SONY

3-868-749-09 (1)

HD COLOR CAMERA

HDC1500 Series

⚠警告 電気製品は、安全のための注意事項を守らないと、
火災や人身事故になることがあります。

このオペレーションマニュアルには、事故を防ぐための重要な注意事項と製品の取り扱いかたを示してあります。**このオペレーションマニュアルをよくお読みのうえ、**製品を安全にお使いください。お読みになったあとは、いつでも見られるところに必ず保管してください。

Digital HDVS

Power HAD EX

MEMORY STICK™

OPERATION MANUAL Japanese/English
1st Edition (Revised 8)

WARNING

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

AVERTISSEMENT

Afin de réduire les risques d'incendie ou d'électrocution, ne pas exposer cet appareil à la pluie ou à l'humidité.

Afin d'écarter tout risque d'électrocution, garder le coffret fermé. Ne confier l'entretien de l'appareil qu'à un personnel qualifié.

WARNUNG

Um die Gefahr von Bränden oder elektrischen Schlägen zu verringern, darf dieses Gerät nicht Regen oder Feuchtigkeit ausgesetzt werden.

Um einen elektrischen Schlag zu vermeiden, darf das Gehäuse nicht geöffnet werden. Überlassen Sie Wartungsarbeiten stets nur qualifiziertem Fachpersonal.

For the customers in the U.S.A.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

All interface cables used to connect peripherals must be shielded in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For the State of California, USA only

Perchlorate Material - special handling may apply, See www.dtsc.ca.gov/hazardouswaste/perchlorate
Perchlorate Material : Lithium battery contains perchlorate.

For the customers in Taiwan only

廢電池請回收

For laser-related devices (HDC1500/1400 only)

This HD Color Camera is classified as a CLASS 1 LASER PRODUCT.

Laser diode properties
Wave length: 1310±40 nm
Emission duration: Pulse Modulation
Laser output power: 141^{+37}_{-29} µW

Daten der Laserdiode
Wellenlänge: 1310±40 nm
Emissionsdauer: Pulsmodulation
Laser-Ausgangsleistung: 141^{+37}_{-29} µW

Laserdiode data
Bølgelængde: 1310±40 nm
Strålingsvarighed: Pulse Modulation
Lasereffekt: 141^{+37}_{-29} µW

Laserdiodens egenskaper
Våglängd: 1310±40 nm
Strålningstid: Pulsmodulering
Laseruteffekt: 141^{+37}_{-29} µW

Laserdiodens egenskaper
Bølgelengde: 1310±40 nm
Emisjonslengde: Pulsmodulasjon
Laser utgangseffekt: 141^{+37}_{-29} µW

CAUTION
The use of optical instruments with this product will increase eye hazard.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

For the customers in Europe

This product with the CE marking complies with both the EMC Directive and the Low Voltage Directive issued by the Commission of the European Community.
Compliance with these directives implies conformity to the following European standards:

- EN60950-1: Product Safety
- EN55103-1: Electromagnetic Interference (Emission)
- EN55103-2: Electromagnetic Susceptibility (Immunity)

This product is intended for use in the following Electromagnetic Environments:
E1 (residential), E2 (commercial and light industrial), E3 (urban outdoors), E4 (controlled EMC environment, ex. TV studio)

The manufacturer of this product is Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, Japan.
The Authorized Representative for EMC and product safety is Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Germany. For any service or guarantee matters please refer to the addresses given in separate service or guarantee documents.

Pour les clients européens

Ce produit portant la marque CE est conforme à la fois à la Directive sur la compatibilité électromagnétique (EMC) et à la Directive sur les basses tensions émises par la Commission de la Communauté Européenne.
La conformité à ces directives implique la conformité aux normes européennes suivantes:

- EN60950-1 : Sécurité des produits
- EN55103-1 : Interférences électromagnétiques (émission)
- EN55103-2 : Sensibilité électromagnétique (immunité)

Ce produit est prévu pour être utilisé dans le senvironnements électromagnétiques suivants : E1 (résidentiel), E2 (commercial et industrie légère), E3 (urbain extérieur) et E4 (environnement EMC contrôlé, ex. studio de télévision).

Le fabricant de ce produit est Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, Japon.
Le représentant autorisé pour EMC et la sécurité des produits est Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Allemagne. Pour toute question concernant le service ou lagarantie, veuillez consulter les adresses indiquées dans les documents de service ou de garantie séparés.

Für Kunden in Europa

Dieses Produkt besitzt die CE-Kennzeichnung und erfüllt die EMV-Richtlinie sowie die Niederspannungsrichtlinie der EG-Kommission.
Angewandte Normen:

- EN60950-1: Sicherheitsbestimmungen
- EN55103-1: Elektromagnetische Verträglichkeit (Störaussendung)
- EN55103-2: Elektromagnetische Verträglichkeit (Störfestigkeit), für die folgenden elektromagnetischen Umgebungen:
  E1 (Wohnbereich), E2 (kommerzieller und in beschränktem Maße industrieller Bereich), E3 (Stadtbereichim Freien) und E4 (kontrollierter EMV-Bereich, z.B. Fernsehstudio).

Der Hersteller dieses Produkts ist Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, Japan.
Der autorisierte Repräsentant für EMV und Produktsicherheit ist Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Deutschland. Bei jeglichen Angelegenheiten in Bezug auf Kundendienst oder Garantie wenden Sie sich bitte an die in den separaten Kundendienst- oder Garantiedokumenten aufgeführten Anschriften.

Table of Contents

Overview

The HDC1500-series cameras, HDC1500, HDC1550, HDC1400, and HDC1450, are 2/3-type high-definition portable video cameras equipped with CCD for 2,200,000 pixels. They incorporate the latest pickup elements and digital signal-processing LSI to yield higher picture quality and higher stability in image creation while maintaining conventional popular functions and operability.

The differences among the models are shown below:

	HDC1500		HDC1550		HDC1400		HDC1450	
	JN4/SYL models	CE/E33 models	UC model	CE model	JN3/JN4 models	CE/E33 models	UC model	CE model
Operation panel	SY type	European type	SY type	European type	SY type	European type	SY type	European type
Control connector	Fiber		Triax		Fiber		Triax	
Video format coverage	1080/50i, 1080/59.94i, 1080/23.98P, 1080/24P, 1080/25P, 1080/29.97P, 720/50P, 720/59.94P, 1080/50P, 1080/59.94P		1080/50i, 1080/59.94i, 1080/23.98P, 1080/24P, 1080/25P, 1080/29.97P, 720/50P, 720/59.94P		1080/59.94i, 720/59.94P	1080/50i, 720/50P	1080/59.94i, 720/59.94P	1080/50i, 720/50P
Built-in filters	Optical ND filters (1/4ND, 1/8ND, 1/16ND,1/64ND) Optical CC filters (cross, 3200K, 4300K, 6300K, 8000K) Electric filter (5600K)				Optical ND filters (1/4ND, 1/16ND,1/64ND) Optical cross filter Electric filter (5600K)			
HD SDI output	BNC connector × 2 (HD SDI with embedded audio × 1, with no embedded audio × 1), Dual Link		BNC connector × 1 (No embedded audio)		←		←	
Promptor output	2 channels		1 channel		←		←	
Genlock/return input	Yes				No			

Features

High picture quality and high performance

The new 2/3-type Progressive IT CCD for 2,200,000 pixels conforms to driving formats up to 1080/59.94P, achieving high sensitivity and low smear. In addition, the 14-bit A/D converter and a unique signal-processing LSI provide picture quality of optimal grade.

Multiple formats

The HDC1500 covers ten video formats, HDC1550 covers eight video formats, and HDC1400 and HDC1450 covers two video formats. With the HDC1500, signal output of 1080/50P and 59.94P from the camera head is also possible via the Dual Link interface.

Newly designed integrated unit with low center of gravity

The basic design has been reworked. The stylish appearance with low-slung design improves operability as a portable camera and, when used in combination with the HDLA1500-series Large Lens Adaptor, it permits the viewfinder to be mounted at a low position, making the viewfinder position closer to the optical axis of the lens for highly efficient operations.

Swing handle

The swinging structure of the handle enables the large viewfinder mounted on the HDLA1500-series Large Lens Adaptor to be shifted forward, giving it the same total longitudinal size as a standard studio-use camera, for operability equivalent to that of a standard studio-use camera.

Position-adjustable shoulder pad

The position of the shoulder pad can be adjusted for stable shooting according to the build of the camera operator, the type of lens in use, or the shooting style.
A low-repulsion shoulder pad (position fixed) is avaliable as an option (Part No.: A-8286-346-A).

Function-assignable switches

The camera has a switch to which various functions can be assigned on the side panel. You can activate your desired function, such as electronic color-temperature conversion, instantly when shooting by assigning it to the switch in advance. Switches on the handle are also available as function assignable switches.

Memory Stick [1)] operation

The camera is equipped with a Memory Stick port, which enables setup data storage and software upgrading using Memory Sticks.

1) Memory Stick and MEMORY STICK ™ are trademarks of Sony Corporation.

Various color-reproduction functions

Selection of the gamma table

Multiple gamma tables are provided, enabling you to use multiple formats and perform flexible image creation.

Multimatrix color correction

In addition the standard 6-axis matrix function, the camera has a multimatrix function that permits you to adjust the hue and chroma for color components in 16-axis directions independently. This is quite useful in color matching among multiple cameras.

Knee saturation

Change of hue and decrease in chroma that occur in highlighted areas can be compensated.
This enables reproduction of natural skin tones under strong lighting.

Low key saturation

Hue and saturation in low-key zones can be compensated. Thus, compensation for color reproduction in all zones is enabled in combination with matrix color compensation and knee saturation functions.

Versatile detail control functions

Skin-tone detail function

This function allows control (emphasis or suppression) of the detail level for just a certain hue or chroma area in the image, by creating a detail gate signal from color components of your specified hue, such as skin tones.

The detail levels of three hues can be adjusted independently at the same time.

Detail boost-frequency control

The boost frequency can be adjusted from 20 to 30 MHz. This allows the detail thickness to be set appropriately for the subject, thus enabling more subtle image expression.

H/V ratio control

The ratio between horizontal and vertical detail can be adjusted.

White/black limiter

The white and black details can be limited independently.

Easy menu-based setting

Selections and settings for viewfinder display items, safety-zone marker [2)] or center marker,[3)] screen size marker, etc. can be made quickly and easily, using setup menus displayed on the viewfinder screen or an external monitor.

2) Safety zone marker:
A box-shaped marker displayed on the viewfinder screen which indicates 80%, 90%, 92.5%, or 95% of the total screen area
3) Center marker:
A cross-shaped marker which indicates the center of the viewfinder screen

Wide variety of viewfinder display options

Along with items such as operation messages, a zebra pattern,[4)] a safety-zone marker, and a center marker, camera settings may also be displayed on the viewfinder screen. Furthermore, there are other indicators arranged above and below the viewfinder, such as a tally lamp, battery warning indicator, and an indicator to tell you that one or more settings are other than standard. This makes it simple to check the status of the camera.

4) Zebra pattern:
A stripe pattern displayed on the viewfinder screen which indicates the portions where the video level is above about 70% or 100%. Used to check the video level of the subject.

Optical digital transmission (HDC1500/1400)

The camera uses electro-optical coding cable for 1.5-gigabit digital optical transmission between the camera and a Camera Control Unit.

High-resolution 2-type monochrome and 3.5-type color multiformat viewfinders (optional)

The HDVF-20A, a multiformat 2-type monochrome CRT viewfinder, and the HDVF-C35W, a multiformat 3.5-type color LCD viewfinder, are available as options to cover various applications.

Prevention of electrical shock

When the power connection is unsafe, the power supply from the connected Camera Control Unit will be shut off.

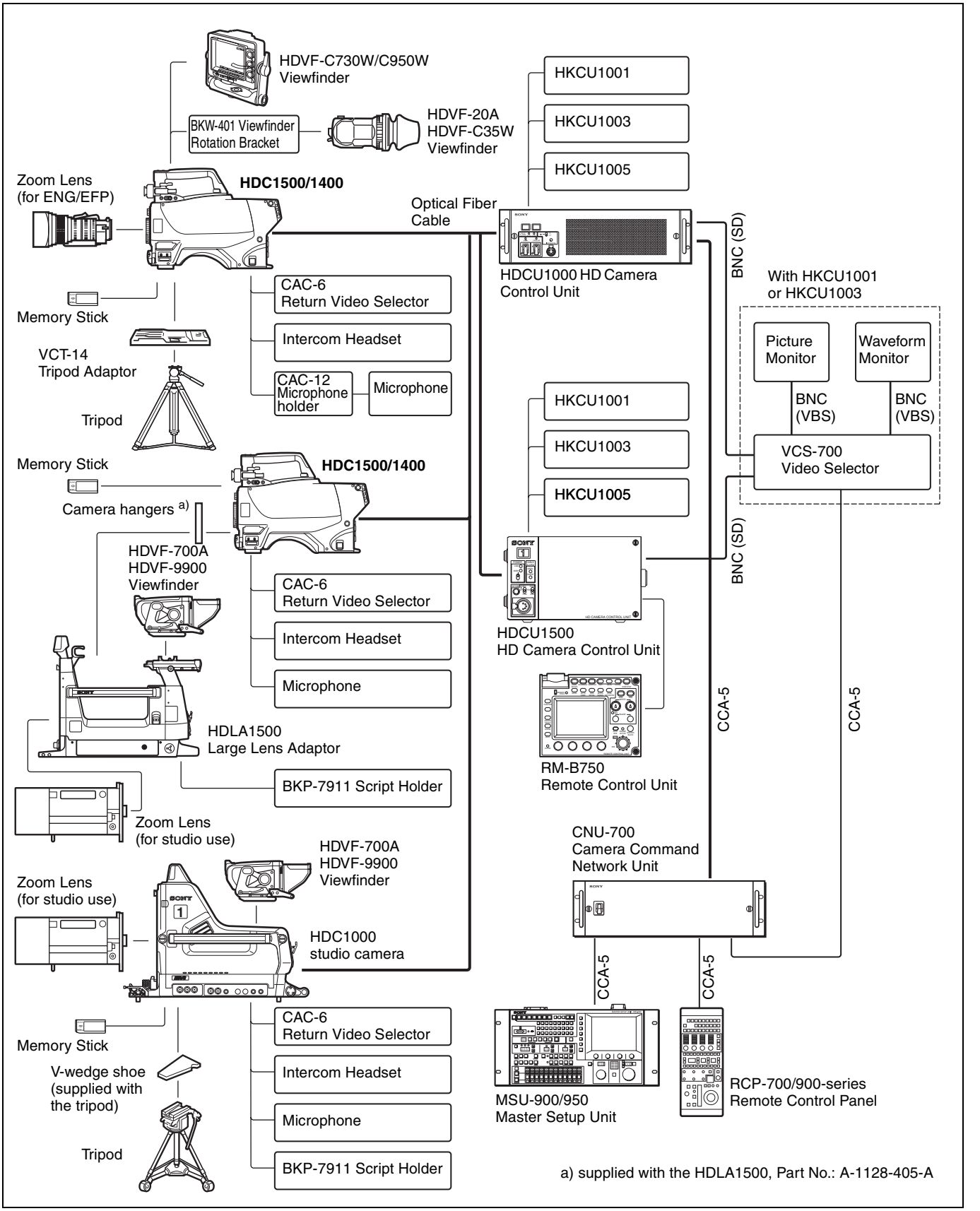
System Configuration

Peripherals and related devices for the HDC1500-series cameras are shown in the figures on the subsequent pages.

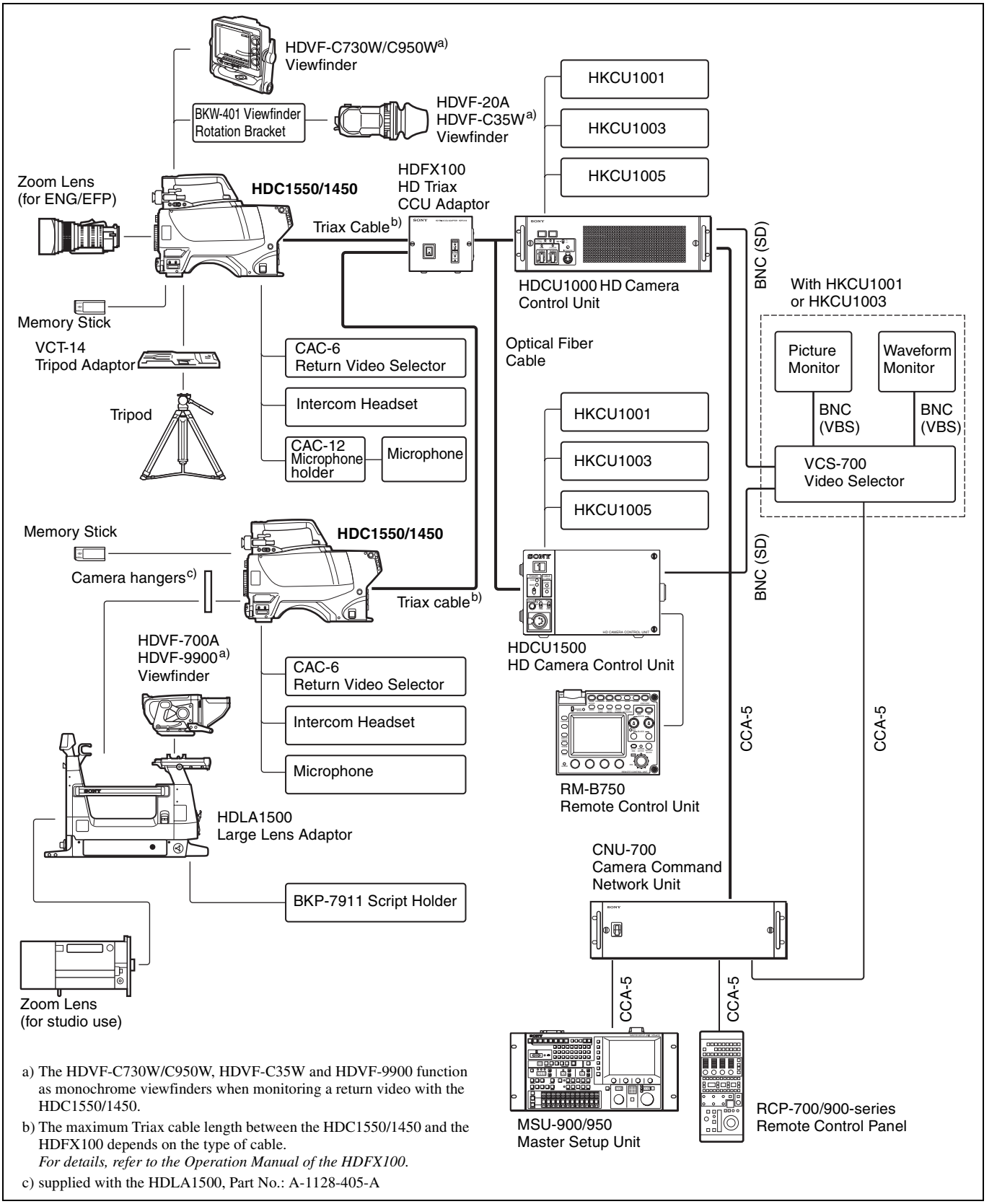
Note

Production of some of the peripherals and related devices shown in the figures has been discontinued. For device about choosing devices, please contact your Sony dealer or a Sony sales representative.

Connection example 1 (HDC1500/1400)



Connection example 2 (HDC1550/1450)

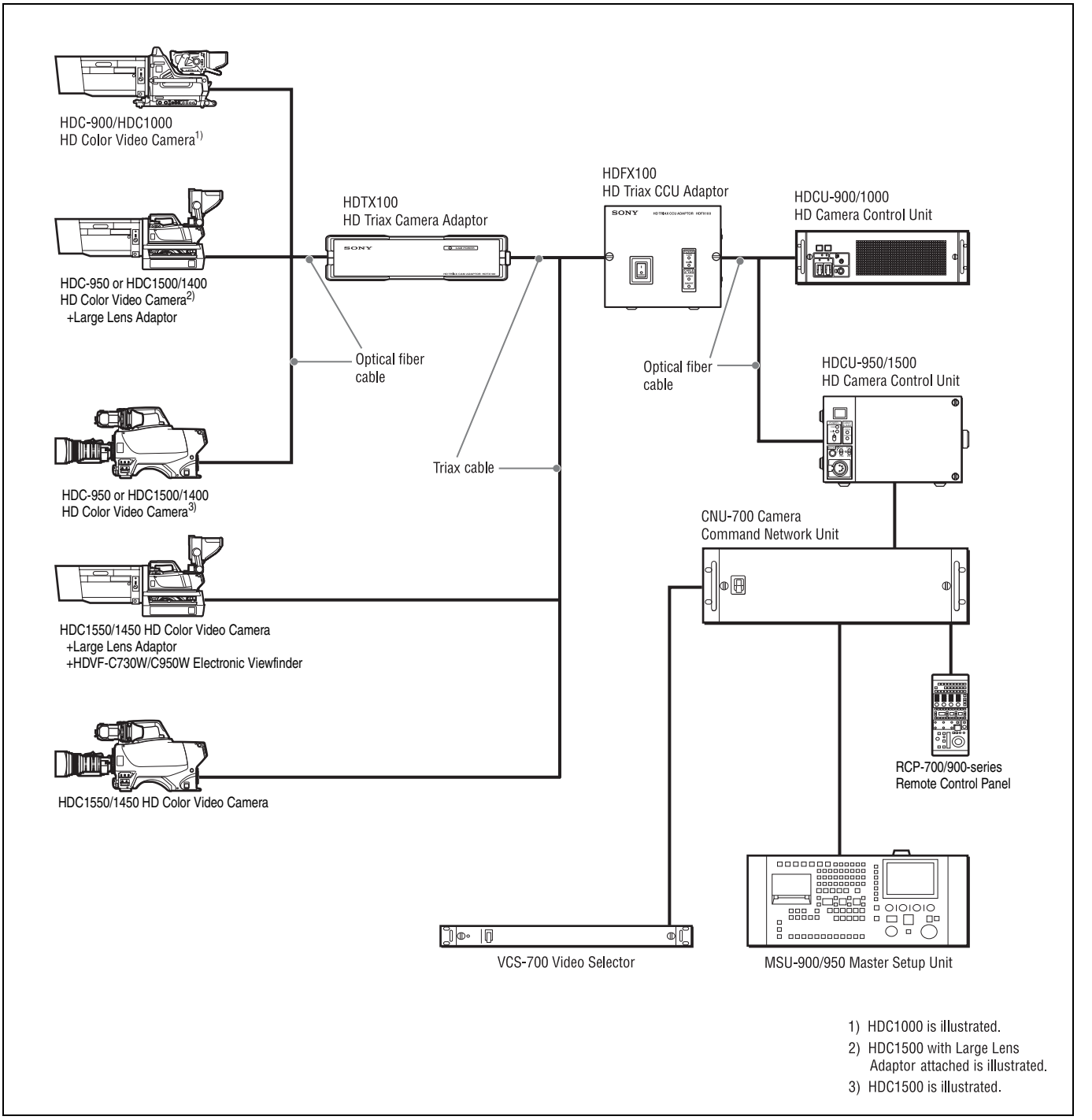


a) The HDVF-C730W/C950W, HDVF-C35W and HDVF-9900 function as monochrome viewfinders when monitoring a return video with the HDC1550/1450.

b) The maximum Triax cable length between the HDC1550/1450 and the HDFX100 depends on the type of cable.
For details, refer to the Operation Manual of the HDFX100.

c) supplied with the HDLA1500, Part No.: A-1128-405-A

Connection example 3



1) HDC1000 is illustrated.
2) HDC1500 with Large Lens Adaptor attached is illustrated.
3) HDC1500 is illustrated.

Maximum cable run with Triax cable

The maximum Triax cable length between the HDC1550/1450 and the HDFX100 or between the HDFX100 and the HDTX100 depends on the type of cable.

For details, refer to the Operation Manual of the HDFX100/HDTX100.

Notes

- The viewfinders function as monochrome viewfinders when monitoring a return video using the HDFX100 and the HDTX100.
- The skin gate signal is superimposed on the camera video signal. When tally becomes ON, the skin gate signal is forced to OFF.

Precautions

Note on laser beams

Laser beams may damage the CCDs. If you shoot a scene that includes a laser beam, be careful not to let a laser beam become directed into the lens of the camera.

Do not subject to severe shocks

Damage to the case or internal components may result.

When finished using

Set the power switch to OFF.

Operation and storage environment

Store in a level place with air conditioning.
If the unit gets wet, make sure it is completely dry before storage.
Avoid use or storage in the following places:

- Extremely hot or cold places
- Places with high humidity
- Places with strong vibration
- Near strong magnetic fields
- In places where it receives much direct sunlight, or near heating equipment

Condensation

If you move the camera from a very cold place to a warm place, or use it in a damp location, condensation may form on the lens or inside the camera.
The camera has no built-in condensation indicator. If you find condensation on the body or lens, switch the camera off and wait for the condensation to disappear for about one hour.

Phenomena Specific to CCD Image Sensors

The following phenomena that may appear in images are specific to CCD (Charge Coupled Device) image sensors. They do not indicate malfunctions.

White flecks

Although the CCD image sensors are produced with high-precision technologies, fine white flecks may be generated on the screen in rare cases, caused by cosmic rays.
This is related to the principle of CCD image sensors and is not a malfunction.

The white flecks especially tend to be seen

- when operating at a high environmental temperature
- when you have raised the master gain (sensitivity)

This product has a compensation function and the problem may be alleviated by automatic black balance adjustment *(see page 80)*.

Smear

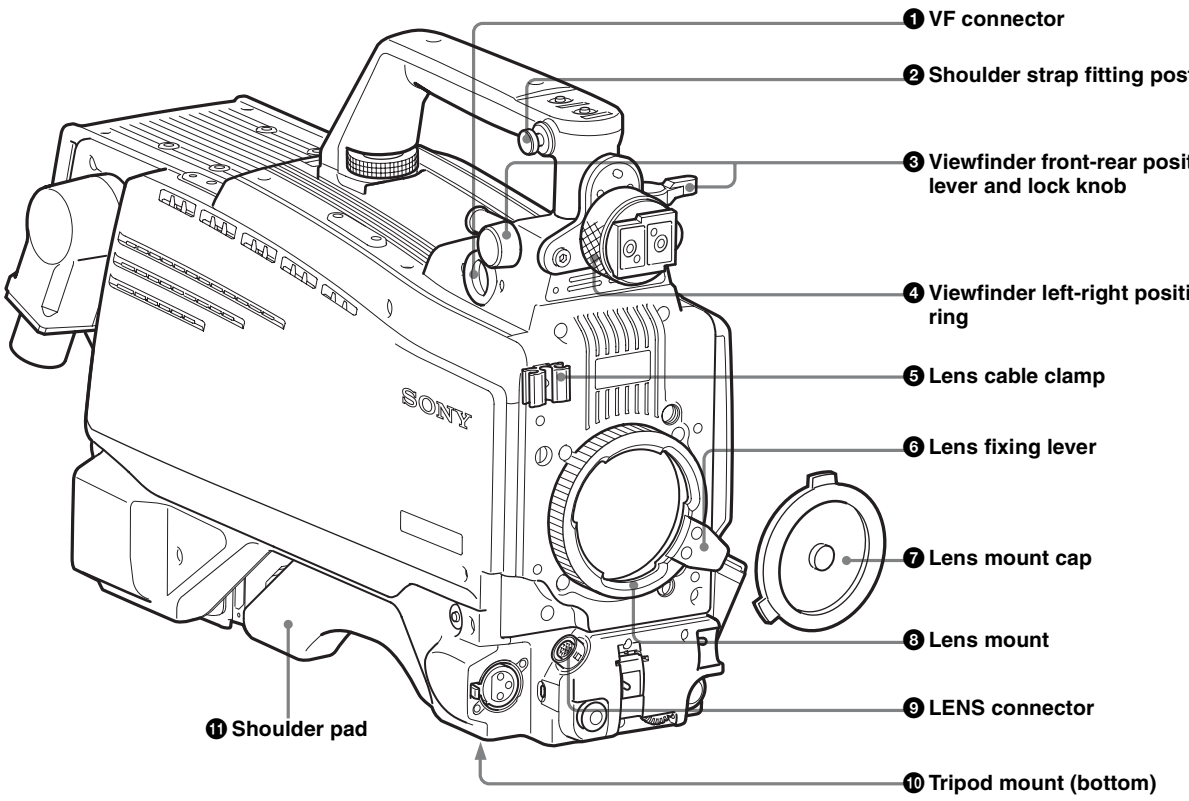
When an extremely bright object, such as a strong spotlight or flashlight, is being shot, vertical tails may be produced on the screen, or the image may be distorted.

Aliasing

When fine patterns, stripes, or lines are shot, they may appear jagged or flicker.

Locations and Functions of Parts

Accessory Attachments



❶ VF (viewfinder) connector (20-pin)
Connect the cable of the viewfinder (not supplied).

❷ Shoulder strap fitting post
Attach one end of a shoulder strap (not supplied) to this fitting post, and the other end to the fitting post on the other side of the camera.

❸ Viewfinder front-rear positioning lever and LOCK knob
Loosen the lever and knob to adjust the viewfinder position towards the front or rear.

❹ Viewfinder left-right positioning ring
Loosen this ring to adjust the viewfinder position towards the left or right.

For details on adjusting the viewfinder position, see "Attaching a Viewfinder" on page 76.

❺ Lens cable clamp
Used to secure the cable of the lens (not supplied).

❻ Lens fixing lever
Used to secure the lens in the lens mount.

❼ Lens mount cap
Cover the lens mount with this cap when a lens is not attached. The cover may be removed by moving the lens fixing lever upwards.

❽ Lens mount
Used to attach a lens (not supplied).

❾ LENS connector (12-pin)
Connect the lens cable. The camera can control the lens functions through this cable.

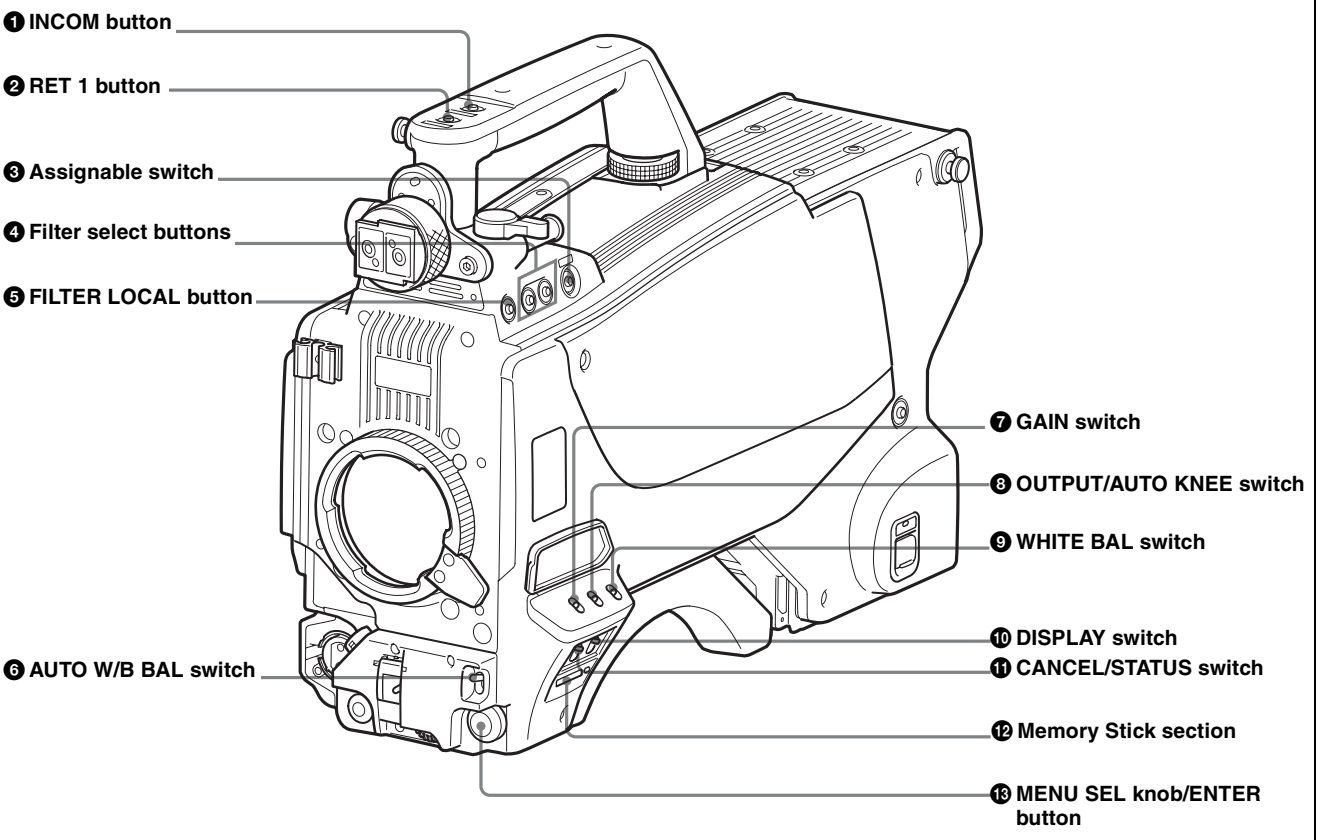
⓾ Tripod mount
Attach the VCT-14 Tripod Adaptor when mounting the camera on a tripod.

⓫ Shoulder pad
You can adjust the position so that you can get the best balance for shooting with the camera on your shoulder.

For details, see "Adjusting the Shoulder Pad Position" on page 78.

Controls and Connectors

Front right



❶ INCOM (intercom 1) button
The intercom 1 microphone is turned ON while this button is pressed.
You can also assign other functions to this button, using the menu displayed on the viewfinder screen.

❷ RET 1 (return video 1) button
The return video 1 signal from the camera control unit is monitored on the viewfinder screen while this button is pressed. It function the same as the RET 1 button on the side (*page 70*) and that on the operation panel on the rear of the camera (*page 72* or *73*).

You can also assign other functions to this button, using the menu displayed on the viewfinder screen.

❸ Assignable switch
You can assign a function using the menu displayed on the viewfinder screen.

❹ Filter select buttons

HDC1500/1550
You can switch the built-in ND and CC (color temperature conversion) filters by pressing the selectors while holding the FILTER LOCAL button depressed.

Pressing the left button selects the available ND filters (clear, 1/4ND, 1/8ND, 1/16ND,1/64ND) in sequence. Pressing the right button selects the available CC filters (cross, 3200K, 4300K, 6300K, 8000K) in sequence.

HDC1400/1450
You can switch the built-in optical filters (clear, 1/4ND, 1/16ND,1/64ND, cross) by pressing either of these buttons while holding the FILTER LOCAL button depressed.

❺ FILTER LOCAL button
While holding this button depressed, press either of the filter select buttons to select the built-in optical filters.

❻ AUTO W/B BAL (white and black balance automatic adjustment) switch
Used to automatically adjust white and black balance when the camera is used in stand-alone status without connecting to the camera control unit.
WHT: Automatically adjust white balance.
BLK: Automatically adjust black balance.

❼ GAIN switch
Used to select the gain of the video amplifier based on lighting conditions when the camera is used in stand-alone status without connecting a camera control unit.
When shipped from the factory, the values set are L = 0 dB, M = 6 dB, and H = 12 dB.

❽ OUTPUT (output signal selection)/AUTO KNEE switch
Used to select the signal (color bar signal or camera's video signal) to be used as output to a VTR, the viewfinder or a video monitor when the camera is used in stand-alone status without connecting a camera control unit.
When the camera's video signal is being used as output, the auto knee function may be used.
The relationship between the switch setting and the output signal and auto knee function is shown in the table below.

OUTPUT	AUTO KNEE	Function
BARS	OFF	Output is a color bar signal.
CAM	OFF	Output is the camera's video signal. The auto knee circuit is disabled.
CAM	ON	Output is the camera's video signal. The auto knee circuit is enabled.

❾ WHITE BAL (white balance memory selection) switch
Used to select the white balance adjustment method or the memory used to store the adjusted value when the camera is used in stand-alone status without connecting a camera control unit.
PRST (preset): White balance is adjusted to a preset value corresponding to a color temperature of 3200K.
A or B: Selects memory A or B.

❿ DISPLAY switch
The functions of the DISPLAY switch are as follows:
ON: Characters and messages showing the camera settings and operating status may be displayed on the viewfinder screen.
OFF: Status messages will not appear on the viewfinder screen.
MENU: Menus for camera settings will be displayed on the viewfinder screen.

⓫ CANCEL/STATUS switch
When a menu is displayed on the viewfinder screen, you can cancel any changed settings or return the display to the previous menu.
When no menu is displayed on the viewfinder screen, the status information of this camera is displayed.

⓬ Memory Stick section
A slot to accommodate a "Memory Stick" and an access lamp are provided behind the panel. The access lamp lights in red while writing or reading data to/from a "Memory Stick."

Note

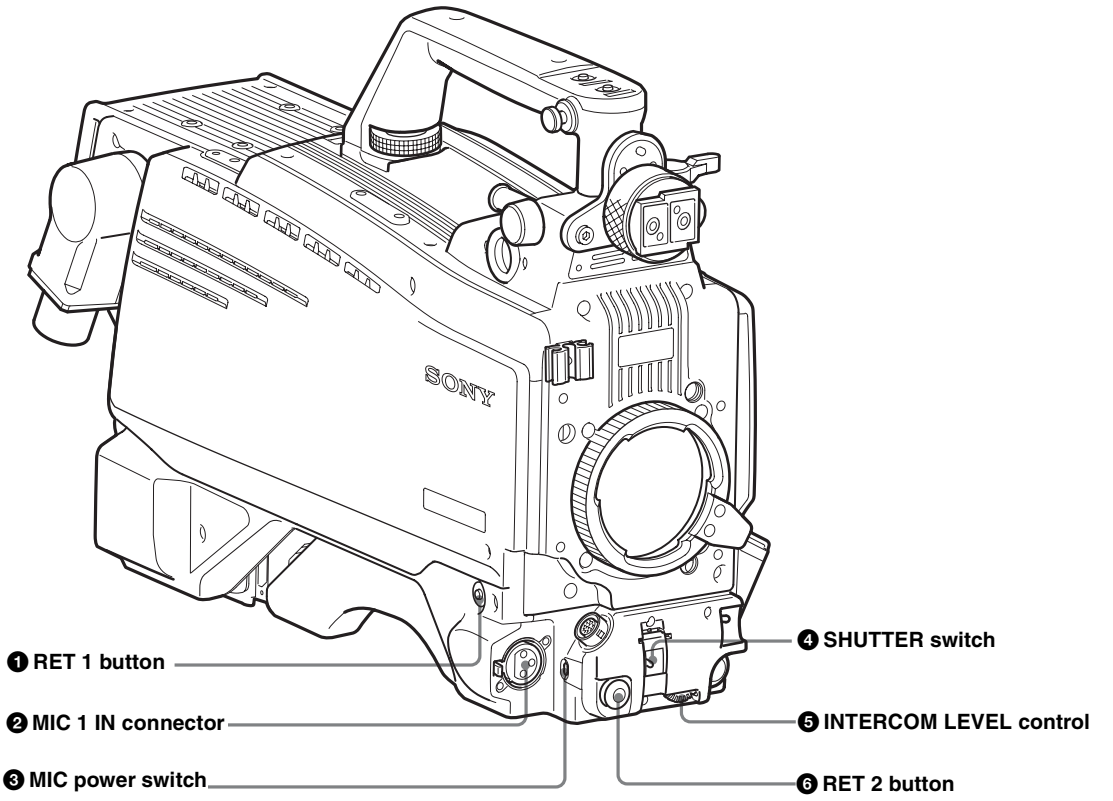
When the access lamp is lit, do not insert/remove the "Memory Stick" or turn off the camera.

⓭ MENU SEL (menu select) knob/ENTER button (rotary encoder)
Used to select settings from menus displayed on the viewfinder screen (by rotating the knob) and to confirm settings (by pushing the button).

Note

When a camera control unit or a remote control device, such as MSU-900/950 and the RCP-700/900-series Remote Control Panel, is connected, the functions of ❻ to ❾ are controlled from the external control device and the controls on the camera are disabled.

Front left



❶ RET 1 (return video 1) button
The return video 1 signal from the camera control unit is monitored on the viewfinder screen while this button is pressed. It function the same as the RET1 buttons on the handle (*page 68*) and that on the operation panel on the rear of the camera (*page 72* or *73*).
You can also assign other functions to this button, using the menu displayed on the viewfinder screen.

❷ MIC 1 IN (microphone 1 input) connector (XLR 3-pin)
Connect a microphone.
This connector and the AUDIO IN CH-1 connector (*page 75*) on the operation panel on the rear of the camera are alternately activated with the CH1 input select switch (*page 75*).

❸ MIC (microphone) power switch
+48V: To supply a power of +48 V to the connected microphone.
OFF: Not to supply a power to the connected microphone.

❹ SHUTTER switch
Used for setting the electronic shutter functions when the camera is used in stand-alone status without connecting a camera control unit.
OFF: The electronic shutter does not function.
ON: The electronic shutter is activated.
SEL: The shutter speed and shutter mode change each time the switch is set to this position.

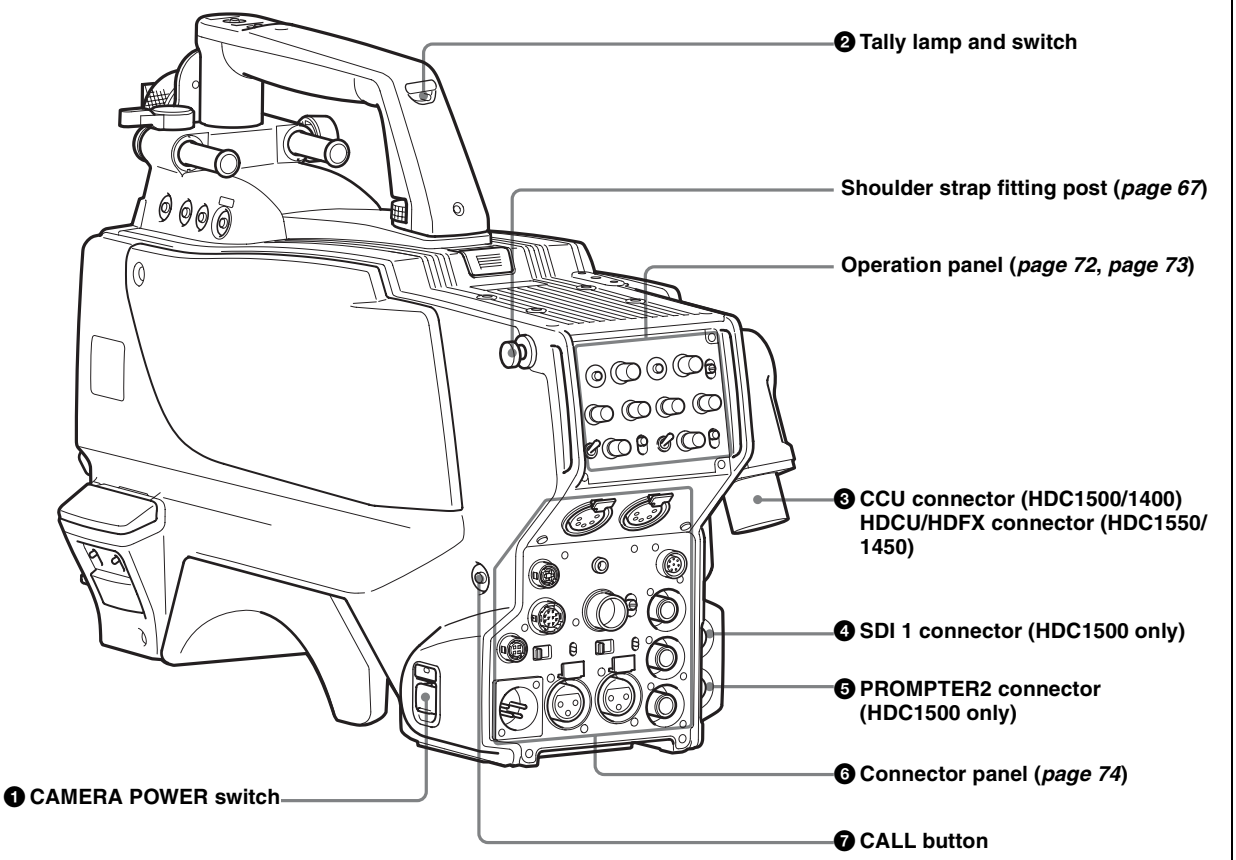
For details, see "Setting the Electronic Shutter" on page 83.

❺ INTERCOM LEVEL control
To adjust the intercom/earphone volume level.
The intercom level adjustment is enabled when the INTERCOM 1 and 2 LEVEL/MIC switches (on the SY-type operation panel, *page 72*) or the LEVEL switch (on the European-type operation panel , *page 73*) on the rear of the camera are set to "FRONT."

❻ RET 2 (return video 2) button
When this button is pressed, the picture on the viewfinder changes to the return video signal selected with the RET 2 select switch (*page 72* or *73*) on the operation panel on the rear of the camera.
You can also assign other functions to this button, using the menu displayed on the viewfinder screen.

Rear

The figure shows HDC1500.



❶ CAMERA POWER switch

CCU: Power supply will be received from the camera control unit.

EXT: Power supply will be received through the DC IN connector.

❷ Tally lamp and switch

ON: The tally lamp lights upon a tally signal input to the connected camera control unit or a call signal generated by pressing a CALL button.

OFF: The tally lamp is prevented from lighting.

❸ CCU (Camera Control Unit) connector (optical/electrical multi-connector) (HDC1500/1400)

Connect a camera control unit using an optical electro-composite cable.

❸ HDCU/HDFX (HD Triax CCU) connector (Triax connector) (HDC1550/1450)

Connect the HDFX100 HD Triax CCU Adaptor using a Triax cable. A camera control unit can be connected via the HDFX100.

❹ SDI 1 (serial digital interface 1) connector (BNC type) (HDC1500 only)

Used for HD SDI signal output.

❺ PROMPTER2 connector (BNC type) (HDC1500 only)

Used for prompter 2 signal output.

This operates only when a camera control unit having a prompter 2 input is connected.

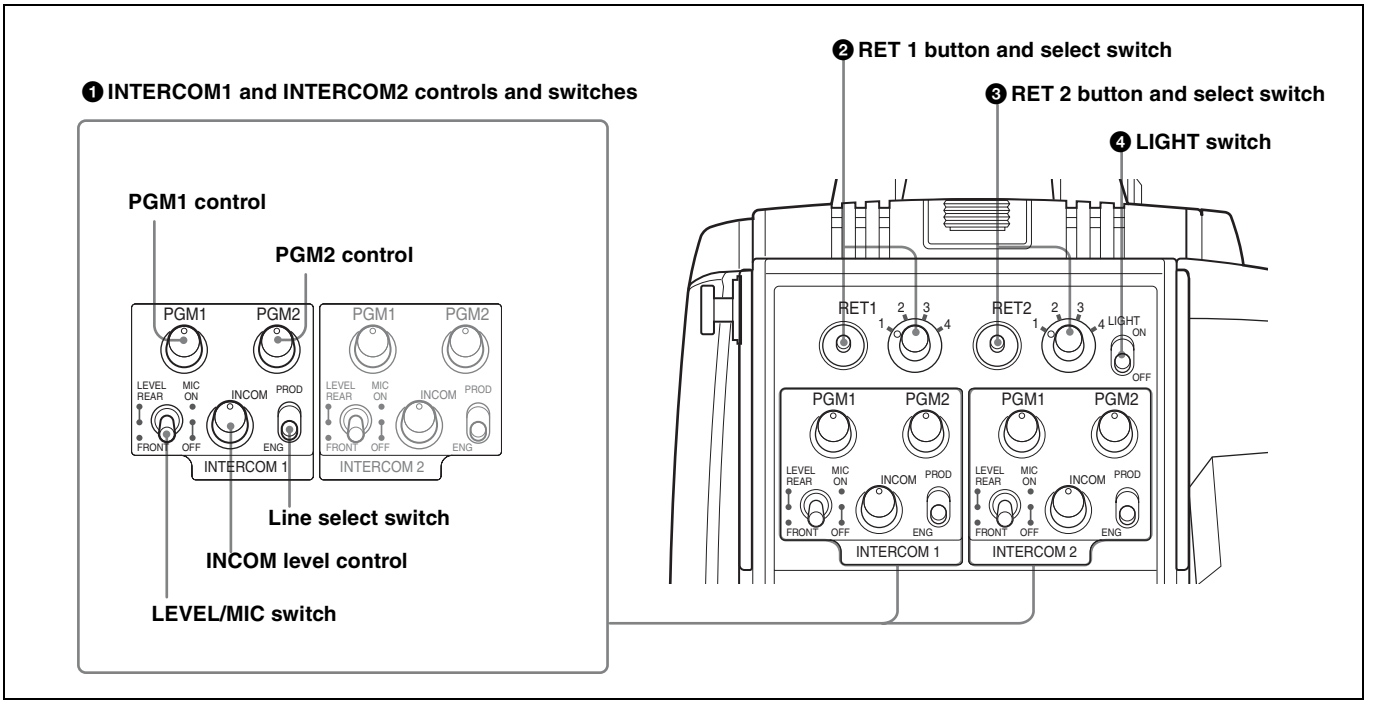
❻ CALL button

When you press this button, the red tally lamp of the RCP-700/900-series Remote Control Panel or the MSU-900/950 Master Setup Unit, will light. Use to call the operator of the RCP or MSU.

Operation panel

SY type: For UC/SYL/JN3 (USA, Canada, and other countries) and JN4 (East Asia) models (for NTSC areas)

For details on the differences among models, see "Overview" on page 60.



❶ INTERCOM1 and INTERCOM2 controls and switches

There are PGM1 and 2 controls incorporated with a line select switch, a LEVEL/MIC switch, and INCOM level control each for intercom line 1 and 2.

PGM1 (program 1) control
Adjust the audio reception level of program 1.

PGM2 (program 2) control
Adjust the audio reception level of program 2.

LEVEL/MIC switch
REAR/ON: The intercom headset microphone is turned on. The intercom audio reception level is adjusted with the INCOM level control.
REAR/OFF: The intercom headset microphone is turned off. The intercom audio reception level is adjusted with the INCOM level control.
FRONT/OFF: The intercom headset microphone is turned off. The intercom audio reception level is adjusted with the INTERCOM LEVEL control on the front of the camera.

INCOM level control
Adjust the intercom audio reception level.

Line select switch
Select the intercom line.
PROD: Producer line
ENG: Engineer line

❷ RET 1 (return video 1) button and select switch

The return video signal selected with the switch is displayed on the viewfinder screen while the button is pressed.

❸ RET 2 (return video 2) button and select switch

When other return video systems are used in addition to return video 1, you can monitor the signal selected with the switch on the viewfinder screen while pressing the button.

Note

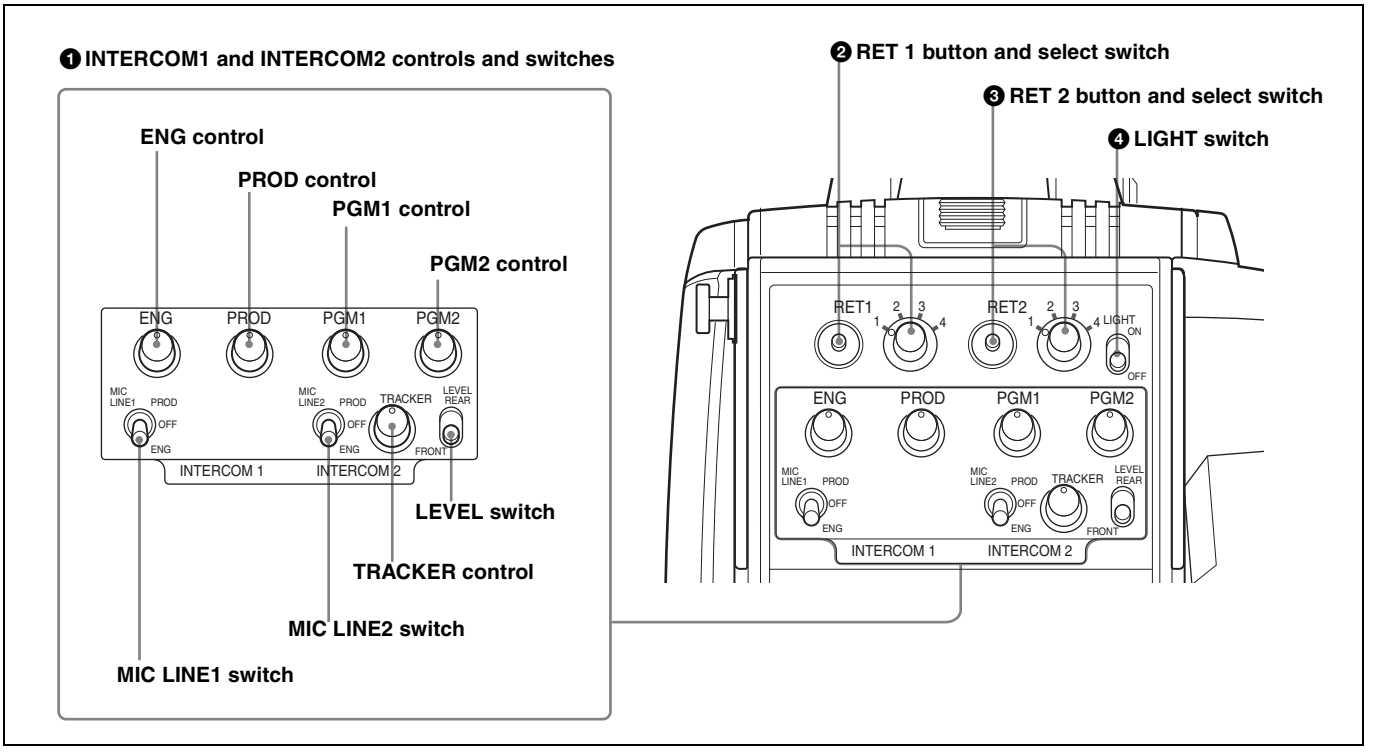
The RET 1 button has priority over the RET 2 button if both buttons are pressed.

❹ LIGHT switch

Set to ON to illuminate the operation panel.

European type: For CE (Europe) and E33 (China and South Asia) models (for PAL areas)

For details on the differences among models, see "Overview" on page 60.



❶ INTERCOM1 and INTERCOM2 controls and switches

The reception level controls are common to intercom 1 and intercom 2. The talk lines can be set independently for intercom 1 and intercom 2.

ENG (engineer line) control:
Adjust the intercom audio reception level of the engineer line.

PROD (producer line) control
Adjust the intercom audio reception level of the producer line.

PGM1 (program 1) control
Adjust the audio reception level of program 1.

PGM2 (program 2) control
Adjust the audio reception level of program 2.

TRACKER control
Adjust the intercom audio reception level at the TRACKER connector (*page 74*) on the connector panel when using the connector for intercom.

MIC LINE1 (intercom microphone line 1) switch
Select the talk line for intercom 1.
PROD: To talk over the producer line
OFF: To turn off the headset microphone for intercom line 1.
ENG: To talk over the engineer line

MIC LINE2 (intercom microphone line 2) switch
Select the talk line for intercom 2.
PROD: To talk over the producer line
OFF: To turn off the headset microphone for intercom line 2.
ENG: To talk over the engineer line

LEVEL switch
REAR: The intercom audio reception level is adjusted with the controls on this panel.
FRONT: The intercom audio reception level is adjusted with the INTERCOM LEVEL control on the front of the camera.

❷ RET 1 (return video 1) button and select switch

The return video signal selected with the switch is displayed on the viewfinder screen while the button is pressed.

❸ RET 2 (return video 2) button and select switch

When other return video systems are used in addition to return video 1, you can monitor the signal selected with the switch on the viewfinder screen while pressing the button.

Note

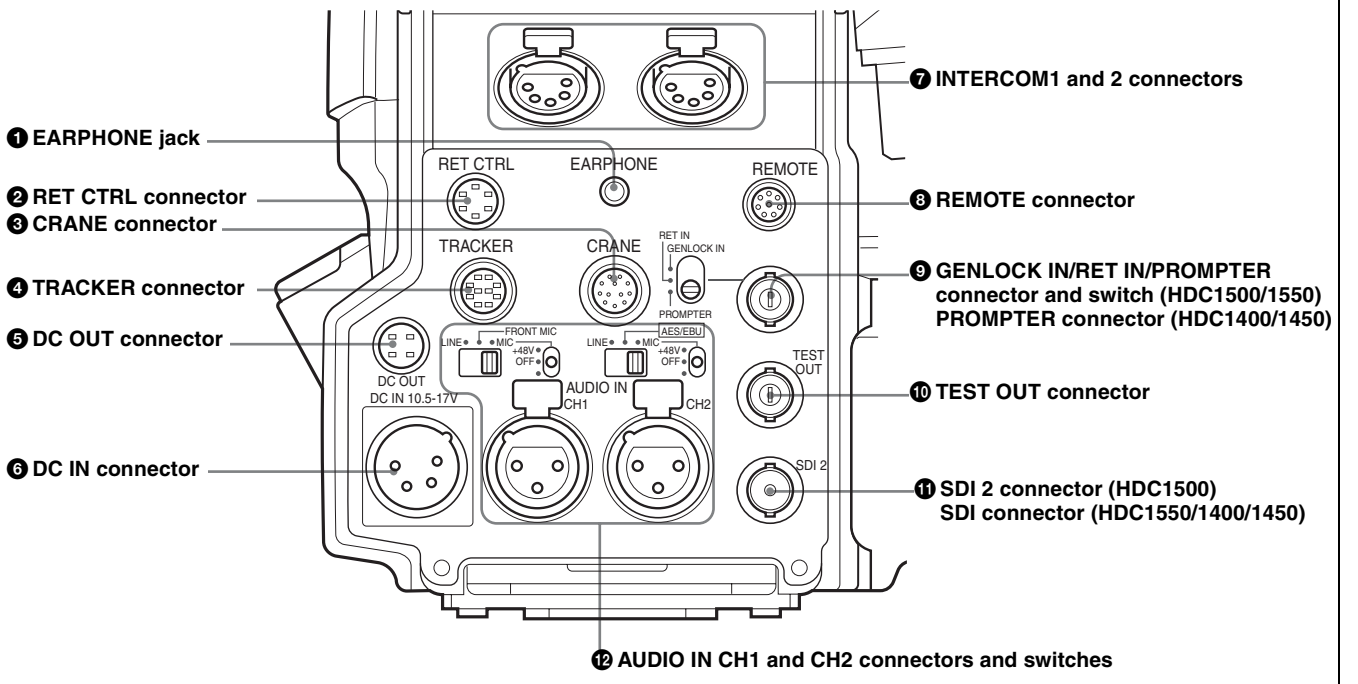
The RET 1 button has priority over the RET 2 button if both buttons are pressed.

❹ LIGHT switch

Set to ON to illuminate the operation panel.

Connector panel

The figure shows HDC1500.



❶ EARPHONE jack (stereo minijack)
Connect an earphone or headset for output of the intercom.

❷ RET CTRL (return control) connector (6-pin)
Used for connection to a CAC-6 Return Video Selector.

❸ CRANE connector (12-pin)
For external interface, such as viewfinder (and external data with HDC1500/1400).

❹ TRACKER connector (10-pin)
For external interface, such as intercom and tally.

❺ DC OUT (DC power supply output) connector (4-pin)
Used to supply power to devices such as a wireless receiver (optional).

❻ DC IN (DC power supply input) connector (XLR 4-pin)
Used for connection to the AC-DN10 AC Adaptor to supply power to the camera.

❼ INTERCOM1 and 2 (intercom 1 and 2) connectors (XLR 5-pin)
Used for input and output of intercom audio signals if an XLR 5-pin headset is connected.
The INTERCOM 1 connector can be used for communication over the engineer line even when the power is off, as long as the power LED is lit in red.

❽ REMOTE connector (8-pin)
Used for connection to an RM-B150/B750 Remote Control Unit, RCP-700/900-series Remote Control Panel, or MSU-900/950 Master Setup Unit.

Note

When the camera is connected to a CCU, do not connect any remote control device, such as RCP and MSU, to this connector.

❾ GENLOCK IN/RET IN/PROMPTER (external gen-lock signal input/return video signal input/prompter signal output) connector (BNC type) and switch (HDC1500/1550)

Set the switch according to the signal at the connector.
GENLOCK IN: Used for input of an external gen-lock signal (VBS or 3-level sync) when the camera is used without a camera control unit connected
RET IN: Used for input of the return video signal when the camera is used without a camera control unit connected.
The connector accepts analog HD signals only. SDI signals are not acceptable. Supply a signal of 1080i (720P is not acceptable).
The signal supplied to this connector cannot be fed as RET OUT from the TEST OUT or SDI OUT connector.
PROMPTER: Used for output of a prompter signal (valid only when a camera control unit is connected). When a camera control unit having two prompter inputs is

connected, the signal of input 1 is output from this connector.

❾ PROMPTER (prompter signal output) connector (BNC type) (HDC1400/1450)

Used for output of a prompter signal (valid only when a camera control unit is connected). When a camera control unit having two prompter inputs is connected, the signal of input 1 is output from this connector.

❿ TEST OUT connector (BNC type)

Used to output the analog signal.
This also supplies the VBS signal, an HD signal nearly equal to the signal output from the VF connector, an HD-SYNC signal, or an SD-SYNC signal depending on which of these you have selected on the menu.

⓫ SDI 2 (serial digital interface 2) connector (BNC type) (HDC1500)

Used for HD SDI or SD SDI signal output.

⓫ SDI (serial digital interface) connector (BNC type) (HDC1550/1400/1450)

Used for HD SDI or SD SDI signal output.

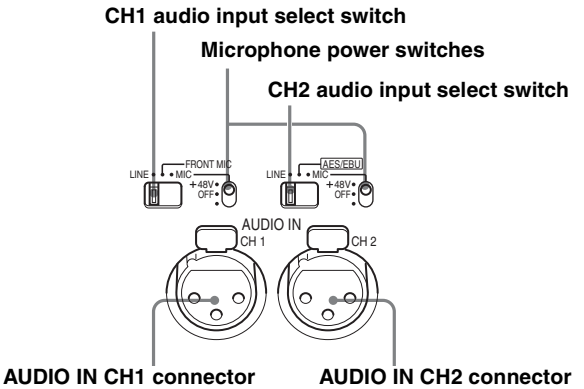
Note

No audio signal is embedded to the output from the SDI 2/ SDI connector.

⓬ AUDIO IN CH1 and CH2 connectors (XLR 3-pin) and switches

Connect audio signals. An input select switch and microphone power switch are provided for each channel.

The figure shows HDC1500.



CH1 audio input select switch

Set to the appropriate position according to the equipment connected to the AUDIO IN CH1 connector.

LINE: When a line-level (0 dBu) signal source is connected

FRONT MIC: When using the microphone connected to the MIC 1 IN connector

MIC: When an external microphone is connected

CH2 audio input select switch

Set to the appropriate position according to the equipment connected to the AUDIO IN CH2 connector.

LINE: When a line-level (0 dBu) signal source is connected

AES/EBU (HDC1500/1400 only): When a digital audio signal is connected (The signal must be in synchronization with the camera output). The corresponding position on the HDC1550/1450 is invalid (NC).

MIC: When an external microphone is connected

Microphone power switches

When a microphone is connected to the corresponding AUDIO IN connector, set whether or not to supply a power to the microphone.

+48V: To supply a power of +48 V

OFF: Not to supply a power

(No function has been assigned to the lowermost position. No power is supplied to the microphone.)

Note

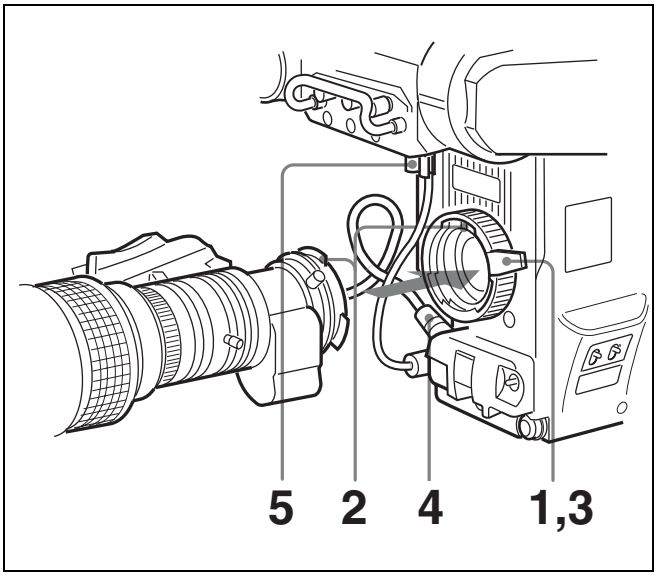
To supply a power of +12 V, modification of the camera is required.

Preparations

Attaching a Lens

The procedure for attaching a lens to the camera is as follows:

For information on handling lenses, refer to the lens' operation manual.



1 Push the lens fixing lever upwards and remove the lens mount cap from the lens mount.

2 Align the lens' alignment pin with the notch in the upper part of the lens mount and insert the lens into the mount.

3 While supporting the lens, push the lens fixing lever downwards to secure the lens.

4 Connect the lens cable to the LENS connector.

5 Secure the lens cable with the cable clamp.

Adjusting the Flange Focal Length

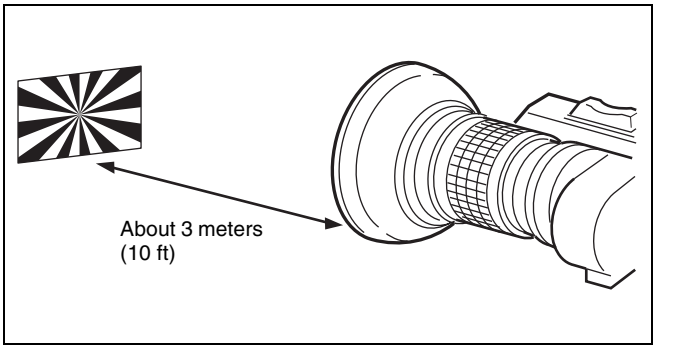
Adjustment of the flange focal length [1] is necessary in the following situations.

- The first time a lens is attached
- When changing lenses
- When zooming and the focus is not sharp at both telephoto and wide angle

Note

The various parts of the lens used in adjusting the flange focal length are in different positions on different lenses. Refer to the lens' operation manual.

The procedure for adjusting the flange focal length is as follows:



1 Set the iris control to manual, and open the iris fully.

2 Place a flange focal length adjustment chart approximately 3 meters from the camera and adjust the lighting to get an appropriate video output level.

3 Loosen the Ff [2] ring lock screw.

4 With either manual or power zoom, set the zoom ring to telephoto.

5 Aim at the flange focal length adjustment chart and turn the focus ring to focus the image.

6 Set the zoom ring to wide angle.

7 Turn the Ff ring to bring the chart in focus. Take care not to move the distance ring.

8 Repeat steps **4** through **7** until the image is focus at both telephoto and wide angle.

9 Tighten the Ff ring lock screw.

1) Flange focal length: The distance between the lens mount attachment plane and the imaging plane
2) Ff: Abbreviation of flange focal length

Attaching a Viewfinder

Caution

When the viewfinder is attached, do not leave the camera (or the camcorder) with the eyepiece facing the sun. Direct sunlight can enter through the eyepiece, be focused in the viewfinder and cause fire.

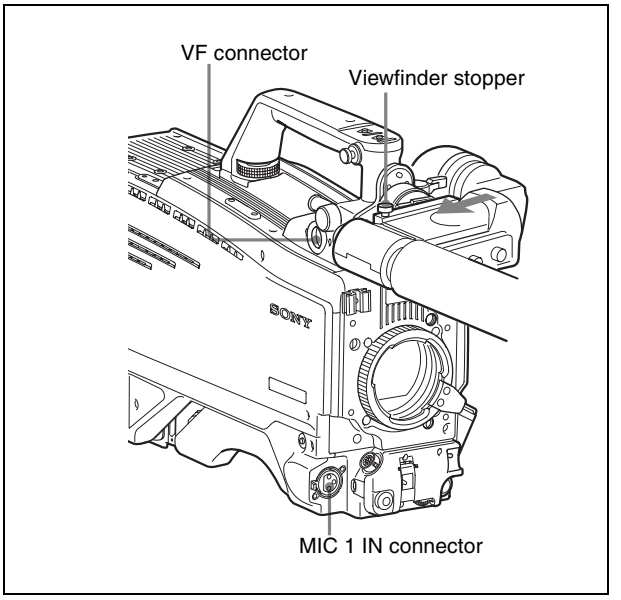
Example: Attaching a HDVF-20A/C35W Viewfinder

For details on the viewfinder, refer to the instruction manual of the viewfinder.

Attaching procedure

1 Slide the viewfinder in the direction of the arrow.

The viewfinder stopper automatically pops down.



2 Loosen the viewfinder left-right positioning ring, slide the viewfinder side to side to the most convenient position and tighten the ring.

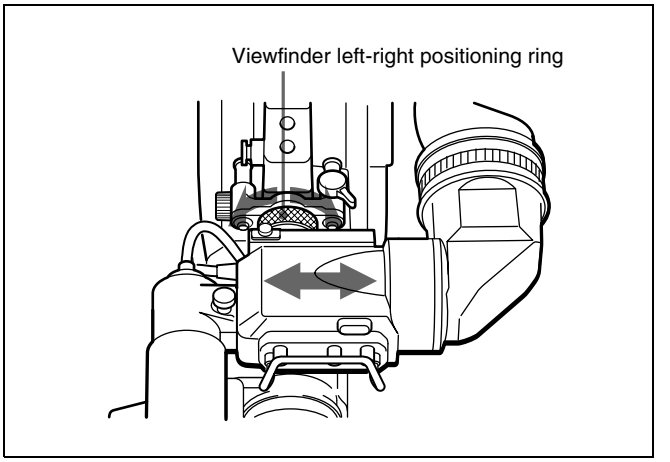
3 Connect the viewfinder cable to the VF connector of the camera.

4 Connect the microphone cable to the MIC 1 IN connector of the camera.

Adjusting the viewfinder position

The viewfinder position may be adjusted towards the front and rear and to the left and right to make it easy to see into it.

To adjust the position to the left or right

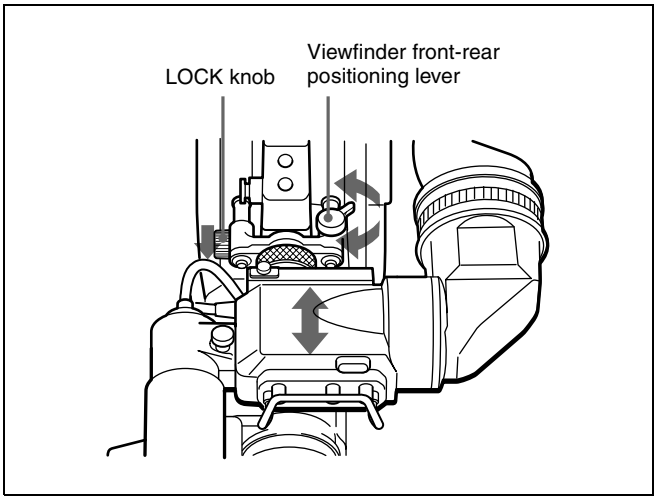


1 Loosen the viewfinder left-right positioning ring.

2 Slide the viewfinder left or right to move it into a good viewing position.

3 Tighten the viewfinder left-right positioning ring.

To adjust the position forward or backward



1 Loosen the viewfinder front-rear positioning lever and LOCK knob.

2 Slide the viewfinder towards the front or rear of the camera to move it into a good viewing position.

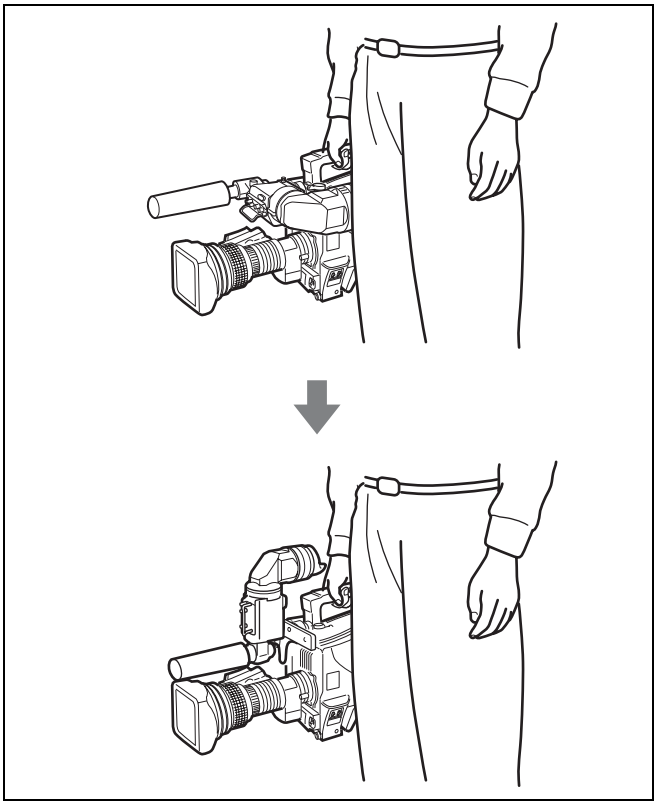
3 Tighten the viewfinder front-rear positioning lever and LOCK knob.

To detach the viewfinder

Loosen the viewfinder left-right positioning ring, pull the viewfinder stopper, then pull out the viewfinder by sliding it in the direction opposite to that when attached.

Keeping the viewfinder from hitting your leg

To keep the viewfinder from bumping your leg when carrying the camera, install the BKW-401 Viewfinder Rotation Bracket (optional) and rotate the viewfinder upwards.

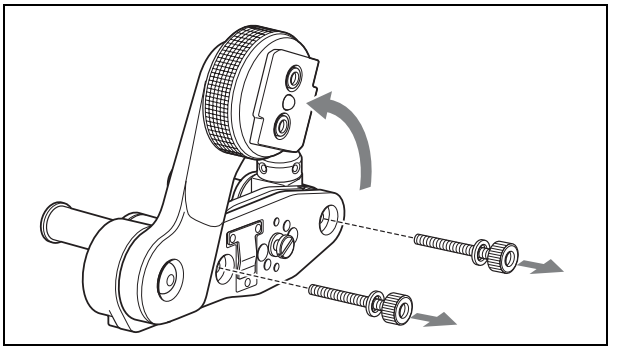


Note

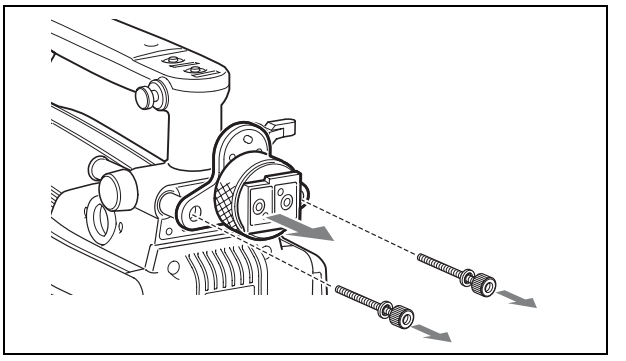
Lock the viewfinder in a slightly forward position before rotating it upwards. If the viewfinder is in its rearmost position, the arm of the viewfinder rotation bracket will strike the grip.

Attaching procedure of the BKW-401

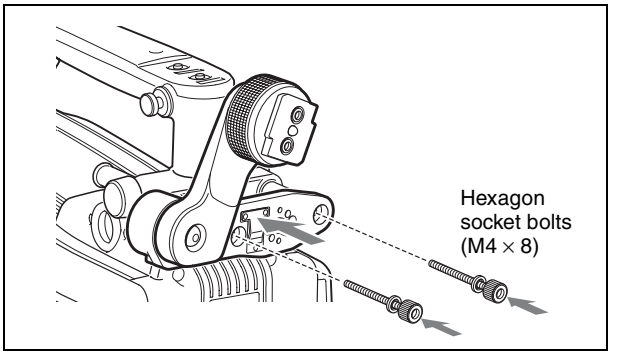
1 Turn the arm of the rotation mechanism assembly of the BKW-401 in the direction of the arrow in the following illustration.
Next, using a hexagonal wrench 3 mm across flats, remove the bolts (M4 × 8) together with the washers, to separate the rotation mechanism assembly from the viewfinder front-back positioning mechanism assembly.



2 In the same manner as step **1**, remove the viewfinder shoe of the camera from the front-rear positioning mechanism.

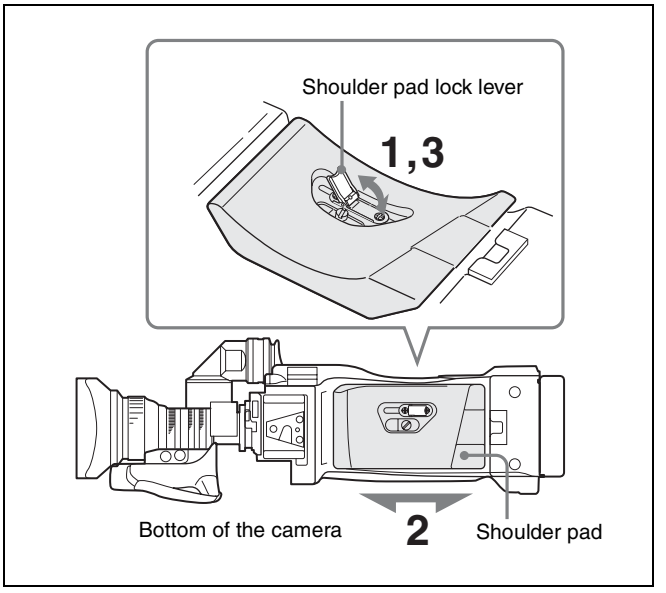


3 Using the two bolts (M4 × 8) and the washers removed from the camera in step **2**, attach the rotation mechanism assembly of the BKW-401 to the camera.



Adjusting the Shoulder Pad Position

You can shift the shoulder pad from its center position (factory setting) backward by up to 10 mm (3/8 inch) or forward by up to 25 mm (1 inch). This adjustment helps you get the best balance for shooting with the camcorder on your shoulder.



Adjusting procedure

1 Raise the lever in the center of the shoulder pad to unlock the shoulder pad.

2 Slide the shoulder pad backward or forward until it is in the most convenient position.

3 Bring down the lever to lock the shoulder pad in the selected position.

Mounting the Camera to a Tripod

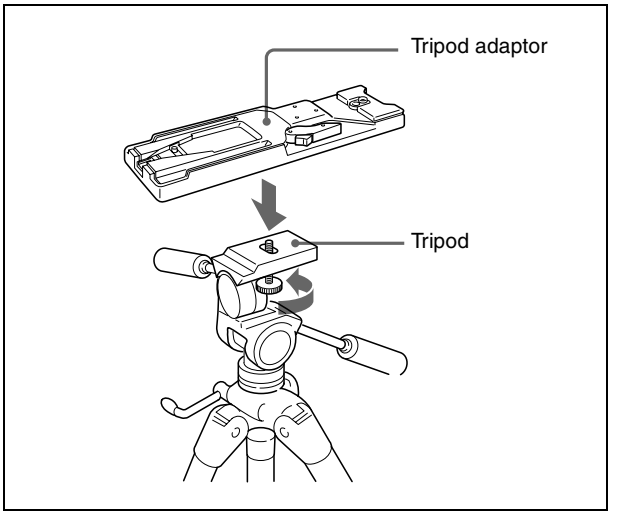
Mount the camera to a tripod using a VCT-14 Tripod Adaptor.

Caution

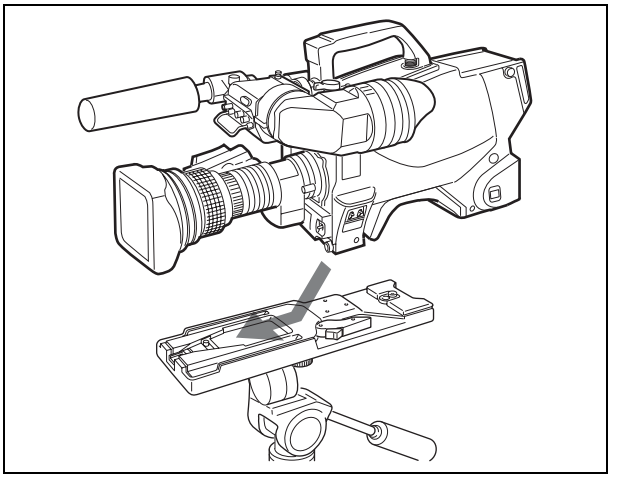
- Select an appropriate hole from among those at the bottom of the tripod adaptor considering the balance of the weight of the camera and the tripod adaptor. If an inappropriate hole is selected, the camera may fall over.
- Check that the size of the selected hole matches that of the screw of the tripod. If they do not match, the tripod adaptor cannot be attached to the tripod securely.

Mounting procedure

1 Attach the tripod adaptor to the tripod and secure it with the screw.

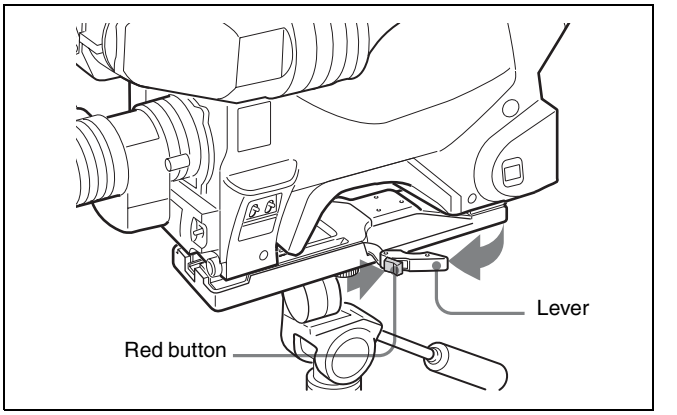


2 Place the camera on the tripod adaptor, and slide forward it along the groove of the tripod adaptor until it clicks.



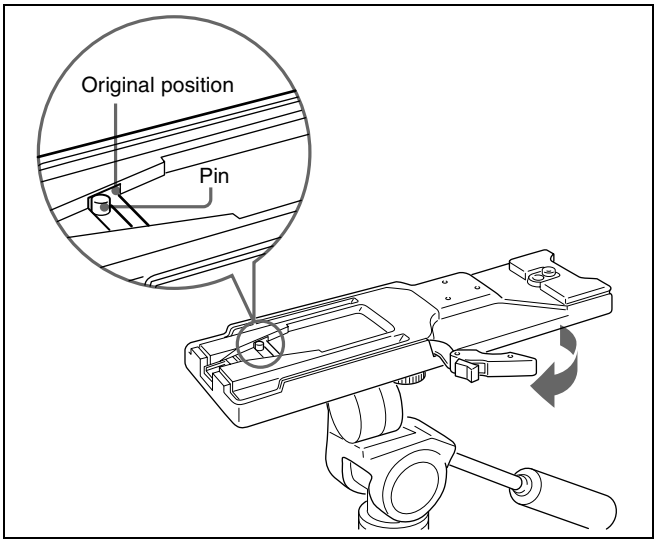
To remove the camera from the tripod adaptor

Hold down the red button and pull the lever in the direction of the arrow.



If the pin of the tripod adaptor does not return to its original position

After removing the camera, if the pin of the tripod adaptor does not return to its original position, hold down the red button and move the lever in the direction of the arrow to return the pin to its original position. It is not possible to mount a camera with the pin not seated.



Adjustments and Settings for Recording

Adjusting the Black Balance and White Balance

In order to maintain high picture quality when using the camera, it is necessary to set the black balance and white balance appropriately for the conditions.

Note

When a camera control unit or a remote control device, such as MSU-900/950 and the RCP-700/900-series Remote Control Panel, is connected, the black balance and white balance are controlled from the external control device and controls on the camera are disabled.

Black balance adjustment

The black balance needs adjustment in situations like the following:

- The first time the camera is used
- When the camera is used after a long period of disuse
- When the surrounding temperature changes greatly
- When the gain value is changed using the setup menus

Normally, there is no need to adjust the black balance every time the camera is turned on.

White balance adjustment

Always readjust the white balance when lighting conditions change.

About the viewfinder screen

After the process of adjusting the black balance or white balance begins, messages about the progress and results of the adjustment will be displayed on the viewfinder screen.

Note

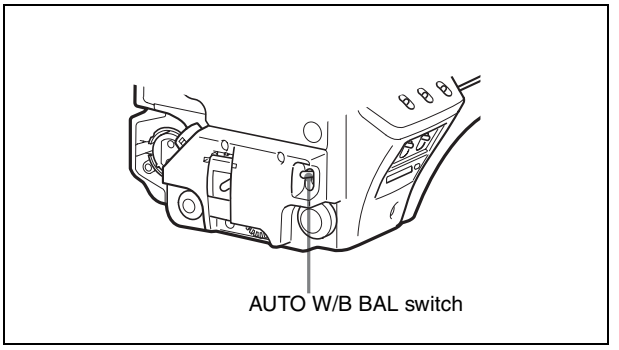
Adjusted values set through automatic adjustment, and other settings, are stored in the camera's memory and preserved even when the camera power is turned off.

Adjusting the black balance

In automatic adjustment of black balance, both the black set and black balance are adjusted.

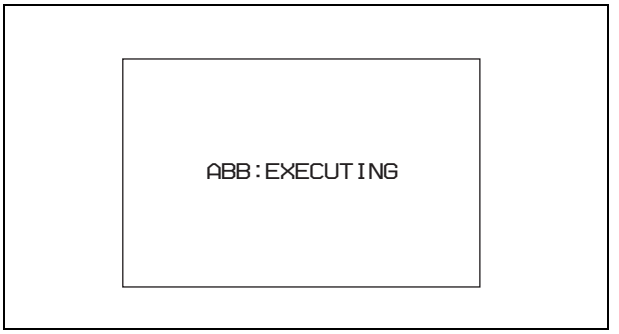
Procedure for adjusting the black balance

1 Push the AUTO W/B BAL switch to BLK and release the switch.



The switch will return to the center position, and adjustment will be performed.

During adjustment, a message like the one in the figure below will be displayed on the viewfinder screen.



When the adjustment process is completed, the message “ABB: OK” will be displayed. The adjusted value is automatically stored in memory.

Notes

- During black balance adjustment, the iris will be automatically closed.
- During black balance adjustment, the gain switching circuit will work automatically, and the viewfinder screen will flicker several times. This is not a malfunction.

When automatic black balance adjustment fails

If the automatic black balance adjustment process does not end successfully, the error message “ABB: NG” will be displayed on the viewfinder screen for approximately three seconds.
If this error message is displayed, try black balance adjustment again.
If the error message continues to be displayed after several attempts, the camera requires internal inspection.

About black balance memory

The black balance values stored in memory will be preserved even when the camera power is turned off.

Adjusting the white balance

Automatic adjustment of white balance is performed with the following procedure:

Procedure for adjusting the white balance

1 Set the WHITE BAL switch to A or B.

2 Select the filter setting according to the lighting conditions.

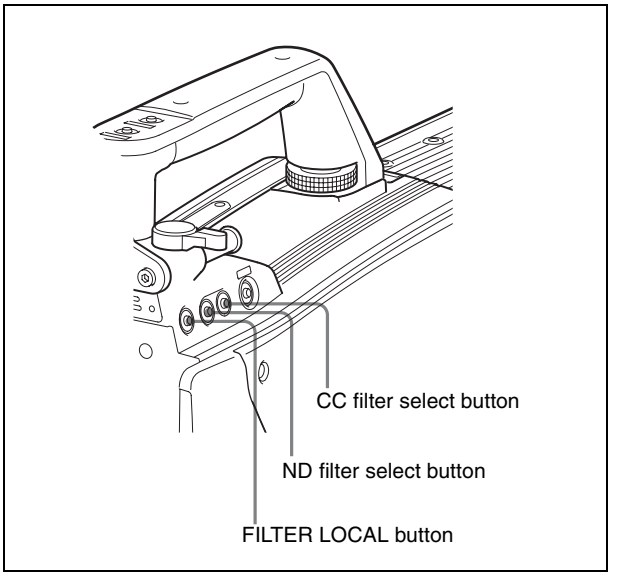
HDC1500/1550

To select the ND filter

Press the ND filter select button while holding the FILTER LOCAL button depressed.
Each press of the select button switches the available ND filters (clear, 1/4ND, 1/8ND, 1/16ND,1/64ND) in sequence.

To select the CC filter

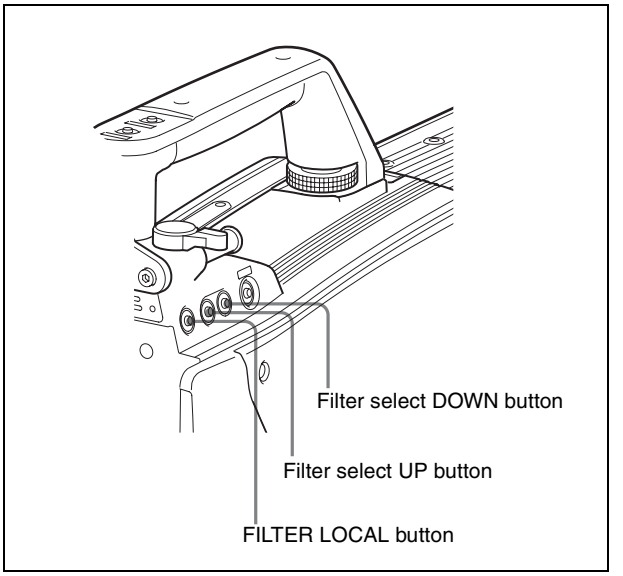
Press the CC filter select button while holding the FILTER LOCAL button depressed.
Each press of the select button switches the available CC filters (cross, 3200K, 4300K, 6300K, 8000K) in sequence.



ND Filter		Color temperature conversion filter	
1	clear	A	cross filter
2	1/4 ND	B	3200K (clear)
3	1/8 ND	C	4300K
4	1/16 ND	D	6300K
5	1/64 ND	E	8000K

HDC1400/1450

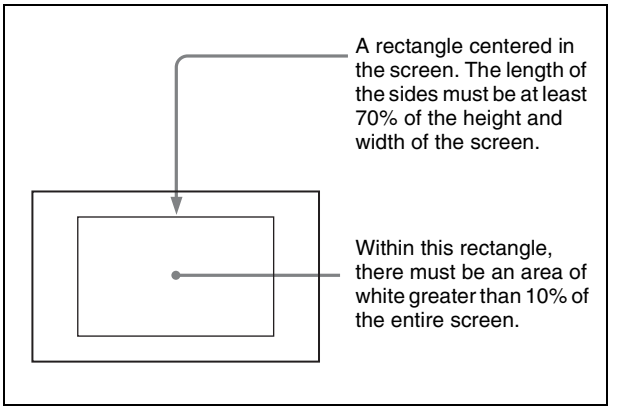
Press the filter select UP or DOWN button while holding the FILTER LOCAL button depressed. Each press of the UP or DOWN button switches the available optical filters in sequence.



Optical Filter	
1	clear
2	1/4 ND
3	1/16 ND
4	1/64 ND
5	cross

3 Place a white pattern in the same lighting conditions as the subject, and zoom in on it so that a white area is obtained in the screen to satisfy the positional and quantitative requirements illustrated below.

A white object (white cloth, a white wall, etc.) near the subject may be used in place of a white pattern.



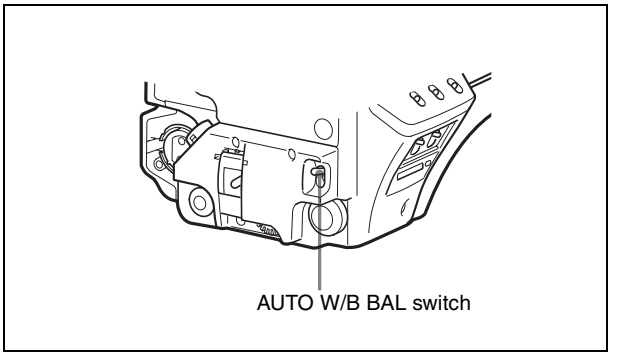
Note

Be careful not to have any spots of high illumination in the rectangle.

4 Adjust the lens iris opening.

With a manually adjusted lens: Set the opening to an appropriate value.
With a lens which has automatic iris control: Set the lens' automatic/manual iris control switch to automatic.

5 Push the AUTO W/B BAL switch to WHT and release the switch.



The switch will return to the center position, and adjustment will be performed.

During adjustment, the message "AWB: EXECUTING" will be displayed on the viewfinder screen.

After about one second, a message like the one in the figure below will be displayed, and the adjustment process will complete. The adjusted value will be automatically stored in the memory (A or B) selected in step **1**.

Note

When using a zoom lens with automatic iris control capability, hunting[1)] may occur. Adjust the lens' iris gain control (labeled IG, IS, S, etc.).

1) Hunting: The automatic iris responds over and over, and the image repeatedly darkens and lightens.

For more information, refer to the lens' operation manual.

When automatic white balance adjustment fails

If the white balance adjustment process does not end successfully, the error message "AWB: NG" will be displayed on the viewfinder screen for approximately three seconds.

If this error message is displayed, try white balance adjustment again.
If the error message continues to be displayed after several attempts, the camera requires internal inspection.

When there is no time to adjust the white balance

Set the WHITE BAL switch to PRST. The white balance will be set automatically according to the filter settings.

About white balance memory

The white balance values stored in memory will be preserved even when the camera power is turned off. There are two white balance memories, A and B. When the AUTO W/B BAL switch is pushed to the WHT side, the white balance will be adjusted automatically according to the filter settings. The adjusted value will be stored in the selected memory. Each memory can store up to five adjusted values, for a total of 10.

Setting the Electronic Shutter

This section explains the different modes which can be used for the electronic shutter, and gives the procedures for setting the shutter mode and shutter speed.

Note

When a camera control unit or a remote control device, such as MSU-900/950 and the RCP-700/900-series Remote Control Panel, is connected, the electronic shutter is controlled from the external control device and control on the camera are disabled.

About the shutter modes

The shutter modes that can be used with the electronic shutter of the camera and the shutter speeds that may be selected are as follows:

Shutter modes and speeds

Shutter mode	Shutter speeds 1)	Usage
Standard	1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000 second	Use to obtain clear images of quickly moving subjects
ECS (Extended Clear Scan)	Continuously variable in the range of 60.0 Hz to 4300 Hz	Use to obtain images of computer monitors without horizontal striping

1) The values in the table are those with 60i/59.94i. With other formats, the available values may be different.

Note

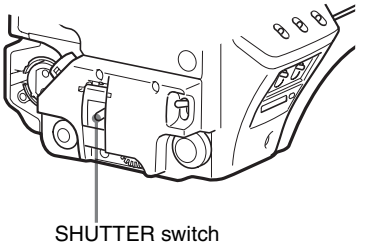
With artificial lighting, particularly fluorescent lights and mercury vapor lamps, the brightness appears to be constant, but in fact the strength of the red, green, and blue components varies with the power supply frequency. This phenomenon is known as "flicker." When using the electronic shutter under these lighting conditions, there are certain cases in which the flicker is more noticeable. In particular, color flicker is evident when the power frequency is 60 Hz. In areas where the power frequency is 50 Hz, setting the shutter speed to 1/100 second will reduce the flicker.

Selecting the shutter mode and speed

The shutter mode, and the shutter speed in standard mode, are set using the SHUTTER switch.

Setting the shutter mode, and shutter speed in standard mode

1 Push the SHUTTER switch from the ON position to the SEL position.

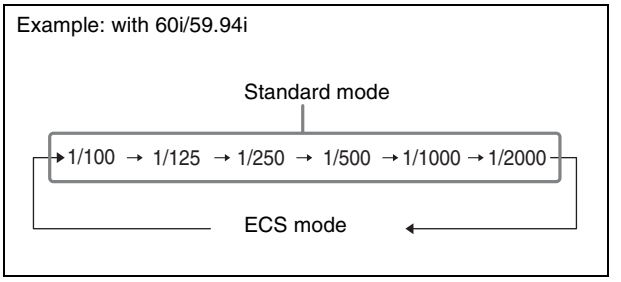


The current shutter setting will be displayed in the setting change/adjustment progress message display area of the viewfinder screen for about three seconds.

Example: “Shutter: 1/250”

2 Push the SHUTTER switch to the SEL position again before the display disappears. Repeat this action until the desired mode or speed is displayed.

When all modes and speeds are displayed, they will be displayed in the following order:



Setting the Camera Outputs

You can specify video signals directly output from the camera, with menu operations.

Note

The MAIN (camera picture), RET (return video), or VF (the same picture as that displayed on the viewfinder) setting is common to SD SDI and VBS. Different signals cannot be output.

The menu pages used for the output settings have been registered to the USER menu at the factory.
- <POWER SAVE>
- <OUTPUT FORMAT>
- <TEST OUT>
- <SDI-2 OUT>(HDC1500)/<SDI OUT>(HDC1550/1400/1450)
- <DOWN CONVERTER>

Set the following menu items to the settings shown in the table.

For details on menu operations and the USER menu, see “Menu Operations” on page 88.

Outputting the signal being shot (camera picture)

The same character information as that displayed on the viewfinder can be added to the output signal by setting CHARACTER to “ON” on the <SDI-2 OUT> (<SDI OUT>) or <TEST OUT> page.

To output as HD SDI

Menu page	Item	Setting
<POWER SAVE>	SDI-2 OUT (HDC1500)/ SDI OUT(HDC1550/ 1400/1450)	ACTIVE
<SDI-2 OUT> (HDC1500) <SDI OUT> (HDC1550/ 1400/1450)	OUTPUT	MAIN

To output as SD SDI

Menu page	Item	Setting
<POWER SAVE>	SDI-2 OUT (HDC1500)/ SDI OUT(HDC1550/ 1400/1450)	ACTIVE
	DOWN CONVERTER	ACTIVE

Menu page	Item	Setting
<DOWN CONVERTER>	OUTPUT SIGNAL	MAIN
<SDI-2 OUT> (HDC1500) <SDI OUT> (HDC1550/ 1400/1450)	OUTPUT	SD-SDI

To output as VBS

Menu page	Item	Setting
<POWER SAVE>	DOWN CONVERTER	ACTIVE
<DOWN CONVERTER>	OUTPUT SIGNAL	MAIN
<TEST OUT>	OUTPUT	VBS

Constantly outputting a return video

- When a camera control unit is connected, one of the signals being supplied to the camera control unit can be output from the camera.
- The last selected return signal is output.
- The same character information as that displayed on the viewfinder can be added to the output signal by setting CHARACTER to "ON" on the <SDI-2 OUT>(<SDI OUT>) or <TEST OUT> page.

To output as HD SDI

Menu page	Item	Setting
<POWER SAVE>	SDI-2 OUT (HDC1500)/ SDI OUT(HDC1550/ 1400/1450)	ACTIVE
<SDI-2 OUT> (HDC1500) <SDI OUT> (HDC1550/ 1400/1450)	OUTPUT	RET

To output as SD SDI

Menu page	Item	Setting
<POWER SAVE>	SDI-2 OUT (HDC1500)/ SDI OUT(HDC1550/ 1400/1450)	ACTIVE
	DOWN CONVERTER	ACTIVE
<DOWN CONVERTER>	OUTPUT SIGNAL	RET
<SDI-2 OUT> (HDC1500)/ <SDI OUT> (HDC1550/ 1400/1450)	OUTPUT	SD-SDI

To output as VBS

Menu page	Item	Setting
<POWER SAVE>	DOWN CONVERTER	ACTIVE
<DOWN CONVERTER>	OUTPUT SIGNAL	RET
<TEST OUT>	OUTPUT	VBS

Outputting the same image as that on the viewfinder

- With HD SDI, you can obtain a signal that includes the same information as that being displayed on the viewfinder according to the settings of the VF MARKER, CHARACTER,VF DETAIL, ZEBRA, etc. The ON/OFF or other settings for adding information are common to those for the viewfinder. The output is synchronized with switching among Y, R, G, and B or switching to a return signal.
- With SD SDI or VBS, the output is synchronized only with switching between a return signal and the camera image. It does not correspond to switching among Y, R, G, and B. Information other than CHARACTER (such as VF MARKER,VF DETAIL, ZEBRA) cannot be added to the output.

Note

With the settings for outputting the same image as that on the viewfinder, the output will be obtained in 1080i, even if the format setting is 720P.

To output as HD SDI

Menu page	Item	Setting
<POWER SAVE>	SDI-2 OUT (HDC1500)/ SDI OUT(HDC1550/ 1400/1450)	ACTIVE
<SDI-2 OUT> (HDC1500) <SDI OUT> (HDC1550/ 1400/1450)	OUTPUT	VF

To output as SD SDI

Menu page	Item	Setting
<POWER SAVE>	SDI-2 OUT (HDC1500)/ SDI OUT(HDC1550/ 1400/1450)	ACTIVE
	DOWN CONVERTER	ACTIVE
<DOWN CONVERTER>	OUTPUT SIGNAL	VF
<SDI-2 OUT> (HDC1500) <SDI OUT> (HDC1550/ 1400/1450)	OUTPUT	SD-SDI

To output as VBS

Menu page	Item	Setting
<POWER SAVE>	DOWN CONVERTER	ACTIVE
<DOWN CONVERTER>	OUTPUT SIGNAL	VF
<TEST OUT>	OUTPUT	VBS

Outputting via Dual Link (HDC1500 only)

The SDI-1 output is assigned to Link A, SDI-2 output to Link B.

Note

This function cannot be used when a camera control unit is connected.

To output in 1080/59.94P or 1080/50P

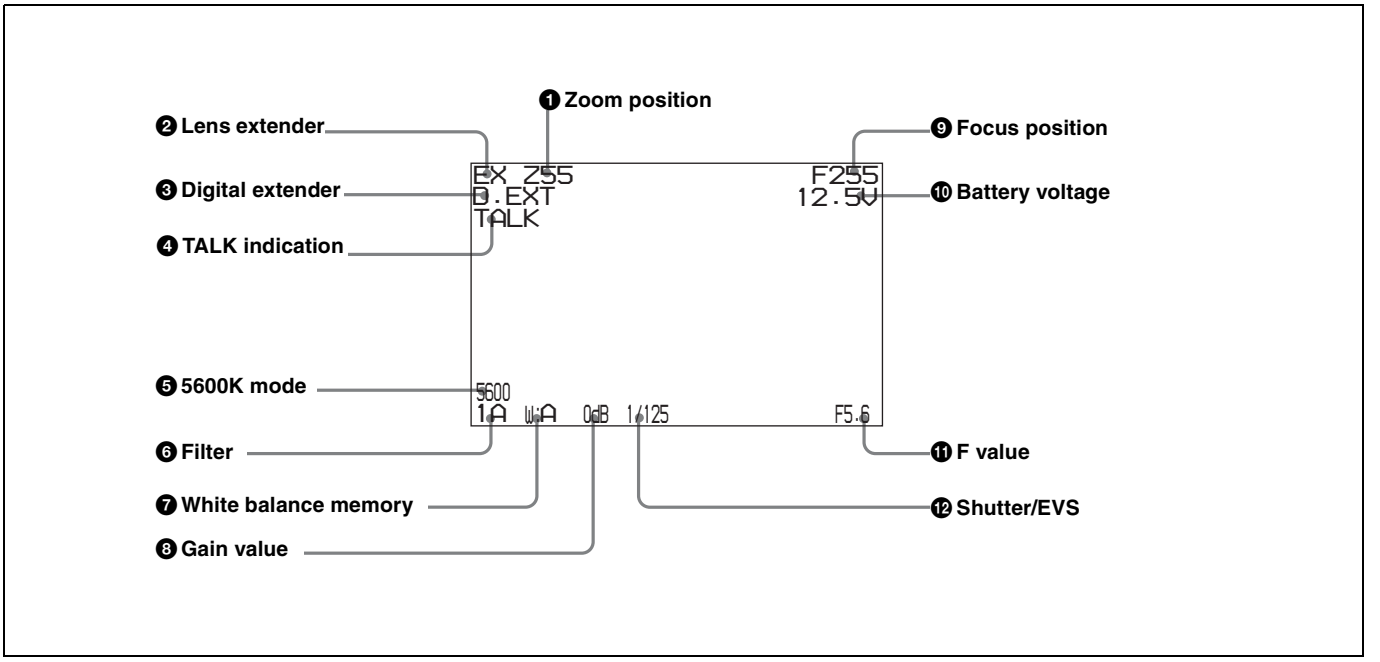
Menu page	Item	Setting
<OUTPUT FORMAT>	ACTIVE LINE	1080
	(Format)	59.94P or 50P
<POWER SAVE>	SDI-2 OUT	ACTIVE
<SDI-2 OUT>	OUTPUT	LINK-B

Viewfinder Screen Status Display

Besides the video image, the viewfinder can display text and messages showing the camera settings and operation status, as well as items such as a center marker or safety zone marker.

When the DISPLAY switch is set to ON

Items set to ON using the menu or related switches will be displayed on the upper and lower edges of the screen.



❶ Zoom position
Indicates the approximate position of the zoom lens variator between wide angle (0) and telephoto (99). Shows how close it is to the telephoto side.

❷ Lens extender
"EX" is displayed when a lens extender is in use.

❸ Digital extender (HDC1500/1550 only)
"D.EXT" is displayed when a digital extender is in use.

❹ TALK indication
Displayed when the intercom microphone is set to ON.

❺ 5600K mode
Displayed when 5600K is set to ON.

❻ Filter
Displays the type of filter currently selected. The number (1, 2, 3, 4, or 5) indicates the ND filter, and the letter (A, B, C, D or E) is for the CC filter (HDC1500/1550 only).

❼ White balance memory
Displays the currently selected white balance automatic adjustment memory.
W:A: The WHITE BAL switch is set to "A"
W:B: The WHITE BAL switch is set to "B"
W:P: The WHITE BAL switch is set to "PRST"

❽ Gain value
Displays the video gain value (dB) set with the GAIN switch.

❾ Focus position
Shows the focus position of a zoom lens as a numeric value (0 to 255 (infinity)).

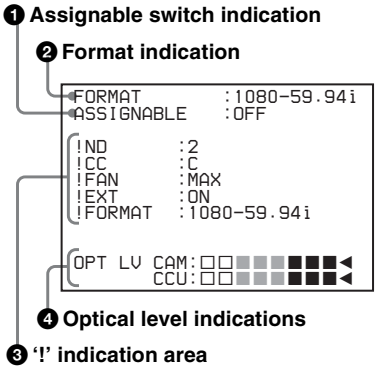
❿ Battery voltage
Displays the input voltage.

⓫ F value
Indicates the lens F (iris opening) value.

⓬ Shutter/EVS
Displays the shutter/EVS status. Nothing is displayed if both the electronic shutter and EVS are set to OFF.

When you press the CANCEL/STATUS switch toward STATUS

The status display is changed to show the following items:



❶ Assignable switch indication
The function assigned to the assignable switch *(page 68)* is indicated.

For the functions that can be assigned, see OPERATION menu <SWITCH ASSIGN1> (page 96).

❷ Format indication
The current video format is displayed.

❸ '!' indication area
This area is used to display abnormal statuses, using the <'!' IND> function. Display options can be set, using the menu. (!CC is displayed for HDC1500/1550 only.)

For details, see OPERATION menu <'!' IND> (page 95).

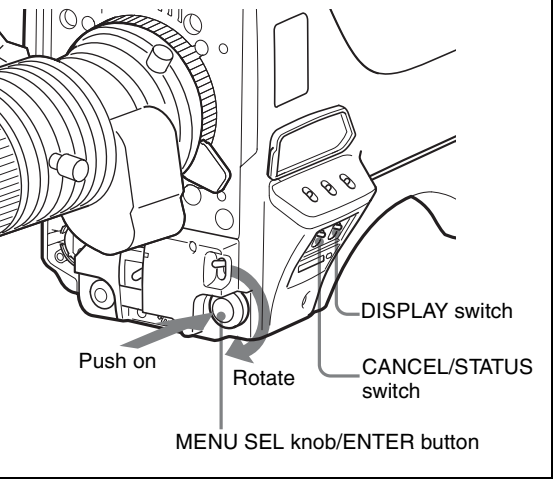
❹ Optical level indications (HDC1500/1400 only)
This area shows the input/output levels at the CCU connector *(page 71)*, in segments.
CAM: Level of the output from the camera head
CCU: Level of the input to the camera head

Note

If a camera control unit other than an HDCU1000/1500 is connected, correct indications may not be obtained.

Menu Operations

The menus displayed on the viewfinder enable various settings of the camera.
The following controls are used to operate the menus.



Starting Menu Operations

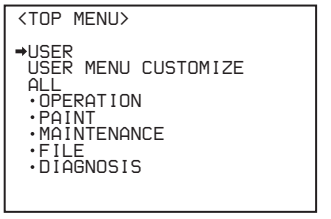
To display a menu page

Set the DISPLAY switch from OFF to MENU.
The menu page that last operated will be displayed. (If it is the first time, the CONTENTS page of the OPERATION menu will be displayed.)

To display the TOP MENU screen

If you set the DISPLAY switch from OFF to MENU while holding the MENU SEL knob/ENTER button pressed, "TOP" is displayed at the upper right corner of the screen. Selecting it displays the TOP MENU screen, which lists the available menus, and you can select the menus on this screen.

TOP MENU screen



To disable the "TOP" indication
Turn the power once off then on again, or set the DISPLAY switch from OFF to MENU while holding the CANCEL/STATUS switch pressed toward CANCEL. This disables the TOP selection.

Available menus

USER menu

This menu can include menu pages selected from among the OPERATION, PAINT, MAINTENANCE, FILE, and DIAGNOSIS menus, for convenience. Changing, adding, and deleting pages can be performed with the USER MENU CUSTOMIZE menu.

USER MENU CUSTOMIZE menu

This menu allows you to edit the USER menu.

For details on the USER menu, see "Editing the USER Menu" on page 90.

ALL menu

This menu permits you to control all items of the OPERATION menu, PAINT menu, MAINTENANCE menu, FILE menu, and DIAGNOSIS menu as a single menu.

OPERATION menu

This menu contains items for camera operators to operate the camera. It mainly permits viewfinder, intercom, and switch settings.

PAINT menu

This menu contains items for making detailed image adjustments while using a waveform monitor to monitor the waveforms output from the camera. Support of a video engineer is usually required to use this menu.
Although you can also use an external remote control panel or master setup unit to set the items on this menu, the menu is effective when using the camera by itself outdoors.

MAINTENANCE menu

This menu contains items for performing camera maintenance operations, such as changing the system or setting infrequently used "paint" items.

FILE menu

This menu is for performing file operations, such as writing or clearing the reference file.

DIAGNOSIS menu

This menu enables you to confirm the self-diagnostic information.

To select a menu on the TOP MENU screen

1 Rotate the MENU SEL knob/ENTER button to align the arrow marker (➡) with the desired menu indication.

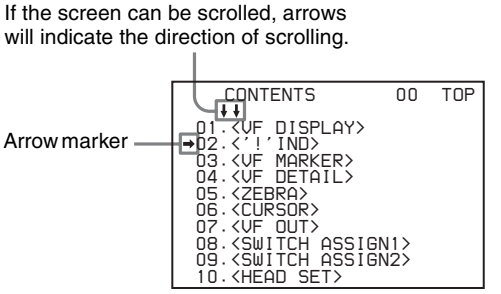
2 Push on the MENU SEL knob/ENTER button.

The CONTENTS page or the last operated page of the selected menu is displayed.

Selecting Pages

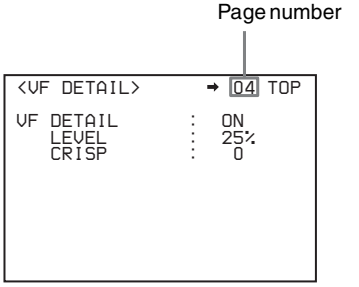
When selecting a page from a CONTENTS page

CONTENTS page (example)



Rotate the MENU SEL knob/ENTER button to align the arrow marker (➡) with the desired page indication, then push on the MENU SEL knob/ENTER button.

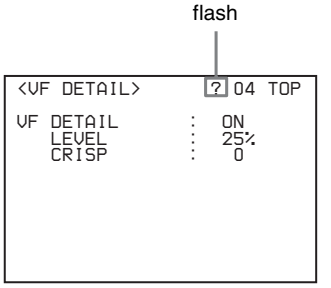
The selected page is displayed.



To change the displayed page

1 Check that the arrow marker (➡) is located at the left of the page number, then push on the MENU SEL knob/ENTER button.

The arrow marker (➡) changes to a flashing question (**?**) mark.

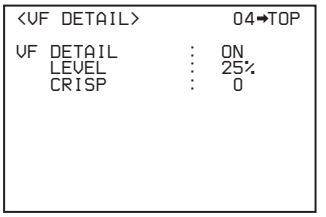


2 Rotate the MENU SEL knob/ENTER button to flip through the pages.

3 When the desired page is displayed, push on the MENU SEL knob/ENTER button.

The "**?**" mark will change back to the arrow marker (➡), and operations with the displayed page are enabled.

To return to the TOP MENU screen
Align the arrow marker (➡) with "TOP" at the top right of the menu page then press the MENU SEL knob/ENTER button.



The TOP MENU screen is resumed.

Setting the Menu Items

If a "**?**" mark is flashing at the left of the page number, push on the MENU SEL knob/ENTER button to change it to the arrow marker (➡). Setting on the displayed page is enabled.

1 Rotate the MENU SEL knob/ENTER button to align the arrow marker (➡) with the desired item.

2 Push on the MENU SEL knob/ENTER button.

The arrow marker (➡) will change to a flashing "**?**" mark.

3 Rotate the MENU SEL knob/ENTER button to change the setting value.

When the knob is rotated quickly, the values will change quickly; when rotated slowly, the values will change slowly.

To reset a changed value
If you press the CANCEL/STATUS switch toward CANCEL before pressing the MENU SEL knob/ ENTER button, the setting will be returned to its previous value.

To interrupt settings
Set the DISPLAY switch to OFF to turn off the menu screen display.
The setting operation can be restarted by setting the DISPLAY switch back to MENU.

4 Push on the MENU SEL knob/ENTER button.

The "**?**" mark will change back to the arrow marker (➡), and the new setting will be registered.

5 To change other setting items on the same menu page, repeat steps **1** through **4**.

To specify a character string

When you press the MENU SEL knob/ENTER button with the arrow marker (➡) pointing to an item for which a character string, such as a file ID, is to be specified, a cursor and the list of selectable characters are displayed. The displayed cursor can be moved by rotating the MENU SEL knob/ENTER button.

1 Set the cursor to the position where you wish enter a character, then push on the MENU SEL knob/ENTER button.

Another cursor appears on the character list.

2 Set the cursor to the character to be entered and push on the MENU SEL knob/ENTER button.

Repeat steps **1** and **2**.

By selecting INS on the line below the character list, you can enter a space at the cursor position.
Selecting DEL deletes the character at the cursor position.
You can return to step **1** without changing the character by selecting RET.

If you enter the permitted maximum number of characters (up to the stop mark at the right end of the line), the cursor moves to ESC on the line below the character list.

To register the new string you have set, select END and push on the MENU SEL knob/ENTER button.

To restore the previous string, select ESC and push on the MENU SEL knob/ENTER button.

To end menu operations

Set the DISPLAY switch to OFF.

Editing the USER Menu

You can select desired pages and items from the OPERATION, PAINT, MAINTENANCE, FILE, and DIAGNOSIS menus and register them to the USER menu. If you specify pages or items frequently used for the USER menu, you can easily call and use them.

The following pages are included on the factory-set USER menu:

Menu page title	USER menu No.	Source menu / page No.	
<VF OUT>	U01	OPERATION	07
<VF DETAIL>	U02	OPERATION	04
<VF DISPLAY>	U03	OPERATION	01
<'!' IND>	U04	OPERATION	02
<VF MARKER>	U05	OPERATION	03
<CURSOR>	U06	OPERATION	06
<ZEBRA>	U07	OPERATION	05
<SWITCH ASSIGN1>	U08	OPERATION	08
<SWITCH ASSIGN2>	U09	OPERATION	09
<POWER SAVE>	U10	MAINTENANCE	M13
<LENS FILE>	U11	OPERATION	17
<HEAD SET>	U12	OPERATION	10
<INTERCOM LEVEL>	U13	OPERATION	11
<MIC GAIN>	U14	MAINTENANCE	M06
<OUTPUT FORMAT>	U15	MAINTENANCE	M09
<TEST OUT>	U16	MAINTENANCE	M11
<SDI-2 OUT> (HDC1500) or <SDI OUT> (HDC1550/1400/1450)	U17	MAINTENANCE	M12
<DOWN CONVERTER>	U18	MAINTENANCE	M10
<TRUNK>	U19	MAINTENANCE	M14
<UP TALLY>	U20	MAINTENANCE	M07
<ROM VERSION>	U21	DIAGNOSIS	D04

For the items on each page, see the corresponding source menu page in the table in "Menu List" on page 94.

The USER MENU CUSTOMIZE menu allows you to configure a USER menu that consists only of pages and items that you need, by your adding, deleting or replacing pages.

Creating a new page

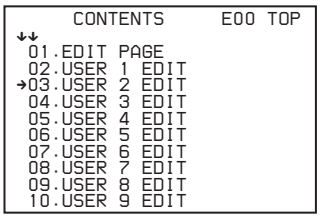
The USER MENU CUSTOMIZE menu allows you to add a new page to the USER menu.
While the EDIT page contains factory-preset items, the USER 1 EDIT to USER 19 EDIT pages are all blank in their initial state. You can register up to 10 items, including blank lines, on each of these pages.
To create a new page, proceed as follows.

1 While holding the CANCEL/STATUS switch pressed toward STATUS, move the DISPLAY switch from the OFF position to the MENU position.

The TOP MENU screen appears.

2 Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to "USER MENU CUSTOMIZE", then push on the MENU SEL knob/ENTER button.

If this is the first time the USER MENU CUSTOMIZE menu has been displayed, the CONTENTS page of the menu appears.

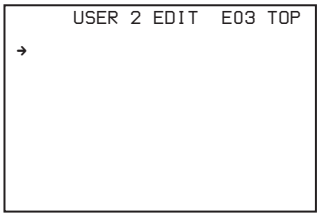


If the USER MENU CUSTOMIZE menu has been used before, the page last accessed appears.

3 If the CONTENTS page is displayed, turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to any of USER 1 EDIT to USER 19 EDIT then push on the MENU SEL knob/ENTER button to display the page.

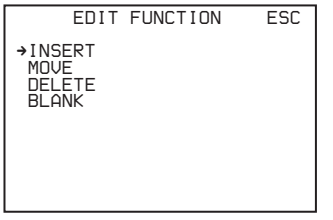
If a different page is displayed, turn the MENU SEL knob/ENTER button until the desired page appears, then push on the MENU SEL knob/ENTER button to select the page.

Example: When you select the USER 2 EDIT page



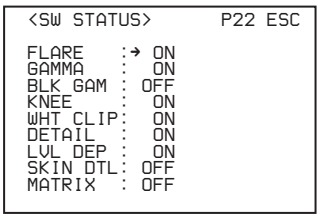
4 Move the arrow marker (➡) to the item to be added (this operation is unnecessary if no item exists on the page, as shown in the figure for step **3**) then push on the MENU SEL knob/ENTER button.

The EDIT FUNCTION screen appears.



5 Move the arrow marker (➡) to "INSERT" and push on the MENU SEL knob/ENTER button.

The page with the last item added appears.



6 Add the items.

① Turn the MENU SEL knob/ENTER button until the page that has the desired items appears, then push on the MENU SEL knob/ENTER button.

② Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to the desired item, then push on the MENU SEL knob/ENTER button.

The USER 2 EDIT page appears again, displaying the newly added item.

7 Add the remaining items by repeating steps **4** to **6**.

You can add up to 10 items on one page.

To delete items from a page

Proceed as follows:

1 Move the arrow marker (➡) to the item to be deleted, and push on the MENU SEL knob/ENTER button.

The EDIT FUNCTION screen appears.

2 Select "DELETE," and push on the MENU SEL knob/ENTER button.

The previously displayed page appears again, and the message "DELETE OK? Yes ➡ No" appears at the upper right.

3 To delete, turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to "YES," and push on the MENU SEL knob/ENTER button.

To change the order of items on a page

Proceed as follows:

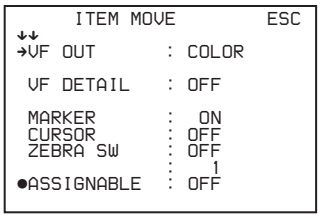
1 Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to the item to be moved, then push on the MENU SEL knob/ENTER button.

The EDIT FUNCTION screen appears.

2 Select MOVE, then push on the MENU SEL knob/ENTER button.

The previously displayed page appears again.

3 Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to the position where you wish to move the item, then push on the MENU SEL knob/ENTER button.



The item selected in step **1** moves to the position that you selected in step **3**.
In the above example, "ASSIGNABLE" is moved to the top and the other items are moved down one line.

To insert a blank line

Proceed as follows:

1 Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to the item above which you wish to insert a blank line.

The EDIT FUNCTION screen appears.

2 Select "BLANK" then push on the MENU SEL knob/ENTER button.

The previously displayed page appears again, and a blank line is inserted above the specified item.

Note

You cannot insert a blank line on a page where 10 items have already been registered.

Adding/deleting/replacing pages

You can add a new page to the USER menu, delete a page from the USER menu or replace pages, using the EDIT PAGE of the USER MENU CUSTOMIZE menu.

To add a page

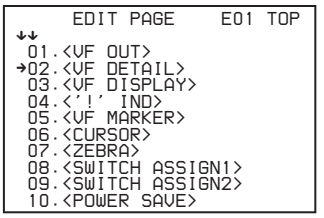
Proceed as follows:

1 Select "USER MENU CUSTOMIZE" on the TOP MENU screen.

If this is the first time the USER MENU CUSTOMIZE menu has been displayed, the CONTENTS page of the menu appears. If the menu has been used before, the last accessed page appears.

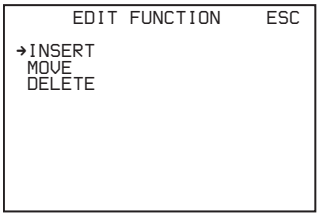
2 If the CONTENTS page is displayed, turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to "EDIT PAGE", then push on the MENU SEL knob/ENTER button to display the EDIT PAGE screen.

If a different page is displayed, turn the MENU SEL knob/ENTER button until the EDIT PAGE screen appears, then push on the MENU SEL knob/ENTER button to select the page.



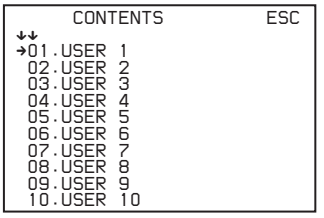
3 Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to where you wish to add the page, then push on the MENU SEL knob/ENTER button.

The EDIT FUNCTION screen appears.



4 Select INSERT then push on the MENU SEL knob/ENTER button.

The selection screen appears.



5 Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to the desired page, then push on the MENU SEL knob/ENTER button.

This adds the number and name of the selected page above the item selected in step **3**.

To cancel addition of a page

Before pushing the MENU SEL knob/ENTER button in step **5**, turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to "ESC" at the top right of the screen, then push on the MENU SEL knob/ENTER button. The EDIT PAGE screen appears again.

To delete a page

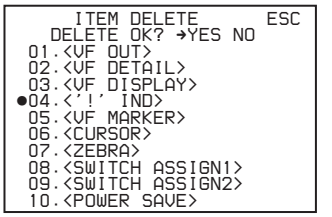
Proceed as follows:

1 On the EDIT PAGE screen of the USER MENU CUSTOMIZE menu, move the arrow marker (➡) to the page to be deleted, and push on the MENU SEL knob/ENTER button.

The EDIT FUNCTION screen appears.

2 Select "DELETE" then push on the MENU SEL knob/ENTER button.

The previously displayed page appears again, and the message "DELETE OK?" appears at the upper right.



3 To delete, turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to "YES," then push on the MENU SEL knob/ENTER button.

To move a page

Proceed as follows:

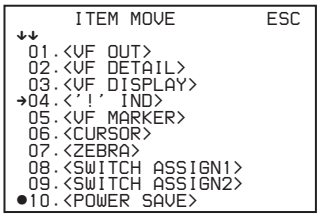
1 Display the EDIT PAGE screen of the USER MENU CUSTOMIZE menu. Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to the page that you wish to move.

The EDIT FUNCTION screen appears.

2 Select "MOVE" then push on the MENU SEL knob/ENTER button.

The EDIT PAGE screen appears again.

3 Turn MENU SEL knob/ENTER button to move the arrow marker (➡) to the position to which you wish to move the page selected in step **1**.



4 Push on the MENU SEL knob/ENTER button.

The page selected in step **1** is moved to the position selected in step **3**.
In the above example, <POWER SAVE> moves to the "04" position, and the <'!' IND> and following pages move down one line.

Menu List

This section shows the menus to be displayed on the viewfinder in tables.

- For the pages that have been registered in the USER menu at the factory, the USER menu page numbers are indicated in parenthesis in the No. column of the tables.
- A CONTENTS page (numbered 00) is also provided for each menu.

Notes

HDLA: HDLA1500-series Large Lens Adaptor
CCU: HDCU1000/1500 Camera Control Unit
Execute by ENTER: Execute by pushing on the MENU SEL knob/ENTER button.

OPERATION Menu

Page title	No.	Item	Default	Settings	Remarks
<VF DISPLAY>	01 (U03)	EX	ON	ON, OFF	
		ZOOM	OFF	ON, OFF	
		DISP	LEFT	LEFT, RIGT	
		FOCUS	OFF	ON, OFF	Valid only when a serial lens is used
		ND	ON	ON, OFF	
		CC	ON	ON, OFF	Invalid with HDC1400/1450
		5600K	ON	ON, OFF	
		IRIS	ON	ON, OFF	
		WHITE	OFF	ON, OFF	
		D.EXT	ON	ON, OFF	Invalid with HDC1400/1450
		GAIN	ON	ON, OFF	
		SHUTT	ON	ON, OFF	
		BATT	OFF	ON, OFF	
		RETURN	ON	ON, OFF	
		TALK	ON	ON, OFF	
		MESSAG	ALL	ALL, WRN, AT, OFF	ALL: To display all messages WRN: To display warning messages and higher AT: To display Auto Setup information and higher

Page title	No.	Item	Default	Settings	Remarks
<'!' IND>	02 (U04)	ND	[IND] ON	ON, OFF	[IND]: Set whether to be included in the status indications on the viewfinder *(see page 88)*. [NORMAL]: Specify the conditions under which the '!' indication is not to be displayed even if [IND] is ON. (By specifying the standard or normal conditions here, non-standard or abnormal conditions can be found with the '!' indication on the viewfinder.) e.g.: With the default setting of ND, the '!' indication is displayed when an ND filter other than 1 is selected. - - - : When CCU connected (cannot be changed) **Note** CC is available for HDC1500/1550 only.
			[NORMAL] 1 – – – –	1, 2, 3, 4, 5 (combination allowed)	
		CC	[IND] ON	ON, OFF	
			[NORMAL] – B – – –	A, B, C, D, E (combination allowed)	
		WHITE	[IND] ON	ON, OFF, - - -	
			[NORMAL] – A B	P, A, B (combination allowed)	
		5600K	[IND] ON	ON, OFF, - - -	
			[NORMAL] OFF	ON, OFF	
		GAIN	[IND] ON	ON, OFF, - - -	
			[NORMAL] – – L	L, M, H (combination allowed)	
		SHUTT	[IND] ON	ON, OFF, - - -	
			[NORMAL] OFF	ON, OFF	
		FAN	[IND] ON	ON, OFF	
			[NORMAL] AUTO1	AUTO1, AUTO2, MIN, MAX	
		EXT	[IND] ON	ON, OFF	
		FORMAT	[IND] ON	ON, OFF	
			[NORMAL] 59.94i or 50i (HDC1400 CE/E33 and HDC1450 CE models)	HDC1500/1550: 59.94i, 29.97PsF, 50i, 25PsF, 24PsF, 23.98PsF, 59.94P, 50P HDC1400 JN3/JN4 and HDC1450 UC models: 59.94i, 59.94P HDC1400 CE/E33 and HDC1450 CE models: 50i, 50P	
<VF MARKER>	03 (U05)	MARKER	ON	ON, OFF	Except MASK
		CENTER	OFF	ON, OFF	
			1	1, 2, 3, 4	1: Entire cross 2: Entire cross with a hole 3: Center 4: Center with a hole
		SAFETY ZONE	OFF	ON, OFF	
			90.0%	80.0, 90.0, 92.5, 95.0%	
		EFFECT	OFF	ON, OFF	
		ASPECT	OFF	ON, OFF	
			4:3	16:9, 15:9, 14:9, 13:9, 4:3, (4.3)	(4.3): If VF SCAN is set to 4:3 on HDLA attached (cannot be changed)
		MASK	OFF	ON, OFF, (ON)	(ON): If VF SCAN is set to 4:3 on HDLA attached (cannot be changed)
			12	0 to 15	Set the level to darken outside the aspect area.
		SAFETY	OFF	ON, OFF	For the safety marker in Aspect mode
			90.0%	80.0, 90.0, 92.5, 95.0%	
<VF DETAIL>	04 (U02)	VF DETAIL	ON	ON, OFF	
		LEVEL	25%	0 to 100%	
		CRISP	0	–99 to +99	
		FREQUENCY	9M	9M, 14M, 18M	

Page title	No.	Item	Default	Settings	Remarks
<ZEBRA>	05 (U07)	ZEBRA	OFF	ON, OFF	
			1	1, 2, 1&2	
		ZEBRA1 LEVEL	70%	50 to 109%	
		WIDTH	10%	0 to 30%	
		ZEBRA2	100%	50 to 109%	
<CURSOR>	06 (U06)	CURSOR	OFF	ON, OFF	display only if HDLA attached
		BOX/CROSS	BOX	BOX, CROSS	
		H POSITION	50	0 to 99	display only if HDLA attached
		V POSITION	50	0 to 99	
		WIDTH	50	0 to 99	
		HEIGHT	50	0 to 99	
<VF OUT>	07 (U01)	VF OUT	COLOR	COLOR, Y, R, G, B, (COLOR), (Y), (R), (G), (B), (RET), (VF), (R+G), (R+B), (G+B)	Settings in ( ): When HDLA attached (cannot be changed)
		RET MIX VF	OFF	ON, OFF, (ON), (OFF)	Settings in ( ): When HDLA attached (cannot be changed)
		MIX DIRECTION	RET	MAIN, RET	
		MIX VF MODE	Y-MIX	Y-MIX, WIRE(W), WIRE(B)	
		MIX VF LEVEL	80%	0 to 80%	
<SWITCH ASSIGN1>	08 (U08)	GAIN	[L] 0 dB	–3, 0, 3, 6, 9, 12 dB	
			[M] 6 dB	–3, 0, 3, 6, 9, 12 dB	
			[H] 12 dB	–3, 0, 3, 6, 9, 12 dB	
		ASSIGNABLE	OFF	OFF, RETURN1 SW, RETURN2 SW, INCOM1, INCOM2, VF DETAIL, MIX VF, 5600K, FAN MAX, D.EXTENDER	When HDLA attached: OFF, EXTENDER, 5600K, FAN MAX, D.EXTENDER **Notes** • When you turn D.EXTENDER ON or OFF, noise may be generated. This is not a malfunction. • D.EXTENDER cannot be selected on HDC1400/1450.
		RE.ROTATION	STD	STD, RVS	Specify operation mode of the MENU SEL knob. STD: Clockwise rotation moves ➡ down or increases values on the menu screen. RVS: Counterclockwise rotation moves ➡ down or increases values on the menu screen.

Page title	No.	Item	Default	Settings	Remarks
<SWITCH ASSIGN2>	09 (U09)	LENS VTR S/S	RETURN2 SW	OFF, RETURN1 SW, RETURN2 SW, INCOM1, INCOM2	Assign a function to the VTR START/STOP switch on the mounted lens.
		FRONT RET1	RETURN1 SW	OFF, RETURN1 SW, RETURN2 SW, INCOM1, INCOM2, D.EXTENDER	D.EXTENDER cannot be selected on HDC1400/1450.
		FRONT RET2	RETURN2 SW	OFF, RETURN1 SW, RETURN2 SW, INCOM1, INCOM2, D.EXTENDER	D.EXTENDER cannot be selected on HDC1400/1450.
		HANDLE SW1	RETURN1 SW	OFF, RETURN1 SW, RETURN2 SW, INCOM1, INCOM2, ZOOM(T)	
		HANDLE SW2	INCOM1	OFF, RETURN1 SW, RETURN2 SW, INCOM1, INCOM2, ZOOM(W)	
		ZOOM SPEED	20	00 to 99	
		HKCT INCOM MIC	INCOM1	INCOM1, INCOM2	UC/SYL/JN3/JN4 models only. Assign a function to the INTERCOM MIC switch on the HKC-T1500.
			ENG	ENG, PROD	CE/E33 models only. Assign a function to the INTERCOM MIC switch on the HKC-T1500.
<HEAD SET>	10 (U12)	INTERCOM1 MIC	CARBON	DYNAMIC, CARBON, MANUAL	
		LEVEL	(–20 dB)	–60 dB, –50 dB, –40 dB, –30 dB, –20 dB	Settings in ( ): With DYNAMIC or CARBON (cannot be changed)
			0 dB	–6 dB, 0 dB, +6 dB	Input gain
		POWER	(OFF)	ON, OFF, (ON), (OFF)	Settings in ( ): With DYNAMIC or CARBON (cannot be changed)
		UNBAL	(OFF)	ON, OFF, (ON), (OFF)	Settings in ( ): With CARBON (cannot be changed)
		INTERCOM2 MIC	CARBON	DYNAMIC, CARBON, MANUAL	
		LEVEL	(–20 dB)	–60 dB, –50 dB, –40 dB, –30 dB, –20 dB	Settings in ( ): With DYNAMIC or CARBON (cannot be changed)
			0 dB	–6 dB, 0 dB, +6 dB	Input gain
		POWER	(OFF)	ON, OFF, (ON), (OFF)	Settings in ( ): With DYNAMIC or CARBON (cannot be changed)
		UNBAL	(OFF)	ON, OFF, (ON), (OFF)	Settings in ( ): With CARBON (cannot be changed)
<INTERCOM LEVEL>	11 (U13)	SIDE TONE			
		INTERCOM1	50	MU, 1 to 99	
		INTERCOM2	50	MU, 1 to 99	

Page title	No.	Item	Default	Settings	Remarks
<RECEIVE SEL1>	12	INTERCOM1 RECEIVE SEL	SEPARATE	SEPARATE, MIX	
		INTERCOM	LEFT	RIGHT, LEFT, BOTH, - - -	UC/SYL/JN3/JN4 models only
		ENG	LEFT	RIGHT, LEFT, BOTH, - - -	CE/E33 models only
		PROD	LEFT	RIGHT, LEFT, BOTH, - - -	CE/E33 models only
		PGM1	RIGHT	RIGHT, LEFT, BOTH, - - -	
		PGM2	RIGHT	RIGHT, LEFT, BOTH, - - -	
		TRACKER	LEFT	RIGHT, LEFT, BOTH, - - -	
<RECEIVE SEL2>	13	INTERCOM2 RECEIVE SEL	SEPARATE	SEPARATE, MIX	
		INTERCOM	LEFT	RIGHT, LEFT, BOTH, - - -	UC/SYL/JN3/JN4 models only
		ENG	LEFT	RIGHT, LEFT, BOTH, - - -	CE/E33 models only
		PROD	LEFT	RIGHT, LEFT, BOTH, - - -	CE/E33 models only
		PGM1	RIGHT	RIGHT, LEFT, BOTH, - - -	
		PGM2	RIGHT	RIGHT, LEFT, BOTH, - - -	
		TRACKER	- - -	RIGHT, LEFT, BOTH, - - -	
<RECEIVE SEL3>	14	TRACKER RECEIVE SEL	SEPARATE	SEPARATE, MIX	
		INTERCOM	LEFT	RIGHT, LEFT, BOTH, - - -	UC/SYL/JN3/JN4 models only
		ENG	LEFT	RIGHT, LEFT, BOTH, - - -	CE/E33 models only
		PROD	LEFT	RIGHT, LEFT, BOTH, - - -	CE/E33 models only
		PGM1	RIGHT	RIGHT, LEFT, BOTH, - - -	
		PGM2	RIGHT	RIGHT, LEFT, BOTH, - - -	
<RECEIVE SEL4>	15	EARPHONE RECEIVE SEL	SEPARATE	SEPARATE, MIX	
		INTERCOM	LEFT	RIGHT, LEFT, BOTH, - - -	UC/SYL/JN3/JN4 models only
		ENG	LEFT	RIGHT, LEFT, BOTH, - - -	CE/E33 models only
		PROD	LEFT	RIGHT, LEFT, BOTH, - - -	CE/E33 models only
		PGM1	RIGHT	RIGHT, LEFT, BOTH, - - -	
		PGM2	RIGHT	RIGHT, LEFT, BOTH, - - -	
		TRACKER	LEFT	RIGHT, LEFT, BOTH, - - -	
<OPERATOR FILE>	16	READ (MS→CAM)		Execute by ENTER.	To read the operator file from a “Memory Stick”
		WRITE (CAM→MS)		Execute by ENTER.	To write the current settings of the operator file items to a “Memory Stick”
		PRESET		Execute by ENTER.	To set the operator file items to the preset values in internal memory
		FILE ID		alphanumerics (max.16 characters)	Enter a comment for the operator file to be written to a “Memory Stick.” *See “To specify a character string” on page 90.*
		CAM CODE	HDCxxxx	Camera code	display only
		DATE			display only

Page title	No.	Item	Default	Settings	Remarks
<LENS FILE>	17 (U11)	FILE	1	1 to 16	
			xxxx...	Lens file name	display only
			F.xx	F-stop number of the lens	display only
		CENTER MARKER			To set and store the center marker position: H POS: Increasing the value moves it to the right. V POS: Increasing the value moves it downwards.
		H POS	0	–20 to +20	
		V POS	0	–20 to +20	
		STORE CENTER		Execute by ENTER.	

PAINT Menu

Menu page	No.	Item	Default	Settings	Remarks
<SW STATUS>	P01	FLARE	ON	ON, OFF	
		GAMMA	ON	ON, OFF	
		BLK GAM	OFF	ON, OFF	
		KNEE	ON	ON, OFF	
		WHT CLIP	ON	ON, OFF	
		DETAIL	ON	ON, OFF	
		LVL DEP	ON	ON, OFF	
		SKIN DTL	OFF	ON, OFF	
		MATRIX	OFF	ON, OFF	
<VIDEO LEVEL>	P02	WHITE	[R] [G] [B] [M] 0 0 0	–99 to +99	R, G, B, and M (master) values can be independently set. (M cannot be set for WHITE or FLARE.)
		BLACK	0 0 0 0	–99 to +99	
		FLARE	0 0 0	–99 to +99	
		GAMMA	0 0 0 0	–99 to +99	
		V MOD	0 0 0 0	–99 to +99	
		FLARE	ON	ON, OFF	
		V MOD	ON	ON, OFF	
		D. SHAD	OFF	ON, OFF	
		TEST	OFF	OFF, SAW, 3STEP, 10STEP	
<GAMMA>	P03	LEVEL	[R] [G] [B] [M] 0 0 0 0	–99 to +99	R, G, B, and M (master) values can be independently set.
		COARSE	0.45	0.35 to 0.90 (0.05 steps)	
		TABLE	STANDARD	STANDARD, HYPER	
			5	1, 2, 3, 4, 5, 6, 7	With STANDARD selected 1: equivalent to a camcorder 2: 4.5-times gain 3: 3.5-times gain 4: equivalent to SMPTE-240M 5: equivalent to ITU-R709 6: 5.0-times gain 7: 5.0-times gain - 709 With HYPER selected 1: 325% to 100% 2: 460% to 100% 3: 325% to 109% 4: 460% to 109% (default) (5 to 7 are not selectable)
		GAMMA	ON	ON, OFF	
		TEST	OFF	OFF, SAW, 3 STEP, 10 STEP	

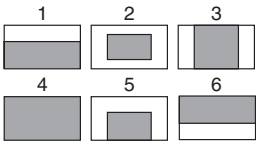
Menu page	No.	Item	Default	Settings	Remarks
<BLACK GAMMA>	P04	LEVEL	[R] [G] [B] [M] 0 0 0 0	–99 to +99	R, G, B, and M (master) values can be independently set.
		RANGE	HIGH	LOW, L.MID, H.MID, HIGH	
			OFF	ON, OFF	
		TEST	OFF	OFF, SAW, 3 STEP, 10 STEP	
<SATURATION>	P05	SATURATION	0	–99 to +99	
		SW	OFF	ON, OFF	
		LOW KEY SAT	0	–99 to +99	
		RANGE	HIGH	LOW, L.MID, H.MID, HIGH	
		SW	OFF	ON, OFF	
		TEST	OFF	OFF, SAW, 3 STEP, 10 STEP	
<KNEE>	P06	K POINT	[R] [G] [B] [M] 0 0 0 0	–99 to +99	R, G, B, and M (master) values can be independently set. Absolute values are displayed in ABS mode except for M (master).
		K SLOPE	0 0 0 0	–99 to +99	
		KNEE	ON	ON, OFF	
		KNEE MAX	OFF	ON, OFF	
		KNEE SAT	0	–99 to +99	
			OFF	ON, OFF	
		AUTO KNEE	OFF	OFF, AUTO, ADAPTIVE	
		POINT LIMIT	0	–99 to +99	Absolute value is displayed in ABS mode.
		SLOPE	0	–99 to +99	Absolute value is displayed in ABS mode.
		ABS			Highlighted: ABS (Absolute) mode
<WHITE CLIP>	P07	W CLIP	[R] [G] [B] [M] 0 0 0 0	–99 to +99	R, G, B, and M (master) values can be independently set. Absolute values are displayed in ABS mode except for M (master).
			ON	ON, OFF	
		ABS			Highlighted: ABS (Absolute) mode
<DETAIL 1>	P08	DETAIL	ON	ON, OFF	
		LEVEL	0	–99 to +99	Absolute value is displayed in ABS mode.
		LIMITER M	0	–99 to +99	
		LIMITER WHT	0	–99 to +99	Absolute value is displayed in ABS mode.
		LIMITER BLK	0	–99 to +99	Absolute value is displayed in ABS mode.
		CRISP	0	–99 to +99	Absolute value is displayed in ABS mode.
		LVL DEP	0	–99 to +99	Absolute value is displayed in ABS mode.
			ON	ON, OFF	
		ABS			Highlighted: ABS (Absolute) mode

Menu page	No.	Item	Default	Settings	Remarks
<DETAIL 2>	P09	H/V RATIO	0	–99 to +99	Absolute value is displayed in ABS mode.
		FREQ	0	–99 to +99	Absolute value is displayed in ABS mode.
		MIX RATIO	0	–99 to +99	Absolute value is displayed in ABS mode.
		KNEE APERTURE	0	–99 to +99	Absolute value is displayed in ABS mode.
			OFF	ON, OFF	
		ABS			Highlighted: ABS (Absolute) mode
<SKIN DETAIL>	P10	SKIN DTL	OFF	ON, OFF	
		SKIN GATE	OFF	OFF, 1, 2, 3	1, 2, 3: Skin gate can be set to ON for the specified channel only.
		ABS			Highlighted: ABS (Absolute) mode
		CH SW	[1] (ON) [2] OFF [3] OFF	ON, OFF	Skin tone detail function can be independently set for each channel (channel 1 is always ON). Absolute values are indicated for LEVEL only in ABS mode.
		HUE	AUTO AUTO AUTO	Execute by ENTER.	
		PHASE	0 0 0	0 to 359	
		WIDTH	29 29 29	0 to 359	
		SAT	–89 –89 –89	–99 to +99	
		LEVEL	0 0 0	–99 to +99	
<USER MATRIX>	P11	R-G	0	–99 to +99	
		R-B	0	–99 to +99	
		G-R	0	–99 to +99	
		G-B	0	–99 to +99	
		B-R	0	–99 to +99	
		B-G	0	–99 to +99	
		MATRIX	ON	ON, OFF	
		PRESET	ON	ON, OFF	Invalid when MATRIX is OFF
			SMPTE-240M	SMPTE-240M, ITU-709, SMPTE-WIDE, NTSC, EBU, ITU-601	
		USER MATRIX	OFF	ON, OFF	
		MULTI MATRIX	OFF	ON, OFF	
<MULTI MATRIX>	P12	PHASE	0	0, 23, 45, 68, 90, 113, 135, 158, 180, 203, 225, 248, 270, 293, 315, 338	Select an axis (angle) at PHASE for which the multimatrix adjustment to be made, and set HUE and SAT. (HUE and SAT can be adjusted independently for 16 axes.)
		HUE	0	–99 to +99	
		SAT	0	–99 to +99	
		ALL CLEAR		Execute by ENTER.	
		GATE	OFF	ON, OFF	
		MATRIX	ON	ON, OFF	
		PRESET	ON	ON, OFF	Invalid when MATRIX is OFF
			ITU-709	SMPTE-240M, ITU-709, SMPTE-WIDE, NTSC, EBU, ITU-601	
		USER	OFF	ON, OFF	
		MULTI	OFF	ON, OFF	

Menu page	No.	Item	Default	Settings	Remarks
<SHUTTER>	P13	SHUTTER	OFF	ON, OFF	
			1/100 (sec)	59.94i: 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000 50i: 1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000 29.97PsF: 1/40, 1/60, 1/120, 1/125, 1/250, 1/500, 1/1000 25PsF: 1/33, 1/50, 1/100, 1/125, 1/250, 1/500, 1/1000 24P/23.98P: 1/32, 1/48, 1/96, 1/125, 1/250, 1/500, 1/1000 59.94P: 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000 50P: 1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000	Step shutter setting **Note** There are some formats that cannot be selected on HDC1400/1450.
		ECS FREQ	59.94 Hz	59.94i: 60.00 to 4300 Hz 50i: 50.00 to 4700 Hz 29.97PsF: 30.00 to 2700 Hz 25PsF: 25.00 to 2300 Hz 24PsF/23.98PsF: 24.00 to 2200 Hz 59.94P: 60.02 to 4600 Hz 50P: 50.03 to 4600 Hz	**Note** There are some formats that cannot be selected on HDC1400/1450.
<SCENE FILE>	P14	1			To store and read scene files (paint data): When storing a file in camera memory, specify the number before executing STORE. When reading, only specify the number.
		2			
		3			
		4			
		5			
		STORE		Execute by ENTER.	
		STANDARD		Execute by ENTER.	To read the standard paint data
		READ (MS→CAM)		Execute by ENTER.	To load five scene files from a “Memory Stick” to internal memory
		WRITE (CAM→MS)		Execute by ENTER.	To write five scene files in the camera’s memory to a “Memory Stick”
		FILE ID		Max.16 characters	Enter a comment for the scene files to be written to a “Memory Stick.” *See “To specify a character string” on page 90.*
		CAM CODE	HDCxxxx	Camera code	display only
		DATE			display only
<NOISE SUP>	P15	NOISE SUP	0%	0 to 100%	
		SW	OFF	ON, OFF	

MAINTENANCE Menu

Menu page	No.	Item	Default	Settings	Remarks
<AUTO SETUP>	M01	AUTO BLACK		Execute by ENTER.	
		AUTO WHITE		Execute by ENTER.	
		AUTO LEVEL		Execute by ENTER.	
		AUTO WHITE SHADING		Execute by ENTER.	
		AUTO BLACK SHADING		Execute by ENTER.	
		TEST	OFF	OFF, SAW, 3STEP, 10STEP	
<WHITE SHADING>	M02	V SAW	[R] [G] [B] 0 0 0	–99 to +99	R, G, and B values can be independently set.
		V PARA	0 0 0	–99 to +99	
		H SAW	0 0 0	–99 to +99	
		H PARA	0 0 0	–99 to +99	
		WHITE	0 0 0	–99 to +99	
		AUTO WHITE SHADING		Execute by ENTER.	
		WHITE SHAD MODE	RB	RGB, RB	
		3D WHITE SHAD	ON	ON, OFF	
<BLACK SHADING>	M03	V SAW	[R] [G] [B] [M] 0 0 0	–99 to +99	R, G, and B values can be independently set. M (master) value can also be set for BLACK.
		V PARA	0 0 0	–99 to +99	
		H SAW	0 0 0	–99 to +99	
		H PARA	0 0 0	–99 to +99	
		BLK SET	0 0 0	–99 to +99	
		BLACK	0 0 0 0	–99 to +99	
		MASTER GAIN	0 dB	–3, 0, 3, 6, 9, 12 dB	
		AUTO BLACK SHADING		Execute by ENTER.	
		2D BLACK SHAD	ON	ON, OFF	
<OHB MATRIX>	M04	PHASE	0	0, 23, 45, 68, 90, 113, 135, 158, 180, 203, 225, 248, 270, 293, 315, 338	To select an axis (angle) at PHASE for which the OHB matrix adjustment is to be made, and set HUE and SAT (HUE and SAT can be adjusted independently for 16 axes).
		HUE	0	–99 to +99	
		SAT	0	–99 to +99	
		ALL CLEAR		Execute by ENTER.	To clear the HUE and SAT values for all PHASE settings
		OHB MATRIX	OFF	ON, OFF	
		MATRIX	ON	ON, OFF	

Menu page	No.	Item	Default	Settings	Remarks
<AUTO IRIS>	M05	AUTO IRIS	OFF	ON, OFF	
		WINDOW	1	1, 2, 3, 4, 5, 6	Select the auto iris windows:  The shaded parts indicate the area where light detection occurs.
		OVERRIDE	- -	–99 to +99, - -	To set the override to temporarily change the reference value for brightness of the automatic iris level in the range of ±2 steps: –99: two steps to fully closed iris +99: two steps to fully open iris - - : OFF The setting returns to " - - " when the power is turned off.
		IRIS LEVEL	0	–99 to +99	±4 steps
		APL RATIO	65	–99 to +99	
		IRIS GAIN	0	–99 to +99	
		IRIS CLOSE	OFF	ON, OFF	
<MIC GAIN>	M06 (U14)	MIC1	60 dB	20, 30, 40, 50, 60 dB	valid only in standalone operation
		MIC2	60 dB	20, 30, 40, 50, 60 dB	
<UP TALLY>	M07 (U20)	TALLY BRIGHTNESS	50	0 to 100	
		NUMBER BRIGHTNESS	50	0 to 100	
		CAMERA NUMBER	- -	- -, 1 to 96	
		NUMBER DISPLAY	AUTO	ON, OFF, AUTO	AUTO: to correspond to the UP TALLY switch setting of HDLA attached
<CALL/TALLY>	M08	CCU CALL	ON	ON, OFF	Invalid with CCU connected
		CAM CALL	OFF	ON, OFF	Invalid with CCU connected
<OUTPUT FORMAT> (HDC1500)	M09 (U15)	CURRENT	1080-59.94i (V)		Displays the current format.
		ACTIVE LINE	1080	1080, 720	The selectable frame settings are displayed for the selected ACTIVE LINE. (not displayed with CCU connected)
			59.94i	1080: 24PsF, 59.94i, 29.97PsF, 23.98PsF, 59.94P, 50i, 25PsF, 50P 720: 59.94P, 50P	
<OUTPUT FORMAT> (HDC1550)	M09 (U15)	CURRENT	1080-59.94i (V)		Displays the current format.
		ACTIVE LINE	1080	1080, 720	The selectable frame settings are displayed for the selected ACTIVE LINE. (not displayed with CCU connected)
			59.94i	1080: 59.94i, 29.97PsF, 23.98PsF, 50i, 25PsF, 24PsF 720: 59.94P, 50P	
<OUTPUT FORMAT> (HDC1400 JN3/JN4 and HDC1450 UC models)	M09 (U15)	CURRENT	1080-59.94i (V)		Displays the current format.
		ACTIVE LINE	1080	1080, 720	The selectable frame setting is displayed for the selected ACTIVE LINE (not displayed with CCU connected)
			59.94i	1080: 59.94i 720: 59.94P	

Menu page	No.	Item	Default	Settings	Remarks
<OUTPUT FORMAT> (HDC1400 CE/E33 and HDC1450 CE models)	M09 (U15)	CURRENT	1080-50i (V)		Displays the current format.
		ACTIVE LINE	1080	1080, 720	The selectable frame setting is displayed for the selected ACTIVE LINE (not displayed with CCU connected)
			50i	1080: 50i 720: 50P	
<DOWN CONVERTER>	M10 (U18)	OUTPUT SIGNAL	MAIN	MAIN, RET, VF	
		ASPECT	SQ	SQ, EC	
<TEST OUT>	M11 (U16)	OUTPUT	VF	SD-SYNC, HD-SYNC, VF, VBS	
		(PWR SAVE)			Displayed in POWER SAVE mode only
		VBS-OUT			
		CHARACTER	OFF	ON, OFF	
		HD-SYNC-OUT			
		V-PHASE	0	–127 to +127	
		H-PHASE	0	–127 to +127	
<SDI-2 OUT> (HDC1500)	M12 (U17)	OUTPUT	MAIN	MAIN, VF, LINK-B, RET, SD-SDI	
		(PWR SAVE)			Displayed in POWER SAVE mode only
		CHARACTER	OFF	ON, OFF	Not displayed if OUTPUT is set to VF or LINK-B
<SDI OUT> (HDC1550/1400/ 1450)	M12 (U17)	OUTPUT	MAIN	MAIN, VF, RET, SD-SDI	
		(PWR SAVE)			Displayed in POWER SAVE mode only
		CHARACTER	OFF	ON, OFF	Not displayed if OUTPUT is set to VF
<POWER SAVE> (HDC1500)	M13 (U10)	SDI-2 OUT	PWR SAVE	PWR SAVE, ACTIVE	
		DOWN CONVERTER	ACTIVE	PWR SAVE, ACTIVE	
<POWER SAVE> (HDC1550/1400/ 1450)	M13 (U10)	SDI OUT	PWR SAVE	PWR SAVE, ACTIVE	
		DOWN CONVERTER	ACTIVE	PWR SAVE, ACTIVE	
<TRUNK>	M14 (U19)	TRUNK	ON	ON, OFF	
		IF	232c	232c, 422a	
<GENLOCK> (HDC1500/1550 only)	M15	REFERENCE		Condition of synchronisation	display only
		GENLOCK			display only
		STATUS			
		FORMAT			
		PHASE			
		V	0	–999 to +999	
		HD H	0	–99 to +99	
		SD H	0	–99 to +99	
<DATE>	M16	DATE/TIME	yyyy/mm/dd hh: mm	2000 to 2099 / 01 to 12 / 00 to 31, 00 to 23 : 00 to 59	
<OTHERS 1>	M17	FAN MODE	AUTO1	AUTO1, AUTO2 , MIN, MAX	AUTO1: Normal rotation AUTO2: Slow rotation
		CAM BARS	OFF	ON, OFF	
		V DTL CREATION	NAM	NAM, G, R+G, Y	
		DTL H/V MODE	H/V	H/V, V only	
		TEST 2 MODE	3STEP	3STEP, 10STEP	
		WHITE SETUP MODE	AWB	AWB, A.LVL	

Menu page	No.	Item✓	Default	Settings	Remarks
<OTHERS 2>	M18	DATE TYPE	5 M/D/Y	1 Y/Mn/D 2 Mn/D 3 D/M/Y 4 D/M 5 M/D/Y 6 M/D	Y: Year Mn: Month (numeric) M: Month (character string) D: Day
		WHITE MEMORY	OFF	ON, OFF	Set to ON to use independent white memory at each CC filter position (HDC1500/1550 only).
		F NO. DISP	CONTROL	CONTROL, RETURN	Select the iris indication on the panel when AUTO IRIS is off: CONTROL: To display the value from the camera RETURN: To display the value returned from the lens (When AUTO IRIS is on, the value returned from the lens is always displayed.)

FILE Menu

Five types of files can be used for easy adjustments of the camera; Operator, Reference, Scene, OHB, and Lens. You can store the items set with the OPERATION menu and customized USER menu in the Operator file.

For the specific items included in these files, refer to the Maintenance Manual.

Menu page	No.	Item✓	Default	Settings	Remarks
<OPERATOR FILE>	F01	READ (MS→CAM)		Execute by ENTER.	To read the operator file from a “Memory Stick”
		WRITE (CAM→MS)		Execute by ENTER.	To write the current settings of the operator file items to a “Memory Stick”
		PRESET		Execute by ENTER.	To set the operator file items to the preset values in internal memory
		STORE PRESET FILE		Execute by ENTER.	To store the current settings of the operator file items in the operator file in internal memory.
		FILE ID		max.16 characters	Enter a comment for the operator file to be written to a “Memory Stick.” *See “To specify a character string” on page 90.*
		CAM CODE	HDCxxxx	Camera code	display only
		DATE			display only

Menu page	No.	Item	Default	Settings	Remarks
<SCENE FILE>	F02	1			To store and read scene files (paint data): When storing a file in camera memory, specify the number before executing STORE. When reading, only specify the number.
		2			
		3			
		4			
		5			
		STORE		Execute by ENTER.	
		STANDARD		Execute by ENTER.	To read the standard paint data
		READ (MS→CAM)		Execute by ENTER.	To load five scene files from a “Memory Stick” to internal memory
		WRITE (CAM→MS)		Execute by ENTER.	To write five scene files in the camera’s memory to a “Memory Stick”
		FILE ID		Max.16 characters	Enter a comment for the scene files to be written to a “Memory Stick.” *See “To specify a character string” on page 90.*
		CAM CODE	HDCxxxx	Camera code	display only
		DATE			display only
<REFERENCE>	F03	STORE FILE		Execute by ENTER.	To store the current settings of the reference file items in the reference file in internal memory.
		STANDARD		Execute by ENTER.	To read the standard values in the reference file in internal memory.
		ALL PRESET		Execute by ENTER.	To resume the factory-preset reference file
		READ (MS→CAM)		Execute by ENTER.	To load a reference file from a “Memory Stick”
		WRITE (CAM→MS)		Execute by ENTER.	To write the current settings of the reference file items as a reference file to a “Memory Stick”
		FILE ID		Max.16 characters	Enter a comment for the reference file to be written to a “Memory Stick.” *See “To specify a character string” on page 90.*
		CAM CODE	HDCxxxx	Camera code	display only
		DATE			display only
<LENS FILE>	F04	STORE FILE		Execute by ENTER.	
		No.	1	1 to 16	
		NAME	xxxxx...		
		F NO	F1.7	F1.0 to F3.4	
		CENTER MARKER			To set and store the center marker position: H POS: Increasing the value moves it to the right. V POS: Increasing the value moves it downwards.
		H POS	0	–20 to +20	
		V POS	0	–20 to +20	
		STORE		Execute by ENTER.	
<OHB FILE>	F05	STORE FILE		Execute by ENTER.	To store the offset values of the items specific to the CCD (No repeated store operation is necessary even if the CCD is reattached)

Menu page	No.	Item	Default	Settings	Remarks
<FILE CLEAR>	F06	PRESET OPERATOR		Execute by ENTER.	
		REFERENCE (ALL)		Execute by ENTER.	
		10 SEC CLEAR	OFF	ON, OFF	OFF: To exclude the 10 SEC setting when executing REFERENCE (ALL)
		LENS (CURRENT)		Execute by ENTER.	To return the settings of the currently selected lens file to the factory-set conditions.
		OHB WHITE SHADE (ALL)		Execute by ENTER.	
		OHB WHITE SHADE (3D)		Execute by ENTER.	To clear the 3D WHITE SHADING setting only
		OHB BLACK SHADE		Execute by ENTER.	
		OHB ND OFFSET		Execute by ENTER.	
		OHB MATRIX		Execute by ENTER.	
		M.S. FORMAT		Execute by ENTER.	To initialize a “Memory Stick”

DIAGNOSIS Menu

This menu is only for viewing and no setting is made using this menu.

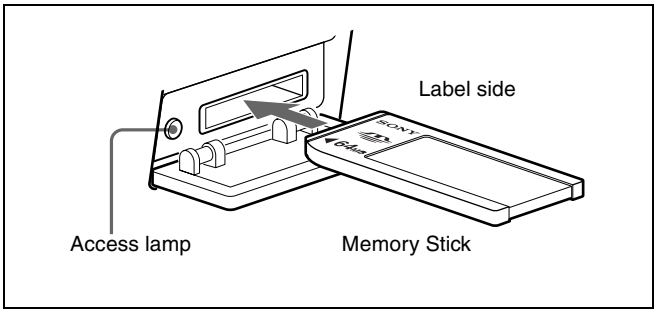
Menu page	No.	Item	Indication	Remarks
<OPTICAL LEVEL>	D01	CCU→CAM	GREEN, YELLOW, RED, NG, NO SIGNAL	With CCU connected only
		CAM→CCU	GREEN, YELLOW, RED, NG, NO SIGNAL	With CCU connected only
<BOARD STATUS>	D02	ROM	Vx.xxx	ROM version
		OHB	OK, NG	
		DPR	OK, NG	
		VDA	OK, NG	
		DAP	OK, NG	
		AU	OK, NG	
		AT	OK, NG	
		PS	OK, NG	
		SDI	OK, NG	HDC1500/1400 only
		TR	OK, NG	HDC1550/1450 only
<PLD VERSION>	D03	TG	Vx.xxx	
		VDA	Vx.xxx	
		DAP	Vx.xxx	
		AT	Vx.xxx	
		SDI	Vx.xxx	
<ROM VERSION>	D04 (U21)	AT	x.xx	
		HDLA	x.xx	With HDLA attached only

Using a “Memory Stick”

When a “Memory Stick” is inserted in the camera, the file data can be stored on the “Memory Stick,” which enables you to share data among cameras.

Inserting a “Memory Stick”

Insert a “Memory Stick” with the label side up into the “Memory Stick” slot until it clicks and the access lamp lights in red.



Access lamp

If the access lamp is lit or is flashing, data is being read from or written to the “Memory Stick.” At this time, do not shake the product or subject it to shock. Do not turn off the power of the product or remove the “Memory Stick.” This may damage the data.

What is “Memory Stick”?

“Memory Stick” is a new compact, portable and versatile IC (Integrated Circuit) recording medium with a data capacity that exceeds a floppy disk. “Memory Stick” is specially designed for exchanging and sharing digital data among “Memory Stick” compatible products. Because it is removable, “Memory Stick” can also be used for external data storage.
“Memory Stick” is available in two sizes: standard size and compact “Memory Stick Duo” size. Once attached to a “Memory Stick Duo” adapter, “Memory Stick Duo” turns to the same size as standard “Memory Stick” and thus can be used with products compliant with standard “Memory Stick”.”

Types of “Memory Stick”

“Memory Stick” is available in the following types to meet various requirements in functions:

“Memory Stick-R”

Stored data are not overwritten. You can write data to “Memory Stick-R” with “Memory Stick-R” compatible products only. Copyright protected data that requires MagicGate copyright protection technology cannot be written to “Memory Stick-R.”

“Memory Stick”

Stores any type of data except copyright-protected data that requires the MagicGate copyright protection technology.

“MagicGate Memory Stick”

Equipped with the MagicGate copyright protection technology.

“Memory Stick-ROM”

Stores pre-recorded, read-only data. You cannot record on “Memory Stick-ROM” or erase the pre-recorded data.

“Memory Stick PRO”

“Memory Stick” with MagicGate copyright protection technology, exclusive for “Memory Stick PRO”-compliant products.

Usable types of “Memory Stick”

You can use a “Memory Stick,” a “MagicGate Memory Stick,” or a “Memory Stick PRO” with this product. However, the MagicGate copyright protection is not valid with this product.

Note

You cannot use a “Memory Stick Duo” without an appropriate adaptor.

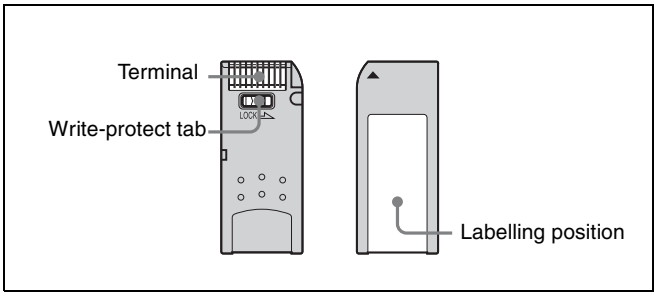
Note on data read/write speed

Data read/write speed may vary depending on the combination of the “Memory Stick” and “Memory Stick” compliant product you use.

What is MagicGate?

MagicGate is copyright protection technology that uses encryption technology.

About a “Memory Stick”



- When you set the “Memory Stick” erasure prevention switch to “LOCK,” data cannot be recorded, edited, or erased.

- Data may be damaged if:
  — You remove the “Memory Stick” or turn off the unit while it is reading or writing data.
  — You use the “Memory Stick” in a location subject to the effects of static electricity or electric noise.
- We recommend that you make a backup copy of important data that you record on the “Memory Stick”.

Notes

- Do not attach anything other than the supplied label to the “Memory Stick” labeling position.
- Attach the label so that it does not stick out beyond the labeling position.
- Carry and store the “Memory Stick” in its case.
- Do not touch the connector of the “Memory Stick” with anything, including your finger or metallic objects.
- Do not strike, bend, or drop the “Memory Stick”.
- Do not disassemble or modify the “Memory Stick”.
- Do not allow the “Memory Stick” to get wet.
- Do not use or store the “Memory Stick” in a location that is:
  — Extremely hot, such as in a car parked in the sun
  — Under direct sunlight
  — Very humid or subject to corrosive substances

Precautions

- To prevent data loss, make backups of data frequently. In no event will Sony be liable for any loss of data.
- Unauthorized recording may be contrary to the provisions of copyright law. When you use a “Memory Stick” that has been pre-recorded, be sure that the material has been recorded in accordance with copyright and other applicable laws.
- The “Memory Stick” application software may be modified or changed by Sony without prior notice.
- Note that there are certain restrictions on recording stage performances and other entertainment events, even if they are recorded for personal use only.

- “Memory Stick”, MEMORY STICK and “MagicGate Memory Stick” are trademarks of Sony Corporation.
- “Memory Stick Duo” and MEMORY STICK DUO are trademarks of Sony Corporation.
- “Memory Stick PRO” and MEMORY STICK PRO are trademarks of Sony Corporation.
- “MagicGate” and MAGICGATE are trademarks of Sony Corporation.

Specifications

HDC1500

General

Power requirements	240 V AC, 1.4 A (max.) 180 V DC, 1.0 A (max.) 12 V DC, 7 A (max.)
Operating temperature	−20°C to +45°C (−4°F to +113°F)
Storage temperature	−20°C to +60°C (−4°F to +140°F)
Mass	Approx. 4.5 kg (9 lb 15 oz) (camera head only)

Imager

Imager	2/3-type Progressive Scan CCD
Method	3-CCD, RGB
Effective resolution	1920 (horizontal) × 1080 (vertical)

Electrical characteristics

Sensitivity	f10.0 (at 2000 lx with 89.9% reflectivity)
Image S/N	Typical −54 dB/−62 dB (NS MAX)
Horizontal resolution	1000 TV lines (at center of screen) 5% or higher modulation
Registration	0.02% for total area (not including lens distortion)
Geometric distortion	Negligible (not including lens distortion)

Optical system specifications

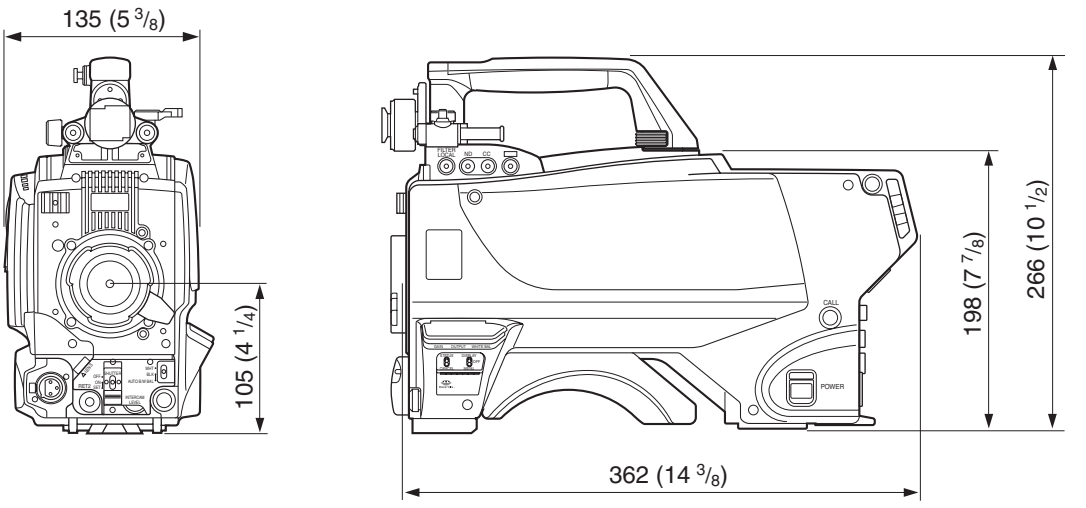
Spectral system	F1.4 prism
Built-in filters	Color temperature conversion filters A: cross filter B: 3200K (clear) C: 4300K D: 6300K E: 8000K ND filters 1: clear 2: 1/4 ND 3: 1/8 ND 4: 1/16 ND 5: 1/64 ND

Input/output connectors

CCU	Optical/electrical multi-connector (1)
LENS	12-pin (1)
VF	20-pin (1)
MIC 1 IN	XLR 3-pin, female (1)
AUDIO IN CH1, CH2	XLR 3-pin, female (1 each) For MIC: −60 dBu (may be selected to −20 dBu by menu or HDCU1000/1500 operations), balanced For LINE: 0 dBu, balanced
INTERCOM1, INTERCOM2	XLR 5-pin, female (1 each)
EARPHONE	Stereo minijack (1)
DC IN	XLR 4-pin (1), 10.5 to 17 V DC

Dimensions

Unit: mm (inches)



DC OUT	4-pin (1), 10.5 to 17 V DC, 1.5 A maximum It may be limited depending on the load and input conditions.
SDI 1, 2	BNC type (1 each)
TEST OUT	BNC type (1)
GENLOCK IN/RET IN/PROMPTER	BNC type (1), 1 Vp-p, 75 ohms
PROMPTER2	BNC type (1), 1 Vp-p, 75 ohms
RET CTRL	6-pin (1)
REMOTE	8-pin (1)
TRACKER	10-pin (1)
CRANE	12-pin (1)

Supplied accessories

Operation manual (1)
Switch label 1, 2 (1 each)

Optional accessories

HDVF-20A HD Electronic Viewfinder (2-type, monochrome)
HDVF-C35W HD Electronic Viewfinder (3.5-type, color)
HDVF-C730W HD Electronic Viewfinder (6.3-type, color)
HDVF-C950W HD Electronic Viewfinder (9-type, color)
HDLA1500/1505 Large Lens Adaptor
HDLA1507 Large Viewfinder Adaptor
CAC-12 Microphone Holder
CAC-6 Return Video Selector
BKW-401 Viewfinder Rotation Bracket
VCT-14 Tripod Adaptor
Memory Stick
Low-repulsion Shoulder Pad A-8286-346-A

Related equipment

HDCU1000/1500 HD Camera Control Unit
MSU-900/950 Master Setup Unit
RCP-700/900-series Remote Control Panel
VCS-700 Video Selector
CNU-700 Camera Command Network Unit

For the customers in the U.S.A., Canada, Europe, Australia, and New Zealand

Connectors for optical/electric composite cables:

- LEMO® PUW.3K.93C.TLCC96 (to the "CAMERA" connector on HDCU)
- LEMO® FUW.3K.93C.TLMC96 (to the "HDCU" connector on CAMERA)

Caution on the optical/electric composite cable:

For connection between the HD camera control unit and a camera, be sure to use an optical/electric signal composite cable with the connectors specified in this manual in order to comply with the limit for EMC regulations.

Pour les utilisateurs aux Etats-Unis, au Canada, en Europe, à l'Australie, et à la Nouvelle-Zélande

Connecteurs pour les câbles optiques/électriques composites:

- LEMO® PUW.3K.93C.TLCC96 (au connecteur « CAMERA » de l'unité de commande de caméra HD)
- LEMO® FUW.3K.93C.TLMC96 (au connecteur « HDCU » de la caméra)

Précaution concernant le câble optique/électrique composite:

Pour la connexion entre l'unité de commande de caméra HD et une caméra, utilisez un câble optique/électrique composite avec connecteurs spécifiés dans ce manuel pour assurer la conformité avec la réglementation EMC.

Für Kunden in USA, Kanada, Europa, Australien und Neuseeland

Anschlüsse für optische/elektrische FBAS-Kabel:

- LEMO® PUW.3K.93C.TLCC96 (an „CAMERA"-Anschluss an der HD-Kamerasteuereinheit)
- LEMO® FUW.3K.93C.TLMC96 (an „HDCU"-Anschluss an der KAMERA)

Vorsichtsmaßregeln für optische/elektrische FBAS-Kabel:

Für Verbindung zwischen HD-Kamerasteuereinheit und Kamera verwenden Sie immer ein optisches/elektrisches FBAS-Kabel mit Steckern, wie in dieser Anleitung beschrieben, um die Grenzwerte der geltenden EMV-Vorschriften zu erfüllen.

Design and specifications are subject to change without notice.

HDC1550

General

Power requirements	180 V DC, 1.0 A (max.) 12 V DC, 7 A (max.)
Operating temperature	–20°C to +45°C (–4°F to +113°F)
Storage temperature	–20°C to +60°C (–4°F to +140°F)
Mass	Approx. 4.9 kg (10 lb 13 oz) (camera head only)

Imager

Imager	2/3-type Progressive Scan CCD
Method	3-CCD, RGB
Effective resolution	1920 (horizontal) × 1080 (vertical)

Electrical characteristics

Sensitivity	f10.0 (at 2000 lx with 89.9% reflectivity)

Image S/N	Typical –54 dB/–62 dB (NS MAX)
Horizontal resolution	1000 TV lines (at center of screen) 5% or higher modulation
Registration	0.02% for total area (not including lens distortion)
Geometric distortion	Negligible (not including lens distortion)

Optical system specifications

Spectral system	F1.4 prism
Built-in filters	Color temperature conversion filters A: cross filter B: 3200K (clear) C: 4300K D: 6300K E: 8000K ND filters 1: clear 2: 1/4 ND 3: 1/8 ND 4: 1/16 ND 5: 1/64 ND

Input/output connectors

HDCU/HDFX	Triax connector (1)
LENS	12-pin (1)
VF	20-pin (1)
MIC 1 IN	XLR 3-pin, female (1)
AUDIO IN CH1, CH2	XLR 3-pin, female (1 each) For MIC: –60 dBu (may be selected to –20 dBu by menu or HDCU1000/1500 operations), balanced For LINE: 0 dBu, balanced
INTERCOM1, INTERCOM2	XLR 5-pin, female (1 each)
EARPHONE	Stereo minijack (1)
DC IN	XLR 4-pin (1), 10.5 to 17 V DC
DC OUT	4-pin (1), 10.5 to 17 V DC, 1.5 A maximum It may be limited depending on the load and input conditions.
SDI	BNC type (1)
TEST OUT	BNC type (1)
GENLOCK IN/RET IN/PROMPTER	BNC type (1), 1 Vp-p, 75 ohms
RET CTRL	6-pin (1)
REMOTE	8-pin (1)
TRACKER	10-pin (1)
CRANE	12-pin (1)

Supplied accessories

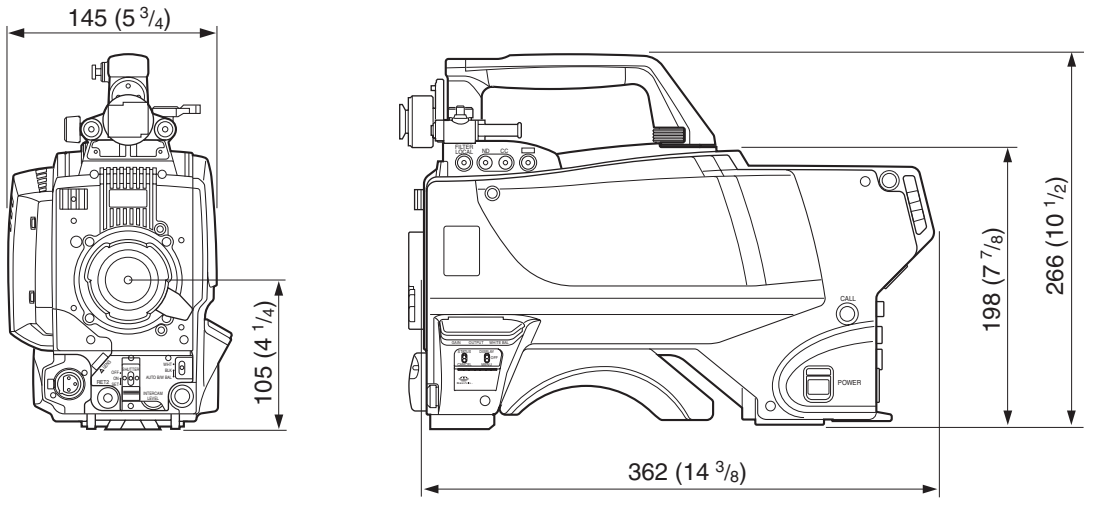
Operation manual (1)
Switch label 1, 2 (1 each)

Optional accessories

HDVF-20A HD Electronic Viewfinder (2-type, monochrome)
HDVF-C35W HD Electronic Viewfinder (3.5-type, color)
HDVF-C730W HD Electronic Viewfinder (6.3-type, color)
HDVF-C950W HD Electronic Viewfinder (9-type, color)
HDLA1500/1505 Large Lens Adaptor
HDLA1507 Large Viewfinder Adaptor
CAC-12 Microphone Holder
CAC-6 Return Video Selector
BKW-401 Viewfinder Rotation Bracket
VCT-14 Tripod Adaptor
Memory Stick
Low-repulsion Shoulder Pad A-8286-346-A

Dimensions

Unit: mm (inches)



Related equipment

HDFX100 HD Triax CCU Adaptor
HDCU1000/1500 HD Camera Control Unit
MSU-900/950 Master Setup Unit
RCP-700/900-series Remote Control Panel
VCS-700 Video Selector
CNU-700 Camera Command Network Unit

Design and specifications are subject to change without notice.

HDC1400

General

Power requirements	240 V AC, 1.4 A (max.) 180 V DC, 1.0 A (max.) 12 V DC, 7 A (max.)
Operating temperature	–20°C to +45°C (–4°F to +113°F)
Storage temperature	–20°C to +60°C (–4°F to +140°F)
Mass	Approx. 4.5 kg (9 lb 15 oz) (camera head only)

Imager

Imager	2/3-type Progressive Scan CCD
Method	3-CCD, RGB
Effective resolution	1920 (horizontal) × 1080 (vertical)

Electrical characteristics

Sensitivity	f10.0 with 1080/59.94i f11.0 with 1080/50i (at 2000 lx with 89.9% reflectivity)
Image S/N	Typical –54 dB/–62 dB (NS MAX)
Horizontal resolution	1000 TV lines (at center of screen) 5% or higher modulation
Registration	0.02% for total area (not including lens distortion)
Geometric distortion	Negligible (not including lens distortion)

Optical system specifications

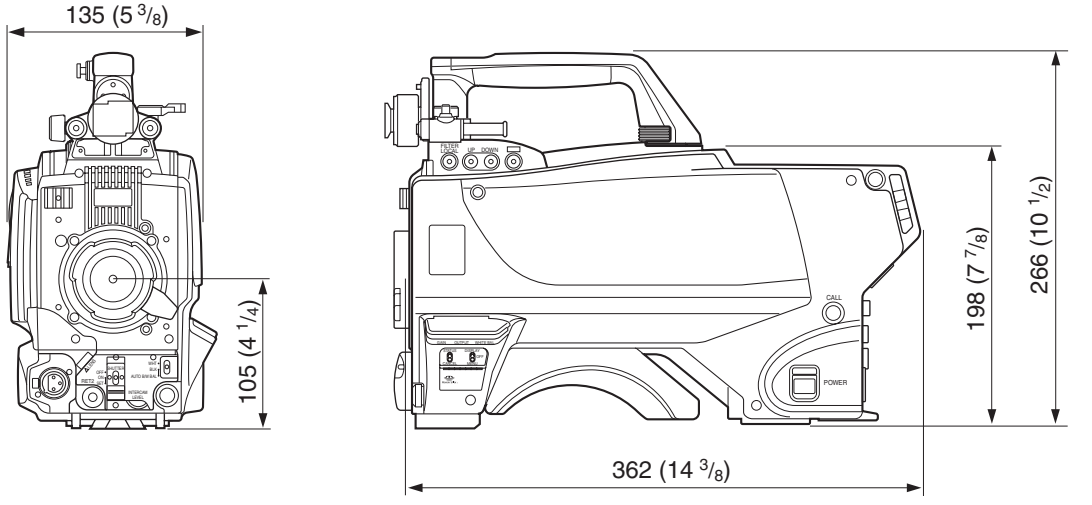
Spectral system	F1.4 prism
Built-in optical filters	1: clear 2: 1/4 ND 3: 1/16 ND 4: 1/64 ND 5: cross

Input/output connectors

CCU	Optical/electrical multi-connector (1)
LENS	12-pin (1)
VF	20-pin (1)
MIC 1 IN	XLR 3-pin, female (1)
AUDIO IN CH1, CH2	XLR 3-pin, female (1 each) For MIC: –60 dBu (may be selected to –20 dBu by menu or HDCU1000/1500 operations), balanced For LINE: 0 dBu, balanced
INTERCOM1, INTERCOM2	XLR 5-pin, female (1 each)
EARPHONE	Stereo minijack (1)
DC IN	XLR 4-pin (1), 10.5 to 17 V DC
DC OUT	4-pin (1), 10.5 to 17 V DC, 1.5 A maximum It may be limited depending on the load and input conditions.

Dimensions

Unit: mm (inches)



SDI	BNC type (1)
TEST OUT	BNC type (1)
PROMPTER	BNC type (1), 1 Vp-p, 75 ohms
RET CTRL	6-pin (1)
REMOTE	8-pin (1)
TRACKER	10-pin (1)
CRANE	12-pin (1)

Supplied accessories

Operation manual (1)
Switch label 1, 2 (1 each)

Optional accessories

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Memory Stick
Low-repulsion Shoulder Pad A-8286-346-A

Related equipment

HDCU1000/1500 HD Camera Control Unit
MSU-900/950 Master Setup Unit
RCP-700/900-series Remote Control Panel
VCS-700 Video Selector
CNU-700 Camera Command Network Unit

For the customers in the U.S.A., Canada, Europe, Australia, and New Zealand

Connectors for optical/electric composite cables:
- LEMO® PUW.3K.93C.TLCC96 (to the "CAMERA" connector on HDCU)
- LEMO® FUW.3K.93C.TLMC96 (to the "HDCU" connector on CAMERA)

Caution on the optical/electric composite cable:

For connection between the HD camera control unit and a camera, be sure to use an optical/electric signal composite cable with the connectors specified in this manual in order to comply with the limit for EMC regulations.

Pour les utilisateurs aux Etats-Unis, au Canada, en Europe, à l'Australie, et à la Nouvelle-Zélande

Connecteurs pour les câbles optiques/électriques composites:
- LEMO® PUW.3K.93C.TLCC96 (au connecteur « CAMERA » de l'unité de commande de caméra HD)
- LEMO® FUW.3K.93C.TLMC96 (au connecteur « HDCU » de la caméra)

Précaution concernant le câble optique/électrique composite:

Pour la connexion entre l'unité de commande de caméra HD et une caméra, utilisez un câble optique/électrique composite avec connecteurs spécifiés dans ce manuel pour assurer la conformité avec la réglementation EMC.

Für Kunden in USA, Kanada, Europa, Australien und Neuseeland

Anschlüsse für optische/elektrische FBAS-Kabel:
- LEMO® PUW.3K.93C.TLCC96 (an „CAMERA"-Anschluss an der HD-Kamerasteuereinheit)
- LEMO® FUW.3K.93C.TLMC96 (an „HDCU"-Anschluss an der KAMERA)

Vorsichtsmaßregeln für optische/elektrische FBAS-Kabel:

Für Verbindung zwischen HD-Kamerasteuereinheit und Kamera verwenden Sie immer ein optisches/elektrisches FBAS-Kabel mit Steckern, wie in dieser Anleitung beschrieben, um die Grenzwerte der geltenden EMV-Vorschriften zu erfüllen.

Design and specifications are subject to change without notice.

HDC1450

General

Power requirements	180 V DC, 1.0 A (max.) 12 V DC, 7 A (max.)
Operating temperature	−20°C to +45°C (−4°F to +113°F)
Storage temperature	−20°C to +60°C (−4°F to +140°F)
Mass	Approx. 4.9 kg (10 lb 13 oz) (camera head only)

Imager

Imager	2/3-type Progressive Scan CCD
Method	3-CCD, RGB
Effective resolution	1920 (horizontal) × 1080 (vertical)

Electrical characteristics

Sensitivity	f10.0 with 1080/59.94i f11.0 with 1080/50i (at 2000 lx with 89.9% reflectivity)
Image S/N	Typical −54 dB/−62 dB (NS MAX)
Horizontal resolution	1000 TV lines (at center of screen) 5% or higher modulation

Registration	0.02% for total area (not including lens distortion)
Geometric distortion	Negligible (not including lens distortion)

Optical system specifications

Spectral system	F1.4 prism
Built-in optical filters	1: clear 2: 1/4 ND 3: 1/16 ND 4: 1/64 ND 5: cross

Input/output connectors

HDCU/HDFX	Triax connector (1)
LENS	12-pin (1)
VF	20-pin (1)
MIC 1 IN	XLR 3-pin, female (1)
AUDIO IN CH1, CH2	XLR 3-pin, female (1 each) For MIC: –60 dBu (may be selected to –20 dBu by menu or HDCU1000/1500 operations), balanced For LINE: 0 dBu, balanced
INTERCOM1, INTERCOM2	XLR 5-pin, female (1 each)
EARPHONE	Stereo minijack (1)
DC IN	XLR 4-pin (1), 10.5 to 17 V DC
DC OUT	4-pin (1), 10.5 to 17 V DC, 1.5 A maximum It may be limited depending on the load and input conditions.
SDI	BNC type (1)
TEST OUT	BNC type (1)
PROMPTER	BNC type (1), 1 Vp-p, 75 ohms
RET CTRL	6-pin (1)
REMOTE	8-pin (1)
TRACKER	10-pin (1)
CRANE	12-pin (1)

Supplied accessories

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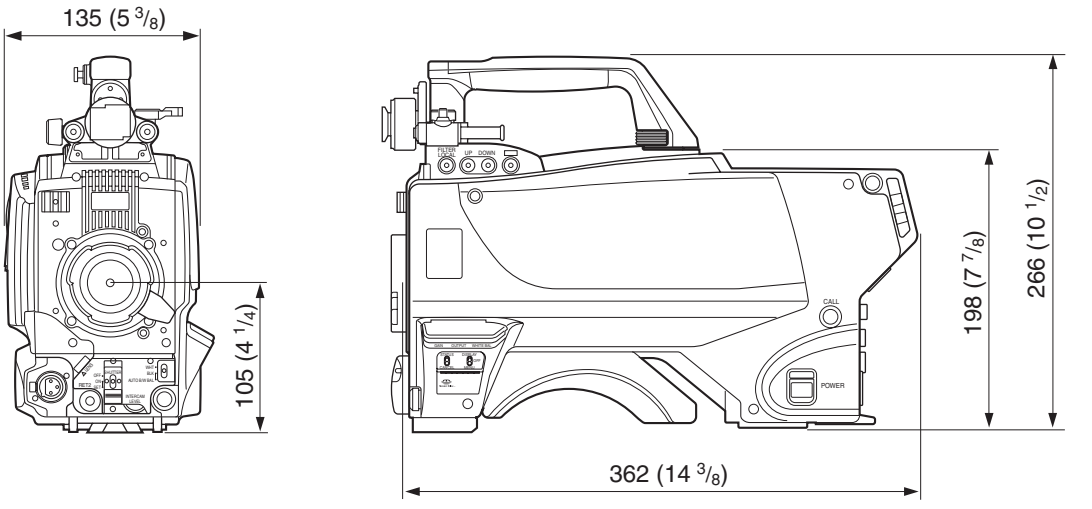
Design and specifications are subject to change without notice.

Dimensions

Unit: mm (inches)



Note

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http://pro.sony.com.cn

3-868-749-09(1)

HDC1400 (JN3/JN4/CE/E33)
HDC1450 (UC/CE)
HDC1500 (SYL/JN4/CE/E33)
HDC1550 (UC/CE)
HDC1600 (J)
3-868-749-**09**(1)

Sony Corporation

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