

SONY®

HD COLOR CAMERA

HDC2000

Digital **HDVS**

OPERATION MANUAL
1st Edition (Revised 1)

English



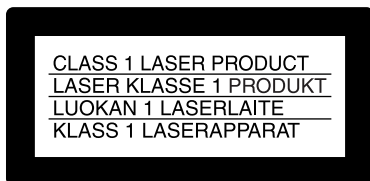
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Before operating the unit, please read this manual thoroughly and retain it for future reference.

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.



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

Diese HD-Farbkamera ist als LASERPRODUKT DER KLASSE 1 eingestuft.

Tämä HD-värikamera on luokiteltu 1. LUOKAN LASERTUOTTEEKSI.

Den här HD-färgkameran klassificeras som en LASERPRODUKT AV KLASSE 1.

CAUTION

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

CAUTION

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

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.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For the customers in Canada

This Class A digital apparatus complies with Canadian ICES-003.

For the customers in Europe

This product with the CE marking complies with the EMC Directive issued by the Commission of the European Community.

Compliance with this directive implies conformity to the following European standards:

- 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, 108-0075 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.

For the Customers in Taiwan only



廢電池請回收

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.

Pour les clients au Canada

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Pour les clients en Europe

Ce produit portant la marque CE est conforme à la Directive sur la compatibilité électromagnétique (EMC) émise par la Commission de la Communauté européenne.

La conformité à cette directive implique la conformité aux normes européennes suivantes :

- EN55103-1 : Interférences électromagnétiques (émission)
- EN55103-2 : Sensibilité électromagnétique (immunité)

Ce produit est prévu pour être utilisé dans les environnements 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, 108-0075 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 la garantie, veuillez consulter les adresses indiquées dans les documents de service ou de garantie séparés.

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.

Für Kunden in Europa

Dieses Produkt besitzt die CE-Kennzeichnung und erfüllt die EMV-Richtlinie der EG-Kommission.

Angewandte Normen:

- 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 (Stadtgebiet im Freien) und E4 (kontrollierter EMV-Bereich, z.B. Fernsehstudio).

Der Hersteller dieses Produkts ist Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, 108-0075 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	5
Features.....	5
System Configuration	7
Locations and Functions of Parts	8
Right Side and Left Side	8
Rear Panel.....	10
Attaching Accessories	14
Mounting the Camera to the Tripod	14
Attaching the Lens to the Camera	15
Attaching the 7.4-Type Viewfinder	16
Setting the Focus Assist Function	17
Adding the VF Detail Signal	17
Displaying the Focus Assist Indicators	18
Setting the Camera Outputs.....	19
Viewfinder Screen Status Display	21
Menu Operations	22
Starting Menu Operations.....	22
Selecting Pages.....	23
Setting the Menu Items.....	23
Editing the USER Menu.....	24
Menu List	27
Menu Tree	27
OPERATION Menu.....	31
PAINT Menu	36
MAINTENANCE Menu.....	40
FILE Menu	44
DIAGNOSIS Menu	46
Appendix	47
Precautions.....	47
Error Messages	47
Using a USB Drive.....	48
Specifications	49
Notice Concerning Software Governed by the GNU GPL/LGPL	52

Overview

The HDC2000 is a 2/3-type high-definition large-size studio video camera equipped with CCD for 2,200,000 pixels.

Features

High picture quality and high performance

HDC2000 features a 2/3-type wide progressive IT CCD for 2,200,000 pixels and a signal processing LSI, both newly developed to help achieve a high level of image quality via improved S/N, high resolution, and low smear compared to previous models. A 16-bit AD converter allows for optimal picture quality and enhanced black reproduction.

Slow motion via 2× speed recording

1080/50i-59.94i and 720/50P-59.94P formats are supported, as well as 1080/23.98PsF-24PsF-25PsF-29.97PsF and 1080/50P-59.94P progressive formats, and 1080/100i-119.88i and 720/100P-119.88P slow-motion 2× speed recording formats.

Digital extender function

The central part of the viewfinder picture is digitally magnified to twice its size.

The digital extender function prevents the decrease in sensitivity (F-drop) that occurs when the lens extender function is used.

Note

This function does not operate when a 2x slow motion format is selected.

This function also reduces the resolution of images to one-half.

Aberration correction function

This camera features ALAC 2.0 (Auto Lens Aberration Compensation).

When an achromatic lens is used, this function reduces chromatic aberration of magnification automatically.

For details on achromatic lenses, contact a Sony sales representative or Sony service representative.

Standard 3G optical digital transmission unit

3G optical digital transmission of signals between the camera and camera control unit (CCU) is included, and allows the following kinds of video signal transmission and system configurations:

- 1080/50P-59.94P progressive video signal transmission
- Transmission of 2× speed recording signals such as 1080/100i-119.88i for production of slow-motion video
- Transmission of HD prompter, HD TRUNK, and network TRUNK signals that utilize empty bands during 1080/50i-60i and 720/50P-59.94P operation
- Dual camera system for transmitting video signals from two HDC2000 cameras to two CCUs using just one optical fiber/multi-cable

- Subcamera system for transmitting video signals from both an HDC2000 and another subcamera—such as the HDC-P1—using just one optical fiber/multi-cable and outputting their signals from one CCU

Various color-reproduction functions

Adaptive-matrix function

This function accurately controls calculation factors for performing accurate color conversion when shooting. This makes precise color conversion possible even when shooting under conditions that would otherwise exceed the color conversion range of traditional matrix functions, such as under strong monochromatic blue light sources.

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

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.

Selection of multiple gamma tables

Seven types of standard and 4 types of hyper gamma tables are provided with this camera. The hyper gamma values enable cinematic image creations with wide dynamic range, which are different from those achieved with conventional video gamma.

User gamma

Gamma tables created with CvpFileEditor™ can be saved to a “Memory Stick”, or registered to HDC2000 from the MSU-1000/1500 or RCP-1500 series.

Versatile detail control functions

Skin-tone detail function/Natural skin detail function

Like HDC1000R, this function allows control (emphasis or suppression) of the detail level for specific hues or chroma areas 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 kinds of hues can be adjusted independently at the same time.

HDC2000 features the natural skin detail function, which allows for adjustment of the detail gate signal, allowing even more vivid distinction of areas like skin that you want to make smooth while selectively keeping areas like eyebrows that don't require smoothing.

Detail boost-frequency control

The boost frequency can be adjusted from 20 to 30 MHz. This allows the thickness of detail signals to be set appropriately for the subject, thus enabling high-definition 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.

Focus assist functions

The VF detail function and focus assist indicator function facilitate focusing.

VF detail

Various functions are provided for the VF detail signal, which can be added only on images on the viewfinder screen in order to facilitate focusing in various situations: Functions for coloring the VF detail signal, flickering the VF detail signal by adding modulation, and changing the VF detail level according to the zoom position.

Focus assist indicator

The focusing level indicator on the viewfinder screen provides a guide for focusing. The best focus setting can be easily determined by observing fluctuation of the level indicator as a guide.

Numerous viewfinder functions

Wide variety of viewfinder display options

Along with items such as operation messages, a zebra pattern, 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 a warning indicator to tell you that one or more settings are other than standard.

Menu-based setting operation function

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

VF operation assignable switch

Assignable switches for operating the viewfinder are located on the rear panel of the camera. These switches are linked to viewfinder assignable switches, such as those featured on HDVF-EL70, and allow for using the camera's buttons to perform functions like image zooming within the viewfinder.

PinP function

The return video signal can be displayed on the viewfinder in picture-in-picture mode.

Note

The PinP function cannot be used during stand-alone operation, and cannot be used with the HD TRUNK FRAME SYNCHRO function simultaneously.

Wide variety of input/output interfaces

In addition to 3G/HD/SD-SDI output and HD/SD-SDI input, HDC2000 features a wide variety of input/output interfaces, including the following:

Network TRUNK function

The network TRUNK function (LAN port) allows for data transmission between the camera and CCU at speeds of up to 1 Gbps. This allows for a multitude of new system configurations, such as connecting several IP transmission cameras as subcameras.

Note

The network TRUNK transfer rate differs depending on the video format. Jumbo frames are not supported.

HD TRUNK function

The new HD TRUNK function uses 3G optical transmission to send HD-SDI-equivalent digital data (not an HD-SDI video signal) from the HDC2000 to an HDCU2000/2500.

Note

The HD TRUNK function can only be used when a single format is selected and the network TRUNK function is set to OFF.

HD prompter function

The new HD prompter function on HDC2000 supports sending HD-SDI-equivalent digital data (not an HD-SDI signal) separate from the return video signal from an HDCU2000/2500 to the HDC2000.

Note

The HD prompter function can only be used when a single format is selected and the network TRUNK function is set to OFF.

User-friendly operation

Unit-body with low center of gravity

Featuring a stylish exterior with a low overall height, the viewfinder's position is kept as low as possible, bringing it closer to the optical axis of the lens.

Assignable switches

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

USB connector

Connect a USB drive to the USB connector to save and load setup menu setting data.

Function for prevention of electrical shock

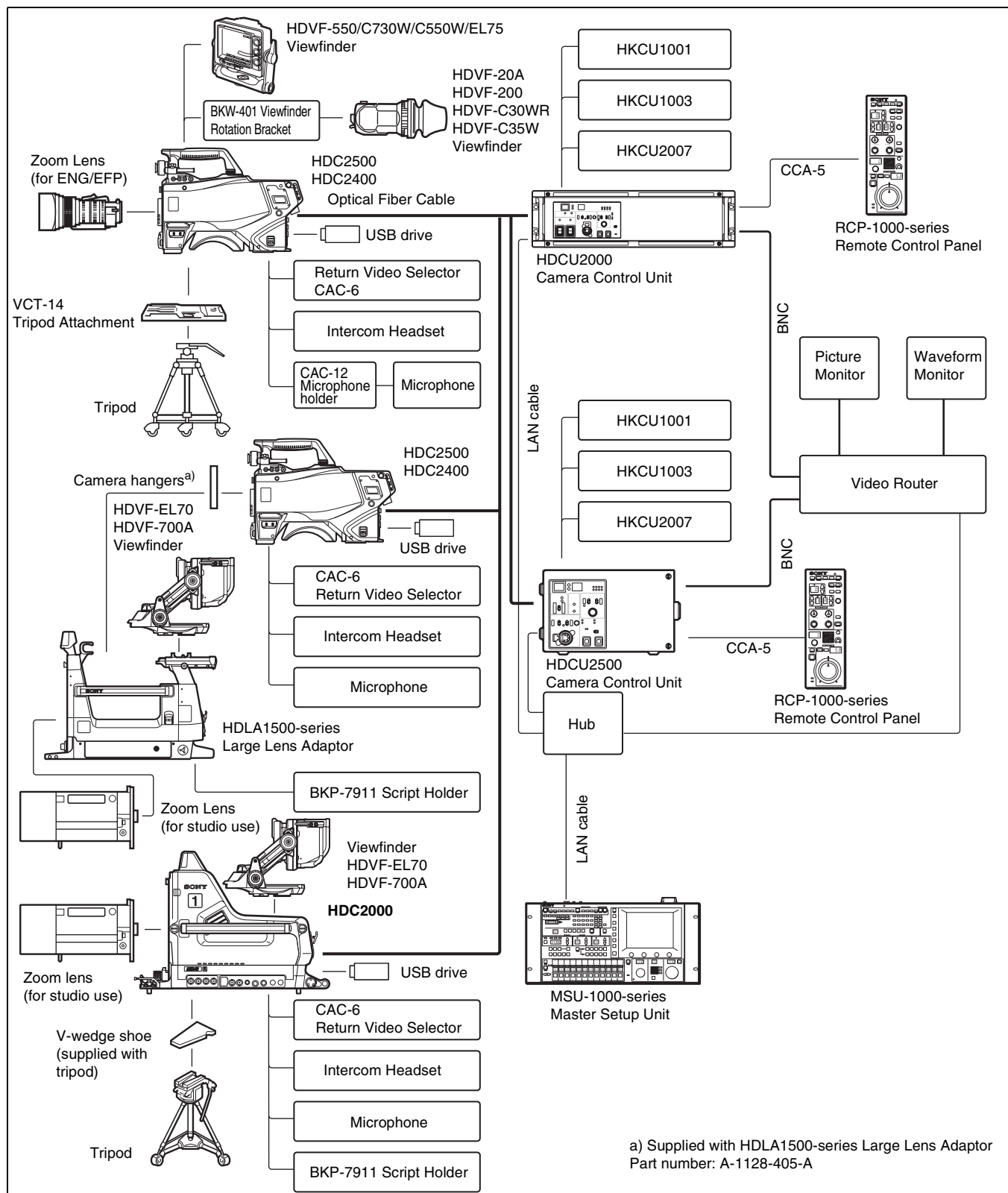
When the power connection is unsafe, this shuts off the power supply from the connected Camera Control Unit.

System Configuration

Note

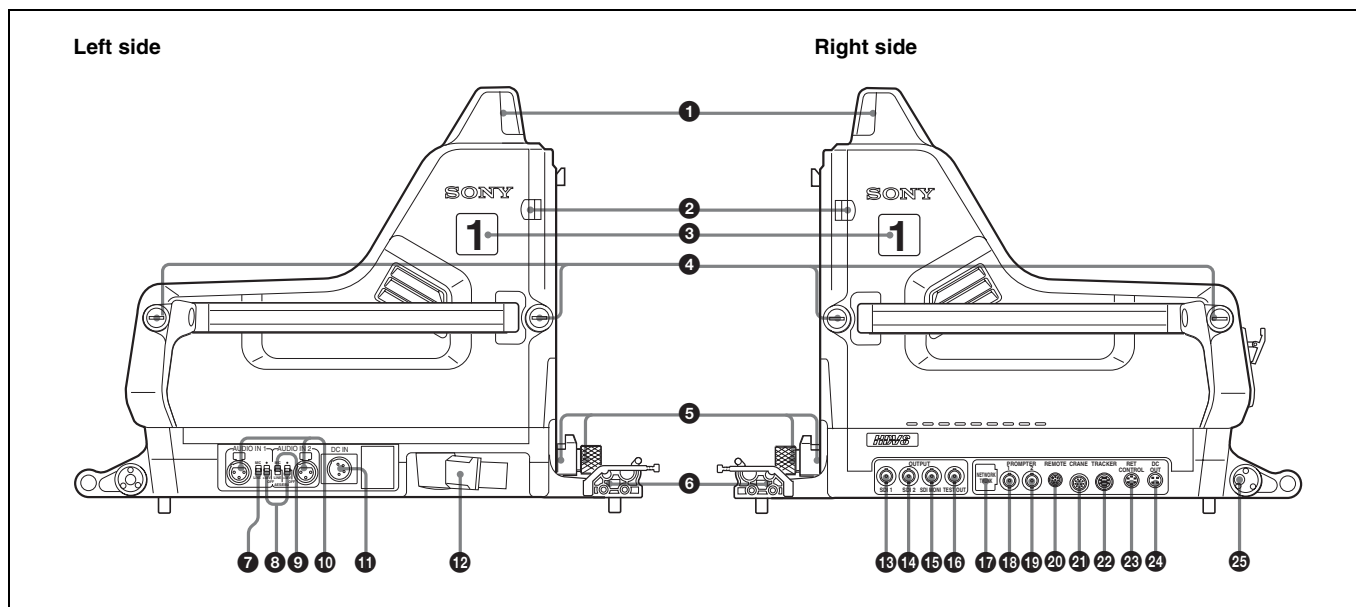
Production of some of the peripherals and related devices shown in the figures has been discontinued. For advice on choosing devices, please contact your Sony dealer or a Sony sales representative.

Connection example



Locations and Functions of Parts

Right Side and Left Side



1 Up tally lamp

Lights when the camera receives a red tally signal.

When the CALL button on the MSU-1000/1500 Master Setup Unit or the RCP-1000/1500-series Remote Control Panel is pressed, the lamp lights if previously off or goes off if previously on. The brightness of the lamp can be adjusted by menu operation. Setting the UP TALLY switch on the rear panel to OFF will keep the lamp from lighting.

To display the camera number, attach a supplied number plate (0 to 9) or select the desired number on the menu.

2 Safety lock

Locks the side panel to prevent accidental opening. To open the side panel, loosen the side panel lock screws, slide the safety lock towards the lens, and open the panel. The side panel locks automatically when closed.

3 Camera number plate

Attach a light gray number plate (supplied) to display the camera number.

4 Side panel lock screws

These screws secure the side panel. Turn clockwise until tight to lock the panel.

5 Lens lock and knob

These lock the lens. To attach or remove a lens, turn the knob counterclockwise until the lens lock is horizontal. To secure the lens, turn the knob clockwise until the lens lock is vertical.

Note

To attach a large lens, remove the pin from the bayonet mount of the lens.

6 Cable clamp

To secure the fiber optic cable.

7 AUDIO IN 1 switch

Set this switch according to the device connected to the AUDIO IN 1 connector.

MIC: When connecting a microphone

LINE: When connecting the signal of line level (0 dBu)

8 Microphone power switches

For the microphones connected to the AUDIO IN 1 and 2 connectors, respectively.

OFF: When the connected microphone requires no external power.

+48 V: When the connected microphone requires an external power source. A power of +48 V is supplied to the microphone.

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

Note

When supplying a power of +12 V, contact a Sony service representative or a Sony representative.

9 AUDIO IN 2 switch

Set this switch according to the device connected to the AUDIO IN 2 connector.

MIC: When connecting a microphone

AES/EBU: When connecting a digital audio signal synchronized with a camera signal

LINE: When connecting the signal for line level (0 dBu)

10 AUDIO IN 1 and 2 connectors (XLR 3-pin)

To input microphone or line signals.

11 DC IN connector (4-pin)

Connect to a DC power source (10.5 V to 17 V) when using the camera as a standalone unit.

Note

In standalone status, power supply from this unit is limited to 6.5 A. Check the power consumption of the device to be connected.

12 CCU (camera control unit) connector (electro-optical multi-connector)

Connect to the CAMERA connector of the HDCU2000/2500 Camera Control Unit using an electro-optical composite cable. Power, video, audio, and control signals are passed between the camera and HDCU2000/2500 using just one cable.

13 SDI 1 (serial digital interface 1) connector (BNC type)

For 3G-SDI, HD-SDI or HD PROMPTER signal output.

For details on output signals, see "Setting the Camera Outputs" (page 19).

14 SDI 2 (serial digital interface 2) connector (BNC type)

For HD-SDI signal output or HD TRUNK signal input. During stand-alone operation, also used for inputting an HD-SDI return signal. When RET (return) is set to 1, this is displayed in the viewfinder.

For details on the output signals, see "Setting the Camera Outputs" (page 19).

15 SDI-MONI (serial digital interface) connector (BNC-type)

To output HD-SDI or SD-SDI signals.

For details on the output signals, see "Setting the Camera Outputs" (page 19).

16 TEST OUT (test signal output) connector (BNC type)

To output analog signals.

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.

For details on the output signals, see "Setting the Camera Outputs" (page 19).

17 NETWORK TRUNK connector (RJ-48 8-pin)

Connects a device connected to the CCU's NETWORK TRUNK connector to the network.

Caution

- For safety, do not connect the connector for peripheral device wiring that might have excessive voltage to this port. Follow the instructions for this port.
- When you connect the LAN cable of the unit to peripheral device, use a shielded-type cable to prevent malfunction due to radiation noise.

ATTENTION

Par mesure de sécurité, ne raccordez pas le connecteur pour le câblage de périphériques pouvant avoir une tension excessive à ce port. Suivez les instructions pour ce port.

VORSICHT

Aus Sicherheitsgründen nicht mit einem Peripheriegerät-Anschluss verbinden, der zu starke Spannung für diese Buchse haben könnte. Folgen Sie den Anweisungen für diese Buchse.

18 PROMPTER 1 connector (BNC type)

To output the signal input from the camera control unit's PROMPTER INPUT connector. If the connected camera control unit has two prompter inputs, a signal of prompter 1 is output. In standalone status, this is used for GENLOCK input.

19 PROMPTER 2 connector (BNC type)

To output the signal input from the camera control unit's PROMPTER 2 INPUT connector. This is enabled only for the unit which has the PROMPTER 2 input. In standalone status, this is used for VBS RET input.

20 REMOTE connector (8-pin)

To connect the camera to an optional MSU-1000/1500 Master Setup Unit, RCP-1000/1500-series Remote Control Panel, or RM-series Remote Control Unit via a CCA cable. The connected unit may then control the camera.

Note

When the camera is connected to a CCU, do not connect any device to this connector.

21 CRANE connector (12-pin)

For external interface with a viewfinder or external data.

22 TRACKER connector (10-pin)

For communication between the camera operator and the tracker, and also for intercom channels 1 and 2. It also supplies the up tally signal and the program audio signal.

23 RET (return video) CONTROL connector (6-pin)

To connect a CAC-6 Return Video Selector.

24 DC OUT connector (4-pin)

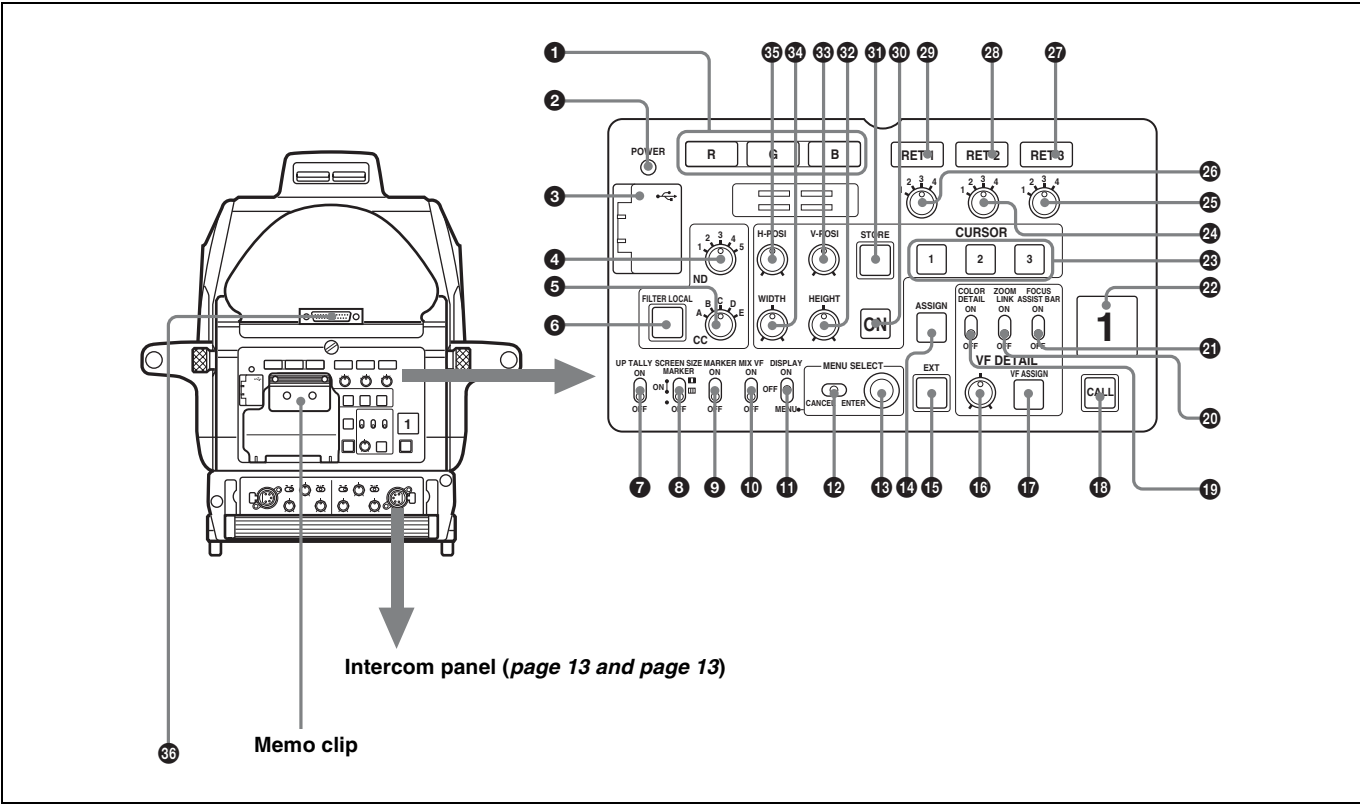
To supply power to a script light of the BKP-7911 Script Holder.

25 Accessory bracket

To secure optional accessories such as the BKP-7911 Script Holder.

For more information on attaching an accessory, see the accessory's operation manual.

Rear Panel



❶ Video signal select buttons
Select the video output signal (R, G, or B) to the viewfinder. The R, G, and B buttons may be pressed individually or in combination. The signal corresponding to each pressed button will be output. When two buttons are pressed, the output will consist of those two signals mixed together. When all three buttons are pressed, the output to the viewfinder will be the Y signal.
When no buttons is pressed, the output will be a color signal if the viewfinder is a color model, and it will be the Y signal if the viewfinder is a monochrome model.
The video output to the monitor connected to the TEST OUT connector of the camera will also depend on the setting of these buttons (however, this output is in monochrome in all situations).

❷ POWER indicator
This indicator lights up or goes off as follows to indicate the power supply status:
Green: Power is being supplied to the camera.
Red: Power is being supplied to the camera, but the CAM PW button of the MSU-1000/1500 Master Setup Unit or RCP-1000/1500-series Remote Control Panel is set to OFF.
Yellow: Power is being supplied to the camera, but the VF PW button of the MSU-1000/1500 Master Setup Unit or RCP-1000/1500-series Remote Control Panel is set to OFF, and power is not being supplied to the viewfinder.
Off: Power is not being supplied to the camera.

❸ USB connector (for connecting a USB drive)
You can connect a USB drive to save/load a setting data file.
For details, see “Using a USB Drive” (page 48)

❹ ND filter selector
When the FILTER LOCAL button is lit up, this selector may be used to select an ND filter.

Selector position	Selected filter
1	Clear
2	1/4ND
3	1/8ND
4	1/16ND
5	1/64ND

❺ CC (color temperature conversion) filter selector
When the FILTER LOCAL button is lit up, this selector may be used to select a color temperature conversion filter appropriate to the light source illuminating the subject.

Selector position	Selected filter
A	Cross filter
B	3200K (clear)
C	4300K
D	6300K
E	8000K

❻ FILTER LOCAL (filter local control) button
Pressing this button enables selecting of a color temperature conversion filter using the CC filter selector or an ND filter using the ND filter selector. Pressing the button again gives control of the filters to the MSU-1000/1500 Master Setup Unit or RCP-1000/1500-series Remote Control Panel.

7 UP TALLY switch

Set whether or not the camera's Up Tally lamp and the lens's tally lamp will light when the camera receives a red tally signal.

ON: The tally lamps will light.

OFF: The tally lamps will not light.

8 SCREEN SIZE MARKER switch

To control the display of the screen size marker as follows:

ON (■■■): Areas outside the specified ratio area will be darkened.

ON (□□□): The screen size marker (white lines) will be displayed.

OFF: The screen size marker will not be displayed.

9 MARKER switch

To control the display of the marker as follows:

ON: A marker selected from the menu will be displayed on the viewfinder screen.

OFF: The marker will not be displayed.

10 MIX VF (mix viewfinder) switch

You can see the mixed signal of the camera's output signal and the return video signal on the viewfinder screen.

ON: This function is enabled. You can see the mixed signal of the camera's output signal and the selected return video signal (return video 1 or 2) on the viewfinder screen when you press the RET 1 or RET 2 button.

OFF: This function is disabled.

11 DISPLAY switch

The functions of the DISPLAY switch are as follows:

ON: Text and messages describing 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.

12 MENU SELECT switch

The functions of the MENU SELECT switch are as follows:

ENTER: Confirm the menu or page selected using the MENU SELECT control, or confirm setting values.

CANCEL: Cancel menu setting values or return to the previous menu.

13 MENU SELECT control

To select menu items or change setting values in the menus displayed on the viewfinder screen.

14 ASSIGN switch

You can assign a function, such as digital extender ON/OFF, using the menu.

15 EXT switch

Set the lens extender to ON/OFF.

16 VF DETAIL (viewfinder detail) control

Adjust the amount of detail of the picture on the viewfinder screen. This has no effect on the output signal of the camera.

17 VF ASSIGN switch

With a viewfinder such as HDVF-EL70, you can assign a function, such as VF MAG, using the menu.

18 CALL button

- Press to call the operator of the HDCU2000/2500 Camera Control Unit, the MSU-1000/1500 Master Setup Unit, or the RCP-1000/1500-series Remote Control Panel.

- When the CALL button on the RCP-1000/1500-series Remote Control Panel or the MSU-1000/1500 is pressed, this button will light up.

19 COLOR DETAIL switch

You can set the color detail function to ON/OFF.

ON: This function is enabled.

OFF: This function is disabled.

20 ZOOM LINK switch

Set the VF detail level at the full WIDE position to ON/OFF.

ON: This function is enabled.

OFF: This function is disabled.

21 FOCUS ASSIST BAR switch

Set the focus indicator to ON/OFF.

ON: You can see the focus indicator on the viewfinder screen.

OFF: The focus indicator is not displayed.

22 Back tally lamp

This lamp lights red when a red tally signal is applied.

The lamp lights green when a green tally signal is applied.

You can display the camera number selected with the menu.

When red and green tally signals are applied simultaneously, the left half lights red and the right half lights green.

23 CURSOR (cursor memory) 1, 2, and 3 buttons

To store the size and position of the box cursor displayed on the viewfinder screen.

Three different box cursor settings may be stored in memory using buttons 1, 2, and 3. Pressing one of these buttons will cause a cursor of the stored size to be displayed in the stored position.

Note

When one of the CURSOR buttons is lit up, the H-POSI, V-POSI, WIDTH, and HEIGHT buttons will be disabled.

24 RET 2 knob

This knob selects from the four return signals from the CCU. By pressing in the RET 2 button, you can monitor the selected return video signal in the viewfinder.

25 RET 3 knob

This knob selects from the four return signals from the CCU. By pressing the RET 3 button, you can monitor the selected return video signal in the viewfinder.

26 RET 1 knob

This knob selects from the four return signals from the CCU. By pressing in the RET 1 button, you can monitor the selected return video signal in the viewfinder. The signal supplied from the TEST OUT connector will also be switched.

27 RET 3 button

By pressing this button, you can view the return video signal selected by the RET 3 knob in the viewfinder. Pressing this button again will switch the viewfinder and monitor screen display back to the camera's video signal.

28 RET 2 button

By pressing this button, you can view the return video signal selected by the RET 2 knob in the viewfinder. Pressing this button again will switch the viewfinder and monitor screen display back to the camera's video signal.

29 RET 1 button

By pressing this button, you can view the return video signal selected by the RET 1 knob in the viewfinder. Pressing this button again will switch the viewfinder and monitor screen display back to the camera's video signal.

Note

Priority is given in the following order: RET 1, RET 2, RET 3. When a menu in the RETURN page of the OPERATION menu is set, pressing the RET 1 and RET 2 buttons will activate RET 3.

30 ON button

When this button is pressed, the button will light up and the box cursor will be displayed on the viewfinder screen. When the button is pressed again, the light will go off and the box cursor will disappear. This can also be used to switch to the cross cursor.

31 STORE (cursor store) button

Press this button to store the size and position of the box cursor in memory.

Notes

- If the ON button is not lit, box cursor information will not be stored.
- The cross cursor information cannot be stored.

32 HEIGHT control

Adjust the height of the box cursor displayed on the viewfinder screen within the effective resolution area.

33 V-POSI (vertical position) control

Adjust the vertical position of the box cursor displayed on the viewfinder screen within the effective resolution area.

34 WIDTH control

Adjust the width of the box cursor displayed on the viewfinder screen within the effective resolution area.

35 H-POSI (horizontal position) control

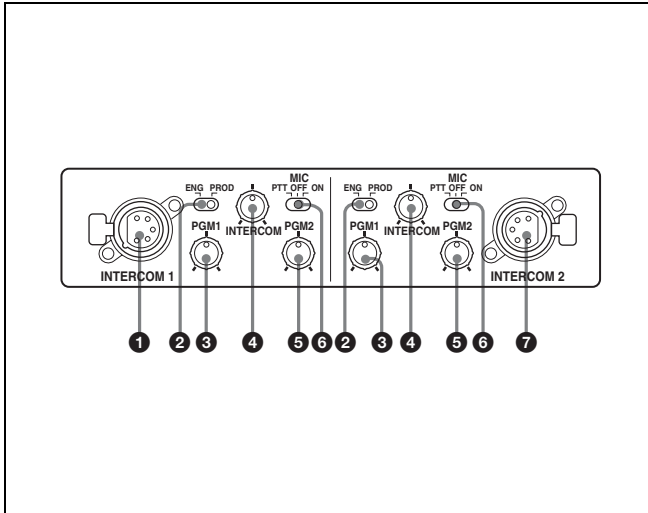
Adjust the horizontal position of the box cursor displayed on the viewfinder screen within the effective resolution area.

36 VF (viewfinder) connector (D-sub 25-pin)

Connect to the CAMERA connector on the viewfinder.

Intercom Panel

For JN (USA, Canada, and other countries) models



1 INTERCOM 1 connector (XLR 5-pin)

Connects to an XLR 5-pin headset. The INTERCOM 1 connector can be used for communication via the engineer line even when the power to the camera has been turned off from the HDCU2000/2500 Camera Control Unit and the POWER indicator is lit in red.

2 ENG/PROD (intercom engineer/producer line select) switch

To switch intercom channel 1 or 2 between producer and engineer lines.

ENG: Use the engineer line.

PROD: Use the producer line.

3 PGM (program audio) 1 control

Adjust the program audio 1 output level.

4 INTERCOM control

Adjust the intercom output level.

5 PGM (program audio) 2 control

Adjust the program audio 2 output level.

6 MIC (microphone) switch

Set the headset microphone to ON/OFF.

PTT: While the switch is flipped to this position, the headset microphone is turned on.

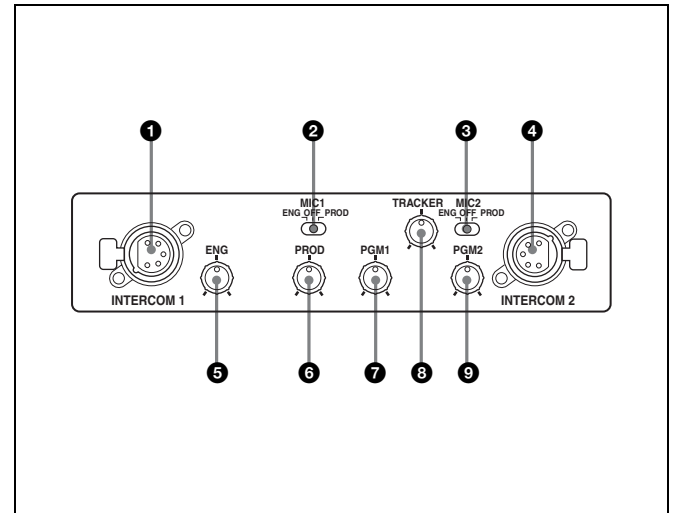
ON: The headset microphone is turned on.

OFF: The headset microphone is turned off.

7 INTERCOM 2 connector (XLR 5-pin)

Connects to an XLR 5-pin headset.

For CE (Europe) model



1 INTERCOM 1 connector (XLR 5-pin)

Connects to an XLR 5-pin headset. The INTERCOM 1 connector can be used for communication via the engineer line even when the power to the camera has been turned off from the HDCU2000/2500 Camera Control Unit and the POWER indicator is lit in red.

2 MIC1 (intercom microphone 1) switch

Select the talk line for intercom 1.

ENG: To talk over the engineer line

OFF: To turn off the headset microphone for intercom line 1

PROD: To talk over the producer line

3 MIC2 (intercom microphone 2) switch

Select the talk line for intercom 2.

ENG: To talk over the engineer line

OFF: To turn off the headset microphone for intercom line 2

PROD: To talk over the producer line

4 INTERCOM 2 connector (XLR 5-pin)

Connects to an XLR 5-pin headset.

5 ENG (engineer line) control

Adjust the intercom audio level of the engineer line.

6 PROD (producer line) control

Adjust the intercom audio level of the producer line.

7 PGM (program audio) 1 control

Adjust the program audio 1 output level.

8 TRACKER control

Adjust the intercom audio level at the TRACKER connector (page 9) on the connector panel when using the connector for intercom.

9 PGM (program audio) 2 control

Adjust the program audio 2 output level.

Attaching Accessories

Mounting the Camera to the Tripod

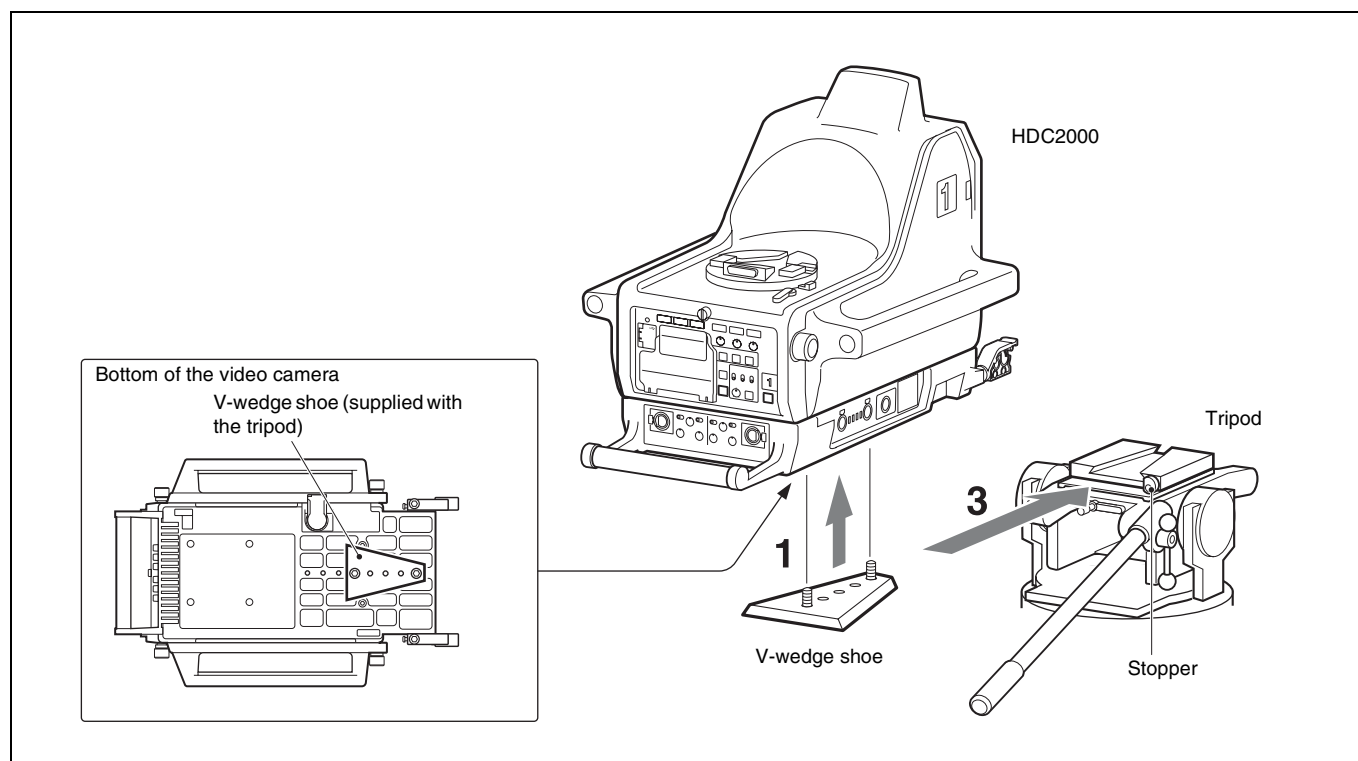
Several types of tripods are available. Select an appropriate tripod according to the type of lens to be used, and mount the camera to the tripod as described below. For details, refer to the instruction manual of the tripod.

For detailed information on choosing an appropriate tripod for different camera and lens combinations, contact a Sony service representative, a Sony representative or a tripod manufacturer. The instructions below give an example of just

one type of attachment. Before attaching, choose a tripod cam plate appropriate for your lens type and lens weight.

Caution

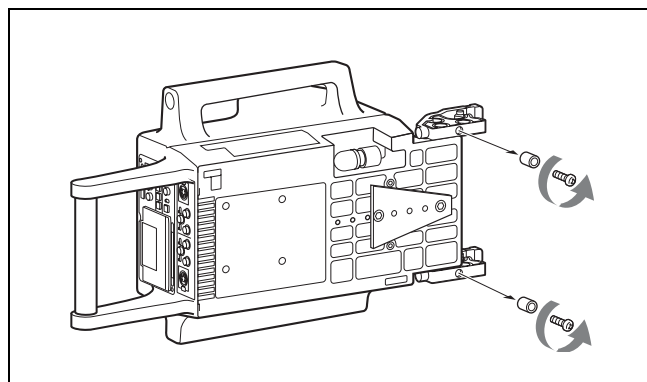
Firmly attach the V-wedge shoe to the camera, and mount the camera to the tripod securely. Otherwise the camera may fall down.



- 1 Attach the V-wedge shoe (supplied with the tripod) to the bottom of the camera with the two screws.**
The position where the shoe should be attached is decided considering the balance of the weight of the camera and lens.
- 2 Check that the pan-lock and tilt-lock levers of the tripod are securely locked.**
- 3 Mount the camera to the tripod holding it by the handles on each side.**
- 4 Lock the camera to the tripod with the stopper on the tripod.**

Note

If the feet on the bottom of the camera interfere with mounting the tripod, remove them as illustrated.



Attaching the Lens to the Camera

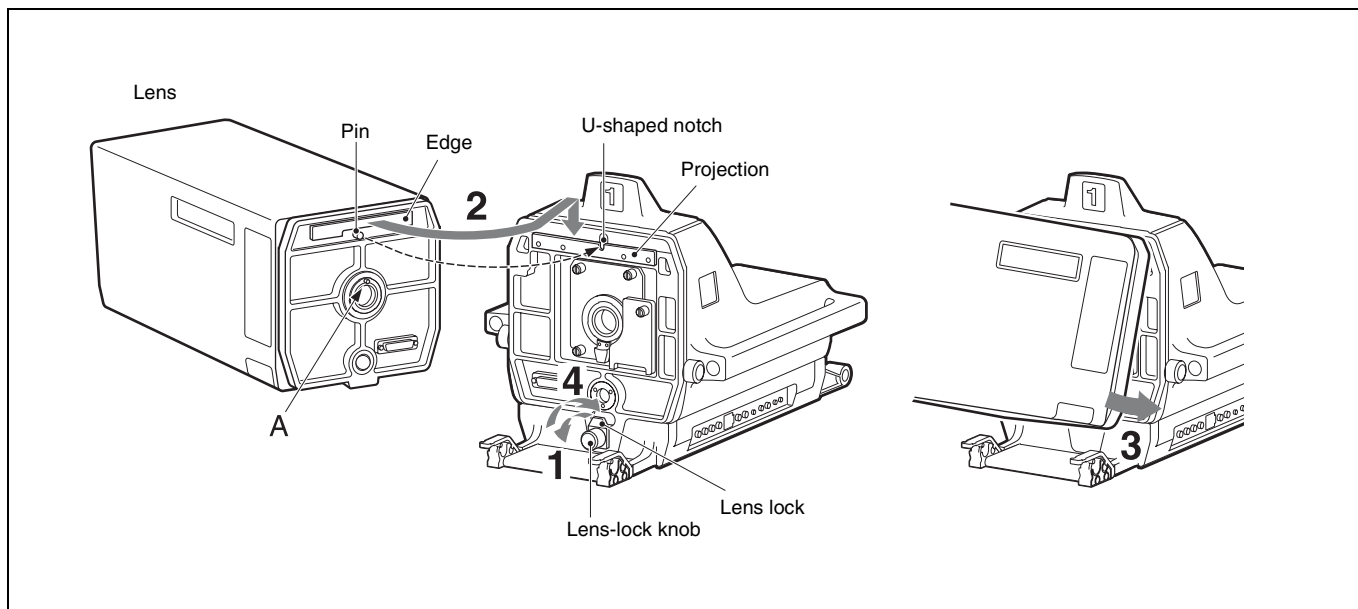
Attach a hanger-mount-type lens recommended by Sony. For details on the lens, refer to the instruction manual supplied with the lens.

To attach, proceed as follows:

Note

Be sure to check the following two points before attaching the lens:

- That the pan-lock and tilt-lock levers on the tripod are fixed.
- That there is not a pin at part A on the lens shown in the figure below (if there is, remove it). If the pin cannot be removed, consult your Sony representative.



- 1** Loosen the lens-lock knob and turn the lens lock counterclockwise to the horizontal position.
- 2** Align the pin on the lens with the U-shaped notch, then hook the edge of the lens on the projection of the camera.
- 3** Couple the lens to the camera.
- 4** Turn the lens lock clockwise, then fasten the lens-lock knob.

Attaching the 7.4-Type Viewfinder

For details on attaching a viewfinder, refer to the operating instructions supplied with the viewfinder.

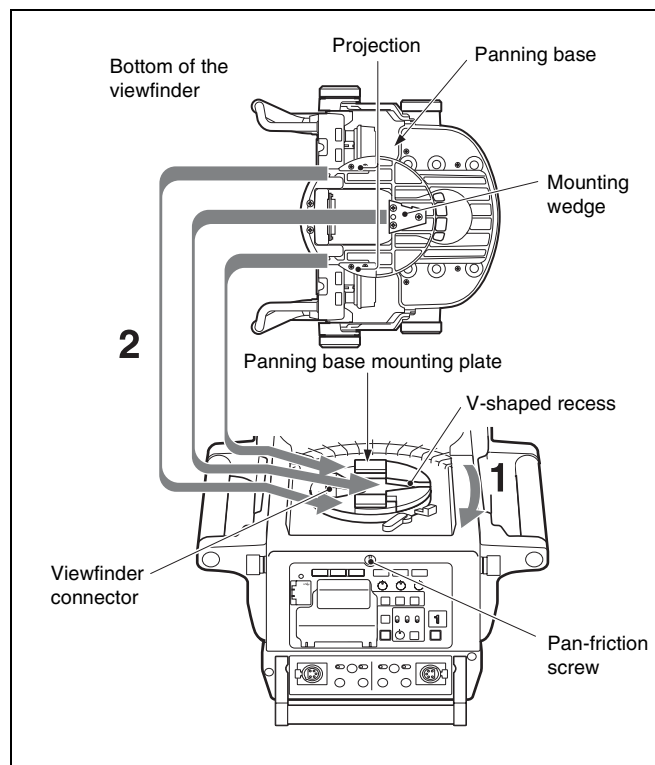
Proceed as follows:

Notes

- Before attaching the viewfinder, be sure that the VF connector on the viewfinder mount is positioned at a right angle to the control panel of the camera as shown below.
- When attaching the viewfinder to the camera or removing it from the camera, be sure to lock the viewfinder in its standard position.
- When removing the viewfinder from the camera, be sure to secure the tripod with its tilt-lock mechanism and hold the viewfinder firmly.
Be careful not to fall or drop the viewfinder and camera.

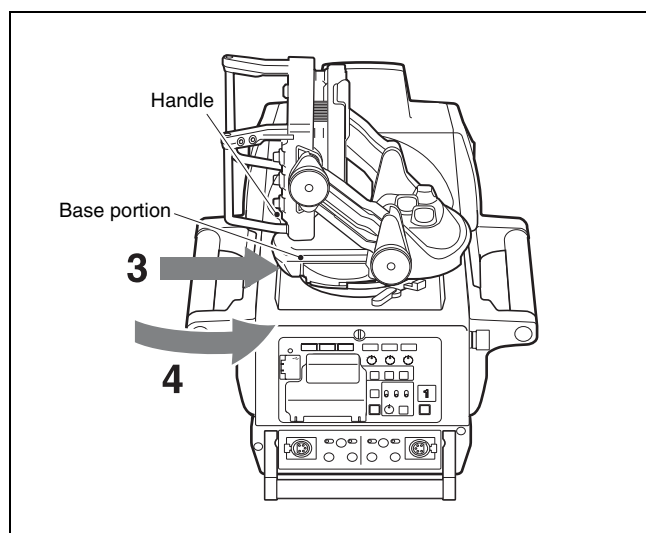
For how to change the position of the viewfinder attached to the camera, refer to the operating instructions of the viewfinder.

- 1** Turn the panning base mounting plate of the camera fully to the right, as illustrated in the figure below.
- 2** Hold the viewfinder so that the projection of the panning base located at the bottom is positioned as illustrated and insert the mounting wedge of the viewfinder into the V-shaped recess of the camera's panning base mounting plate.



- 3** Press the base portion and insert the viewfinder fully into the panning base mounting plate.
Pull the handle and check to ensure that the viewfinder is securely locked.

- 4** Turn the viewfinder to a random position.



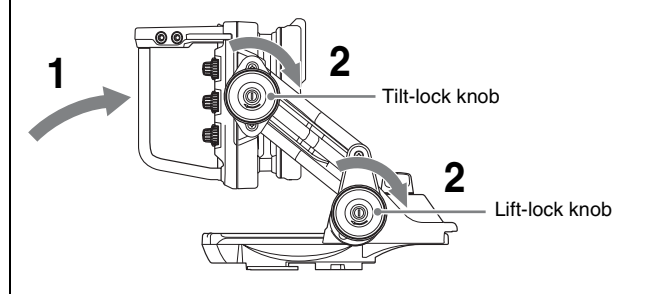
Note

Make sure that the viewfinder is securely locked. If the viewfinder is not properly attached to the camera, it may fall and cause injuries.

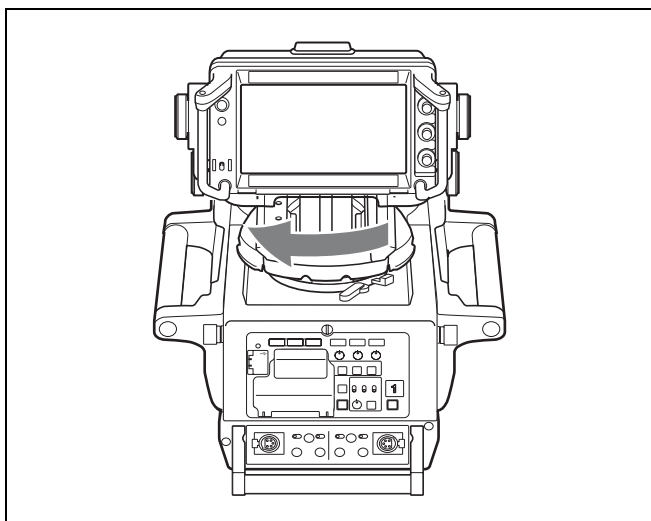
To remove the viewfinder

- 1** Return the viewfinder screen to the standard position.
- 2** Fix the viewfinder screen in the standard position by turning the tilt-lock knob and lift-lock knob in the direction of the arrow indicated on each knob (toward the lock position).

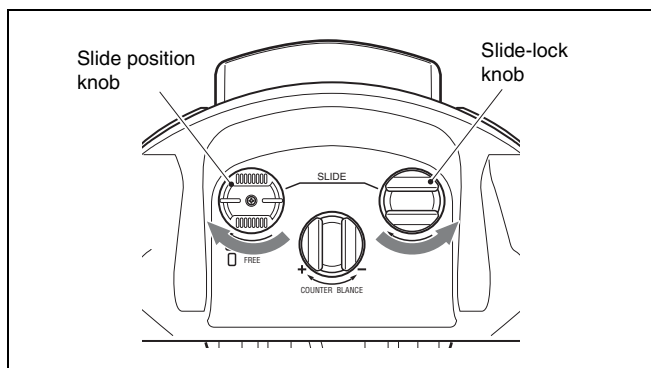
Standard position: The screen's height and position are fixed fully back, as illustrated.



- 3** Turn the viewfinder fully clockwise.

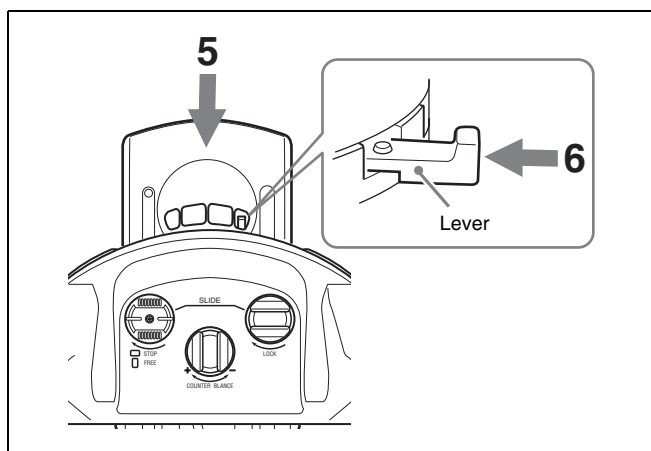


- 4** Turn the slide position knob clockwise to **FREE**, and turn the slide-lock knob counterclockwise to release the lock of the slide position.



- 5** Slide the viewfinder so that the lever is seen through the slit in the panning base mounting plate (see illustration in step 6). Then turn the slide position knob counterclockwise to **STOP** to secure the slide position.

- 6** While pressing the lever, pull the handle of the viewfinder toward you then lift the viewfinder to remove it.



Setting the Focus Assist Function

Using the OPERATION menu, you can activate the assist functions for easier focusing on the viewfinder.

Adding the VF Detail Signal

Adding the VF detail signal to sharp edges in the image on the viewfinder screen makes it easier to check the focusing condition by observing changes in the detail signal or in the color converted from the detail signal (color detail). The focus setting where the detail signal becomes strongest is the best focus setting. COLOR DETAIL and ZOOM LINK can also be set to ON/OFF via the switches on the back panel.

- 1** Turn on the camera.
- 2** Set the **DISPLAY** switch to **MENU** while pressing the **MENU SELECT** switch toward **ENTER**.
The camera enters Menu mode, and "TOP" is displayed at the upper right corner of the screen.
- 3** Rotate the **MENU SELECT** knob to align the arrow marker (→) to "TOP," then press the **MENU SELECT** switch toward **ENTER**.
The TOP MENU screen is displayed.

```
<TOP MENU>
→USER
  USER MENU CUSTOMIZE
  ALL
  • OPERATION
  • PAINT
  • MAINTENANCE
  • FILE
  • DIAGNOSIS
```

- 4** Rotate the **MENU SELECT** knob to align the arrow marker (→) to **OPERATION**, then press the **MENU SELECT** switch toward **ENTER**.
The CONTENTS page of the OPERATION menu is displayed.

```
CONTENTS      00 TOP
↓ ↓
→01.<VF DISPLAY>
02.<' I' IND>
03.<VF MARKER>
04.<VF DETAIL>
05.<FOCUS ASSIST>
06.<ZEBRA>
07.<CURSOR>
08.<VF OUT>
09.<SWITCH ASSIGN1>
10.<RETURN>
```

- 5** Rotate the **MENU SELECT** knob to align the arrow marker (→) to **<VF DETAIL>**, then press the **MENU SELECT** switch toward **ENTER**.
The **<VF DETAIL>** page is displayed.

<VF DETAIL>		→ 04 TOP
VF DETAIL :	ON	(25%)
CRISP :	0	
FREQUENCY :	9M	
FLICKER :	OFF	
AREA :	70%	
ZOOM LINK :	(ON) 100%	
COLOR DETAIL :	(ON) BLUE	
PEAK COLOR :	ON	
CHROMA LEVEL :	100%	

- 6 Rotate the MENU SELECT knob to align the arrow marker (➡) to the item to be set, then press the MENU SELECT switch toward ENTER.**

To use the VF detail signal

Set VF DETAIL to ON to activate the VF detail function to add the detail signal to sharp edges in the image. You can adjust the signal level (strength) in the range of 0 to 100% (default 25%).

You can adjust the characteristics of the detail signal with the menu items below.

CRISP: Adjust to eliminate fine portions of the detail signal.

FREQUENCY: Change the detection band of sharp edges.

FLICKER: Turn ON/OFF the function to thicken the detail signal.

AREA: To limit the area where to display the detail signal.

ZOOM LINK: Set the VF detail level at the full WIDE position. (The VF detail level changes according to the zoom position.) This can also be set to ON/OFF via the switch on the back panel.

To use the color detail

Set COLOR DETAIL to ON to convert the VF detail signal to a specified color. This makes it easier to check the signal on an LCD screen, including the viewfinder screen. The display color can be selected at the column next to ON.

You can adjust the coloring with the menu items below.

PEAK COLOR: Turn ON/OFF the function to change the color where the detail signal is strongest.

CHROMA LEVEL: To reduce the chroma components of the video signal (only for video signals on the viewfinder).

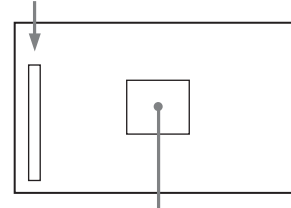
- 7 Rotate the MENU SELECT knob to display the desired setting, then press the MENU SELECT switch toward ENTER.**

- 8 To finish the adjustment, set the DISPLAY switch to OFF to exit Menu mode.**

Displaying the Focus Assist Indicators

The focus assist indicator function extracts the irregularities of a subject and converts the integrated values to a level indicator, which shows the focus condition. This can be set to ON/OFF via the switch on the back panel.

Level indicator (its position and operations can be adjusted.)



Area marker to display the detection area of the focus (its size and position can be adjusted.)

The focus setting where the indicator shows the maximum level is the best focus setting. (The range of the indicator substantially changes depending on picture elements or shooting environments. Adjust it with GAIN and OFFSET as required.)

- 1 Display the CONTENTS page of the OPERATION menu (referring to step 1 to 4 in “Adding the VF Detail Signal”).**

- 2 Rotate the MENU SELECT knob to align the arrow marker (➡) to <FOCUS ASSIST>, then press the MENU SELECT switch toward ENTER.**

The <FOCUS ASSIST> page is displayed.

<FOCUS ASSIST>		→ 05 TOP
INDICATOR :	(OFF)	
MODE :	BOX	BTM QUICK
LEVEL :	3	
GAIN :	50	
OFFSET :	50	
AREA MARKER :	OFF	
SIZE :	MIDDLE	
POSITION :	CENTER	
POSITION H :	50	
POSITION V :	50	

- 3 Rotate the MENU SELECT knob to align the arrow marker (➡) to the item to be set, then press the MENU SELECT switch toward ENTER.**

To use the level indicator

Setting INDICATOR to ON displays the level indicator—which shows a guide for focusing—on the viewfinder.

You can set the display format with the menu items below.

MODE: Set the type and position of the indicator.

LEVEL: Set the density and the response speed of the indicator.

GAIN: Set the sensitivity of the indicator.¹⁾

OFFSET: Set the offset of the focus detection value.²⁾

¹⁾ Normally, the sensitivity of the indicator is automatically set to the optimum value in conjunction with the AREA MARKER SIZE set value. Use this setting when an optimum sensitivity value cannot be obtained, depending on the shooting environment.

²⁾ Normally, the optimum offset is automatically set in conjunction with the AREA MARKER SIZE and MASTER GAIN set values. Use this setting when the optimum offset cannot be obtained, depending on the shooting environment.

To use the area marker

Setting AREA MARKER to ON displays the detection area of the focus as a marker on the viewfinder screen.

You can set the size and position of the detection area with the menu items below.

SIZE: The size of the detection area can be changed. (If the area size is too large, both the subject and the background are included in the area, making the indicator display may easily deviate from the subject.)

POSITION: Roughly set the position of the detection area.

POSITION H: Finely adjust the position of the detection area in the horizontal directions.

POSITION V: Finely adjust the position of the detection area in the vertical directions.

4 Rotate the **MENU SELECT** knob to display the desired setting, then press the **MENU SELECT** switch toward **ENTER**.

5 To finish the adjustment, set the **DISPLAY** switch to **OFF** to exit Menu mode.

Notes

- The level indicator and the effect area marker cannot be displayed simultaneously, whichever you set to ON later is preferentially displayed.
- The area marker and the aspect safety marker cannot be displayed simultaneously, whichever you set to ON later is preferentially displayed.
- When displaying the focus assist indicators, check that the flange focal length has been precisely adjusted.

Setting the Camera Outputs

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

Note

The MAIN (camera picture), RET (return signal), 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.

- <OUTPUT FORMAT>
- <TEST OUT>
- <SDI OUT>

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 22.

Outputting the signal being shot by the camera

The same textual information as those displayed on the viewfinder can be added to the output signal by setting CHARACTER to "ON" on the <SDI OUT> or <TEST OUT> page.

To output as HD-SDI

Menu page	Item	Setting
<SDI OUT>	SDI-MONI OUT	MAIN

To output as SD-SDI

Menu page	Item	Setting
<SDI OUT>	SDI-MONI OUT	SD-SDI
	DOWN CONVERTER SELECT	MAIN

To output as VBS

Menu page	Item	Setting
<TEST OUT>	OUTPUT	VBS
	DOWN CONVERTER SELECT	MAIN

Constantly outputting a return signal

- When a camera control unit is connected, one of the signals being supplied to the camera control unit can be selected and output it from the camera.
- The last selected return signal is output.
- The same textual information as those displayed on the viewfinder can be added to the output signal by setting

CHARACTER to “ON” on the <SDI OUT> or <TEST OUT> page.

To output as HD-SDI

Menu page	Item	Setting
<SDI OUT>	SDI-MONI OUT	RET

To output as SD-SDI

Menu page	Item	Setting
<SDI OUT>	SDI-MONI OUT	SD-SDI
	DOWN CONVERTER SELECT	RET

To output as VBS

Menu page	Item	Setting
<TEST OUT>	OUTPUT	VBS
	DOWN CONVERTER SELECT	RET

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. Switching between Y, R, G, and B is not supported. 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
<SDI OUT>	SDI-MONI OUT	VF

To output as SD-SDI

Menu page	Item	Setting
<SDI OUT>	SDI-MONI OUT	SD-SDI
	DOWN CONVERTER SELECT	VF

To output as VBS

Menu page	Item	Setting
<TEST OUT>	OUTPUT	VBS
	DOWN CONVERTER SELECT	VF

Outputting via 3G

The SDI-1 output becomes 3G output.

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

Menu page	Item	Setting
<OUTPUT FORMAT>	ACTIVE LINE	1080
	(Format)	59.94P or 50P
<SDI OUT>	SDI-1 OUT	3G-SDI

Outputting via Dual Link

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

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

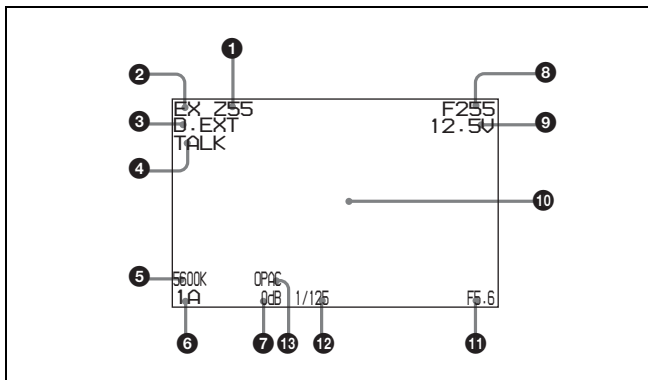
Menu page	Item	Setting
<OUTPUT FORMAT>	ACTIVE LINE	1080
	(Format)	59.94P or 50P
SDI-OUT	SDI-1 OUT	MAIN/ LINK-A
	SDI-2 OUT/IN	MAIN/ LINK-B

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.



1 Zoom position

Indicates the approximate position of the zoom lens variator between wide angle (0) and telephoto (99).

2 Lens extender

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

3 Digital extender

"D.EXT" is displayed when a digital extender is in use.

4 TALK indication

Displayed when the intercom microphone is set to ON.

5 5600K mode

Displayed when 5600K is set to ON.

6 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.

7 Gain value

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

8 Focus position

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

Note

This is only displayed when a lens supporting serial data communication is attached.

9 Battery voltage

Displays the input voltage.

10 Setting change / adjustment process message area

This area is only used when the MESSAGE item of the menu is set to other than OFF.

11 F value

Indicates the lens F (iris opening) value.

12 Shutter/ECS

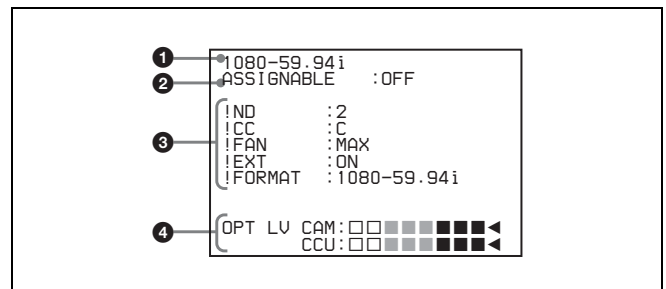
Displays the shutter/ECS status. Nothing is displayed if the electronic shutter is set to OFF.

13 Optical axis compensation (OPAC) mode

Displays when optical axis compensation is set to ON.

When you set the MENU SELECT switch to CANCEL

The status display is changed to show the following items:



1 Format indication

The current video format is displayed.

2 Assignable switch indication

The function assigned to the ASSIGN (assignable) switch (page 11) is indicated.

For the functions that can be assigned, see OPERATION menu <SWITCH ASSIGN1> (page 34).

3 'I' indication area

This area can be used to display abnormal statuses using the <'I' IND> function.

For details, see OPERATION menu <'I' IND> (page 32).

4 Light-receiving level indications

This area shows the light-receiving levels in segments.

CHU: Light-receiving level at the CCU connector (page 9) of the camera

CCU: Light-receiving level at the CAMERA connector of the CCU

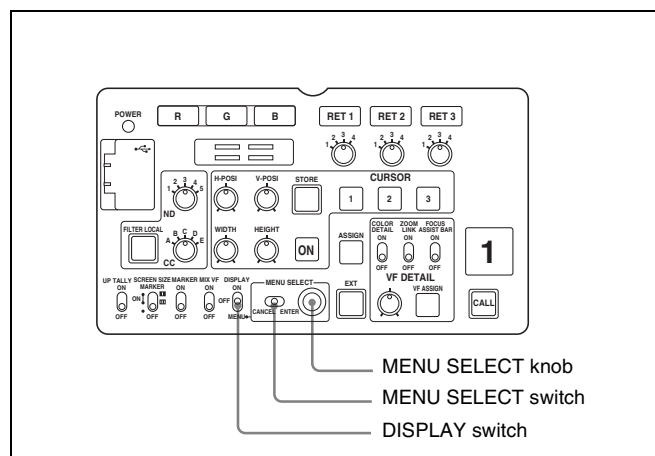
Note

If a camera control unit other than an HDCU2000/2500 is connected, correct indications may not be obtained.

Menu Operations

The menus displayed on the viewfinder enable various settings of the camera.

The following parts are used to operate the menus.



Starting Menu Operations

To display a menu page

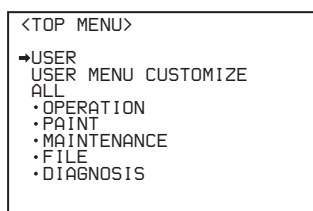
Move the DISPLAY switch from OFF to MENU.

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

While pressing the MENU SELECT switch toward ENTER, set the DISPLAY switch from OFF to MENU, and “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 pressing the MENU SELECT switch toward CANCEL. This disables the TOP selection.

Available menus

USER menu

This menu can include menu pages selected from 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, see “Editing the USER Menu” (page 24).

ALL menu

This menu permits you to control all items of the OPERATION menu, PAINT menu, MAINTENANCE menu, FILE menu and DIAGNOSIS menu as one 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, this 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

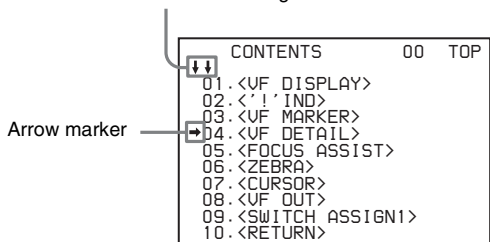
- 1** Rotate the **MENU SELECT** knob to align the arrow marker (➡) with the desired menu.
- 2** Press the **MENU SELECT** switch toward **ENTER**.
The **CONTENTS** page or the last operated page of the selected menu is displayed.

Selecting Pages

When selecting a page from a CONTENTS page

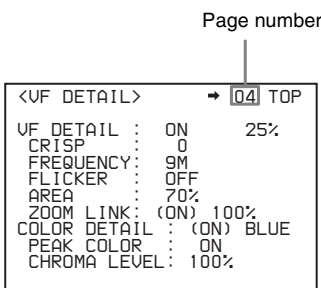
Example: CONTENTS page of the OPERATION menu

If the screen can be scrolled, arrows will indicate the direction of scrolling.



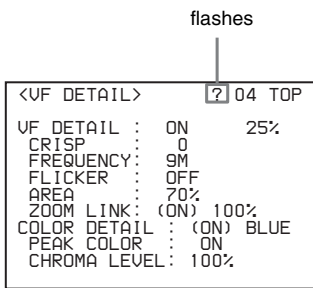
Rotate the MENU SELECT knob to align the arrow marker (➡) with the desired page, then press the MENU SELECT switch toward ENTER.

The selected page is displayed.



To change the displayed page

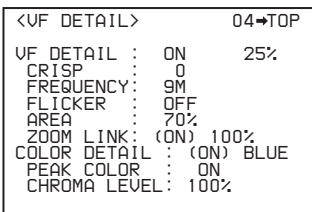
- 1 Check that the arrow marker (➡) is located at the left of the page number, then press the MENU SELECT switch toward ENTER.
The arrow marker (➡) changes to a flashing “?” mark.



- 2 Rotate the MENU SELECT knob to flip the pages.
- 3 When the page you want to set is displayed, press the MENU SELECT switch toward ENTER.
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, and press the MENU SELECT switch toward ENTER.



The TOP MENU screen is displayed.

Setting the Menu Items

If a “?” mark is flashing at the left of the page number, press the MENU SELECT switch toward ENTER to change the arrow marker (➡). Setting on the displayed page is enabled.

- 1 Rotate the MENU SELECT knob to align the arrow marker (➡) with the desired item.
- 2 Press the MENU SELECT switch toward ENTER.
The arrow marker (➡) will change to a flashing “?” mark.
- 3 Rotate the MENU SELECT knob 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 MENU SELECT switch toward CANCEL, before pressing the MENU SELECT switch toward ENTER, 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 can be restarted by setting the DISPLAY switch back to MENU.

- 4 Press the MENU SELECT switch toward ENTER.
The “?” mark will change back to the arrow marker (➡), and the new setting will be saved.
- 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 SELECT switch toward ENTER with the arrow marker (➡) pointing to an item for which a character string, such as a file ID, is to be specified, a square cursor and the list of selectable characters are displayed.
The displayed cursor can be moved by rotating the MENU SELECT knob.

- 1 Set the cursor to the position where you wish to enter a character, then press the MENU SELECT switch toward ENTER.
Another cursor appears on the character list.

2 Set the cursor to the character to be entered and press the MENU SELECT switch toward ENTER. 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 press the MENU SELECT switch toward ENTER.

To restore the previous string, select ESC and press the MENU SELECT switch toward ENTER.

To return a menu item to its standard value

Select the menu item to be returned to its standard value then press the MENU SELECT switch toward ENTER and hold it for 3 seconds while the arrow marker (➡) is displayed. If "10 SEC CLEAR" has been set to ON on the <FILE CLEAR> page of the FILE menu, you can return the setting in the reference file for the item being selected to the factory-set value by pressing the MENU SELECT switch toward ENTER and holding it for another 10 seconds.

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 in the factory-set USER menu:

Menu page title	USER menu No.	Source menu / page No.
<VF OUT>	U01	OPERATION 08
<VF DETAIL>	U02	OPERATION 04
<FOCUS ASSIST>	U03	OPERATION 05
<VF DISPLAY>	U04	OPERATION 01
<'I' IND>	U05	OPERATION 02
<VF MARKER>	U06	OPERATION 03
<CURSOR>	U07	OPERATION 07
<ZEBRA>	U08	OPERATION 06
<SWITCH ASSIGN1>	U09	OPERATION 08
<HEADSET MIC>	U10	OPERATION 11

Menu page title	USER menu No.	Source menu / page No.
<OUTPUT FORMAT>	U11	MAINTENANCE M09
<TEST OUT>	U12	MAINTENANCE M10
<SDI OUT>	U13	MAINTENANCE M11
<ROM VERSION>	U14	DIAGNOSIS D03

For the items on each page, see the corresponding source menu page in the table in "Menu List" (page 27).

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

Editing by items

The USER MENU CUSTOMIZE menu allows you to add a new page to the USER menu and add desired items to the page.

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 add items to a page

Proceed as follows:

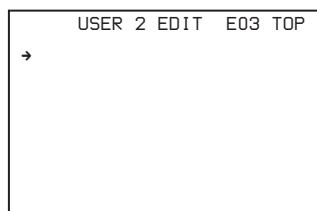
- 1 While pressing the MENU SELECT switch toward ENTER, move the DISPLAY switch from OFF to MENU. The TOP MENU screen appears.
- 2 Turn the MENU SELECT knob to move the arrow marker (➡) to "USER MENU CUSTOMIZE", then press the MENU SELECT switch toward ENTER. If this is the first time the USER MENU CUSTOMIZE menu has been displayed, the CONTENTS page of the menu appears.

CONTENTS	E00 TOP
↓↑	
01.EDIT PAGE	
02.USER 1 EDIT	
➡03.USER 2 EDIT	
04.USER 3 EDIT	
05.USER 4 EDIT	
06.USER 5 EDIT	
07.USER 6 EDIT	
08.USER 7 EDIT	
09.USER 8 EDIT	
10.USER 9 EDIT	

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

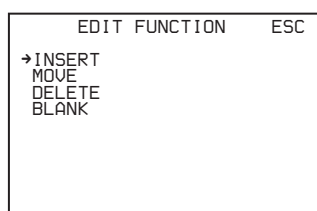
- 3 If the CONTENTS page is displayed, turn the MENU SELECT knob to move the arrow marker (➡) to one of USER 1 EDIT to USER 19 EDIT, then press the MENU SELECT switch toward ENTER to display the page. If a different page is displayed, turn the MENU SELECT knob until the desired page appears, then press the MENU SELECT switch toward ENTER.

Example: When you select the USER 2 EDIT page



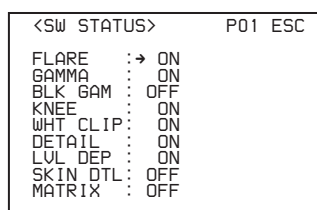
- 4** Move the arrow marker (➡) to the item to be added (this operation is unnecessary, if no item exists on the page as shown in the figure for step 3), then press the MENU SELECT switch toward ENTER.

The EDIT FUNCTION screen appears.



- 5** Move the arrow marker (➡) to "INSERT", and press the MENU SELECT switch toward ENTER.

The page for the last added item appears.



- 6** Add the items.

- ① Turn the MENU SELECT knob until the page that has the desired items appears, then press the MENU SELECT switch toward ENTER.
- ② Turn the MENU SELECT knob to move the arrow marker (➡) to the desired item, then press the MENU SELECT switch toward ENTER.

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 press the MENU SELECT switch toward ENTER. The EDIT FUNCTION screen appears.
- 2** Select "DELETE," and press the MENU SELECT switch toward ENTER.

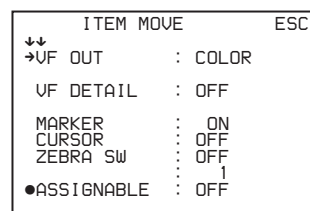
The previously displayed screen appears again, and the message "DELETE OK? YES➡NO" appears at the upper right.

- 3** To delete, turn the MENU SELECT knob to move the arrow marker (➡) to "YES," and press the MENU SELECT switch toward ENTER.

To change the order of items on a page

Proceed as follows:

- 1** Turn the MENU SELECT knob to move the arrow marker (➡) to the item to be moved, then press the MENU SELECT switch toward ENTER. The EDIT FUNCTION screen appears.
- 2** Select MOVE, then press the MENU SELECT switch toward ENTER. The previously displayed page appears again.
- 3** Turn the MENU SELECT knob to move the arrow marker (➡) to the position where you want to move the item, then press the MENU SELECT switch toward ENTER.



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 SELECT knob to move the arrow marker (➡) to the item above which you want to insert a blank line. The EDIT FUNCTION screen appears.
- 2** Select "BLANK", and press the MENU SELECT switch toward ENTER. 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.

Editing by 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 SELECT knob to move the arrow marker (➡) to “EDIT PAGE”, then press the MENU SELECT switch toward ENTER to display the EDIT PAGE screen. If a different page is displayed, turn the MENU SELECT knob until the EDIT PAGE screen appears, then press the MENU SELECT switch toward ENTER to select the page.

```
EDIT PAGE      E01 TOP
↓ ↓
01.<VF OUT>
➡02.<VF DETAIL>
03.<FOCUS ASSIST>
04.<VF DISPLAY>
05.<'I' IND>
06.<VF MARKER>
07.<CURSOR>
08.<ZEBRA>
09.<SWITCH ASSIGN1>
10.<HEADSET MIC>
```

3 Turn the MENU SELECT knob to move the arrow marker (➡) to where you want to add the page, then press the MENU SELECT switch toward ENTER. The EDIT FUNCTION screen appears.

```
EDIT FUNCTION  ESC
➡INSERT
MOVE
DELETE
```

4 Select INSERT, and press the MENU SELECT switch toward ENTER. The selection screen appears.

```
CONTENTS      ESC
↓ ↓
➡01.USER 1
02.USER 2
03.USER 3
04.USER 4
05.USER 5
06.USER 6
07.USER 7
08.USER 8
09.USER 9
10.USER 10
```

5 Turn the MENU SELECT knob to move the arrow marker (➡) to the desired page, then press the MENU SELECT switch toward ENTER. This adds the number and name of the selected page above the item selected in step 3.

To cancel adding a page

Before pressing the MENU SELECT switch toward ENTER in step 5, turn the MENU SELECT knob to move the arrow marker (➡) to “ESC” at the top right of the screen, then press the MENU SELECT switch toward ENTER.
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 press the MENU SELECT switch toward ENTER. The EDIT FUNCTION screen appears.

2 Select DELETE, and press the MENU SELECT switch toward ENTER. The previously displayed screen appears again, and the message “DELETE OK? YES➡NO” appears at the upper right.

```
ITEM DELETE      ESC
DELETE OK? YES➡NO
01.<VF OUT>
02.<VF DETAIL>
03.<FOCUS ASSIST>
●04.<VF DISPLAY>
05.<'I' IND>
06.<VF MARKER>
07.<CURSOR>
08.<ZEBRA>
09.<SWITCH ASSIGN1>
10.<HEADSET MIC>
```

3 To delete, turn the MENU SELECT knob to move the arrow marker (➡) to “YES”, and press the MENU SELECT switch toward ENTER.

To move a page

Proceed as follows:

1 Display the EDIT PAGE screen of the USER MENU CUSTOMIZE menu. Turn the MENU SELECT knob to move the arrow marker (➡) to the page that you want to move. The EDIT FUNCTION screen appears.

2 Select MOVE, then press the MENU SELECT switch toward ENTER. The EDIT PAGE screen appears again.

3 Turn MENU SELECT knob to move the arrow marker (➡) to the position to where you want to move the page selected in step 1.

```
ITEM MOVE      ESC
↓ ↓
01.<VF OUT>
02.<VF DETAIL>
03.<FOCUS ASSIST>
➡04.<VF DISPLAY>
05.<'I' IND>
06.<VF MARKER>
07.<CURSOR>
●08.<ZEBRA>
09.<SWITCH ASSIGN1>
10.<HEADSET MIC>
```

4 Press the MENU SELECT switch toward ENTER. The page selected in step 1 is moved to the position selected in step 3. In the above example, <ZEBRA> moves to the “04” position, and the <VF DISPLAY> and following pages move down one line.

Menu List

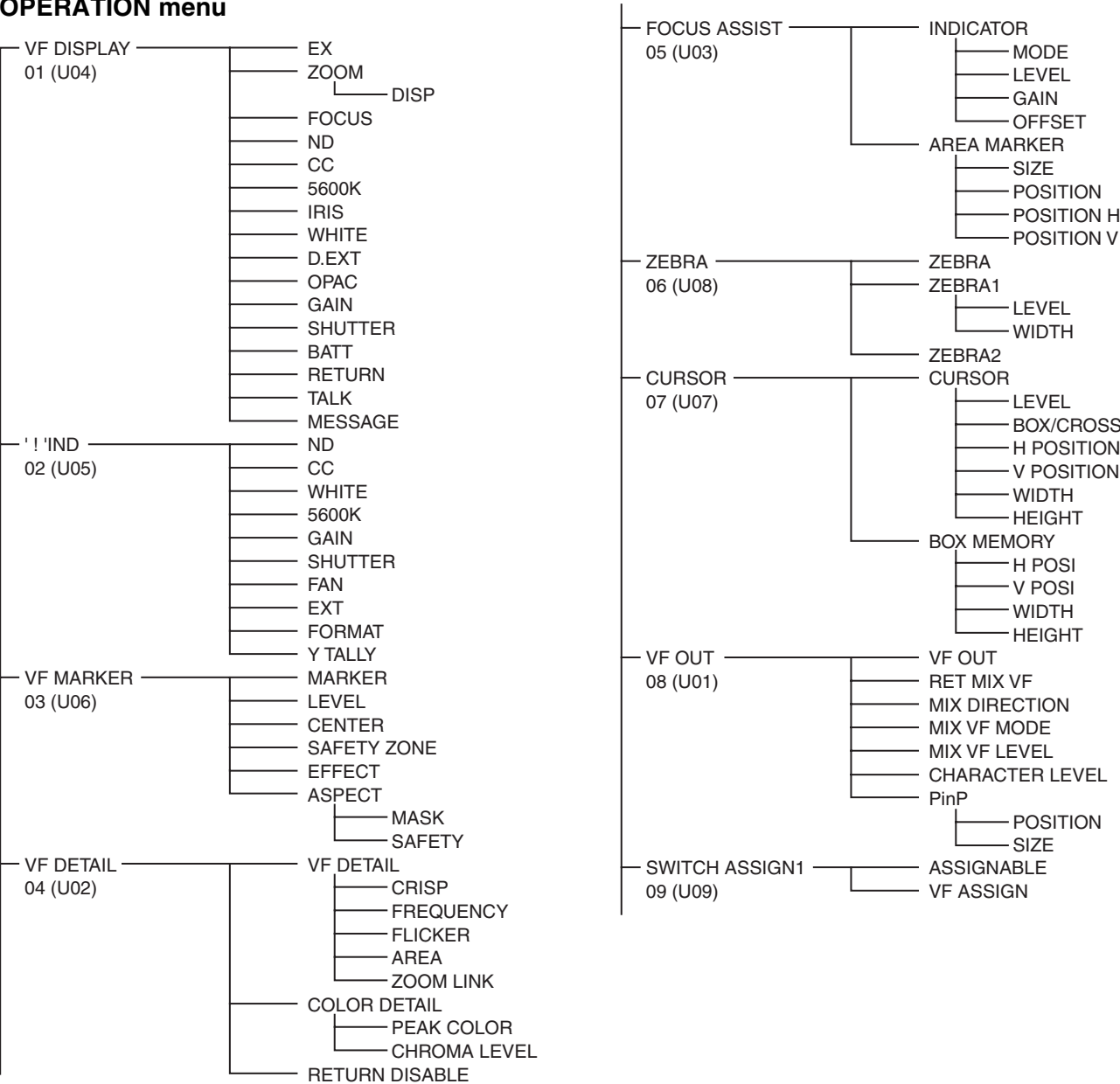
- This section shows the menus to be displayed on the viewfinder screen in tables.
- For the pages that have been registered in the USER menu at the factory, the USER menu page numbers are indicated in parenthesis in the No. column of the tables.
 - A CONTENTS page (numbered 00) is also provided for each menu.

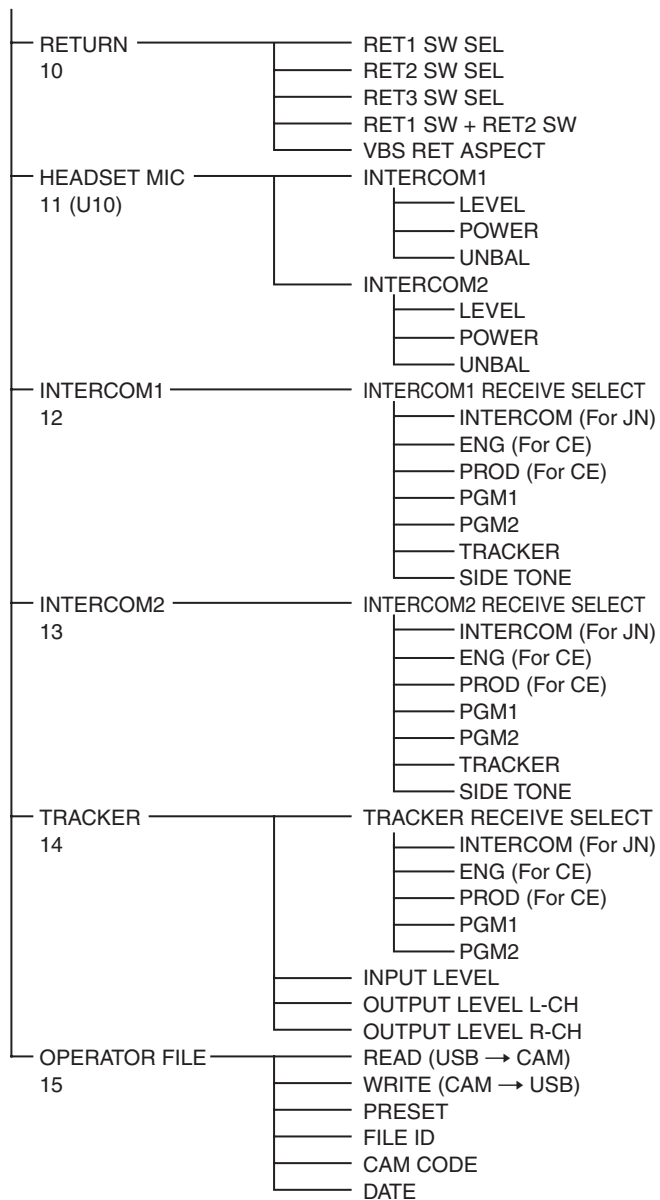
Notes

CCU: HDCU2000/2500 Camera Control Unit
Bold values (e.g. ON, OFF, 0): Default settings
Execute via ENTER: Execute by pressing the MENU SELECT switch toward ENTER.

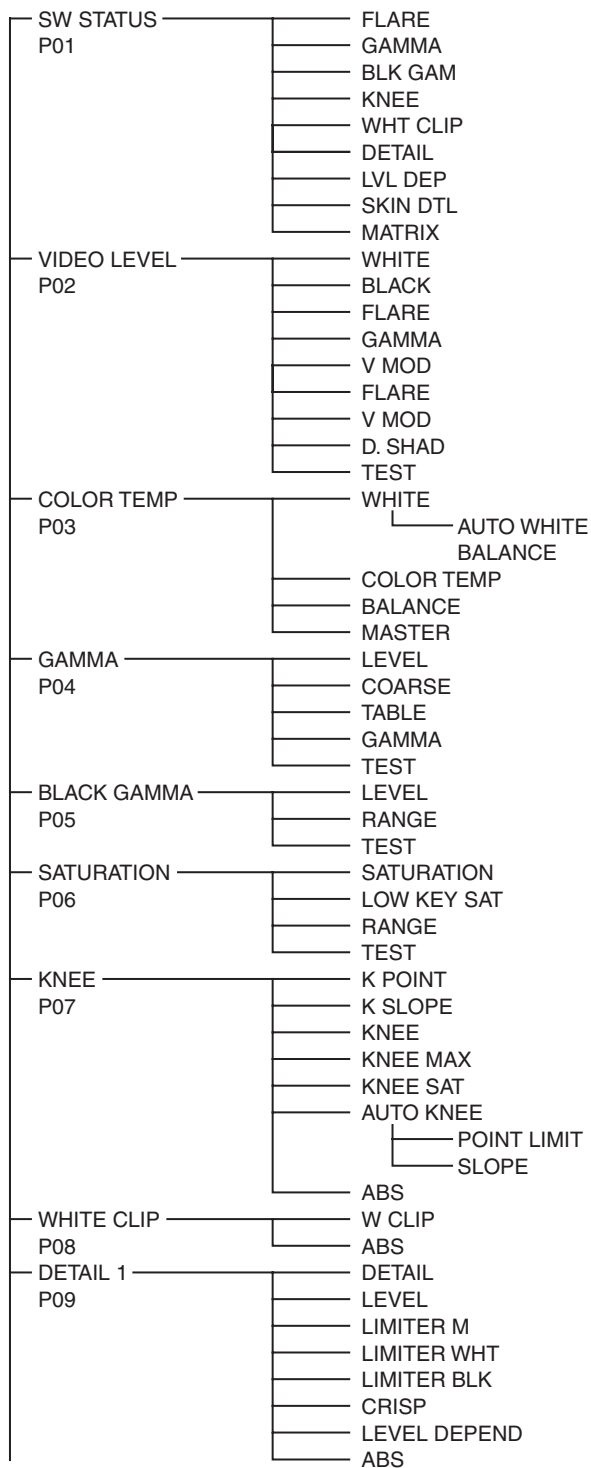
Menu Tree

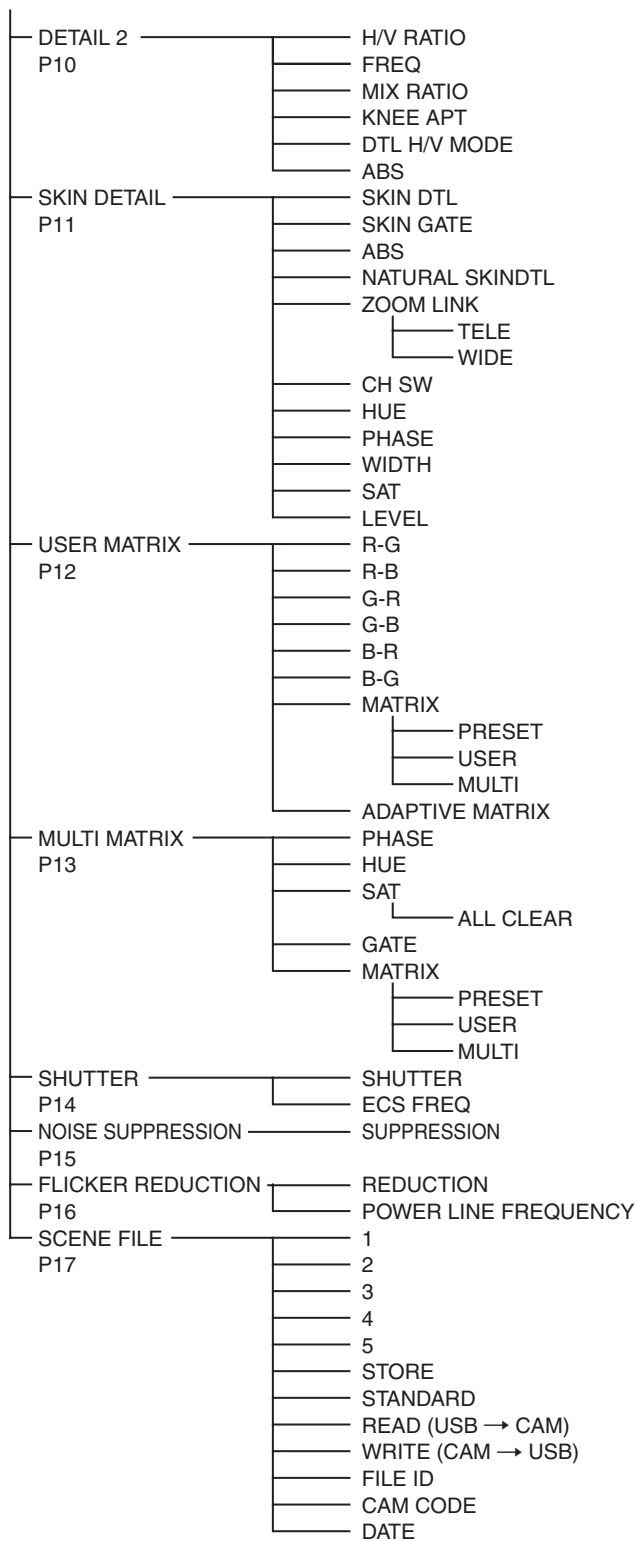
OPERATION menu



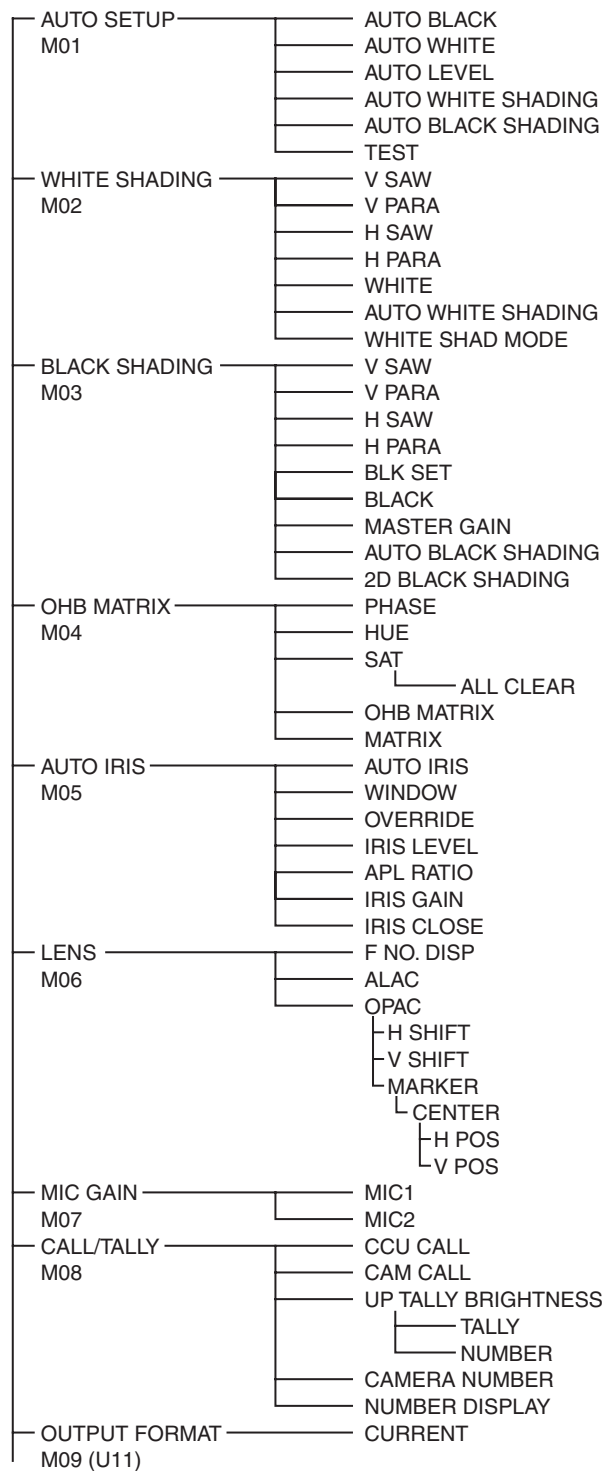


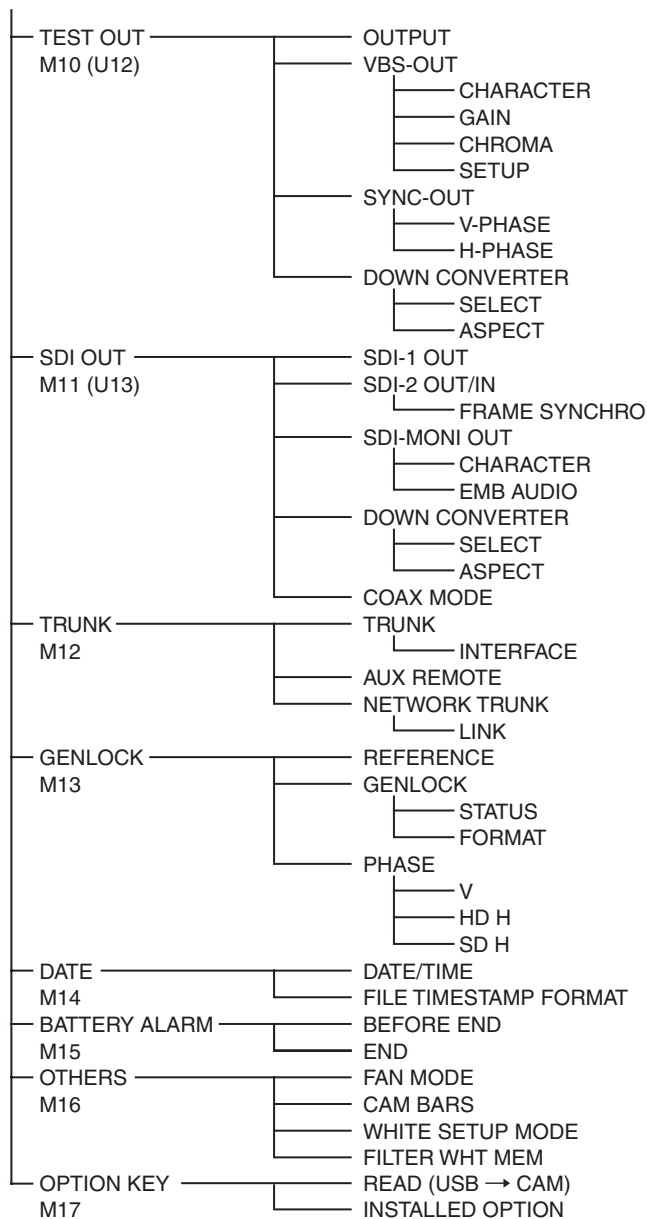
PAINT menu



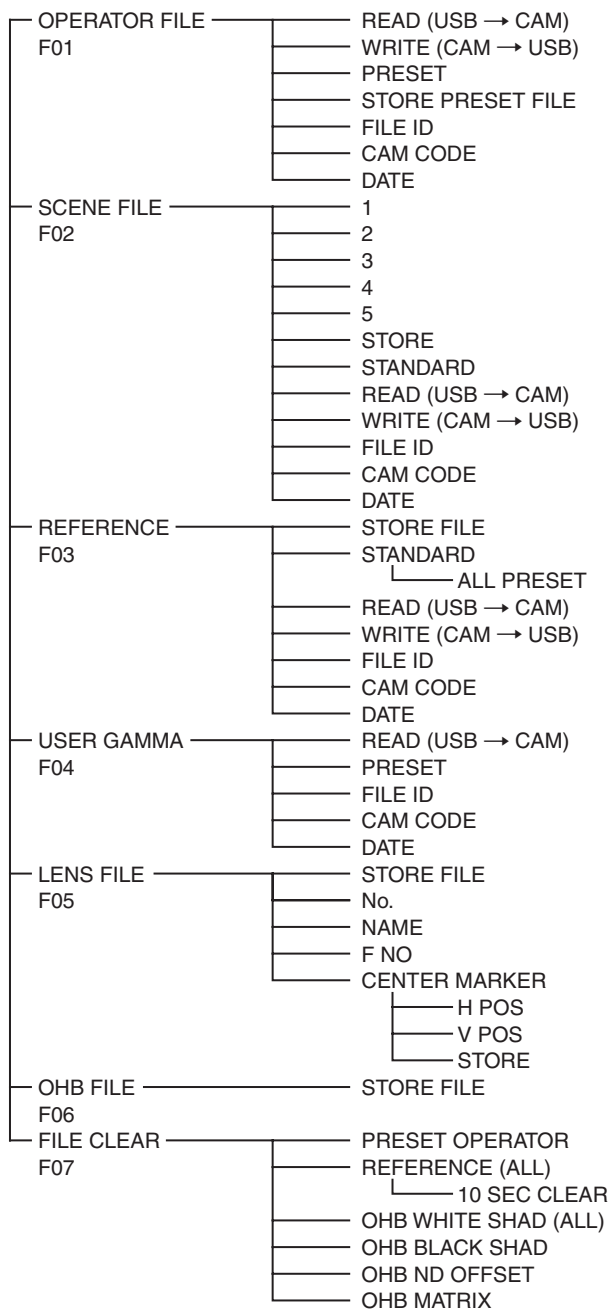


MAINTENANCE menu

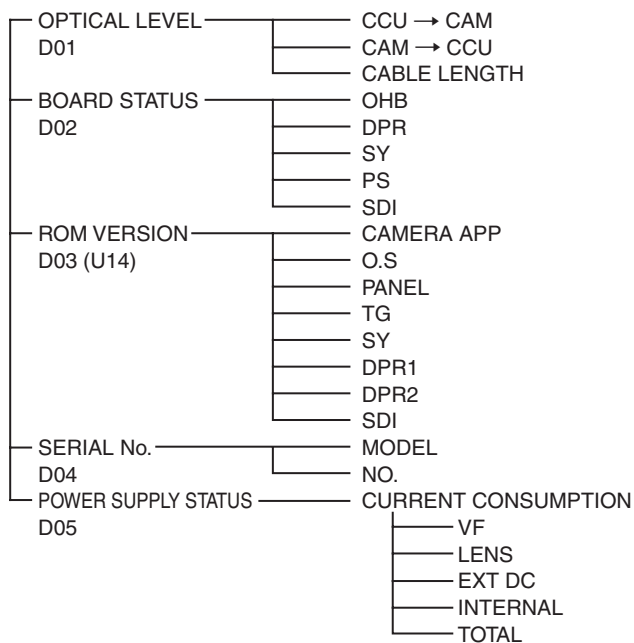




FILE menu



DIAGNOSIS menu



OPERATION Menu

OPERATION			
Page title PageNo.	Item	Settings	Description
<VF DISPLAY> 01 (U04)	EX	ON , OFF	
	ZOOM	ON, OFF	
	DISP	LEFT , RIGHT	
	FOCUS	ON, OFF	Valid only when a serial lens is used.
	ND	ON , OFF	
	CC	ON , OFF	
	5600K	ON , OFF	
	IRIS	ON , OFF	
	WHITE	ON, OFF	
	D.EXT	ON , OFF	
	OPAC	ON , OFF	
	GAIN	ON , OFF	
	SHUTTER	ON , OFF	
	BATT	ON, OFF	
	RETURN	ON , OFF	
	TALK	ON , OFF	
	MESSAGE	ALL , WRN, AT, OFF	ALL : Displays all messages. WRN : Displays warning messages and higher. AT : Displays Auto Setup information and higher.

OPERATION			
Page title PageNo.	Item	Settings	Description
<'!'IND> 02 (U05)	ND	<u>ON</u> , OFF 1, 2, 3, 4, 5 (combination allowed)	[IND]: Sets whether to be included in the status indications on the viewfinder screen (<i>see page 21</i>). [NORMAL]: Specifies 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 screen.) e.g.: With the default setting of ND, the '!' indication is displayed when an ND filter other than 1 is selected. --- : When a CCU is connected (cannot be changed)
	CC	<u>ON</u> , OFF A, <u>B</u> , C, D, E (combination allowed)	
	WHITE	<u>ON</u> , OFF, --- P, <u>A</u> , <u>B</u> (combination allowed)	
	5600K	<u>ON</u> , OFF, --- ON, <u>OFF</u>	
	GAIN	<u>ON</u> , OFF, --- <u>L</u> , M, H (combination allowed)	
	SHUTTER	<u>ON</u> , OFF, --- ON, <u>OFF</u>	
	FAN	<u>ON</u> , OFF <u>AUTO1</u> , AUTO2, MIN, MAX	
	EXT	<u>ON</u> , OFF	
	FORMAT	<u>ON</u> , OFF 1080-59.94i, 1080-29.97PsF, 1080-50i, 1080-25PsF, 1080-24PsF, 1080-23.98PsF, 1080-59.94P, 1080-50P, 720-59.94P, 720-50P, 1080-59.94i (2x), 1080-50i (2x), 720-59.94P (2x), 720-50P (2x)	
	Y TALLY	<u>ON</u> , OFF	
	MARKER	(<u>ON</u>), (OFF) <u>WHITE</u> , BLACK, DOT	
	LEVEL	0 to 100, <u>70</u>	
	CENTER	ON, <u>OFF</u> 1, 2, 3, 4	
<VF MARKER> 03 (U06)	SAFETY ZONE	ON, <u>OFF</u> 80.0, <u>90.0</u> , 92.5, 95.0%	1: Entire cross 2: Entire cross with a hole 3: Center 4: Center with a hole (FOCUS): Displayed when INDICATOR of <FOCUS ASSIST> is ON. Settings in (): Display only Settings in (): Display only Sets the level to darken outside the aspect area. For the safety marker in Aspect mode. (AREA): Displayed when AREA MARKER of <FOCUS ASSIST> is ON.
	EFFECT	ON, <u>OFF</u> , (FOCUS)	
	ASPECT	(ON), (<u>OFF</u>) 16:9, 15:9, 14:9, 13:9, <u>4:3</u>	
	MASK	(ON), (<u>OFF</u>) 0 to 15, <u>12</u>	
	SAFETY	ON, <u>OFF</u> , (AREA) 80.0, <u>90.0</u> , 92.5, 95.0%	

OPERATION			
Page title PageNo.	Item	Settings	Description
<VF DETAIL> 04 (U02)	VF DETAIL	ON , OFF	
		0 to 100%, (0 to 100%), 25%	
	CRISP	-99 to +99, 0	
	FREQUENCY	9M , 14M, 18M	
	FLICKER	ON, OFF	
	AREA	100% , 70%, 60%, 50%, 40%	
	ZOOM LINK	(ON), (OFF)	Settings in (): Display only
		0%, 25%, 50%, 75%, 100%	
	COLOR DETAIL	(ON), (OFF)	Settings in (): Display only
		BLUE , RED, YELLOW	
	PEAK COLOR	ON, OFF	
	CHROMA LEVEL	100%, 50%, 25% , 0%	
	RETURN DISABLE	ON, OFF	
<FOCUS ASSIST> 05 (U03)	INDICATOR	(ON), (OFF), (EFFECT)	(ON), (OFF): Display only (EFFECT): Displayed when EFFECT of <VF MARKER> is ON.
	MODE	BOX , B&W, COL	
		BTM , LEFT, TOP, RIGHT	
	LEVEL	0 to 100%, 70%	
		QUICK , SMOOTH	
	GAIN	0 to 99, 50	
	OFFSET	0 to 99, 50	
	AREA MARKER	ON, OFF , (ASPECT)	(ASPECT): Displayed when ASPECT SAFETY of <VF MARKER> is ON.
	SIZE	SMALL, MIDDLE , LARGE	
	POSITION	LEFT, CENTER , RIGHT	
	POSITION H	0 to 99, 50	
	POSITION V	0 to 99, 50	
<ZEBRA> 06 (U08)	ZEBRA	ON, OFF	
		1 , 2, 1&2	
	ZEBRA1		
	LEVEL	50 to 109%, 70%	
	WIDTH	0 to 30%, 10%	
	ZEBRA2	50 to 109%, 100%	
<CURSOR> 07 (U07)	CURSOR	(ON), (OFF)	Settings in (): Display only
		WHITE , BLACK, DOT	
	LEVEL	0 to 100%, 70%	
	BOX/CROSS	BOX , CROSS	
	H POSITION	(0 to 99), (50)	Settings in (): Display only
	V POSITION	(0 to 99), (50)	
	WIDTH	(0 to 99), (50)	
	HEIGHT	(0 to 99), (50)	
	BOX MEMORY	1/2/3: (OFF), (ON)	Settings in (): Display only
		H POSI	1/2/3: (0 to 99), (50)
		V POSI	1/2/3: (0 to 99), (50)
		WIDTH	1/2/3: (0 to 99), (50)
		HEIGHT	1/2/3: (0 to 99), (50)

OPERATION			
Page title PageNo.	Item	Settings	Description
<VF OUT> 08 (U01)	VF OUT	<u>(COLOR)</u> , Y, R, G, B	Settings in (): Display only
	RET MIX VF	(ON), <u>(OFF)</u>	Settings in (): Display only
	MIX DIRECTION	MAIN, <u>RET</u>	
	MIX VF MODE	<u>Y-MIX</u> , WIRE(W), WIRE(B)	
	MIX VF LEVEL	0 to <u>80%</u>	
	CHARACTER LEVEL	0 to 5, <u>5</u>	
	PinP	ON, <u>OFF</u> , (OFF)	Cannot be used during stand-alone operation.
	POSITION	<u>1</u> , 2, 3, 4	Not available when HD TRUNK FRAME SYNCHRO is set to ON.
<SWITCH ASSIGN1> 09 (U09)	ASSIGNABLE	SIZE <u>1/3</u> , 1/4	
		<u>OFF</u> , EXTENDER, 5600K, FAN MAX, D.EXTENDER, PinP	JN model only.
			Note When you turn D.EXTENDER ON or OFF, noise may be generated. This is not a malfunction. D.EXTENDER does not operate when a 2x speed motion format is selected.
<RETURN> 10	VF ASSIGN	<u>VF ASSIGN1</u> , VF ASSIGN2	
		RET1 SW SEL (CCU RET1), (CCU RET2), (CCU RET3), (CCU RET4)	Varies based on the RET1 button setting. Settings in (): Display only
		RET2 SW SEL	Varies based on the RET2 button setting. Settings in (): Display only
	RET3 SW SEL	(CCU RET1), (CCU RET2), <u>(CCU RET3)</u> , (CCU RET4)	Settings in (): Display only
	RET1 SW + RET2 SW	RET1 SW, <u>RET3 SW</u>	Changes operation when you press both the RET1 button and RET2 button at the same time. RET1 SW: The two buttons function as the RET1 button. RET3 SW: The two buttons function as the RET3 button.
	VBS RET ASPECT	<u>EC</u> , SQ	Sets the Aspect mode of the VBS RET when the camera is used in stand-alone. EC: Edge Crop SQ: Squeeze

OPERATION			
Page title PageNo.	Item	Settings	Description
<HEADSET MIC> 11 (U10)	INTERCOM1	DYNAMIC , CARBON, MANUAL	
	LEVEL	–60 dB, –50 dB, –40 dB, –30 dB, –20 dB, (–60 dB), (–50 dB), (–40 dB), (–30 dB), (–20 dB)	Settings in (): With DYNAMIC or CARBON (cannot be changed)
		–6, 0 , 6 dB	Input gain
	POWER	ON, OFF, (ON), (OFF)	Settings in (): With DYNAMIC or CARBON (cannot be changed)
	UNBAL	ON, OFF, (ON), (OFF)	Settings in (): With CARBON (cannot be changed)
	INTERCOM2	DYNAMIC , CARBON, MANUAL	
	LEVEL	–60 dB, –50 dB, –40 dB, –30 dB, –20 dB, (–60 dB), (–50 dB), (–40 dB), (–30 dB), (–20 dB)	Settings in (): With DYNAMIC or CARBON (cannot be changed)
		–6, 0 , 6 dB	Input gain
	POWER	ON, OFF, (ON), (OFF)	Settings in (): With DYNAMIC or CARBON (cannot be changed)
	UNBAL	ON , OFF, (ON), (OFF)	Settings in (): With CARBON (cannot be changed)
<INTERCOM1> 12	INTERCOM1 RECEIVE SELECT	SEPARATE , MIX	
	INTERCOM	--- , LEFT , RIGHT, BOTH	JN model only
	ENG	--- , LEFT , RIGHT, BOTH	CE model only
	PROD	--- , LEFT , RIGHT, BOTH	CE model only
	PGM1	--- , LEFT, RIGHT , BOTH	
	PGM2	--- , LEFT, RIGHT , BOTH	
	TRACKER	--- , LEFT , RIGHT, BOTH	
	SIDE TONE	MU, 1 to 99, 50	
<INTERCOM2> 13	INTERCOM2 RECEIVE SELECT	SEPARATE , MIX	
	INTERCOM	--- , LEFT , RIGHT, BOTH	JN model only
	ENG	--- , LEFT , RIGHT, BOTH	CE model only
	PROD	--- , LEFT , RIGHT, BOTH	CE model only
	PGM1	--- , LEFT, RIGHT , BOTH	
	PGM2	--- , LEFT, RIGHT , BOTH	
	TRACKER	--- , LEFT , RIGHT, BOTH	
	SIDE TONE	MU, 1 to 99, 50	
<TRACKER> 14	TRACKER RECEIVE SELECT	SEPARATE , MIX	
	INTERCOM	--- , LEFT , RIGHT, BOTH	JN model only
	ENG	--- , LEFT , RIGHT, BOTH	CE model only
	PROD	--- , LEFT , RIGHT, BOTH	CE model only
	PGM1	--- , LEFT, RIGHT , BOTH	
	PGM2	--- , LEFT, RIGHT , BOTH	
	INPUT LEVEL	20 dBu, 0 dBu –6 dBu, 0 dBu , 6 dBu	
	OUTPUT LEVEL	L-CH 0 dBu , –6 dBu, –12 dBu, –18 dBu, R-CH –20 dBu, –24 dBu	

OPERATION			
Page title PageNo.	Item	Settings	Description
<OPERATOR FILE> 15	READ (USB → CAM)	Execute via ENTER.	Reads the operator file from a USB drive.
	WRITE (CAM → USB)	Execute via ENTER.	Writes the current settings of the operator file items to a USB drive.
	PRESET	Execute via ENTER.	Sets the operator file items to the preset values in internal memory.
	FILE ID	alphanumerics (max.16 characters)	Enters a comment for the operator file to be written to a USB drive. <i>See "To specify a character string" (page 23).</i>
	CAM CODE	Camera code	Display only
	DATE		Display only

PAINT Menu

PAINT			
Page title PageNo.	Item	Settings	Description
<SW STATUS> P01	FLARE	<u>ON</u> , OFF	
	GAMMA	<u>ON</u> , OFF	
	BLK GAM	ON, <u>OFF</u>	
	KNEE	<u>ON</u> , OFF	
	WHT CLIP	<u>ON</u> , OFF	
	DETAIL	<u>ON</u> , OFF	
	LVL DEP	<u>ON</u> , OFF	
	SKIN DTL	ON, <u>OFF</u>	
	MATRIX	ON, <u>OFF</u>	
<VIDEO LEVEL> P02	WHITE	R/G/B: -99 to +99, <u>0</u>	R, G, B, and M (master) values can be independently set. (M cannot be set for WHITE or FLARE.)
	BLACK	R/G/B/M: -99 to +99, <u>0</u>	
	FLARE	R/G/B: -99 to +99, <u>0</u>	
	GAMMA	R/G/B/M: -99 to +99, <u>0</u>	
	V MOD	R/G/B/M: -99 to +99, <u>0</u>	
	FLARE	<u>ON</u> , OFF	
	V MOD	<u>ON</u> , OFF	
	D. SHAD	ON, <u>OFF</u>	Selectable only with a lens which supports dynamic shading.
	TEST	<u>OFF</u> , SAW, 10STEP	
<COLOR TEMP> P03	WHITE	R/G/B: -99 to +99, <u>0</u>	
	AUTO WHITE BALANCE	Execute via ENTER.	
	COLOR TEMP	0K to 65535K, <u>3200K</u>	
	BALANCE	-99 to +99, <u>0</u>	
	MASTER	-3.0 to +12.0 dB, <u>0.0 dB</u>	

PAINT			
Page title PageNo.	Item	Settings	Description
<GAMMA> P04	LEVEL	R/G/B/M: -99 to +99, <u>0</u>	R, G, B, and M (master) values can be independently set.
	COARSE	0.35 to 0.90 (0.05 steps), <u>0.45</u>	
	TABLE	<u>STANDARD</u> , HYPER, <u>USER</u>	
		1, 2, 3, 4, <u>5</u> , 6, 7	With STANDARD or USER selected (only 1 to 5 are available for USER) 1: equivalent to a camcorder 2: gain x4.5 3: gain x3.5 4: equivalent to SMPTE-240M 5: equivalent to ITU-R709 6: gain x5.0 7: x5.0-709
		1, 2, 3, <u>4</u>	With HYPER selected 1: 325% to 100% 2: 460% to 100% 3: 325% to 109% 4: 460% to 109%
	GAMMA	<u>ON</u> , OFF	
	TEST	<u>OFF</u> , SAW, 10STEP	
<BLACK GAMMA> P05	LEVEL	R/G/B/M: -99 to +99, <u>0</u>	R, G, B, and M (master) values can be independently set.
	RANGE	LOW, L.MID, H.MID, <u>HIGH</u>	
	TEST	<u>OFF</u> , SAW, 10STEP	
<SATURATION> P06	SATURATION	-99 to +99, <u>0</u>	
		ON, <u>OFF</u>	
	LOW KEY SAT	-99 to +99, <u>0</u>	
	RANGE	LOW, L.MID, H.MID, <u>HIGH</u>	
	TEST	<u>OFF</u> , SAW, 10STEP	
<KNEE> P07	K POINT	R/G/B/M: -99 to +99, <u>0</u>	R, G, B, and M (master) values can be independently set.
	K SLOPE	R/G/B/M: -99 to +99, <u>0</u>	Absolute values are displayed in ABS mode except for M (master).
	KNEE	<u>ON</u> , OFF	
	KNEE MAX	ON, <u>OFF</u>	
	KNEE SAT	-99 to +99, <u>0</u>	
		ON, <u>OFF</u>	
	AUTO KNEE	<u>OFF</u> , AUTO	
	POINT LIMIT	-99 to +99, <u>0</u>	Absolute value is displayed in ABS mode.
	SLOPE	-99 to +99, <u>0</u>	Absolute value is displayed in ABS mode.
	ABS		Highlighted: ABS (Absolute) mode
<WHITE CLIP> P08	W CLIP	-99 to +99, <u>0</u>	
		<u>ON</u> , OFF	
	ABS		Highlighted: ABS (Absolute) mode

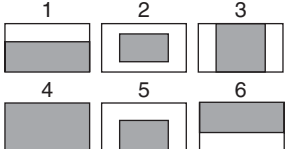
PAINT			
Page title PageNo.	Item	Settings	Description
<DETAIL 1> P09	DETAIL	<u>ON</u> , OFF	
	LEVEL	–99 to +99, <u>0</u>	Absolute value is displayed in ABS mode.
	LIMITER M	–99 to +99, <u>0</u>	
	LIMITER WHT	–99 to +99, <u>0</u>	Absolute value is displayed in ABS mode.
	LIMITER BLK	–99 to +99, <u>0</u>	Absolute value is displayed in ABS mode.
	CRISP	–99 to +99, <u>0</u>	Absolute value is displayed in ABS mode.
	LEVEL DEPEND	–99 to +99, <u>0</u>	Absolute value is displayed in ABS mode.
		<u>ON</u> , OFF	
	ABS		Highlighted: ABS (Absolute) mode
<DETAIL 2> P10	H/V RATIO	–99 to +99, <u>0</u>	Absolute value is displayed in ABS mode.
	FREQ	–99 to +99, <u>0</u>	Absolute value is displayed in ABS mode.
	MIX RATIO	–99 to +99, <u>0</u>	Absolute value is displayed in ABS mode.
	KNEE APT	–99 to +99, <u>0</u>	Absolute value is displayed in ABS mode.
		ON, <u>OFF</u>	
	DTL H/V MODE	<u>H/V</u> , V only	
	ABS		Highlighted: ABS (Absolute) mode
<SKIN DETAIL> P11	SKIN DTL	ON, <u>OFF</u>	
	SKIN GATE	<u>OFF</u> , 1, 2, 3, (MAT)	1, 2, 3: The skin gate function can be turned on for the specified channel only. (MAT): Displayed when GATE of <MULTI MATRIX> is ON.
	ABS		Highlighted: ABS (Absolute) mode
	NATURAL SKINDTL	<u>OFF</u> , ON	
	ZOOM LINK	<u>OFF</u> , ON	
	TELE	0 to <u>99</u>	
	WIDE	<u>0</u> to 99	
	CH SW	1: (ON), 2/3: ON, <u>OFF</u>	Sets the skin tone detail function independently for each channel. (Channel 1 is always set to ON.)
	HUE	1/2/3: Execute via ENTER.	
	PHASE	1/2/3: <u>0</u> to 359	
	WIDTH	1/2/3: 0 to 90, <u>29</u>	Absolute values are indicated for LEVEL only in ABS mode.
	SAT	1/2/3: –99 to +99, <u>–89</u>	
	LEVEL	1/2/3: –99 to +99, <u>0</u>	
<USER MATRIX> P12	R-G	–99 to +99, <u>0</u>	
	R-B	–99 to +99, <u>0</u>	
	G-R	–99 to +99, <u>0</u>	
	G-B	–99 to +99, <u>0</u>	
	B-R	–99 to +99, <u>0</u>	
	B-G	–99 to +99, <u>0</u>	
	MATRIX	ON, <u>OFF</u>	
	PRESET	<u>ON</u> , OFF	
		SMPTE-240M, <u>ITU-709</u> , SMPTE-WIDE, NTSC, EBU, ITU-601	
	USER	ON, <u>OFF</u>	
	MULTI	ON, <u>OFF</u>	
	ADAPTIVE MATRIX	<u>OFF</u> , ON	

PAINT			
Page title PageNo.	Item	Settings	Description
<MULTI MATRIX> P13	PHASE	0 , 23, 45, 68, 90, 113, 135, 158, 180, 203, 225, 248, 270, 293, 315, 338	Selects 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	–99 to +99, 0	
	SAT	–99 to +99, 0	
	ALL CLEAR	Execute via ENTER.	
	GATE	ON, OFF , (SKN)	
	MATRIX	ON, OFF	
	PRESET	ON , OFF SMPTE-240M, ITU-709 , SMPTE-WIDE, NTSC, EBU, ITU-601	
	USER	ON, OFF	
	MULTI	ON, OFF	
<SHUTTER> P14	SHUTTER	ON, OFF , (ON), (OFF)	Settings in (): When a remote control unit/panel or a CCU is not connected (cannot be changed)
		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, 1/100, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/2000 25PsF: 1/33, 1/50, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000 24PsF/23.98P: 1/32, 1/48, 1/96, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000 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 selection
	ECS FREQ	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: 59.96 to 4600 Hz 50P: 50.03 to 4600 Hz	
<NOISE SUPPRESSION> P15	SUPPRESSION	0 to 100%	
		ON, OFF	
<FLICKER REDUCTION> P16	REDUCTION	ON, OFF	
	POWER LINE FREQUENCY	50 , 60	

PAINT			
Page title PageNo.	Item	Settings	Description
<SCENE FILE> P17	1		Stores and reads scene files (paint data):
	2		When storing a file in camera memory, specify the number before executing STORE.
	3		When reading, only specify the number.
	4		
	5		
	STORE	Execute via ENTER.	
	STANDARD	Execute via ENTER.	Reads the standard paint data.
	READ (USB → CAM)	Execute via ENTER.	Loads five scene files from a USB drive to internal memory.
	WRITE (CAM → USB)	Execute via ENTER.	Writes five scene files in the camera's memory to a USB drive.
	FILE ID	Max.16 characters	Enters a comment for the scene files to be written to a USB drive. <i>See "To specify a character string" (page 23).</i>
	CAM CODE	Camera code	Display only
	DATE	Date	Display only

MAINTENANCE Menu

MAINTENANCE			
Page title PageNo.	Item	Settings	Description
<AUTO SETUP> M01	AUTO BLACK	Execute via ENTER.	
	AUTO WHITE	Execute via ENTER.	
	AUTO LEVEL	Execute via ENTER.	
	AUTO WHITE SHADING	Execute via ENTER.	
	AUTO BLACK SHADING	Execute via ENTER.	
	TEST	OFF, SAW, 10STEP	
<WHITE SHADING> M02	V SAW	R/G/B: -99 to +99, <u>0</u>	R, G, and B values can be independently set.
	V PARA	R/G/B: -99 to +99, <u>0</u>	
	H SAW	R/G/B: -99 to +99, <u>0</u>	
	H PARA	R/G/B: -99 to +99, <u>0</u>	
	WHITE	R/G/B: -99 to +99, <u>0</u>	
	AUTO WHITE SHADING	Execute by ENTER.	
	WHITE SHAD MODE	RGB, <u>RB</u>	

MAINTENANCE			
Page title PageNo.	Item	Settings	Description
<BLACK SHADING> M03	V SAW	R/G/B: -99 to +99, <u>0</u>	R, G, and B values can be independently set. M (master) value can also be set for BLACK.
	V PARA	R/G/B: -99 to +99, <u>0</u>	
	H SAW	R/G/B: -99 to +99, <u>0</u>	
	H PARA	R/G/B: -99 to +99, <u>0</u>	
	BLK SET	R/G/B: -99 to +99, <u>0</u>	
	BLACK	R/G/B/M: -99 to +99, <u>0</u>	
	MASTER GAIN	-6, -3, <u>0</u> , 3, 6, 9, 12 dB	
	AUTO BLACK SHADING	Execute via ENTER.	
	2D BLACK SHADING	<u>ON</u> , OFF	
<OHB MATRIX> M04	PHASE	<u>0</u> , 23, 45, 68, 90, 113, 135, 158, 180, 203, 225, 248, 270, 293, 315, 338	Selects 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	-99 to +99, <u>0</u>	
	SAT	-99 to +99, <u>0</u>	
	ALL CLEAR	Execute via ENTER.	
	OHB MATRIX	ON, <u>OFF</u>	
	MATRIX	ON, <u>OFF</u>	
<AUTO IRIS> M05	AUTO IRIS	ON, <u>OFF</u> , (ON), (OFF)	Settings in (): When a remote control unit/panel or a CCU is not connected (cannot be changed)
	WINDOW	<u>1</u> , 2, 3, 4, 5, 6	
	WINDOW	<u>1</u> , 2, 3, 4, 5, 6	<p>Selects the auto iris windows:</p>  <p>The shaded parts indicate the area where light detection occurs.</p>
	OVERRIDE	-99 to 99, <u>---</u>	<p>Sets the override to temporarily change the reference value for brightness of the automatic iris level in the range of ± 2 steps:</p> <p>-99: Two steps to fully closed iris. 99: Two steps to fully opened iris. --- : OFF The setting returns to " --- " when the power is turned off.</p>
	IRIS LEVEL	-99 to +99, <u>0</u>	± 4 steps
	APL RATIO	-99 to +99, <u>65</u>	
	IRIS GAIN	-99 to +99, <u>0</u>	
	IRIS CLOSE	ON, <u>OFF</u>	

MAINTENANCE			
Page title PageNo.	Item	Settings	Description
<LENS> M06	F NO. DISP	CONTROL , RETURN	Selects the iris indication on the panel when AUTO IRIS is off: CONTROL : Displays the value from the camera. RETURN : Displays the value returned from the lens. (When AUTO IRIS is on, the value returned from the lens is always displayed.)
	ALAC	AUTO , OFF	With AUTO selected, the status is displayed at the right. (ACTIVE) : Compensation is in progress. (WAIT) : Waiting for completion of lens initialization. (STOP) : Compensation is turned off for a non-applicable lens.
	OPAC	ON, OFF	Sets the optical axis compensation (OPAC) function to ON/OFF.
	H SHIFT	–5, –4, –3, –2, –1, 0 , 1, 2, 3, 4, 5	Sets the H-direction movement amount.
	V SHIFT	–3, –2, –1, 0 , 1, 2, 3	Sets the V-direction movement amount.
	MARKER	ON , OFF	Sets VF MARKER to ON/OFF. (This has the same function as MARKER on the VF MARKER page in the OPERATION menu.)
	CENTER	ON, OFF	Sets the center marker to ON/OFF.
	H POS	–48 to +48, 0	Display only (The value of H POS on the <LENS FILE> page in the FILE menu is displayed.)
	V POS	–27 to +27, 0	Display only (The value of V POS on the <LENS FILE> page in the FILE menu is displayed.)
<MIC GAIN> M07	MIC1	20, 30, 40, 50, 60 dB	Valid only in standalone operation.
	MIC2	20, 30, 40, 50, 60 dB	
<CALL/TALLY> M08	CCU CALL	OFF, ON , ---	--- : With no CCU connected (cannot be changed)
	CAM CALL	OFF , ON, ---	
	UP TALLY BRIGHTNESS		
	TALLY	0 to 100, 50	
	NUMBER	0 to 100, 50	
	CAMERA NUMBER	---, 1 to 96	
	NUMBER DISPLAY	ON, OFF, AUTO	AUTO : Corresponds to the UP TALLY switch setting.
<OUTPUT FORMAT> M09 (U11)	CURRENT	1080: 24PsF, 59.94i, 29.97PsF, 23.98PsF, 59.94P, 50i, 25PsF, 50P, 59.94i × 2, 50i × 2 720: 59.94P, 50P, 59.94P × 2, 50P × 2	Displays the current format.

MAINTENANCE			
Page title PageNo.	Item	Settings	Description
<TEST OUT> M10 (U12)	OUTPUT	SD-SYNC, HD-SYNC, <u>VF</u> , VBS	
	VBS-OUT		OUTPUT is displayed during VBS.
	CHARACTER	ON, OFF	
	GAIN	–99 to +99, <u>0</u>	
	CHROMA	–99 to +99, <u>0</u>	
	SETUP	ON, OFF	JN models only (displayed when the format is NTSC)
	SYNC-OUT		OUTPUT is displayed during SD-SYNC and HD-SYNC.
	V-PHASE	–999 to +999, <u>0</u>	
	H-PHASE	–999 to +999, <u>0</u>	
	DOWN CONVERTER		OUTPUT is displayed for VBS.
	SELECT	MAIN , RET, VF	
	ASPECT	SQ , EC	
<SDI OUT> M11 (U13)	SDI-1 OUT	OFF, MAIN/LINK-A , 3G-SDI, HD PROMPTER	
	SDI-2 OUT/IN	OFF, MAIN/LINK-B , HD TRUNK/RET IN	
	FRAME SYNCHRO	ON, OFF	Displays this when SDI-2 OUT/IN is HD TRUNK.
	SDI-MONI OUT	MAIN , VF, LINK-B, RET, SD-SDI, OFF	
	CHARACTER	ON, OFF	
	EMB AUDIO	OFF , MIC, PGM	
	DOWN CONVERTER		SDI-MONI OUT is displayed for SD-SDI.
	SELECT	MAIN , RET, VF	
	ASPECT	SQ , EC	
	COAX MODE	ON, OFF	Enables or disables COAX connection. Displayed only when no CCU connected.
<TRUNK> M12	TRUNK	ON , OFF	
	INTERFACE	232c , 422A	
	AUX REMOTE		Display only
	NETWORK TRUNK		Display only
	LINK		
<GENLOCK> M13	REFERENCE	Condition of synchronisation	Display only
	GENLOCK	ENABLE , DISABLE	Displayed only when no CCU connected.
	STATUS		
	FORMAT		
	PHASE		
	V	–1024 to +1023, <u>0</u>	
	HD H	–1700 to +1700, <u>0</u>	
	SD H	–1024 to +1023, <u>0</u>	
<DATE> M14	DATE/TIME	2000 to 2099 / 01 to 12 / 00 to 31, 00 to 23 : 00 to 59	
	FILE TIMESTAMP FORMAT	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
<BATTERY ALARM> M15	BEFORE END	11.5 to 17.0 V	
	END	11.0 to 11.5 V	

MAINTENANCE			
Page title PageNo.	Item	Settings	Description
<OTHERS> M16	FAN MODE	OFF, AUTO1 , AUTO2 , MIN, MAX	AUTO1 : Normal rotation AUTO2 : Slow rotation
	CAM BARS	ON, OFF	
	WHITE SETUP MODE	AWB, A.LVL	
	FILTER WHT MEM	ON, OFF	Sets the function to use independent white memory at each CC filter position to ON/OFF.
<OPTION KEY> M17	READ (USB → CAM)	Execute via ENTER.	Reads the install key from a USB drive.
	INSTALLED OPTION		Displayed only when an option has been installed.

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.

FILE			
Page title PageNo.	Item	Settings	Description
<OPERATOR FILE> F01	READ (USB → CAM)	Execute via ENTER.	Reads the operator file from a USB drive.
	WRITE (CAM → USB)	Execute via ENTER.	Writes the current settings of the operator file items to a USB drive.
	PRESET	Execute via ENTER.	Sets the operator file items to the preset values in internal memory.
	STORE PRESET FILE	Execute via ENTER.	Stores the current settings of the operator file items in the operator file in internal memory.
	FILE ID	Max.16 characters	Enters a comment for the operator file to be written to a USB drive. <i>See "To specify a character string" (page 23).</i>
	CAM CODE	Camera code	Display only
	DATE	Date	Display only
<SCENE FILE> F02	1		Stores and reads scene files (paint data):
	2		When storing a scene file in camera memory, specify the number before executing STORE.
	3		When reading, only specify the number.
	4		
	5		
	STORE	Execute via ENTER.	
	STANDARD	Execute via ENTER.	Reads the standard paint data.
	READ (USB → CAM)	Execute via ENTER.	Loads five scene files from a USB drive to internal memory.
	WRITE (CAM → USB)	Execute via ENTER.	Writes five scene files in the internal memory to a USB drive.
	FILE ID	Max.16 characters	Enters a comment for the scene files to be written to a USB drive. <i>See "To specify a character string" (page 23).</i>
	CAM CODE	Camera code	Display only
	DATE	Date	Display only

FILE			
Page title PageNo.	Item	Settings	Description
<REFERENCE> F03	STORE FILE	Execute via ENTER.	Stores the current settings of the reference file items in the reference file in internal memory.
	STANDARD	Execute via ENTER.	Reads the standard values in the reference file in internal memory.
	ALL PRESET	Execute via ENTER.	Resumes the factory-preset reference file.
	READ (USB → CAM)	Execute via ENTER.	Loads a reference file from a USB drive.
	WRITE (CAM → USB)	Execute via ENTER.	Writes the current settings of the reference file items as a reference file to a USB drive.
	FILE ID	Max.16 characters	Enters a comment for the reference file to be written to a USB drive. <i>See "To specify a character string" (page 23).</i>
	CAM CODE	Camera code	Display only
	DATE	Date	Display only
<USER GAMMA> F04	READ (USB → CAM)	Execute via ENTER.	Reads the user gamma file from a USB drive.
	PRESET	Execute via ENTER.	Sets the user gamma file items to the preset values in internal memory.
	FILE ID	Max.16 characters	Enters a comment for the user gamma file to be written to a USB drive. <i>See "To specify a character string" (page 23).</i>
	CAM CODE	Camera code	Display only
	DATE	Date	Display only
<LENS FILE> F05	STORE FILE	Execute via ENTER.	
	No.	1 to 17, 1	1 to 16: When using a non-serial lens 17: When using a serial lens
	NAME		Changeable only when using a non-serial lens.
	F NO	F1.0 to F3.4, F1.7	Changeable only when using a non-serial lens.
	CENTER MARKER		Sets and stores the center marker position:
	H POS	-20 to +20, 0	H POS: Increasing the value moves the position to the right.
	V POS	-20 to +20, 0	V POS: Increasing the value moves the position downwards.
	STORE	Execute via ENTER.	
<OHB FILE> F06	STORE FILE	Execute via ENTER.	Stores the offset values of items specific to the CCD. (No repeated store operation is necessary even if the CCD is reattached)
<FILE CLEAR> F07	PRESET OPERATOR	Execute via ENTER.	
	REFERENCE (ALL)	Execute via ENTER.	
	10 SEC CLEAR	ON, OFF	Sets the function to clear the selected menu item to ON/OFF. <i>See "To return a menu item to its standard value" (page 24).</i>
	OHB WHITE SHAD (ALL)	Execute via ENTER.	
	OHB BLACK SHAD	Execute via ENTER.	
	OHB ND OFFSET	Execute via ENTER.	
	OHB MATRIX	Execute via ENTER.	

DIAGNOSIS Menu

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

MAINTENANCE			
Page title PageNo.	Item	Indication	Description
<OPTICAL LEVEL> D01	CCU → CAM	GREEN, YELLOW, RED, NG, NO SIGNAL	Displayed only when a CCU is connected.
	CAM → CCU	GREEN, YELLOW, RED, NG, NO SIGNAL	Displayed only when a CCU is connected.
	CABLE LENGTH	0.0 km to 9.9 km, ±- km	Displays the camera cable length. (Displayed only when a CCU is connected.)
<BOARD STATUS> D02	OHB	OK, NG	
	DPR	OK, NG	
	SY	OK, NG	
	PS	OK, NG	
	SDI	OK, NG	
<ROM VERSION> D03 (U14)	CAMERA APP	Vx.xx	
	O.S	Vx.xx	
	PANEL	Vx.xx	
	TG	Vx.xx	
	SY	Vx.xx	
	DPR1	Vx.xx	
	DPR2	Vx.xx	
	SDI	Vx.xx	
<SERIAL No.> D04	MODEL	HDCxxxx	
	NO.	xxxxxxx	
<POWER SUPPLY STATUS> D05	CURRENT CONSUMPTION		
	VF	x.x A (xxx %)	Displays the current consumption of the viewfinder (as a percentage of the maximum available supply current).
	LENS	x.x A (xxx %)	Displays the current consumption of the lens (as a percentage of the maximum available supply current).
	EXT DC	x.x A (xxx %)	Displays the current consumption of the external DC (as a percentage of the maximum available supply current).
	INTERNAL	x.x A (xxx %)	Displays the current consumption of the internal camera (as a percentage of the maximum available supply current).
	TOTAL	xx.x A (xxx %)	Displays the total current consumption (as a percentage of the maximum available supply current).

Appendix

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.

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.

Error Messages

If a problem occurs during operation, a warning message is displayed.

Note

To display a message, set the DISPLAY switch to ON.

Message	Meaning
TEMP WARNING	The internal temperature is abnormally high.
FAN STOP	The built-in fan is not rotating properly.
SET SYSTEM CLOCK	The time/date of the internal clock have not been set.
OHB BLOCK NG!	A problem is detected in the optical block.
MSU RPN BUSY	RPN compensation was attempted using the camera menu while being operated from an external device. Consult Sony service personnel.
VF RPN BUSY	RPN compensation was attempted from an external device while being operated using the camera menu. Consult Sony service personnel.
NO USB FLASH DRIVE	A USB drive operation was attempted with no USB drive connected.
USB FLASH DRIVE ERROR	An error occurred during access to a USB drive.
FORMAT ERROR!	A USB drive operation was attempted with an unformatted USB drive.
WRITE PROTECTED	File writing was attempted with a write-protected USB drive.
FILE ERROR	An error occurred while reading a file from a USB drive.
OTHER MODEL'S FILE	You attempted to read a file of other models having no compatibility.
FILE NOT FOUND	The file you attempted to read does not exist in the USB drive.

Using a USB Drive

You can connect a USB drive to the USB connector to save and load the settings data file.

The following Sony USB drives are recommended. (As of July 2012)

Series	Model
Micro Vault L Series	USM16GL, USM8GL, USM4GL, USM2GL, USM1GL
Micro Vault LX Series	USM64GLX, USM32GLX, USM16GLX, USM8GLX, USM4GLX
Micro Vault P Series	USM64GP, USM32GP, USM16GP, USM8GP, USM4GP
Micro Vault M Series	USM32GM, USM16GM, USM8GM, USM4GM
Micro Vault R Series	USM32GR, USM16GR, USM8GR, USM4GR
Micro Vault Q Series	USM64GQ, USM32GQ, USM16GQ, USM8GQ
Micro Vault N Series	USM32GN, USM16GN, USM8GN, USM4GN

Notes

- USB drives other than those recommended may not be recognized when connected to the USB connector.
- USB drives must be formatted with the FAT16 or FAT32 file system. Recommended Sony USB drives are preformatted, and can be used without any prior setup.

Specifications

General

Power requirements	AC 240 V, 1.7 A (max.) DC 180 V, 0.9 A (max.) DC 12 V, 10 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. 21 kg (46 lb 5 oz) (main unit only)
Dimensions	See <i>page 51</i> .

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 -60 dB/-64 dB (NS MAX)
Horizontal resolution	1000 TV lines (at center of screen) 5 % or higher modulation
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 connectors


DC IN	XLR 4-pin (1) 10.5 V to 17 V DC
RET CONTROL	6-pin (1)
AUDIO IN 1, AUDIO IN 2	XLR 3-pin, female (1 each) For MIC: -60 dBu (can be selected up to -20 dBu by menu or HDCU2000/2500 operations), balanced For LINE: 0 dBu, balanced

Output connectors

TEST OUT	BNC type (1) 1.0 Vp-p, 75-ohm terminated
----------	---

PROMPTER 1, PROMPTER 2	BNC type (1) 1.0 Vp-p, 75-ohm terminated
VF	D-sub 25-pin (1)
DC OUT	4-pin (1) 10.5 V to 17 V DC, 1.5 A maximum (This may be limited depending on the load and input conditions.)
SDI 1, SDI 2	BNC type (1 each)
SDI-MONI	BNC type (1)

Input/output connectors

CCU	Electro-optical connector (1)
TRACKER	10-pin (1)
REMOTE	8-pin multi-connector (1)
INTERCOM 1, INTERCOM 2	XLR 5-pin female (1 each)
CRANE	12-pin multi-connector (1)
Lens	36-pin multi-connector (1)
USB	USB 2.0 Type A 4-pin (1) (for connecting USB drive)
NETWORK TRUNK	 RJ-45 type 8-pin (1)

Supplied accessories

Angle adjustment brackets (2)
Front cover (1)
Number plates for side panel (2 sets)
Number plates for up-tally lamp (1 set)
Cable clamp (2)
Operation manual (1)

Optional accessories

HD Electronic Viewfinder	HDVF-700A (7-type, monochrome) HDVF-EL70 (7.4-type, color)
--------------------------	---

BKP-7911 Script Holder (with script light)
CAC-6 Return Video Selector

Related equipment

HDCU2000/2500 HD Camera Control Unit
MSU-1000/1500 Master Setup Unit
RCP-1000/1500-series Remote Control Panel
VCS-700 Video Selector
CNU-700 Camera Command Network Unit
HZC-CSM10 Camera System Management Software

Connectors for optical/electric composite cables:

- LEMO® PUW.3K.93C.TLCC96 (to the “CAMERA” connector on CCU)
- LEMO® FUW.3K.93C.TLMC96 (to the “CCU” connector on CAMERA)

Caution on the optical/electric composite cable:

For connection between the 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.

Connecteurs pour les câbles optiques/électriques composites:

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

Attention concernant le câble optique/électrique composite:

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

Anschlüsse für optische/elektrische FBAS-Kabel:

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

Vorsichtsmaßnahmen für optische/elektrische FBAS-Kabel:

Für Verbindung zwischen 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.

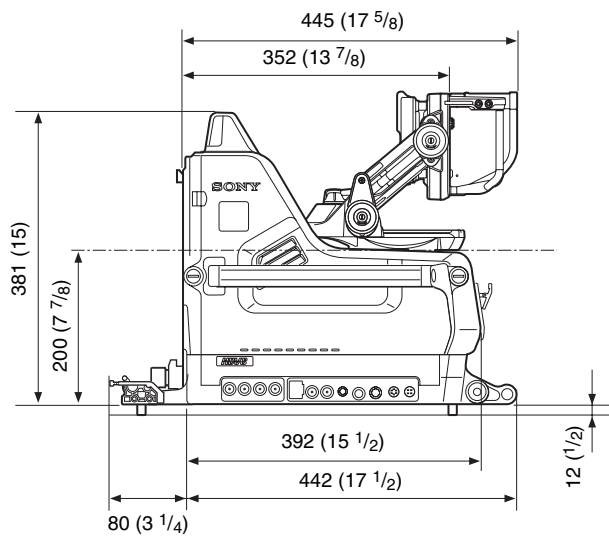
Design and specifications are subject to change without notice.

Note

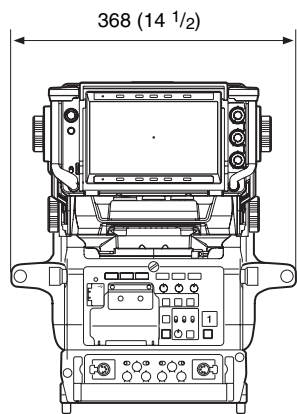
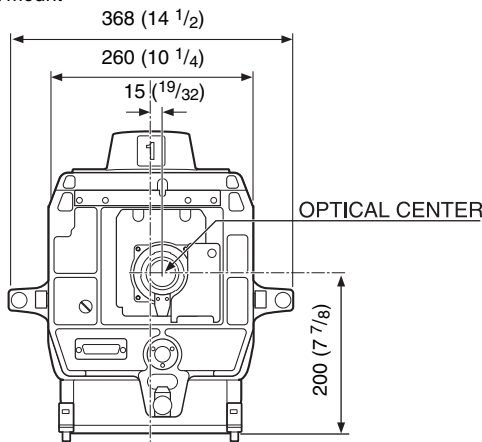
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Dimensions

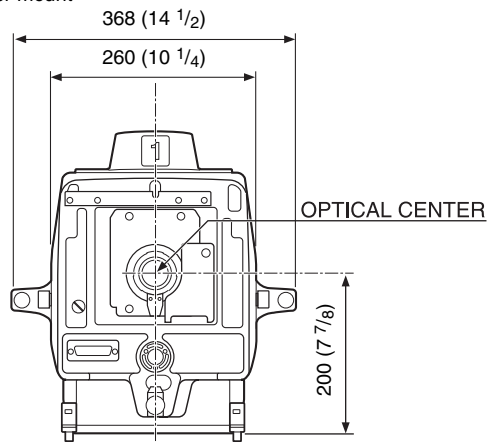
Unit: mm (inches)



Offset mount



Center mount



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Package list

lzo	time	less
blktrace	util-linux-ng	libusb
compcache	vsftpd	minicom
directfb	wireless-tools	oprofile
e2fsprogs	acl	procps
net-tools	glibc	setserial
gawk	bash	tar
gdisk	busybox	tofrodo
gpm	coreutils	vim
iputils	diffutils	which
libtool	dosfstools	xz
libcap	ethtool	iptables
memstat	findutils	mt-d-utis
mkcramfs	fuse	glibc-libpthread_ptt
nfs-utils	glib	module-init-tools
procinfo	grep	linux-kernel
pump	ksymoops	netbase

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@version 3.0 (December 2000)

Optimised ANSI C code for the Rijndael cipher (now AES)

@author Vincent Rijmen <vincent.rijmen@esat.kuleuven.ac.be>
@author Antoon Bosselaers <antoon.bosselaers@esat.kuleuven.ac.be>
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zlib.h -- interface of the 'zlib' general purpose compression library version 1.2.5, April 19th, 2010

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