

new

*Linhof*

Focusing and Light Measuring Bellows  
and  
Reversal Mirror Attachment



Two  
indispensable accessories  
for the modern  
photographer





## INDISPENSABLE TOOLS FOR THE MODERN PHOTOGRAPHER

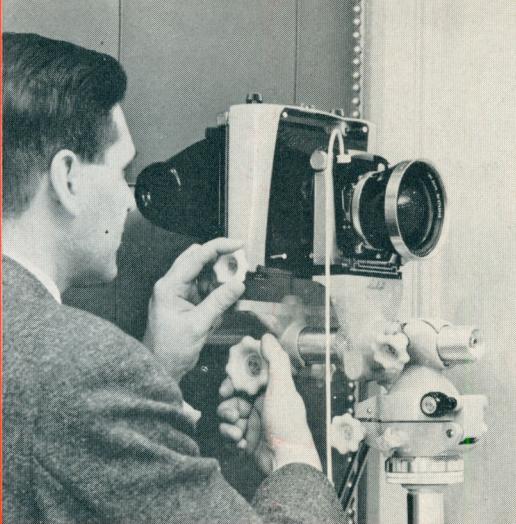
### REVERSAL MIRROR ATTACHMENT —

its important advantages:

- Undistracted groundglass observation through 2 x magnifier, with complete elimination of stray light. Black focusing cloth no longer required.
- Bright, upright vertical groundglass image facilitates composition and framing.
- Precise exposure measurement in the film plane by reading the groundglass illumination over the entire picture area.
- Simplified viewing and focusing in micro, macro and process work with camera in vertical position (see illustration at left).
- Facilitates focusing in close quarters, with film plane close to a wall or other obstructions, as it permits viewing the groundglass image from the left or right (see illustration on page 3).
- Available for all LINHOF cameras in the following sizes:  $2\frac{1}{4} \times 3\frac{1}{4}$  in. / 6,5 x 9 cm (ZYS)  
 $4 \times 5$  in. / 9 x 12 cm (ZYL),  
 $5 \times 7$  in. / 13 x 18 cm (ZYSD).

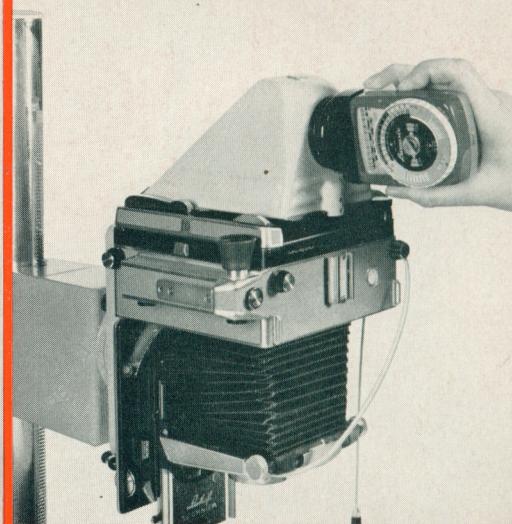


The Reversal Mirror Attachment produces an upright vertical picture like any single lens reflex camera. An Ektalite screen, placed against the ground glass, ensures even illumination up to the corners of the ground glass image.

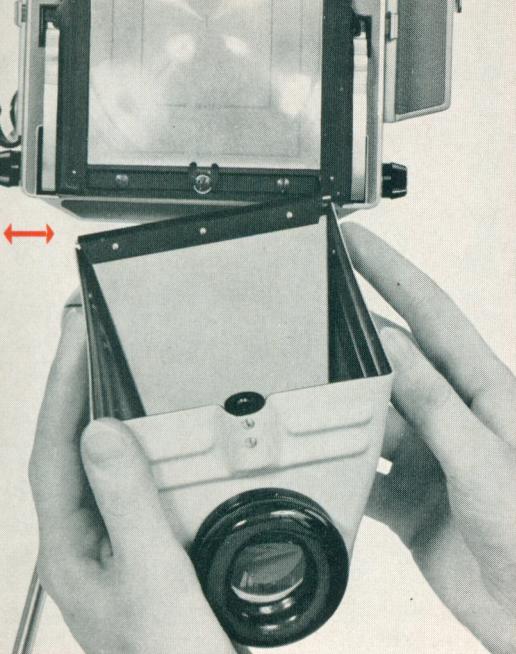


#### In close quarters,

all the space available can be used by employing the Reversal Mirror Attachment for horizontal pictures. Thus, the camera can be placed against the wall as viewing and focusing are done comfortably from the side. This is an important advantage when photographing interiors or on industrial assignments.

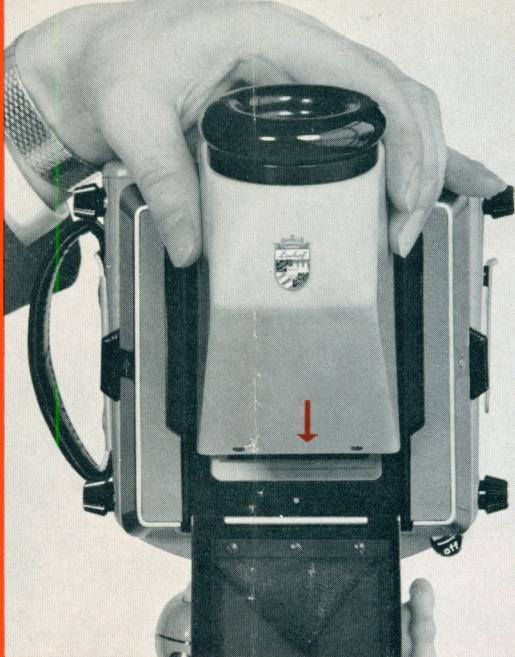


The elegant and precise method of reading the exposure in the film plane (through the ground glass) can also be employed with the Reversal Mirror Attachment. The 2 x magnifier overlooks the entire picture area and gives integrated readings of the ground glass brightness taking into consideration all the variables (bellows extension, stray light, reflection properties of the subject) that make precise exposure measurement in the conventional manner rather difficult. For light-tight placement of the exposure meter, special plastic receptacles are available for the Lunasix and Metrastar meters. To obtain correct results, an Ektalite field lens of the corresponding size must be used.



#### Attaching the Reversal Mirror

The Reversal Mirror is attached in place of the standard focusing hood. To remove focusing hood, fold it down and push gently sideways until spring loaded hinge is released. Mount Reversal Mirror Attachment in the same way, fold up against locking pin and let it snap into position.



#### Earlier $2\frac{1}{4} \times 3\frac{1}{4}$ in. camera models

are equipped with a focusing hood firmly attached to the camera back. As this hood cannot be removed, a special version of the Reversal Mirror Attachment (ZYSS) and of the Focusing Bellows (see page 6) is supplied fitting those earlier type backs. To attach the Reversal Mirror, the focusing hood is merely folded down, the mirror then, with the protruding edge on the shorter side, inserted between the ground glass frame and the focusing hood, folded up and snapped into position.



#### Insertion of Film and Plate Holders

is not affected by the use of the Reversal Mirror Attachment. The following film and plate holders can be inserted into the spring back with the Reversal Mirror remaining in its place:

LINHOF Double Holder, Super Cutfilm Holder, Metal Single Plate Holder, Grafmatic Magazine, Polaroid Land Cutfilm Holder. When extreme camera adjustments are being used, the flexible focusing bellows is more useful than the Reversal Mirror Attachment with its fixed focusing magnifier.

# *Linhof* Focusing and Light Measuring Bellows

## A revolutionary new and sure method of light measuring through the ground glass.

A surprisingly simple yet highly exact exposure measuring method has been developed by LINHOF, using standard CdS exposure meters for direct exposure reading in the film plane by measuring the brightness of the ground glass image.

The original concept of this new method was developed by LINHOF many years ago and first reports about the advantages of this new system appeared in the leading photographic publications already in 1962/63 (see International Phototechnic No. 4/63). After extensive tests which have proven the extreme accuracy and dependability of the new measuring method, LINHOF makes this new system available to all photographers by adding the Light Measuring and Focusing Bellows to its manufacturing program.

This new tool provides a tremendously simple, practical, and fool-proof way of determining the exact exposure time. It is easily exchanged for the standard focusing hood of the camera and completely eliminates any stray light that might interfere with the ground glass observation. The need for a focusing cloth is thus eliminated and furthermore an important prerequisite for exposure reading in the film plane is provided. A built-in (2 x) magnifier allows exact control of sharpness and can be adjusted, due to the flexible bellows, to the most favourable viewing angle which is especially important when using camera adjustments. The combination with the Ektalite screen provides a brilliant ground glass image from corner to corner free of reflections, extremely favouring composition and observation of proper color rendition even of minute details.

Far more remarkable, however, than the above mentioned practical advantages of this new instrument is the revolutionary new method of exposure time reading, made possible with the focusing bellows. Without expensive special measuring devices, quite simply with standard CdS-exposure meters, direct reading of the proper exposure time is obtained without any tiresome calculation, either by integral or spot measurement of the ground glass brightness for interiors and exteriors and especially there, where an exact exposure determination through standard measuring techniques cannot be obtained. This applies both to close-ups as well as long shots and especially of course to macro and micro photography. The measuring can be done at any given diaphragm of the lens and even extremely long exposure times are still shown as a clearly recognizable needle deflection. It is still possible for instance to get exact readings under light conditions demanding an exposure time of 15 minutes at f/5.6. A decisive advantage is that this method takes into account the reproduction ratio (extended bellows extension), the subject's contrast range, filters used, and all other factors which normally would have to be calculated separately with an exactness of  $1/8$  of a stop equalling  $1/2^{\circ}$  DIN! This does not only save time, but also cuts down on material waste, facilitating the photographer's work as well as improving the overall picture quality.



The black focusing cloth, a rather inconvenient yet necessary accessory for proper focusing, is a thing of the past. The modern photographer uses the LIN-HOF Focusing Bellows for perfect ground glass control and exposure reading.

The focusing bellows is available for the following camera formats:

$2\frac{1}{4} \times 3\frac{1}{4}$  in. / 6,5 x 9 cm —

ZYMAS (for cameras with non-removable hood)  
ZYMS (for cameras with new type back only)

$4 \times 5$  in. / 9 x 12 cm —

ZYM

$5 \times 7$  in. / 13 x 18 cm —

ZYMD



## Attaching the focusing bellows

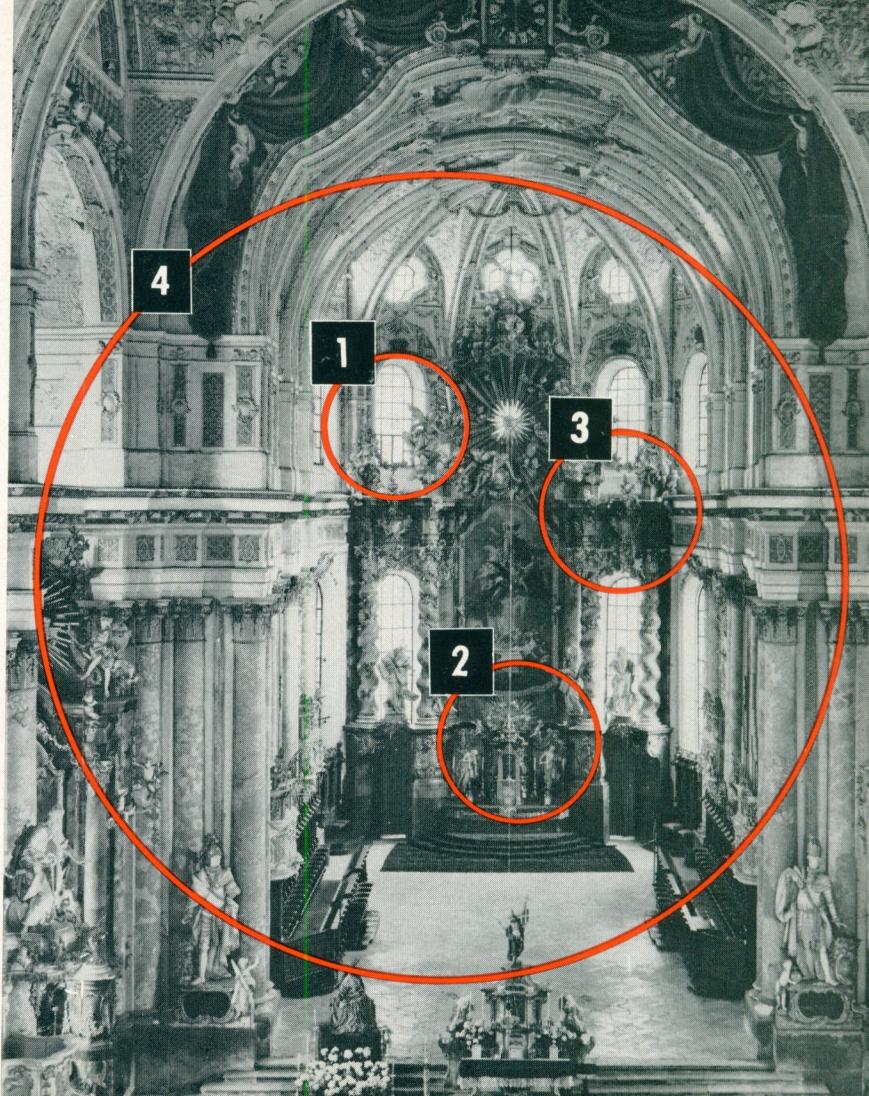
Fold down the closed focusing hood of the camera and remove after pushing gently sideways against spring-loaded hinge. Attach the focusing bellows in the same way, inserting the spring-loaded hinge, fold up against locking pin until it snaps into position.

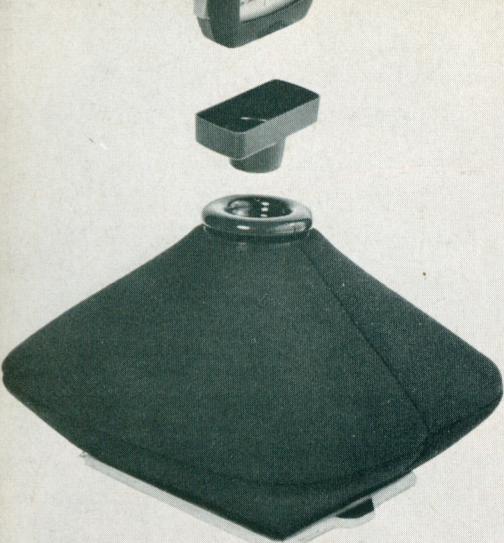
## Ektalite Field Lens

Prerequisite for exact measuring results is the use of an Ektalite field lens which also greatly facilitates focusing by brightening the edges of the ground glass image. The screen is placed on top of the ground glass by means of the furnished holders (see separate instructions). To compensate for the deflection of the light rays resulting from extreme camera adjustments it might become necessary to point the exposure meter in the direction of the lens center. By doing so, the needle deflection will change; for proper exposure evaluation, always the highest value indicated should be used.

## Integral and spot measurement

As the case may be, both measuring methods can be employed with the focusing bellows. The small acceptance angle of the CdS cell permits exact measurement of highlight (1) and shadow (2) areas. However, the meter can also be pointed at smaller areas containing both highlight and shadow detail (3) to obtain an average reading. The integral measurement covers a large circular area (4) and gives an integrated reading of all highlight and shadow areas present within the area covered by the meter.





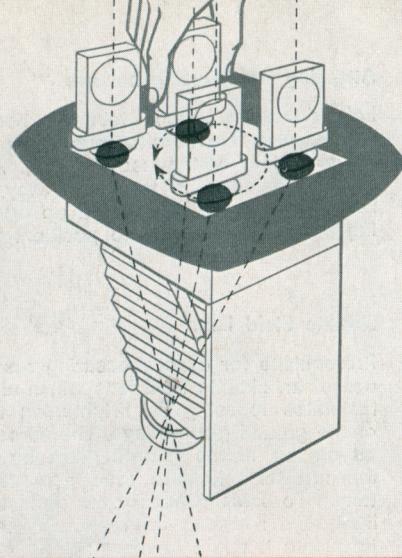
#### Attaching the exposure meter

An exact measuring of the exposure time demands a light-tight connection of the exposure meter with the focusing bellows. This is accomplished by adapters available for the Lunasix and Metrastar CdS exposure meters. With the Lunasix, the exact exposure time is read off, after transferring the needle deflection to the yellow scale, opposite the f/1 mark on the scale indicating the possible speed/stop combinations. As the exposure reading is taken with the working diaphragm, the f-stop is automatically considered, so that only the exposure time remains to be established.



#### Integral measuring

The integrated exposure reading is recommended for rather evenly lighted subjects and scenes with average contrast. To obtain correct results, the exposure meter should be placed against the magnifier with the bellows completely raised (see illustration at top left corner).



#### Partial measuring

Subjects of high contrast require exact and individual measurement of the highlight and shadow areas. The magnifier of the bellows is placed in direct contact with the ground glass screen and, with the exposure meter inserted, moved to the various portions of the ground glass image for spot readings. By keeping the selector lever of the Lunasix depressed, the needle deflection can be observed continuously.

The flexibility of the bellows permits spot readings even in the corners of the ground glass.

*Linhof*

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