HASSELBLAD

User Manual

H3D II

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H3D II HASSELBLAD

Welcome to Hasselblad !

The H3D II represents the forefront of medium format photography. This unrivalled position is based on an accumulation of experience spanning more than fifty years. By using Hasselblad equipment you share the decision made by of some of the world's best and most famous photographers. Congratulations on a wise choice!

The H3D II is a development of the world's first full-frame, large-sensor, medium-format DSLR camera. The H3D II has been developed around a brand new digital camera engine producing increased lens performance and a new level of image sharpness. By focusing solely on digital camera architecture, Hasselblad is able to offer photographers the full benefits of professional medium-format digital cameras as well as the ease of use of the best 35mm DSLRs.

The H3D II delivers outstanding performance, taking full advantage of the virtues of medium format photography. The result is flexibility for the professional photographer, including the freedom to choose between eye-level and waist-level viewfinders, digitally APO corrected lenses, and on-the-fly classification of images. Hasselblad's Natural Color Solution delivers out-of-the-box image quality only achievable in a true digital camera system.

Medium Format digital capture advantage

In digital photography, the advantages of large format cameras have become even more obvious. The 6×4.5 cm window allows the H3D II to use the largest image sensors currently available in digital photography – up to more than twice the physical size of a 35mm camera sensor. Consequently the sensor holds more and larger pixels, which deliver the highest possible image quality in terms of moiré-free color rendering without gradation break-ups in even the finest lit surfaces.

An impressive lens line

The highly renowned HC/HCD lens line includes 10 Auto-Focus lenses, all with central shutters. Range is from 28mm to 300mm, 50-110mm zoom, 35-90mm zoom and 1.7X converter. The HTS 1.5 tilt/shift adapter delivers an easy to use, portable tilt/shift solution for 5 HC/HCD lenses ranging from 28mm to 100mm. The CF adapter allows use of the classic CF-lenses from the Hasselblad V-camera, with full use of their central shutters, allowing flash to be employed at

shutter speeds up to 1/800s. The central shutter also improves image quality by reducing camera vibration. And thanks to the large format of the H System cameras, there is a considerably shallower depth of field range, making it much easier to utilize selective focus to creative effect.

A choice of large and bright viewfinders

One of the important traditional advantages of the medium format is the extra-large and bright viewfinder image, enabling extremely precise compositions and easy operation in dim lighting. The H3D II comes with the HVD 90x viewfinder designed for full performance over the large 36x48mm sensor. Hasselblad has added an interchangeable waist-level viewfinder, the HVM, for the entire range of H system cameras. The bright and large viewfinder image is ideal for creative composing and the photographer is able to shoot in the fashion that suits them most; maintaining eye contact with the model, or gaining impact by shooting from a point lower than eye-level, for example.

Phocus software for the professional

Phocus provides an advanced software toolbox that has been especially designed to achieve optimum workflow and absolute image perfection from Hasselblad raw image files. With the H3D II camera system Phocus provides:

- *Uncompromising Image Quality*
- *Special extended camera controls with which to operate your H3D II camera. These features, such as live video for easier shot set-up and workflow, or the ability to control the lens drive for focusing when the camera is in a remote position or when the digital capture unit is mounted on a view camera, bring an entirely new level of flexibility to the way you shoot.*
- *Moiré Removal Technology automatically applied directly on the raw data, leaving image quality intact and eliminating the need to carry out special masking selections or other manual procedures, saving hours of tedious post-production work.*
- *Flexible Workflow. The Phocus GUI features easy-to-use options that allow you to customize your set-up to suit a range of different workflow situations, such as choice of import source, browsing/comparison functions, file management, image export in a number of file formats, pre-setting of options for upcoming shoots, and much, much more.*
- *New Metadata (GPS, etc). The extended metadata included in all Phocus images provides for accurate and detailed cataloguing and indexing, easy image management, and includes added GPS data functionality in order to allow a range of new functions. Phocus links GPS data directly to Google Earth, for example, making geographic reference a snap and image storage and retrieval much easier.*
- *Perfect Viewing Quality. The Phocus Viewer delivers image viewing quality that matches every detail of what you will see later in Photoshop. In addition, the Phocus Viewer allows you to customize layout and composition to suit your current or desired workflow, providing a wide range of options including full view, compare, browse, horizontal, or vertical view, and so on. You can have multiple folders open simultaneously for side-by-side viewing, comparison, and selection.*

Ultra-Focus and Digital Auto Correction for image perfection

The H3D II camera allows information from the lens and exact capture conditions to be fed to the camera processor for ultra-fine-tuning of the auto-focus mechanism, taking into account the design specifications of the lens and the optical specifications of the sensor. In this way the full HC lens program is even further enhanced, bringing a new level of sharpness and resolution. Digital correction for color aberration, distortion and vignetting is also added. "Digital Auto Correction" (DAC), is an APO-chromatic correction of the images based on a combination of the various parameters concerning each specific lens for each specific shot, ensuring that each image represents the best that your equipment can produce. Based upon these techniques, Hasselblad has been able to expand our lens program with a 35–90 mm zoom lens that has been especially developed for the H3D product family. The design of this lens has been optimized for the actual 36x48mm area of the sensor to make it more compact and to work in conjunction with DAC. This is a critical part of the technology behind capturing perfect images with this extraordinary lens. The result is clear: DAC increases image resolution and delivers perfect pixels, thereby providing an ideal basis for optimal image rendering.

Hasselblad's unique natural colors

Hasselblad's Natural Color Solution (HNCS) enables you to produce outstanding and reliable out-of-the-box colors, with skin tones, specific product colors and other difficult tones reproduced easily and effectively. In order to incorporate our new unique HNCS and DAC-features we have developed a custom Hasselblad raw file format called 3F RAW (3FR). This file format includes lossless image compression, which reduces the required storage space by 33%. The 3FR files can be converted into Adobe's raw image format DNG ('Digital Negative'), bringing this new technology standard to the professional

photographer for the first time. In order to utilize DAC and optimize the colors of the DNG file format, conversion from 3FR must take place through Phocus.

GPS Recording Flexibility

Hasselblad's Global Image Locator (GIL) is an accessory for use with any Hasselblad H-System digital capture product. With the GIL device, all images captured outside are tagged with GPS coordinates, time and altittude. This data provides the key to a number of future applications involving image archiving and retrieval. One example is the direct mapping of images in Phocus software to the Google Earth application.

Instant Approval Architecture

Building on the success of its Audio Exposure Feedback technology, Hasselblad has created Instant Approval Architecture (IAA), an enhanced set of feedback tools, designed to enable the photographer to focus o n the shoot rather than the selection process. IAA triggers audible and visual signals for each image captured, notifying the photographer immediately of its classification status. The information is recorded both in the file and in the file name, providing a quick and easy way to classify and select images, in the field or back at the studio. IAA is a Hasselblad trademark and Hasselblad has a patent pending on the invention. Extra large 3" display on the H3D II provides a realistic, high quality and perfect contrast image view, even in bright sunlight.

Three modes of operation and storage

The H3D II offers a choice of storage devices: portable CF cards, the flexible ImageBank-II or a computer hard drive. With these three operating and storage options, you are able to select a mode to suit the nature of the work in hand, whether in the studio or on location.

Options for working with tilt/shift

Two basic options are available for tilt/shift work with H3D II. A simple, portable adapter solution and the classic view camera solution. The HTS tilt/shift adapter for H3D II allows for portable tilt/shiftwith the HC/HCD lens range from 28mm to 100mm (please refer to the separate datasheet on this product for details).

To further increase usability, the H3D II has been designed to allow the digital capture unit to be detached and used on a view camera by way of an adapter (please refer to the separate datasheet on Hasselblad View Camera solutions for details).

The primary goal of all camera development is of course the seamless and unobtrusive production of superb images, regardless of situation. Hasselblad cameras have abilities and features that you may not think you need yet; each individual has their own way of working. But the H3D II has tremendous scope for fine-tuning your technique possibly beyond your present ambitions.

Take your time to learn the intricacies and potentials of your new camera. Go at your own pace and explore the possibilities when you feel ready for the next step. Results will be good from the word go, that's guaranteed, but when you want to make improvements or work more efficiently perhaps, the capabilities are there for you.

The supreme Hasselblad potential is there, it's up to you to exploit it!

H3D II

Computer system requirements

Digital files naturally end up on a computer for processing. Image-storage and correction requires a certain minimum standard regarding computer capabilities. Large images will require a high-performance computer with plenty of memory, advanced graphics capabilities and a recent operating system. In most cases, the computer should include a FireWire 800/400 connector, which will enable you to load images directly from the camera or ImageBank-II (see note below). To load images stored on the removable compact-flash card, you could instead use a compact-flash card reader, but FireWire is recommended for maximum flexibility.

Warnings and restrictions

- *If you want to power the H3D II from a PC laptop (as opposed to a Macintosh laptop), you must ensure that the FireWire port on the computer is capable of supplying power. Please note the following:*
  - *Most recent Macintosh computers are compatible, both desktops and laptops.*
  - *Most recent desktop PC computers are compatible.*
  - *Most laptop PC computers are NOT compatible (but can be modified in many cases).*
- *Keep the H3D II and all other computer equipment away from moisture wherever possible. If your camera becomes wet, disconnect from power and allow it to dry before attempting to operate again.*
- *Always take great care when you remove the digital capture unit for cleaning —the exposed CCD sensor protective filter is vulnerable to damage.*
- *Keep all cables connected to or from your camera and computer out of the way where they will not be tripped over.*
- *Ensure the ventilation openings remain uncoverd on the digital capture unit when it is active.*
- *Your new Hasselblad camera may have been supplied in kit form or as separate items. There are a number of possible combinations depending on factors such as offers, bundles etc. Please ensure that all the items noted on the accompanying packing information have been supplied and are correct.*
- *Contact your Hasselblad dealer or distributor immediately if anything is missing or seems faulty in any way, quoting the serial numbers and purchase details where appropriate.*
- *Please keep purchase details and the warranty in a safe place.*
- *Familiarise yourself with the various parts and components. Leave protective covers on as much as possible and avoid touching glass surfaces and inserting fingers into the camera body. Hasselblad equipmentthas a robust construction and is capable of withstanding fairly rough treatment but nevertheless is a precision instrument and will serve you longer if treated with respect from the beginning.*
- *Finally, please check occasionally on the Hasselblad website–www.hasselblad.com– for any updates regarding user instructions, changes, news, or other information. If you have no Internet access, please contact your Hasselblad dealer or distributor for the latest information.*

H3D II

1

General overview of body and viewfinder – control and display

- LCD display on camera
- LED display in viewfinder
- Upgradeable firmware
- Rapidly accessible menu
- Interactive display
- Customizable functions

All functions and settings on the H3D II camera body are accessed and altered by the control buttons and wheels on and around the grip aided visually by the display user-interface.

The information on the grip display has a great deal in common with display menus found in mobile/cell phones, etc. It is pixel based and therefore has a greater capacity to produce user-friendly symbols for rapid and secure interpretation.

Below is an overview of the primary functions of the control wheels and buttons. Some controls have dual or triple functions according to the state of the menu or setting. A full description can be found further on in this manual.

Shutter release button

Releases shutter. Also activates camera from standby mode.

FLASH / (CONTROL LOCK) button

Locks settings to avoid inadvertent change. Also accesses flash settings as well as acting as Exit button.

AF button

Accesses focus modes.

ISO/WB button

Accesses ISO and White Balance settings. Also acts as Save button.

Front control wheel

Accesses and changes various settings.

MENU button

Accesses menu.

Illumination/Battery status button

Illuminates grip display. Acesses battery status and general information screen.

ON.OFF (PROFILES/ESC) button

Turns the camera on and off. Accesses Profiles and acts as escape button for other functions.

Rear control wheel

Accesses and changes various settings.

M.UP button

Raises and lowers mirror. Can be reassigned to another function.

Remote release cord port

For attaching a remote release cord (electrical).

STOP DOWN button

Stops down aperture to current setting. Can be reassigned to another function.

AE-L button

Locks light reading made in both automatic and manual exposure modes. Can be reassigned to another function.

Format button

Re-formats CF card.

USER button

User assignable-function button.

Eyesight correction adjustment wheel

Personal eyesight adjustment facility.

EV correction adjustment button

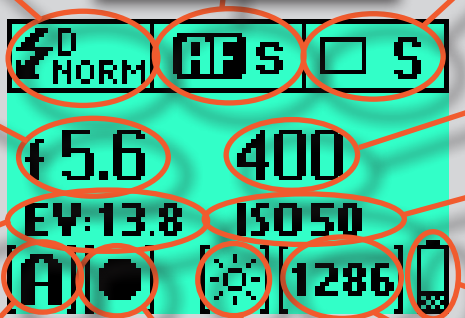
Produces EV exposure compensation.

EXP button

Accesses exposure mode and metering method.

Grip display

Typical camera grip display. (The information in brackets describes this particular example only).



Flash condition indication
(No exposure compensation, normal flash synchronisation)

Aperture setting
(f/5.6)

Exposure Value display
(EV 9.3)

Exposure mode indication
(Aperture priority setting)

Focus setting
(Autofocus setting, single shot mode)

Metering method indication
(Centre weighted)

White balance
(Daylight)

Drive condition
(Single setting)

Shutter speed setting
(1/400s)

ISO setting
(50 ISO/ASA)

Low battery symbol

'Capture counter'
(1286 shots remaining on chosen storage medium)

Typical camera grip display when changing settings.

Command indication

The upper row on the screens describes commands (which change according to the setting). The button immediately above each command effects the change. So in this case, for example, you would press the FLASH button to 'exit' from the screen. See note below.

Settings symbols

Symbolize the options available when settings are changed. The active symbol is depicted by a drop shadow.

Control wheel description and direction

Arrowheads symbolize which control wheel should be used to change the setting they are beside. In this case, the Bracketing option is chosen by the front control wheel and the number of captures in that option is chosen by the rear control wheel.

◀…▶ = *front control wheel*

▲▼ = *rear control wheel*

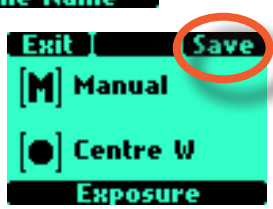
Setting information

The lower row on the screen displays information about the current state of the setting. In short, the upper row displays what you can do, and the lower row displays the current state of settings or what you have done.

The basic principle behind making changes is that the appropriate button is first pressed to access the menu and then settings altered by way of the control wheels. The appropriate control wheel is designated by arrowheads alongside the setting description.

- *Some buttons have a toggle function, the ON.OFF button has a quick 'click' action as well as a longer (half-second) 'press' action and the shutter release has two positions: 'half-press' and 'full-press'.*
- *Several buttons on the grip are multifunctional, according to the state of the menu. In the example illustrated here, the FLASH button functions as the EXIT button, the AF button functions as the ON button and the ISO/WB button functions as the SAVE button.*
- *The front and rear control wheels can also be used to navigate the menu on the digital capture unit.*
- *At very low temperatures the displays require a few seconds to present new settings.*
- *The control wheels are also used to navigate the menu on the digital capture unit.*
- *The FLASH button also acts as an EXIT button and the ISO/WB button acts as an OK button when navigating the digital capture unit menu.*

Examples



The following is a list of the various terms describing the various actions that appear in the menu (on the grip display):

Enter : *moves screen down one level on the menu.*

Exit : *moves screen back up one level on the menu. Does not save any settings.*

Off : *deactivates the particular function being set.*

On : *activates the particular function being set.*

Sel. : *(Select) - selects the character marked for image info and profile name*

ESC : *(Escape) - terminates an action and returns to the main screen. Does not save any settings.*

Save : *saves a setting and also moves screen back up one level on the menu. Can save many changes made in a setting sequence.*

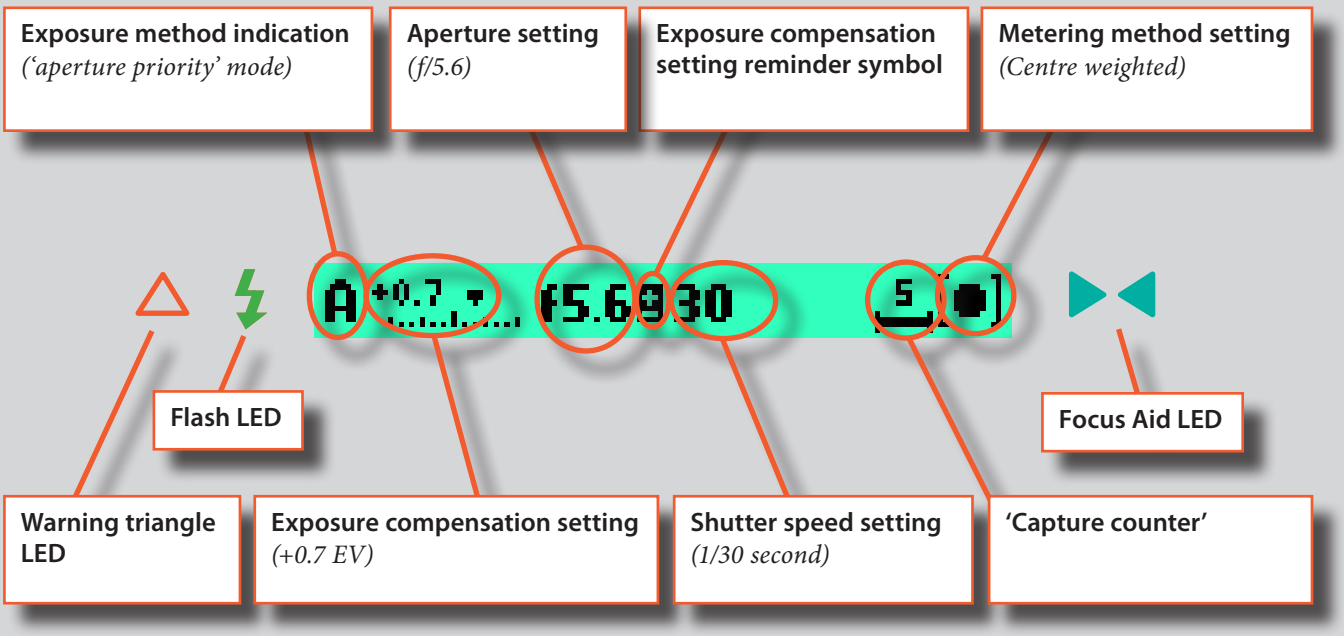
Remember the following groupings of 'saved' and 'not-saved' actions when making settings changes:

SAVED	NOT SAVED
'Quick save' - *half-press shutter release button*	**Escape** - *press ESC button (PROFILES /ESC button)*
Save - *press save button (ISO/WB button)*	**Exit** - *press exit button (FLASH button)*

Viewfinder display

Typical viewfinder display. Note the LEDs will only be visible when activated (by the camera or a setting).

(The information in brackets describes this particular example only).



Some examples of various viewfinder displays visible with standard settings and when specific control buttons are pressed.

Standard settings	A +0.0 f5.6 250 5 [●] *Normal screen*	A +0.0 f5.6 20 5 [●] *Normal screen in AE lock state*	A +1.0 f5.6 10 5 [●] *Normal screen with exposure compensation set*
FLASH	+0.0 Ev Flash Normal *Flash mode*	-1.0 Ev Flash Normal	+0.0 Ev Flash Rear
AF	Manual AF *AF mode*	Single AF	Cont AF
DRIVE	Single Drive *Drive mode*	Cont Drive	Multi Drive Num:4
MENU	Menu mode *Menu mode*		
+/–	EXPOSURE ADJUSTMENT +0.3 Ev *Exposure compensation mode*		
EXP	A Exp [●] S Exp [●] P Exp [●] A Exp [●] M Exp [●] A Exp [●] A Exp [·] A Exp [●] *Exposure method and metering method*		

Menu charts – general

Throughout this manual you will find charts to explain the steps and procedures required to alter the various settings. These charts are laid out to graphically illustrate in a simple manner how to navigate through the menus. While they include all the information that would be presented on the display relevant to that section, they cannot illustrate all the possible combinations of the various symbols seen on a screen at one time as that would be impractical and too confusing. If you are familiar with mobile/cell phone menus, for example, then the design of the layout and working practice will not be unfamiliar.

You should find that, in practice, working your way through a menu on the camera is a good deal simpler and more obvious than the written explanation implies!

In the descriptions, various terms are used regarding menu navigation. Menus have 'trees', for example, which describes their imaginary graphical layout where you could trace a navigational path along its 'branches'. Each new section, or stopping off point on the branches, seen on the display is called a 'screen'. Therefore a screen is the graphical display of where you are on the menu and represents the current state of settings.

The H3D II features the advantage of multiple customization of settings. This means that your personal choice of settings, and thereby appearance of various combinations of symbols on the display at any time, will not necessarily be the same as many of the screens illustrated in this manual.

To simplify the descriptions, reference is often made to a 'main' or standard screen. Apart from default settings, there is no actual standard setting in the normal sense and therefore you create your own 'standard', which of course can be changed at any time.

The 'main' screen is therefore the one you have currently created and is the one visible on the display when photographing (except where a particular mode is in actual operation, such as self-timer, for example).

Symbols used in the charts

Use front control wheel
(direction depends on user setting)

Use rear control wheel
(direction depends on user setting)

Press button or turn wheel

MENU button on the grip

Choose ENTER
(by pressing ISO/WB button on grip)

Choose ON
(by pressing AF button on grip)

Choose Save
(by pressing the ISO / WB button on grip) The new setting will be saved and chosen action can be carried out. Setting will be retained until changed.

Functions in loop on menu

A loop means that the available functions on that particular branch of the menu can be successively accessed in either direction of the control wheels without a break in flow. That is, you could turn the wheel clockwise or anticlockwise to arrive at the desired function.

Main direction of path through menu

The main path traces step-by-step the path that has to be taken through the various branches of the menu tree as they appear on the display to reach the relevant functions.

Shutter release button — A

This button has ***half-press*** and ***full-press*** positions. By pressing half-way (or softly) the camera, auto focus function and exposure meter can be activated. By pressing all the way down (or more firmly) the shutter will be released (or the chosen exposure procedure will begin, as relevant. For example, the self timer is activated with this button)

FLASH / (CONTROL LOCK) button / (EXIT) — B

This is a triple function button. If you press the button for one second, the beeper will sound (if set) and a key symbol will appear on the grip display signifying that the controls (except the shutter release) have been locked and therefore cannot be altered unintentionally in use. Press the button for one second again to unlock (this function can be altered to lock all controls or control wheels only in 'Custom options').

Quickly clicking the button will access the flash settings information on the display from the main screen. See separate section for full details.

This button also acts as the **EXIT** button for many other settings including an **EXIT** button when navigating the digital capture unit menu.

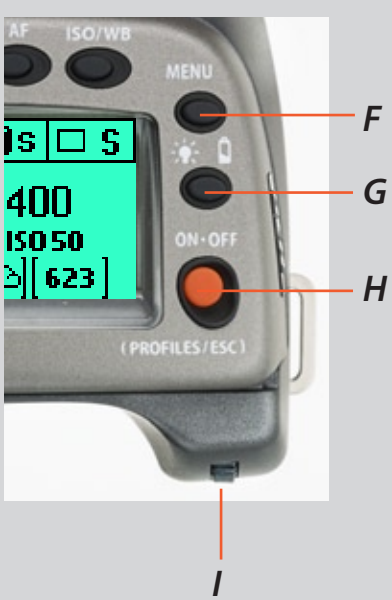
AF button / (ON) / (SEL.) — C

This is a triple function button. Press this button to directly access the autofocus/manual focus choice screen from the main screen. See separate section for full details. It also acts as the **ON** and **SEL.** (= select) buttons for many other settings.

ISO/WB button / (SAVE) / (ENTER) — D

This is a triple function button. It provides direct access to the ISO and White Balance settings (see separate section for full details).

It also acts as the **SAVE** and **ENTER** buttons for many other settings as well as an **OK** button when navigating the digital capture unit menu.



Front control wheel — E

The front and rear control wheels are used to make changes in exposure settings, access the various loop sections of the menu for settings as well as navigate the digital capture unit's menu. The effect of the wheels' direction is customizable.

MENU button — F

Accesses the first level of the menu for settings changes.

Illumination/Battery status button — G

Press to illuminate the display. Remains active until camera enters standby mode. Hold down to access battery status/general information screen.

ON.OFF (PROFILES/ESC) button — H

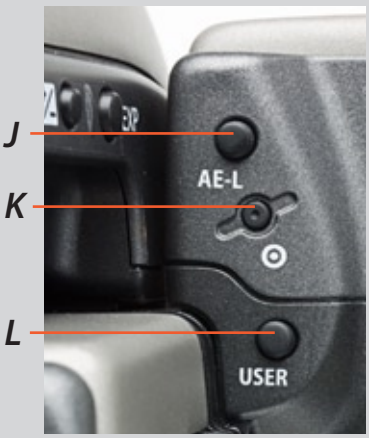
Press the button for 1 second to activate the camera. The H3D II start-up logo will appear and then the main screen. After a few seconds (customizable) the camera will enter Standby mode.

A long press of the button will turn the camera off completely (even from Standby mode) signified by an audible signal (if set). A quick 'click' on the button will access the Profiles section of the menu from the main screen.

Note the difference in results between a long press and a quick click of the this button.

Rear control wheel — I

The front and rear control wheels are used to make changes in exposure settings, access the various loop sections of the menu for settings as well as navigate the digital capture unit's menu. The effect of the wheels' direction is customizable.



On the rear of the grip, as well as the rear control wheel, there are a further three control buttons:

AE-L button — *J*

This button can lock a light reading made in both automatic and manual exposure modes. It can also be used in Zone mode to take a new reading.

Can be reassigned in* Custom Settings *to another function.

See section on the AE-L button ("Light Metering and Exposure Control") for full details.

Card format button — *K*

Re-formats the CF card. Purposefully recessed to prevent unintentional use. Dialogue appears for confirmation.

USER button — *L*

This button is purely user programmable to rapidly access a chosen function or screen. For example, you might use bracketing a great deal and so by one press of this button you could access the bracketing function without having to navigate through the menu. The **AE-L**, **Mirror -UP** and **Stop Down** buttons are also user-programmable but are by default initially assigned the functions according to their names

The reassignable capability of these buttons is particularly useful and can save you a great deal of time and effort depending on how you work. You are advised to investigate their potential fully. See under 'Custom settings' for full details.

On the front of the grip there are two more control buttons plus the remote cord release port:

M.UP button — *M*

Press this button to raise the mirror and press again to lower it (toggle function). A quick double press of the button (two within a half second) will immediately access the 'Self timer' function.

Can be reassigned in* Custom Settings *to another function.

Remote release cord port — *N*

For attaching a remote release cord (electrical). The Hasselblad accessory jack plug socket is protected by a captive rubber plug.

STOP DOWN button — *O*

Press this button to make a visual check of the depth-of-field on the viewfinder screen at the chosen aperture. The aperture will close according to the setting and remain closed as long as the pressure is maintained. You can alter the aperture at the same time to see the changes taking place.

Can be reassigned in* Custom Settings *to another function.

There are also two control buttons on the viewfinder, as well as the eyesight correction adjustment wheel:

Eyesight correction adjustment wheel *P*

The personal eyesight adjustment facility has a diopter range of -5 to +3.5, to suit most users.

EV correction adjustment button *Q*

Press this button to access the EV compensation screen. Settings are made with either the front or rear control wheels. An EV correction symbol appears on the grip and viewfinder display as confirmation.

EXP button *R*

The **EXP** (Exposure) button accesses the exposure mode and metering method options screen. Settings are made with the front and rear control wheels and the appropriate symbols appear on the grip and viewfinder displays accordingly.

Audio feedback

There are 14 different sounds to help provide immediate information. A button press has a normal mechanical 'click' sound while the remaining actions listed here are more musical. For example, a capture rated as overexposed is signified by three rapid notes going up the musical scale, whereas an underexposed capture has three rapid notes going down the musical scale, as illustrated here.

See later section about available options on the digital capture unit for activation and volume control.

ON:

OFF:

Error:

Ready:

Low Battery:

Overexposure:

Underexposure:

5 images left:

1 image left:

Media full:

IAA yellow:

Overwrite red:

Transfer complete:

Customizable button function list

- The **USER, AE-L, STOP DOWN** and **M.UP** buttons can all be reassigned to different functions.
- The **USER** button has no function until specifically assigned one (default is 'None'). The **AE-L, STOP DOWN** and **M.UP** buttons, however, by default are assigned the function appropriate to the name, until assigned otherwise, as follows:.

None

The user button has no function.

Standby

Sets the camera in standby mode to save battery consumption.

Stop down

Stops the lens down to the chosen aperture.

Flash Measure

Initiates flash measure function.

Interval timer

Initiates interval timer function.

Self timer

Initiates self timer function.

Bracketing

Initiates bracketing function.

AF Drive

Activates the AF system in any focusing mode. When the button is pressed the AF system sets the correct focusing point automatically. This is a rapid, accurate and handy way of using the AF system when the camera is set to manual focus mode. In this manner you take advantage of the accuracy and certainty of the autofocus system while retaining the control inherent in manual focusing mode.

Mirror up

Controls the mirror up or down function (same function as the M-UP button).

B mode

Sets the camera to B exposure mode.

T mode

Sets the camera to T exposure mode.

Histogram

Recalls the last shown histogram on the grip display.

Grey balance exp.

Initiates a grey balance exposure using the marker frame to select the desired tone.

Cycle LM mode

Changes the light-metering method in a loop manner: Centre Weighted/CentreSpot/Spot.

Delete last image

Activates the delete function for the last capture.

Dig. foc check

Displays last capture at 100% scale to check focus.

IAA toggle

Allows IAA rating change of last capture.

Expose

Acts as alternative shutter release button.

AE-lock

Activates AE lock function.

A quick way to program the customizable buttons (and to access the Custom Option level in general) is to use the short-cut as follows:

1) *Press the* **MENU** *button.*
2) *Then press the* **USER** *button.*

*This directly accesses the "***Custom options***" level in the menu where you can access the desired option for a setting change.*

H3D II

2

Camera Body

- Aluminium cast in one piece
- Stainless steel shell
- Integral quick-coupling plate
- Digitally controlled
- Upgradeable firmware
- Modular design
- Integral ergonomic grip
- Pixel based user interface

The H3D II camera body is a robust construction of cast aluminium with a stainless steel shell for extreme durability.

The integral ergonomic grip houses the main control interface and also contains the battery holder. The camera body also contains the viewfinder screen, which can be easily removed or exchanged without the use of special tools or adjustment procedures.

Please take extra care when handling the camera body without a protective cover or the digital capture unit in place to protect the auxiliary shutter. Likewise, the front opening of the camera body reveals the mirror when unprotected by a cover or lens. Do not touch or attempt to clean the mirror yourself—marks or dust particles will not impair results in any case. More noticeable problems, however, should be taken care of by a Hasselblad Authorized Service Center.

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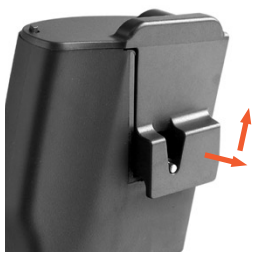

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Carrying strap 1, 2

The carrying strap is attached by firstly withdrawing the safety collar. The hook is then freed and attached to the strap lug (fig. 1). Slide back the safety collar (fig. 2) to ensure the hook remains in the locked position between the small protruding lugs. The collar is purposely a tight fit and might need some effort to slide.

Rechargeable battery grip

The Battery grip rechargeable 7.2V (3043348) is the standard power source for the H3D II camera and is an environmentally approved Li-ion type. The H3D II requires a power supply for all actions as there is no mechanical reserve facility. When working untethered, it is therefore advisable to keep the reserve battery grip complete with fresh lithium batteries handy (if you do not use a spare rechargeable battery grip). As is the case with most batteries, problems might be encountered when used in very low temperatures. In this situation it is advisable to keep the reserve battery in an inside pocket, for example, to maintain it near body temperature (both sorts of battery grips are referred to as the 'battery' in this manual).

Fitting and removing a battery 3, 4, 5

The fitting and removing procedure is the same for both types of battery grip.

Remove the battery from the camera by depressing the battery holder button (A) and simultaneously swinging the battery holder retaining lever (B) down until it stops. Pull the battery downwards (C).

If you intend to store the battery separately from the camera you should ensure that the safety cover is in place (to prevent short-circuiting). It snaps into place and is removed by pulling outwards and upwards on the locking clip (fig. 4).

To fit, hold the battery flat against the camera body and aligning the two upper lugs with the slot, slide it back into position as far as it will go. Swing back the battery holder retaining lever until it clicks back into place.

Please note if you want to use the rechargeable battery with an H1/H1D model, the firmware in the camera must be version 8.2.2 or later for the battery grip to function properly.

The battery charger 6, 7

The battery charger unit is supplied with five plug attachments to suit various types of domestic electrical sockets available worldwide. Other types of socket will require a domestic socket converter. Attach the chosen plug (fig 7) by sliding it into position, ensuring that the two electrical contact prongs on the charger correctly enter the two contact sockets on the plug attachment. Removal is by the reverse procedure.

Please note the Battery charger BC-H Li-ion 7.2 VDC (3053568) is designed for use with Battery grip rechargeable 7.2V units only.

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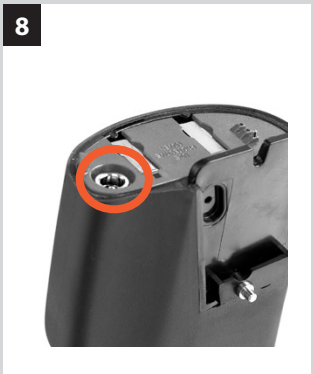

Charging the battery 8

With the battery removed from the camera, insert the jack plug from the battery charger into the socket on the battery grip. Insert the battery charger into a standard (100–240V~ /50–60 Hz) domestic socket.

It will take about 12 hours to load the battery properly the first time.

There are two types of battery charger. Please check here for the relevant description of the LED indicator, etc.

On (not flashing)	→	**Battery is charging**
Slow flashing (0.8 Hz)	→	**Charging is complete and condition is being maintained.**
Or occasionally		
Rapid flashing (3 Hz)	→	**Deeply discharged battery is charging (with reduced current)**

Please note that rapid flashing of the LED indicator is not to be expected. The battery will not normally be so deeply discharged because the camera will shut down automatically before complete battery discharge takes place. The indicator might also flash rapidly for a few moments in some instances when the charger is connected to the electrical supply. The normal indication is therefore either 'not flashing' or 'slow flashing'.

continuous yellow	→	**Standby**
slow flashing yellow	→	**Pre charge**
rapid flashing green	→	**Charging (<75%)**
slow flashing green	→	**Charging (>75%)**
continuous green	→	**Ready (100%)**
rapid flashing yellow	→	**Fault condition**

Rechargeable battery grip – general

- The battery should be charged for approximately 12 hours before first time use.
- The battery is best charged at an ambient temperature of 10°—45°C (50°— 113°F).
- Maximum battery capacity is reached only after the battery has been charged and discharged several times.
- Avoid frequent full discharges (a full discharge is signalled by the appearance of the 'Replace battery' warning on the grip display). As the battery is a Li-ion type, it has no 'memory effect' of practical importance and therefore frequent recharges will cause no problems such as loss of capacity or poor performance. It is therefore better policy to recharge the battery at very regular intervals, regardless of use.
- Remove the battery if you intend to store the camera for some while as it will eventually become completely drained, even though the camera is turned off.
- The battery has an integrated 'fuel gauge' capability that supports the 'Replace battery' and 'Battery status' functions on the grip display. As with most Li-ion batteries, this capability should be occasionally calibrated, depending on how much the battery is used. To do this, leave the camera on (or use it), until the 'Replace battery' warning appears. Then, recharge the battery for 12 hours. This will improve the accuracy of the measurements.
- When removing a battery from the charger and immediately replacing it with another, allow a few seconds to elapse so that the charger can automatically reset for the next charging procedure.
- It is perfectly normal for the battery to become warm when being charged.
- A slight temporary loss of battery performance might be noticed at very high or low temperatures. Take the appropriate measures if this is the case.
- If you do not intend to use the battery for a while, it is best to store it at room temperature with an approximate 30 to 40% charge. You can check the percentage level on the status screen.
- According to the CIPA standard, 200 shots should be expected from a fully charged battery, though this depends on camera use. In practice, however, with short intervals between shots 1,000 shots can be achieved.
- The battery should have a useable service life of around 400 recharge/discharge cycles.

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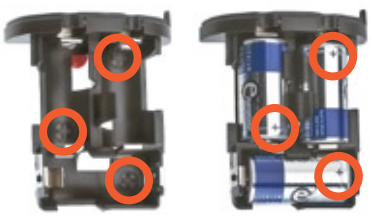

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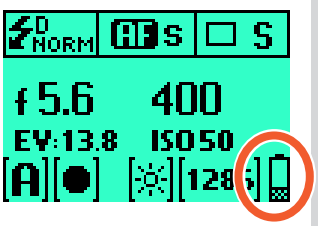

12

Camera battery warning

13

ImageBank-II battery warning

14

Rechargeable battery grip – precautions

The following precautions should be followed:

- Connect the battery grip to the camera correctly.
- Keep the protective cover in place when not in use. (Short-circuiting across keys in a pocket, for example, could cause a fire risk).
- Do not use the battery grip for anything other than an H1/H1D/H2/H2D camera.
- Do not immerse the battery grip in liquids.
- Do not incinerate the battery grip. Please recycle or discard in an environmentally approved manner.
- Do not use any other charger than the Hasselblad battery charger BC-H Li-ion 7.2 VDC (3053568).

Battery charger BC-H Li-ion 7.2 VDC:

- Read the instructions before using the charger.
- Use indoors only (protect against moisture).
- Do not use charger for anything else than charging of Battery grip rechargeable 7.2 V (3043348).
- Do not short-circuit the jack plug.
- Do not alter the charger in any way other than changing the plug attachment.

Reserve lithium-battery grip (31 and 39 Mpixel models only) *9, 10*

The reserve lithium-battery grip is attached and removed in the same manner as the rechargeable grip.

Press the red battery cassette retaining button inwards on the holder to release the battery cassette (fig 9). Load three CR-123 lithium (or equivalent) into the cassette, ensuring the polarity of each battery is correctly oriented (see the '+' markings on the batteries and the cassette) (fig 10, 11). Re-insert the cassette into the battery holder, ensuring that it is seated properly in place and that the red button returns fully into the locked position. Holding the battery flat against the camera body and aligning the two upper lugs with the slot, slide it back into position as far as it will go. Swing back the battery holder retaining lever as far as it will go into the locked position.

Do not use a lithium-battery grip with the 50 Mpixel model.

Battery life *11, 12, 13, 14*

Battery life is dependent on a number of variable factors and therefore cannot be exactly predicted. If the camera is left in the active state instead of standby for long periods, for example, then the battery will become exhausted much faster.

A low camera battery state is indicated by a symbol on the grip display (fig. 11) as well as on the digital capture unit display (fig. 12). In addition, an audible signal can be heard.

The warning on the display (fig. 12) appears as a flashing yellow icon in the top right of the screen signifying that the battery should be charged (or changed) as soon as possible. The warning icon will also appear with a FireWire connection and will in addition turn red to signify that the camera battery is completely exhausted.

Another battery warning also appears signifying ImageBank-II battery exhaustion (fig. 13). This icon appears on the top left of the display screen. It too flashes yellow as the initial warning and changes to red to signify complete exhaustion.

When the battery is almost completely exhausted, a warning message 'Replace battery' will appear on the grip display (fig. 14).

When the 'Low battery' icon appears, the camera automatically enters a temporary power-saving mode. This is recognizable by a slower pace for all the actions in a capture sequence. The camera actions also sound differently .

This mode is designed so that you can continue working for a while, even though the power remaining in the battery is too low for working in the normal manner. Naturally, you should replace the battery as soon as possible to restore normal action again.

Battery status (rechargeable battery only) 15

An immediate full-screen information and battery status check appears on the grip display by holding down the illumination/ battery status button. This screen displays:

- the firmware version
- the number of captures taken since the last battery recharge / change.
- a rechargeable-battery status icon that provides a quick visual check as well as a figure estimate in percent.

The information regarding the number of captures taken is intended to help you make an estimate of the number of possible remaining captures according to your way of working. For example, if you regularly browse a great deal when shooting or you leave the camera in ON-mode with no standby, you would naturally expect to drain the battery sooner than others who don't. You should soon be able to build up a picture of how you usually work and can therefore estimate that after X number of captures, you normally expect to be able to take Y captures before the battery is exhausted (when working in a similar manner in similar conditions).

The percentage information, however, provides another kind of estimate based more on the amount of power left in the battery rather than on your normal way of working.

Remember that these are only estimates and that there are a number of factors affecting remaining battery, ambient temperature for example, as well as general practice.

15

Viewfinder screen 16, 17

The H3D II is fitted with a Spherical Acute-Matte D viewfinder screen for extreme brightness, clarity and even illumination. An optional accessory screen with a grid pattern is also available.

To change a viewfinder screen, remove the viewfinder to access the viewfinder screen. To remove the screen, place the tip of a ballpoint pen or similar in the viewfinder screen removal lug and pull upwards. To replace the screen, position the right side of the screen in place so that it sits correctly in the recess. Place the tip of a ballpoint pen or similar in the viewfinder screen replacement indentation and press downwards until the screen snaps into position. Try to avoid touching either surface of the screen with bare fingers.

Do not attempt to clean the screen by immersing it in water, or use any kind of cleaning fluid. If the screen becomes damp, do not use hot air to dry it. Use a soft cloth on the upper surface only. Seek advice from an Authorized Hasselblad Service Center if the screen becomes particularly soiled. Remember that particles or greasy marks on the screen might impair the viewfinder image but have no effect whatsoever on the recorded image.

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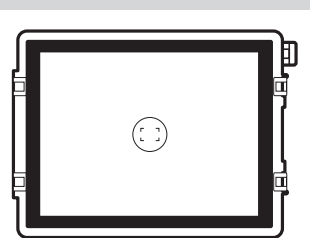
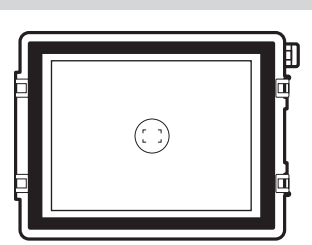


Viewfinder screen showing composition frame marking (22/39/50MPix).



Viewfinder screen showing composition frame marking (31MPix).

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Accessory connection *18, 19*

On the left hand side of the camera body are two accessory-retaining screw threads (M5), as well as a databus connector, protected beneath a cover.

The cover can be removed by inserting a pointed object, such as a pen, in the small hole and then sliding it to the left, as in the illustration. The cover-retaining clip can then also be removed to access the connector.

PC-connector *20*

A PC connector for non TTL-flash synchronisation is located on the left side of the body. It is protected by a captive rubber plug.

Protective base plate *21, 22*

To attach the protective base plate, slip it over the camera foot until it stops. To remove it, lift the securing catch while pushing the plate back as in the illustration.

H3D II

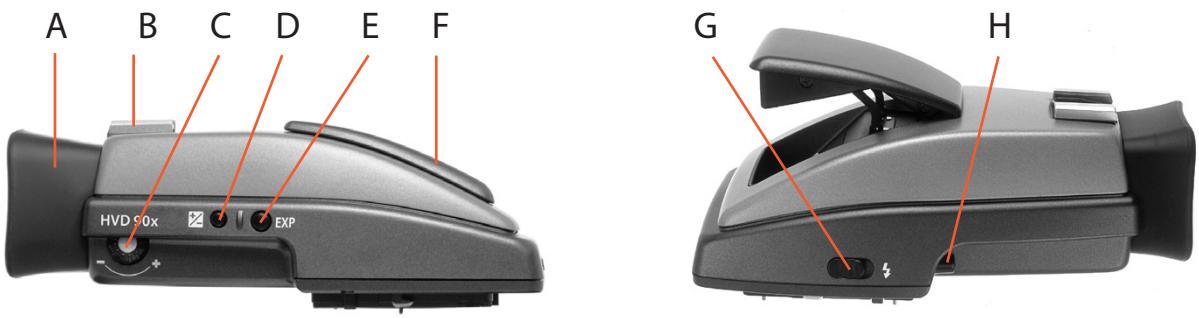
3

Viewfinder

- **Multi-mode light metering**
- **Full exposure information**
- **100% image**
- **90° viewing angle for eye-line composition**
- **Full image for spectacle wearers**
- **Integral dioptre adjustment**
- **Integral flash unit**

The HVD 90X viewfinder provides a laterally corrected 100% image at eye-line level. It features a wide-range diopter adjustment to suit most users. The viewing distance is designed to provide full frame view even for eyeglass wearers. The bright Spherical Acute-Matte D focusing screens (located in the camera body) are interchangeable to suit preference, each of them naturally indicating the spot light-metering area for accuracy in exposure calculation. The information display located beneath the viewing frame is continually updated and visible and is back lit for optimum visibility. This display also duplicates much information visible on the grip display for immediate checking. In addition to the display, there are four LEDs providing general warnings, flash and focus information. The viewfinder also features a pop-up fill-flash unit for added convenience.

Parts and components



A. Rubber eye cup
B. Hot shoe
C. Eyesight adjustment wheel
D. Exposure compensation button
E. Exposure method / mode button
F. Integral flash unit
G. Flash unit button
H. Viewfinder release button

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Attaching and removing the viewfinder 1

While holding the viewfinder at a slight angle and resting it on the top of the camera, slide the viewfinder forward until the front locating pin is in position in the recess in the front edge of the viewfinder screen aperture on camera body. Press the rear part of the viewfinder firmly downwards until it clicks into place.

Ensure that both sides of the viewfinder are seated correctly and that it has been firmly attached and locked into position. Failure to do so could cause an intermittent malfunction if the databus interface connections between the viewfinder and camera body are not positively secured.

To remove, grasp the viewfinder in the right hand and while depressing the viewfinder release button, lift the rear of the viewfinder up and away from the camera body.

Eyepiece adjustment 2

No corrective lenses are needed to adjust the eyepiece to suit most requirements. The diopter range is from -5 to +3.5. Eyeglass wearers can rapidly and accurately change the settings according to whether they wish to wear eyeglasses for viewing or not.

Personal eyepiece adjustments can be carried out by pointing the camera at the sky or similar smoothly toned area. While holding the camera in your left hand, you can with your right thumb turn the adjustment wheel until the markings on the viewfinder screen reach the optimum sharpness for your eyesight.

If you normally wear eyeglasses for distance viewing and intend to wear them for camera use then do not remove them for the above procedure. If, on the other hand, you prefer to remove your eyeglasses for camera work, then repeat the above procedure without wearing your eyeglasses.

Rubber eye cup

Two rubber eye cups are available for the H3D II. The one supplied is suitable for users who do not intend to use eyeglasses when photographing. The second shorter eye cup is for those who either prefer to position their eye further from the viewfinder and those who wish to wear eyeglasses.

The eye cups can be rapidly changed by a Hasselblad Authorized Service Center.

Integral flash unit

See section on ‘Flash’ for full details.

H3D II

4

Lenses

- Rapid and accurate automatic focusing capability
- Central electronic shutter
- Instant manual focus override with natural friction
- Instant automatic-focus access in manaul mode
- Non-rotation of filter or accessory when focusing
- Non-rotation of focus ring in automatic focusing mode
- Flash sync at shutter speeds from 32s to 1/800s
- Reversed lens shade serves as protection
- Automatic detection of extension rings and converters

All HC lenses have been specially formulated for the H system to produce the extremely high performance expected from Hasselblad to meet the demands from digital photography alike. In addition to extreme sharpness, the design also incorporates a soft, pleasant looking boké (the visual quality of the out-of-focus areas of the image). All lenses feature an electronically controlled central shutter designed to extremely fine tolerances for supreme accuracy. To ensure reliable and fast autofocus in low contrast and low light conditions, a focusing-assist light (on the grip) is automatically activated. Aperture and shutter control is set via the control wheels on the camera grip.

As a general rule, lens shades should always be fitted to achieve optimum performance. Protective filters (UV / Sky) should also be considered at least when working outdoors in harsh conditions.

(See Accessories section for information about the CF Adapter that allows the use of C type lenses from the Hasselblad V-system).

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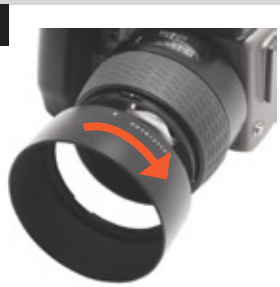

6

Parts and components 1

A. Lens shade index
B. Manual focus ring
C. Focusing distance scales
D. Depth-of-field scales
E. Lens index

Attaching a lens 2, 3

Remove the front protective cover on the camera body by depressing the lens release button and keeping it depressed while turning the cover counter-clockwise. Remove the rear lens cap by unscrewing it in a counter-clockwise direction. Align the index on the lens with the index on the camera body and rotate the lens clockwise (bayonet fitting) until it clicks into place.

Removing a lens

Depress the lens release button and keep it depressed while rotating the lens counter-clockwise until it stops and lift it out. Replace protective caps on the lens immediately and on the camera body if necessary.

If you try to rotate the lens before you press the lens release button, it might lock. In this case, rotate the lens clockwise a little first and then re-attempt removal with the correct procedure: button first, then lens.

Front lens cap 4

Front lens caps are released for removal and attachment by inserting a thumb and index finger into the recesses and pinching in the direction of the arrows.

Filters

Filters have a screw thread fitting (67 / 77 / 95 mm, according to lens) and are screwed clockwise into place. As there is no rotation of the front section of the lens when focus is changed, filters do not rotate either. This is particularly useful when using polarizing or graduated filters where the orientation is normally critical.

Lens shades 5, 6

All lenses are supplied with lens shades that additionally provide extra protection for transport and storage when mounted in reverse. Lens shades have a bayonet fitting and are turned clockwise into place after ensuring the index on the lens shade aligns with the index on the front of the lens. When mounted in reverse, they are attached by matching the indexes and turning clockwise.

Shutter and aperture control

Both the shutter and aperture are electronically controlled and are adjusted by the control wheels on the grip. There are no separate manual setting rings on the lenses or camera body.

The chosen settings are displayed both on the grip display and in the viewfinder display. See the ‘Exposure Control’ chapter for a complete explanation.

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Lens focus setting too far beyond the distance of the subject framed by the central section in the viewfinder

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Focus setting too close for the distance of the subject framed by the central section in the viewfinder

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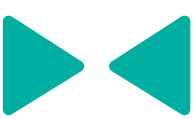


Focus setting correct

Depth-of-field calculation 7

There are two distance scales (in feet and metres) visible through the focus distance window on the upper part of the lens barrel. There is also a central lens index mark and a depth-of-field scale. The focusing distance is read off the chosen scale from the central lens index.

Depth-of-field can be calculated as follows:

1. *Focus the lens as required.*
2. *Make an exposure reading (auto or manual) and note the aperture setting.*
3. *Find the markings on either side of the central index that correspond to the chosen aperture.*
4. *From these two markings, read off on the required lens distance scale the two corresponding distances.*
5. *The depth-of-field (at that particular aperture and focus setting) will be the area included between these two distances.*

In the example given here, the focusing distance is set at nearly 3 metres. At an aperture of f/22, the depth-of-field would therefore extend from just over 2 m to approximately 4.5 m. Note that depth of field is not an absolute. Perception of it depends on several factors and so it should be seen only as a rough guide.

Stop down / depth-of-field 8

A visual depth-of-field preview can be made by depressing the **STOP DOWN** button while viewing the image on the viewfinder screen.

Infrared focus settings 9

As infrared rays form an image at a different plane to that formed by visible light, the normal focus settings do not apply. Proceed as follows in manual focus mode:

1. *Focus the lens in the conventional manner until satisfied.*
2. *Note the distance setting against the central lens index.*
3. *Re-align this distance setting against the infrared mark (coloured red) instead of the central lens index.*

Alternatively if you have already calculated the required distance, you can make a manual distance setting by using the distance scales together with the infrared mark instead of the central lens index.

Focus aid 10, 11, 12

As well as the conventional view on the focusing screen to ensure a sharp image, the H3D II also features LED focus aid capability appearing as two arrowheads to the right of the viewfinder display (except for lenses with a maximum aperture of f/6.7 or smaller). The arrowheads provide confirmation of a precision focus setting and are a useful aid when making a setting with eyesight alone.

Manual focus setting

When the left arrowhead alone appears it means the focus setting is too far beyond the chosen distance (the area framed within the central zone in the viewfinder) and when the right arrowhead alone appears it means the focus setting is too close. Focus is correct when both arrowheads appear together. If the focus cannot be established, then both arrowheads flash.

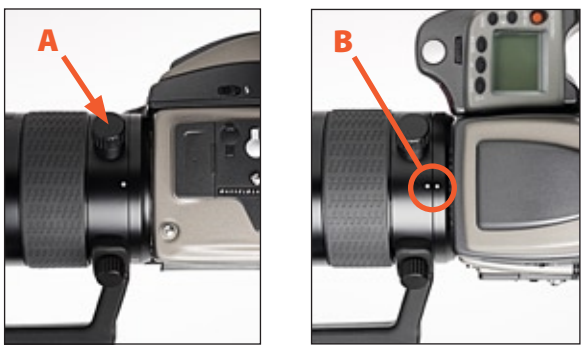
Automatic focus setting

Focus is correct when both arrowheads are visible together. Focus is incorrect if only one arrowhead is visible. If the focus cannot be established, then both arrowheads flash.

CF Adapter

The CF adapter is an optional accessory that allows virtually all C type lenses from the V-system to be used on H-system camera bodies. This provides an economical alternative way of extending the lens range. The automatic focusing system in the H camera can be used as a guide for manual focus setting. Light is measured at full aperture with all lenses which produces aperture and shutter speed information display in the camera for manual setting. With CFE lenses, however, a preset aperture is automatically transferred to the camera. Shutter cocking is manual with all lenses and is swiftly carried out by an easily accessible lever.

1 HC 3.5 / 300



Landscape orientation Portrait orientation

2 HC 4 / 120 (Macro)

Full scan = 0.39 m – ∞

Inf. scan = 0.9 m – ∞

Near scan = 0.39 m – 1m

Specific-lens information

HC 3.5 / 300 1

When using a tripod with a 300mm you should use the (removable) tripod mounting bracket to provide optimum balance. This is attached via a sleeve so that the camera body can be rotated for landscape/portrait formats without altering the tripod head position. The rotation is secured by a locking screw (A). Correct 90° orientation can be ensured by aligning white index markers (B) for both landscape and portrait orientations.

HC 4 / 120 (Macro) 2

In addition to the metres/feet scale, the 120 mm lens also displays magnification ratio scale (A). In the illustration, the scale shows a focusing distance of 1.27 feet / 0.39 metres which in turn produces a 1:1 (lifesize) magnification.

With the 120mm lens mounted on the camera, addition screens will appear on the grip display when autofocus is chosen to signify a focus limit setting. Three are available – Full scan, Infinity scan and Near scan – accessed by the rear control wheel. This time-saving function is a form of presetting that restricts the scanning range of the lens to prevent it searching across the whole focus scale. Simply make a rough assesment of the approximate focusing distance and then choose the most suitable of the three ranges. The lens will then be able to find the critical focus much faster.

HC 3.5 – 4.5 / 50 – 110 Zoom lens

Please read the advice that is included with this lens before use regarding how it should be placed or stored.

H3D II

5

General overview of digital capture unit

- 3 operating and storage modes
- Direct shooting to 3FR
- Phocus / FlexColor
- Instant Approval Architecture

H system cameras were designed with digital photography in mind right from the outset so the H3D II is a natural development within the world famous H system.

Seamless integration and consequently increased efficiency and improved workflow are the results of such a design that features shared information visible on the displays as well as a shared battery, for example.

Phocus, the image processing software that is included with an H3D II, can take advantage of the information that is stored with each capture both for future reference and for enhanced processing to fine-tune optical characteristics, for example.

Phocus also provides for tethered use allowing digital capture control directly from the computer.

In very simple terms, a digital capture unit holds a light sensitive sensor in place at the film plane. The electronic signals from the sensor are then processed and stored as a digital file.

As an electronic colour image is made up of three components – red, green and blue which combine to form a so-called RGB image – the sensor's task is to convert a multi spectrum light image into three digital files (red, green and blue) for combination later on.

The H3D II uses a CCD (Charged Couple Device) type sensor that has millions of light sensitive areas on its surface each of which creates a pixel.

Each pixel in the sensor is filtered to create the three separate red, green and blue files. Software then processes these electronic files as a package into a Hasselblad 3FR file which in turn is processed in Phocus to produce Hasselblad 3F files or various other formats such as DNG, TIFF, JPEG etc.

The three components of the image file are later recombined on the computer screen to produce the familiar full colour image.

•

The captured image can be temporarily stored internally on a CF card. Externally, captures can be stored via a FireWire connection onto a Hasselblad ImageBank-II or onto the hard disk of a computer. When using the camera tethered in a studio you can control all the digital aspects of camera operation from a computer using Phocus. See the separate Phocus manual for further details.

As the H3D II is a purely electronic device, attention to power supply is vital. When working untethered it is therefore important to plan either battery loading or battery replacement to ensure continued workflow. Likewise, image storage is limited, particularly when using flash cards and appropriate steps should also be taken when planning a shoot.

•

When attaching and removing the digital capture unit, pay particular attention to the image sensor area. The sensor itself is covered and protected by a glass IR filter but take great care when handling. If you need to clean the filter, see later section for specific details. When storing separated from the camera, always ensure you have replaced the protective cover.

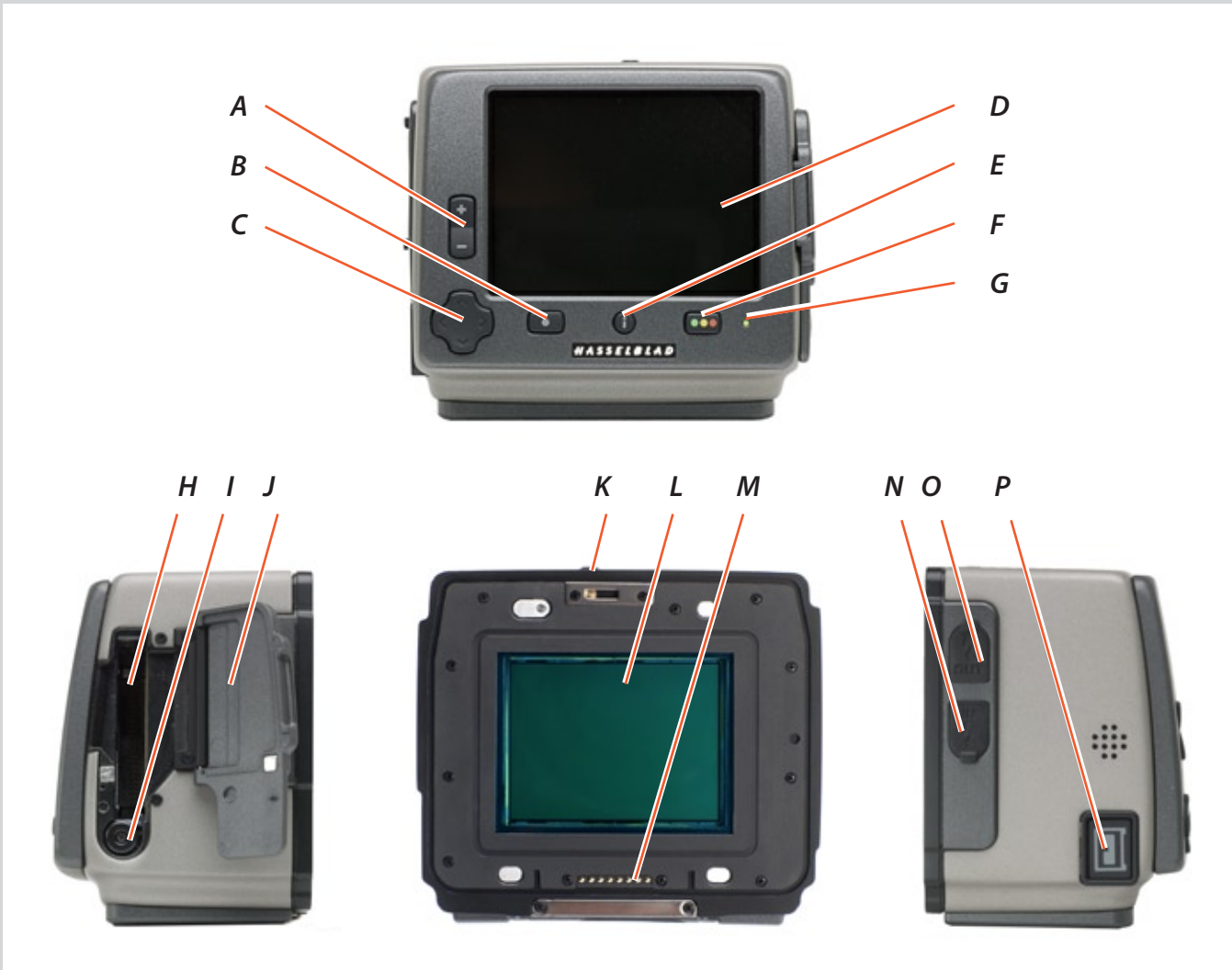
If you scratch or mark the filter in any way, it will show up on every shot. Replacements are expensive so treat the glass surface with at least as much care as you would a lens.

The sensor itself is not accessible for any kind of cleaning or maintenance by a user. Do not attempt any such action as you will almost certainly damage it irreparably.

As is the case with all electronic devices pay extra care when working in damp environments and avoid damp conditions for storage.

●

Take note of the ways of working you can adopt to improve workflow efficiency. Using batches, naming batches, IAA etc will speed things up when working on image development in both FlexColor and Phocus (the Hasselblad image processing software included).



Parts, components & control panel buttons

The control panel with its bright TFT display is the main graphical user-interface for image checking and capture settings changes, while the grip display is the interface for focus and exposure settings (when not tethered to a computer).

The buttons are used for browsing images and navigating the menu system. Two of the buttons, located at the bottom-right and -left of the screen, are given an on-screen label that changes according to the current context. For example, the Approval button sets the approval rating when browsing images, but becomes an OK button to confirm settings.

Zoom- in/-out button A

Zoom-in /out rocker button for the preview image. You can zoom in to view close-ups for focus checking. You can zoom out to view several small images at once and finally to view and select batches and media. Also acts as a selection button for value setting on the menu.

MENU / (EXIT) button B

Opens and closes the menu system. Also used for various other tasks (EXIT button, for example) as you issue commands within the menu system indicated by a description beside the button on the preview screen.

Navigation button C

A four-way rocker button enabling you to step through preview images and navigate the menu system. To use it, press the side of the button that corresponds to what you wish to do (e.g., move up, left, right or down).

Display D

The display is a 3 inch, TFT, 24 bit, 230,000 pixel type. Contrast and brilliance can be adjusted.

View-mode button E

Steps through the various view modes for the preview image: standard, histogram overlay, image details, screen off and full-screen.

Approval / (OK) button F

This button steps through the three approval levels, thereby assigning an approval status to the image currently displayed (or selected) in the preview screen. (part of the Instant Approval Architecture system). Also acts as a confirmation button (OK button) for some types of menu operations, such as deleting images; indicated by a label beside the button on the preview screen.

Busy-light G

Flashes to indicate that the digital capture unit is performing an operation (such as saving a new capture). Although a new capture cannot be made while the light is flashing, focusing, aperture and shutter speed settings can all be changed.

Red signifies a problem (an explanatory message will be displayed).

Flash-card slot H

Flash-card removal button I

Flash-card slot cover J

Safety catch K

Used when removing the digital capture unit.

CCD and IR filter L

This is the light-sensitive element, which is positioned behind a permanently mounted IR filter. Always be very careful not to touch or scratch the surface of the filter when it is exposed and to replace the protective cover whenever the digital capture unit is not mounted on a camera.

WARNING: never attempt to remove the glass filter—you will probably ruin the CCD if you do so.

See Cleaning the CCD section for cleaning.

Databus connectors M

For digital communication with camera body.

Flash sync input N

Flash synch connector (protected behind a rubber cover) for when the digital capture unit is used with a view camera.

Flash sync output O

Flash synch connector (protected behind a rubber cover) for when the digital capture unit is used with a view camera.

FireWire connector P

Insert a FireWire 800 cable here to connect the digital capture unit to a computer or ImageBank-II.

General

Using the menu on the H3D II is very similar to using a menu on a mobile/cell phone or similar. When you enter the menu (by pressing the MENU / button) you will be see an initial list:

ISO
White Bal.
Media
Browse
.....
Storage
Settings

It is advisable to initially quickly skim through the following section of the manual to build up a picture of the menu structure and its various sections.

Note that some of the buttons have a double function while others remain single function. For example, the navigation button always takes you through the menu in the direction that the arrowhead illustrates. The zoom in/out buttons (and) though, for example, act as image enlargers and reducers as well as confirmation buttons, according to where you are on the menu.

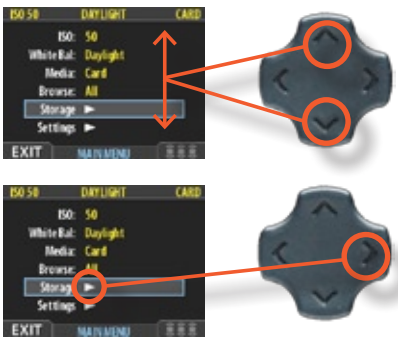
Time & Date settings on the digital capture unit (which are included with files and batch labels) are updated automatically through a FireWire/Phocus connection. These settings are retained for about two consecutive weeks by a small rechargeable cell that is automatically recharged by the main battery or Firewire with regular use. If problems occur, charge the cell by leaving the digital capture unit turned ON for around 12 hours.

Simple introductory overview of menu access, navigation and settings choice.

The menu is structured in a manner similar to mobile/cell phones and similar small electronic devices. Various branches within the tree system are accessed by pressing the navigation button until you reach the point where a choice has to be made.

The OK (Approve) button or SELECTION (Zoom-in/Zoom-out) buttons are then used to confirm choice.

Both the front and rear control wheels can also be used to navigate the menu. The rear control wheel navigates up and down the menu list and the front control wheel navigates sideways in the direction of the menu arrows. The front control wheel also functions in the same as way as the plus and minus button functions for settings choice.



After pressing the **MENU** *button, the main menu list appears. The blue frame highlights where you are on the menu. Press on the 'up' and 'down' symbols on the navigation button to move up and down the list.*

You can return to the standard image view by pressing either on the 'left' symbol on the navigation button or on the **EXIT/MENU** *button again.*

The need to continue further into the menu is indicated by the arrow symbol beside the menu item.

Press the 'right' arrow symbol on the navigation button to access the next part of the menu.

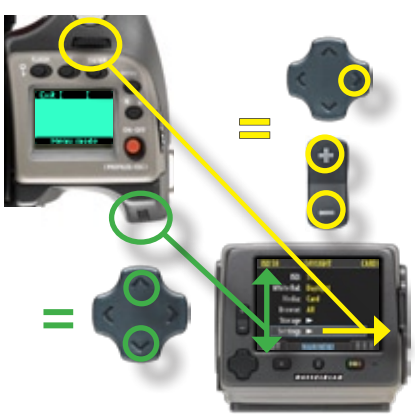
When you reach the final destination of your choice (this might take several moves), **PLUS** *and* **MINUS** *symbols appear to the right in the frame round the item. You then press the Zoom-in /Zoom-out /SELECTION buttons to access a loop list of choices.*

In the example on the left, 50 is the ISO value shown. By pressing either button the alternatives appear – 100, 200, 400 and then back to 50 again – both on the list as well as on the upper low to the left (in the case of ISO value).

Pressing the **EXIT/MENU** *button will then confirm the new setting.*

In the next example on the left, the name of a new batch is changed by pressing a combination of the Zoom-in /Zoom-out /SELECTION buttons as well as the navigation button. You can then confirm your choice with the **OK** *(Approve) button or revert to the previous status by pressing the* **EXIT/MENU** *button. Note that how the* **MENU** *button is now described as* **EXIT** *on the screen, and the Instant Approval button is described as the* **OK** *button.*

See later sections for more comprehensive information.



The rear control wheel navigates up and down the menu list and the front control wheel navigates sideways in the direction of the menu arrows.

The front control wheel also functions in the same as way as the **PLUS** *and* **MINUS** *button functions for settings choice.*

The **FLASH** *button on the grip also acts as a menu* **EXIT** *button and the* **ISO /WB** *button acts as an* **OK** *button.*

Overview of menu structure

By using the buttons on the control panel you can navigate down through the various levels in the menu. It provides the source of information about image files and also provides a way of making custom settings so the digital capture unit suits your way of working.

Below is a simple overview of what is available and where it is situated on the menu.

MENU

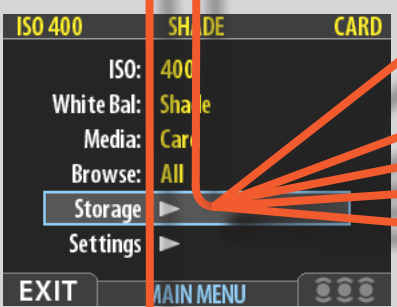
ISO
Sets the light sensitivity of the sensor. Equivalent to 'film speed'.

WHITE BALANCE
Set to match the color temperature of light used.

MEDIA
Determines where files will be stored (flash card, ImageBank-II).

BROWSE
Sets the approval status (classification) filter for easier and quicker image browsing.

STORAGE



DELETE
For single or multiple deletion of images.

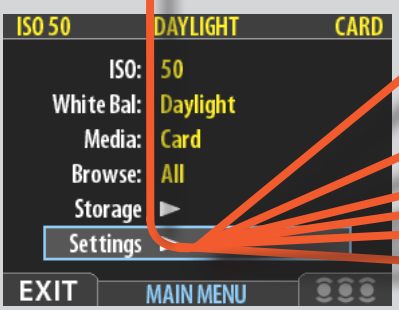
FORMAT
Used to format CF cards and ImageBank-IIs for optimum use.

COPY
Copies files from a CF card to an ImageBank-II.

BATCH
Used to create new storage folders (batches) and name them.

DEFAULT APP LEVEL
Assigns a default approval status (classification) to all new images.

SETTINGS



USER INTERFACE
Sets menu language, power down, sound, date & time and several other custom settings.

CAMERA
Sets options when digital capture unit is attached to a view camera.

ABOUT
Displays serial number and firmware version.

DEFAULT
Resets all custom settings back to the original factory settings.

CUSTOM OPTIONS
Sets options regarding file copying to an ImageBank-II.

GPS
Sets options for the GIL (Global Image Locator) GPS accessory when attached.

6 Initial General Settings and Preparation

H3D II

The initial general setting is language choice. This choice is retained but can be changed at any time. You can choose between:

ENGLISH
GERMAN
FRENCH
ITALIAN
SPANISH
JAPANESE
CHINESE

Before each shoot, just as in analogue photography, an ISO setting should be made, though in the digital world it matches the job in hand and circumstances as opposed to the sensitivity of the film chosen. A white balance setting should also be made. This is for your convenience regarding the appearance of the image on the display though; it will not affect the raw file.

ISO and White Balance are immediately accessible by pressing the ISO/WB button on the grip. They are also shown on-screen in most preview modes, so you can easily keep an eye on them as you work.

The description below is a general illustration of how settings are changed. See later section in this manual for details regarding **ISO** *and* **White Balance**.

Setting the menu language

Proceed as follows:

1. *Press the* **MENU/EXIT** *(●) button to open the menu.*
2. *Press the* **NAVIGATOR** *button (▲ and ▼) to select the* **SETTINGS** *sub-menu.*
3. *Press the* **NAVIGATOR** *button (➤) to open the* **SETTINGS** *menu.*
4. *Press the* **NAVIGATOR** *button (➤) to select the* **USER INTERFACE** *sub-menu.*
5. *Press either* **ZOOM** *button (+ or −) to choose a new language (in this case, Spanish).*
6. *Press the* **MENU/EXIT** *(●) button again to close the menu.*

Storage & Shooting

Image storage modes / shooting

The H3D II can store captured images in three ways:

1. Untethered / Compact flash card mode

In this mode the H3D II acts independently of other connections. Images are stored on the internal, removable compact-flash card.

- ***The main advantage with this mode is the freedom of cables and extra equipment.***
- ***The main disadvantages with this mode in the field are the battery power capacity and the size of the card's holding capacity.***

Please note that the recommended types of CF cards are Sandisk Extreme-III/IV or Lexar Professional 133x/233x. Other cards will work but offer a reduced capture rate.

2. Semi-tethered / Imagebank-II mode

This mode enables you to attach the camera to a portable Hasselblad ImageBank-II via a FireWire cable. The ImageBank-II features massive storage capacity (100GB) and high-speed data transfer. It is small, lightweight, battery powered and easily clips to your belt, so the solution is just as portable as the untethered option.

- ***The main advantage with this mode is the great number of images that can be stored without a pause.***
- ***The main disadvantage with this mode is the extra equipment and cablage needed that might restrict mobility in some cases.***

3. Tethered / Studio mode

This mode enables you to connect your H3D II directly to a computer and to operate the system using Hasselblad Phocus software and store images on a computer hard-disk.

- ***The main advantages with this mode are the almost limitless storage capacity and being able to work on the images (with Hasselblad Phocus) on a large screen.***
- ***The main disadvantage with this mode is the lack of mobility to any great extent.***

Selecting the current medium

The current storage medium is the location to which new shots are saved and from which you can browse using the navigation button. In many cases, the destination medium is selected automatically, for example:

- ***When you are connected to a computer, then images are always saved directly to the computer hard disk.***
- ***When only one medium is connected (e.g., a compact-flash card), then this medium is automatically selected.***

However, if you are working away from your computer and have several media attached (e.g., both a card and an ImageBank-II, then you may need to select a medium explicitly if you want to browse its contents and store images new to it).

There are two ways of selecting the current storage medium:

- ***See "Selecting the Current Storage Medium" for details.***
- ***Use the zoom-out button to zoom all the way up to the top level, which shows all connected media, and then zoom in on the appropriate medium and batch.***

  See "Navigating Media and Batches" for more information about selecting media and batches in this way.

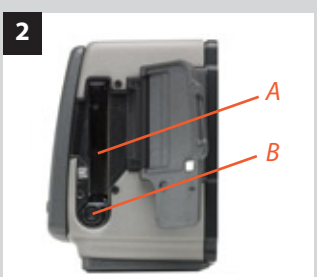
Using compact flash memory cards

When shooting to a compact-flash card, the H3D II is completely self-contained. No additional wires or connectors need to be attached.

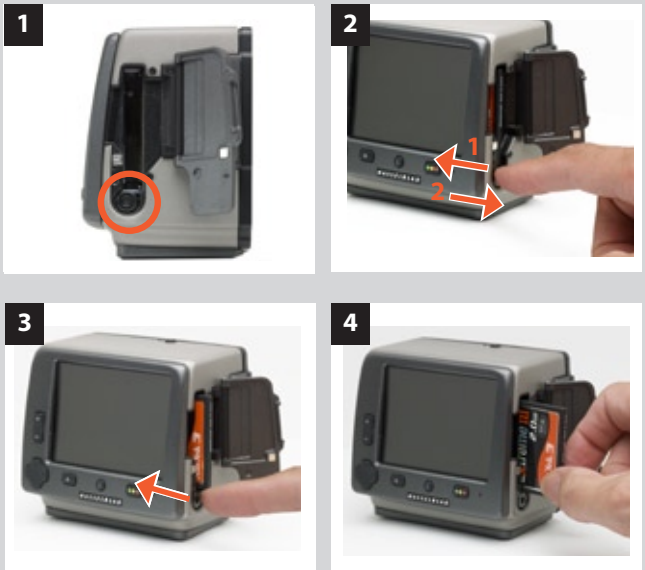
The H3D II is shipped with a 2GB (or larger) compact-flash card, which is able to hold over 40 shots. Lossless compression is applied to the images, so the actual size of each capture can vary, thereby affecting the total number of shots you can fit on the card.

Inserting a card

1. *Open the CF card slot cover on the digital capture unit.*
2. *Behind the cover, you can see a slot for the card (A), possibly with a card already inside, and a release button (B) below the slot. (If a card is already installed, then remove it as described in "Removing a Card", below).*
3. *Hold the compact-flash card so that the connector holes face into the slot in the digital capture unit, with the brand label facing in the same direction as the digital capture unit pre-view screen, as in the illustration. Gently press the card into the slot. If you encounter resistance, it might be because you are holding the card backwards or upside down.*
4. *When the card is able to drop very easily nearly all the way into the digital capture unit, then you are doing it right. Once you have achieved this, press the card firmly into place until it sinks another couple of millimeters into the digital capture unit and is held fast.*
5. *Snap the slot cover shut again.*



You can reformat a card by pressing the Card format button ⊙ on the camera grip or on the digital capture unit: ***Menu>Storage>Format.***



Removing a card

1. *Open the CF card slot cover on the digital capture unit. Behind the cover, you can see the bottom edge of the card in its slot and a release button immediately below the card.*
2. *Press the release button a little way in to release it into the active position.*
3. *Press the now extended release button all the way back into the digital capture unit again. Some force is required. As you do this, the card will be pushed out a few millimeters.*
4. *Grasp the card between your thumb and forefinger and pull it away from the digital capture unit. (Insert a new card as described in "Inserting a Card", if required).*
5. *Snap the slot cover shut again.*

Working with an ImageBank-II

There are no practical differences between storage on the internal CF card or on an ImageBank-II. However, when several media are mounted, you must be sure to select the correct destination medium (see also "Working with Media and Batches").

Working with a Hasselblad ImageBank-II

The ImageBank-II is an optional add-on for your digital camera system. It is essentially an external FireWire hard disk optimized for digital photography, providing extensive storage space and high-speed data transfer. It is small, light and battery powered. You can easily clip it to your belt, so the solution is nearly as portable as the stand-alone camera.

Older digital backs in the 'ixpress' line used a different external disk and controller called simply the "ImageBank". This older version is not compatible with the H3D II. Only use the Hasselblad ImageBank-II with an H3D II.

To use an ImageBank-II with the H3D II, assemble it and connect the two with a standard FireWire 800 (IEEE 1394b) cable. See the ImageBank-II manual for complete details.

To remove the ImageBank-II, simply disconnect the FireWire cable when all disk activity (indicated by the LED) has stopped. The digital capture unit will then revert to saving and browsing images on the internal flash card (if available).

Tethered to a computer

When tethered to a computer, you can control many camera functions using Phocus software. Even if you never shoot while connected, you will probably connect the camera to your computer each time you want to download your images, though you might instead use a compact-flash card reader and/or connect your ImageBank-II directly.

Connecting to a computer

To connect to a computer, simply attach a FireWire cable from the FireWire port on your computer to the port on the side of the digital capture unit. The port is protected behind a hinged cover.

Shooting with Phocus running

When you are connected to a computer, the following rules apply:

- ***The destination medium and location are controlled from Phocus.***
- ***All exposure settings, including ISO, aperture and exposure time, are controlled from Phocus if you choose to expose from Phocus.***
- ***The screen and menu system on the digital capture unit are disabled.***
- ***The digital capture unit will take power from the FireWire cable if it is available (not all computers supply power here, notably laptops). This will help conserve the battery power of the H3D II. However, you must still have a charged battery connected as the camera body requires this battery in order to operate.***

When initiating a shot from Phocus, the computer sends a signal to the digital capture unit, which triggers the shutter and strobe/flash (if any). The digital capture unit then sends the image back over the FireWire connection to the computer, where it is displayed on the computer screen and saved as a 16-bit 3F file in the currently selected folder of the computer hard disk.

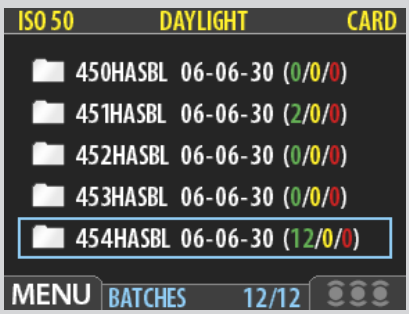
3FR is a proprietary Hasselblad format for storing raw captures. It contains the complete raw image exactly as it was captured by the camera, plus technical details that enable Phocus to process and display the image correctly, amongst other things. This 3FR file is converted into a 3F file (denoted by each file now bearing the suffix ".fff") that furthermore stores a complete history of the Phocus settings that you have applied to each image and stores meta-data such as camera settings, image name, photographer, copyright, etc.

If you prefer not to correct and adjust your captures in Phocus, then you can export converted 3F files from Phocus (and Aperture/Mac OS 10.5.2) directly to DNG, TIFF or PSD and use Adobe Photoshop, for example. (Please note that a direct export will not enable DAC and those benefits will therefore be lost).

Please refer to the Phocus Software Reference manual for further instructions about using Phocus.

7 Storage overview– working with media and batches

H3D II



General

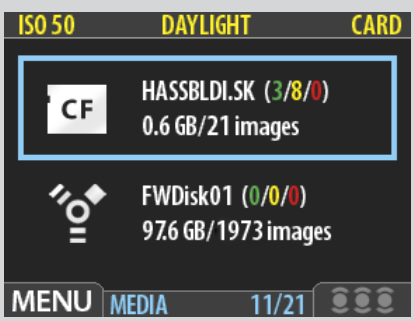
Whichever way you choose to store your images, they should be filed in batches for efficient workflow.

Organizing your work with batches

Batches help you to organize your shots as you work. They function exactly as folders on a computer. Batches have the following properties:

- ***When you create a new batch, you assign a name to it and it is created as a new folder.***
- ***When you copy images from a compact-flash card, each batch is saved as a subfolder on the destination disk.***
- ***When deleting multiple images, you are able to restrict your delete command so that it affects just a single batch.***
- ***When browsing images, you will only see images from the current batch.***
- ***You can change between batches by using the navigation controls of the digital capture unit front panel.***
- ***The batch name also shows the date on which it was created (using the Year/Month/Day convention).***

Please note that each new image will be saved in the latest created batch only. You cannot select any other batch to save a new image in.



Navigating media and batches

The camera always works with a **current medium** and a **current batch**. This is the location at which the camera will save all new shots and the location in which you can browse using the navigator button on the front panel. There are two ways of selecting the current medium and/or batch:

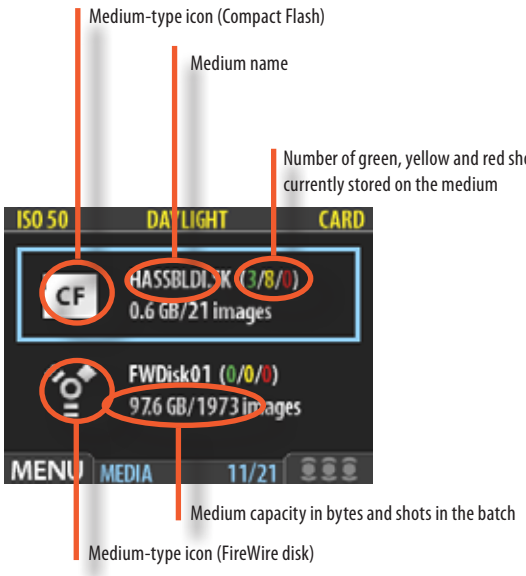
- ***Using the zoom and navigator buttons on the front panel. This method enables you to select any existing batch and is therefore useful even when only one type of medium is attached. This method is explained in the procedure below.***
- ***Choose MAIN MENU > Storage to select a medium. This is only relevant when more than one medium is attached (e.g., both a compact flash card and an Imagebank). When you use this function, you will always go to the most recently created batch from the medium you select. Please see Selecting the Current Storage Medium for a complete description of this method.***

Introductory overview

The **MEDIA** *list.*

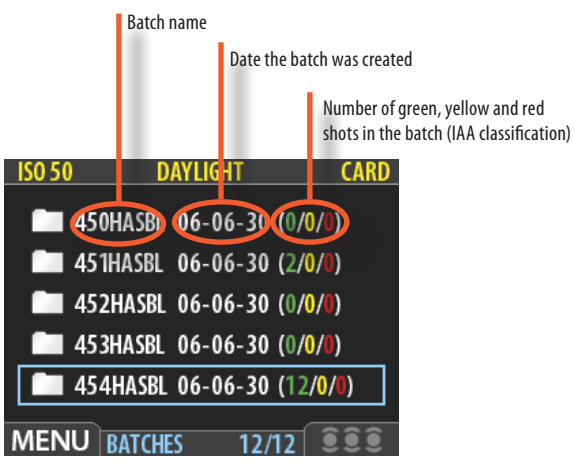
In this example a CF card and a FireWire disk are illustrated and therefore connected.

The blue frame around the CF card symbol tells you that captured images will be saved to the CF card and not the FireWire disk. This is the **Current Medium**



The **BATCH** *list.*

The blue frame around a folder tells you that it is the **Current Batch.**

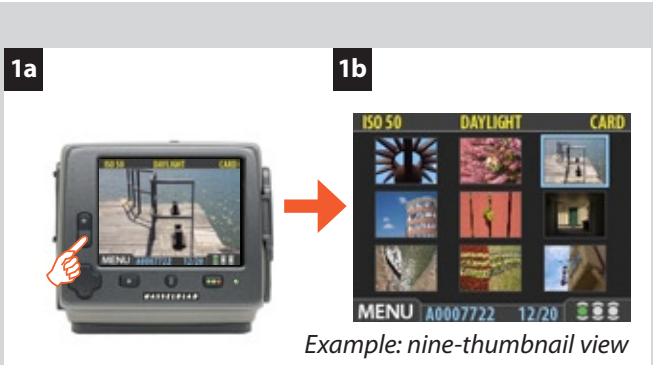


You work your way deeper into the menu branching off the selected item (framed in blue) each time you press the + button to view media, batch, thumbnail view etc.

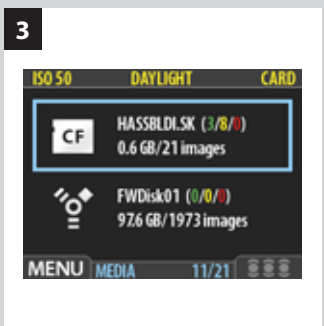
Conversely, you work your way back out of the menu each time you press the − button.

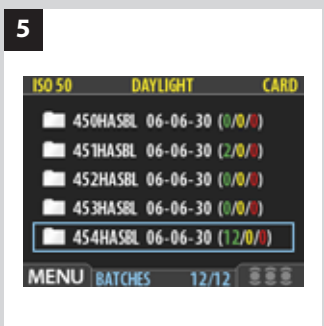
Media list **Batch list** **9-Thumbnail view** **4-Thumbnail view** **Normal view** **Zoomed**

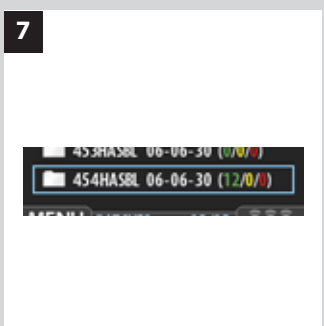
Continue to press (+) to zoom further

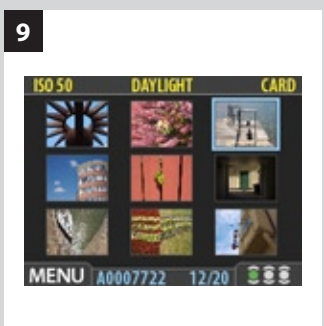


Example: nine-thumbnail view









To select the current medium and view batches using the browse controls:

1. *Press the zoom-out ( ) button repeatedly until you are all the way at the top zoom level. If you start with the single-image preview view, then you pass through the following views to get there:*
   - *Single-image preview (as in fig 1a)*
   - *Four-thumbnail view*
   - *Nine-thumbnail view (as in fig 1b)*
   - *Batch list (as in fig 3)*
   - *Media list (as in fig 4)*
2. *Each medium shows a name, total size and an estimate for how many images will fit on it. To the right of the medium name is a set of three coloured numbers in parentheses. These indicate the total number of images of each approval status (green, yellow and red) that currently exist on that medium. For example, if you see a card that shows (**18** / **5** / **3**), then that card contains a total of 26 images: 18 green (**APPROVED**), 5 yellow (**UNCLASSIFIED**) and 3 red (**DELETE**). If more than one medium is listed, then use ▲ and ▼ to highlight the medium you wish to use.*
3. *The currently selected medium shows a blue border.*
4. *Press the zoom-in ( ) button to zoom-in on the currently highlighted medium.*
5. *A list of batches on this medium now appears. Each batch appears as a folder icon with a name and the date on which it was created. As with the media list, you can read the number of shots of each approval status that are stored in each batch.*
6. *As with media, use ▲ and ▼ to highlight the batch you wish to view.*
7. *The currently selected batch shows a blue border.*
8. *Press the zoom-in ( ) button to zoom in on the currently highlighted batch.*
9. *The nine-thumbnail view of your selected batch now appears.*

Please note the difference between 'selecting' a medium and 'browsing' a batch. Each new image will automatically be saved in the latest created batch only on the selected medium. You cannot 'select' a batch for storage.

Creating new batches

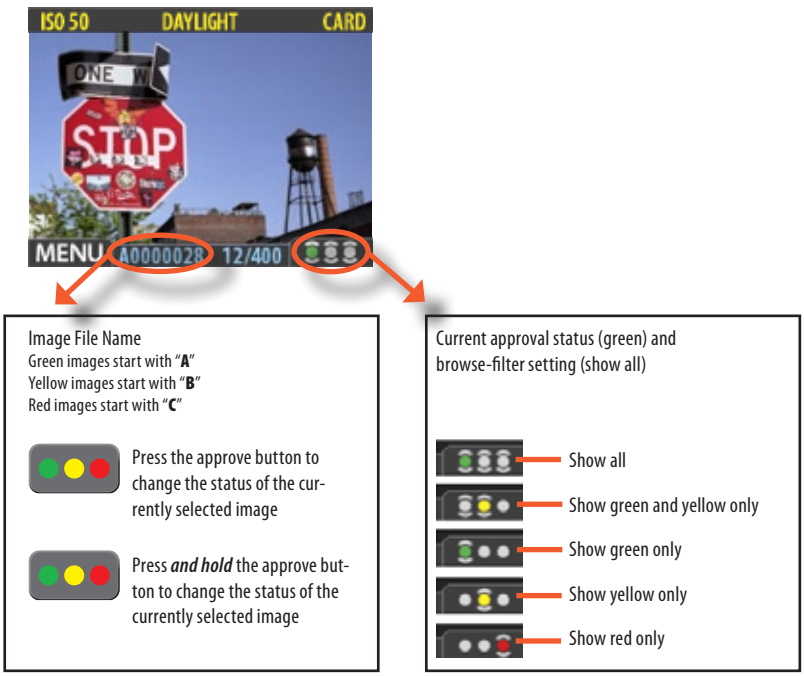
You can create any number of batches on each medium. To create a new batch, first make sure you have selected the correct current medium (see **Navigating Media and Batches**) and then choose **MAIN MENU > STORAGE > BATCH** to create the new batch. See **Creating Batches** for a detailed procedure.

Using Instant Approval Architecture

The Instant Approval Architecture system helps you to evaluate your images as quickly as you take them. It works by supplying immediate audio feedback, which tells you instantly whether each new picture is exposed correctly or likely to be over- or underexposed. Thereafter, the system enables you to assign each image one of three status levels. Though you can use the system any way you like, the intention (based on the 'traffic light' principle) is that you should assign the levels as follows:

- ***GREEN*** *for your best shots.*
- ***YELLOW*** *for images that need closer inspection.*
- ***RED*** *for images that you are unlikely to use.*

Please note, when the current storage medium is full, red-status images will be deleted (one at a time) to make room for new shots. You can continue shooting until no red-status images remain; if you then try to take additional new shots you will get a medium-full message.



One of the greatest advantages of digital photography compared to film is that it costs no more to shoot 100 images than it does to shoot one. Photographers therefore tend to take many more pictures when shooting digitally. By assigning approval levels as you work, it can be much easier to sort through and select images when you get back to your computer.

The default approval level is set by going Menu > Storage > Default Appr Level. See later section for details.

Standard Instant Approval workflow

The standard method of working with the Instant Approval Architecture is as follows:

1. *Take a shot.*
2. *The camera analyzes the shot to find out if it seems to be over- or underexposed. If it suspects a problem, it does the following:*
   - ***Provides audio feedback (if this option has been chosen) by making a warning sound, which immediately alerts you to a possible problem even if you are not looking at the screen. The warning sound is a rapid string of notes going up the musical scale if the image is judged as overexposed or conversely a rapid string of notes going down the musical scale if the image is judged as underexposed.***
   - ***Downgrades the approval status to yellow (if Approval is set to 'Auto').***

Note that some shots may trigger the warning even though they are exposed according to your intentions. You should consider these warnings only as a guideline. This feature can be turned off.

3. *If no problem is detected, then the image is saved with the chosen default approval status.*

If you set Approval to 'Auto', all images will be stored as Green if judged as correct and Yellow if judged as technically doubtful. No images are ever stored as Red automatically!

4. *When you are browsing through your shots, keep an eye on the approval status of each and consider whether you should promote or demote each shot based on its appearance on the preview screen. You can also apply a browse filter to, for example, browse only red shots when looking for images to delete or to browse only green shots to make sure you have a good version of each shot that you need.*
5. *When you begin working with the images on your computer, use the approval status as a guide for organizing your work. For example, you might begin by opening and optimizing the green shots and then go to the yellow shots only if you still need more images and then, finally, check the red shots as a last resort.*

Note that the system is very flexible so you can use it in any way that you like. For example, you can set the camera to assign all new images a yellow or green status regardless of the exposure warning. Be careful when assigning red status because red images may be deleted if the current storage medium becomes full.

Reading and changing the approval status

The current approval status of each shot is indicated in two ways:

- ***In most preview modes, the current status is indicated by a coloured dot in the bottom-right corner of the screen.***
- ***Each image is given a name that indicates its approval status. Approved (green) image names start with "A" (e.g., "A0000043"); warning (yellow) images start with "B" (e.g., "B0000043"); and images marked for delete (red) start with "C". Because of this naming convention, you will also be able to sort your image files by status after you have imported them onto your computer (e.g., by listing the folder by file name).***

See also the diagram showing where you can read the image name and approval status on the screen.

By keeping an eye on the file name and/or coloured dot as you browse your images at the single-image, four-thumbnail or nine-thumbnail level, you can easily see the current approval status of each of them.

To change the approval status of the currently displayed/selected image, simply press the approval button until the desired approval status is shown.

Note that you can set the camera to filter by approval status as you browse, which means that some images may be hidden (though they are still there). See "Browsing by Approval Status", below, for details about how to work with the filter.

Be careful when assigning red status because red images may be deleted if the current storage medium becomes full.

Browsing by approval status

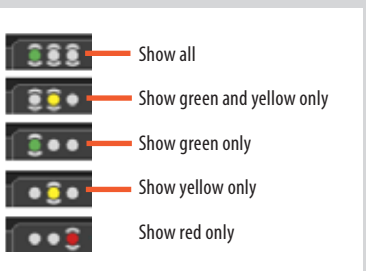
You can set the camera to browse by approval status, which means, for example, that you will see only green-status images as you browse a batch (or both green and yellow, or only red, etc.). The current filter setting is indicated on-screen, as illustrated. Filtered images are still there, but they will not be shown until you change the filter setting. Also, if you change the status of an image, the image may 'disappear' if it no longer passes the filter. For example, if you have set the camera to browse only green-status images and then change an image to yellow status, that image will not be shown again until you change the browse filter.

There are many ways to make use of this feature. For example:

- ***Set the filter to show only yellow images. Then step through each image and decide whether any of them should be promoted to green or demoted red.***
- ***If you are running out of space, set the filter to show only red images and then step through to find shots you can delete.***
- ***Set the filter to show only green images. Then step through to make sure you have at least one 'good' example of each shot that you need.***

There are two ways to set the browse filter:

- ***Press and hold***  ***until the filter you want to use is shown by the indicator.***
- ***Choose*** **MAIN MENU > Browse.** ***See* Setting the Browse Filter *for a detailed procedure.***



Deleting by approval status

There are many ways to delete images, including one-at-a-time and multiple delete by batch, media and/or approval status. When deleting several images, you first pick the medium or batch from which you want to delete and then choose **MAIN MENU > STORAGE > Delete** to specify the status of the images to delete. You can choose to delete:

- ***All red-status images from the selected batch or medium***
- ***All red- and yellow-status images from the selected batch or medium***
- ***All images from the selected batch or medium***

See **MAIN MENU > Delete** for detailed procedures describing each of the delete options.

Setting the default status

As outlined in **Standard Instant Approval Workflow**, the camera normally works by assigning a green status to all images that pass a basic exposure test and a yellow status to all images that fail the test. However, you can change this behaviour if you prefer an alternative workflow. You have the following options:

- **Auto***: works as described in* **Standard Instant Approval Workflow .**
- **Green***: gives all new images a green status, regardless of the exposure warning.*
- **Yellow***: gives all new images a yellow status, regardless of the exposure warning.*

Regardless of this setting, audio feedback will still be provided if an image is judged to be badly exposed.

Choose **MAIN MENU > Browse** to make this setting. See also **Setting the Default Approval Status** for a detailed procedure.

8 Overview of viewing, deleting and copying images

H3D II

Basic image browsing

The large, full-colour display enables you to inspect your shots while you are still on-location. It offers full-screen previews, high-magnification zoom, two levels of thumbnails and analysis tools including a full histogram and camera settings.

When you first turn on the camera, the display opens in standard browse mode, showing the last image taken (if any) for the current medium and batch. Likewise, after each new shot, the display shows a preview of the shot.

To browse the images of the current batch, simply press the left (◄) and right (►) arrows of the navigator button.

Choosing the current batch

When you browse using the navigator button, you will only see images from the current batch on the current medium. To view another batch, you must navigate to it by zooming out to the batch or media level and then zooming in on the appropriate folder. See **Navigating Media and Batches** for complete details about how to select the current medium and/or batch.

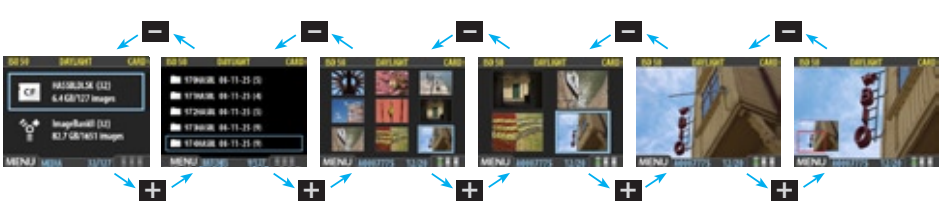
Browsing by approval status

It is possible to set the camera to browse only images of one or more specific approval levels from the current batch. You can use this, for example, to review all of your red-status shots to make sure you don't need them or to review all of your yellow-status shots to decide whether they should be moved to green or red status. When you use the browse filter, you will not see images excluded by the filter, but they are still there.

See **Using Instant Approval Architecture** for complete details about how to check and set the browse filter.

Zooming in and out

As illustrated below, you can use the Zoom in/out button to see various levels of detail in your images. You can furthermore zoom all the way out to view and select batches and media.

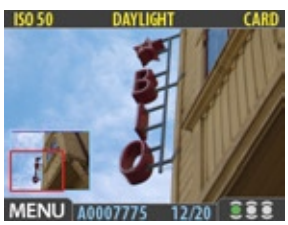


Media list | Batch list | 9-Thumbnail view | 4-Thumbnail view | Normal view | Zoomed

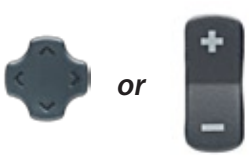
Continue to press (+) to zoom further

1

2



3



4

Zooming in for more detail

The preview display has a much lower resolution than your images. You can therefore zoom very far into the images to inspect small details. To do this:

1. *Browse to the image you wish to zoom into with the navigation button.*
2. *Press the zoom-in (+) button to zoom in one step. The screen updates to show both a zoomed image and a thumbnail image that includes a red box outlining the portion of the images currently shown.*
3. *You can now do the following as needed:*
   - *Use the navigator button to move the zoom area if you wish to inspect a different part of the image.*
   - *Zoom further by pressing the zoom-in (+) button more times.*
   - *Zoom back out one step by pressing the zoom-out (−) button.*
4. *When you are finished, press and hold the zoom-out (−) button to return to browsing at the standard zoom level.*

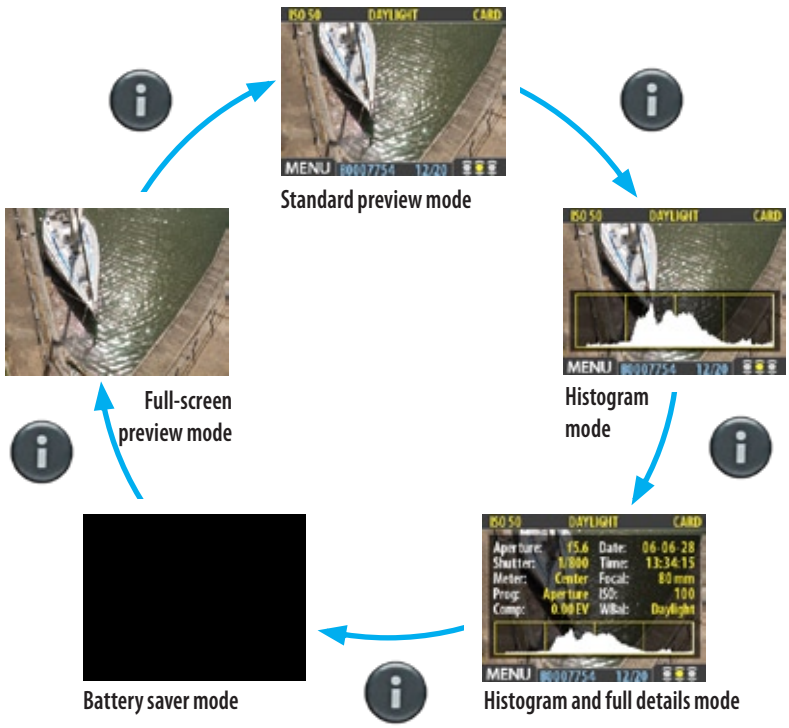
Thumbnail views

Preview thumbnails are small versions of each preview, sized to fit either four or nine images on the screen at once. Use them to get an overview of your work so far and to help find specific shots.

To see the thumbnails, start with the standard preview display and press the zoom-out button once to see four thumbnails or twice to see nine.

When viewing thumbnails, the selected image shows a blue border. When an image is selected, you can zoom in on it using the zoom-in button or delete it using **MAIN MENU > STORAGE > Delete** (see also **MAIN MENU > STORAGE > Delete** for a detailed procedure). Use ▲ and ▼ to scroll the thumbnails when you have more shots than can be shown.

*If you continue to zoom out beyond the nine-thumb view, you will come to the batch list and then to the media list. You can use this to select the current medium and batch for browsing and for storing new images. See **Working with Media and Batches** for details.*



Preview Modes

You can cycle through all the available preview modes by pressing the **View-Mode** *button.*

Preview Modes

Choosing the Preview mode

You can use the **View Mode** button to cycle through the available preview modes which are:

- ***Standard preview:***

  Shows a preview image surrounded by a display of a few important settings. Note that the information covers some of the image. Go to Full–screen mode to see whole image.
- ***Histogram:***

  Shows a preview image overlaid with a histogram.
- ***Histogram and full details:***

  Shows a preview image overlaid with both a histogram and camera-setting details.
- ***Battery saver:***

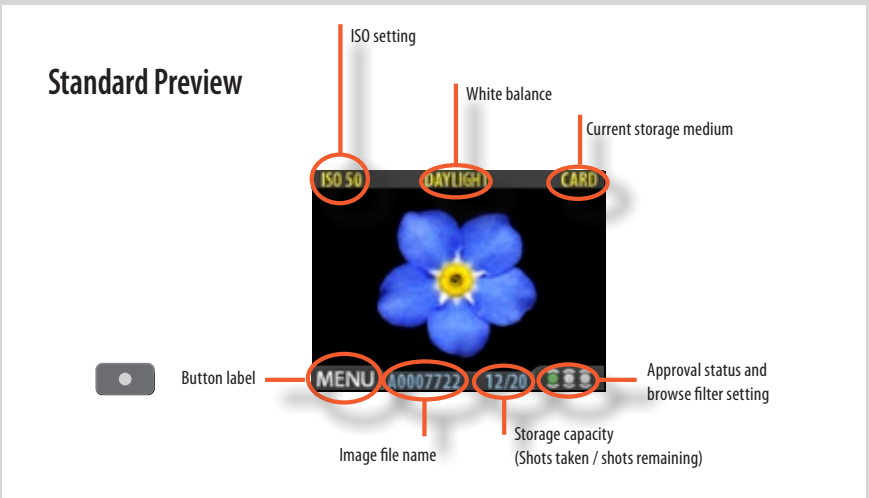
  Turns off the screen, but you can still use the menus and take pictures.
- ***Full-screen preview:***

  Shows the preview only, with no frame or settings information.

To cycle through the various modes, press the **View Mode** button on the front panel. The order is on a loop.

Regardless of the current mode, if you zoom in on the image or zoom out to the thumbnails, the display reverts to showing the "standard" preview frame, which shows information about the current image and camera settings around the edges. When you return to the standard zoom level, however, you will then also return to your last-selected preview mode.

Note that the screen can also operate in menu mode, which does not show a preview, but enables you to make digital capture unit settings. To enter menu mode, press the menu button. See **Working with the Menus** for details.



The Standard Preview display is the one shown when you first turn on the camera and is probably the view you will use most often.

It features a preview of your most recent shot and basic information about the settings and the image itself.

Furthermore, the display enables you to navigate the menu system and make camera settings; see ***Working with the Menus*** *for details.*

Histogram Mode 1, 2, 3

Using the histogram

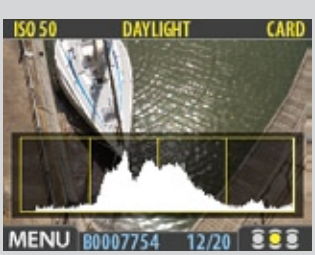
The histogram provides a graph that indicates the total number of pixels at each brightness level, with brightnesses going from black on the left to white on the right. It is a valuable tool for evaluating your capture. A well-exposed shot usually has a full range of levels, while under- and overexposed shots tend to show levels concentrated at the left or right part of the scale, respectively.

Look at the histogram examples and the explanations below:

1

Underexposure 1

A histogram display that is concentrated on the left with few pixels elsewhere indicates a likely underexposure. Many details will be lost in the shadows.



2

Even exposure 2

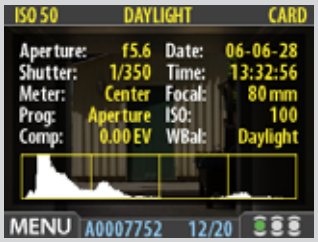
A histogram display that is spread across the full range indicates a likely good exposure. There may still be a few pixels at the extremes, indicating a few spectral highlights and saturated shadows, but this is often normal in a good exposure.

3

Overexposure 3

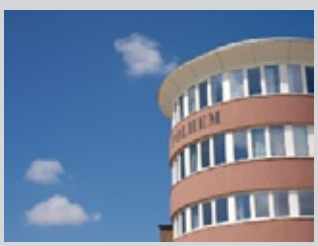
A histogram display that is concentrated on the right with few pixels elsewhere indicates a likely overexposure. Many details will be lost in the highlights.

The histogram is only an indicator that should be interpreted—there are many situations in which a questionable histogram will match an exposure that is perfectly acceptable for the intended effect (and vice-versa).



4

5



6

Full Details Mode 4

In full-details mode, you can read a complete list of camera settings, plus see the histogram and, in the background, a darkened preview of the image.

The camera-setting details are stored with the image, so you can refer to them using Phocus even after you have loaded the image to your computer and stored it in your archive.

Battery-Saver Mode 5

In this mode, the digital capture unit is fully responsive, so you can take pictures but the screen is not lit up, thereby saving battery power.

You can enter the menu system while shooting in this mode (which activates the screen until you exit the menu system again) but the approval, zoom and navigator buttons have no effect.

You can also save battery power by turning down the brightness and/or contrast of the display using the entries of the MAIN MENU > SETTINGS > USER INTERFACE > DISPLAY menu. See 'Making Display Settings' for details.

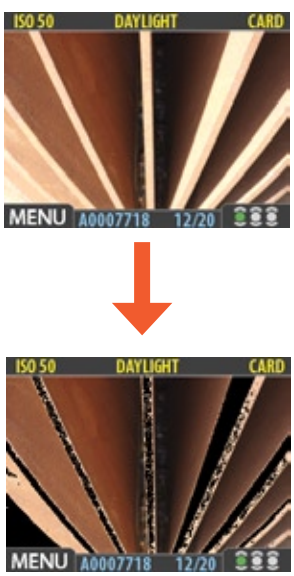
Other ways to save battery power include setting a display time-out and/or a power-down time-out (each of these is disabled by default). Use MAIN MENU > SETTINGS > USER INTERFACE > Power Down to set a power-down time out. Use MAIN MENU > SETTINGS > USER INTERFACE > DISPLAY > Timeout to set a display time-out. See also 'Entries of the USER INTERFACE Menu' and 'Making Display Settings' for details about these settings.

Full-Screen Mode 6

In full-screen mode, you can browse your images at standard preview resolution without any distracting data surrounding them.

Because the current approval setting is not shown in full-screen mode, the approval button has no effect. This will prevent you from accidentally assigning the wrong status without knowing it.

7



Overexposure indicator 7

Though the histogram shows you when some of your pixels are overexposed, it does not tell you which ones. In a shot with many bright areas, it can be hard to know whether the key parts of your image are just bright or completely overexposed. To help you find them, the digital capture unit can provide an overexposure indicator, which shows precisely which areas of your shot are overexposed (i.e., pixels that are at maximum brightness, thereby eliminating details).

When enabled, the overexposure indicator flashes the overexposed pixels from black to white.

To enable or disable the overexposure indicator, choose **MAIN MENU > SETTINGS > USER INTERFACE > Mark Overexp.** .

Please see **Entries of the USER INTERFACE Menu** for a detailed procedure.

SHORTCUT

Press and hold ▲ until the indicator is working as you would like (enabled or disabled).

Deleting images – general

The H3D II enables you to delete images using any of the following techniques:

- ***Delete the currently selected image only.***
- ***Delete all images from the current batch***
- ***Delete all images from the current medium***
- ***Delete all red-status images from the current batch***
- ***Delete all red-status images from the current medium***
- ***Delete all red- or yellow-status images from the current batch***
- ***Delete all red- or yellow-status images from the current medium***

Another way of working is to simply assign unwanted images as Red. In this way, you retain the option (for a while) of changing your mind later while allowing the system to automatically delete the unwanted images as the storage medium fills up.

You will always be asked to confirm each delete operation.

For complete details about how to use the menu system to delete single or multiple images, please see **MAIN MENU > STORAGE > Delete**.

Transferring images

Transferring to a computer

To transfer images stored on the compact-flash card to your computer, simply connect the digital capture unit to a computer using a FireWire cable and then run Phocus. Alternatively, use a card reader and connect to a computer. See the Phocus manual for details.

See also **Connecting to the Computer** for details about how to connect to a computer.

Overexposure indicator shortcut !

Press and hold ▲ until the indicator is working as you would like (enabled or disabled).

Delete shortcut !

Select a target image and then press and hold ▼ until the confirm-delete dialog opens.

Set browse filter !

Press and hold until the preferred filter is indicated. Repeat if necessary.

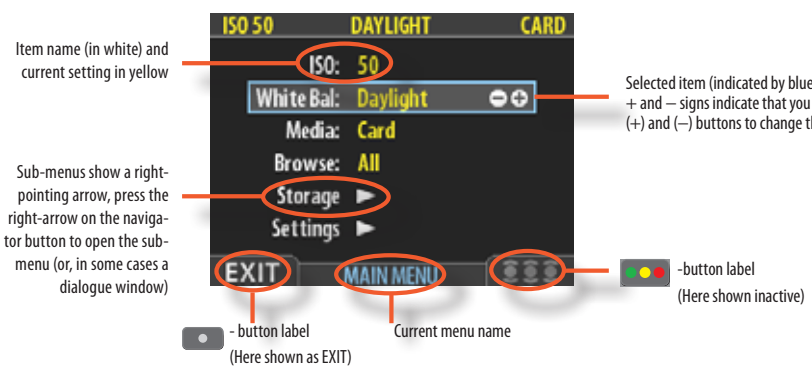
9 Menu:

- *ISO*
- *White Balance*
- *Media*
- *Browse*

H3D II

Menu system overview

The main menu contains those settings that you will need to access most often as you work on an assignment. It also provides sub-menus that give you access to all other settings, most of which you will need less often.

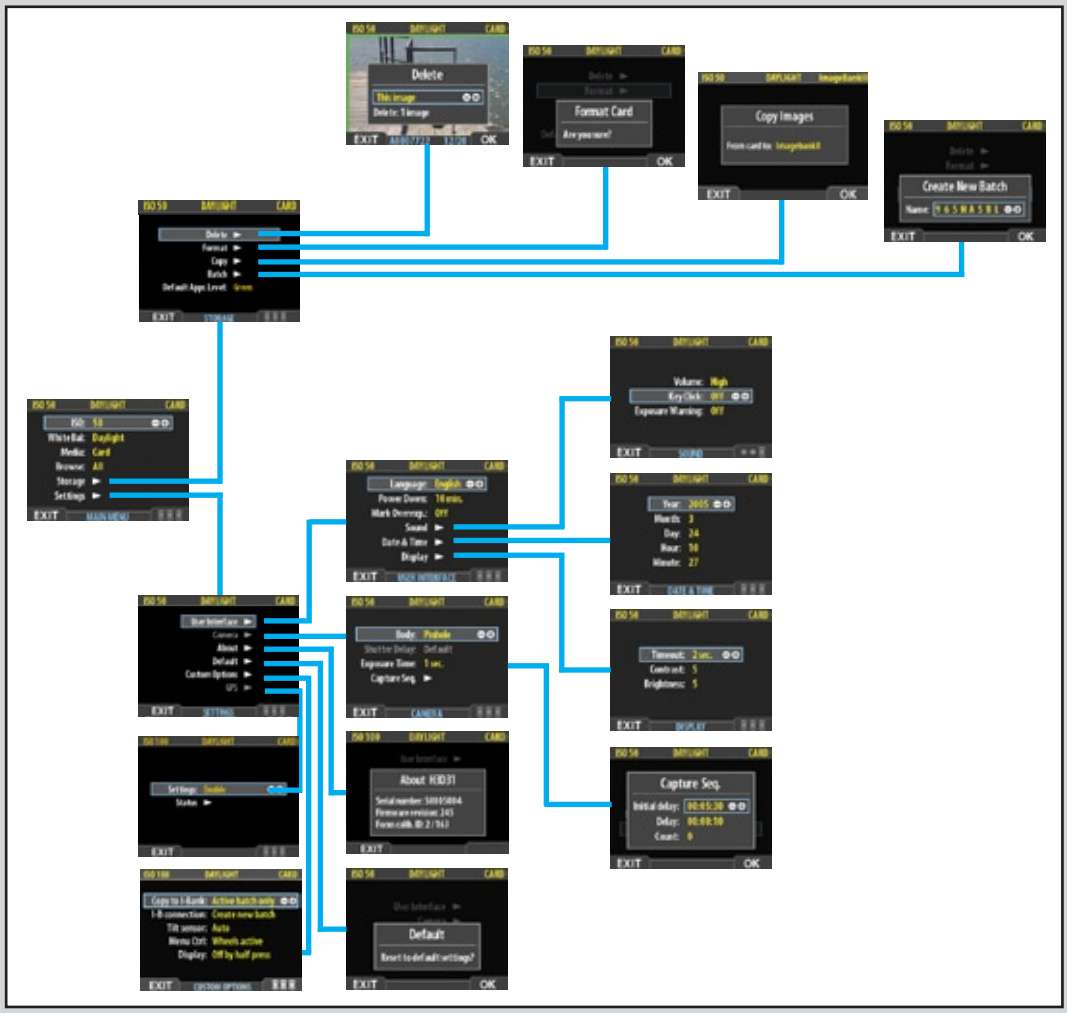


Navigating the menu system

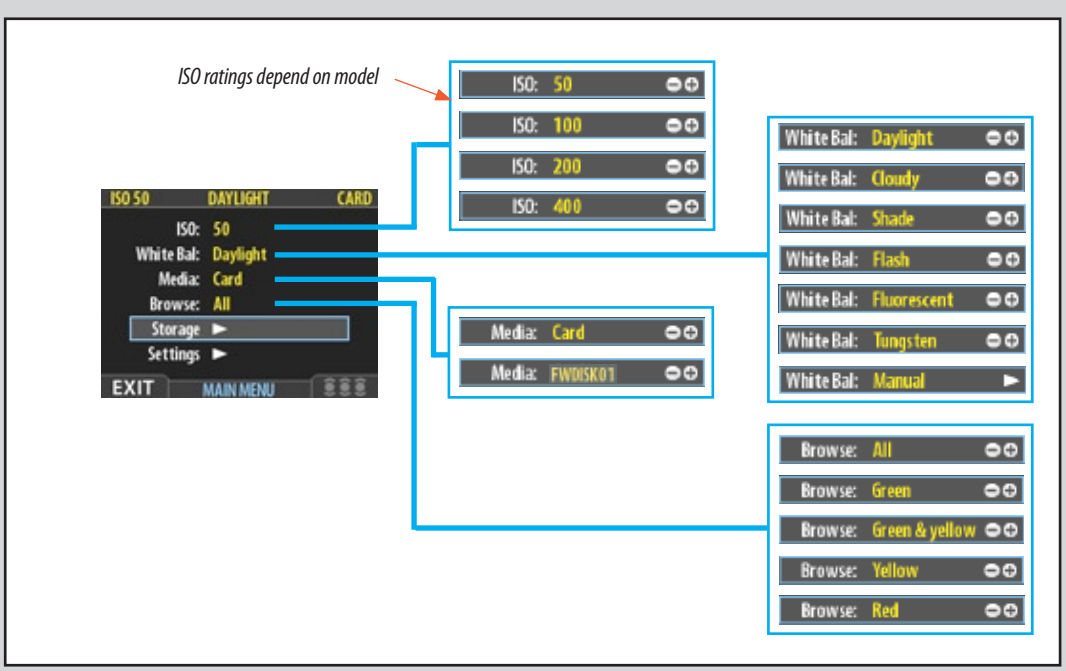
To enter to the menu system, press the **MENU** button on the panel. Any image visible is then replaced by the first level of the menu. Use the navigator button to scroll through the menu items and use the Zoom in/out (– or +) button to change the selected setting. See also **The Control Panel** for button diagrams and descriptions.

Any given menu may include both items and/or sub-menus.

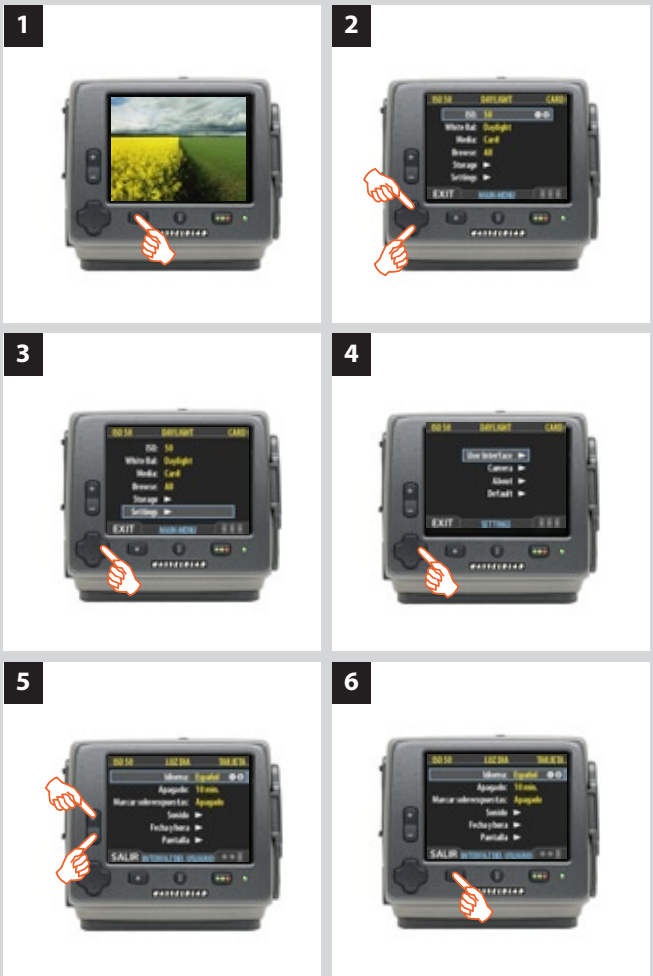
- ***Items are settings that are available at the current menu level; they show their current settings next to the item name. To make an item setting, use the navigator ( ) button to select the item and then use the zoom (– or +) button to select the desired option for that item.***
- ***Sub-menus do not have settings at the current level; they lead to another menu or dialog. Sub-menus show a right-pointing arrowhead (➤) instead of a value. To open a sub-menu, use the up/down arrowheads (▲ and ▼) of the navigator button to select the sub-menu and then press the right side of the button to open it. There can be several levels of sub-menus.***
- ***When you are in a sub-menu, you can go back to the parent menu by pressing the left arrowhead (◄) of the navigator button.***
- ***Some sub-menus open a dialog. Dialogs require that you either make a setting or exit the dialog (e.g., to confirm or cancel a delete command). The left arrowhead will have no effect.***



Menu structure



Items on the main menu



Language

As a practical example, a **MAIN MENU > SETTINGS > USER INTERFACE > Language** item instruction would involve the following procedure:

1. *Making sure you feel confident to return to your choice of language by navigating in another, press the menu (***MENU***) button to open the menu.*
2. *Use ➤ and ➤ to select the* **SETTINGS** *sub-menu.*
3. *Press ➤ to open the* **SETTINGS** *menu.*
4. *Press ➤ to select the* **USER INTERFACE** *sub-menu.*
5. *Press either the zoom (▬ or ✚) button to choose a new language (in this case Spanish).*
6. *Press the* **MENU/EXIT** *button again to close the menu.*

Note also that the menu and approval buttons are situated just outside the bottom-left and bottom-right corners of the screen. As you work through the various menu entries, the screen shows a label for each of these buttons. In the text, we therefore give the generic name for the button and the screen name. For example we will refer to: the menu (**MENU**) button, the menu (**EXIT**) button, or the approval (**OK**) button.

Settings check

ISO, White Balance, Media and **Browse** settings should be checked before each session. They are therefore placed at the top level of the menu for quick and easy access. They are also shown on-screen in most preview modes, so you can easily keep an eye on them as your work.

ISO

The ISO setting can be made using the ISO/WB button on the grip or on the digital capture unit. The "natural" sensitivity of the CCD is ISO 50 for H3DII 39/50 models and 100 ISO for H3DII 31 models, so you will get best results with this setting if the light conditions allow.

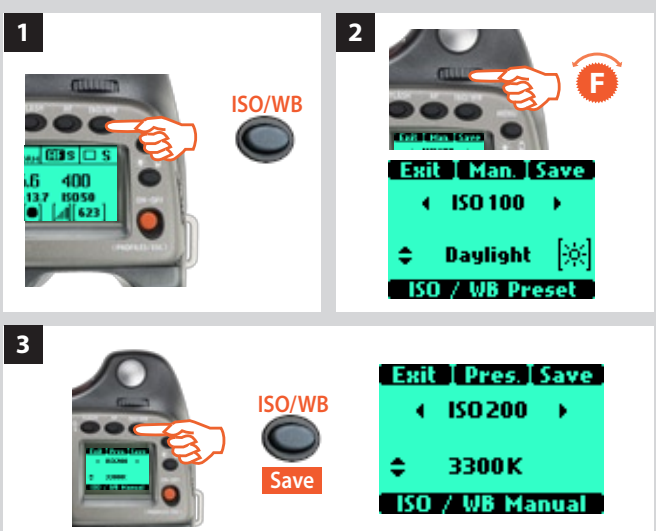
To set the ISO on the grip:

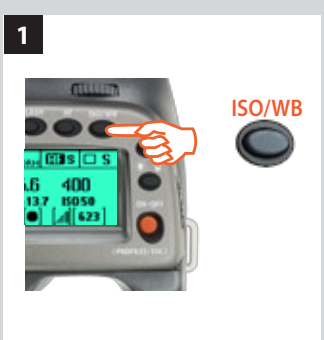
The **ISO/WB** button provides immediate access to ISO settings. The front control wheel is used to make the desired changes. The settings are automatically and simultaneously transferred from the camera to the digital capture unit. Please note that the changes are only displayed on the digital capture unit unit when the settings have been saved.

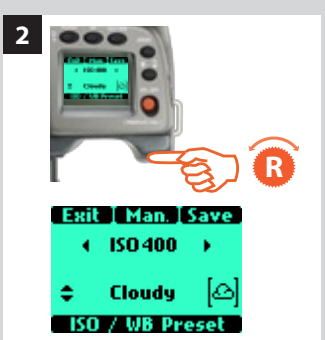
1) *Press the* **ISO/WB** *button on the grip.*
2) *To make an* **ISO** *setting, turn the front control wheel to choose between:*

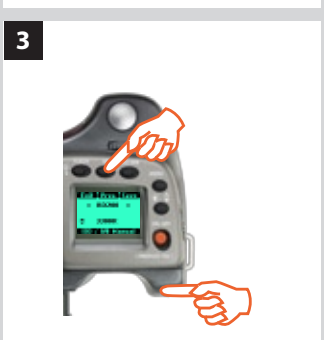
   50, 100, 200 and 400 (39 and 50 Mpix models)

   50, 100, 200, 400 and 800 (31 Mpix models)
3) *Press* **SAVE** *(***ISO/WB** *button) to save the setting.*









Note that the default sensitivity of the CCD sensor is either ISO 50 or ISO 100. Higher ISO settings result in progressively noisier images (just as higher ISO film becomes grainer). It is recommended that you use the lowest ISO setting that the lighting situation allows.

To set the ISO on the digital capture unit

1. *Choose* **MAIN MENU > ISO**. *This is the top item of the top menu, so it will be selected by default when you enter the menu system. (See also* **Navigating the Menu System** *for details about how to find this setting.)*
2. *Use the zoom (* **−** *or* **+** *)button to step through the available ISO settings until the setting you want is shown.*
3. *Either move on to another setting by using the navigator button or press the menu button to exit the menu system and keep your setting.*

White balance / Grey balance setting

There are several ways to make a white/grey balance setting adjustment. When untethered on location you might prefer to make a quick preset adjustment setting at the same time that you check the **ISO** and **Media** settings. Tethered in the studio you might prefer to take the first shot of a grey scale and make the adjustment in Phocus/FlexColor for that session. In addition, you might want to assign the **User Button** as a rapid white balance check in a mixed lighting situation.

A white balance setting can be made either on the grip or on the digital capture unit. Changes made on one are recorded and displayed on the other.

To set the white balance on the grip

The **ISO/WB** button provides immediate access to white balance settings. The rear control wheel is used to make the desired changes. The settings are automatically and simultaneously transferred from the camera to the digital capture unit. Please note that the changes are only displayed on the digital capture unit unit when the settings have been saved.

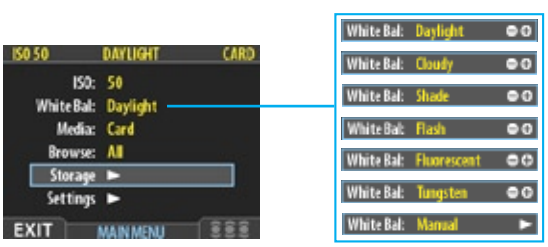
1) *Press the* **ISO/WB** *button on the grip.*
2) *To make a preset* **White Balance** *setting, turn the rear control wheel to choose between:*

   Daylight, Shade, Cloudy, Flash, Fluorescent and Tungsten
3) *To make a* **Manual White Balance** *setting (not a* ***White balance test exposure),*** *press the* **Man.** *(***AF***) button and then turn the rear control wheel to choose a color temperature:*

   2000 – 10000 K
4) *Press* **SAVE** *(***ISO/WB** *button) to save the setting.*

White Balance settings are only approximate color temperature settings. They are only used for user convenience when viewing. 3F/3FR files are raw format files and therefore contain all the information required for correction in Phocus / FlexColor and/or other software, regardless of the original color temperature at the time of exposure .

There are seven 'White Balance' settings to choose from.



White Bal. Setting	Setting description
Daylight	For general outdoor use in direct sunlight.
Cloudy	For general outdoor use in cloudy weather.
Shade	For general outdoor use in shady locations out of direct sunlight.
Flash	For general indoor use when using a normal flash/strobe system.
Fluorescent	For use when using fluorescent lighting (strip lights).
Tungsten	For use when shooting indoors under standard tungsten/B lamps.
Manual	For a manual setting

3b

Color temperature can be set manually or read off after a test capture.

To set the white balance on the digital capture unit

To select a preset white balance:

1a. Press the **MENU** *button on the digital capture unit.*

2a. Use ▲ and ▼ to select the **White Bal:** *sub-menu.*

3a. Use the zoom(▬ or ✚) button to step through the available choices until the one you want is shown.

4a. Either move on to another setting by using the navigator button or press the **MENU** *button to exit the menu system and keep your setting.*

To make a manual white balance setting:

1a. Choose **MAIN MENU** > **White Bal** > **Manual**.

2a. Use the ➤ button to call up the 'Manual White Balance' screen.

3b. Here, you can adjust the color temperature to a specific numeral setting in degrees K with the zoom (▬ or ✚) button.

Alternatively, you can position the central spot in the viewfinder over an area that you consider should be rendered as neutral in color in the image (a 'grey card' or even a sheet of white paper is ideal) and make a test capture (ensure the exposure is approximately correct otherwise you will get a warning message).

A small rectangle appears on the display marking that particular area. Calculations then take place automatically so that the following shots use the area chosen as the new 'white balance' standard. Using this method you can also read off the screen what the color temperature of the light source has been judged to be in degrees Kelvin.

4a. Press the **MENU** *button to exit the menu system and keep your setting.*

New settings are retained even when the camera has been turned off and re-activated, so don't forget to make new settings when required.

White Balance Shot screen appears after test capture to illustrate the area chosen for white balance calculation.

To make a rapid User Button white balance setting:

(Please note: this function works with a CF card or an ImageBank-II only)

1. *Assign the* **User Button** *(or* **AE-L, STOP DOWN or M.UP** *button) to activate* **Grey balance exp.** *(see later section – Advanced Features / Customizable button function list – for details).*
2. *While framing the centre spot in the viewfinder over a neutrally colored surface, press the assigned button.*

   A small rectangle appears on the OLED marking that particular area. Calculations then take place automatically so that the following shots use the area chosen as the new 'white balance' standard.

Media

The storage setting controls where your digital capture unit will store new images and which stored images will be visible in the browse window.

Often, you have just one type of storage media available—the internal compact-flash card. However, if you have several media attached (e.g., a card and one or more external disks), then you may need to switch between them.

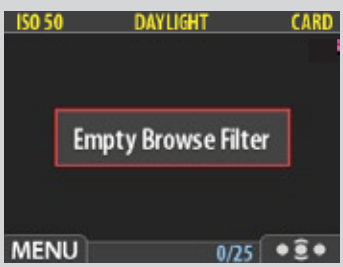
If your selected storage medium has more than one batch (folder) on it, then the batch selected when you use the storage menu item will be the one you most recently created.

To select the medium to which to save new shots and from which to browse previous shots:

1. *Press the* **MENU** *button.*
2. *Use ▲ and ▼ to select the* **MEDIA** *sub-menu.*
3. *Use the zoom (− or +) button to step through the available media until the name for destination/source you wish to use is shown.*
4. *Either move on to another setting by using the navigator button, or,*

   press the **MENU** *button to exit the menu system and keep your setting.*

Note that you can also select media using just the (+) and (-) buttons while browsing images. This method also enables you to select a batch as you zoom in from media to batch to thumbnails to preview. See Navigating Media and Batches for complete details about this method.



Browse filter shortcut !

There is also a one-button shortcut for changing the browse filter.

To use it, press and hold (do not click!) the Instant Approval button until the approval status colour appears. Browsing will then only display the images with that classification.

Browse

The browse filter complements the instant-approval system by enabling you to browse through images according to their approval status. You have the following choices:

- ***All:*** *browses all of the images in the current batch, regardless of their approval status. This is the default.*
- ***Red:*** *browses only red-status images from the current batch. These are images that you have marked for likely deletion. You might browse these images to make sure you have not eliminated any usable images and/or to find images that you can delete to make room for new shots.*
- ***Green:*** *browses only green-status images from the current batch. These are either new shots that did not trigger an exposure warning or shots that you manually assigned to green after overriding an exposure warning.*
- ***Green & Yellow:*** *browses green and yellow-status images, but does not show red-status images. These are probably images that you have either decided to keep or not yet checked for approval status.*
-

For more information about using the instant-approval system, please see **Using Instant Approval Architecture**.

To set the browse filter using the menus:

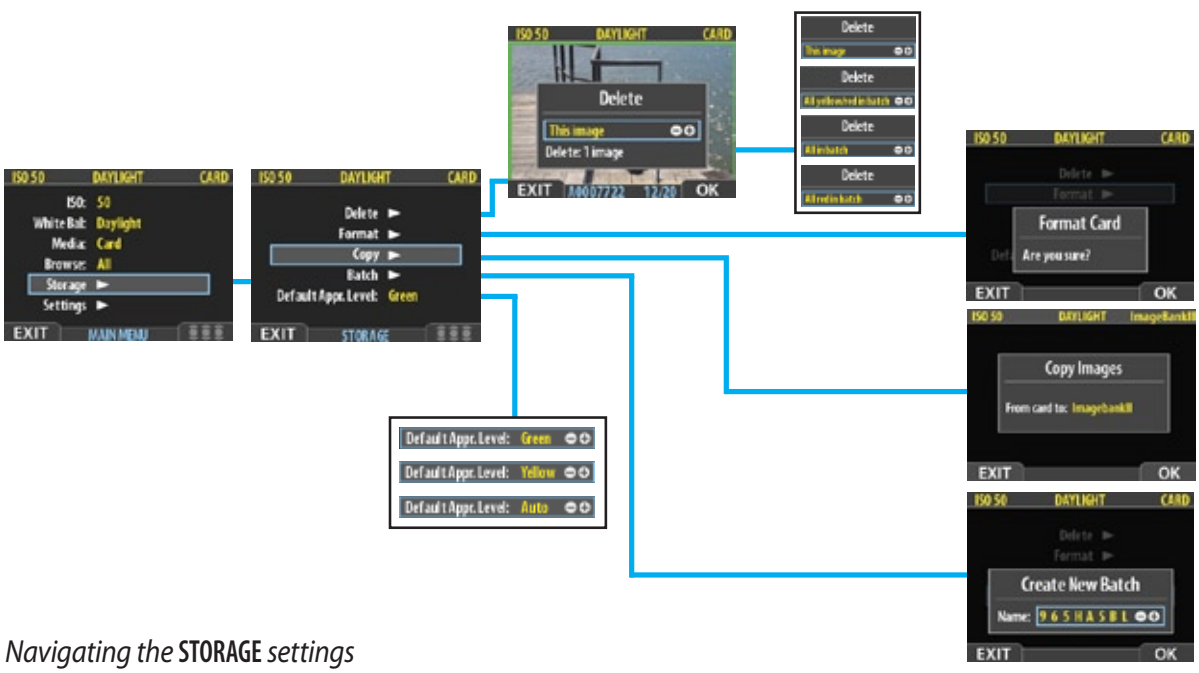
1. *Choose* **MAIN MENU > Browse**. *The current setting is displayed here.*
2. *Use the zoom (− or +) button to step through the filter options (described above) until you have selected the filter you wish to use.*
3. *Either move on to another setting by using the navigator button or press the menu button to exit the menu system and keep your setting.*

The appearance of the 'Empty Browse Filter' message signifies that there are no images with that particular approval status.

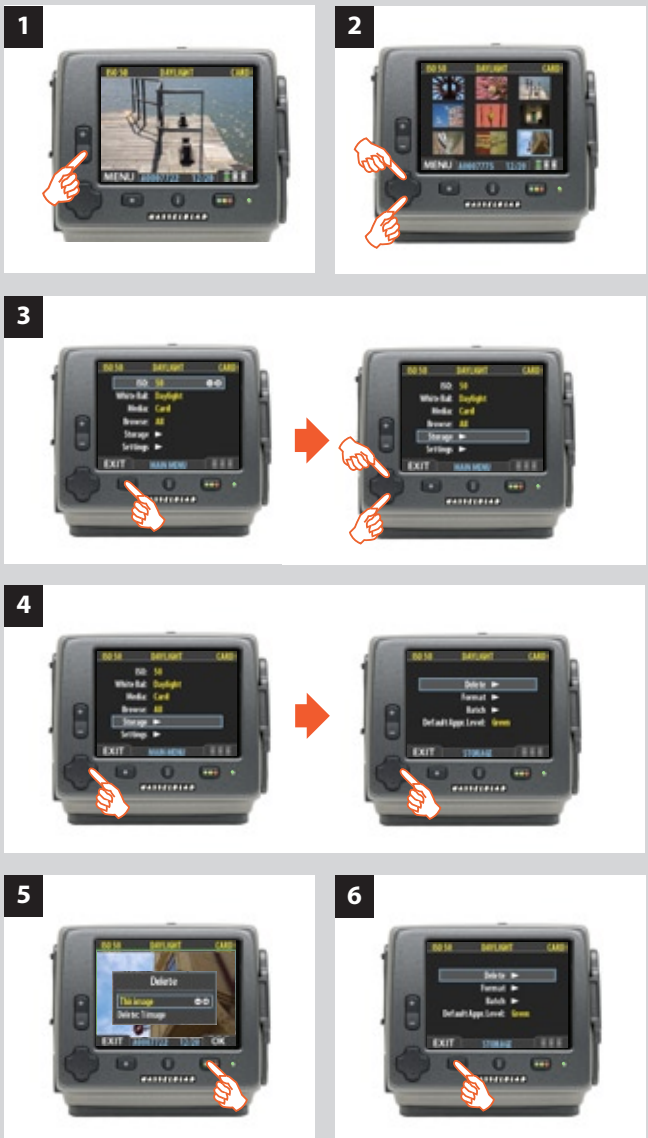
10 Menu: *Storage*

This section describes file storage, file transference, storage organization, file classification and related subjects.

H3D II



Navigating the **STORAGE** *settings*



MAIN MENU > STORAGE

The **Storage** menu provides entries for working with storage media. Here, you can format media, copy images from the camera to an ImageBank-II and create new batches on available media. You can also set the initial approval status (green or yellow) assigned to new pictures.

The first item on the storage list is file deletion. The great advantage of digital capture is of course the ability to judge images on the spot, delete them immediately if necessary and thereby make room for more valuable captures. There are several ways to delete images:

- ***Delete a single image***
- ***Delete all images from a batch***
- ***Delete all images from a medium***
- ***Delete all images of a specified approval status (e.g. red) from a batch or medium***

DELETE

In this example, one image is to be deleted from a batch containing nine images.

To delete a single image:

1. *Use the − button to go to the nine-thumbnail (in this case) view to make an initial search.*
2. *Use the navigator button to select the image you wish to delete. When you are viewing thumbnails, the selected image has a coloured border around it. When you are viewing single images, the selected image is the one currently shown. (You can delete an image either from single image view or from thumbnail view).*
3. *Select* **MAIN MENU > STORAGE**
4. *Press ➤ to open the* **Delete** *dialog.*
5. *You are now shown a full-size preview of the selected image and asked to confirm the delete. Press* **OK**.
6. *You now return to the main menu. Notice that the unwanted image has been deleted and the batch only contains the three remaining images. Either move on to another image by using the navigator button or press the menu button to exit the menu system.*

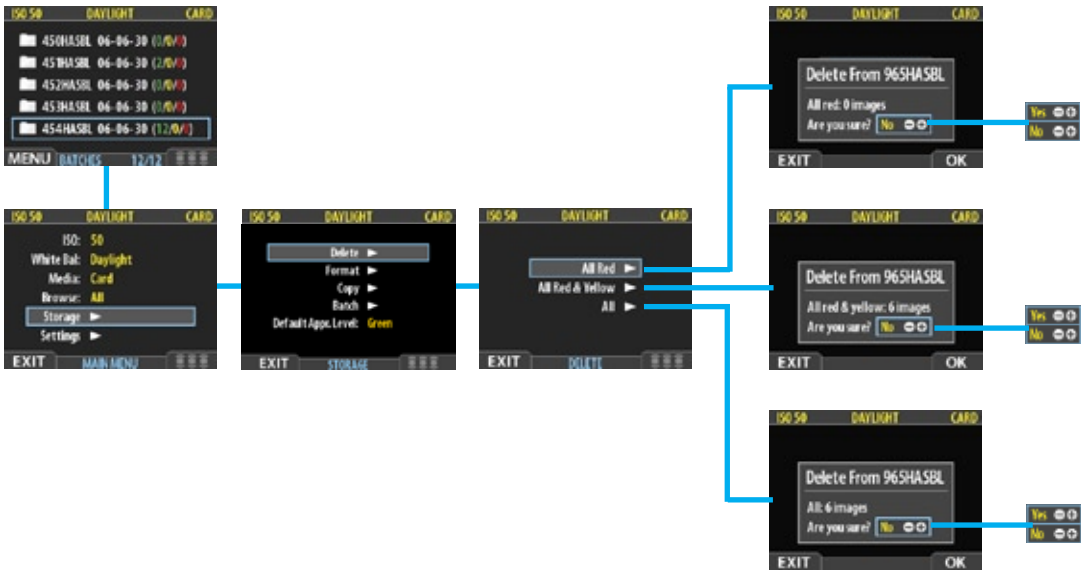
or:

1. *Use the − button to make an initial search and then the + button to reach full-size preview.*
2. *Hold down ▼ on the navigator button open the* **Delete** *dialog.*

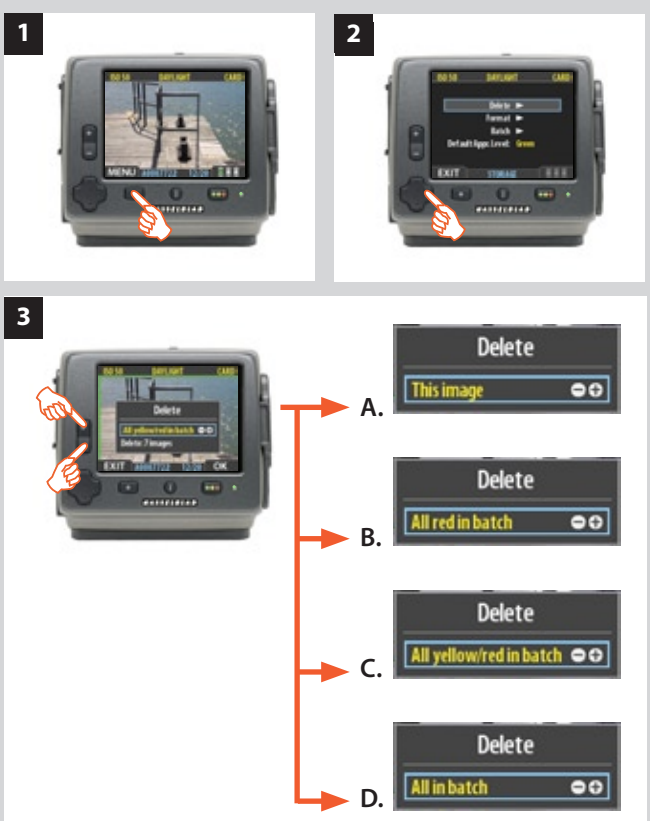
Use the delete shortcut immediately after an unwanted capture to save space on a card.

Delete shortcut !

Select a target image and then press and hold until the confirm-delete dialog opens.



Menus for deleting several images from a batch.



Deleting several images from a batch

To delete several images from a selected batch:

1. *Starting at the single-image preview display, Select* **MAIN MENU > STORAGE > Delete**. *(See also* **Navigating the Menu System** *for details about how to find this setting.)*

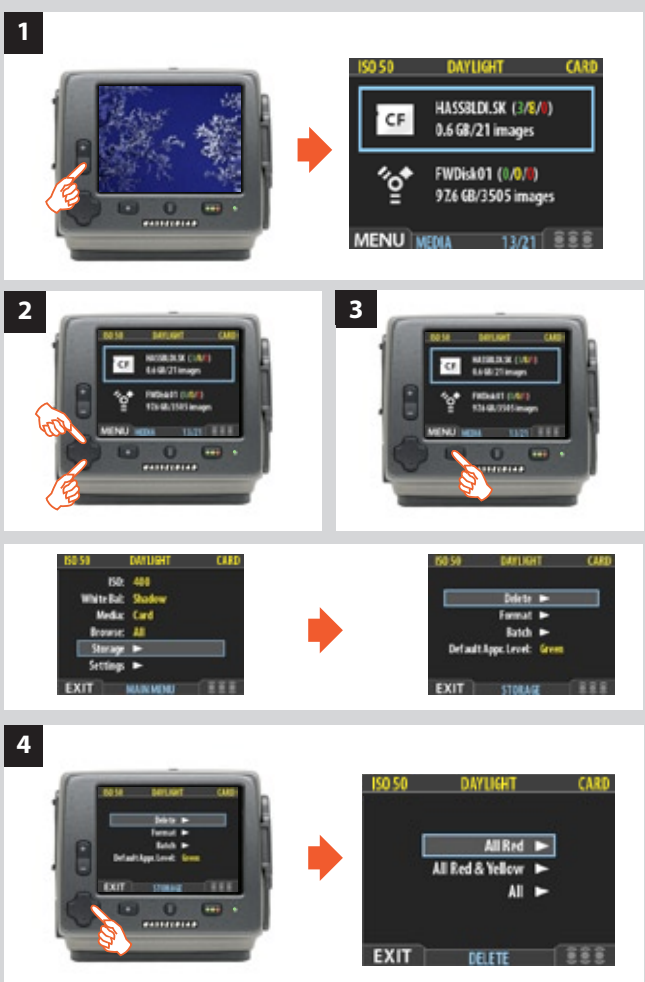
2. *Use ➤ to enter the* **Delete** *submenu or use shortcut.*

3. *Use the − or + button to select:*
   A. **This image** - *deletes the current image only*
   B. **All red in batch** - *deletes all red images in the current batch*
   C. **All yellow/red in batch** - *deletes all yellow and red images in the current batch*
   D. **All in batch** - *deletes all images in the current batch*

4. *Press* **OK** *to confirm the delete (to exit without delete, press* **EXIT**).

5. *You now return to the main menu. Either move on to another setting by using the navigator button or*

6. *Press the menu (***EXIT***) button to exit the menu system.*



Deleting several images from a selected medium

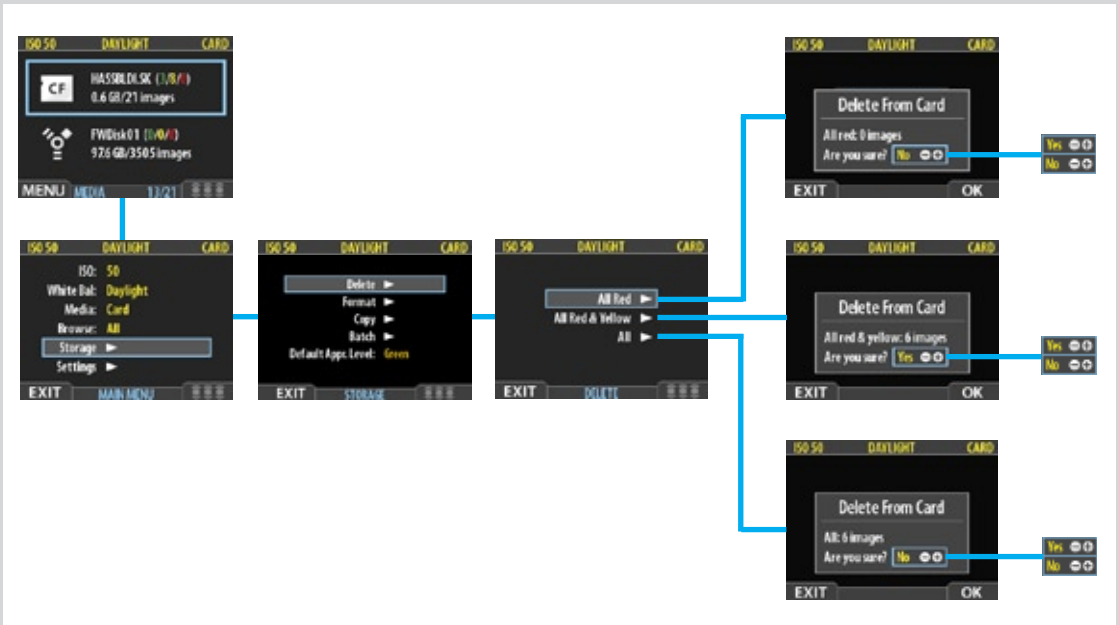
To delete several images at once:

1. *Starting at the single-image preview display, press the* − *button until you reach the media list.*
2. *Use* ▲ *and* ▼ *to select the medium from which you wish to delete. You will be deleting from all batches stored on that item.*

Note that both each listed medium shows a set of three coloured numbers in parentheses to the right of the medium name. These indicate the total number of images of each approval status (green, yellow and red) that exist on the medium. For example, if you see a medium that shows (18/5/3), then the medium contains a total of 26 images: 18 green (approved), 5 yellow (unclassified) and 3 red (marked for probable delete).

3. *Select* **MAIN MENU** > **STORAGE** > **Delete.** *(See also* **Navigating the Menu System** *for details about how to find this setting.)*

4. *Press* ➤ *to open the* **Delete Image** *dialog.*



Menus for deleting several images from all batches from a selected storage medium.

5

6

7

8

5. *You must now select the approval status that you wish to delete. All images from the selected medium that are also of the status that you select here will be deleted by the operation.*

   Use ▲ and ▼ to select **All Red**, **All Red & Yellow** *or* **All**.

6. *Then press ➤ to open the delete dialog for your selected status.*

   You are now asked to confirm the delete.

7. • ***To confirm, press** the + button **to change the status to** Yes **and then press the** OK **button to execute the delete.***
   • ***To cancel, press the menu button to exit; or press** the − **button to set the status to** No **and then press the** OK **button to cancel.***

   You now return to the main menu. Either move on to another setting by using the navigator button or

8. *Press the menu (**EXIT**) button to exit the menu system.*

FORMAT

The camera is only able to read and write to storage media that have been formatted. New cards or disks sometimes have no formatting, or you might want to convert media that are currently using a format that the camera cannot read.

Each time you get a new compact-flash card, it is recommended that you format it as described below, even if the digital capture unit is already able to read it. This will enable the digital capture unit to use the card more efficiently.

The digital capture unit is capable of formatting any type of medium connected to it, including compact flash cards and ImageBank-II units. When you do this, all data contained on the target medium will be erased.

You can also use the format command to delete all images on a disk. This is sometimes faster than using the delete function, but it is not as flexible because all data from all batches will always be erased.

There are two ways to format cards. The quickest way is to use the Format card button on the grip. If you prefer, you can also use the menu on the digital capture unit.

Format card button / camera

Press the **Format Card** button on the camera grip. It is purposely recessed to avoid unintentional use, so use a ball-point pen or similar. A warning is displayed as verification.

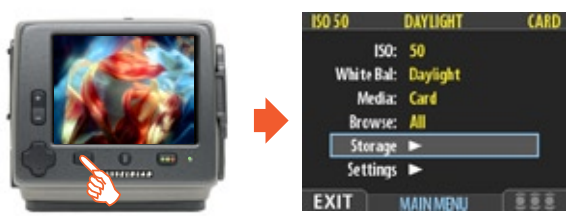
Format card / digital capture unit

1. *If you have more than one type of medium connected (e.g. a compact-flash card and ImageBank-II), then start by selecting the medium you wish to format by choosing* **Storage** *(see also* ***Selecting the Current Storage Medium*** *).*
2. *Select* **MAIN MENU > STORAGE > Format**. *(See also* ***Navigating the Menu System*** *for details about how to find this setting.)*
3. *Press the ➤ to open the* **Format Card** *dialog.*
4. *You are now asked to confirm the operation.*

- *To confirm, press the* **OK** *button. This will carry out the format and delete all data on the current medium.*
- *To cancel, press the* **EXIT**.

5. *You now return to the* **STORAGE** *menu. Either move on to another setting by using the navigator button or press the menu (***EXIT***) button to exit the menu system.*

1

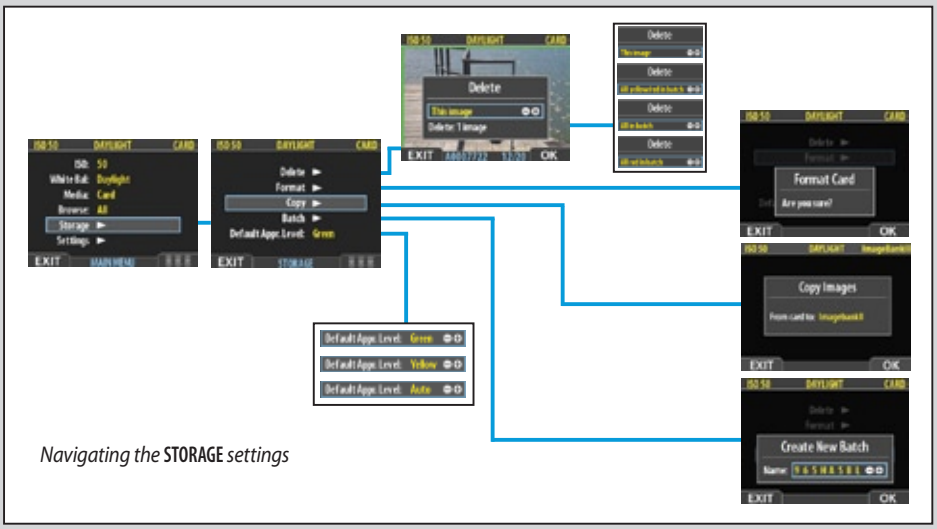


2

3

4

5



Navigating the **STORAGE** *settings*

COPY

To free up space on a CF card, while on location for example, files can be copied onto an ImageBank-II. All batches and files remain on the card until deleted.

There are several options available and these choices should be selected before copying to ensure the correct action takes place.

Proceed as follows:

1. *Press* **MENU** *and navigate down to select* **SETTINGS**.
2. *Press the* ➤ *button and navigate down to* **Custom Options**.
3. *Press the* ➤ *button to select between* **Copy to I-Bank** *or* **I-B connection**. *Both options have two choices selected by the the* ⊖ *or* ⊕ *buttons:*

   Copy to I-Bank: *Choose between copying files from the active batch only or all files from the entire card:*

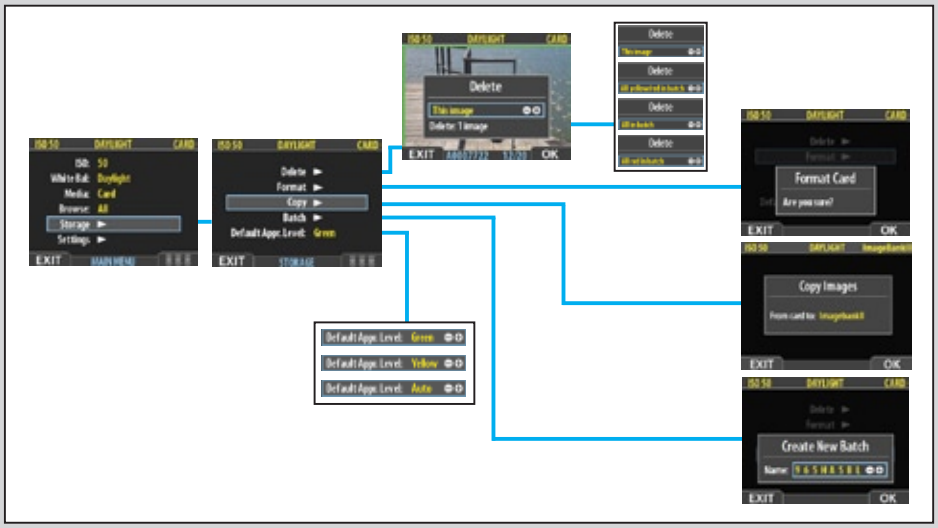
   Copy to I-Bank: Active batch only ⊖⊕

   Copy to I-Bank: Entire card ⊖⊕

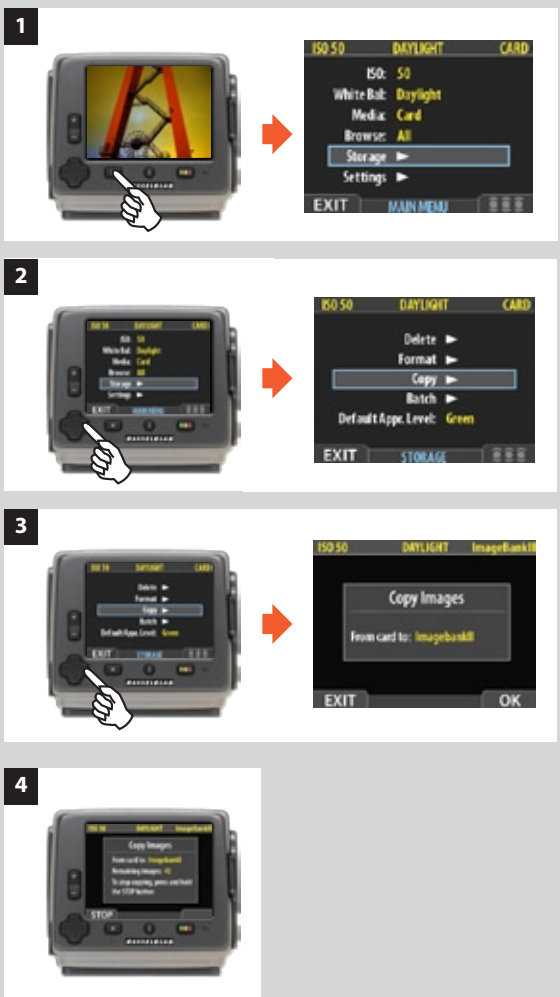
   I-B connection: *Choose between copying files into the batch already present or into a new one:*

   I-B Connection: Add to last batch ⊖⊕

   I-B Connection: Create new batch ⊖⊕



Navigating the STORAGE settings to COPY IMAGES.



To copy files:

With an ImageBank-II attached to the camera by a FireWire cable and turned on:

1. *Press* **MENU** *and navigate down to select* **STORAGE**.
2. *Press the* ➤ *button and navigate down to* **COPY**.
3. *Press the* ➤ *button to reach the confirmation dialogue.*

   To confirm, press the **OK** *button. (To cancel, press the* **EXIT** *button.)*

   Confirmation will make a copy of all batches and files and store them on the ImageBank-II in a newly created folder called 'CARD0001' (for example). If you connect the camera to the ImageBank-II again, a new folder can be automatically created with the name 'CARD0002' (for example) and so on, depending on setting (see **Menu** > **Settings** > **Custom Options**).
4. *The copying dialogue now appears to inform you of progress. Press* **STOP** *if you want to cancel the procedure.*

BATCH

Batches help you to organize your work. They are very similar to folders on a computer hard disk. Use the **Batch** command of the **STORAGE** menu each time you want to create a new batch.

For more information about batches, please see **Working with Media and Batches** .

To create a new batch:

1. *Press the* **MENU** *button.*
2. *Press ▼ to navigate down and select the* **Storage** *dialog.*
   Press ➤ and then ▼ to navigate down and select **Batch**.
3. *Press ➤ to open the* **Batch** *dialog. The new batch name will always begin with a three-digit number, which automatically increments by one with each new batch. Following this is five letters, which you can assign yourself to help make the batch easier to identify. To set the letters:*
   Use ◀ and ➤ to select one of the five letters. Then use the + or − button to step the currently selected letter up or down the alphabet until you have found the letter you want. Continue working until you have set the name you want.
4. *Press the approve (***OK***) button to save the new batch with the name you selected.*
5. *You now return to the* **BATCH** *menu. Either move on to another setting by using the navigator button or press the menu (***EXIT***) button to exit the menu system.*

Remember that all new images are stored automatically in the latest batch. It is not possible to store new images in older batches.

DEFAULT APPR. LEVEL

The Instant Approval Architecture system helps you to evaluate and mark each image based on how well it has come out. By default, the system assigns an initial approval status for each new shot based on an analysis of the distribution of exposure levels. In the factory configuration, the status of each new shot is assigned as follows:

- ***Green (approved):***

  The new shot seems to have been exposed correctly.
- ***Yellow / Amber (unclassified):***

  The new shot seems to have been over- or under-exposed.

However, you might choose instead to override this system and have all new shots assigned either as green or yellow, regardless of the exposure analysis results. A typical strategy could be to assign all shots to yellow and then review all of the shots later and promote only the best ones to green status. At the same time you might demote the most doubtful shots to red status.

See also **Using Instant Approval Architecture** for complete details about working with the approval system.

To change the default status assigned to each new image:

1. *Press the* **MENU** *button.*
2. *Press ▼ to navigate down and select the* **Storage** *level.*

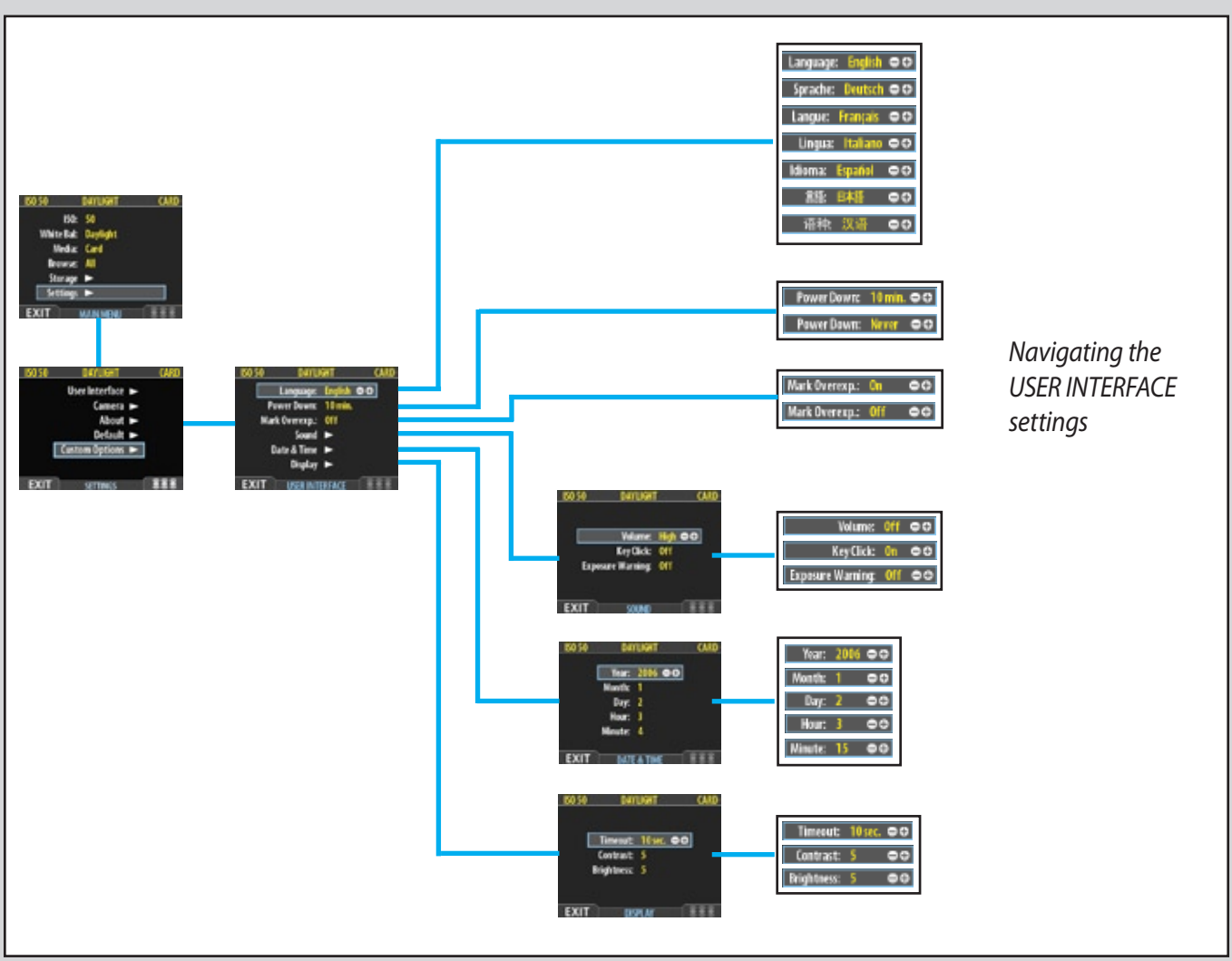
   Press ➤ and then ▼ to navigate down and select **Default Appr. level**. *Press ➤ to open the* **Default Appr. level** *dialog.*
3. *Use the the ✚ or ━ button to step through the available settings until the default status you wish to use (auto, green or yellow) is shown.*
4. *Either move on to another setting by using the navigator button or press the menu (***EXIT***) button to exit the menu system and keep your setting.*

11 Menu: *Settings*

There are a number of settings grouped under the general "Settings" heading which are:

- *User Interface*
- *Camera*
- *About*
- *Default*
- *Custom Options*

H3D II



Navigating the USER INTERFACE settings

MAIN MENU > SETTINGS > User Interface

By altering the **User Interface** settings, you can control the way the digital capture unit interacts to suit you and your preferred way of working. It also includes date and time settings.

USER INTERFACE menu items

The user interface menu includes both items and sub-menus as follows:

- **Language**:

  The menu system can be displayed in any of seven languages. This menu item enables you to select your preferred language for the menus.

- **Power Down**:

  To help preserve the charge of the battery, you can set the digital capture unit to power down after a specified period of inactivity. The effect is exactly the same as though you had pressed the off button on the camera. Once it has powered down, you must turn the H3D II on before you can continue working. Set this to **Never** to disable this feature (this is the default setting). Set to a value between 3 and 99 minutes to establish a time-out.

- **Mark Overexp.**:

  This feature helps draw your attention to areas of your images that are overexposed. When this feature is enabled, the single-image preview display will highlight each overexposed pixel by flashing it white and black.

  Set this item to **On** to enable the feature; set to **Off** to disable it.

- **Sound**:

  The H3D II uses audio feedback to help let you know if each new image is exposed correctly. This is described in **Standard Instant Approval Workflow.**

  This menu item has **Volume** (choose between ***High, Low*** and ***Off***), **Key Click** (choose between ***On*** and ***Off***) and **Exposure Warning** (choose between ***On*** and ***Off***).

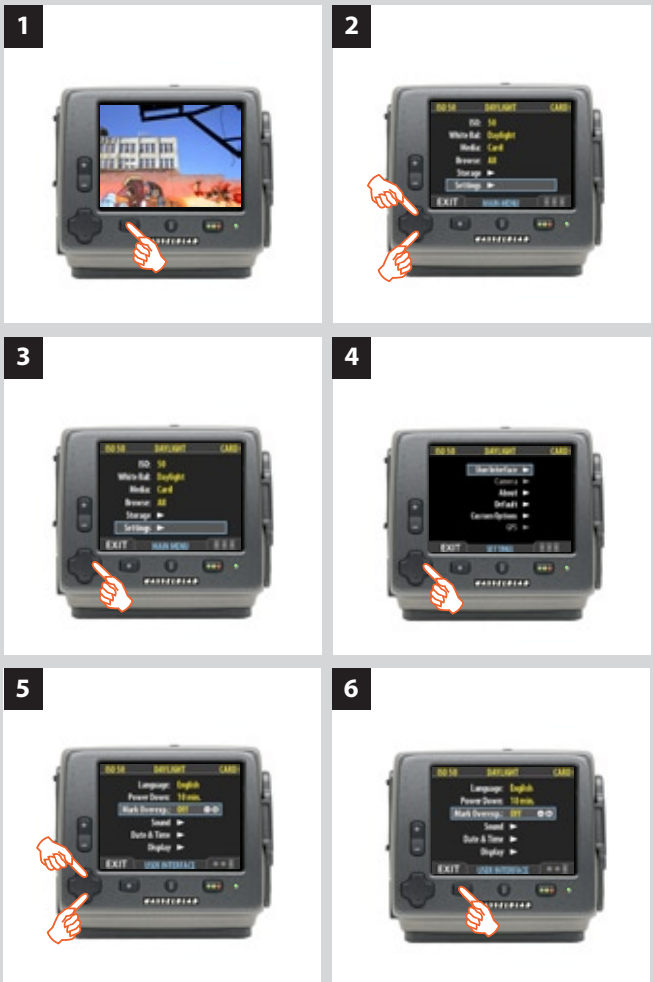
- **Date & Time**:

  The H3D II has an internal clock that keeps track of the date and time. This information is used to mark each shot with the date and time at which it was taken. It is also used to label batches with the date on which each batch was created. (*See note under 'General overview of digital capture unit' about keeping the internal battery charged to maintain Date and Time settings*).

- **Display**:

  This feature also sets the level of **Contrast** (on a scale of **1-10**) on the display. Usually, you should leave this set to the default level of 5; however in some viewing environments and/or with some types of images you may wish to increase or decrease this value. A value of 10 provides maximum contrast; a value of 0 provides no contrast (a black screen). You can also help save battery power by using a low value here.

  This feature also sets the **Brightness** (on a scale of **1-10**) on the display. This sets the brightness shown on the screen. Usually, you should leave this set to the default level of 5, however in some viewing environments and/or with some types of images you may wish to increase or decrease this value. A value of 10 provides maximum brightness; a value of 0 provides minimal brightness. You can also help save battery power by using a low value here.



Setting the options under the User Interface menu

Each of the above items can be set by similar menu navigation. Language, Power Down and Mark Overex can be set immediately by the + or − button while Sound, Date & Time and Display require another move to sub menu for final choice.

Proceed as follows:

1. *Press the menu (***MENU***) button to open the menu.*
2. *Use ▲ and ▼ to select the* **SETTINGS** *sub-menu.*
3. *Press ➤ to open the* **SETTINGS** *menu.*
4. *Press ➤ to select the* **USER INTERFACE** *sub-menu.*
5. *Use ▲ and ▼ to select the required item.*
   Press either the + or − button to make the new settings in the case of **Language**, **Power Down** *and* **Mark Overex** *or press ➤ again to access* **Sound**, **Date & Time** *and* **Display**.
6. *Press the* **EXIT** *button again to save the new settings and close the menu.*

MAIN MENU > SETTINGS > Camera

The H3D II digital capture unit can also be used with view cameras (with the appropriate adapter and cables).

The exposure time set on the unit sets the maximum length of exposure. The default setting is 1/8 sec and this is the setting that can be kept for all exposures from 1/8 sec through 1/2000sec. However, this setting should be changed in accordance with the time required if it exceeds 1/8 sec. Times of up to 32 seconds can be set.

If you prefer, you can connect the 'Flash sync input cable' between the lens PC socket and the unit which allows you to retain the default setting of 1/8 second while still being able to use exposure times longer than 1/8 second. This method also allows the use of the B setting.

Model setting variations

When using the H3D II digital capture unit with a view camera you should make the appropriate setting change accordingly. Don't forget to change the setting again if you change camera model!

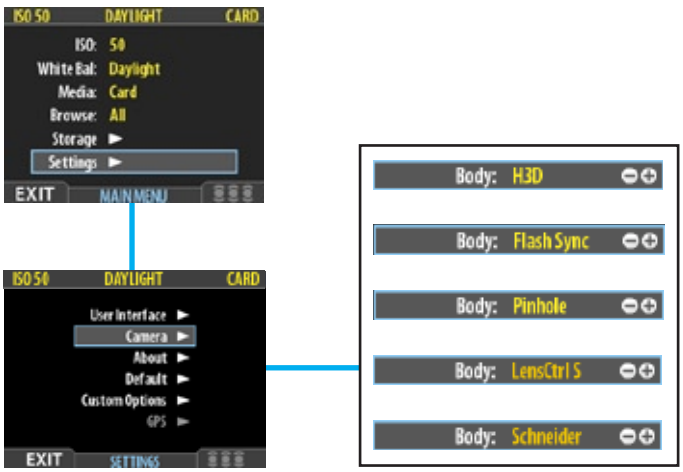
The five options are:

- **H3D** *Set automatically*
- **Schneider** For use with view cameras and Schneider lenses.
- **LensCtrlS** For use with view cameras.
- **Pinhole**

  Intended primarily for use in a studio environment where complete darkness can be achieved and captures made accordingly (also useful for 'light painting'). In this mode the H3D II uses the exposure time (as well as other required stages in a capture sequence) set in the **Capture Sequence** dialog. The back can be triggered either via the **START** (MENU/EXIT) button or from FlexColor (see later section for full description of Capture Sequence settings procedure).
- **Flash sync**

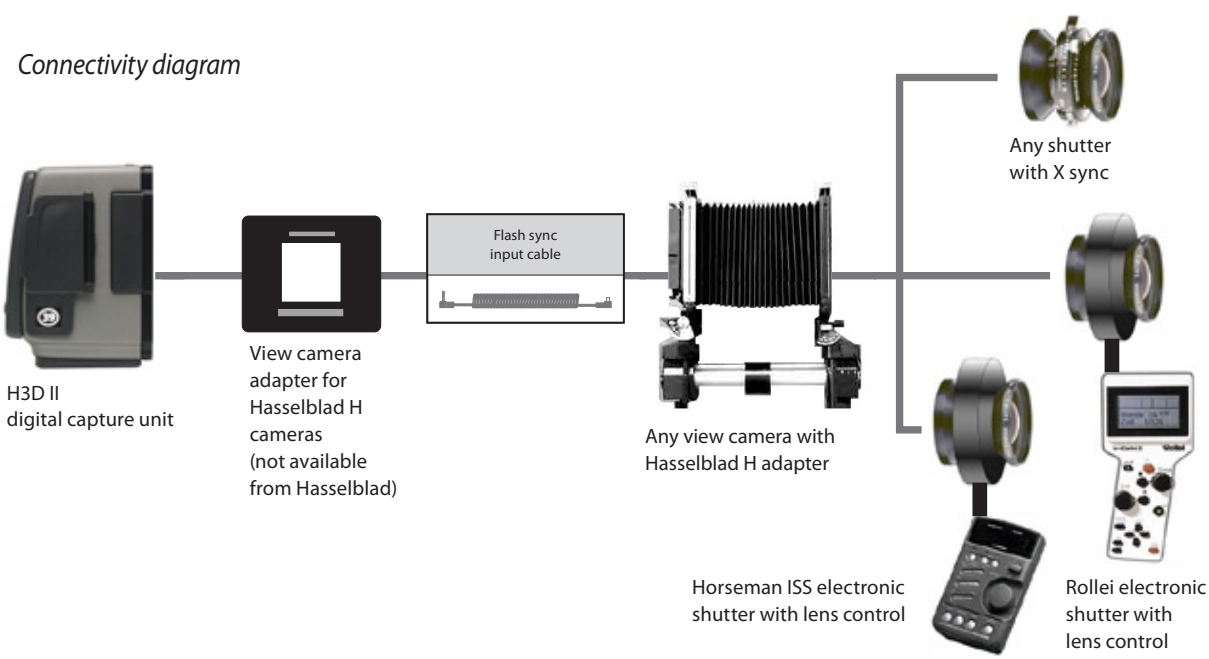
  For use with view cameras.

Navigating the CAMERA settings



The CAMERA item on the menu remains dimmed when the digital capture unit is attached to the H3D II body.

Connectivity diagram



H3D II digital capture unit

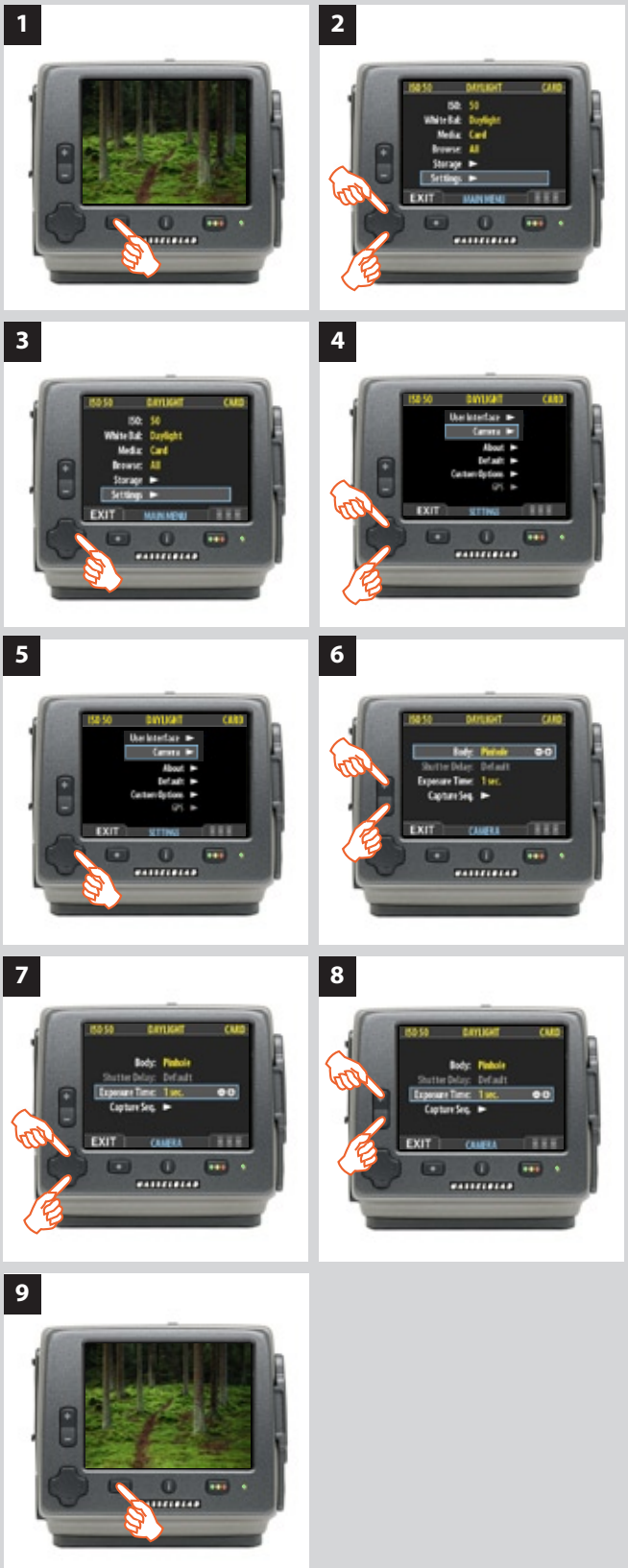
View camera adapter for Hasselblad H cameras (not available from Hasselblad)

Any view camera with Hasselblad H adapter

Any shutter with X sync

Horseman ISS electronic shutter with lens control

Rollei electronic shutter with lens control



Setting CAMERA model and options

These settings are only available when the digital capture unit is not attached to an H3D II body.

Proceed as follows:

1. *Press the menu (***MENU***) button to open the menu.*
2. *Use ▲ and ▼ to select the* **SETTINGS** *sub-menu.*
3. *Press ➤ to open the* **SETTINGS** *menu.*
4. *Use ▲ and ▼ to select* **CAMERA**.
5. *Press ➤ to open the* **CAMERA** *menu.*
6. *Press either the ✚ or ▬ button to select camera model.*
7. *Use ▲ and ▼ to select* **EXPOSURE TIME** *or* **CAPTURE SEQ.** *if required.*
8. *Press either the ✚ or ▬ button to make new settings if required.*
9. *Press the menu (***EXIT***) button to exit the menu system and keep your settings.*

Options available for PINHOLE and FLASH SYNC

Shutter Delay

The normal setting is Default and cannot be changed.

Exposure Time

This setting should be changed for cable-free exposure times longer than 1/8 second, ensuring that it matches the shutter speed/exposure time on the camera/lens. The settings range from 1/8 second to 32 seconds (1/8 second is the default setting).

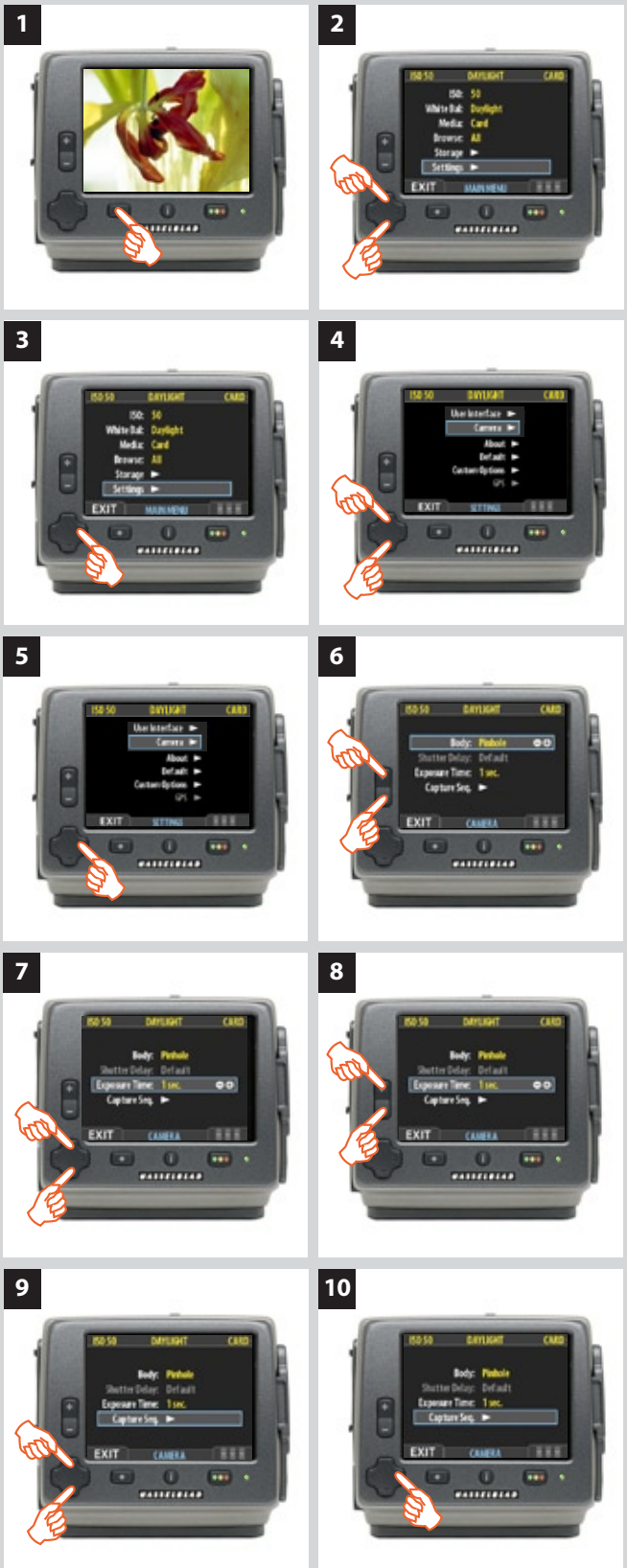
Capture Sequence

This feature functions in the same manner as an interval timer.

Initial delay: Controls the amount of time required to elapse before the first capture.

Delay: Controls the amount of time required between each capture.

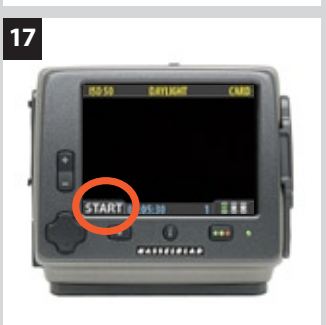
Count: Controls the total number of captures required.

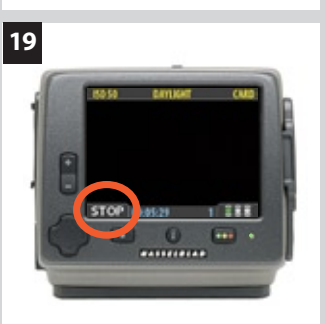


Setting EXPOSURE TIME and CAPTURE SEQUENCE

Proceed as follows:

1. *Press the menu (***MENU***) button to open the menu.*
2. *Use ▲ and ▼ to select the* **SETTINGS** *sub-menu.*
3. *Press ➤ to open the* **SETTINGS** *menu.*
4. *Use ▲ and ▼ to select* **CAMERA**.
5. *Press ➤ to open the* **CAMERA** *menu.*
6. *Press either the + or − button to select* **PINHOLE**.
7. *Press ▲ or ▼ to select* **EXPOSURE TIME.**
8. *Press either + or − to make an exposure time setting.*
9. *Press ▼ to select* **CAPTURE SEQUENCE.**
10. *Press ➤ to open the* **CAPTURE SEQUENCE** *menu.*





11. *Press either the* + *or* − *button to make an* **INITIAL DELAY** *setting.*

    This setting controls the amount of time that elapses before the first capture in the sequence.

12. *Press* ▼ *to select* **DELAY.**

13. *Press either* + *or* − *to make a* **DELAY** *setting.*

    This setting controls the amount of time between each capture in the sequence.

14. *Press* ▼ *to select* **COUNT.**

15. *Press either* + *or* − *to make a* **COUNT** *setting.*

    This setting controls the number of captures in the sequence.

16. *Press* **OK** *to confirm all the settings.*

17. *The unit is now ready for a sequence start. Note that the* **MENU/EXIT** *button now diplays* **START** *instead:*

18. *Press* **START** *to set the sequence running.*

19. *Note that the* **EXIT** *button now displays* **STOP.** *The sequence can be stopped at any time by pressing this button and the standard menu display returns.*

MAIN MENU > SETTINGS > About

The About box

Occasionally, Hasselblad releases updates to the internal software ("firmware") of the digital capture unit. These updates may fix small errors and/or add new features. You will probably receive additional assistance from Hasselblad technical support if and when a new update is available. In this case, it may be important to know the serial number and current firmware vision of your digital capture unit.

The About box also shows the focus calibration ID (which must match the information on the grip display under 'System Status' to obtain the optimum performance). Each digital capture unit is carefully adjusted to match the corresponding camera body, which in turn produces the matching verifications respectively. If you want to use different digital capture units with different camera bodies, please refer to a Hasselblad Service Center for more information.

To find this out:

1. *Select* **MAIN MENU** > **SETTINGS** > **ABOUT**. *(See also* ***Navigating the Menu System*** *or details about how to find this setting.)*
2. *Press* ➤ *to open the* ***About*** *dialog, which shows the serial number and firmware version. When you are done reading the information, press the menu (***EXIT***) button to return to the* **SETTINGS** *menu. Either move on to another setting by using the navigator button or press the menu (***EXIT***) button again to exit the menu system.*

MAIN MENU > SETTINGS > Default

The **DEFAULT** setting will reset all custom settings you have made back to the original default / factory settings.

To reset all settings:

1. *Select the* **MAIN MENU** > **SETTINGS** > **DEFAULT** *entry.*
2. *Press the* **OK** *button and then the* **EXIT** *to return.*

MAIN MENU > SETTINGS > Custom Options

Copy to I-Bank: Active batch only

Copy to I-Bank: Entire card

I-B Connection: Create new batch

I-B Connection: Add to last batch

Tilt sensor: Auto

Tilt sensor: Lock at 0 deg.

Tilt sensor: Lock at 90 deg.

Tilt sensor: Lock at 180 deg.

Tilt sensor: Lock at 270 deg.

Menu Ctrl: Wheels active

Menu Ctrl: Wheels inactive

Display: On by half press

Display: Off by half press

Display: Toggle

Selecting an option

Proceed as follows:

1. *Press* **MENU** *and navigate down to select* **SETTINGS**.
2. *Press the* ➤ *button and navigate down to* **Custom Options**.
3. *Press the* ➤ *button to select the option. Choices are selected by the* + *or* − *buttons.*

• Copy to I-Bank

When copying files to an ImageBank-II, you can choose whether you want to copy files from the active batch only or all files from the entire card.

• I-B connection

You can choose whether you want to add files to the last batch or create a new batch every time the ImageBank-II is connected.

• Tilt sensor

The tilt sensor sets the viewing orientation of captures when they appear in Phocus / FlexColor. In order to avoid unintentional orientation changes when the camera is pointing straight up or down, for example, the tilt setting can be locked at:

Auto, Lock at 0 degrees, Lock at 90 degrees, Lock at 180 degrees and Lock at 270 degrees.

• Menu Ctrl.

This sets whether the front and rear control wheels are active or inactive when navigating the sensor menu.

• Display

This setting allows you to turn the digital capture unit display on when half-pressing the shutter release button. Three options are available:

- ***Display ON by half-press***
- ***Display OFF by half-press***
- ***Toggle display by half-press***

H3D II

12

Light Metering & Exposure Control

- **Three metering methods**
- **Five exposure method**
- **Extremely accurate light metering**

The light metering system of the HVD90X is capable of selective sensitivity producing three reflective metering methods: Average, CentreSpot and Spot. All methods are measured in increments of 1/12 EV. Information transfer is rapid and automatic ensuring consistently correct exposure settings even in difficult and changeable lighting situations.

Light measurement is made through the lens (TTL) and exposure is controlled manually or automatically by the control wheels and/or settings. The information is visible on both the grip display and the viewfinder display.

A great deal of control is available ranging from 100% manual through to sophisticated fully automatic by way of the various exposure methods: Manual, Aperture priority, Shutter priority, Program and Program variable.

Light metering and exposure control

Two primary factors have to be considered when making exposure control choice, namely, metering method and exposure method:

Metering method *determines in which manner the light measurement is made and how much of the image is taken into account(Centre Weighted, CentreSpot and Spot).*

Exposure method *involves the parameters and deciding factors about how the light measurement is translated into aperture and shutter speeds. Here the choice is about the camera controls and their effect on the result or suitability for the subject. Included in this choice is the type of automation too (Manual for 100% user control, Aperture priority, Program, etc for automated control).*

Some methods and modes are much more suited to various situations and applications than others, while some depend to a greater degree on personal preference and ways of working. A discussion of the points to consider in this context is beyond the scope of this manual. If you are not sure about choice, please check in other general photographic literature for a fuller explanation. Also check our website occasionally – www.hasselblad.com – for articles and discussions concerning such matters.

Remember that all exposure configurations are only applicable to the ISO setting in use!

Since the light measuring system is TTL, filter factors, lens extension / extension ring factors, etc, are automatically taken into account for average purposes. However, some combinations of methods and equipment can cause slight discrepancies for various reasons and therefore for critical work you should make alternative captures to suit personal preference.

Exposures are displayed on the grip display to within 1, 1/2 and 1/3 EV tolerances (dependent on setting). This means that 'half-stops' are shown in a form that can differ from more traditional displays. For example, the position between f/ 8 and f/11 is displayed as f9.5 and likewise the position between 1/30s and 1/60s is displayed as 45. Therefore a display showing 'f 9.5 45' simply means 'f/9.5 at 1/45 second'. The appearance of an 's' after the shutter speed signifies whole seconds so, for example, '32s' on the display signifies an exposure time of 32 seconds, not 1/30.

Metering method

There are three metering methods available. All three are reflective methods (measuring the light reflected off various selected parts of the subject according to method) and are through the lens (TTL). These have the following designations (with their respective display symbols):

- [●] — *Centre Weighted*
- [⊙] — *CentreSpot*
- [•] — *Spot*

Centre Weighted
(23 x 20 mm) ≈ 25%

CentreSpot
(23 x 20 mm) ≈ 25%

Spot
(diameter 7.5mm) ≈ 2.5%

Centre Weighted: *Commonly used for 'average' light situations where there is no particular dominance of light or dark areas across the tonal range. Takes into account approximately 25% of the image seen in the viewfinder.*

CentreSpot: *Emphasises the central section of the focusing screen equivalent to approximately 25% of the image. This provides a balanced assessment and is a typical choice where the main subject is in the centre of the image.*

Spot: *The sensitive area is equivalent to approximately 2.5% of the image area (the central spot on the viewfinder screen). Any parts of the image outside of this area will not affect the exposure reading. This provides a very accurate measurement of specific tones.Typically used in the zone system and similar light measuring situations where maximum control is required. Also excellent for tonal comparison measurements. The spot mode can display 'zones' instead of EVs in the viewfinder display (see Camera Options).*

Selecting metering method

Proceed as follows with the camera in active mode:

1. *Press the* **EXP** *button on the viewfinder.*
2. *Turn the rear control wheel (in either direction 2a) to successively access the three choices:* **Centre Weighted, Centre Spot** *and* **Spot** *2b.*
3. *Press* **Save** *(***ISO / WB** *button) to retain the setting.*

Exposure method

Exposure can be controlled either manually or by using one of four automatic modes. These have the following designations on the grip display:

M – Manual

A – Aperture (priority)
S – Shutter (priority)
P – Program
Pv – Program variable

In each mode you can see both the aperture and the shutter speed information on the grip display and on the viewfinder display.

In manual mode, aperture is set by the front control wheel and the shutter speed by the rear control wheel unless set otherwise in Custom Options #26

In the automatic modes, the aperture and shutter speed settings are controlled by the camera, either partially or completely according to setting. Within this mode there are four choices.

(Please see the Appendix for P and Pv mode charts that describe the aperture and shutter speed setting combinations).

MANUAL EXPOSURE — M 1, 2, 3, 4

Manual mode will provide total user control of the shutter and aperture settings.

To set the Manual mode, proceed as follows with the camera in active mode:

1) *Press the* **EXP** *button on the viewfinder.*
2) *Turn the front control wheel (either direction 2a) until you reach* **M** *(Manual) 2b.*
3) *Press* **Save** *(***ISO / WB** *button) to retain the setting.*

In this mode the shutter speed and aperture settings are manually chosen by turning the front and rear control wheels.

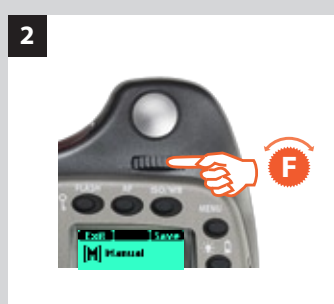
The standard exposure setting is obtained when the pointer over the exposure scale is positioned above the central index (in the viewfinder display).

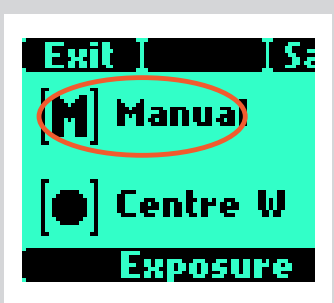
Any deviation from this standard setting is displayed by:

- ***the pointer appearing elsewhere than above the central index***

and

- ***by figures above the scale representing the amount of adjustment in EVs.***





4

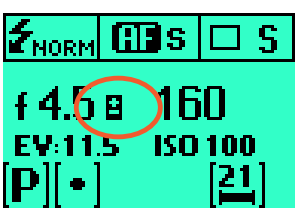
A '+ 0.7' above the scale in the display, as in illustration 4 for example, would indicate a '0.7 EV overexposure' setting. Conversely, a '-2' , for example, would indicate a '2EV underexposure' setting. Note that the appearance of a +/- symbol on the grip and viewfinder displays in manual mode means that a change has been made to the exposure compensation setting. See later section on 'Exposure compensation'.

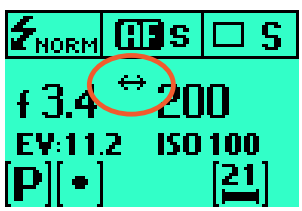
The actual aperture settings and shutter speeds are indicated to the right of the exposure scale in the conventional manner. (Note: 'full-stops', 'half-stops' and 'third-stops' are also displayed, according to setting (see 'increment setting). For example, a setting between f/8 and f/11 will appear as f/9,5 if 'half-stop' is chosen).

1

2

3





AUTOMATIC EXPOSURE — A, S, P, Pv 1, 2, 3

Automatic exposure provides a choice of two ways of controlling shutter speed and aperture settings semi-automatically and two ways fully automatically:

Aperture priority: A - The aperture is manually chosen by you by turning the front control wheel, and the shutter speed is automatically chosen by the camera.

Shutter priority: S - The shutter speed is manually chosen by you by turning the front control wheel, and the aperture is automatically chosen by the camera.

Programmed: P - In this mode, an aperture / shutter combination is chosen by the camera according to the EV measured (metering method remains as your choice), though only within pre-set appropriate limitations to suit various requirements and applications.

Programmed variable: Pv - This mode is very similar to Programmed, except with the additional parameters of lens focal length being automatically taken into account. For example, long shutter speeds will automatically be avoided with a long focal length lens.

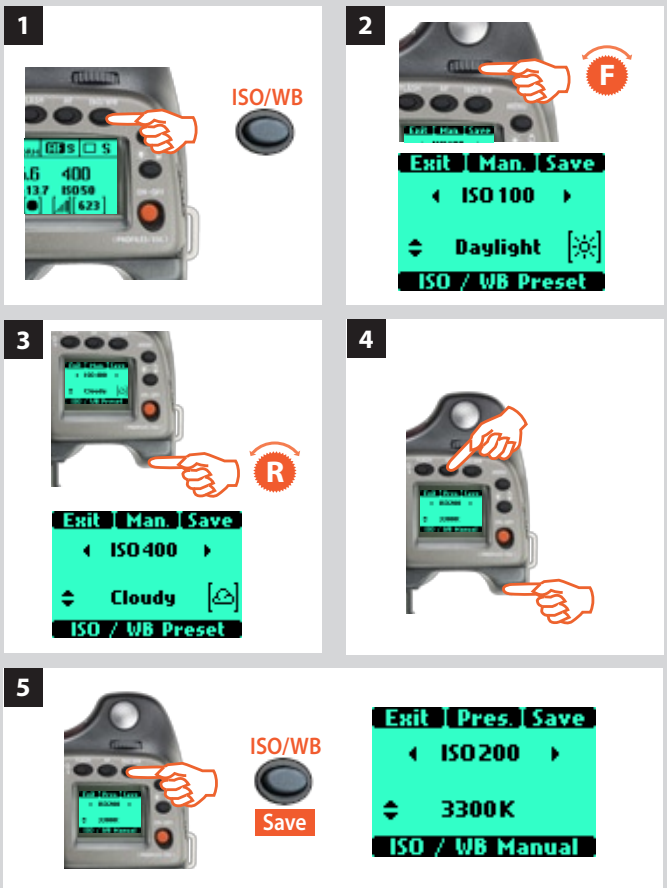
To set one of the modes, proceed as follows with the camera in active mode:

1) *Press the* **EXP** *button on the viewfinder.*
2) *Turn the front control wheel (either direction) until you reach the required setting.*
3) *Press* **Save** *(***ISO / WB** *button) to retain the setting.*

In Automatic mode the front control wheel selects alternative aperture /shutter combinations while maintaining the same EV and the rear control wheel alters the amount of exposure compensation. The compensation appears as a +/- symbol on the grip display and viewfinder display.

Variations (chosen by using the front control wheel) from the specific combination selected by the P or Pv mode are signified by a double arrow symbol appearing between the aperture and speed settings on the grip display. These new variations, however, still provide the correct exposure.

Aperture and shutter speed settings can both be changed even while the busy light on digital capture unit is flashing.



ISO & White Balance button

The **ISO/WB** button provides immediate access to ISO and White Balance settings. The front and rear control wheels are used to make the desired changes. The settings are automatically and simultaneously transferred from the camera to the digital capture unit. Please note that the changes are only displayed on the digital capture unit unit when the settings have been saved.

1) *Press the* **ISO/WB** *button on the grip.*
2) *To make an* **ISO** *setting, turn the front control wheel to choose between:*

   50, 100, 200 and 400 (39 and 50 Mpix models)

   100, 200, 400 and 800 (31 Mpix models)
3) *To make a preset* **White Balance** *setting, turn the rear control wheel to choose between:*

   Daylight, Shade, Cloudy, Flash, Fluorescent and Tungsten
4) *To make a* **Manual White Balance** *setting (not a* ***White balance test exposure),*** *press the* **Man.** *(***AF***) button and then turn the rear control wheel to choose a color temperature:*

   2000 – 10000 K
5) *Press* **SAVE** *(***ISO/WB** *button) to save the setting.*

White Balance settings are only approximate color temperature settings. They are only used for user convenience when viewing. 3F/3FR files are raw format file and therefore contain all the information required for correction in FlexColor and/or other software, regardless of the original color temperature at the time of exposure .

AE- L button 1, 2, 3, 4, 5, 6

This button has two main functions that can be incorporated in various working methods involving exposure locking. It also has an extra function for the flash meter capability (see AE-L section under Flash). The **AE-L** button can:

a) lock an EV setting in manual and automatic modes.

b) be used as a Zone System placement button.

a) When the button is pressed (fig 1), the light metering facility is locked to the EV setting at that moment. An **L** (= locked) symbol appears between the shutter speed and the aperture indication (fig 2) on the grip display and viewfinder display to confirm the status. Press the **AE-L** button again to unlock (toggle function).

In the locked setting, the aperture and shutter speed become interlocked. In this way, a new aperture/shutter combination that still represents the same EV, can be rapidly chosen. For example, if you set the shutter at 1/125s and the aperture at f/8 and lock them together, you can access new EV-equivalent combinations of, for example, 1/30s a f/16 or 1/500s at f/4 just by moving the front control wheel.

In practice this means you could, for example, in auto mode, position the metering area (spot setting) over an area in the subject that you determine to be equivalent to a mid-grey and lock it with the **AE-L** button. You can then recompose the picture with the metering zone positioned over an area much brighter or darker while still retaining the original exposure setting and choose a new combination of aperture and shutter speed settings.

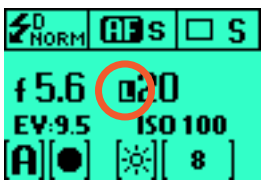
b) The **AE-L** button also allows the spot metering function to make zone placements. When the **AE-L** button is pressed, the metered area is saved as a mid-grey (Zone 5). When the spot area is then placed over another part of the scene, the new area is then compared to the saved area and the difference can be read off the scale seen in the viewfinder. For example, in a landscape situation you could meter the foreground, lock the reading with the **AE-L** button (thereby locking that area to be reproduced as the equivalent to a mid-grey 18%), point the camera at some rocks to see by how much darker they are compared to the foreground by the EV difference read off the scale (illus 3).

If you have chosen **Spot** together with **Zone** display (see 'Custom options' for settings and 'Zone' in the Appendix for further information about the zone system.) as well as one of the automatic modes **A**, **S**, **P** or **Pv**, point the spot marking at an area that you decide should be a Zone 5 and click the **AE-L** button (illus 4). The meter will now display different parts of the subject as zone values (illus 5) in the viewfinder display, instead of EV deviations, as you move the spot marking over the subject. (Included are Lo and Hi (illus 6)to signify areas beyond the range of the sensor).

Alternatively you can choose to re-classify an area as another zone and then check the rest of the subject to see how other areas fall on the zone scale. Do this by following the above procedure and then turning the rear control wheel until you see the new desired zone value in the viewfinder display. You will also see the new exposure that will now produce that new zone. For example, you might have measured a rock at zone 5 but wish to make it darker. By moving the rear control wheel you could re-classify it as zone 4. You will then be able to see, for example, whether white clouds are now falling within the exposure range by their new Zone classification.

1

2



3

New metered area is 1.8 EV lower than the area metered when the AE-L button was pressed.

4

AE-L button pressed to call the metered area 'Zone 5'.

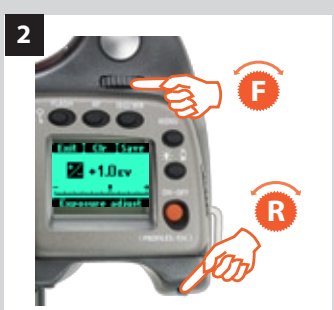
5

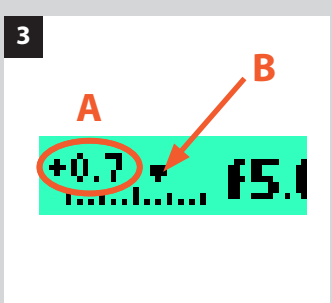
Metered area reads 'Zone 8'.

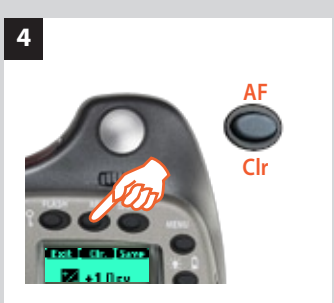
6

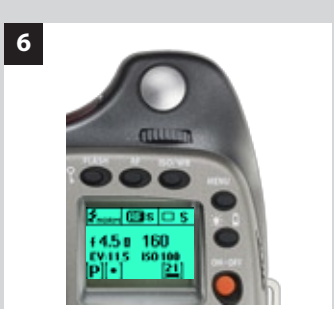
Metered area above 'Zone 10'.

Custom Options #3, #17 and #22 used to deactivate and alter the settings for the rear control wheel/ Quick Adjust facility.









Alternatively, you can also pre-set the initial zone reading in order to save time and effort where there is no freely available 'zone 5' subject for light measuring. For example, you might be on a sandy beach where you know that sand is normally classified as zone 6. You can pre-programme the zone placement by holding down the **AE-L** button while choosing the new zone value and turning the front control wheel until zone 6 appears. All new placements will then be zone 6.

Exposure compensation/Quick Adjust 1, 2, 3, 4, 5

The exposure compensation facility, for both manual and automatic modes can be set from -5 to +5 EV, in 1/3, 1 or 1/2 EV increments (Custom Option #3) and is visible above the scale in the viewfinder and as a ± symbol on the grip display.

The quickest way to make an adjustment in auto-exposure mode is use the rear control wheel.

To make a temporary compensation setting in an auto-exposure mode using the Quick Adjust facility:

a) Select chosen auto exposure mode.

b) Turn the rear control wheel to select the chosen amount of compensation.

The amount is displayed in the viewfinder as both an EV figure complete with a 'minus' or 'plus' prefix (A in illustration 3), and as a marker above a 'minus' to 'plus' scale (B in illustration 3).

Default settings provide 1/3 EV compensation and an immediate clearing of the setting after capture.

However, in Custom Options #3 you can select 1/3, 1 or 1/2 EV increment changes, in Custom Options #22 you can choose to retain the setting after capture and in Custom Options #17 you can deactivate the facility.

To make a fixed exposure compensation setting, proceed as follows with the camera in active mode:

1) Press the +/- button on the viewfinder.

2) Turn either the front or rear control wheels to increase or decrease the amount of compensation in 1/3 EV steps.

3) The amount is displayed in the viewfinder as both an EV figure complete with a 'minus' or 'plus' prefix (A in illustration) , and as a marker above a 'minus' to 'plus' scale (B in illustration).

4) Press **Clr** *(***AF** *button) to reset any compensation back to zero.*

5) Press **Save** *(***ISO / WB** *button) to retain the setting.*

6) A '±' symbol is then displayed between the aperture and shutter speed setting as confirmation of the setting.

H3D II

13

General Functions

- Manual and autofocus modes
- Two drive modes
- Profiles

This section describes the basic and general functions used in most situations.

By understanding the capabilities of the H system you will be able to gain a great deal of control of how you work in the future. By taking advantage of the many features available, you might well find your normal practices changing for the better. As all features are user controllable, you tailor the way the camera works according to your preferences.

Features such as the Quick adjust wheel and Profiles, for example, do not have to be used of course, but you are advised to read about them and see if they might suit your way of working.

Power

*The camera can be set at two active power modes – **ON** or **Standby** – as well as **OFF**. In active modes, battery consumption is least in **Standby** mode and most in **ON** mode. The camera enters **Standby** mode to preserve battery consumption after 10 seconds (Default. Can be changed in Custom Options #1). Both the grip and the digital capture unit displays are dimmed accordingly.*

*The digital capture unit becomes inactive after the period set in **POWER DOWN** (Menu > Settings > User Interface > Power Down).*

ON

To activate the camera press the red **ON.OFF** button until you see the start-up H3D logo appear on the grip display. The logo is automatically followed by the main screen. The camera is now in **ON** mode.

After a set period of inactivity (programmable in Custom Options) the camera automatically enters **Standby** mode, signalled by the appearance of the H3D logo again.

Standby

In this mode the camera is in a mainly inactive 'standby' mode and is ready to be immediately reactivated to the **ON** mode by:

- *pressing the shutter release button half way*
- *pressing the* **Stop down** *button*
- *clicking the* **ON.OFF** *button*
- *pressing the* **Mirror up** *button.*

In this mode, signalled by the standby H3D II logo appearing on the grip display, the demand on the batteries is very low. It is ideal for general use where intervals between shots exceed a few seconds.

Standby mode is automatically set from the **ON** mode after 10 seconds (default) of inactive use (programmable in Custom Options).

OFF

From the active screen, press (not click !) the red **ON.OFF** button for a half second. All buttons (except the **ON.OFF** button) remain ineffective, producing virtually no demand on the battery. This is the normal mode when transporting or storing the camera or where there might be a risk of inadvertently activating the camera. (However, remove the batteries if you are going to store the camera for a period of more than a few weeks).

In this mode neither the viewfinder display nor grip display information is available.

Manual focus

*There is both a **Manual Focus** mode setting and a **Manual Override** capability. **Manual Focus** is a specific setting that you actively make, whereas **Manual Override** is always available as a temporary override of an autofocus setting.*

*In **Manual Focus** mode, focusing is carried out by rotating the focusing ring in the conventional manner. The focus setting remains until changed as with a conventional non-autofocus lens. This means that pressing the shutter release button will not activate a focus setting change as it does in autofocus. To change back to autofocus, you must make a new setting (by pressing the **AF** button and choosing **AF S** or **AF C**).*

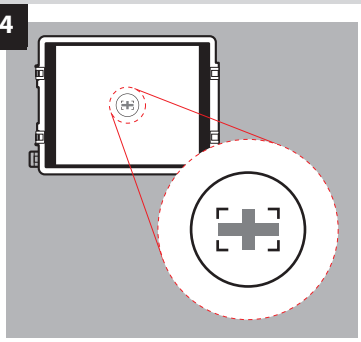
*With **Manual Override**, you can manually alter a focus setting that has been made in the autofocus mode, by rotating the lens barrel in the conventional manner and without having to change modes. As long as the shutter release button is kept at the half-press position, the new focus setting is maintained. By releasing the pressure on the shutter release button and pressing again, the autofocus function is immediately reactivated.*

1

2

3

4



Manual focus mode

The ***Manual focus mode*** *is set by the front control wheel on the grip in the following manner:*

In camera active mode:

1) *Press the* ***AF*** *button on the grip.*
2) *Turn the front control wheel to: Manual*
3) *Press* ***Save*** *to store the setting.*

You can also use the shutter release button 'half-press' function to save a new setting and automatically return to the main screen.

Natural friction is inherent in the design to purposely reproduce the secure feel of a completely manual lens.

Please note that when focusing manually, the infinity and closest distance marks on the lens scale can appear to be positioned beyond the central index. This is only an apparent effect and does not change the focusing range of the lens.

Autofocus override in Manual mode

See Autofocus section for a description of how to use the advantages of a rapid autofocus check while remaining in Manual mode.

Autofocus

Autofocus mode can be either ***Single Shot*** *or* ***Continuous*** *and is activated by pressing the shutter release to the half-press position. Its operative range from EV1 - 19 at ISO100. The point of focus is determined according to the vertical and horizontal areas (see illus 4.) within the central rectangular zone on the focusing screen. When light levels are too low or the contrast of the subject is too low, auxiliary illumination (situated on the top of the grip) is automatically activated if desired. The operative distance is approximately six metres from the camera. Alternatively, a suitable attached flash unit that has a similar facility (a Metz 54/70, for example) can also be used instead. This feature can be altered in settings; see under Custom options/AF assist light.*

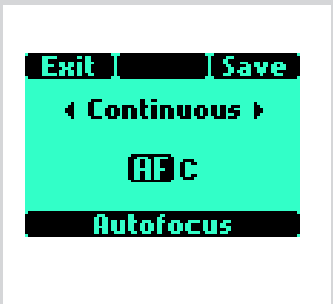
The autofocus range on the HC 4/120 Macro lens can be limited by a specific setting on the camera allowing for near range, far range or full range. This only appears on the grip display together with this particular lens.

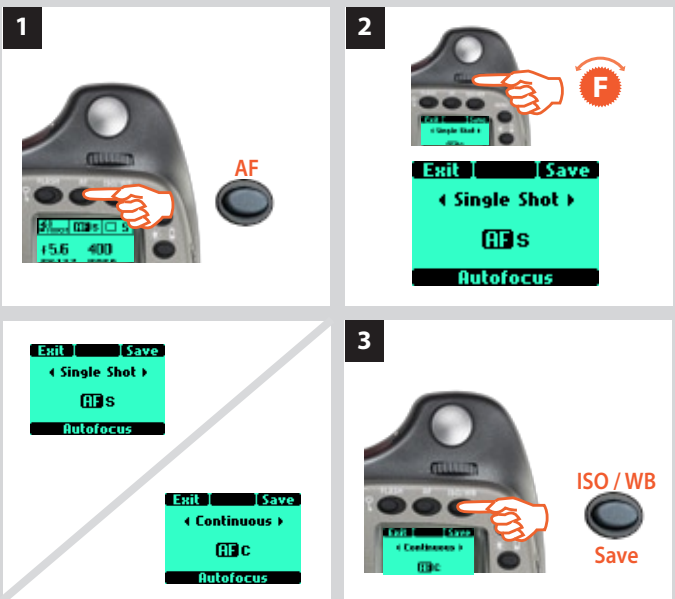
Single Shot

In ***Single Shot*** setting (***AF S***), the shutter release will be blocked until the camera finds the optimum focus setting. This ensures that no captures can be made that are not finely focused. However, this delay will normally be only a fraction of a second in good lighting conditions with a clear focusing pattern.

Note though that in this mode the lens will focus at a distance and will remain focused at that distance while pressure remains on the shutter release button. In this way, you can focus on a nearby object for example, temporarily positioned within the focusing zone on the viewing screen and then without releasing pressure on the shutter release button, recompose knowing that the focus remains on the object chosen even though it is now outside the focusing zone. Releasing the pressure on the shutter release button and pressing again half way would now change the focus setting to the distance of the object within the focusing zone.

See under 'Manual override in autofocus mode' for a useful way of working with manual and autofocus settings in a combined manner.





Continuous

At Continuous setting (**AF C**), the shutter can be released rapidly before the lens is focused in order to capture a split-second shot (in **Single Shot**, a capture cannot be made until the camera has had time to focus). However, the camera will continue to focus if a moving subject is within the focusing zone or if you recompose, even though the shutter release button is half pressed.

One method to exploit this feature when photographing in a rapidly changing situation such as photojournalism, for example, is to keep the shutter release button pressed down. In this way the lens focuses constantly (according to the focusing zone) and by momentarily releasing the pressure on the shutter release and then immediately pressing again, you minimize the amount of time needed for the lens to check focus, thus ensuring a split-second shot at optimum focus.

Autofocus mode

Autofocus is set via the control wheels in the following manner:

In camera active mode:

1) *Press the* **AF** *button on the grip.*
2) *Turn the front control wheel to:* **Single Shot** *or* **Continuous** *as required.*
3) *Press* **Save** *(***ISO/WB** *button) to store the setting.*

Manual override in autofocus mode

Manual override is always possible in automatic focus mode without any need to make a new setting; just rotate the focusing ring in the conventional manner. As the lens barrel does not rotate in autofocus mode, you can hold the focusing ring for instant manual adjustments as you would with a conventional lens. However, to retain the new manual focus adjustments, you must maintain the pressure on the shutter release button. You can instantly return to the automatic focusing mode by releasing the pressure on the shutter release button first and then pressing the release button halfway again.

The instant manual override facility produces a convenient way of working. You can take advantage of autofocus while retaining an instantly adjustable manual focus check if preferred for pin-point accuracy without making any changes in the settings.

Another method for users who prefer more manual focus control while maintaining the benefits of the accuracy of autofocus is to set the camera to Manual focus and the User button to AF (Single) drive (see 'User button function list').

Focus is then adjusted manually with the focusing ring as normal but when the User button is pressed, the autofocus facility temporarily operates in AF S mode. After the new focus adjustment has been made automatically, the camera reverts immediately to manual focus control when the User button is released. Therefore, you can recompose the picture without having to maintain pressure on the release button in order to retain the newly automatically made focus setting.

Profiles

The profiles feature allows rapid access to pre-determined combinations of settings that increase the speed and security of workflow. One example might be in a social situation where there might be a need for formal outdoor portraiture followed by informal indoor handheld flash-assisted wide-angle shots, both situations requiring very different settings in a stressful environment. By predetermining the relevant settings required beforehand for each situation, they can be saved collectively as a profile. By calling up the profile, you can then be assured that all the settings are correct at the press of one button.

For example, you might choose – autofocus single, bracketing, programmed exposure, etc – for outdoors. Once set, you would click on the red **PROFILES** *button, select a profile name and press* **SAVE**. *A new name can be entered for the new profile - 'Outdoors', for instance - and saved again. New settings are made for the indoor shots changing to flash, Pv setting, etc and the procedure repeated. By simply accessing 'Outdoors' or 'Indoors' in the profile list, all the relevant settings will be instantly and correctly implemented to match the situation.*

There are four profiles: **Standard, Full auto, Studio** *and* **Fill flash**. *All except Standard can be changed and renamed.*

The pre-set profiles feature the following:

Standard: *normal flash sync, autofocus (single), single drive, autoexposure (aperture priority), average metering, user button -None*

Full auto: *normal flash sync, autofocus (single), single drive, programmed exposure, centre weighted metering, user button -None*

Studio: *normal flash sync, manual focus, single drive, manual exposure, spot metering. user button - AF drive*

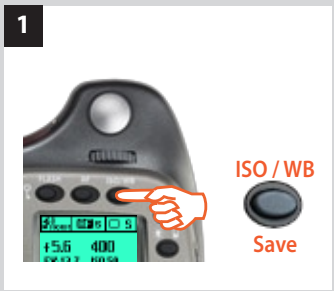
Fill flash: *normal flash sync (adjusted output -1.7EV), autofocus (single), single drive, autoexposure, average metering.*

All user profiles can be restored to default values again simply by removing the battery and holding down the **MENU** *and* **ISO/WB** *buttons together and while keeping them depressed, replace the battery. There will be an audible signal that denotes the restoration.*

All settings are stored when a profile is created. This includes the ISO, white balance, color temperature and color tint settings that were current at the time the profile was created. These profile settings will override the settings in use at the time the profile button was pressed. In other words, remember to check for unintentional ISO, white balance or color temperature changes when using profiles. (Color tint is not a user setting but is stored after a manual white balance has been made).

Making a profile

1) *Activate the camera and go through the various settings (for example, autofocus, aperture priority, fill flash exposure compensation, etc.) you require for the particular purpose and save them as you go.*
2) *When all the required settings have been made, click (not press!) the* **PROFILES** *button (***ON.OFF** *button) on the grip and the profile screen will appear.*
3) *Use either the front or rear control wheel to scroll through the list of profiles. Choose a profile name (except Standard). You can either save the new settings under this name or change the name you want to change.*



To quickly reset all profiles back to the original factory settings:

1. *Remove battery.*
2. *Wait 5–10 seconds.*
3. *Replace the battery while keeping both the Menu and ISO/WB buttons pressed.*

4) *Press* **Save (ISO/WB** *button).*
   The Profile name screen is then displayed where you can rename the profile to what suits you (see section Image Info 4.2 further on in this manual for procedure details).
5) *Press Save (ISO/WB button) to keep the combination of settings with the new name.*

To use a profile from the main screen, press the **PROFILES** button to reach the profiles screen again. Scroll down the list to the profile you want and then press the **Load** (**AF**) button. All the saved settings will then be automatically implemented.

If you decided to change the settings but nevertheless keep the Profile name on the list, the new set of parameters will be retained under that name. That is to say, the settings will not be the same as listed here, despite the name. It might be safer practice to always change the profile name to avoid later confusion.

Using profiles

1) *From the main screen, click* **PROFILES** *(***ON.OFF** *button) on the grip and the profile screen will appear.*
2) *Use either the front or rear control wheel to scroll through the list and highlight the desired profile.*
3) *Press* **Load** *(***AF** *button). The camera is now set according to all the parameters stored according to the name.*

Changing a profile name

You can change a profile name (except 'Standard') at any time.

Proceed as follows:

1) *From the main screen, click* **PROFILES** *(***ON.OFF** *button) on the grip and the profile screen will appear.*
2) *Use either the front or rear control wheel to scroll through the list and highlight the desired profile.*
3) *Press* **Load** *(***AF** *button).*
4) *Click* **PROFILES** *(***ON.OFF** *button) again.*
5) *Press* **Save (ISO/WB** *button)*
6) *The Profile name screen is then displayed where you can rename the profile to what suits you (see section Image Info 4.2 further on in this manual for procedure details).*

H3D II

14

Advanced Features

- **Programmable self timer**
- **Programmable bracketing**
- **Programmable interval setting**
- **30 custom options**

This section describes the features that are not normally used on every occasion but can be exploited wisely to obtain the optimum from the system.

The custom options are designed to work for you in the background, ensuring security and also helping to bring down the barriers between you and capturing the image. Each one can be changed to suit your preferences so that the whole camera becomes a reflection of the way you like to work.

General overview of camera menu

Exit Enter
1 Self Timer Menu

Exit Enter
2 Bracketing Menu

Exit Enter
3 Interval Menu

Exit Enter
4 Settings Menu

Exit Enter
5 Drive Menu

Self timer options

Bracketing options

Interval options

Settings options

Text setting

Custom Options

1 Standby timeout: 10s	2 Ev increment: 1/2 Step	3 Exp. adjust increment: 1/3 Step	4 User button function: AF Drive	5 AE-L button function: AE-Lock
6 Stop down button function: Stop down	7 M.UP button function: Mirror up	8 Control wheel direction: Clockwise	9 Flash ready exposure lock: Yes	10 Magazine exposure lock: No
11 Lens exposure lock: Yes	12 Out of range exposure lock: No	13 True exposure: On	14 Spot mode: Normal	15 Focus aid in MF: Half press
16 AF assist light: Ext. flash	17 Rear wheel quick adjust: Yes	18 Control lock: All controls	19 Beeper: On	20 Show histogram: Yes
21 Interval & Self timer: Exit	22 AE-lock / Quick adjust: Exp reset	23 Show EV: Yes	24 Show ISO: Yes	25 Bracket param. in Manual: Shutter speed
26 Aperture ctrl. in Manual: Front wheel	27 Low flash warning: On	28 Interval timer initial delay: None	29 Aperture indication: Normal	30 Extra mirror delay: 50 ms

System status

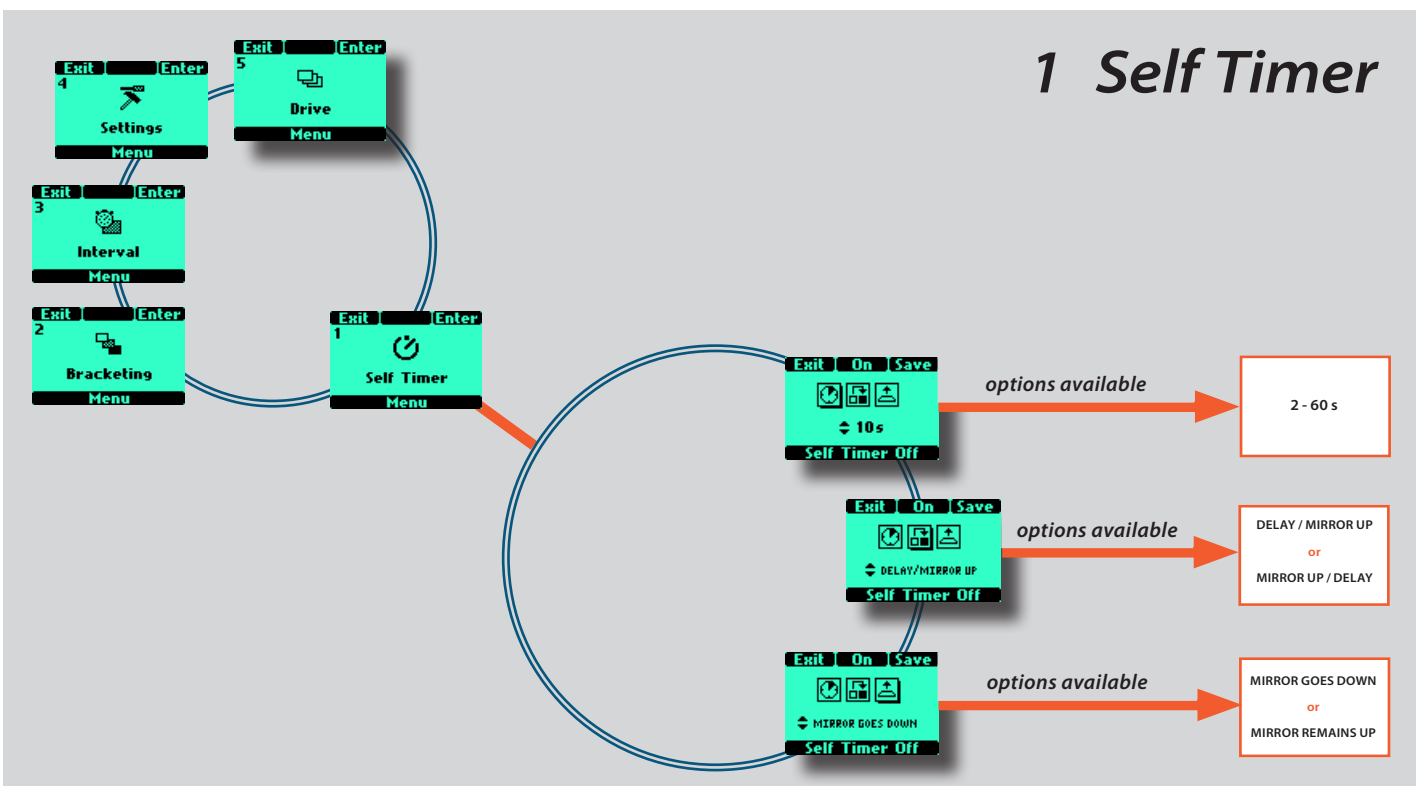
Drive

There are a number of more advanced features that while not necessarily used every day still remain immediately accessible through the menu system. They provide the integral finesses that make the H3D II a powerful and sophisticated tool to satisfy a variety of professional demands.

There are five main functions:

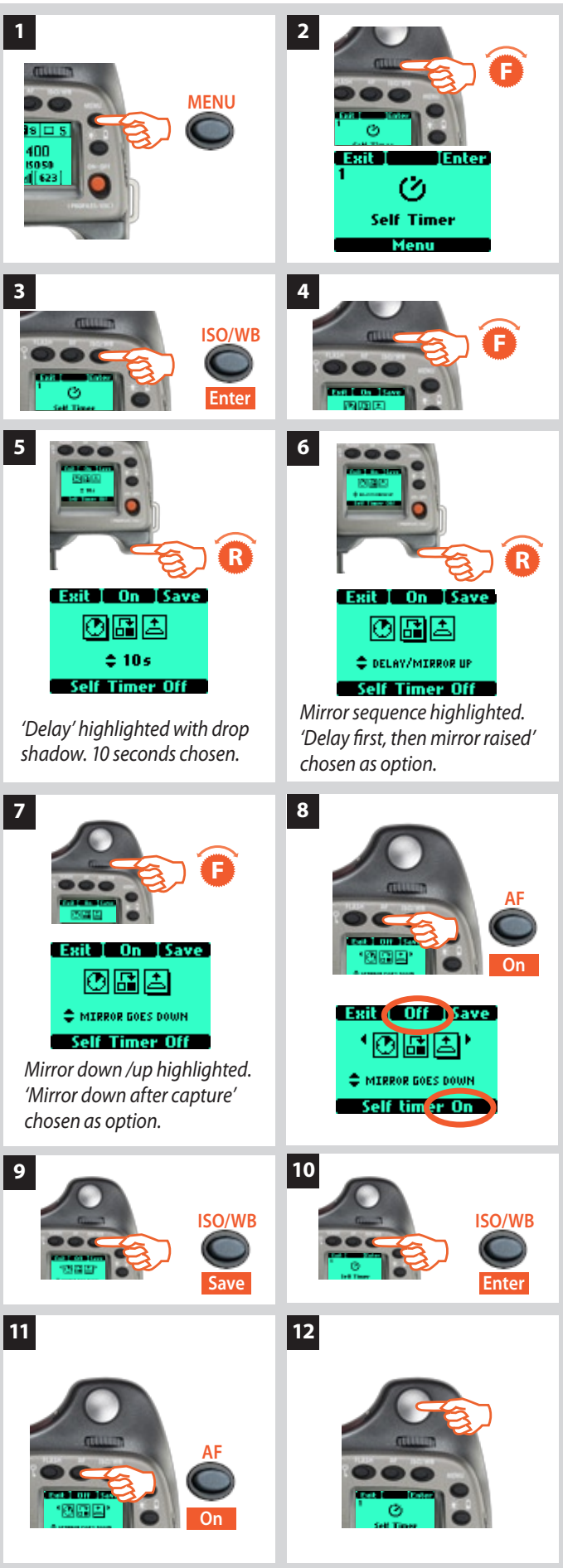
1. Self timer
2. Bracketing
3. Interval timer
4. Settings
5. Drive

An important point to remember is that certain options are only available when the relevant screen has been accessed. For example, in Self Timer the choice of 'delay/mirror up' or 'mirror up/ delay' is only available (by turning the rear control wheel - lower row on display) when the relevant function has been chosen (by turning the front control wheel - upper row on display)



1 Self timer

The self timer allows a delay in the activation of the shutter and a change in sequence of the mirror movement. Normally the mirror is raised before the shutter is tripped creating a pause between the two actions to minimize camera vibration. However, during this pause there will be no image in the viewfinder and no light metering available for any eventual exposure change. Therefore the Self timer function can be set to a sequence where the delay is followed by the mirror being raised instead. Normally the mirror will instantly return after a capture but you can also choose a setting where the mirror remains raised. The Self Timer can be set to provide virtually vibration-free shutter release. It can be used instead of a remote release cable/cord/device when split-second timing is not critical. The camera's exposure settings (Manual or Auto) will be according to the light metering requirements just prior to the mirror being raised so choose your method accordingly with long delays in very changeable lighting conditions.



Self timer setting

The Self timer function is set in the following manner:

1) *Press the* **MENU** *button on the grip.*
2) *Turn the front control wheel until* **Self Timer** *appears.*
3) *Press* **ENTER** *(***ISO/WB** *button) on the grip.*
4) *Turn the front control wheel to access the options, that are:*

Delay

Mirror sequence

Mirror Up / Mirror Goes Down

(A drop shadow will be displayed beneath the selected symbol, for example)

5) *When* **Delay** *is highlighted - - turn the rear control wheel to choose a delay range from 2 - 60s in 1s intervals.*
6) *Turn the front control wheel again to choose* **Delay / Mirror Up**, **Mirror Up/ Delay** *sequence - . When highlighted turn the rear control wheel to choose.*

Delay / Mirror Up *sequence =*

Delay for set amount of time — mirror raised — capture made.

Mirror Up/ Delay *sequence =*

Mirror raised — delay for set amount of time — capture made.

7) *Turn the front control wheel again for*
Mirror goes down / **Mirror remains up** - *- choice. Turn the rear control wheel to choose.*

Mirror goes down =

Mirror returns to its normal position and the camera is made ready for the next capture.

Mirror raised =

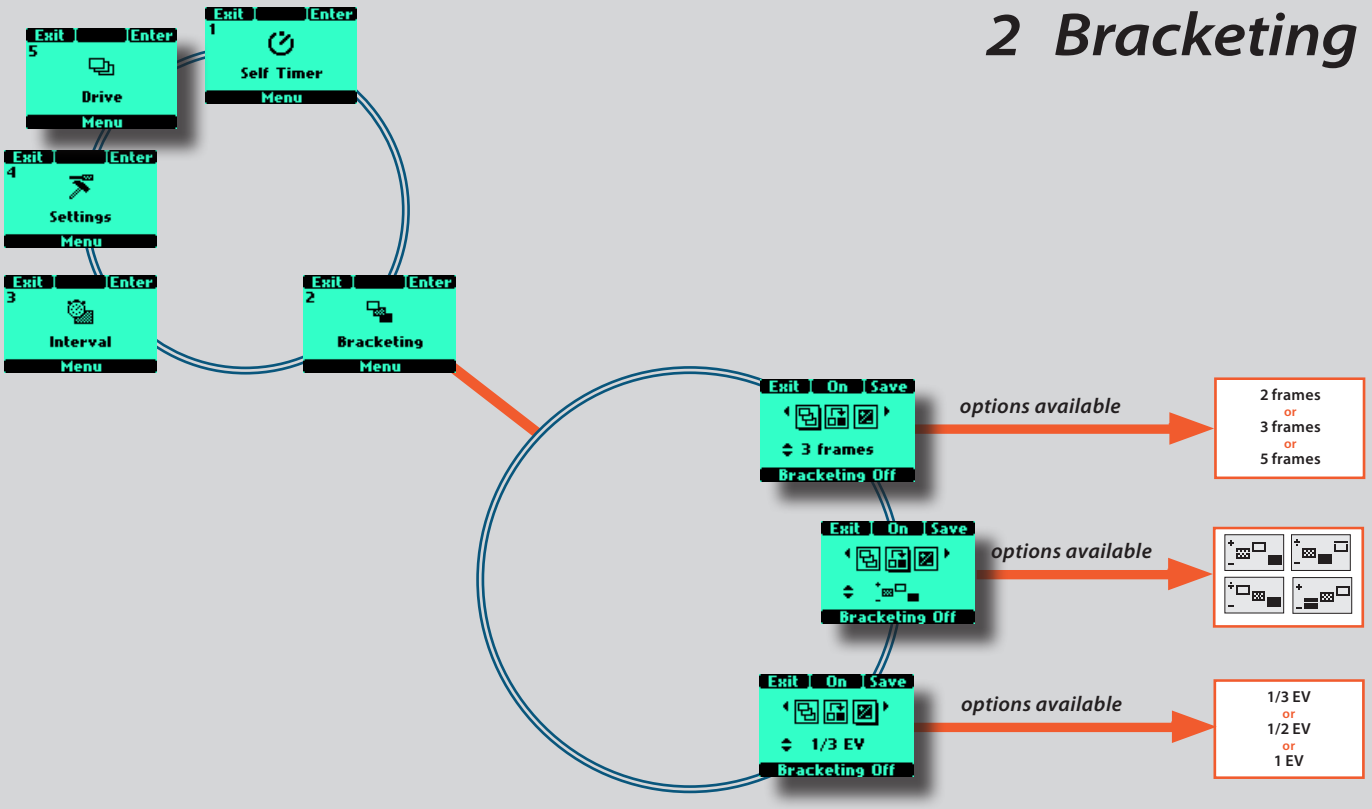
Mirror remains in raised position. No image is visible in the viewfinder until M UP button pressed.

8) *Press* **On** *(***AF** *button). Note that this now reads* **Off** *and the line of text at the bottom of the screen reads '***Self timer on***'.*
9) *Press* **SAVE** *(***ISO/WB** *button) to save the setting.*
10) *Press* **ENTER** *(***ISO/WB** *button) again from the Self Timer screen to activate the function.*
11) *Click* **On** *(***AF** *button).*
12) *Half-press the shutter release button to standby mode for this function (press the shutter release button again (full press) for activation) or full-press the shutter release for immediate activation.*

Check the lower text-row on the screen for ON or OFF status.

You can halt the sequence by clicking the ON / OFF (ESC) button.

Press the Mirror Up button twice within 0.5s to access the self timer mode directly.



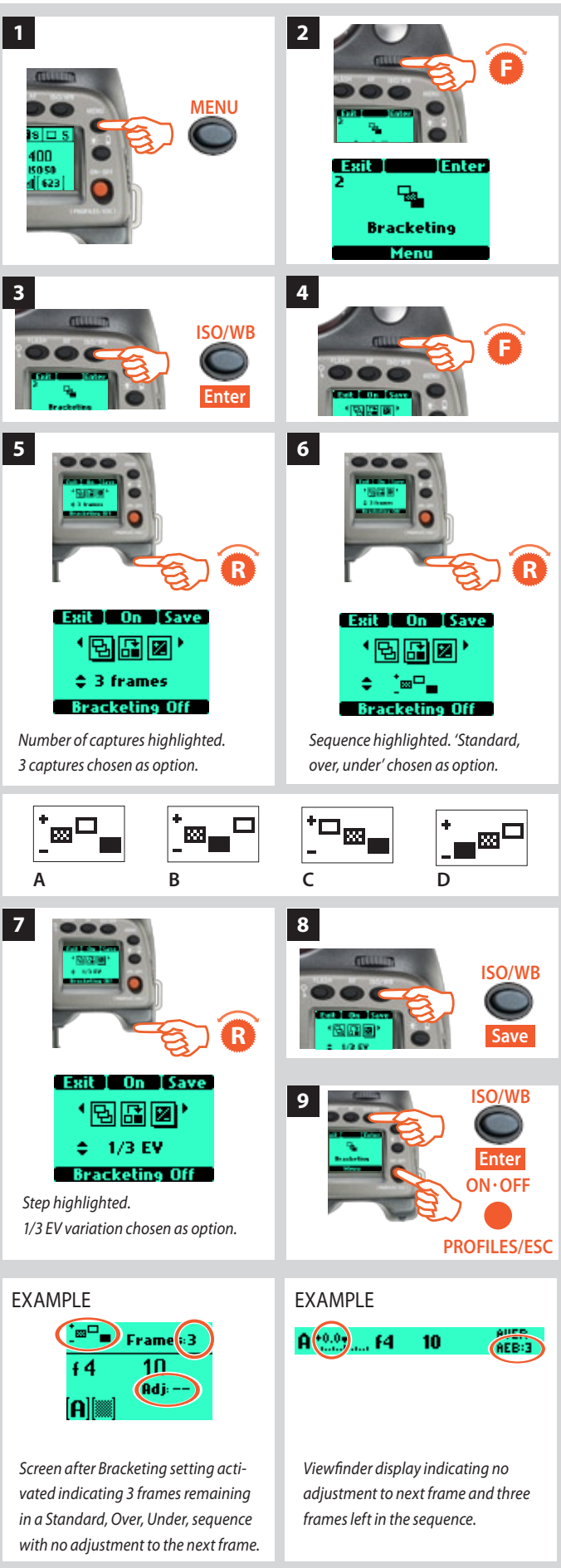
2 Bracketing

The bracketing facility provides an automatic series of captures; one at the standard exposure setting (Manual or Auto) and the others with pre-determined deviations in EV from the standard exposure. This is particularly useful for images containing a very wide tonal range, for example.

Firstly you make an assessment concerning the number of extra frames required, the order in which they should be taken, and by how much EV deviations there should be and the setting made accordingly. The first metered exposure (Manual or Auto) is the EV that determines the calculations for the bracketing sequence.

Note the difference in operation between **Single** and **Continuous** drive settings:

- In **Single** you must press the shutter release button separately for every separate capture until the sequence is finished.
- In **Continuous** you can either maintain the pressure on the button to take all frames without stopping or you can release the pressure on the button and press again to continue to the end of the sequence without losing any frames within the set sequence.



Bracketing setting

The Bracketing function is set in the following manner:

1) *Press the* **MENU** *button.*
2) *Turn the front control wheel until* **Bracketing** *appears*
3) *Press* **Enter** *(***ISO/WB***) button on the grip*
4) *Turn the front control wheel to access the options, that are:*

Number of Captures *(the number of captures required in the sequence)*

Sequence *(the sequential order of the over- or under- exposures)*

Step *(the amount of EV variation from the standard exposure setting)*

(A drop shadow will be displayed beneath the selected symbol, for example)

5) *In turn the rear wheel to choose the number of frames required:* ***2, 3, 5, 7 or 9.***

6) *In turn the rear wheel to choose one of four sequences:*

A: ***Standard, Over, Under***
B: ***Standard, Under, Over***
C: ***Over, Standard, Under***
D: ***Under, Standard, Over***

7) *In turn the rear wheel to choose the amount of EV variation required:* ***1, 1/2, 1/3 EV.***
8) *Press* **SAVE** *(***ISO/WB** *button) to save the setting.*
9) *Press* **ENTER** *(***ISO/WB** *button) again from the Bracketing screen to activate the function. Press* **On** *(***AF** *button). Note that this now reads* **Off** *and the line of text at the bottom of the screen reads '***Bracketing on'***.*

Half-press the shutter release button to standby mode for this function (press the shutter release button again (full press) for activation) or full-press the shutter release for immediate activation.

To escape from this mode press **MENU**, *then* **Enter** *(ISO/WB button on the Bracketing screen, then* **Off** *(AF button).*

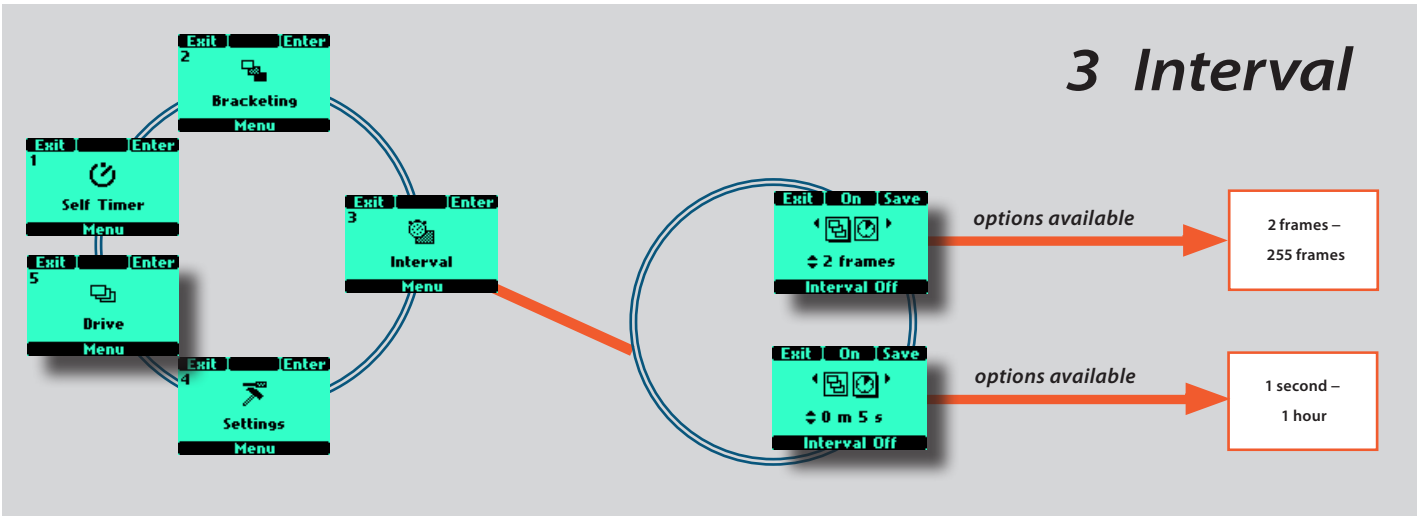
Check the lower text-row on the screen for ON or OFF status

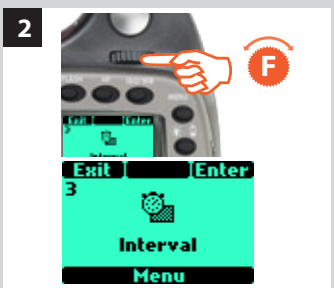
The default setting is a shutter speed change in a bracketing sequence. However, if the camera is set in Manual mode, you can choose an aperture change instead (Custom Options - Bracket param. in Manual - 25).

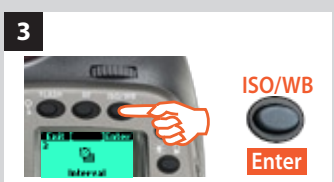
See note at the beginning of this section regarding the difference between Single and Continuous drive settings. In both cases, the bracketing function is automatically reset for a new sequence.

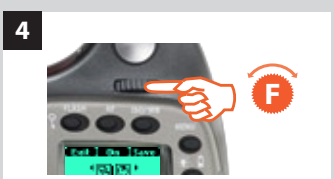
A bracketing sequence can be stopped mid-sequence by pressing the ESC (ON.OFF) button.

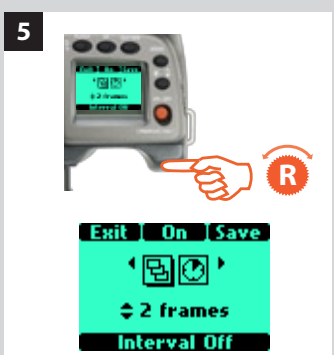
As an example, a 5 frame sequence with an EV 1 variation setting at 'Standard, Over, Under' would produce: Standard (O EV variation), +1EV, -1EV, +2EV, -2EV.



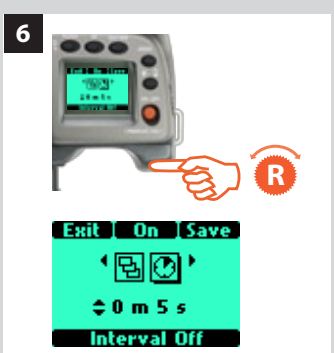




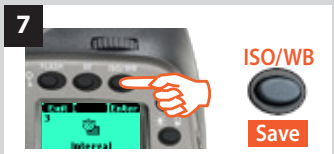




Number of captures highlighted.
2 frames variation chosen as option.



Interval duration highlighted.
5 seconds variation chosen as option.



EXAMPLE

Screen after Interval setting activated indicating 3 shots remaining at 30 second intervals.

3 Interval

By using the interval setting, you can allow the camera to take a series of captures automatically over a set period. This is often required for time and motion studies, security surveillance, nature study, etc. The exposure and focus settings (Manual or Auto) will be according to the camera settings at the time of capture.

Interval setting

1) *Press the* **MENU** *button on the grip.*
2) *Turn the front control wheel until* **Interval** *appears.*
3) *Press the* **ISO/WB** *(***Enter***) button on the grip.*
4) *Turn the front control wheel to access the options, that are:*

Number of captures
(the number of captures required)
Interval duration
(the time interval between the captures)
(The chosen symbol is indicated by a drop shadow)

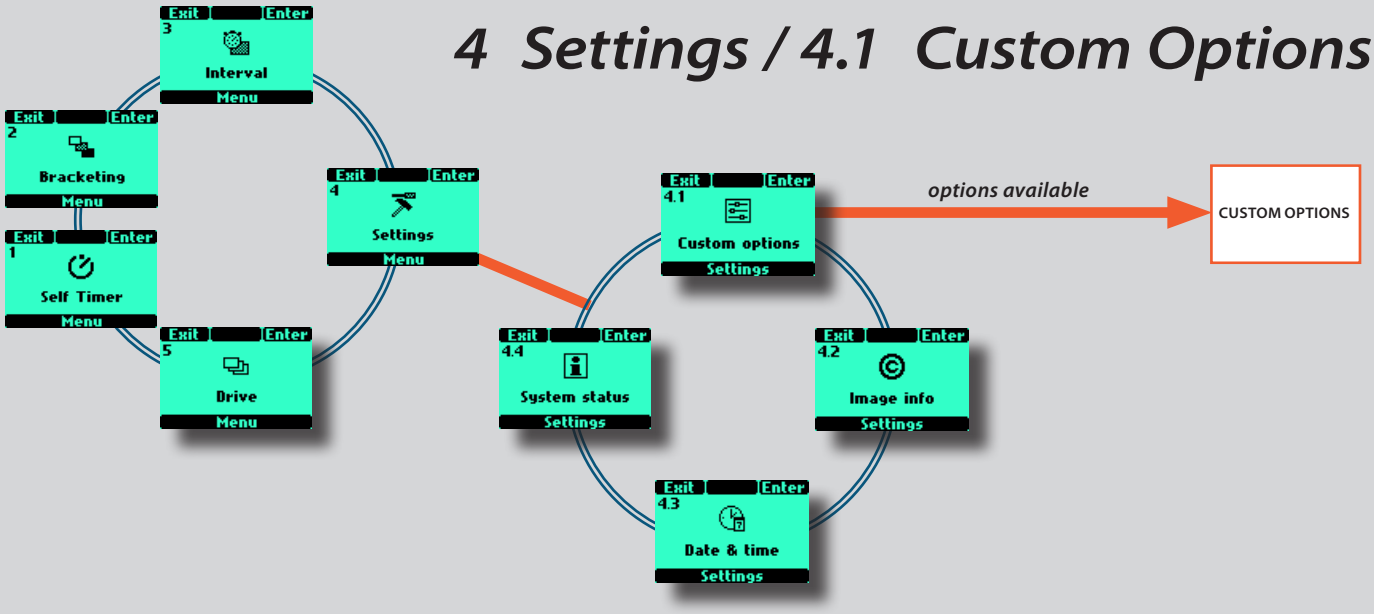
5) *In Number of captures, turn the rear wheel to choose the number of captures required:* ***2 – no limit***
6) *In Interval duration, turn the rear wheel to choose:*
   1 second – 1 hour
7) *Press* **SAVE** *(***ISO/WB** *button) to save the setting.*
8) *Press* **ENTER** *(***ISO/WB** *button) again from the Interval screen to activate the function. Press* **On** *(***AF** *button). Note that this now reads* **Off** *and the line of text at the bottom of the screen reads '***Interval on***'.*
   Half-press the shutter release button to standby mode for this function (press the shutter release button again (full press) for activation) or full-press the shutter release for immediate activation.

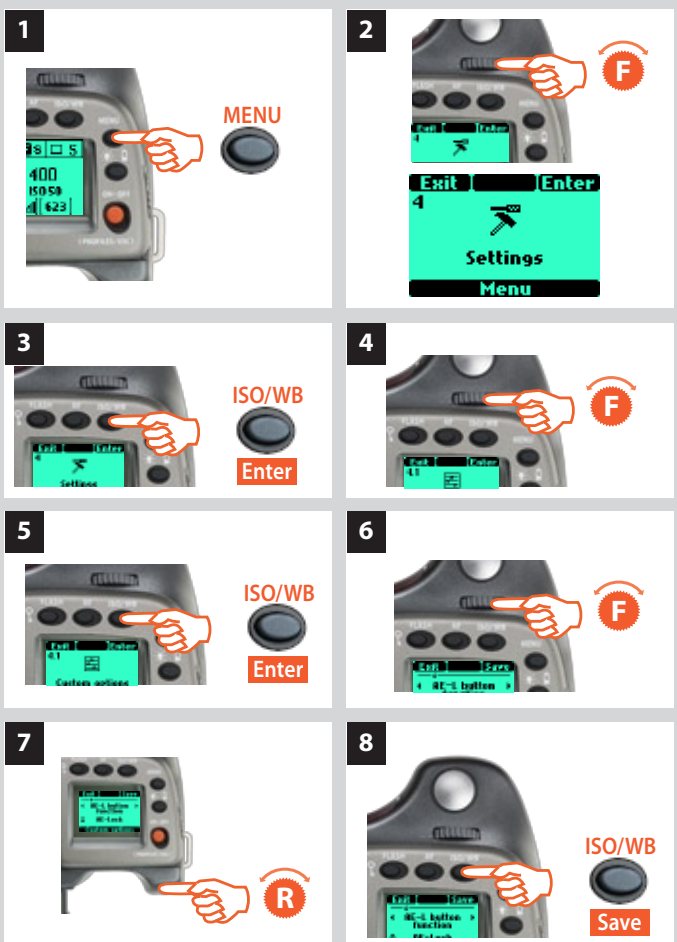
In Custom Options #27 you can select an initial delay of None, 2, 10, 60 seconds or the interval time.

Check the lower text-row on the screen for ON or OFF status.

An Interval setting can be stopped mid-sequence by pressing the ESC button.

4 Settings / 4.1 Custom Options





4 Settings

From the **Settings** *screen you can access three main sub-settings:* **Custom options**, **Image Info** *and* **System status** *by turning the front control wheel. From each of these three sub-settings you can access further screens.* **Custom options** *has 30 screens,* **Image info** *has two more screens each with more choices and* **System status** *has two more screens. Look at the main menu chart to get an idea of where all the options are on the menu tree*

4.1 Custom options

1) *Press the* **MENU** *button on the grip.*
2) *Turn the front control wheel until* **Settings** *appears.*
3) *Press the* **ISO/WB** *(***Enter***) button on the grip.*
4) *Turn the front control wheel to access* **4.1 Custom options**.
5) *Press the* **ISO/WB** *(***Enter***) button to access the more than 25 choices available.*
6) *Turn the front control wheel to the desired Option.*
7) *Turn the rear control wheel to the desired Setting.*
8) *Press* **Save**

As a shortcut to the Custom Option level, press **MENU** *and then the* **USER** *button. After making any changes, press the shutter release button to save the new setting.*

In the following list, the options marked in red are the default settings. So, in the case of the User button, for example, as None is the default there will be no reaction from the camera until you make a specific choice and save it.

If you want to reset the camera to the default setting for all options, press the **ON.OFF** *button quickly to enter* **Profiles**, *select* **Standard** *and then press* **Load**.

4.1 Custom options

The following is a description of all 30 Custom Options. They are accessed by Menu > Settings > Custom Options. The words and figures in red signify the default setting for that option.

Standby timeout 1

• *10s* • *5s* • *15s* • *30s*

Determines the amount of time the camera remains active before it automatically reverts to standby mode (indicated on the grip display by the H3D II logo). Minimises battery consumption.

EV increment 2

• *1/2 Step* • *1 Step* • *1/3 Step*

Determines the amount of EV change applied (per click of either the front or rear control wheels) to either aperture or shutter speed.

Exp adjust increment 3

• *1/3 Step* • *1 Step* • *1/2 Step*

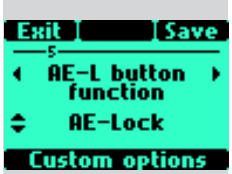
Determines the amount of EV change applied (per click of the rear control wheels) when making fixed exposure adjustment settings.

User button function 4

• *None* •

Standby • Stop Down• Flash Measure • Interval timer • Self Timer • Bracketing • AF drive • Mirror up • B mode • T mode • Histogram • Grey balance exposure • Cycle LM mode • Delete last image • Digital focus check • IAA toggle • Expose • AE-lock

Sets which function will be immediately activated when the User button is pressed (you cannot alter the setting in this mode though, only use it). The button has a toggle function so that by pressing it again the new setting will be de-activated.



AE-Lock button function 5

• *AE-lock*

but can be reassigned to:

Self Timer • Bracketing • AF drive • Mirror up • B mode • T mode • Histogram • Grey balance exposure • Cycle LM mode • Delete last image • Digital focus check • IAA toggle • Expose • AE-lock • None • Standby • Stop Down• Flash Measure • Interval timer

Stop down button function 6

• *Stop Down*

but can be reassigned to:

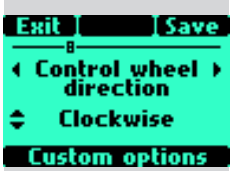
• Flash Measure • Interval timer • Self Timer • Bracketing • AF drive • Mirror up • B mode • T mode • Histogram • Grey balance exposure • Cycle LM mode • Delete last image • Digital focus check • IAA toggle • Expose • AE-lock • None • Standby

M.UP button function 7

• *Mirror up*

but can be reassigned to:

• B mode • T mode • Histogram • Grey balance exposure • Cycle LM mode • Delete last image • Digital focus check • IAA toggle • Expose • AE-lock • None • Standby • Stop Down• Flash Measure • Interval timer • Multiple exposure • Self Timer • Bracketing • AF drive



Control wheel direction 8

• *Clockwise* • *Counter clockwise*

Determines the effect the direction of the controls wheels have on a setting.

For example, by moving the front control wheel to the left you can alter the aperture setting from f/8 to f/6.8 to f/5.6 and so on. By changing the wheel direction setting however, the same action of turning the wheel to the left would then produce the opposite effect, that is, the aperture settings would change from f/ 8 to f/ 9.5 to f/ 11, and so on.

Flash ready exposure lock 9

• *Yes* • *No*

Allows you to make a capture before the flash is fully charged. For use with integral flash unit or other TTL compatible flash units connected to the hot-shoe. Not valid for flash units connected by the PC connector.

Yes *blocks the shutter until flash is ready.*

No *allows shutter release before flash is ready.*

Magazine exposure lock 10

• *No* • *Yes*

Allows you to release the lens and auxiliary shutter in camera body without a digital capture unit attached.

Yes *blocks the lens shutter and auxiliary shutter in camera body if the digital capture unit is not attached. Generates message on grip display if attempted.*

No *allows the lens shutter and auxilliary shutter in camera body to be released without the digital capture unit attached.*

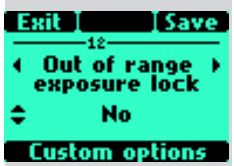
Lens exposure lock 11

• *Yes* • *No*

Allows you to release the auxilliary shutter in camera body without a lens attached.

Yes *blocks the release of auxilliary shutter in camera body if there is no lens attached. Generates message on grip display if attempted.*

No *allows a release of auxilliary shutter in camera body without a lens attached.*



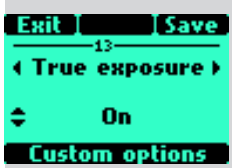
Out of range exposure lock 12

• *No* • *Yes*

Allows you to release the camera when either the aperture or shutter speed setting is beyond the working range (indicated on the displays by "—").

Yes *blocks the shutter if beyond the working range.*

No *allows the shutter to be released (1/800s or 32s) if beyond the working range.*



True exposure 13

• *On* • *Off*

Determines whether the exposure is automatically adjusted to create a true exposure setting. (See Appendix, Glossary of Terms for full explanation).

On *allows the adjustment.*

Off *retains the normal setting.*

If using flash/strobe as the main light source and 1/800s shutter speed, remember to turn off the True Exposure option.

Spot mode 14

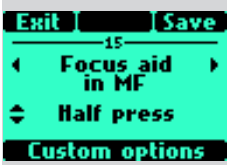
• *Normal* • *Zone*

Determines how the camera behaves when set to Spot Mode.

Normal *makes the camera behave in the same fashion as when set to Average or Centre Weighted.*

Zone *makes the camera behave in the same fashion as the Hasselblad 205FCC. That is, the central spot is placed over a particular area of the subject and the AE-L button is pressed. The exposure is then calculated assuming that the metered area is 18% grey or Zone 5 and is indicated on the display as Zone 5 (see Appendix / Glossary of Terms). Alternatively, the area can be reassigned to another zone by turning the rear control wheel.*

Then, when the camera is moved, the areas within the central spot are indicated by their zone values.



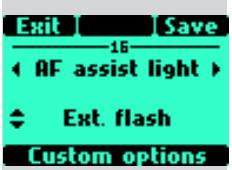
Focus aid in MF 15

• *Half press* • *Always* • *Off*

Sets how the focus aid arrowhead LED symbols appear in the viewfinder display in manual focus mode.

Half press *makes them visible when the shutter release button is pressed half way.*

Always *makes them visible all of the time when camera is active.*
Off *disables them completely.*



AF assist light 16

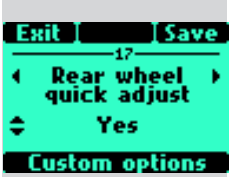
• *Ext flash* • *Camera* • *Off*

Allows projection of light pattern to assist the autofocus system in poor light or low contrast situations.

Camera *sets the integral AF assist illumination to be always active.*

External flash *activates the AF assist illumination projected by a suitable attached external flash unit. When detached, however, the integral system is automatically used.*

Off *sets the AF assist illumination to remain always inactive.*



Rear wheel quick adjust 17

• *Yes* • *No*

Allows rear control wheel to make a rapid EV adjustment (or EV compensation) in auto-exposure mode.

Yes *turns the setting on. By turning the rear control wheel, the adjustment is made and appears on both displays as a ± symbol between the shutter speed and aperture values. The amount of deviation also appears above the scale to the left of the aperture value on the viewfinder display.*

No *turns the function off completely.*

Control lock 18

• *All controls* • *Wheels* • *Off*

Sets the amount of locking used when the Control Lock button is pressed.

All controls *locks control wheels and buttons.*

Wheels *locks only control wheels. They remain operable in any setting mode, however.*

Off *disables lock function.*

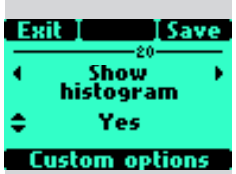
Beeper 19

• *On* • *Off*

Sets the audible beeper signal.

On *enables the signal.*

Off *disables the signal.*



Show histogram 20

• *Yes* • *No*

Sets whether a histogram of a capture appears on the display after exposure.

Yes *enables the setting.*

No *disables the setting.*

Interval & Self Timer 21

• *Exit* • *Stay*

Allows either the Interval or Self Timer mode to remain active after a capture or immediately return to standard setting.

Exit *clears the setting and produces an automatic return to standard setting after a capture.*

Stay *retains the setting after a capture.*

AE lock / Quick adjust 22

• *Exp reset* • *Saved*

Allows either the AE-Lock or Quick adjust mode to remain active after a capture or immediately return to standard setting.

Exp Reset *clears the settings and produces an automatic return to standard setting after a capture.*

Saved *retains the AE-Lock or Quick adjust settings after a capture.*

Show EV 23

• *Yes* • *No*

Allows the display of EV settings on the grip display.

Yes *enables the display.*

No *disables the display.*

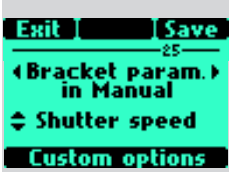
Show ISO 24

• *Yes* • *No*

Allows the display of ISO settings on the grip display

Yes *enables the display.*

No *disables the display.*



Bracket param. in Manual 25

• *Shutter speed* • *Aperture*

Selects either the shutter speed or the aperture as the parameter which changes in a bracketing sequence when in Manual exposure mode.

Shutter speed *selects changes in shutter speed.*

Aperture *selects changes in aperture settings.*

Aperture control in Manual 26

• *Front wheel* • *Rear wheel*

Selects which control wheel changes the aperture setting when in Manual exposure mode.

Front wheel *selects the front control wheel to change the aperture setting.*

Rear wheel *selects the rear control wheel to change the aperture setting.*

Low flash warning 27

• *On* • *Off*

Controls the display of the 'Low flash' warning message and triangle.

ON *enables the function.*

OFF *disables the function.*

Interval timer initial delay 28

• *None* • *2s* • *10s* • *60s* • *Interval time*

Allows an initial delay before the first capture of an interval timer function operation.

Aperture indication 29

• *Normal* • *Light meter*

Allows choice of aperture indication display (in Manual mode only).

Normal *selects conventional display (f5.6, f8, etc)*

Light meter *selects 'light meter' type display ($f5.6^0$, $f8.^5$, etc)*

Extra mirror-delay 30

50 ms • *100 ms* • *200 ms* • *None* • *25 ms*

Extends the delay period between the mirror being raised and the opening of the lens shutter thereby reducing the negative effect of vibration on longer exposure times.

- The **USER, AE-L, STOP DOWN** and **M.UP** buttons can all be reassigned to different functions. The **USER** button has no function until specifically assigned one (default is 'None'). The **AE-L, STOP DOWN** and **M.UP** buttons, however, by default are assigned the function appropriate to the name, until assigned otherwise.

None

The user button has no function.

Standby

Sets the camera in standby mode to save battery consumption.

Stop down

Stops the lens down.

Flash Measure

Initiates flash measure function.

Interval timer

Initiates interval timer function.

Self timer

Initiates self timer function.

Bracketing

Initiates bracketing function.

AF Drive

Activates the AF system in any focusing mode. When the button is pressed the AF system sets the correct focusing point automatically. This is a rapid, accurate and handy way of using the AF system when the camera is set to manual focus mode. In this manner you take advantage of the accuracy and certainty of the autofocus system while retaining the control inherent in manual focusing mode.

Mirror up

Controls the mirror up or down function (same function as the M-UP button).

B mode

Sets the camera to B exposure mode.

T mode

Sets the camera to T exposure mode.

Histogram

Recalls the last shown histogram on the grip LCD.

Grey balance exp.

Initiates a grey balance exposure using the marker frame to select the desired tone.

Cycle LM mode

Changes the light-metering method in a loop manner: Centre Weighted/CentreSpot/Spot.

Delete last image

Activate the delete function for the last image in a digital back.
(to be implemented at a later stage)

Dig. foc check

Displays last exposure taken at 100% scale on digital backs with LCD.

IAA toggle

Allows IAA rating change of last capture.

Expose

Acts as alternative shutter release button.

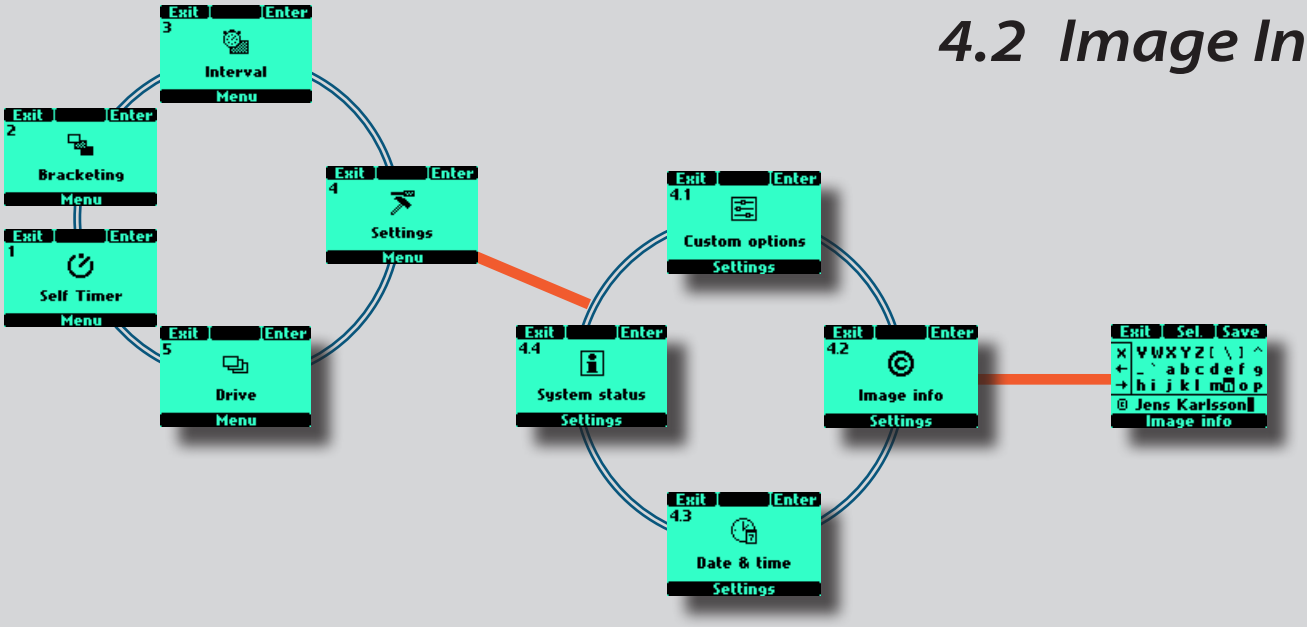
AE-lock

Activates AE lock function.

A quick way to program the customizable buttons (and to access the Custom Option level in general) is to use the short-cut as follows:

1) *Press the* **MENU** *button.*
2) *Then press the chosen button to customize.*
   *This directly accesses the "***Custom options***" level in the menu where you can access the desired option for a setting change.*

4.2 Image Info



4.2 Image Info

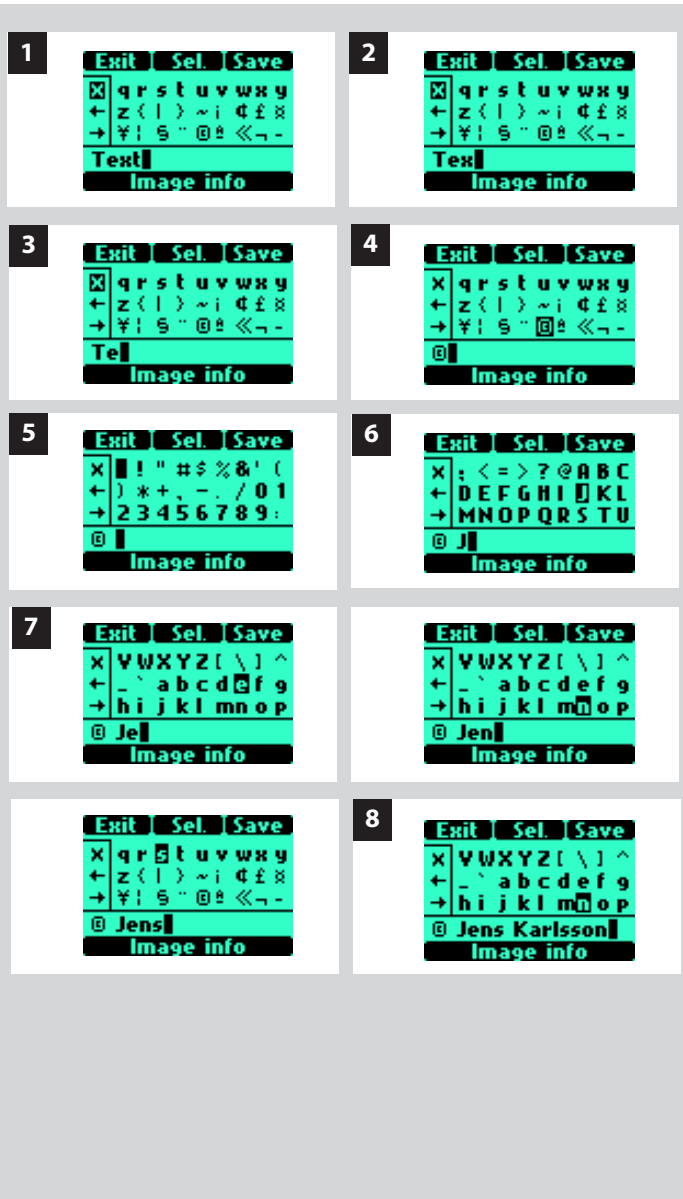
In Image info you can compose your own combination of letters, words, symbols, etc to be included in the metadata. The same procedure is also used to change a Profile name.

Text setting

1) *Press the* **MENU** *button on the grip.*
2) *Turn the front control wheel until* **Settings** *appears.*
3) *Press* **Enter** *(***ISO/WB** *button) on the grip.*
4) *Turn the front control wheel to access* **4.2 Image info**.
5) *Press* **Enter** *(***ISO/WB** *button) to access the list of characters and figures available.*
6) *By turning the front control wheel, the character selector cursor will will move to the left and right in the available characters while the rear control wheel moves it up and down. The chart of characters will automatically scroll to reveal the whole set. The space character is top left in the list.*

   On the left side of the screen there is a small box frame containing two arrow symbols and an **X** *symbol. By selecting the arrows you can position the cursor in the line of text you have created. The* **X** *symbol deletes the selected character.*

   To create a line of text, select the desired character and press then **Sel** *(***AF** *button). That character is then automatically added to the line of text below the character chart. Press* **Save** *(***ISO/WB** *button) to store the new setting.*



Changing text - an example

Here is an example of how to change existing text (in this case the word 'Text' to a copyright symbol plus a photographer's name -'Jens Karlsson'). See previous section '4.2 Image info' for procedure description.

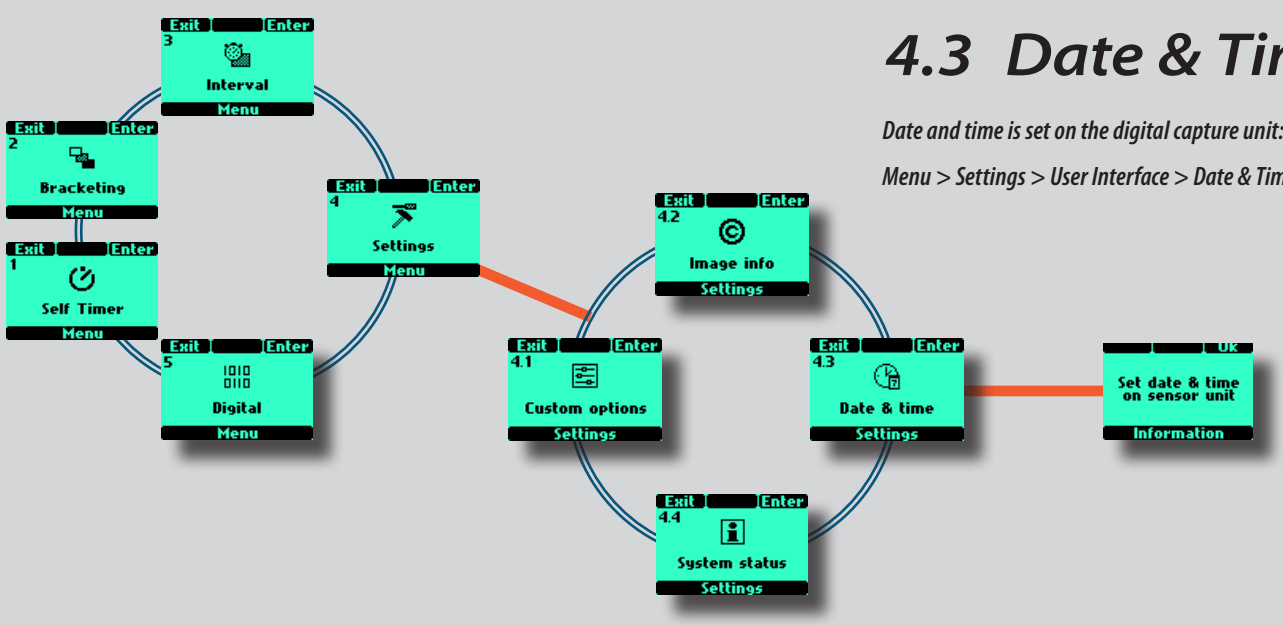
1) *Start by accessing the* **Image info** *screen. On the text row towards the bottom of the screen, the text line cursor is automatically placed to the right of the character that is to be changed. Turn the front and rear control wheels to move the selector cursor until the X symbol is highlighted.*
2) *Press* **Sel.** *(***AF** *button) and the character will be erased.*
3) *Repeated pressing of* **Sel.** *will progressively erase all the characters in the line.*
4) *After erasing unwanted text, turn the front and rear control wheels until the desired character is highlighted by the selector cursor (in this case the copyright symbol) and press Save. Note that more symbols have automatically appeared as you scrolled down the screen.*
5) *Choose the next character in the same manner (in this case a space) and press* **Save**.
6) *The capital letter 'J' has been highlighted and saved in this example.*
7) *Repeat the procedure until all the letters and characters you want appear. As you progress with more characters, those to the left will temporarily disappear from the screen so that you can see what you are adding. Don't forget there is a maximum of approximately 40 characters.*

   If you make a mistake you must remove each character singly (see steps 1-3 above) until you reach where you want to make a change and then return to the 'Adding text' procedure again.
8) *This example shows a completed 15 character text line with symbols, spaces, upper and lower case (large and small) letters.*

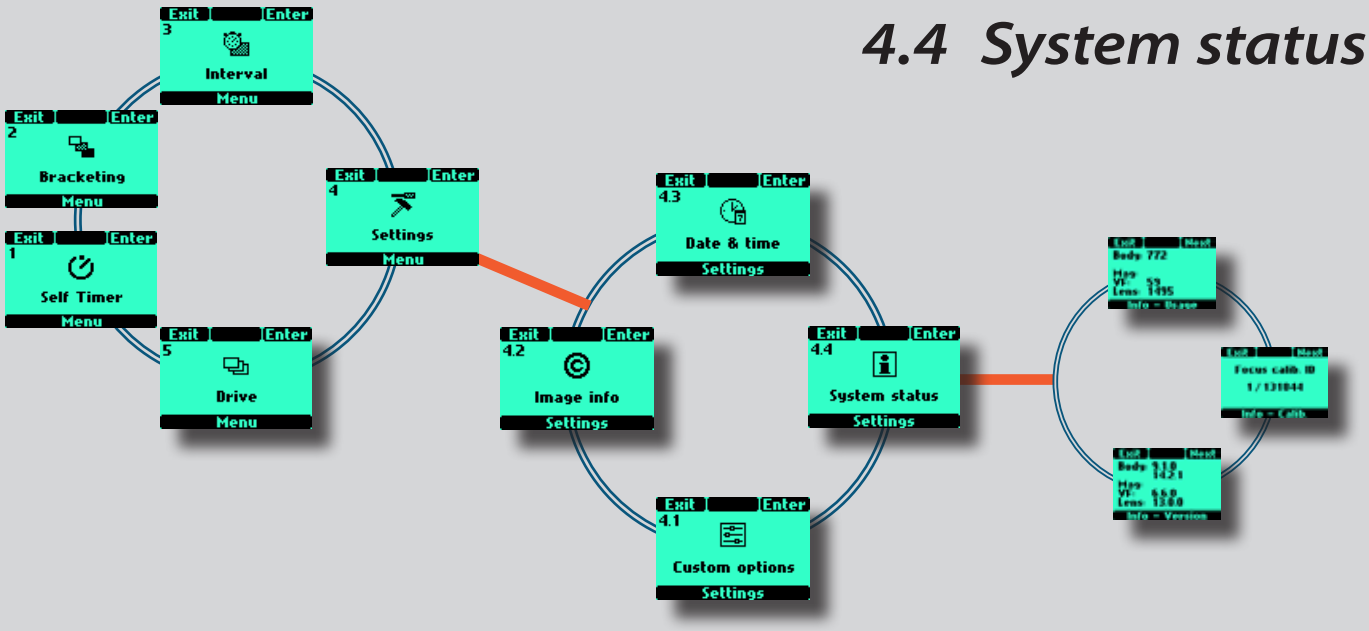
4.3 Date & Time

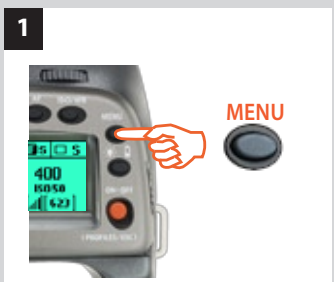
Date and time is set on the digital capture unit:

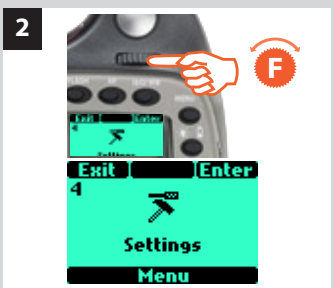
Menu > Settings > User Interface > Date & Time

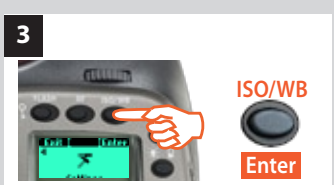


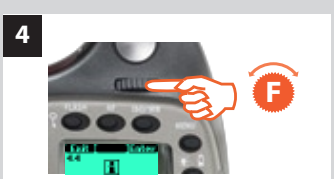
4.4 System status

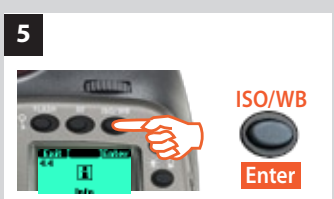


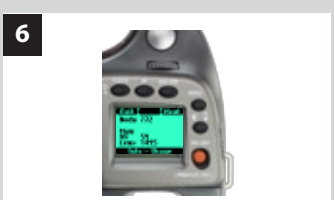


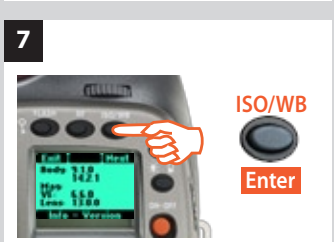












4.4 System status

Check component usage and general servicing information as follows:

1) *Press the* **MENU** *button on the grip.*

2) *Turn the front control wheel until* **Settings** *appears.*

3) *Press the* **Enter** *(***ISO/WB** *button) on the grip.*

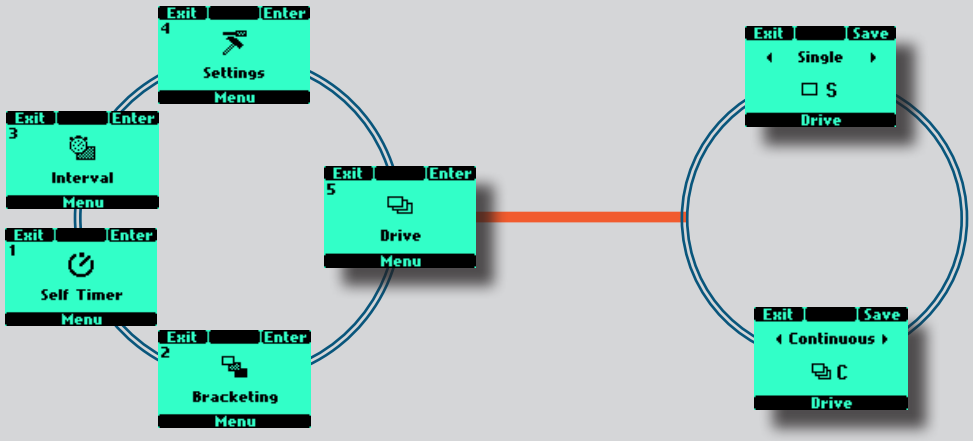
4) *Turn the front control wheel to access* **System Status**.

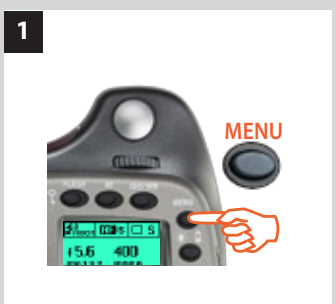
5) *Press the* **Enter** *(***ISO/WB** *button).*

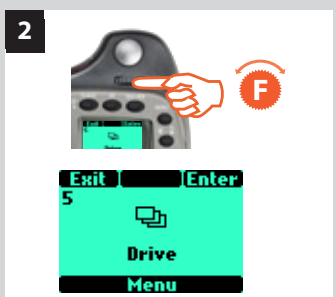
6) *The display now shows a list of camera components* **Info-Usage** *and to the right of each individual component a figure that represents the number of actions taken by that component. Please note that even a completely new camera will have registered actions as these occur during testing before delivery.*

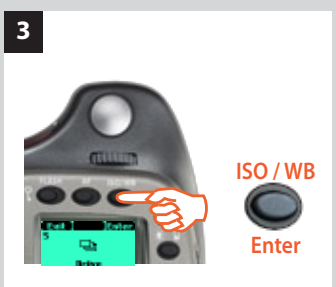
7) *Press the* **Next** *(***ISO/WB***) button to display* **Info-Version** *to display the software version for each item. Press the* **Next** *(***ISO/WB***) button again to display* **Info-Calib** *for focus calibration information.*

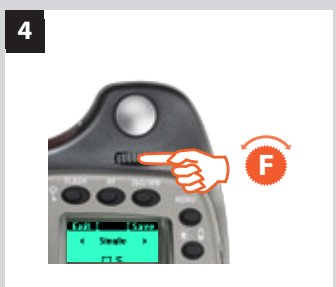
5 Drive











Drive

There are two drive modes: **Single** *and* **Continuous**.

Single and Continuous

In **Single** mode, a capture is made when the shutter release button is pressed and the camera is made ready for the next capture. To make the next capture however, you must first release the shutter release button and then press again.

In **Continuous** mode, the camera automatically makes captures and makes ready for the next capture in a continuous manner as long as you maintain pressure on the shutter release. Please note the speed is dependent on the time taken to save the capture according to equipment.

In camera active mode:

1) *Press the* **MENU** *button on the grip.*
2) *Turn the front control wheel to* **Drive**
3) *Press* **Enter** *(***ISO/WB** *button).*
4) *Turn the front control wheel to* **Single** *or* **Continuous**
5) *Press* **Save** *to store the setting.*

H3D II

15

Flash

- Sync at all shutter speeds to 1/800s
- Integral fill-flash
- SCA 3002 compatible
- Flash measure capability
- Rear sync capability

The H system meets professional demands for a variety of situations where flash is required.

It includes an integral flash primarily intended for fill-flash use but strong enough for simple close work.

Combined with an adapter and a portable unit, H cameras can exploit the automatic features offered by Metz and other top names in the field for powerful and reliable solutions

When in the studio, the H system is capable of providing flash metering for maximum control and security.

The H3D can be used together with most flash units in manual mode. However, to make use of a TTL automatic function, you must ensure the flash unit is compatible with the SCA 3002 system. Connection is either by the PC socket or by the hot shoe (see warning note below).

The viewfinder houses an integral fill-flash with a guide number of 12 and features OTF/TTL flash control. This unit is capable of providing enough illumination for many fill flash functions outdoors as well as simple indoor shots at shorter distances.

Flash output can be adjusted separately from ambient exposure for optimum control.

Separate flash units can be used in dedicated mode when connected to the hot shoe if the unit is compatible with the SCA3002 (Metz) system using a Hasselblad SCA3902 adapter. This provides a cable free link up for information transfer.

Flash synchronisation can be set to normal or rear (the beginning or end of a capture).

Please see the relevant user manuals for information regarding separate flash units.

As with all strobe/studio flash use, very particular attention should be taken to ensure correct connections and general handling practice. Potential dangers might increase when cameras are also connected to electronic peripherals (digital backs, computers, lighting units, etc) and should diminish when IR and similar wireless flash release devices are used.

Victor Hasselblad AB and Hasselblad A/S can accept no responsibility whatsoever for accidents that might occur or damage caused when Hasselblad equipment is used in combination with third-party units of any description.

Do not attempt to connect a flash unit dedicated for use with another camera brand via the hot shoe. The flash unit and / or camera could be damaged.

General

When using the A or S setting together with flash, the exposure requirements of the camera will dominate which might produce slow shutter speeds indoors, for example, requiring the use of a tripod. If, on the other hand, you select P or Pv instead, then a shutter speed of 1/60 or faster is automatically chosen by the camera enabling you to hand hold.

When using flash close up or when using larger aperture settings, remember that the flash unit's output has a specific minimum duration which might still be too great for correct exposure. Read the unit's output specifications for further information regarding any potential restrictions.

You can use the flash metering capability with external flash units of all kinds (TTL flashes must be set to Manual mode).

Rear sync is a useful feature used either for effect or to produce a more 'natural' look when combining long exposures involving light trails and flash.

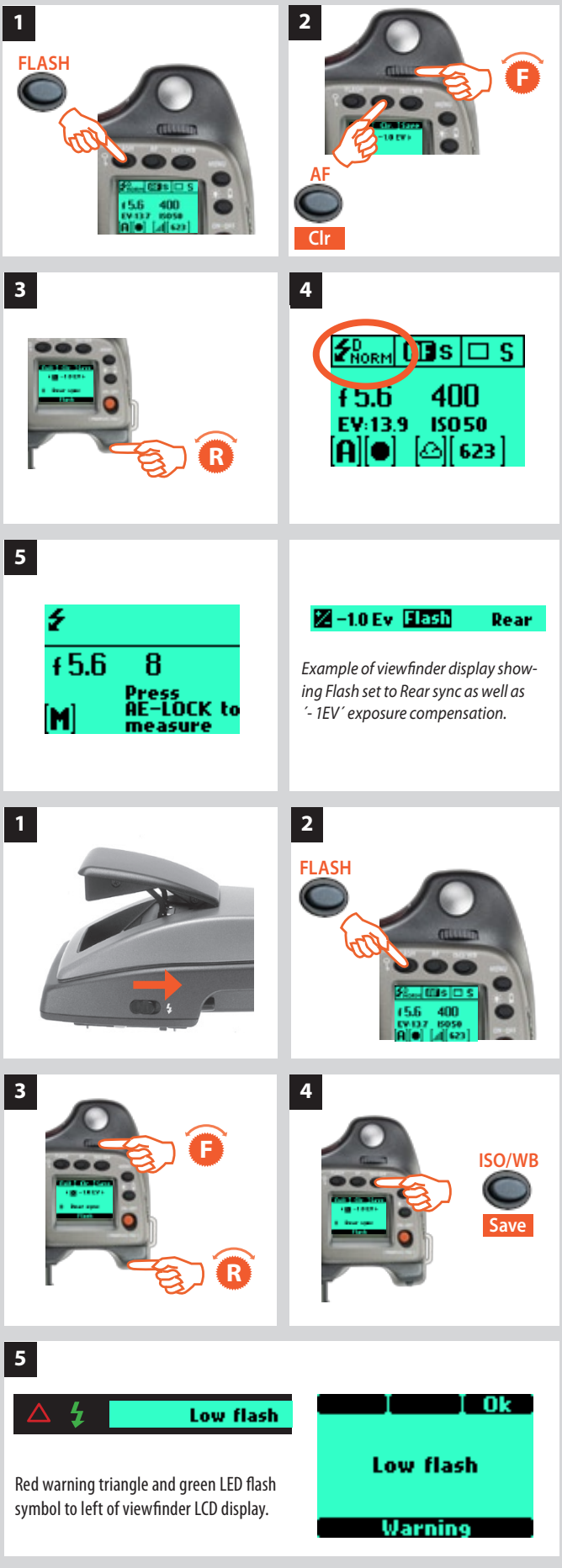
When using suitable dedicated units (compatible with SCA3002), adjustments are made automatically and governed by the settings on the camera. This applies to whether the flash unit is set to TTL or whether it is set to its own integral metering system (A).

Control of either the integral flash unit or separate SCA3002 compatible flash unit regarding the two functions, exposure compensation and shutter sync, is via the grip. The flash measure function can be used for flash units that are not SCA 3002 compatible or for SCA 3002 compatible units at manual setting.

Only flash units specially adapted for use with the H3D should be connected to the hot shoe on the camera.

If using flash/strobe as the main light source and 1/800s shutter speed, remember to turn off the True Exposure facility (Custom Option #13).

To change the balance between flash output and camera exposure requirements to produce a variety of effects, use the exposure compensation function. For various long exposure effects use the sync function. To make flash exposure tests use the flash measure function.



Example of viewfinder display showing Flash set to Rear sync as well as ´- 1EV´ exposure compensation.

Red warning triangle and green LED flash symbol to left of viewfinder LCD display.

To access the controls:

1) *Activate the camera and press the* **FLASH** *button once.*
2) *Turn the front control wheel to set the amount of compensation required:*
   - *from +3EV through -3EV*
   - *press* **Clr** *(***AF** *button) to clear the setting quickly if required.*
3) *Turn the rear control wheel to set:*
   - *normal sync (flash triggered just after the shutter opens)*
   - *rear sync (flash triggered just before the shutter closes)*
   - *flash measure (with non-TTL flash units or TTL units in Manual mode)*
4) *The grip display shows the flash mode - Normal or Rear - in the standard display.*
5) *When set to Flash Measure, a specific screen requests you to press the AE-L button in order to make a reading. See below for details.*

Integral flash

The integral flash unit features the following specifications:

Guide no.	*12*
Coverage	*56º horizontal, 44º vertical*
Maximum light fall-off at side centres	*- 1EV (50%)*
Colour temperature (full flash)	*5,000 – 5,600º K*

To raise the flash unit into its operative position, slide the flash-unit catch backwards in the direction of the flash symbol. To return the flash unit into its closed position, push down on the top of the unit until it clicks back into place. The flash unit is automatically activated when it is in the operative position and de-activated when returned to its stored position.

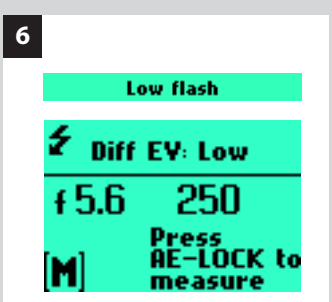
The green LED flash symbol blinks in the viewfinder when the flash unit is charging and remains stationary when fully charged. The flash output can also be adjusted for optimum light balance in fill-flash situations.

Do not use the integral flash together when another external TTL flash unit is connected (and used in TTL or A mode)

For full coverage with the integral flash, use 80 mm or longer lenses (without a lens shade).

Using the integral flash:

1) *Slide the flash-unit catch backwards in the direction of the flash symbol.*
2) *Press the* **FLASH** *button.*
3) *Choose between* **Normal** *or* **Rear** *sync by turning the rear control wheel and the amount of compensation (if required) by turning the front control wheel.*
4) *Press* **Save** *(***ISO/WB** *) button. Make an exposure.*



5) *If the settings were incorrect to match the output of the flash unit, the viewfinder display shows a red triangle alongside a flashing green 'flash' symbol plus a warning message - '***Low flash***'. The grip display will also show a warning message - '***Low flash***'.*

Conventional measures should then be taken to correct the situation. (That is: move closer to the main subject, use a larger aperture setting or use a higher ISO setting).

The 'Low Flash' warning can be turned off in Custom Option #26 if preferred.

Separate flash unit connection and use

Separate flash units can be electrically connected either by way of the hot shoe accessory holder (see previous warnings) on the top of the viewfinder or via a cord to the PC connection port on the left hand side of the camera body. Slave unit switches/ transmitters can also be connected similarly dependant on unit (see specific user manuals for details).

Keep the plastic safety cover in place in the hot shoe when not in use.

Flash measure of separate flash unit

You can measure the effect of an attached flash unit (with PC connected flash units and SCA3902 compatible flash units set to M mode), where the camera acts much as a flash meter would. The aperture setting can be adjusted and more trial exposures made until the information on the grip display is satisfactory.

To use flash measure:

1) *Press the* **FLASH** *button on the grip to access the flash option screen.*
2) *Turn the rear control wheel until* **Flash measure** *appears.*
3) *Press* **Save** *(***ISO/WB** *button) to access the flash exposure screen.*
4) *Make preliminary required aperture setting by turning the front control wheel.*
5) *Press the* **AE-L** *button. The camera will close the aperture, raise the mirror and fire the flash. Light reflected from the flash lit subject will be reflected off a white spot on the auxiliary shutter to the meter sensor.*
6) *Deviations from a normal exposure are displayed as differences in EV on the grip display and the viewfinder display. If '***high***' or '***low***' appears, change the aperture accordingly and make a new test reading.*

   Change the aperture until **Diff EV: 0** *appears, or the desired amount of deviation from the normal exposure.*

   Diff EV: **Low** *signifies more than 2 EV under*

   Diff EV: **High** *signifies more than 2 EV over*

16 Multi Shot

H3D II

Multi-shot

The H3D II multi-shot capability is available with the H3D II-39MS product. Multi-shot provides a capture mode where four separate images are saved that are captures of the same object with the sensor offset by one pixel between the shots. The resulting image shows ultimate color definition and eliminates unwanted moiré and artefacts in studio type stills photography.

To make a multi-shot capture, you must work tethered to the computer and have the Hasselblad software FlexColor or Phocus running. From the capture menu simply choose the capture type "multi-shot". Multi-shot images are saved as 3F raw files directly into the capture destination folder of FlexColor or Phocus. Please see the FlexColor/Phocus user manuals for full intructions.

The technology behind the multi-shot is high precision piezo controlled movements of the sensor in pixel sized increments. Four separate shots are taken in succession (one for each color, but with green captured twice for extra sharpness) that are then combined into a single, high-resolution image. Images taken in multi-shot mode will be sharper and contain more detail than single-shot images. Multi-shot images will also stand up to greater enlargement later in production.

In use, it is essential to ensure that there is no movement in either the camera or the subject. Because of this, these methods are only suitable for tripod/camera stand use for studio-like environments, technical shots, product shots, architectural subjects and similar.

17 Optional Accessories

- HTS 1.5
- HVM waist level viewfinder
- Proshade V/H 60 – 95
- GIL
- Tripod quick coupling
- Flash adapter
- Filters
- Support strap H
- Camera strap H
- Focusing screens
- Release cord
- Lens accessories

Optional accessories provide the opportunity to extend the capabilities of your system or just to add extra convenience to suit your way of working.

(The figures in brackets after the headings are the product codes.)

H3D II

HTS 1.5

(75020359)

The HTS 1.5 is a shift and tilt adapter designed for the HCD28mm, HC35mm, HC50mm, HC80mm and the HC100mm lenses. It not only solves technical challenges but also provides exciting opportunities for creative solutions as well.

HVM waist level viewfinder

(3053328)

The HVM waist level viewfinder allows a comfortable lower viewing angle either for effect or where eye contact with the subject is desirable in portrait photography, for example. Autofocus function of all lenses fully retained. Optimized for horizontal format shooting and not suitable for vertical format use.

Proshade V/H 60 – 95

(3040740)

An adjustable bellows lens shade that provides highly efficient protection against stray light. Its compact, flat folding design saves space in the equipment case. With adapters fits all HC lenses and virtually all V system lenses. Also features a filter holder for glass, gelatin, or plastic filters.

Proshade adapters

(3043415, 3043417, 3043419)

67 mm, 77 mm and 95 mm adapters with bayonet mount for HC lenses. Features lock to provide positive and secure attachment.

Tripod quick coupling H

(3043326)

Mounted on a tripod, this accessory facilitates rapid attachment and removal of the camera. The camera is firmly held in an exact and repeatable position. Two integrated spirit levels make horizontal positioning of the camera easy. The Tripod quick-coupling H fits 1/4" and 3/8" tripod threads and has a safety catch.

GIL (Global Image Locator)

(3053300)

The Hasselblad GIL (3053300) provides automatic creation and storage of GPS information for all H-system digital cameras. The data is tagged to each individual image file and can be read directly by Phocus. The unit requires no extra external battery or power source and works seamlessly in the background for ease of use.

Flash adapter SCA 3902

(3053393)

For connecting flashes compatible with the SCA 3002 system to the Hasselblad H3D II.

UV-sky filters

(3053470, 3053474 and 3053478)

Absorbs UV radiation and reduces blue haze without affecting colours. Also protects the front lens surface. Particularly recommended when the camera is used in harsh conditions. Available in three sizes to suit various lenses: UV-sky 67 mm (3053470), UV-sky 77 mm (3053474) and UV-sky 95 mm (3053478).

Pola filters

(3053482, 3053486 and 3053490)

Reduces non-specular reflections and glare. Increases colour saturation in general. Can intensify a blue sky. Available in three sizes.

Support strap H

(3053623)

Improves comfort and security with hand-held photography.

Camera strap H

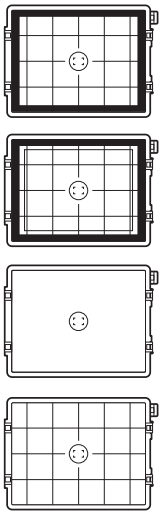
(3053616)

Extra wide camera strap with anti-slip backing.

Release cord H

(3043370)

Remote release cord with a cable length of 0.5 m.

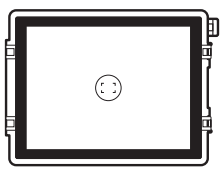


Focusing screens H3D

All focusing screens are of the Spherical Acute-Matte D type with or without grid and central markings for spot (ø 7.5) and AF metering area. Grid patterns provide aid in technical, architectural, documentation and other similar fields.

Available with or without masking for the sensor format

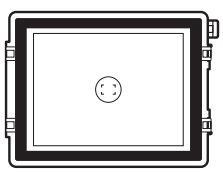
See www.hasselblad.com for details.



Focusing screen H3D 22/39/50

(3043328)

Supplied with all H3DII 39 and 50 Mpixel camera bodies.



Focusing screen H3D 31

(3043330)

Supplied with all H3DII 31 Mpixel camera bodies.

Check on the Hasselblad website – www.hasselblad.com – for further details or news of new accessories.

HC lens accesories

Converter H 1.7X

(3023717)

The Converter attaches between the lens and the body to increase the focal length by a factor of 1.7. This provides a convenient way to expand your range of lenses. The Converter H 1.7 X features the same outstanding optical and mechanical quality as all the lenses in the Hasselblad H system. The optical design consists of 6 elements in 4 groups.

H 13, 26 and 52 Extension tubes

(3053513, 3053526 and 3053542)

The Extension tubes attach between the lens and the body to reduce the close focusing distance for close up photography. They are available in three sizes: 13mm, 26mm and 52 mm. As the H3D has a TTL light metering system, exposure compensation is automatic.

CF Adapter

(3043500)

The CF adapter allows virtually all lenses from the V-system to be used on H-system camera bodies. This automatically expands the potential lens range for H cameras by more than a dozen different focal lengths.

HC lens range

HCD 4/28 mm

HC 3.5/35 mm

HC 3.5/50 mm

HC 2.8/80 mm

HC 2.2/100 mm

HC Macro 4/120 mm

HC 3.2/150 mm

HC 4/210 mm

HC 4.5/300 mm

HC 3.5–4.5/50–110 mm

HC 4.0–5.6/35–90 mm

V system C type lenses
with optional CF lens adapter

Connectivity diagram

This diagram illustrates the compatibility of the H3D II resulting from the modular concept. Even large format cameras can be used in conjunction with the digital capture unit to maximise the useability and extend the range even further.

Optional viewfinders

HV 90x viewfinder

HVM waist-level viewfinder

Optional storage

Imagebank II 100 GB External storage

H3D-II Camera

HVD 90x viewfinder (included)

Digital capture unit (included)

Camera body

Optional V system lenses

CF lens adapter (DAC function unavailable)

Lenses

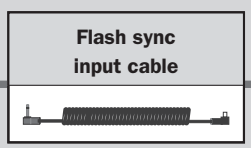
All HC lenses, including HCD 28, extension tubes and converter

Accessories

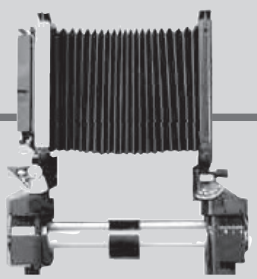
GIL GPS receiver

Large format cameras

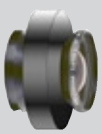
Any shutter with X sync



View camera adapter for Hasselblad H cameras (not available from Hasselblad)



Any view camera with Hasselblad H adapter



Horseman ISS electronic shutter

Schneider Shutter Control ES

Rollei electronic shutter

H3D II

18

Appendix

- Glossary of Terms
- P and Pv explanatory charts
- Technical specifications
- Problems, Equipment Care & Service

This section provides an insight into the more technical aspects as well as some important reference information.

Glossary of Terms

For the sake of clarity, here are short and simple explanations of several terms, items and features mentioned in the manual that may be unfamiliar to some.

Bracketing

The practice of making extra exposures over or under (normally both) the 'standard' exposure to ensure the desired result. This is particularly useful in difficult, wide-ranging lighting conditions. Easily set and controlled with the H3D II.

Custom setting

The setting chosen by the user that differs from the default setting.

Click / Press – On.Off button

The ON.OFF button can be depressed in two different ways which in turn cause different results. This distinction is referred to in the text as ***clicking*** and ***pressing***. ***Clicking*** is a very rapid depressing of the button with immediate release whereas ***pressing*** is a longer depression of the button with maintained pressure.

EV

Exposure Value. It represents the standard photographic notation within exposure control. For example, if you change the aperture on a lens from f/11 to f/8, you will increase the exposure by 1EV. Similarly, if you change the shutter speed from 1/15s to 1/60s you will decrease the exposure by 2EV. A change in EV can therefore represent a change in aperture, shutter speed or a mixture of both. It is a simpler and more useful way of referring to the essential effective combination when making exposure settings without referring to the implications and sometimes confusing aspects of specific shutter speeds or apertures.
As a practical example, if you are using 'exposure compensation', the settings are in EV's (often referred to as 'stops' in older descriptions) or fractions of EVs (or 'stops'). Therefore an exposure compensation of +1EV, for example, will provide 'one stop overexposure' and similarly an exposure compensation of -1/2EV, for example, will provide ' a half stop underexposure'.
See the chart in this manual for cross reference of EVs and their aperture/shutter speed equivalents

DAC

The "Digital APO Correction" or DAC feature optimizes lens performance by automatically including lens specific metadata with every image. APO-chromatic correction is then implemented which reduces colour fringing and corrects distortion to provide the optimum performance of the lens at all settings.

Default setting / factory setting

A standard setting that a device is set to in the first instance during manufacture and returns to if a setting change is halted or interrupted in any way.

FireWire

FireWire is an interface standard that provides the rapid communication of data information between separate units. The H3D II uses Firewire to connect to an ImageBank II or computer.

Half-press / Full press – Shutter release button

The shutter release button can be depressed in two different ways. This distinction is referred to in the text as ***half-press*** and ***full-press*** positions. A ***half-press*** is a rapid, soft press whereas a ***full-press*** is a firmer and longer depression of the button.

IAA

Instant Approval Architecture or IAA provides the user with a method of classifying images either immediately after capture or at any other time. This greatly improves workflow efficiency.

LCD

Liquid Crystal Display. An electronic information panel. The grip has an LCD panel.

LED

Light Emitting Diode. Electronic devices used in information displays. The viewfinder display has LED's to the left and right of the integral LCD panel.

Mid-grey / 18% grey

An important point to be remembered is that all photographic exposure meters / light metering systems are calibrated to provide a reading that will reproduce a 'mid-grey or 18% grey tone' from the measured subject tone. This is an international photographic standard upon which all exposure calculations must be based. The H3D II has very accurate and sophisticated exposure measuring modes. Pre-programmed information is taken into account via the metering system when calculations are automatically made. This provides a very satisfactory compromise for a host of photographic situations and many users will certainly be very satisfied with the consistently high quality of results. Nevertheless, some situations are either so technically difficult or open to interpretation that manual intervention is advised to ensure the desired result. Naturally, many seasoned users always prefer manual control but they base their calculations and decisions on much experience.
To illustrate this point, imagine the following example:
Pin two sheets of paper, one black and the other white, onto a grey wall. Take three exposures using an average light reading; a close-up of the black sheet, a close-up of the white sheet, and a distance shot of the whole wall including the two sheets. Without any manipulation, the first two exposures will produce a tone that is similar to the wall, namely, a grey tone; not black or white. The third exposure, however, will reproduce the wall as a grey tone while the two respective sheets now appear as black and white respectively, as originally observed.
However confusing this might at first seem, it is fundamental to mastering exposure calculations and exposure control. If you are at all unsure about this basic concept, you are strongly recommended to refer to a general photographic manual for a fuller explanation in order to obtain the maximum from your H3D.

OTF

Off The Film - the original literal description of the light measurement mechanics regarding flash exposure measurement that now applies to digital sensors too.

Profile

You can allow the H3D II to be set according to 'profiles'. These profiles are combinations of modes, methods and settings (custom or default) that suit specific photographic situations. By using a personal profile - which you can create, name and save - the camera is immediately configured for a specific purpose without any need to check through the menus. This is a very rapid and secure way of working when repeatedly confronted with similar photographic situations.
As an example you might regularly take outdoor portraits of wedding couples with a long lens. You want a specific aperture to restrict depth-of-field and a fairly fast shutter speed to freeze any movement. You are concerned about the couple blinking during the exposure and so want to take several shots in succession, possibly with slight variations in exposure settings for safety's sake so you might choose the bracketing option too. All these parameters can be preset and stored as a profile that is rapidly accessible.

Quick save

When altering settings, a half-press of the shutter release button will cause a return to the main screen and save the new setting at the same time.

Standard exposure

A 'standard exposure' in the manual refers to the concept of technically correct in accordance with internationally accepted photographic measurement standards (see section on Mid-grey / 18% grey). This does not imply, however, that it would automatically be the preferred choice or be 'correct' according to the desired result. See section on Bracketing.

Main screen

To simplify the descriptions, reference is often made to a 'main' screen regarding the menu. Apart from default settings, there is no standard setting in the normal sense and therefore you create your own 'standard', which of course can be changed at any time.
The 'main' screen is therefore the one you have currently created and is the one visible on the display when photographing (except where a particular mode is in actual operation, such as self-timer, for example).

TTL

Through The Lens - a literal description of the light measurement mechanics. The advantage is that only the essential parts of the subject in front of the camera are included. Accessories such as filters, bellows, close-up rings, converters, etc that could affect exposure are also taken into account automatically with exposure evaluation (for general purposes).

Tethered / Untethered

When the H3D II saves digital files directly to a computer - it is described as tethered..
When files are saved to an internal CF card or an ImageBank II, it is described as untethered.

Time out

This is the time interval that a temporary setting is maintained for before it automatically returns to the original setting (default or custom).

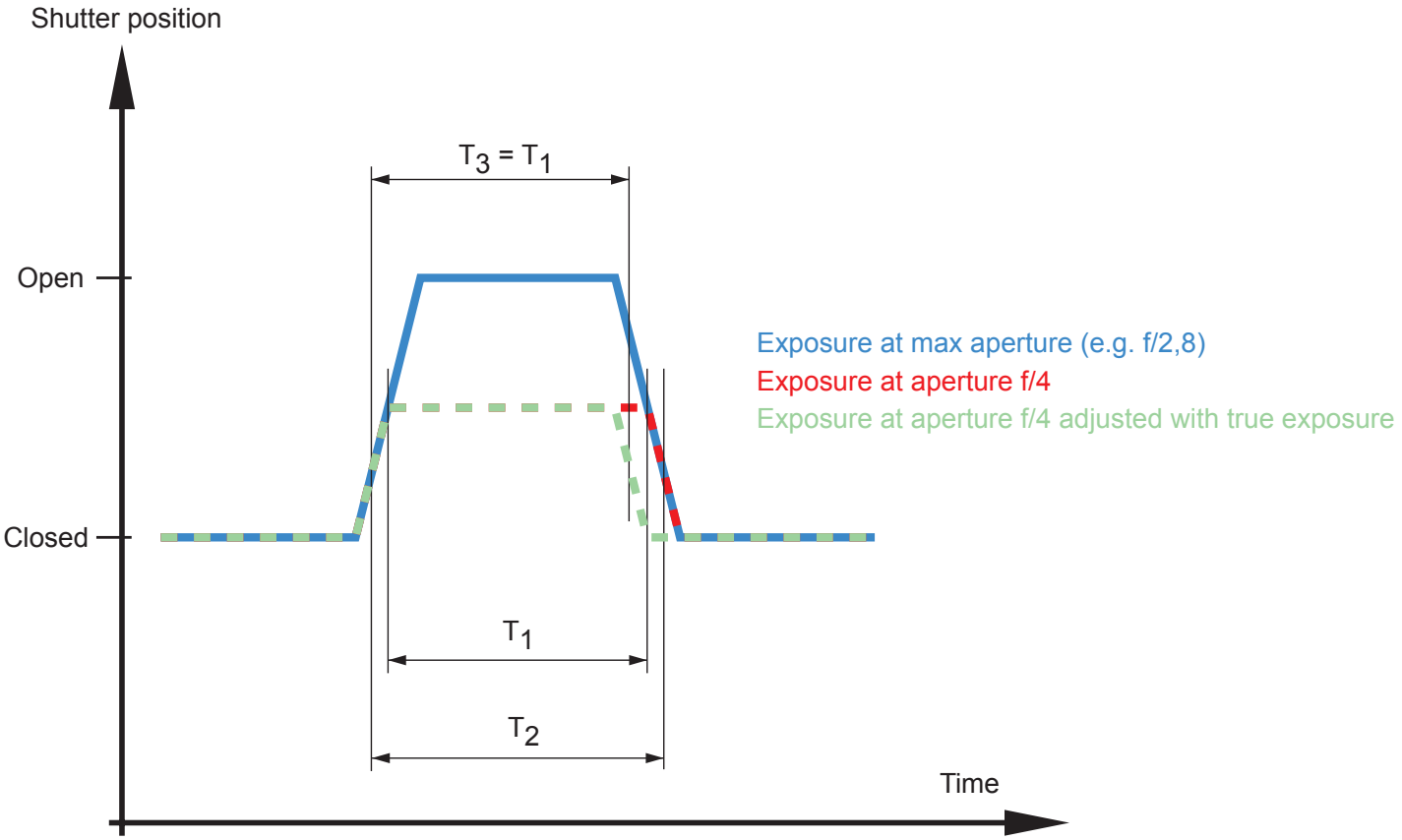
Zone (system)

The Zone System is a method of combined exposure calculation/ film development providing a great deal of tonal control. It was originally devised by Ansel Adams - the classic landscape photographer and Hasselblad user - and now exists in various forms for both black & white and colour photography.
Naturally in the case of the H3D II or any other digital camera, the film development part of the method can not apply. However, some photographers are used to its philosophy and are familiar with its terminology and might like to still refer to it.
An integral part of the method includes the classification and grouping of any given scene into a range of nine (or ten) so-called zones, hence the name. Concerning the H3D II, the word zone refers to the grouping and classification of various tones, where Zone V is the equivalent (whether in black & white or colour) to 18% mid-grey on a scale of Zone I (black) through Zone IX (white). See specific literature for a complete description of this method.

3F / 3FR

The H3D II produces Hasselblad 3FR files after capture. These RAW format files are automatically converted into 3F files when imported to a computer using Phocus or FlexColor.

True exposure



When using flash/strobe as the main light source and using the 1/800s shutter speed, you should turn off the True Exposure facility (Custom Option #13). Failure to do so will cause underexposure.

You can download a full explanation of this situation from www. hasselblad.com.

True exposure

The effective shutter speed for a central lens shutter is defined as the length of time between the opening and closing when measured at the half height position when expressed in diagram form (see diagram). The fact that it will take some time to open and close the shutter will have an influence on the effective shutter speed as the lens aperture closes to its setting. The faster the shutter opens and closes, the less this influence will be. It is also follows that the influence will be greater on shorter shutter speeds.

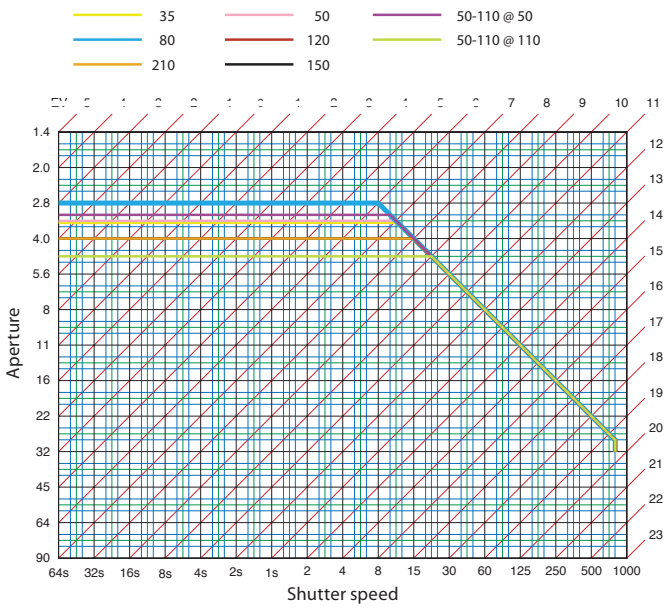
With the lens at full aperture (largest opening), the amount of light at the film plane appears as illustrated by the blue curve in the diagram. The effective shutter speed then becomes T1. If the lens is now closed down by one stop, the amount of light appears as illustrated by the red dashed curve. The effective shutter speed is now increased to T2, which is longer that T1. The result is that the exposure is not reduced by exactly one stop (1EV), however, but slightly less. At the shorter shutter speeds, the exposure error can be as much as 0,5 – 0,8 EV.

The True exposure mode can compensate for this exposure error since the behaviour of the shutter is a known and predictable factor. At shutter speeds of 1/150 second or shorter (faster), the camera will shorten the shutter speed to compensate, as illustrated by the green dashed curve. At the fastest shutter speeds, however, it is not possible to adjust the shutter speed and so the aperture is adjusted instead.

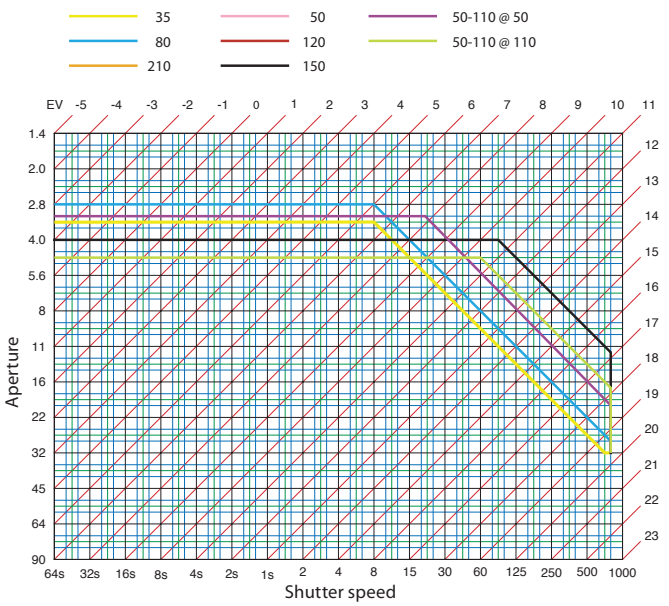
Although it is probably an infrequently used combination, please note nevertheless that the fastest shutter speed / minimum aperture combination cannot be adjusted by True exposure.

Automatic exposure — P & Pv Mode

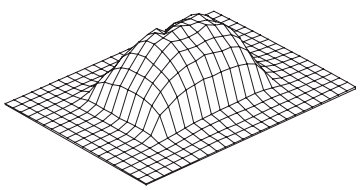
P Mode



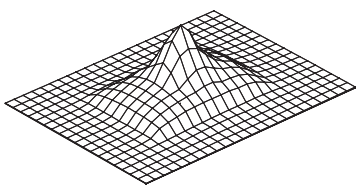
Pv Mode



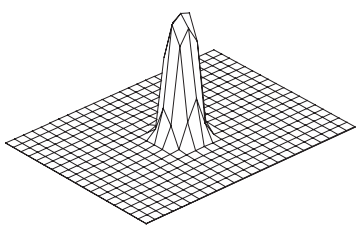
Light metering method sensitivity distribution with an HVD 90X viewfinder



Centre Weighted
(23 x 20 mm)
≈ 25%



CentreSpot
(23 x 20 mm)
≈ 25%



Spot
(diameter 7.5 mm)
≈ 2.5%

Technical specifications

Camera Type	Auto-focus, auto-exposure digital SLR camera with interchangeable viewfinders and lenses.
Construction	One piece stainless steel shell. Die-cast aluminium internal structure. Tripod sockets (1/4 and 3/8") and quick coupling tripod plate for rapid mounting.
Lenses	Hasselblad HC/HCD lenses with built-in electronically controlled shutter and aperture. Automatic or manual focusing with instant manual focus override. All HC/HCD lenses meet the exacting requirements of digital photography. Lens shades can be mounted in reverse for transport. V- system lenses can be used with a CF adapter.
Viewfinder (HVD 90X)	A 90° reflex viewfinder, providing 100% field of view even when wearing eyeglasses, and built-in multi-mode light metering system. Image magnification 3.1x. Integrated fill-in flash with guide number 12. Hot-shoe for automatic flash (Metz SCA3002 system / adapter SCA3902). Dot matrix display with presentation of all relevant information. Built-in diopter adjustment from –5 to + 3.5D. Interchangeable.
Focusing	Automatic and manual focusing with electronic focus aid in manual mode. Instant manual focus override. Automatic focusing using passive central cross type phase detection sensor. AF metering range EV 1 to 19 (ISO 100).
Shutter	Electronically controlled lens shutter with speeds ranging from 32 seconds to 1/800. Flash sync at all speeds.
Flash control	TTL centre-weighted system. Can be used with the built-in flash or a wide variety of flashes compatible with the SCA3002 (Metz) system using adapter SCA3902. ISO range16 to 6400. Flash output can be adjusted (-3 to +3EV) for fill-in purposes independent of ambient light.
Flash measurement	The H3D II has a built-in measurement system that measures flash light from non-TTL flashes, such as studio flashes.
Exposure metering	Multi-mode exposure metering using 90° reflex viewfinder. Metering options are: Spot (diameter 7.5 mm), Centre Weighted, and CentreSpot. Metering range at f/2.8 and ISO100: Spot: EV2 to 21, Centre-weighted: EV1 to 21, CentreSpot: EV1 to 21.
Auto bracketing	Bracketing using predetermined number of captures (2, 3, 5, 7 or 9) in 1/3, 1/2, or 1 EV step difference intervals.
Interval timer	Number of captures from 2 to 'no limit' and interval from 1 second to 1 hour.
ISO range	ISO range: 50 to 400 (39 and 50 Mpix models), 100 to 800 (31 Mpix model).
Displays	The camera features two dot-matrix displays that provide clear and easy-to-understand information to the user. One is located on the grip and the other in the 90° viewfinder. The digital capture unit has a high contrast 3 inch TFT type display.
Focusing screen	Bright Spherical Acute-Matte type D with sensor format markings. Grid marked type also available as option.
Compatibility	All H System lenses and accessories except film magazines. V System C type lenses with optional CF lens adapter.
Accessory connection	Provided with two M5 threads and an electrical connector for accessories.
Customization	A large number of the H3D II's functions can be customized by the user to suit specific styles or situations through the built-in menu system.

User interface	Both basic and advanced functions are set using buttons and control wheels on the camera body in conjunction with the grip and viewfinder graphic interface displays. Digital capture unit menu visible and controllable from unit's display and from Phocus/FlexColor on a tethered computer.
Battery grip rechargeable 7.2 V	Li-ion type. 7.2 V / 1850 mAh output.
Battery charger Li-ion 7.2 VDC	Uses DV charge termination technique to prevent over-charging.100–240 VAC / 50–60 Hz input. 6.0–7.9 VDC/ 800mA output
External dimensions	Complete camera with 2.8/80 mm lens: 153 x 131 x 213 mm – 6.0 x 5.2 x 8.4 ins. (W x H x L)
Weight	Complete camera with Li-Ion battery and CF card: 2175 g / 4lb 12oz.

DIGITAL CAPTURE UNIT	**31 Mpixels**	**39 Mpixels**	**50 Mpixels**
Sensor size	31 Mpixels: (4872 x 6496 pixels)	*39 Mpixels: (5412 x 7212 pixels)*	50 Mpixels:
Sensor dimensions	33.1 x 44.2 mm	*36.8 x 49.1 mm*	36.8 x 49.1 mm
Image size	Raw 3FR capture 40MB on average 8 bit TIFF: 95 MB	*Raw 3FR capture 50 MB on average* *8 bit TIFF: 117 MB*	Raw 3FR capture 65 MB on average 8 bit TIFF: 150MB
Capture rate	1.2 seconds per capture 42 captures per minute	*1.4 seconds per capture* *39 captures per minute*	1.1 seconds per capture 33 captures per minute
Storage capacity	2 GB CF card holds 50 images on average	*2 GB CF card holds 40 images on average*	4 GB CF card holds 60 images on average
ISO speed range	ISO 100, 200, 400 and 800	*ISO 50, 100, 200 and 400*	ISO 50, 100, 200 and 400
Shooting mode	Single shot		
Color definition	16 bit		
Color management	Hasselblad Natural Color Solution		
Image storage	CF card type U-DMA (e.g. SanDisk extreme IV), ImageBank-II or tethered to a Mac or PC		
Battery type	Rechargeable Li-ion battery (7.2 VDC / 1850 mAh). Optional cassette for 3 CR-123 lithium batteries included. (*31 and 39 Mpixel models only*).		
Color display	Yes – TFT 3 inch, 24 bit color		
Histogram /Acoustic feedback	Yes		
IR filter	Mounted on CCD sensor		
File format	Lossless compressed Hasselblad 3FR/3F		
Software	Phocus/FlexColor (supplied, for Mac and PC)		
Platform support	Mac: OSX version 10.5, Windows: NT, 2000, XP, XP64, Vista and Vista 64		
Host connection type	FireWire 800 (IEEE1394b)		
View camera compatibility	Yes, controlled via flash sync. Electronic shutters must be controlled from local panel.		
Operating temperature	0 – 45 ˚C / 32 – 113 ˚F		
Dimensions	Complete camera w.HC80 mm lens: 153 x 131 x 213 mm (W x H x D)		
Weight	2290 g (complete with HC80 mm lens, Li/ion battery and CF card)		

Default Settings ("Standard" profile)

Exp.mode		A (Aperture priority)	
LM mode		Centre weighted	
Exp. adjust		0	
Focus mode		AF-S	
Drive mode		S	
Flash sync		Normal (beginning of exp.)	
Flash adjust		0	
Self timer	delay	10 sec	
	Sequence	Mirror up / Delay	
	Mirror mode	Mirror goes down	
Bracketing	Frames	3	
	Sequence	Normal - over - under	
	EV diff	0,5 EV	
Interval timer	Frames	3	
	Interval	0 min 30 sec	
Custom options	1	Standby timeout	10 sec
	2	EV increment	1/2 step (0.5 EV)
	3	Exp adjust increment	1/3 step (0.3 EV)
	4	User button function	None
	5	AE-Lock button function	AE-lock
	6	Stop Down button function	Stop down
	7	M.UP button function	Mirror up
	8	Control wheel direction	CW
	9	Flash ready exposure lock	Yes
	10	Magazine exposure lock	Yes
	11	Lens exposure lock	Yes
	12	Out of range exposure lock	No
	13	True exposure	On
	14	Spot mode	Normal
	15	Focus aid in MF	Half press
	16	AF assist light	Ext. Flash
	17	Rear wheel quick adjust	Yes
	18	Control lock	All controls
	19	Beeper	On
	20	Show histogram	Yes
	21	Interval & Selftimer	Exit
	22	AE-lock & Quick adjust	Exp. reset
	23	Show EV	Yes
	24	Show ISO	Yes
	25	Bracket param. in Manual	Shutter speed
	26	Aperture control in Manual	Front wheel
	27	Low flash warning	On
	28	Interval timer initial delay	None
	29	Aperture indicator	Normal
	30	Extra mirror-delay	50ms

Care and maintenance of digital capture unit

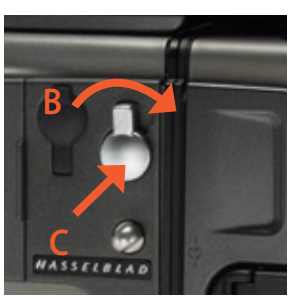
Handling and storage

- ***Always replace the protective CCD/filter cover when the digital capture unit is not mounted on your camera.***
- ***Do not touch the exposed CCD/filter with your fingers.***
- ***Keep all foreign objects out of the camera opening.***
- ***Store your digital capture unit away from moisture and excessive heat. Please see "Technical Specifications" for complete operational and storage requirements.***
- ***Protect your digital capture unit from impact—do not drop it.***

1

2

3



Cleaning the CCD Infrared Filter

If you see dark or coloured spots or lines in your images, then you may need to clean the outer surface of digital capture unit's infrared (IR) filter. In most cases, the careful use of compressed air will be adequate though if you use canned compressed air, read the intructions very carefully before use to avoid spraying impurities or even ice on the filter! Sometimes, however, small particles will get stuck to the surface of the IR filter, requiring for a more thorough cleaning, involving either fluid or wipes. For a good safe cleaning, follow descriptions below.

Basic air-cleaning procedure / removing the digital capture unit

1. *Remove a FireWire if connected.*
2. *Remove the viewfinder (see 'Attaching and removing the viewfinder' if unsure).*
3. *While pushing the safety catch backwards on the digital capture unit (3 illus. A) push the lever of the digital capture unit release button to the right (3 illus. B) and while maintaining that position press the centre of the button firmly inwards towards the camera body (3 illus. C) to finally release the magazine.*
4. *Clean the outside surface of IR filter by spraying it with clean compressed air (see warning above first). If this is not enough, then use one of the procedures outlined below.*
5. *Reattach the digital capture unit to the camera immediately after cleaning to check results.*
6. *If you still see spots on your shot after you have cleaned the outside of the infrared filter, then you may have dust either on the inside of the IR filter or on the CCD itself.*

WARNING:

Never attempt to remove the glass filter from the front of the CCD—you will probably ruin the CCD if you do so. If dust manages to get between the IR filter and CCD, it can only be removed at the Hasselblad factory. Contact your Hasselblad dealer for assistance.

Cleaning using the HAMA cleaning fluid and tissues

Note! Hasselblad recommends HAMA Optic Cleaning Fluid 5902.

1. *Carefully spray the fluid onto the IR filter at a distance of 10-15 cm (4-5 inches), so that the fluid is applied onto the filter as a thin, even haze. 1-2 sprays are enough. If you apply too little, the fluid will start to dry up before you start wiping the filter. As an alternative you can spray the fluid onto the tissue first, and then apply it to the filter as you wipe it.*

2. *Fold the tissue several times to match the width of the IR filter—you might use two or three tissues at a time if necessary (to give you a better grip). Be sure to fold the paper so that the coated glossy side faces outwards—do not use the other side, as it can do more harm than good!*
3. *Gently place the folded tissue onto the edge of the filter using two or three fingers. Be sure to wipe the entire surface evenly. Sweep the filter only once. Do not wipe the same area twice with the same tissue as you might reapply dirt removed in the first sweep.*
4. *Finally check if the IR filter has been properly cleaned either by visual inspection or by mounting the digital capture unit to the camera and making a shot. If further cleaning is needed, repeat cleaning procedure.*

Cleaning with an E-Wipe

E-wipes are individually packed wet tissues.

1. *Tear at the notch to break seal.*
2. *Remove e-wipe from its packaging and continue without delay.*
3. *Fold the tissue to match the width of the IR filter.*
4. *Apply firm pressure using two or three fingers at the edge of the wipe to ensure an even, firm contact with filter surface. Wipe the surface in one unbroken motion.*

Note! Do not use same side of the e-wipe twice as you will be likely to reapply any particles removed in the first pass.

5. *Finally check if the IR filter has been properly cleaned either by visual inspection or by mounting the digital capture unit to the camera and making a shot. If further cleaning is needed, repeat cleaning procedure.*

Attaching the digital capture unit

Position the digital capture unit retention groove onto the digital capture unit support on the camera body ensuring that they are correctly positioned. Swing the digital capture unit towards the camera body and firmly press into place with a click. If there is resistance, the magazine retaining catch on the camera has probably been inadvertently released. In that case, push the release button again to reset the catch.

Cleaning the housings

If the camera becomes dirty, clean it with a soft, clean cloth lightly moistened with water only. Do not use any other solvents and do not allow water to seep in the openings.

Problems, Equipment Care & Service

The H3D II is a very sophisticated camera that relies on much information being passed and processed to and from each modular unit to produce the correct behaviour. It is therefore essential that reasonable care is taken in attaching, detaching and storing the viewfinder, lenses, extension tubes, etc to ensure that the databus connections are not damaged or soiled in any way. Also when lifting or handling the camera try to always use the grip or strap and avoid holding the camera just by the digital capture unit or viewfinder. Warning messages are normally easily addressed and remedied but 'Error' messages require further attention as they denote a fault, temporary or otherwise. You should methodically investigate the situation to see for example whether the recent attachment of an accessory has coincided with the appearance of an error message. Standard procedure is to detach and re-attach the viewfinder, lens etc ensuring that they are positioned firmly and correctly to see whether the problem disappears. Failing that, removal of the battery grip for about ten seconds or so will reset the camera's processors. Persistent error messages might well signify a more complex problem and you are advised to contact your nearest Hasselblad Authorized Service Center for advice. You may receive a feedback report on either the grip display or the capture unit display. Please note this message carefully as it can facilitate support response greatly, as well as improve on firmware updates . As well as the error message, a description of the camera's behaviour and an account of what action you were trying to take when it happened could be also beneficial. Also, please remember that if a hardware icheck is to be made, the Center will almost certainly want to inspect all of the items that were involved when the error message first appeared.

In certain situations, it is possible that the camera can be affected by a discharge of static electricity particularly if the area around the control buttons on the grip comes into contact with a conductive cord or material that is connected to earth, directly or indirectly (a lighting stand, for example). This might temporarily deactivate the camera though it does not cause any damage. Press the red ON.OFF button on the grip again to reactivate the camera.

If a problem does occur you are advised not to attempt any repairs yourself. Some service operations require very sophisticated instruments to check, measure and adjust and there is a real danger of creating more problems than solving them if such attempts are made in any other way.

EQUIPMENT CARE

A Hasselblad camera is designed to withstand the rigours of professional use in most environments. To avoid the possibility of damage however, it should be protected from harsh conditions and in particular avoid oil fumes, steam, humid conditions and dust.

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

Dust and grit: 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. Some form of protective case or camera bag is advised for transportation.

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

Return your equipment to a service centre for occasional checking and preventive maintenance to ensure optimal reliability. You can easily keep a check on service intervals by looking under 'Info' in the menu. If your camera is used constantly and intensively, regular periodic check-ups 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.

CAUTION

- *Keep all equipment and accessories out of the reach of small children.*
- *Do not place heavy objects on the equipment.*
- *Do not use the batteries except as specified.*
- *Use only the batteries specified for use with the camera.*
- *Remove the batteries when cleaning the camera or if you intend to leave the camera unused for a long period.*
- *If you use spare (standard or rechargeable) battery packs be particularly careful to use the supplied protective cap when storing. There is a potential fire risk if the contacts are short circuited across a conductive object (such as keys in a pocket, for example).*
- *Take particular care when working with strobe / studio flash units to prevent damage to equipment and personal injury.*
- *Do not attempt to open the digital capture unit.*
- *Keep your digital capture unit and all other computer equipment away from moisture. If your digital capture unit becomes wet, disconnect from power and allow it to dry before attempting to operate again.*
- *Never cover the ventilation openings on the digital capture unit.*
- *Always replace the protective CCD/filter cover when the digital capture unit is not connected to your camera--the exposed CCD and filter are vulnerable to damage.*
- *Never try to remove the glass IR filter from the front of the CCD; this will probably ruin the CCD. If dust manages to get between the CCD and IR filter, please contact your Hasselblad dealer for assistance.*

Disposal

If you need to dispose of the digital capture unit, ImageBank-CF and/or batteries, please do so in an environmentally friendly manner at the local waste plant/ recycling centre or similar.

The information in this manual is furnished for informational use only, is subject to change without notice, and should not be construed as a commitment by Victor Hasselblad AB & Hasselblad A/S.

Not all the images in this manual were taken with a Hasselblad H3D II. They are used for illustrative purposes only and are not intended to represent the image quality produced by a Hasselblad H3D II.

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