

SONY®

HD MULTI PURPOSE CAMERA

HDC-P1



Power HAD FX



OPERATION MANUAL
1st Edition

English

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.

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

WARNUNG

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

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

CAUTION

The apparatus shall not be exposed to dripping or splashing. No objects filled with liquids, such as vases, shall be placed on the apparatus.

ATTENTION

Eviter d'exposer l'appareil à un égouttement ou à des éclaboussures. Ne placer aucun objet rempli de liquide, comme un vase, sur l'appareil.

VORSICHT

Das Gerät ist nicht tropf- und spritzwassergeschützt. Es dürfen keine mit Flüssigkeiten gefüllten Gegenstände, z. B. Vasen, darauf abgestellt werden.

WARNING

This apparatus shall not be exposed to excessive heat such as sunshine, fire or the like.

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.

Pour les clients au Canada

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

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, Japan.

The Authorized Representative for EMC and product safety is Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Germany. For any service or guarantee matters please refer to the addresses given in separate service or guarantee documents.

Pour les clients 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, 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.

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, 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.

For the State of California, USA only

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

Perchlorate Material : Lithium battery contains perchlorate.

For the customers in Taiwan only



廢電池請回收

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Overview

HDC-P1 is a 2/3-type high-definition video camera equipped with CCD units for 2,200,000 pixels. The camera has a compact, box-shaped case, so it requires little space for installation and can be used for a variety of applications. A camera control system that uses the same protocol as a HDC studio camera is employed, allowing the camera to be used for system operation in combination with a multi-camera studio system.

Features

High picture quality and high performance

The latest 2/3-type Progressive IT CCD units for 2,200,000 pixels achieve high sensitivity and low smear. In addition, the 14-bit A/D converter and an original developed signal processing LSI provide high picture quality of optimal grade.

Multiple formats

The camera covers 1080/59.94i, 720/59.94P, 1080/50i, and 720/50P. Furthermore, it incorporates a down-converter to also enable SD operation.

Same control system as HDC1000R series

The use of the same controller as the HDC1000R series means it is possible to build a system with a command network unit and LAN.

Compact, box-shaped case

Operation in various situations is made possible by a compact, light case that is 86 mm slim.

ND/CC dual optical servo filters mounted

The compact case incorporates ND/CC dual optical servo filters.

Auto Lens Aberration Compensation function

The Auto Lens Aberration Compensation function (ALAC) is provided with this camera. This automatically reduces chromatic aberration of magnification when a lens that supports auto aberration compensation is attached.

For details on lenses supporting auto aberration compensation, contact a Sony sales representative or Sony service representative.

Image Inverter function

The camera comes standard with an image inverter function for inverting the top/bottom and left/right of the image. If an image is inverted by, for example, half mirroring for 3D shooting, this function can be used to restore the image inside the camera.

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 monitor 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 automatically compensating the VF detail level according to the zoom position.

Focus Assist Indicator

The focusing level indicator is displayed on an external monitor to provide a guide for focusing. The best focus setting can be easily determined by using the fluctuation of the level indicator as a guide.

The focus assist functions can be used when a monitor is connected to the SDI 2 connector and camera output is set to HD-SDI. For details on the adjustment, see "Setting the Focus Assist Function" (page 14).

"Memory Stick Duo" operation

The camera is equipped with a "Memory Stick Duo" slot, which enables setup data storage and software upgrading using a "Memory Stick Duo."

Various color-reproduction functions

Selection of multiple gamma tables

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

Multimatrix color correction

In addition to 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

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

Versatile detail control functions

Skin-tone detail function

This function allows control (emphasis or suppression) of the detail level for just a certain hue or chroma area in an image containing, for example, skin tones.

Knee Aperture function

This function emphasizes detail in highlighted portions.

Detail boost-frequency control

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

H/V ratio control

The ratio between horizontal and vertical detail can be adjusted.

White/black limiter

The white and black details can be limited independently.

Easy menu-based setting

Selections and settings for camera status items, safety-zone marker ¹⁾ or center marker,²⁾ screen size marker, etc. can be made quickly and easily, using setup menus displayed on the monitor.

1) Safety zone marker: A box-shaped marker displayed on the external monitor screen which indicates 80%, 90%, 92.5%, or 95% of the total screen area

2) Center marker: A cross-shaped marker which indicates the center of the external monitor screen

The functions that are displayed differ depending on the output settings. For details on the adjustment, see "Connector Output Settings and Display Functions" (page 9).

Wide variety of monitor display functions

Along with items such as operation messages, zebra pattern, and safety-zone marker, camera settings may also be displayed on an externally connected SDI monitor.

Furthermore, camera settings can also be displayed on an externally connected VBS monitor.

The functions that are displayed differ depending on the output settings. For details on the adjustment, see "Connector Output Settings and Display Functions" (page 9).

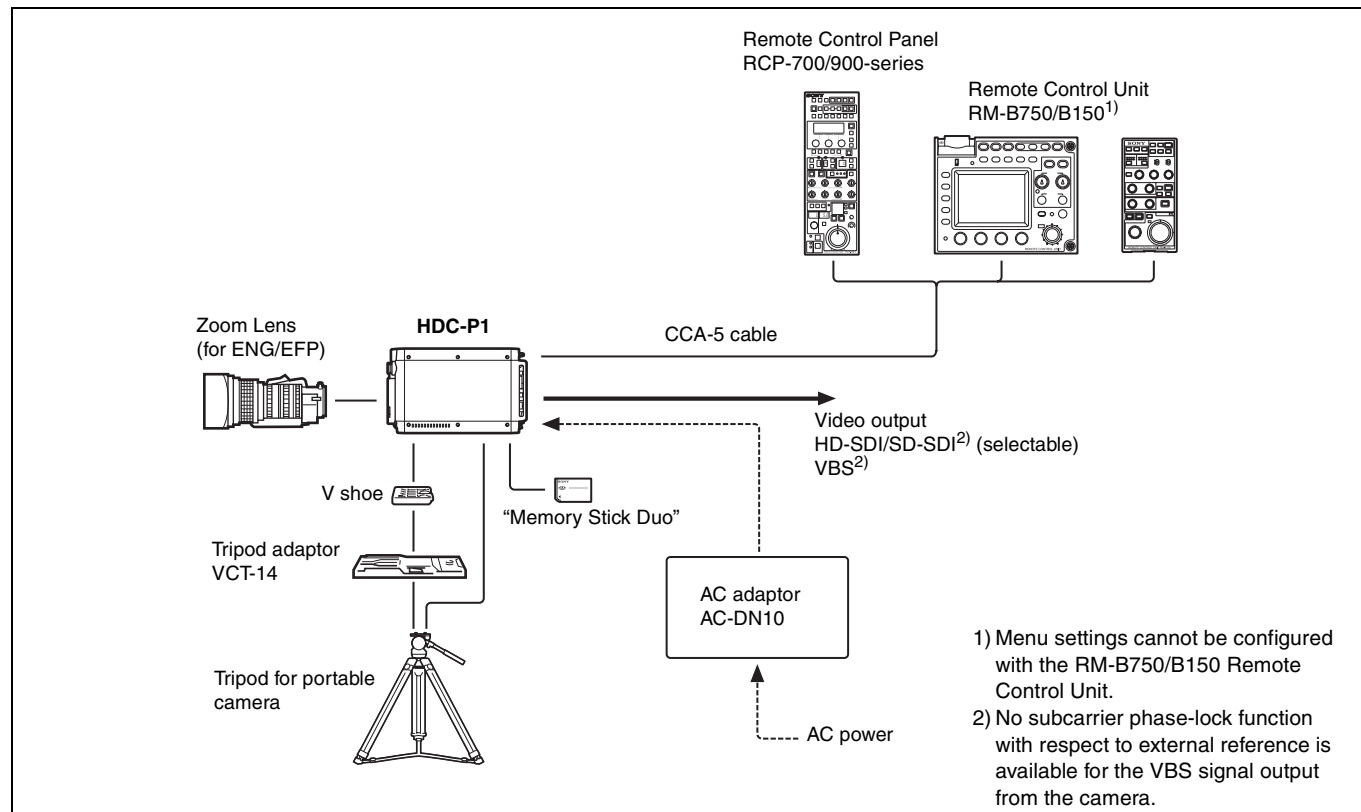
System Configuration

Peripherals and related devices for the camera are shown in figures.

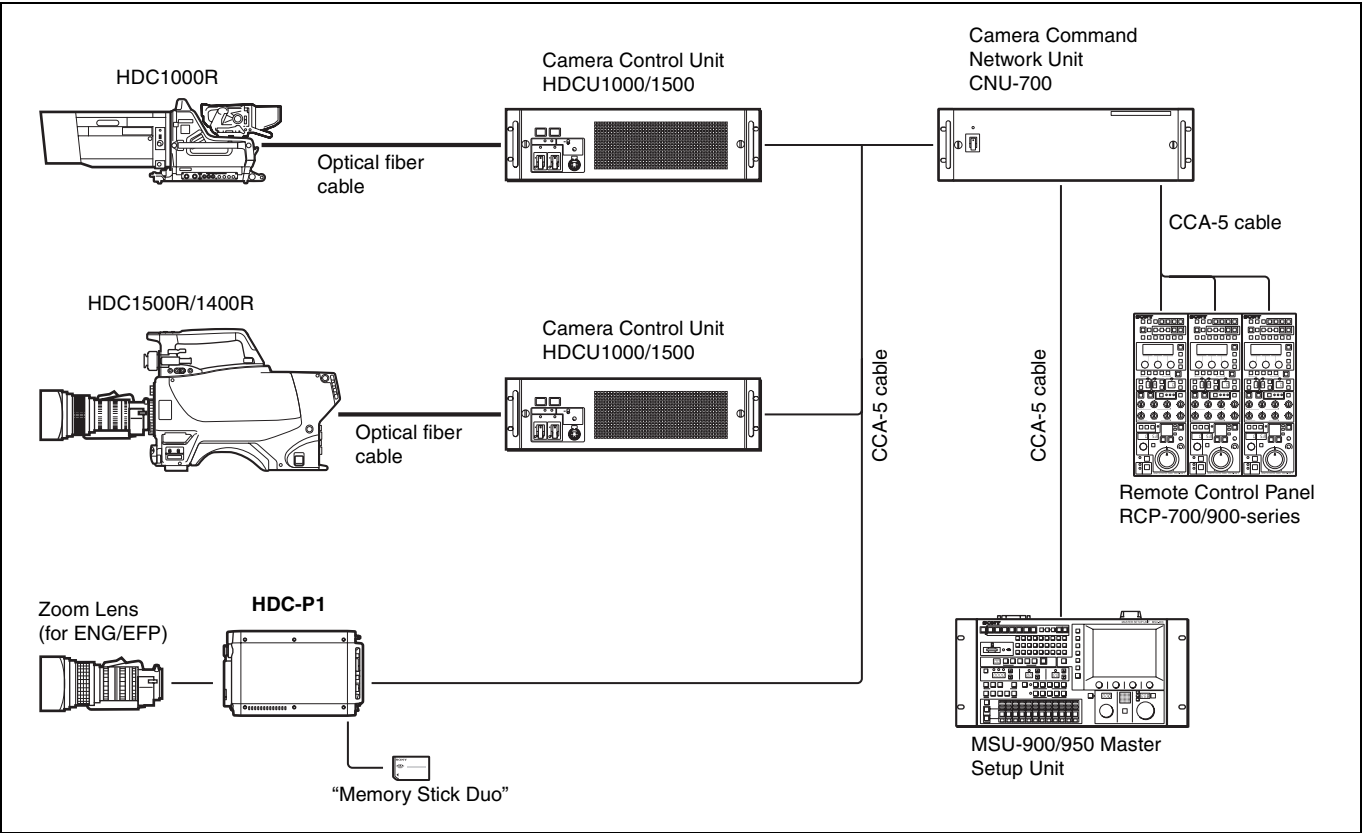
Caution

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.

Standalone operation example

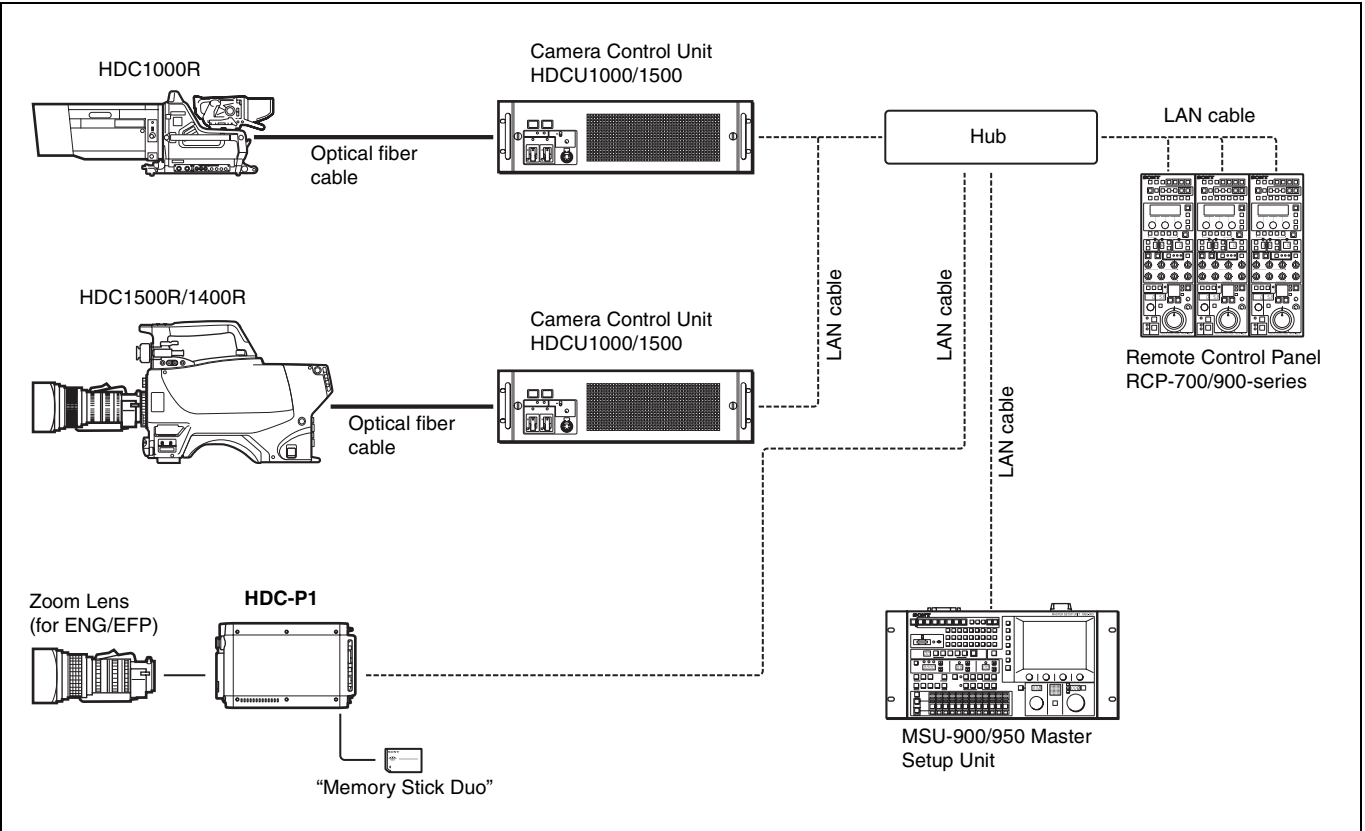


System operation example (camera command network unit)



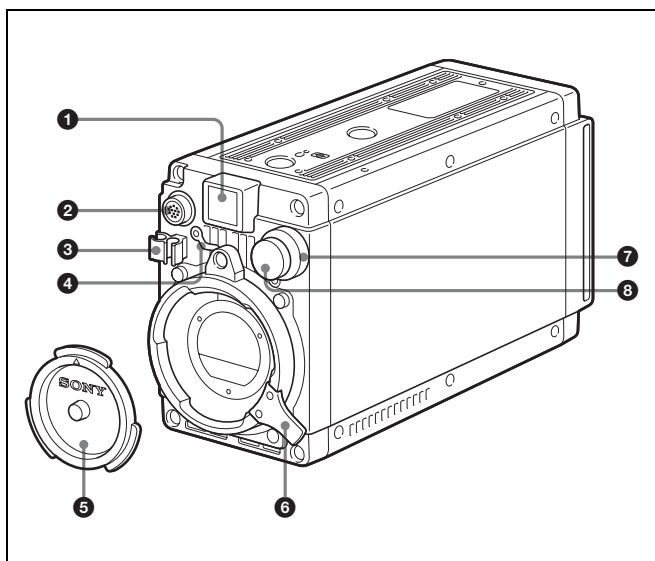
System operation example (LAN)

For details on the camera settings, see "Configuring Control System Connection Settings" (page 12).



Parts Identification

Front



1 Front tally lamp

The tally lamp lights when a call signal is generated in response to the pressing of a CALL button or a tally signal input to the EXT I/O connector. You can attach the supplied number plate to display the camera number.

Note

The front tally function cannot be operated during a battery alarm operation.

2 LENS connector (12-pin)

Connect the cable of the lens. The camera can control the lens functions through this cable.

Connect the lens cable so that ▲ is at the top.

3 Lens cable clamp

To secure the cable of the lens (optional).

4 Lens mount safety rubber

After attaching a lens, attach the rubber to prevent the lens from coming loose.

Before removing the lens, remove this rubber from the boss on the front panel.

5 Lens mount cap

The cap can be removed by moving the lens fixing lever upward.

Always keep the lens mount covered with this cap when a lens is not attached.

6 Lens fixing lever

Move the lever down to secure the lens in the lens mount.

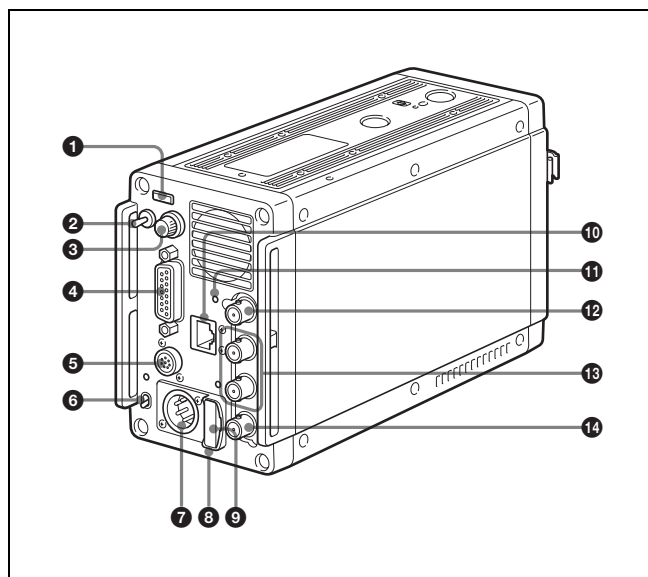
7 CC filter select knob

To select the built-in CC filters (A: cross, B: 3200K, C: 4300K, D: 6300K).

8 ND filter select knob

To select the built-in ND filters (1: clear, 2: 1/4 ND, 3: 1/16 ND, 4: 1/64 ND).

Rear



1 Rear tally lamp

The tally lamp lights when a call signal is generated in response to the pressing of a CALL button or a tally signal input to the EXT I/O connector.

The rear tally lamp also serves as a battery alarm function.

If the voltage of the battery connected to the camera decreases, the rear tally lamp flashes, and if the limit becomes close to being reached, the rear tally lamp switches to high-speed flashing.

The alarm voltage for starting flashing can be set in the BEFORE END item of the BATTERY ALARM page on the MAINTENANCE menu, and the alarm voltage for switching to high-high speed flashing can be set in the END item.

If a call signal is generated while the battery alarm function is operating, the rear tally lamp goes out. Furthermore, the front tally function becomes inoperable, so replace the battery.

If you want to give priority to the tally function and call function, set the BATTERY ALARM item of the BATTERY ALARM page on the MAINTENANCE menu to OFF.

For details, see "MAINTENANCE Menu" (page 24).

2 DISPLAY/MENU switch

Select the display on the monitor screen.

DISPLAY: To display various textual information and markers, such as messages showing the camera settings and operating status, the center marker, and the safety zone marker, in addition to camera images.

● **(OFF):** To not display textual information and markers.

MENU: To display menus for camera settings, in addition to camera images.

3 Menu control knob (rotary encoder)

Used to select settings from menus displayed on the monitor screen (by rotating it) and to confirm settings (by pushing it).

4 EXT I/O (external input/output) connector (D-sub, 15-pin)

Connect an external device.

5 REMOTE connector (8-pin)

For connection to an RM-B150/B750 Remote Control Unit, RCP-700/900-series Remote Control Panel, or MSU-900/950 Master Setup Unit.

6 CAMERA POWER switch and indicator

To turn the power ON/OFF.

ON: Set the switch to the I side.

OFF: Set the switch to the 0 side.

The indicator lights in green when the power is turned ON.

7 DC IN (DC power supply input) connector (XLR 4-pin)

For connection to an AC-DN10 AC Adaptor, etc. to supply power to the camera.

8 "Memory Stick Duo" slot and access lamp

When you insert a "Memory Stick Duo" into the slot, the access lamp lights in green.

The lamp is lit in red while writing/reading data to/from the "Memory Stick Duo."

Caution

- Only a "Memory Stick" of Duo size can be used with the camera.
- When the access lamp is lit in red, do not insert/remove the "Memory Stick Duo" or turn off the camera.

9 "Memory Stick" cap

Remove the cap before inserting a "Memory Stick Duo."

Caution

Do not use excessive force to pull the "Memory Stick" cap.

10 LAN connector (RJ-45 type, 8-pin)

To connect to a LAN. Use a LAN cable (shielded, category 5 or above) to connect to the hub of the LAN (10BASE-T/100BASE-TX).

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.

11 NETWORK indicator

To indicate the state when connected to a network system.

Lit: Successfully connected to an external control device (MSU-900 series master setup unit, RCP-900 series remote control panel, etc.).

Flashing: Unable to connect to an external control device (MSU-900 series master setup unit, RCP-900 series remote control panel, etc.) properly.

Off: A LAN cable is not connected or the connection settings of the network system are not configured.

For details on the adjustment, see "Configuring Control System Connection Settings" (page 12), "MAINTENANCE Menu" (page 24), "DIAGNOSIS Menu" (page 28).

12 GENLOCK (external sync signal input) connector (BNC type)

To input an external sync signal (BB or 3-level sync) to synchronize the camera.

Note

Even when a BB signal is used for the external sync signal, no subcarrier phase-lock function is available for the VBS output signal.

13 SDI 1 (serial digital interface) connector and SDI 2 connector (BNC type)

For HD-SDI or SD-SDI signal output.

HD-SDI signal and SD-SDI signal output can be selected on the menu. (It is not possible to select an HD-SDI signal and SD-SDI signal separately for the SDI 1 connector and SDI 2 connector. One or the other needs to be selected.)

Note

The functions that can be displayed differ depending on the output settings.

For details on the adjustment, see "Connector Output Settings and Display Functions" (page 9).

14 VBS connector (BNC type)

To output a VBS signal.

Caution

- The VBS output signal has no subcarrier phase-lock function with respect to external sync signals.
- The functions that can be displayed differ depending on the output settings.

For details on the adjustment, see "Connector Output Settings and Display Functions" (page 9).

Connector Output Settings and Display Functions

The functions that can be displayed differ depending on the connector output settings.

Connector name	Output setting	Display functions				
		Setting Menus	Operation status	Marker	Zebra	Focus assist ¹⁾
SDI 1	HD/SD	No	No	No	No	No
SDI 2	HD	Yes ²⁾	Yes ²⁾	Yes ³⁾	Yes ³⁾	Yes ³⁾
	SD	Yes ²⁾	Yes ²⁾	No	No	No
VBS	SD	Yes ²⁾	Yes ²⁾	No	No	No

1) The focus assist functions include the VF DETAIL function and FOCUS ASSIST INDICATOR function.

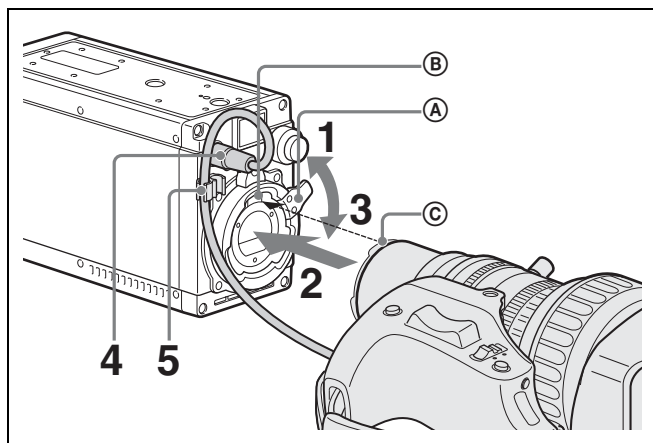
2) Linked to the DISPLAY/MENU switch setting.

3) A function can be set to ON/OFF on the OPERATION menu.

Installation

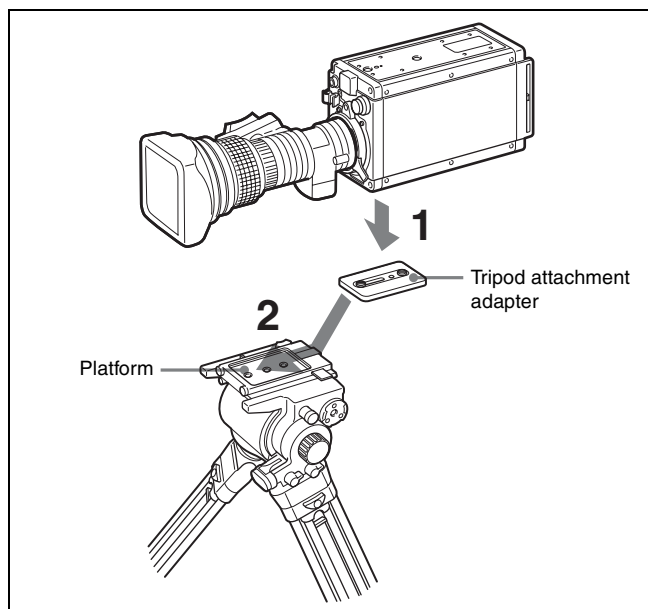
Attaching a Lens

For information on handling lenses, refer to the operation manual for the particular lens



- 1** Remove the lens mount safety rubber, and then push the lens fixing lever **A** upward and remove the lens mount cap from the lens mount.
- 2** Align the lens' alignment pin **C** with the notch **B** in the upper part of the lens mount and insert the lens into the mount.
- 3** While supporting the lens, push the lens fixing lever **A** downward to secure the lens.
- 4** Connect the lens cable to the LENS connector.
- 5** Secure the lens cable with the cable clamp.
- 6** Reattach the lens mount safety rubber.

Mounting the Camera to a Tripod



- 1** Attach the tripod attachment adapter directly to the camera.
(Two 3/8-inch tripod screws: screw depth of 10 mm (13/32 inches) or less)
- 2** Place the camera on the tripod and mount the camera by sliding it forward along the groove of the platform until it clicks into place.

Note

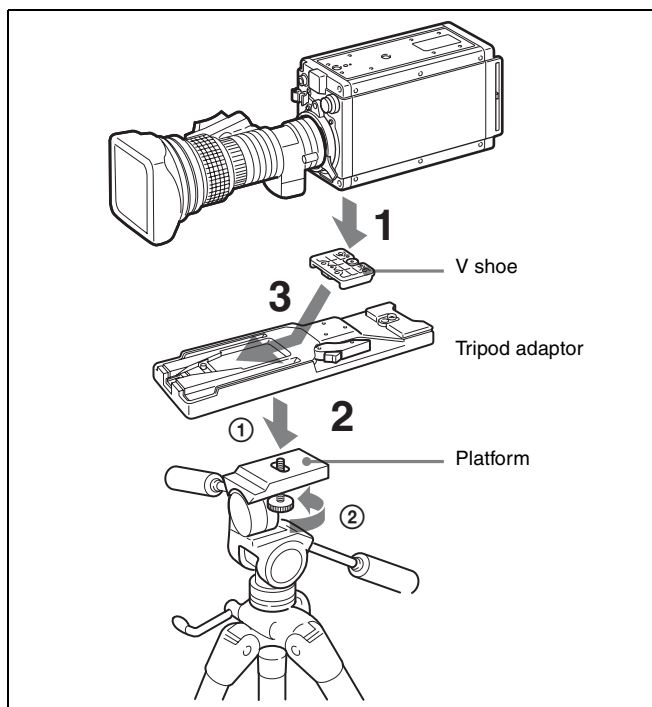
If the screws of the tripod attachment adapter are 1/4-inch tripod screws, use inch conversion screws (Sony Part No.: 4-170-419-02) to attach the adapter. For details on purchasing inch conversion screws, and other information, contact a Sony service representative or Sony sales representative.

Mounting the Camera to a Tripod (When Using V Shoe and Tripod Adapter VCT-14)

Use a separately sold V shoe (Sony Part No.: A-8279-993-C) and tripod adapter VCT-14 to mount the camera to the tripod.

Notes

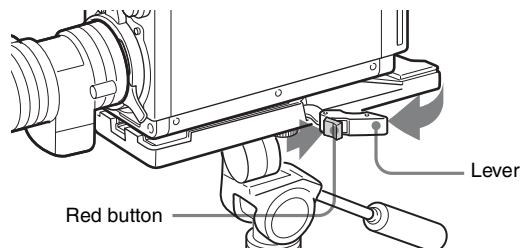
- Select an appropriate hole from among those at the bottom of the tripod adaptor considering the balance of the weight of the camera and the tripod adaptor. If an inappropriate hole is selected, the camera may fall over.
- Check that the size of the selected hole matches that of the screw of the tripod. If they do not match, the tripod adaptor cannot be attached to the tripod securely.
- Use the following screws when attaching a separately sold V shoe. Attachment screws: Four Alok + K4 × 8 screws (Sony Part No.: 3-729-072-02)
Do not use screws that are 5 mm or longer for the camera.
For details on purchasing parts, contact a Sony service representative or Sony sales representative.



- 1** Attach the V shoe to the camera with the attachment screws.
- 2** ① Attach the tripod adaptor to the tripod and ② secure it with the screw.
- 3** Place the camera on the tripod adaptor and slide forward it along the groove of the tripod adaptor until it clicks.

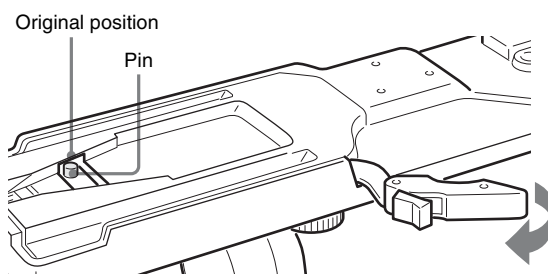
To remove the camera from the tripod adaptor

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



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

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



Preparatory Settings

Setting the Local Time

When the camera is used for the first time, display the MAINTENANCE menu on the monitor connected to the VBS connector or SDI 2 connector and set the built-in clock to the current local time on the <DATE> page.

For details on menu operations, see "Menus" (page 16).

- 1 Turn on the camera.
- 2 While holding the menu control knob pressed, set the **DISPLAY/MENU** switch to **MENU**.
The camera enters Menu mode, and "TOP" is displayed at the upper-right corner of the screen.
- 3 Rotate the menu control knob to set the cursor to **"TOP"** and push on the menu control knob.
The TOP MENU screen is displayed.

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

- 4 Rotate the menu control knob to position the cursor to **MAINTENANCE** and push on the menu control knob.
The CONTENTS page of the MAINTENANCE menu is displayed.

```
CONTENTS      MOO TOP
↑↓
→01.<AUTO SETUP>
02.<WHITE SHADING>
03.<BLACK SHADING>
04.<OHB MATRIX>
05.<AUTO IRIS>
06.<TALLY>
07.<OUTPUT FORMAT>
08.<DOWN CONVERTER>
09.<VBS OUT>
10.<SDI OUT>
```

- 5 Turn the menu control knob to scroll the page and position the pointer to <DATE> then push on the menu control knob.
The <DATE> page is displayed.

```
<DATE>      M16 TOP
DATE/TIME
↓
2009/12/23   08:32
```

- 6 Turn the menu control knob and set the date and time.
Push on the menu control knob to shift to the next digit.

- 7 When the date/time setting is completed, set the **DISPLAY/MENU** switch to **OFF** to exit Menu mode.

Setting the Camera Outputs

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

Setting the output of SDI 1/2

Menu page title	Setting	Output
<SDI OUT> M10	HD-SDI	HD-SDI
	SD-SDI	SD-SDI

Notes

- It is not possible to set the signals separately for the SDI 1 connector and SDI 2 connector.
- The functions that can be displayed differ depending on the connector output settings.

For details on the adjustment, see "Connector Output Settings and Display Functions" (page 9).

Configuring Control System Connection Settings

There are the following three modes for the control system of the camera.

- LEGACY mode: This setting mode is for when controlling the camera from an external control device via the REMOTE connector of the camera.
- BRIDGE mode: This setting mode is for when controlling the camera from an external control device via the LAN connector of the camera on a one-to-one basis.
- MCS mode: This setting is for when building a multiple-camera system using multiple network compatible devices.

Use the MAINTENANCE menu to set the mode.

For details on menu operations, see "Menus" (page 16).

Note

When the control system connection mode is changed, turn the power of all devices in the system off and then back on.

To connect in LEGACY mode

Set CNS MODE to LEGACY.

For details, see "CNS SETTINGS (MAINTENANCE menu)" (page 14).

Note

When a LAN cable will not be connected directly to the camera even when building a camera network system using a LAN, set CNS MODE to the LEGACY mode.

To connect in BRIDGE mode

- 1 Set CNS MODE to BRIDGE.

For details, see "CNS SETTINGS (MAINTENANCE menu)" (page 14).

2 Configure settings related to TCP/IP.

For details, see “TCP/IP SETTING (MAINTENANCE menu)” (page 13).

3 Set the LAN connection.

For details, see “LAN SETTINGS (MAINTENANCE menu)” (page 13).

4 Set the IP address of the camera for “target IP address” of the MSU or RCP to be connected to the LAN.

For details, see the operation manual of the MSU or RCP.

Note

The BRIDGE mode does not support a multiple-camera system.

To connect in MCS mode

In MCS mode, one MSU that can be called the master is required.

If there are multiple MSUs, set one of them to “master,” and the others to “client.”

1 Set CNS MODE to MCS.

For details, see “CNS SETTINGS (MAINTENANCE menu)” (page 14).

2 Set CCU NO.

For details, see “CNS SETTINGS (MAINTENANCE menu)” (page 14).

3 Set MASTER IP ADDRESS.

For details, see “CNS SETTINGS (MAINTENANCE menu)” (page 14).

4 Configure settings related to TCP/IP.

For details, see “TCP/IP SETTING (MAINTENANCE menu)” (page 13).

5 Set the LAN connection.

For details, see “LAN SETTINGS (MAINTENANCE menu)” (page 13).

6 Configure the settings of the MSU or RCP to be connect by LAN.

For details, see the operation manual of the MSU or RCP.

Notes

- When connecting the RCP to the camera with a CCA-5 cable, and using a LAN cable for the connection device of that RCP, set CNS MODE to the LEGACY mode.
- When connecting the RCP to the camera with a LAN cable, and using a CCA cable for the connection device of that RCP, set CNS MODE to the MCS mode.
- Set CCU NO to a number that is not a duplicate of any of the CCU device numbers in the system.

About the menu to configure the control system connection settings

For details on menu operations, see “Menus” (page 16).

TCP/IP SETTING (MAINTENANCE menu)

<TCP/IP SETTING>				M15	TOP
IP ADDRESS:				0.	0.
SUBNET MASK:				0.	0.
DEFAULT GATEWAY:				0.	0.
				0.	0.
				SET	

IP ADDRESS: Set the IP address to assign to the camera.

SUBNET MASK: Set the subnet mask of the network environment.

DEFAULT GATEWAY: Set the default gateway of the network environment if necessary.

LAN SETTINGS (MAINTENANCE menu)

<LAN SETTINGS>		M16	TOP
AUTO NEGOTIATION		:	ON
CONNECTION SPEED		:	100M
DUPLEX MODE		:	FULL
AUTO MDI/MDIX		:	ON
MDI/MDIX		:	MDI
		SET	

AUTO NEGOTIATION: The LAN interface of the camera supports Auto Negotiation. If the connected device supports Auto Negotiation, setting this to ON will automatically set the connection speed (SPEED) and communication system (DUPLEX) in accordance with the connected device. If the connected device does not support Auto Negotiation, set this to OFF.

CONNECTION SPEED: Set the connection speed of the LAN line. If AUTO NEGOTIATION is set to OFF, set this manually (10M or 100M) in accordance with the connected device.

DUPLEX MODE: Set the communication system of the LAN line. If AUTO NEGOTIATION is set to OFF, set this manually (half duplex: HALF or full duplex: FULL) in accordance with the connected device.

AUTO MDI/MDIX: Set the automatic setting function for the polarity of the connector of the LAN cable to be connected. This setting is only enabled when AUTO NEGOTIATION is set to ON.

MDI/MDIX: Set the polarity of the connector of the LAN cable to be connected. When AUTO NEGOTIATION or AUTO MDI/MDIX is set to OFF, manually set the polarity (MDI or MDIX) in accordance with the connected device and cable.

CNS SETTINGS (MAINTENANCE menu)

```
<CNS SETTINGS>    M17 TOP
CNS MODE      : LEGACY
CCU NO       : 0
MASTER IP ADDRESS:
0. 0. 0. 0
SET
```

CNS MODE: Sets the control system connection mode.

LEGACY: Sets the mode to the LEGACY mode.

BRIDGE: Sets the mode to the BRIDGE mode.

MCS: Sets the mode to the MCS mode.

CCU NO: Set the device number (camera number) of the camera when using the MCS mode. Set a number that is not a duplicate of any of the CCU device numbers in the system.

MASTER IP ADDRESS: Set the IP address of the master device for MCS mode.

Resetting the network configuration information

```
<NETWORK RESET>    M18 TOP
NETWORK ALL RESET
```

NETWORK ALL RESET: Restore the network related information to the default state.

Adjusting the Flange Focal Length

Adjustment of the flange focal length (the distance between the lens mount attachment plane and the imaging plane) is necessary in the following situations:

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

The flange focal length can be more precisely adjusted by using the focus assist indicators.

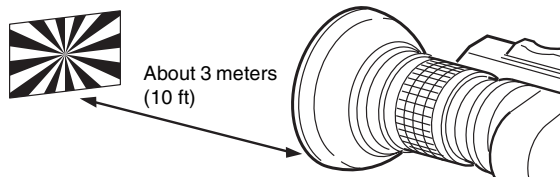
See “Displaying the focus assist indicators” (page 15) for the focus assist indicators.

Note

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

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

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



- 3 Loosen the Ff (flange focal length) ring lock screw.
- 4 With either manual or power zoom, set the zoom ring to telephoto.
- 5 Aim at the flange focal length adjustment chart and turn the focus ring to focus the image.
- 6 Set the zoom ring to wide angle.
- 7 Turn the Ff ring to bring the chart into focus. Take care not to move the distance ring.
- 8 Repeat steps 4 through 7 until the image is in focus at both telephoto and wide angle.
- 9 Tighten the Ff ring lock screw.

Setting the Focus Assist Function

Using the OPERATION menu, the assist functions for easier focusing on the monitor screen can be activated.

Note

When using the focus assist functions, connect a monitor to the SDI 2 connector and set camera output to HD-SDI.

For details on the adjustment, see “Setting the Camera Outputs” (page 12).

Adding a VF detail signal

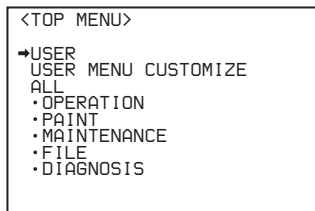
Adding a VF detail signal to sharp edges in the image on the monitor screen makes it easier to check the focusing condition by observing changes in the detail signal or in the color converted from the detail signal (color detail).

The focus setting where the detail signal becomes strongest is the best focus setting.

- 1 Turn on the camera.
- 2 Set the DISPLAY/MENU switch to MENU while holding the menu control knob pressed.
The camera enters Menu mode, and “TOP” is displayed at the upper right corner of the screen.

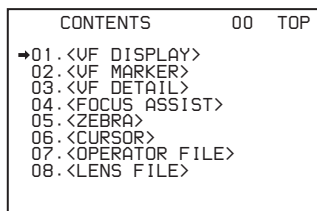
3 Rotate the menu control knob to align the pointer to "TOP" and push on the knob.

The TOP MENU screen is displayed.



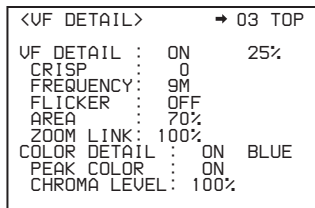
4 Rotate the menu control knob to align the pointer to OPERATION and push on the knob.

The CONTENTS page of the OPERATION menu is displayed.



5 Rotate the menu control knob to align the pointer to <VF DETAIL> and push on the knob

The <VF DETAIL> page is displayed.



6 Rotate the menu control knob to align the pointer to the item to be set and push on the knob.

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: Set the function for flickering the detail signal to ON/OFF. (Setting the function to ON makes it easier to check the detail signal on a CRT screen.)

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. The default setting is 100% with no change at the full WIDE position. It becomes half at 50%.)

To use the color detail

Set COLOR DETAIL to ON to convert the VF detail signal to a specified color. The display color can be selected in the column on the right of ON.

You can adjust the coloring with the menu items below:

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

CHROMA LEVEL: To reduce the chroma components of the video signal.

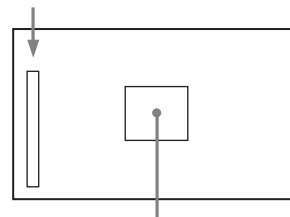
7 Rotate the menu control knob to display the desired setting and push on the knob.

8 To finish the adjustments, set the DISPLAY/MENU 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.

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



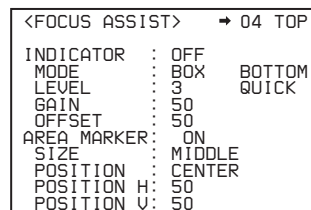
Area marker to display the detection area of the focus (Its size and position can be adjusted.)

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

1 Display the CONTENTS page of the OPERATION menu (referring to step 1 to 4 in "Adding a VF detail signal").

2 Rotate the menu control knob to align the pointer to <FOCUS ASSIST> and push on the menu control knob.

The <FOCUS ASSIST> page is displayed.



3 Rotate the menu control knob to align the pointer to the item to be set and push on the knob.

To use the level indicator

Setting INDICATOR to ON displays the level indicator on the monitor. 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 monitor.

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 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 control knob to display the desired setting and push on the knob.

5 To finish the adjustments, set the DISPLAY/MENU switch to OFF to exit Menu mode.

Notes

- The INDICATOR and effect area marker cannot be displayed at the same time. The one that was set to ON last takes priority.
- The AREA MARKER and aspect safety marker cannot be displayed at the same time. The one that was set to ON last takes priority.
- When displaying the focus assist indicators, check that the flange focal length has been precisely adjusted.

See “Adjusting the Flange Focal Length” (page 14) for the flange focal length.

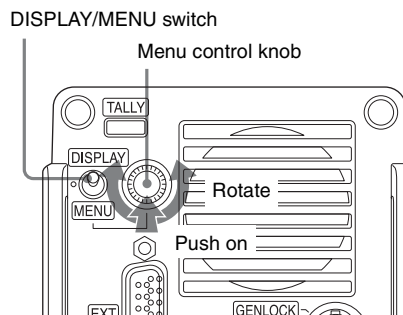
Menus

The menus displayed on the monitor connected to the VBS connector or SDI 2 connector enable various settings of the camera to be configured.

The following controls are used to operate the menus.

Turn the menu control knob on the rear panel to select menu items or values, and push on it to register (enter) the selection.

Rear



Displaying Menu Pages

To display a menu page

Set the DISPLAY/MENU switch to MENU.

The menu page last accessed will be displayed. If it is the first time, the CONTENTS page of the USER menu will be displayed.

To display the TOP MENU screen

If you set the DISPLAY/MENU switch to MENU while holding the menu control knob pressed, “TOP” is displayed at the upper right corner of the screen.

Turn the menu control knob to move the pointer on the display to “TOP” and push on the knob. The TOP MENU screen is displayed, listing the available menus.

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

Menu	Purpose
USER	This menu can include menu pages selected from among the OPERATION, PAINT, MAINTENANCE, FILE, and DIAGNOSIS menus, for convenience (see the table on page 18 for the default configuration). Changing, adding, and deleting pages can be performed with the USER MENU CUSTOMIZE menu.
USER MENU CUSTOMIZE	This menu allows you to edit the USER menu. For details, see “Editing the USER Menu” (page 18).

Menu	Purpose
ALL	This menu permits you to control all items of the OPERATION menu, PAINT menu, MAINTENANCE menu, FILE menu, and DIAGNOSIS menu as a single menu.
OPERATION	This menu contains items for camera operators to operate the camera. It mainly permits switch settings.
PAINT	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 control device to set the items on this menu, the menu is effective when using the camera by itself outdoors.
MAINTENANCE	This menu contains items for performing camera maintenance operations, such as changing the system or setting infrequently used "paint" items.
FILE	This menu is for performing file operations, such as writing or clearing the reference file.
DIAGNOSIS	This menu enables you to confirm the self-diagnostic information.

To disable the "TOP" indication

Turn the power off then on again to disable the TOP selection.

Setting the Menu

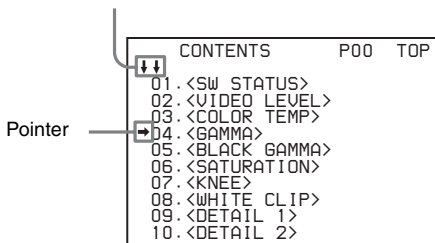
To select a menu on the TOP MENU screen

Rotate the menu control knob to align the pointer with the desired menu indication then push on the knob. The CONTENTS page (page No. 00) or the last accessed page of the selected menu is displayed.

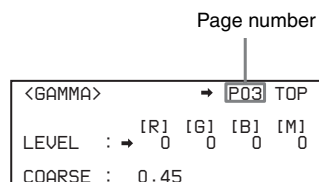
To select a page from a CONTENTS page

Rotate the menu control knob to align the pointer (➡) with the desired page indication then push on the menu control knob.

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

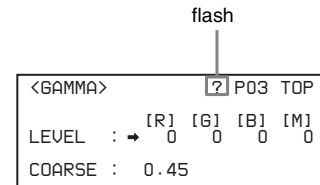


The selected page is displayed.



To change the displayed page

- 1 Check that the pointer is located at the left of the page number then push on the menu control knob. The pointer changes to a flashing question mark.

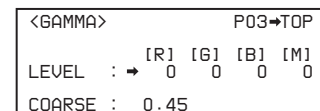


- 2 Rotate the menu control knob to flip through the pages, and push on the knob when the desired page is displayed.

The question mark will change back to the pointer, and operations with the displayed page are enabled.

To return to the TOP MENU screen

Align the pointer with "TOP" at the top right of the menu page then push on the menu control knob.



To set the Menu Items

If a question mark is flashing at the left of the page number, push on the menu control knob to change it to the pointer (➡). Operation on the displayed page is enabled.

- 1 Align the pointer with the desired item, then push on the menu control knob. The pointer changes to a flashing question mark.

- 2 Rotate the menu control 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 interrupt settings

Set the DISPLAY/MENU switch to OFF to turn off the menu screen display.

The setting operation can be restarted by setting the DISPLAY/MENU switch back to MENU.

- 3 Push on the menu control knob. The question mark will change back to the pointer, and the new setting will be registered.

- 4 To change other setting items on the same menu page, repeat steps 1 through 3.

To specify a character string

When you press the menu control knob with the pointer pointing to an item for which a character string, such as a file ID, is to be specified, a cursor and the list of selectable characters are displayed.

The displayed cursor can be moved by rotating the menu control knob.

1 Set the cursor to the position where you wish enter a character, then push on the menu control knob.

Another cursor appears on the character list.

2 Set the cursor to the character to be entered and push on the menu control knob.

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.

3 Select END and push on the menu control knob.

The new string you have set is registered.

To reset a changed value

Select ESC and push on the menu control knob.

To end menu operations

Set the DISPLAY/MENU switch to OFF.

Restoring a setting to the default setting

When an item is selected and ➡ is displayed, pressing and holding the menu control knob for 3 seconds restores the setting value to the state in the reference file. If 10 SECCLEAR of the FILE CLEAR page on the FILE menu is set to ON, pressing the control knob for another 10 seconds restores the reference file value of the selected item to the default state.

Editing the USER Menu

You can select desired pages and items from the OPERATION, PAINT, MAINTENANCE, FILE, and DIAGNOSIS menus and register them to the USER menu. If you specify pages or items frequently used for the USER menu, you can easily call and use them. The following pages are included on the factory-set USER menu:

Menu page title	USER menu No.	Source menu/ page No.	
<VF DETAIL>	U01	OPERATION	03
<FOCUS ASSIST>	U02	OPERATION	04
<VF DISPLAY>	U03	OPERATION	01
<VF MARKER>	U04	OPERATION	02
<CURSOR>	U05	OPERATION	06
<ZEBRA>	U06	OPERATION	05
<LENS FILE>	U07	OPERATION	08
<OUTPUT FORMAT>	U08	MAINTENANCE	M07
<SDI OUT>	U09	MAINTENANCE	M10
<DOWN CONVERTER>	U10	MAINTENANCE	M08
<TALLY>	U11	MAINTENANCE	M06
<ROM VERSION>	U12	DIAGNOSIS	D03

For the items on each page, see "OPERATION Menu" (page 20), "MAINTENANCE Menu" (page 24), or "DIAGNOSIS Menu" (page 28).

The USER MENU CUSTOMIZE menu allows you to configure the USER menu as follows:

- Creating a new menu page and selecting and adding (registering) items that you use very frequently from multiple menu pages.
- Deleting (unregistering) added items.
- Changing the order of added items.
- Adding (registering) a menu page (new page you create or existing menu page) to the USER menu.
- Deleting (unregistering) a page from the USER menu.
- Changing the order of pages of the USER menu.

Editing at the item level

The USER MENU CUSTOMIZE menu allows you to create a new page for the USER menu and add any item. Initially, the EDIT page of the USER MENU CUSTOMIZE already contains items but the USER 1 EDIT to USER 19 EDIT pages are blank. Up to 10 items can be selected and registered to these pages from different menu pages.

To add items to a page

1 Select USER MENU CUSTOMIZE on the TOP MENU screen (see page 16).

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 page last accessed appears.

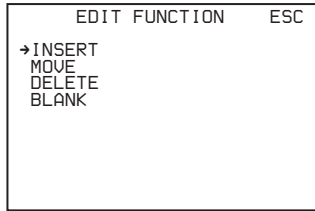
2 If the CONTENTS page is displayed, turn the menu control knob to move the pointer to any of USER 1 EDIT to USER 19 EDIT then push on the menu control knob to display the page.

If a different page is displayed, turn the menu control knob until the desired page appears then push on the menu control knob to select the page.

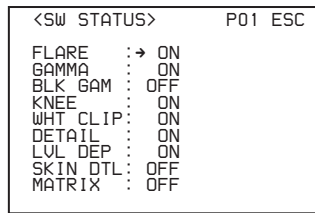
Example: When you select the USER 2 EDIT page

USER 2 EDIT	E03 TOP
→	

- 3** Move the pointer to the item to be added (this operation is unnecessary if no item exists on the page, as shown in the figure for the previous step) then push on the menu control knob.
The EDIT FUNCTION screen appears.



- 4** Move the pointer to INSERT and push on the menu control knob.
The page with the last item added appears.



- 5** Add the items.

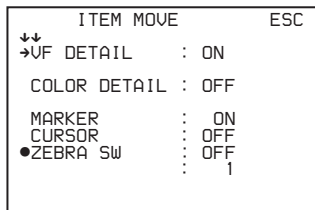
- ① Turn the menu control knob until the page that has the desired items appears, then push on the menu control knob.
- ② Turn the menu control knob to move the pointer to the desired item, then push on the menu control knob.

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

- 6** Add the remaining items by repeating steps 3 to 5.
You can add up to 10 items on one page.

To change the order of items on a page

- 1** Move the pointer to the item to be moved then push on the menu control knob.
The EDIT FUNCTION screen appears.
- 2** Select MOVE then push on the menu control knob.
The previously displayed page appears again.
- 3** Move the pointer to the position where you wish to move the page then push on the menu control knob.



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

To delete items from a page

- 1** Move the pointer to the item to be deleted then push on the menu control knob.
The EDIT FUNCTION screen appears.
- 2** Select DELETE and push on the menu control knob.
The previously displayed page appears again, and the message "DELETE OK? YES→NO" appears.
- 3** To delete, turn the menu control knob to move the pointer to YES and push on the menu control knob.

To insert a blank line

- 1** Move the pointer to the item above which you wish to insert a blank line.
The EDIT FUNCTION screen appears.
- 2** Select BLANK then push on the menu control knob.
The previously displayed page appears again, and a blank line is inserted above the specified item.

Note

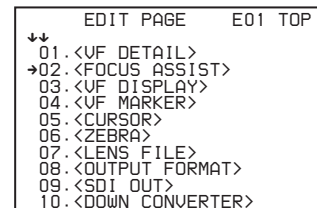
You cannot insert a blank line on a page where 10 items have already been registered.

Editing at the page level

EDIT PAGE of the USER MENU CUSTOMIZE menu allows you add, delete, and sort new pages and existing pages.

To add a page

- 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 USER MENU CUSTOMIZE menu has been used before, the page last accessed appears.
- 2** If the CONTENTS page is displayed, turn the menu control knob to move the pointer to EDIT PAGE then push on the menu control knob to display the EDIT PAGE screen.
If a different page is displayed, turn the menu control knob until the EDIT PAGE screen appears then push on the menu control knob to select the page.



- 3** Move the pointer to the position where you wish to add the page then push on the menu control knob.
The EDIT FUNCTION screen appears.

- 4** Select **INSERT** then push on the menu control knob.
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** Move the pointer to the desired page then push on the menu control knob.

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

To cancel addition of a page

Before pushing the menu control knob in step 5, turn the menu control knob to move the pointer to ESC at the top right of the screen then push on the menu control knob.
The EDIT PAGE screen appears again.

To delete a page

- 1** On the **EDIT PAGE** screen of the **USER MENU CUSTOMIZE** menu, move the pointer to the page to be deleted and push on the menu control knob.

The EDIT FUNCTION screen appears.

- 2** Select **DELETE** and push on the menu control knob.

The previously displayed page appears again, and the message “DELETE OK? YES→NO” appears.

ITEM DELETE		ESC
DELETE OK? YES→NO		
01.	<VF DETAIL>	
02.	<FOCUS ASSIST>	
03.	<VF DISPLAY>	
●04.	<VF MARKER>	
05.	<CURSOR>	
06.	<ZEBRA>	
07.	<LENS FILE>	
08.	<OUTPUT FORMAT>	
09.	<SDI OUT>	
10.	<DOWN CONVERTER>	

- 3** To delete, turn the menu control knob to move the pointer to **YES** and push on the menu control knob.

To change the order of pages

- 1** Display the **EDIT PAGE** screen of the **USER MENU CUSTOMIZE** menu. Turn the menu control knob to move the pointer to the page that you wish to move.

The EDIT FUNCTION screen appears.

- 2** Select **MOVE** then push on the menu control knob.

The EDIT PAGE screen appears again.

- 3** Move the pointer to the position where you wish to move the page then push on the menu control knob.

ITEM MOVE		ESC
↕		
01.	<VF DETAIL>	
02.	<FOCUS ASSIST>	
03.	<VF DISPLAY>	
→04.	<VF MARKER>	
05.	<CURSOR>	
06.	<ZEBRA>	
07.	<LENS FILE>	
08.	<OUTPUT FORMAT>	
●09.	<SDI OUT>	
10.	<DOWN CONVERTER>	

The item selected in step 1 moves to the position that you selected in step 3. In the above example, <SDI OUT> moves to 04, and <VF MARKER> and the following pages move down one line.

OPERATION Menu

Note

These remarks are common for all the following menu tables.

ON, OFF, 0, ..., in the **Settings** columns: Default settings

Page No. nn (Unn): For the pages that have been registered on the USER menu at the factory, the USER menu page numbers are indicated in parenthesis.

Execute by ENTER: Execute by pushing on the menu control knob.

Page title Page No.	Item	Settings
<VF DISPLAY> 01 (U03)	EX	ON , OFF
	ZOOM	ON, OFF
	DISP	LEFT , RIGHT
	FOCUS Valid only when a serial lens is used	ON, OFF
	ND	ON , OFF
	CC	ON , OFF
	5600K (246 ft)	ON , OFF
	IRIS	ON , OFF
	WHITE	ON, OFF
	GAIN	ON , OFF
	SHUTT	ON , OFF
	BATT	ON, OFF
	MESSAG	ALL , AT, WRN, OFF ALL: To display all messages WRN: To display warning messages and higher AT: To display Auto Setup information and higher

Page title Page No.	Item	Settings
<VF MARKER> 02(U04)	MARKER	ON, OFF WHITE , BLACK, DOT
	CENTER	ON, OFF 1 , 2, 3, 4 1: Entire cross 2: Entire cross with a hole 3: Center 4: Center with a hole
	SAFETY ZONE	ON, OFF 80.0, 90.0 , 92.5, 95.0%
	EFFECT	ON, OFF , (FOCUS) (FOCUS): Displayed when INDICATOR of <FOCUS ASSIST> is ON.
	ASPECT	ON, OFF 16:9, 15:9, 14:9, 13:9, 4:3
	MASK	ON, OFF 0 to 15 12 Set the level to darken outside the aspect area.
	SAFETY For the safety marker in Aspect mode	ON, OFF , (AREA) (AREA): Displayed when AREA MARKER of <FOCUS ASSIST> is ON. 80.0, 90.0 , 92.5, 95.0%
	VF DETAIL	ON, OFF 0 to 100% 25%
	CRISP	-99 to +99 0
	FREQUENCY	9M , 14M, 18M
<VF DETAIL> 03 (U01)	FLICKER	ON, OFF
	AREA	100% , 70%, 60%, 50%, 40%
	ZOOM LINK	0%, 25%, 50%, 75%, 100%
	COLOR DETAIL	ON, OFF BLUE , RED, YELLOW
	PEAK COLOR	ON, OFF
	CHROMA LEVEL	100%, 50%, 25% , 0%

Page title Page No.	Item	Settings
<FOCUS ASSIST> 04 (U02)	INDICATOR	ON, OFF , (EFFECT) (EFFECT): Displayed when EFFECT of <VF MARKER> is ON.
	MODE	BOX , B&W, COL BOTTOM , LEFT, TOP, RIGHT
	LEVEL	1 to 5 3 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> 05 (U06)	ZEBRA	ON, OFF 1 , 2, 1&2
	ZEBRA1 LEVEL	50 to 109% 70
	WIDTH	0 to 30% 10
	ZEBRA2	50 to 109% 100
<CURSOR> 06 (U05)	CURSOR	ON, OFF WHITE , BLACK, DOT
	BOX/CROSS	BOX , CROSS
	H POSITION	0 to 99 50
	V POSITION	0 to 99 50
	WIDTH	0 to 99 50
	HEIGHT	0 to 99 50
<OPERATOR FILE> 07 See FILE menu F01.	READ (MS→CAM)	Execute by ENTER.
	WRITE (CAM→MS)	Execute by ENTER.
	PRESET	Execute by ENTER.
	FILE ID	Max.16 characters
	CAM CODE	Display only
	DATE	Display only

Page title Page No.	Item	Settings
<LENS FILE> 08 (U07)	FILE	1 to 17 1 to 16: When using a non-serial lens 1 to 17: When using a serial lens
		Lens file name Changeable only when using a non-serial lens
		F-stop number of the lens Changeable only when using a non-serial lens
	CENTER MARKER	To set and store the center marker position
	H POS	–20 to 20 0 Increasing the value moves it to the right.
	V POS	–20 to 20 0 Increasing the value moves it downwards.
	STORE	Execute by ENTER.

PAINT Menu

Page title Page No.	Item	Settings
<SW STATUS> P01	FLARE	ON , OFF
	GAMMA	ON , OFF
	BLK GAM	ON, OFF
	KNEE	ON , OFF
	WHT CLIP	ON , OFF
	DETAIL	ON , OFF
	LVL DEP	ON , OFF
	SKIN DTL	ON, OFF
	MATRIX	ON, OFF
<VIDEO LEVEL> P02	WHITE	R/G/B: –99 to 99 0
	BLACK	R/G/B/M: –99 to 99 0
	FLARE	R/G/B: –99 to 99 0
	GAMMA	R/G/B/M: –99 to 99 0
	V MOD	R/G/B/M: –99 to 99 0
	FLARE	ON , OFF
	V MOD	ON , OFF
	D. SHAD	ON, OFF Selectable only when using a dynamic shooting compatible lens
	TEST	OFF , SAW, 3STEP, 10STEP

Page title Page No.	Item	Settings
<COLOR TEMP> P03	WHITE	R/G/B: –99 to 99 0
	AUTO WHITE BALANCE	Execute by ENTER.
	COLOR TEMP	0K to 65535K 3200K
	BALANCE	–99 to 99 0
	ATW	ON, OFF
	SPEED	1 to 5 4
	MASTER	–3.0dB to 12.0dB 0.0dB
<GAMMA> P04	LEVEL	R/G/B/M: –99 to 99 0
	COARSE	0.35 to 0.45 to 0.90 (0.05 steps)
	TABLE	STANDARD , HYPER With STANDARD selected: 1, 2, 3, 4, 5 , 6, 7 1: equivalent to a camcorder 2: 4.5-times gain 3: 3.5-times gain 4: equivalent to SMPTE-240M 5: equivalent to ITU-R709 6: 5.0-times gain 7: 5.0-times gain - 709 With HYPER selected: 1, 2, 3, 4 1: 325% to 100% 2: 460% to 100% 3: 325% to 109% 4: 460% to 109% (When you change the TABLE setting, noise may be generated. This is not malfunction.)
	GAMMA	ON , OFF
	TEST	OFF , SAW, 3 STEP, 10 STEP
<BLACK GAMMA> P05	LEVEL	–99 to 99 0 Master level only
	RANGE	LOW, L.MID, H.MID, HIGH ON, OFF
	TEST	OFF , SAW, 3 STEP, 10 STEP
<SATURATION> P06	SATURATION	–99 to 99 0 ON, OFF
	LOW KEY SAT	–99 to 99 0
	RANGE	LOW, L.MID, H.MID, HIGH ON, OFF
	TEST	OFF , SAW, 3 STEP, 10 STEP

Page title Page No.	Item	Settings
<KNEE> P07	K POINT	R/G/B/M: -99 to 99 <u>0</u>
	K SLOPE	R/G/B/M: -99 to 99 <u>0</u>
	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>
	SLOPE	-99 to 99 <u>0</u>
<WHITE CLIP> P08	ABS	When highlighted (ABS mode): K POINT R/G/B, K SLOPE R/G/B, and POINT LIMIT are displayed in absolute values.
	W CLIP	-99 to 99 <u>0</u> <u>ON</u> , OFF
	ABS	When highlighted (ABS mode): W CLIP displayed in absolute values.
<DETAIL 1> P09	DETAIL	<u>ON</u> , OFF
	LEVEL	-99 to 99 <u>0</u>
	LIMITER [M]	-99 to 99 <u>0</u>
	LIMITER [WHT]	-99 to 99 <u>0</u>
	LIMITER [BLK]	-99 to 99 <u>0</u>
	CRISP	-99 to 99 <u>0</u>
	LVL DEP	-99 to 99 <u>0</u> <u>ON</u> , OFF
	ABS	When highlighted (ABS mode): LEVEL, LIMITER WHT, LIMITER BLK, CRISP, and LVL DEP are displayed in absolute values.
<DETAIL 2> P10	H/V RATIO	-99 to 99 <u>0</u>
	FREQ	-99 to 99 <u>0</u>
	MIX RATIO	-99 to 99 <u>0</u>
	KNEE APT	-99 to 99 <u>0</u> ON, <u>OFF</u>
	ABS	When highlighted (ABS mode): H/V RATIO, FREQ, MIX RATIO, and KNEE APERTURE are displayed in absolute values.
<SD DETAIL 1> P11	SD DETAIL	<u>ON</u> , OFF
	LEVEL	-99 to 99 <u>0</u>
	LIMITER [M]	-99 to 99 <u>0</u>
	LIMITER [WHT]	-99 to 99 <u>0</u>
	LIMITER [BLK]	-99 to 99 <u>0</u>
	CRISPENING	-99 to 99 <u>0</u>
	LEVEL DEP	-99 to 99 <u>0</u>
<SD DETAIL 2> P12	H/V RATIO	-99 to 99 <u>0</u>
	FREQUENCY	-99 to 99 <u>0</u>
	DETAIL COMB	-99 to 99 <u>0</u>

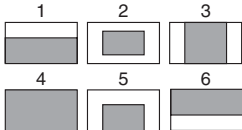
Page title Page No.	Item	Settings
<SKIN DETAIL> P13	SKIN DTL	ON, <u>OFF</u>
	SKIN GATE	ON, <u>OFF</u> , (MAT) (MAT): Displayed when GATE of <MULTI MATRIX> is ON.
	AUTO HUE	Execute by ENTER.
	PHASE	<u>0</u> to 359
	WIDTH	0 to 90 <u>29</u>
	SAT	-99 to 99 <u>-89</u>
	LEVEL	-99 to 99 <u>0</u>
	ABS	When highlighted (ABS mode): LEVEL is displayed in an absolute value.
<SD CROSS COLOR> P14	CRS COL REDUCE	ON, <u>OFF</u>
	LEVEL	-99 to 99 <u>0</u>
	CORING	-99 to 99 <u>0</u>
<USER MATRIX> P15	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, - - - - : When MATRIX OFF (cannot be changed) SMPTE-240M, ITU-709 , SMPTE-WIDE, NTSC, EBU, ITU-601, - - - - : When MATRIX OFF (cannot be changed)
	USER	ON, <u>OFF</u> , - - - - : When MATRIX OFF (cannot be changed)
	MULTI	ON, <u>OFF</u> , - - - - : When MATRIX OFF (cannot be changed)

Page title Page No.	Item	Settings
<MULTI MATRIX> P16	PHASE	<u>0</u> , 23, 45, 68, 90, 113, 135, 158, 180, 203, 225, 248, 270, 293, 315, 338
	HUE	–99 to 99 <u>0</u> Independently set for 16 axes.
	SAT	–99 to 99 <u>0</u> Independently set for 16 axes.
	ALL CLEAR	Execute by ENTER. The HUE and SAT values for all PHASE settings are cleared.
	GATE	ON, OFF , (SKN) (SKN): Displayed when SKIN GATE of <SKIN DETAIL> is ON.
	MATRIX	ON, OFF
<SHUTTER> P17	PRESET	ON , OFF, -- -- : When MATRIX OFF (cannot be changed) SMPTE-240M, ITU-709 , SMPTE-WIDE, NTSC, EBU, ITU-601, -- -- : When MATRIX OFF (cannot be changed)
	USER	ON, OFF , -- -- : When MATRIX OFF (cannot be changed)
	MULTI	ON, OFF , -- -- : When MATRIX OFF (cannot be changed)
	SHUTTER	ON , OFF When 59.94i: 1/100 , 1/125, 1/250, 1/500, 1/1000, 1/2000 (sec) When 50i: 1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000 (sec) When 59.94P: 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000 (sec) When 50P: 1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000 (sec)
<NOISE SUP> P18	ECS FREQ	59.94i: 60.00 to 4300 Hz 50i: 50.00 to 4700 Hz 59.94P: 59.96 to 4600 Hz 50P: 50.03 to 4600 Hz
	NOISE SUP	0 to 100%, 0% ON , OFF

Page title Page No.	Item	Settings
<SCENE FILE> P19 <i>See “FILE menu” F02.</i>	1	To store and read scene files (paint data).
	2	
	3	
	4	
	5	
	STORE	
	STANDARD	Execute by ENTER.
	READ (MS→CAM)	Execute by ENTER.
	WRITE (CAM→MS)	Execute by ENTER.
	FILE ID	Max.16 characters
	CAM CODE	Display only
	DATE	Display only

MAINTENANCE Menu

Page title Page No.	Item	Settings
<AUTO SETUP> M01	AUTO BLACK	Execute by ENTER.
	AUTO WHITE	Execute by ENTER.
	AUTO LEVEL	Execute by ENTER.
	AUTO WHITE SHADING	Execute by ENTER.
	AUTO BLACK SHADING	Execute by ENTER.
	TEST	OFF , SAW, 3STEP, 10STEP
<WHITE SHADING> M02	V SAW	R/G/B: –99 to 99 <u>0</u>
	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.
<BLACK SHADING> M03	WHITE SHAD MODE	RGB, RB
	V SAW	R/G/B: –99 to 99 <u>0</u>
	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	–3, <u>0</u> , 3, 6, 9, 12 dB
	AUTO BLACK SHADING	Execute by ENTER.

Page title Page No.	Item	Settings
<OHB MATRIX> M04	PHASE	<u>0</u> , 23, 45, 68, 90, 113, 135, 158, 180, 203, 225, 248, 270, 293, 315, 338 Select an axis (angle) for which the OHB matrix adjustment to be made.
	HUE	-99 to 99 <u>0</u> Independently set for 16 axes.
	SAT	-99 to 99 <u>0</u> Independently set for 16 axes.
	ALL CLEAR	Execute by ENTER. The HUE and SAT values for all PHASE settings are cleared.
	OHB MATRIX	ON, OFF
	MATRIX	ON, OFF
<AUTO IRIS> M05	AUTO IRIS	ON, OFF
	WINDOW	1, 2, 3, 4, 5, 6 Select the auto iris windows:  <p>The shaded parts indicate the area where light detection occurs.</p>
	OVERRIDE	-99 to 99, -- Set the override to temporarily change the reference value for brightness of the automatic iris level in the range of ±2 steps. -99: Two steps to fully closed iris +99F Two steps to fully open iris -- : OFF The setting returns to "--" when the power is turned off.
	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, OFF

Page title Page No.	Item	Settings
<TALLY> M06 (U11)	FRONT TALLY	OFF , LOW, HIGH (Even if this is set to ON, the front tally lamp goes out while the battery alarm function is operating.)
	REAR TALLY	OFF, ON (The battery alarm function is disabled when this is set to OFF.)
	BATTERY ALARM	OFF, ON (The front tally lamp goes out while the battery alarm function is operating. When BATTERY ALARM is ON, setting this item to OFF disables the battery function.)
<OUTPUT FORMAT> M07 (U08)	CURRENT	Displays the current format.
	[1080] [720]	59.94i, 50i 59.94P, 50P (When OUTPUT FORMAT is changed, turn off the camera power. Operation will be performed in the selected mode the next time the power is turned on.)
<DOWN CONVERTER> M08 (U10)	SD ASPECT	EC, SQ
	CENTER LOCK	ON , OFF (Fixed to ON when SD ASPECT is SQ.)
	CROP POSITION	-99 to 99 <u>0</u> (Fixed to 0 when SD ASPECT is SQ.)
	H INTERPOLATION	A , B, C, D, E
	V INTERPOLATION	A , B, C, D, E
<VBS OUT> M09	GAIN	-127 to 127 <u>0</u>
	CHROMA	ON , OFF
	CHROMA LEVEL	-127 to 127 <u>0</u>
	SETUP	ON, OFF Displayed when the format is 59.94
<SDI OUT> M10 (U09)	OUTPUT	HD-SDI , SD-SDI
<IMAGE INVERTER> M11	H MIRROR	ON, OFF
	V MIRROR	ON, OFF
	DELAY MODE	ON, OFF
<GENLOCK> M12	GENLOCK	DISABLE, ENABLE
	STATUS	Display only
	FORMAT	
	PHASE	
	V	-1024 to 1023 <u>0</u>
	H	-1683 to 1683 <u>0</u>

Page title Page No.	Item	Settings
<DATE> M13	DATE/TIME	yyyy/mm/dd hh:mm
<BATTERY ALARM> M14	BEFORE END	11.5 V to 17.0 V
	END	11.0 V to 11.5 V
	BATTERY ALARM	ON , OFF (The front tally lamp goes out while the battery alarm function is operating. When BATTERY ALARM is ON, setting this item to OFF disables the battery function.)
<TCP/IP SETTING> M15	IP ADDRESS	0.0.0.0 to 255.255.255.255
	SUBNET MASK	0.0.0.0 to 255.255.255.255
	DEFAULT GATEWAY	0.0.0.0 to 255.255.255.255
	SET	Execute by ENTER. When "SET OK?" appears, execute by ENTER again to confirm the changes in the page
<LAN SETTINGS> M16	AUTO NEGOTIATION	ON , OFF
	CONNECTION SPEED	10M, 100M
	DUPLEX MODE	HALF, FULL
	AUTO MDI/MDIX	ON , OFF
	MDI/MDIX	MDI , MDIX
	SET	Execute by ENTER. When "SET OK?" appears, execute by ENTER again to confirm the changes in the page
<CNS SETTINGS> M17	CNS MODE Select the connection system of the network	LEGACY , BRIDGE, MCS See "CNS SETTINGS (MAINTENANCE menu)" (page 14)
	CCU NO	The default setting is 0 . When MCS is selected for CNS MODE: 1 to 96
	MASTER IP ADDRESS	0.0.0.0 to 255.255.255.255
	SET	Execute by ENTER. When "SET OK?" appears, execute by ENTER again to confirm the changes in the page
<NETWORK RESET> M18	NETWORK ALL RESET	Execute by ENTER. When "RESET OK?" appears, execute ENTER again to restore all settings of the MAINTENANCE menu items M15 to M17 to their default state.

Page title Page No.	Item	Settings
<COLOR BARS> M19	BARS	ON, OFF
	HD BARS	BAR 16:9 (100%) , BAR 16:9 (75%), MF-ARIB (75%), MF-ARIB (100%), MF-ARIB (+I), MF-SMPTE (-I, Q)
	SD BARS	DISABLE , SMPTE, EIA (EBU), FULL, 95%, NTSC 100% (PAL 100%), Y/C-RAMP, Y-RAMP
<OTHERS 1> M20	FAN MODE	OFF, AUTO1 , AUTO2, MIN, MAX AUTO1: Normal rotation AUTO2: Slow rotation (The internal temperature may raise with the OFF setting.)
	V DTL CREATION	NAM, G, R+G, Y
	DTL H/V MODE	H/V , V only
	TEST2 MODE	3STEP , 10STEP
	WHITE SETUP MODE	AWB, A.LVL
	ALAC	AUTO , OFF With AUTO selected, the status is displayed at the right. (ACTIVE): Compensation in progress (WAIT): Waiting for completion of lens initialization (STOP): Compensation is turned off for a non-applicable lens
	DATE TYPE	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
	FILTER WHT MEM	ON, OFF Set to ON to use independent white memory at each CC filter position.
	F NO. DISP	CONTROL , RETURN Select the iris indication on the panel when AUTO IRIS is off: CONTROL: To display the value from the camera RETURN: To display the value returned from the lens (When AUTO IRIS is on, the value returned from the lens is always displayed.)

Page title Page No.	Item	Settings
<OPTION KEY> M22	READ (MS→CAM)	Execute by ENTER. To read the installation key from a "Memory Stick Duo."
	INSTALLED OPTION	To display the names of the installed options.

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.

Page title Page No.	Item	Settings
<OPERATOR FILE> F01	READ (MS→CAM)	Execute by ENTER. To read the operator file from a "Memory Stick Duo."
	WRITE (CAM→MS)	Execute by ENTER. To write the current settings of the operator file items to a "Memory Stick Duo."
	PRESET	Execute by ENTER. To set the operator file items to the preset values in internal memory.
	STORE PRESET FILE	Execute by ENTER. To store the current settings of the operator file items in the operator file in internal memory.
	FILE ID	Max.16 characters Enter a comment for the operator file to be written to a "Memory Stick Duo." <i>See "To specify a character string" (page 17).</i>
	CAM CODE	Camera code Display only
	DATE	Date Display only

Page title Page No.	Item	Settings
<SCENE FILE> F02	1	To store and read scene files (paint data): When storing a file in camera memory, specify the number for STORE and execute by ENTER.
	2	
	3	
	4	
	5	When reading, only specify the number.
	STORE	
	STANDARD	Execute by ENTER. To read the standard paint data.
	READ (MS→CAM)	Execute by ENTER. To load five scene files from a "Memory Stick Duo" to internal memory.
	WRITE (CAM→MS)	Execute by ENTER. To write five scene files in the camera's memory to a "Memory Stick Duo."
	FILE ID	Max.16 characters Enter a comment for the scene files to be written to a "Memory Stick Duo." <i>See "To specify a character string" (page 17).</i>
<REFERENCE> F03	CAM CODE	Camera code Display only
	DATE	Date Display only
	STORE FILE	Execute by ENTER. To store the current settings of the reference file items in the reference file in internal memory.
	STANDARD	Execute by ENTER. To read the standard values in the reference file in internal memory.
	ALL PRESET	Execute by ENTER. To resume the factory- preset reference file.
	READ (MS→CAM)	Execute by ENTER. To load a reference file from a "Memory Stick Duo."
	WRITE (CAM→MS)	Execute by ENTER. To write the current settings of the reference file items to a "Memory Stick Duo."
	FILE ID	Max.16 characters Enter a comment for the reference file to be written to a "Memory Stick Duo." <i>See "To specify a character string" (page 17).</i>
	CAM CODE	Camera code Display only
	DATE	Date Display only

Page title Page No.	Item	Settings
<LENS FILE> F04	STORE FILE	Execute by ENTER.
	No.	1 to 17 1 to 16: When using a non-serial lens 1 to 17: When using a serial lens
	NAME	Lens file name Changeable only when using a non-serial lens
	F NO	F1.0 to F3.4 F1.7
	CENTER MARKER	To set and store the center marker position
<OHB FILE> F05	H POS	-20 to +20 0 Increasing the value moves it to the right.
	V POS	-20 to +20 0 Increasing the value moves it downwards.
	STORE	Execute by ENTER.
	STORE FILE	Execute by ENTER. To store the offset values of the items specific to the CCD (No repeated store operation is necessary even if the CCD block is reattached.)
	REFERENCE (ALL)	Execute by ENTER.
<FILE CLEAR> F06	10 SEC CLEAR	ON, OFF To activate/deactivate the function for clearing an item selected in a menu. <i>See "Restoring a setting to the default setting" (page 18).</i>
	OHB WHITE SHADE (ALL)	Execute by ENTER.
	OHB BLACK SHADE	Execute by ENTER.
	OHB ND OFFSET	Execute by ENTER.
	OHB MATRIX	Execute by ENTER.
	M.S. FORMAT	Execute by ENTER. To initialize a "Memory Stick Duo."

DIAGNOSIS Menu

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

Page title Page No.	Item	Indication
<BOARD STATUS> D01	OHB	OK, NG
	DPR	OK, NG
	AT	OK, NG
	IF	OK, NG
<PLD VERSION> D02	TG	Vx.xx R IT
	AT	Vx.xx
	IF	Vx.xx
	DPR1	Vx.xx
<ROM VERSION> D03 (U12)	DPR2	Vx.xx
	AT	Vx.xx
	IF	Vx.xx
	IF	Vx.xx
<NET STATUS 1> D04	NETWORK	OK, NG, - - - -: When not connected to a network device
	LINK CONDITION	(DOWN), (UP)
	CONNECTION SPEED	10M, 100M
	DUPLEX MODE	HALF, FULL
	MDI/MDIX	MDI, MDIX
	MAC ADDRESS	xx-xx-xx-xx-xx-xx
<NET STATUS 2> D05	IP ADDRESS	x.x.x.x
	SUBNET MASK	x.x.x.x
	DEFAULT GATEWAY	x.x.x.x
<SERIAL NO.> D06	MODEL	HDC-P1
	NO	Serial No.

Appendices

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 on the monitor.

Note

To display a message, set the DISPLAY/MENU switch to DISPLAY or MENU.

Message	Meaning
TEMP WARNING	The internal temperature is extraordinarily 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 MEMORY STICK	A "Memory Stick" operation was attempted with no "Memory Stick Duo" in the slot.
MEMORY STICK ERROR	An error occurred during access to a "Memory Stick Duo."
FORMAT ERROR!	A "Memory Stick" operation was attempted with an unformatted "Memory Stick Duo."
MEMORY STICK LOCKED	File writing was attempted with a write-protected "Memory Stick Duo."
FILE ERROR	An error occurred while reading a file from a "Memory Stick Duo."
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 "Memory Stick Duo."

Using a "Memory Stick Duo"

You can use "Memory Stick Duo" media with the unit.

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

Unit operations have been checked using "Memory Stick Duo" media up to 16 GB.

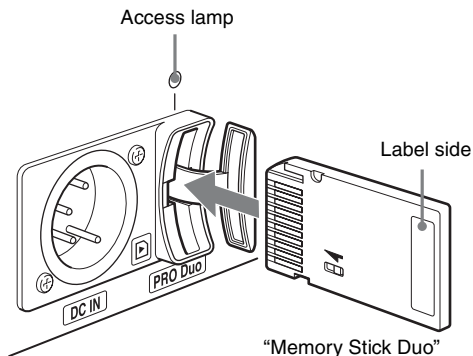
Note

Only a "Memory Stick" of Duo size can be used with the camera.

Inserting a “Memory Stick Duo”

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

When the “Memory Stick Duo” is properly set, the lamp lights in green.



Note

If it does not fit into the slot properly or if there is some resistance when you insert it, the “Memory Stick Duo” may be turned around or upside-down. Do not force the “Memory Stick Duo” into the slot. Confirm the direction of the notch and arrow on the “Memory Stick Duo” before inserting the “Memory Stick Duo,” and then try inserting it again.

Removing a “Memory Stick Duo”

Confirm that the access lamp is not lit in red, then lightly push in the “Memory Stick Duo” to release the lock.

Note

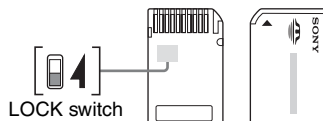
If the access lamp is lit in red, data is being read from or written to the “Memory Stick Duo.” At this time, do not shake the product or subject it to shock. Do not turn off the power to the product or remove the “Memory Stick Duo.” Doing so may damage the data.

Protecting saved data

To prevent accidental erasure of important setup data, use the LOCK switch on the “Memory Stick Duo.”

Slide the switch upward to the write protect position.

This ensures that you cannot inadvertently overwrite data on the “Memory Stick Duo.”





Note

The “Memory Stick Duo” does not have a LOCK switch. When using “Memory Stick Duo” media, be careful not to inadvertently overwrite or erase your data.

Precautions

- Do not attach anything other than the supplied label to the “Memory Stick Duo” labeling position.
- Attach the label so that it does not stick out beyond the labeling position.
- Carry and store the “Memory Stick Duo” in its case.
- Do not touch the connector of the “Memory Stick Duo” with anything, including your finger or metallic objects.

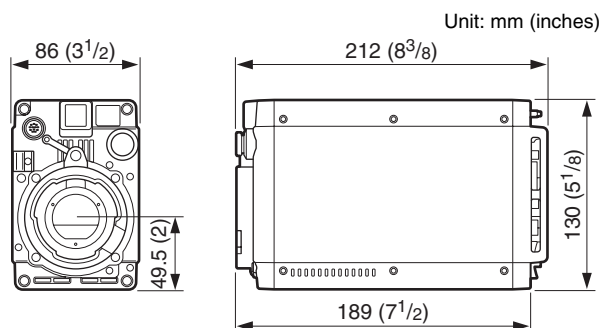
- Do not strike, bend, or drop the “Memory Stick Duo.”
- Do not disassemble or modify the “Memory Stick Duo.”
- Do not allow the “Memory Stick Duo” to get wet.
- Do not use or store the “Memory Stick Duo” in a location that is:
 - Extremely hot, such as in a car parked in the sun
 - Under direct sunlight
 - Very humid or subject to corrosive substances
- To prevent data loss, make backups of data frequently. In no event will Sony be liable for any loss of data.
- Unauthorized recording may be contrary to the provisions of copyright law. When you use a “Memory Stick Duo” that has been pre-recorded, be sure that the material has been recorded in accordance with copyright and other applicable laws.

- “Memory Stick” and  are trademarks of Sony Corporation.
- “Memory Stick Duo” and  are trademarks of Sony Corporation.
- “Memory Stick PRO Duo” and  are trademarks of Sony Corporation.

Specifications

General	
Power requirements	DC 10.5–17V, 24W (not including peripherals)
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. 1.7 kg (3 lb 12 oz) (camera head only)
Imager	
Imager	2/3-type Progressive Scan CCD
Method	3-CCD, RGB
Effective resolution	1920 (horizontal) × 1080 (vertical)
Electrical characteristics	
Sensitivity	f10.0 with 59.94 Hz/f11.0 with 50.00 Hz (at 2000 lx with 89.9% reflectivity)
Image S/N	HD output: Typical 55 dB (NS Max. 62 dB) SD output: Typical 65 dB (59.94 Hz) Typical 63 dB (50.00 Hz)
Horizontal resolution	HD: 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
	ND filters 1: Clear 2: 1/4 ND 3: 1/16 ND 4: 1/64ND

Input/output connectors	
LENS	12-pin (1)
SDI 1	BNC type (1) Can be switched between HD-SDI and SD-SDI
SDI 2	BNC type (1) Can be switched between HD-SDI and SD-SDI
VBS	BNC type (1)
GENLOCK	BNC type (1) HD: SMPTE-274M, 3-level sync, 0.6 Vp-p, 75 ohms SD: Black burst (NTSC: 0.286 Vp-p, 75 ohms/PAL: 0.3 Vp-p, 75 ohms)
LAN	8-pin (1)
REMOTE	8-pin (1)
EXT I/O	D-sub 15-pin, female (1)
Supplied accessories	
Operation manual (1)	
Tally number plate (1)	
Optional accessories	
VCT-14 Tripod Adaptor	
V shoe (D) ASSY A-8279-993-C	
"Memory Stick Duo"	
Related equipment	
MSU-900/950 Master Setup Unit	
RCP-700/900-series Remote Control Panel	
RM-B150/B750 Remote Control Unit	
External dimensions (excluding largest protrusions)	



Design and specifications are subject to change without notice.

Note

Always verify that the unit is operating properly before use. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS DUE TO FAILURE OF THIS UNIT, EITHER DURING THE WARRANTY PERIOD OR AFTER EXPIRATION OF THE WARRANTY, OR FOR ANY OTHER REASON WHATSOEVER.

Menu Tree

OPERATION

- VF DISPLAY (01)
 - EX
 - ZOOM
 - DISP
 - FOCUS
 - ND
 - CC
 - 5600K
 - IRIS
 - WHITE
 - GAIN
 - SHUTT
 - BATT
 - MESSAG
- VF MARKER (02)
 - MARKER
 - CENTER
 - SAFETY ZONE
 - EFFECT
 - ASPECT
 - MASK
 - SAFETY
- VF DETAIL (03)
 - VF DETAIL
 - CRISP
 - FREQUENCY
 - FLICKER
 - AREA
 - ZOOM LINK
 - COLOR DETAIL
 - PEAK COLOR
 - CHROMA LEVEL
- FOCUS ASSIST (04)
 - INDICATOR
 - MODE
 - LEVEL
 - GAIN
 - OFFSET
 - AREA MARKER
 - SIZE
 - POSITION
 - POSITION H
 - POSITION V
- ZEBRA (05)
 - ZEBRA
 - ZEBRA1 LEVEL
 - WIDTH
 - ZEBRA2
- CURSOR (06)
 - CURSOR
 - BOX/CROSS
 - H POSITION
 - V POSITION
 - WIDTH
 - HEIGHT
- OPERATOR FILE (07)
 - READ (MS→CAM)
 - WRITE (CAM→MS)
 - PRESET
 - FILE ID
 - CAM CODE
 - DATE

- LENS FILE (08)
 - FILE
 - CENTER MARKER
 - H POS
 - V POS
 - STORE

PAINT

- SW STATUS (P01)
 - FLARE
 - GAMMA
 - BLK GAM
 - KNEE
 - WHT CLIP
 - DETAIL
 - LVL DEP
 - SKIN DTL
 - MATRIX
- VIDEO LEVEL (P02)
 - WHITE
 - BLACK
 - FLARE
 - GAMMA
 - V MOD
 - FLARE
 - V MOD
 - D.SHAD
 - TEST
- COLOR TEMP (P03)
 - WHITE
 - AUTO WHITE BALANCE
 - COLOR TEMP
 - BALANCE
 - ATW
 - SPEED
 - MASTER
- GAMMA (P04)
 - LEVEL
 - COARSE
 - TABLE
 - GAMMA
 - TEST
- BLACK GAMMA (P05)
 - LEVEL
 - RANGE
 - TEST
- SATURATION (P06)
 - SATURATION
 - LOW KEY SAT
 - RANGE
 - TEST
- KNEE (P07)
 - K POINT
 - K SLOPE
 - KNEE
 - KNEE MAX
 - KNEE SAT
 - AUTO KNEE
 - POINT LIMIT
 - SLOPE
 - ABS
- WHITE CLIP (P08)
 - W CLIP
 - ABS

- DETAIL 1 (P09)
 - DETAIL
 - LEVEL
 - LIMITER [M]
 - LIMITER [WHT]
 - LIMITER [BLK]
 - CRISP
 - LVL DEP
 - ABS
- DETAIL 2 (P10)
 - H/V RATIO
 - FREQ
 - MIX RATIO
 - KNEE APT
 - ABS
- SD DETAIL (P11)
 - SD DETAIL
 - LEVEL
 - LIMITER [M]
 - LIMITER [WHT]
 - LIMITER [BLK]
 - CRISPENING
 - LEVEL DEP
- SD DETAIL 2 (P12)
 - H/V RATIO
 - FREQUENCY
 - DETAIL COMB
- SKIN DETAIL (P13)
 - SKIN DTL
 - SKIN GATE
 - AUTO HUE
 - PHASE
 - WIDTH
 - SAT
 - LEVEL
 - ABS
- SD CROSS COLOR (P14)
 - CRS COL REDUCE
 - LEVEL
 - CORING
- USER MATRIX (P15)
 - R-G
 - R-B
 - G-R
 - G-B
 - B-R
 - B-G
 - MATRIX
 - PRESET
 - USER
 - MULTI
- MULTI MATRIX (P16)
 - PHASE
 - HUE
 - SAT
 - ALL CLEAR
 - GATE
 - MATRIX
 - PRESET
 - USER
 - MULTI

- SHUTTER (P17)
 - SHUTTER
 - ECS FREQ
- NOISE SUP (P18)
 - NOISE SUP
- SCENE FILE (P19)
 - 1/2/3/4/5
 - STORE
 - STANDARD
 - READ (MS→CAM)
 - WRITE (CAM→MS)
 - FILE ID
 - CAM CODE
 - DATE

MAINTENANCE

- AUTO SETUP (M01)
 - AUTO BLACK
 - AUTO WHITE
 - AUTO LEVEL
 - AUTO WHITE SHADING
 - AUTO BLACK SHADING
 - TEST
- WHITE SHADING (M02)
 - V SAW
 - V PARA
 - H SAW
 - H PARA
 - WHITE
 - AUTO WHITE SHADING
 - WHITE SHAD MODE
- BLACK SHADING (M03)
 - V SAW
 - V PARA
 - H SAW
 - H PARA
 - BLK SET
 - BLACK
 - MASTER GAIN
 - AUTO BLACK SHADING
- OHB MATRIX (M04)
 - PHASE
 - HUE
 - SAT
 - ALL CLEAR
 - OHB MATRIX
 - MATRIX
- AUTO IRIS (M05)
 - AUTO IRIS
 - WINDOW
 - OVERRIDE
 - IRIS LEVEL
 - APL RATIO
 - IRIS GAIN
 - IRIS CLOSE
- TALLY (M06)
 - FRONT TALLY
 - REAR TALLY
 - BATTERY ALARM
- OUTPUT FORMAT (M07)
 - CURRENT
 - [1080]
 - [720]
- DOWN CONVERTER (M08)
 - SD ASPECT
 - CENTER LOCK
 - CROP POSITION
 - H INTERPOLATION
 - V INTERPOLATION
- VBS OUT (M09)
 - GAIN
 - CHROMA
 - CHROMA LEVEL
 - SETUP
- SDI OUT (M10)
 - OUTPUT
- IMAGE INVERTER (M11)
 - H MIRROR
 - V MIRROR
 - DELAY MODE

- GENLOCK (M12)
 - GENLOCK
 - STATUS
 - FORMAT
 - PHASE
 - V
 - H
- DATE (M13)
 - DATE/TIME
- BATTERY ALARM (M14)
 - BEFORE END
 - END
 - BATTERY ALARM
- TCP/IP SETTING (M15)
 - IP ADDRESS
 - SUBNET MASK
 - DEFAULT GATEWAY
 - SET
- LAN SETTING (M16)
 - AUTO NEGOTIATION
 - CONNECTION SPEED
 - DUPLEX MODE
 - AUTO MDI/MDIX
 - MDI/MDIX
 - SET
- CNS SETTING (M17)
 - CNS MODE
 - CCU NO
 - MASTER IP ADDRESS
 - SET
- NETWORK RESET (M18)
 - NETWORK ALL RESET
- COLOR BARS (M19)
 - BARS
 - HD BARS
 - SD BARS
- OTHERS 1 (M20)
 - FAN MODE
 - V DTL CREATION
 - DTL H/V MODE
 - TEST2 MODE
 - WHITE SETUP MODE
 - ALAC
- OTHERS 2 (M21)
 - DATE TYPE
 - FILTER WHT MEM
 - F NO. DISP
- OPTION KEY (M22)
 - READ (MS→CAM)
 - INSTALLED OPTION

FILE

- OPERATOR FILE (F01)
 - READ (MS→CAM)
 - WRITE (CAM→MS)
 - PRESET
 - STORE PRESET FILE
 - FILE ID
 - CAM CODE
 - DATE
- SCENE FILE (F02)
 - 1/2/3/4/5
 - STORE
 - STANDARD
 - READ (MS→CAM)
 - WRITE (CAM→MS)
 - FILE ID
 - CAM CODE
 - DATE
- REFERENCE (F03)
 - STORE FILE
 - STANDARD
 - ALL PRESET
 - READ (MS→CAM)
 - WRITE (CAM→MS)
 - FILE ID
 - CAM CODE
 - DATE
- LENS FILE (F04)
 - STORE FILE
 - No.
 - NAME
 - F NO
 - CENTER MARKER
 - H POS
 - V POS
 - STORE
- OHB FILE (F05)
 - STORE FILE
- FILE CLEAR (F06)
 - PRESET OPERATOR
 - REFERENCE (ALL)
 - 10 SEC CLEAR
 - OHB WHITE SHADE (ALL)
 - OHB BLACK SHADE
 - OHB ND OFFSET
 - OHB MATRIX
 - M.S. FORMAT

DIAGNOSIS

- BOARD STATUS (D01)
 - OHB
 - DPR
 - AT
 - IF
- PLD VERSION (D02)
 - TG
 - AT
 - IF
 - DPR1
 - DPR2
- ROM VERSION (D03)
 - AT
 - IF
- NET STATUS 1 (D04)
 - NETWORK
 - LINK CONDITION
 - CONNECTION SPEED
 - DUPLEX MODE
 - MDI/MDIX
 - MAC ADDRESS
- NET STATUS 2 (D05)
 - IP ADDRESS
 - SUBNET MASK
 - DEFAULT GATEWAY
- SERIAL NO. (D06)
 - MODEL
 - NO

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