenses can be interchanged in full daylight without fogging the film but it is obvious that the opening in the camera should be protected from direct sunlight.

A special case

Fig. 12

The BIOGON f/4.5, 21 mm, which extends deep into the body of the CONTAREX, can be inserted only when the mirror is in its raised position. For this purpose the shutter must be cocked. When the CONTAREX is tensioned and the mirror is in the viewing position, it can be moved upwards by depressing the small key-lug beneath the mirror. Then the BIOGON f/4.5, 21 mm can be inserted according to the "red dot to red dot" rule. For sighting the viewfinder for 21 mm focal length should be used, which must be slipped into the accessory shoe (27). The depth of field of the BIOGON f/4.5, 21 mm is so great that it is sufficient to guess at the distance. The depth of field at f/5.6, when set to approx. 6 ft., ranges from approx. 34 in. to infinity. Inserting the BIOGON does not involve the loss of a frame. When the BIOGON is removed the mirror will return to the viewing position automatically when the shutter is tensioned (Fig. 13).

Fig. 13

Loading and unloading

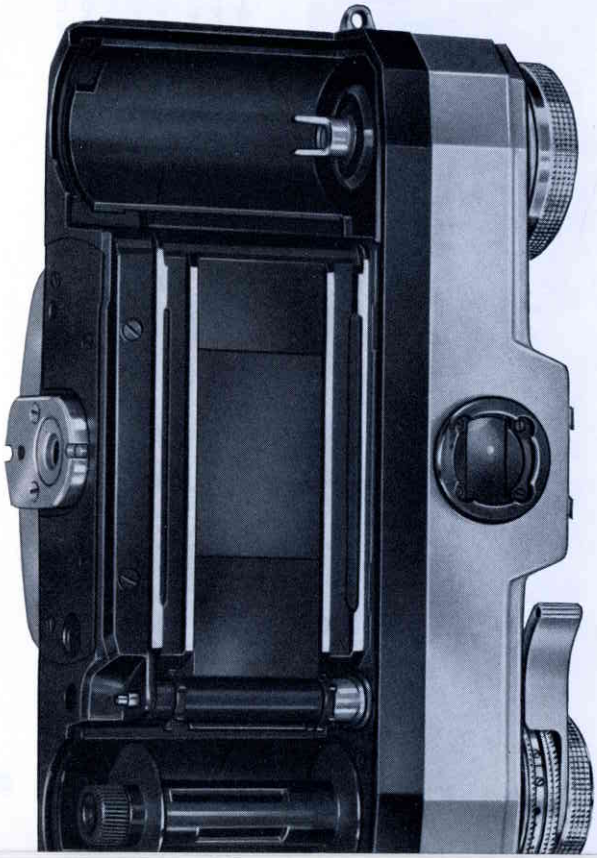
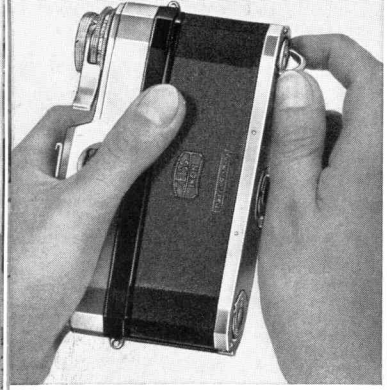
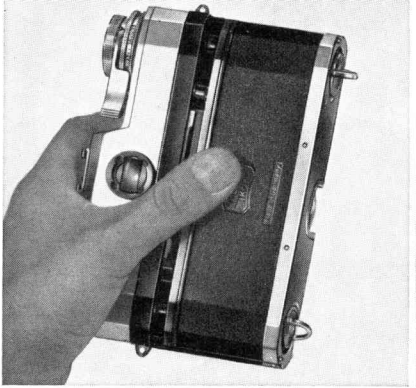


Fig. 14





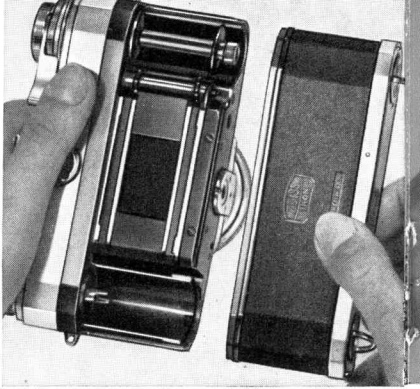


Fig. 15, 16, 17

Opening the camera (Fig. 14, 15, 16, 17)

The CONTAREX should be held in the left hand, with the lens pointing downwards. The locking keys (26) at the base of the camera should be folded outwards with the right hand and turned to the right and the left respectively. This unlocks the back. With your left thumb push the back of the camera downwards and lift it off with the right hand.

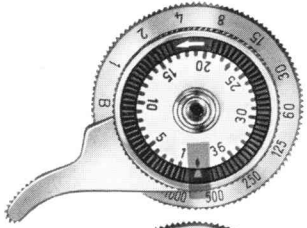
Loading (Fig. 18, 19, 20)

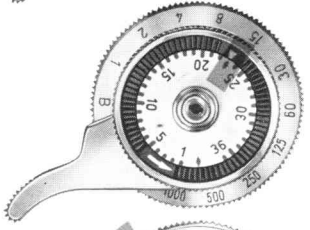
To load the camera, place a standard commercial cartridge for 20 or 36 exposures in the right-hand film chamber so that the trunnion for rewinding engages the lower opening of the cartridge. Pull the beginning

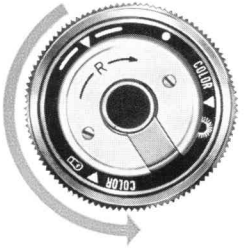
Fig. 18, 19, 20 -

of the film across the film gate and insert it into the slot of the take-up spool. Hook the third or fourth perforation hole in the lug in the slot and turn the take-up spool so that the teeth of the transport sprocket engage the perforations of the film on both sides.

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. Then slide it back on to the camera body. Turn the locking keys on the base in the opposite direction and fold them up. The keys can be folded only when the back is properly in position.



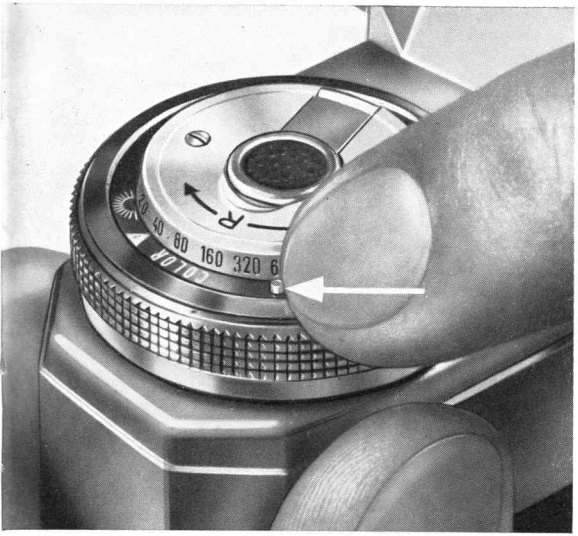




After loading, the frame counter (3) should be set. When your cartridge contains film for 36 exposures set the white mark to the red mark to the left of 36; when you use a 20-exposure cartridge the white mark should be set to the red mark to the left of 20. Now the rapid wind lever (1) is swung around with your right thumb until it butts hard against the stop, and then release the shutter. Do this twice so as to wind the fogged leader film on to the take-up spool. After releasing the shutter twice, unfogged film will be behind the film gate and the frame counter mark will point towards 36 or 20. The frame counter counts backwards, that is to say, it indicates the number of unexposed frames remaining.

If the film is wound on properly, the rewind disc (20) should rotate in the opposite direction to the engraved arrow. When using bulk film (see "Cassettes") or 20-exposure cartridges, the turns of the film may partially unwind; in this case the rewind disc (20) will not rotate when the first frames are advanced. In this case the rewind disc (20) should be turned in the direction of the arrow until a distinct

Fig. 21



resistance is felt. (This is also a reliable indication of whether the camera is loaded at all or not.)

After loading, the speed of the film in use should be set on the speed scale underneath the shutter speed setting ring. For this purpose the upper ring should be lifted up and turned so that its black mark (12) is opposite the film speed required. The ring should be allowed to spring back. When x2 or x4 filters are used, the appropriate filter factor should be set opposite the film speed.

The film-type indicator (19) can also be set to the type of film used in the CONTAREX, by setting the appropriate symbol (black-and-white, daylight colour, artificial light colour film) to the speed figure of the film. The film type indicator has no influence on the functioning of the CONTAREX, but it may prove a useful reminder for you (Fig. 21).

Fig. 22

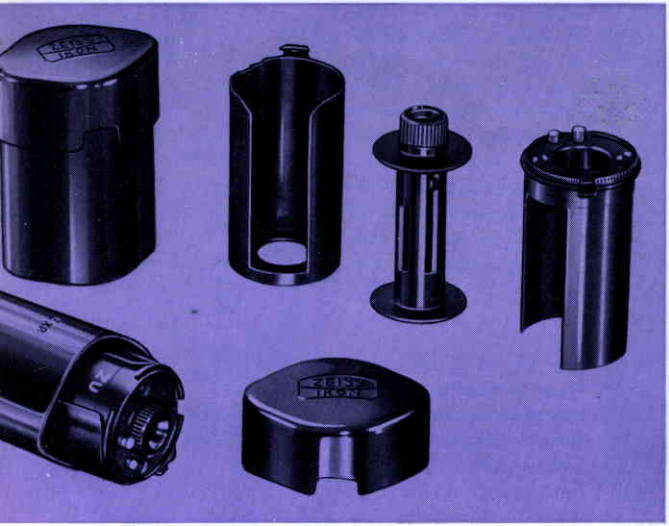
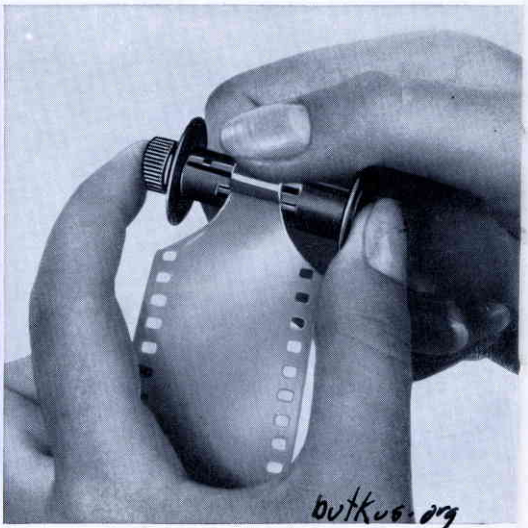


Fig. 23



Cassettes

The CONTAREX will take the same cassettes as used in the CONTAX. You can work either from cassette to cassette or from cartridge to cassette; film types can be interchanged at any time in this way, and after any number of exposures. For this purpose, you should further expose three blanks and only then open the camera. When unlocking the back, the cassettes are automatically closed light-tight. Then you can load the camera with a film of different type and change it again at any desired time.

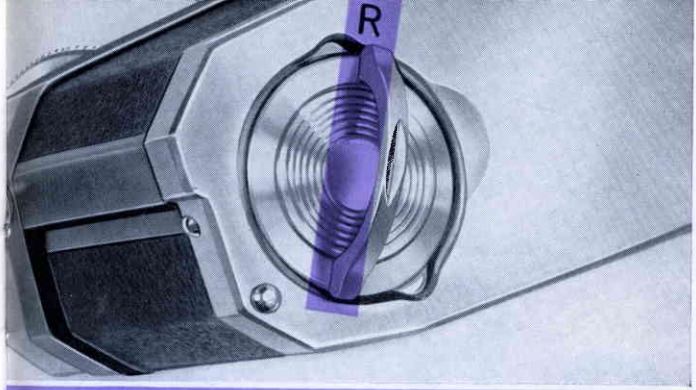
The cassette consists of two shells and a centre spool. To open it, press the locking button, turn the inner and outer shell against each other until their slots coincide, and then pull them apart (Fig. 22).

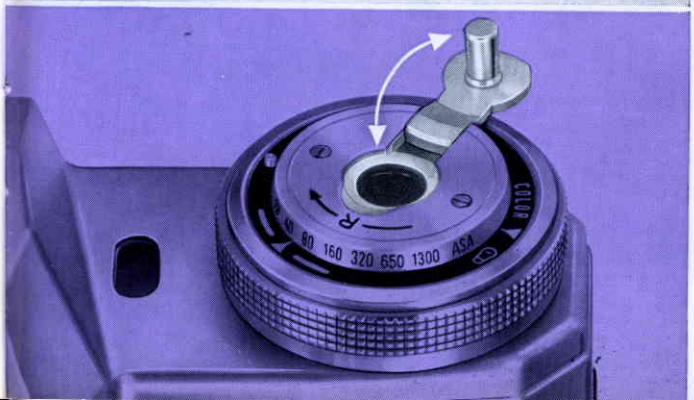
The cassette can be loaded with darkroom and daylight refills or bulk film. When working from cassette to cassette, the film must only be hooked on to the spool of the feed cassette. If the cassette is to be rewound in the camera, then the shaped end of the film must be threaded into the smaller slot so that it protrudes through the larger slot; the end is then secured by sticking it again into the smaller slot (Fig. 23). Hold the film in this position with your thumb and start winding the film while pulling it tight. Insert the full spool with its milled knob first into the inner shell of the cassette and push the outer shell over it. The leader of the film should then protrude through the superimposed slots. Now turn the inner

Fig. 24

and outer shell until they are tightly locked and the word "zu" becomes visible. When inserting the cassettes into either the feed or take-up chambers of the CONTAREX, make sure that the locating pegs of the cassettes engage in the corresponding grooves in the camera body. Turning the locking keys on the back of the camera automatically opens or closes the cassettes (Fig. 24).

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

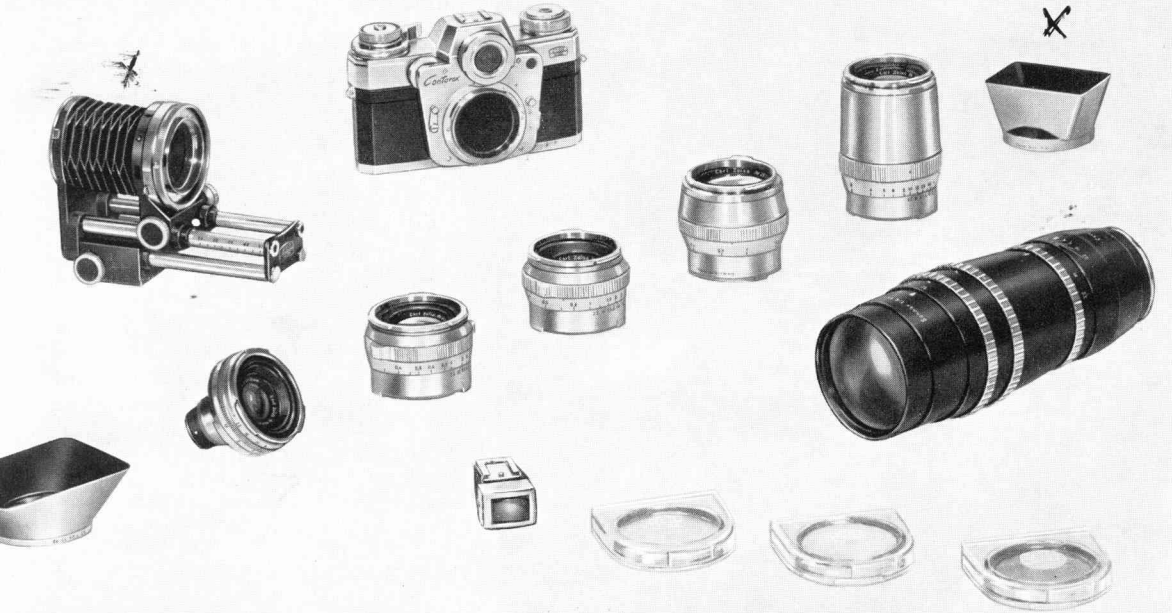




Unloading (Fig. 25, 26)

Exposed films in standard commercial cartridges have to be rewound into their cartridges after exposure. For this purpose one of the locking keys (30) on the camera back (marked "R") must be lifted and turned so that its bar points to the "R". This operation frees the transport mechanism inside the camera. Fold out the countersunk crank (21) from the rewind disc (20) 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 with a soft brush.

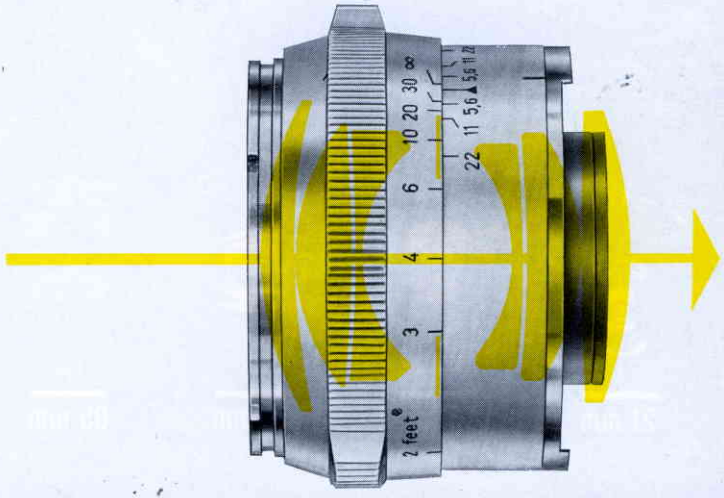
Fig. 25, 26



The CONTAREX-System

To widen the scope of the CONTAREX, several interchangeable lenses and accessories are available. Being a single-lens reflex camera the CONTAREX can be used to solve a wide range of photographic problems with relatively few accessories.

Fig. 27



The CONTAREX lenses

ZEISS IKON

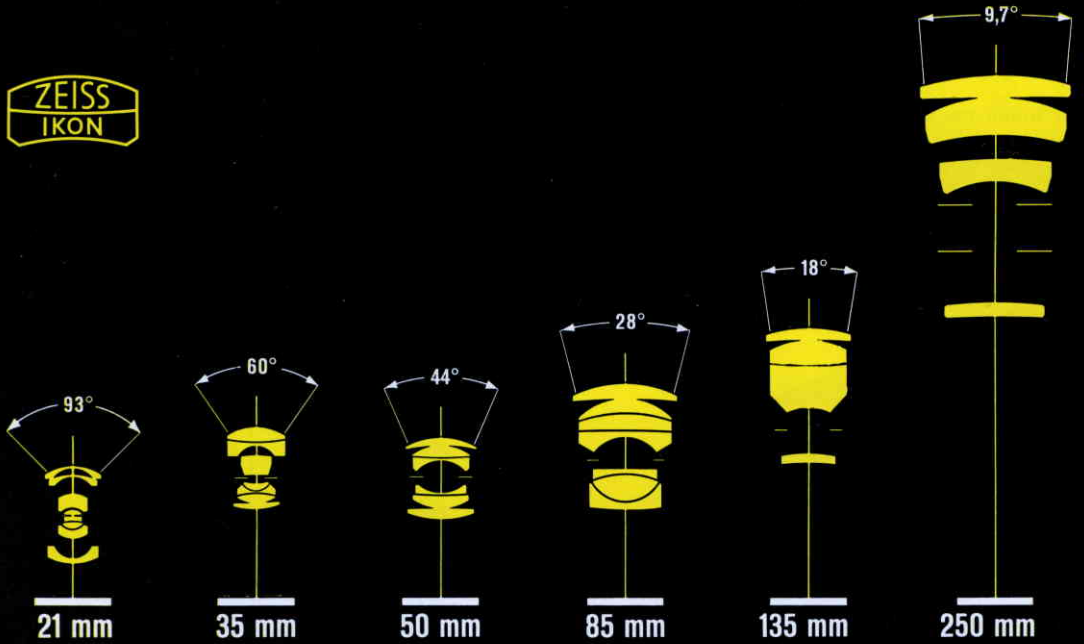


Fig. 28

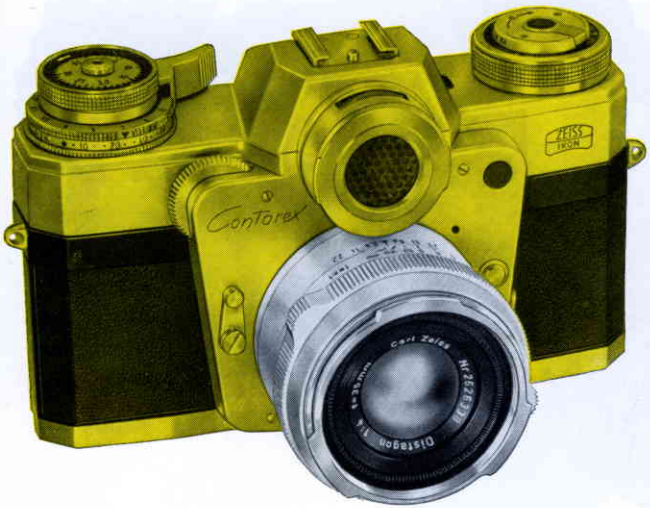
ZEISS PLANAR f/2, 50 mm

The standard lens (angular field of 44°) of excellent optical properties and superb colour correction. This lens is most suitable for general use as well as for close-ups, close-up magnifications and copying. The PLANAR can be focused down to 12 ins. (measured from the focal plane (28). When photographing very close subjects, the additional exposure necessary is provided automatically by the appropriately wider opening of the diaphragm, so that the automatic exposure control is effective down to 12 ins. without extra correction.

ZEISS BIOGON f/4.5, 21 mm

The super-wide-angle lens with the astounding angular field of 93°. The BIOGON is inserted into the CONTAREX after folding up the mirror (see page 26) and is used with a special viewfinder. Its great depth of field makes it possible to neglect distance measurement. Despite the enormous picture angle, the BIOGON excels in its extremely uniform illumination and sharp definition over the entire image field.

Fig. 29



ZEISS DISTAGON f/4, 35 mm

This is a special design for the CONTAREX, in that this wide-angle lens (angular field of 60°) can be used with all the possibilities of the reflex camera. The DISTAGON can be focused down to 7 3/4 in. (measured from the focal plane). At very close distances the diaphragm will also be opened appropriately to retain the facility of the automatic exposure control.

Fig. 30

ZEISS SONNAR f/2, 85 mm

The ultra-high speed lens (angular field of 28°) of relatively long focal length, for press photography, portraiture, stage photography, etc. Excellent definition even at full aperture. This powerful lens permits to take hand-held press shots also in poor light conditions.

Fig. 31

ZEISS SONNAR f/4, 135 mm

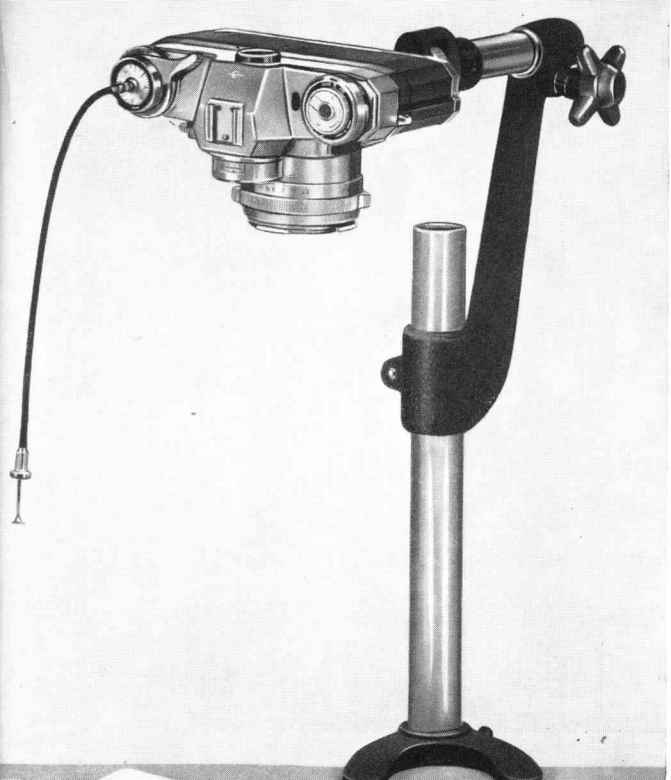
A lens conveying a tele-effect (angular field of 18°) for distant views, architectural detail, portraiture, snapshots of distant objects, etc., which, owing to its speed and compact design and despite its focal length, can be used with the hand-held camera at $^1/_{125}$ sec.

Fig. 32

Fig. 33

ZEISS SONNAR f/4, 250 mm

The lens of ultra-long focal length (angular field of 9.7°) for special fields of photography, such as animals in their natural habitat, photographing distant events (press photography) and generally for bridging great distances. With this SONNAR, the aperture indicated by the exposure meter in the aperture window (5) should be transferred to the lens by setting the front ring to the pre-set f/number. Focusing is performed at full aperture, but immediately before exposure the second ring is turned by hand until it stops: this sets the pre-set aperture for exposure.



CONTAREX Copying Unit

For copying documents, pictures, prints, etc., for texture and scientific photographs of small objects, etc., a copying unit for the CONTAREX is available. It can be fixed to any table by means of a table clamp and can also be used for oblique exposures of any kind. The unit can also be used in combination with the CONTAREX bellows focusing attachment. For particulars see the special instructions for using this unit.

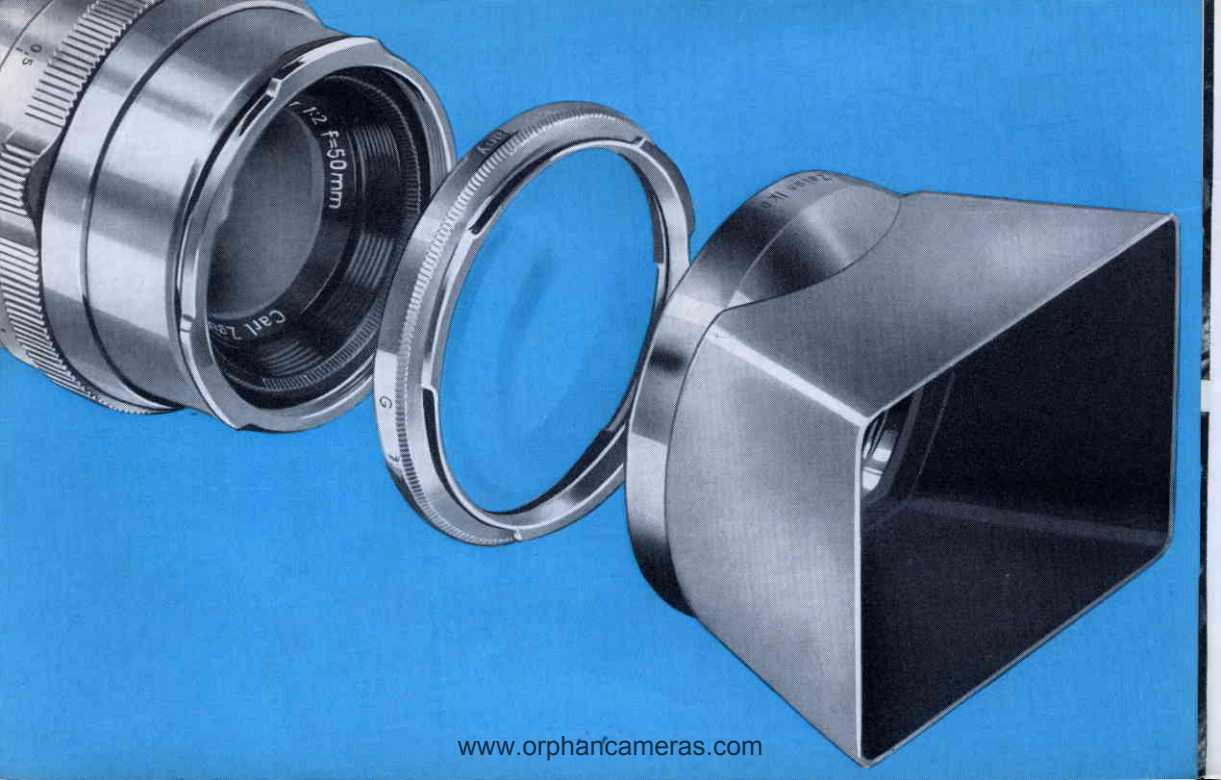
Fig. 34

Diagram and reproduction scales of the Bellows Focusing Unit and ZEISS PLANAR f/2,50 mm.

CONTAREX
Bellows Focusing Attachment

For exposures at very short distances, at a 1 : 1 image scale and for close-up magnification, the bellows focusing attachment is interpolated between the CONTAREX and the lens. With the DISTAGON f/4, 35 mm a x3½ magnified picture can be made. The bellows focusing attachment can be used with all CONTAREX lenses from 35 mm to 135 mm. For particulars see the special instructions issued with the attachment.

Fig. 35



CONTAREX filters and lens hoods

There are CONTAREX filters in yellow, green, orange and red as well as ultra-violet-suppression filters and filters for colour work, such as Ikolor A, Ikolor B, Ikolor C and Ikolor F. When using filters, the filter factor should be taken into account when setting the film speed.

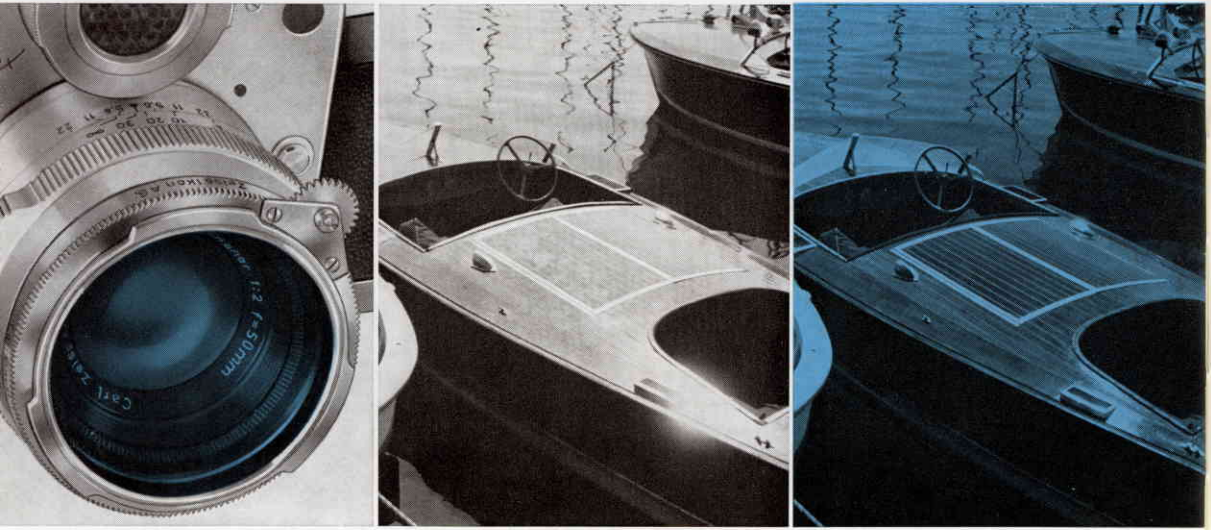
The CONTAREX filters are supplied in a bayonet mount which makes it possible to use the same filters with all lenses from 35 mm to 135 mm. The front bayonet of the filters can be used to accommodate the lens hood, which is also provided with a bayonet mount. For the BIOGON f/4.5, 21 mm in conjunction with the lens hood, the screw-in filters S 49 should be used.

Fig. 36

Copying and micro pictures. Are much easier to focus in the finder image when the angle viewfinder is inserted into the eyepiece of the camera viewfinder.

Two lens hoods are available for the CONTAREX: the lens hood with the wide opening should be used for 21 mm and 35 mm lenses, the lens hood with the narrow opening is designed for the 50 mm, 85 mm and 135 mm lenses.

Fig. 37, 38, 39



CONTAPOL polarising filter. Can also be inserted into the bayonet mount of the 35 mm to 135 mm lenses. To find the most effective polarising effect, the knurled knob should be turned whilst observing the finder image (Fig. 37, 38, 39).

Defective Eyesight. Into the ring on the eyepiece, eye correction lenses can be screwed to compensate for defects of vision, so that focusing and framing can be performed without the aid of glasses. When ordering correction lenses, please quote your optician's prescription for distance glasses.

Cable Release. It is advisable to use a cable release for work at slow shutter speeds and for time exposures. 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 speed setting "B").

Photomicrographs. The lens of the CONTAREX should be replaced by the micro-attachment. The finder image shows the correct framing. Focusing is performed by means of the micro-raster ring. The film speed (12) should be set to the green dot.

Ever-ready case. It protects the CONTAREX from damage. The camera need not be removed from the case for exposure.

Care of the CONTAREX

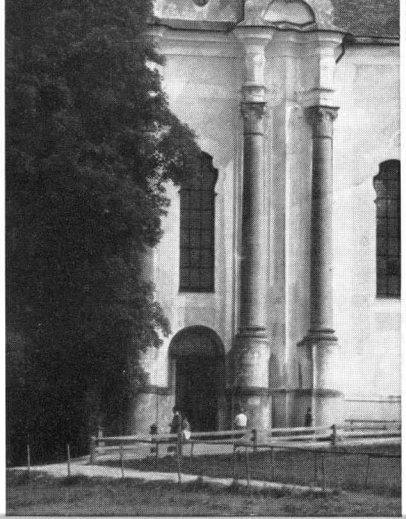
From time to time, the film track and the film transport sprocket bearings of the CONTAREX, the spool chambers and the inner side of the back should be carefully cleaned with a soft brush.

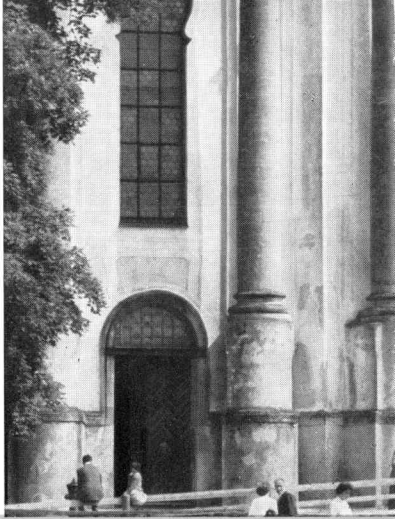
Note: Do not damage or scratch the shutter blind. If necessary, the mirror can be cleaned through the lens opening when the lens is removed. Wipe it with a very soft, non-fluffy piece of linen. Dust and threads can be removed by a soft brush after removing the lens. The lens surfaces, the finder eyepiece and the light baffle of the exposure meter should be cleaned carefully with a soft linen rag and all finger prints removed. Dust should always be removed with a soft brush. Polish the external chromium-plated fittings also with a soft linen rag.

Serial Number

Every CONTAREX has its serial number engraved on the narrow side of the back and inside (a letter preceding the figures). Every lens is also provided with a serial number. You are advised to make a careful note of these numbers as they may help in establishing ownership in cases of loss or theft.

Subject to changes in the interest of technical progress.





ZEISS SONNAR
f/2 - 85 mm

ZEISS SONNAR
f/4 - 135 mm

ZEISS SONNAR
f/4 - 250 mm

Comparison of focal lengths

Cross Section

ZEISS PLANAR
lens f/2 50 mm 1

Diaphragm 2

Control Ring 3

Automatic Exposure Control 4

Selenium Cell 5

Accessory Shoe 6

Pentaprism 7

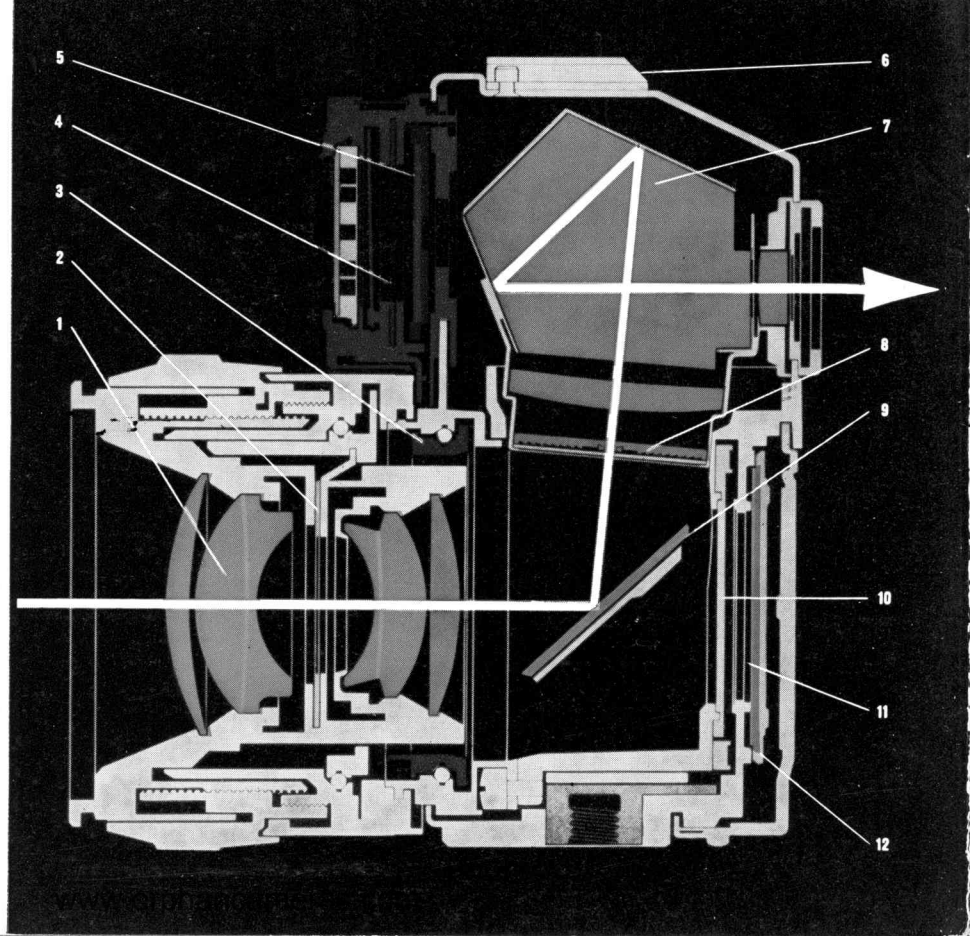
Fresnel Lens with
split image indicator
and micro-raster ring 8

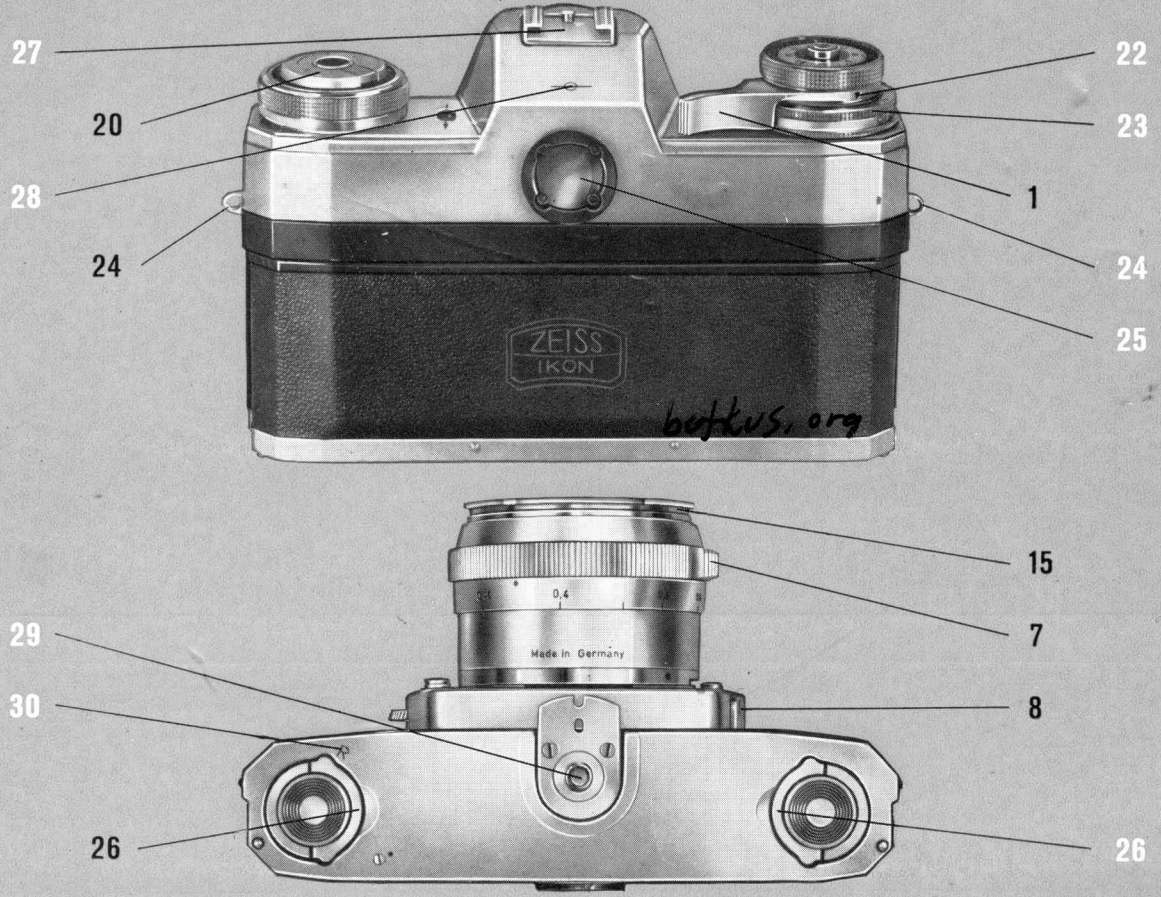
Instant Return Mirror 9

Focal Plane Shutter 10

Film 11

Film Pressure Plate 12

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Cross Section

ZEISS PLANAR
lens f/2 50 mm 1

Diaphragm 2

Control Ring 3

Automatic Exposure Control 4

Selenium Cell 5

Accessory Shoe 6

Pentaprism 7

Fresnel Lens with
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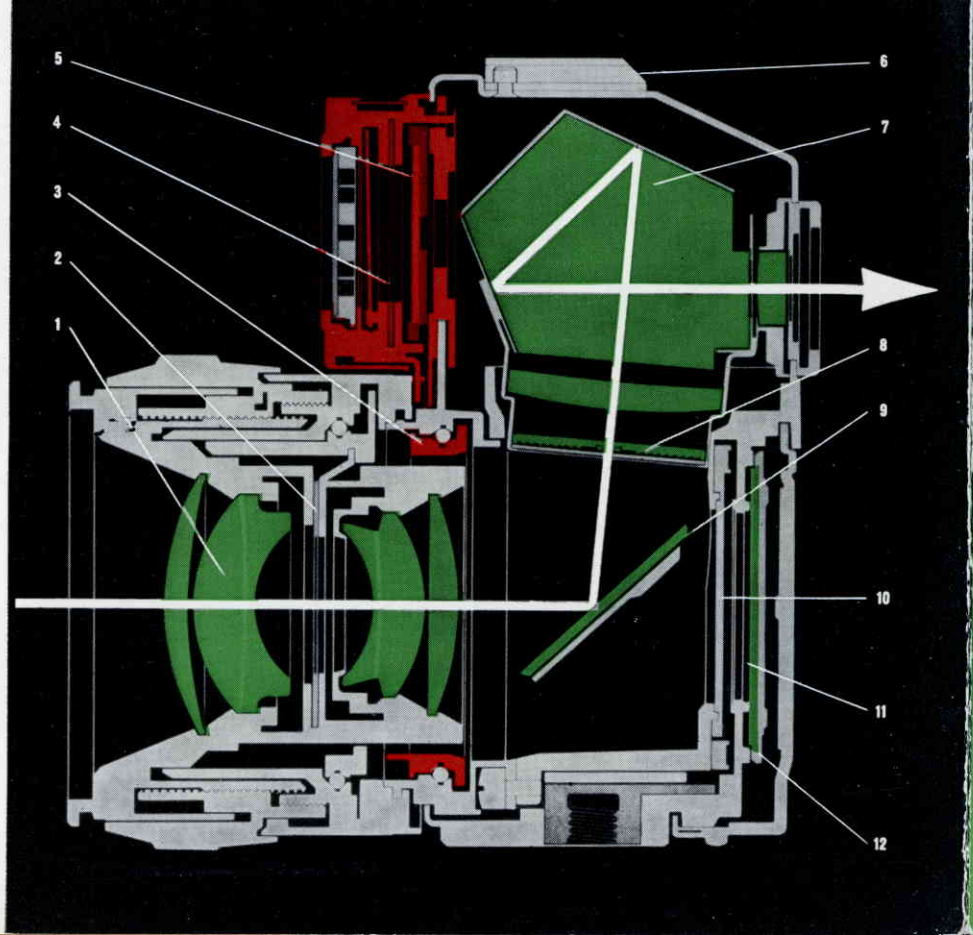

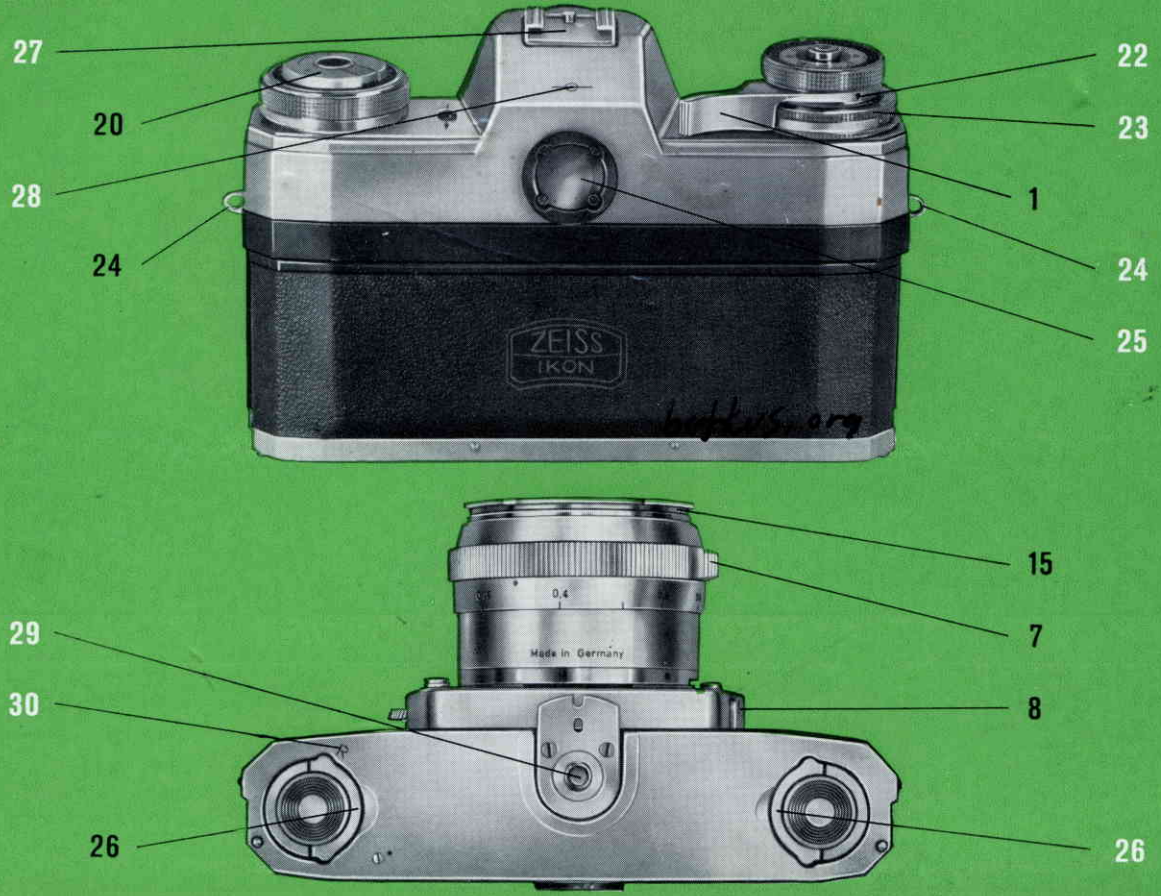
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