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SONY

3-810-845-11 (1)

# Color Video Camera

## Operating Instructions

Before operating the unit, please read these instructions thoroughly and retain them for future reference.

## Mode d'emploi

Avant la mise en service de cet appareil, prière de lire attentivement ce mode d'emploi que l'on conservera pour toute référence ultérieure.

## Manual de instrucciones

Antes de utilizar la unidad, lea detenidamente este manual, y consérvelo para futuras referencias.

# SSC-C104/C108P

Sony Corporation © 1996 Printed in Japan

## Owner's Record

The model and serial numbers are located on the bottom. Record these numbers in the spaces provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. _____ Serial No. _____

## WARNING

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

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

### NOTICE FOR THE SSC-C104

The graphical symbols are on the unit SSC-C104.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

### For the customers in the USA (SSC-C104 only)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment

## English

This manual applies to both the SSC-C104 and SSC-C108P. The operating instructions apply to both cameras, but their signal systems and power requirements are different.

| | Signal system | Power requirements |
|---|---|---|
| SSC-C104 | NTSC color system | 24V AC, 60 Hz |
| SSC-C108P | PAL color system | 220-240V AC, 50 Hz |

## Features

- **High sensitivity**
- **Backlight compensation**
- **Turbo AGC**
- **CCD-IRIS function**
- **Compact and lightweight**
- **Line lock function**
- **C/CS mount capability**
- **DC/VS servo Auto-iris lens capability**
- **Automatic Tracing White Balance**

## Notes on Use

### Power supply

- The SSC-C104 must always be operated with a 24V AC, 60 Hz Class 2 power supply.
  In the U.S.A, use a power supply which is UL Listed. In Canada, use a power supply which is CSA Certified.
  – When connecting the transformer, be sure to connect each lead to the appropriate terminal. Wrong connection may cause malfunction and/or damage to the video camera.
  – Ground the unit or an irregular voltage may be generated in the AC power cord and may cause malfunction and/or damage to the video camera.
- The SSC-C108P must always be operated with a 220-240V AC, 50 Hz.

### Handling of the unit

Be careful not to spill water or other liquids on the unit, or allow combustible or metallic materials inside the body. If used with foreign matter inside, the camera may fail, or be a cause of fire or electric shock.

### Operating and storage locations

Avoid shooting very bright objects (such as light fittings) for an extended period. Avoid operating or storing the unit in the following locations:

- Extremely hot or cold places (operating temperature –10°C to 50°C (14°F to 122°F), storage temperature –40°C to 60°C (–40°F to 140°F)
- Damp or dusty places
- Where it is exposed to rain
- Locations subject to strong vibration
- Close to generators of powerful electromagnetic radiation such as radio or TV transmitters.

### Care of the unit

- Use a blower to remove dust or dirt on the surface of the lens or optical filter.
- Clean the body with a dry soft cloth. If it is very dirty, use a cloth dampened with a small quantity of neutral detergent, then wipe dry. Avoid the use of volatile solvents such as thinners, alcohol, benzene, and insecticides. They may damage the surface finish, or impair the operation of the camera.

In the event of any problems with the operation of the camera, contact your authorized Sony dealer.

## Location and Function of Parts

### Front and side Illustration A

**❶ C/CS adjustment ring**

The C/CS ring to adjusts the back focus to suit the type of lens fitted (C-mount or CS-mount). The factory setting is set to C-mount. After adjusting, be sure to lock the back focus with the ❺ LOCK screw.

**❷ Camera mounting plate (C104-Top/C108P-Bottom)**

The camera mounting plate can be attached to either the top or bottom of the camera using the 4 attached screws. Use the mounting plate screw hole to fix the camera to a mounting bracket. The mounting screw must be of the following type.

1/4" UNC (20 pitch)




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used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

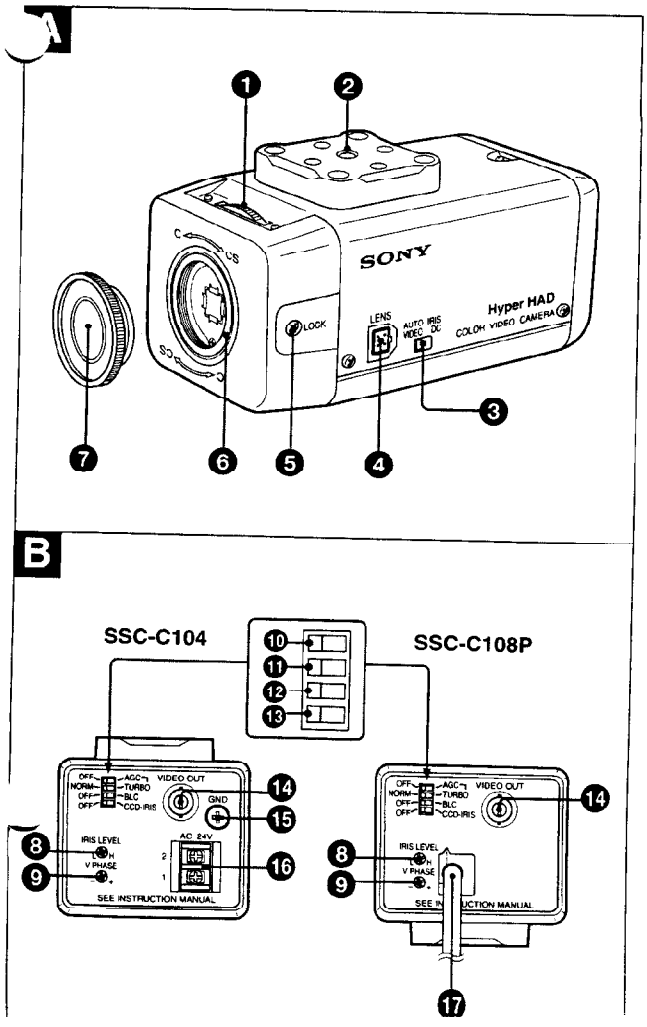
### For the customers in the United Kingdom (SSC-C108P only)

**WARNING**
**THIS APPARATUS MUST BE EARTHED**

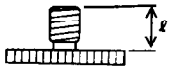
**IMPORTANT**
The wires in this mains lead are coloured in accordance with the following code:

| | |
|---|---|
| Green-and-yellow: | Earth |
| Blue: | Neutral |
| Brown: | Live |

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:
The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.




screw hole to fix the camera to a mounting bracket. The mounting screw must be of the following type.
1/4" UNC (20 pitch)
ℓ: 4.5 mm ± 0.2 mm (ISO standard),
or 0.197" (ASA standard)




**❸ AUTO IRIS select switch**
Switch to VIDEO when using a VS-servo lens.
Switch to DC when using a DC-servo lens.

**❹ LENS connector (4-pin)**
When using an auto iris lens, plug the lens plug into this socket. The lens cable plug will have to be replaced with the plug supplied before insertion.

**❺ Back focus LOCK screw**
After adjusting the ❶ C/CS adjustment ring to match the type of lens you are using, turn this screw with a screwdriver to lock the back focus.

**❻ Lens mount (C- or CS-mount)**
Used to attach a C- or CS-mount lens.

**❼ Lens mount cap**
Keep in place when not attaching a lens to the camera.

## Rear B

**❽ IRIS LEVEL L/H adjustment screw**
This screw can be used to adjust the incident light level when using the CCD-iris or a DC servo lens. Before leaving the factory, the level is set for the CCD-Iris. If you wish to use a DC servo lens, turn the adjustment screw towards the H (high) side.

**❾ V PHASE (vertical phase) +/– screw**
Use this screw to compensate for vertical phase discrepancies which can occur when multiple cameras are connected to a switching device. Each camera's output is synchronized to the frequency of the power supply.

**❿ AGC ON/OFF switch**
When the AGC (automatic gain control) is switched on, the signal sensitivity automatically adjusts to the lighting conditions of the subject. The switch normally remains in the AGC position.

**⓫ Turbo-AGC TURBO/NORM switch**
When switched to TURBO, the Turbo-AGC function gives you a brighter picture under poor lighting conditions. Although noise increases slightly, signal elements are nearly doubled, thereby increasing picture definition. Switching this function on also activates the AGC function.

**⓬ BLC compensation ON/OFF switch**
Set the BLC (back light compensation) switch to BLC to compensate for scenes with a strong back light. The BLC function senses the strength of the back light and compensates accordingly. Switching this function on also activates the AGC function.

**⓭ CCD IRIS ON/OFF switch**
When switched on (switched to CCD IRIS) this function automatically adjusts the sensitivity in accordance with the incident light conditions. Set this switch to OFF when using an auto-iris lens. The factory setting is "CCD IRIS."

**⓮ VIDEO OUT connector**
This coaxial connector (BNC-type) outputs the video signals.

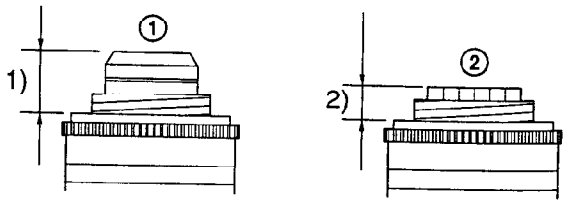
**⓯ GND (ground) terminal (SSC-C104 only)**
Connect this terminal to the ground.

**⓰ 24V AC 1 and 2 terminals (SSC-C104 only)**
Connect these terminals to a 24 V AC power supply.

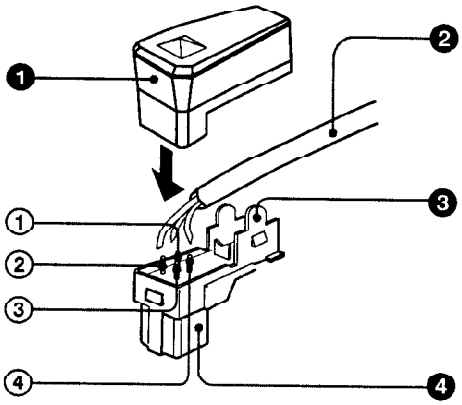
**⓱ Mains lead (SSC-C108P only)**
Connect to an AC power supply.

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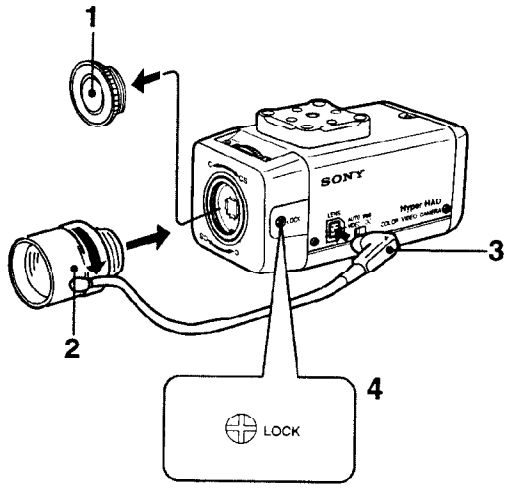
C



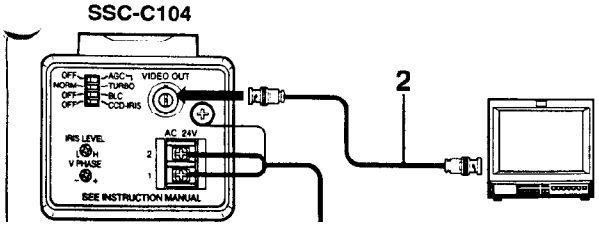

D




E




F




## Mounting the Lens

### Compatible lenses C

| | |
|---|---|
| ① C mount lens | 1) 9 mm (3/8 inch) or less |
| ② CS mount lens | 2) 4 mm (5/32 inch) or less |

**Notes**

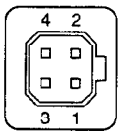
- Be sure to attach the lens mount cap when the lens is not mounted.
- Only lenses that are suitable for a 1/3-inch CCD should be used with this camera. If lenses for a 2/3-inch or 1/2-inch CCD are used, the view angle will be different.

### Fitting the auto-iris lens plug D

The camera is supplied with a plug for inserting into the LENS connector on the side of the camera. When fitting an auto-iris lens, you will need to replace the plug on the lens cable with the plug supplied. Replace as follows:

❶ Cover
❷ Audio-iris cable
❸ Rib (If the cable is thick and the plug cover does not seat properly, cut away this rib.)
❹ Lens plug

**1** Remove the plug cover and solder the lens cable wires to the pins on the plug supplied. The pin assignment is as follows:




| | Lens | |
|---|---|---|
| | DC-servo | VS-servo |
| ① Pin 3: | Drive (+) | Video signal |
| ② Pin 1: | Control (–) | Power supply (DC 9V 50mA) |
| ③ Pin 2: | Control (+) | Not used |
| ④ Pin 4: | Drive (–) | Ground |

**2** Put the cover on the plug.

### Fitting the lens E

When using an auto-iris lens, fit it as follows. For a manual-iris lens, omit step 3.

1 Unscrew lens mount cap.
2 Screw in the lens.
3 First, replace the plug on the lens cable with the plug supplied with the camera. Then, connect the camera cable plug to the LENS socket.
4 Loosen the back focus LOCK screw. Adjust the back focus by turning the C/CS adjustment ring in accordance with the type of lens fitted (C-mount or CS-mount). Once adjusted, tighten the back focus LOCK screw. (The factory setting is C-mount.)

**Note**

When attaching a C-mount type lens, be sure to turn the C/CS adjustment ring fully in the "C" direction. When the C/CS adjustment ring is set to "CS," mounting any lens with a mount projection of more than 4 mm may damage the internal parts of the camera.

## Connections

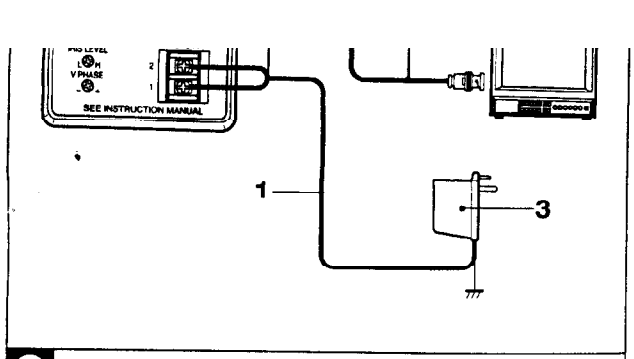
### Connecting the SSC-C104 F

1 Connect the power lines to the camera.
2 Connect the 75-ohm coaxial cable to the video monitor.
3 Connect the wall outlet transformer.

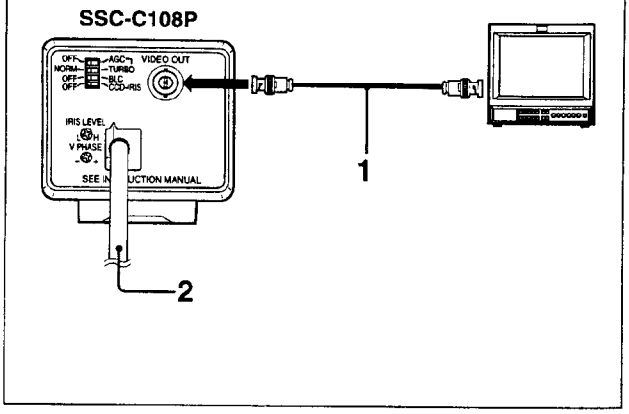
**Notes**

- When using a transformer without a ground lead (two-lead type), connect the output of the transformer to the 24V AC 1 and 2 terminals of the camera.
- When using a transformer with a ground lead (three-lead type), connect the ground lead to the GND terminal and the other two leads to the 24V AC 1 and 2 terminals.
- To prevent a short circuit, do not let the exposed transformer leads brush against conductive material when connecting to the AC 24V terminals.

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G




brush against conductive material when connecting to the AC 24V terminals.

## Connecting the SSC-C108P G

1 Connect the 75-ohm coaxial cable to the video monitor.
2 Connect the main lead.

## CCD Characteristics

The following are characteristics that may be observed when viewing an image produced by a CCD camera. These are inherent characteristics of the CCD camera and do not stem from any fault within the camera itself.

**Vertical smear**
This phenomenon occurs when viewing a very bright object.

**Patterned noise**
This is a fixed pattern which may appear over the entire monitor screen when the camera is operated at a high temperature.

**Jagged picture**
When viewing stripes, straight lines, or similar patterns, the image on the screen may appear jagged.

## Specifications

| | |
|---|---|
| Image device | 1/3" Interline transfer type CCD |
| Sensing area | 1/3" format (3.3 × 4.4 mm) |
| Effective picture elements | SSC-C104 : 510(H) × 492(V)<br>SSC-C108P : 500(H) × 582(V) |
| Horizontal resolution | 330 TV lines |
| Minimum illumination | 1.0 lux at F1.2 (Turbo AGC on) |
| CCD Iris | SSC-C104 : 1/60 to 1/100,000 second<br>SSC-C108P: 1/50 to 1/100,000 second |
| CCD Iris control | ON/OFF switchable |
| Lens Type | VIDEO/DC servo switchable |
| Power requirements | SSC-C104: AC24 V AC, 60Hz<br>SSC-C108P: 220-240V AC, 50Hz |
| Power consumption | SSC-C104: 3.5W<br>SSC-C108P: 4 W |
| Sync system | SSC-C104: AC line lock 60Hz<br>SSC-C108P: AC line lock 50Hz |
| AGC | ON/OFF/Turbo switchable |
| Signal system | SSC-C104 : NTSC color system<br>SSC-C108P : PAL color system |
| White Balance | ATW only |
| Video Signal | 1.0 volt peak to peak at 75 Ohms, sync negative |
| S/N ratio | 46dB (AGC off) |
| Phase control | V-phase adjustment (±90°) |
| Lens mount | C/CS mount (Adjustable) |
| Dimensions | SSC-C104: (w/h/d) 70 × 57 × 130 mm<br>(2 7/8 × 2 1/4 × 5 1/8 inches)<br>SSC-C108P:(w/h/d) 70 × 57 × 130 mm<br>(2 7/8 × 2 1/4 × 5 1/8 inches)<br>(excluding protruding parts) |
| Mounting plate height | 6.15mm, (1/4 inch) |
| Mass | SSC-C104: Approx. 550g (1 lb 2 oz.)<br>SSC-C108P: Approx. 760g (1 lb 6 oz.) |
| Operating temperature | –10°C to +50°C (14°F to 122°F) |
| Storage temperature | –40°C to +60°C (–40°F to 140°F) |
| Relative operating humidity | 20% to 80% (non condensing) |
| Relative storage humidity | 20% to 95% |
| Shock resistance | 70G |
| Auto-Iris lens connector | 4-pin |
| Supplied accessories | 4-pin plug for auto iris lens (1)<br>Operating Instructions (1) |

Design and specifications are subject to change without notice.

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