

ZEISS IKON VOIGTLÄNDER



Instructions for use

Icarex

35 S

Icarex

35 S

Single lens reflex miniature film camera. Format 24 x 36 mm

All-metal die-cast body guarantees optimum technical precision and stability.

Parallax-free mirror-reflex viewfinder providing bright, large and evenly illuminated lens field and automatic mirror return action.

Aperture indication and shutter cocking control.

Rangefinder coupled with lens setting.

Light metering system is CdS through-the-lens.

Correct exposure with all optical accessories.

Exposure meter setting indicated in viewfinder and in window on camera body.

Interchangeable ZEISS lenses with breech-lock bayonet mount fitting and automatic pre-set spring diaphragm from 35—400 mm.

Manual diaphragm button for depth of field control.

Shutter speeds from $\frac{1}{2}$ to $\frac{1}{1000}$ seconds and "B" for time exposures can be set on one single ring.

Focal-plane shutter with synchronization for flashbulbs and electronic flash guns. Built-in delayed-action mechanism for exposures with self-timer.

Setting scales for distance, aperture, depth of field, shutter speed and film speed rating — readable at a glance from above.

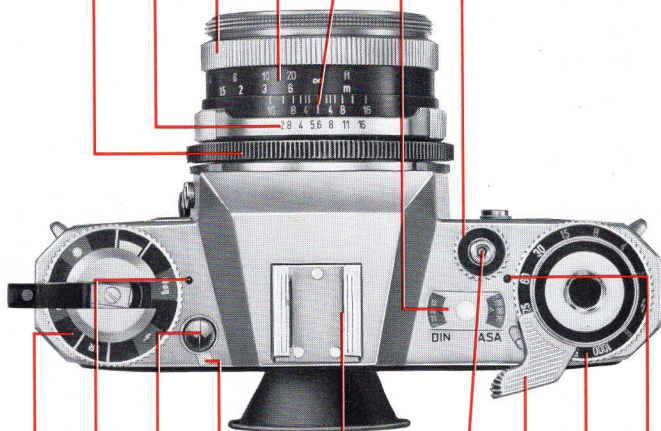
With only a few accessories such difficult fields as close-ups, macro-photography, photomicrography and reproduction work are considerably simplified.

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VOIGTLÄNDER



1 2 3 4 5 6 7 8 9 10 11



12 13 14 15 16 17 18 19 20

Controls

- 1 Lever for delayed-action mechanism
- 2 Milled ring for interchange of lenses
- 3 Aperture setting ring with aperture scale
- 4 Focusing ring
- 5 Focusing scale in metres and feet
- 6 Setting mark for distance and aperture with depth of field scale
- 7 Window for setting film speed rating in DIN or ASA
- 8 Milled ring for setting film speed rating
- 9 Diaphragm button for measuring exposure time and depth of field control through the viewfinder
- 10 Flash socket for flashbulbs
- 11 Flash socket for electronic guns
- 12 Film-in-use disc
- 13 Setting dot for film-in-use disc
- 14 Exposure meter window on camera body
- 15 Lever for covering viewfinder eyepiece. Normal position "right"
- 16 Accessory shoe
- 17 Shutter release with screw-in socket for cable release
- 18 Rapid advance lever with exposure meter switch
- 19 Shutter speed setting disc with speed scale
- 20 Shutter speed setting dot
- 21 Rewind button with fold-away rewind crank
- 22 Film winding lug (must engage in slot of film cassette shaft)
- 23 Film cassette compartment
- 24 Release button for rewind locking mechanism
- 25 Viewfinder eyepiece with eyecup
- 26 Tripod socket
- 27 Film counter
- 28 Transport roller with sprocket rings for engaging the perforations of the film
- 29 Take-up spool with slot and tooth for engaging film leader
- 30 Milled disc for turning film take-up spool
- 31 Eyelets for carrying straps
- 32 Battery compartment
- 33 Battery cover with inserted battery

Loading and unloading

Inserting the film

(Do not carry out in direct sunlight!)

Pull rewind knob 21 upwards until the camera back is released. Then slip the film leader which projects from the cassette into the slot in take-up spool 29 and engage with one of the perforations to the tooth in the slot. (If the slot is not visible, rotate the spool by turning milled ring 30.)

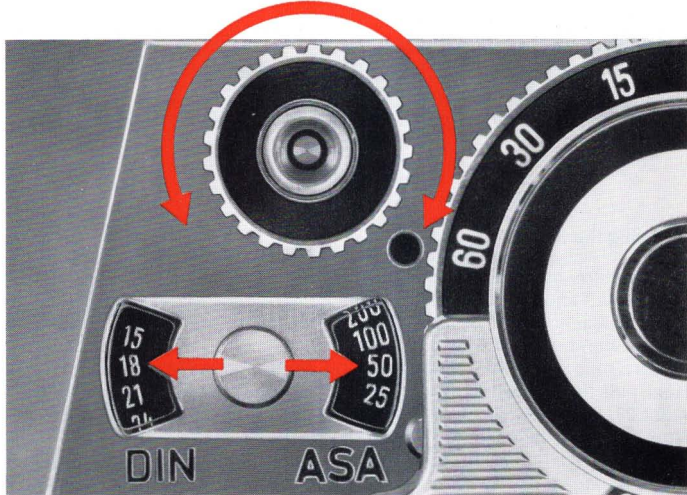
Next pull the cassette across the film track and drop into film compartment 23, rewind knob 21 again being pulled upwards as far as it will go. Now push the rewind knob right down into the camera.

Rotate the take-up spool by turning milled ring 30 until the perforations at both edges of the film are engaged by the sprockets of transport roller 28.

Lift up the eyecup, close the camera back and press down until an audible click indicates that it is firmly closed. Now operate rapid advance lever 18 and release button 17 until the number "1" appears below the red index in film counter 27. As soon as a number is visible in the film counter window, this indicates that there is a film in the camera (loading control). When the film counter moves on, the film has been advanced (film transport control). The film counter always indicates the number of frames that have already been exposed.

Setting the film speed

Set the speed rating on the camera immediately the film has been inserted or check the speed that is already set. The film speed rating in DIN or ASA is given either on the film packing or in the instructions



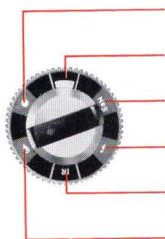
for use. Turn milled ring 8 until the appropriate number is opposite the red triangle below window 7.

If the number given is not engraved on the scale, set at a suitable intermediate rating.

Film-in-use disc

This serves merely as a memory aid and does not influence the camera action.

When disc 12 is turned the symbols click into position above setting dot 13. They present:



colour reversal film for daylight exposures

black-and-white film

colour negative film

colour reversal film for flash exposures

infra-red film

colour reversal film for artificial light.

Removing the film

After exposing the last frame (the film counter indicates the number corresponding to the number of frames on the film), do not advance lever 18 but rewind the film. Press down button 24 to release the rewind locking mechanism and turn rewind crank 21 clockwise until the film counter indicates the initial position and a slight resistance is felt. Only now open the camera back by pulling up the rewind knob and remove the film cassette. Always keep the take-up spool and film guide track clean!

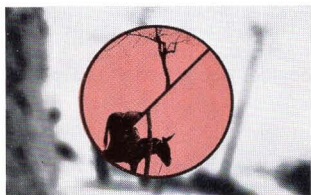
Focusing

Look through the viewfinder and turn setting ring 4 until the split-images visible in the centre of the viewfinder are exactly aligned or, if the subject has no distinct lines, use the ground glass screen to focus the picture. The focused distance is indicated on scale 5 at setting mark 6.

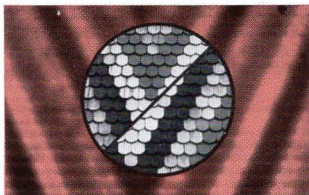
If the viewfinder is blocked out, move the small lever 15 to the right over the red dot.

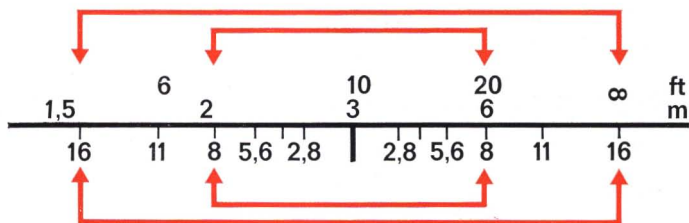
If the viewfinder image is darkened, open the lens diaphragm by depressing button 9. The pre-set aperture is retained.

focusing with split-image indicator



focusing with ground glass screen





Aperture and depth of field

Pre-set the aperture by turning milled ring 3. The f/number required must be opposite setting mark 6. The aperture depends on the depth of field dictated by the type of subject. The smaller the f/number the larger the lens aperture and the smaller the depth of field. The depth of field indicated by the pre-set aperture can be read direct from the depth of field scale 6 on the lens.

It covers the range from the distance indicated opposite the f/number on the left to the distance opposite the same f/number on the right.

The depth of field can also be checked on the ground glass screen in the viewfinder. By pressing down button 9 the diaphragm is closed to the pre-set value and thus the aperture or distance can be adjusted exactly as required. When button 9 is pressed down again, the diaphragm returns to full lens aperture. It is automatically closed down to the pre-set aperture when the shutter is released. Focusing is also possible with the depth of field scale (recommended for snapshots). Determine the depth of field required with the aid of scale 6 and set the indicated f/number opposite setting mark 6 by turning ring 3.

Exact data are given in the enclosed booklet containing the depth of field tables.

Setting the shutter speed

Turn disc 19 until the shutter speed required for the exposure clicks into position opposite setting dot 20. Intermediate speeds must not be used.

The shutter speed depends on the lighting conditions and the rate at which the subject is moving. The faster the movement, the shorter the exposure time. The numbers on ring 20 denote fractions of a second ($60 = \frac{1}{60}$ sec.). The orange numbers indicate that a tripod should be used.

When set at "B", the shutter remains open as long as the release button is depressed.

Shutter speed and aperture are inter-dependent. The faster the shutter speed, the larger the aperture and vice-versa. The exact values can be determined with the built-in exposure meter.

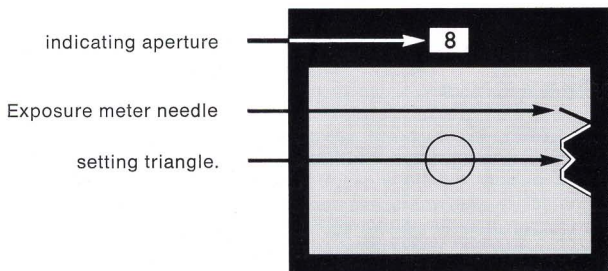
Exposure measurement

To switch on the exposure meter, lever 18 must be swung out and diaphragm button 9 depressed. Now pre-select shutter speeds.

Sight the subject with the camera held in a horizontal position, even if the exposure is to be made with the camera in the vertical holding position. Turn aperture ring 3 until the exposure meter needle in the viewfinder or on the camera body below window 14 is positioned exactly in the centre of the triangle.

The aperture is indicated at the top of the viewfinder. If a definite aperture is dictated by the type of subject, pre-select this aperture and turn shutter speed disc 19 until the exposure meter needle coincides with the centre of the triangle. Only a click-in shutter speed must be used, otherwise adjust the aperture setting.

If the indicator below window 14 is used for exposure measurement, for instance, when using a tripod, the viewfinder eyepiece must be covered, in order to keep disturbing stray light from entering and falling on the photo-resistor. To do this, move lever 15 to the left (red dot becomes visible).



The exposure meter

Light metering is through the lens (inside metering). The light falls on two CdS photo-resistors. These regulate the battery power in relation to the incident light. The exposure meter in the Icarex 35 S has standard calibration. It provides correct exposure for average conditions.

Correction is necessary:

Against-the-light exposures, dark subjects against a bright background or subjects of low contrast (overcast sky — snow landscapes) —

after measurement open the aperture $\frac{1}{2}$ to 1 stop. Subjects of high contrast, in particular, very bright subjects against dark backgrounds — after measurement close the aperture $\frac{1}{2}$ to 1 stop.

Battery

The "Mallory PX 13" provided in the camera to operate the exposure meter will last about one year under normal use. At extremely low temperatures below -10°C , use type "Mallory PX 625".

When testing in the open at average brightness with the camera set at $\frac{1}{60}$ sec., the battery is still in working order as long as the exposure meter needle moves across the entire acceptance field on turning the aperture ring after the diaphragm button has been depressed and the rapid lever swung out. If this is not the case, the battery must be changed. It is accommodated underneath cover 33 which is removed by turning to the left. When inserting a new battery take care that it is poled to match the signs on the cover. New batteries are obtainable from photographic dealers.

The exposure meter should be switched off when the camera is not in use for longer periods. It is switched off when the diaphragm button projects or the rapid advance lever is pushed in.

The exposure

When taking a shot press down release button 17 rapidly and smoothly. The mirror swings up, the diaphragm closes down to the pre-set lens aperture and the focal-plane shutter travels at the pre-set speed. Immediately afterwards, the mirror returns to its position for viewfinder focusing. When the diaphragm button is depressed, however, the diaphragm always remains at the pre-set aperture after release and tensioning.

Working with depressed diaphragm button is particularly recommended when variable lighting necessitates frequent adjustment of the exposure meter.

When the shutter has been released, a red warning index appears in the bottom left-hand corner of the finder as an indication that the shutter must be tensioned before the next exposure. To do this, swing lever 18 through until it stops.

Self-timer

Tension the shutter beforehand with the rapid advance lever and then press lever 1 upwards as far as it will go. On letting go the lever about 8 seconds elapse before automatic exposure. During this time the lever returns to its initial position.

Time exposures (shutter setting "B") are not possible with the delayed-action mechanism.

Filters

The yellow, green, orange and red filters that are available for the ICAREX can be used only with black-and-white film, whereas the UV, Ikolor B, skylight and CONTAPOL filters can also be used with colour material. These filters in bayonet mount fitting B 50 fit all ICAREX lenses from 35–135 mm.

The through-the-lens light metering system means that the filter factor is usually adjusted automatically. Only when using the more dense colour filters for black-and-white films is it available after exposure measurement to open the aperture one stop or increase the exposure time by one full value (corresponding to filter factor 2 x).

Flash exposures

When the flash symbol on slide 19 is set at index 20 contact-making is so controlled that the different flashbulbs and electronic guns are fired at the correct moment. Contact for firing the flashbulbs (e. g., type AG) is made at socket 10 (flashbulb symbol), for electronic guns at socket 11 (flash symbol). The flash equipment itself can be either slid onto accessory shoe 16 or fixed on a rail in tripod socket 26.

Connection to the camera is by means of an adapter available from photographic dealers; the cable is connected to one of the two flash sockets.

The aperture setting can be taken from the tables given on the flash-bulb packing. For electronic flash, use the aperture calculating discs on the gun. The instructions given by the flash equipment manufacturer must be followed.

Lens exchange



Note!

When removing or attaching the lens rotate only milled ring 2, in order to avoid any possible damage to the mechanism for closing the diaphragm. This also applies when taking the lens from or placing it back on the red base plate in the case.

Removing the lens: Rotate milled ring 2 anti-clockwise until it stops and lift out the lens.

Attaching the lens: First line up the red dot on the inside of milled ring 2 with the red dot on the lens. (The ring clicks into this position.) Then insert the lens so that the red dots on the lens and the camera body are exactly opposite each other. When the lens is actually touching the camera body, turn milled ring 2 clockwise to lock the lens in position.

Exposures with tele attachment 8 x 30 B

When using tele attachment 8 x 30 B the lens is stopped down to an invariable smaller aperture. During exposure measurement the aperture ring must be turned to provide full aperture. Actual measurement is made by turning speed ring 19.

Close-ups

Besides the focusing ranges of the lenses, close-ups up to an image scale of 3:1 are possible with supplementary lenses, extension tubes and a bellows unit. **The tables booklet contains not only all the necessary tables but also a diagram showing the exposure ranges that are available in this way.** Since the reduced depth of field in close-ups requires additional stopping down, which in most cases results in longer exposure times, the use of a tripod and cable release are recommended. Reference is made here to our table copying unit and our universal copying unit REPROPHOT. The latter unit is equipped with a focusing slide which is practically indispensable for close-ups.

Exposure measurement for close-ups

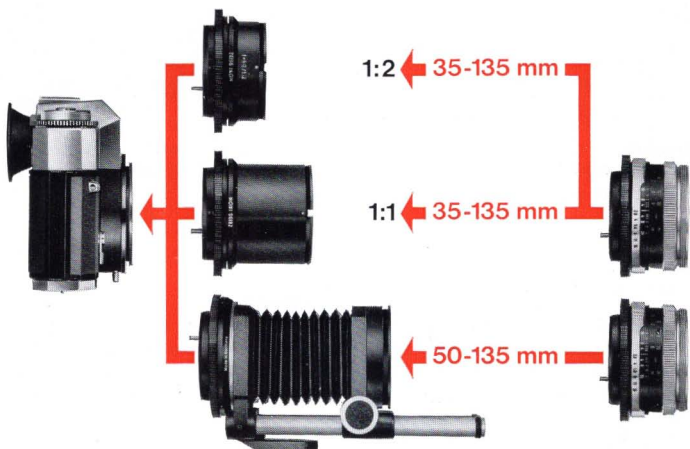
If supplementary lenses, extension tubes 1:2 and 1:1, the bellows focusing unit or microattachment are used, exposure measurement is in principle the same as described above.

The exposure factors given in the tables booklet for extension tubes and the bellows unit do not refer to the ICAREX 35 S. They apply only to Icarex models without an exposure meter.



Supplementary lenses

The bayonet fitting ϕ B 50 fits all ICAREX lenses from 35—135 mm in the same ways as filters. In order to obtain a sufficient depth of field, however, the lens should be stopped down to at least $f/5.6$. If filters are also used, these are to be mounted in front of the supplementary lenses.



Extension tubes

The two extension tubes extend the focusing range of the ICAREX up to an image scale of 1:2 and 1:1 (particular advantage when copying slides). The image scales 1:2 and 1:1 apply, however, only to exposures taken with 50 mm lenses. These values are not correct, if referred to any other lenses.

The tubes are attached to the camera as described under lens exchange. In the same way, the lenses are then attached to the front bayonet mount fitting of the tubes.

Diaphragm pre-setting or depth of field control by depressing button 9 is not impaired by the extension tubes.

Bellows focusing unit

As shown in the diagram of image scales, a magnification of approximately 5 times can be achieved on the negative with the bellows focusing unit and the 50 mm lenses. The 35 mm lens cannot be used with the bellows unit, because the lens would lie within the range of the rails. The bellows focusing unit is first attached to the camera and then the lens to the bellows unit with the bayonet rings over the dot markings.

The bellows are extended by turning the right-hand knob on the focusing slide. When turned clockwise, the left-hand knob serves to lock the setting. Focusing is also possible with the focusing mount on the lens.

On the left-hand rail is a millimeter scale which can be used to re-set extensions, even when other exposures have been made in the meantime. A swivel arm permits exposures with the camera both in vertical and horizontal positions, whereby the camera engages in extreme positions.

Diaphragm pre-setting is not possible with the bellows focusing unit.

If a correction in the focusing is necessary after exposure measurement, the diaphragm must be opened manually and then re-closed manually to the pre-selected f/number before exposure.

Microphotography

For exposure measurement in microphotography set speed ring 19 at the slowest speed ($1/2$ sec) and then adjust the brightness of the microscopic lamp so that the needle in the viewfinder coincides with the centre of the triangle marking.

When very bright subjects are involved, adjustment is possible by reducing the exposure time.

Accessories

Interchangeable lenses for ICAREX 35 S

11.2003	Skoparex 3.4/35	
11.2001	Color-Pantar 2.8/50	
11.2002	Tessar 2.8/50	
11.2014	Ultron 1.8/50	
11.2004	Dynarex 3.4/90	
11.2005	Super-Dynarex 4/135	
20.1629	ZEISS tele attachment 8 x 30 B ($f = 400$ mm)	
20.1644	Adapter ring for 20.1629	
11.2008	Super-Dynarex 4/200	} with case
11.2010	Telomar 5/400	
11.2012	Zoomar 2.8/36-82 Vario lens	

Viewfinder Accessories

20.1614	Angle telescope
20.0504	Eyepiece correction ± 0.5 to ± 5 dptr.

Lens hoods

20.0718	Lens hood (pull-out type) for 35 to 90 mm lens S. 56 ϕ Lens hood available for Super Dynarex 135, 200 and Telomar 400
20.5752	Lens hood for Zoomar S. 95 ϕ

Filters

20.1051	yellow	for 35 to 135 mm lens B 50 ϕ
20.1052	green	for 35 to 135 mm lens B 50 ϕ
20.1053	orange	for 35 to 135 mm lens B 50 ϕ
20.1054	red	for 35 to 135 mm lens B 50 ϕ
20.1055	UV	for 35 to 135 mm lens B 50 ϕ
20.1058	Skylight	for 35 to 135 mm lens B 50 ϕ
20.1056	Ikolor A	for 35 to 135 mm lens B 50 ϕ
20.1057	Ikolor B	for 35 to 135 mm lens B 50 ϕ
20.6041	yellow	S 77 ϕ }
20.6045	UV	S 77 ϕ } for Super-Dynarex 4/200
20.6048	Skylight	S 77 ϕ }
20.6051	yellow	S 95 ϕ }
20.6053	orange	S 95 ϕ } for Telomar and Zoomar (for Zoomar
20.6055	UV	S 95 ϕ } only with adapter 20.6605)
20.1208	Polarizing filter (Contapol)	for 35 to 135 mm lens B 50 ϕ

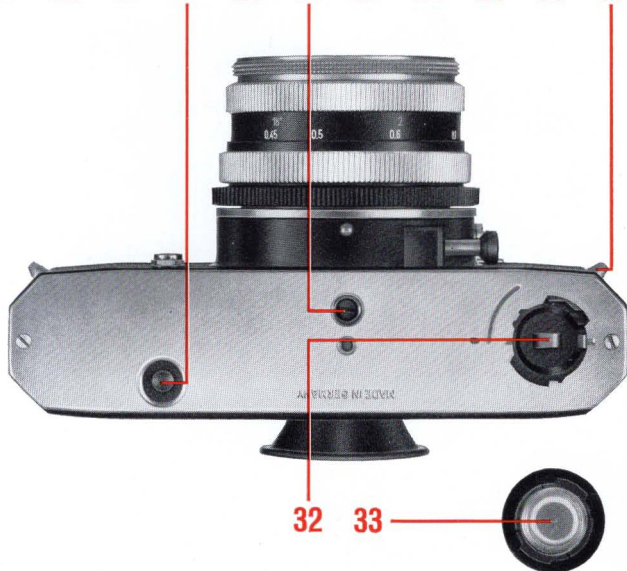
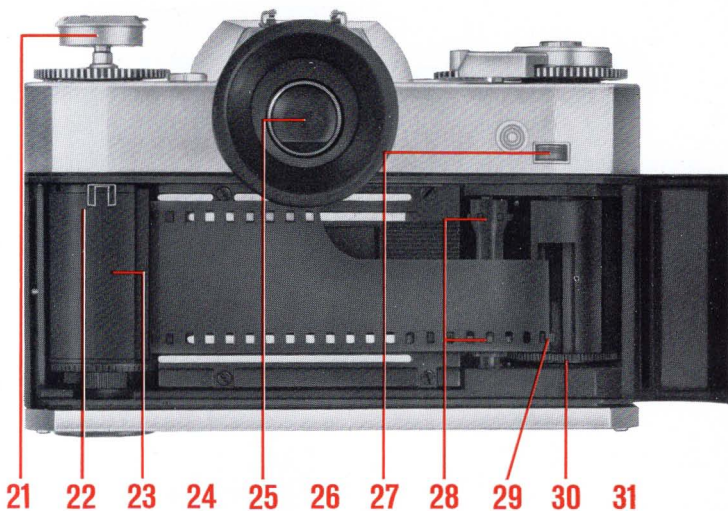
Accessories for close-ups and photomicrography

20.0846	Supplementary lens $f = 2.0 \text{ m } 0.5 \text{ dptr. B } 50 \text{ } \phi$
20.0847	Supplementary lens $f = 1.0 \text{ m } 1.0 \text{ dptr. B } 50 \text{ } \phi$
20.0848	Supplementary lens $f = 0.5 \text{ m } 2.0 \text{ dptr. B } 50 \text{ } \phi$
20.0849	Supplementary lens $f = 0.3 \text{ m } 3.0 \text{ dptr. B } 50 \text{ } \phi$
20.0850	Supplementary lens $f = 0.2 \text{ m } 5.0 \text{ dptr. B } 50 \text{ } \phi$
20.1640	Extension tube 1:1 for 35 to 135 mm lens
20.1647	Extension tube 1:2 for 35 to 135 mm lens
20.1630	Bellows focusing unit for 50 to 135 mm lens
20.1646	Extension tube for microscope
20.1616	Connecting head for microscope
20.1853	REPROPHOT universal copying unit
20.1850	Table copying unit
20.1852	Lighting equipment for table copying unit
20.0205	Adapter plate for connection of ICAREX 35 S to copying units

Cases and containers

23.0016	Ever-ready case, standard type
23.0013	Ever-ready case, de-luxe type
23.0207	Universal case
23.0211	Carrying straps (real leather) with spring rings for camera without case
23.1004	Leather case for 35, 50 and 90 mm lens (optional) and 1 filter or 1 supplementary lens
23.1203	Case for 3 filters or 3 supplementary lenses
23.2007	Leather case for ZEISS tele attachment 8 x 30 B

The Icarex system is going to be extended still further.





Care of the ICAREX 35 S

From time to time the film guide track and film transport bearings in the ICAREX as well as the inside of the camera back should be carefully cleaned with a soft brush. (Note: Do not scratch the shutter blind.) Dust or threads on the focusing screen and mirror can be carefully removed with a soft hair brush when the lens is removed. Fingermarks should be carefully removed with a soft linen cloth from the lens surface and the viewfinder eyepiece. Dust particles should be removed beforehand with a soft hair brush.

Serial number

Every ICAREX has its serial number on the fold-away rewind crank. Every lens also has its own serial number. We advise you to make a note of these numbers, so that you can establish ownership in the case of loss or a mistake.

Special note:

Your photographic dealer or the photographic advisory service of ZEISS IKON — VOIGTLÄNDER Vertriebsgesellschaft mbH, 7 Stuttgart, Postfach 540, will gladly advise you free of charge, if you have any photographic problems or require any information.

ZEISS IKON — VOIGTLÄNDER offer a world-wide guarantee — a valuable service covering all countries and frontiers. A guarantee booklet is provided with each camera. Make sure that your photographic dealer confirms the date of purchase with his signature on the back of the booklet. Take good care of this booklet in your own interest, as it contains a list of repair agents throughout the world for ZEISS IKON — VOIGTLÄNDER products.

Subject to change in the interest of technical progress.

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