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**H A S S E L B L A D**

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**H A S S E L B L A D**

**503CW**



*Instruction Manual, Gebrauchsanweisung, Brugsanvisning, Manual de Instrucciones, Manuel d'Instructions, Manuale d'Istruzioni, Gebruiksaanwijzing, Manual de Instruções, Bruksanvisning, Käyttöohjekirja.*

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**503 CW**

**Instruction manual**



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# Hasselblad 503CW

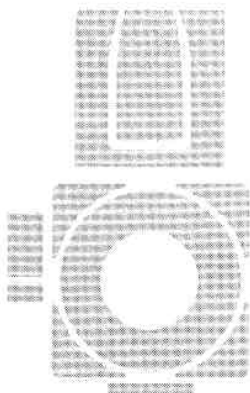
## – the 'workhorse' motorized

Thank you for choosing a Hasselblad 503CW. This camera continues the Hasselblad tradition of well-known and appreciated features that have carried the Hasselblad name beyond the ends of the earth and into space: reliability and absolute fidelity.

Several much sought-after features were incorporated in this further development of the Hasselblad 500-series cameras. Motorization is an available option simply by the addition of the Hasselblad Winder CW. The large mirror of the GMS (Gliding Mirror System) provides a full viewfinder image with virtually all Hasselblad CF lenses. Further enhancement of the image is achieved by the new improved "Acute-Matte D" focusing screen for more even illumination as well as easier and more accurate focusing. Originally featuring the 6 x 6 cm (2 1/4 x 2 1/4 in) format the 503CW also accepts format masks for 6 x 4.5 cm and 6 x 3 cm (panoramic) formats to broaden options.

With a Hasselblad 503CW you have opened the door to the Hasselblad System with its compatibility second to none in the medium format. It features interchangeability of 19 different lenses, 1.4x and 2x teleconverters, magazines for different image formats and film types including Polaroid films, viewfinders with or without exposure metering properties, a number of focusing screens and a variety of accessories to fit your special requirements.

The Hasselblad Winder CW, specifically designed for the 503CW, has an SAI (Self Adjusting Interface) function which senses the camera's status, ensuring mechanical reliability. Just detach the winding crank and hook the winder on for the additional features of fast sequence photography and various choices of remote control.

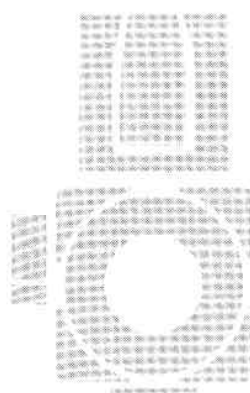


The complete range of accessories affords almost limitless flexibility and potential for superior photography in any application.

Since the early 1950's, Hasselblad lenses have been manufactured by Carl Zeiss in Germany, renowned for extremely high quality. With the exception of F and FE-type lenses - designed for use with the Hasselblad focal plane shutter cameras - all Hasselblad lenses manufactured since 1957 can be used with the 503CW.

This instruction manual describes in detail how to operate your 503CW, so please read it carefully. If you have a query do not hesitate to contact your dealer - we want you to be 100% satisfied! Your dealer can also provide you with the latest in news and technical developments from Hasselblad. A quarterly magazine - FORUM - is published with the emphasis on photographic imagery featuring photographers from all over the world to provide you with inspiration! Our internet site - [www.hasselblad.com](http://www.hasselblad.com) - is a source of general and technical information and you can e-mail us - [info@hasselblad.se](mailto:info@hasselblad.se) - for further inquiries.

Your new 503CW provides access to the Hasselblad potential. The realization of this potential is only dependant upon your skill, care and judgement as a photographer.



Congratulations on a fine choice!

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## Parts & Components

1, 2

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3. Screen retaining clip
4. Flash function indicator
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7. Central lens index
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46. Lens locating index
47. Accessory rail
48. Strap lug
49. Film speed selector

\* Acute-Matte D designed by MINOLTA

*In the text, positions of components and orientation are described in relation to the camera as seen when taking a photograph, i.e. the lens at the front, the viewfinder on the top and the winding crank on the right hand side.*

*The appropriate illustrations are indicated by the figures beside the small headings in the text.*


## Getting Started

*This section describes how to prepare your camera for use as well as the basic operations. Follow the instructions step-by-step to avoid damaging the equipment.*

*Check that the winding crank on the right hand side of the camera is locked thus ensuring that the camera is fully wound. If the crank is not locked, rotate it clockwise until it does lock, thereby winding the camera.*

### Front protective cover 3

Turn the cover (bayonet fitting) in the direction of the arrow and lift it out. Do not remove it until you are ready to attach a lens.

 *The front protective cover can only be removed when the camera is fully wound.*

### Rear cover Multicontrol 4

Depress the catch, tilt the cover backwards, and lift it off. Do not remove it until you are ready to attach a magazine. Always replace the cover to protect the auxiliary shutter when storing the camera body without a magazine attached.


### Attaching the lens 5, 6

Make sure that both camera and lens are fully wound. Fig. 5 shows the correct relationship between the drive shaft, the lens drive coupling and their indexes. If the lens

is not wound, you can insert a coin in the coupling slot and rotate it clockwise until it locks (about 4/5 of a turn). When you have aligned the red index on the lens with the one on the camera as shown in fig. 6, the lens will drop easily into the bayonet fitting. You can then rotate it clockwise until it stops with a faint click as the lens catch locks it in place.

### Removing the lens 7

Depress the lens release button and rotate the lens counter-clockwise until it stops and lift it out of the mount.

 *You can only remove the lens when the camera is fully wound and not in the pre-released mode (see 'Pre-release and cable release').*

### Attaching and removing the magazine 8, 9

Ensure that the magazine slide is fully inserted with the hinge towards the front of the camera (see fig 19) and that the magazine status indicator is white. If the indicator is red then see 'Magazine status indicator'. It is also advisable to have the camera fully wound.

Rest the magazine on the magazine supports making sure that the lugs are properly engaged in the recesses. Carefully swing the magazine towards the camera body and check that the camera's upper support hooks fit into the slots in the magazine.

Push the magazine gently but firmly against the hooks while sliding the magazine catch to the right. Release the button when the magazine has made contact with the camera body, and then push the button to the left to en-


sure that it has reached the locked position. Remove the slide to positively lock the magazine to the camera body. The camera is now ready to use.


### Removing the magazine

Removing the magazine is simply the reverse of the attaching procedure. Just as when attaching the magazine, it is advisable to have the camera fully wound and the magazine indicator displaying white.

See 'Magazine operation' for a general explanation of these magazine features.


Insert the magazine slide fully with the hinge towards the front of the camera (fig 19). Slide the magazine catch to the right, swing the magazine back and lift it off the lower supports.


 *The magazine cannot be removed without first inserting the magazine slide.*

 *Note also that the camera cannot be operated when a magazine, with slide inserted, is attached to the camera.*

### The magazine status indicator 10

The status indicator on the right hand side of the magazine shows white when the magazine is ready to operate and red when the film has not been advanced after an exposure. If the status indicator shows red, release the camera first before attaching the magazine. Then, winding the camera again will automatically advance the film by one frame.

 *Do not attach a magazine showing white to a camera that is not rewound! Wind the camera first or you will lose a frame.*

 *Do not attach a magazine showing red to a fully wound camera! This could result in a double exposure.*

### Opening the focusing hood 11

Lift the lid by firmly gripping the tab on its rear edge, and swing it up to a vertical position. The hood unfolds automatically and locks in the open position.

### The built-in magnifier 12

The magnifier flips up into the viewing position when the oval button inside the lid is moved to the right, as in the illustration. To fold the magnifier down simply press it back down towards the lid until it locks into place.

It can easily be exchanged to suit individual eyesight (see 'Changing the magnifier').

### Focusing screen and viewfinder image 13

The 503CW is fitted with an Acute-Matte D focusing screen featuring unrivalled brightness and the highest resolution among the Hasselblad focusing screens. The centre of the screen is indicated by a hairline cross.

The screen can easily be exchanged for others specially designed for various applications (see 'Changing the focusing screen').

### Closing the focusing hood 14

Fold away the magnifier by pressing it back down towards the lid until it locks into place. 'Pinch' in the side plates at

the hinge points and then push the lid lightly backwards. The hood then automatically folds back down.

### **Removing the winding crank** 15

Push the catch lever downwards while rotating the crank counter-clockwise. Then pull the crank straight out from the shaft.

### **Attaching the winding crank** 16

Attach the crank to the shaft, aligning the smaller triangular index mark against the red dot just above the mount. Keep the crank pushed against the camera while turning it clockwise until the larger triangular mark is aligned with the red dot.

### **Strap attachment and removal** 17

Place the main body of the strap clip over one of the camera's strap lugs. Press the tip of the clip towards the camera while pulling back on the strap so that the clip slides over the lug and locks into position.

To remove the strap, lift the clip locking plate high enough to be able pass over the camera lug. Slide the clip in the direction away from the strap until it is free.

### **Left hand grip** 18

Without a Winder CW attached, may find that holding the camera in your left hand is the most convenient grip; operating the exposure release button with your index finger. Your right hand is then free for focusing, setting the exposure, rewinding, and changing the lens or magazine.

### **Exposure release**

Before you can take a photograph, you must remove the magazine slide. The magazine will then be locked on the camera body, and the camera release button will be unlocked.

After exposure, the viewfinder remains dark until you have rewound the camera by one full turn of the crank, which also advances the film.

## **Magazine Operation**

*Hasselblad film magazines provide the opportunity to vary format, length and type of film used. They can be quickly and easily switched mid-film without the loss of a single frame.*

*Operation of the magazines is not difficult but pay particular attention to the section on loading. Go through the procedure one step at a time and practice a little until you feel confident. Note especially which way round the spool of film is placed and the positioning of the backing paper under the clamp bar.*

*The film is automatically advanced frame-by-frame in the magazine by the camera winding mechanism and consequently only when attached to the camera body. Therefore when separated, the magazine and camera body could become unmatched. This can be determined by checking the magazine status indicator or by the winding crank status.*

*Try to adopt a routine that suits you regarding winding and removal as well as checking on the status of each item. This will ensure that the camera/lens/magazine combination status is always fully operative.*

### **Loading the magazine**

The magazine can be loaded on, or off the camera. If it is to be loaded off the camera, then the magazine slide must be inserted first.

In either case, when inserting the slide ensure that its flat side is towards the rear (see detail in illustration) as this facilitates the removal of the film holder.

### **Step-by-step film loading** 19-26

*Follow the procedure below in the correct order.*

19. Fold out the film holder key.
20. Turn the key counter-clockwise and withdraw the film holder (magazine insert).
21. 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 the same way as in the illustration. Be sure to remove all of the paper band surrounding a new roll of film.
22. Turn the film holder key clockwise to open the film clamp. Pull 8-10 cm (3-4 in.) of paper backing off the film roll and slide the edge under the clamp.
23. Insert the tongue of the backing paper into the slot in the take-up spool.
24. Turn the grooved knob clockwise until the arrow on the paper backing is aligned opposite the triangular index on the spool clamp bar, but no further.
25. With the film holder key still in the counter-clockwise position, insert the film holder into the magazine. Ensure that it is correctly positioned. Turn the film holder key clockwise to lock the film holder in the magazine and then fold the key back into place.
26. Fold out the film crank and rotate it clockwise about



ten turns until it stops. Then turn it counter-clockwise and fold it in. The figure (1) will now be displayed in the automatic frame-counter window indicating that the magazine is loaded and ready for use.

- The magazine's film winding crank is only blocked at frame 1. A partially exposed film may be wound off at any frame afterwards.
- Do not put the film holder down on an unclean surface or where it can attract dust.
- Clean out the magazine housing regularly removing not only dust and particles but also any scraps of paper from previous rolls that may have remained inside.
- Each magazine housing and film holder form a carefully matched pair. Be careful, therefore, when loading more than one magazine at a time not to switch housings and holders. The last three figures of the housing serial number should correspond with the serial number on the film holder.
- Load and unload the magazine away from direct light sources.

### Magazine load status 27

In the centre of the film holder key there is a crescent-shaped indicator window that shows white when the magazine is freshly loaded. It gradually changes to red as the film is wound through. An all red indicator shows that either the film is used up or that the magazine is empty.

### Removing film from the magazine

When the last frame has been exposed and wound on, the magazine blocks the camera for further release.

Wind off the film by folding out the film winding crank,

and rotate it clockwise until you can feel the film leaving the supply spool.

You can now withdraw the film holder from the magazine and remove the exposed film.

The frame counter is automatically reset when the film holder is withdrawn from the magazine.

### Film tab holder 28


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.

### Installing format masks 29

The body's rear plate has a recess that accepts the 6 x 4.5 and 6 x 3 panoramic format masks.

To install a mask, ensure it is facing the right way (so you can read the text as in the illustration) and push it in place in the recess. The masks can be used horizontally or vertically.

Each format mask has a corresponding viewfinder mask which is placed over the focusing screen.

 **Do not forget to install the corresponding viewfinder mask and align according to format mask orientation.**

### Film plane position 30

In close-up photography the film-to-subject distance can be an important factor when determining an accurate focus setting. The red line in the illustration marks the location on the film magazines that coincides with the film plane position.

## Lens and Shutter Functions

*The 503CW is compatible with lenses from the CF, CB and C lens series. CF series lenses are mentioned and illustrated here as the conventional choice.*

*CB lenses although very similar to CF lenses differ slightly in specification and appearance and so are described separately in the CB lenses instruction manual.*

*C lenses have no 'F' setting, interlocked shutter speed/aperture facility or coloured lens markings but otherwise are very similar in appearance to the CF lenses.*

### Shutter speed and aperture 31

The shutter speed selector ring is the ring located closest to the front of the lens. To set the speed, turn the ring until the desired marked shutter speed position aligns with the central lens index.

The white scale shows the shutter speeds, and the orange scale the exposure values (EV).

The green 'F' setting is used only when the lens is attached to a Hasselblad camera in the 200 or 2000 series with a focal plane shutter. The operation of the diaphragm is not affected. The 'F' setting can only be engaged/disengaged when the green lever is pressed. If the F setting is used with the 503CW, exposure errors will occur since the shutter remains open.

The aperture setting ring is the second closest ring to the front of the lens. The aperture value is also set against the central lens index. CF lenses have an automatic diaphragm that stops down to the preset working aperture at the start of the exposure sequence.

### Exposure

As a general rule for all shutter speed settings except B, you should keep the release button depressed until the lens shutter has opened and closed fully. This is especially important at shutter speeds from 1s to 1/4s, as the auxiliary shutter remains open only when the button is kept depressed (see also 'Warning Mark' below).

You can see the auxiliary shutter, consisting of two blinds, covering the rear opening of the camera body. It protects the film from unwanted exposure as the lens' shutter normally is open for focusing.

### Warning mark 32

You will find a red mark on the shutter speed scale above the 1, 1/2, and 1/4s settings. This is to warn you of possible exposure errors as detailed above. The auxiliary shutter will terminate the exposure prematurely if you relax the pressure on the button too soon.

Listen to the buzzing sound of the delay escapement in the lens' shutter and maintain the pressure on the release button until the sound stops.

### Exposure values 33

The aperture and shutter speed combination set opposite the central lens index determines the exposure. Every combination of shutter speed/aperture has an equivalent exposure value (EV) which you can read and set against the red EV index on the right hand side of the lens.

### Interlocked shutter speed / aperture 34

If you want to change the shutter speed or aperture while still keeping the same shutter speed/aperture combination (EV), you can interlock the speed and aperture setting rings by holding down the interlock button which is on the right of the aperture scale. When interlocked, the rings move together, increasing or decreasing the aperture to compensate for a decrease or increase of speed respectively.

### Focusing and depth-of-field 35

The focusing ring is closest to the camera body. It has a knurled rubber grip and engraved distance scales in feet (orange) and metres (white). Focus the lens by rotating the focusing ring until you obtain a sharp image of the subject in the viewfinder.

The distance between the subject and the film plane is read off the focusing ring's distance scale opposite the central lens index.

Objects closer or further away than the selected distance will be sharp, within certain limits. The limits of this field of sharp focus, i.e. depth of field, vary with the aperture.

The depth of field available at any given *f*/stop can be read off the depth-of-field scale on both sides of the central index. As an example, the rings in the illustration indicate how to read the depth of field scale at an aperture of *f*/11.

### Depth-of-field preview 36

Depth-of-field can be visually checked on the focusing screen. The diaphragm can be stopped down to the preset aperture from its normally wide open position simply

by pushing the depth-of-field preview lever downwards until it locks.

To reopen the diaphragm, depress the lower part of the lever.

### Pre-release and cable release 37

Considerable efforts have been made to reduce camera vibrations caused by moving parts in the exposure sequence. However, if you wish to avoid these vibrations completely, you can pre-release the mechanism by pushing the pre-release button upwards. This causes the following sequence:

1. the mirror folds up
2. the shutter closes and remains closed
3. the diaphragm closes to its preset aperture
4. the auxiliary shutter opens

When you subsequently press the release button, only the shutter then operates at the preset speed.

As shown in the illustration, you can also attach a cable release to further reduce vibrations.

### Multiple exposure 38

As the camera has been designed to prevent accidental multiple exposure you will have to carry out the following procedure in order to make multiple exposures on the same frame:

1. Depress the main release button and make the initial exposure.
2. Insert the magazine slide and remove the magazine.
3. Wind the camera with one full revolution of the winding crank.
4. Replace the magazine and remove the slide.

The unit is now ready to make a second exposure on the same frame. You can make additional exposures in the same manner.

### Flash synchronization 39

The C, CB, and CF series lenses have built-in leaf shutters with speeds from 1s to 1/500s and B. Flash synchronization occurs at full shutter opening via the PC flash terminal. Suitable electronic flash units can be used at all shutter speeds from 1s -1/500s as well as B.

### Infrared photography 40

Infrared (IR) rays (wavelengths longer than 800 nm) form an image on a plane further away from the lens than the image plane for visible light. To compensate for this difference you have to align the chosen distance against the red IR index and not the normal central index. Proceed as follows:

1. Focus as usual on the focusing screen.
2. Note the distance on the focusing scale that is opposite the central index line.
3. Now rotate the focusing ring to set this distance opposite the red IR index line instead of the central index line.

## The Viewfinder System

*The 503CW is supplied with a light, compact and foldable viewfinder, providing a through-the-lens laterally reversed image. It is easily interchangeable with alternative viewfinders including the prism finders, which produce a laterally corrected image.*

*The focusing hood on the standard viewfinder has a built-in 4.5x magnifier for accurate focusing and this can easily be changed to suit individual eyesight.*

*The 503CW is equipped with an Acute-Matte D focusing screen which produces an exceptionally bright and sharp image. While this covers most needs, the Hasselblad system offers a range of alternative screens for various specific applications.*

*Each item is easily and quickly interchangeable without the need for special tools or facilities.*

### Changing the focusing hood or viewfinder 41

To remove the focusing hood so as to attach any other viewfinder in the Hasselblad system, proceed as follows:

1. Detach the magazine.
2. Fold down the focusing hood to protect it from damage and remove it by sliding it to the rear in its guide slots.



- Slide the replacement viewfinder into the slots and push it forward until it stops.

When fully inserted the viewfinder is retained in position by a spring-loaded catch until you have reattached the magazine

### Changing the magnifier 42

Mounted lenses with dioptré correction from +3 to -4 are available, and are easily interchanged as follows:

- Remove the focusing hood from the camera and open it by lifting the lid.
- Release the magnifier by pushing the catch to the right.
- Push the magnifier halfway back down to its folded position.
- Grip the lower edge of the magnifier plate (through the underside of the hood), and pull firmly.
- Keep the plate holder halfway down and insert the replacement lens plate with the printed side up. Fold the hood down and replace on the camera.

### Changing the focusing screen 43 - 44

- Detach the magazine and viewfinder.
- Push the two screen clips to the side into their recesses.
- Place your hand over the screen, and invert the camera. The screen will now drop into your hand.
- Insert the replacement screen, ensuring that the smooth flat side is uppermost 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 replaced.

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 on the screen from underneath, preferably with a soft cloth between the screen and the finger.

### PME / PME3 / PMES / PMES1 / PME90 Meter prism viewfinder adjustments

The Hasselblad meter prism viewfinders measure the light level on the focusing screen. They are calibrated at the factory to give an accurate reading with one particular type of screen. If that focusing screen is replaced with another type which gives a different light level under the same ambient conditions, the meter has to be adjusted to compensate for the difference.

The table on page 19 shows the adjustments that should be made with the PME and PME3/PME5/PME51/PME90 meter prism viewfinders to compensate for the light level differences with the different focusing screens.

Please refer to your viewfinder's operating instructions for further information about other functions.

## Flash

*Automatic flash control is provided by the camera's built-in flash sensor (fig 46) and electronics that measure the light reflected from the central portion of the film surface; a circle with a diameter of 40 mm. The metering system is connected to a selector for setting film speed.*

*When a Hasselblad D-Flash 40 is attached - or a System SCA 300 dedicated flash unit is connected through the SCA390 flash adaptor - the system controls the flash unit and cuts off the flash when the exposure is correct. Under the left hand edge of the focusing screen an indicator light shows when the flash is ready to be operated and also confirms if the flash output was sufficient to give a correct exposure. The flash unit powers the camera's electronics and also the flash adaptor, when that is used.*

### Attaching the Hasselblad flash adaptor SCA 390 45

For hand-held flash units, either adaptor is attached as shown in the illustration:

- the 6-pole contact from the spiral cord is connected to the camera's side socket
- the sync cord is connected from the adaptor to the PC flash terminal of the lens
- the connecting cord is attached to the hand-held unit

### Setting the film speed 46

The film speed is set via the ISO selector. This is marked in ISO/ASA settings from 64 - 4000 (see fig. 55 for the equivalent in DIN ratings). Certain films require compensation for differences in reflection. In these instances, the compensation is made by changing the film speed selector setting. The amount of compensation has to be determined by experiment.

Please refer to your flash unit's operating instructions for more information about other functions when using the D-Flash 40, automatic flash light metering that conforms to System SCA flash photography with flash sensors, or with non-automatic flash units.

### Viewfinder Indicator 47

Flash operation and flash battery-check are indicated by a red light, located under the left edge of the focusing screen. It is operative only when a dedicated flash is connected to the TTL socket. It indicates three separate states as described below.

#### Ready Signal

A steady red light indicates that the flash unit is charged and ready to be fired. Absence of any signal indicates the need for fresh batteries.

#### Confirmation Signal

A flashing red light occurring for just over a second immediately after exposure confirms that the light output was sufficient for a proper exposure. It then remains dark until the flash unit has recharged. The steady red light will then reappear indicating operative status again. The time of reappearance however may vary according to the condition of the batteries.

### No Result Signal

Absence of the flashing confirmation signal after exposure indicates that the flash emitted was not sufficient for correct exposure. The aperture must then be opened more or the flash distance to the subject reduced. Changing to a faster film is also a possibility.

See section on Rear cover MultiControl for description of flash exposure check facility.

## Accessories

*All accessories included in the present Hasselblad Product Catalogue can be used on the 503CW (when not specifically noted otherwise), except the FE-type lenses. As the 503CW is a further development of previous models, it features certain improvements and differences in construction. This means that certain older and now discontinued accessories cannot be used and any forced attempt at mounting them may damage your equipment.*

*Figs 51 and 52 show the wide range of accessories available within the Hasselblad System. Please refer to the Hasselblad Product Catalogue for more comprehensive information.*

### Accessory mounts

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The coupling plate on the bottom of the camera body has both a 1/4 in. and a 3/8 in. tripod thread. It also fits the useful and reliable Hasselblad Tripod Quick-Coupling S. The front of the lenses have external and internal bayonet mounts for filters, close-up lenses and lens shades.

Other close-up accessories can be attached between the lens and the camera body.

On the left hand side is the accessory rail for the spirit level and the adjustable flash shoe.

### Winder CW

49, 50

The Winder CW is a compact, ergonomically designed unit providing not only a motor drive facility but also a comfortable and robust grip for the Hasselblad 503CW.

It features single exposure, continuous exposure as well as multi-exposure modes. Remote control is achieved by a simple release cord or by the unique infrared transmitter – the Hasselblad IR Remote control (fig. 50). Both provide considerable freedom, with the IR Remote control offering an extra remote mode choice facility. Each winder is governed by a unique code from the IR Remote control so there is no risk of controlling other cameras unintentionally. However, one IR Remote control can control several cameras at the same time if desired.

As the winder is set close to the camera body, it produces stability and balance for optimum hand held efficiency – the perfect requirement for vertical 6x4.5 shots. A removable strap offers extra security and is adjustable to suit personal requirements.

A special feature is the SAI (Self Adjusting Interface) which senses not only whether the camera is wound but also the unique mechanical status of each camera body. This unusual capability considerably reduces mechanical wear.

See the Winder CW instruction manual for further details.

### Rear cover MultiControl

54

The Rear cover MultiControl has a vignetting control facility in the form of four holes, positioned at each corner of the frame.

Vignetting can be caused by incorrectly positioned or adjusted accessories such as lens shades, filter holders, etc. It can also occur when shifting the lens as with the PC-Mutar 1.4X Shift Converter, for example.

As a quick and efficient check against such an occurrence, proceed as follows:

1. Set up the camera and compose picture.

2. Remove the magazine/focusing screen adapter.
3. Replace with the Rear cover MultiControl.
4. Depress the depth-of-field button on the lens so that the lens stops down to the working aperture.
5. Open the shutter set at 'B'.
6. Look through each hole in the Rear cover MultiControl in the direction of the lens and compare what you can see with the illustrations.
7. If vignetting is occurring, experiment to find whether it is the degree of shift applied and/or an accessory that is causing the problem.

#### Illustrations:

- a. The aperture is fully open. No vignetting will occur.
- b. The lens has been stopped down to the working aperture producing the ideal situation. No vignetting will occur.
- c. The lens has been stopped down to the working aperture but vignetting is starting to occur. However this amount is acceptable for a vignette free result.
- d. The lens has been stopped down to the working aperture and more than 50% has been covered. Vignetting will occur and will produce a visible result.

### Flash Exposure Control Facility

The Rear cover MultiControl has a flash exposure control facility in the form of a grey panel printed on the inside. It simply replaces the magazine temporarily to provide an inexhaustible standard reference for flash exposure testing at no cost in terms of film. It is particularly useful when exposing films with a narrow exposure latitude, such as transparency film.

The camera's flash control system reads light reflected directly off the film plane, and is governed by the reflective characteristics of the film emulsion that the grey panel simulates.

When using a dedicated flash unit proceed as follows:

1. Set up the flash unit with the camera normally, using the TTL/OTF function setting.
2. Replace the magazine with the Rear cover Multi-Control.
3. Make a test exposure.
4. Note the exposure indications in the viewfinder. If warned by the camera for over- or underexposure then make the appropriate changes by altering the aperture or flash-to-subject distance. Make further tests until the camera indicates correct exposure.
5. Replace the Rear cover MultiControl with a magazine and proceed as normal, using the adjusted exposure settings.

Although this method should provide a generally acceptable exposure, adjustment of the settings may still be required to obtain a result that suits your personal preference. See flash unit's instruction manual for more information.

## Action required when combining prism meter viewfinders with Acute-Matte D\* focusing screens

	PME3 PME5 PME51	PME	Integral Metering PME90	Spot Metering PME90
<b>Acute-Matte D</b> 42204 42207 42210 42213	No restrictions	The exposure should be <b>increased</b> by one EV value.**  <i>Note: 1.4X and 2X converters require test exposures.</i>	No restrictions	The exposure should be <b>reduced</b> by one EV value when using lens/teleconverter combinations which reduce the effective aperture to f/8 or smaller.
<b>Acute-Matte D</b> 42215 42217 42219	No restrictions	The exposure should be <b>increased</b> by one EV value.**  <i>Note: 1.4X and 2X converters require test exposures.</i>	No restrictions	No restrictions within the f/2 - f/5.6 range.  <i>Note: Not recommended for lenses or lens/converter combinations where the maximum effective aperture is smaller than f/5.6</i>

\*\* The easiest way to **increase** the exposure by one EV value is to **reduce** the ASA /ISO setting to **half the film speed** value as indicated on the film package, e.g. 400 ASA film is set at 200 ASA, 100 ASA film is set at 50 ASA, etc.

To **reduce** the exposure by one EV value, **increase** the ASA /ISO setting to **double the film speed** value as indicated on the film package, e.g. 400 ASA film is set at 800 ASA, 100 ASA film is set at 200 ASA, etc.

\*Acute-Matte D designed by MINOLTA

## Troubleshooting

Problem	Possible cause	Remedy
<b>You cannot operate the exposure release button</b>	<ul style="list-style-type: none"> <li>The magazine slide is still in place</li> <li>The film is finished</li> <li>The camera is not rewound</li> </ul>	<ul style="list-style-type: none"> <li>Remove the magazine slide completely</li> <li>Load a new film</li> <li>Wind the camera</li> </ul>
<b>There is no image on the focusing screen</b>	<ul style="list-style-type: none"> <li>The camera is in the pre-released or released position</li> <li>The lens cap is still in place</li> </ul>	<ul style="list-style-type: none"> <li>Complete the camera release and rewind the camera</li> <li>Remove the lens cap</li> </ul>
<b>You cannot remove the front protective cover</b>	<ul style="list-style-type: none"> <li>The camera is in the pre-released or released position</li> </ul>	<ul style="list-style-type: none"> <li>Complete the camera release and rewind the camera</li> </ul>
<b>You cannot attach the lens</b>	<ul style="list-style-type: none"> <li>The lens is in the released position</li> <li>The camera body is in the pre-released or released position</li> </ul>	<ul style="list-style-type: none"> <li>Wind the lens</li> <li>Complete the camera release and rewind the camera</li> </ul>
<b>You cannot remove the lens</b>	<ul style="list-style-type: none"> <li>The camera body is in the pre-released or released position</li> </ul>	<ul style="list-style-type: none"> <li>Complete the camera release and rewind the camera</li> </ul>
<b>You cannot remove the magazine</b>	<ul style="list-style-type: none"> <li>The magazine slide is not fully inserted</li> </ul>	<ul style="list-style-type: none"> <li>Push the magazine slide until it positively stops</li> </ul>

## Technical Specifications and Equipment - 503CW

<b>Camera type:</b>	Single lens reflex camera with 6 x 6 cm (2 1/4 x 2 1/4 in.) max. film size. Interchangeable lenses, film magazines, viewfinders, and focusing screens.
<b>Design:</b>	Mechanical, with an aluminum alloy camera body shell cast in one piece.
<b>Viewfinders:</b>	Folding focusing hood interchangeable with reflex viewfinder, prism viewfinders with or without built-in light meter, or magnifying hood.
<b>Film advance:</b>	Manual advance or motor driven with Winder CW. Simultaneous shutter winding. Winder CW winding time: 1.05 sec, approx. 0.8 frames/sec in continuous mode.
<b>Flash control:</b>	TTL/OTF-metering. ISO 64 - 4000 with Hasselblad D-Flash or flash adaptor SCA390 connected to flash unit compliant with the SCA 300 system. Metering area within 40 mm diameter in the centre of the image area.
<b>Tripod coupling:</b>	1/4 in. and 3/8 in. socket threads and base plate for quick coupling attachment.
<b>External dimensions:</b>	Camera body only - see fig 53. Camera body with Planar CFE 80 mm lens, film magazine A12 and focusing hood: 180mm L x 114mm W x 110mm H ( 7 x 4 1/2 x 4 1/8 in ).
<b>Weight:</b>	Camera body only: 0.6 kg (1.3 lb). Camera body with Planar CFE 80 mm lens and A12 film magazine: 1.5 kg (3.3 lb).
<b>Focusing screen:</b>	Hasselblad Acute-Matte D* focusing screen

\*Acute-Matte D designed by MINOLTA



## Equipment Care, Service and Guarantee

### EQUIPMENT CARE

The Hasselblad 503CW is designed to withstand the rigours of professional use in most environments. To avoid the possibility of damage however, it should be protected from the following:

**Extremes of temperature.** High temperatures can have an adverse effect on both film and equipment. Try to avoid frequent and severe temperature changes. Be particularly careful in humid environments. Allow the equipment to acclimatize before disassembly. Try to ensure the storage conditions in such environments are as dry as possible.

**Dust and grit.** You should take care to prevent dust and grit from getting into your equipment. In coastal areas take measures to protect your equipment from sand and salt water spray. Dust on the lens glass and focusing screen can be removed with a blower brush or very soft lens brush if necessary. Smears on the lens glass should be treated with great caution. In some cases they may be removed with a high quality lens cleaning solution on a tissue but be careful not to scratch the lens or touch any of the glass surfaces with your fingers. If in any doubt, do not attempt to clean lens glass surfaces yourself but allow a "Hasselblad Authorized Service Center" to treat them.

**Impact.** Your equipment can be damaged by severe physical shocks so practical protective precautions should be taken. When not in use, try to make a habit of storing your camera equipment in some form of protective case or bag to avoid accidental damage.

**Loss.** Hasselblad equipment is much sought after and you should take obvious steps to prevent theft. Never leave it visible in an unattended car, for example. Separate and specific camera insurance cover should be considered by professional users.

### SERVICE

You should return your equipment to a service centre for occasional checking and preventive maintenance to ensure optimal reliability. If your camera is used constantly and intensively, periodic check-ups every six months are recommended at one of the "Hasselblad Authorized Service Centers". They have the expert staff and specialised equipment necessary to ensure that your equipment remains in perfect working order.

### GUARANTEE

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

### 503CW CAMERA BODY, CHROME

10243

supplied with the following equipment:

Winding crank E	44086
Focusing hood, chrome	42315
Focusing screen Acute-Matte D	42204
Standard strap	59110
Front protective cover	51438
Rear cover MultiControl	51070

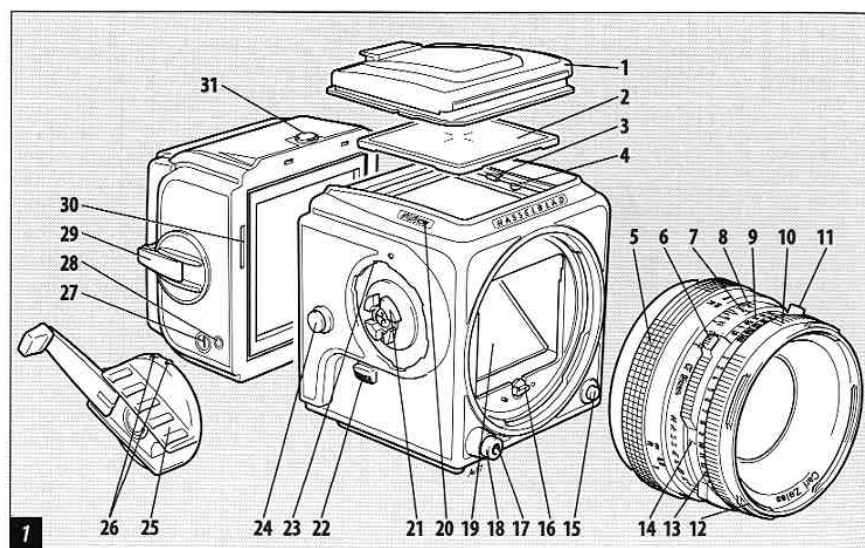
### 503CW CAMERA BODY, BLACK

10246

supplied as 10243 above, but equipped with black Focusing hood 42323.



## 503CW



## 503CW

