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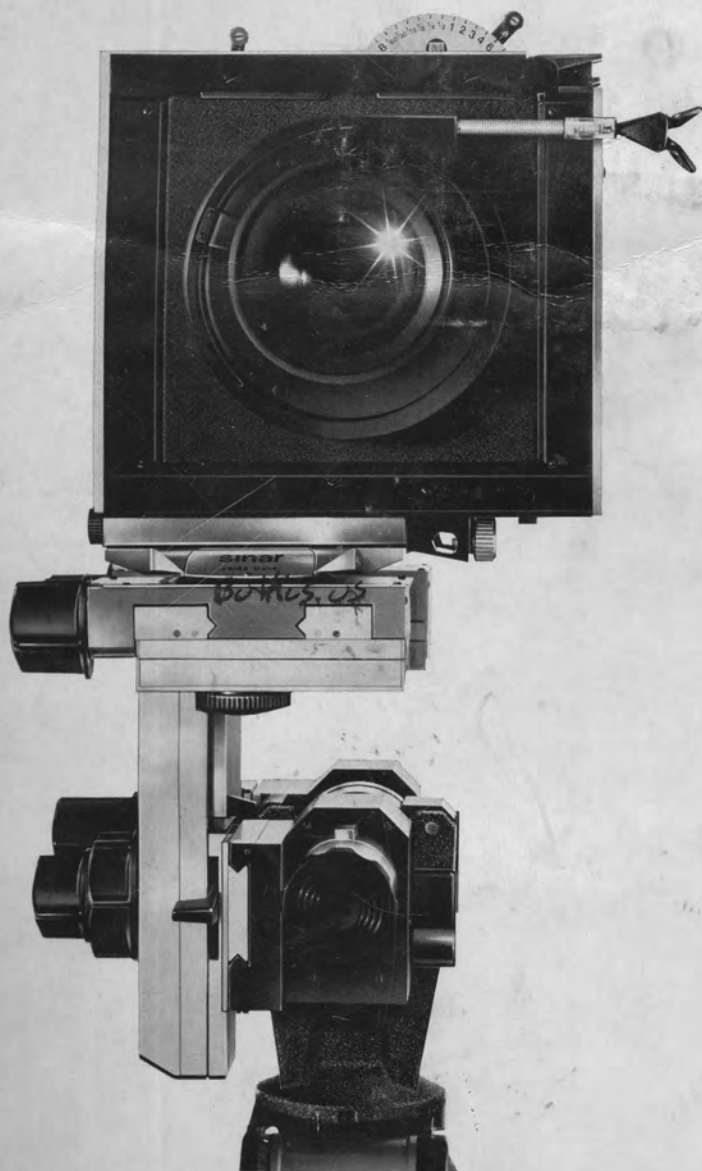
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Introduction

This instruction booklet is concerned with the assembly and operation of the Sinar-p.

The theoretical principles are described in the book "Large Format Photography" available from Sinar-distributors.

The complete production programme of the Sinar-p with all available accessories, combinations and order numbers is listed in the construction unit catalogue Bp, a copy of which is enclosed. To avoid confusion when ordering items, please use the exact order numbers and descriptions of items listed there. Subject to modifications.

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The system

The construction unit system, first introduced to technical and view camera design in 1947 with the original Sinar camera, has not only proved itself but has become a standard design for this camera type.

The Sinar-p now closes the remaining gap in this approach by combining

precision manipulation with a precision camera

Apart from that, the Sinar-p uses the established Sinar system. Only the optical axis of the standard is located 0.70 inch (18 mm) higher. Hence the previous and Sinar-p type standards can be combined, but the difference in the location of the optical axis must be compensated by an appropriate vertical displacement.

The main Sinar accessories are also usable with the Sinar-p. The only exceptions are the Sinar bellows holder for the bellows hood (old No. × 1150) and the focusing magnifier (No. × 850). The cases are also changed.

The rail units of the Sinar-p have been modified, and previous type rails should not be used with the Sinar-p. The new rail lengths can however be combined with the previous camera model.

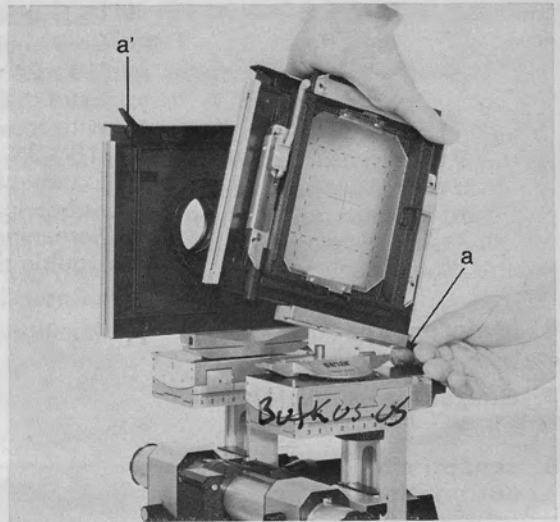


Fig. 1

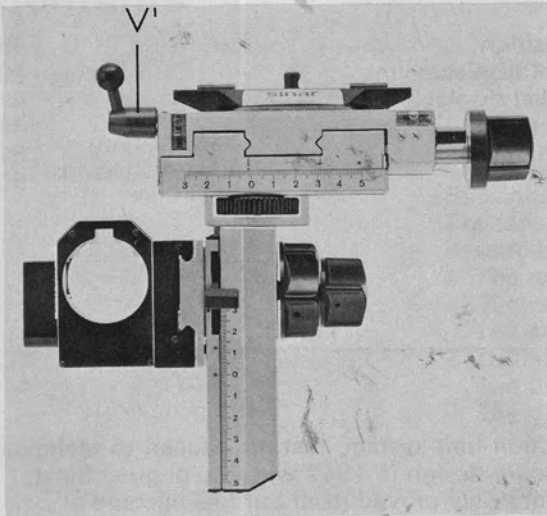


Fig. 1a

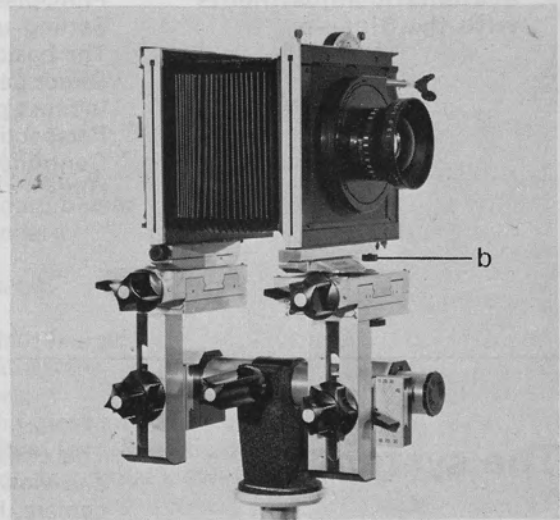


Fig. 2

1. The Sinar-p Standard

The basic outfit

The Sinar-p Standard is the basis of the whole Sinar-p system. It consists of the camera itself, without extensions and accessories, and is assembled from its interchangeable components (Fig. 2).

Changing the format

According to the format frame fitted (slack off the rotating knob *a* and the bellows lock *a'*, fit the frame and tighten again) the Sinar-p Standard (Fig. 1) is obtained in the three main formats: 4 × 5-inch (9 × 12 cm), 5 × 7-inch (13 × 18 cm) and 8 × 10-inch (18 × 24 cm). The focusing plane is located in exactly the same position in each of the three format frames with their total of ten individual formats.

Important:

Remember to adjust the standard bearer according to the format used (see Fig. 5 and text *h* to *i*).

Special standard bearer

for 8 × 10-inches (18 × 24 cm)
and the Rapid-Adapter

Where the camera is used exclusively as an 8 × 10-inch or 18 × 24 cm outfit, or with the Rapid adapter (especially when the camera is set up vertically) the special heavy-duty standard bearer No. 433.22 should be used (Fig. 1 a). This has an additional locking knob *V* for the vertical tilt to prevent accidental displacement of this under heavy load.

The zero position of the adjustments is matched to the 8 × 10-inch (18 × 24-cm) format (see also note to Fig. 5, text *g* and *i*).

The Lens Standard

Note that the lens standard is the **same for all formats**. This ensures the universal use of main accessories such as lens panels, filter holders, the bellow hood, the Sinar shutter, etc., with all formats. The frame of the front standard is therefore permanently bolted to the standard bearer.

On the other hand, this standard has a guide and an adjustment screw *b* to take the supporting rods for filter and bellows holders of different lengths (Fig. 2).

Such a holder is also fitted on the rear frame (No. 433.25) for the 4 × 5-inch (9 × 12-cm) format when this is used to hold the lens as shown in the arrangement of Fig. 65.

Assembly

Fig. 2 shows the basic outfit of the Sinar-p Standard assembled with the 4 × 5-inch (9 × 12-cm) format adapter and including the lens and Sinar shutter.

The rail clamp

The correct orientation of the rail clamp on the camera for one-hand operation is shown in Fig. 2.

To ensure perfect locking of the camera on the tripod or the pan-and-tilt head without backlash, the rail clamp has a lockable three-point bracing system.



Fig. 3

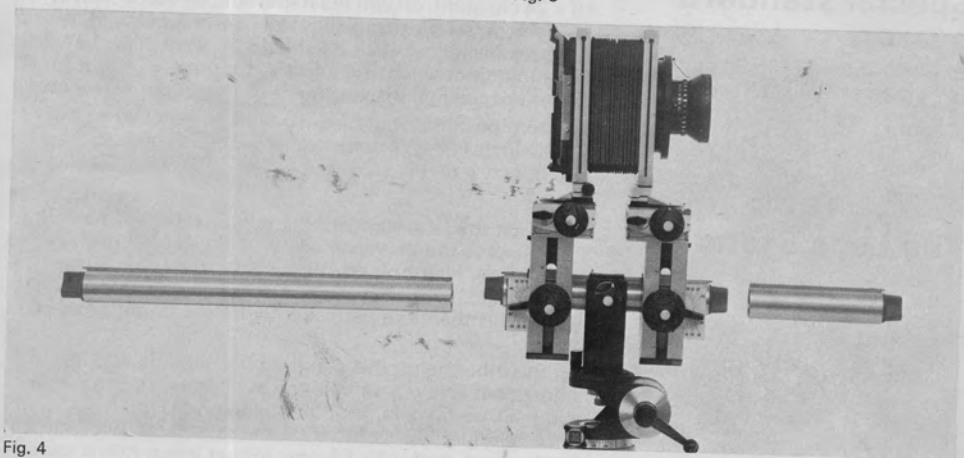


Fig. 4

Important:

When mounting the clamp on the tripod head, the lever *c* must be **fully** swung to the right. Now tighten the tripod screw fully by hand. Then brace the set-up firmly by pulling the locking lever in the direction of the arrow as shown in Fig. 3, position *c*.

By slacking off the clamping knob *d* of the rail clamp, the camera can be moved in the direction of the rail or inclined about it. On unscrewing the knob through six or seven turns, the camera can be lifted off altogether.

The best procedure is to leave the rail clamp permanently on the tripod and to fit or remove the camera always with this rapid clamping system.

With the aid of the universal camera holder No. 519.11, the rail clamp can also be used as a double tilting head for other cameras (see also Fig. 60).

The rail

The basic rail unit of the Sinar-p Standard is 12 inches (30 cm) long. After removing the rail caps, extension lengths can be screwed on at both ends.

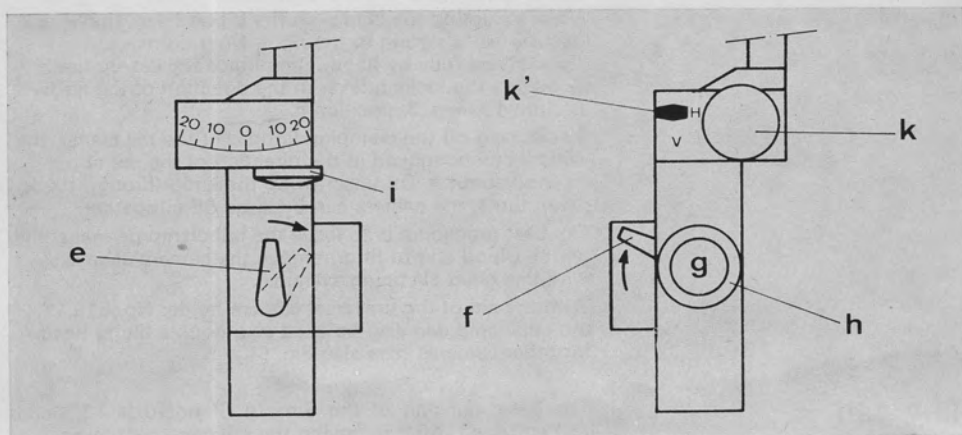


Fig. 5

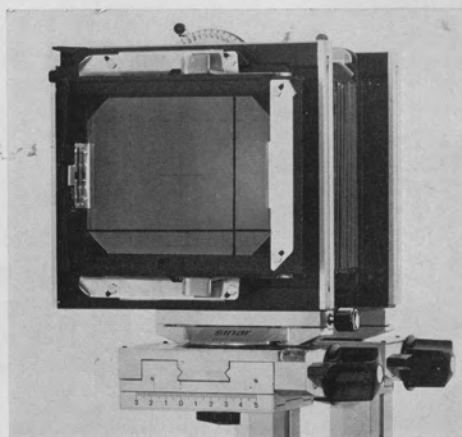


Fig. 6

The standard bearer

The standard bearer of the Sinar-p incorporates all the adjustments of the camera standards. These are:

- e* Locking lever for coarse focusing
- f* Locking lever for coarse tilt about the horizontal axis (release by moving in the direction of the arrow)
Note: This coarse tilt should be used only for indirect parallel displacement or in cases where the $\pm 20^\circ$ micrometer adjustment of the horizontal tilt is inadequate. The other adjustments are carried out with self-braking micrometer drives.
- g* Fine focusing drive with millimetre scale. This is arranged unsymmetrically to allow for the rules of conjugate image formation – in other words the scale is longer in the direction of increasing bellows extension.
- h* Rise and fall micrometer drive with scale. The scale of the rear standard has zero position engagement points and colour coded index marks for the three main formats:

black: position for 4×5 inch (9×12 cm)

green: position for 5×7 inch (13×18 cm)

red: position for 8×10 inch (18×24 cm)

The vertical displacement of the **front standard** only has one additional red index mark to indicate the zero position of the optical axis for the 8×10 -inch (18×24 -cm) format. The black index mark is used for both the other formats.

- i* Micrometer drive for lateral displacement, with scale:
The scale of the rear standard has two colour coded marks and two engagement positions for the three main formats:

Black: = position for 4×5 inch (9×12 cm)

Green/red = position for 5×7 inch (13×18 cm) and 8×10 inch (18×24 cm)

The lateral displacement of the **front standard** has the same zero index mark (black) and the same engagement position for the 4×5 -inch (9×12 -cm) and 5×7 -inch (13×18 -cm) formats. For the 8×10 -inch (18×24 -cm) format set the lateral adjustment of the front standard to the red dot (corresponding to the optical axis for 8×10 inch or 18×24 cm). When using the auxiliary frame as a bellows lens hood, this should also be moved sideways by 32 mm.

When using the special 8×10 -inch (18×24 -cm) standard bearer, the lateral adjustment of the front standard and the auxiliary frame can remain at the zero position (black index mark) for all formats.

- k* micrometer drive for horizontal and vertical swings and tilts

k' change-over lever

Position *H*: tilts about the horizontal axis

Position *V*: swings about the vertical axis

Fig. 6 shows the two asymmetrical swing and tilt axes marked on the ground-glass screen. These are an essential part of the systematic adjustment procedure described in detail in section 7.

Important:

Important:

Note:

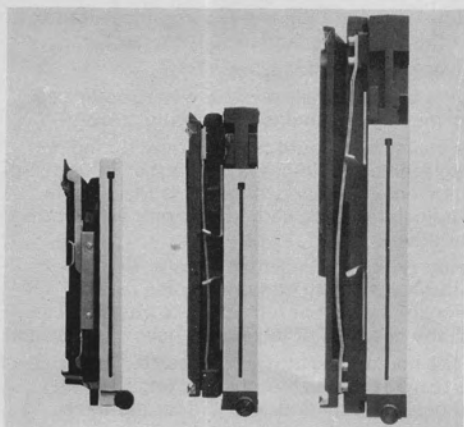


Fig. 7

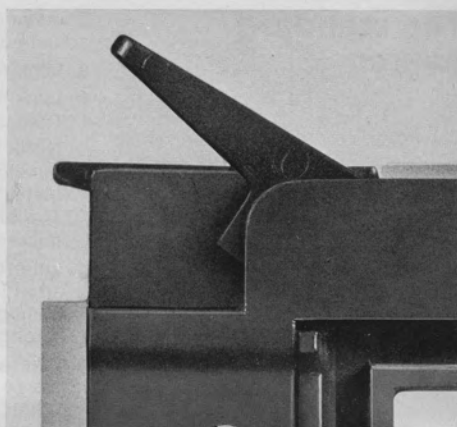


Fig. 8

The format frames

The format frame of the Sinar-p is designed as a simple carrying and connecting frame and has no adjustments of its own.

When used as the image standard, it takes the interchangeable ground-glass and film-holder carrier and the interchangeable bellows. It is interchangeable for different formats. When used as the lens standard, it takes the interchangeable lens panels and bellows as well as other accessories, for instance the Sinar shutter, etc.

Important:

The components are coupled with the aid of the locking strips. To ensure correct connection (incorrect connection leads to light leaks), the locking levers protrude visibly beyond the edge of the frame when the locking strips are open. See Fig. 8. The strips are correctly closed only when the locking lever is flush with the edge of the format frame.

Important:

Note also that the connecting elements for the 4 × 5-inch (9 × 12-cm) format frame are inserted behind a fixed retaining strip at the bottom and secured at the top with the strips mentioned.

The format frames for 5 × 7-inch (13 × 18-cm) and 8 × 10-inch (18 × 24-cm) carry two locking strips which have to be secured. (Exception: see for the 5 × 7-inch [13 × 18-cm] and 8 × 10-inch [18 × 24-cm] ground-glass and film-holder carrier.)

The bellows

The bellows are changed with the aid of the locking strips mentioned above.

The elastic strip built into the folding bellows prevents sagging at medium extensions. But do not place any objects on top of the bellows (not even the black focusing cloth!) as this weight inevitably causes sagging and may in extreme cases lead to vignetting of the image.

If a bellows should start to sag, turn it round through 180° on the format frame.

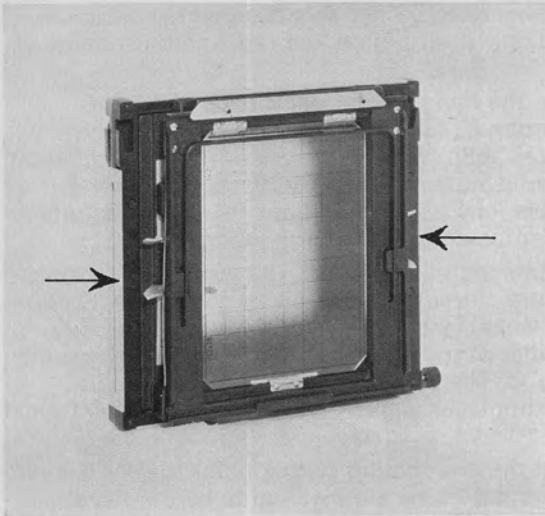


Fig. 9

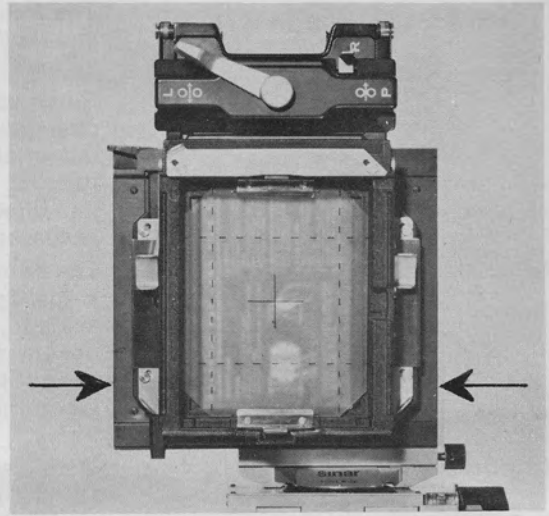


Fig. 10

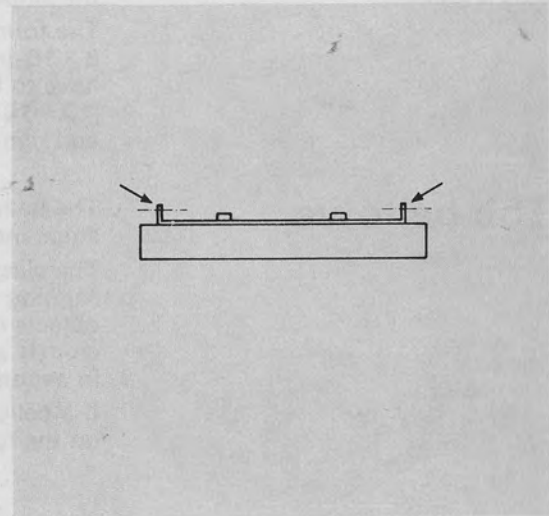


Fig. 10a

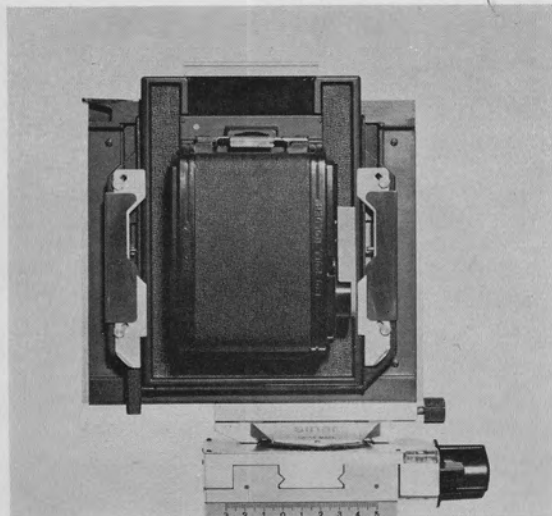


Fig. 11

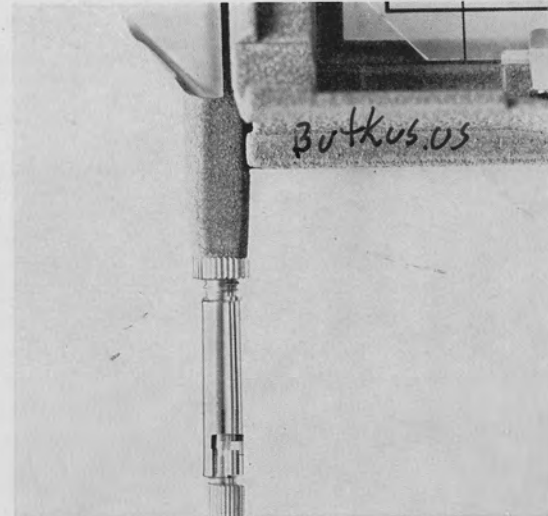


Fig. 12

The ground-glass and film-holder carrier

Important:

The ground-glass and film-holder carrier for 4 × 5 inch (9 × 12 cm) is also fitted to the format frame with the aid of the locking strips.

On the other hand, the film-holder carriers for 5 × 7 inch (13 × 18 cm) and 8 × 10 inch (18 × 24 cm) have their own locking latches (Fig. 9). So use this locking arrangement and not the locking strips of the format frame.

Firmly press together the latches, insert the frame straight and fully into the format frame, then let go of the latches. Incorrect mounting of the bellows, film-holder carrier or other accessories is liable to lead to **light leaks**. So always check the correct locking of all components.

All the ground-glass and film-holder carriers of the Sinar-p have ground-glass screens with marked swing and tilting axes (Fig. 6). These are used for the adjustment procedure described in section 7.

The accessories for the ground-glass and film-holder carrier as well as the various film holders, Fresnel field lenses, binocular and mirror magnifier, etc., are listed in detail in the construction unit catalogue Bp.

The 4 × 5-inch (9 × 12-cm) film-holder carrier has two additional locking latches along its long sides. These provide additional spring pressure of the ground-glass carrier to keep heavy-weight film holders in the image plane, especially the P500 and P545 Polaroid film holder, the Calumet roll-film holders, interchangeable Grafmatic holders, Graflex film pack holders, etc. (Fig. 10).

Important:

With the older type Polaroid film holders (model P 500), the two ledges (Fig. 10a) must be filed down slightly to prevent the film holder from riding away from the format frame. Otherwise this causes light leaks and unsharp images.

After removal of the ground-glass carrier by pressing down and pushing up the two spring ends at the side, the two additional locking latches mentioned also serve for mounting all types of roll-film holder (Fig. 11).

Cable linkage for automatic operation

In addition all ground-glass and film-holder carriers of the Sinar have a coupling socket for automatic operation. This takes the automatic shutter control of the Sinar/ Copal behind-lens shutter. The Sinar shutter is open for observation of the image on the ground-glass screen, but closes automatically through this coupling system as soon as the film holder is inserted. It once more opens automatically on removing the film holder. For more details see the Sinar shutter booklet V.

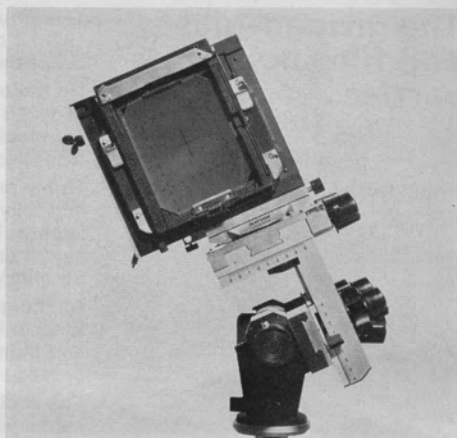


Fig. 13

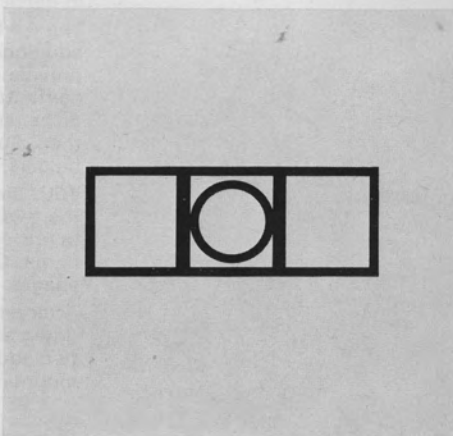


Fig. 14

Vertical and horizontal views – and intermediate positions

The film and plate holders

Important:

These are made by turning the back round through 90°. Intermediate positions are obtained by inclining the **whole** camera about the rail axis (Fig. 13). Unlike a rotating ground-glass screen, this arrangement maintains the correct alignment of all the swing and tilt axes of the camera to the image axes. This is vital for precise operation. This axial inclination also takes the lens hood round with it and so prevents vignetting of the image corners.

The Sinar takes standard international double film holders (ASA type) which are very easy to load. Note however the following points:

Grains of dust and grit between the film and the divider panel cause scratches on the back of the film. So carefully clean the inside of the holder with an antistatic cloth.

Always push sheet films **fully home** to the end stop to prevent unsharpness, light leakage and bulging of the film during the exposure.

Large format films may bulge forward during long exposure times. To minimize this, the films should be stored under as **dry** conditions as possible. Variations in atmospheric humidity affect film flatness more than temperature variations – but these should also be kept as small as possible.

A good way of releasing internal film stresses is to tap on the ground-glass screen after pulling out the draw slide.

Film holders dimensioned according to the ASA standard have their image plane located in a slightly different position from certain European film-holder types. This difference can be compensated by placing a shim underneath the ground-glass screen. The image plane of the Sinar camera is located in accordance with the usual international and ASA standards.

Important:

The spirit levels

Precise reading of the spirit levels is only possible with the eye centred exactly above them. The eye is correctly centred, when the front line of the reference mark is superimposed on the rear line (Fig. 14). The spirit level therefore has to be observed with **one** eye.

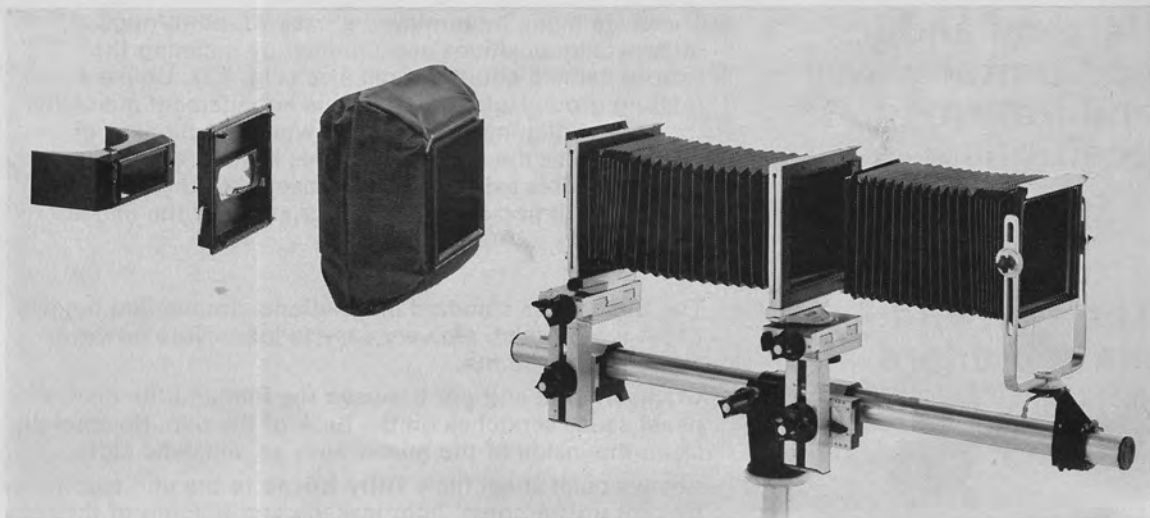


Fig. 15

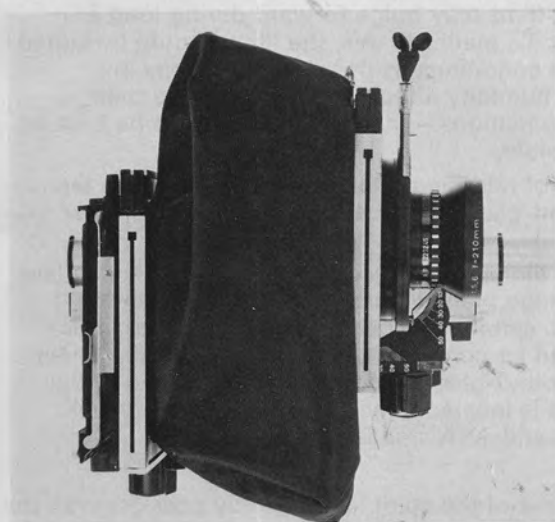


Fig. 16



Fig. 17

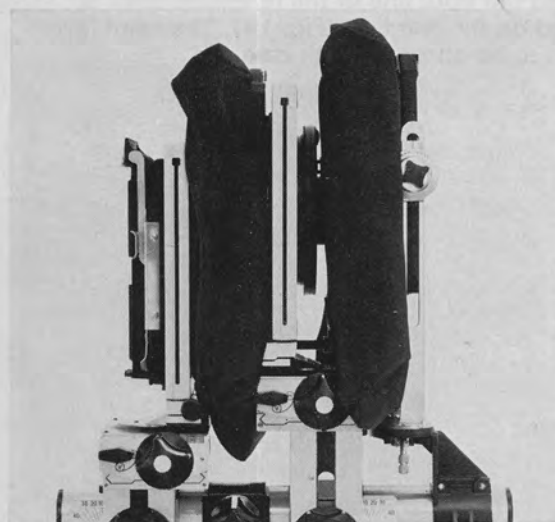


Fig. 18

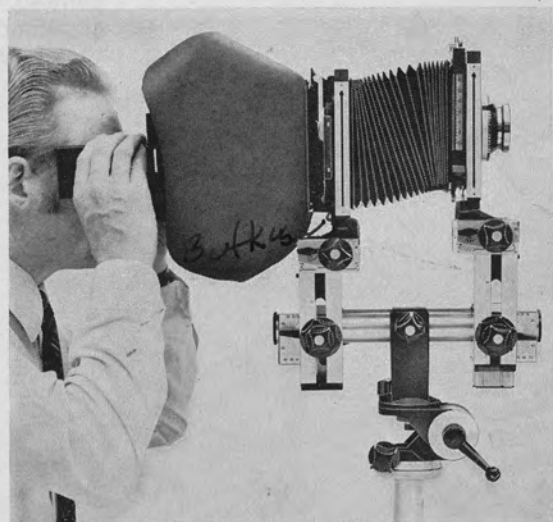


Fig. 19

2. The Sinar-p Expert

The extended outfit

This consists of the basic Sinar-p Standard outfit plus a number of accessories which turn the camera into a versatile high-performance professional system.

These additional items are:

	Order No.
Wide-angle bellows	455.36 or 455.27 or 455.28
Mask and Fresnel lens holder with accessories (only for the 4 × 5-inch [9 × 12-cm] Expert)	461.76
Binocular magnifier with hood	471.21 and 531.91
6-inch (15-cm) and 18-inch (45-cm) extension rails	421.11 and 424.11
Set of mask 2¼ × 2¼ inch (6 × 6 cm)	
2¼ × 2¼ inch (56 × 72 mm)	
2¼ × 3¼ inch (6 × 9 cm) 9 × 12 cm	534.16
Auxiliary frame	437.21
Square bellows	454.11
Three bellows-hood/filter-holder rods	472.61/71/81
Two bellows holders I and II	473.81 and 473.91
Two mask 9 × 12 cm and 4 × 5 inch	533.41 and 51
Case	475.22 or 475.28

The wide-angle bellows, cases (the case for the 4 × 5-inch [9 × 12-cm] and 5 × 7-inch [13 × 18-cm] cameras is identical) and the mask and Fresnel lens holder are different for the various formats. All other accessories are usable for all formats which greatly simplifies operation and reduces the cost of the outfit. Fig. 15 shows the Sinar-p Expert 4 × 5 inch (9 × 12 cm) with its complete outfit, but without case.

The wide-angle bellows

This serves for wide-angle shots and large parallel displacements. It can also be used as a bellows hood. The ways of fitting it are shown in Figs. 16–18. In Fig. 19 the wide-angle bellows serves as a focusing hood, combined with the binocular focusing magnifier and hood.

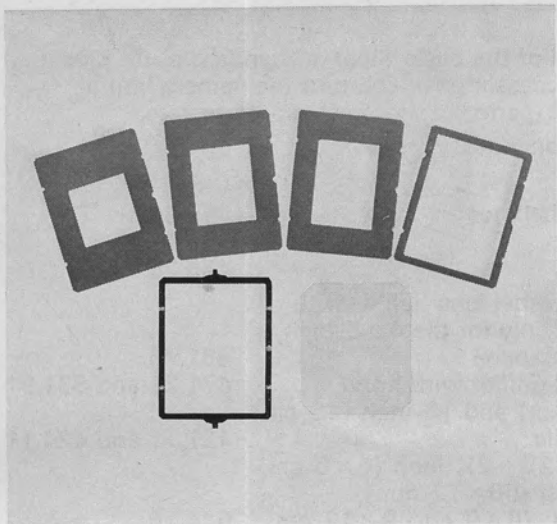


Fig. 20

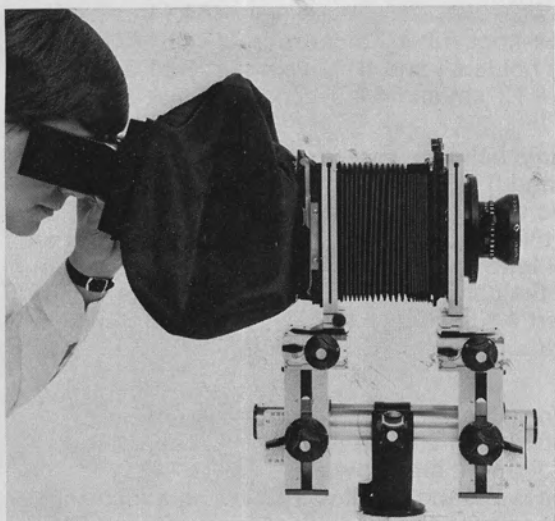


Fig. 21

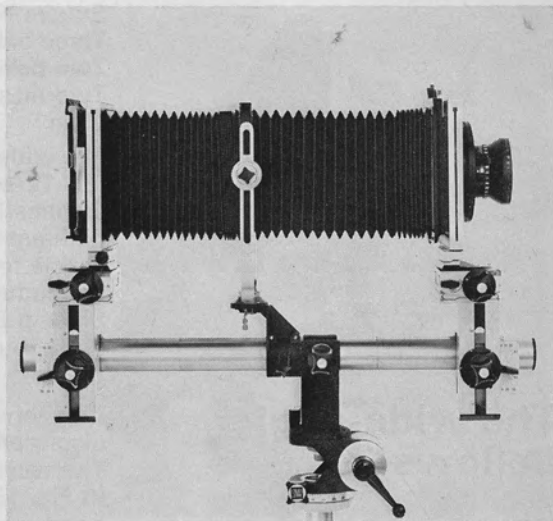


Fig. 22

The mask and Fresnel lens holders

An interchangeable holder for masks and Fresnel field lenses is available for the 4 × 5-inch (9 × 12-cm) ground-glass and film-holder carrier. The back of the holder takes the Fresnel field lens which is fixed with four countersunk screws. The ridges of the Fresnel lens face the ground-glass screen.

To facilitate precise focusing, the 4 × 5-inch (9 × 12-cm) Fresnel lens has a central clear spot. This permits direct observation of the image sharpness on the ground glass screen.

The front of the holder takes various cut-out masks according to the picture format used (Fig. 20).

The binocular magnifier

This can be attached to the ground-glass holder of the Sinar with the aid of any available camera bellows. The use of the Fresnel lens is advisable.

Figs. 19, 21 and 34 show different ways of using the binocular magnifier. The magnifier itself can be swung in and out of the magnifier panel.

For long-sighted users a second set of magnifier lenses is available to special order. This permits observation of the ground-glass screen image without spectacles.

See also the separate instructions B1p for the binocular magnifier.

Important:

Long extensions

The extension of the Sinar-p Expert can be increased at will with the extension rails, the auxiliary frame and the square bellows (Fig. 22).

The outfit of the Sinar-p Expert includes – in addition to the basic 12-inch (30-cm) rail of the standard model – two extension rails of 6 inches (15 cm) and 18 inches (45 cm) length respectively. These permit a convenient selection of the rail length in intervals of 6 inches (15 cm) with six alternative rail lengths from 6 to 36 inches (15 to 90 cm).

With further extension elements, the extension can be increased to any degree. See also "Long Extensions", Fig. 49.

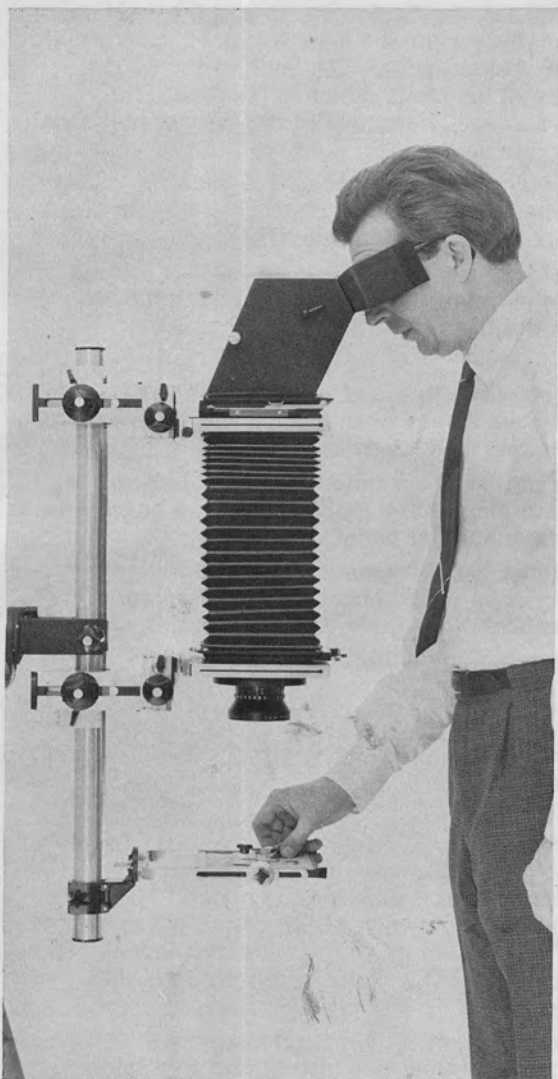


Fig. 23

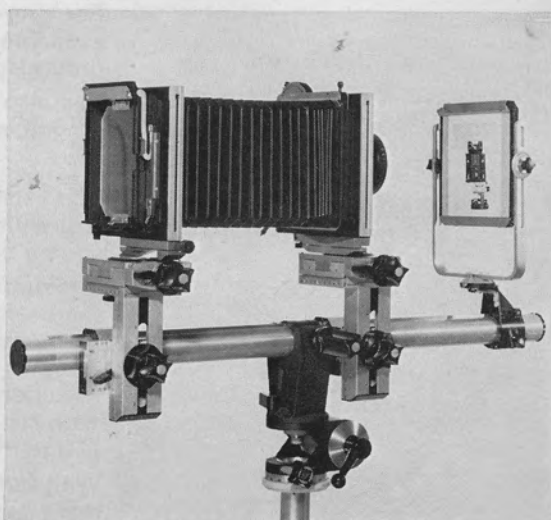


Fig. 24

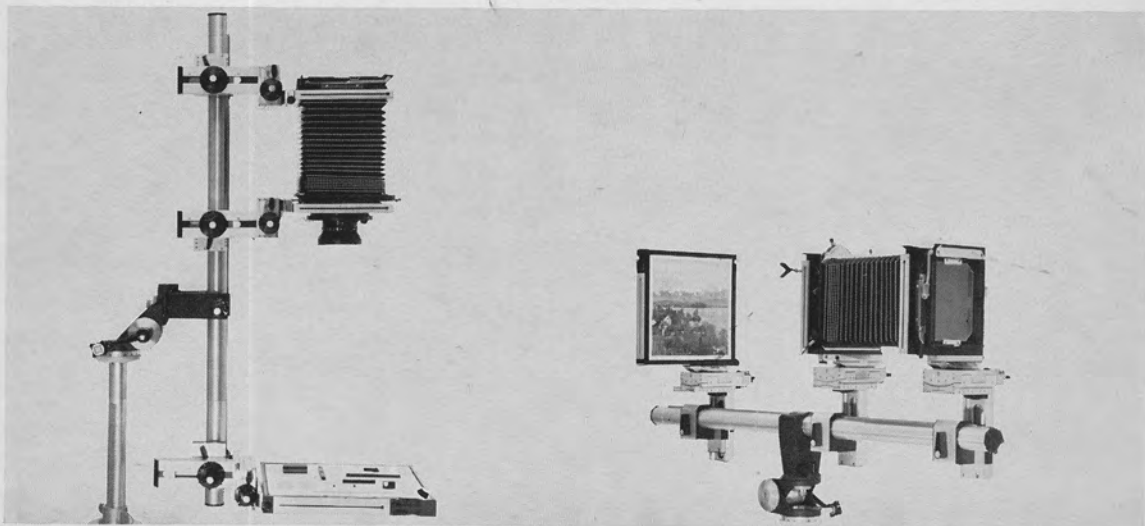


Fig. 25

The auxiliary frame as a copying stage

Important:

The bellows hood and filter holder rods

The auxiliary frame is a very useful multi-purpose item in the Sinar-p construction unit system.

In Figs. 23 and 24, it is used as an object stage or easel for macrophotography or miniature copying by reflected or transmitted light, with the camera set up vertically and horizontally respectively. Naturally this also permits the usual adjustments of perspective and sharpness control. As the subject stage is rigidly connected to the camera, this set-up acts like the suspended vibration-damping arrangement of a process camera.

Note: The larger format frames with standard bearer can also be used as a stage for larger objects (Fig. 25).

In the close-up range in particular, attention should be given to the heat emitted by warm light sources, which may cause glimmering and thus affect the image sharpness. Flash or daylight naturally exclude such danger.

In the range of 5 to 10 × magnification, miniature camera lenses mounted in reverse are often very suitable for macrophotography with the 4 × 5-inch (9 × 12-cm) large format. The Sinar behind-lens shutter facilitates this way of working.

These rods support the filter holder and the bellows hood holder.

They are available in three different lengths of 4¼ inches (11 cm), 6¼ inches (16 cm) and 10 inches (25 cm), to suit lenses of different focal length.

The 10-inch (25-cm) rod in particular provides a simple lens hood support as shown in Fig. 27.

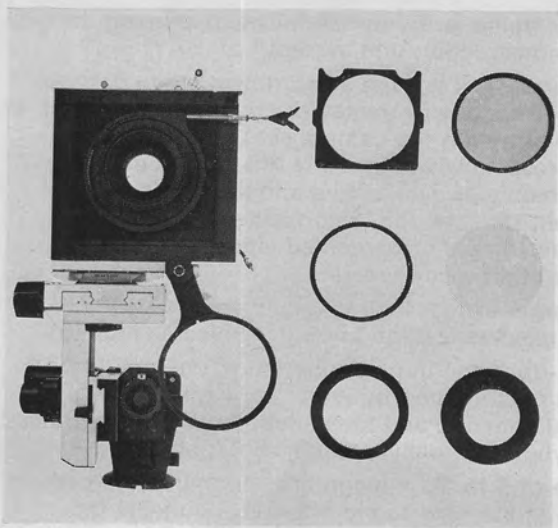


Fig. 26

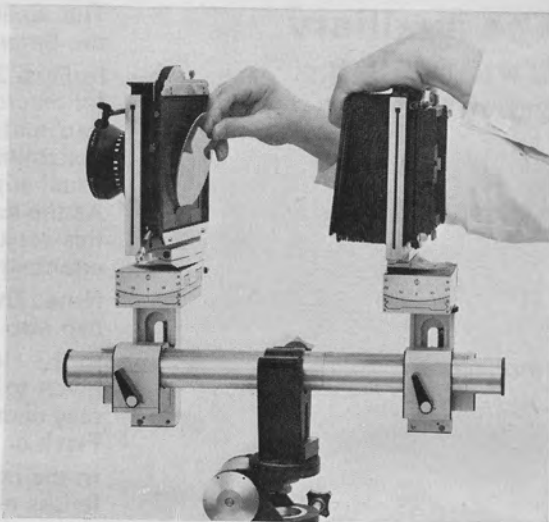


Fig. 26 a

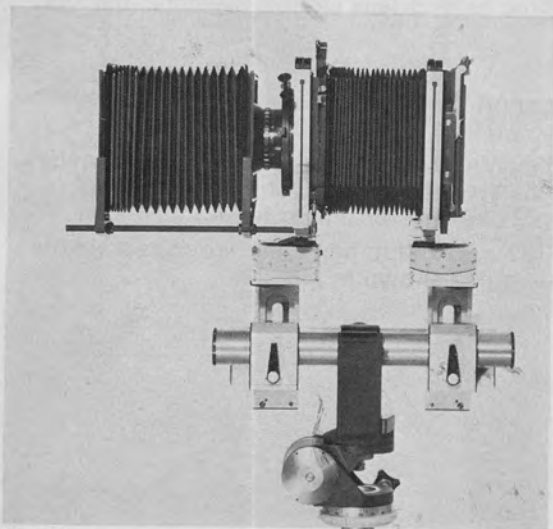


Fig. 27

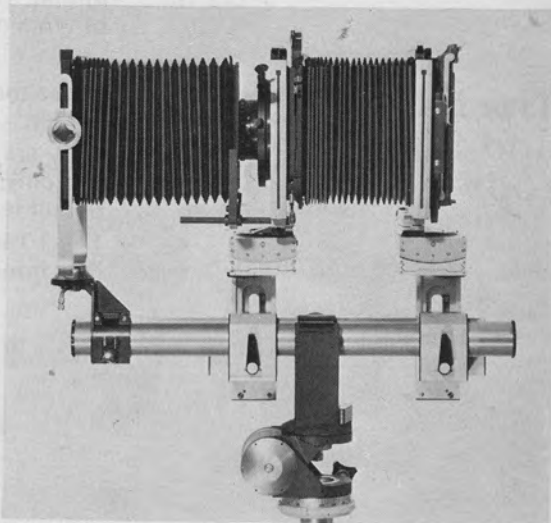


Fig. 28

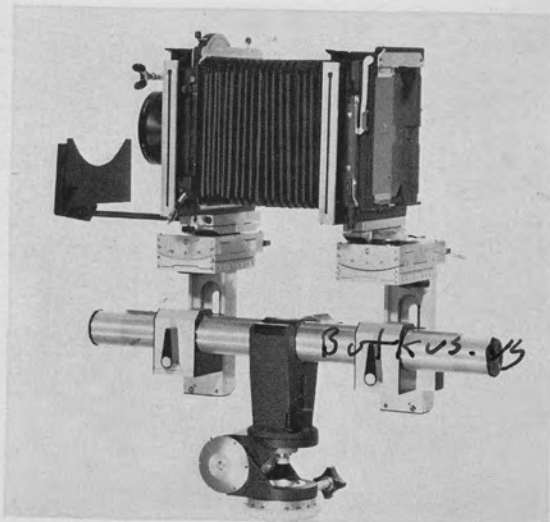


Fig. 29

Filter holders

When mounting the filter holder, the red dots on the format frame and the filter holder must be correctly lined up with each other.

The filter holder (Fig. 26) takes the following filteres:

Sinar 4-inch (103-mm) diameter glass filteres

Sinar 4-inch (103-mm) diameter polarizing filter

Kodak size VIII glass filters with a No. 544.11 reducing ring

Kodak size IX glass filteres with a No. 543.11 reducing ring

4 × 4-inch (10 × 10-cm) gelatine filters with the Sinar gelatine filter holder No. 542.11

The filter holder swings through 180°, to that polarizing filters can be correctly orientated while swung out next to the ground-glass screen, and then swung back into position. A rotating ring in the filter holder serves for rotating the polarizing filter.

The filters can be inserted on both sides, thus permitting any desired combination of glass, gelatine and polarizing filters.

Note: The Sinar glass filters and the 4 × 4 inch (10 × 10-cm) as well as 5 × 5-inch (12.5 × 12.5-cm) gelatine filters – but not the polarizing filter – can also be fitted in the Sinar shutter behind the lens (Fig. 26a).

The bellows holder

This supports the bellows when used as a bellows hood and mask box. Engage or disengage the bellows with the press-button at the corner of the holder.

The two bellows holders I and II with a standard camera bellows provide a simple extendible bellows lens hood. The holder I should be used next to the lens (Fig. 27).

When mounting the bellows hood, the bellows holder I is sufficient to link the bellows to the lens as shown in Fig. 28. (An exception is shown in Fig. 30.)

Masks and mattes can also be fitted to the bellows holder with adhesive tape (Fig. 29).

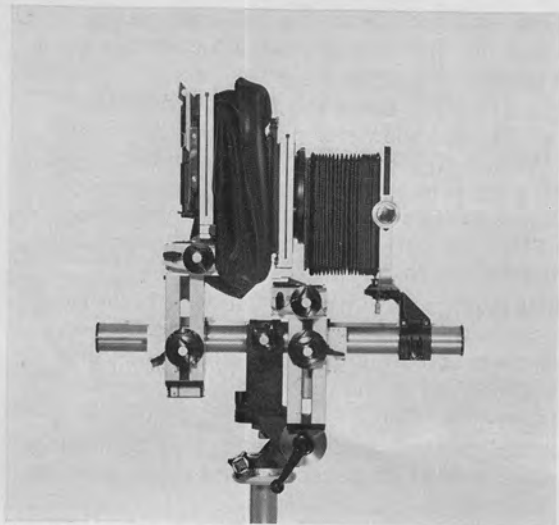


Fig. 30

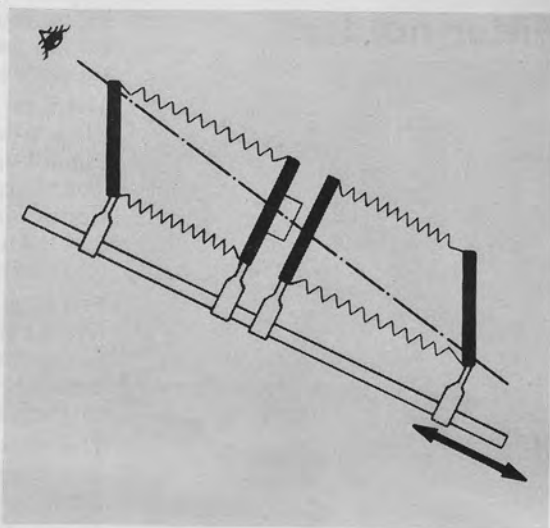


Fig. 32

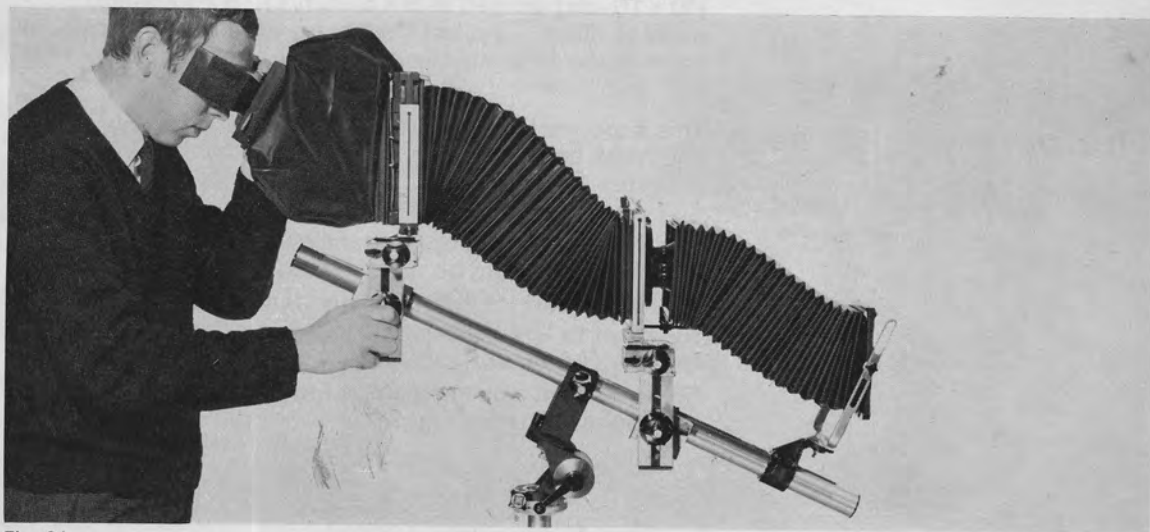


Fig. 31



Fig. 33

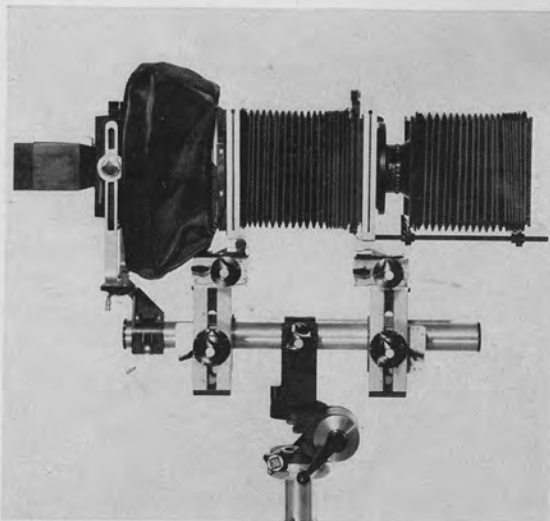


Fig. 34

The bellows hood

Important:

The bellows hood should be used whenever feasible; it improves the quality of the pictures by eliminating stray light.

Fig. 30 shows its application with short camera extensions.

The offset support of the auxiliary frame should face the lens. In addition the bellows is **free-floating** on the lens and not fixed with a bellows holder. This retains the adjustability even at short extensions.

Fig. 31 shows the application with medium and long extensions. The offset support of the auxiliary frame here faces to the front to increase the available extension. In addition, the bellows is supported near the lens with the bellows holder I.

When using the bellows hood in conjunction with long extensions, rising or drop front movements should be set up by indirect rather than by direct displacement, as shown in Fig. 31. This keeps the bellows lens hood lined up with the optical axis while retaining full adjustability.

Important:

The efficiency of the bellows hood is greatly increased by inserting the appropriate masks for the format used.

The comparatively dim ground-glass screen image often makes an accurate check of the optimum adjustment of the bellows hood difficult – especially when used with the various camera adjustments such as parallel displacement, swings and tilts and increased camera extension. This lining-up operation is made even more difficult by the fact that on stopping down, the vignetting limits move towards the centre of the image.

To carry out the optimum adjustment of the bellows hood as efficiently as possible, proceed as follows (Fig. 32):

Sight through the cut-off corners of the Sinar ground-glass screen (this is one of the reasons for the corner cut-outs) and through the lens at its working aperture. Hold the eye close to the corners of the screen and move the bellows hood forward, backwards or sideways until the edges of the front bellows frame (or the mask inserted in it) are just clear of the lens opening. Repeat this procedure while sighting from all four corners of the screen.

This method is also useful to establish the cut-off limit of the lens with extreme swings or tilts. Again sight the lens opening through the corner cut-outs of the screen. This shows immediately whether the lens mount cuts off or not.

The same check is also suitable to establish any cut-off by the Sinar front surface mirror when this is used in front of the lens.

The use of masks in the bellows hood also permits multiple and trick shots (Fig. 33).

The elements of the bellows hood can also be used as a fixed focusing hood (Fig. 34). This combination is particularly suitable for studio use. The bellows used as lens hood can be fitted with the aid of the two bellows holders I and II on the long filter holder rod (see also Fig. 27).

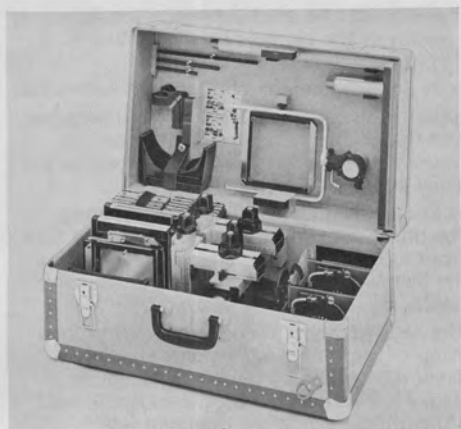


Fig. 35

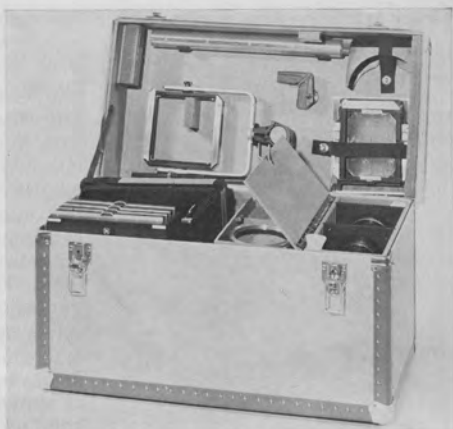


Fig. 36



Fig. 37



Fig. 38



Fig. 39



Fig. 40

The cases

Fig. 35 shows the standard case for the Sinar-p Standard or Expert 4 × 5 inch (9 × 12 cm) and 5 × 7 inch (13 × 18 cm) and the arrangement in it of the camera and its accessories.

Fig. 36 shows the case for the 8 × 10-inch (18 × 24-cm) Sinar-p Standard or Expert with the arrangement of the camera and its accessories.

Fig. 37 shows the separate case for the 5 × 7-inch (13 × 18-cm) format frame plus the wide-angle bellows, seven film holders and the 18-inch (45-cm) rail extension.

Fig. 38 shows the supplementary case for the 8 × 10-inch (18 × 24-cm) format frame plus the wide-angle bellows, eight film holders, the 18-inch (45-cm) extension rail and the special standard bearer (with the format frame removed).

Fig. 39: The camera cases can be carried on the back with the aid of the carrying straps (order No. 577.11). This way of carrying – for example from a car to the picture taking location – is often much more convenient than carrying the case by its handle – and it leaves both hands free.

The Sinar cases can also be used as stools (Fig. 40). But be sure to place the load on the edges of the case and not on the panels.

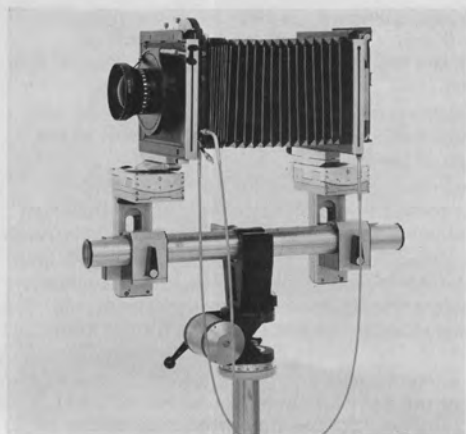


Fig. 41

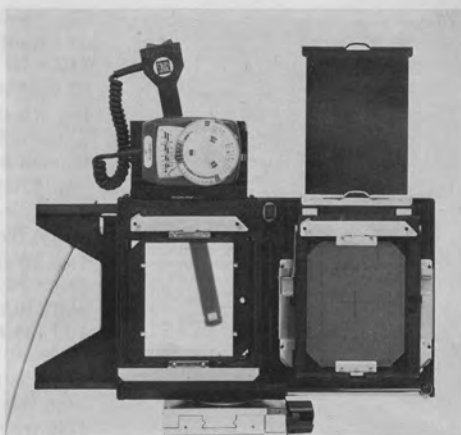


Fig. 42

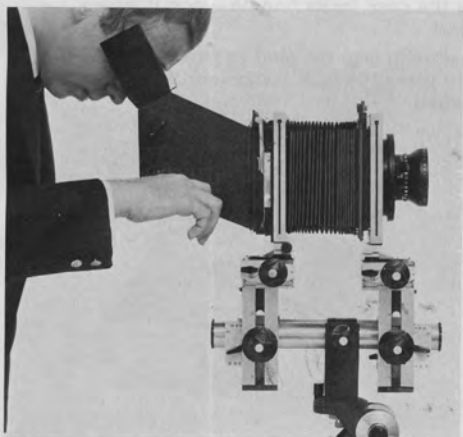


Fig. 43



Fig. 44

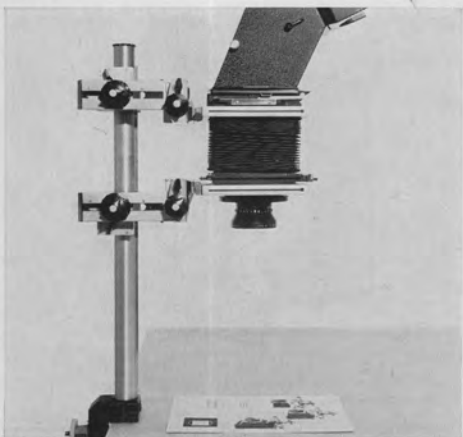


Fig. 45



Fig. 46

Other combinations and possibilities

The Sinar provides scope for almost unlimited combinations and extension. In addition to those already shown, here are a few further possibilities and suggestions:

You can supplement your Sinar-p with the unique **Sinar/Copal behind-lens shutters** ($1/80$ to 8 seconds). These provide consistent exposure times and operation – as well as automation – of the Sinar-p with more than 100 lenses and with over 10 picture formats. For further details see leaflet V.

The **Rapid-Adapter** (No. 551.16) for five formats from $2\frac{1}{4} \times 2\frac{1}{4}$ to 4×5 inch gives unique readiness for action – in the studio virtually equivalent to that of a single-lens reflex. (Note: When using the camera pointing vertically downwards; the special standard bearer No. 433.22 is recommended.)

The **binocular reflex magnifier** (No. 531.12/91) yields an upright ground glass screen image for viewing with both eyes. A valuable aid to focusing on the ground glass screen. Further details in leaflet B1p.

The **binocular magnifier** (No. 471.21/531.91) provides ideal viewing direction for observation of the screen. Can be used in conjunction with the Sinar Rapid adapter and with the Sinarsix.

The **Sinarsix** (No. 524.11) the unique system of spot readings in the film plane. Further details in booklet S.

The **Sinar clamping stand** (No. 514.21) can serve as a table stand (Fig. 45) for macrophotography, photomicrography, copying and, in conjunction with the camera and enlarging attachment, as an enlarger. (Further details in Sinar-Information, No. 4 and No. 6.)

Special adapters are available to combine the Sinar with a single-lens reflex camera so that the Sinar acts as an **extensions bellows** (Fig. 46) – with all camera movements.

Adapter for the Alpa:	Order No. 556.63
Adapter for the Exakta:	Order No. 556.73
Adapter for the Hasselblad 500 C:	Order No. 556.64
Adapter for Mamiya, Yashica, Asahi Pentax, Icarex 35 TM	Order No. 556.83

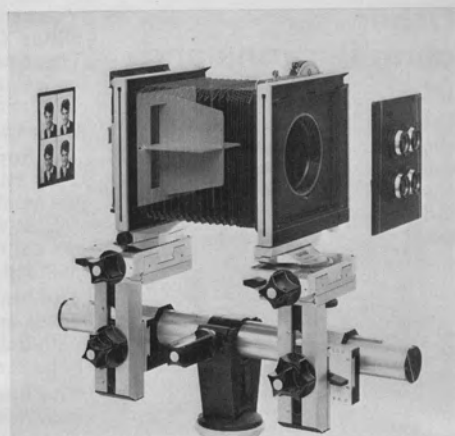


Fig. 47

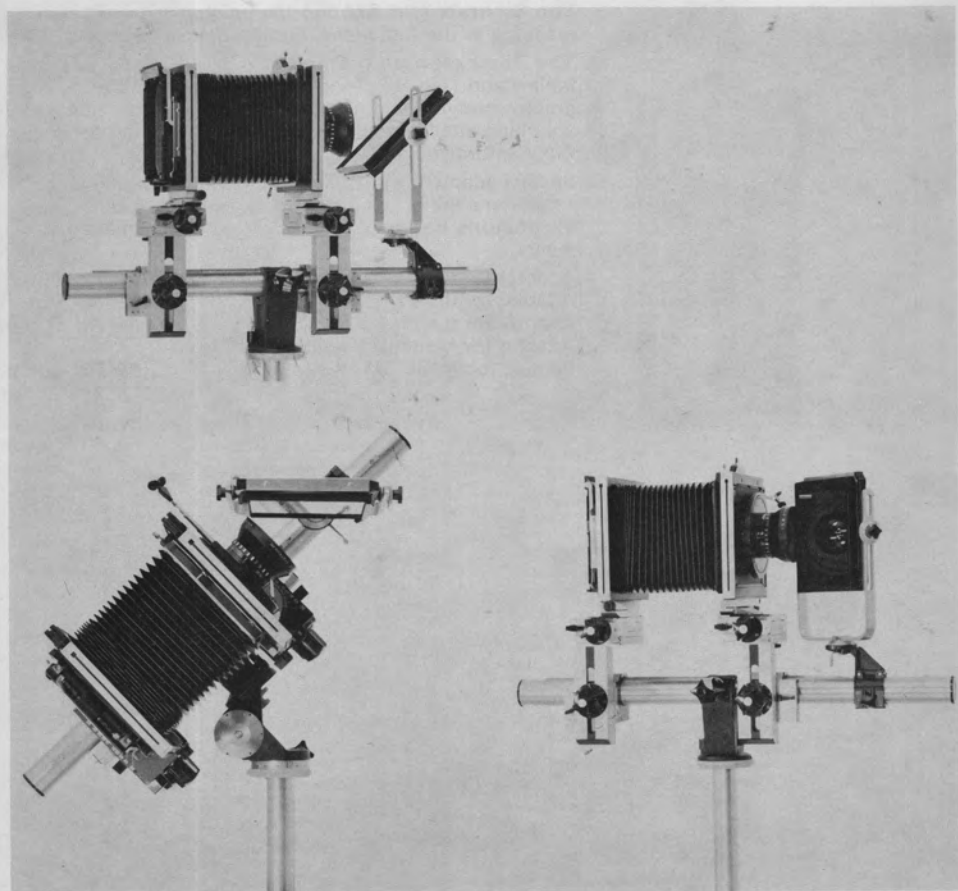


Fig. 48

Four-exposure camera (Fig. 47): The format divider permits four simultaneous or four sequence (or two pairs of each) passport shots on 4 × 5-inch sheet or instant films.

The Sinar front surface mirror (Fig. 48) permits photography from almost inaccessible camera viewpoints.

More details see Sinar Information No. 4.

With a few exceptions, these combinations can be used with all ten formats of the Sinar-p.

Further combinations, especially with shutters and lenses, are described in section 6.

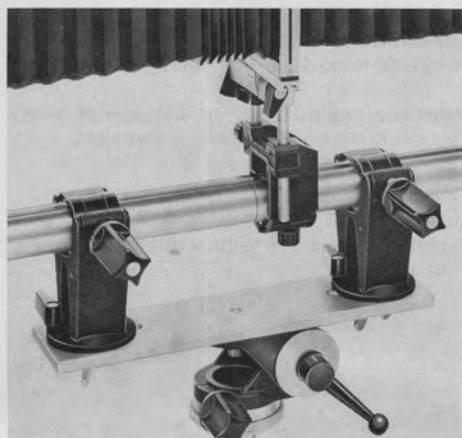


Fig. 49

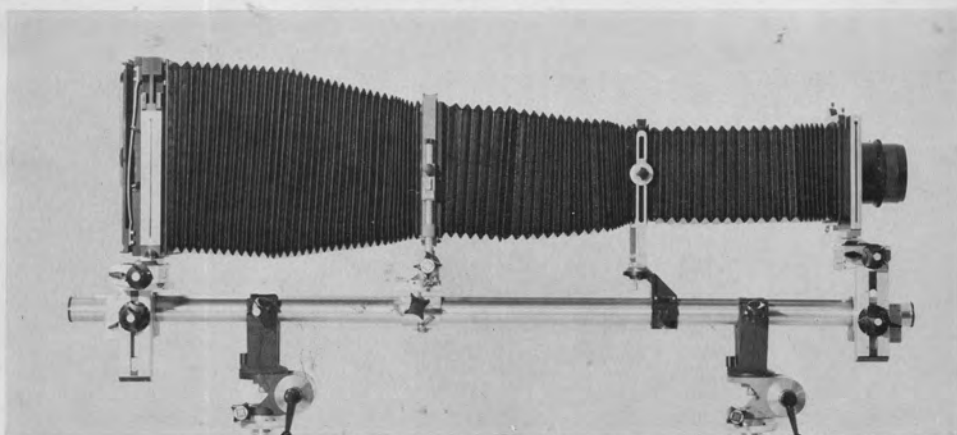


Fig. 50

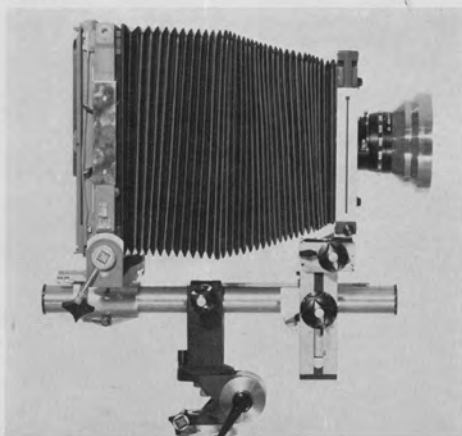


Fig. 51

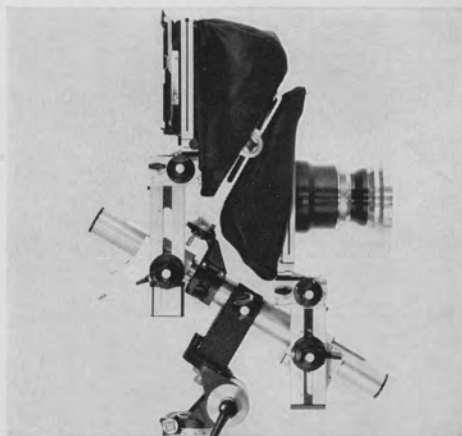


Fig. 52

3. Various points of operation

Long extensions

The longer the camera extension, the more rigid and stable the camera set-up must be. In such cases the use of the **base plate** (order No. 418.11) is recommended together with a second rail clamp, as shown in Fig. 49.

With very long extensions out of doors, the front and rear halves of the camera can be supported on two separate tripods (Fig. 50).

With extensions over 36 inches (90 cm) such a double support is indispensable. With extensions of 36-inches or more with the 8 × 10-inch (18 × 24-cm) format, a 5 × 7-inch (13 × 18-cm) standard plus bellows is necessary as a further intermediate element. A special tapered 8 × 10- / 5 × 7-inch (18 × 24- / 13 × 18-cm) bellows (order No. 453.18) connects the standard to the camera back.

Measuring the extension

The swing-and-tilt plane (and thus the focusing plane) is the same **for all formats**. Its location is indicated by a Φ placed above the fine tilt scale on both standard bearers.

Extra large lens panels

Fig. 51: The Sinar lens panels are large enough for most normal lenses for technical or view cameras. For exceptional cases a special set-up is however possible with larger lens panels. Here the front standard is simply replaced by a complete rear standard for 5 × 7 inch (13 × 18 cm). Here again the special 8 × 10- / 5 × 7-inch (18 × 24- / 13 × 18-cm) adapter bellows (order No. 453.18) is required. To special order a large square bellows 5 × 7 / 5 × 7 inch (13 × 18 / 13 × 18 cm) is also available. In addition a special lens panel (available to order) is required.

Extreme parallel displacement

Fig. 17 shows the recommended combination of wide-angle and square bellows for this purpose.

Fig. 52 also shows a combination of two wide-angles bellows for still more extreme parallel displacements. The same degrees of displacement are also possible with the bellows hood using an appropriate bellows combination.

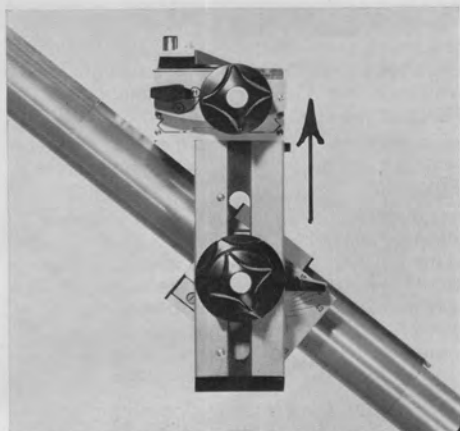


Fig. 53

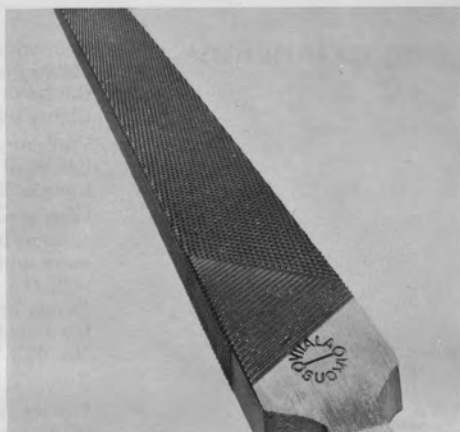


Fig. 54

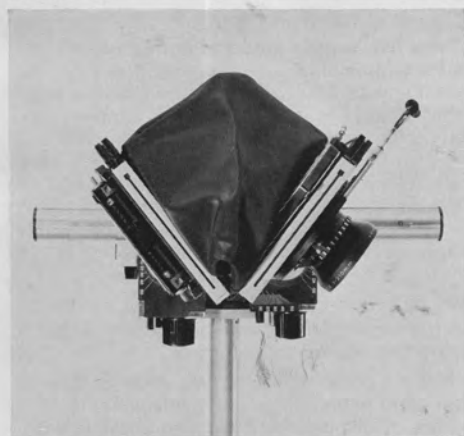


Fig. 55

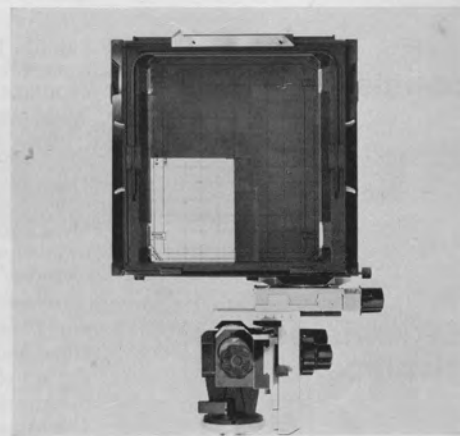


Fig. 56

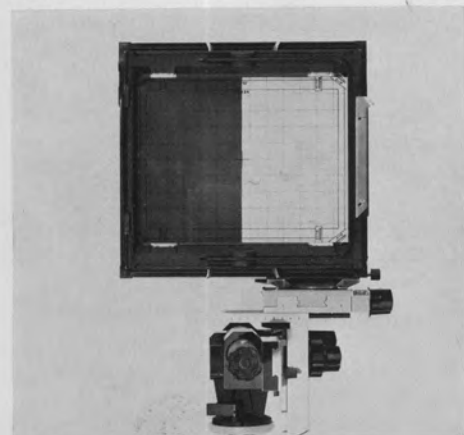


Fig. 57



Fig. 58

Coarse swings and tilts

especially with the 5×7-inch (13×18-cm) and 8×10-inch (18×24-cm) standards

Extra displacement

Downwards and to the right with the 5×7-inch (13×18-cm) and 8×10-inch (18×24-cm) standards

Extreme tilts at short extensions

Subdividing the negative

for multiple exposures

During extreme indirect parallel displacement with the larger format frames, the rail may obstruct the coarse tilt adjustment of the standard bearer (Fig. 53). In such cases the front and rear standards can be moved upwards by about 0.40 inch (1 cm) (or more) each by the micrometer drive *h*, thus permitting an extra tilt.

By raising the optical axis of the lens standard and the rear standard, a greater drop front displacement becomes possible, which is sometimes useful with the larger 5×7-inch (13×18-cm) and 8×10-inch (18×24-cm) standards. The same applies to lateral displacement. Moving the lens standard to the left, permits a greater horizontal displacement of the rear standard to the right.

Special effects as shown in Fig. 54 sometimes call for extreme tilts with short focal lengths. These are obtained by swinging the standards about the vertical axis *V*. Depending on the position of the subject, the camera may have to be swung round through 90° on the rail clamp (Fig. 55).

The same procedure is possible when using the Sinar mirror.

Movable and interchangeable masks in the format frame (available for the 8×10-inch [18×24-cm] format frame – order No. 439.18) permit subdivision of the format into two or four separate fields (Fig. 56). With this system each exposure must be refocused afresh.

Another way – suitable for the more frequent case of halving a horizontal shot – is to leave the mask fixed and reverse the back through 180°. In this case the camera setting can remain unchanged; each exposure then only covers the same half of the image space (Fig. 57).

A further possibility with 4×5-inch (9×12-cm) and smaller formats is to insert a dividing mask in the fully extended bellows hood and then divide the image area by parallel displacement of the rear standard. This method requires no refocusing of the image and no change of the film holder. This subdivision method is even handier with the Sinar Rapid-Adapter and the Sinar shutter (Fig. 58).

Note that the 4×5-inch (9×12-cm) format can also be subdivided with the Sinar 4-lens unit with 125 mm focal length (order No. 586.16) and the format divider (order No. 558.16) to obtain four part images (Fig. 47).

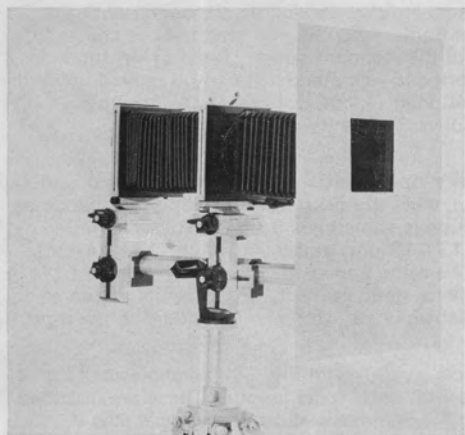


Fig. 59



Fig. 60

Screening the camera against reflections

Dark camera parts are liable to be reflected in light subject areas and light camera components in dark objects. The best way to avoid that, is to use a card screen of approximately the same reflectivity as the subject. This is tailored as shown in the illustration (Fig. 59) and fixed to a Sinar bellows frame (order No. 454.11-300). The card screen is thus easily interchangeable.

Double tilting head

A combination of the Sinar tilting head and the Sinar rail clamp with the universal camera holder (order No. 519.11) yields a solid double tilting head for all camera types (Fig. 60).

Blank

4. Maintenance

Cleaning

The friction bearings and self-braking bearings of the Sinar-p are all fitted with self-lubricating plastic linings. These require no lubrication or greasing.

Contamination by dust, sand, etc., causes more rapid wear. Therefore regularly clean the friction bearings with a brush and with petrol or a similar cleaning fluid.

Resetting the drives

Through wear or excessive loads, a readjustment of the drives may become necessary, which the local Sinar representatives or Sinar Ltd. Schaffhausen are able to make.

Cleaning the mirror

The Sinar front-silvered glass mirror must only be cleaned with optical cleaners as used for lens cleaning – for instance Kodak lens cleaner or special lens-cleaning tissues.

Blank

5. Guarantee conditions

12 months of guarantee

The supplier guarantees all new equipment for 12 months from the date of invoice. This guarantee covers the use of fault-free materials and perfect operation. The supplier undertakes to rectify at his own cost all faults and damage arising on the Sinar or its accessories during the guarantee period through shortcomings with respect to the above specifications. No further or consequential claims can be entertained. The guarantee becomes invalid if alterations or repairs are carried out by the customer or other parties without written agreement by Sinar Ltd., Schaffhausen.

Registration card

Fill in carefully and mail it. This registers your new equipment and you automatically receive the warranty certificate and are entitled to free reception of the Sinar Information, which appears periodically.

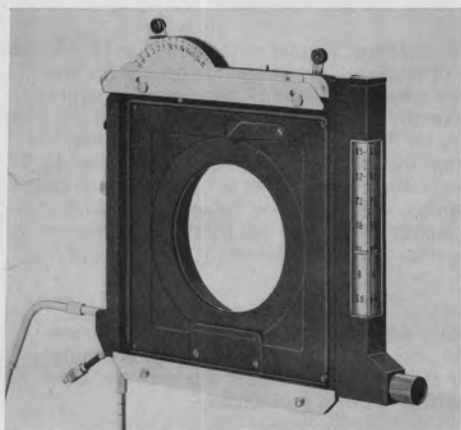


Fig. 61



Fig. 62



Fig. 63



Fig. 64



Fig. 65



Fig. 65 a

6. Select whichever you prefer: lenses, shutters, automation

(See separate lens price list for the Sinar lens range)

**Unique automatic control, thanks to the Sinar/Copal behind-the-lens-shutter
(1/60-8 sec.)**

Sinar/Copal auto-aperture shutter

(Fig. 61)

Automatic shutter with central aperture control. Consistent exposure times and operation. Permits setting from behind the ground glass screen. Automatic control of the shutter on inserting the film holder. Automatic aperture control for lenses with Sinar spring-loaded diaphragm, see Fig. 62 and leaflet V!

Thus providing high operation speed for more than 100 lenses and 10 image formats.

Order numbers and data

No. 521.31

Lens mounts which combine with the Sinar shutter:

Sinar spring- loaded diaphragm (DB)

(Fig. 62)

Centralized automatic aperture control with shutter 521.31 makes for astonishingly easy and fast operation.

Lens Type*
Mounted in 446.11

Sinar aperture control (B)

(Fig. 63)

Regular lenses, mounted with the Sinar aperture control (B) - in barrel mount (NF) or with mechanical between-lens shutter. Permit diaphragm setting from behind the ground glass, with or without Sinar shutter. No aperture pre-selection.

Lens Type*
Mounted in 442.21

Available lenses

(Fig. 64)

Regular lenses, mounted on the plain Sinar lens board. As under Fig. 63, but without Sinar aperture control.

Lens Type*
Mounted in 441.11

Lens mounts within the Sinar system, which do not combine with the Sinar shutter nor with the Sinar aperture control:

Electronic shutters

(Fig. 65)

Lenses in electronic shutters (EI) with aperture control attachment and remote control.

Lens Type*
Mounted in 441.11

Lenses with focusing mount

(Fig. 65 a)

Lenses in their own shutter with focusing mount combine with the coupling frame 443.26 and the back 461.26 to make a simplest wide-angle camera.

Lens Type*
(in focusing mount)
Mounted in 441.11

Note especially: When ordering, please specify the lens precisely, e.g. "240 mm (... inch) Symmar 5.6 in standard mount" or the type of the between-lens shutter: "To be mounted in (order No.)." For further informations see the Sinar shutter booklet V.

*All the lens/shutter combinations shown here and the automatic coupling possibilities are suitable both for the Sinar-p and for the Sinar.

The Sinar auto-aperture shutter and the Sinar spring-loaded diaphragm (DB) are always correctly coupled. The lens panel must, however, be correctly mounted as shown in Fig. 62.



Fig. 66



Fig. 67

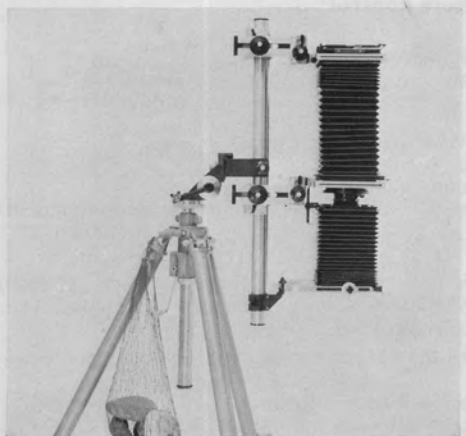


Fig. 68

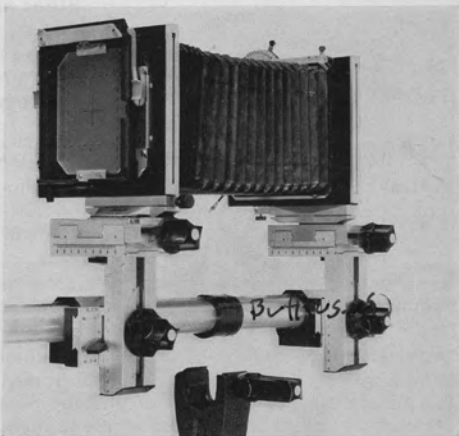


Fig. 69

7. Systematic camera settings with the Sinar-p

Principles

We assume that you are familiar with the optical laws of parallel displacement and camera swings and tilts. If not, study the booklet "Large Format Photography" available from Sinar agencies or from Sinar Ltd., Schaffhausen, CH-8245 Feuerthalen, Switzerland (order No. 401.22).

Setting-up

Correctly set up the tripod, with the third leg to the front (Fig. 66).

First extend the tripod legs fully before raising the centre column. This provides greater rigidity (Fig. 67).

Out of doors or with the camera overhanging the tripod, a weighted shopping bag is a first-class stabilizer. You will nearly always find suitable weights (Fig. 68).

Experienced photographers usually leave the rail clamp on the tripod and only change the camera (Fig. 69).

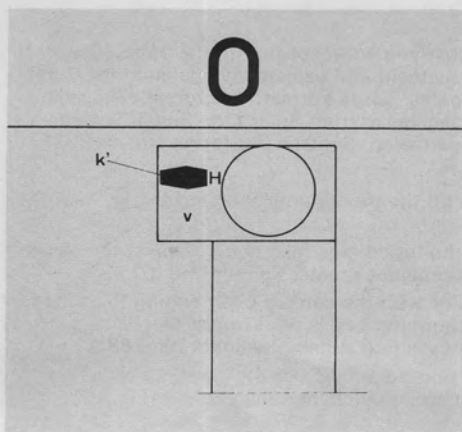


Fig. 70

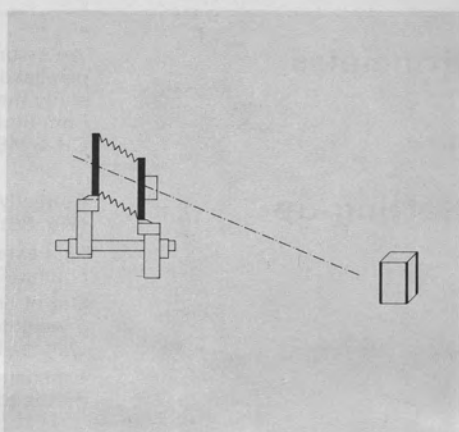


Fig. 71

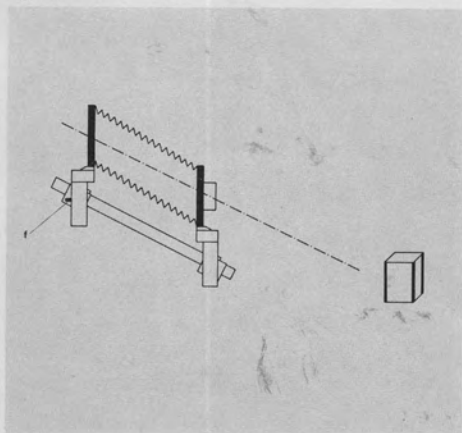


Fig. 72

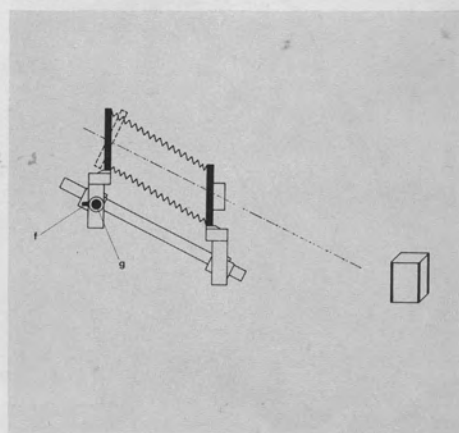


Fig. 73

The basic position

Set all movements to their zero position before starting to use the settings.

Move the change-over lever k' of the swings of **both** standards to position H (Fig. 70).

Direct parallel displacement

Set up the camera with its back **parallel** to the main subject plane. Adjust the image position on the screen as required, by **direct** parallel displacement upwards, downwards or sideways (Fig. 71).

Indirect parallel displacement

Important:

With long extensions, increased displacements and also when using the bellows hood, the **indirect** parallel displacement is usually preferable.

Note: Owing to the non-gyrating standards of the Sinar-p, this important method of adjustment is usable without complications or limitations.

Point the whole camera at the subject (Fig. 72) and tilt the standards to their vertical position with the aid of the **coarse tilt** (lever f).

Perspective control

Tilt the image frame (rear standard) with the **coarse tilt** (lever f) as described above to vertical or to required position for the desired perspective and sharpness.

Where no sharpness adjustment in depth (Scheimpflug principle of coincident planes) is required or intended, focus the image with the normal fine focusing drive g on the required image point (Fig. 73) and stop down as necessary.

If however the aim is a large aperture with an oblique view the next step is the sharpness adjustment. This can be carried out in two different ways.

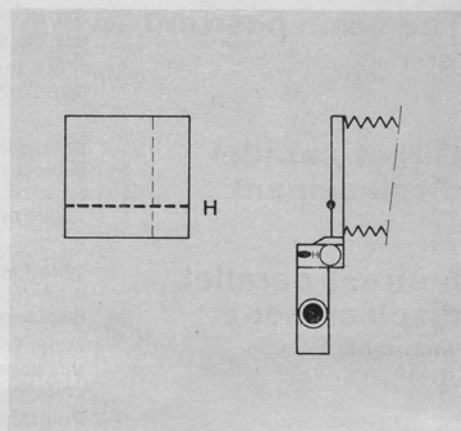


Fig. 74

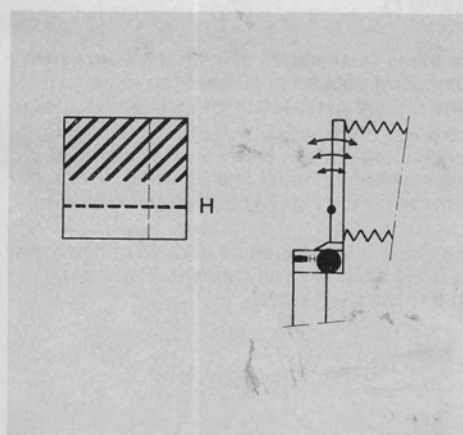


Fig. 75

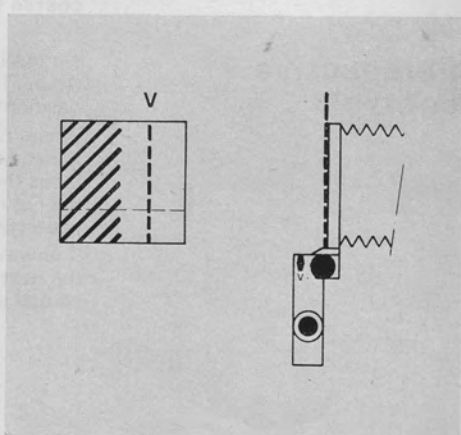


Fig. 76

Sharpness control with the rear standard

2-point setting

Important:

If the rear standard is used for the sharpness adjustment, this also involves a change in the perspective which has to be allowed for. On the other hand, the optical axis does not move away from the centre of the image field during tilting.

1. Focus the **first** image point, which you locate **exactly on the horizontal axis H**, by turning focusing knob g (Fig. 74).
2. Focus the **second** image point, which you locate **above the horizontal axis H** (Fig. 75, shaded section), by turning tilt knob k (change-over lever k' in position H) – and the tilt is perfect!

For the swing around the vertical axis, switch lever k' to V and proceed as above by using the vertical axis V. The Sinar-p's non-gyrating feature makes this simple swing method possible, even after a tilt around the horizontal axis has been effected.

Should there be no image point located on the respective axis, simply move the axis to such a point (by parallel displacement), proceed with 2-point setting as above, re-center the image (by reverse parallel displacement) and re-focus on focusing knob g.

For a second image point, always choose one, which is located as far away as possible from the respective axis. The longer the distance between the two points, the more precise is the setting.

When focusing the second image point, you achieve three things at once: tilt, establish the tilt direction, establish the angle of the tilt. And this without image drift, as on the Sinar-p, the axis does not budge, during the tilting.

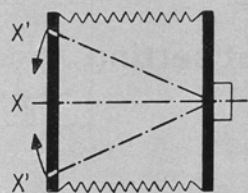


Fig. 77

Sharpness control with the lens standard

If the lens standard is swung or tilted for sharpness adjustment, neither the image perspective nor its proportions change. However, this method requires a lens of a sufficiently large angle of view, as the optical axis moves away from the centre of the image during the swinging or tilting.

Another point to note is that the camera always needs refocusing after a lens tilt or swing. This has nothing to do with the tilting mechanism of the camera and is the result of the lens correction for curvature of field. It means that the rays from the lens to the edges of the field have a longer path than the central ray (Fig. 77). This fact can lead to an appreciable focusing correction – for instance about 0.60 inch (15 mm) in the lens extension with an 8-inch (240 mm) lens swung through 20°!

It is therefore impossible to swing or tilt the front standard while keeping the image sharp on the screen at the same time, as the sharpness changes in all points of the image.

To eliminate the somewhat haphazard trial and error procedure often employed with this type of sharpness adjustment, the design of the SINAR-p and SINAR-c cameras offers a systematic and precise setting method:

- Make 2-point setting with the **rear standard**, as described on page 51, in order to **establish the tilt angle**.
- Retain the angle's value and tilt the standard back to its original position, by turning knob k.
- **In the same sense**, turn the knob k on the **front standard**, to tilt the latter until the retained angle value is reached.*
- Re-set the **general image sharpness**, on knob g.

Should the tilt require an additional **small** adjustment, this can usually be made with the rear standard, without re-adjustment of the front one.

This systematic setting method avoids completely the difficulties mentioned above and leads easily and fast to a precise result.

Close-ups

If the taking distance (lens-object) is shorter than four times the focal length of the lens, start with an estimated tilt of the front standard, according to the Scheimpflug law of the three planes' common intersection, then proceed with the simple 2-point setting.

* On the SINAR-c, unlock lever c (for a tilt) or screw d (for a swing), move the standard into position and lock again.

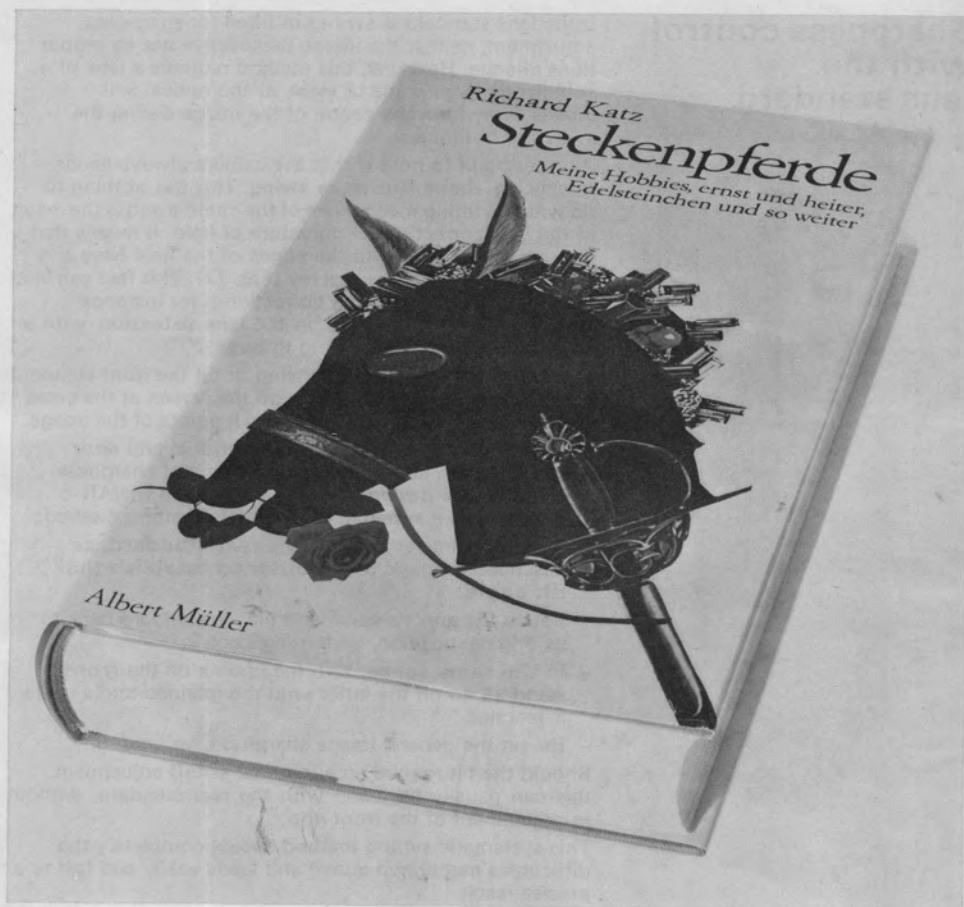


Fig. 78

Illustrated example

Fig. 78 shows a typical example of sharpness compensation in two directions.

The aim was to show the book sharply at not too small an aperture in all planes including extension in depth.

This sharpness adjustment was carried out by tilting and swinging the lens standard, to avoid perspective distortion of the shape of the book. A 75° angle lens of 6-inch (150-mm) focal length was used.

The lens standard was tilted through some 10° about the horizontal axis H as well as swung about the vertical axis V , which provided complete sharpness of the title page at full aperture. To cover the depth of the object between the cover and the bottom of the book the lens was then stopped down to $f22$.

Hints

If large angles of tilt are required for sharpness control, especially **with close-ups**, it is best to tilt the standards first by **rough estimation** for approximate coincidence of the object, lens and image planes. This simplifies the subsequent fine control.

With the Rapid-Adapter the film plane is 0.80 inch (2 cm) behind the normal image plane. This requires slight refocusing and recentering when tilting or swinging the camera back.

If a Sinar ground-glas holder is used on the Sinar-p, the tilting and swing axes should be marked on the screen with a fine felt pen at the same distance from the centre. Better still, replace the ground-glass screen with a new screen carrying the axes already marked. These screens have the following order Nos.:

Replacement ground-glass screen for

4 × 5-inch (9 × 12-cm) back	536.56
Rapid-Adapter	536.46
5 × 7-inch (13 × 18-cm) back	536.27
8 × 10-inch (18 × 24-cm) back	536.28

Instruction booklets for Sinar accessories

**Separate instructions booklets
are available for
the following Sinar items**

Sinar/ Copal behind-lens shutter and Sinar
aperture control

Order No.

501.23

Sinarsix

503.23

Sinar binocular reflex magnifier

506.23

Sinar Rapid-Adapter

504.23

Sinar format divider

505.23

Sinar clamping stand and front surface mirror

Inf. No. 4

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More accurate exposure with the Sinar shutter (a single shutter system in place of a number of shutters of variable tolerances).

More accurate exposure with more precise aperture settings on the Sinar aperture scales. (This counts more than appears at first sight.)

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The Sinar auto-aperture shutter with central aperture control automatically self-cocks, closes and opens with insertion and removal of the film holder and closes the lens diaphragm down to the pre-selected setting for the duration of exposure.

The Sinar rapid adapter increases even further the shooting rate for sequence shots.

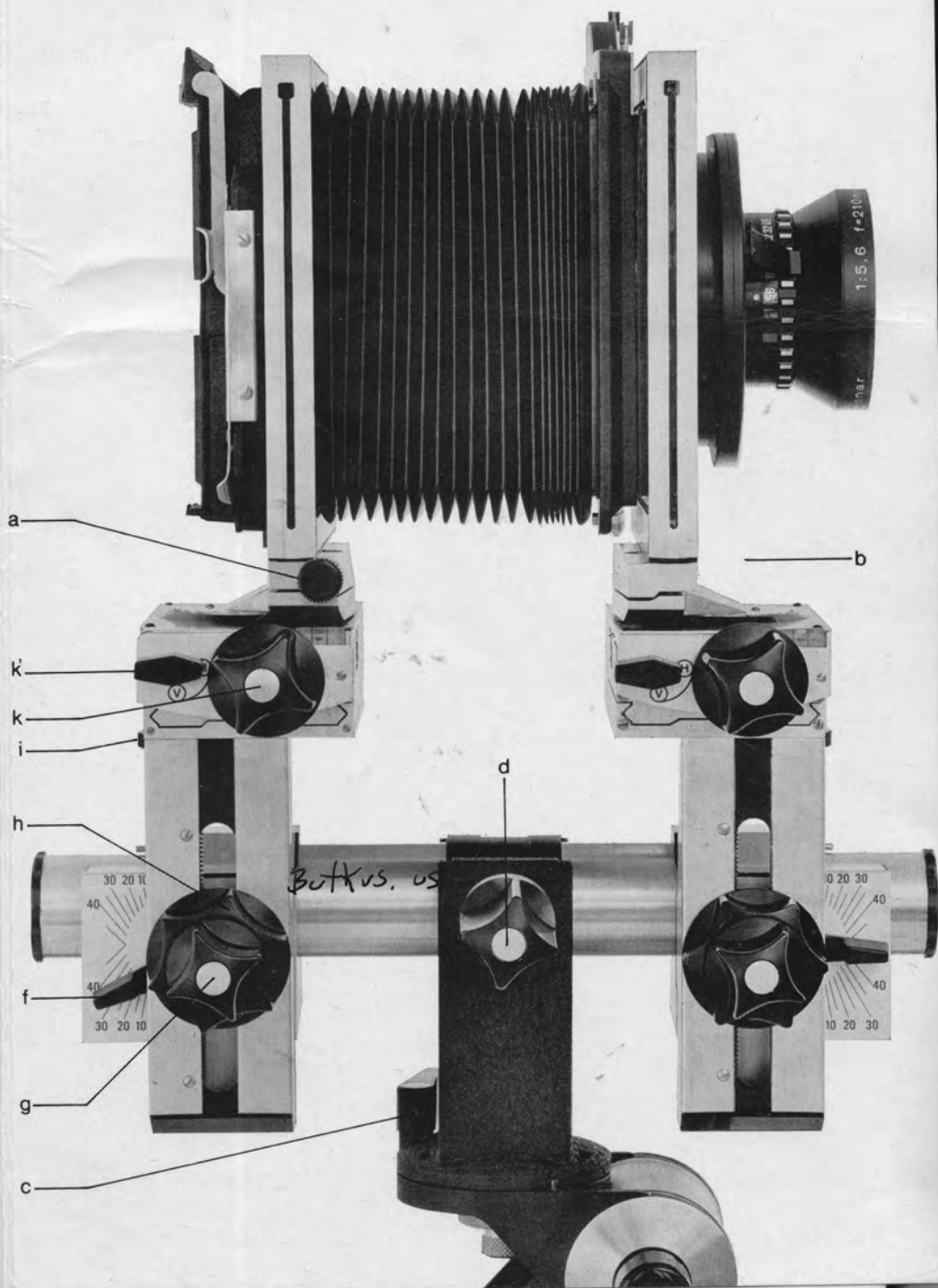
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Sinar-p Standard – 4 × 5 inch (9 × 12 cm)



Anleitung Sinar-p:

(Korrektur zu Seite 11, Absatz i)

Wichtig:

Zu beachten:

Sinar-p Instructions

(Correction on page 11,
paragraph i)

Important:

Note:

Mode d'emploi de la Sinar-p

(Correction à apporter en
page 11, paragraphe i)

Important:

Attention:

Feintrieb der Standartenverschiebung mit zugeordneter Skala:

Die Skala der hinteren Standarte weist 2 Farbcode-Marken und 2 Rasten für die drei Hauptformate auf
schwarz = Stellung für Format 9×12 (4×5")
grün/rot = Stellung für Format 13×18 (5×7")
und 18×24 (8×10")

Die Seitenverschiebung der **vorderen** Standarte hat für die Formate 9×12 (4×5") und 13×18 (5×7") denselben 0-Index (schwarz) und dieselbe 0-Raste. Für das Format 18×24 (8×10") ist die Seitenverschiebung der vorderen Standarte auf den roten Punkt zu stellen (optische Achse bei 18×24 [8×10"]). Bei Verwendung der Hilfsstandarte (Kompendium) ist auch diese entsprechend um 32 mm seitlich zu verschieben.

Bei Verwendung des Spezial-Gelenkblockes 18×24 (8×10") kann die Seitenverschiebung der vorderen Standarte für alle Formate in der 0-Stellung (schwarzer Index) verbleiben.

Micrometer drive for lateral displacement, with scale:

The scale of the rear standard has two colour coded marks and two engagement positions for the three main formats:

Black = position for 4×5 inches (9×12 cm)

Green/red = position for 5×7 inches (13×18 cm) and 8×10 inches (18×24 cm)

The lateral displacement of the **front standard** has the same zero index mark (black) and the same engagement position for the 4×5 inch (9×12 cm) and 5×7 inch (13×18 cm) formats. For the 8×10 inch (18×24 cm) format set the lateral adjustment of the front standard to the red dot (corresponding to the optical axis for 8×10 inches or 18×24 cm). When using the auxiliary frame as a bellows lens hood, this should also be moved sideways by 32 mm.

When using the special 8×10 inch (18×24 cm) standard bearer, the lateral adjustment of the front standard can remain at the zero position (black index mark) for all formats.

Commande micrométrique du décentrement latéral du corps de la chambre et son échelle:

L'échelle gravée sur le corps arrière porte deux marques de couleur et deux encliquetages, correspondant aux trois formats principaux:

noir = position pour le format 9×12 (4×5")

vert/rouge = position pour les formats 13×18 (5×7") et 18×24 (8×10")

Le dispositif de décentrement latéral du **corps avant** comporte un seul repère zéro (noir) et un seul encliquetage pour les formats 9×12 (4×5") et 13×18 (5×7"). Pour le format 18×24 (8×10"), on doit amener le repère du décentrement latéral du corps avant en face du point rouge (coïncide avec l'axe optique de ces formats 18×24 et 8×10"). Les corps auxiliaires (attache du compendium) devront alors subir une translation latérale équivalente de 32 mm.

Si l'on utilise le bloc de base spécial arrière 18×24 (8×10"), le repère de réglage du décentrement latéral du corps avant pourra conserver la position zéro (index noir), quel que soit le format.

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