

SPECIALIZED PHOTOGRAPHY

The Exakta in Scientific Photography

A scientific photograph cannot be an ordinary snapshot taken at random. The scientist, in many instances, has one chance only to take the exact picture as seen at a particular moment. There is no margin of error. Once the shutter has been released, corrections cannot be made.

Because of the principles and practices of the exact sciences, scientific photography is feasible only with a camera that has ground glass focusing so that the precise position, composition, color and possibly exposure can be studied and selected. Exakta Photography offers this preview of your exact picture in the ground glass. It also offers you many other indispensable features, because the Exakta is the world's most versatile, precision 35-mm. camera.

The Exakta is ideally suited for scientific photography because it provides the benefits of 35-mm. picture taking plus the view camera's advantages of ground glass focusing and the possibility of interchanging focusing glasses. The latter feature is of great importance and help to the scientific photographer. By interchanging focusing glasses, he can increase the efficiency and scope of his picture taking immeasurably. Subjects which are difficult to photograph by ordinary methods become easy to record with special glasses. For example, a clear focusing glass must be used when critically sharp focusing is required and the ground glass grain (even if it is the finest) interferes. The grain is enlarged by the viewfinder magnifying glass and becomes larger than certain details of the object being photographed.

The clear glass is essential for photomicrographs of more than 150x magnifications and close-ups of life size or larger. It provides an image brighter than the one from a ground glass and further facilitates focusing.

There are several types of focusing glasses available and, in most cases, a scientific photographer will need only a few of them. The following description of the glasses and information about their installation in various Exakta models has been prepared to aid you in making the right selection to meet your requirements. The glasses are illustrated on page 4 of the attached brochure *The Art of Viewfinding*.

Insertion of Focusing Glasses

Exakta V and VX. These models have two interchangeable viewfinders, the waist-level and the Penta Prism. The ground glass can be removed from either without difficulty and replaced with another glass.

Penta Prism Finder. Installation of focusing glasses in the Penta Prism is so simple that the photographer can handle it himself. No special adjustments are required. The glass is readily accessible and it can be removed and another inserted in its place in an instant.

Waist-level finder. The ground glass is removable from the waist-level finder and another glass can be inserted in its place. Installation of a glass in the waist-level finder, however, requires precision to make certain that the substituted glass is in perfect focus. Our technicians should be permitted to make the exchange.

If the ground glass and the special glass are to be used with equal frequency and you do not care to dispense with the ground glass of your camera, you can take advantage of the Exakta V or VX's viewfinding versatility. Under these circumstances it may be more practical to purchase separate waist-level finders for each focusing glass so that they can be interchanged instantly.

Exakta I and II. The ground glass of either of these cameras can be removed and replaced with another focusing glass but the substituted glass becomes the permanent focusing glass of the camera. The photographer, therefore, must decide whether he cares to dispense with the regular ground glass in order to obtain another kind of focusing glass. Installation of focusing glasses in the Exakta I and II cameras is a fairly difficult matter because precision is necessary to make certain that the substituted glass is in perfect focus. Our technicians should be permitted to make the exchange.

Focusing Glasses Available for the Exakta

W column lists price of glass, which includes installation, for the waist-level viewfinder in all 35-mm. Exaktas.

CH column lists price of glass and waist-level viewfinder when purchased as a unit for the Exakta V or VX.

P column lists price of glass for Penta Prism Finder. Photographer can install glass.

Ground Focusing Glasses

(1) Ground Glass with Center Cross: This is a plain ground glass with two lines, at right angles to each other, which bisect the surface of the glass across and up and down. The center cross, which bisects the whole area of the frame, enables the photographer to position and compose the subject (or a portion of it) exactly where he wants it to be. This bisected glass greatly facilitates copywork where a segment of the page usually must appear in the center of the picture. In addition, when a moving subject is being photographed it can be observed in the ground glass and the moment it is in the right position the shutter releases.

W - \$13.00 CH - \$29.50 P - \$12.00

(2) Ground Glass with Center Cross and divisions into eighths and sixteenths of an inch: This glass is similar to (1) and the same uses and advantages apply. In addition, however, the bisecting lines are divided into eighths and sixteenths of an inch for fine measurements and this accurate scale permits the most precise photographic work.

W - \$27.00 CH - \$43.50 P - \$26.00

(3) Ground Glass with Chessboard Pattern: Each cubicle is 1/8" square. With this focusing glass, the size of the subject on film can be measured and the scale of reduction or enlargement can be calculated immediately. Also, the subject, or a portion of it, can be put or arranged in the desired position. Different subjects can be photographed in sequence in exactly the same scale of

reduction or enlargement. Photos which are to be repeated after a subject has received treatment (i.e. medically, surgically) can be made at exactly the same proportion to the frame size. W - \$22.00 CH - \$38.50 P - \$21.00

(4) Plain Ground Glass: For replacement of regular ground glass furnished with cameras. W - \$7.95 CH - \$25.50 P - \$6.95

Clear Focusing Glasses

(5) Clear Plain Glass: This glass is useful for more complicated close-ups and photomicrographs. It provides a brighter image than a ground glass, which is very helpful when the light is poor. With high power magnifications, photomicrographs usually over 150x and for close-ups in life size or larger, it is extremely difficult to focus sharply with the regular ground glass, because the grain of the ground glass prevents the rendering of a clear image. In such cases, a clear glass must be used. W - \$7.95 CH - \$25.50 P - \$6.95

(6) Bisected Clear Glass: This is similar to the preceding glass and has the same uses and advantages. In addition, however, it has two lines at right angles to each other which bisect the surface of the glass across and up and down. The center cross, which bisects the whole area of the frame enables the photographer to position the subject (or a portion of it) exactly where he wants it. W - \$13.00 CH - \$29.50 P - \$12.00

(7) Bisected Clear Glass with divisions into eighths and sixteenths of an inch: This is similar to (6). The bisecting lines, however, are divided into eighths and sixteenths of an inch for fine measurements and this accurate scale permits the most precise photographic work. W - \$27.00 CH - \$43.50 P - \$26.00

(8) Clear Glass with Chessboard Pattern: Each cubicle is 1/8" square. With this focusing glass the size of the subject on film can be measured and the scale of reduction or enlargement can be calculated immediately. Also, the subject, or a portion of it can be put or arranged in the desired position. Different subjects can be taken in sequence in exactly the same scale of reduction or enlargement. Photos which are to be repeated after the subjects treatment can be made in exactly the same proportion to the frame size. W - \$22.00 CH - \$38.50 P - \$21.00

Combination Focusing Glasses

(9) Combination Ground Glass with Clear Center Spot: This glass is all ground with the exception of a clear circular spot, free of grain, in the center. This glass, therefore, can be used alternatively both for special work or for regular photography. In the former instance, focusing is done in the clear spot. A most useful combination for the average laboratory. W - \$13.00 CH - \$29.50 P - \$12.00

(10) Combination Ground Glass with Clear Center Spot and Hairline Center Cross: This glass is similar to (9). In addition, however, for special work, it has a hairline cross in the center of the clear spot to facilitate focusing when the magnifying glass is used. W - \$17.00 CH - \$33.50 P - \$16.00