Hasselblad 203FE Instruction Manual

Contents

1. Hasselblad 203FE Introduction
2. Parts and Components
3. Getting Started
4. Battery
5. Coating the Camera
6. Front Protective Cover
7. Attaching the Lens
8. Removing the Lens
9. Rear Protective Cover
10. Attaching the Magazine
11. Removing the Magazine
12. Magazine Status Indicator
13. Winding Crank
14. Removing the Winding Crank
15. Attaching the Winding Crank
16. Strap and Strap Loops
17. Attaching the Strap
18. Removing the Strap
19. Focusing Hood and Magnifier
20. Opening the Focusing Hood
21. The Built-in Magnifier
22. Closing the Focusing Hood
23. Viewfinder Image and Display
24. Focusing Screen
25. Exposure Meter
26. Viewfinder Display
27. Control Panel
28. Left Hand Grip
29. Actuating Camera & Metering System
30. Focusing Exposure Viewfinder Display
31. Operating Detail Instructions
32. Viewfinder Display & Symbols
33. Right Hand Side
34. Dial Pad
35. Mirror and Mirror Mechanism

Hasselblad 203FE – Speed and Precision

Your Hasselblad 203FE is a camera designed for professionals who often work on location under unpredictable light conditions and film moving subjects. With the 203FE, you have a choice of either shutter priority, automatic, or true manual function. In the automatic modes you can manually adjust the camera-controlled exposure within the range ±3.5 to ±1.5 EV. The extremely accurate focal plane shutter provides the widest range of shutter speeds in the medium format field: 34 minutes to ultra fast 1/000th of a second. With 1/2 stop increments in manual mode to 1/4000th of a second and 1/125 stop increments in automatic mode. It also provides the fastest flash sync speed among medium format focal plane shutters: 1/500th.

Primarily designed to take advantage of this remarkable shutter are the Hasselblad FE (former TCC) series lenses, ranging from the medium-wide 105mm f/3.8 to the short telephoto 300mm f/4, including the powerful Planar 110mm f/2. Both using the Hasselblad Cartridge 2VE in one position doubles the range of focal lengths.

These outstanding lenses by Carl Zeiss are supported by the brightness possible viewfinder image, provided by the Azo- illuminated focusing screen, completed with the illuminated LCD display with all relevant exposure and set-up data.

The metering system compiles the information from the focal plane, the built-in extremely sensitive light meter, and the film speed setting on the attached E or TCC magazine to calculate the accurate shutter speed. If any of the parameters, e.g. the pre-set speed, is changed the shutter speed changes accordingly.

Attaching the Hasselblad Winder motorizes your 203FE for the full use of the automatic triggering function. It also allows speeds up to 1/1000th of a second and the choice of 1 1/2, 1/2, or 1/3 second at the flick of the button. Press the exposure button and hold for the number of frames you decide – the camera automatically adjusts the shutter speed according to your selection.

Above all, according to the Hasselblad philosophy, your 203FE can be used on the full range of Hasselblad CF lenses with built-in shutters for the added advantage of battery-independent shutter operation and a wider range of shorter flash sync speeds for more light sources.

This instruction manual describes in detail how to operate your Hasselblad 203FE. Read it carefully to avoid mistakes and get full access to the Hasselblad potential.

Exploring the potentials is limited by your own imagination only!
Getting Started

This section describes how you prepare your Hasselblad 203F to use. You will find comprehensive information how to operate the camera in the section starting on page 15. Follow the instructions step by step to avoid jamming or damaging the camera. Always keep the rear protective cover on to protect the shutter curtain when the magazine is detached.

Battery

The battery compartment and cassette is located in the tower forward corner on the left hand side of the camera body. Pull out the cassette and install the battery - 6V type PX23L or equivalent – according to the marking on the cassette. Push the cassette all the way back into the compartment.

Closing the Camera

Close the camera after installing the battery. Press the button in the center of the crank and rotate it counterclockwise one turn until it locks (page 15, Double exposure.).

Front Protective Cover

The front protective cover is attached to the lens bayonet mount. Rotate it counterclockwise and lift it out of the mount.

Attaching the Lens

Remove the lens rear protective cover by rotating it counterclockwise and lifting it off the lens.

Rear Protective Cover

Deactivate the catch, lift the cover backwards and lift it off. Always keep the rear protective cover on to protect the shutter curtain when the magazine is detached.

Attaching the Magazine

Ensure that the magazine slide is fully inserted and that the magazine status indicator is white. If the indicator is red, follow the instructions on page 6. Push the magazine on the magazine supports with the support lug properly engaging the recess on the magazine bottom. Carefully swing the magazine towards the camera body, checking that the magazine hooks into the slots in the magazine. Push the magazine gently but firmly against the front while sliding the magazine catch to the right.

Release the button when the magazine first comes into contact with the camera body and then push the button to the left to ensure that it has reached the locked position. Remove the slide from the bayonet mount and slide the magazine to the camera body.

The Winding Crank

One full revolution of the winding crank winds the camera, cocks the lens mechanism and transports the film to the next frame. Underneath the crank is the drive shaft and the bi-cell protection cover (pages 74, 76), which can be attached after removing the crank. It is recommended that the camera is fully wound when the crank is removed or replaced.

Removing the Winding Crank

To remove the crank push the catch lever on the rear of the crank hub downwards while rotating the crank counter-clockwise. Then pull it straight out from the shaft.

Attaching the Winding Crank

On the side of the crank hub are two triangular index marks, a larger one and a smaller one. Attach the crank to the shaft with the smaller mark aligned with the red dot, located immediately above the mount. While pushing the crank against the camera body, rotate it clockwise until the larger mark is aligned with the red dot.

Check that both the camera and the lens are cocked. The lower illustration on page 6 shows the proper position against the mirror (for the camera drive shaft (left) and the lens drive shaft (bottom)). If the mirror is not cocked you can insert a coin or a similar object in the slot and turn the shaft in the direction of the arrow approximately 45° of a full turn. You will find that holding the camera body in your left hand and the lens in your right hand (as shown in the illustration (right, right) is the easiest way to attach the lens.

Removing the Lens

Depress the front catch button, rotate the lens counter-clockwise and lift it out of the bayonet mount.

NOTE: You can only attach and remove the lens when the camera is cocked fully wound and not in pre-released mode (see page 20).

Removing the Magazine

It is advisable to have the camera fully wound and the magazine silver indicator showing white. If the indicator shows red, then follow the instructions below.

Insert the magazine slide fully and with the hinge towards the front of the camera. Slide the magazine catch to the right, lift the magazine back and lift it off the supports.

NOTE: The magazine cannot be removed without first opening the magazine side. The side projects the film from the camera. Follow this and the camera cannot be opened when the magazine is in the camera.

The Magazine Status Indicator

The status indicator on the right hand side of the magazine window whether the magazine is ready to operate (white) or not (red), i.e. the film has not been advanced. Do not attach a magazine showing white to a camera that is not in cocked Wind it first, otherwise you will lose one frame. Do not attach a magazine showing red to a fully wound camera. That could result in an unintentional double exposure since the frame in position in the magazine probably already is exposed. If the status indicator shows red, remove the camera (page 17) before attaching the magazine. Then, when you want the camera, the film will be advanced one frame.

Strap and Strap Lugs

The 203F is delivered with a medium white shoulder strap, packed separately. You will find other types of straps in the Hasselblad Product Catalog. All straps are provided with special clips for easy attaching and removing of the strap.

Attaching the Strap

Place the main body of the strap clip is behind the strap lug on the camera with the strap-pulling backwards (see fig.). Press the tip of the clip towards the camera while pulling the strap clip slides the clip over the lug to the locked position.

Removing the strap

Hold the strap pulling backwards and lift the locking plates of the clip high enough to pass over the top of the lug. Push the clip backwards to slide it off the lug.
Focusing Hood and Magnifier
Opening the Focusing Hood
Lift the focusing hood by tapping on the tab at its rear edge and swing it up to a vertical position. The hood will hinge automatically and lock in open position.

The Built-In Magnifier
Use the built-in magnifier to enlarge the viewfinder image, e.g. for more accurate focusing. To utilize it, push the oval catch inside the lid to the right, as indicated in the illustration. To fold the magnifier down, simply push it back towards the lid until it locks. The magnifier can easily be exchanged for one with a suitable correction lens to match your individual eyeglasses (see page 26).

Closing the Focusing Hood
Pinch the side plates at the hinge points and fold the hood back down.

The Control Panel
The control panel occupies most of the left hand side of the camera body. It includes all the controls for the various functions of the 200FE, such as:
- The Flash Connectors
- The Display Illumination Switch
- The Mode Selector Dial
- The Adjustment Buttons

Flash Connectors
The flash connectors are located underneath the protective cover in the upper forward corner of the control panel. The smaller one is a standard PC socket and the larger one is a 5-pin connector for TTL-controlled dedicated flash units.

The PC-socket
Non-dedicated flash units and certain adaptors should be connected to this socket.

The Dedicated Flash Connector
A dedicated flash unit connected to this 5-pin socket directly or through a suitable adaptor will be fully controlled by the camera processor. You’ll find detailed information on flash photography on pages 59-71.

The Display Illumination
Pressing the button above the flash connectors turns the display illumination on or off. The switch has a toggle function. It works only when the camera is activated.

Left Hand Grip
Holding the 200FE in your left hand with your index finger on the release button, as shown in the upper illustration below, is the most convenient grip. You can reach the AE-lock and the adjustment keys with your left thumb (lower illustration below) and your right hand is free for focusing, aperture setting, operating the crank or changing the lens or the magazine.

Activating the camera and the metering system
Before operating the 200FE you have to wind the camera to cock the shutter (if it is released) and switch on the metering system. To be able to release it you also have to remove the magazine slide.

The fully wound 200FE can be switched on in two different ways:
1. By depressing the exposure button halfway in, i.e. to the "pressure point".
2. By depressing the AE-lock button. Activation as per 1. above can only be performed when the magazine slide is removed. At normal light levels this activation occurs when the exposure button is depressed for an exposure.

At low light levels the camera should always be activated well before releasing the exposure in the automatic modes (Ab, D, and A).

Activation as per 2. is not possible if the AE-lock has been kept depressed for more than 15 seconds. Keep the magazine slide inserted when you wish to avoid unwanted battery power consumption caused by unintentional activation of the metering system.

The electronic system and the viewfinder display turn off automatically 16 seconds after the last key or button operation, but all relevant data are stored in the memory.

Viewfinder Image and Display
Focusing Screen
The Hasselblad 200FE is equipped with the Acute-Mate focusing screen featuring the highest brightness and resolution among the Hasselblad focusing screens. The center of the screen is indicated by a hairline cross. A circle of dots indicates the metering area used by the built-in selective meter. See page 27 how to change the focusing screen.

The Exposure Meter
The exposure meter is a center weighted selective meter where the weighted value derives from a circular, circular 0.38 mm central area corresponding to 20% of the total image area. The metering range for a film speed of ISO 100/21° extends from EV 0.5 to EV 21.5 at 9.5.

The Viewfinder Display
Located above the upper edge of the viewfinder image is the display, which is the information center of the camera. You’ll find a comprehensive description of the display and its symbols on pages 18-19.

The Mode Selector Dial
With the mode selector dial you can select any of the five operating modes: Pr, Ab, D, A, or Manualize in the 200FE. The Ab, A, and M modes are used for photography and Pr for the programming of certain functions.

The Automatic Exposure (AE) Lock
In the center of the mode selector dial is a window, marked with a red circle. If it illuminates the AE-lock and certain other functions, depending on the setting of the mode selector dial. You can also use it to start the electronic operating system in the camera.

The Adjustment Buttons
These keys also have multiple functions depending on the setting of the mode selector dial.

The functions of the mode selector dial, the AE-lock and the adjustment buttons are described in detail on pages 28-29.

Focusing, Exposure Release and Viewfinder Display
Turn the focusing ring (page 31) until the image of the subject appears sharp in the viewfinder. Depress the exposure button to the pressure point (halfway in).

If the mode selector dial is set in Ab, D or A position the display may show a series of a few other symbols indicating the following section of this manual: the preselected aperture and the shutter speed calculated by the camera computer. With the mode selector set at M, the display shows the shutter speed set on the shutter speed ring. If the exposure button is released again, this display will disappear. If the exposure button is released again, the shutter advance shows the selected shutter speed and the difference in EV between the metered and the manually set value.

You can now press the exposure button off the way in to make the exposure. After releasing the button you can rotate the winding crank one full turn until it locks, to rewind the camera and advance the film one frame.
Operating details

The Right Hand Side
On the right hand side of the camera body are the winding crank, dislocation on page 10, and the pre-release and selftimer lever.

Double Exposure
With double exposure or multiple exposure by rewinding the camera without advancing the film, this is possible by depressing the double exposure button in the center of the crank hub and simultaneously turning the crank slightly clockwise. Then you can release the button and complete the winding until the crank locks.

Mirror and Mechanism Pre-release
By pre-releasing certain camera functions and lifting up the mirror you can avoid camera vibrations, reduce the sound level and shorten the time delay between the depressing of the pre-release button and the exposure release. Pre-release is done by actuating the pre-release lever once. To reset the mechanism and lower the mirror again you perform the operation for a double exposure as described above.

Since the mirror is tilted the light metering is interrupted and locked on the latest recorded value.

The Front
The Shutter Speed Ring
The shutter speed ring for the focal plane shutter in the 202FE has speed markings from 1 to 1/2000s as well as B and C. Between the markings are intermediate half speed click stop settings. One of these settings – 1/00 s – is marked with a flash symbol – it is the fastest shutter speed for flash synchronization with the focal plane shutter (page 83). Manual operation except
M camera the processor automatically calculates and sets the shutter speed within the range 50 s to 1/2000 s, irrespective of the shutter speed ring setting.

Long Exposure
If you require a shutter speed slower than 90 s you have to switch to M mode and depress both connection buttons (page 39). This involves the switching of the split-second markings on the shutter speed ring, i.e. 30 s (30 s + 30 s etc., until 2000), meaning 304/ s (34 min). The “inverter” remains as long as the camera is in use and 4 sec. after auto- shut-off, or until you change mode or depress both connection buttons a second time.

In the B setting in all modes the display continuously shows the exposure time up to 60 minutes. The setting marked C is used together with C/F and C/ E lenses only (Appendix A, page 65).

NOTE: When the mode selector dial is set at M (page 52) the display indicates the actual shutter speed for the intermediate settings.

Exposure Release Button
In the lower right hand corner of the front, within comfortable reach with the left hand grip, in the exposure release button. The button has four different functions:

A. When depressed at the ‘pressure point’:
1. Activate the camera
2. Change the display to indicate aperture and shutter speed
3. Lock the light value in Ab and A mode

When depressed at the ‘release point’:
4. Release the shutter to make the exposure with preset or calculated values.

The exposure button is locked when the magazine slide is in the magazine.

Cable Release
When using shutter speeds slower than 1/30 s we recommend to pull the camera on a tripod and use a cable release to the threaded mount in the center of the exposure release button. The cable release and the exposure button have identical functions.

Lens Catch & Shutter Speed Ring Lock
The lens catch button is located in the lower left hand side of the camera front. To release and remove the lens you have to keep the button depressed while rotating the lens counterclockwise, as seen from behind. This button also operates the lock for the shutter speed ring settings B and C. Keep it depressed when moving the ring to either of these settings. Moving beam B is to the far.
The Rear of the Camera and the Focal Plane Shutter

Avoid leaving the rear of the camera and the shutter curtains unattended. Always attach the dual protective covers when the magazine is removed.

The opening in the rear of the camera is normally covered by the shutter curtain. The 203FE has a mechanically powered, electronically controlled focal plane shutter with two textile curtains running from left to right across the opening. The running time for the curtain is 1/440 sec, and at shutter speeds from 1/1600 to 1/3 sec. the practical reasonings only one shutter speed per each 1/2 EV step is indicated in the viewfinder display.

Caution: Whether the shutter is cocked or wound, one shutter curtain is always exposed in the opening. When the rest of the camera is not covered by a magazine or a protective cover, such will be taken when handling the camera. Avoid touching the curtain. It is sensitive to damage.

To the right of the opening are the magazine driving gear and the trigger for the magazine status indicator (page 6). There are also the contact pins for the 8-pole connection between the magazine and the central processor in the camera body. The contact pins are sensitive to contamination and should not be touched. As the lower edge of the back is the mechanical stop and cover to the top are the magazine hooks – both together serving to positively lock the magazine to the camera body (page 6).

The Viewfinder System

Changing the Focusing Hood or Viewfinder

To remove the focusing hood for using any other viewfinder within the TCC system designed for the Hasselblad (or the protective cover). Also fold down the focusing hood to avoid damage when the camera is carried.

1. Remove the eyepiece ring by lifting the edge of the eyepiece ring and fold it down until it stops.
2. Fold the focusing hood into the sides and pull it forward until it stops.
3. When fully expanded, the viewfinder is positioned in position by a spring-loaded ball catch until you have reattached the magazine or the protective cover.

Changing the Magnifier:

The standard 0.8x magnifier lens plate can be changed for a plate with a correction lens to correct for myopic or hyperopic eyesight. The supplied magnifier attached – also provides a compact storage for the focusing screen and the display for max. view-corrected lenses. Connection lenses, however, are usually supplied with stronger lenses from +3 to +4 diopters.

Change the magnifier as follows:

1. Remove the focusing hood from the camera body and open it by lifting the lid the lid.
2. Release the magnifier by pushing the catch to the right, then the magnifier halfway down and pull out the lens plate.
3. Keep the plate holder halfway down and insert the replacement lens plate with the printed side up. Fold the hood and put it back on the camera.

The Bottom

At the bottom of the camera are the quick coupling plate, the tripod thread and two ridges, mapping the camera when placed on a flat surface. The quick coupling plate fits in Hasselblad accessories, such as the tripod quick coupling or the flash bracket. The tripod thread is 1/4".

The Top

The viewing components (page 28) occupy most of the camera top. The camera body is supplied with the combined focusing hood, which also serves as a protective cover for the focusing screen.

In front of the Hasselblad sign is a window for daylight illumination of the viewfinder display screen.

Changing the Focusing Screen

Your 203FE is equipped with the exceptionally bright and sharp Auto-Matte focusing screen. The area inside the dotted circle indicates the area metered by the built-in exposure meter (page 36).

If you wish to replace the focusing screen with any of the other focusing screens in the Hasselblad System, simply follow the procedures below:

1. Detach the magazine and the viewfinder.
2. Push the two screen latches to the side into their recesses.
3. Place your hand over the screen and insert the camera.
4. Insert the replacement screen with the smooth side up and the sharp-edged corners down. Ensure that all four corners of the screen are positively seated on their supports. You need not return the screen latches. This is done automatically when the viewfinder is reattached.

NOTE: Should the screen refuse to drop out by itself, ensure that the camera is fully wound; remove the lens and check that the mirror is in the down position. Put a finger through the lens mount and push gently at the screen from underneath, preferably with a soft cloth between the finger and the screen.

Always avoid direct light into the viewfinder eyepiece when making an exposure.

The Viewfinder System

The Left Hand Side

The Mode Selector Dial

The mode selector dial is in the center of the mode selector dial, marked with a red ring. It has different functions, depending on the mode of operation as described later. It can also be used to activate the camera’s metering system (page 18) except after the AE lock has been depressed for more than 15 seconds, e.g., if the camera has been kept on the left hand side. In this case the camera can only be activated for normal use by depressing the exposure release button to the pressure point.

The Automatic Exposure (AE) Lock

The AE lock is the push button in the center of the mode selector dial, marked with a red ring. It has different functions, depending on the mode of operation as described later. It can also be used to activate the camera’s metering system (page 18) except after the AE lock has been depressed for more than 15 seconds, e.g., if the camera has been kept on the left hand side. In this case the camera can only be activated for normal use by depressing the exposure release button to the pressure point.

The Adjustment Buttons

The adjustment buttons have different functions depending on the selected mode. With a few exceptions, a single push on the upper button increases and on the lower button decreases the value to be adjusted. If you keep the button depressed for more than half a second the value starts to change at a rate of 4–5 steps per second until the button is released.

The Flash Connectors

The larger six-pin TTL-connector provides automatic control of dedicated flash units. The Hasselblad ProFlash 4500 can be connected directly to the 203FE but other dedicated flash units may require a slave adapter, such as the Hasselblad SCA adapter 390 or 590, between the unit and the camera. The smaller connector is a common PC-socket for any kind of flash unit. You can find further instructions on flash photography with the 203FE on pages 59 and 88.

Display Illumination

In low light levels depressing the switch button on the upper edge of the control panel switches on the illumination of the viewfinder display. The button has a triple function.
Lenses

The Hasselblad lenses made since 1957 can be separated into two major groups, each with two subgroups:

1. Lenses with a built-in leaf shutter:
   - CF lenses
   - CF lenses

2. Lenses without shutter:
   - FE lenses

All these lenses can be used on the 203FE. Only the FE lenses will give you access to the full range of exclusive and sophisticated features of the 203FE.

FE Lenses Functions

Setting the Aperture

The stop ring is the one closest to the shutter release ring on the camera body. Use it to pre-set the selected f-stop. The full f-stop shrinkage is made on the ring by moving the click stop, but there are also click stops for which intermediate half-steps. The set aperture value can be read against the index line on the exposure ring in front of the aperture ring. If this value differs from the exposure value, you can also show it on the viewfinder display when you depress the exposure button halfway, i.e., up to the pressure point.

The aperture ring has two grooved areas for handling convenience. One of these grooves has a push-button which has no function on the 203FE.

Focusing and Depth-of-field

The focusing ring is the rotating ring with a knurled rubber grip closest to the front of the lens. It has two slots for the focusing distance and the exposure index. The white meter scale and the orange index scale rotate with the focusing ring until the image of your subject appears absolutely sharp on the focusing screen.

The Depth-of-field Scale

The depth-of-field scale repeats the aperture values on both sides of the neap index line between the focusing ring and the focusing ring. When the image is focused on the screen you can read the focusing distance opposite the index line on the depth-of-field scale. However, the aperture settings of the lens you are using may affect the exposure index. The illustration depicts the depth-of-field for the pre-set aperture value of f/8.

Depth-of-field Preview

The lens is natively set at the largest aperture. You can use the brightest possible viewfinder image with the shallowest depth-of-field. You can stop down the lens diaphragm to the pre-set aperture by pushing down the depth-of-field preview knob until it locks. Turn the depth-of-light, depress the lower end of the knob.

Infrared (IR) Photography

Infrared light with wavelengths beyond 800 nm is reflected by the lens to an image plane. Lettering away from the lens than the image plane for visible light. When photographing with IR light you have to compensate for this difference by setting the focusing distance of the 203FE in the right of the common index. The following procedures:

1. Focus as usual on the focusing screen:
2. Move the mirror on the focusing scale and the common index.
3. Reset the focusing ring to set this distance opposite the IR index.

Exposure Value (EV)

The orange scale on the right-hand indicator indicates the brightness of the viewfinder image. This index is for the real aperture/selected shutter combination. You will see the value opposite the orange index on the shutter release ring. The index wins no particular position on the 203FE. Do not contaminate the exposure value with the light value applied in the metering system when you release and release the AE-lock (page 28).

Other Hasselblad Lenses

How to use other Hasselblad lenses on your 203FE is described on pages 56–60 and in Appendix A.

Magazine Operation

Loading the Magazine

You can load the magazine with film on or off the camera. With the magazine slide inserted you have to ensure that its flat side or turned towards the magazine body.

Follow the procedure below to load a film:

1. Open the film holder key.
2. Turn the key clockwise and withdraw the film holder.
3. Place an empty take-up spool under the grooved knob of the spool clamp bar. Insert a roll of film under the other end of the bar, turned as in the picture. Remove all of the paper band surrounding the roll.
4. Turn the film holder key to open the spool clamp. Pull 8-10 cm (3-4 in.) of paper backing off the film roll. Slide the side stop of film under the clamp.
5. Insert the tongue of the backing paper into the slot in the take-up spool.
6. Turn the grooved knob counterclockwise to align the arrow on the paper with the indicator on the roller. Insert the film holder key to lock the film holder in the magazine.
7. Turn the film holder key to lock the film holder into the magazine. Ensure that it is correctly positioned. Turn the film holder key to lock the film holder in the magazine.
8. Fold out the film winding crank. Roll it up about ten turns until it stops. Turn it clockwise and fold it in.
9. Number 1 will then be displayed in the frame counter window. You will then see the value opposite the orange index on the shutter release ring. This index wins no particular position on the 203FE. Do not contaminate the exposure value with the light value applied in the metering system when you release and release the AE-lock (page 28).

Magazine Operation
Magazine Load Status
In the center of the film holder key there is a crescent-shaped indicator window that shows when the magazine is fully loaded. If it gradually changes to red as the film is wound through, an red indicator shows that the film is used up or that the magazine is empty.

Removing the Film
After the last frame has been exposed and the film advanced, the magazine blocks the camera against further release. To remove the exposed film, feed out the film winding crank and turn it clockwise until you can feel that the film is leaving the supply spool. Withdraw the film holder from the magazine and remove the film.

Film Tab Holder
The end tab of the film pack can be inserted in the holder on the back of the magazine as a reminder of the kind of film that has been loaded into the magazine.

Film Speed Dial
On the left-hand side of the magazine above the film holder key is the film speed dial. The speed set on this dial is automatically transferred to the metering system in the camera body and displayed in the viewfinder in the Pr mode (page 40). The range of the film speed dial extends from ISO 12 to ISO 6400 with 1/3 and 2/3 intermediate settings.

20FE Selective Metering System and Operating Modes
Pages 28 and 29 described how you can select the various operating modes by using the 20FE. The description included, also in short, the function of the different controls on the control panel and how to use them. The following section describes in detail the metering system and the different operating modes.

The Metering System
The different methods to start the camera and activate the metering system are described on page 16. The system turns off automatically 16 seconds after the last button operation.

The selective light meter is the most important feature in the metering system. The metering area is indicated by a circle of dots in the center of the focusing screen. The circle has a diameter of 28 mm which is approximately 20% of the total image area. The meter is very sensitive and accurate. It measures the light reflected from the subject within the metering area, applying a soft integral method, and has a limited reaction to light from outside that area. Thus, even minor displacements of the metering area may result in unchanged values in exposure values.

NOTE: Leave all other reflex exposure meters of the selective meter is adjusted to give an exposure value that is in the red produces an 16%, gray, no matter if the metered subject black, gray, white or any of these. If the metered area is brighter or darker than the 16% gray the metering result has to be adjusted manually up or down to obtain the picture result.

The value that is stored in the metering system is the light value. This means that the shutter speed calculated by the system is adjusted automatically if the pre-set aperture of the film speed is changed. The working shutter speed is adjusted in 1/3 to 1/3 EV steps (see page 24), i.e. much more accurate than the half speed steps that for practical reasons are used on the viewfinder display.

Functions:
Pr To set the film speed when you are using standard film magazines. The film speeds can be set from 12/12 ISO to 640000 ISO in 1/3 EV steps (1 ISO increment). The standard setting is 100/200/ISO.

Pr2 To set the shutter delay in the range from 2 seconds to 60 seconds. The available values are 2, 4, 6, 8, 10, 12, 14, 16, 20, 30, 40, 50, 60 seconds. The standard setting is 10 seconds.

Pr3 To adjust the automatic flash metering function, lacking the use of引起 is flash. The setting range is 3 to 11 EV in 1/3 EV increments. The standard setting is 0.

Pr4 To set the exposure shift in the AE mode for automatic bracketing. The shift has four different settings: 0, 1/3, 2/3 and 1 EV. The standard setting is 2/3 EV.

Pr5 To switch the reference metering function On/Off and to set the warming values for reference metering in M mode. The standard setting is Off.

How to use the “Pr” Mode
The Programmed Pr mode can be selected whenever the circumstances require a change of the standard values listed above, or a change of previously mode settings. The changed values are effective as soon as they are entered.

Magazine Slide Pocket
On the rear of the magazine is the slide pocket where the magazine dark slide could be stored away when not in use. Slide the slide with the hinge towards the rear to hold the bow fully into the slide pocket recesses.

Film Plane Index
Close to the magazine front and mounted into the rubber grip surface is the film plane index. It can be used to measure the subject-film distance when the exact figure is required, e.g. in close-up photography.

Other concepts used in this manual are continuously metering and simultaneous indication. This means that the system continuously measures the light from the part of the subject which at that moment lies within the metering area and also continuously updates the value displayed in the viewfinder.

Optional Features
Less symbols or symbols in the viewfinder indicate that an additional function has been triggered. See pages 54 and 59 about warnings.

Operating Modes
The different operating modes are described in the order they appear on the Mode Selector Dial.

Pr Programming Mode
The Pr mode is not an exposure mode but used to enter certain user defined values, different from the standard settings, which are built into the camera. The standard settings are always set when you activate the system after the battery has been removed or if no other values are stored from previous operations. Any change made in the Pr mode is effective until changed again or until the battery is removed.

NOTE: After a battery change the system always returns to the standard settings and all previously entered values are lost.

Setting the Film Speed (Pr1 function)
Setting the film speed in Pr mode is possible only when a common A-camera is used. This is indicated on the display by the symbol "Pr" before the film speed value. With an E-camera the film speed is set on the magazine dial (page 36). The Pr1 function is inactive and the display shows the magazine dial setting only.

1. Set the Mode Selector Dial in the Pr position.
2. Depress the AE-lock button to start the camera and then repeatedly if required to select the Pr1 function.
3. Press the adjustment buttons to change the film speed value. The upper button increases and the lower decreases the value in steps of 1/3 EV.
4. Repeat the Mode Selector Dial to the desired exposure mode or press the AE-lock button to switch to next Pr function.

NOTE: A film speed value manually inserted in the Pr1 function is stored until changed again by the same procedure (or until the battery is removed).
If an E- or TCC- (or TCC) magazine is attached, the film speed is set on the magazine dial overrides the stored value. When the magazine is detached, then the stored value is automatically recalled. Thus it is easy to shift between E- magazines and common magazines with films of different speeds (e.g., Polaroid films).

Setting the Shutter Delay (PP function)
1. Set the Mode Selector Dial in the Pr position.
2. Depress the AE-lock button to start the camera and then repeatedly if required to select the PP function.
3. Press the adjustment button to change the shutter delay. The upper button increases the delay and the lower button decreases it (4 steps per operating step (4c), page 40).
4. Reset the Mode Selector Dial to the desired exposure mode or press the AE-lock button to switch to next Pr-function.

Adjusting the Automatic Flash Metering (PP function)
The function is used to introduce a fixed adjustment in the automatic flash control to reduce or increase the flash power, e.g., for flashroom applications.
1. Set the Mode Selector Dial in the Pr position.
2. Depress the AE-lock button to start the camera and then repeatedly if required to select the PP function.
3. Use the upper adjustment button as a toggle switch to switch the function on or off.
4. Press the lower adjustment button to set the automatic flash metering levels, with 1/3 of EV increments within the 1/3 to 3 EV range. The lower the value, the lower the flash power level.
5. Reset the Mode Selector Dial to the desired exposure mode or press the AE-lock button to switch to next Pr-function.

Operating the Reference Metering (PP function)
In Pr mode, the reference metering function can be switched on or off and the warning levels can be established.
1. Set the Mode Selector Dial in the Pr position.
2. Depress the AE-lock button to start the camera and then repeatedly if required to select the Pr function.
3. Use the upper adjustment button as a toggle switch to switch the function on or off.
4. Press the lower adjustment button to set the automatic warning levels, with 1/3 of EV increments within the 1/3 to 3 EV range. The upper the value, the lower the warning level.
5. Reset the Mode Selector Dial to the desired exposure mode or press the AE-lock button to switch to next Pr-function.

AB Automatic Bracketing Mode
Function:
Automatic exposure with aperture priority, pre-selected film speed and automatically calculated shutter speed.
Exposure bracketing with 0, 1/3, 2/3 or 1 EV-step presetted bracket increments.
Features:
Calibration of the metering light value.
Locking and storing of the light value at a selected moment by keeping the exposure button at the pressure point. Permanent preselected adjustment of the continuous or stepped light value ± 5 EV-steps in 1/3 EV-step increments.

How to Use the "AB" Mode
For the best utilization of the sequential AB mode you are recommended to use the Hasselblad winder accessory.
The selected range in the 1000°F is very sensitive and reacts to the smallest change in the light level within the measuring range (pages 13 and 39). The shielding of the sensor makes it much less sensitive to light outside that area. The metering area should be located on a suitable subject to avoid changing readings in the viewfinder display constantly observed before storing the reading or releasing the exposure.
Exposure bracketing is very useful when the subject is difficult to meter or when the possibility to make an accurate determination of the exposure value is limited. Bracketing is best performed by using the winder for the smoothest operation. The same runs as long as the exposure button is kept depressed or until the film is finished, and for each exposure after the first one the shutter speed is changed according to the preset shift value. The second button gets one step more exposure (lower EV), the third and step less (higher EV), the fourth two steps more, the fifth two steps less, and so on. The bracketing shift function is limited to 10 exposures above and below of the originally measured and stored light value. Thus, after 21 exposures there is no more shift in the exposure values. During the bracketing operation, the light meter is disenabled.
The value of the shift step should be preset to any of the steps 0, ± 1/3, ± 2/3 or ± EV in P mode (page 43). Default value is ± 1/3 EV, which gives a total exposure range of ± 2 EV. With a shift step of ± 1 EV, the maximum total exposure range is ± 4 EV. If any of the shutter speeds selected (0.0, 0.0 or 10.0) is reached during bracketing that speed will be repeated until the operation is terminated.

Suggested procedure:
1. First set the desired bracketing shift value using the Pr function (pages 40, 42).
2. Set the desired shutter speed. With an E- or TCC- (or TCC) magazine, set the film speed dial (page 39). With a standard magazine use the Pr mode to enter and store the film speed (page 41). Pr-set the desired aperture.
3. Set the Mode Selector Dial at Al and aim the camera to locate the metering area on a selected subject part.
4. Start the metering system by depressing the exposure release button (page 23) to the "pressure point". This display shows the pre-set aperture, the metering "L", and the displayed shutter speed calculated from that aperture, the pre-set ISO value and the metered light level is locked in the metering system and is saved for Automatic Mode. When you release the button the aperture figure are replaced by a figure that shows the stored exposure correction. The system changes to the continuous metering state and the shutter speed figure keeps changing when the metering area is moved about. If the display goes out, the system is re-activated by depressing the exposure button half-way again.
Depressing the exposure button fully at this stage releases an exposure with the shutter speed that was locked down to the time when the exposure button reached the pressure point on the way in.

NOTE: This system can also be started by depressing the AE-lock button. It then reaches as described in Pr above. Displaying the AE-lock button during all previously stored exposure information.
5. Depress and release the AE-lock button to lock and store the exposure of a selected subject area. The display shows the locked shutter speed, "L", 3 for locked off, "O" for "no adjustment". If the aperture or ISO setting is changed the shutter speed adjusts automatically.

NOTE: Depressing the exposure button resets the system to p4 above.
6. Use the adjustment buttons (page 29) to adjust the stored exposure if necessary. The display shows the + or - amount of
D. Differential Mode

**Functions**
Automatic exposure with aperture priority, pre-set film speed and calculated shutter speed.

**Features**
- Continuous metering of the light value.
- Locking and storing of the light value in a selected moment.
- Continuous indication of the difference between the stored and the presently measured light value.
- Adjustment of the stored light value by 5 EV-steps in 1/3 EV-step increments.

**How to Use the "D" Mode**
The Differential D Mode is very convenient when you want to find out the contrast range of a subject. By locking and storing the light value on one subject part and then moving the metering area over the subject, the display continuously shows the contrast difference between the initially released part and the present location of the metering area. The stored light value remains for any number of exposures until intentionally replaced or adjusted.

**Suggested procedure**
1. Pre-set the film speed. With a E- or TDC magazine, use the ISO film speed dial (page 36). With a standard magazine use the Pr mode to select and store the film speed (page 10).
2. Pre-set the desired aperture.
3. Set the Meter Selector Dial at D and use the camera to place the metering area on a selected subject part.

4. Depress the AE-lock button to start the metering system. The viewfinder display shows the symbol "DF", the word "D", the shutter speed (displayed above the preset aperture), the ISO setting and the measured light value. This continuously changing the speed as the metering area is moved to brighter or darker subject parts.

5. Release the AE-lock button to lock the exposure value and the shutter speed on a selected "reference" subject part consisting of the desired "normal" ignoring the metering area is moved to other subject parts.

6. Use the adjustment buttons to adjust the exposure up or down to the desired level (up to 1/3 EV increments). You can also adjust the shutter speed automatically by having the exposure release button on the pressure point, and you can change if it is required. The shutter speed is automatically adjusted to the new aperture setting, re-metering the exposure unchanged.

7. Depress the exposure release button fully to make an exposure.

8. Rewind the camera to cock the shutter and advance the film to the next frame with the previous exposure values and adjustments maintained.

**How to Use the "M" Mode**
The M mode is completely manual. The metering system is working, but it does not change the shutter speed (the aperture is unchanged manually). The display indicates the calculated "normal" exposure for the metered subject part, but the exposure will be executed according to the manual settings.

**Suggested procedure**
1. Pre-set the film speed with the film speed dial (E- or TDC magazine) or using the Pr mode with a standard magazine. (This step may be omitted but is required for a correct indication on the viewfinder display.)
2. Set the Mode Selector Dial at M.
3. Set the aperture and the shutter speed manually.

**M Manual Mode**
Normal exposure, reference function. off.

**Functions**
Manual pre-setting of aperture as well as shutter speed.

**Features**
Completely manually controlled exposure, continuous indication of the difference in EV between the pre-set exposure and the exposure calculated by the camera's CPU.

**How to Use the "M" Mode**
The M mode is completely manual. The metering system is working, but it does not change the shutter speed (the aperture is unchanged manually). The display indicates the calculated "normal" exposure for the metered subject part, but the exposure will be executed according to the manual settings.

**Suggested procedure**
1. Pre-set the film speed with the film speed dial (E- or TDC magazine) or using the Pr mode with a standard magazine. (This step may be omitted but is required for a correct indication on the viewfinder display.)
2. Set the Mode Selector Dial at M.
3. Set the aperture and the shutter speed manually.
M (Ref) Manual Mode, reference
Normal exposure, reference function on.

Features:
A manual pre-setting of aperture as well as shutter speed.
Pre-programming of acceptable exposure variation and optional warning feature.

How to Use the "M (Ref)" Mode
The M (Ref) Mode is completely manual, but the metering system is still working. It detects any changes in the ambient conditions but does not change the shutter speed (the aperture is always pre-set manually). You decide the proper exposure for the actual subject yourself, using the camera's metering system or any other means, and enter that exposure manually by setting the aperture and shutter speed.

M (Ref) Manual Mode
Aperture priority, metering system disabled.

Features:
A manual pre-setting of aperture as well as shutter speed.

Suggested procedure:
1. Set the Mode Selector Dial to M.
2. Depress the exposure release button or the AE-Lock button to select the camera.
3. Depress both adjustment buttons at the same time to select "long exposure".
4. Depress the exposure release button to show the pre-set aperture and shutter speed.

WARNING Functions
When the camera settings could result in an exposure error, the red warning triangle flashes.

Permanent Warnings
The permanent warnings are built into the system and cannot be changed or disabled.

Battery Capacity Warning
When the battery voltage drops below a certain point, the battery symbol is displayed for at least two seconds and the warning triangle flashes twice.

NOTE: Battery capacity may cause the battery symbol to disappear after the two seconds.

Shutter Speed Warning
When the calculated shutter speed is slower than 1/8 or faster than 1/1000 the shutter speed indication and the red warning triangle will flash.

Light Meter Range Warning
When the reading falls below or above the range indicated by the light meter, the indication "Lo or "Hi" appears in the left-hand part of the display, if no other light value is stored, the warning triangle flashes.

Operating Modes, Manual Mode (Ref)

How to Use the "M (L.E.)" Mode
The M (L.E.) mode is completely manual. The metering system is disabled. The display indicates the manual settings.

Suggested procedure:
1. Set the Mode Selector Dial at M.
2. Depress the exposure release button or the AE-Lock button to select the camera.
3. Depress both adjustment buttons at the same time to select "long exposure".
4. Depress the appropriate exposure and set the aperture and shutter speed manually. The display shows the letters "M" and "L.E." to indicate the long exposure function and the selected shutter speed in minutes and seconds.
5. Depress the exposure release or the pre-release button to the exposure point. The display changes to show the pre-set aperture and shutter speed.
6. Depress the exposure release button. All the way in for an exposure with the set values.

WARNING Functions
In dedicated flash photography the indication "Hi FLASH" or "Lo FLASH" is displayed together with the flashing warning triangle and display backlighting if the flash was too bright or it was insufficient. This warning is on for 2 seconds after the exposure.

If the pre-set film speed exceeds the range for the automatic flash control (ISO 25 – 1000) the indication "FLASH E" is displayed when the exposure button is depressed to the depress point.

Reference Warning
The difference indication flashes when the pre-set limit is exceeded.

This optional warning function can be set, changed or disabled by you (P15, page 44).

Flash Photography
Dedicated Flash Unit
The flash control function in the 302E works behind the selected mode operation, which technically remains unchanged. The film speed range for the flash function is ISO 25 – 1000. When a dedicated flash unit, such as the Hasselblad Flash 450E, or another unit complying with the European SCA standards is connected to the dedicated flash socket (page 14) – directly or through a suitable adapter – and set on the green flash symbol in the viewfinder automatically lights up when the flash is charged and operative. A plus or minus flash metering adjustment has been entered, the +/- plus-minus sign also appears in the display.
Your 203/E controls the flash duration by TTL (or T-type through the lens) or OT (off-the-lens), i.e., it meters the light coming off the film and terminates the flash when the exposure is correct. 

There is of course also the possibility to connect the flash unit to the PC socket, but you will no longer have the advantage of using the camera system control the flash and the exposure. 

The camera continues to operate in the selected mode with the calculated or pre-set shutter speed. 

If an automatic mode is desired for the metering the D mode is recommended. Meter the selected subject area, lock the metered value and make the desired adjustments. 

Then adjust the aperture or use the adjustment keys until the shutter speed figure stops flashing to be sure that the shutter speed will be slower than 1/500 s. Note that even the displayed 1/90 s could be flashing! 

NOTE: the shutter speed is faster than 1/90 s the shutter speed display flashes and no sync signal is generated to trigger the flash.

How to use the dedicated flash 

A. Flash set at TTL mode 

For the operation of the flash unit see the flash unit instruction manual. 

Functions: 

- Fully automatic exposure control through TTL 
- Exposure plus pre-set aperture and shutter speed slower than 1/90 s. 

4. Depress the exposure button to the pressure point. 

The camera is working in the selected mode. When the exposure button is depressed, the pressure point the display appears in accordance with the mode except for the described flash indication. 

5. Release the exposure button fully to make the exposure and trigger the flash. 

The control circuits in the camera cut the flash when the exposure is correct. 

The sign "FE" appears on the display when the flash was too bright, e.g. if the flash-to-subject distance is short, the camera amplification, the flash or any combination of these. The remedial measures are to move the flash away from the subject (use a lens with longer focal length) or reduce the aperture, change to a slower film. 

The sign "LO FLASH" appears when the flash was insufficient to give a correct exposure, e.g. if the flash-to-subject distance is too long, the aperture is too small, the film too slow. The remedial measures are to reduce the flash-to-subject distance, larger aperture or faster film. It also appears at shutter speeds faster than 1/90 s when the flash triggering was delayed when the exposure was released. 

In both cases the suggested remedial measures could be combined in any desired way. 

B. Flash set at Automatic Mode 

The flash unit should be set for its own built-in automatic control (see the flash unit instructions). 

Functions: 

- Automatic exposure control through the built-in system in the flash unit. 
- Exposure with pre-set aperture and shutter speed determined by the selected operating mode. 
- Viewfinder indication when the flash unit is charged and ready to flash. 
- Viewfinder warning at over- and under-exposure and delayed flash triggering. 

Suggested procedure: 

1. Attach and connect the flash according to the Flash Manual. With the Hasselblad Pro-Flash 4054, connect the TTL-cable between the dedicated flash socket in the camera body (page 29) and the TTL socket in the flash unit. (The PC connector of Proflash 4054 is imperative but can be "parked" in the PC-socket.) 

2. Set the flash unit to Automatic or corresponding mode, set the film speed on the flash unit's dial and switch it on. When the flash unit is charged and ready to flash, the green flash symbol (page 16) lights up in the viewfinder. 

3. Select and pre-set the lens aperture for the desired aperture on the flash unit's dial at the corresponding aperture value or set the flash-to-subject distance on the flash dial, and the corresponding aperture value on the dial and pre-set the camera aperture at the same value. 

4. Depress the exposure release or the pre-release button to the pressure point to start the camera. The camera operates in the selected mode and the display shows the corresponding indications. 

Warnings (page 58): 

The sign "FE" appears on the display when the flash was too bright, e.g. if the flash-to-subject distance is short, the camera amplification, the flash or any combination of these. The remedial measures are to move the flash away from the subject (use a lens with longer focal length) or reduce the aperture, change to a slower film. The sign "LO FLASH" appears when the flash was insufficient to give a correct exposure, e.g. if the flash-to-subject distance is too long, the aperture is too small, the film too slow. The remedial measures are to reduce the flash-to-subject distance, larger aperture or faster film. It also appears at shutter speeds faster than 1/90 s when the flash triggering was delayed when the exposure was released. 

In both cases the suggested remedial measures could be combined in any desired way. Both warnings appear for two seconds after the flash exposure together with a flashing display backlighting, which also is visible from the outside in the display backlighting window.
Non-dedicated Flash Units

With a non-dedicated flash unit you can not take advantage of the sophisticated TTL/OTF flash metering and control system in the 200FE and the viewfinder information supplied by this system. You must have to rely on the control system of the flash itself or your own exposure calculations. Always refer to the Flash Instruction Manual for flash settings and Guide Numbers.

The non-dedicated flash unit should be connected to the PC-socket next to the TTL socket on the left hand side of the camera body through a conventional synchronization cord, usually supplied with the flash unit.

The metering system and the viewfinder display in the camera will work normally in all operating modes as if no flash was connected, i.e. the flash symbol in the viewfinder will not light up when the flash is ready.

NOTE: The locked shutter speed for full flash synchronization is 1/500, corresponding to the symbol on the shutter speed ring. At slower shutter speeds the exposure is not triggered. Use the camera's M mode and the 1/500 shutter speed to ensure that the flash will fire.

Since the metering system automatically calculates and sets the correct shutter speed in the modes A, A and D, you must monitor the viewfinder display closely to check that the shutter speed is 1/500 or slower before making the exposure. Change the pre-set aperture or use the adjustment buttons to change the shutter speed if necessary.

C. Flash set at Manual Mode

The flash unit should be set for manual control (see the Flash unit Instructions).

Functions:

Exposure with pre-set aperture and shutter speed determined by the operating modes.

Viewfinder indication when the flash unit is charged and ready to fire.

Viewfinder warning at over- and under- exposures and disabled flash triggerings.

Suggested procedure:

1. Attach and connect the flash according to the Flash Manual.

With the Hensel Elinor Prolight 504A connect the TTL-cable between the dedicated flash socket on the camera body (page 25) and the TTL socket on the flash unit.

The PC-connector of Prolight 504A is imperative but can be 'parked' in the PC-socket.

2. Set the flash unit to Manual or corresponding mode and switch it on. When the flash unit is charged (more than 100 when the flash triggering was disabled, both warnings appear together with a flashing display backlighting for two seconds after the flash exposure).

6. Readjust the exposure release button fully to release the exposure and trigger the flash. In Manual mode the flash normally uses full power.

The flash symbol turns off while the flash unit is recharging and lights up again when it is fully recharged.

Warnings (page 56)

The sign "Hi FLASH" appears on the display when the flash was too bright, e.g. if the flash-to-subject distance is short, the camera aperture too large, the film too fast or any combination of these. The remedies are to move the flash away from the subject (use a lens with longer focal length), reduce the aperture, change to a slower film.

The sign "Lo FLASH" appears when the flash was insufficient to give a correct exposure, e.g. if the flash-to-subject distance is too long, the aperture is too small, the film too slow. The remedies are to move the flash nearer to the subject, use a slower film, etc. It also appears at shutter settings slower than 1/500 sec. In the fill-in mode the flash triggering was disabled.

Both warnings appear together with a flashing display backlighting for two seconds after the flash exposure.

7. Rewind the camera to cock the shutter and advance the film to the next frame.

Non-dedicated Flash Units

With a non-dedicated flash unit you can not take advantage of the sophisticated TTL/OTF flash metering and control system in the 200FE and the viewfinder information supplied by this system. You must have to rely on the control system of the flash itself or your own exposure calculations. Always refer to the Flash Instruction Manual for flash settings and Guide Numbers.

The non-dedicated flash unit should be connected to the PC-socket next to the TTL socket on the left hand side of the camera body through a conventional synchronization cord, usually supplied with the flash unit.

The metering system and the viewfinder display in the camera will work normally in all operating modes as if no flash was connected, i.e. the flash symbol in the viewfinder will not light up when the flash is ready.

NOTE: The locked shutter speed for full flash synchronization is 1/500, corresponding to the symbol on the shutter speed ring. At slower shutter speeds the exposure is not triggered. Use the camera's M mode and the 1/500 shutter speed to ensure that the flash will fire.

Since the metering system automatically calculates and sets the correct shutter speed in the modes A, A and D, you must monitor the viewfinder display closely to check that the shutter speed is 1/500 or slower before making the exposure. Change the pre-set aperture or use the adjustment buttons to change the shutter speed if necessary.

C. Flash set at Manual Mode

The flash unit should be set for manual control (see the Flash unit Instructions).

Functions:

Exposure with pre-set aperture and shutter speed determined by the operating modes.

Viewfinder indication when the flash unit is charged and ready to fire.

Viewfinder warning at over- and under-exposures and disabled flash triggerings.

Suggested procedure:

1. Attach and connect the flash according to the Flash Manual.

With the Hensel Elinor Prolight 504A connect the TTL-cable between the dedicated flash socket on the camera body (page 25) and the TTL socket on the flash unit.

The PC-connector of Prolight 504A is imperative but can be ‘parked’ in the PC-socket.

2. Set the flash unit to Manual or corresponding mode and switch it on. When the flash unit is charged (more than 100 when the flash triggering was disabled, both warnings appear together with a flashing display backlighting for two seconds after the flash exposure).

6. Readjust the exposure release button fully to release the exposure and trigger the flash. In Manual mode the flash normally uses full power.

The flash symbol turns off while the flash unit is recharging and lights up again when it is fully recharged.

Warnings (page 56)

The sign "Hi FLASH" appears on the display when the flash was too bright, e.g. if the flash-to-subject distance is short, the camera aperture too large, the film too fast or any combination of these. The remedies are to move the flash away from the subject (use a lens with longer focal length), reduce the aperture, change to a slower film.

The sign "Lo FLASH" appears when the flash was insufficient to give a correct exposure, e.g. if the flash-to-subject distance is too long, the aperture is too small, the film too slow. The remedies are to move the flash nearer to the subject, use a slower film, etc. It also appears at shutter settings slower than 1/500 sec. In the fill-in mode the flash triggering was disabled.

Both warnings appear together with a flashing display backlighting for two seconds after the flash exposure.

7. Rewind the camera to cock the shutter and advance the film to the next frame.
F-Lenses
The F-lenses are optically, mechanically and operatively identical with the corresponding FE-lenses but are not equipped with their internal electronics and external identifications. The instructions for the FE-lenses are generally applicable also to the F-lenses (page 31).

NOTE: With an F-lens on the camera the aperture value does not appear in the viewfinder display when the exposure or preview button is depressed. Instead the display shows two dashes (―). How to use the 203FE with an F-lens
Like all Hasselblad lenses the F-lenses are normally opened up to the largest aperture in viewing position but can be stopped down manually to the pre-set aperture. Since no information on the pre-set aperture is transferred to the metering system in the camera body by the shutter speed camcassette by the system relays to the actual lens aperture. To get a correctly calculated shutter speed you have to stop down the lens to the pre-set aperture before you make the exposure. With the extra-ordinary brightness of the Auto-Matte focusing screen there are usually no difficulties to focus with a stopped-down lens.

Suggested procedure:
1. Pre-set the film speed as previously described.
2. Pre-set the desired aperture value.
3. Set the Mode Selector Dial at the desired mode of operation.
4. Step down the lens by pushing the preview button down until it locks (page 32). 5. Follow the instructions for the selected mode of operation.

Flash photography with F-lenses
The overall similarity between the FE- and F-lenses makes the flash photography procedure almost identical. The only difference is that the aperture value does not appear on the viewfinder display.

Dedicated Flash Unit
The TTL/OTF flash control system makes no difference between the FE- and F-lenses as it always operates when the lens is stopped down during the exposure.

How to use the Dedicated Flash
The procedure is identical to those described for the FE-lenses in all flash and camera modes of operation (pages 56-63).

Non-dedicated Flash Unit
The information and procedure described for the use of a non-dedicated flash unit together with a FE-lens (page 66) is still applicable with an F-lens.

Winder
The TDC Winder materials the 203FE for a maximum frame rate of 1,3 fps.

E-type Extension Tubes
For close-up and macro photography the E-type extension tubes have all connections, both mechanical and electrical, between camera body and lens.

Accessories
All accessories originally designed for the 203FE are marked with the blue line. The mark is always located on that side which is the left when the accessory is attached to the camera to make it easily identified.

How to use the 203FE
A third group of accessories can be used but will cause certain limitations to the TCC functions.

Accessories
Finally there is a fourth group of accessories that cannot in any way be used on the 203FE.

Accessory Mounts
The quick coupling plate on the bottom of the camera body (pages 25 and 72) fits to the handy and reliable Hasselblad tripod quick coupling and to the flash gun bracket.

On the front of the lenses are external and internal bayonet mounts for filters, close-up lenses and shade. The viewfinder mount on top of the camera body accepts various focusing screens and viewfinders. Underneath the winding crank is a bayonet mount for the Hasselblad Winder.

Major FE Accessories
A selection of the most important FE accessories is described below. For a complete review of the Hasselblad system refer to the Hasselblad Product Catalog.

Viewfinders
Besides the focusing hood which is deliver ed with the camera body you have a choice of a magnifying hood and prism viewfinders with and without exposure meters.

General Accessories
The range of general Hasselblad accessories that can be used on the 203FE without affecting the metering functions include various focusing screens, lens shades and filter adaptors. There is also the Hasselblad Winder and the Hasselblad Portrash 450/3 dedicated flash unit. Other dedicated flash units can be connected through flash adaptors such as the Hasselblad SCA 390 and SCA 590.

Other Accessories
These accessories can be used but will result in certain limitations to the metering system. The F and CF-lenses belong to this group.

External Battery Cassette
The external battery cassette connector replaces the original battery cassette in the battery compartment. It provides additional power and the extension cord allows you to keep the batteries warm in your pocket when you are using the 203FE in cold conditions.

do the bellows and the PC-Motor. Also some of the discontinued accessories such as the C lenses belong here.

Finally there is a group of accessories which cannot be used on your 203FE. Free the other Hasselblad reflex models.

The Hasselblad System Chart
Overleaf you will find the accessory chart that indicates the different groups of accessories in the Hasselblad System. Refer to the Hasselblad Product Catalog for complete information on the entire Hasselblad System. General Accessories
Can be used on the 203FE without affecting the metering function

Other Accessories
Causes limitations to the metering function when used on the 203FE.

Hasselblad System Chart

Hasselblad System Chart

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Hasselblad System Chart

Hasselblad System Chart
Troubleshooting

Your Hasselblad 203FE is built for long and trouble-free service, especially when you follow the advice in this manual and care page (page 62). Should you encounter any operational difficulties the troubleshooting chart below may help you to resolve them.

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POSSIBLE CAUSE</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>The camera cannot be activated in any way.</td>
<td>The battery is removed or completely discharged. The battery is reversed.</td>
<td>Install or replace the battery. Insert the battery according to the labeling on the battery. Use a suitable tool. Wind the camera with one full turn of the winding crank, or the film advance knob.</td>
</tr>
<tr>
<td>The camera cannot be activated by depressing the AE lock.</td>
<td>The AE lock has been depressed for more than 15 seconds.</td>
<td>Activate the AE lock by depressing the AE lock button.</td>
</tr>
<tr>
<td>The exposure release button cannot be depressed.</td>
<td>The camera was not rewound after the last exposure.</td>
<td>Rewind the film. With the camera one full turn of the winding crank, or film advance knob.</td>
</tr>
<tr>
<td>The viewfinder image is dark but the display is bright.</td>
<td>The lens cover is on.</td>
<td>Remove the lens front cover.</td>
</tr>
</tbody>
</table>

Faulty and Error Indications on the Viewfinder Display (A) (Hours tab system mark)

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POSSIBLE CAUSE</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>The display shows an error message.</td>
<td>The display is not properly installed.</td>
<td>Pull the display firmly forward until it stops.</td>
</tr>
<tr>
<td>The display indication is &quot;- -&quot;.</td>
<td>Defective contact between lens and camera body.</td>
<td>Disconnect the lens. Clean all four contacts between the lens and camera body with a clean, dry cloth or sponge. DO NOT touch the contact surfaces with your fingers.</td>
</tr>
<tr>
<td>The magenta symbol appears when a TCC magazine is attached.</td>
<td>Defective contact between magazine and camera body.</td>
<td>Disconnect the magazine. Clean all four contacts between the magazine and camera body with a clean, dry cloth or sponge. DO NOT touch the contact surfaces with your fingers.</td>
</tr>
<tr>
<td>The display indication &quot;- -&quot; is displayed together with A or B.</td>
<td>Electronic system error.</td>
<td>Bring the camera to an authorized &quot;Hasselblad Service Center&quot;. Explain the loop of the display to the service technician.</td>
</tr>
</tbody>
</table>

NOTE: If there is a control failure between the lens and the camera body you can still use your equipment according to the instruction for the F lens (pages 73-74). Contact failure between the magazine and the camera body could be averted by inserting PE mode and entering the film speed manually (page 41).  


Film Speed Range: ISO 12-120 to ISO 400/50, selected with film speed dial on E and TCC magazines or entered in programming mode.

Flash Control: Center weighted TTL-OTF flash exposure meter. Full dedicated flash control with flash display triggering at shutter speed limited from 1/200 s. Flash control limits exposure range ISO 25 – 1000.

Shutter: Normal type with 4 f numbers, interchangeable with magnifying hood and prawn viewfinder with and without exposure meter. TCC viewfinders only acceptable. Acute-Matt focusing screen interchangeable with other Hasselblad focusing screens. Buttoned flash and warning symbols.

Operation Display: LCD display in viewfinder with all relevant exposure and operational data and screen controlled low light illumination.

Camera Winding & Part Advancer: Manual single slot winding crank. Simultaneous shutter cocking and film advance. The crank is interchangeable with the Hasselblad motor winder for up to 1 3/4 frames/second.

Exposure Meter: TTL metering at full aperture with FE lenses. High sensitivity silicon photocell. Selecting meter areas approximately 20% of the image area. Metering range EV 0.5 to EV 21.5 at ISO 100/21 and f/2.8. Active line 16 after release of any operational button.

Camera Body Dimensions:

Dimensions 63
Camera Care, Service and Guarantee

Camera Care.
Your Hasselblad camera is designed to withstand the rigours of professional use in most environments. In order to avoid the possibility of damage, however, the camera should be protected from the following:

- Extreme temperatures. High temperatures can have an adverse effect on both the film and the camera. Do not keep your camera in places where it may get hot, such as in direct sunlight or above a radiator.
- High humidity or condensation. In tropical environments fungus growth can be prevented by keeping your equipment in a well-ventilated area where the air is circulating. Frequent rapid and severe temperature changes can cause problems such as corrosion of electrical contacts, and should be avoided. When extremely cold temperatures, cameras and especially lenses should be protected as much as possible.
- Dust and grit. Prevent dirt of any kind from getting into your camera. When taking photographs in coastal areas, for example, the camera should be protected from sand and salt water spray.
- You can blow away dust on the lens glass, megaphone of focusing screen, or wipe it off gently with a soft cloth if necessary. Smears on the lens glass should be removed with a high quality lens cleaning solution on a soft, clean tissue. Be careful not to scratch the lens or touch any of the glass surfaces with your fingers. The surface of the mirror is coated and should be blown clean but not wiped. Lens cleaning solvents or other chemicals should not be used on the focusing screen.
- Service. Faultless camera performance is essential to the professional photographer. Therefore it is advisable to check that your camera is functioning correctly before an important assignment. Your should call your Hasselblad Authorized Service Center for periodic checking and preventive maintenance. If your camera is used constantly and intensively, exposing hundreds of rolls of film per week, chadshue every six months are recommended.

Hasselblad Service Centers have the expert staff and specialized equipment necessary to ensure that your camera remains in perfect working order.

Guarantee. Provided that you bought your camera from an authorized Hasselblad outlet, it is covered by an international guarantee for one year. The guarantee document and a registration card are supplied with the camera. Record the document carefully, but fill in the registration card and return it to your Hasselblad distributor.

APPENDIX A
Hasselblad 203FE with CF- and C-lenses

The CF- and the older C-lenses differ from the FE- and F-lenses through their built-in leaf shutter with shutter speeds from 1/1000 s and B. Both types have flash synchro-
chronization on all shutter speeds. The CF- lenses also have an additional shutter setting P to let the lens be used together with the focal plane shutter and the instant return mirror.

NOTE: Avoid using the 203FE with a C-
lens in temperature conditions below 2°C (35°F).

CF-lenses
With a CF-lens on your 203FE you can chose to use the focal plane shutter with all its advantages and full automation or to des- ignate the local plane shutter and benefit from the advantage of lens built-in leaf shutter with shutter interdependence and wallclocks of flash synchronization on selector shutter speeds.

NOTE: When you need shutter speeds of 1/1000 s or slower while using a CF-lens, you are under certain conditions recom-
mended to select the lens shutter at F (page 44) and use the camera's focal plane shutter.

CF-lens design and functions
The setting rings and scales on the CF-
lenses are arranged differently from those on the F-lenses. Counted from the camera body and towards the rings are:
- Focusing ring with focusing distance scale in feet (orange) and meters (white).
- Common index line and depth-of-field scale.
- Aperture ring with aperture scale and EV index (orange).
- Shutter speed ring with shutter speed scale, EV scale (orange) and F lock button (green).

How to use the CF-lens
A. Lens in F mode (leaf shutter open)

Suggested procedure:
1. Turn the shutter speed ring to the F setting.
2. Operate the camera as described for the F-lens.

B. Lens in C mode (leaf shutter working)

When using the built-in leaf shutter in the CF-

lenses, the focal plane shutter in the camera body must be disengaged. By setting the camera’s shutter speed ring in the C position (page 22, 23) the focal plane shutter is turned into an auxiliary shutter, only used to protect the film from inadvertent exposure.

NOTE: The leaf shutter remains closed after the exposure, leaving the viewfinder screen dark until the camera is remounted.

Suggested procedure:
1. Check that the lens’ shutter speed ring is not set.
2. Keep the lens catch button depressed while turning the camera’s shutter speed ring to align the O at the end of the scale with the red index mark.
3. Release the lens catch button to lock the shutter speed ring in the C setting.

APPENDIX A: CF-lenses

Depth-of-field Preview Knob
The Depth-of-field Preview knob location and operation is identical to the FE- and F-lenses (page 30).

APPENDIX A: CF-lenses

APPENDIX A: CF-lenses

Depth-of-field Preview Knob
The Depth-of-field Preview knob location and operation is identical to the FE- and F-lenses (page 30).

Q.

How to use the CF-lens
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1. Check that the lens’ shutter speed ring is not set.
2. Keep the lens catch button depressed while turning the camera’s shutter speed ring to align the O at the end of the scale with the red index mark.
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Depth-of-field Preview Knob
The Depth-of-field Preview knob location and operation is identical to the FE- and F-lenses (page 30).

Q.
How to use the Dedicated Flash
(Camera shutter speed set at C)

Suggested procedure:
1. Attach the flash to the camera if desired.
2. Connect the TTL cord according to the flash instruction.
3. Connect the PC-connector to the PC-socket on the CF-lens, not to the
   PC-socket in the camera body.
4. Set the flash unit in the desired mode of operation and switch it on. The green flash
   symbol in the viewfinder lights up when the flash is ready for use.
5. Select shutter speed and pre-set aperture on the lens.
6. Press and release the exposure button to make an exposure, observing the view-
   finder display for warning indications.
7. Rewind the camera to get the viewfinder image back, cock the shutter and
   advance the film to the next frame.

NOTE: When used at full power some
   electronic flash units have a flash duration
   longer than 1/500 s. To take advantage of
   the full flash power in such cases and to
   avoid "Lo FLASH" warning and under-
   exposure you are recommended to use
   shutter speeds of 1/128 s or slower.

How to use the Non-dedicated Flash Unit.
(Camera shutter speed ring set at C)

Suggested procedure:
1. Attach the flash to the camera if desired.
2. Connect the sync cord to the PC-socket on the CF-lens, not to the PC-socket in the
   camera body.
3. Set the flash unit at the desired mode and
   switch it on.
4. Select and pre-set aperture and shutter speed (preferably 1/125 s or slower).
5. Press the exposure button to make an
   exposure.
6. Rewind the camera to get the viewfinder image back, cock the shutter and
   advance the film to the next frame.

C-lenses
The Canon C-lenses (production terminated in
1982) look different but are in most respects
identical to the CF-lenses. There are, how-
ever, four major differences:
1. There is no F-setting on the shutter.
2. The shutter speed and aperture rings are
   normally interlocked.
3. There are two different flash synchroniza-
   tion modes.
4. There is a built-in mechanical self-timer.

How to use the C-lens
Avoid using the focal plane shutter together
with a C-lens. If it cannot be avoided follow
the procedure below:
1. Set the lens shutter at B.
2. Pre-set the desired aperture.
3. Set the camera shutter at the desired
   shutter speed.
4. Press the exposure button to make an
   exposure.
5. Rewind the camera to get the viewfinder
   image back, cock the shutter and advance
   the film to the next frame.

Lens in C mode
The procedure is identical with the CF-lens
procedure (page 95).

Flash photography with the C-lens
Using the camera's focal plane shutter
With the lens shutter set at B the lens can be
used as an F-lens.

Dedicated and Non-dedicated Flash Units
Follow the corresponding procedures for the
C-lens (page 87).

Using the C-lens' leaf shutter
Make sure that the flash mode selector is set at X.

Dedicated and Non-dedicated Flash Units
Follow the corresponding procedures for the
CF-lens (page 67).