

Using the



Exa
II

Main operational points of the EXA II

- | | |
|--|--|
| 1 lens | 18 shutter release button |
| 2 red dot on lens | 19 lens bayonet catch |
| 3 diaphragm stop ring | 20 ocular of Pentaprism |
| 4 focusing ring | 21 rewind-spindle dogs |
| 5 depth of field scale | 22 cassette chamber |
| 6 red dot on camera | 23 guide plate |
| 7 flash contact | 24 film guide roller |
| 8 neck strap eyelets | 25 film guides |
| 9 exposure counter | 26 shutter-blind slit |
| 10 rewinding stud | 27 film transport sprockets |
| 11 rapid-wind lever for shutter and film transport | 28 take-up spool for exposed film |
| 12 Pentaprism | 29 take-up chamber (for spool or cassette) |
| 13 shutter release catch | 30 film pressure plate (removable) |
| 14 film rewinding knob | 31 camera back |
| 15 film-speed indicator | 32 camera back hinge spindle |
| 16 speed setting ring | 33 tripod socket |
| 17 camera back lock | |

EXA II

In your EXA II, unrivalled in its combination of extreme versatility and exceptionally simple operation, you have invested in a photographic instrument which will meet your requirements in every field of miniature photography. The camera makes one call upon you only, which is that in fairness to its wonderful operational scope, you learn to get the very best out of it... which means nothing more than carefully reading the instructions for use, and practising with the unloaded camera before actually putting it to work. (A few minutes devoted, for example, to loading and unloading the camera with an old film will be very well spent.) And now, please open out the page facing this one so that in reading the directions, the relevant illustrations will always be visible.

Obviously, there can be little need for us to extol the major virtues of the EXA II - the fact that you have chosen the camera is indicative on that score, of course - but we are glad you share our pleasure in its single-lens-reflex focusing, where the brilliant magnified image of the subject, seen right-way-up and right-way-round, is free of all parallax errors whether the camera is used with extension tubes for close-ups, or with wide-angle, telephoto, and other special lenses or accessories, . . . and where, too, picture composition, focusing, and check of focal depth are all controlled through the screen image. With us you share as well the pleasure given by the quietly-operating focal plane shutter mechanisms, the convenience of the rapid lever-wind operation, the reliability of the film transport system in general, and the wide range of EXA II accessories that make light work of otherwise impossible photographic tasks.

And now for the how-to-do-it details!

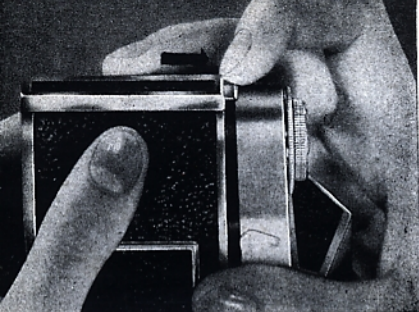


Fig. 3

Exa II

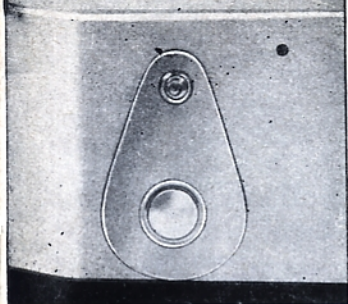


Fig. 4

Opening and closing camera back

Hold the EXA in your left hand. Pull out the camera back lock (17) as in fig. 3, and open camera back. When closing, press camera back (31) lightly against the camera body, so that lock (17) snaps into its original position.

When back (31) has to be detached from the camera, withdraw the pin securing the hinge spindle (32) after opening camera back. When refitting, hold the back against the camera body and introduce spindle (32) into the hinge aperture.

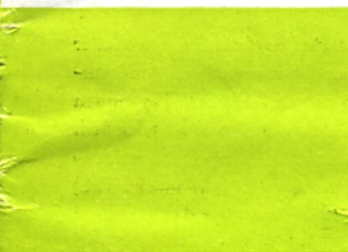


Fig. 5

Shutter and film transport

Film wind and shutter loading are coupled to prevent double exposures and unexposed frames.

Lift shutter release catch (13) as in fig. 4, to enable shutter to be fired by pressing release button (18) - see fig. 5. With shutter release catch (13) swung slantwise to the red point (fig. 6), it is impossible to release the shutter through unintentionally depressing the release button when storing or carrying the camera.

When setting shutter and transporting film with rapid-wind lever (11), the lever should be operated as far as the stop either with a single sweeping movement or with a number of smaller movements of the lever, which will always return automatically to its starting position.

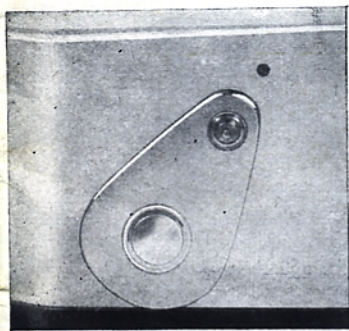
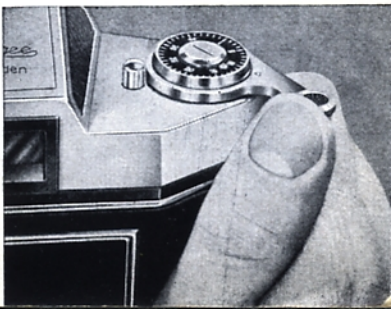


Fig. 6



Fig. 7



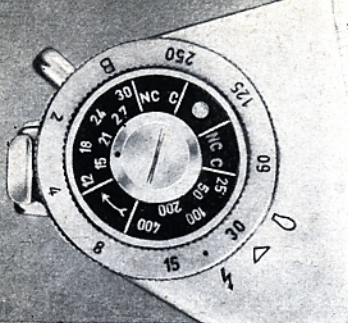


Fig. 8

With shutter set, the lever cannot be operated again before the shutter is released, and equally the shutter cannot be released until the lever-operation is completed. The lever must never be forced. The screen image in the Pentaprism (12) is visible only with the shutter loaded. (When picture-taking is interrupted, safeguard against accidentally firing the shutter by swinging release catch (13) to red dot.)

Shutter operation

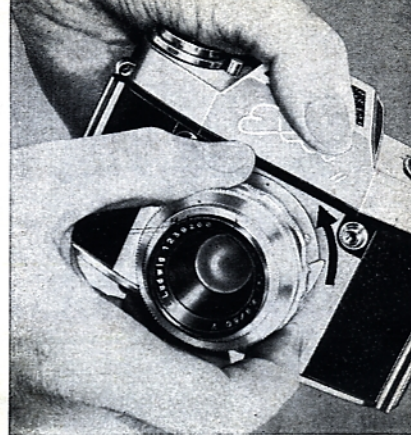
Instantaneous Exposures. Turn speed setting ring (16) in either direction until the exposure time required is against the black triangle (\blacktriangle) (fig. 8). The figures represent fractions of a second, e. g. $2 = 1/2$ sec., $30 = 1/30$ th sec., $125 = 1/125$ th sec. (Setting between engraved speeds does not give proportionate intermediate exposure.)

Exposures from $1/250$ th to $1/30$ th second can safely be hand-held - with experience, $1/15$ th may also be used "in the hand" - but for longer exposures, a tripod or other firm support for the camera is essential. (Tripod socket (33) is in base of the camera.)

Time Exposures. Turn speed setting ring (16) to B. On depressing release button (18), shutter will open and remain so until pressure is removed. To obtain T setting for very long exposures, turn speed setting ring (16) to B, and open shutter by depressing release button (18).

Exd II

Fig. 9



Then set shutter release catch (13) slantwise by swinging to red dot, shutter will stay open until release catch (13) is re-set to vertical. (As camera is not touched during exposure, camera-shake is avoided.) B and T settings are important for night shots and interior studies.

For time exposures (and especially when setting on B) a cable release is recommended, in order to eliminate camera shake caused by the camera being touched, and it should be screwed into release button (18).

A tripod must be used for all time exposures, or the camera may be placed on some other solid support, such as a table, wall, etc. Setting shutter speeds may be effected before or after winding on, and standard delayed action releases may be fitted either into the cable release or direct into the release button (18), according to the type.

Lens operation

Lens (1) is interchangeable. Press lens catch (19) towards the lens. Turn lens to the left (fig. 9) until red dots (2 and 6) are opposite each other, and lift off. When re-inserting lens, reverse the procedure: red dot to red dot, and turn lens to the right until it locks into position.

All the special lenses in the EXAKTA range, from the shortest to the longest focal lengths, may be used.

Sharp focus is obtained by rotation of the focusing ring (4), which is scaled in both feet and metres, and the point of focus is checked by looking through the Pentaprism (20), where the considerably magnified right-way-round, right-way-up image of the subject is visible. When this image is at its maximum sharpness, the subject is in focus, and the subject distance is indicated against the red focusing mark.

Diaphragm setting is effected with the stop ring (3) on which low numbers (2.8, 4) indicate large iris openings, with which short exposures are possible, but which give shallow depth of focus. Large numbers (16, 22) indicate small openings, requiring longer exposure times, but giving great depth of focus. "Depth of focus" refers to the field in which at a given lens setting all objects are in sharp register, and is determined in the EXA II on the depth scale (5). To the left and right of the red focusing index, read off (against the iris setting in use) the focusing scale distances, which will indicate where the depth of focus begins and ends: if on one side the diaphragm number is opposite the infinity mark - or, reading from the centre, behind it - the depth of focus reaches to infinity.

For example: Focusing at 5 m., iris $f/8$, shows depth of focus from about 3 m. to more than 15 m. (about 23 m.) (fig. 10).

Focusing at infinity, diaphragm $f/11$, shows depth of focus of about 5 m. to infinity (fig. 11).

Focusing at 2 m., diaphragm $f/5.6$, shows depth of focus from about 1.60 m. to 2.5 m. (fig. 12).

For critical focusing by the ground glass image, use a large diaphragm aperture (more light and shallower depth) and stop down just before exposing: this is simplified by the lens being provided with either a pre-set diaphragm or click stops.

Fig. 10



Fig. 11

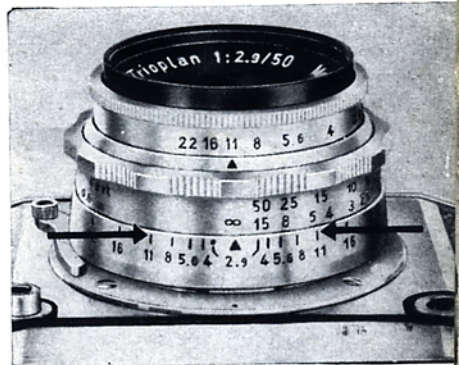
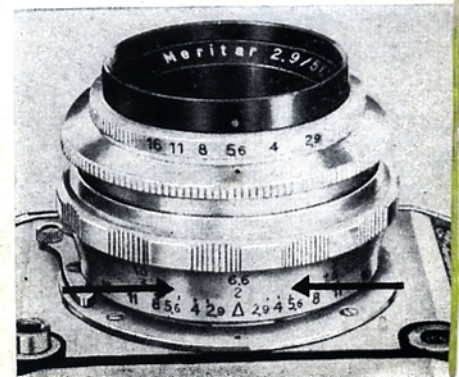


Fig. 12



Exakta II

Using Pre-set diaphragm of f/2.9 50 mm Meritar

Push ring behind diaphragm scale towards the camera body, and turn diaphragm ring until the aperture required is opposite the red mark, and then allow the ring to spring back into its original position. Open the lens to full aperture for critical focusing, and just before firing the shutter turn diaphragm setting ring as far as the pre-set diaphragm stop: this can be done without moving the camera from eye-level.

Using Click Stops of f/2.8 50 mm Jena T and f/2.9 50 mm Trioplan

At every engraved setting of the diaphragm, a light snap-in of the iris setting ring will be felt. To stop down, therefore, without removing the camera from eye-level, it is merely necessary to count the appropriate predetermined number of "clicks".

Using the Pentaprism

The Pentaprism has many advantages, of which the main are

- a) Camera may always be operated at eye-level,
- b) the eyepiece (20) suits either the left or right eye,
- c) whether used horizontally or vertically, the image is always seen right-way-up and right-way-round,
- d) photography of moving subjects is greatly facilitated, and
- e) as the screen image of a moving subject travels in the same direction as the subject itself, 'panning' of high-speed movement (car racing, etc.) is simplified.

In normal use, for either vertical or horizontal shots, hold the EXA in the right hand and focus the lens with the right thumb and forefinger, while using the left hand to give extra support for the camera and the left forefinger for firing the shutter (figs. 13 and 14). For horizontal pictures press camera body firmly against the forehead, to minimize risk of camera shake (fig. 15). - Persons wearing glasses focus in the prismatic finder with telescopes.

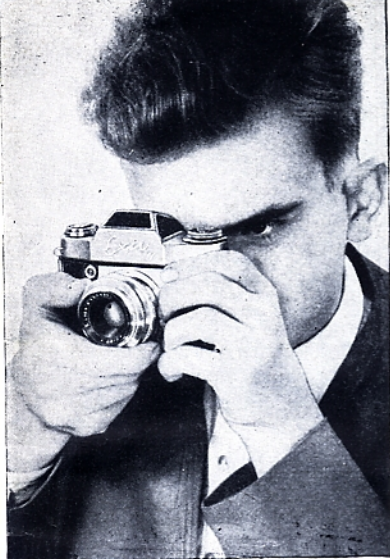


Fig. 13



Fig. 15

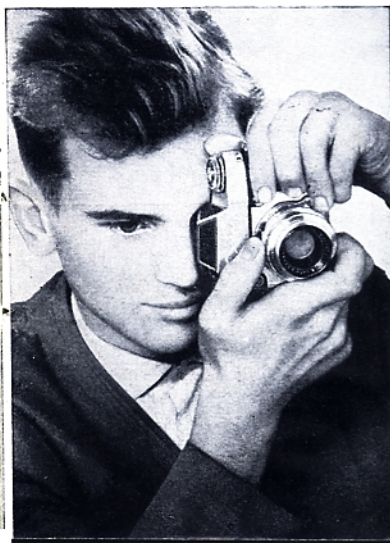


Fig. 14

Exa II

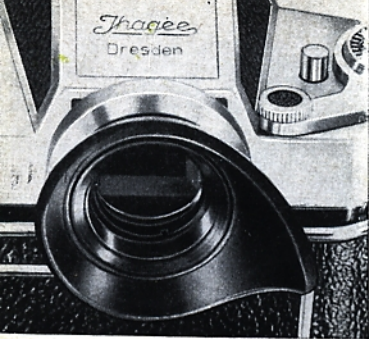


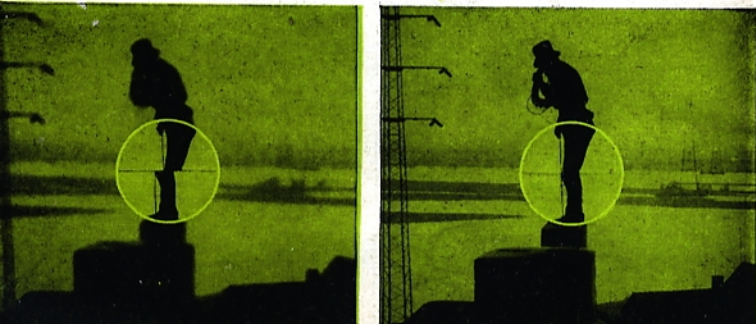
Fig. 16

EXA II

A most useful accessory for the Pentaprism is the rubber rotating eyepiece (fig. 16). This is fixed to the Pentaprism ocular (20) for keeping out distracting stray light, and is also helpful to the spectacle wearer, for whom the fitment includes provision for mounting sight-correction lenses, enabling him to use the camera without wearing glasses.

The EXA II is also available with Distance Meter permanently built into the Pentaprism screen: this is a split image rangefinder which vastly simplifies focusing in poor light or other adverse sighting conditions. When the subject is exactly in focus, the two halves of the split image are seen in exact normal relation to each other (fig. 17), but the Distance Meter is not recommended for lens apertures smaller than $f/5.6$.

Fig. 17



Loading camera with film

Films for the EXA II: Perforated miniature cinefilm, 35 mm. wide, 1.60 m. long for taking 36 exposures 24 x 36 mm.

Open camera back (31). Insert cassette with unexposed film into film chamber (22) from below (fig. 18) and then slightly turn rewind button (14) if necessary so that the spindle dogs engage the bar in the centre spool. The cassette mouth and film leader must be positioned by the guide plate (23), and the take-up spool (28) extracted from the take-up chamber (29). Tuck the end of the film under the clamping spring of the take-up spool (28) and wind half a turn around spool (fig. 19). Re-insert take-up spool (28) into the chamber (29) and turn slightly in wind-on direction to allow the fork of the wind-on lever (11) to engage the bar of the spool, so that the spool may be pushed right home in the take-up chamber.

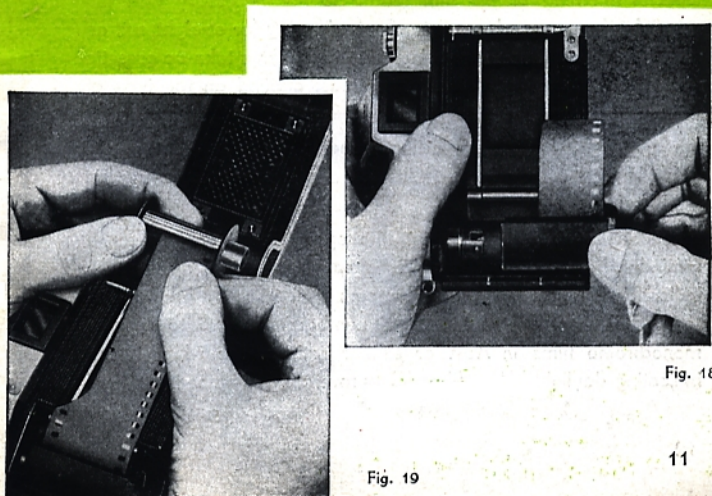


Fig. 18

Fig. 19

Exa II

Now operate winding lever (11) as far as the stop (subsequently firing shutter) to ascertain that the film strip is running correctly from the full cassette over the film guide roller (24) and between the film guides (25) as tightly as possible on the film transport sockets (27) and thence to the take-up spool (28). The sprocket (27) must, of course, engage with the film perforations (fig. 20).

Camera back (31) must now be closed, and two "blind" exposures should be run off for spooling on the film leader. Operate lever-wind (11) to its stop and turn dial of exposure counter (9) in either direction, and set to "1" (fig. 21). Your EXA II is now ready for action.

Instead of the take-up spool (28), an empty cassette may be used in the chamber (29), with film leader fastened to the cassette centre spool, but with the centre spool fitted into the cassette the opposite way round to normal, so that the fork of the lever-wind (11) engages the centre spool of the cassette, allowing the film to be drawn from cassette to cassette (fig. 22).

Special trimming of the film leader is not necessary with the normal take-up spool, any standard trimming (or straight cut, as when film is cut from bulk) being suitable. When a take-up cassette is used, the trimming of the leader must depend on the type of centre spool (see fig. 23).

To check that film is transporting properly, the rewind button (14) and film speed indicator (15) should revolve as the lever-wind is operated.

Immediately after loading, set film speed indicator (15) as a reminder. Turn indicator in either direction until the appropriate indication faces the red mark. Numbers from 12 to 30 are for DIN ratings of monochrome films, the numbers from 25 to 400 for monochrome films in ASA or similar ratings, the white letters indicating daylight colour films (C = reversal, NC = neg/pos) and

Fig. 20

Please pay attention to a little variation on operating the exposure counter (9): Now the disk of the exposure counter is equipped with an arrow and for setting on cipher „1“ it must be turned only in arrow direction.

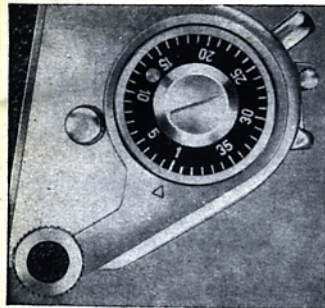
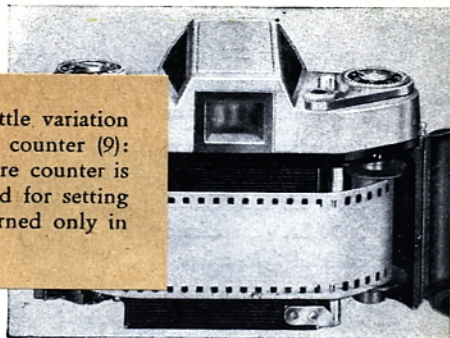


Fig. 21

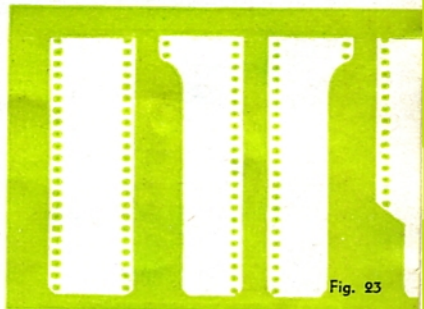


Fig. 23

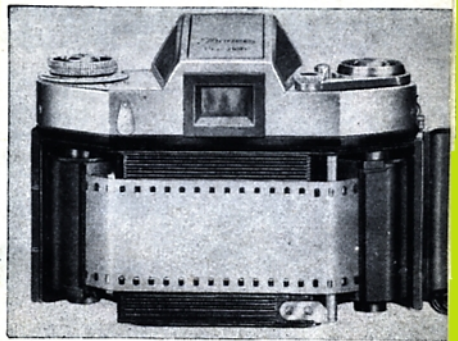


Fig. 22



Fig. 29



Fig. 30

Flash photography

The EXA II has a flash contact (7) with symbol setting for the shutter speeds required in flash work. When working with flashbulbs, turn speed setting ring (16) so that the red dot is alongside the flashbulb symbol (⊞) (fig. 29) and working with flashtube, the red point should be alongside the flashtube symbol (⚡) (fig. 30). In this way, the correct shutter setting is automatically obtained, being $1/15$ th second for flashbulbs, $1/30$ th second for electronic. In

Fig. 31



Fig. 32

both cases, openflash working is used, as the flash comes when the focal plane shutter of the EXA II is fully open.

To connect for flash, first set the shutter by operating the lever-wind, and connect the cable from the flashgun to the flash contact on the camera. (Fig. 31 shows EXA II connected with an electronic equipment.) - The following flashbulbs are suitable for EXA II:

Osram-Vakublitz-Bulbs			Philips-Photoflux-Flashbulbs			RFT-Photo-Flashbulbs		
Type	guide number 17° DIN *)	Exposure time (~ flash duration)	Type	guide number 17° DIN *)	Exposure time (~ flash duration)	Type	guide number 17° DIN *)	Exposure time (~ flash duration)
XM 1	25	$1/100$	PF 1	25	$1/100$	X 1	18	$1/200$
XM 5	40	$1/80$	PF 5	40	$1/80$	X 2	35	$1/100$
			PF 24	25	$1/40$	XM 2	35	$1/60$
			PF 60	55	$1/50$			
			PF 100	80	$1/45$			

*) monochrome only

EXA II



Fig. 29



Fig. 30

Flash photography

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Fig. 31



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Type	guide number 17° DIN *)	Exposure time (~ flash duration)	Type	guide number 17° DIN *)	Exposure time (~ flash duration)	Type	guide number 17° DIN *)	Exposure time (~ flash duration)
XM 1	25	$\frac{1}{100}$	PF 1	25	$\frac{1}{100}$	X 1	18	$\frac{1}{200}$
XM 5	40	$\frac{1}{80}$	PF 5	40	$\frac{1}{80}$	X 2	35	$\frac{1}{100}$
			PF 24	25	$\frac{1}{40}$	XM 2	35	$\frac{1}{50}$
			PF 60	55	$\frac{1}{50}$			
			PF 100	80	$\frac{1}{45}$			

*) monochrome only

For flashbulb use, we recommend the Ihagee flashgun (fig. 32), as it is of modern design, handy, and reliable. Special advantages are that it

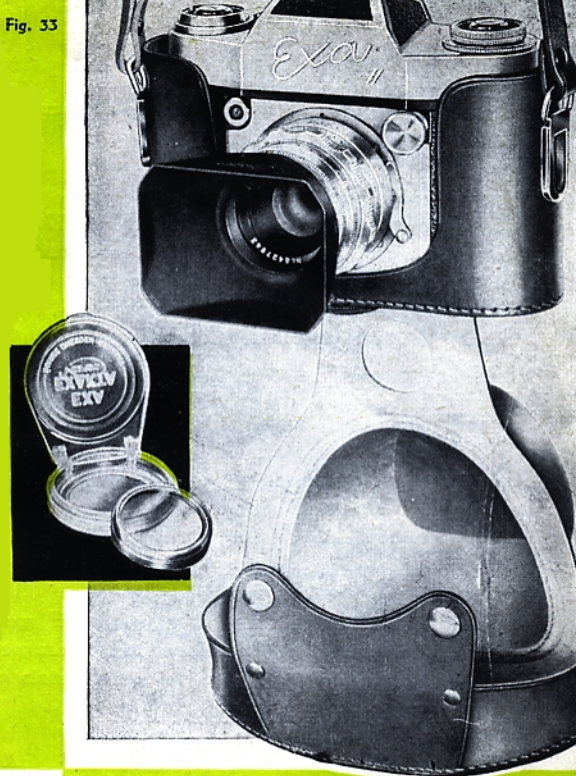
- a) is collapsible into a very small compass,
- b) has a specially compact folding high-efficiency reflector,
- c) can be used with an extension lamp holder for flashbulbs of all sizes and with any type of base,
- d) fires with certainty by capacitor ignition,
- e) incorporates a built-in indicator lamp, and
- f) an extension cable for additional flashes is available.

"Dud" flashbulbs should be removed from the flashgun after the shutter's travel, and replacements for them should not be inserted until the shutter has been re-cocked.

Exa II

Care in handling camera and lens

The camera should always be kept with its lens or a protective body cover in position, and either fitted in its ever-ready case or wrapped in a soft, dust-proof cloth. All easily accessible parts must be kept clean and dusted with a soft camelhair brush, especially the film track with film guides (25), film guide roller (24), film transport sockets (27), chambers (22 and 29), camera back (31), and film pressure plate (30). Occasionally, the mirror may be delicately dusted with a very soft brush, and the camera should always be protected against moisture, dust, blown sand, etc. Never touch the glass surfaces of the lenses, the ocular of the Pentaprism (20), or the mirror, with your fingers. Lenses and the ocular (20) may, if need be, receive a very careful cleaning with very soft leather or soft, smooth linen. Do not in any circumstances interfere with the camera mechanism, and repairs should be entrusted to Ihagee specialists or our own Works only.



Accessories

Increasing the versatility of the EXA II, and indispensable for many purposes, a wide range of ancillary equipment is available for the camera.

Leather ever-ready case (fig. 33)

Valuable protection for the camera when being stored or carried, and does not impair its readiness for picture-taking. Securing

screw for camera includes tripod bush to allow camera and case to be used together on tripod.

Filters (light absorption) (fig. 33)

For black-and-white photography, filters capable of absorbing varying forms of light are essential for good results: clouds, for example, can be rendered effectively only by using a suitable filter. Ihagee precision light filters consist of first-class plano-parallel polished colour filter glasses in hardchrome mounts with screw threads. The filters are marketed in elegant translucent plastic cases. Available with screw thread M 35.5 x 0.5 for the three EXA standard lenses, and M 49 x 0.75 for various special lenses. Standard colour range includes light yellow (2x exposure), medium yellow (3x exposure), yellow-green (2x exposure), green (4x exposure), orange (4x exposure), red (6x exposure), and blue (2x exposure). An ultraviolet suppression filter is also available.

Soft focus discs

These give photographs a pleasantly soft and rounded effect, with an air of sunshine. Ihagee soft focus lenses are supplied in two grades, in the same precision screw mounts and elegant plastic cases as Ihagee filters.

Lens hoods (fig. 33)

Indispensable for protecting lenses from stray light, or for contra-jour work, especially when taking colour pictures, and additionally for protecting lenses from raindrops and snowflakes. Ihagee hoods have a modern rectangular shape, giving excellent light protection, and are supplied for screwing into the EXA standard lenses with M 35.5 x 0.5 threads, or threaded M 49 x 0.75 for certain special lenses. Soft focus disc mounts and filter mounts will screw into lens hoods of corresponding diameter.

f = 35 mm



f = 50 mm



f = 135 mm



f = 300 mm



Fig. 34

Giant release button (fig. 33)

Principally needed in winter, this increases the pressure area of the release button, for easy operation of the shutter when gloves are worn.

Polarising filters

Special filters for cutting out reflections on non-metallic surfaces, such as glass, water, paint, etc. Delivered with screw-in mounts for EXA lenses. Photography with polarising filters is only possible at an angle to the reflecting surfaces - about 35° with glass - and the filter must be turned to the "Extinguish" position in front of the lens (marked by lines on the mount). The Pentaprism reflex image enables a visual control of the polarisation effect to be maintained.

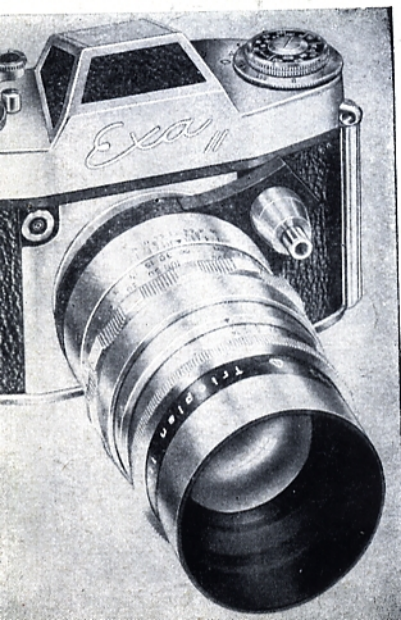
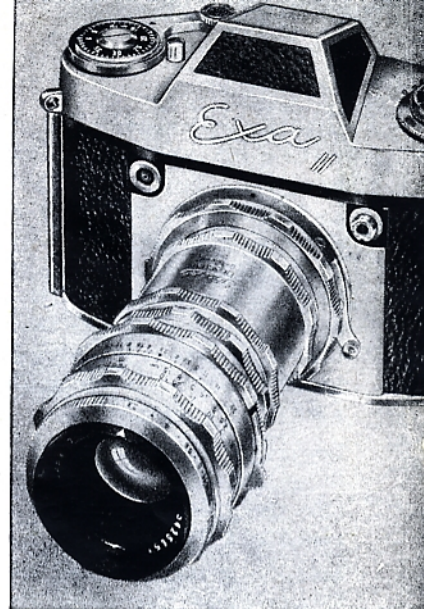


Fig. 35

Fig. 36

Exa II



Special lenses

Advanced photography depends essentially on the advantages associated with lens interchangeability, but only the single lens reflex can fully exploit those advantages. The EXA II, foremost in its field, exploits them to perfection, thanks to the ground glass image always giving exactitude in picture composition, subject sharpness, and depth of focus.

Wide-angle lenses, with their shorter focal lengths, cover a substantial field of view, but objects in that field are reduced in size (fig. 34). Indispensable for interiors, architectural work, landscapes, art galleries, etc.

Long-focus and telephoto lenses, with their greater focal lengths provide a reduced field of view but bring subjects closer, so that they occupy a larger area of the picture, and in certain cases correct perspective distortion (fig. 34). Employed for child photography, portraits, sports, animal pictures, and a wide variety of other work. Fig. 35 shows the EXA II with the popular $f/2.8$ 100 mm Trioplan, a lens with fully automatic diaphragm, which allows you to focus at full aperture and closes itself down automatically to a pre-set aperture as the shutter release is depressed. Another wonderful lens, with amazing lightpassing characteristics, is the $f/1.5$ 75 mm Jena B.

Bayonet Adapter Rings and Tubes

Close-ups (macrophotography) are a major feature of single lens reflex application, the ground glass focusing screen being unsurpassed for this work.

Bayonet rings and tubes, in any desired combination, are inserted between camera and lens (fig. 36), and provide simple focusing for either normal close-ups or extreme close work. Close-up fittings available include Two-in-One-Ring, providing an extension of 5 mm. and the complete set of Bayonet Rings and Tubes in which the adapter rings together give 10 mm. extension, while the tubes provide extra extensions of 5, 15, and 30 mm.

Microscope Attachments

There is a choice of two attachments for connecting the EXA to a microscope for 'micro' pictures. Microscope Attachment Type 1 is fitted with a hinged clamp, enabling the camera to be tilted to one side if photographic work is suspended. The Type 2, however, has a bayonet fitting, by means of which the camera may be removed from the microscope in a single rapid movement. In photomicrography, as in all EXA work, focusing is by the ground glass screen.



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