

WHAT IS EXAKTA?

In its thirty years of life the Exakta System has grown into one of the most complex single lens reflex camera systems available to the photographer. There are accessories to cover virtually every photographic assignment. This feature is by no means a complete survey of the Exakta System, but it does give a very good indication of the equipment available and what it is used for.

EXAKTA VAREX IIb

Focusing Hood Ground-glass screen and supplementary magnifier giving $\times 6$ magnification of the reflex image.

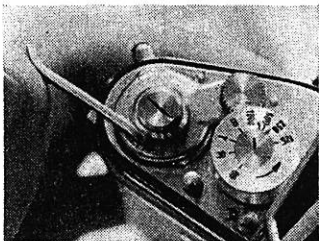
Pentaprism This gives a $\times 4$ -magnification, upright and laterally-correct image when the camera is held horizontally or vertically. Accessories: flexible eyepiece cup for shielding eyepiece against stray light, also designed for fitting eyesight-correction lenses.

Shutter and Flash Synchronization

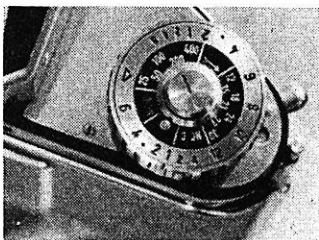
The Varex IIb has a focal-plane shutter speeded from 1/1000 sec to 12 seconds (standard sequence of speed-settings). T and B settings for time exposures. Sound-damped speed adjusting mechanism. Built-in delayed-action release operating on speeds from 1/1000 sec to 6 seconds. Three-position flash-synchronization selector; F contact for fast-burning miniature flashbulbs (shutter-speed setting 1/30 sec) FP contact for full synchronization with long-peak flashbulbs and faster shutter speeds, X contact for electronic flash units (shutter-speed setting 1/60 sec).

Film Wind

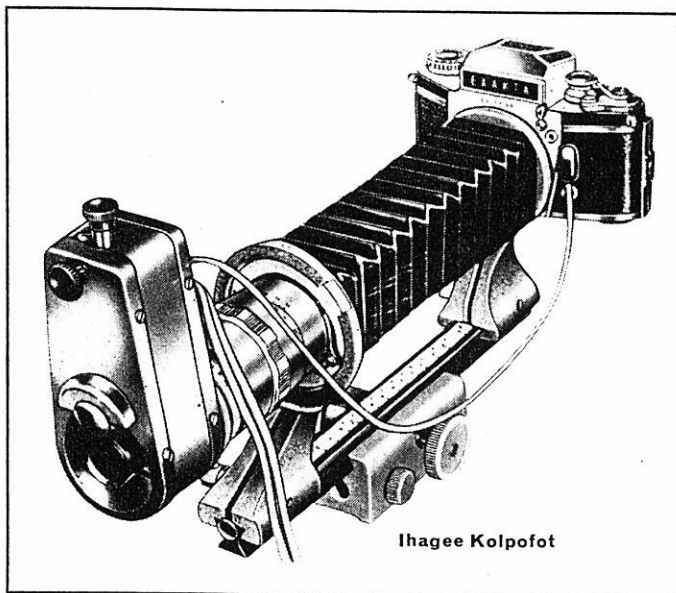
Lever wind advance. Film can either be advanced from one cassette to another, or rewind after exposure by means of the rewind crank: both operations can be controlled and their progress observed from outside the camera. Frame counter. Built-in cutting knife for cutting the film with the camera closed. Film-type reminder disc. Interlocked film transport and shutter.



The lever wind is of an unusual design. Positioned on the right-hand side of the camera body it travels through 300°. Below: the time exposure and variable delay-action scale.



THE EXAKTA SYSTEM



Ihagee Kolpof

Two-in-One Ring

The two-in-one ring provides the shortest-possible extension of 5mm. This is inserted in the camera bayonet and the lens is fitted into the front mount.

Adapter Ring Set and Extension Tubes

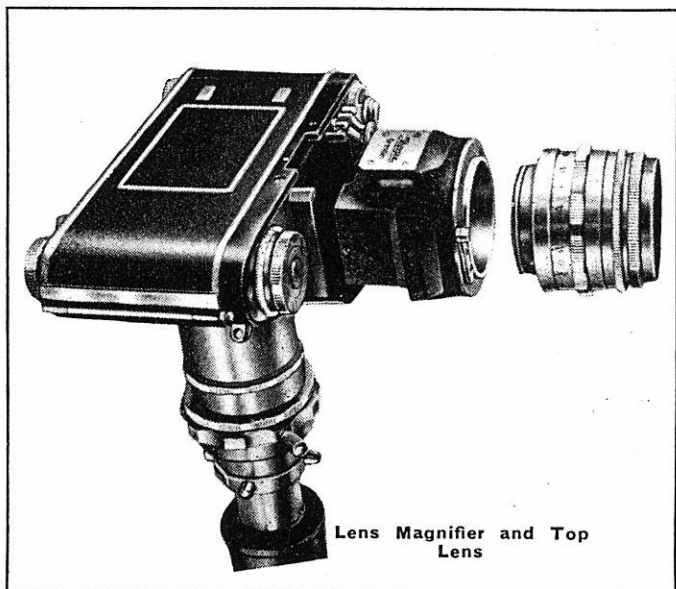
This consists of a pair of Bayonet Adapter Rings providing an extension of approximately 10mm and three Extension Tubes of different lengths, giving 5, 15 and 30mm lens extension. The two Bayonet Rings can be screwed together and used as a single unit, and can also be used separately to provide intermediate adapters for the three tubes, which are provided with screw threads only. The rear Bayonet Ring is provided with a locking ring, which enables the lens to be rotated to its normal position and so locked when using it with the front Bayonet Ring and any of the Tubes (this is particularly important when using the Ihagee Autocouple Extension Release). The Bayonet Adapter Rings and the three Tubes are only supplied as a complete set.

Miniature Bellows Attachment

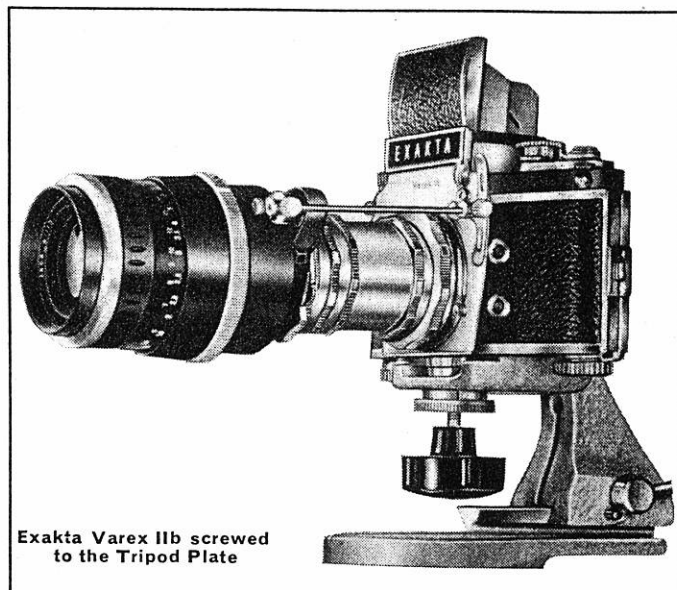
The bellows extension has a continuous-adjustment range from 35 to 125mm. The image scale and other focusing data can be altered at any time. The unit is particularly suitable for taking close-up pictures with a hand-held camera but can also be fitted to any tripod or to the Ihagee Copying Stand (¼ in tripod bushes are provided on both the camera and lens standards).

The Miniature Bellows Attachment is designed for attaching the camera in both a vertical and horizontal position. For adjusting to any desired distance between 25 and 125mm, the standard lens is slid along the guide rails and locked in the appropriate position. The right-hand guide rail is calibrated in centimetres.

With a standard lens of 50mm focal length all image scales between 0.7 (with an extension increase of 35mm) to 2.5 (with an extension increase of 25mm)



Lens Magnifier and Top Lens



Exakta Vorex Iib screwed to the Tripod Plate

can be obtained, permitting the full-frame reproduction of objects from 34mm × 51mm to 10mm × 14mm in size. If you wish to record full-frame images of larger objects and also require a focusing range extending to infinity, the T f 2.8/50mm special lens with a sunken mount, from Jena, may be employed with the Miniature Bellows Attachment. With this lens an extension range from 0 to 90mm can be obtained.

Ihagee Autocouple Extension Release

In order to operate the fully-automatic pressure or spring diaphragm of the camera lens when employing Bayonet Adapter Rings and Tubes or the Miniature Bellows Attachment, the Ihagee Autocouple Extension Release can be fitted between the lens and the camera body. This unit may be employed with two coupling rods of different length for all lens extension distances up to 125mm. Its function is to connect the shutter release button on the camera with the diaphragm-release knob or lever on the lens. The camera can be held normally when using the Autocouple Extension Release, so ensuring successful close-up pictures with a hand-held camera even with moving subjects.

The Swing Angle Attachment

Permits exceptionally accurate and convenient close-up focusing when using the Bayonet Adapter Rings and Extension Tubes in conjunction with a heavy tripod. The Swing Angle Top which holds the camera can be slid along the guide rail of the focusing slide, or alternatively the focusing slide may be racked forwards and backwards by turning the rack-and-pinion wheel which moves the guide rail the Swing Angle Top and the camera as a single unit. In either case the camera can be locked in any desired position. The Swing Angle Attachment can be mounted horizontally on the tripod or swung into the vertical by using a pan-and-tilt head tripod.



Exakta Vorex Iib fitted with extension tubes and Autocouple Extension Release

EXA 500

Takes standard 35mm film, giving negatives or transparencies 24mm x 36mm.

The lenses available are the same as the Exakta Varex IIb. Non-detachable, built-in pentaprism viewfinder. Framing and focusing controlled by means of a magnified, laterally-correct reflex image. Through-the-lens reflex focusing. Instant return mirror.

A red signal in the viewfinder indicates when the film has not been wound. The EXA 500 can be supplied with a built-in fresnel lens, giving extra image brightness. A full range of interchangeable lenses are available from 20mm to 1000mm focal length. Lenses from f/20mm to f/180mm are available with fully-automatic spring or pressure diaphragms. Quick-change bayonet

mounts enabling lenses and accessories to be interchanged with the Exakta Varex and EXA 1a.

Focal plane shutter speeded from 1/2 second to 1/500 second, B and T. Rapid-wind lever for shutter tensioning coupled with film advance mechanism. Body shutter release with lock with cable release thread.

Flash contact with symbol-settings - red dot alongside lightning-flash marking. Film can be wound on to the take-up spool and then back into the cassette by the rewind crank, or advanced from one cassette into another. Fully-detachable camera back. Frame counter counts up to 36 exposures. Film-type reminder disc with DIN speed ratings from 12 to 30 (25 to 400 ASA).

EXA 1A

Interchangeable viewfinder systems. Choice of finder hood (giving an upright but laterally reversed image), pentaprism (image both upright and right-way round). A special fresnel lens, giving increased image brilliance, is available in place of the standard focusing screen: this also features a split-image rangefinder in the centre of the ground-glass screen.

Interchangeable lenses - manual and preset or with fully-automatic spring or pressure diaphragms from 20mm focal length upwards. Exakta bayonet lens mount. Special flap shutter giving speeds of 1/30, 1/60, 1/125 and 1/175 sec, also B and T settings. Body shutter release with cable-release socket. Shutter release lock. Coupled shutter tensioning and film wind mechanism elimi-

nate double exposures and blank frames. Lever wind film advance. Flash contacts with symbol-settings for bulb and electronic flash.

Film transport, either advancing on to take-up spool with rewinding into cassette, or winding from cassette to cassette. Detachable camera back with film pressure plate. Frame counter. Film-type reminder dial.

Extensive range of accessories with slight limitations on use at ultra-close distances, caused by vignetting on the long sides of the image. The EXA 1a is supplied with a finder hood or pentaprism (both available with either standard ground-glass screen or fresnel lens).

LENSES

The EXAKTA Varex IIb and Exa 1a are supplied fitted with either a finder hood or a pentaprism, with either ground-glass screen or fresnel-lens screen and one of the following lenses:

Designation, max aperture and focal length in mm	Type of diaphragm*	Angle of view (nominal)	Front mount diam. for push-on or screw-in attachments
Domiplan f/2.8/50	AD	45°	42mm ø, M 49 x 0.75
T f/2.8/50 from Jena	AD	45°	51mm ø, M 49 x 0.75
Pancolar f/2/50 from Jena	AD	45°	51mm ø, M 49 x 0.75

Special lenses for EXAKTA Varex

Flektogon f/4/20 from Jena	AD	93°	80mm ø, M 77 x 0.75
Flektogon f/2.8/35 from Jena	AD	62°	51mm ø, M 49 x 0.75
B f/1.5/75 from Jena	PD	32°	60mm ø, M 58 x 0.75
Bm f/2.8/80 from Jena	AD	30°	51mm ø, M 49 x 0.75
Meyer Trioplan N f/2.8/100	AD	25°	57mm ø, M 55 x 0.75
Bm f/2.8/120 from Jena	AD	21.5°	70mm ø, M 67 x 0.75
Orestor f/2.8/135	PD	18°	57mm ø, M 55 x 0.75
S f/4/135 from Jena	AD	18.5°	51mm ø, M 49 x 0.75
S f/2.8/180 from Jena	AD	14°	90mm ø, M 86 x 1
Orestegor f/4/200	PD	12°	60mm ø, M 55 x 0.75
S f/4/300 from Jena	PD	8°	80mm ø, M 77 x 0.75
Meyer Tele-Megor f/5.5/400	PD	6°	85mm ø, M 82 x 75
Orestegor f/5.6/500	PD	5°	125mm ø, M 118 x 1
Catoptric (mirror) lens f/4/500 from Jena	No diaphragm	5°	Built-in filter turret
Catoptric (mirror) lens f/5.6/1000 from Jena	No diaphragm	2.5°	Built-in filter turret

* PD= Pre-set diaphragm; AD = Automatic diaphragm.

The Bellows Attachment

Intended for use with a static subject and stationary camera, and is designed for efficient close-up photography of very small objects. The bellows extension is continuously variable between 35 and 220mm, providing a speedy means of varying the image distance - and consequently the image scale - over a wide and unbroken range.

The Transparency Copying Equipment

As an extension to the Bellows Attachment it enables the photographer to make transparencies from 24mm x 36mm monochrome and colour negatives and also intermediate negatives from 35mm reversal slides. This copying operation is performed optically, by using the accepted close-up techniques for photographing at an image scale of X 1.0 - 1:1; selected smaller sections of the original can also be copied.

The Transparency Copying Equipment is supplied with a focusing screen for setting-up the apparatus and two masks for single negatives or transparencies.

The Copying Stand and Repro Unit

Specially designed for the rapid and trouble-free copying of flat originals. They are generally employed with the camera pointing vertically downwards, but can also be attached horizontally so that the copying stand performs the role of a steady table tripod. An illuminator may be placed on the baseboard of the Copying Stand or Repro Unit. The Copying Stand is designed for supporting the camera directly without any intermediate attachments. The Repro Unit, on the other hand already incorporates the Bellows Attachment.

The Lighting Equipment

The lights for the Copying Stand and Repro Unit provide even illumination for originals to be copied or for photographing any small objects at very close distances. The equipment is slid on to the lower part of the metal column and can be locked at any desired height. The pivoted reflectors and flexible arms allow the lamps to be adjusted so as to provide the most efficient illumination of the original.

The Tripod Plate

Designed for use with the Swing Angle Top. When using a camera with a long-focus or other heavy lens (which does not have a tripod bush of its own) particularly in combination with Bayonet Adapter Rings and Extension Tubes, the centre of gravity of the whole apparatus often becomes unbalanced. The purpose of the Tripod Plate is to restore equilibrium to the camera. The camera is screwed to the upper component of the Swing Angle Top which in turn is then slid on to the short guide rail of the Tripod Plate and moved sufficiently to the rear of the central vertical axis of the tripod.

Lens Reversal Ring

In order to obtain close-ups which result in a considerable enlargement of the subject on the actual negative, it is necessary to provide a relatively great image distance and a correspondingly short subject distance. Normal camera lenses are, however, corrected to provide optimum definition under the reverse conditions, i.e. a short image distance and a large subject distance. When maximum definition is required in close-ups in which the subject is to appear magnified by more than 1.5 times on the negative, it is therefore advisable to mount the lens with its rear element facing the subject. The Lens Reversal Ring is provided for this purpose. This permits the camera lens to be screwed back to front on to the foremost extension tube.

Adapter Ring for Photomicrographic Lenses

For taking pictures at an image scale of more than 5.0 photomicrographic lenses specially designed for extreme close-up work should be employed instead of the camera lens. An adapter ring is available with a screw-in thread for accepting these lenses. The adapter ring is screwed into the front extension tube. When using the Bellows Attachment the rear bayonet ring is first fitted on the lens standard, and then the adapter can be screwed into the bayonet ring.

Front Bayonet Adapter Ring with Outer Bayonet

When using long-focus lenses with outer bayonet mounts in conjunction with the Bayonet Adapter Rings and Extension Tubes, the front Bayonet Ring must likewise be fitted with an outer bayonet.

Lens Magnifier

The Lens Magnifier provides the critical focusing which is so important in close-up and photomicrographic work. This attachment enables one of the highly corrected standard or special-purpose camera lenses to be used

(focused to infinity) as a magnifying lens for viewing an enlarged, virtually distortion-free viewfinder image.

Special Focusing Screens

Besides providing interchangeable viewfinder units, the EXAKTA Varex allows the focusing screen to be selected to suit the requirements of specialized types of work. Special focusing screen for the current finder hood, the penta prism and the lens magnifier.

Plane Ground-Glass Screen: a plane-surfaced ground-glass screen is available for adjusting the image framing without the distortion of a convex focusing lens; this is often useful in copying work, etc. If desired, the focusing screen can be obtained with centimetre or millimetre divisions, right-angle guide lines. Ground Glass with 3mm clear centre spot and hairline cross
Ground Glass with 10mm clear centre spot and hairline cross
Clear Glass with hairline cross
Ground Glass with hairline cross and millimetre graticule

Ihagee Macro-Micro Photometer

The function of the Ihagee Macro-Micro Photometer is to measure the actual image-forming light in photomicrography and macrophotography. In close-up work, this unit is attached between the camera body and the lens, and for photomicrography between the camera body and the microscope eyepiece; in both cases it is fitted immediately in front of the front plate of the camera. There is a standard lens-mount bayonet on the side of the Photometer which faces towards the subject.

For measuring the intensity of the light actually involved in creating the image in the camera, a selenium barrier-layer cell is lowered into the beam of light passing through the lens.

The selenium barrier-layer cell converts the luminous energy into an electrical current in the normal way, and this can be measured with the aid of a standard micro-ammeter or luminous-spot galvanometer with an effective range of 5-30uA. The Ihagee Macro-Micro Photometer provides the ideal method of exposure measurement for all branches of photomicrography, for close-up photography of stationary subjects and for optical copying of transparencies.

The Ihagee RB 1 and RB 2 Ring-Flash Units

These units can be used for practically every type of close-up photography and make it possible to adopt a most convenient close-up technique. When photographing living subjects (eg small animals) in particular, the very brief flash duration of the electronic flash unit employed ensures maximum image sharpness. The constantly-uniform frontal illumination provides a high effective light output and gives almost shadowless lighting. Both Ring-Flash Units have their own triggering mechanisms and can be connected to all electronic flash units having up to 250 joules output, with an operating voltage of 500 V.

Ihagee Kolpofot

The Ihagee Kolpofot has proved invaluable in many fields of scientific and technical photography, and particularly in medical practice. It provides a most convenient method of taking pictures of eyes, skin conditions, teeth and ears etc. The Kolpofot is, however, primarily employed for photographing the interior of body cavities.

The Ihagee Kolpofot comprises of Bellows Attachment, S f4/135mm lens with pre-set diaphragm, RB 1 Ring-Flash Unit with pilot light and cable.

Microscope Attachment

The Microscope Attachment is fitted over the standard 25mm diameter eyepiece tube of the microscope. The lower part of the adapter is clamped to the tube, exerting uniform pressure on all sides, whilst the camera is placed on the upper component. By slackening the milled screw of the quick-change mount, the upper part can be removed from the microscope together with the camera in order to resume direct visual examination of the specimen, or if photography is temporarily suspended. This upper component of the Microscope Attachment is also designed to accept the quick-change tube mount of the latest Type L and N tube stands from Jena.

Repro Unit

Many workers, however, prefer not to have a rigid mechanical connection between the microscope and the camera. These users are recommended to employ the Repro Unit, which may be used to hold the camera above the microscope. This form of installation is particularly suitable whenever large degrees of magnification are desired. To exclude straylight two light-baffle tubes are employed, which slide one inside the other without coming into contact with each other.

The Ihagee Copying Stand

A Bellows Unit and tracking mechanism is supplied with the Repro Unit

Ihagee Copying Stand fitted with Bellows Unit

