SONY®

HD COLOR CAMERA

HSC300RF
HSC100RF
HSC300R
HSC100R

Power HAD FX **R** SERIES

OPERATION MANUAL   English
1st Edition

Table of Contents

Overview

The HSC300RF, HSC100RF, HSC300R, and HSC100R are high-definition portable video cameras equipped with a 2/3-type, 2.2 million pixel CCD.
They can be used as standalone cameras or can be combined with a camera control unit (CCU) for studio camera use.
The following equipment combinations can be used.
- HSC300RF/HSC100RF and HSCU300RF camera control unit
- HSC300R/HSC100R and HSCU300R camera control unit

In addition, by installing HZCU-MC3 multi-camera control system support software on the CCU, a multi-camera application system can be formed in combination with a master setup unit (MSU).

The camera specifications vary depending on the model as given below.

	HSC300RF	HSC100RF	HSC300R	HSC100R
Signal transmission method between camera and CCU	Optical digital transmission over an optical fiber cable		Digital transmission over a triaxial cable	
Built-in filters	Optical ND filters (clear, 1/4 ND, 1/16 ND, 1/64 ND) Optical CC filters (3200K, 4300K, 6300K) Electric filter (5600K)	Optical ND filters (clear, 1/4 ND, 1/16 ND, 1/64 ND) Electric filter (5600K)	Optical ND filters (clear, 1/4 ND, 1/16 ND, 1/64 ND) Optical CC filters (3200K, 4300K, 6300K) Electric filter (5600K)	Optical ND filters (clear, 1/4 ND, 1/16 ND, 1/64 ND) Electric filter (5600K)
Large-lens adapter operation	HDLA1500-series support	Not supported	HDLA1500-series support	Not supported

Features

High picture quality and high performance

The camera is equipped with a 2/3-type, 2.2 million pixel, wide bandwidth, progressive IT CCD.
It features the latest signal processor LSI technology that achieves high image quality through improved S/N ratio, high resolution, and reduced smear level in comparison with previous models.
Also, a 16-bit A/D converter provides high-definition image reproduction and enhanced black reproduction.

Multi-format support

Supports 1080/59.94i, 720/59.94P, 1080/50i and 720/50P.

Digital extender function

This function digitally magnifies the central part of the viewfinder picture to twice its size.
It prevents the decrease in sensitivity (F-drop) that occurs with a lens extender.

Aberration compensation function

Auto Lens Aberration Compensation 2.0 (ALAC) is provided with this camera. This automatically reduces the magnification chromatic aberration when a lens that supports auto lens aberration compensation is attached.

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

Various color reproduction adjustment functions

Adaptive matrix function

This function accurately controls matrix calculation coefficients to provide more 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.

Knee saturation

Changes in 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 areas can be compensated. It provides compensation for color reproduction in all areas, when used in combination with matrix color compensation and the knee saturation function.

Gamma table selection

Seven types of standard and 4 types of hyper gamma tables are provided with this camera. The hyper gamma values enable cinema-like image creation with wide dynamic range, unlike images achieved with conventional video gamma.

Versatile detail control functions

Skin-tone detail function
This function controls (enhances or suppresses) the detail level for certain hue or chroma areas in the image, by creating a detail gate signal from color components of any specified hues.
The detail of three hues can be controlled independently at the same time.

Detail boost-frequency control
The boost frequency can be adjusted in the range 20 to 30 MHz, enabling more subtle image reproduction by setting the thickness of the detail signal to an appropriate level to match the subject.

H/V ratio control
The ratio between horizontal and vertical detail is adjustable.

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 which can be added to images on the viewfinder screen only to facilitate focusing: functions for adding color to the VF detail signal, flickering the VF detail signal by adding modulation, broadening the VF detail signal, and automatically compensating 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 the fluctuation of the level indicator as a guide.

Various viewfinder functions

Wide variety of viewfinder display options
Camera settings can be displayed on the viewfinder screen, in addition to items such as operation messages, a zebra pattern[1], safety-zone marker[2], and center marker[3]. Also, other indicators are arranged along the top and bottom on the viewfinder screen, such as a tally lamp, battery warning indicator, and warning indicators to alert you when settings are other than standard.

1) Zebra pattern: A stripe pattern displayed on the viewfinder screen which indicates the portions where the video level is above about 70% and 100%. Used to check the video level of the subject.
2) Safety zone marker: A box-shaped marker displayed on the viewfinder screen which indicates 80%, 90%, 92.5%, or 95% of the total screen area
3) Center marker: A cross-shaped marker which indicates the center of the viewfinder screen

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

Optional accessories
You can add new functions by incorporating the following optional accessories.

For information about installing optional accessories, contact a Sony service or sales representative.

HZC-PSF3 Support software for PsF format
Embedding HZC-PSF3 PsF format-compatible software makes creation of 1080/25PsF and 1080/29.97PsF formats possible.
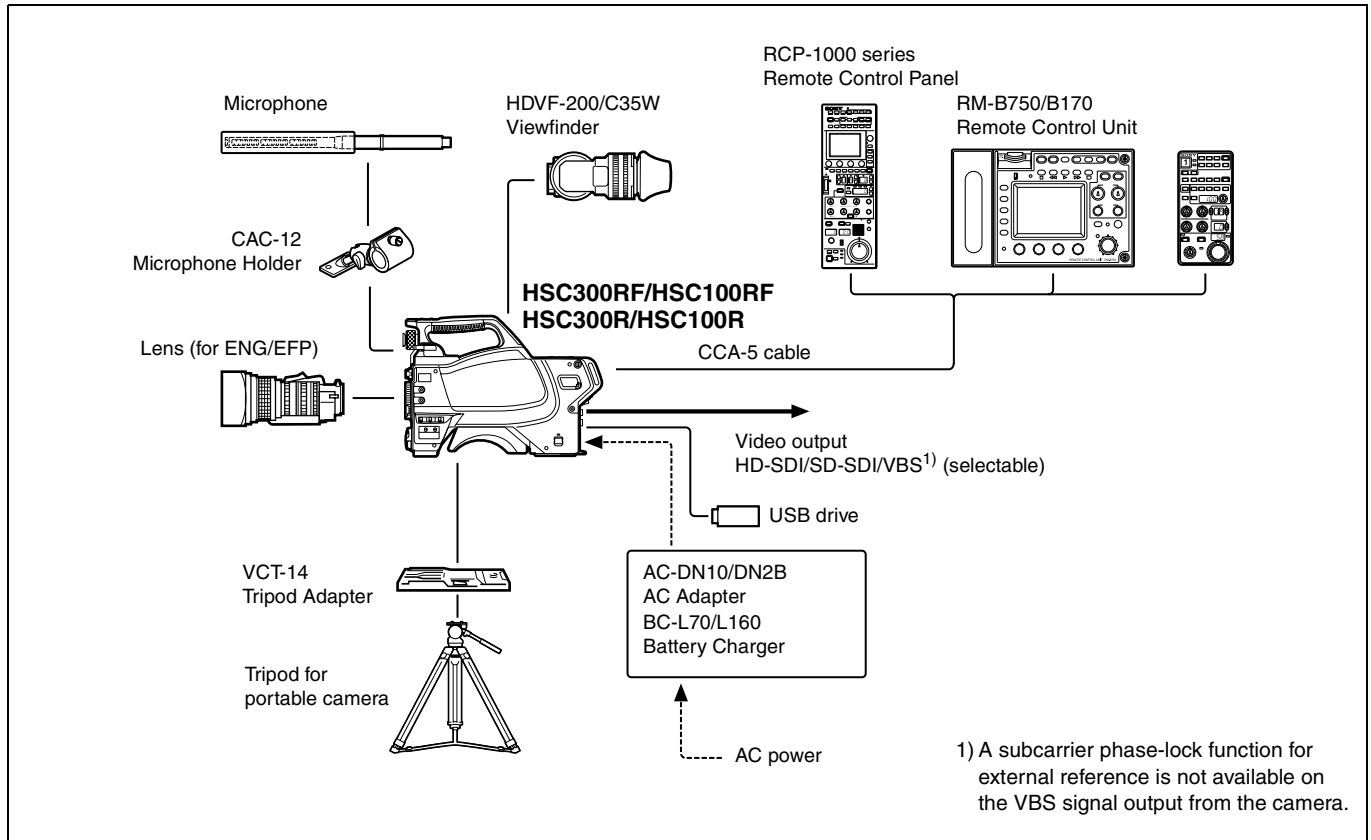
System Configuration Example

Peripheral devices and related devices for the camera are shown in the following diagrams.

Standalone operation example

Microphone

HDVF-200/C35W
Viewfinder

RCP-1000 series
Remote Control Panel

RM-B750/B170
Remote Control Unit

CAC-12
Microphone Holder

HSC300RF/HSC100RF
HSC300R/HSC100R

Lens (for ENG/EFP)

CCA-5 cable

Video output
HD-SDI/SD-SDI/VBS[1] (selectable)

USB drive

VCT-14
Tripod Adapter

AC-DN10/DN2B
AC Adapter
BC-L70/L160
Battery Charger

Tripod for
portable camera

AC power

1) A subcarrier phase-lock function for external reference is not available on the VBS signal output from the camera.

System operation example (two HSC300RF/HSC100RF cameras with camera control units[a])
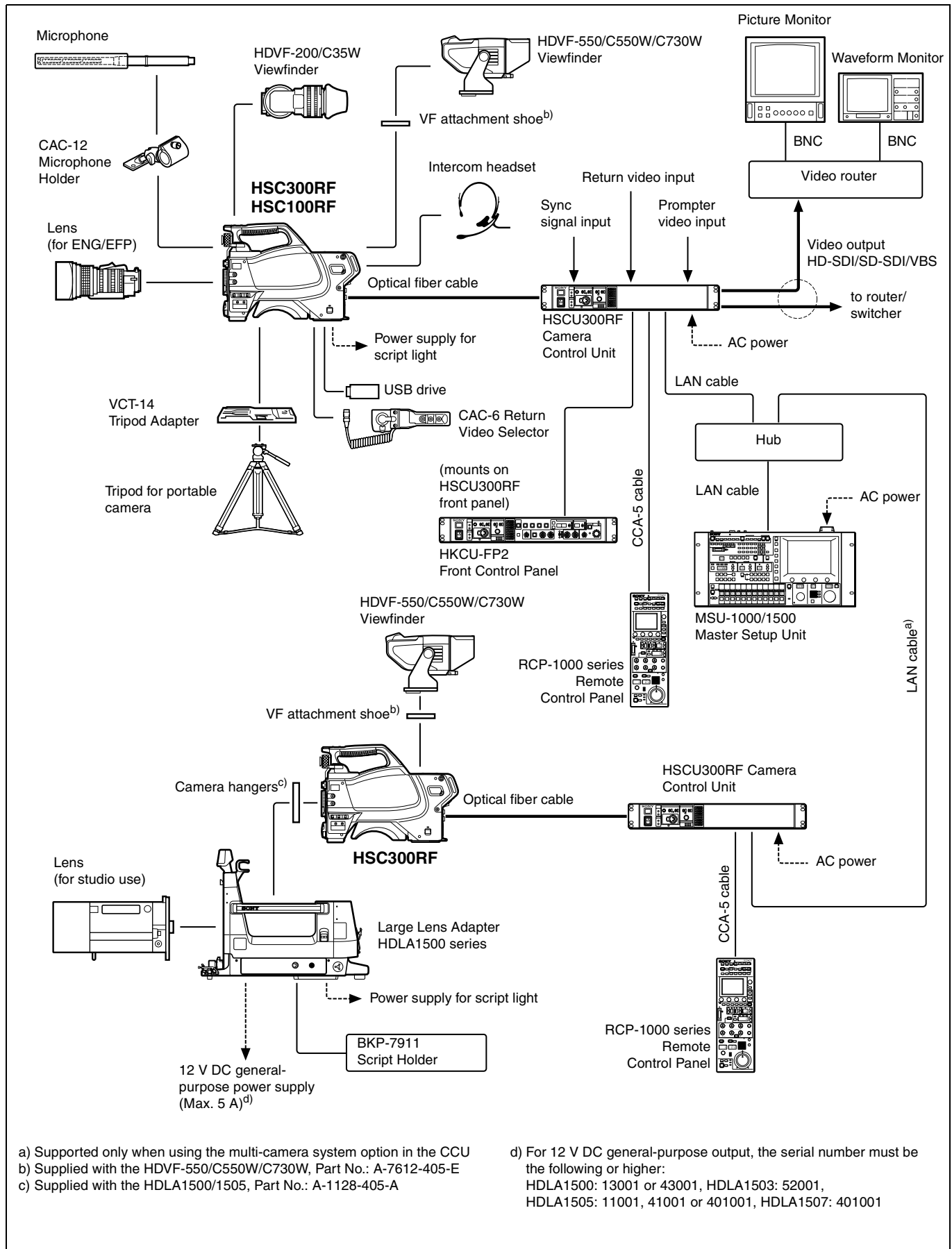
a) Supported only when using the multi-camera system option in the CCU
b) Supplied with the HDVF-550/C550W/C730W, Part No.: A-7612-405-E
c) Supplied with the HDLA1500/1505, Part No.: A-1128-405-A

d) For 12 V DC general-purpose output, the serial number must be the following or higher:
HDLA1500: 13001 or 43001, HDLA1503: 52001,
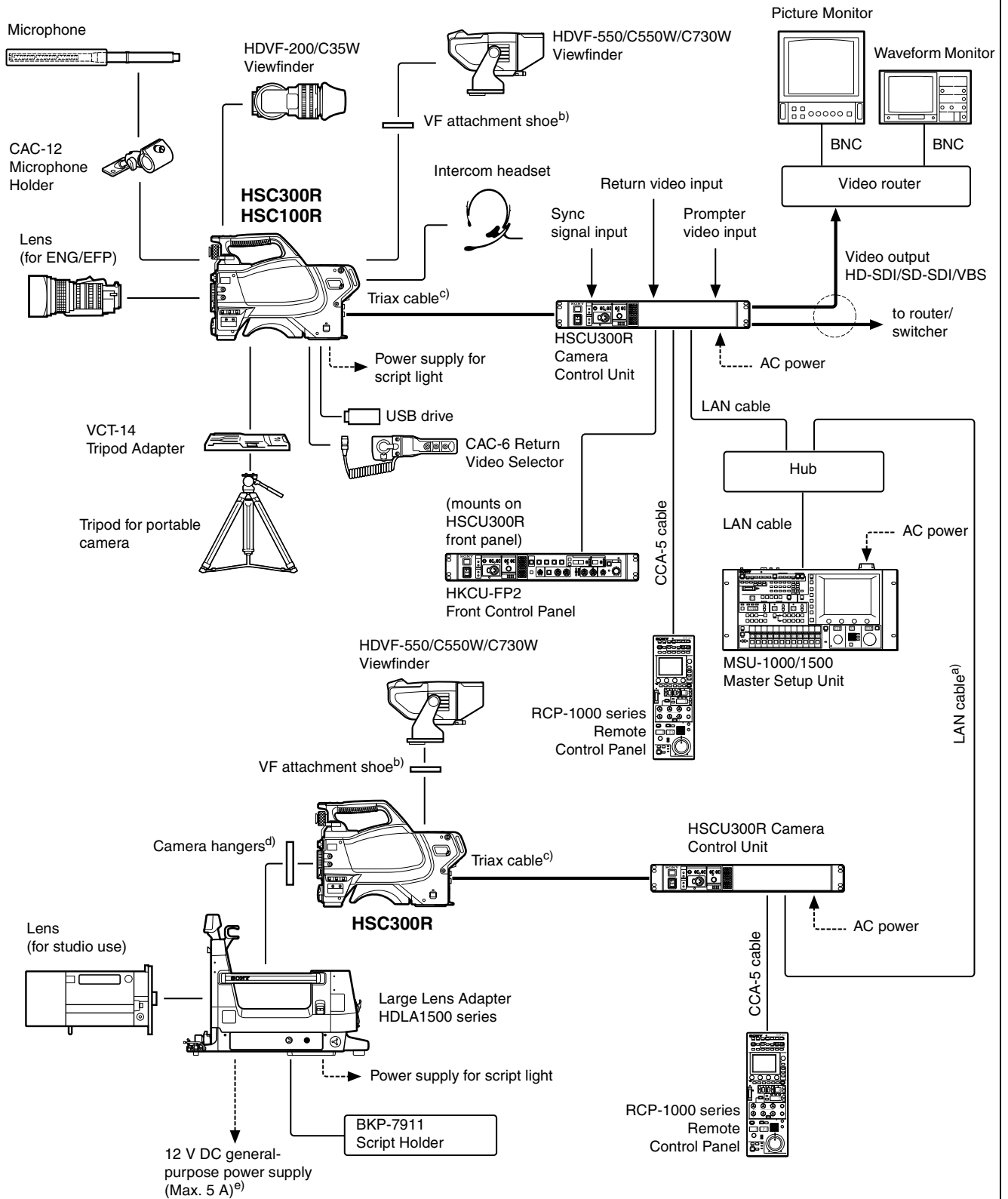HDLA1505: 11001, 41001 or 401001, HDLA1507: 401001

System operation example (two HSC300R/HSC100R cameras with camera control units[a])

a) Supported only when using the multi-camera system option in the CCU
b) Supplied with the HDVF-550/C550W/C730W, Part No.: A-7612-405-E
c) For details about triax transmission distances, see *"Triax Transmission Distances" on page 46*.
d) Supplied with the HDLA1500/1505, Part No.: A-1128-405-A
e) For 12 V DC general-purpose output, the serial number must be the following or higher:
   HDLA1500: 13001 or 43001, HDLA1503: 52001,
   HDLA1505: 11001, 41001 or 401001, HDLA1507: 401001

Locations and Functions of Parts

Front Right
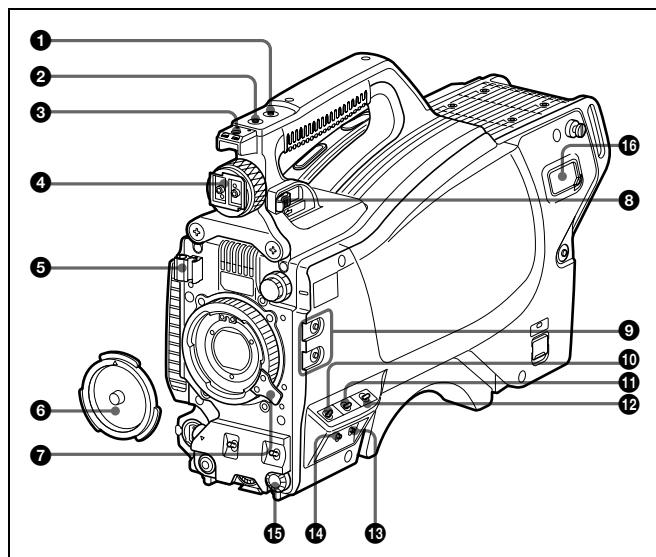
❶ INCOM (intercom) button (UC model)/ENG (engineer line) button (CE model)

UC model: The intercom microphone is on while this button is held pressed.

CE model: The intercom microphone is on and the engineer line is selected while this button is held pressed.

You can also assign other functions with a menu operation.

❷ RET 1 (return video 1) button

Monitors the return video 1 signal from the CCU on the viewfinder screen while this button is held pressed. It functions the same as the RET 1 button on the rear operation panel *(page 10)*.

You can also assign other functions using the menu.

❸ Accessory shoe

Used to attach an accessory using a 1/4-inch screw.

❹ Viewfinder shoe

Mounts a viewfinder.

For details about mounting, see "Attaching a Viewfinder" on page 13.

❺ Lens cable clamp

Secures the cable of the lens (optional).

❻ 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.

❼ Lens fixing lever

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

See "Attaching a Lens" on page 13.

❽ Viewfinder front-rear position lock lever

The viewfinder position can be adjusted forward or backward when the lock is released by the lever.

See "To adjust the viewfinder front-rear position" on page 13.

❾ Assignable buttons

You can assign a function to the upper button using ASSIGNABLE 1 and the lower button using ASSIGNABLE 2 on the <SWITCH ASSIGN1> page of the OPERATION menu.

❿ GAIN switch

Selects the gain of the video amplifier based on lighting conditions when the camera is used in standalone status (without connection to a CCU). Factory default values are L = 0 dB, M = 6 dB, and H = 12 dB.

⓫ AUTO KNEE and output signal selection switch

Selects the signal (color-bar signal or camera video signal) for output to a VTR, the viewfinder, or a video monitor when the camera is used in standalone status (without connection to a CCU).

The auto knee function can be used when the camera video signal is selected for output.

BARS/OFF: Outputs a color-bar signal.

CAM/OFF: Outputs the camera video signal. The auto knee circuit is disabled.

CAM/ON: Outputs the camera video signal. The auto knee circuit is enabled.

⓬ WHITE BAL (white balance memory selection) switch

Selects the white balance adjustment method or the memory used to store the adjusted value when the camera is used in standalone status (without connection to a CCU).

PRST (preset memory): White balance is adjusted to a preset value corresponding to a color temperature of 3200K.

A: Selects memory A.

B: Selects memory B.

> **Note**
>
> When a CCU or an external control device, such as an RCP/RM or MSU, is connected, the functions of ❿ to ⓬ are controlled from the external device, and the controls on the camera are disabled.

⓭ DISPLAY/MENU switch

Selects the display on the viewfinder screen.

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

OFF: Displays the image only.

MENU: Displays menus for camera settings, in addition to the camera image.

The switch functions the same as the DISPLAY/MENU switch on the rear operation panel.

⓮ STATUS/CANCEL switch

STATUS: Displays camera status information when the DISPLAY/MENU switch is set to DISPLAY (not displaying the menu).

CANCEL: Cancels changed settings and returns the display to the previous menu when a menu is displayed in the viewfinder.
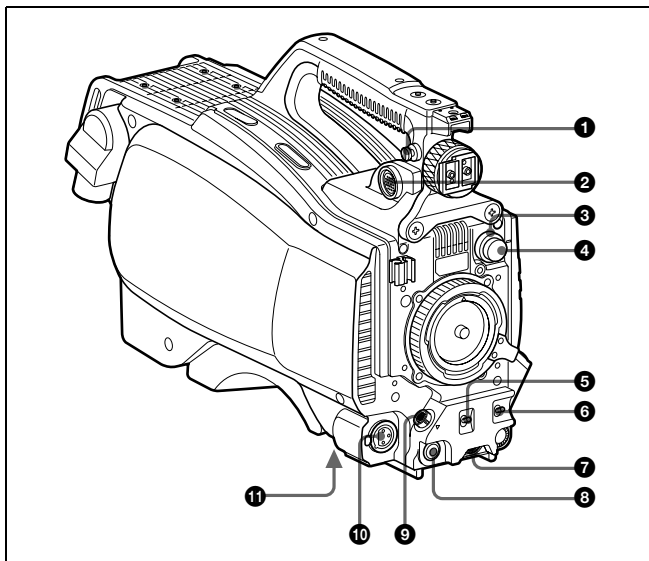
⓯ Menu control knob (rotary encoder)
Selects settings from menu items displayed on the viewfinder screen (by rotating it) and confirms settings (by pushing it). This knob functions the same as the menu control knob on the rear operation panel.

⓰ DC power supply output connector (2-pin)
Supplies up to 2.5 A current (10.5 V to 17 V DC) to an external device.

Front Left

❶ Shoulder strap fitting post
Attach one end of a shoulder strap (optional, part No. A-6772-374-C) to this fitting post and the other end to the fitting post on the other side of the camera.

❷ VF (viewfinder) connector (20-pin)
Connects to the cable of the viewfinder (optional).

❸ CC filter select knob (HSC300RF/HSC300R only)
Selects the built-in CC filters (A: cross, B: 3200K, C: 4300K, D: 6300K).

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

❺ SHUTTER switch
When the camera is used in standalone status (without connection to a CCU), use this switch to turn the electronic shutter ON or OFF and to change (SEL) the shutter speed and shutter mode.

For details, see "Setting the Electronic Shutter" on page 18.

❻ AUTO W/B BAL (white and black balance automatic adjustment) switch
Automatically adjusts white and black balance when the camera is used in standalone status (without connection to a CCU).
WHT: Automatically adjusts white balance.
BLK: Automatically adjusts black balance.

For details, see "Adjusting the Black Balance and White Balance" on page 16.

❼ INTERCOM LEVEL knob
Adjusts the intercom/earphone volume level.
The intercom level adjustment is enabled when the LEVEL/MIC switch on the rear operation panel is set to "FRONT."

❽ RET (return video) button
When this button is pressed, the picture on the viewfinder changes to the return video signal selected with the RET 2/3/4 select switch *(page 10)* on the rear operation panel.
You can also assign other functions to this button using the menu in the viewfinder.

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

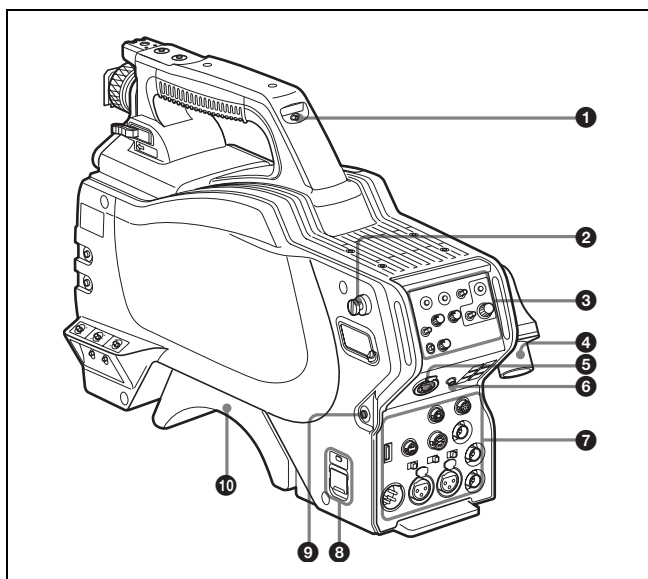**❿ MIC 1 IN (microphone 1 input) connector (XLR 3-pin)**
Connects to a microphone.
This connector and the AUDIO IN CH1 connector are alternately activated with the MIC 1 select switch on the rear connector panel.

⓫ Tripod mount (bottom)
Attaches to a VCT-14 Tripod Adapter when mounting the camera on a tripod.

For details, see "Mounting the Camera to a Tripod" on page 15.

Rear

❶ Tally lamp and switch
ON: The tally lamp lights when a tally signal is input to the connected CCU or a call signal is generated in response to pressing of a CALL button.
OFF: The tally lamp is disabled.

❷ Shoulder strap fitting post

❸ Operation panel (see "Operation Panel")

❹ Camera control unit (CCU) connector (optical fiber/triax connector)
Connects to a HSCU300RF/HSCU300R camera control unit using an optical fiber cable or a triax cable.

5 INTERCOM connector (XLR 5-pin)
Connects to an XLR 5-pin headset for input and output of intercom audio signals.

6 EARPHONE jack (stereo minijack)
Connects to an earphone for output of the intercom audio.

7 Connector panel (see Connector Panel *(page 11)*)

8 CAMERA POWER switch and indicator
CCU: Operates the power supply from the camera control unit.
EXT: Operates the power supply from the DC IN connector.
The indicator is lit in green during operation.
It is lit in red while standby power is being supplied from the CCU, even if the switch is set to OFF.

> **Note**
>
> When a CCU is connected, external power supply (EXT) cannot be used.

9 CALL button
When pressed, the red tally lamp of the connected external control device (RCP/RM, MSU, etc.) will light. Use to call the operator of the external control device.
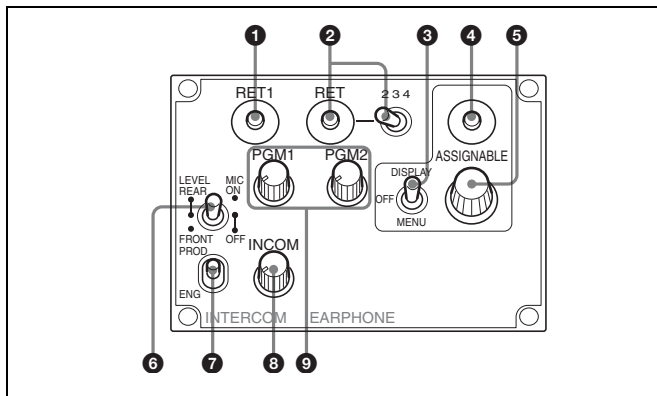
10 Shoulder pad
You can adjust the position forward or backward.

For details, see "Adjusting the Shoulder Pad Position" on page 16.

Operation Panel

UC type: Model for NTSC areas

1 RET 1 (return video 1) button
The return video signal is displayed on the viewfinder screen while the button is held pressed.

2 RET (return video) button and 2/3/4 (return video 2/3/4) select switch
When other return video systems are used in addition to return video 1, the signal selected with the 2/3/4 switch is displayed on the viewfinder screen while holding the RET button pressed.

> **Note**
>
> The RET 1 button has priority over the RET (2/3/4) button if both buttons are pressed.

3 DISPLAY/MENU switch
This switch functions the same as the DISPLAY/MENU switch on the front *(page 8)*.

4 ASSIGNABLE button
You can assign a function with ASSIGNABLE REAR on the <SWITCH ASSIGN1> page of the OPERATION menu.

5 Menu control knob (rotary encoder)
This knob functions the same as the menu control knob on the front *(page 9)*.

6 LEVEL/MIC (intercom level control/microphone) switch
To determine whether to use the INTERCOM LEVEL knob *(page 9)* on the front and to turn the intercom headset microphone ON/OFF.

Switch position	INTERCOM LEVEL knob on the front	Headset microphone
REAR/ON	Inactive	ON
REAR/OFF		OFF
FRONT/OFF	Active	

7 Line select switch
To select the intercom line:
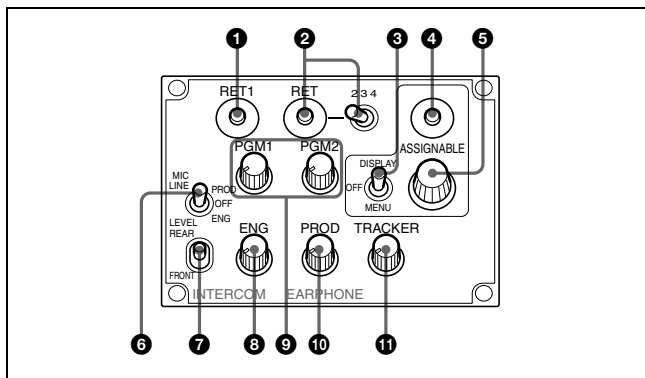**PROD:** Producer line
ENG: Engineer line

8 INCOM (intercom) level knob
To adjust the intercom audio listening level.

9 PGM1 (program 1) and PGM2 (program 2) knobs
To adjust the audio listening level of program 1 or program 2, respectively.

CE type: Models for PAL areas

1 to **5** are the same as those of the UC type.

6 MIC LINE (intercom microphone line) switch
To select the talk line for intercom:
PROD: To talk over the producer line
OFF: To turn off the headset microphone for the intercom line
ENG: To talk over the engineer line

7 LEVEL switch
REAR: The intercom audio listening level is adjusted with the ENG or PROD knob on this panel.
FRONT: The levels adjusted on the rear panel can be totally adjusted with the INTERCOM LEVEL knob on the front.

8 ENG (engineer line) knob
To adjust the intercom audio listening level of the engineer line.

⑨ PGM1 (program 1) and PGM2 (program 2) knobs
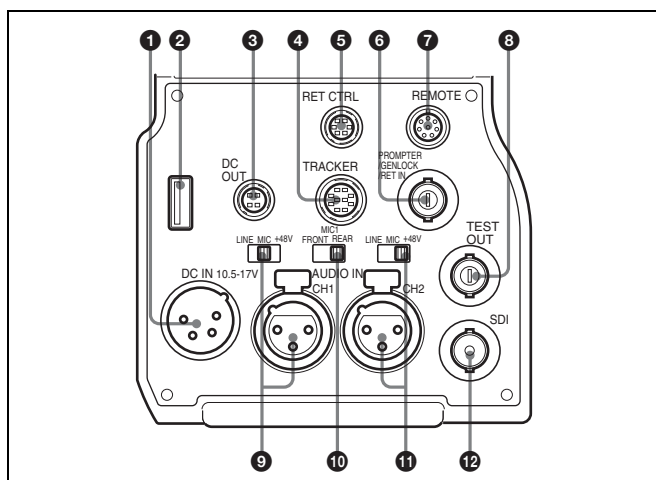To adjust the audio listening level of program 1 or program 2, respectively.

⑩ PROD (producer line) knob
To adjust the intercom audio listening level of the producer line.

⑪ TRACKER knob
To adjust the intercom audio listening level at the TRACKER connector on the connector panel.

Connector Panel

❶ DC IN (DC power supply input) connector (XLR 4-pin)
Connects to an AC-DN10 AC Adapter, etc. to supply power to the camera. (When a CCU is connected, this connector cannot be used.)

❷ USB connector (for USB drive)
Connects to a USB drive to save and load the settings data file.

❸ DC OUT (DC power supply output) connector (4-pin)
Supplies power to a script light or equivalent (10.5 to 17 V DC, max. 0.5 A).

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

❺ RET CTRL (return control) connector (6-pin)
Connects to a CAC-6 Return Video Selector.

❻ PROMPTER/GENLOCK/RET IN (prompter signal output/external sync signal input/VBS return input) connector (BNC type)
• When a CCU is connected, this connector outputs a VBS prompter 1 signal.
• When the camera is used in standalone status (without connection to a CCU), use this connector to input an external sync signal (BB or 3-level sync). If a VBS signal is input, you can check the input image by pressing the RET button.

Notes

• Even when a BB signal is used for the external sync signal, a subcarrier phase-lock function is not available on the VBS output signal.
• PROMPTER is set to PWR SAVE by factory default, so a prompter signal is not output. To activate it, set it to "ACTIVE" on the POWER SAVE page of the MAINTENANCE menu.

❼ REMOTE connector (8-pin)
Connects to an RM-B170/B750 Remote Control Unit, RCP-1000-series Remote Control Panel, or MSU-1000/1500 Master Setup Unit.

Note

When a CCU is connected, this connector functions as the trunk signal input/output. Do not connect any external control device to this connector.

❽ TEST OUT connector (BNC type)
Outputs an analog signal.
This supplies a VBS signal, a VBS prompter 2 signal (HSC300R only), an HD-Y signal the same as the signal output from the VF connector, an HD-SYNC signal, or an SD-SYNC signal, depending on which is enabled in the menu.

Note

A subcarrier phase-lock function is not available for external sync signals on the VBS output signal.

❾ AUDIO IN CH1 connector (XLR 3-pin) and input select switch
Selects the audio signal for channel 1. Set the input select switch to match the connected device.
LINE: When a line-level (0 dBu) signal source is connected
MIC: When a microphone is connected
+48V: When supplying +48 V power to the connected microphone

❿ MIC 1 (microphone 1) select switch
Selects the microphone for channel 1.
FRONT: When using the microphone connected to the MIC 1 IN connector
REAR: When using the microphone connected to the AUDIO IN CH1 connector

⓫ AUDIO IN CH2 connector (XLR 3-pin) and input select switch
Selects the audio signal for channel 2. Set the switch in the same manner as for CH1.

⓬ SDI (serial digital interface) connector (BNC type)
Outputs an HD-SDI or SD-SDI signal.
You can select to output the camera line signal, return signal, VF signal, or SDI prompter signal (HSCU300R connection only) using the menu.

Note

A prompter signal can be output from the camera with format selected on the CCU.
The prompter signal type and output connector varies with the camera and model of CCU.

Camera	Prompter signal (varies with CCU model)	Output connector
HSC300RF/ HSC100RF	VBS × 1ch	PROMPTER/GENLOCK/RET IN
HSC300R	VBS × 2ch	①PROMPTER/GENLOCK/RET IN ②TEST OUT
	HD-SDI/SD-SDI × 1ch	SDI OUT
	VBS-Y × 1ch (Low Latency)	PROMPTER/GENLOCK/RET IN
HSC100R	VBS × 1ch	PROMPTER/GENLOCK/RET IN
	VBS-Y × 1ch (Low Latency)	PROMPTER/GENLOCK/RET IN

Connection and Setup

Connecting a Camera Control Unit (CCU)

When operating the camera in a system with a CCU, connect the CCU connector of the camera and the CAMERA connector of the CCU using an optical fiber cable or triax cable.
Secure the cable, as required, using the supplied cable clamp belt.

To use the cable clamp belt

1 **Insert the belt bracket ⓒ into hole ⓐ or ⓑ of the cable clamp belt.**
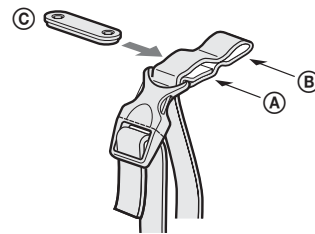
2 **① Remove the back screw-hole cover on the top of the camera and ② secure the cable clamp belt to the camera, using the two supplied screws (+B3 × 10).**
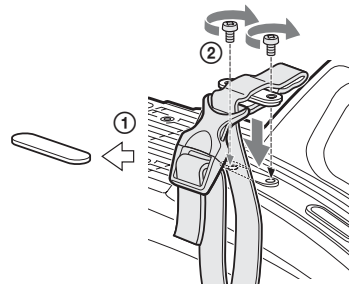
3 **① Release the buckle, ② bundle the cable with the belt, ③ then lock the buckle again.**

4 Adjust the length by pulling down the end of the belt.

Attaching a Lens

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

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

2 Align the lens alignment pin Ⓒ with the notch Ⓑ in the upper part of the lens mount and insert the lens into the mount.
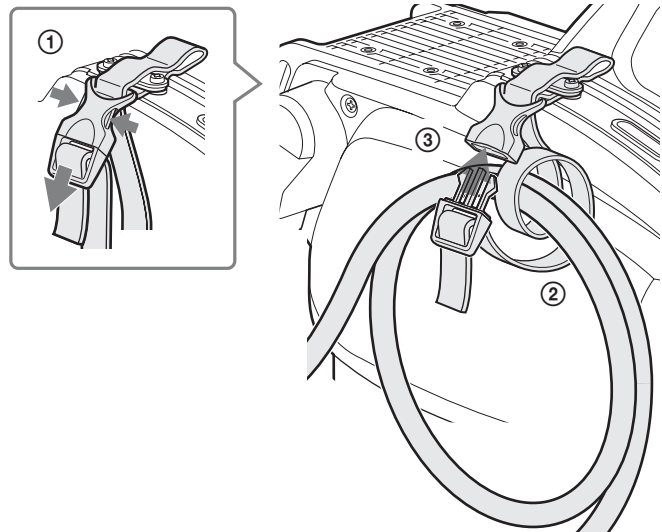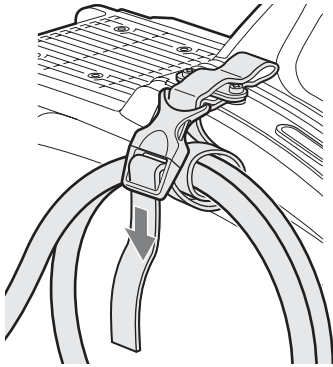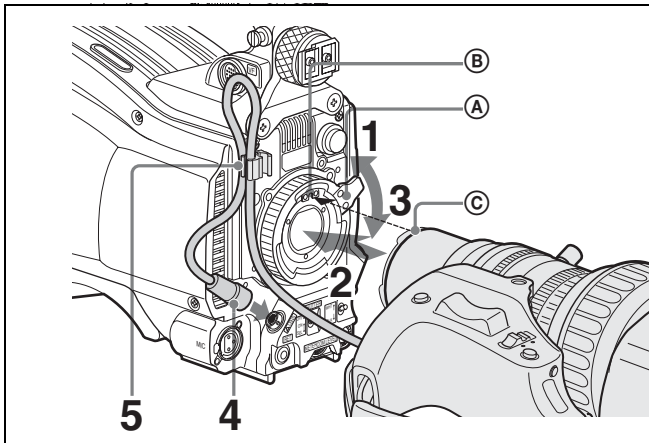
3 While supporting the lens, push the lens fixing lever Ⓐ downward to secure the lens.

4 Connect the lens cable to the LENS connector.

5 Secure the lens cable with the cable clamp.

To use a large studio-use lens
HSC300RF/HSC300R: A large studio-use lens can be used by mounting the camera on an optional HDLA1500-series Large Lens Adapter.

Note

When attaching the camera hangers to the camera, always use the screws (+B4 × 10) supplied with the lens adapter.

For details, refer to the operation manual supplied with the HDLA1500-series adapter.

Attaching a Viewfinder

Caution

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

Example: Attaching an HDVF-200 Viewfinder
For details on the viewfinder, refer to the operation manual for the viewfinder.
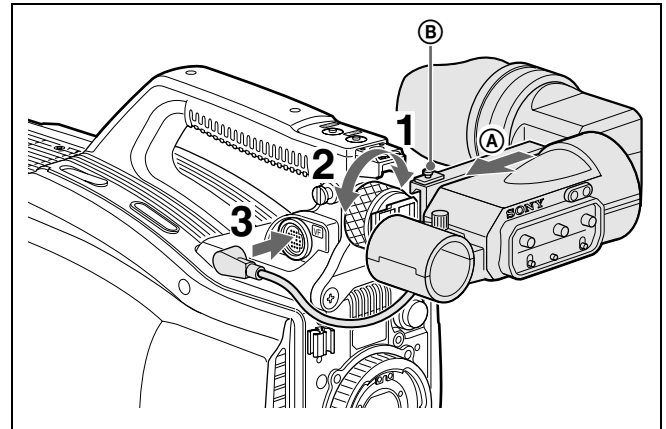
1 Loosen the viewfinder left-right positioning ring and slide the viewfinder in the direction of arrow Ⓐ.
The viewfinder stopper Ⓑ automatically pops down.

2 Tighten the viewfinder left-right positioning ring to secure the viewfinder at the most convenient position.

3 Connect the viewfinder cable to the VF connector.

To adjust the viewfinder front-rear position
The viewfinder can slide in the range of 53 mm (2 $\frac{1}{8}$ inches). Adjust the front-rear position so that you can easily operate it on your shoulder.
① Pull the LOCK lever backward and ② slide the viewfinder backward or forward. Adjust the viewfinder front-rear position and ③ lock it by returning the lever forward to the original position.

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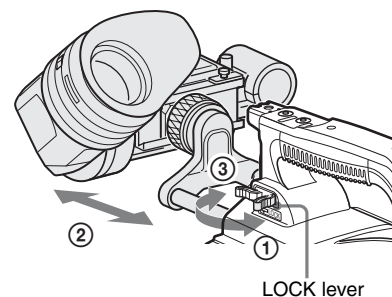
To detach the viewfinder
Loosen the viewfinder left-right positioning ring, pull the viewfinder stopper, then pull out the viewfinder by sliding it in the direction opposite to that when attached.

Status displays in the viewfinder

Besides the video image, the viewfinder can display characters 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/MENU switch is set to DISPLAY
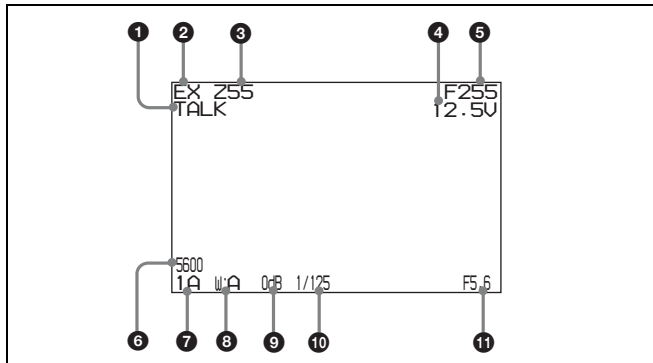
Items set to ON using the menu or related switches will be displayed.

❶ TALK indicator
Displayed when the intercom microphone is set to ON.

❷ EX (lens extender) indicator
Displayed when using a lens extender.

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

❹ Battery voltage indicator
When the CAMERA POWER switch is set to EXT, the DC IN voltage is displayed. When the switch is set to CCU, the internal voltage of the camera is displayed.

❺ Focus position indicator
Shows the focus position of a zoom lens as a numeric value (0 to 255 [infinity]).

❻ 5600K mode indicator
Displayed when the internal electric filter (5600K) is set to ON.

❼ Filter indicator
Displays the types of filters currently selected. The number (1, 2, 3, or 4) indicates the ND filter, and the letter (A, B, C, or D) indicates the CC filter (HSC300RF/HSC300R only).

❽ White balance memory indicator
Shows the currently selected white balance automatic adjustment memory. This is not displayed when a CCU is connected.

W:A: The WHITE BAL switch is set to A.
W:B: The WHITE BAL switch is set to B.
W:P: The WHITE BAL switch is set to PRST.

❾ Gain value indicator
Shows the video gain value (dB) set with the GAIN switch.

❿ Shutter/ECS indicator
Displays the shutter/ECS status. Nothing is displayed if the shutter is set to OFF.

⓫ F-stop value indicator
Displays the lens f-stop value (iris value).

When the STATUS/CANCEL switch is set to STATUS

The status display changes to show the following items:
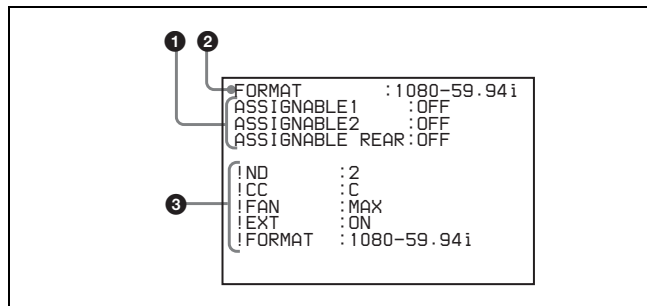
❶ Assignable button function display
Displays the functions assigned to the assignable buttons.

For details about the functions that can be assigned, see OPERATION menu <SWITCH ASSIGN1> on page 33.

❷ Format display
Displays the current video format.

❸ '!' display area
Displays non-standard conditions using the '!' IND function. The display options can be set using the menu. ("!CC" display on HSC300RF/HSC300R only)

For details, see OPERATION menu <'!' IND> on page 24.

Attaching a Microphone

A microphone can be attached to the camera, using the microphone holder of the viewfinder or an optional CAC-12 Microphone Holder.

For details about attaching to the microphone holder of the viewfinder, refer to the instruction manual for the viewfinder.

When the microphone is attached to the microphone holder of the viewfinder

Secure the microphone cable Ⓐ to the cable clamp Ⓑ of the camera.
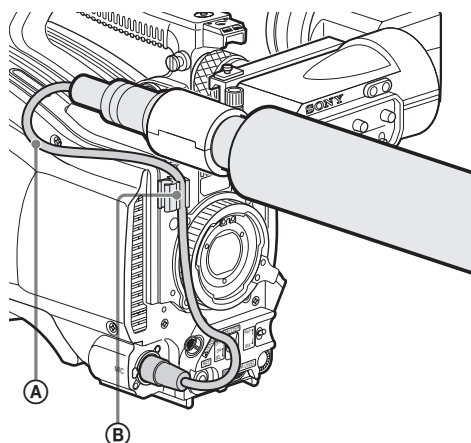
To attach a microphone using a CAC-12

When attaching a long-type microphone, such as an ECM-674/678, use an optional CAC-12 Microphone Holder.

1 ① **Remove the front screw-hole cover on the top then** ② **fix the CAC-12 in place with the two screws (+B4 × 8) supplied with the CAC-12.**
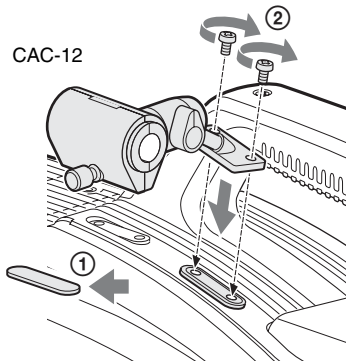
CAC-12

2 **Loosen the screw to open the CAC-12 and attach the microphone.**

If the microphone diameter is small, attach the adapter Ⓐ (supplied with the CAC-12 or the microphone) to the microphone.
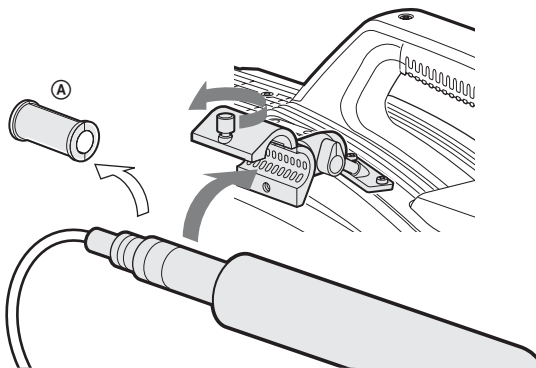
Mounting the Camera to a Tripod

Mount the camera to a tripod, using an optional VCT-14 Tripod Adapter.

Notes

- Select an appropriate hole from among those at the bottom of the tripod adapter considering the balance of the weight of the camera and the tripod adapter. 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 adapter cannot be attached to the tripod securely.

Tripod adapter

Platform
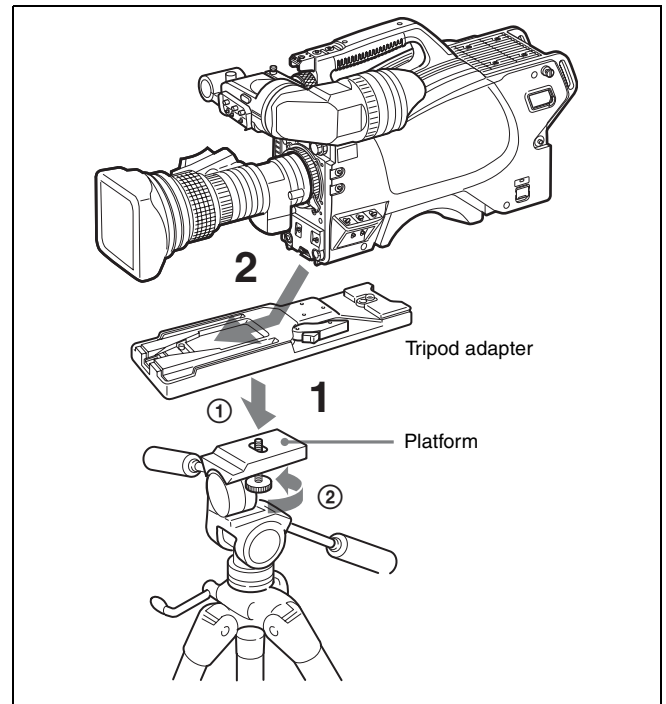
1 ① **Attach the tripod adapter to the tripod and** ② **secure it with the screw.**

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

3 **Move the camera backward and forward and check that the camera does not come off.**

To remove the camera from the tripod adapter

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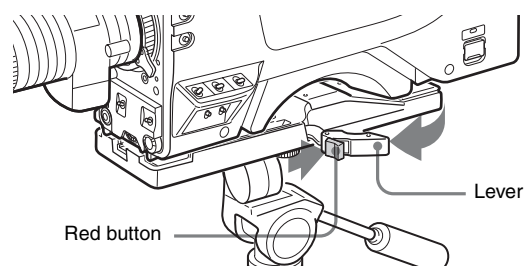
Lever

Red button

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

After removing the camera, if the pin of the tripod adapter 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.

Original position
Pin
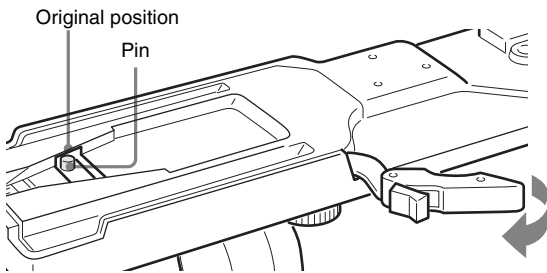
Adjusting the Shoulder Pad Position

You can shift the shoulder pad in the range of 28 mm (1 $\frac{1}{8}$ inches). This adjustment helps you get the best balance for shooting with the camera on your shoulder.

To adjust

① Raise the lever in the center of the shoulder pad to unlock the shoulder pad, ② slide the shoulder pad backward or forward until it is in the most convenient position, and ③ move the lever down to lock the shoulder pad in the selected position.

Lock lever
①
③

Bottom of the camera

②
Shoulder pad
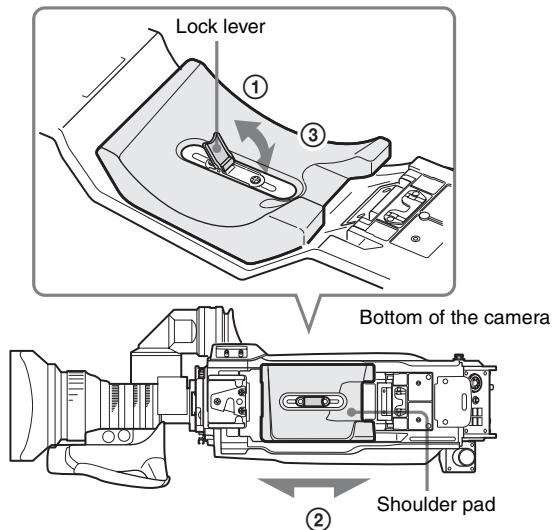
Adjustments/Settings

Adjusting the Black Balance and White Balance

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

Note

When a CCU, RCP/RM, MSU or other external device is connected, the camera is controlled from the external control device, and the switches on the camera are disabled.

Black balance adjustment

The black balance needs adjustment in situations like the following:
- The first time the camera is used
- When the camera is used after a long period of disuse
- When the surrounding temperature changes greatly
- When the gain value is changed using the setup menus

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

White balance adjustment

Always adjust the white balance when lighting conditions change.

To adjust the black balance

Push the AUTO W/B BAL switch to BLK.

WHT
BLK
RET SEL
ON
OFF
INTERCOM LEVEL

AUTO W/B BAL switch
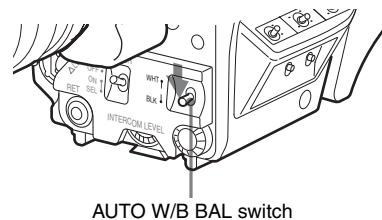
Automatic black balance adjustment begins.
In automatic adjustment of black balance, both the black set and black balance are adjusted.
During adjustment, the message "ABB: EXECUTING" will be displayed on the viewfinder screen.
When the adjustment process is completed, the message "ABB: OK" will be displayed. The adjusted value is automatically stored in memory.
The black balance values stored in memory will be preserved even when the camera power is turned off.

Notes

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

To adjust the white balance

1 **Select the built-in filters according to the lighting conditions with the filter select knobs.**

- **HSC300RF/HSC300R**

CC filter select knob

ND filter select knob
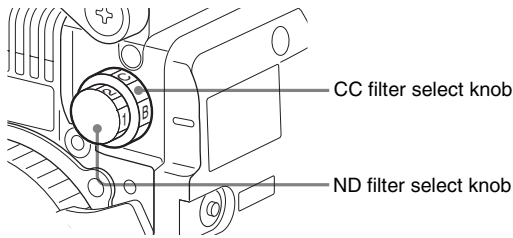
ND filter		CC (color temperature conversion) filter	
1	Clear	A	Cross filter
2	1/4 ND	B	3200K (clear)
3	1/16 ND	C	4300K
4	1/64 ND	D	6300K

- **HSC100RF/HSC100R**
  (1: clear, 2: 1/4 ND, 3: 1/16 ND, 4: 1/64 ND)

Filter select knob
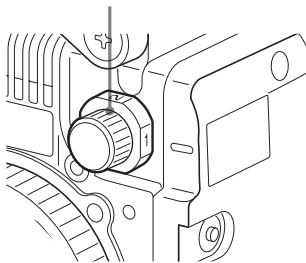
2 **Place a white pattern, as shown below, with the same lighting conditions as the subject, and zoom in on it.**
A white object (white cloth, a white wall, etc.) near the subject may be used in place of a white pattern.

A rectangle centered in the screen:
The length of the sides must be at least 70% of the height and width of the screen.
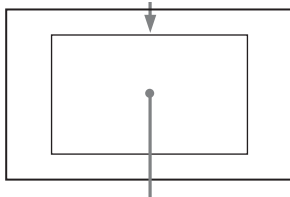
Within this rectangle, there must be an area of white greater than 10% of the entire screen.

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

3 **Adjust the lens iris opening.**
With a manually adjusted lens: Set the opening to an appropriate value.

With a lens which has automatic iris control: Set the lens automatic/manual iris control switch to automatic.

4 **Select white balance memory A or B with the WHITE BAL switch and set the AUTO W/B BAL switch to WHT.**

WHITE BAL switch

AUTO W/B BAL switch
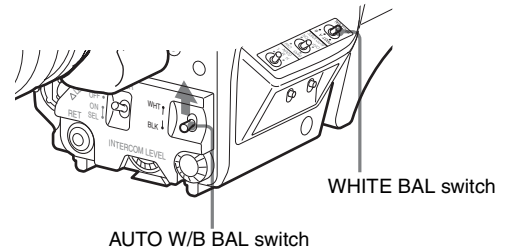
Automatic white balance adjustment begins.
During adjustment, the message "AWB: EXECUTING" will be displayed on the viewfinder screen.
After about one second, the message "AWB: OK" will be displayed, and the adjustment process will complete. The adjusted value will be automatically stored in the selected memory (A or B).

Note

When using a zoom lens with automatic iris control capability, hunting[1] may occur. Adjust the lens iris gain control (labeled IG, IS, S, etc.).
1) Hunting: The automatic iris responds over and over, and the image repeatedly darkens and lightens.

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

About white balance memory

There are two white balance memories: A and B. When you execute automatic white balance adjustment, the adjusted white balance value and the settings of the filter select knobs will be stored in either memory A or B, selected with the WHITE BAL switch.
The white balance values stored in memory will be preserved even when power is turned off.
When power is turned on again, the white balance in memory corresponding to the current WHITE BAL switch setting is retrieved.
By setting FILTER WHT MEM to ON on the <OTHERS 2> page of the MAINTENANCE menu, you can store a white balance value for each of the built-in CC filters in memory A and B individually. In this case, a total of 8 white balance values can be stored as the camera has four CC filters. The settings of the filter select knobs are not stored when you adjust white balance with FILTER WHT MEM set to ON. In this case, the white balance in memory corresponding to the current WHITE BAL switch and CC filter select knob settings is retrieved when power is turned on again.

If automatic black balance or white balance adjustment fails

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

Setting the Electronic Shutter

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

Note

When a CCU, RCP/RM, MSU or other external device is connected, the camera is controlled from the external control device, and the switches on the camera are disabled.

About shutter modes

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

Shutter mode	Shutter speed[1]	Usage
Standard	1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000 seconds	Use to obtain clear images of quickly moving subjects
ECS (Extended Clear Scan)	Variable over range 60.0 Hz to 4300 Hz	Use to obtain images of video monitors without horizontal striping

1) The values in the table are for 59.94i format. With other formats, the available values may be different.

Note

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

Selecting the shutter mode and speed

The shutter mode (Standard mode or ECS mode) and the shutter speed in Standard mode are set using the SHUTTER switch.

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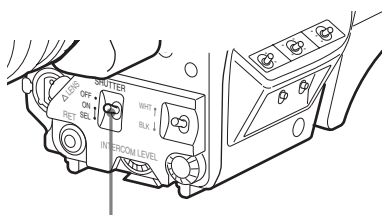
SHUTTER switch

The current shutter setting will be displayed in the viewfinder for about three seconds.
Example: "Shutter: 1/250"

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

Example: 59.94i format

Standard mode

ECS mode
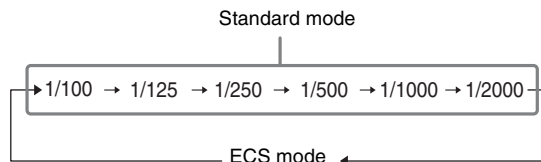
Setting the Time

When using the camera for the first time, set the built-in clock to the local time, using the <DATE> page of the MAINTENANCE menu displayed on the viewfinder screen.

For details about menu operations, see "Menus" on page 22.

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.

```
<TOP MENU>

➡USER
 USER MENU CUSTOMIZE
 ALL
 ·OPERATION
 ·PAINT
 ·MAINTENANCE
 ·FILE
 ·DIAGNOSIS
```
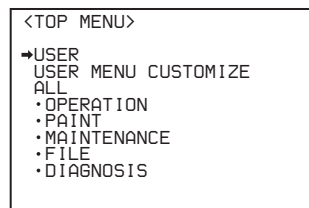
4 Rotate the menu control knob to position the cursor to MAINTENANCE and push on the menu control knob.
The CONTENTS page of the MAINTENANCE menu is displayed.

```
   CONTENTS    M00 TOP
↓↓
➡01.<AUTO SETUP>
 02.<WHITE SHADING>
 03.<BLACK SHADING>
 04.<OHB MATRIX>
 05.<AUTO IRIS>
 06.<MIC GAIN>
 07.<UP TALLY>
 08.<CALL/TALLY>
 09.<OUTPUT FORMAT>
 10.<DOWN CONVERTER>
```
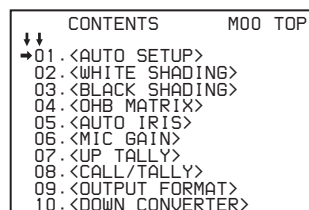
5 Turn the menu control knob to scroll the page and position the pointer to <DATE> then push on the menu control knob.
The <DATE> page is displayed.

```
<DATE>              M16 TOP
DATE/TIME
  ↓
  2013/12/23    08:32
```
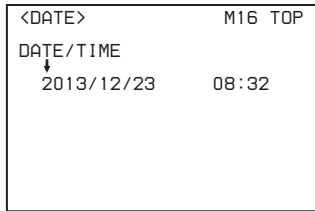
6 **Turn the menu control knob and set the date and time.**
Push on the menu control knob to shift to the next digit.

7 **To finish the adjustments, set the DISPLAY/MENU switch to OFF to exit menu mode.**

Adjusting the Lens (Flange Back)

Adjustment of the flange back focal distance (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 back focal distance can be more precisely adjusted by using the focus assist indicators.

For details about focus assist indicators, see "Displaying the focus assist indicators" on page 20.

Note

The various parts of the lens used in adjusting the flange back focal distance vary depending on the lens. Refer to the operation manual for the lens.

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

2 **Place a flange back adjustment chart approximately 3 meters (10 ft.) from the camera and adjust the lighting to get an appropriate video output level.**

About 3 meters (10 ft)
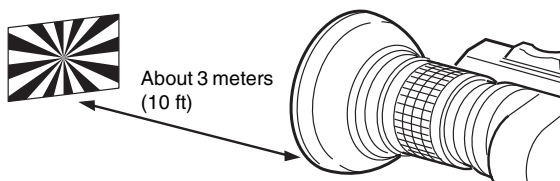
3 **Loosen the Ff (flange focal length) ring lock screw.**

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

5 **Aim at the flange back 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 flange back 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 viewfinder screen can be activated.

Adding a VF detail signal

Adding a 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.

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.

```
<TOP MENU>

→USER
 USER MENU CUSTOMIZE
 ALL
 ·OPERATION
 ·PAINT
 ·MAINTENANCE
 ·FILE
 ·DIAGNOSIS
```
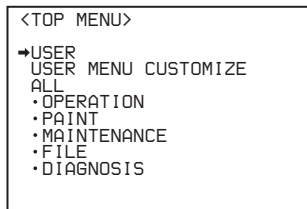
4 **Rotate the menu control knob to align the pointer to OPERATION and push on the knob.**
The CONTENTS page of the OPERATION menu is displayed.

```
   CONTENTS      00  TOP
↓↓
→01.<VF DISPLAY>
 02.<'!'IND>
 03.<VF MARKER>
 04.<VF DETAIL>
 05.<FOCUS ASSIST>
 06.<ZEBRA>
 07.<CURSOR>
 08.<VF OUT>
 09.<SWITCH ASSIGN1>
 10.<SWITCH ASSIGN2>
```
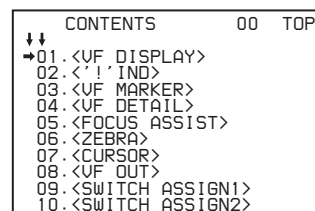
5 **Rotate the menu control knob to align the pointer to <VF DETAIL> and push on the knob.**
The <VF DETAIL> page is displayed.

```
<VF DETAIL>      → 04 TOP

VF DETAIL : ON      25%
 CRISP    :    0
 FREQUENCY:   9M
 FLICKER  :  OFF
 AREA     :  70%
 ZOOM LINK: 100%
COLOR DETAIL : ON   BLUE
 PEAK COLOR :  ON
 CHROMA LEVEL: 100%
 RETURN DISABLE:OFF
```
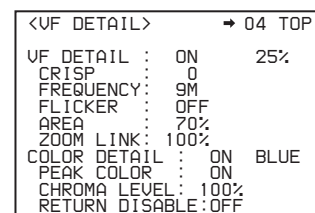
6 **Rotate the menu control knob to align the pointer to the item to be set and push on the knob.**

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: Turn the function ON/OFF to flicker the detail signal, which makes it easier to check the 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.)

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 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 (only for video signals on the viewfinder).

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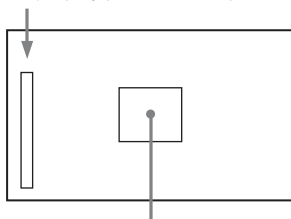
Area marker to display the detection area of the focus (size and position can be adjusted)

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 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.
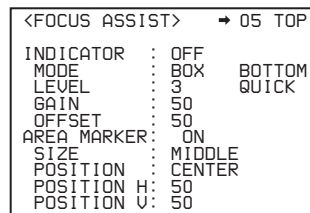
```
<FOCUS ASSIST>     → 05 TOP

INDICATOR  : OFF
MODE       : BOX    BOTTOM
LEVEL      : 3      QUICK
GAIN       : 50
OFFSET     : 50
AREA MARKER:  ON
SIZE       : MIDDLE
POSITION   : CENTER
POSITION H: 50
POSITION V: 50
```

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 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 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 level indicator and the effect area marker cannot be displayed simultaneously. Subsequently, whichever you set to ON is preferentially displayed.

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

For details about flange back, see "Adjusting the Lens (Flange Back)" on page 19.

Setting the Camera Outputs

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

Note

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

The menu pages used for the output settings have been registered to the USER menu at the factory.
- <POWER SAVE>
- <OUTPUT FORMAT>
- <TEST OUT>
- <SDI OUT>

Set the menu items on the above menu pages to the settings shown in the following tables.

For details about menu operations and the USER menu, see "Menus" on page 22.

Outputting the signal being shot (camera picture)

The same textual information as that displayed on the viewfinder screen 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 OUT	MAIN

To output as SD-SDI

Menu page	Item	Setting
<SDI OUT>	SDI OUT	SD-SDI

To output as VBS

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

Outputting a constant return video

- When a CCU is connected, one of the signals being supplied to the CCU can be output from the camera.
- The last selected return signal is output.
- The same character information as that displayed on the viewfinder screen 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 OUT	RET

To output as SD-SDI

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

To output as VBS

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

Outputting the same image as that on the viewfinder screen

- With HD-SDI, you can obtain a signal that includes the same information as that being displayed on the viewfinder screen 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 the switching of the Y, R, G, B, or return signal.
- With SD-SDI or VBS, the output is synchronized only with switching between a return signal and the camera image. Switching of Y, R, G, and B is not supported. Also, 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 in 1080i format, even if the format setting is 720P.

To output as HD-SDI

Menu page	Item	Setting
<SDI OUT>	SDI OUT	VF

To output as SD-SDI

Menu page	Item	Setting
<POWER SAVE>	DOWN CONVERTER	ACTIVE
<SDI OUT>	SDI OUT	SD-SDI
	DOWN CONVERTER SELECT	VF

To output as VBS

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

Outputting a prompter signal (HSC300R)

There are two types of prompter signals (VBS and SDI) which are selected using a menu of the connected CCU.

In the case of the VBS prompter

Two prompter lines can be used at the same time.
- A VBS signal input to the PROMPTER1 connector on a CCU is output from the PROMPTER/GENLOCK/RET IN connector of this unit.
- A VBS signal input to the PROMPTER2 connector on a CCU is output from the TEST OUT connector of this unit.

To output the prompter 2 signal from the TEST OUT connector

Menu page	Item	Setting
<TEST OUT>	OUTPUT	PROMPTER2

In the case of the SDI prompter

Either HD-SDI or SD-SDI can be input.
- The signal supplied to the SDI RET connector of the CCU is output from the SDI connector of the camera.
- Menus of the CCU are used for switching between SDI RET1 and SDI RET2 of the CCU input connectors, as well as between HD-SDI and SD-SDI.

To output the SDI prompter signal from the SDI connector

Menu page	Item	Setting
<SDI OUT>	SDI OUT	SDI-PROMPTER

Outputting a prompter signal (HSC300RF/HSC100RF/HSC100R)

A VBS signal input to the PROMPTER connector on a CCU is output from the PROMPTER/GENLOCK/RET IN connector of this unit.

Outputting a Trunk Signal

Connects to an external device connected to the TRUNK connector on the CCU to provide a communication path via the CCU between that device and another external device connected to the REMOTE connector on the camera.

To output the trunk signal from the REMOTE connector

Menu page	Item	Setting
<TRUNK>	TRUNK	ON

Menus

The menus displayed on the viewfinder screen enable various settings of the camera.
The following controls are used to operate the menus.
To enter menu mode, you can use the DISPLAY/MENU switch either on the side or on the rear operation panel.
The menu control knob at the low on the front panel and that on the rear operation panel function the same. Rotate the knob to select menu items or values and push on it to register (enter) the selection.

Front right
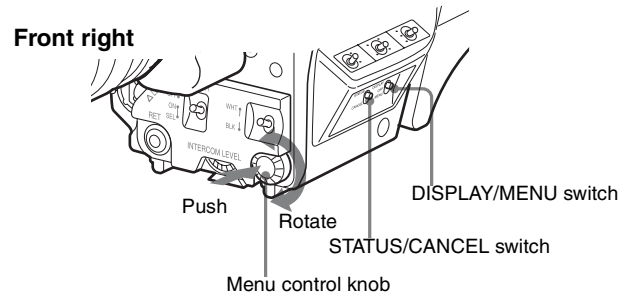
Rear operation panel
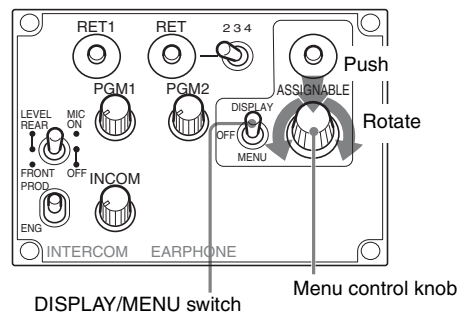
Displaying Menu Pages

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	Description
USER	This menu includes often-used menu pages selected from among the OPERATION, PAINT, MAINTENANCE, FILE, and DIAGNOSIS menus. Changing, adding, and deleting pages can be performed with the USER MENU CUSTOMIZE menu (*page 24*).
USER MENU CUSTOMIZE	This menu allows you to edit the USER menu. *For details, see "Editing the USER Menu" on page 24.*
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 viewfinder, intercom, and 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, or set the DISPLAY/MENU switch to MENU while holding the STATUS/CANCEL switch pressed toward CANCEL. This disables 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.

```
         CONTENTS     00  TOP
 ↑↓
   01.<VF DISPLAY>
   02.<'!'IND>
   03.<VF MARKER>
→  04.<VF DETAIL>
   05.<FOCUS ASSIST>
   06.<ZEBRA>
   07.<CURSOR>
   08.<VF OUT>
   09.<SWITCH ASSIGN1>
   10.<SWITCH ASSIGN2>
```
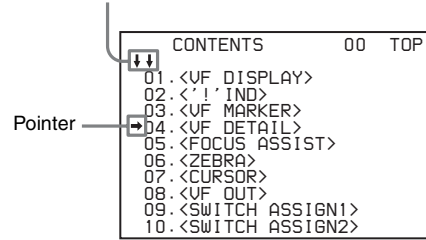
Pointer

The selected page is displayed.

Page No.

```
<VF DETAIL>      →  04  TOP

VF DETAIL :  ON      25%
 CRISP     :   0
 FREQUENCY:   9M
 FLICKER   :  OFF
```
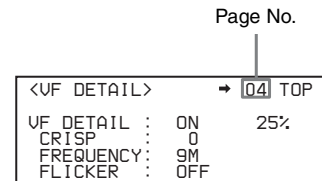
To change the displayed page

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

Flashing

```
<VF DETAIL>        ?  04  TOP

VF DETAIL :  ON      25%
 CRISP     :   0
 FREQUENCY:   9M
 FLICKER   :  OFF
```
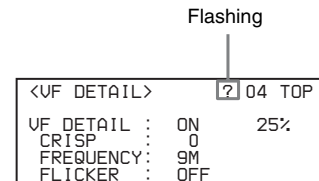
2 **Rotate the menu control knob to flip through the pages, and push on the knob when the desired page is displayed.**
The ? question mark changes back to the ➡ arrow. Items on the page can now be selected and changed.

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.

```
<VF DETAIL>        04 → TOP

VF DETAIL :  ON      25%
 CRISP     :   0
 FREQUENCY:   9M
 FLICKER   :  OFF
```
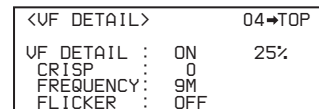
To change a menu item setting

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. Items on the page can now be selected and changed.

1 **Align the pointer with the desired item, then push on the menu control knob.**
The ➡ arrow 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 reset a changed value

If you press the STATUS/CANCEL switch toward CANCEL before pushing on the menu control knob, the setting will be returned to its previous value.

To suspend menu changes

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 changes back to the ➡ arrow, and the item setting is registered.

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

To enter 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.**

A second cursor is displayed in 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** to enter other characters.
- Select INS to insert a space character at the cursor position.
- Select DEL to delete the character at the cursor position.
- Select RET to return to step **1** without changing the string.
- Entering the maximum number of characters (up to the right edge) moves the cursor to ESC on the lower right of the character list.

3 **Select END and push on the menu control knob.**

The new input string is registered.

To cancel the character string setting

Select ESC and push on the menu control knob.

To return a menu item to its standard value

Select the menu item to be returned to its standard value then hold the menu control knob pressed 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 holding the menu control knob pressed for another 10 seconds.

To end menu operations

Set the DISPLAY/MENU switch to OFF.

Editing the USER Menu

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

Menu page	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
<'!' IND>	U05	OPERATION	02
<VF MARKER>	U06	OPERATION	03
<CURSOR>	U07	OPERATION	07
<ZEBRA>	U08	OPERATION	06
<SWITCH ASSIGN1>	U09	OPERATION	09
<SWITCH ASSIGN2>	U10	OPERATION	10
<POWER SAVE>	U11	MAINTENANCE	M12
<HEADSET MIC>	U12	OPERATION	11
<MIC GAIN>	U13	MAINTENANCE	M07
<OUTPUT FORMAT>	U14	MAINTENANCE	M09
<TEST OUT>	U15	MAINTENANCE	M10
<SDI OUT>	U16	MAINTENANCE	M11
<TRUNK>	U17	MAINTENANCE	M13
<ROM VERSION>	U18	DIAGNOSIS	D03

For details about the items on each page, see "OPERATION Menu" on page 30, "MAINTENANCE Menu" on page 39, and "DIAGNOSIS Menu" on page 43.

The USER MENU CUSTOMIZE menu allows you to configure the USER menu as follows:
- Creating a new page with items selected from multiple menu pages
- 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

To edit items

While the EDIT page of the USER MENU CUSTOMIZE 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

1 **Select USER MENU CUSTOMIZE on the TOP MENU screen** *(page 22)*.
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 menu has been used before, the page last accessed appears.

2 **If the CONTENTS page is displayed, turn the menu control knob until the pointer points to one of USER 1 EDIT to USER 19 EDIT, then push on the menu control knob to select the page.**
If a different page is displayed, turn the menu control knob until the desired page screen 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.

```
       EDIT FUNCTION    ESC
→INSERT
 MOVE
 DELETE
 BLANK
```

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

```
 <SW STATUS>      P01 ESC
 FLARE   :→ ON
 GAMMA   :  ON
 BLK GAM : OFF
 KNEE    :  ON
 WHT CLIP:  ON
 DETAIL  :  ON
 LVL DEP :  ON
 SKIN DTL: OFF
 MATRIX  : OFF
```

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.**

```
       ITEM MOVE       ESC
↓↓
→VF OUT    : COLOR

 VF DETAIL : OFF

 MARKER    :  ON
 CURSOR    : OFF
 ZEBRA SW  : OFF
           :   1
●ASSIGNABLE1 : OFF
```

The item selected in step **1** moves to the position that you selected in step **3**.
In the above example, ASSIGNABLE1 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 then push on the menu control knob.**
The previously displayed page appears again, and the message "DELETE OK? YES➡NO" is displayed.

3 **To delete, turn the menu control knob to move the pointer to YES then 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.

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

To edit pages

You can add a 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

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 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.

```
        EDIT PAGE     E01 TOP
↓↓
 01.<VF OUT>
→02.<VF DETAIL>
 03.<FOCUS ASSIST>
 04.<VF DISPLAY>
 05.<'!' IND>
 06.<VF MARKER>
 07.<CURSOR>
 08.<ZEBRA>
 09.<SWITCH ASSIGN1>
 10.<SWITCH ASSIGN2>
```

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 then push on the menu control knob.**
The previously displayed page appears again, and the message "DELETE OK? YES➜NO" is displayed.

```
      ITEM DELETE      ESC
   DELETE OK?  YES→NO
 01.<VF OUT>
 02.<VF DETAIL>
 03.<FOCUS ASSIST>
●04.<VF DISPLAY>
 05.<'!' IND>
 06.<VF MARKER>
 07.<CURSOR>
 08.<ZEBRA>
 09.<SWITCH ASSIGN1>
 10.<SWITCH ASSIGN2>
```

3 **To delete, turn the menu control knob to move the pointer to YES then 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 OUT>
 02.<VF DETAIL>
 03.<FOCUS ASSIST>
→04.<VF DISPLAY>
 05.<'!' IND>
 06.<VF MARKER>
 07.<CURSOR>
 08.<ZEBRA>
●09.<SWITCH ASSIGN1>
 10.<SWITCH ASSIGN2>
```

The page selected in step **1** is moved to the position selected in step **3**. In the above example, <SWITCH ASSIGN1> moves to the "04" position, and the <VF DISPLAY> and following pages move down one line.

Menu Tree

OPERATION

- VF DISPLAY (01)
  - EX
  - ZOOM
    - DISP
  - FOCUS
  - ND
  - CC
  - 5600K
  - IRIS
  - WHITE
  - D.EXT
  - GAIN
  - SHUTTER
  - BATT
  - RETURN
  - TALK
  - MESSAGE
- ' ! ' IND (02)
  - ND
  - CC
  - WHITE
  - 5600K
  - GAIN
  - SHUTTER
  - FAN
  - EXT
  - FORMAT
- VF MARKER (03)
  - MARKER
  - LEVEL
  - CENTER
  - SAFETY ZONE
  - EFFECT
  - ASPECT
    - MASK
    - SAFETY
- VF DETAIL (04)
  - VF DETAIL
    - CRISP
    - FREQUENCY
    - FLICKER
    - AREA
    - ZOOM LINK
  - COLOR DETAIL
    - PEAK COLOR
    - CHROMA LEVEL
  - RETURN DISABLE
- FOCUS ASSIST (05)
  - INDICATOR
    - MODE
    - LEVEL
    - GAIN
    - OFFSET
  - AREA MARKER
    - SIZE
    - POSITION
    - POSITION H
    - POSITION V
- ZEBRA (06)
  - ZEBRA
  - ZEBRA1
    - LEVEL
    - WIDTH
  - ZEBRA2

- CURSOR (07)
  - CURSOR
    - LEVEL
    - BOX/CROSS
    - H POSITION
    - V POSITION
    - WIDTH
    - HEIGHT
  - BOX MEMORY
    - H POSI
    - V POSI
    - WIDTH
    - HEIGHT
- VF OUT (08)
  - VF OUT
  - RET MIX VF
  - MIX DIRECTION
  - MX VF MODE
  - MX VF LEVEL
  - CHARACTER LEVEL
- SWITCH ASSIGN 1 (09)
  - GAIN
  - ASSIGNABLE 1
  - ASSIGNABLE 2
  - ASSIGNABLE REAR
  - ASSIGNABLE HDLA
  - RE. ROTATION
- SWITCH ASSIGN 2 (10)
  - LENS VTR S/S
  - FRONT RET
  - HANDLE SW1
  - HANDLE SW2
    - ZOOM SPEED
- HEADSET MIC (11)
  - INTERCOM MIC
    - LEVEL
    - POWER
    - UNBAL
- INTERCOM (12)
  - INTERCOM RECEIVE SELECT
    - INTERCOM (UC model)
    - ENG (CE model)
    - PROD (CE model)
    - PGM1
    - PGM2
    - TRACKER
    - SIDE TONE
- TRACKER (13)
  - TRACKER RECEIVE SELECT
    - INTERCOM (UC model)
    - ENG (CE model)
    - PROD (CE model)
    - PGM1
    - PGM2
- EARPHONE (15)
  - EARPHONE RECEIVE SELECT
    - INTERCOM (UC model)
    - ENG (CE model)
    - PROD (CE model)
    - PGM1
    - PGM2
    - TRACKER

- OPERATOR FILE (15)
  - READ (USB→CAM)
  - WRITE (CAM→USB)
  - PRESET
  - FILE ID
  - CAM CODE
  - DATE

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
  - LEVEL DEPEND
  - ABS
- DETAIL 2 (P10)
  - H/V RATIO
  - FREQ
  - MIX RATIO
  - KNEE APT
  - DTL H/V MODE
  - ABS
- SKIN DETAIL (P11)
  - SKIN DTL
  - SKIN GATE
  - ABS
  - ZOOM LINK
    - TELE
    - WIDE
  - CH SW
  - HUE
  - PHASE
  - WIDTH
  - SAT
  - LEVEL
- USER MATRIX (P12)
  - R-G
  - R-B
  - G-R
  - G-B
  - B-R
  - B-G
  - MATRIX
    - PRESET
    - USER
    - MULTI
  - ADAPTIVE MATRIX
- MULTI MATRIX (P13)
  - PHASE
  - HUE
  - SAT
  - ALL CLEAR
  - GATE
  - MATRIX
    - PRESET
    - USER
    - MULTI
- SHUTTER (P14)
  - SHUTTER
  - ECS FREQ
- SCENE FILE (P15)
  - 1/2/3/4/5
  - STORE
  - STANDARD
  - READ (USB→CAM)
  - WRITE (CAM→USB)
  - 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
  - 2D 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
- LENS (M06)
  - F NO.DISP
  - ALAC
  - AF DISPLAY
- MIC GAIN (M07)
  - MIC1
  - MIC2
  - FRONT MIC +48V
- CALL/TALLY (M08)
  - CCU CALL
  - CAM CALL
  - UP TALLY BRIGHTNESS
    - TALLY
    - NUMBER
  - CAMERA NUMBER
  - NUMBER DISPLAY
- OUTPUT FORMAT (M09)
  - CURRENT

```
├─ TEST OUT (M10)
│    ├─ OUTPUT
│    ├─ VBS-OUT
│    │    ├─ CHARACTER
│    │    ├─ GAIN
│    │    ├─ CHROMA
│    │    └─ SETUP (UC model)
│    ├─ SYNC-OUT
│    │    ├─ V-PHASE
│    │    └─ H-PHASE
│    └─ DOWN CONVERTER
│         ├─ SELECT
│         └─ ASPECT
├─ SDI OUT (M11)
│    ├─ SDI OUT
│    │    ├─ CHARACTER
│    │    └─ EMB AUDIO
│    └─ DOWN CONVERTER
│         ├─ SELECT
│         └─ ASPECT
├─ POWER SAVE (M12)
│    ├─ DOWN CONVERTER
│    ├─ PROMPTER
│    └─ D.EXT ENABLE
├─ TRUNK (M13)
│    └─ TRUNK
├─ GENLOCK (M14)
│    ├─ REFERENCE
│    ├─ GENLOCK
│    │    ├─ STATUS
│    │    └─ FORMAT
│    └─ PHASE
│         ├─ V
│         └─ H
├─ DATE (M16)
│    ├─ DATE/TIME
│    └─ FILE TIMESTAMP FORMAT
├─ BATTERY ALARM (M17)
│    ├─ BEFORE END
│    └─ END
├─ OTHERS 1 (M17)
│    ├─ FAN MODE
│    ├─ CAM BARS
│    ├─ WHITE SETUP MODE
│    └─ FILTER WHT MEM
├─ EXT RETURN (M18)
│    └─ SD ASPECT
└─ OPTION KEY (M19)
     ├─ READ (USB→CAM)
     └─ INSTALLED OPTION
```

FILE

```
├─ OPERATOR FILE (F01)
│    ├─ READ (USB→CAM)
│    ├─ WRITE (CAM→USB)
│    ├─ PRESET
│    ├─ STORE PRESET FILE
│    ├─ FILE ID
│    ├─ CAM CODE
│    └─ DATE
├─ SCENE FILE (F02)
│    ├─ 1/2/3/4/5
│    ├─ STORE
│    ├─ STANDARD
│    ├─ READ (USB→CAM)
│    ├─ WRITE (CAM→USB)
│    ├─ FILE ID
│    ├─ CAM CODE
│    └─ DATE
├─ REFERENCE (F03)
│    ├─ STORE FILE
│    ├─ STANDARD
│    │    └─ ALL PRESET
│    ├─ READ (USB→CAM)
│    ├─ WRITE (CAM→USB)
│    ├─ 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 SHAD (ALL)
     ├─ OHB BLACK SHAD
     ├─ OHB ND OFFSET
     └─ OHB MATRIX
```

DIAGNOSIS <HSC300RF/HSC100RF>

```
├─ OPTICAL LEVEL (D01)
│    ├─ CCU→CAM
│    └─ CAM→CCU
├─ BOARD STATUS (D02)
│    ├─ OHB
│    ├─ DPR
│    ├─ SY
│    ├─ PS
│    └─ SDI
├─ ROM VERSION (D03)
│    ├─ CAMERA APP
│    ├─ O.S
│    ├─ PANEL
│    ├─ TG
│    ├─ SY
│    ├─ DPR
│    └─ SDI
└─ SERIAL NO. (D04)
     ├─ MODEL
     └─ NO.
```

DIAGNOSIS <HSC300R/HSC100R>

```
├─ BOARD STATUS (D01)
│    ├─ OHB
│    ├─ DPR
│    ├─ SY
│    ├─ PS
│    └─ CD
├─ PLD VERSION (D02)
│    ├─ CAMERA APP
│    ├─ O.S
│    ├─ PANEL
│    ├─ TG
│    ├─ SY
│    ├─ DPR
│    ├─ CD1
│    └─ CD2
└─ SERIAL NO. (D03)
     ├─ MODEL
     └─ NO.
```

OPERATION Menu

The following conventions are used in the menu list table.

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

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

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

HDLA: HDLA1500 series

Page name Page No.	Item	Settings	Description
<VF DISPLAY> 01 (U04)	EX	**ON**, OFF	
	ZOOM	ON, **OFF**	
	DISP	**LEFT**, RIGT	
	FOCUS	ON, **OFF**	Enabled only when a serial lens is used
	ND	**ON**, OFF	
	CC	**ON**, OFF	HSC300RF/HSC300R only
	5600K	**ON**, OFF	
	IRIS	**ON**, OFF	
	WHITE	ON, **OFF**	
	D.EXT	**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.

Page name Page No.	Item	Settings	Description
<'!' IND> 02 (U05)	ND	[IND] **ON**, OFF	[IND]: Enable/disable the '!' indication *(page 14)*.
		[NORMAL] **1**, 2, 3, 4, 5 (combination allowed)	[NORMAL]: Specify the conditions under which the '!' indication is not to be displayed even if [IND] is ON. (By specifying the standard or normal conditions here, non-standard or abnormal conditions can be found using the '!' indication in the viewfinder.)
	CC	[IND] **ON**, OFF	
		[NORMAL] A, **B**, C, D, E (combination allowed)	
	WHITE	[IND] **ON**, OFF, ---	e.g.: With the default setting of ND, the '!' indication is displayed when an ND filter other than 1 is selected.
		[NORMAL] P, **A**, **B** (combination allowed)	---: When a CCU is connected (cannot be changed) CC: HSC300RF/HSC300R only
	5600K	[IND] **ON**, OFF, ---	
		[NORMAL] ON, **OFF**	
	GAIN	[IND] **ON**, OFF, ---	
		[NORMAL] **L**, M, H (combination allowed)	
	SHUTTER	[IND] **ON**, OFF, ---	
		[NORMAL] ON, **OFF**	
	FAN	[IND] **ON**, OFF	
		[NORMAL] **AUTO1**, AUTO2, MIN, MAX	
	EXT	[IND] **ON**, OFF	
	FORMAT	[IND] **ON**, OFF	
		[NORMAL] **1080-59.94i**, 1080-50i, 720-59.94P, 720-50P	
<VF MARKER> 03 (U06)	MARKER	**ON**, OFF	Sets display of all markers ON/OFF.
		WHITE, BLACK, DOT	
	LEVEL	0 to 100, **40**	
	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**, (4.3)	**(4.3)**: If VF SCAN is set to 4:3 when HDLA attached (cannot be changed)
	MASK	ON, **OFF**, (ON)	**(ON)**: If VF SCAN is set to 4:3 when HDLA attached (cannot be changed)
		0 to 15, **12**	Set the level to darken outside the aspect area.
	SAFETY	ON, **OFF**, (AREA)	For the safety marker in Aspect mode.
		80.0, **90.0**, 92.5, 95.0%	**(AREA)**: Displayed when AREA MARKER of <FOCUS ASSIST> is ON.

Page name Page No.	Item		Settings	Description
<VF DETAIL> 04 (U02)	VF DETAIL		**ON**, OFF, (ON), (OFF)	Settings in ( ): When HDLA attached (cannot be changed)
			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	
			0%, 25%, 50%, 75%, **100%**	
	COLOR DETAIL		ON, **OFF**	
			BLUE, RED, YELLOW	
		PEAK COLOR	ON, **OFF**	
		CHROMA LEVEL	100%, 50%, **25%**, 0%	
	RETURN DISABLE		ON, **OFF**	
<FOCUS ASSIST> 05 (U03) Not displayed when AF DISPLAY of <LENS> is ON.	INDICATOR		ON, **OFF**, (EFFECT)	**(EFFECT)**: Displayed when EFFECT of <VF MARKER> is ON.
		MODE	**BOX**, B&W, COL	
			BOTTOM, LEFT, TOP, RIGHT	
		LEVEL	0 to 100, **40**	
			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**	Display only if HDLA attached
			WHITE, BLACK, DOT	
		LEVEL	0 to 100, **40**	
		BOX/CROSS	**BOX**, CROSS	
		H POSITION	0 to 99, **50**	Display only if HDLA attached
		V POSITION	0 to 99, **50**	
		WIDTH	0 to 99, **50**	
		HEIGHT	0 to 99, **50**	
	BOX MEMORY		1/2/3: **OFF**, ON	
		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**	

Page name Page No.	Item	Settings	Description
<VF OUT> 08 (U01)	VF OUT	**COLOR**, Y, R, G, B, (COLOR), (Y), (R), (G), (B), (RET), (R+G), (R+B), (G+B)	Settings in ( ): When HDLA attached (cannot be changed)
	RET MIX VF	ON, **OFF**, (ON), (OFF)	Settings in ( ): When HDLA attached (cannot be changed)
	MIX DIRECTION	MAIN, **RET**	
	MIX VF MODE	**Y-MIX**, WIRE(W), WIRE(B)	
	MIX VF LEVEL	0 to **80%**	
	CHARACTER LEVEL	0 to 5, **4**	
<SWITCH ASSIGN1> 09 (U09)	GAIN	L: −3, **0**, 3, 6, 9, 12 dB	
		M: −3, 0, 3, **6**, 9, 12 dB	
		H: −3, 0, 3, 6, 9, **12** dB	
	ASSIGNABLE1	**UC model:**	---: When HDLA attached (HSC300RF/HSC300R only)
	ASSIGNABLE2	**OFF**, RETURN1 SW, RETURN2 SW, INCOM, VF DETAIL, MIX VF, 5600K, FAN MAX, D.EXTENDER, FOCUS ASSIST INDICATOR, VF ASSIGN SW1, VF ASSIGN SW2 - - - **CE model:** **OFF**, RETURN1 SW, RETURN2 SW, ENG, PROD, VF DETAIL, MIX VF, 5600K, FAN MAX, D.EXTENDER, FOCUS ASSIST INDICATOR, VF ASSIGN SW1, VF ASSIGN SW2 - - -	
	ASSIGNABLE REAR	**UC model:** **OFF**, RETURN1 SW, RETURN2 SW, INCOM, VF DETAIL, MIX VF, 5600K, FAN MAX, D.EXTENDER, FOCUS ASSIST INDICATOR, CURSOR, MARKER, VF ASSIGN SW1, VF ASSIGN SW2 - - - **CE model:** **OFF**, RETURN1 SW, RETURN2 SW, ENG, PROD, VF DETAIL, MIX VF, 5600K, FAN MAX, D.EXTENDER, FOCUS ASSIST INDICATOR, CURSOR, MARKER, VF ASSIGN SW1, VF ASSIGN SW2 - - -	
	ASSIGNABLE HDLA	**OFF**, EXTENDER, 5600K, FAN MAX	Only when HDLA attached
	RE.ROTATION	**STD**, RVS	Specify operation mode of the menu control knob on the front. **STD**: Clockwise rotation moves the pointer down or increases values on the menu screen. **RVS**: Counterclockwise rotation moves the pointer down or increases values on the menu screen.

Page name Page No.	Item	Settings	Description
<SWITCH ASSIGN2> 10 (U10)	LENS VTR S/S	**UC model:** OFF, RETURN1 SW, **RETURN2 SW**, INCOM, VF ASSIGN SW1, VF ASSIGN SW2 **CE model:** OFF, RETURN1 SW, **RETURN2 SW**, ENG, PROD, VF ASSIGN SW1, VF ASSIGN SW2	Assign a function to the VTR START/STOP switch on the mounted lens.
	FRONT RET	OFF, RETURN1 SW, **RETURN2 SW**, INCOM, D.EXTENDER	
	HANDLE SW1	**UC model:** OFF, **RETURN1 SW**, RETURN2 SW, INCOM, ZOOM(T) **CE model:** OFF, **RETURN1 SW**, RETURN2 SW, ENG, PROD, ZOOM(T)	
	HANDLE SW2	**UC model:** OFF, RETURN1 SW, RETURN2 SW, **INCOM**, ZOOM(W) **CE model:** OFF, RETURN1 SW, RETURN2 SW, **ENG**, PROD, ZOOM(W)	
	ZOOM SPEED	0 to 99, **20**	
<HEADSET MIC> 11 (U12)	INTERCOM MIC	**DYNAMIC**, CARBON, MANUAL	
	LEVEL	−60 dB, −40 dB, −20 dB, **(−60 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)
<INTERCOM> 12	INTERCOM RECEIVE SELECT	**SEPARATE**, MIX	
	INTERCOM	---, **LEFT**, RIGHT, BOTH	UC 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> 13	TRACKER RECEIVE SELECT	**SEPARATE**, MIX	
	INTERCOM	---, **LEFT**, RIGHT, BOTH	UC model only
	ENG	---, **LEFT**, RIGHT, BOTH	CE model only
	PROD	---, **LEFT**, RIGHT, BOTH	CE model only
	PGM1	---, LEFT, **RIGHT**, BOTH	
	PGM2	---, LEFT, **RIGHT**, BOTH	
<EARPHONE> 14	EARPHONE RECEIVE SELECT	**SEPARATE**, MIX	
	INTERCOM	---, **LEFT**, RIGHT, BOTH	UC 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	

Page name Page No.	Item	Settings	Description
<OPERATOR FILE> 15	READ (USB→CAM)	ENTER to execute	Reads the operator file from a USB drive.
	WRITE (CAM→USB)	ENTER to execute	Writes the current settings of the operator file items to a USB drive.
	PRESET	ENTER to execute	To set the operator file items to the preset values in internal memory
	FILE ID	Max. 16 characters	Enters a comment for the operator file to be written to a USB drive. *See "FILE Menu" on page 42.*
	CAM CODE	Camera code	(display only)
	DATE	Date	(display only)

PAINT Menu

Page name Page No.	Item	Settings	Description
<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**	R, G, B, and M (master) values can be independently set. (M cannot be set for WHITE.)
	BLACK	R/G/B/M: −99 to +99, **0**	
	FLARE	R/G/B/M: −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 a lens supporting dynamic shading is used.
	TEST	**OFF**, SAW, 10STEP	
<COLOR TEMP> P03	WHITE	R/G/B: −99 to +99, **0**	
	AUTO WHITE BALANCE	ENTER to execute	
	COLOR TEMP	0 K to 65535 K, **3200 K**	
	BALANCE	−99 to +99, **0**	
	ATW	ON, **OFF**	
	SPEED	1 to 5, **4**	
	MASTER	−3.0 dB to +12.0 dB, **0.0 dB**	

Page name Page No.	Item	Settings	Description
<GAMMA> P04	LEVEL	R/G/B/M: −99 to +99, **0**	R, G, B, and M (master) values can be independently set.
	COARSE	0.35 to 0.90 (0.05 steps), **0.45**	
	TABLE	**STANDARD**, HYPER	
		UC model: 1, 2, **3**, 4, 5, 6, 7 **CE model:** 1, **2**, 3, 4, 5, 6, 7	With STANDARD selected: **1**: equivalent to a camcorder **2**: 4.5-times gain **3**: 3.5-times gain **4**: equivalent to SMPTE-240M **5**: equivalent to ITU-R709 **6**: 5.0-times gain **7**: 5.0-times gain - 709
		1, 2, 3, **4**	With HYPER selected **1**: 325% to 100% **2**: 460% to 100% **3**: 325% to 109% **4**: 460% to 109%
	GAMMA	**ON**, OFF	
	TEST	**OFF**, SAW, 10STEP	
<BLACK GAMMA> P05	LEVEL	R/G/B/M: −99 to +99, **0**	R, G, B, and M (master) values can be independently set.
	RANGE	LOW, L.MID, H.MID, **HIGH**	
		ON, **OFF**	
	TEST	**OFF**, SAW, 10STEP	
<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, 10STEP	
<KNEE> P07	K POINT	R/G/B/M: −99 to +99, **0**	Absolute values are displayed in ABS mode except for [M] (master).
	K SLOPE	R/G/B/M: −99 to +99, **0**	
	KNEE	**ON**, OFF	
	KNEE MAX	ON, **OFF**	
	KNEE SAT	−99 to +99, **0**	
		ON, **OFF**	
	AUTO KNEE	**OFF**, AUTO	
	POINT LIMIT	−99 to +99, **0**	Absolute value is displayed in ABS mode.
	SLOPE	−99 to +99, **0**	Absolute value is displayed in ABS mode.
	ABS		Highlighted: ABS (Absolute) mode
<WHITE CLIP> P08	W CLIP	−99 to +99, **0**	
		ON, OFF	
	ABS		Highlighted: ABS (Absolute) mode

Page name Page No.	Item	Settings	Description
<DETAIL 1> P09	DETAIL	**ON**, OFF	
	LEVEL	−99 to +99, **0**	Absolute value is displayed in ABS mode.
	LIMITER M	−99 to +99, **0**	
	LIMITER WHT	−99 to +99, **0**	Absolute value is displayed in ABS mode.
	LIMITER BLK	−99 to +99, **0**	Absolute value is displayed in ABS mode.
	CRISP	−99 to +99, **0**	Absolute value is displayed in ABS mode.
	LEVEL DEPEND	−99 to +99, **0**	Absolute value is displayed in ABS mode.
		ON, OFF	
	ABS		Highlighted: ABS (Absolute) mode
<DETAIL 2> P10	H/V RATIO	−99 to +99, **0**	Absolute value is displayed in ABS mode.
	FREQ	−99 to +99, **0**	Absolute value is displayed in ABS mode.
	MIX RATIO	−99 to +99, **0**	Absolute value is displayed in ABS mode.
	KNEE APT	−99 to +99, **0**	Absolute value is displayed in ABS mode.
		ON, **OFF**	
	DTL H/V MODE	**H/V**, V only	
	ABS		Highlighted: ABS (Absolute) mode
<SKIN DETAIL> P11	SKIN DTL	ON, **OFF**	
	SKIN GATE	**OFF**, 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
	ZOOM LINK	**OFF**, ON	
	TELE	0 to **99**	
	WIDE	**0** to 99	
	CH SW	1: (ON), 2/3: ON, **OFF**	Sets the skin tone detail function independently for each channel. (Channel 1 is always set to ON.) Absolute values are indicated for LEVEL only in ABS mode.
	HUE	1/2/3: ENTER to execute	
	PHASE	1/2/3: **0** to 359	
	WIDTH	1/2/3: 0 to 90, **29**	
	SAT	1/2/3: −99 to +99, **−89**	
	LEVEL	1/2/3: −99 to +99, **0**	
<USER MATRIX> P12	R-G	−99 to +99, **0**	
	R-B	−99 to +99, **0**	
	G-R	−99 to +99, **0**	
	G-B	−99 to +99, **0**	
	B-R	−99 to +99, **0**	
	B-G	−99 to +99, **0**	
	MATRIX	ON, **OFF**	
	PRESET	**ON**, OFF, --	**--**: When MATRIX is set to OFF (cannot be changed)
		SMPTE-240M, **ITU-709**, SMPTE-WIDE, NTSC, EBU, ITU-601, --	
	USER	ON, **OFF**, --	
	MULTI	ON, **OFF**, --	
	ADAPTIVE MATRIX	**OFF**, ON	

Page name Page No.	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	ENTER to execute	
	GATE	ON, **OFF**, (1), (2), (3)	**(1), (2), (3)**: Displayed when SKIN GATE of <SKIN DETAIL> is ON.
	MATRIX	ON, **OFF**	
	PRESET	**ON**, OFF, --	**--**: When MATRIX is set to OFF (cannot be changed)
		SMPTE-240M, **ITU-709**, SMPTE-WIDE, NTSC, EBU, ITU-601, --	
	USER	ON, **OFF**, --	
	MULTI	ON, **OFF**, --	
<SHUTTER> P14	SHUTTER	ON, **OFF**	
		59.94i format: **1/100**, 1/125, 1/250, 1/500, 1/1000, 1/2000 50i format: 1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000 59.94P format: 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000 50P format: 1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000	Step shutter selection
	ECS FREQ	59.94i format: **60.00** to 4300 Hz 50i format: 50.00 to 4700 Hz 59.94P format: 59.96 to 4600 Hz 50P format: 50.03 to 4600 Hz	
<SCENE FILE> P15	1		Stores and reads scene files (paint data): When storing a file in camera memory, specify the number before executing STORE. When reading, only specify the number.
	2		
	3		
	4		
	5		
	STORE	ENTER to execute	
	STANDARD	ENTER to execute	Reads the standard paint data.
	READ (USB→CAM)	ENTER to execute	Loads five scene files from a USB drive to internal memory.
	WRITE (CAM→USB)	ENTER to execute	Writes five scene files in camera memory to a USB drive.
	FILE ID	Max. 16 characters	Enters a comment for the scene files to be written to a USB drive. *See "To enter a character string" on page 24.*
	CAM CODE	Camera code	(display only)
	DATE	Date	(display only)

MAINTENANCE Menu

Page name Page No.	Item	Settings	Description
<AUTO SETUP> M01	AUTO BLACK	ENTER to execute	
	AUTO WHITE	ENTER to execute	
	AUTO LEVEL	ENTER to execute	
	AUTO WHITE SHADING	ENTER to execute	
	AUTO BLACK SHADING	ENTER to execute	
	TEST	**OFF**, SAW, 10STEP	
<WHITE SHADING> M02	V SAW	R/G/B: −99 to +99, **0**	R, G, and B values can be independently set.
	V PARA	R/G/B: −99 to +99, **0**	
	H SAW	R/G/B: −99 to +99, **0**	
	H PARA	R/G/B: −99 to +99, **0**	
	WHITE	R/G/B: −99 to +99, **0**	
	AUTO WHITE SHADING	ENTER to execute	
	WHITE SHAD MODE	RGB, **RB**	
<BLACK SHADING> M03	V SAW	R/G/B: −99 to +99, **0**	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, **0**	
	H SAW	R/G/B: −99 to +99, **0**	
	H PARA	R/G/B: −99 to +99, **0**	
	BLK SET	R/G/B: −99 to +99, **0**	
	BLACK	R/G/B/M: −99 to +99, **0**	
	MASTER GAIN	−6, −3, **0**, 3, 6, 9, 12 dB	
	AUTO BLACK SHADING	ENTER to execute	
	2D BLACK SHADING	**ON**, OFF	
<OHB MATRIX> M04	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 OHB matrix 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	ENTER to execute	The HUE and SAT values for all PHASE settings are cleared.
	OHB MATRIX	ON, **OFF**	
	MATRIX	ON, **OFF**	

Page name / Page No.	Item	Settings	Description
<AUTO IRIS> M05	AUTO IRIS	ON, **OFF**	
	WINDOW	**1**, 2, 3, 4, 5, 6	Selects the auto iris window: 1 2 3 4 5 6 The shaded parts indicate the area where light detection occurs.
	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. 99: Two steps to fully opened iris. --- : OFF The setting returns to "---" when the power is turned off.
	IRIS LEVEL	–99 to +99, **0**	±4 steps
	APL RATIO	–99 to +99, **65**	
	IRIS GAIN	–99 to +99, **0**	
	IRIS CLOSE	ON, **OFF**	
<LENS> M06	F NO. DISP	**CONTROL**, RETURN	Selects 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.)
	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
	AF DISPLAY	ON, **OFF**	
<MIC GAIN> M07	MIC1	20, 30, 40, 50, **60** dB	Valid only in standalone operation.
	MIC2	20, 30, 40, 50, **60** dB	
	FRONT MIC +48V	**ON**, OFF	
<CALL/TALLY> M08 (U13)	CCU CALL	OFF, **ON**, ---	--- : When a CCU is 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**: When HDLA is attached, corresponds to the UP TALLY switch setting.
<OUTPUT FORMAT> M09 (U14)	CURRENT	1080: 59.94i, 50i 720: 59.94P, 50P	Displays the current format.

Page name Page No.	Item	Settings	Description
<TEST OUT> M10 (U15)	OUTPUT	SD-SYNC, HD-SYNC, VF, **VBS**, PROMPTER	
	VBS-OUT		OUTPUT is displayed for VBS.
	CHARACTER	ON, **OFF**	
	GAIN	−99 to +99, **0**	
	CHROMA	−99 to +99, **0**	
	SETUP	ON, **OFF**	Displayed when the format is NTSC.
	SYNC-OUT		OUTPUT is displayed during SD-SYNC and HD-SYNC.
	V-PHASE	−999 to +999, **0**	
	H-PHASE	−999 to +999, **0**	
	DOWN CONVERTER		OUTPUT is displayed for VBS.
	SELECT	**MAIN**, RET, VF	
	ASPECT	**SQ**, EC	
<SDI OUT> M11 (U16)	SDI OUT	OFF, **MAIN**, VF, RET, SD-SDI, SDI PROMPTER	
	CHARACTER	ON, **OFF**	
	EMB AUDIO	**OFF**, MIC, PGM	
	DOWN CONVERTER		SDI OUT is displayed for SD-SDI.
	SELECT	**MAIN**, RET, VF	
	ASPECT	**SQ**, EC	
<POWER SAVE> M12 (U11)	DOWN CONVERTER	PWR SAVE, **ACTIVE**	
	PROMPTER	**PWR SAVE**, ACTIVE	
	D.EXT ENABLE	ENABLE, **DISABLE**	
<TRUNK> M13 (U17)	TRUNK	**ON**, OFF	
<GENLOCK> M14	REFERENCE	Synchronization status	(display only)
	GENLOCK	**ENABLE**, DISABLE	Not displayed when a CCU is connected.
	STATUS		
	FORMAT		
	PHASE		
	V	−1024 to +1023, **0**	
	H	−1700 to +1700, **0**	
<DATE> M15	DATE/TIME	yyyy/mm/dd hh:mm	
	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> M16	BEFORE END	**11.5** to 17.0 V	
	END	**11.0** to 11.5 V	
<OTHERS> M17	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 (HSC300RF/HSC300R only).
<EXT RETURN> M18	SD ASPECT	**SQ**, EC	

Page name Page No.	Item	Settings	Description
<OPTION KEY> M19	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.

Page name Page No.	Item	Settings	Description
<OPERATOR FILE> F01	READ (USB→CAM)	ENTER to execute	Reads the operator file from a USB drive.
	WRITE (CAM→USB)	ENTER to execute	Writes the current settings of the operator file items to a USB drive.
	PRESET	ENTER to execute	To set the operator file items to the preset values in internal memory.
	STORE PRESET FILE	ENTER to execute	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. *See "To enter a character string" on page 24.*
	CAM CODE	Camera code	(display only)
	DATE	Date	(display only)
<SCENE FILE> F02	1		Stores and reads scene files (paint data): When storing a file in camera memory, specify the number before executing STORE. When reading, only specify the number.
	2		
	3		
	4		
	5		
	STORE	ENTER to execute	
	STANDARD	ENTER to execute	Reads the standard paint data.
	READ (USB→CAM)	ENTER to execute	Loads five scene files from a USB drive to internal memory.
	WRITE (CAM→USB)	ENTER to execute	Writes five scene files in camera memory to a USB drive.
	FILE ID	Max. 16 characters	Enters a comment for the scene files to be written to a USB drive. *See "To enter a character string" on page 24.*
	CAM CODE	Camera code	(display only)
	DATE	Date	(display only)
<REFERENCE> F03	STORE FILE	ENTER to execute	To store the current settings of the reference file items in the reference file in internal memory.
	STANDARD	ENTER to execute	To read the standard values in the reference file in internal memory.
	ALL PRESET	ENTER to execute	To resume the factory-preset reference file
	READ (USB→CAM)	ENTER to execute	Loads a reference file from a USB drive.
	WRITE (CAM→USB)	ENTER to execute	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. *See "To enter a character string" on page 24.*
	CAM CODE	Camera code	(display only)
	DATE	Date	(display only)

Page name Page No.	Item	Settings	Description
<LENS FILE> F04	STORE FILE	ENTER to execute	
	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		To set and store the center marker position H POS: Increasing the value moves the position to the right.
	H POS	−20 to +20, **0**	
	V POS	−20 to +20, **0**	V POS: Increasing the value moves the position downwards.
	STORE	ENTER to execute	
<OHB FILE> F05	STORE FILE	ENTER to execute	To store the offset values of the items specific to the CCD (No repeated store operation is necessary even if the CCD is reattached.)
<FILE CLEAR> F06	PRESET OPERATOR	ENTER to execute	
	REFERENCE (ALL)	ENTER to execute	
	10 SEC CLEAR	ON, **OFF**	To activate/deactivate the function to clear the current menu item. *See "To return a menu item to its standard value" on page 24.*
	OHB WHITE SHAD (ALL)	ENTER to execute	
	OHB BLACK SHAD	ENTER to execute	
	OHB ND OFFSET	ENTER to execute	
	OHB MATRIX	ENTER to execute	

DIAGNOSIS Menu

This menu is only for viewing and camera settings cannot be made using this menu.

However, some items set the conditions for viewing.

HSC300RF/HSC100RF

Page name Page No.	Item	Indication	Description
<OPTICAL LEVEL> D01	CCU→CAM	GREEN, YELLOW, RED, NG, NO SIGNAL	
	CAM→CCU	GREEN, YELLOW, RED, NG, NO SIGNAL	
<BOARD STATUS> D02	OHB	OK, NG	
	DPR	OK, NG	
	SY	OK, NG	
	PS	OK, NG	
	SDI	OK, NG	
<ROM VERSION> D03 (U15)	CAMERA APP	Vx.xx	
	O.S	Vx.xx	
	PANEL	Vx.xx	Displayed only when mounted in HDLA
	TG	Vx.xx	
	SY	Vx.xx	
	DPR	Vx.xx	
	SDI	Vx.xx	
<SERIAL No.> D04	MODEL	HSCxxxx	
	NO.	xxxxxxx	

HSC300R/HSC100R

Page name Page No.	Item	Indication	Description
<BOARD STATUS> D01	OHB	OK, NG	
	DPR	OK, NG	
	SY	OK, NG	
	PS	OK, NG	
	CD	OK, NG	
<ROM VERSION> D02 (U15)	CAMERA APP	Vx.xx	
	O.S	Vx.xx	
	PANEL	Vx.xx	Displayed only when mounted in HDLA
	TG	Vx.xx	
	SY	Vx.xx	
	DPR1	Vx.xx	
	CD1	Vx.xx	
	CD2	Vx.xx	
<SERIAL No.> D03	MODEL	HSCxxxx	
	NO.	xxxxxxx	

Appendix

Precautions

The fan and battery are consumable parts that will need periodic replacement.
When operating at room temperature, a normal replacement cycle will be about 5 years. However, this replacement cycle represents only a general guideline and does not imply that the life expectancy of these parts is guaranteed. For details on parts replacement, contact your dealer.

The life expectancy of the electrolytic capacitor is about 5 years under normal operating temperatures and normal usage (8 hours per day; 25 days per month).
If usage exceeds the above normal usage frequency, the life expectancy may be reduced correspondingly.

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.

After use
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 using or storing the unit 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 the unit is suddenly taken from a cold to a warm location, or if ambient temperature suddenly rises, moisture may form on the outer surface of the unit and/or inside of the unit. This is known as condensation. If condensation occurs, turn off the unit and wait until the condensation clears before operating the unit. Operating the unit while condensation is present may damage the unit.

Phenomena specific to image sensors

Note

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

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)
• when using slow shutter

Smearing
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.

Monitor screen — Vertical tails shown on the image — Bright object (e.g., strong spotlight, strong reflected light, flashlight, the Sun)
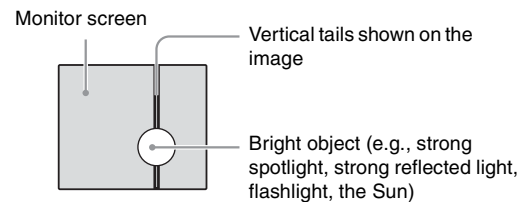
Aliasing
When fine patterns, stripes, or lines are shot, they may appear jagged or flicker.

Digital Triax Transmission (HSC300R/HSC100R)

A powerful error-correction function is incorporated for the transmission between the camera and CCU. However, if an error occurs on long-distance transmission because of external noise or for some other reason, the compensation by interpolation that partially uses the previous picture may operate.

In digital triax transmission, the following video delay in transmission may occur.
• The video delay in transmission between the camera and the CCU is approx. 9 ms to 12 ms.
• A delay of about 1 frame occurs on the viewfinder display if a camera image is sent back from the CCU to the camera as a return signal.
• The prompter video will delay approx. 5 frames in the standard mode. (For the prompter video, either the standard mode or the low-delay mode using simplified images can be selected on the CCU).
• An appropriate delay is applied to the MIC 1 and 2 audio signals from the CCU to match the video delay.
• A certain time is required for the video signal transmitted between the camera and the CCU to stabilize after power is applied. This is not a malfunction.

Triax Transmission Distances

When an HSC300R is connected to HSCU300R/HSCU-300

The maximum and minimum transmission distances allowed for triax cable connection are shown in the table below. The distances may vary according to the conditions, such as the total power requirements (including the power supply to the camera from the CCU) and cable degradation.

Allowable transmission range when using triax cables with the following characteristics:

Attenuation: 3.8 to 68.4 dB at 100 MHz (including the connector loss)

Cable type (example)		Max. distance[1]	Min. distance
Fujikura	8.5 mm dia.	900 m (2953 ft)[2]	50 m (164 ft)
Fujikura	14.5 mm dia.	1800 m (5906 ft)	100 m (328 ft)
Belden 9232	13.2 mm dia.	1300 m (4265 ft)	75 m (246 ft)

1) If the transmission distance exceeds approximately 7/9 of the maximum transmission distance, the teleprompter transmitted image quality starts to deteriorate.
2) The maximum distance is 650 m (2133 ft) when the total power for the lens, viewfinder and utility outputs is between 100 W and 120 W.

When an HSC300R is connected to HXCU-100 or when an HSC100R is connected to HSCU300R/HSCU-300/HXCU-100

The maximum and minimum transmission distances allowed for triax cable connection are shown in the table below. The distances may vary according to the conditions, such as cable degradation.

Allowable transmission range when using triax cables with the following characteristics:

Attenuation: 3.8 to 45.6 dB at 100 MHz (including the connector loss)

Cable type (example)		Max. distance	Min. distance
Fujikura	8.5 mm dia.	600 m (1969 ft)	50 m (164 ft)
Fujikura	14.5 mm dia.	1200 m (3937 ft)	100 m (328 ft)
Belden 9232	13.2 mm dia.	850 m (2789 ft)	75 m (246 ft)

Error Messages

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

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.

Message	Meaning
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.
FORMAT ERROR!	A USB drive operation was attempted with an unformatted 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 on 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 2013)

Series	Product
Micro Vault P	USM32GP, USM16GP
Micro Vault M	USM32GM, USM16GM, USM8GM, USM4GM
Micro Vault R	USM32GR, USM16GR, USM8GR, USM4GR

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 supply	180 V DC, 1.0 A (max.)
	12 V DC, 7 A (max.)
Operating temperature	−20 °C to +45 °C (−4 °F to +113 °F)
Storage temperature	−20 °C to +60 °C (−4 °F to +140 °F)
Mass	Approx. 4.1 kg (9 lb 0.62 oz) (HSC300RF/HSC100RF, unit only) Approx. 4.5 kg (9 lb 15 oz) (HSC300R/HSC100R, unit 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	Typical 60 dB
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 (HSC300RF/HSC300R)
	  A: Cross filter
	  B: 3200K (clear)
	  C: 4300K
	  D: 6300K

	ND filters
	  1: Clear
	  2: 1/4 ND
	  3: 1/16 ND
	  4: 1/64 ND

Input/output connectors	
CCU	Optical fiber/triax connector (1)
LENS	12-pin (1)
VF	20-pin (1)
MIC 1 IN	XLR 3-pin, female (1)
AUDIO IN CH1, CH2	XLR 3-pin, female (1 each) For MIC: –60 dBu (variable up to –20 dBu by menu or HSCU300RF/HSCU300R operation), balanced For LINE: 0 dBu, balanced
INTERCOM	XLR 5-pin, female (1)
EARPHONE	Stereo minijack (1)
DC IN	XLR 4-pin (1), 10.5 V to 17 V DC
DC OUT	4-pin (1), 10.5 V to 17 V DC, Max. 0.5 A (It may be limited depending on the load and input conditions.)
	2-pin (1), 10.5 V to 17 V DC, Max. 2.5 A (It may be limited depending on the load and input conditions.)
SDI	BNC type (1)
TEST OUT	BNC type (1)
PROMPTER/ GENLOCK/RET IN	BNC type (1), 1 Vp-p, 75 Ω
RET CTRL	6-pin (1)
REMOTE	8-pin (1)
TRACKER	10-pin (1)
USB	USB 2.0 Type A 4-pin (1) (for connecting USB drive)

Supplied accessories
Operation guide (1)
Operation manual (CD-ROM) (1)
Warranty (1) (HSC100RF/HSC100R)
Cable clamp belt (1 set)
Switch label (1)

Optional accessories

HD Electronic Viewfinder
  HDVF-200 (2-type, monochrome)
  HDVF-550 (5-type, monochrome)
  HDVF-C35W (3.5-type, color)
  HDVF-C550W (5-type, color)
  HDVF-C730W (6.5-type, color)

Large Lens Adapter
  HDLA1500 (large lens + large viewfinder)
  HDLA1505 (large lens + small viewfinder)
Large Viewfinder Adapter
  HDLA1507 (small lens + large viewfinder)

A-1128-405-A Camera Hanger
CAC-12 Microphone Holder
CAC-6 Return Video Selector
VCT-14 Tripod Adapter
USB drive
A-8286-346-A Low-repulsion Shoulder Pad
A-6772-374-C Shoulder Strap
HZC-PSF3 Camera Operating Software

Related equipment
Camera Control Unit   HSCU300RF, HSCU300R, HSCU-300, HXCU-100
MSU-1000/1500 Master Setup Unit
RCP-1000 series Remote Control Panel
RM-B170/B750 Remote Control Unit

Dimensions

136 (5 $^3/_8$)   Unit: mm (inches)

105 (4 $^1/_4$)   184 (7 $^1/_4$)   263 (10 $^3/_8$)

363 (14 $^3/_8$)
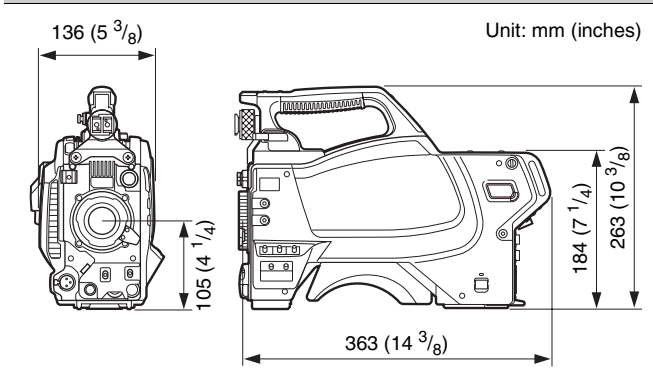
Design and specifications are subject to change without notice.

Notes
- 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.
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Package list

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

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@version 3.0 (December 2000)

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@author Vincent Rijmen <vincent.rijmen@esat.kuleuven.ac.be>
@author Antoon Bosselaers <antoon.bosselaers@esat.kuleuven.ac.be>
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