

# SONY®

## HD ELECTRONIC VIEWFINDER

# HDVF-700A



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OPERATION MANUAL  
1st Edition (Revised 2)

Japanese/English

## **WARNING**

**To prevent fire or shock hazard, do not expose the unit to rain or moisture.**

**Dangerously high voltages are present inside the set. Do not open the cabinet. Refer servicing to qualified personnel only.**

### **For the customers in the USA**

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

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

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

### **For the customers in Europe**

This product with the CE marking complies with the EMC Directive (89/336/EEC) issued by the Commission of the European Community.

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

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

This product is intended for use in the following

Electromagnetic Environment(s):

E1 (residential), E2 (commercial and light industrial), E3 (urban outdoors) and E4 (controlled EMC environment, ex. TV studio).

### **Pour les clients européens**

Ce produit portant la marque CE est conforme à la Directive sur la compatibilité électromagnétique (EMC) (89/336/CEE) émise par la Commission de la Communauté européenne.

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

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

Ce produit est prévu pour être utilisé dans les environnements électromagnétiques suivants:

E1 (résidentiel), E2 (commercial et industrie légère), E3 (urbain extérieur) et E4 (environnement EMC contrôlé ex. studio de télévision).

### **Für Kunden in Europa**

Dieses Produkt besitzt die CE-Kennzeichnung und erfüllt die EMV-Richtlinie (89/336/EWG) der EG-Kommission.

Angewandte Normen:

- EN55103-1: Elektromagnetische Verträglichkeit (Störaussendung)
- EN55103-2: Elektromagnetische Verträglichkeit (Störfestigkeit),

für die folgenden elektromagnetischen Umgebungen: E1 (Wohnbereich), E2 (kommerzieller und in beschränktem Maße industrieller Bereich), E3 (Stadtgebiet im Freien) und E4 (kontrollierter EMV-Bereich, z.B. Fernsehstudio)

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# Overview

The HDVF-700A HD Electronic Viewfinder is a 7-type monochrome viewfinder for use with a Sony high-definition color camera.

This viewfinder has the following features:

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## Multiscan

In addition to the 60i format, formats such as 24PsF and 50i are supported for control signals from the camera.

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## 16:9 display capability

When operated from an external device such as a camera control unit, the screen can be switched between 16:9 and 4:3 display modes.

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## High resolution

The viewfinder uses a high-resolution cathode-ray tube, providing 800 or more lines of horizontal resolution.

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## Stable picture

A high-voltage regulation circuit provides a stable image with a minimum of distortion, regardless of screen brightness.

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## Continuously variable peaking

A continuously variable peaking circuit provides a sharp image, making it easy to focus the camera.

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## Tally lamps

The viewfinder has red and green tally lamps which light in response to tally signals.

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## Superior usability

The viewfinder height may be set to one of three positions, and it may be tilted up to 60° upwards or 50° downwards.

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## Drip-proof construction

The drip-proof design is able to withstand light rain, making the viewfinder well suited to outdoor use.

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## Studio monitor hood, outdoor hood

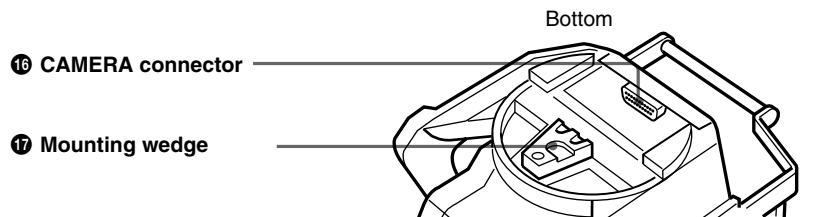
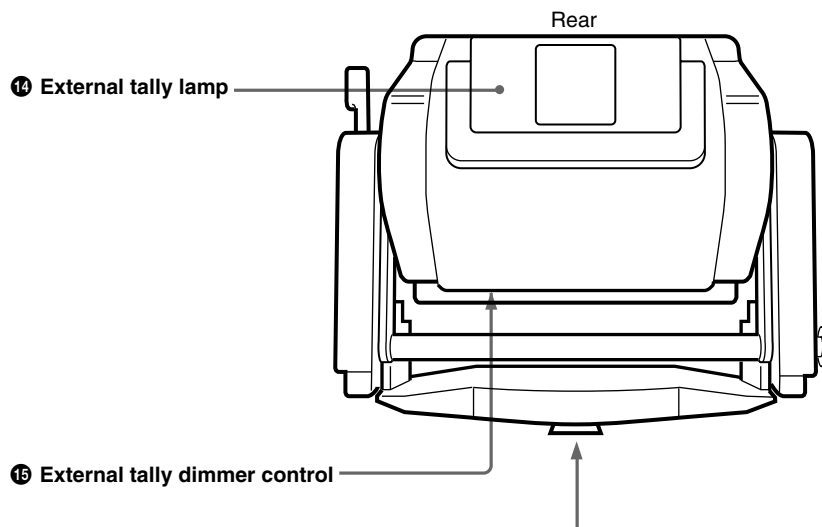
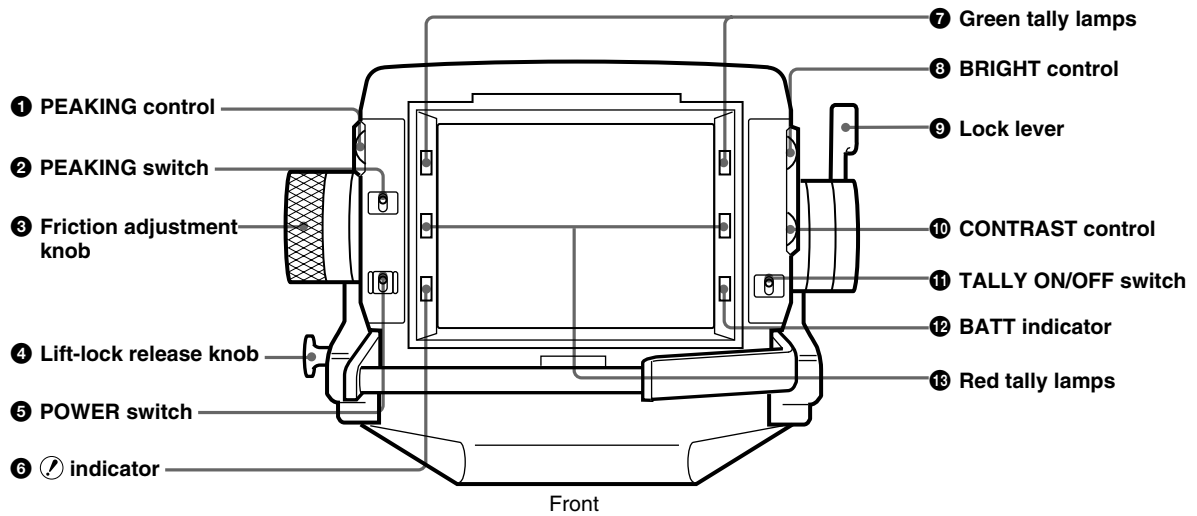
The viewfinder may be fitted with a strong, easy-to-use studio hood (supplied), or an outdoor broadcasting (OB) hood with excellent shading ability (option).

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## Energy-saving design

The viewfinder will accept a wide range of power supply voltage (from 10.5 to 17 volts) with low power consumption (33 watts).

# Location and Function of Parts



## Location and Function of Parts

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### ❶ PEAKING control<sup>1)</sup>

When the PEAKING switch ❷ is set to ON, this control can be used to sharpen the edges in the picture. Turning the control clockwise will increase the sharpness. The peaking can be adjusted from 0 to 18 dB.

### ❷ PEAKING switch

When this switch is set to ON, peaking can be adjusted using the PEAKING control ❶. When the switch is set to OFF, the PEAKING control ❶ is disabled, and the peaking value will be 0 dB.

### ❸ Friction adjustment knob

Used to adjust the amount of friction in the tilting mechanism.

### ❹ Lift-lock release knob

The viewfinder height can be adjusted while pulling this knob. By releasing the knob after adjusting the height to the standard (low), middle position, or top position, the viewfinder will remain fixed at that height.

### ❺ POWER switch

Turns the power supply from the camera to the viewfinder on and off.

### ❻ ⓘ (attention) indicator

This indicator lights when the camera detects certain conditions. The particular conditions which cause the indicator to light up are set by the camera.

*For information on how to set up and verify the conditions under which the ⓘ indicator will light, refer to the manual for the camera being used.*

### ❼ Green tally lamps<sup>2)</sup>

Light up when the camera receives a green tally signal.

### ❽ BRIGHT (brightness) control<sup>1)</sup>

Used to adjust the picture brightness.

### ❾ Lock lever

This lever is used to lock the viewfinder into a desired angle. The angle is locked when the lever is pushed towards the camera lens. When the lever is pulled toward the back of the camera, the angle can be adjusted. The tilt mechanism will resist movement with the amount of friction set by the friction adjustment knob ❸.

### ❿ CONTRAST control<sup>1)</sup>

Used to adjust the picture contrast.

### ⓫ TALLY ON/OFF switch

Controls the external tally lamp ⓫. When set to ON, the external tally lamp will operate. When set to OFF, the lamp will not operate (will not light in response to a tally signal).

### ⓬ BATT (battery) indicator

This indicator blinks when the voltage output of the camera battery drops. When the battery reaches a point that it may no longer be used, the indicator will light up.

To prevent camera shutdown due to the battery running down, change the battery as soon as possible after this indicator begins blinking.

*The threshold battery voltage value to make this indicator begin blinking is set by the camera. For details, refer to the manual for the camera.*

### ⓭ Red tally lamps<sup>2)</sup>

Light up when the camera receives a red tally signal.

### ⓮ External tally lamp

Lights up red in response to a red tally signal. Can be used to display the camera number by attaching one of the supplied number plates (0 through 9).

### ⓯ External tally dimmer control

Used to adjust the brightness of the external tally lamp. Use a screwdriver to turn the control clockwise to increase the brightness, or counterclockwise to dim the lamp.

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1) These controls have no effect on the camera's video output signals.

2) The brightness of these lamps can be adjusted using controls inside the viewfinder body. For more information, contact qualified Sony service personnel.

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**⑩ CAMERA connector (D-sub 25-pin)**

Used to connect to the camera's viewfinder connector.

**⑪ Mounting wedge**

To attach the viewfinder to a camera, the mounting wedge is inserted into the V-shaped groove on the top of the camera.



# Attaching to the Camera

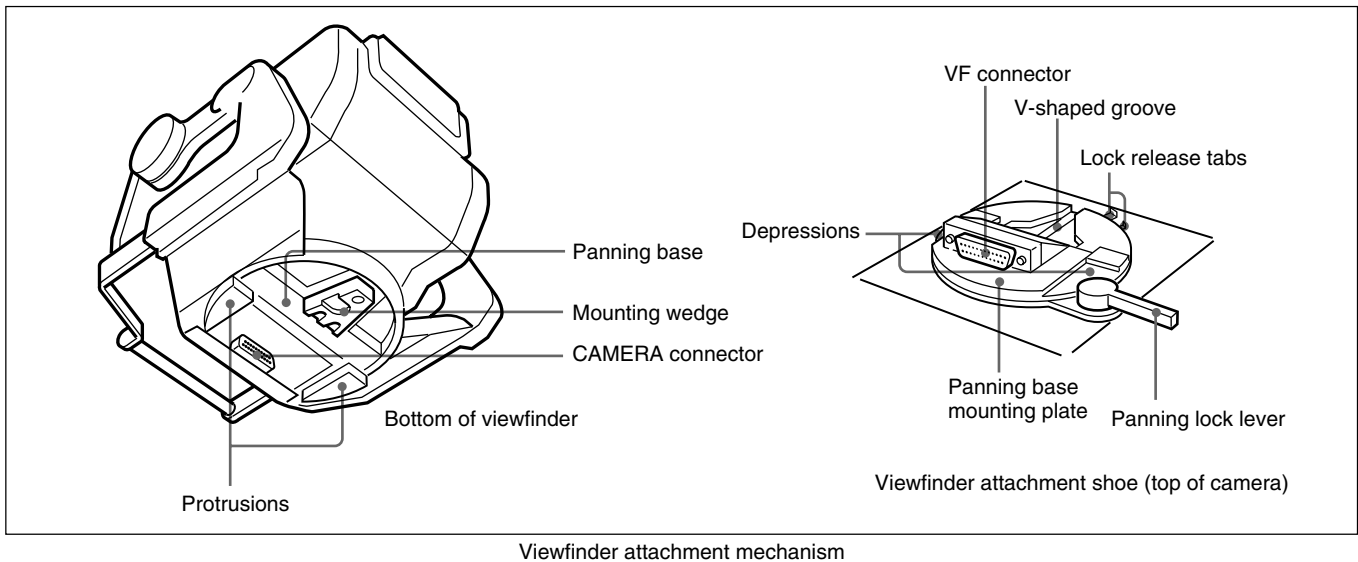
The viewfinder is attached to the panning base mounting plate (see the figure below) on the top of the camera.

## Note

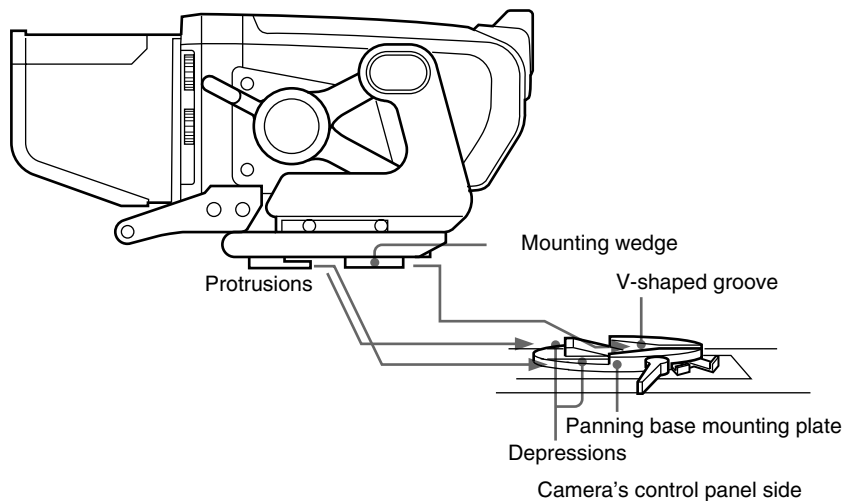
- When attaching the viewfinder to or removing it from a camera, always be sure to lock the viewfinder in standard position (the lowest position).

- Before attaching the viewfinder to the camera, check to be sure that the VF connector on the camera's panning base mounting plate faces in the direction 90° clockwise to the camera's control panel.

For more information on adjusting the viewfinder position, see the section “Adjusting the Position – Tilting” on page 8(E).

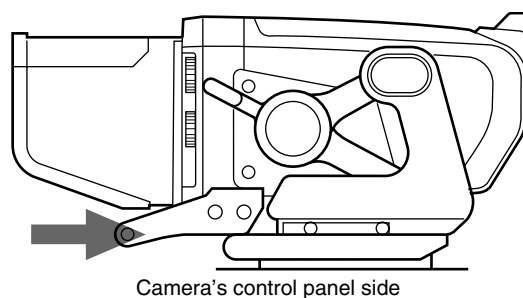


- 1 Aligning the mounting wedge with the V-shaped groove, and the protrusions on the viewfinder with the depressions on the left and right of the panning base mounting plate, set the viewfinder on the panning base mounting plate.



- 2 Holding on to the handle, push the viewfinder forwards.

The CAMERA connector will mate with the camera's VF connector.



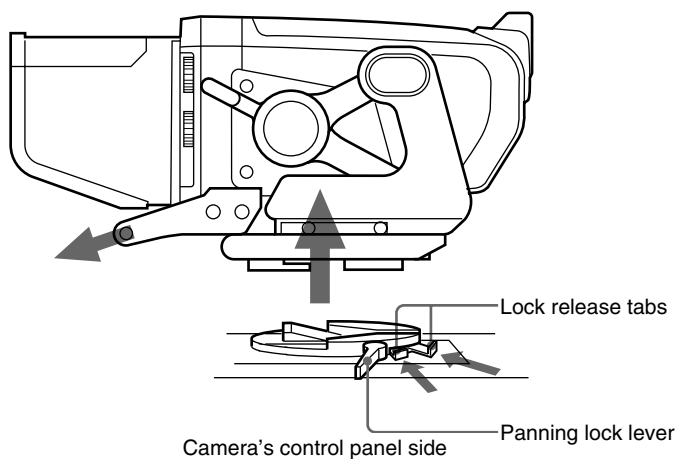
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## Removing the viewfinder

### Note

Before detaching the viewfinder from the camera, release the camera's panning lock lever and turn the viewfinder in the direction 90° clockwise to the camera's control panel. You cannot detach the viewfinder from the camera unless it is in this position.

While pushing in the lock release tabs, grasp the viewfinder handle and lift the viewfinder to remove it from the camera.

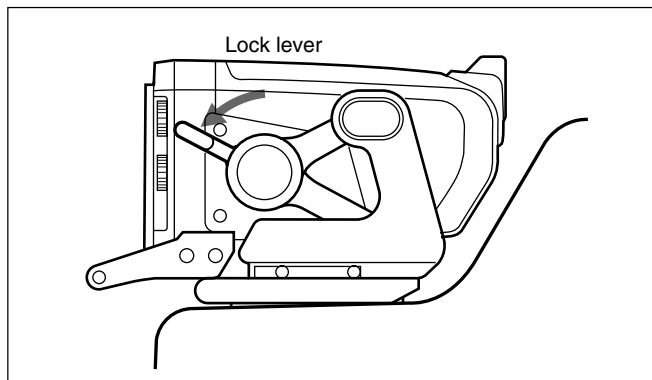


# Adjusting the Position — Tilting

## Note

When moving the camera with the viewfinder attached, always lower the viewfinder to its standard (lowest) position and push the lock lever towards the camera lens. Also, verify that the lift-lock release knob is fitted into the standard position depression.

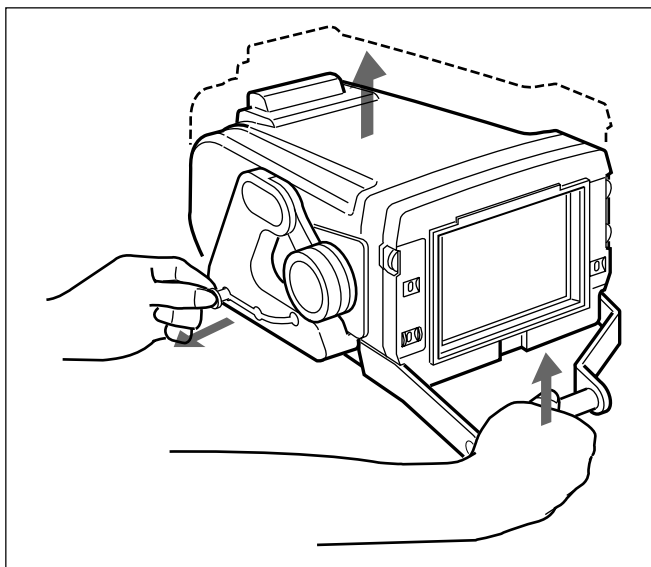
- 1 Pull the lock lever towards the rear of the camera.



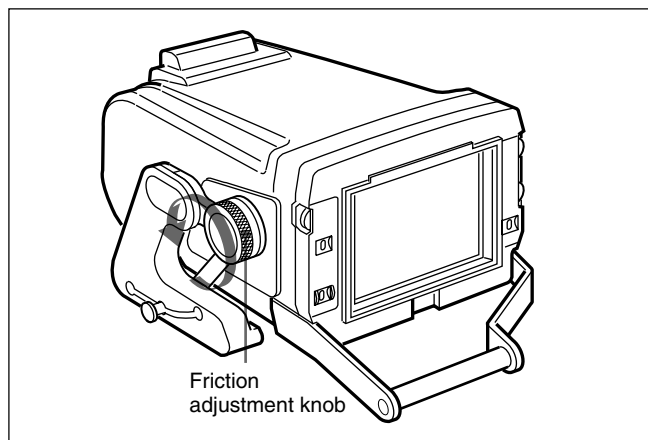
- 2 While pulling the lift-lock release knob, grasp the viewfinder handle and lift the viewfinder to its middle or top position.

## Note

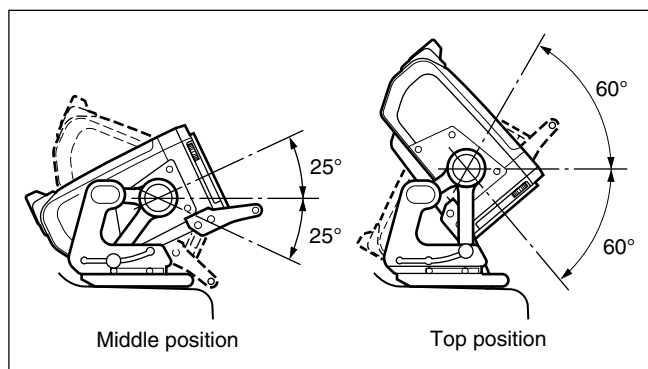
If the viewfinder is raised while holding onto the lift-lock release knob only, the viewfinder may not lock properly in the desired height position. Always lift the viewfinder while holding onto both the lift-lock release knob and the handle.



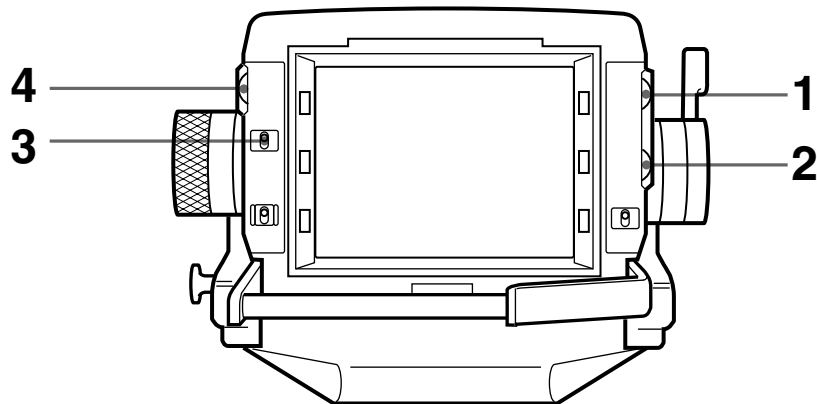
- 3 Turn the friction adjustment knob to set the desired tilt friction.



- 4 Adjust the tilt angle.  
After setting the viewfinder to the desired angle, push the lock lever towards the camera lens to lock the viewfinder in position.



# Adjusting the Screen



- 1** Turn the BRIGHT control to adjust the brightness of the screen. Turning the control clockwise makes the picture brighter.

**Note**

When the BRIGHT control is turned counterclockwise as far as it will go, no picture may be displayed on the screen.

- 2** Turn the CONTRAST control to adjust the screen contrast.

- 3** Set the PEAKING switch to ON.

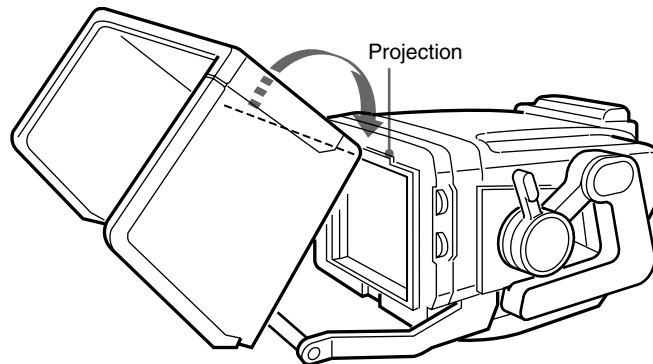
- 4** Turn the PEAKING control to adjust the peaking. Turn the control clockwise to make edges in the image sharper.

# Attaching Accessories

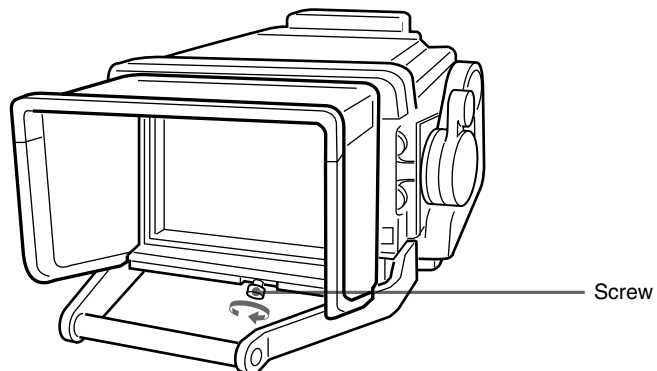
## Attaching hoods

This section describes how to attach the supplied studio monitor hood. The VFH-770 Outdoor Hood (sold separately) is attached in the same manner.

- 1 Hook the hood on the projection over the screen.

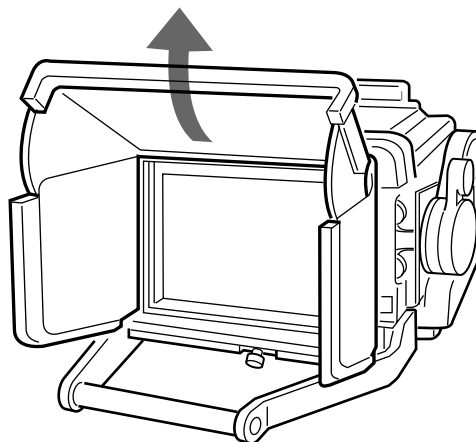


- 2 Tighten the screw to fix the hood in place.



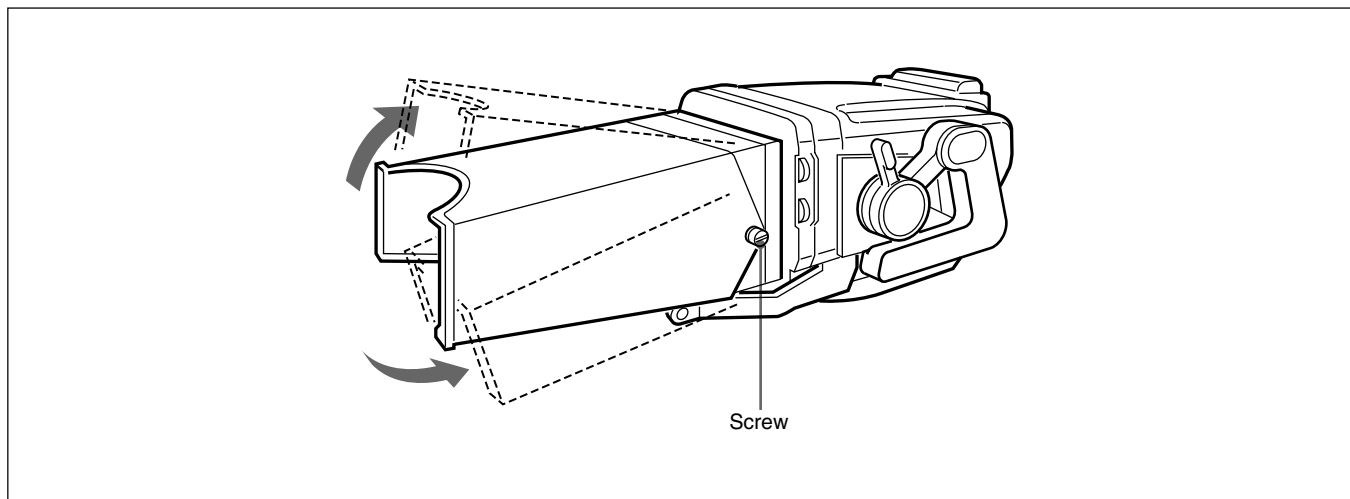
The hood direction can be adjusted up by 30°.

## Studio monitor hood



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## Outdoor (OB) hood (sold separately)

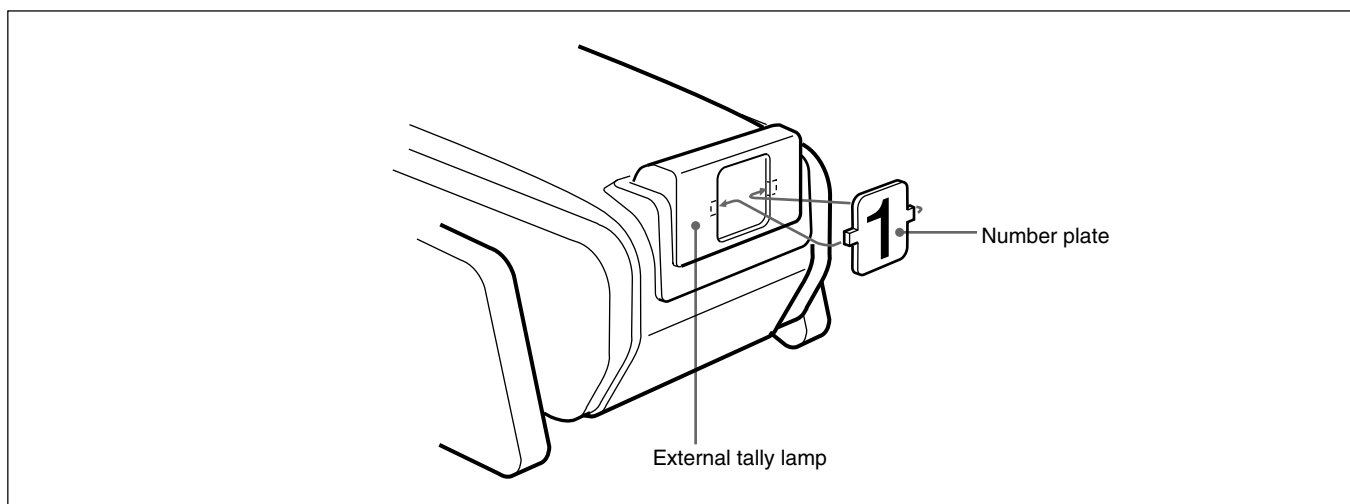


When the outdoor hood is difficult to move, or when it won't stay in a set position, adjust the tilt friction using the screw. Turning the screw clockwise will tighten the joint, and turning it counterclockwise will loosen it.

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## Attaching a number plate

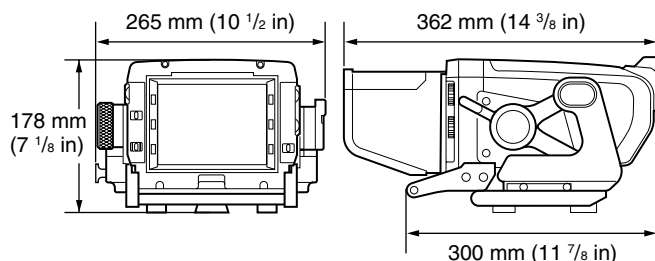
Insert the tabs on the sides of the required number plate (supplied) into the slots on the sides of the external tally lamp.



# Specifications

## General

|                       |                                            |
|-----------------------|--------------------------------------------|
| Power supply          | 10.5 to 17.0 V DC (supplied by the camera) |
| Power consumption     | 33 W                                       |
| Operating temperature | -20°C to +45°C (-4°F to +113°F)            |
| Mass                  | 5.0 kg (11 lb) not including hood          |
| External dimensions:  |                                            |



## CRT

|                                   |                                                      |
|-----------------------------------|------------------------------------------------------|
| 7-type monochrome, 90° deflection |                                                      |
| Dimensions                        | 160 × 131 mm (6 3/8 × 5 1/4 in)                      |
| Picture size                      | 120 × 90 mm (4 3/4 × 3 5/8 in)<br>(4:3 aspect ratio) |

## Deflection and high voltage

|                        |                                           |
|------------------------|-------------------------------------------|
| Brightness             | 500 cd/m <sup>2</sup>                     |
| Resolution             | 800 lines at center<br>600 lines at edges |
| Geometric distortion   | 2.0% or less                              |
| EHT voltage regulation | within ±2.0%                              |
| EHT voltage            | 12.5 kV (standard)                        |

## Input voltages and signal characteristics

### Supported formats

| Effective scanning lines / Format / Horizontal scanning frequency / Vertical scanning frequency |            |            |         |
|-------------------------------------------------------------------------------------------------|------------|------------|---------|
| 1080 /                                                                                          | 23.98PsF / | 26.97kHz / | 47.95Hz |
| 1080 /                                                                                          | 24PsF /    | 27kHz /    | 48Hz    |
| 1080 /                                                                                          | 25PsF /    | 28.13kHz / | 50Hz    |
| 1080 /                                                                                          | 29.97PsF / | 33.72kHz / | 59.94Hz |
| 1080 /                                                                                          | 30PsF /    | 33.75kHz / | 60Hz    |
| 1080 /                                                                                          | 50i /      | 28.13kHz / | 50Hz    |
| 1080 /                                                                                          | 59.94i /   | 33.72kHz / | 59.94Hz |

|                    |                                                                                                                                  |            |         |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------|------------|---------|
| 1080 /             | 60i /                                                                                                                            | 33.75kHz / | 60Hz    |
| 1035 /             | 59.94i /                                                                                                                         | 33.72kHz / | 59.94Hz |
| 1035 /             | 60i /                                                                                                                            | 33.75kHz / | 60Hz    |
| Video input        | 1.0 Vp-p ±6 dB, 75-Ω terminated                                                                                                  |            |         |
| Video input        | 1.0 Vp-p ±6 dB (SMPTE 240M), 75-Ω terminated                                                                                     |            |         |
| DC restoration     | Back porch type<br>Back porch level: within 2% of peak<br>(The fluctuation in black level against 10% to 90% fluctuation in APL) |            |         |
| Frequency response | 0.1 to 23 MHz (±2 dB)<br>23 to 27 MHz (±3 dB)                                                                                    |            |         |
| Peaking            | 0 to 18 dB (17 MHz)                                                                                                              |            |         |
| Synchronization    | Line pull range:<br>Horizontal, ±500 Hz or more<br>Vertical, -10 Hz or more<br>Line hold range:<br>±500 Hz or more               |            |         |

## Connectors

|                  |              |
|------------------|--------------|
| CAMERA connector | D-sub 25-pin |
|------------------|--------------|

## Supplied accessories

|                         |
|-------------------------|
| Studio monitor hood (1) |
| Number plate (1)        |
| Fuse (1)                |
| Operation manual (1)    |

## Optional accessories

|                      |
|----------------------|
| VFH-770 Outdoor Hood |
|----------------------|

## Related products

|                                   |
|-----------------------------------|
| HDC-900/950 HD Color Video Camera |
| CA-905L Large Lens Adaptor        |
| BKP-9057 Viewfinder Saddle        |

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