EXAKTA

VX IIa

35mm

1961

INSTRUCTIONS

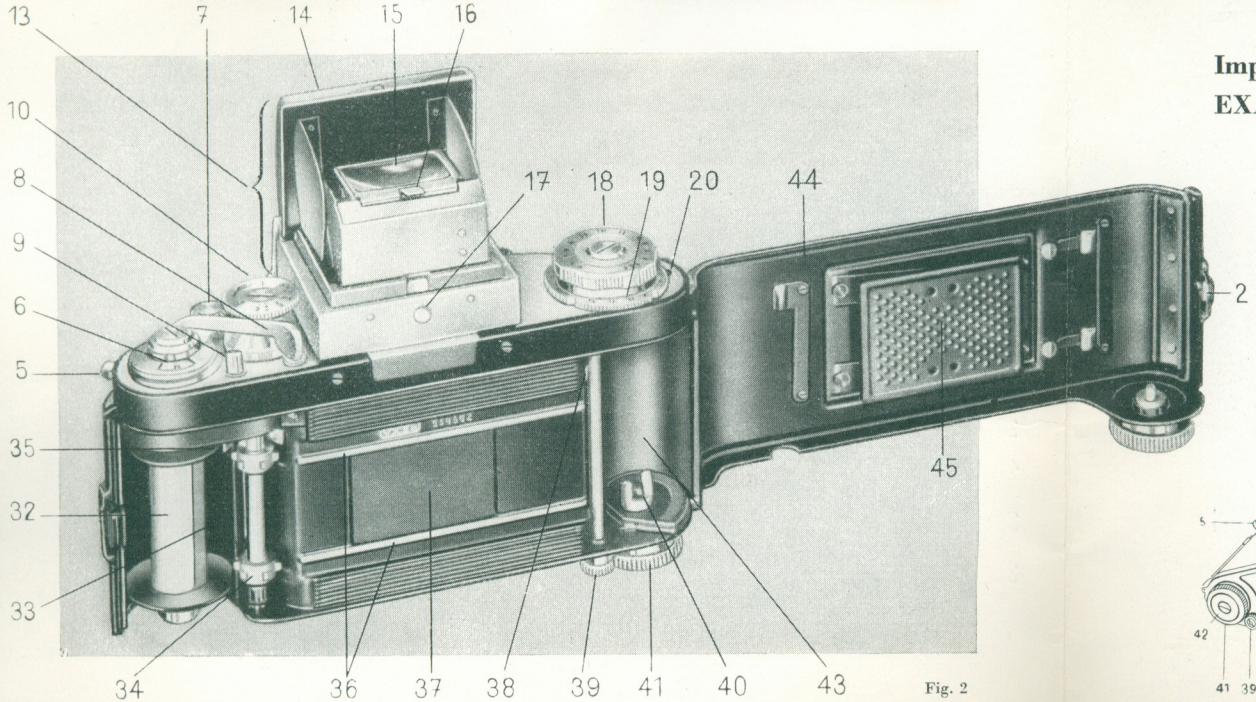


Fig. 2

Important camera parts of EXAKTA VX IIa/1961

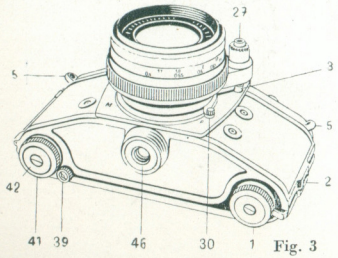
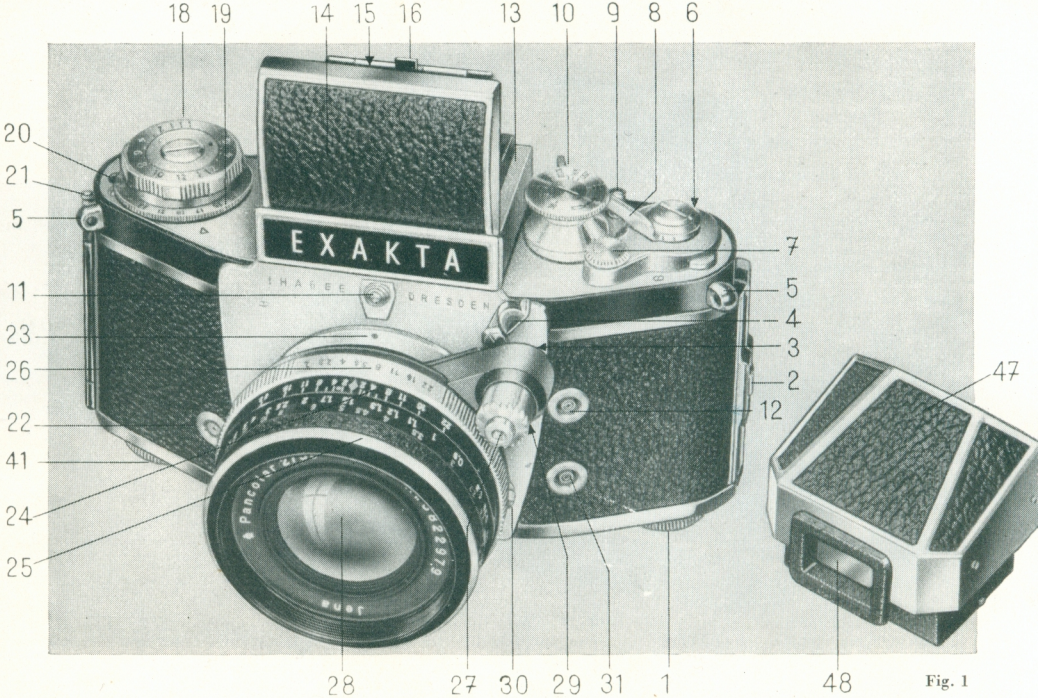


Fig. 3

1 = Button for opening camera back
2 = Camera-back lock (operated by button No. 1)
3 = Shutter release knob
4 = Hinged shutter release lock
5 = Neck-strap eyelets
6 = Exposure counter
7 = Knob for setting exposure counter
8 = Film transport and shutter winding lever
9 = Rewinding pin
10 = Small speed-setting knob (for $^1/_{25} \cdots {}^1/_{1000}$ sec., "T", and "B")
11 = Catch for Finder Hood and Penta Prism
12 = "X" electronic flash contact
13 = Reflex Finder Hood
14 = Front part of Reflex Finder Hood
15 = Hinged focusing magnifier
16 = Button for focusing screen
17 = Release button for Reflex Finder Hood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EXAKTA
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Fig. 1

18 = Large knob for speed-setting ($^1/_5$ ··· 12 sec. and $^1/_5$ ··· 6 sec. with delayed action)

19 = Film-speed indicator

20 = Control disc for film transport

21 = Removable Pin of camera-back hinge

22 = "M" flash bulb contact

23 = Red mark on camera body (important when changing lenses)

24 = Depth of field scale on lenses

25 = Distance setting ring

26 = Diaphragm setting ring

27 = Release knob of lens

28 = Lens

29 = Red mark on lens (to match 23 when changing lenses)

30 = Lens bayonet catch

31 = "F" flash bulb contact

32 = Take-up spool

33 = Film Chamber for take-up spool or cartridge

34 = Film transport sprockets

35 = Cartridge Holder

36 = Film guides

37 = Film gate with Focal Plane Shutter

38 = Knife for cutting exposed film

39 = Handle of knife

40 = Fork of film rewinding knob (41)

41 = Film rewinding knob

42 = Centre part of film rewinding knob (41)

43 = Film Chamber for feeder cartridge (unexposed film)

44 = Hinged camera back (removable)

45 = Exchangeable film pressure plate

46 = Tripod socket

47 = Penta Prism

48 = Ocular of Penta Prism

It is a great pleasure for us that you have chosen the EXAKTA and we wish you every success with your camera.

At the same time we are asking you to study this instruction leaflet very carefully before you start working practically; in doing so you will be rendering yourself the best service, for you will avoid wrong handling right from the beginning as well as difficulties with the camera mechanism. The EXAKTA is a high class precision camera and can only meet all requirements if it is always operated correctly.

Please unfold these pages to the left, opening up the reference charts, so that they become visible and you will always be able to refer to one of the illustrations while studying the text.

We recommend strongly that before loading the EXAKTA with a film, begin by getting thoroughly acquainted with the unloaded camera. Train yourself to master the shutter control, opening and closing the camera, composing and critically focusing the picture with the Finder Hood as well as with the Penta Prism. When doing so handle the camera as though it were loaded. Not until you have achieved a complete master of the camera, should you load it with a film. It is advisable to start by using an old film for practice.

The EXAKTA is built on the basic principle of the single-lens reflex which was employed by us for the first time in connection with miniature photography. Inside the camera there is a small movable mirror which reflects the picture, produced by the taking-lens on the reflex focusing screen up to the moment of releasing the shutter. This alone makes it possible for the reflex image to be absolutely in accordance with the final photo. The EXAKTA is free from parallax error and you will always be able to rely on the ground glass image for picture combination and critical focusing.

Please keep in good contact with your photo-dealer so that he may keep you well informed regarding all novelties coming from our factory. It goes without saying that we ourselves will always be at your disposal if you should be in need of our help or advice in special problems concerning the EXAKTA.

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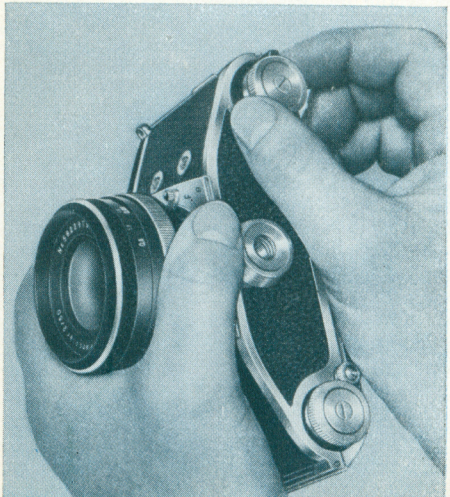
Opening and closing the camera back

Pull out the button (1), see fig. 4; fix it by a short turn either to the left or to the right. Open camera back (44). When closing the camera back press it slightly against the camera body. Turn the button (1) to the left or right until it snaps into position. If the camera back shall be removed from the camera itself the camera back has to be opened first and then the removable pin (21) has to be pulled out. When fastening the camera back to the camera again insert the pin into the hinge.

Fig. 4



Opening and closing the Finder Hood

Open the Finder Hood by pressing button (17), close it by pressing back the Finder Hood front (14), which snaps into position. Focusing screen (15) to be moved in rest or working position by operating button (16).

Further details for using the Finder Hood see page 1?.

Ground glass image only visible when shutter is in "taking" position. How to operate the shutter see next chapter.

Shutter and film transport

are coupled (no double exposures, no unexposed film). Remove shutter release lock (4), shutter to be released either direct by pressing the shutter release knob (3) or indirect by pressing the release knob (27) or tilter of the lens.

Shutter winding and film transport with lever (8). This lever has to be turned as far as it will go (fig. 5), it then automatically moves back. Firing is impossible before having turned the lever; film transport can only be done after releasing the shutter. Also at intermediate position of the lever, firing is impossible. Do not force the lever back in its original position, you may damage the mechanism. If the lever (8) should not go back when the camera is unloaded, open camera back (44) and turn film transport sprockets (34) in direction of the film chamber (33), when doing so press the lever carefully. Catch up the lever (8) when turning back with your thumb. During intervals between exposures, the shutter release knob (3) may

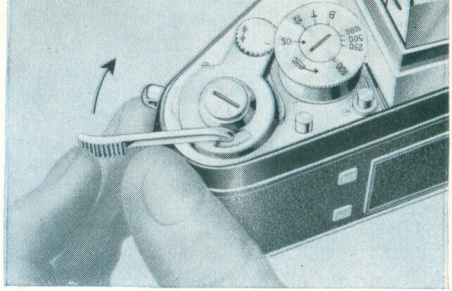


Fig. 5

be protected by swinging the shutter release lock (4) over the knob.

How to handle the shutter

Instantaneous exposures
from $^1/_{25}\cdots{}^1/_{1000}$th sec.: Lift small speed setting knob (10), see fig. 6, before or after having operated the lever, turn it in the arrow direction and let it snap back into position when exposure time and red mark

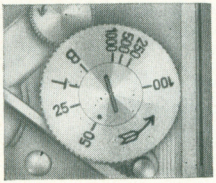


Fig. 6

are opposite each other. Figures are fractional numbers in seconds, e.g. 25 = $^1/_{25}$th sec. Intermediate speeds cannot be set.

Exposures from $^1/_{25}$ ··· $^1/_{1000}$th sec. may be done from the hand. Longer exposures (see following paragraph) should be done from a tripod or a firm surface.

Any longer exposure times (T and B):

Set small speed setting knob (10) on T or B, before or after having operated the lever. T = shutter opens by pressure on the shutter release knob (3) or release knob or tilter of lens (27) and closes on second pressure. B = shutter remains open only as long as shutter release knob (3) or release knob or tilter of lens is being pressed.

Lenses with Fully Automatic Diaphragm to be set on normal aperture, otherwise the diaphragm will be re-opening too early. You will find more about it under the instructions given for lenses on pages 7 ··· 12. B and T settings are important for night and indoor photography.

Longer instant exposures and shorter time exposures from $^1/_5$th sec. ··· 12 sec.:

Wind the shutter. Set small speed setting knob (10) on T or B, turn big speed setting knob (18) clockwise, see fig. 7, as far as it will

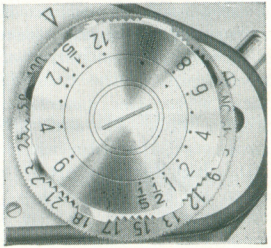


Fig. 7

go (winding up speed regulating mechanism); lift outer ring of speed setting knob (18), turn it until **black** figure and mark on the central disc are opposite each other and then let outer ring of speed setting knob (18) snap into position. If your last exposure was made at a short speed (e.g. $^1/_5$th sec.), the mechanism has run down a little way only, which, however, should not irritate you in **any** case this short distance must be rewound vigorously as far as it will go. Lenses with Fully Automatic Diaphragm to be set on normal aperture otherwise the diaphragm will be re-opening too early.

Self-Timer photos with delayed actions:

a) Exposures from $^1/_5$th sec. ··· 6 sec. Wind the shutter, set small speed setting knob (10) on T or B, as described, wind big speed setting knob (18) as far as it will go and set it – as described before – on the **red** number required.

b) Exposures from $^1/_{25}$th sec. ··· $^1/_{1000}$th sec. Wind the shutter, set small speed setting knob (10) not on B or T but on the exposure time required (e.g. $^1/_{1000}$th sec.), then wind big speed setting knob (18) as far as it will go – as described before – and set outer ring of knob (18) on **any** one of the **red** figures.

The black figures on the big speed setting knob (18) are for exposures immediately on release of the focal shutter and the red ones are for the self-timer (delayed action, shutter only opens approx. 12 secs. after firing). When taking photographs with delayed action, lenses with Fully Automatic Diaphragm to be set on normal aperture, otherwise diaphragm re-opens too early!

For all exposures from $^1/_5$th sec. or longer, a tripod should be used or place the camera on a sturdy support (a table, a wall, etc.). The same may be said when taking photos with self-timer. Tripod socket (46) on camera base. A cable release can be screwed into the shutter release knob (3) or into the release knob or tilter of a lens. That is important for exposures longer than $^1/_5$th sec. and, of course, for all "B" settings.

Double exposures are normally impossible. If, however, in exceptional cases, double exposures should be required (e.g. pictures of double), the shutter alone can be wound up as follows: After the first exposure turn

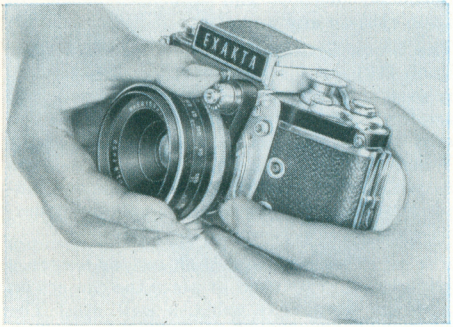


Fig. 8

the small speed setting knob (10) in arrow direction **without** lifting it until you feel a stop. While winding up the shutter, the knob (10) being under tension, tries to snap back again. You must, therefore, while turning, keep the knob (10) under slight pressure. The exposure counter (6) always counts the exposure and naturally it counts the double exposures too.

The lens and how to focus

The lens is interchangeable: Press the knob of the bayonet catch (30) towards the lens. Turn the whole lens to the left (fig. 8) until red dots (23 and 29) are opposite each other. Lift the lens out of the camera mount. When inserting the lens, the procedure is reversed: Red dots to be opposite, turn the lens to the right until the lens snaps into position (If, by exchanging the Jena lenses with Fully Automatic Diaphragm, the adjusting screw of the release knob (27) should knock against other camera parts then the lens must be set on automatic, as described on page 10). All lenses, from the shortest to the longest focal length can be employed.

For critical sharpness turn the distance setting ring (25) with feet or feet and metre scale. You can control the sharpness by means of the reflex image in the Finder Hood or Penta Prism. As soon as your picture has the best possible sharpness then the distance required on the distance setting ring will be opposite the red mark. The distances are measured between camera back and object.

Setting the diaphragm aperture by means of the diaphragm setting ring (26). Low figures, e.g. 2.8, 4 = large aperture: short exposure time, decrease of depth of field. High figures, e.g. 16, 22 = small aperture: longer exposure time necessary, increased depth of field.

Depth of field means that objects in different distances from the camera appear sharp on the negative. This depth is indicated on the depth of field scale (24) of EXAKTA lenses: On either side of the middle mark there is a diaphragm scale, one side shows the distance from which the sharpness reaches and the other side shows the distance to which the sharpness extends. The distance in question stands opposite the selected diaphragm figure. If on one half of the scale the aperture chosen appears opposite or even behind the infinity sign (∞) – proceeding from the middle – the sharpness will extend to infinity.

Three examples: Lens set at 4 m (approx. 13′), diaphragm stop 5.6 = depth of field approx. from 3 m (approx. 10′) to 7 m (approx. 23′), see fig. 9. – Lens set at 2.5 m (approx. 8′), diaphragm stop 16 = depth of field approx. from 1.5 m (approx. 5′) to 11 m (approx. 35′), see fig. 10. – Lens set at ∞, diaphragm stop 8 = depth of field approx. from 7 m (approx. 23′) to infinity, see fig. 11.

Focusing by means of the ground glass screen should always be done at full aperture (bright image) and only just before firing the lens should be stopped down to the "working" aperture. It is not necessary to move the camera from the taking position as the lens is equipped with Fully Automatic Diaphragm.

PRIMOTAR f 3.5/50 mm with Fully Automatic Diaphragm (fig. 9): Focusing to be done by turning the distance setting ring. The diaphragm mechanism to be set as follows: Red dot on front ring at top of lens mount and opposite the red mark = Fully Automatic Diaphragm, black dot on top and opposite the red mark = "Normal Diaphragm", that is to say setting of diaphragm aperture by turning the diaphragm setting ring, situated behind the front ring. The diaphragm then remains closed according to the turning of

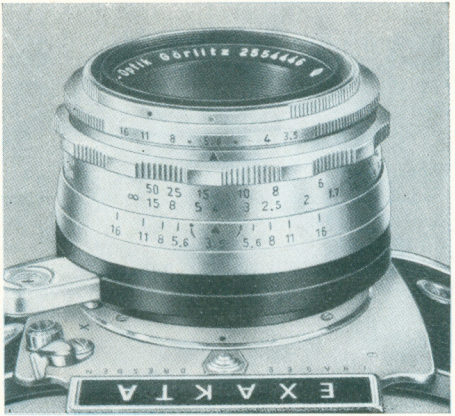


Fig. 9

the ring (this is necessary for long exposure times and self-timer exposures). The diaphragm setting will remain in any position, even in intermediate settings (between the figures 4 and 5.6 as well as between 5.6 and 8). The aperture desired must be opposite the red mark.

When using Fully Automatic Diaphragm (red dot on front ring on top) the diaphragm is fully open for exact focusing and observation of the reflex image. Stopping down to the pre-selected aperture (= working aperture) by pressing the release knob or tilter of the lens. The working aperture is set by means of the diaphragm setting ring. When pressing the release knob or tilter first the diaphragm closes down to the preselected aperture and then the shutter will be released. After having taken the finger from the release knob or tilter the diaphragm automatically re-opens to its widest aperture. But do not take away the finger before the shutter has closed again (important for longer instantaneous exposures). For pictures with long exposure times and for exposures with delayed action the diaphragm mechanism is to be set on Normal Diaphragm (black dot on top of lens mount). A cable release can be screwed into the release knob or tilter of the lens.

To ensure that the release knob of the camera is always pressed sufficiently into the camera, a setting screw is provided on the lower side of the lens release knob or tilter which can be adjusted to the necessary length by means of a screw driver.

When wishing to examine the depth of field, press release knob or tilter only so far until the diaphragm closes down to the pre-selected aperture – the shutter must not be released.

MEYER NORMAL LENS f 2/50 mm Fully Automatic Diaphragm (fig. 10): Focusing to be done by turning the wide shining distance setting ring. The diaphragm mechanism to be set as follows: Fully Automatic Diaphragm = red dot on front ring at top of lens mount. "Normal Diaphragm" = white dot on top, that is to say setting of diaphragm aperture by turning the diaphragm setting ring situated immediately in front of the camera body. The diaphragm then remains closed according to the turning of the ring (this is necessary for long exposure times and self-timer exposures).

The diaphragm setting ring will remain in any position, even in intermediate settings which are not engraved. The aperture desired must be set opposite the red stroke.

Fig. 10

When using Fully Automatic Diaphragm (red dot on front ring on top), the diaphragm is fully open for exact focusing and observation of the reflex image. Stopping down to the pre-selected aperture (= "working aperture") by pressing the tilter. The working aperture is set by means of the diaphragm setting ring. When pressing the release tilter, first the diaphragm closes down to the pre-selected aperture and then the shutter will be released. After having taken the finger from the release tilter the diaphragm automatically re-opens to its widest aperture. But do not take away the finger before the shutter has closed again. For pictures with long exposure time the diaphragm mechanism is to be set on Normal Diaphragm (white dot on top of lens mount). In this case a cable release should be screwed into the release tilter. When wishing to examine the depth of field press the tilter only so far until the diaphragm closes down to the pre-selected aperture, the shutter must not be released. The Meyer Normal Lens has another advantage: The long helical thread allows close-up focusing down to 0.34 m or approx. $13^1/_2$″ (without any auxillary equipment).

JENA T f 2.8/50 mm and JENA PANCOLAR f 2/50 mm with Fully Automatic Diaphragm (fig. 11): Focusing by means of turning the front setting ring.

Diaphragm mechanism to be set either on Fully Automatic Diaphragm or on "Normal Diaphragm". When using Fully Automatic Diaphragm the release button (27) of the lens must project by about one centimetre from the black release housing. If necessary press the release knob (27) slightly in the direction of the camera and rotate then to the right (as when viewing the front of the camera). Release knob (27) then clicks in Fully Automatic Position.

Fully Automatic Diaphragm to be switched off as follows: Release knob (27) to be pressed down and then to be turned to the left (as when viewing the front of the camera). When the release knob (27) is pressed into the release housing and secured in position, normal stopping down can be effected by turning the diaphragm setting ring (immediately in front of the camera body). The diaphragm remains closed according to the

turning of the ring which is important for long exposure times and self-timer exposures.

The diaphragm setting ring remains in all desired positions, also in intermediate ones which are not engraved. The diaphragm aperture required must be set opposite the red mark.

To ensure that the release knob of the camera is always pressed sufficiently into the camera, a setting screw is provided on the lower side of the lens release knob which can be adjusted to the necessary length by means of a screw driver. If this setting screw should knock on one of the camera parts – when exchanging lenses – then the lens must be switched over to "Automatic" as previously described. When using Fully Automatic Diaphragm system, the diaphragm is fully opened for exact focusing and observation of the reflex image. Stopping down the diaphragm to the pre-selected aperture ("working" aperture) then only by means of the diaphragm setting ring. When pressing the release knob (27), first the diaphragm closes down to the pre-selected aperture and then the shutter will be released. After having taken the finger from the lens release knob the diaphragm automatically re-opens to its widest possible aperture.

Fig. 11

Do not move the finger before the shutter has closed! For pictures which need a long exposure time, diaphragm mechanism to be set on "Normal Diaphragm". A cable release can be screwed into the release knob (27) of the lens. When controlling the depth of field set lens on Fully Automatic Diaphragm, press the release knob (27) only so far until the diaphragm closes down to the aperture desired, the shutter must not be released.

How to focus when using infra-red film

When infra-red film is used focusing is to be done in the usual way by image screen. The distance reading (infinity sign, metre or feet reading) should then be turned from the red mark to the red dot, right or left; whereby the picture produced by the invisible infra-red rays is brought into the film plane of the camera and appears sharp in the negative although it is further away from the lens than that picture which is produced by visible rays.

Using the Finder Hood

A bright, upright, and magnified image is visible in the Finder Hood (13) of the EXAKTA. It serves for choosing objects as well as for exact focusing and, of course, for controlling the depth of field. For normal focusing the ground glass screen will do but for critical focusing the built-in additional magnifier (15) too should be employed. When opening the Finder Hood, the hinged-on magnifier moves in operating position but it can be pressed downwards by its lever (16) with one single movement, see also page 2.

Usually the EXAKTA is held at chest level (fig. 12). Figs. 13 and 14 show how to hold the camera when using the built-in magnifier too. Vertical pictures at right angles can be taken with the Finder Hood (fig. 14), enabling the photographer to work unobserved (fig. 15). The Penta Prism (see next paragraph) also permits vertical pictures in direct vision showing an upright and laterally correct image. Controlling the image of the Finder Hood is also possible by holding the camera upside down above your head and

Fig. 12

Fig. 13

Fig. 14

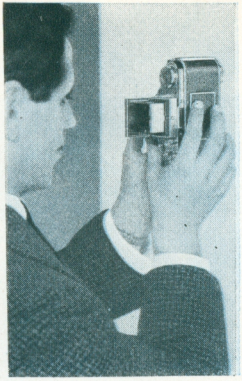


Fig. 15

looking up into the Finder Hood. This is the way for taking snapshots from behind a wall, over the heads of a crowd, etc.

The EXAKTA is a multi-system camera: The Finder Hood is interchangeable with a Penta Prism (47), as already mentioned. Moreover, there is a third system, the Lens Magnifier for microphotography and close-ups, see page 32. When changing finders, the Finder Hood (13) must be closed. Depress the Finder Hood catch (11) and lift the closed Finder Hood straight upwards (fig. 16). When replacing the Finder Hood, insert it carefully

Fig. 16

in a perpendicular direction and press it down until it snaps in audibly. Never use force!

People with faulty eye-sight should use their spectacles for short distance when focusing with the Finder Hood.

Using the Penta Prism

The Penta Prism (47), see figure 17, the most important supplementary part of the EXAKTA, is available separately as a camera accessory and is, above all, designed for sport shots and fast moving subjects.

With the inserted Penta Prism – which is inserted and exchanged into the camera in the same way as the Finder Hood – the camera is held at eye-level. The object to be photographed is viewed through the ocular with your left or right eye. Whether vertical or horizontal, the Penta Prism always reveals

Fig. 17 ▸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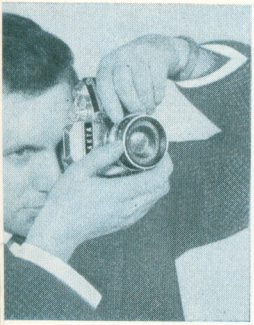


Fig. 18

Fig. 19

an upright and laterally correct reflex image, which is a great advantage for photographs of moving objects. Movements in image and nature are the same, therefore, easy "panning" of the camera in direction of the fast moving object, e.g. car-races.

When taking normal vertical or horizontal photographs, EXAKTA with Penta Prism inserted is best to be taken in the right hand and focus with the right thumb and index finger. The left hand holds the camera additionally and you fire with the left index finger (figs. 18 and 19). For horizontal pictures you may also turn the camera upside down and press the back against your forehead. People with faulty eye-sight should wear their long distance spectacles when focusing with the Penta Prism.

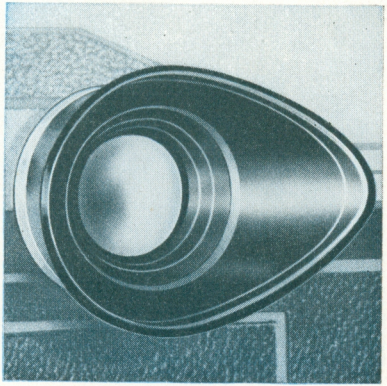
We recommend strongly the very useful rubber eye-piece (fig. 20). It will be slipped on the Ocular frame (48) of the Penta Prism and keeps away disturbing stray light. Very useful for people with glasses, as an eye-sight correction-glass can be inserted by any optician, then focusing will be possible without spectacles.

Changing ground glass screens and using the Distance Meter

The ground glass screens of the focusing systems are interchangeable. Before removing it from the Finder Hood the hinged focusing magnifier (15) has to be brought downwards by button (16) and then the Finder Hood has to be closed. Focusing system to be taken out of the camera. One takes the ground glass at the longitudinal sides and lifts it out. When inserting the screen take it against the longitudinal sides and put it between fixing springs. (Finder Hood to be prepared as described.) Do not touch the frosted side of the screen!

Instead of the ground glass screen the Distance Meter can be employed. It is particularly recommended for the Finder Hood and the Penta Prism. When using the Distance Meter the image shows two part images of the subject in one measuring range; in correct focus these two part images must match together, their outlines, horizontal or vertical – as the case may be – must meet precisely. It is very useful if the light conditions are not the best ones. Do not focus with less than 5.6!

Fig. 20



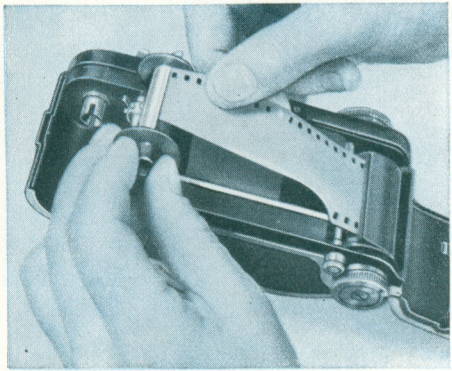


Fig. 21

How to load the EXAKTA

Film material: 35 mm perforated miniature cine film. One strip of the usual length of 5′4″ (=1.6 m)=36 exposures of $1^1/_2 \times 1$ inch.

Open the camera back as described. Pull out film rewinding knob (41). Insert the cartridge with the unexposed film into the film chamber (43). Push back the outer ring of the film rewinding knob (41) into its original position, at the same time turn it slightly. (Do not push centre disc (42) into the rewinding knob!) Push the film leader over the film guides (36) under the clamp spring of the take-up spool (32). The emulsion side of the film has to face the lens. Take-up spool (32) can be taken out of the camera when loading – shown in fig. 21 (easy to remove from fork of film transport and shutter winding lever (8)). Take care that the fork of the lever (8) engages properly the bar in the hole of the spool when inserting again! If take-up spool remains in camera when loading the clamp spring of the spool must be upwards. When fastening the film to the receiving spool (32) the camera should be placed on a solid stand. Take care that the sprocket teeth (34) engage the film perforation properly (fig. 22). Close camera back. Now, two blank exposures have to be made. Film transport lever (8) to be moved up to the stop (perhaps releasing shutter first), let

it go back and the shutter has to be released (=first blank exposure). Wind up film transport lever (8) as far as the stop, let it go back, and release again (=second blank exposure). Wind up film transport lever (8) a third time as far as it will go: an unexposed section of film is now brought into position in the film gate (37). Finally set exposure counter (6). Turn the little knob (7) with index finger in arrow direction until one stroke before No. 1 (mechanism counts each picture after the exposure has been made). Camera in taking position!

Instead of the take-up spool (32) you may also insert a second cartridge in the film chamber (33). Film leader to be fixed to the spool of the cartridge which has, of course,

Fig. 22

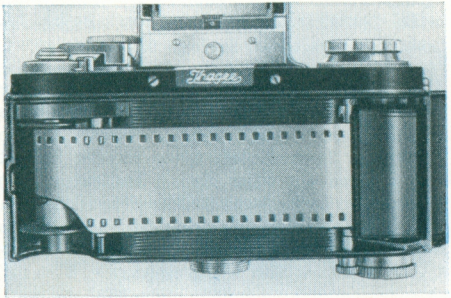
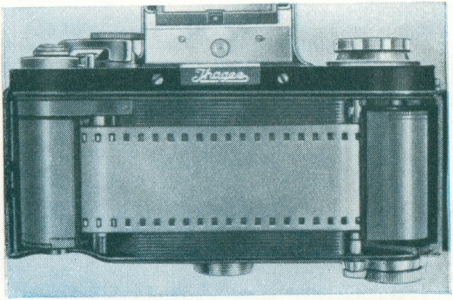


Fig. 23



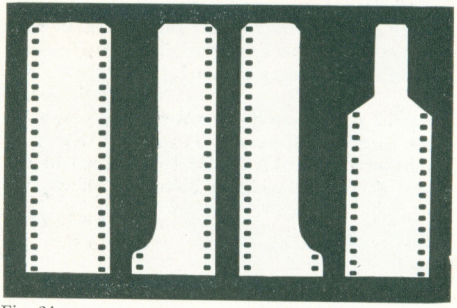
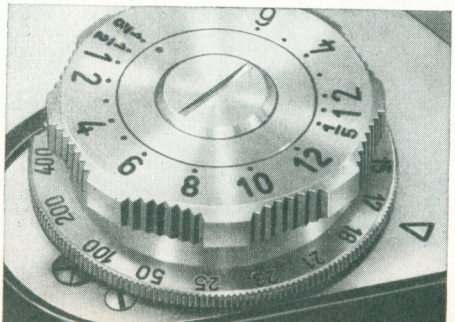


Fig. 24 ▲

Fig. 25 ▼



to be opened first. Now insert the cartridge so that the fork of the film transport lever (8) engages the bar in the spool, causing the film to be wound up, emulsion side inwards (fig. 23).

Special trimming of the film leader is not required. The take-up spool of the EXAKTA accepts any of the usual trimmings on the market. (The ones with the small tongue or even better the cut off film strips when buying loose film.) When reloading an empty film cartridge the film tongue has to conform with the core of the spool. Some film leaders with special trimmings are shown in fig. 24.

For controlling the film transport watch the control disc (20): The red marked disc rotates simultaneously with the spool core of the cartridge. Immediately after having loaded the camera set Film Speed Indicator (19) in order to assist your memory (fig. 25), turn it in anticlockwise direction by means of its milled edge. The figures refer to the sensitivity of black and white films (e.g. 17=17°

DIN, 100 = 100 ASA, etc.). The letters have the following meaning:

C Black = Color Reversal Film for daylight.
C Red = Color Reversal Film for artificial light.
NC Black = Color Negative Film for daylight.
NC Red = Color Negative Film for artificial light.

According to the fil, you have in your camera set the respective numeral or letter opposite the triangle (▲) engraved on the covering plate. Examples: Agfa Isopan ISS 21° DIN = "21" to be set against the triangle. Kodachrome daylight film (Reversal Film) = black C to be set against the triangle. So you can always see what film is in your camera.

Changing the Film

Even if the exposure counter (6) points to "36" one or two more exposures may be possible, until the film transport lever (8)

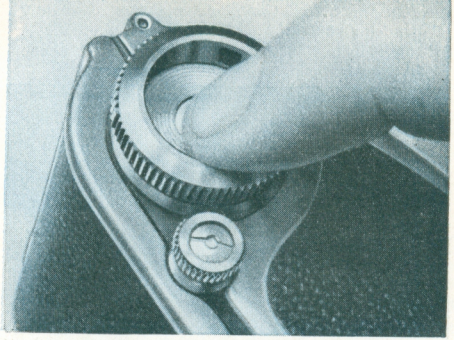
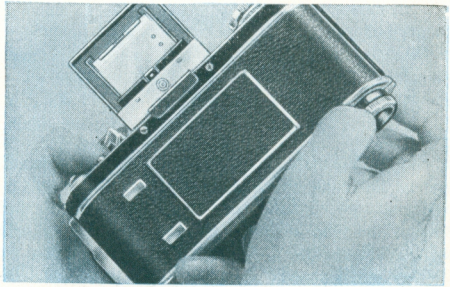


Fig. 26 ▲

Fig. 27 ▼



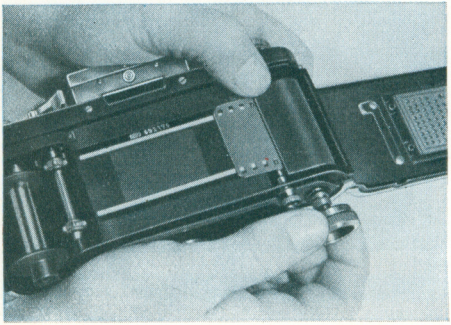


Fig. 28

cannot be wound anymore, it might get stuck on the way to the usual stop. When using take-up spool (32), film has to be rewound. Press down centre part (42) of film rewinding knob (41), see fig. 26. Press rewinding pin (9) during the whole rewinding process which is performed by turning the rewinding knob (41) clockwise, see fig. 27. Make sure that film is being rewound correctly by watching the control disc (20) and the spindle of the transport lever (8) with the big screw slit, which should both be rotating when in action.

After having rewound, the rewinding spindle does not rotate anymore. Take your finger from rewinding pin (9) which automatically springs back into its normal position. Consequently the next film can be wound as usual. Now open camera back. Pull out film rewinding knob (41), see fig. 28, and take the cartridge containing the exposed film. Press outer ring of rewinding knob (41) against the camera.

When using an empty cartridge rewinding is not necessary. As soon as the film is used up (film transport lever (8) can no longer be wound up) the film has to be cut off behind the film gate (37) with the built-in knife (38). Handle of knife (39) to be unscrewed and

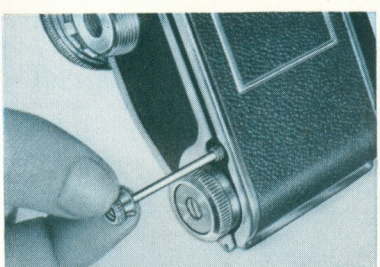


Fig. 29

pulled down (approximately 4 centimetres, see fig. 29) then push it back again and screw it tightly. By two blank exposures the film end will draw into the cartridge. Operate the knife (38) in the same way if any single part of the film is to be removed from the camera for processing.

Flash Light

The EXAKTA VX IIa/1961 has three synchronized contacts for flashlight exposures: X contact (12) for open flash with flash tubes and flash bulbs. M (22) and F (31) contacts for the use of flash bulbs at high shutter speeds. Both contacts are adjusted in accordance to the delay in firing of the flash bulbs. You will find more about it in the following tables. The adapter of the flash gun or the electronic flash unit has to put in the right contact given in the tables. It is advisable to wind up the shutter first. Fig. 30 shows EXAKTA in connection with an electronic flash unit.

Should you come across any difficulties when using flash bulbs – e.g. faulty contact in the lamp base – remove the flash bulb after the shutter has travelled its course. Do not insert a new lamp before having wound up the shutter!

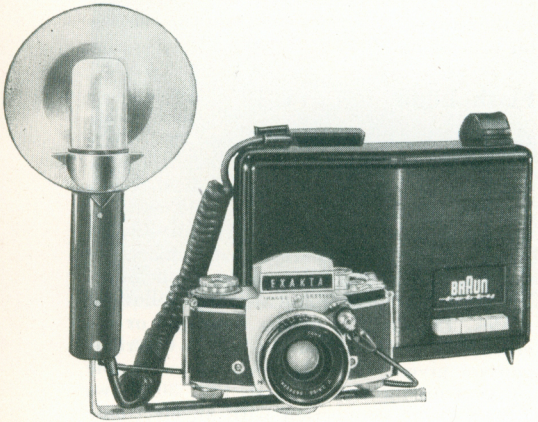


Fig. 30

When using electronic flash unit cable adapter to be connected to X contact (12) and shutter to be set on $^1/_{50}$th sec.

Tables explaining the three flash contacts of the EXAKTA IIa/1961

a) Full synchronisation:
Connect the cable adapter to M contact (22)!

Shutter setting = actual exposure speed.	Philips Photoflux flash bulbs. Guide number for 17° DIN	
	PF 24	PF 45
$^1/_{1000}$ sec.	7	9
$^1/_{500}$ sec.	10	12
$^1/_{250}$ sec.	14	18
$^1/_{100}$ sec.	20	25
$^1/_{50}$ sec.	—	35

b) Open flash technique: Connect cable adapter to F contact (31) and set shutter on $^1/_{25}$th sec. For use with small, short-burning flash bulbs.

Shutter setting (not exposure speed)	Osram Flash Bulbs			Philips Photoflux Flash Bulbs			RFT Photo Flash Bulbs		
	Type	Guide Number 17° DIN	Flash Duration (approx. exposure speed)	Type	Guide Number 17° DIN	Flash Duration (approx. exposure speed)	Type	Guide Number 17° DIN	Flash Duration (approx. exposure speed)
$^1/_{25}$ sec.	XM 1	30	$^1/_{100}$	PF 1	30	$^1/_{100}$	X 1	18	$^1/_{200}$
	XM 5	50	$^1/_{80}$	PF 5	50	$^1/_{80}$			

c) Open flash technique: Connect cable adapter to X contact (12) and set shutter on $^1/_5$th sec. or a slower speed. For use with all flash bulbs on the market. For European flash bulbs please note the following data:

Shutter setting (not exposure speed)	Osram Flash Bulbs			Philips Photoflux Flash Bulbs			RFT Photo Flash Bulbs		
	Type	Guide Number 17° DIN	Flash Duration (approx. exposure speed)	Type	Guide Number 17° DIN	Flash Duration (approx. exposure speed)	Type	Guide Number 17° DIN	Flash Duration (approx. exposure speed)
$^1/_5$ sec. and longer	XM 1	30	$^1/_{100}$	PF 1	30	$^1/_{100}$	X 1	18	$^1/_{200}$
	XM 5	50	$^1/_{80}$	PF 5	50	$^1/_{80}$	X 2	35	$^1/_{100}$
				PF 24	33	$^1/_{40}$	XM 2	35	$^1/_{50}$
				PF 45	42	$^1/_{33}$			
				PF 60	90	$^1/_{50}$			
				PF 100	115	$^1/_{45}$			

The Guide Numbers mentioned are only for black and white film.

Maintenance of Camera and Lens

The camera closed, with inserted lens or protective cover and inserted focusing system, should always be kept in the Ever-Ready Case or wrapped in a smooth dust proof cloth. All easily accessible parts must be kept clean and, if necessary dusted with a soft camel-hair-brush, especially the film track with film guides (36), film transport sprockets (34), the chambers (33 and 43), and the camera back (44) with film pressure plate (45). Only in the case of need should the mirror of the camera be dusted delicately with a soft hair-brush, without any pressure! In doing so do not get too close to the slightly greased mirror frame! Protect your camera carefully against dust, sand, etc., and, of course, against moisture of any kind. Never touch the glass surfaces of the lens, focusing screens, or the ocular of the Penta Prism. The same may be said about the mirror. If necessary clean these parts carefully with a very soft leather, or a piece of soft, smooth linen.

Under no circumstances interfere with the camera mechanism. Repairs are the business of the expert and should, therefore, be carried out through our agency or in our works itself.

Accessories

Accessories increase the functions of the EXAKTA and are practically indispensable for certain special subjects.

Ever-Ready Case (fig. 31)

Good protector when storing camera or transporting. No interference when camera in working position. Fastening screw with thread to put camera on tripod including Ever-Ready Case.

Lens Hood (fig. 31)

Indispensable for protecting the lens against side lights and very often against direct sunlight – especially in color photography. Moreover, the Lens Hood protects the lens against rain and snow. Our Lens Hoods have the modern rectangular form with a very good light shielding effect, and are available

with screw-in threads M 35.5 × 0.5 (slip-on ∅ 37 mm), and M 49 × 0.75 (slip-on ∅ 51 mm). Our filters and soft focus discs can be screwed in the Lens Hood in question.

Filters

Black and white photography without filters gives only half the pleasure. E. g. clouds in a landscape can only be reproduced effectively by means of a filter. Our precision light filters are composed of high-quality color filter glass with hard chromed mounts and screw-in threads. The filters are supplied in elegant plastic cases. Available with screw-in threads M 35.5 × 0.5 (slip-on ∅ 37 mm) and M 49 × 0.75 (slip-on ∅ 51 mm) in the following colors: Light-yellow (2×), Medium-yellow (3×), Yellow-green (2×), Green (4×), Orange (4×), Red (6×), and Blue (2×). Moreover, there is an ultra-violet filter available.

Soft Focus Discs

gives the photograph softness and creates "atmosphere". Soft Focus Discs in elegant

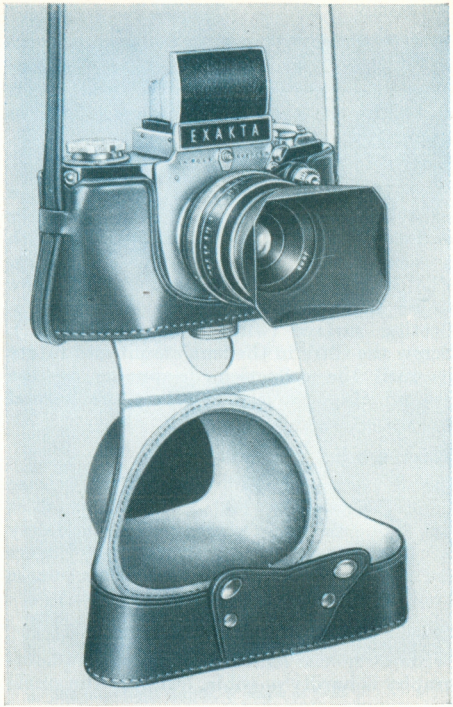


Fig. 31 ▶

plastic cases are available in two graduations and have the precision screw-in mounts as the filters.

Polarizing Filters

Intended to eliminate light reflections on light objects (e.g. glass, surfaces of water and varnish, etc.). The filter is equipped with a screw-in thread for EXAKTA lenses. Photographs with the Polarizing Filter have to be taken at a certain angle to the reflecting surface (with glass approx. 35°). Screw the filter in the lens mount and rotate it until the reflection disappears on the ground glass (approx. 2 times the normal exposure time).

The Giant Release Button

can be screwed into the shutter release knob (3) enlarging its surface and enables you to operate the release easily and safely when wearing gloves or when your fingers are stiff with cold. (Lenses with a large release knob or tilter do not need this button.)

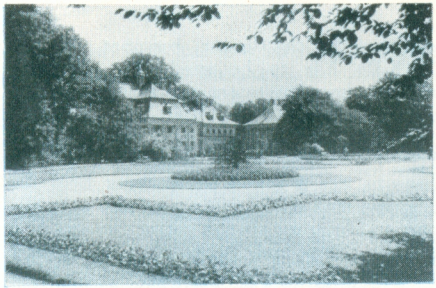
Special lenses

Without special lenses comprehensive photography is hardly possible, but only the single lens reflex camera gives every opportunity of taking full advantage of this facility in the simplest way. The reflex image of the EXAKTA is always the correct reproduction of the object as well as showing correct sharpness and depth of field.

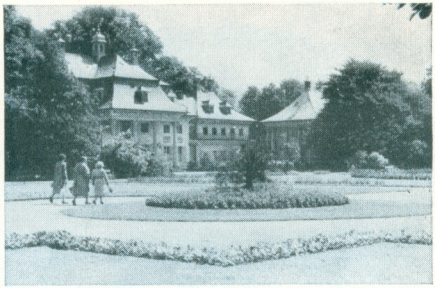
Wide angle lenses (with short focal length) give a great angle of field and show "a lot" in a photograph but, of course, everything is reproduced relatively small (fig. 32). These lenses are indispensable when taking indoor photographs, architectures, landscapes, reproductions, etc.

Long focal length lenses or actual tele-photo lenses have a long focal length and appear to "bring near" the distant object, though the angle of field is smaller (see fig. 32). Moreover, they correct perspective distortions and are used for children's photos portraits, and sport and animal photography, and for many other subjects. Fig. 33 shows the EXAKTA with the well-known Jena Bm f 2.8/120 mm with Fully Automatic Diaphragm.

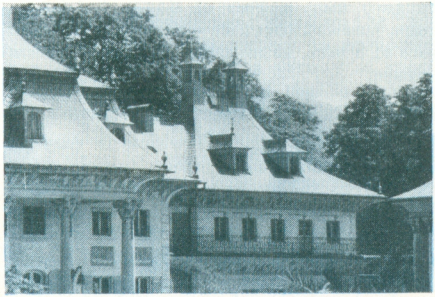
Fig. 32



▲ 35 mm. focal length, 62° angle of field



▲ 50 mm. focal length, 45° angle of field



▲ 180 mm. focal length, 14° angle of field

▲ 500 mm. focal length, 5° angle of field

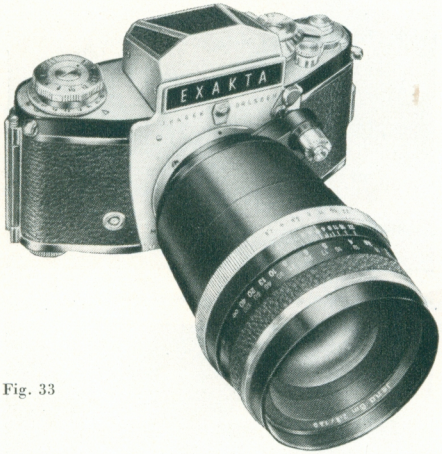


Fig. 33

With ultra high speed there is also the Jena B f 1.5/75 mm available.

The normal lens has to be removed – as described – and the special lens can be employed instead. For some lenses with a very long focal length the outer bayonet of the EXAKTA has to be used. The distance scales on these lenses are also measured from the camera back to the object.

Extension Tubes

Close-ups are a favoured working field for the single lens reflex camera as also here the camera defines an always correct image. The Bayonet Rings and Tubes may be utilized in any combination between the camera body and lens (fig. 34) enabling close-ups at shortest distances. Available are: Two-in-one Rings=5 mm, a Pair of Bayonet Adapter Rings, screwed together=10 mm, and three tubes of 5 mm, 15 mm, and 30 mm extension increase.

Miniature Bellows Attachment

This apparatus (fig. 35) which is easy to carry, is recommended when taking close-ups whereby the image ratio has to be changed quickly and unbrokenly. The bellows extension can be set continuously from 3.5 cm to 12.5 cm. The apparatus is mainly intended for close-up work by hand, but it can also be employed on any tripod and in

connection with our new Repro Attachment 61, it has also two bushes for horizontal and vertical working with EXAKTA.

Autocouple Extension Release

In order to employ the Fully Automatic Diaphragm of modern lenses, also when using Bayonet Adapter Rings or the Miniature Bellows Attachment for close-ups, the Autocouple Extension Release is inserted between lens and camera (figs. 34 and fig. 35).

Ihagee "Vielzweck" equipment

This universal equipment based on the "add-on" principle, is suitable for an economical use with EXAKTA on a variety of special fields. The single parts of the "Vielzweck" equipment can be used on their own or in combination so that you may complete the unit piece by piece. Available are: Swing Angle Attachment with focusing slide for convenience in close-up work with bayonet rings and tubes.

The big Bellows Attachment for an economical taking of close-ups is especially recommended for very short distances; the bellows may be extended continuously from 3.5 cm to 22 cm so that you will get all ratios of reproduction within this range.

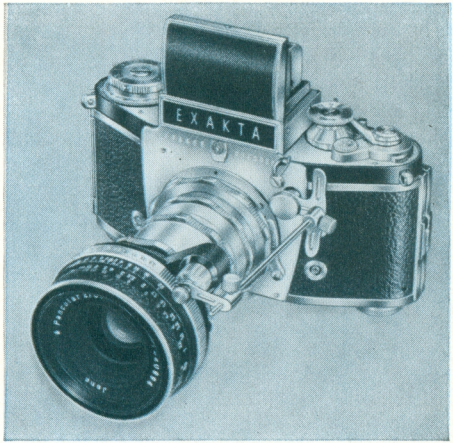
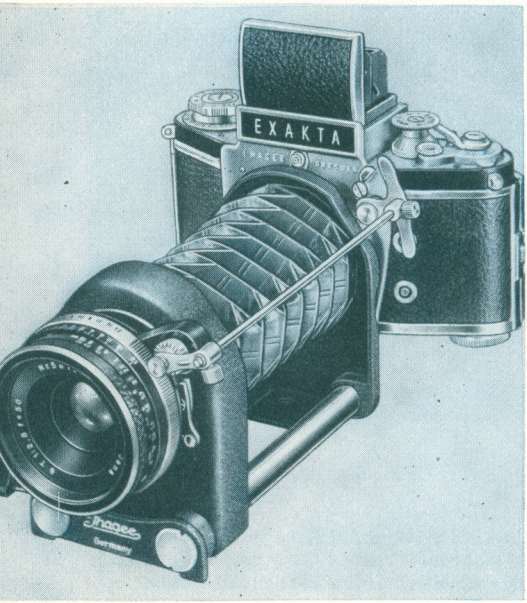


Fig. 34



◀ Fig. 35

The Transparency Copying Equipment for the big Bellows Attachment enables transparencies to be copied optically. The Copying Stand 61 and the Repro Attachment 61, fig. 36, (if desired with our lighting equipment) are intended for reproduction but they may also be used as table tripods when taking close-ups. Repro-Attachment 61 with special equipment may also be used for photomicrography.

Microscope Attachment

A micro-adapter is used for connecting the EXAKTA to a microscope and, therefore, the camera can, in a very simple way, be employed for photomicrography. The attachment is equipped with a rapid change mount so that the camera may be removed from the microscope, when interrupting the work, with one single movement only. In photomicrography too, focusing is done by the image screen.

Lens Magnifier

When taking close-ups and in photomicrography, usually a special focusing system

is employed, the Lens Magnifier. One of the highly corrected standard or special lenses of EXAKTA is used as a magnifying glass. This system shows an enlarged reflex image which is equally sharp and completely free from any form of distortion. If you should not have a spare lens on hand, there is, additionally a well corrected Top Lens available.

Special Screens for Macrophotography and Photomicrography

Critical focusing in Macrophotography and Photomicrography is sometimes very difficult due to the grain in the ground glass screen, therefore, special ground glass screens with a clear centre spot (3 or 10 mm ∅) or clear screens are at your disposal, then focusing with hair-line cross is achieved in accordance with the clear aerial image. Special focusing screens can be interchanged in all three focusing systems – excepting the former finder hood for EXAKTA models. The interchange of screens is already mentioned on page 17. There are also further

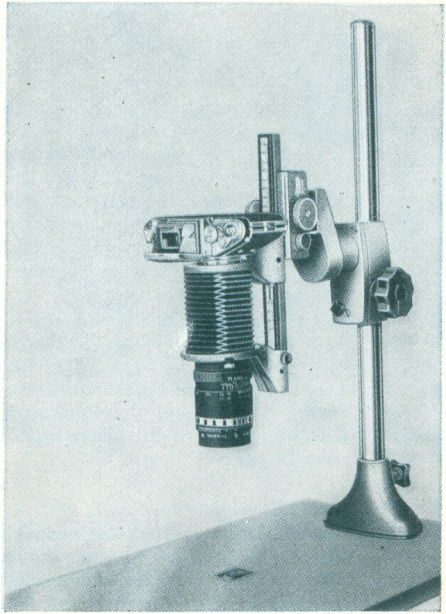


Fig. 36 ▶

screens with grid marking, centimetre or millimetre, etc., available.

Ihagee Macro-Micro Photometer

This apparatus is a great aid in macrophotography and photomicrography and for optical copying. A selenium cell element is lowered into the central light beam in order to measure the light effective in the camera. Additionally, a normal pattern micro-ammeter or light-galvanometer is necessary.

Ihagee Kolpofot

The Kolpofot is especially produced for medical photography, for close-ups covering small areas of the patient's body. With the aid of Electronic Flash, needle sharp pictures of cavity areas (vagina, mouth, pharyngeal gland), as well as of the skin, the eyes, the ears, etc., can be taken.

Ihagee Endoscope Adapters

Our Endoscope Adapters make it possible to take interior photos of human organs (e.g. bladder). They are the connection between the camera and controlling instrument (Endoscope). For a sufficient illumination of endoscopis subjects an "Overrunning Switch Apparatus" is available.

Stereo Attachments (fig. 37)

have been developed for three dimensional photography. The large Stereo Attachment 65 mm permits taking pictures from ∞ (infinity) up to 2 metres, approx. 6′6″, whereas the small Stereo Attachment 12 mm yields photos at distances ranging between 2 metres, approx. 6′6″, and 0.15 metres, approx. 6″ (when focusing short distances there are three auxiliary lenses available for the small Stereo Attachment). Both Stereo Attachments can be screwed into the front mount of the normal 50 mm lenses; suitable lenses are the Jena T f 2.8/50 mm and Pancolar f 2/50 mm (with Fully Automatic Diaphragm). Other lenses with the same focal lengths and a similar mount could perhaps be employed by means of an adapter ring. After having screwed the Stereo Attachments into the front mount of a lens, the attachment is fixed by turning the fastening ring in the opposite direction, as soon as the separation line in the centre of the ground

glass screen runs perfectly parallel with the vertical sides of the half-images. The ground glass must already reveal two rectangular half images. Perpendicular setting is facilitated by paying attention to the fact that a certain point in either picture has to be set at the same distance from the bottom edge of the image. Focusing is performed as usual on the ground glass image only. When using the Stereo Attachments the exposure time must be increased 1.5 times. Due to the fact that the two pictures always have to stand side by side, the EXAKTA can be used only in a horizontal position and, therefore, always yields upright Stereophotos.

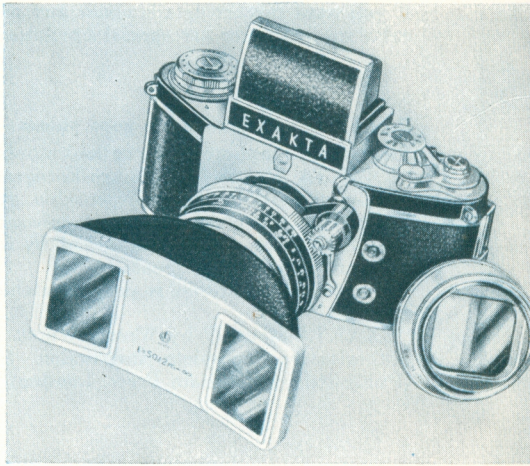


Fig. 37 ▶

If you want further details about any particular subject there are special brochures at your disposal. Please quote in which subjects you are especially interested.

Books that lead the way to good photos:

Please ask your photo dealer or book store for:
"EXAKTA Makro- und Mikro-Fotografie" by Georg Fiedler. An indispensable guide for two of the most important spheres of EXAKTA photography (Published by fotokinoverlag halle, Halle/Saale).
At present this edition is only available in German.
"EXAKTA Manual" by Werner Wurst. The authoritative, complete instruction book (Published by Fountain Press, London).
"35 mm EXAKTA Handbook" by K. L. Allinson A. R. P. S. (Published by Fountain Press, London).
"35 mm Photography with an EXAKTA" by K. L. Allinson A. R. P. S. (Published by Fountain Press, London).
"EXAKTA Photography" by Jacob Deschin (Published by Camera Craft Publishing Company, San Francisco 5, California).
"EXAKTA GUIDE" by W. D. Emmanuel (Published by Focal Press, London).

There may be slight deviations between the camera models with their accessories and illustrations in this booklet.

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