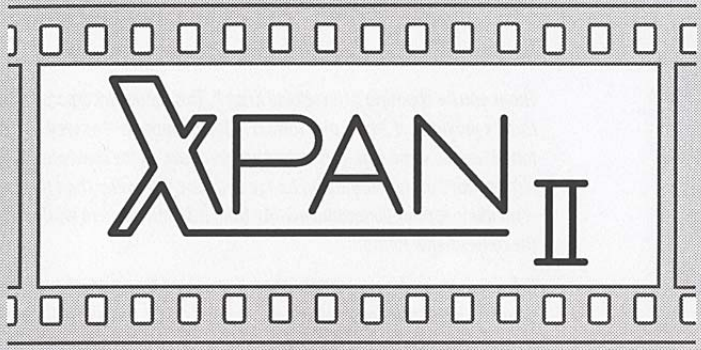
HASSELBLAD



User manual

XPAN II -a new way of seeing

Thank you for choosing a Hasselblad XPan II. This camera incorporates an innovative dual format facility providing a 24x65 mm format - full panorama - as well as a conventional 24x36 mm format on the same film. This means you can have all the convenience and advantages of the 35 mm format but can produce an image with one side wider than the 6x6 cm format. Put simply - medium-format panorama quality from a 35 mm camera while still providing the option of the conventional format!

It follows on in the well-established Hasselblad tradition of superb craftsmanship founded on intensive development which has helped create the world famous name. The quality and reliability of Hasselblad equipment was clearly witnessed when it was chosen by NASA for the lunar missions.

The Hasselblad XPan II is a feature-packed and highly professional tool. It includes both automatic facilities and total manual override for complete control to suit all situations and working methods. Auto exposure, auto bracketing, coupled rangefinder and pre-wind are just some of the advantageous features.

The camera body is robustly built from aluminium and titanium for the long working-life expected from such a camera. The interchangeable Hasselblad lenses are made to the most exacting standards producing excellent coverage and 'razor' sharpness for top quality images. Digital technology controls a host of functions making camera use simplicity itself so you can concentrate more on composition and image making.

This instruction manual describes in detail how to operate your XPan II, so please read it carefully. If you have a query please 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! XPan images now regularly appear. Our internet site - www.hasselblad.com - is a source of general and technical information concerning Hasselblad products. You can also e-mail us - info@hasselblad.se - for further inquiries.

We are sure you have made a wise choice with this exciting camera. Hasselblad have provided the possibility, its now up to you to create the images.

We wish you good luck and look forward to seeing the results!

Contents

Hasselblad XPan II

Become familiar with the various components on the camera by checking them against figs 1- 3 and the component list. Avoid touching the lens surfaces and take care regarding the focal plane shutter and format blind when opening the camera back.

Begin by loading the batteries so that you can go through all the camera's functions. The XPan II is a very simple camera to operate following well-established routines and most photographers should be able to successfully operate it straight away without any problems.

The mode selector switch is the main ON/OFF control, which activates the camera. Information is provided by two LCD panels and an LCD display in the viewfinder. Read quickly through the main items in this manual for a general overview of the information system and the mechanics of the camera. Then read again more carefully the relevant sections to gain a firmer understanding of individual procedures. Fluency in operation of the camera will allow you to concentrate more on picture taking.

*In the text, the main LCD on the back of the camera is referred to as **camLCD** and the small exposure counter LCD as **expLCD** and the viewfinder display as **viewLCD**.*

Positions of components and orientation are described in relation to the camera as seen when taking a photograph, i.e. with the lens at the front, unless otherwise stated.

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

Please read 'Film processing' before sending your exposed film to a film laboratory.

Parts & Components

1. Lens release button
2. PC flash terminal
3. Viewfinder window
4. Self-timer lamp
5. Bright frame illumination window
6. Rangefinder window
7. Hot shoe
8. Format selector knob
9. Format selector release button
10. Viewfinder eyepiece release button
11. Viewfinder eyepiece
12. Viewfinder LCD display (viewLCD)
13. Cable release socket
14. Strap lug
15. Film type window
16. Camera back release catch
17. Tripod socket
18. Battery compartment cover
19. Main LCD display panel (camLCD)
20. LCD illumination button
21. Mid-roll rewind button
22. Program MODE button
23. Up/Down buttons (▲/▼)
24. Shutter speed selector dial
25. Shutter speed selector lock
26. Shutter speed selector index
27. Film plane index
28. Shutter release button
29. Exposure counter LCD (expLCD)
30. Shooting mode selector
31. Shooting mode selector lock
32. Shooting mode selector lever

Parts Description

The following is a concise introductory description of the major parts of the camera (the figures refer to the illustrations 1-3). Details of functions and procedures can be found under the appropriate sections and headings further on in this manual. See the main index for details.

2. PC flash terminal
   - *for flash connection via cord.*
4. Self-timer lamp
   - *countdown timer for shutter release when set at self-timer mode.*
7. Hotshoe
   - *accessory shoe with direct contact for flash units.*
8. Format selector knob
   - *for standard and panorama format.*
12. Viewfinder LCD display
   - *(Referred to in the text as* **viewLCD***)*
13. Cable release socket
   - *for vibration-free or remote shutter-release.*
15. Film type window
   - *for confirmation of whether camera is loaded and film type.*
19. Main LCD display panel
   - *main information panel. (Referred to in the text as* **camLCD***)*
20. LCD illumination button
   - *information and exposure LCD illumination.*
21. Mid-roll rewind button
   - *for rewinding film before completion.*
22. Program MODE button
   - *for programming of camera settings.*
23. Up/down buttons
   - *for programming of camera settings.*
24. Shutter speed selector dial
   - *for manual or automatic shutter modes.*
25. Shutter speed selector lock
   - *releases selector from automatic setting.*

27. Film plane index
    - *for critical focusing distance measurement.*
28. Shutter release button
    - *for camera activation when pressed halfway and shutter release when pressed completely.*
29. Exposure counter LCD
    - *indicates number of unexposed frames left on film and format indication. (Referred to in the text as expLCD)*
32. Shooting mode selector lever
    - *for choice between* **S**, **C** *and self-timer modes (*⏲*).*

Getting Started

Attaching the strap 4

With the buckle and retainer already attached to the strap, pass the strap end first through the strap lug on the camera, then through the retainer and finally back through the buckle again. Allow at least 2-3 cm of loose strap beyond the buckle. See the illustration for details.

Loading the batteries 5, 6

Set the shooting mode selector to **OFF**. Unscrew the battery compartment cap – situated on the baseplate – counter-clockwise several turns by inserting a small coin or similar in the groove. Insert two fresh batteries (Lithium CR2- 3V) with the terminals positioned as in the illustration. Replace the cap and screw clockwise several turns until secure.

The camera is wholly battery dependent and so it will not function in any way if the batteries have been omitted, are exhausted or have been fitted incorrectly. Always use fresh batteries and do not mix old with

new. Please discard used batteries in an environmentally correct way.

Battery check 7

Set the shooting mode selector to S, C or ⏲). The **camLCD** will indicate the battery status by the following icons:

- ***The battery capacity is adequate.***
- ***The batteries are low. The camera will function but replace batteries soon.***
- ***Flashing battery icon. The batteries are exhausted and the camera will not function.***

The battery check icon is always visible when the camera is in active mode. Check battery status regularly.

Power 8, 9, 10, 11

ON

Set the shooting mode selector to S, C or ⏲).

S - *single exposure mode*

C - *continuous exposure mode*

⏲ - *self-timer mode*

Without film in the camera, the **camLCD** will display an ISO symbol, the manually set ISO rating (or '100' in the case of an automatic DX setting), other camera set tings and a battery icon, see fig. 9 for example. When loaded with film, however, the **expLCD** will also display a figure that shows the number of unexposed frames left on the film (fig. 10).

When the shutter release button is pressed halfway down, the **ISO** symbol disappears and a **TV** symbol appears (time value) together with the selected shutter speed (fig.ll). After ten seconds of no response, the ISO symbol appears again, replacing the **TV** symbol. The **viewLCD** display will show selected shutter speed and exposure information.

OFF

1. Set the shooting mode selector to **OFF**
2. All indications on all three LCD's disappear.

POWER SAVE

After three minutes of no response from the camera controls, all indications on the LCDs will disappear and the camera switches over to stand-by status automatically.

The camera will reactivate when:

- ***the shooting mode selector is moved from OFF to S, C or ⏲.***
- ***the shutter release button is pressed halfway down***

- ***the remote release is operated (see 'Remote release')***
- ***the LCD back light illumination button is pressed***
- ***the camera back is opened or closed***
- ***the MODE button is pressed***
- ***the ▲ or ▼ button is pressed***

Lenses

The XPan II uses interchangeable bayonet-fitting Hasselblad lenses specifically designed for the Xpan/ Xpan II cameras. Three lenses are available: a 30mm Aspherical, a 45mm and a 90mm. The following is general user information for both the 45mm and the 90mm lenses. The 30mm lens requires more specific information and is therefore supplied with its own user manual. See the 'Technical Specifications' table towards the end of this manual for further details of all three lenses as well as depth of field tables for the 45 mm and 90 mm lenses. Further information on filters can also be found under 'Accessories' towards the end of this manual.

Lens case **12**

The lens case consists of a cover, cover base and an integral rear lens cap. The lens cover is unscrewed approximately Vs turn counter-clockwise to remove. The lens can then be unscrewed approximately ⅛ turn counter-clockwise to remove from the base. If, however, you continue to turn the lens counter-clockwise, the rear lens cap will also be released from the base. As the cap is then also free from the lens, take care not to drop it.

Lens cap **13**

The lens cap is removed and attached by pinching inwards the two projections on the rim of the cap to release its grip.

Always replace the camera body protective cover and the lens caps when camera and lens are separated.

Attaching lenses **14**

Firstly, turn the protective cover on the camera body counter-clockwise and remove it. Align the index on the lens with the index on the camera body. Gripping the lens by the knurled attachment ring, turn the lens

clockwise, when seen from the front, until it clicks and locks into position. The camera automatically adjusts the frame in the viewfinder to match the focal length of the chosen lens.

Removing lenses **15a, 15b, 15c**

Gripping the lens by the knurled attachment ring, turn the lens in a counter-clockwise direction while depressing the lens release button.

Always grip the lens by the attachment ring when attaching and removing and not by the aperture ring, focusing ring or lens shade.

Lens components **16**

1. Aperture scale
2. Aperture index
3. Focusing ring
4. Lens attachment alignment index
5. Distance scale
6. Depth-of-field scale
7. Central index
8. Infra red index
9. Attachment ring

Filters

Standard screw-threaded M49 mm filters should be used. Two filters together may be used without problems with vignetting. As the XPan II has a TTL exposure system, filter factors – the amount of exposure increase necessary for each filter- can in general be ignored as they are automatically taken into account. Tests or alternative exposures should be made in special cases, however, to ensure the required result.

Three dedicated Hasselbad filters are available. A UV/Sky for general purposes and two centre filters (with respectively 30mm and 45mm fitting) for critical applications using transparency film. Each filter can also be combined with one additional filter including polfilter type.

See under 'Accessories' for further information about dedicated UV/Sky and Centre filters for Hasselblad XPan lenses.

When using filters and a hand-held meter, be sure to include any filter factors in the exposure calculations.

Lens shade **17, 18, 19**

Match the red index on the rear of the XPan lens shade (see illustration) with the red index on the lens. Turn the lens shade (bayonet fitting) counter-clockwise (when seen from behind the camera) until it clicks into place and is secured against unintentional rotation by the locking device. XPan lens shades have been specifically designed for XPan lenses; other types of lens shade are not recommended. The XPan lens shade is designed so that it should be removed first before a filter or lens cap is attached, changed or removed. Remove the lens shade after first pushing the locking device catch counter-clockwise.

When an XPan lens shade is fitted, there is a partial blocking of view in the bottom right of the viewfinder image. However, this in no way affects the results.

Focusing

The lens is focused by turning the rubber covered focusing ring that surrounds the lens barrel. Focusing can be either visual, via the viewfinder/rangefinder system, or manual. For the former see 'Rangefinder focusing'. For manual focusing align the chosen distance on the distance scale against the lens central index.

Rangefinder focusing **20, 21**

The rangefinder is a coupled-type in the form of a small, bright rectangle in the centre of the field-of-view frame in the viewfinder that provides a superimposed 'ghosted' image of a central part of the subject (fig 20). The lens is turned until the 'ghosted' image coincides with the subject image (fig 21) producing a sharp focus setting for that particular distance from the camera. You may find that subjects containing few or no lines or sharp contrasts in the image are more difficult to focus. Try pointing the camera to other areas of the subject containing vertical lines or contrast changes that are approximately the same distance away from the camera, focus at those points and then return to your original composition. You may also find it easier to turn the camera on its side if there are only horizontal lines within the image, for example, when photographing a near horizon.

Look directly into the viewfinder and not from an angle otherwise it can result in inaccurate focusing.

Depth-of-field 22

Depth-of-field – the amount of acceptable sharpness produced at a given aperture and focus setting – can be calculated as in the following example:

The aperture has been set at f/11 and the focus at 3 metres. By reading across from the relevant aperture markings on the depth-of-field scale on either side of the central index to the focusing distance scale, you can see the extent of the sharp zone. In this example the depth-of-field ranges from approx. 2m to 7m.

There are two tables at the end of the illustration section of this manual that describe the depth-of-field produced by the various combinations of aperture settings and focus settings regarding 45mm and 90mm lenses. For example, when focused at 2m and set at f/8, the depth-of-field extends from 1.61 to 2.66m with the 45mm lens and from 1.89 to 2.13 with the 90mm lens. See separate user manual for 30mm depth-of-field table.

Viewfinder

The viewfinder is a coupled rangefinder type with the additional feature of automatic field-of-view frame change according to the focal length of the lens and chosen format. The field-of-view frame also moves automatically to compensate for parallax error when photographing close subjects. The 90mm lens produces a larger rangefinder double-image compared to the 45mm lens. The viewfinder eyepiece is interchangeable to suit individual eyesight.

Changing the viewfinder eyepiece 23

The standard dioptre of the viewfinder eyepiece is -1.0. Five other strengths are available: +2D, +0.5D, -2D, -3D and -4D. The eyepieces simply slide in and out of the viewfinder frame, clicking into position and secured by the locking device. Pushing the locking device button and simultaneously sliding the eyepiece from its locked position can release it.

Please refer to the 'Viewfinder eyepiece selection' table towards the end of this manual for a detailed description of choice.

Format

Standard **24a**

For the standard 35 mm format (24 mm x 36 mm) turn the format selector knob to align the indexes (counter-clockwise if already set at the panorama format) while keeping the centre button depressed. The viewfinder will automatically display the correct format framing and the exposure counter will indicate the number of frames remaining at that chosen format.

Panorama **24b**

From the standard format, turn the format selector knob clockwise while keeping the centre button depressed and align the indexes to the panorama format. The letter P will be visible on the top of the dial. Again the viewfinder will automatically display the correct format framing and the exposure counter will indicate the number of frames remaining though now for the panorama format. The expLCD also displays a P in the top left of the window.

Ensure you turn the knob as far as it will go to the stop position when selecting the panorama format.

A flashing **P** *in the* **expLCD** *together with a locked shutter release indicates that either the format selector knob is not positioned correctly or that you have switched from standard to panorama format when only one standard sized unexposed frame remained on the film.*

Programming

Programming of camera settings **25**

The following settings can be programmed:

- ***Film speed (ISO 25 -3200, Auto (DX))***
- ***Exposure compensation (-2 to +2 f/stop in 0.5 f/stop increments)***
- ***Auto-bracketing f+/- 0.5 f/stop or +/-7 f/stop)***
- ***Multi exposure (2-9 exposures)***
- ***Flash sync (at the beginning "N" or at the end "R" of the exposure)***

- ***Film tip out or film fully spooled back into the cassette when rewinding the film (see 'Film loading' section for access details).***

Access the menu by pushing the **MODE** button for 1s. Select the required function by repeated pushing of the **MODE** button and make the changes by using the ▲ or ▼ buttons. Confirm the selected value (or operational mode) by:

- ***Pushing the release button halfway***
- ***Pushing the MODE button (not for all settings)***
- ***Waiting for 5 seconds***

Confirmation using the **MODE** *button accesses the next item on the menu, as well as making a new setting.*

Detailed instructions for respective type of settings is provided under the respective function headings further on in this manual.

Self-timer delay (2s or 10s) can be selected by pushing the arrow ▲ or ▼ buttons after setting the shooting mode selector to **Self-timer**

All set parameters except for Auto-bracketing and Multi exposure remain stored after the camera is switched off.

Film

Film speed (ISO) setting

If you want to expose the film at the recommended speed (ISO/ASA/DIN) and the film has a DX barcode on it (a large pattern consisting of exposed metal surfaces) then set the shooting mode selector to **S**. Press the **MODE** button on the **camLCD** for 1s. Press repeatedly until **ISO** appears on the top left of the display. Select **Auto DX** by pressing the ▲ / ▼ buttons. Confirm by pushing **MODE** again or by pushing the release button halfway. A **DX** symbol is shown on the display and the corresponding ISO rating is indicated after loading the film.

If there is no DX barcode on the cassette or you want to alter the recommended ISO rating of the film, set the film speed manually before loading the cassette into the camera. Do this by entering the film speed programming mode as described for DX setting. Set to the required value and confirm the setting. The film speed can be set at 1/3 intervals from IS0 25 through 3200 and the selection will be visible on the **camLCD**. Proceed to load the camera as described below.

Make a manual ISO setting before using an un-coded cassette, otherwise the camera will not prewind the film.

If you make the manual ISO setting with the film tip extracted to its automatic loading position, the camera will prewind the film only after opening and closing the camera back.

If you make a manual ISO setting do not forget to make the appropriate changes afterwards for the next film.

Film loading **26, 27, 28**

In subdued lighting, lift the camera back release catch as in the illustration and push upwards. The camera back will now be released.

Be careful not touch the shutter or format blinds with your fingers or let a film cassette drop onto them!

With the shooting mode selector set at **OFF**, insert a 35 mm film cassette into the film compartment as in the illustration. Note which way round the cassette is inserted. Tilt the 'top' of the cassette a little at first so that the cassette is seated securely in the compartment. Pull out just enough - but no more-film leader to align the tongue of the film against the green 'film tip' index line so that it rests on the take-up spool. Ensure the film is laying down flat against the shutter housing and the cassette opening is pulled down accordingly. If the film bows upwards it may pull the film tip back and away from the index position. Carefully close the camera back. Press the left part of the back towards the main camera body until you hear a click to ensure it is locked. The film is automatically withdrawn completely from the cassette, set at the first frame and the camera power turned off.

The winding of the film back into the cassette after the last exposure can be programmed to either wind the film fully into the cassette or leave a film tip out of the cassette. Make your choice by switching the camera from **OFF** to **S** while holding down the **MODE** button on the **camLCD**. A cassette symbol accompanied with the text **out** or **in** will be shown. Select with the ▲ / ▼ buttons which type you prefer. Confirm by pushing the release button halfway. A cassette symbol illustrating your choice will now shown on the display.

If a non-DX film has been loaded while the ISO programming was set at 'Auto' (DX) then it will not be wound forward and the camera will not operate. Make a manual film speed programming and load the film again.

Load the camera with the mode setting at 'OFF'

While the film is being withdrawn, the **camLCD** will

show the film speed while the **expLCD** will count down the exposures. When the film has been completely withdrawn from the cassette, the **camLCD** will turn off. The **expLCD** will indicate the number of exposures remaining (according to format setting).

The number of exposures remaining will depend on the format setting. Therefore with a new 36 exposure cassette, for instance, the counter will show 36 exposures at standard format but only 20 at panorama format.

If the exposure counter does not show how many exposures are remaining, it is an indication of a fault. Open the camera back and re-align the tip of the film with the take-up spool.

If the exposure counter flashes, it is an indication of a fault. Rewind the film and reload the camera.

The camera will appear to operate normally even if it is empty. However, no figures will be visible in the **expLCD** *and of course no information can be seen in the film type window!*

Exposure Counter 29

The **expLCD** indicates the number of unexposed frames remaining, automatically changing after every exposure. It also takes into account the chosen format setting automatically. This means that by switching the format selector knob back and forth, you can see how many frames are remaining in either format at any time. The figure **1** indicates the last frame and when that has been exposed the camera automatically rewinds the remainder of the film into the cassette. When the motor stops, the exposure counter will indicate **E** (empty).

If the camera back is opened the camera will rewind the remaining unexposed film when closing the back again. After the film has been fully rewound **expLCD** will indicate a flashing **E** (empty) as a warning.

Exposure Control

Exposure control can be automatic (aperture priority) or manual. Aperture priority means that the camera automatically chooses a shutter speed to match the aperture that you have set. The TTL exposure meter provides a centre-weighted, average reading and measures the light at the shutter plane.

A yellow LCD display inside the viewfinder shows the shutter speed and triangle symbols indicating over or under exposure.

The pattern of the sensitive area remains the same for both the normal and panorama formats. It occupies a central area of approximately 20 x 30 mm (vertically x horizontally) and is suitable for readings with the camera in both the horizontal and vertical positions. Normal photographic precautions and practices apply when taking an exposure reading in either manual or automatic mode with regard to the tonal value of the chosen metered area, the effect of bright skies in landscapes, the contrast range of the scene, back light situations, etc.

Automatic ***30, 31***

1. If set within the manual speed range, turn the shutter speed selector dial to align A against the index on the camera body. It will click into position.

2. Press the shutter release button halfway to activate the meter.

3. Adjust the aperture setting according to the signals in the viewfinder to ensure the exposure will be within the metering range as in the table.

Ensure you check this information when using automatic mode in case the lighting conditions are beyond the range of the meter/camera settings for the sensitivity of the film in use. This might happen when using a fast film in very bright conditions or a slow film in poor lighting conditions, for example.

In automatic mode, the longest exposure possible is 4 seconds.

Holding the shutter release button halfway down will lock the exposure reading. When the shutter release button returns to its normal position, the camera continues to measure light for approximately 10 seconds.
The **camLCD** and **viewLCD** will also show the **Tv** value (shutter speed) for that particular exposure setting in ½ EV steps.

A flashing shutter speed indicates light meter out of range (too dark or too bright scene).

Manual ***32, 33***

1. If set at A, depress the shutter speed control lock button. At the same time, turn the shutter speed control to any desired shutter speed except A or B by aligning it against the index. You can then turn the shutter speed control without having to press the

AUTO	(31a)	Shutter speed and ▼ flashing	= beyond metering range (too dark)
	(31b)	Shutter speed stable	= correct exposure time
	(31c)	Shutter speed 1000 stable and ▲ flashing	= calculated exposure time of less than 1/1000s (close the aperture until the ▲ symbol disappears and the shutter speed is stable)
	(31d)	Shutter speed 1000 and ▲ flashing	= beyond metering range (too bright) (close the aperture until the ▲ symbol disappears and the shutter speed is stable)

MANUAL	(32a)	Shutter speed and ▼ flashing	= beyond metering range (too dark)
	(32b)	▼ flashing	= more than 1 EV underexposure
	(32c)	▼ showing	= 0.5 EV underexposure
	(32d)	▲/▼ showing	= correct exposure
	(32e)	▲ showing	= 0.5 EV overexposure
	(32f)	▲ flashing	= more than 1 EV overexposure
	(32g)	Shutter speed and A flashing	= beyond metering range (too bright)

lock button again. It remains locked only at the A setting. Be sure to set the dial at a specific speed and not in between two speeds as this will cause exposure errors.

2. ***Press the shutter release button halfway to activate the meter.***
3. ***Adjust the aperture and/or shutter speed controls until the triangle symbols both appear in the viewfinder for correct exposure.***

The **camLCD** and **viewLCD** will also indicate the **TV** (shut-ter speed) setting.

A flashing shutter speed indicates light meter out of range (too dark or too bright scene).

Exposure compensation

In certain situations a preferable exposure may be obtained – technically or creatively – by overriding the suggested exposure. There are two alternative ways to do this in automatic mode, the choice of method depending on the type of scene. Where there are large, bright areas- a landscape with large white clouds for example - point the camera down towards foreground tones and press the release button halfway to lock the exposure. While maintaining the pressure on the button, return to the desired composition and press the button all the way down for exposure.

In situations where this method is not possible - where there are no suitable areas to make a reading from or where you are taking several pictures in quick succession, for example - use programming of the exposure compensation instead. Setting in half EV steps, it will provide you with the desired amount of correction automatically.

1. ***Press the* MODE *button on the* camLCD *for 1s.***
2. ***Press repeatedly until a combined +/- symbol appears in the lower right frame on the display (not the AEB± symbol).***
3. ***Select the amount of compensation with the ▲ / ▼ buttons and confirm by pushing* MODE *again or by pushing the release button halfway.***

A +/- symbol is shown on the display as well as the amount of compensation. A +/- symbol also appears on the **viewLCD**, though not the amount of compensation. For example, if you want to photograph a dark figure against a dominant light background, the exposure suggested (averaged TTL meter reading) will produce an underexposed image. By setting an exposure compensation of + 1.5, for example, the result will be more natural. A common situation is a 'back lit* subject – an

interior where a figure is standing in front of a window, for instance, or against snow, a sandy beach, silhouetted against a sky, etc, where the background is very light while a much smaller but important part of the image is comparatively much darker.

The opposite situation can also be corrected where, for example, a light coloured object is positioned in front of a very dark background. In this case an averaged TTL meter reading will suggest a reading that would produce an overexposed image. A decrease compensation of -1.5, for example, can be applied producing a background tone that was closer to the original and darkening the object to a more 'natural' tone. Similar situations might be an object placed in sunlight against a background in shadow, for example.

The amount of compensation required will differ from case to case dependant on the situation and the desired effect.

Do not forget to re-set the exposure compensation back to zero after use.

Auto-bracketing

The auto-bracketing function allows you to make a series of increased and decreased exposures in rapid succession to ensure an optimal exposure without having to alter the settings after each exposure. This is particularly useful when using reversal film that inherently has little tolerance for exposure error. It under- and overexposes (by altering the shutter speed) using the chosen exposure setting as standard providing three separate exposures. Half or full EV step variations can be made. Proceed as follows:

1. ***Set the film transport mode to S or C.***
2. ***Push the* MODE *button on the* camLCD *for 1s. Push repeatedly until an* AEB *and a ± symbol appear in the lower right frame on the display. Select the exposure deviation with the ▲ / ▼ buttons. Confirm by pressing* MODE *again or by pressing the release button halfway. An* AEB *symbol is shown on the display as well as the set exposure deviation. A +/- symbol is also shown on the* viewLCD.**
3. ***Determine the exposure as normal in manual or 'automatic' mode.***
4. ***Press the shutter release button (or remote release) and keep it pressed until the three frames have been exposed.***

The exposures will consecutively be: standard, under, over. They are also indicated in the camLCD as follows (assuming 0.5 EV is your choice of variation for this example):

Exposure #1 displays '± 0.5' (standard)

Exposure #2 displays '-0.5' (under)

Exposure #3 displays '+0.5' (over)

The bracketing function will automatically be deactivated when the camera is turned off and will have to be reactivated when switched on again. The function can also be turned off by pressing the **MODE** button again.

If you release the pressure on the shutter release button (or remote release) too soon, the operation will not complete. When depressed again, the sequence will carry on from where it stopped. That is to say, if you release the pressure after the first exposure for example, the two final exposures remain programmed in the camera. Therefore, when you depress the release again (assuming you have not turned off the **AEB** *mode or the camera), the first exposure will be underexposed by 0.5EV and the exposure after that, overexposed by 0.5EV. The information concerning the remaining frames remains in the camera even if it has gone into the standby mode but the* **AEB** *symbol and the figures will be visible again in the* **camLCD** *when the camera is reactivated.*

Pay attention to the information in the **camLCD** *when working in the* **AEB** *mode and to remember to cancel this mode after use either by pressing the* **AEB** *button again or by turning off the camera. Failure to do so can cause frames to be incorrectly exposed as you may have inadvertently continued an interrupted sequence or started a new one.*

The standard exposure will include any exposure compensation you have set. When using both exposure compensation and **AEB**, *only the* **AEB** *setting will be shown on the* **camLCD**.

AEB cannot be activated when only one or two pictures remain unexposed on the film.

The shutter will lock and the **camLCD** *will indicate a flashing* **AEB** *'±' and a number when the bracketing function is activated in standard format with only three pictures left and the format switch is changed to panorama.*

The shutter will lock and a flashing **P** *will appear in the* **expLCD** *if the format is changed after one or two exposures while the camera is set or* **AEB**.

You can any time cancel the **AEB** *by pushing the* **MODE** *button.*

AEB *cannot be combined with Multi exposure.*

Film advance

The film is advanced automatically to the next frame with consistent spacing between frames regardless of format. This resetting of the frame position can be heard when the format selector is moved.

When the mode dial is set at **S**, one exposure is made. When the mode dial is set at **C**, consecutive exposures are made as long as the release button remains depressed. In the **C** mode the exposure rate is 1.2 frames/s in the standard format and 0.9 frames/s in the panorama format.

If only one unexposed frame is left on the film to cover the standard format and the format selector is switched to 'panorama', the shutter will lock and a P will flash as a warning.

General

LCD illumination 34

When the ambient lighting conditions are too dark too read the LCD information panels, press the LCD back light illumination button located below the **camLCD** panel, as in the illustration. The panels will be illuminated and remain so until the camera remains inactive for a period of five seconds. The lighting will then go out automatically. The button also has a toggle function so you can turn the lighting off simply by pressing button again.

The **viewLCD** has a backlighting brightness automatically controlled by the ambient light level.

Close-range photography

The viewfinder has an integral parallax compensation facility. This automatically moves the position of the bright frame in the viewfinder in accordance with the focusing distance to ensure correct framing of the subject.

Film plane index

The film plane index is situated on the top plate of the camera to the left of the flash hot shoe. This provides the most accurate mark for distance measurement from the subject.

Self Timer

1. Set the main selector dial to the ⏲ icon as in the illustration.

2. The ⏲ icon and set delay time appears in the camLCD panel.

3. Set delay time can be changed (2s or 10s) with the up/down buttons on the camLCD panel.

4. Press the shutter release button.

5. When delay time is set to 10s, the self-timer lamp, located on the front of the camera to the right of the viewfinder window, lights up for seven seconds and flashes for three seconds as a countdown indication. When delay time is set to 2s the self-timer lamp start flashing immediately after release.

6. The shutter will then fire and the film will advance.

Even if the self-timer operation has started, you can stop it simply by turning the mode switch back to **S**, **C** or **OFF**.

When set in the automatic mode, do not stand in front of the camera when pressing the release button as this could adversely affect the exposure reading.

The exposure reading is fixed at the time of pressing the shutter release button, even in AE mode. Check, therefore, to see that there has been no change in the lighting conditions during the delay time before exposure.

Multi exposure

The camera can be programmed to make up to 9 exposures of the same frame.

1. To select multi exposure mode push the MODE button on the camLCD for 1s. Push repeatedly until a flashing double frame symbol appears on the display.

2. Select multi exposure with the ▲ / ▼ buttons to select a non-flashing double frame symbol. Confirm the setting by pushing the release button halfway and a double frame symbol is shown on the camLCD.

3. By pushing the ▲ button repeatedly you can now select up to 9 exposures, displayed on the expLCD. You can any time cancel the multi exposure function by pushing the MODE button. Multi exposure cannot be combined with Auto-bracketing.

Infrared Photography 37

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.***
2. ***Note the distance on the focusing scale that is opposite the central index line on the lens.***
3. ***Now rotate the focusing ring to set this distance opposite the red IR index spot instead of the central index line.***

The illustration shows a lens focused at approx. 4 metres for infrared film. See specific film instruction leaflet for details of filters, film storage, handling and development.

Please make tests with your choice of infrared film before use. High speed black and white infrared film, for example, can be slightly fogged on the edge of the film frame by the film transport emitter / sensor system.

Flash 38

There is flash sync at all speeds from B to 1/125 via the PC flash socket or hot shoe connector. Please see your flash unit's user manual for further information.

When the panorama format is selected, the flash should be adjusted to cover the field of view. With the 45mm lens you should choose an angle that would normally be suitable for a 25 mm lens in the 35 mm format. With the 90mm lens you should choose an angle that would normally be suitable for a 50 mm lens in the 35 mm format.

The flash can be programmed to be triggered either at the beginning or at the end of the exposure. Press the **MODE** button on the **camLCD** for 1s. Press repeatedly until a flash symbol appears on the lower left of the display accompanied by **N** (triggering at the beginning of the exposure) or **R** (triggering at the end of the exposure). Select your choice with the ▲ / ▼ buttons. Confirm by pushing **MODE** again or by pressing the release button halfway. A flash symbol is shown on the display as well as your choice (**N** or **R**).

Remote release **39**

A variety of remote releases can be attached to the XPan II, which has a standard cable release port. Any type of release is suitable on condition that the final connector has a standard fitting, as in the illustration. There is also an optional electrical release cord for XPan II. It uses the same port as for the standard mechanical cable releases

The use of a remote release activates the camera (including the exposure meter) and fires the shutter immediately. In Auto mode you can see which shutter speed was chosen by the camera on the **viewLCD** and **camLCD**; in **Manual** mode press the shutter release button halfway to activate the exposure meter and adjust the settings before making an exposure with a cable release.

When the shutter speed is set at 'B', the drain on the batteries is substantial. The maximum exposure time at this setting is 540 seconds.

Mid-roll rewind **40**

Normally the film is automatically rewound into the cassette after the last frame has been exposed. To remove the film beforehand, however, you must press the mid-roll rewind button located below the **camLCD** panel. The button is recessed to prevent unintentional use, so use the tip of a ball-point pen or similar to access it.

Exposure history

The total number of exposures taken with the camera can be checked on the **camLCD**. With the camera turned off, depress the ▲ button and keep it depressed while you switch the shooting mode selector to **S**.

Each unit signifies ten exposures. You may find that even a brand new camera indicates around 200 exposures taken. This is a result of testing during manufacture and is not a sign of used equipment.

This facility is a handy check to see whether the camera should be serviced.

Film processing **41**

If you have panorama format exposures or a mixture of standard and panorama format exposures on the same roll of film, be sure to use a film processing laboratory that is aware of the situation and is qualified to handle such cases. Normal consumer film processing facilities are not suitable as their systems cannot allow for the mix of formats and will cut the film incorrectly.

Films containing only standard format images, however, remain unaffected and you may use a normal consumer lab.

The lab stickers are provided as a convenient way of informing or reminding the film lab of the situation. Ensure that the sticker covers the film type bar code and the DX code strip on the cassette. Additional stickers are available from your Hasselblad dealer. You may of course mark the cassettes very clearly in some other way to ensure that the film is cut manually.

Always check with the laboratory first to avoid problems.

Further information about panorama format printing and the location of suitable processing labs can be obtained from your local Hasselblad dealer.

Accessories

The XPan II is supplied with a front protective cap, a Quick-coupling plate XPan (together with a hex wrench/Alien key and fixing bolt), a spirit-level and a strap. At the end of this manual you will find a list containing the optional accessories available for the XPan II, some of which are described below. Various flash guns can be attached to the hot shoe and flash brackets can be attached via the tripod screw on the baseplate. Remote releases - cable, pneumatic or electric - can be attached via the cable release socket.

Quick-coupling plate

The Quick-coupling plate XPan (3044410) allows you to use the Hasselblad Tripod quick-coupling S (3045144) - an optional accessory available from the Hasselblad V system range - for rapid and secure attachment to a tripod and is only necessary for use in this case.

The plate is supplied together with a fixing bolt and a hexagonal 'Allen key' wrench. Align the plate along

the length of the camera's baseplate and screw the bolt clockwise into the tripod socket a few turns. Ensure the alignment pin on the plate matches its respective socket in the camera baseplate and continue to screw the bolt until it is securely attached.

Spirit Level **42, 43**

The dual-directional spirit level simply fits into the flash hot-shoe and provides a check for both horizontal and vertical photography. This can be particularly useful when photographing buildings, for example. In these cases the use of a tripod or stable camera support is particularly recommended.

Ensure, however, that it is fitted correctly; see illustrations. Note the difference depending on whether the camera is in the horizontal or the vertical position. Check that the spirit-level has been pushed all the way into the shoe as far as it will go. Remember that the spirit level is intended to be an aid in levelling and cannot guarantee complete accuracy. Check the image carefully in the viewfinder.

UV-Sky filter

The UV-Sky filter XPan (3054460) is designed for use with the Hasselblad 4/45mm and the Hasselblad 4/90mm lenses. The filter absorbs some of the ultra-violet rays present in light, which cause the appearance of haze, particularly noticeable in photography at high altitudes, for example. The use of a UV-Sky filter can reduce this effect somewhat and also cause a slight warming of tone on colour film.

The filter can safely be left on the lens for most photographic applications as it provides some protection for the lens' front element not only against dust and rain etc but also against scratches and accidental damage.

The filter is multi-coated to ensure high anti-reflection quality. No degradation in MTF is seen and there is no shift in focus.

Centre filter XPan for 45mm

The Centre filter XPan for 45 mm (3054453) is designed for use only with the Hasselblad 4/45-mm lens (3024015).

The 45 mm lens is free from vignetting with panorama format images at lens aperture settings smaller than f/8. However, natural light fall-off (a basic law of physics) reduces the exposure at the corners of the image by roughly 1 f-stop.

This light fall-off at the corners causes visible effects in critical photography when using transparency film.

When using negative film, however, natural light fall-off present in traditional optical printing set-ups (most film labs and mini-labs) automatically compensates for this to a greater extent in the print. Therefore, when using negative film and with the lens stopped down, there may be no need to use a centre filter.

The only way to eliminate light fall-off at the corners is to reduce the amount of exposure at the centre of the image. The Centre filter XPan works by a concentration of neutral density at the centre and a progressive reduction of density towards the outer edge. The effect at the centre of the filter corresponds to a 1 f-stop reduction in exposure.

The filter is multi-coated to ensure high anti-reflection quality. No degradation in MTF is seen and there is no shift in focus.

The filter performance is optimised to give even illumination at larger or medium sized apertures.

Tips & Reminders

- *Photographers normally used to working with SLR cameras should particularly check that the lens cap has been removed when making exposures. Flashing shutter speed and flashing low exposure symbol warning appear in the viewfinder.*
- *Take care if using other types of lens shade or filter holders. As the XPan II does not have a TTL viewing system it will be difficult to judge effects and possible vignetting. They may also obscure the rangefinder optics and cause visual focusing difficulties through the viewfinder.*
- *Regularly check that the controls are set correctly before you take a photograph. For example, you may have set the camera at ASA/ISO override for a previous film and have forgotten to reset the Auto DX code setting. Or perhaps you have forgotten to reset an exposure compensation.*
- *When using the panorama format, ensure that you compose accurately, or at least allow a margin for error. If you decide to crop an image later, to level a horizon for instance, you may be forced to mask off slightly more than normal compared to a similar correction in the standard format, owing to the panorama format's greater length.*

- *If you open the camera back by mistake before you have finished the film, you will only have lost the last exposed frame and the unexposed frames. The exposed frames have already been wound back into the cassette as the XPan II starts by withdrawing all of the film first and progressively rewinding it frame by frame.*
- *Make a habit of turning off the camera when not in use. The power save function will put the camera in stand-by mode automatically after three minutes of inactivity but it may reactivate if something presses against it; in a camera bag for example.*
- *Check battery status regularly and always keep some spare batteries in your camera bag.*
- *At very low temperatures, the batteries may not provide sufficient power for the camera. Keep some spare batteries in your pocket, for example, to keep them warm. These can then be exchanged and be used alternately while the cold batteries are being warmed.*
- *The dependable working range for the camera is -10° C – +40° C.*
- *The LCD's may look dark at temperatures around 60° C and react slowly at very low temperatures. This is quite normal and does not signify a fault.*
- *When using a combination of the 45mm lens, panorama format and transparency film, the natural light decrease appears as slight light fall-off for critical applications. This is quite natural and is not due to lens vignetting for a stopped-down lens. To minimize this effect use an aperture of f/8 or smaller and avoid underexposure. The effect can be completely eliminated by using the Centre filter/Pan for 45 mm (3054453).*
- *Remember that it is roughly the central 20x30 mm area that is used in light metering. This is particularly important when using the panorama format if the scene contains a wide range of lighting or tonal, contrasts.*
- *When objects are very close to the lens, remember that their position in relation to the background will also be subject to parallax and therefore, dependent on distance, will not be exactly as seen in the viewfinder This effect is mainly of concern with the 30mm lens.*
- *Landscapes can often include a great deal of sky in wide-angle photography. If pale in tone or with large white clouds for example, such skies can affect the exposure meter sufficiently to cause under-exposure of the image. Dependant on the desired effect, take an exposure reading from a more appropriate part of the subject, excluding most of the sky, or use an external exposure meter.*
- ***Do not forget to remove the lens cap when making an exposure!***

Ophthalmology prescription SPHERICAL	Recommended eyepiece	
	Power	Code
+3.0 – +2.5	+2	3054437
+2.25 – +1	+0.5	3054434
+0.75 – -0.5	-1(std)	3054440
-0.75 – -1.5	-2	3054431
-1.75 – -2.5	-3	3054428
-2.75 – -3.75	-4	3054425

Viewfinder eyepiece selection **42, 43**

The table below provides the choice of correction eyepieces available in connection with an eyeglass prescription. Firstly, decide which eye you would normally use for viewing. Then check your prescription bearing in mind that in ophthalmic terms O.D stands for the right eye and O.S stands for the left eye. In the table, read off the appropriate eyepiece that is alongside your prescription figures.

If your cylindrical eyeglass prescription is more than 0.5 dioptres, it is recommended that you always wear your eyeglasses for viewing and focusing.

Please note that the eyepiece, including the correction glass holder, is constructed from a rubber coated plastic material to minimise the risk of scratching eyeglass lenses.

Technical Specifications - XPan 11

Camera type:	Coupled rangefinder with interchangeable lenses.
Design:	Aluminium and titanium camera body.
Viewfinder:	Bright frame viewfinder (ambient light), automatic parallax compensation, automatic standard / panoramic switch over via format selector dial, automatic bright frame switch-over according to lens fitted, integral LCD display showing shutter speed and exposure metering indications. Field of view 85% or more.
Focusing:	Lens helicoid interlocked to coupled rangefinder.
Film transport:	Pre-wind type, automatic positioning according to format, automatic wind-on, automatic rewind. Programmable selection of full rewinding of the film into the cassette or leaving a film tip exposed for easy film extraction. Film advance of 1.2 frames per second in standard format, 0.9 frames per second in panorama format Programmable multiexposure mode with up to 9 exposures per frame.
Film type:	35mm
Format:	24x36 mm and 24x65 mm.

Frames per film:	36, 24 and 12 frames In standard format or 20, 13 and 6 frames in panorama format from 36 exp, 24 exp and 12 exp cassettes respectively
Exposure counter:	LCD. Automatic, shows number of frames remaining. Illuminated. Panorama format indication.
Shutter:	Focal plane shutter, B (max 540s) -1 /1000 s, flash synchro from B – 1/125 s. Flash sync programmable at the beginning or the end of the exposure. 1 EV step control on manual, 1/12 EV step control on automatic, self-timer with 2s or 10s delay. Activated by button or cable release socket.
Exposure control:	TTL measured at shutter plane, centre weighted averaging system, aperture priority automatic/manual switch over, EV4 (f4) - EV19 (f22) at IS0 100.
Exposure compensation:	±2 EV at 1/2 EV step intervals.
Auto bracketing	0.5 EV or 1.0 EV step intervals. Order: standard, under, over.
Film speed:	Programmable auto DX setting and manual setting. IS0 25-3200, ±1/3 EV accuracy.

Camera LCD information:	ISO, shutter speed (Tv), exposure compensation, auto bracketing, self-timer delay time, sync mode, rewind mode, multi exposure, battery status and exposure history. Illuminated
Batteries:	CR2 x 2 (6V total).
External dimensions:	Camera body only: 51 mm L x 166 mm W x 82 mm H. (2.04 x 6.64 x 3.28") 45 mm lens: 47 mm L (1.88"), Ø 60 mm. 90 mm lens: 73 mm L (2.92"), Ø 60 mm.
Weight:	Body only: 735 g (25.7oz) without batteries. 30 mm lens: 310 g (10.85oz). 45 mm lens: 235 g (8.23oz). 90 mm lens: 365 g (12.78oz).

LENSES:	**Hasselblad 5.6/30 mm Aspherical lens:** bayonet fitting, f5.6 - f22, 8 components, 10 elements, focusing range 0.7m – ∞, filter Ø 58mm. Angle of view - diag./hor. 72°/62° (standard format) 98°/94° (panorama format) ≈17 mm lens in 35 mm camera terms when camera set at panorama format.
	Hasselblad 4/45 mm lens: bayonet fitting, f4 - f22, 6 components, 8 elements, focusing range 0.7m – ∞, filter Ø 49mm. Angle of view-diag./hor. 51°/47° (standard format) 74°/71° (panorama format) ≈ 25mm lens in 35 mm camera terms when camera set at panorama format.
	Hasselblad 4/90 mm lens: bayonet fitting, f4 - f22, 7 components, 9 elements, focusing range 1.0m – ∞, filter Ø 49mm. Angle of view-diag./hor. 27°/23° (standard format) 42°/40° (panorama format) ≈ 50mm lens in 35 mm camera terms when camera set at panorama format.

Troubleshooting

Your XPan II is a fully professional camera and should provide many years of service particularly if the advice is followed under 'Equipment Care, Service and Guarantee'. If a problem arises, however, check back in this manual to the relevant section first taking particular note of the specific warnings. Then check the table below to see if you can solve it. Refer to a Hasselblad Authorised Service Centre if the problem persists.

Problem	Possible cause / solution
Camera does not react when the release button is pressed.	• Mode selector in 'OFF7 position. • Batteries omitted or exhausted.
You cannot attach the lens.	• Ensure lens indexes are aligned.
You cannot remove the lens.	• Depress lens release button while turning lens.
New film has not wound on to first frame.	• Film tip incorrectly positioned before closing camera back. • ISO setting to DX position with a non-DX coded film cassette.
Whole film under/ overexposed.	• Manual film speed (ISO) set incorrectly. • Exposure compensation not set at zero.
Some frames unexposed.	• Lens cap not removed.

Equipment Care, Service and Guarantee

EQUIPMENT CARE

The Hasselblad XPan II 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. Corrosion of electrical contacts may occur in these situations if sufficient care is not taken. 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 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.

Hasselblad XPan II camera *supplied with the following equipment:*	**3014020**
Front protective cap, XPan	**3054415**
Quick-coupling plate, XPan (with hex wrench)	**3044410**
Strap, XPan	**3054403**
Spirit-level, XPan	**3054418**
Batteries (2 xCR2)	

Hasselblad XPan II kit *Complete camera with supplied equipment as **3014020,** plus Hasselblad 4/45 mm lens (complete with supplied equipment as **3054415**) plus Lens shade, XPan **3054405**.*	**3014470**

Hasselblad 5.6/30 mm aspherical lens *supplied with the following equipment:*	**3024013**
Viewfinder XPan 30 mm	**3054472**
fitted with a 'neutral' correction lens	**3054482**
Lens shade XPan 30 mm	**3054407**
Centre filter XPan for 30 mm	**3054451**
Lens pouch	**3058408**

Viewfinder pouch XPan 30 mm	**3054463**
Front lens cap for XPan	**3054410**
Rear lens cap XPan	**3054412**

Optional Accessories - XPan 30	
Correction lens, XPan 30, - 4	**3054476**
Correction lens, XPan 30, - 2.5	**3054479**
Correction lens, XPan 30, -1 (neutral)	**3054482**
Correction lens, XPan 30, + 0.5	**3054485**
Correction lens, XPan 30,+2	**3054488**

Hasselblad 4/45 mm lens	**3024015**
supplied with the following equipment:	
Front lens cap, XPan	**3054409**
Rear lens cap, XPan (integral)	**3054412**
Protective lens cover, XPan	**3054421**

Hasselblad 4/90 mm lens	**3024019**
supplied with the following equipment:	
Front lens cap, XPan	**3054409**
Rear lens cap, XPan (integral)	**3054412**
Protective lens cover, XPan	**3054421**

Optional Accessories	
Lens shade, XPan (for 45 and 90 mm)	**3054405**
Centre filter XPan for 45 mm	**3054453**
UV-Sky filter XPan	**3054460**
Release cord XPan II	**3054510**
Leather case 580	**3054468**
Ever ready case XPan	**3054536**
Correction lens, XPan, - 4	**3054425**
Correction lens, XPan, - 3	**3054428**
Correction lens, XPan, - 2	**3054431**
Correction lens, XPan, -1 (neutral)	**3054440**
Correction lens, XPan, +0.5	**3054434**
Correction lens, XPan, +2	**3054437**

Product no:

3014020
3014470

Hasselblad reserve the right to make changes in the published specifications without prior notice.

HASSELBLAD

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