HASSELBLAD

Instruction manual



2000FC/M

HASSELBLAD 2000FC/M

The Hasselblad 2000FC/M is a single-lens reflex camera featuring lens, magazine, viewfinder, and focusing screen interchangeability. Its unique design offers you a choice of shutter options (focal plane or leaf), depending on your photographic requirements. The '2000' in the designation '2000FC/M' stands for the fastest shutter speed (1/2000 s), the F stands for focal plane shutter and the C for the (Synchro)Compur leaf shutter. The M stands for modified. The 2000FC/M differs from the 2000FC by having a built-in safeguard which automatically retracts the exposed shutter curtain from the camera's focal plane opening. So you can work with the camera's own focal plane shutter or with the leaf shutter built into lenses made since 1957 for the Hasselblad 500C, 500C/M, 500EL, 500EL/M, 2000FC, and 2000FC/M.

A series of lenses with a leaf shutter will be designated CF lenses in the Instruction Manual. Like the C lenses, they can be used with the optic's own leaf shutter or with the 2000FC/M's focal plane shutter. The leaf shutter is disconnected when a CF lens is used with the focal plane shutter. This feature makes it possible to obtain instant mirror return even in mirror mode 2. The leaf shutter offers the advantage of flash synchronization at all shutter speeds down to 1/500 s.

Lenses especially designed for the Hasselblad 2000FC and 2000FC/M will be referred to as F lenses in this Instruction Manual. F lenses can only be used in combination with the camera's focal plane shutter.

The Hasselblad 2000FC/M has an electronically timed focal plane shutter with X synchronization at 1/90 s or slower speeds. Electronic timing results in exceptionally accurate shutter operation.

A choice of mirror action modes is another feature of the 2000FC/M.

An additional feature of the Hasselblad 2000FC and 2000FC/M is a greatly simplified procedure for making intentional double exposures.

This Instruction Manual will explain the camera's many advanced features.

It will only take you a few minutes to study this Manual. After each section, familiarize yourself with the various operations by carrying them out with your camera, step by step. The few minutes spent this way are sure to pay dividends in the future and will enable you to make the very most of your new Hasselblad 2000FC/M.

Important

Read this before you operate your camera!

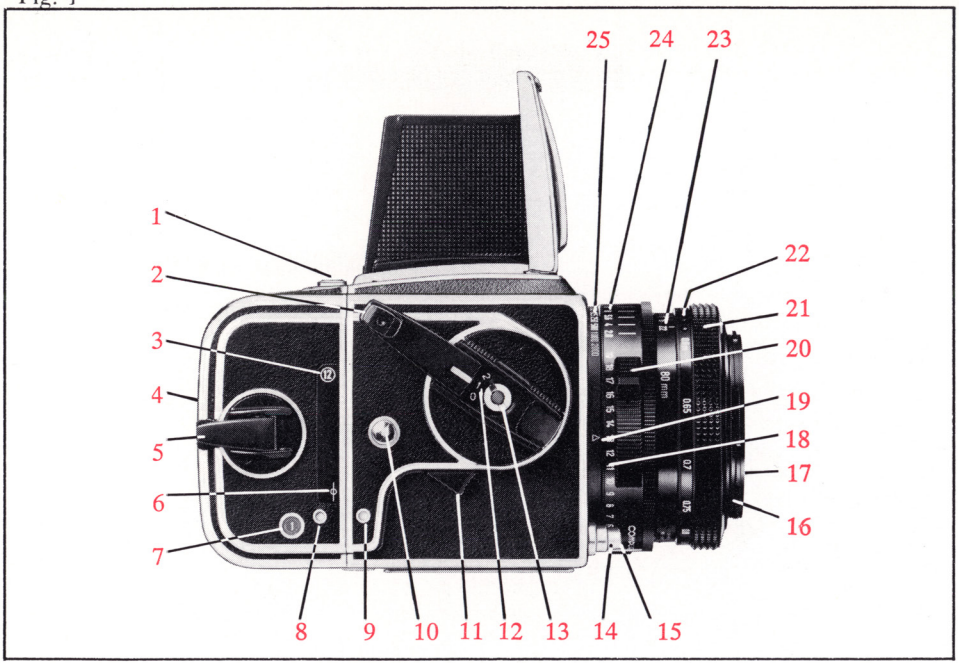
The procedure described below must be followed in the sequence indicated before the 2000FC/M is operated for the first time.
The Hasselblad 2000FC/M is shipped from the factory in the triggered (i.e. untensioned) state, the mirror program disc in mode 1, i.e. the mirror in the raised position, and with no battery in the battery compartment.
To cock the camera and restore the mirror to the viewing position, use a fingertip to press the button in the center of the slotted collar uncovered when the film advance crank is unfolded. Keep the button depressed and begin to wind the crank. Then release the button and continue crank rotation one full turn. This will restore the first focal plane shutter curtain to the opening at the back of the camera body. The curtain is easily damaged if touched in this exposed position. So always perform the cocking operation with a magazine attached to the camera body. Then insert the battery (p.10, Fig. 13). The camera is now ready for shooting.

HASSELBLAD 2000FC/M

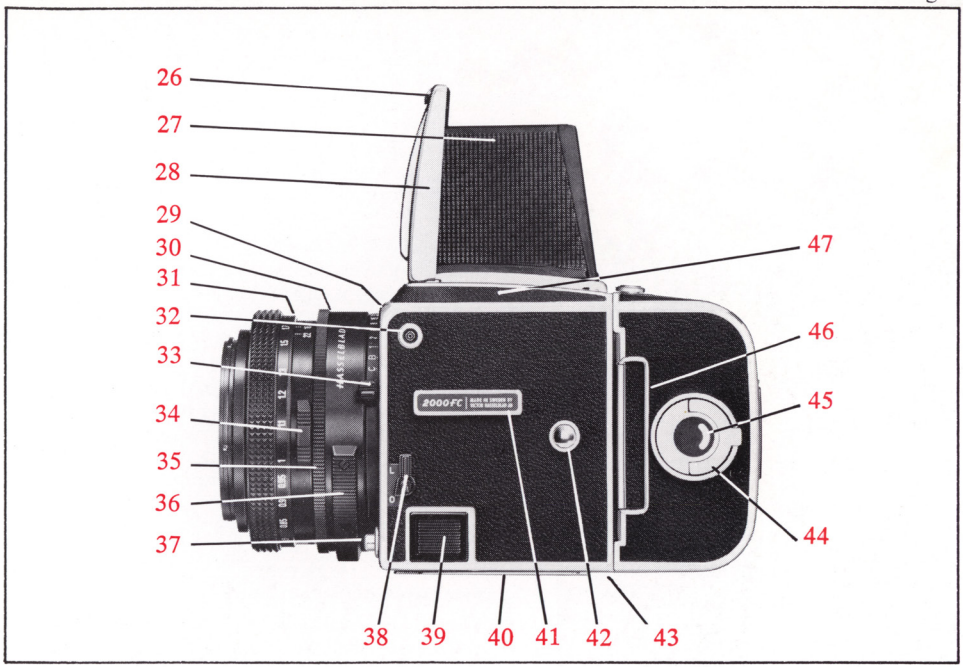
TYPE OF LENS	F LENS	CF LENS/C LENS	
Shutter option	Focal plane	Focal plane	Leaf shutter
Required setting	—	**CF:** Leaf shutter set at F **C:** Leaf shutter at B. Leaf shutter synch contact set at X.	Lock camera's shutter speed ring at C
Available setting	1–1/2000 s and B on camera's shutter speed ring	1–1/2000 s and B on camera's shutter speed ring	1–1/500 s and B on lens shutter speed ring
Fastest flash	1/90 s	1/90 s. Set on camera. Connect flash unit to camera.	1/500 s. Set on lens. Connect flash to lens.
Reaction time with normal release Reaction time after pre-release	Approx. 1/15 s Approx. 1/50 s	Approx. 1/15 s Approx. 1/50 s	Approx. 1/20 s Approx. 1/100 s
Available mirror mode options	1-2	CF: 1-2 C: 1-2*	1-2*

* Viewfinder image not restored.

Fig. 1



1. Magazine release catch
2. Folding crank for film advance and shutter cocking
3. Magazine designation
4. Film reminder
5. Folding film winding crank
6. Film plane marking
7. Frame counter window
8. Film advance indicator window
9. Shutter status indicator window
10. Strap lug
11. Pre-release tab
12. Mirror mode settings
13. Mirror mode selector
14. Shutter release
15. Cable release socket
16. External mount for accessories
17. Internal mount for accessories
18. Exposure value scale
19. Exposure value index
20. Button for cross-coupling of shutter speed and aperture ring
21. Focusing ring
22. Distance scale
23. Depth-of-field scale
24. Aperture ring and aperture scale
25. Shutter speed ring and shutter speed scale



26. Catch for focusing hood and fine-focus magnifier
27. Fine-focus magnifier
28. Focusing hood
29. Index for shutter speed scale
30. Index for aperture scale
31. Index for distance scale
32. PC outlet for focal plane shutter
33. Shutter speed selector tab
34. Depth-of-field preview tab
35. Fixed grip ring
36. Aperture selection tab
37. Lens lock release button
38. Lever for locking shutter speed ring
39. Battery compartment with battery cassette
40. Tripod plate and 3/8″ tripod socket
41. Accessory rail
42. Strap lug
43. Magazine support catches
44. Roll holder key
45. Film consumption indicator
46. Magazine slide
47. Focusing screen

Fig. 4

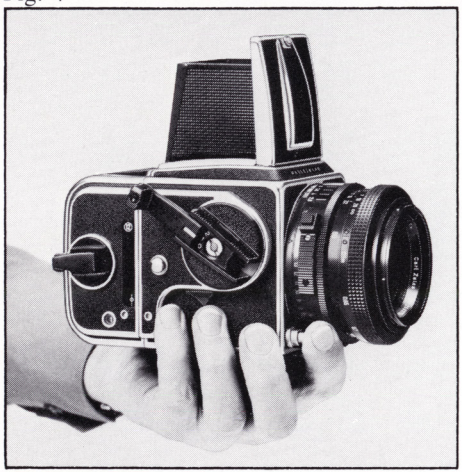


Fig. 5

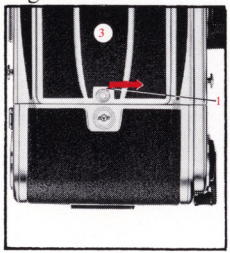
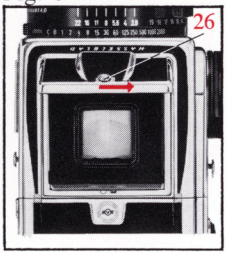


Fig. 6



Left-hand grip

Fig. 4 shows the best way to hold a Hasselblad 2000FC/M when taking pictures. Cradle the camera in your left hand with your left index finder resting lightly on the shutter release. This leaves your right hand free for other operations, such as film winding, shutter cocking, focusing, etc. Make it a habit to use the left-hand grip when holding your camera.

Focusing hood (Fig. 5)

The focusing hood (28) opens automatically when the catch (26) is slid to the right.

Changing the focusing hood and other viewfinders:

1. Remove the film magazine.
2. Slide the finder back out of the grooves.
3. Slide another finder forward into the grooves.
4. Reattach the film magazine.
5. See p. 2 to reset the shutter if the shutter curtain was retracted when the magazine was removed.

Fine-focus magnifier (Fig. 6)

The built-in fine-focus magnifier is used for critical focusing. It pops up when the catch (26) on an open focusing hood is slid to the right.

Closing the focusing hood

To close the hood, first flip the magnifier down until it clicks into place. Then fold the hood walls down over the focusing screen, first the side walls, followed by the rear walls, and finally by the front which serves as a lid. st

LENSES

Introduction

The Hasselblad 2000FC/M accepts all the lenses for the Hasselblad 500C, 500C/M, 500EL, and 500EL/M (i.e. C lenses, the C standing for "central" (= leaf shutter version). The 2000FC/M also has its own special lens series i.e. F (focal plane shutter) lenses.

F lenses (Fig. 7)

In this manual, **lenses especially designed for the Hasselblad 2000FC are referred to as F lenses. (This designation will not be found on the lenses.) The Hasselblad 500C, 500C/M, 500EL, and 500EL/M will not accept** F lenses.

F lenses have an automatic disphragm which closes to the preset aperture before the shutter opens and reopens to the maximum aperture after the shutter has closed. The depth-of-field preview tab 34 can be used to preview depth of field at the preselected f/stop.

C lenses (Fig. 8)

Lenses made for the Hasselblad 500C, 500C/M, 500EL, and 500EL/M will be referred to as C lenses in this instruction manual. (However, this designation will not be found on the lenses themselves.) Black-finish C lenses will be recognized by the *Synchro Compur* designation on the ring between the focusing and aperture rings (Fig. 8). This designation is found behind the focusing ring on chrome-finish lenses. C lenses can also be used on the 2000FC/M. C lenses have an automatic diaphragm which automatically stops down to the working f/stop when the camera is triggered. They also have a built-in Synchro Compur shutter fully synchronized at all shutter speeds.
The leaf shutters provide a shutter speed range of 1–1/500 s and B.

Fig. 7



F

Fig. 8



C

Fig. 9



CF

The shutter is recocked and the diaphragm reopens to its maximum aperture when the film is advanced.

CF lenses (Fig. 9)

The design of CF lenses is similar to that of the F lenses.

Paragraphs printed in *bold face* indicate the use of C lenses.

Fig. 10

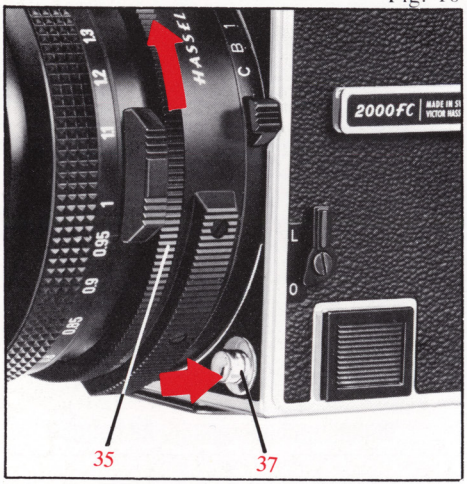




Fig. 11

CHANGING LENSES

F lenses (Fig. 10)

Lens removal

Make sure the shutter is cocked (white signal) in the shutter status indicator window (9) and that the camera is not in the pre-release mode. (Also see 'Pre-release' on p. 26). Hold the lens by the fixed grip ring (35) *but never press the button for cross-coupling of the shutter speed and aperture rings during lens removal since this could destroy the button mechanism.* Press the lens lock release button (37) with your left hand. Then remove the lens by turning it *counter-clockwise* one fifth of a revolution.

***Lens attachment** (Fig. 11)*

Make sure the camera is tensioned and not in the pre-release mode (see p. 26). The slot (A) on the head of the cocking shaft should point to the adjacent red index dot (B). (Also see 'Diaphragm cocking' for details on cocking a released, detached lens.) Insert the lens carefully into the camera lens mount. Align the red triangle at the rear of the lens with the red dot (O) on the camera lens mount (Fig. 11).
***Never press the button for cross-coupling of shutter speed and aperture rings while changing a lens since this could destroy the button mechanism.** Then rotate the lens **clockwise** one fifth of a revolution until the lens locks in place with an audible click.*

C and CF lenses

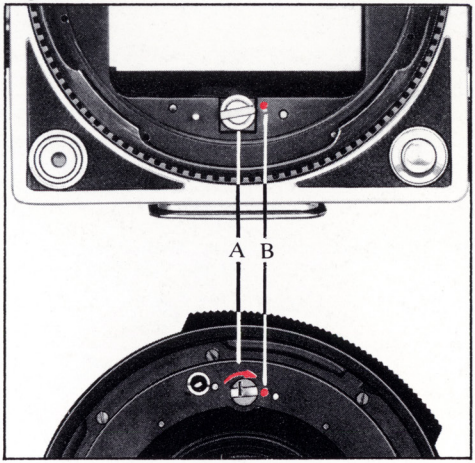
C and CF lenses are attached and detached in the same way as F lenses.

Diaphragm cocking (Fig. 12)

F lenses

When an F lens is attached to the camera the diaphragm mechanism in the lens is automatically cocked each time the film is advanced with the film advance crank.
Make sure the diaphragm is cocked before you attach a lens to the camera. In the cocked mode, the slot (A) on the head of the cocking shaft points to the red dot (B).
If the lens has been off the camera and the diaphragm inadvertantly released, the diaphragm must be recocked before the lens can be reattached to the camera.
The diaphragm is cocked by rotating the cocking shaft *clockwise,* using e.g. a coin in the shaft head slot (A), slightly less than one full turn until the shaft stops in the cocked position. (Never use a screwdriver or any other sharp object which could slip and damage the rear lens element.) **NOTE:** The same cocking procedure is also employed when extension tubes are used.

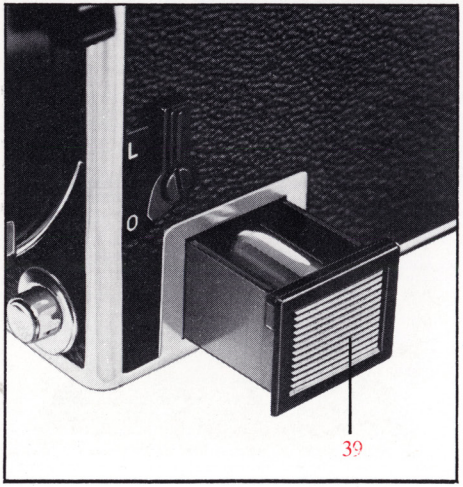
Fig. 12



C and CF lenses

The shutter and diaphragm on C and CF lenses are cocked in the same way as those on F lenses.

Fig. 13



CAMERA BATTERY

The electronics responsible for focal plane shutter timing are powered by a 6 V battery (e.g. a PX 28).
Batteries with a nominal voltage less than 6 V must not be used.

Loading a battery

- Pull out the battery cassette (39).
- Insert the battery with the (+) terminal facing the (+) marking in the cassette.
- To avoid inserting a battery into a mechanically released camera, press the slotted mirror mode selector (13) and wind the film advance crank (2) a full turn. (The life of a battery inserted into a mechanically triggered camera will be drastically reduced.)
- Reinsert the cassette containing the battery into the camera.

A fresh battery of the above type should be sufficient for a least 20,000 exposures. Check regularly to ensure that the battery is not leaking. Change the battery at least once a year to safeguard against the leakage which sometimes occurs after protracted storage.

FILM MAGAZINES

Hasselblad 2000FC/M accepts all the film magazines in the Hasselblad system—*with the exception of the magazine 80 for Polaroid film. The projecting plate on this magazine will destroy the camera's shutter curtains (Fig. 18).*

Changing magazines

The Hasselblad 2000FC/M has a safeguard mechanism (Fig. 14) to protect the focal plane shutter when no magazine is attached to the camera.
When the lever A is at the setting to the right, the first shutter curtain in a cocked 2000FC/M will be automatically retracted as soon as the magazine is removed from the camera. So no shutter curtain will be visible in the focal plane opening of the camera body when a magazine has been removed.
Switching the lever A to the setting on the left disconnects this shutter safeguard and the camera works as the 2000FC.
The following description only applies to the 2000FC/M with the lever A at the right setting.

Detaching a magazine from the camera

1. Tension the camera or make sure it is already tensioned. Make sure the indicator windows (8 and 9) are displaying white signals.
2. If a flash unit is connected to the camera, remove the flash unit's synch cord from the PC flash terminal on the lens. Otherwise the flash will be triggered when the shutter curtain is retracted.
3. Insert the magazine slide (46). Slide the magazine release catch to the right and tip the upper part of the magazine to the rear. The camera's first shutter curtain will then be instantly and automatically retracted and leave the focal plane open. Lift the magazine off the lower support catches (43). The magazine slide will protect the film from fogging if the magazine is then removed from the camera.

Fig. 14

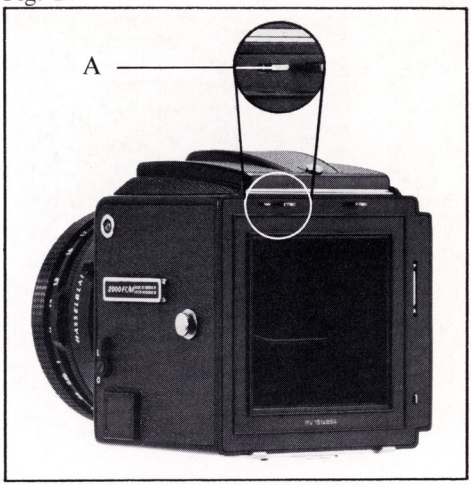
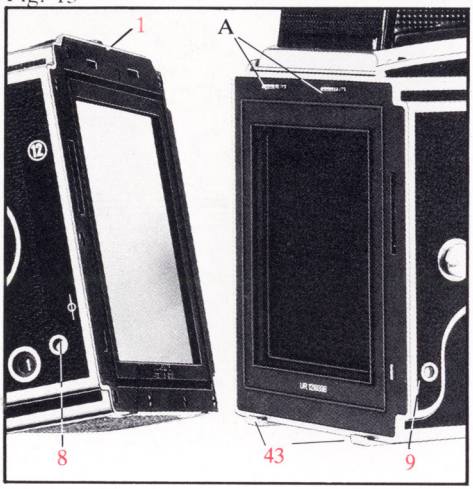


Fig. 15



Attaching a magazine to the camera

1. Make sure the magazine's film advance indicator is white.
   When a red signal is displayed, this means that there is an exposed film frame under the magazine slide. Proceed as follows to avoid fogging this frame:
   Trigger the camera (with the magazine detached). The film advance indicator window will then be red.
   Reattach the magazine to the camera. Tension the camera in the usual way.
2. Hook the magazine onto the camera's lower support catches (43) and make sure they engage properly. Press the upper part of the magazine forward to engage the upper magazine support catches (A) while simultaneously sliding the magazine release catch (1) to the right. Then release the catch and *make sure the magazine is securely attached by sliding the catch to the left.* Remove the magazine slide.

NOTE: The magazine can only be removed when the magazine slide is inserted. The camera cannot be triggered when a magazine with an inserted magazine slide is attached to the camera.

3. Depress the slotted mirror mode selector in the camera's film advance crank and keep it depressed while you start to rotate the crank. Release the selector and continue crank rotation for one complete turn.
   The previously retracted curtain will then reset without any film being advanced.
4. Remove the magazine slide from the magazine. The camera is now ready for a new exposures.

NOTE: Always follow this procedure. Any other procedure can lead to the loss of exposed and unexposed frames and to camera malfunction.

NOTE: If a magazine is removed from a trig-

gered camera, the first shutter curtain will remain in the rear body opening. To reactivate the shutter safeguard, recock the camera with no magazine attached. Reattach a magazine and then remove it again.

Indicator signals (Figs. 16 and 17)

The camera body and film magazine have indicator windows (8 and 9) whose display are affected by the film advance. The following signals can be displayed in the indicator windows:

A. Both windows white=Camera ready for exposure.

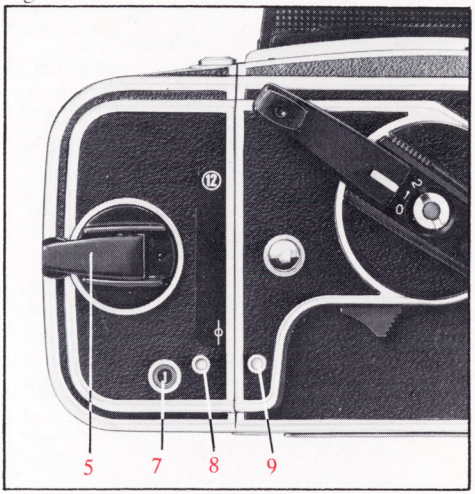
B. Both windows red=An exposure has been made but the film has not been advanced, nor the shutter cocked. Advance the film.

C. Film advance indicator window is red and the shutter status indicator window is white=Magazine attached to a cocked camera with the exposed frame unadvanced. Remove the magazine, trigger the camera, replace the magazine, and advance the film.

D. Film advance indicator window white and shutter status indicator window red=Magazine with advanced film attached to uncocked camera. Press the detent button in the mirror mode selector (13) and rotate the film advance crank (2) one full turn. The selector only has to be kept depressed at the start of the crank rotation.

Golden rule: Always make sure that the indicator signals on the camera and magazine display the same color when a magazine is attached to the camera.

Fig. 16



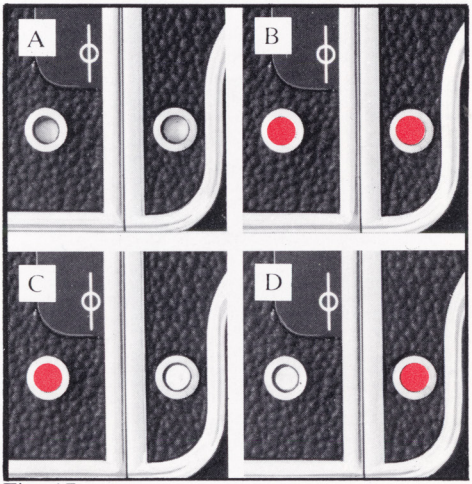


Fig. 17

Fig. 18



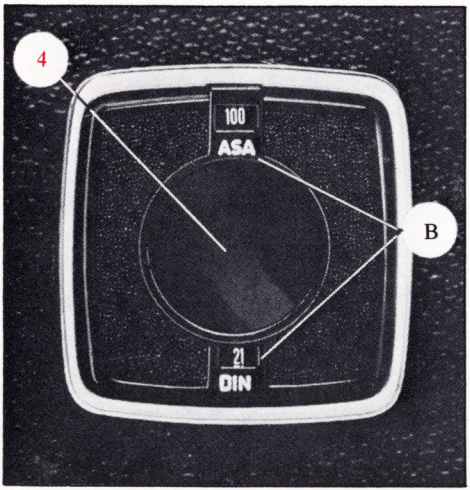


Fig. 19

Miscellaneous

The film winding crank (5) is only blocked at frame 1. So a partially exposed roll of film can be rewound at any time.
The frame counter is automatically reset to zero when the roll holder key is removed.
The center of the roll holder key (44) features a display (45) which is white when the magazine is loaded. The display gradually turns red as each frame is advanced. A completely red display means that the final frame on the roll has been exposed or that there is no film in the magazine.
The ASA and DIN film speeds (B) (Fig. 19) can be set on the film reminder (4). Settings are made by flipping down the hinged clip and rotating the serrated ring. There is space behind the clip to hold a film box tab.

FILM ADVANCE

The film is advanced and the shutter cocked after every turn of the film advance crank (2). Do *not* keep your finger on the shutter release while advancing the film since this could lead to unintentional shutter triggering.

The Magazine 80 for Polaroid film must *not* be used on the Hasselblad 2000FC and 2000FC/M. 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 and 2000FC/M.

Fig. 20



Fig. 21

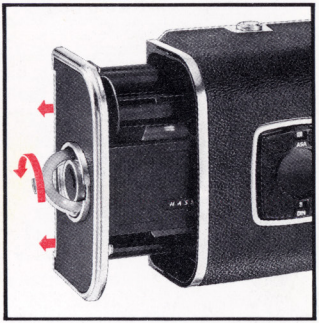


Fig. 22

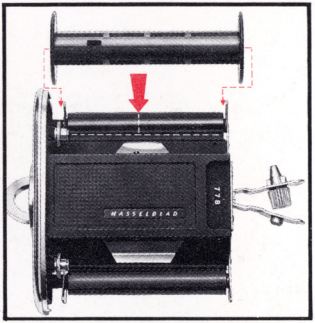


Fig. 23

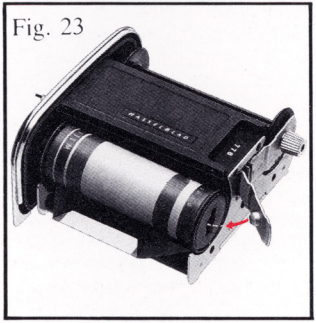


Fig. 24

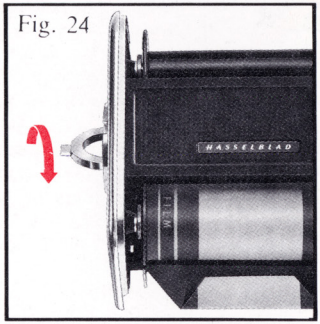


Fig. 25

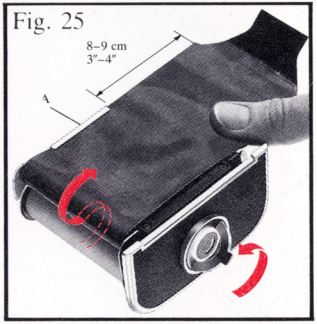


Fig. 26

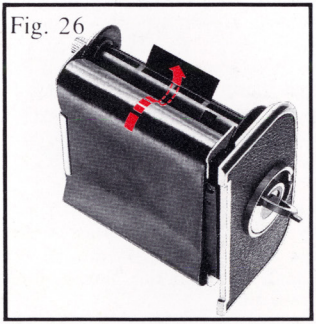


Fig. 27

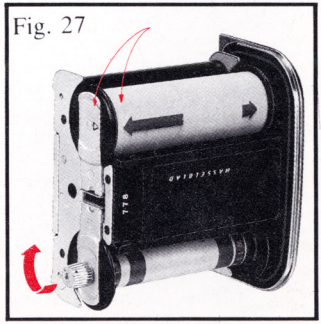


Fig. 28

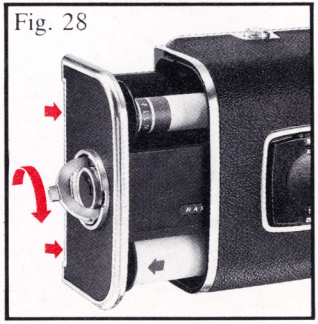
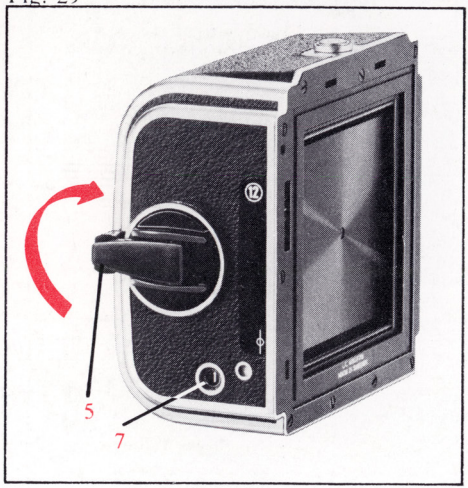


Fig. 29



Loading the magazine A12

Fig. 20 Fold out the magazine's roll holder key.
Fig. 21 Turn the roll holder key *counter-clockwise*. Pull the roll holder out of the magazine.
Fig. 22 Hold the fixed end turned toward you. Flip up both spool clips. Place an empty take-up spool on the prong on the take-up side, and flip down the take-up clip (the one with the knurled knob) onto the spool. Twirl the spool to ensure that it is correctly seated.
Fig. 23 Place a roll of film on the prong on the film side as shown in the photograph and flip down the film clip (bearing a red arrow) onto the film spool. Make sure the entire glued paper strip around the film backing is removed.
Fig. 24 Turn the roll film holder *clockwise* so the film clamp (A, Fig. 25) opens.
Fig. 25 Pull out 3–4 inches of paper backing and guide the backing paper under the film clamp A.
Fig. 26 Insert the tongue of the paper backing into a take-up spool slit.
Fig. 27 Turn the clip knob *clockwise* until the arrow on the paper backing is aligned with the delta on the film clip. Make sure the paper backing is under the film clamp.
Fig. 28 Carefully reinsert the roll holder into the magazine and lock it in place by turning the roll holder key *clockwise*.
Fig. 29 Make sure the magazine slide is in place (or that a 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 be visible in the frame counter window (7). The magazine is now loaded and ready for use.

Rewinding exposed film

The camera release mechanism is automatically blocked after exposure of the final frame (a '12' will be seen in the frame counter window of 12-exposure magazines). Fold out the film winding crank and rewind the film.

NOTE: The magazine can only be detached if the magazine slide is inserted. The camera cannot be triggered when a magazine with an inserted magazine slide is attached to the camera.

MIRROR MODES (Fig. 30)

The Hasselblad 2000FC and 2000FC/M have three different mirror action modes:
Mode 2: Instant mirror return
Mode 1: Non-return mirror
Mode 0: Mirror locked in raised position.

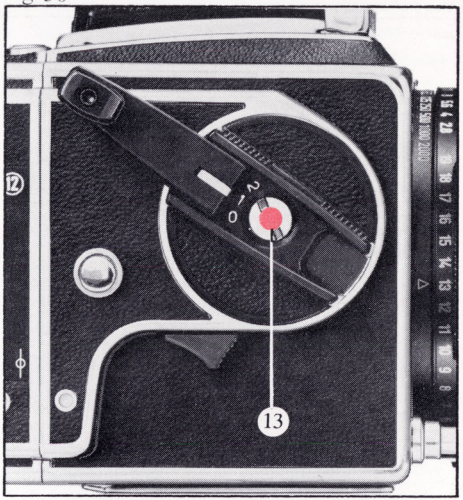
The modes are selected with the mirror mode selector (13) found under the unfolded film advance crank. A coin pressed into the selector slot automatically depresses the red detent button in the center of the selector collar. This enables you to turn the selector until the slot points to the desired mirror mode. Releasing pressure on the red detent button locks the mode selector at the desired mode.

Mirror settings

Mode 2—Instant mirror return (Fig. 31)

When the mode selector is set at mode 2, the mirror is raised when the shutter release is pressed and is flipped down again when the exposure has been concluded.
The viewfinder image is restored and the lens reopens to the maximum aperture with F lenses immediately after exposure.
In mode 2 with a C lens the viewfinder image is not restored until the film is advanced and the shutter cocked. The mirror mode should not be changed except on a released camera. The mirror will flip down when the mode is changed.

Fig. 30



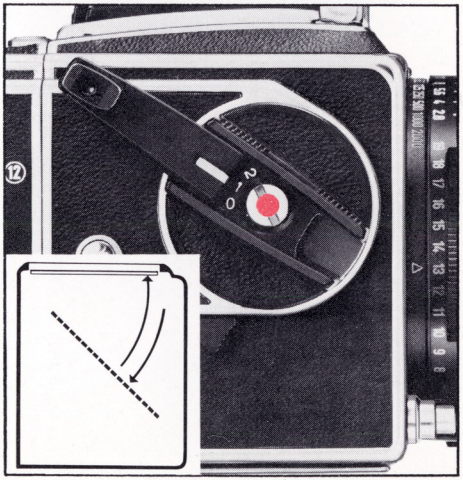
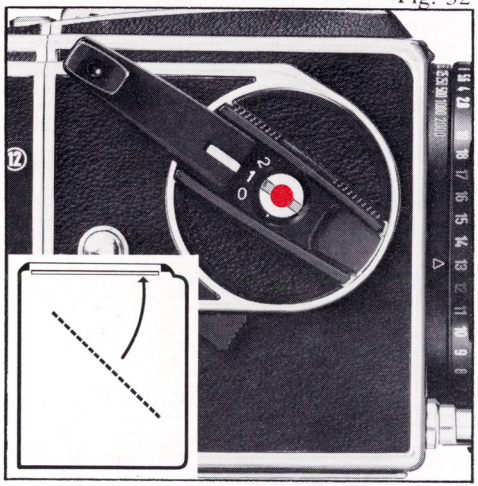


Fig. 31

Fig. 32



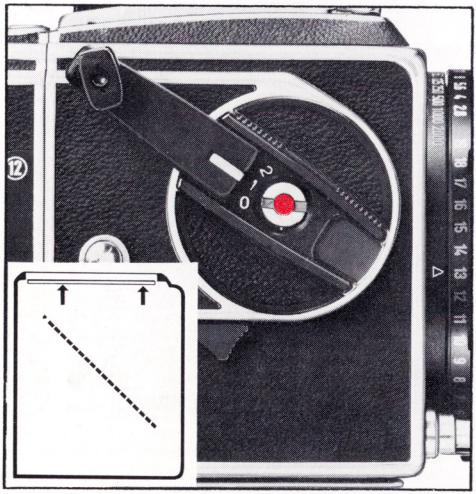


Fig. 33

Mode 1—Non-return mirror (Fig. 32)

When the mode selector is set at mode 1, the mirror remains in the raised position after exposure. The viewfinder image is restored as soon as the film is advanced are the shutter cocked.

Mode 1 is suitable for photographers who prefer having a blacked-out viewfinder to indicate when the film has not been advanced or the shutter cocked.

This effect is obtained with C lenses, irrespective of which shutter option is used or which mirror mode is selected.

The mirror mode should not be changed except on a released camera. The mirror does not flip down after exposure.

Mode 0—Mirror locked in raised position (Fig. 33)

When the mode selector is set at mode 0, the mirror is locked in the raised position. This mirror mode is only operational in conjunction with the focal plane shutter and is suitable when mirror-induced vibration must be kept at an absolute minimum.

The camera should be tensioned before the mirror mode is switched to 0. Raise the mirror by pressing the pre-release tab (11), and lock it in the raised position by turning the mode selector (13) to mode 0.

This mirror mode is only for use when the camera is triggered via the battery compartment. If you wish to raise the mirror before the camera is triggered with the shutter release, first raise the mirror with the pre-release tab. See p. 26.

OPERATING THE 2000FC/M

Using the focal plane shutter

F lenses

The *f/stop* is set using the aperture ring. This ring has two knurled tabs (36). The ring can be manipulated with your right hand while the camera is held in the left-hand grip.

The *shutter speed* is set against the index (29) with the shutter speed ring which has a knurled tab (33). The tab makes it easy to set the most common shutter speeds with the thumb of your left hand.

Shutter speeds: 1–1/2000 s and B. At the B setting, the shutter remains open as long as the shutter release is depressed.

The shutter speed ring (25) has click stops for both the designated speeds and intermediate speeds. Thus, you can set the shutter at 1/250 s, 1/375 s, 1/500 s, 1/750 s, etc. However, no intermediate speeds can be set between 1 s and B or between B and C. (Note: No intermediate speeds can be set on the shutter speed rings of C and CF lenses.)

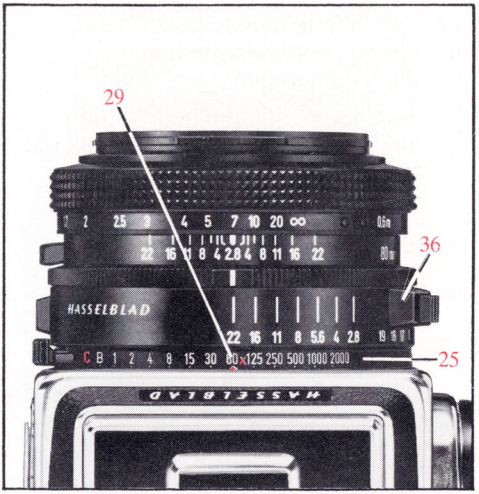
The camera's shutter speed ring shall be set at C during leaf shutter operation with C and CF lenses.

The shutter speed ring on the 2000FC and 2000FC/M can be locked to prevent accidental displacement. The shutter speed dial is locked with the lever (38) which points to 'L' in the locked position (Fig. 35).

The camera's shutter speed and the lens' aperture rings can be cross-coupled by pressing the cross-coupling button (20). With the shutter and aperture rings interlocked in this manner, shutter speed/ aperture combinations can be altered with no change in the value set on the exposure value (EV) scale.

For example: With the cross-coupling button depressed, the aperture setting can be changed from f/8 to f/11. This will then automatically change the shutter speed setting from e.g. 1/250 to 1/125

Fig. 34



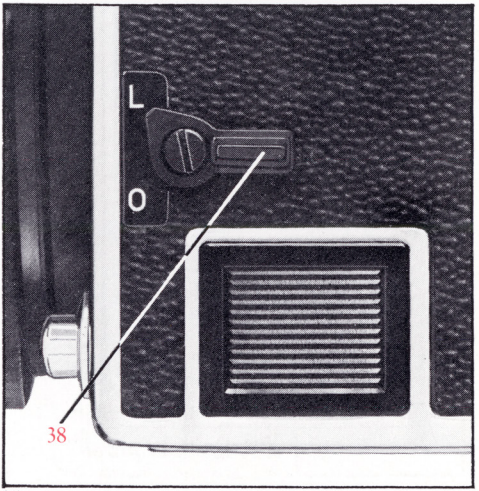
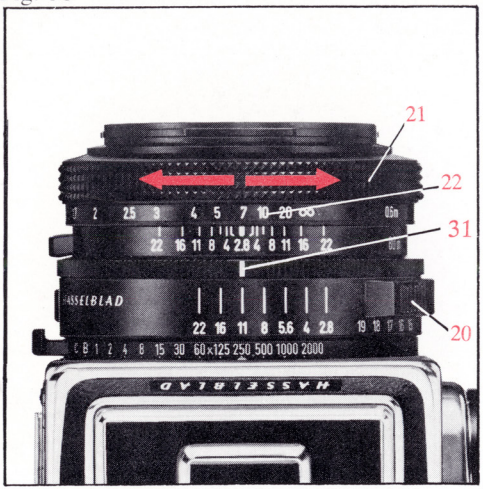


Fig. 35

Fig. 36



s. (Cross-coupling is not possible when you work with an extension tube or bellows extension.)

Focusing—F and CF lenses

The lens is focused with the knurled ring at the front of the lens (21). The ring is rotated until the sharpest subject image is obtained on the camera's focusing screen.

The distance between the subject and the focal plane is then shown on the distance scale (22) opposite the distance index (31, Fig. 36). Subjects at distances on either side of the distance set opposite the distance index will also be sharp within certain limits. This zone of sharpness is referred to as depth of field. Depth of field varies with the f/stop. A small f/stop yields wide depth of field and a larger aperture yields shallow depth of field. The depth of field available at any given f/stop can be read off on the depth-of-field scale (23) on either side of the distance index (31).

In the example shown here, the lens is set at a distance of 7 m. Depth of field at f/11 will then range from about 4 m to about 20 m.

WARNING

Never use the button for cross-coupling of shutter and aperture rings when the shutter speed ring is locked (L position) or while attaching or detaching a lens, since the button mechanism could then be destroyed. (This only applies to F lenses.)

C and CF lenses on the Hasselblad 2000FC and 2000FC/M

CF lenses and focal plane shutter operation

Depress the green button, keep it depressed (G, Fig. 37) while rotating the shutter speed ring until the F is opposite the lens shutter speed index. Release the button. This disconnects the CF optic's built-in leaf shutter. The CF lens will then operate in the same way as an F lens. Shutter speeds are set on the *camera's* shutter speed dial. Leaf shutter operation can be restored by turning the shutter speed ring past the F marking while keeping the green button depressed.

C lenses and focal plane shutter operation (Fig. 39)

Set the shutter speed ring of the C lens at B and the synchronization selector at X. The catch (I, Fig. 39) must be pressed forward to release the detent when you wish to switch from M to X. Shutter speeds are set on the *camera's* shutter speed dial. All speeds from 1 to 1/2000 s and B can be used.

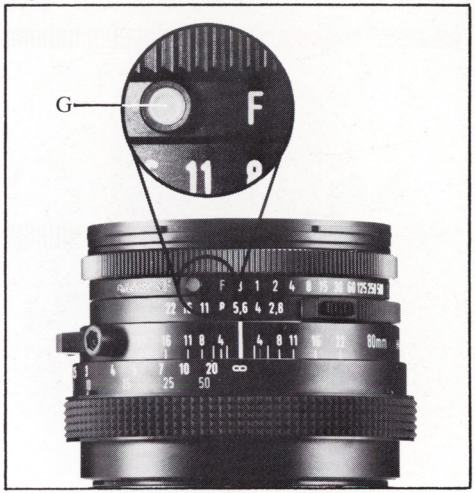
NOTE: Be careful not to dislodge the B setting on the lens when setting an f/stop.

NOTE: When long exposures (1/4 s or longer) are made, pressure on the shutter release must not be relaxed until the leaf shutter in the C lens has concluded the exposure.

C and CF lenses with leaf shutter operation

The camera's shutter speed dial must be set at C and locked with the lever (38, Fig. 35). In this position, the camera's focal plane serves as a light baffle and the actual exposure and flash synchronization is carried out by the leaf shutter in the lens.

Fig. 37



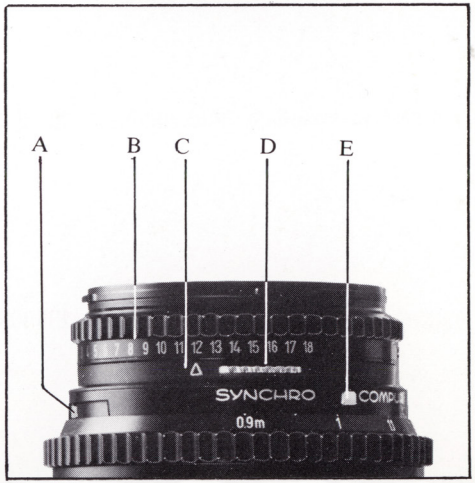
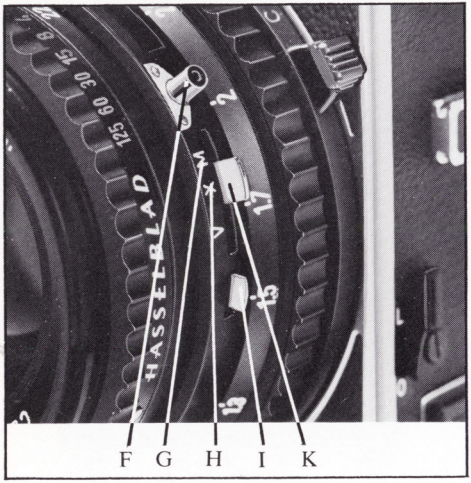


Fig. 38

Fig. 39



CF lenses

The shutter speed and f/stop are set on the respective rings on the lens. They operate independently of one another but can be cross-coupled with the cross-coupling button (20). When the rings are interlocked, a change in a shutter speed/aperture combination will not alter the exposure value (EV) setting. Shutter speeds and f/stops are set against indices.

NOTE: When long exposures (1/4 s or longer) are made, pressure on the shutter release must not be relaxed until the leaf shutter has concluded the exposure.

C lenses (Fig. 38)

The shutter speed and f/stop are set on the respective rings on the *lens*. The shutter speed ring (B) and aperture ring (C) are cross-coupled on C lenses. The cross-coupling can be disconnected by pulling back the cross-coupling release tab (D). The shutter speed and diaphragm rings can then be rotated independently of one another. Shutter speeds and f/stops are set against the index (A).

NOTE: When long exposures (1/4 s or longer) are made, pressure on the shutter release must not be relaxed until the leaf shutter in the C lens has concluded the exposure.

Infrared photography

CF lenses

When *black & white* infrared film is used, compensation must be made because of the focusing shift resulting from the longer wavelength of infrared radiation compared to visible light. Compensate as follows: Focus in the normal way or set the lens-to-subject distance opposite the distance index (31). Then rotate the focusing ring until the distance setting is opposite the red index for infrared focus compensation. No focus compensation is required with the 250mm f/5.6 Zeiss Sonnar CF Superachromat lens.

C and F lenses

Send for the special data sheet from Victor Hasselblad AB.

Depth-of-field preview (Fig. 41)

F lenses

A lens is usually focused wide open because the minimum depth of field yielded there makes the viewfinder image snap crisply in and out of focus more readily. But you can still preview the depth of field available at any f/stop by pressing down on the upper part of the depth-of-field preview tab (34). This is conveniently done with the left thumb. The operation causes the lens to stop down to the preselected aperture. Upward pressure on the bottom of the tab reopens the lens to the maximum aperture.

The lens automatically stops down to the preselected f/stop when the camera is triggered. After exposure, the diaphragm is reopened to the maximum aperture.

CF lenses

The same as for F lenses above.

C lenses

Depth of field is previewed by pressing the spring-loaded detent (E). The lens then stops down to

Fig. 40



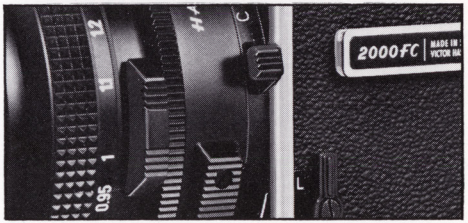
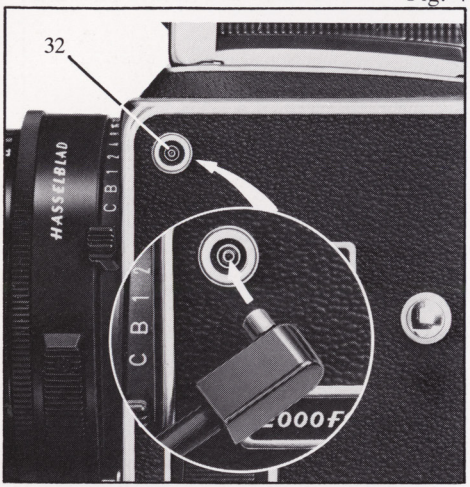


Fig. 41

the working aperture. The lens is automatically restored to the maximum aperture when the film is advanced after an exposure or by manually resetting the aperture ring to the optic's maximum f/stop.

Fig. 42



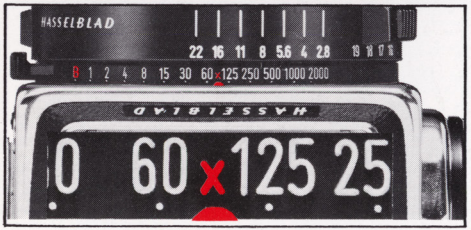


Fig. 43

FLASH PHOTOGRAPHY

The Hasselblad 2000FC and 2000FC/M can be used for synchronized flash photography with electronic or expendable flash and with F, CF, or C lenses.

F lenses

F lenses have no built-in synchronization terminals, and flash synchronization cords are therefore connected to the PC outlet on the **camera** (32). A contact is connected by pressing it into the outlet using a jiggling action. A friction device built into the outlet is designed to hold PC contacts more securely.

Synchronized **electronic** flash is possible when the **camera's** shutter speed ring is set at 1/90 s or slower (e.g. 1/60 s, 1/30 s, etc.). 1/90 s is represented on the **camera's** shutter speed ring by a red 'x' between '60' and '125.' A flash will not be triggered when a shutter speed faster than 1/90s (e.g. 1/125s) is set on the camera.

C and CF lenses

When you work with C and CF lenses, you can trigger the flash via the shutter's PC terminal or the camera's PC outlet.

When the *leaf shutter* is selected, synchronized electronic flash is available at all shutter speeds from 1 to 1/500 s. The flash unit's synch cord is then connected to the PC terminal on the lens.

Flash with focal plane shutter operation

CF lenses

For synchronized *electronic* flash, set the lens shutter at F and the *camera's* shutter speed ring at 1/90 s or slower. The flash synchronization cord is then attached to the *camera's* PC outlet, and the flash is triggered via that outlet.

C lenses

Set the flash synchronization selector at X and the lens shutter speed ring at B. Set the camera's shutter speed ring at 1/90 s or slower for *electronic* flash. The flash synchronization cord is then attached to the camera's PC outlet. The flash is triggered via that outlet, and exposure is made by the *camera's* shutter.

Flash with leaf shutter operation

CF lenses

Set the *camera's* shutter speed ring at C. The flash synchronization cord is attached to the synchronization terminal on the *lens*. The cord contact is attached by pressing it onto the synchronization terminal using a jiggling action. The terminal has a built-in friction device designed to hold PC contacts more securely. Flash synchronization is made via this *lens terminal*, and synchronized *electronic* flash is then available at all the designated lens shutter speeds, i.e. from 1–1/500 s.

C lenses

Set the camera's shutter speed ring at C and the synchronization selector at X. The flash synchronization cord is attached to the synchronization terminal on the *lens*. Flash synchronization is made via this *lens terminal*, and synchronized *electronic* flash is then available at all the designated lens shutter speeds, i.e. from 1–1/500 s.

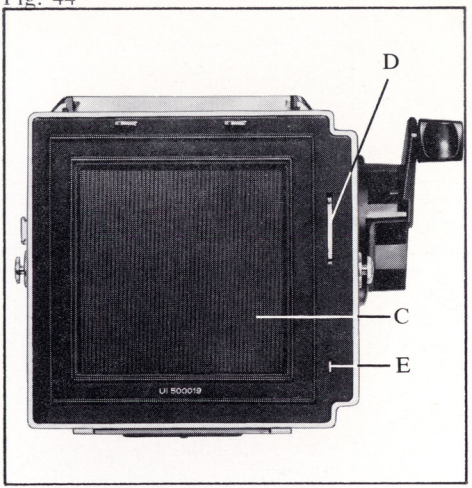
***GOLDEN RULE:* Flash with focal plane shutter—Use the *camera's* PC outlet (32). Flash with leaf shutter—Use the *lens* synchronization terminal (F).**

CAMERA BODY

Changing the focusing screen (Fig. 45 and 46).

The camera's standard focusing screen is interchangeable with other Hasselblad focusing screens and is replaced as follows:

Fig. 44



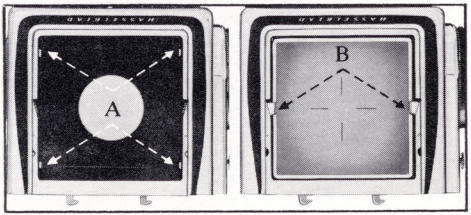
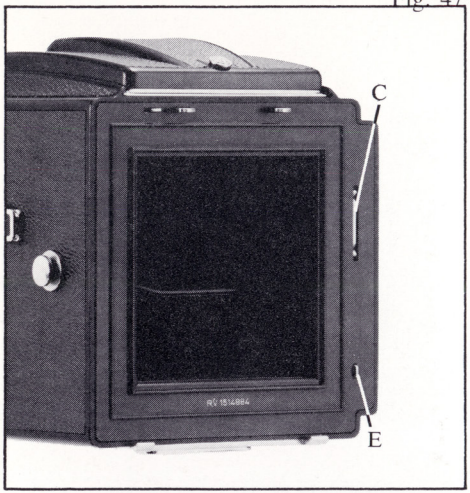


Fig. 45 - 46

First remove the film magazine and focusing hood. 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 the underside of the screen from inside the camera body. The mirror must be in the down position during this operation.

Fig. 47



Insert a new focusing screen. The side with the sharp, protruding edges of the frame should face down. The frame sides facing up will then be flat and smooth.
Make sure the base of the screen rests on all four support pins (A).
When a finder is slid into place over the focusing screen, the catches (B) automatically lock the screen in place.

Back of the camera body (Fig. 47)

NOTE: *The magazine 80 for Polaroid film must not be used with the Hasselblad 2000FC or 2000FC/M since its projecting glass plate will destroy the shutter curtain.*

The gear C transfers the force exerted on the film advance crank to the magazine. The pin (E) actuates the film advance indicator and the double exposure detent. Make sure (C) and (E) are kept clean, otherwise dirt and dust could cause them to malfunction.

Camera pre-release (Fig. 48)

Pressure on the pre-release tab (11) triggers all of the many internal mechanical operations—with one exception—which normally take place when the shutter release is pressed on a cocked camera. This pre-release facility sets the camera up so that only one operation remains, i.e. the opening and closing of the shutter, when the shutter release is subsequently pressed with the camera in the pre-release mode.
The pre-release of certain mechanical functions reduces the time elapsing from the moment the shutter release is depressed to the moment the shutter can begin to open to an absolute minimum. Blurring due to camera motion and vibration is also reduced to a minimum by camera operation in the pre-released mode.

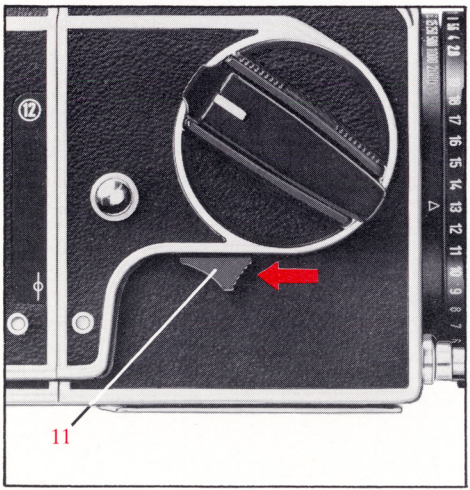


Fig. 48

Resetting the pre-released camera (Fig. 49)

A pre-released camera can be reset for conventional operation by pressing the red detent button in the center of the mirror mode selector and keeping it depressed as you start to rotate the film advance crank.
Then release the button and complete the crank revolution one full turn. (See "Intentional double exposure.")

Intentional double exposure

Each film magazine contains a detent to prevent unintentional double exposure. This detent can be easily disconnected when intentional double exposures are desired with the Hasselblad 2000FC and 2000FC/M.
First make an exposure in the usual way. Then depress the red detent button in the mirror mode selector (13). Keep it depressed and start to rotate the film advance crank. Release the button and complete the crank revolution one full turn. This tensions the camera's various mechanisms without advancing the film. A second exposure can then be made on the previously exposed film frame.

STRAP LUGS (Fig. 50)

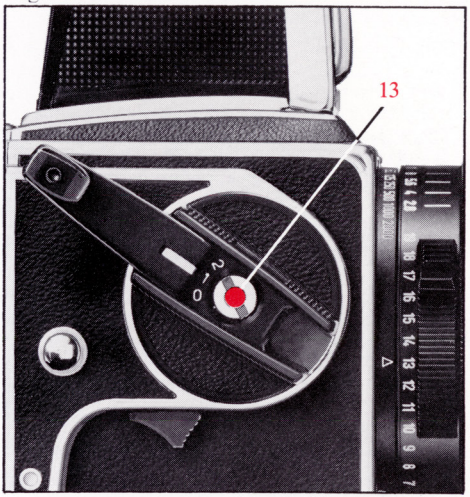
Strap attachment

Hook the strap latch onto the camera strap lugs (43).
Press down 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 catch forward. The latch will then slip off the strap lug.

Fig. 49



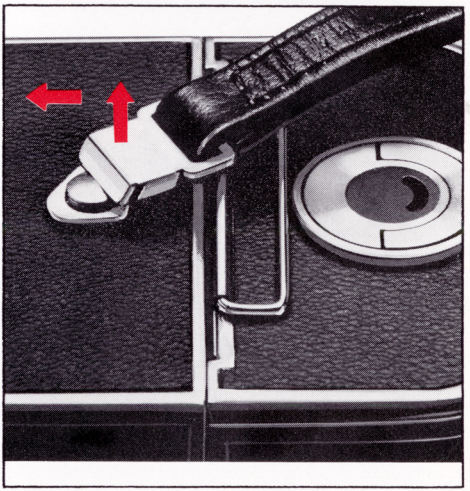


Fig. 50

SERVICE AND MAINTENANCE

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

The lubricants in cameras and lenses which are out of action for a long period of time, such as 6 months or more, can dry out. The precision mechanism in e.g. the between-the-lens shutters could then malfunction. So such cameras and lenses should be operated from time to time by making serveral exposures at each speed.

This is especially important before you begin important work with a camera which has been disused for some time. First give it a run-through without any magazine attached. Check through the camera and lens to make sure that the diaphragm and all shutter speeds are working.

WARRANTY

The Hasselblad camera is manufactured in Göteborg, Sweden. It is a product of the highest quality and is therefore factory-guaranteed through each distributor's warranty for a period of twelve months to be free from defective materials and workmanship. ***So please mail the enclosed registration card as soon as you take delivery of your camera.*** (Please *print* your name and address.) The warranty card will then be sent to you.

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