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is in place (i.e. that the magazine is attached to the camera).
Fold out the film winding crank (5) and turn it *clockwise* until it stops (about 10 turns). Fold the crank (5) back and flip it down. The number '1' will now be visible in the frame counter window (7). The magazine is loaded and ready for use.

Note: The magazine can only be removed from the camera when the magazine slide is in place. No exposure can be made with the slide inserted in an attached magazine.

After the final frame:

The camera exposure mechanism is blocked after the final frame has been exposed ('12' will be seen in the frame counter window of 12-exposure magazines). Fold out the film winding crank (5) and wind the film onto the take-up spool.

OPERATING THE 2000FC

This part of the instruction manual deals with subjects such as shutter speed and aperture setting, focusing, determining depth-of-field, film advance, mirror program selection, pre-release operation and intentional double exposure.

Using F lenses with the 2000FC

The *f/stop* is set using the aperture ring; this ring has two knurled projections (36, Fig. 30). The ring can be manipulated with the right hand while the camera is held in the left-hand grip.

The *shutter speed* is set against the index (29) with a prong (33) on the shutter speed

Fig. 30

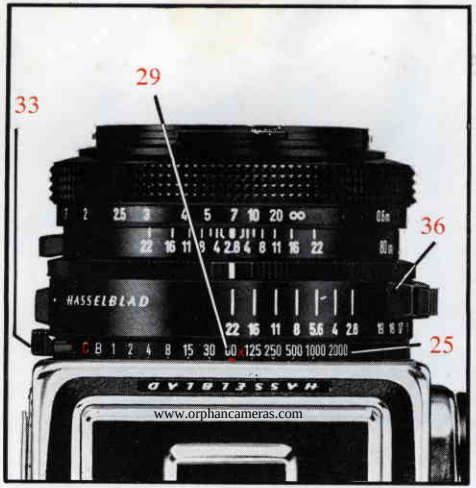


Fig. 31

ring. The most common shutter speeds can be conveniently set just using the thumb of your left hand. F lenses have shutter speeds of B and 1 to 1/2000 s. At the B setting, the shutter remains open as long as the release button is kept depressed. The shutter speed ring (25) has click stops for both engraved and intermediate speeds. Thus, you can set the shutter at 1/250 s, 1/375 s, 1/500 s, 1/750 s etc. No intermediate speed can be set between 1 and B or between B and C.
(Intermediate speeds can not be set on the shutters of C lenses).
The 2000FC shutter speed ring (25) can be locked to prevent accidental displacement. The ring is locked using the lever (38). The lever pointer should point to L (=locked), Fig. 31.

The shutter and diaphragm controls (24 and 25), which normally operate independently, can be cross-coupled by pressing the cross-coupling button (20). With the shutter and diaphragm interlinked in this manner, shutter speed/aperture combinations can be altered with no change in the value set on the exposure value scale. The correct exposure value is obtained with an exposure meter such as the Hasselblad exposure meter or the meter prism finder.

Example: With the button (20) for cross-coupling of shutter and diaphragm depressed, change the aperture from f/8 to f/11. This automatically changes the shutter speed from e.g. 1/250 s to 1/125 s. (Cross-coupling is not possible when an extension tube or bellows extension is used.)

Fig. 32

WARNING:

Never press the button (20) for cross-coupling of shutter and diaphragm when the shutter speed ring (25) is locked in the L position or when changing lenses because the cross-coupling mechanism could then be damaged.

Focusing

The lens is focused with the knurled ring (21) at the front of the lens barrel. The ring is rotated until the subject achieves maximum sharpness on the focusing screen.

The distance between the subject and film plane is then shown on the distance scale (22) opposite the distance index (31, Fig. 33).

There are limits to the distance within which close and remote objects can be reproduced sharply at a given f/stop. These limits, referred to as depth-of-field, vary with the aperture used. A small f/stop yields more depth-of-field than a large f/stop when the lens is focused on the same distance.

The depth-of-field at a given f/stop can be read off on the depth-of-field scale (23, Fig. 33) on either side of the distance index (31). In the example shown on this page, the lens is set at 15 ft. At f/16, depth-of-field would range from 10 ft to 50 ft.

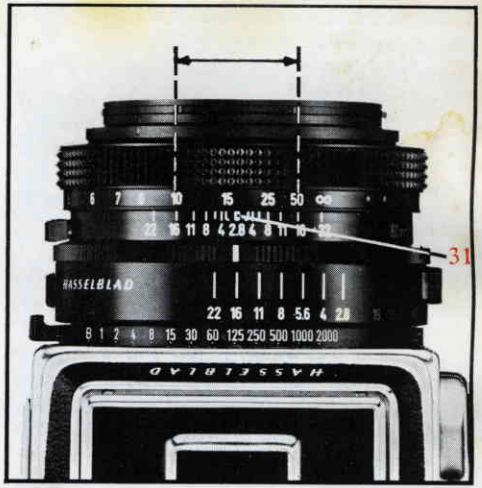
Depth-of-field preview (Fig. 34)

A lens is usually focused wide open because the minimum depth-of-field yielded there makes viewfinder images snap in and out of focus more readily. But you can still check out the depth-of-field available at your preselected f/stop by pressing the upper part of the depth-of-field preview catch (34) with your left thumb. This stops the diaphragm down to your preselected f/stop. Pressure on the lower part of the catch restores the diaphragm to its maximum aperture. The lens automatically stops down to the preselected f/stop when the camera is triggered. After exposure the diaphragm reopens to the maximum aperture.

Advancing the film

The film is advanced and the shutter by cocked one full turn of the folding crank (2). Do not press the release button when turning the crank as this could cause an unintentional exposure.

Fig. 33



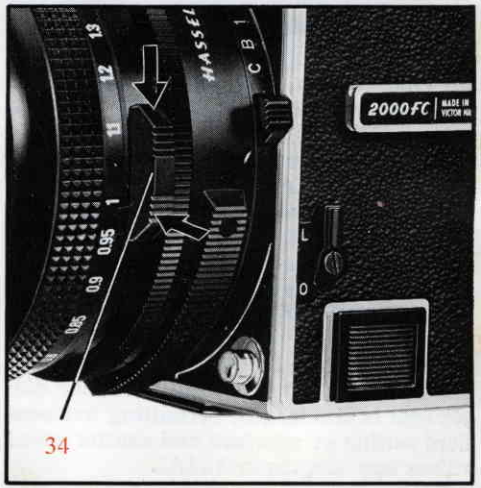


Fig. 34

Using C lenses with the 2000FC

Focal plane shutter and C lenses

Since the built-in leaf shutter in the C lens is not used when the photographer elects to work with the 2000FC's focal plane shutter, the shutter speed ring on the C lens must be set at B (green). The synchronization and self-timer selector on the C lenses must be set at X.

NOTE: If the synchronization selector is set at the M instead of the X setting, the catch (I) must be pressed forward before the selector will shift to X. (See Fig. 38.) Be careful not to dislodge the B (green) setting on the lens when setting an f/stop. The camera's shutter speed ring (25) can then be set at an appropriate speed (B, 1-1/2000 s).

Leaf shutter option

When the leaf shutter in a C lens is used in combination with the 2000FC, the camera's shutter speed ring (25) must be set at C (red) on the speed scale and locked at L with the lever (38). With this arrangement, the 2000FC's focal plane shutter serves as a blind, and the leaf shutter in the C lens handles the exposure and flash synchronization.

The shutter speed and f/stop are set on the C lens. The shutter speed ring (B) and diaphragm ring (C) are normally cross-coupled. However, when the cross-coupling release (D) is pressed back, the diaphragm is disengaged, permitting independent setting of aperture and shutter speed values opposite the index (A).

Fig. 35

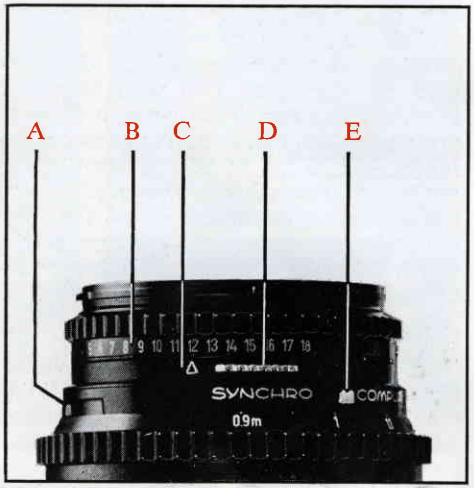


Fig. 36

Depth-of-field is previewed with the catch (E). Pressing on the top of the catch stops the lens down to the preselected f/stop. The diaphragm can be reopened to the maximum aperture by turning the diaphragm ring to the value denoting the maximum aperture.

NOTE: At shutter speeds of 1/4 s or longer, the exposure release button must be kept depressed until the leaf shutter has had time to open and close.

Self-timer

To operate the self-timer press the detent release (I, Fig. 38) forward and cock the self-timer by moving the lever (K) to the V setting. Pressure on the camera release button starts a mechanism which triggers the shutter after 8—10 s.

NOTE: The release button must be kept depressed (most conveniently with a locking cable release) until the shutter has been triggered.

If a locking cable release is used to make the exposure, the locking mechanism must be *disengaged* before the camera is recocked and the film advanced.

FLASH PHOTOGRAPHY

The Hasselblad 2000FC can be used with electronic or expendable flash with F or C lenses.

F lenses

The Hasselblad 2000FC has X synchronization. Flash units are triggered via the camera's recessed synchronization terminal (32, Fig. 37). The contact on the flash unit's synch cord is pressed with a twisting motion into the flash terminal (32) on the camera's left side. This flash terminal features a friction device which keeps the cord contact firmly in place.

The Hasselblad 2000FC synchronizes with electronic flash at shutter speeds of 1/90 s or longer (1/60 s, 1/30 s etc.). 1/90 s is designated with a red 'x' engraved on the shutter speed ring between 60 and 125. Flash operation at shutter speeds faster than 1/90 s (e.g. 1/125 s) is automatically blocked. Expendable flash, such as flash cubes, can also be used at shutter speeds of 1/30 s or longer (1/15 s, 1/8 s etc.)

C lenses (Fig. 38)

With a C lens on your 2000FC you can elect to use the synchronization available via the lens or via the camera. When you work with the *leaf shutter* in the C lens, you have access to electronic flash synchronization at all shutter speeds (1-1/500 s). The flash unit's synch cord contact is attached to the flash terminal (F) on the lens. The *leaf shutter's* X synchronization setting (H) is to be used for electronic flash (at all shutter speeds) and even for expendable flash (at shutter speeds up to 1/30 s). When the camera's shutter speed ring (25) is set at C, the synch cord contact must *always* be connected to the synchronization terminal (F) on the C lens.

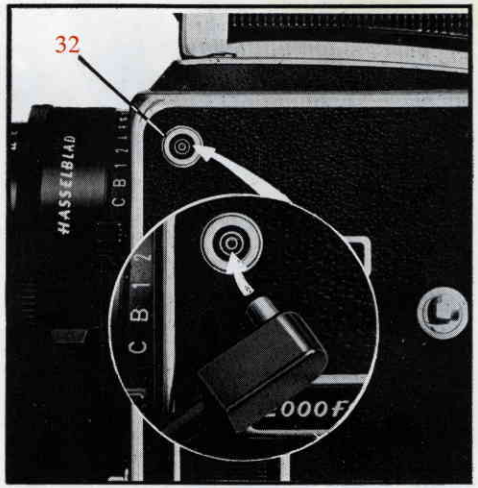
The *leaf shutter's* M synchronization setting (G) is *only for use with expendable flash* (e.g. flash bulbs or cubes) at shutter speeds *faster* than 1/30s (1/60s—1/500s). The M synchronization setting delays shutter opening to take full advantage of the light output from expendable flash.

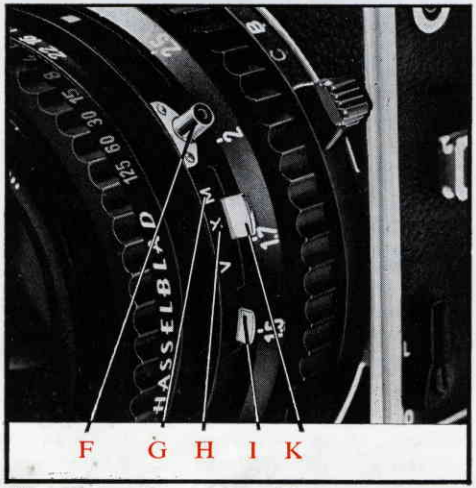
General rule:

Use the *camera's* flash terminal (32) for flash with the *focal plane shutter.*

Use the flash terminal on the *lens* for flash with the *leaf shutter*.

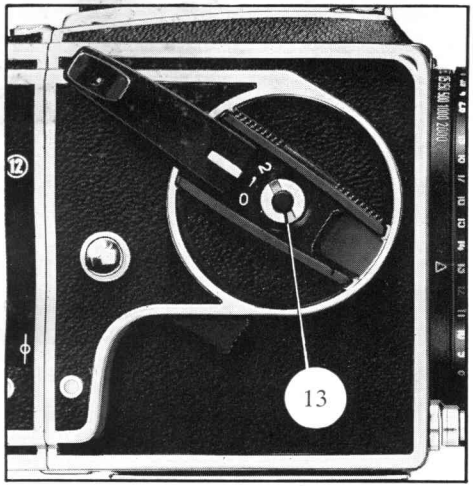
Fig. 37





F:

Fig. 39



MIRROR PROGRAMS

The Hasselblad 2000FC has three different programs for mirror action. Programs are selected using the mirror program disc (13, Fig. 39).

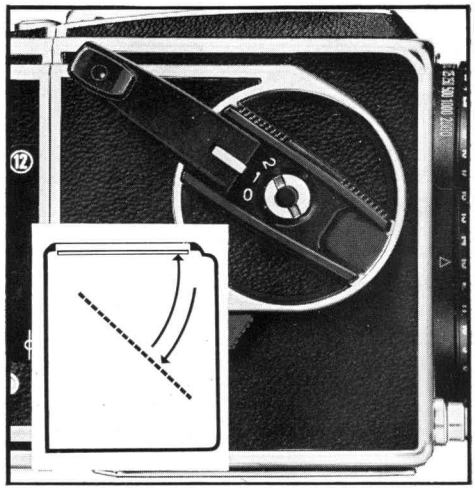
Setting 2 Instant return mirror (viewfinder image restored instantly) after camera release *(with F lenses only).*

Setting 1 The mirror remains in the raised position following camera release. It flips down, thereby restoring the viewfinder image, when the film is advanced and the shutter cocked *(with both F and C lenses).*

Setting 0 Mirror locked in the raised position. The mirror flips down and the viewfinder image is restored only when another program is selected and the camera is cocked *(with both F and C lenses).*

Use a coin to rotate the mirror program disc (13) nested within the unfolded crank (2) to the desired program setting. When the disc has been correctly positioned, its slot pointing towards the chosen mirror setting, the red detent button in the middle of the disc (13) will pop up again to the same level as the disc.

Fig. 40



Mirror settings

Setting 2—Instant return mirror (Fig. 40) With mirror program 2, the mirror is raised when the camera is triggered and flips down again after concluded exposure. The viewfinder image is therefore instantly restored (with F lenses) and the diaphragm reopens to its maximum aperture after the exposure sequence.

(When C lenses are used with the 2000FC, the viewfinder image is not restored until the film is advanced and the shutter cocked following an exposure.)

Changes from another mirror program should be made with the camera in a triggered state. This will also cause the mirror to descend.

Fig. 41

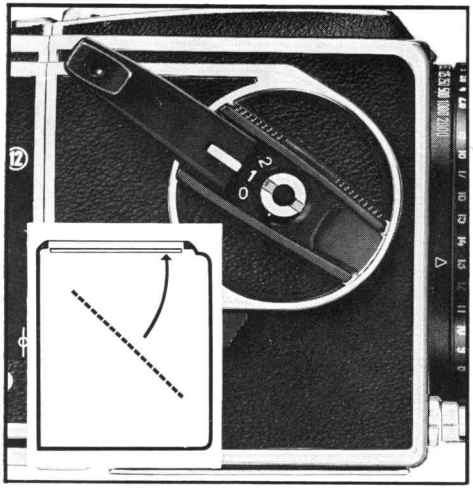
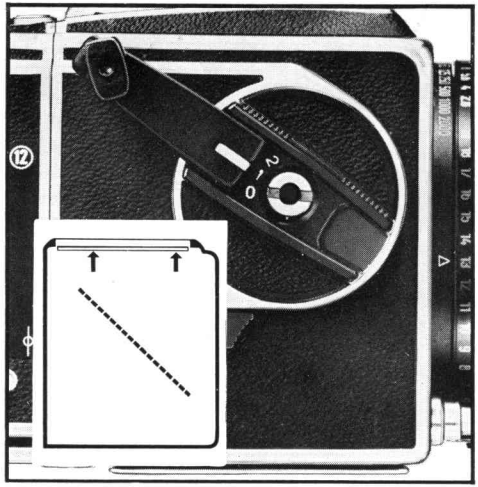


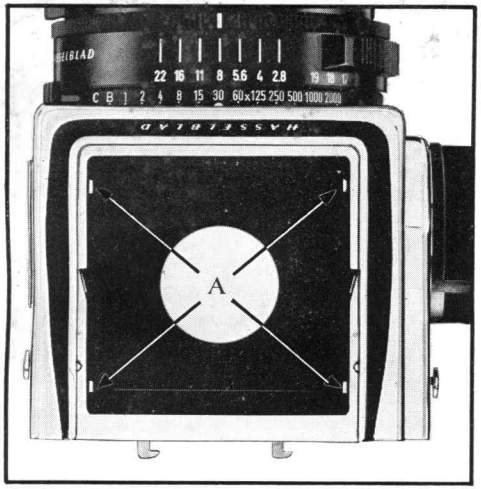
Fig. 42



Setting 1—Non-return mirror (Fig. 41)
With mirror program 1, the mirror remains in the raised position following camera release. It flips down, thereby restoring the viewfinder image, when the film is advanced and the shutter cocked.
Setting 1 will appeal to photographers who prefer the viewfinder blackout you get with a non-return mirror as an indication that the camera has not been advanced.
You *always* get this blackout effect, irrespective of the shutter used or the program selected, when C lenses are used with the 2000FC.
Changes in the mirror program should be made with the camera in a triggered state. The mirror will then not descend after an exposure.

Setting 0—Mirror locked in raised position (Fig. 42)
With mirror program 0, the mirror is locked in the raised position. Changes in the mirror program should be made with the camera in the cocked state.
Raise the mirror by pressing the prerelease latch (11) and lock it in the raised position by turning the mirror program disc (13) to the 0 setting.
Mirror program 0 *must* be selected when any special-purpose lens is used whose barrel projects into the camera body and obstructs mirror movement. The mirror must be raised before such lenses are mounted so as to prevent damage to the camera. Setting 0 must also be used when the camera is operated via an electric triggering device connected to the battery compartment (39). In the case of electric triggering, the lens diaphragm must be locked at the preselected f/stop using the depth-of-field preview catch (34) before exposure can take place.
An external viewfinder, such as the sports viewfinder, must be used since no viewfinder image will be shown.

Fig. 43



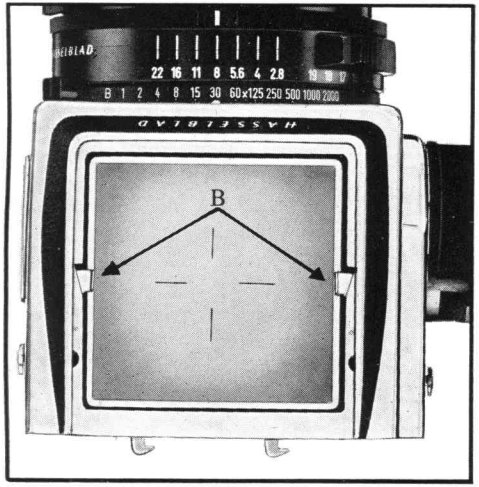


Fig. 44

CAMERA BODY

Changing the focusing screen

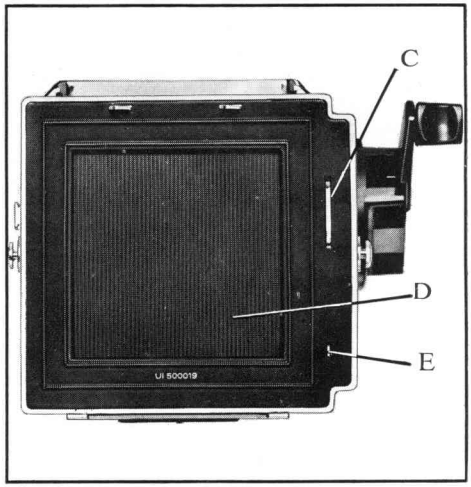
(Fig. 43 and 44)

The camera's standard focusing screen is interchangeable with other Hasselblad focusing screens. Screens are changed as follows:

First remove the magazine and viewfinder. Slide the screen catches (B) to the side. Cup your hand over the focusing screen and turn the camera upside down. The focusing screen should then drop into your hand. If it fails to drop out, remove the lens and gently tap on the underside of the screen from inside the camera body. The mirror must be in the down position during this operation.

Insert a new focusing screen, the red marking facing down. Make sure the base of the screen rests on all four support pins. When a finder is slid into place over the focusing screen, the catches (B) automatically lock the screen in place.

Fig. 45



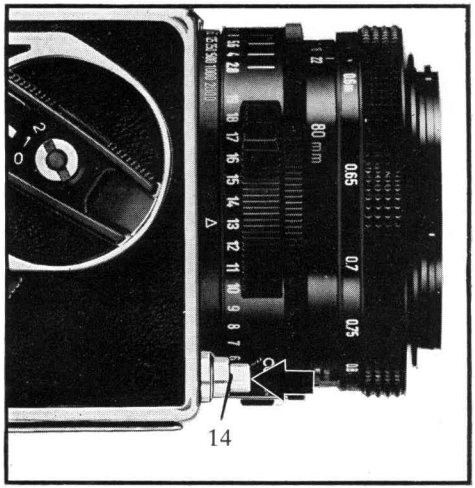


Fig. 46

Camera body rear plate (Fig. 45)

The curtains of the focal plane shutter (D) can be seen through the opening in the camera body rear plate. These curtains are made of tough but extremely thin titanium (13/1000 mm) and must be protected against any damage. So always use a protective cover when there is no magazine on the camera.

NOTE: The Magazine 80 for Polaroid film must not be used with the Hasselblad 2000FC since its projecting glass plate will destroy the shutter curtains.

Gear (C) actuates film advance in the magazine. The pin (E) actuates the film advance indicator (8) and the double exposure prevention detent. Make sure (C) and (E) are kept free from dust and dirt which could hamper their important functions.

Camera release (Fig. 46)

Pressing the release button (14) triggers a sequence of operations. While part of this sequence is predetermined by the photographer (selection of shutter speed, diaphragm and mirror action program), part of it is governed by internal camera mechanisms (stopping down to a preselected aperture, film indication changes and reopening of the diaphragm to maximum aperture after exposure).
A cable release should be used to trigger the camera when long shutter speeds are employed. The camera should then be mounted on a sturdy tripod.

NOTE: When the leaf shutters of C lenses are used at long shutter speeds (1/4 s or longer), the camera's release button must be kept depressed until the exposure has terminated *fully*. If the release button is released too soon, the focal plane shutter will interrupt the exposure before the leaf shutter has finished working.

Pre-release operation (Fig. 47)

Pressing the pre-release latch (11) to the rear pre-releases a number of camera operations which make up the normal release sequence.
Pre-release leaves only one such operation, actual shutter release, to be carried out when the release button is pressed. The shutter producing the exposure is the focal plane shutter with F lenses and the leaf shutter when C lenses are used.
The pre-release of certain camera functions reduces camera reaction time to a bare minimum. Blurring due to camera motion is also reduced to a minimum.

Fig. 47

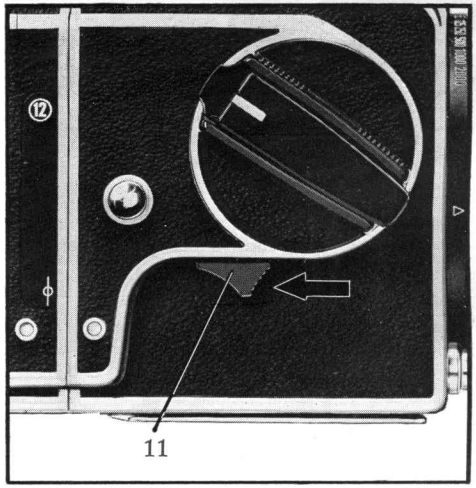
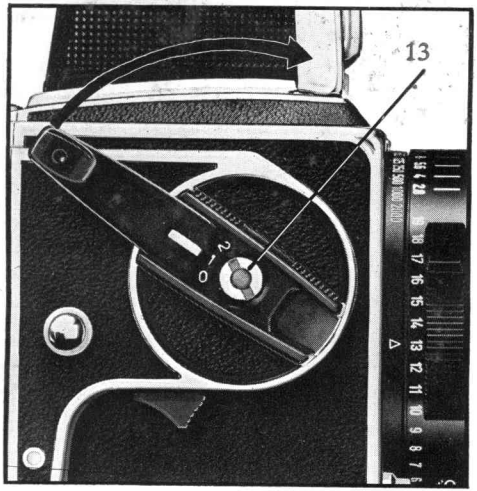


Fig. 48



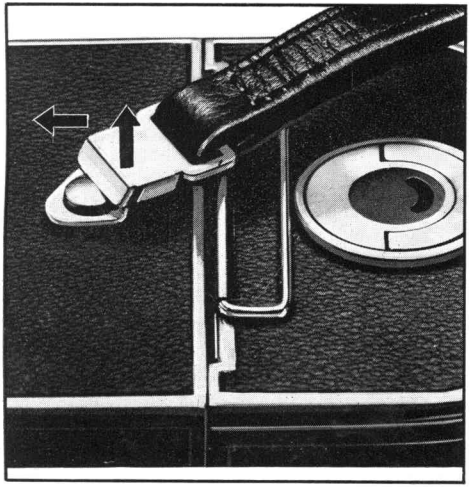


Fig. 49

Resetting a pre-released camera

A pre-released camera can be reset for conventional operation without an exposure by depressing the slotted disc (13) in the center of the crank (2) and keeping it depressed as you start to wind the crank. Then take your finger away and continue winding the crank a full turn. (Also see 'Double exposure'.)

Double exposure (Fig. 48)

Each film magazine has a built-in double-exposure detent. This detent is easily disengaged with the Hasselblad 2000FC when intentional multiple exposures are desired on the same frame.

The procedure is as follows:

Make your first exposure in the usual manner. Then depress the slotted mirror program disc (13) with your finger. Keep it depressed as you start to wind the crank (2). Then take your finger away and carry on winding the crank a full turn. This procedure recocks the camera without advancing the film. So a new exposure can then be made on the exposed frame.

Strap lugs (Fig. 49)

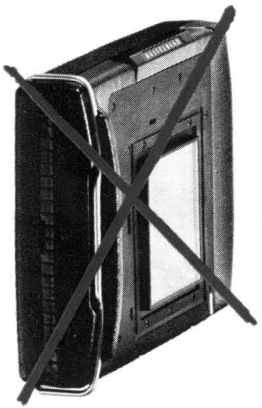
Strap attachment

Hook the strap latch onto the camera strap lugs (10, 42). Press down on the front of the latch while pulling back on the strap. The strap latch should then click into place on the strap lug.

Strap removal

Lift the latch plate while simultaneously sliding the latch forward. The latch will then slip off the strap lug.

Fig. 50



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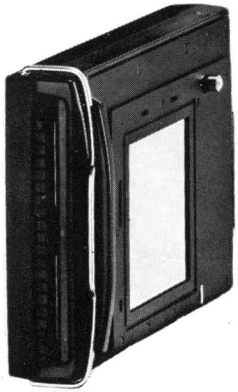

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ACCESSORIES

The Hasselblad 2000FC is part of the extensive Hasselblad system. It has been designed so that most of the accessories for the Hasselblad 500C/M also fit the Hasselblad 2000FC.

For technical reasons, there are a few exceptions, however. **The Magazine 80 for Polaroid film (Fig. 50) must not be used on the Hasselblad 2000FC.** Though it is physically possible to attach this magazine to the camera, the magazine's projecting glass plate would then impinge upon and destroy the shutter curtains. The magazine 100 for Polaroid film has a recessed glass plate and can therefore be used with the Hasselblad 2000FC.

The 10 mm and 21 mm extension tubes will only fit the Hasselblad 500C/M, 500C, 500EL/M and 500EL. The projecting shutter speed ring on the 2000FC prevents attachment of these tubes to the 2000FC camera's bayonet mount. However, the 55 mm extension tube will fit the 2000FC. Two extension tubes have been especially designed for the Hasselblad 2000FC. They are 16 and 32 mm long respectively (Fig. 51).

A number of new accessories for the 2000FC will be introduced to take advantage of the camera's electronics. These accessories will be designed for connection to the camera via the camera's battery compartment.

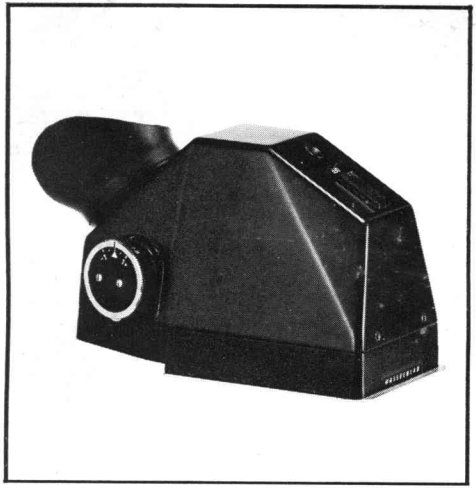
Lens accessories

The design of lenses made for the Hasselblad 2000FC differs from the design of other lenses in the Hasselblad system. So a special program of accessories, including filters, lens shades etc., will be supplied for these lenses.

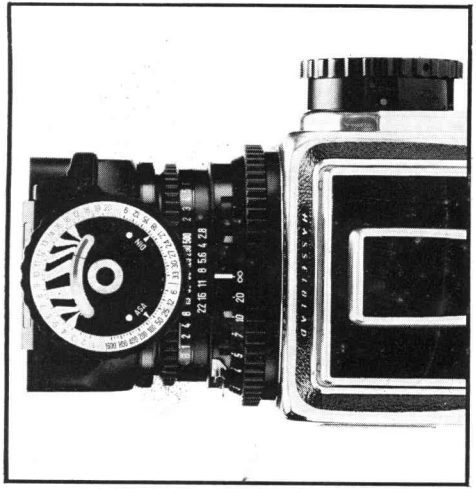
However, most of the accessories which fit the 80mm Planar f/2.8 for the 2000FC will also fit the 80mm Planar with a between-the-lens shutter.

Note: You can *not* use a quick-focusing handle on C lenses in focal lengths of 80mm or less in combination with the Hasselblad 2000FC. This is because of the limited space available between the camera's shutter speed ring and the distance scale on C lenses.

Fig. 51



The Hasselblad meter prism finder is an excellent aid in determining correct exposure. The bright, unreversed viewfinder image is enlarged 3×.The finder's built-in CdS meter measures the light passing through the lens and falling on the focusing screen. Measurement results are displayed on an exposure value scale at the base of the viewfinder field. The displayed value is then transferred to the lens.
The meter is **center-weighted** so that 50% of its sensitivity is located in a circle 1 in in diameter at the middle of the focusing screen. Remaining meter sensitivity is evenly distributed over the surrounding field. The meter can be set for film speeds from 25 to 1600 ASA.
The Hasselblad meter prism finder fits the Hasselblad 500C, 500C/M, 500EL, 500EL/M as well as the Hasselblad 2000FC.



The Hasselblad system also features an exposure meter with a selenium cell. This meter works without batteries and can be used for close-up measuremeent of the light falling onto or reflected from your subject. The meter can also double as a film advance/shutter cocking knob on the Hasselblad 500C and 500C/M. With the aid of a special attachment, the exposure meter can also be mounted on the lens shade.

Service and maintenance

Cameras and lenses put to heavy-duty professional use should be given regular service at an authorized Hasselblad service center.

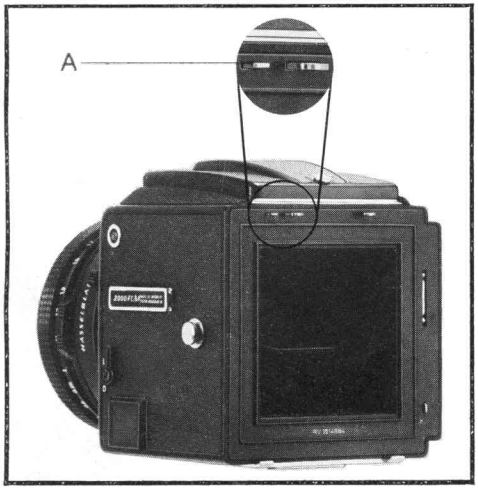
We recommend a check-up every 6 months or after about every 5000 exposures. Lubricants can dry out in cameras and lenses put aside for any length of time. The high-precision mechanism could then malfunction. The camera should periodically be cocked and released several times at every shutter speed. This is especially important when operating the camera for the first time after a long period of disuse. First give it a run through without magazine attached. Inspect the camera body and lens to make sure everything works at all shutter speeds.

WARRANTY

The Hasselblad camera is made in Göteborg, Sweden. It is a product of the highest quality and is therefore guaranteed to be free from defective material and workmanship for a period of twelve months from date of purchase. **As soon as you take delivery of your camera you should mail the enclosed registration card (name and address in block letters) to the factory or distributor in your country.** The warranty will be sent to you as soon as your registration card has been received. We will also put you on our mailing list and send you our printed matter. The warranty does not cover any damage caused to the camera as a result of abnormal use. Transportation costs to and from the nearest Hasselblad authorized service center will be defrayed by the camera owner.

VICTOR HASSELBLAD AKTIEBOLAG
Box 220, S-401 23 Göteborg, Sweden

HASSELBLAD 2000FC/M



The Hasselblad 2000FC/M has been fitted with a mechanism (Fig.) to protect the focal plane shutter curtains when no magazine is attached to the camera. When lever A is at the right setting, a tensioned 2000FC/M will automatically retract the first shutter curtain when the film magazine is removed. With the magazine off the camera, no shutter curtain will be visible in the opening at the back of the camera.

When the lever is moved to the left, the retraction mechanism is dicsconnected and the camera operates like a 2000FC. The information below *only* pertains to the 2000FC/M *with the lever A* in the *right* setting.

Detaching the film magazine

1. Cock the camera or make sure it is already cocked.
2. Remove the synchronization cord of any flash unit attached to the camera body's synchronization terminal (see the 2000FC Instruction Manual, p. 17). Otherwise, the flash unit will be triggered when the curtain is retracted.
3. Remove the magazine. The camera's first shutter curtain will automatically retract to the side, leaving the film plane opening unobstructed.

Attaching the film magazine

1. Make sure the film advance indicator is white (if it is red, see note 2).
2. Attach the magazine (the magazine slide inserted) in the usual way. Slide the magazine release catch (see the 2000FC Instruction Manual, pos. 1, p. 2) to the left for secure locking.
3. With your fingertip press the slotted mirror program disc in the film advance crank. Keep the disc depressed and start rotating the crank. Then release the disc and make a complete revolution with the crank (see the 2000FC Instruction Manual, p. 22, Fig. 48).
   The previously retracted curtain will then be restored without any film advance.
4. Remove the magazine slide from the magazine, the camera is now ready for a new exposure.

NOTE! Always follow this procedure. Any other procedure could lead to the fogging of exposed or unexposed film in the magazine and disruption of camera operation.

Note 1:

If the film magazine is removed from a triggered camera, the shutter curtain will remain in place across the film plane opening. In order to reset the curtain protection mechanism, recock the camera without an attached magazine. Reattach and then detach the magazine.

Note 2:

If the magazine's film advance indicator is red, this means that there is an exposed film frame under the magazine slide. Procede as follows to avoid the loss of that frame:
Trigger the camera with the magazine removed (the shutter cocking indicator will display red).
Reattach the magazine to the camera.
Cock the camera in the usual way.

Elucidation of Instruction Manual 2000FC, page 19, fig. 42.

Mirror program 0 Hsselblad 2000FC and 2000

This mirror mode r use when the camera is tr the battery compartment. If e the mirror prior to era r ase using the shutter releas the mirror must be raised by the pre-release catch. See the 20 Instruction Manual (Fig. 47, p. 21).

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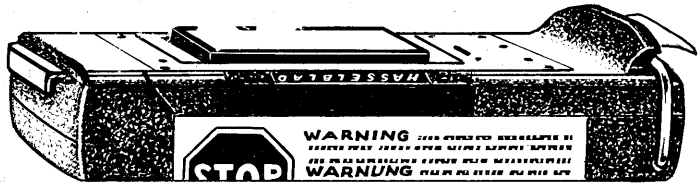

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Warning! Never use the magazine 80 for Polaroid film on the Hasselblad 2000FC.

The Hasselblad magazine for Polaroid film is *only* designed for the Hasselblad 500C, 500C/M, 500EL and 500EL/M.

The magazine 80 for Polaroid film has a projecting glass plate which will damage the focal plane curtain on the Hasselblad 2000FC if the magazine and this camera are used together. In order to prevent this happening, attach the above decal to the magazine.

Warnung! Das Magazin 80 für Polaroid Film niemals mit der Hasselblad 2000FC benutzen!

Das Magazin 80 für Polaroid Land Film ist ausschließlich für die Kameramodelle Hasselblad 500C/M, 500C, 500EL/M und 500EL vorgesehen.

Das Magazin 80 für Polaroid Land Film ist mit einer herausragenden Glasplatte versehen, die Verschlußvorhänge des Schlitzverschlusses der 2000FC zerstören würde, wenn diese beiden Produkte zusammen benutzt würden. Um Versehen zu vermeiden, muß deshalb das vorstehende Abziehbild auf das Magazin aufgeklebt werden.

Varning! Använd inte Magasin 80 för Polaroid film på Hasselblad 2000FC!

Hasselblad Polaroidmagasin 80 är avsett endast för Hasselblad 500C, 500C/M, 500EL och 500EL/M.

Magasin 80 för Polaroid film är försett med en utskjutande glasplatta som förstör ridån på Hasselblad 2000FC, om de två produkterna används tillsammans. För att förhindra att detta sker, bör ovanstående dekal placeras på magasinet.

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