SONY

3-752-274-21 (1)

CCD Color Video Camera

# SSC-C354

## Operating Instructions Page 2

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

## Mode d'emploi Page 22

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

# Contents





# Features

The SSC-C354 color video camera uses a 1/2-inch CCD (Charge Coupled Device) with 510 (horizontal) by 492 (vertical) picture elements. The following are some of its principal features.

**High sensitivity**
Gives a clear picture even under very gloomy conditions.

**CCD IRIS function**
Even when a manual iris lens is fitted, the sensitivity is automatically adjusted according to the incident light level. This keeps the video signal at a suitable level.

**Automatic adjustment of white balance**
The automatic adjustment mode stores the adjusted value; alternatively the automatic tracing mode responds to the lighting conditions to adjust the white balance automatically. Thus a picture with an appropriate color balance is always obtained.

**Electronic shutter function**
Eight shutter speeds are available, for various shooting conditions.

**Lockable to AC power frequency**
The vertical drive frequency of the camera can be locked to the AC power frequency (60 Hz).

**Auto-iris lenses**
A C-mount auto-iris lens can be used, by connecting the lens cable with the plug supplied.

# Notes on Use

**Power supply**

This camera must always be operated with a 24 V AC 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.

**Handling of the unit**

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

**Operating and storage locations**

Avoid shooting a very bright object (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)
- 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**

- Remove dust or dirt on the surface of the lens or optical filter with a blower.
- 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.

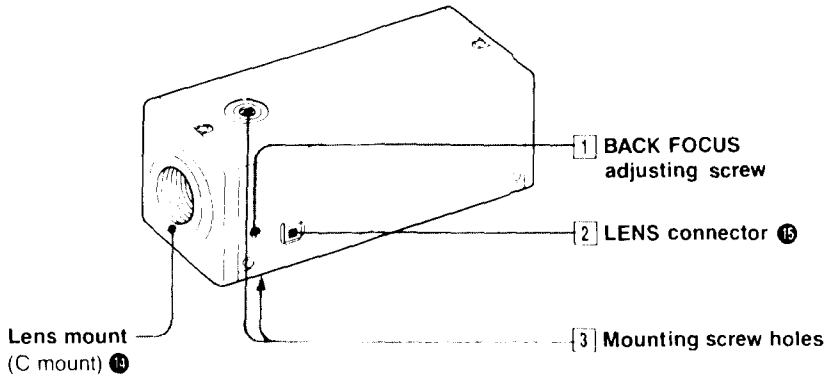
In the event of any problems with the operation of the camera, contact your Sony service representative.



# Location and Function of Parts and Controls

The numerals such as ⓮ in the illustrations indicate the page number on which this part is discussed.

**Front and side**




**1 BACK FOCUS adjusting screw**

The camera is shipped with the back focus adjusted to suit almost all lenses. If necessary, turn this screw with a screwdriver to adjust the focal plane. It has a self-locking mechanism, so once adjusted the focus will not drift.

**2 LENS connector (4-pin)**

When using an auto-iris or zoom lens, replace the plug on the lens cable with the plug supplied with the camera, and plug into this connector.

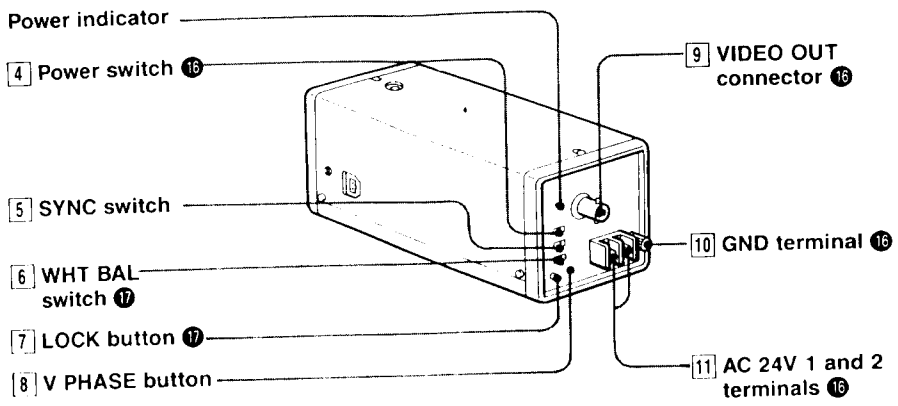
**3 Mounting screw holes**

Use these holes to fix the camera to a mounting bracket or tripod. The mounting screw must be as follows.

1/4″ UNC (20 pitch)

$\ell$: 4.5 mm ±0.2 mm (ISO standard), or 0.197″ (ASA standard)

## Rear




### [4] Power switch

This turns the camera on and off. The power indicator lights when the power is turned on.

### [5] SYNC switch

Use this switch to select the synchronizing signal.

**INT (internal):** for using the internal synchronizing signal.

**L.L (line lock):** for locking the camera operation to the supply power frequency as a synchronizing signal.

### [6] WHT BAL (white balance) switch

This sets the white balance adjustment mode.

**AWB** (Automatic White Balance): When the LOCK button [7] is pressed, the white balance is automatically adjusted, and the setting is stored in memory. When the switch is set to this position the white balance always takes the previously stored value.

**ATW** (Automatic Tracing White Balance): The white balance is continuously adjusted to take account of variations in the incident light color temperature.

### [7] LOCK button

With the white balance switch [6] set to AWB, point the camera at a white object such as a white wall or piece of white paper so that the monitor is completely white, and press this button. The white balance value will be automatically adjusted and the current value stored.

### [8] V PHASE (vertical phase) button

Use this button to compensate for vertical phase discrepancies which will occur when two or more cameras are used with the SYNC switch [5] set to L.L. Use the tip of a ball-point pen or the like to press the button. Each time it is pressed, the line lock position shifts by 60°.

### [9] VIDEO OUT connector

Connect to a video input connector of a video monitor or a switcher

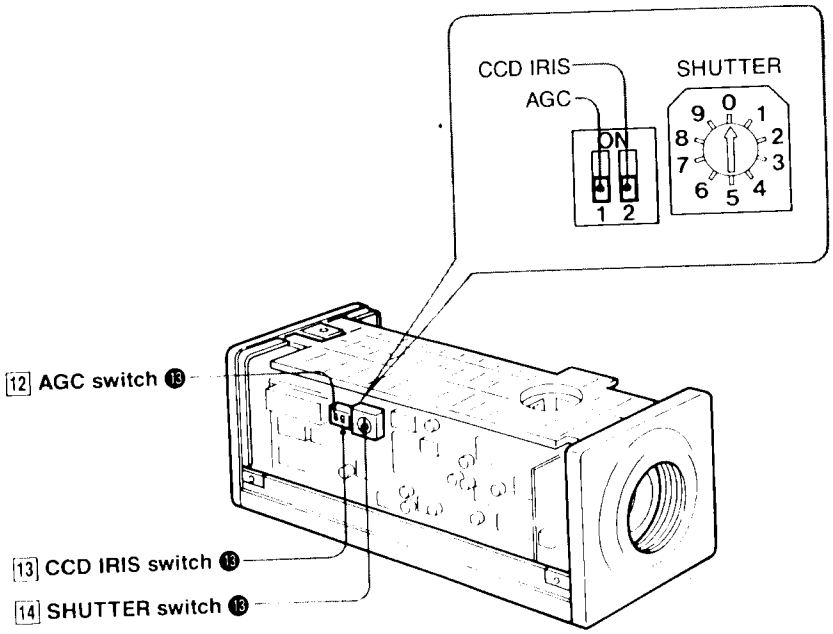
### [10] GND (ground) terminal

Connect this terminal to the ground.

### [11] AC 24V (AC power supply) 1 and 2 terminals

Connect these terminals to a 24 V AC power supply

### Internal switches




**[12] AGC switch**
This switches the automatic gain control on or off.

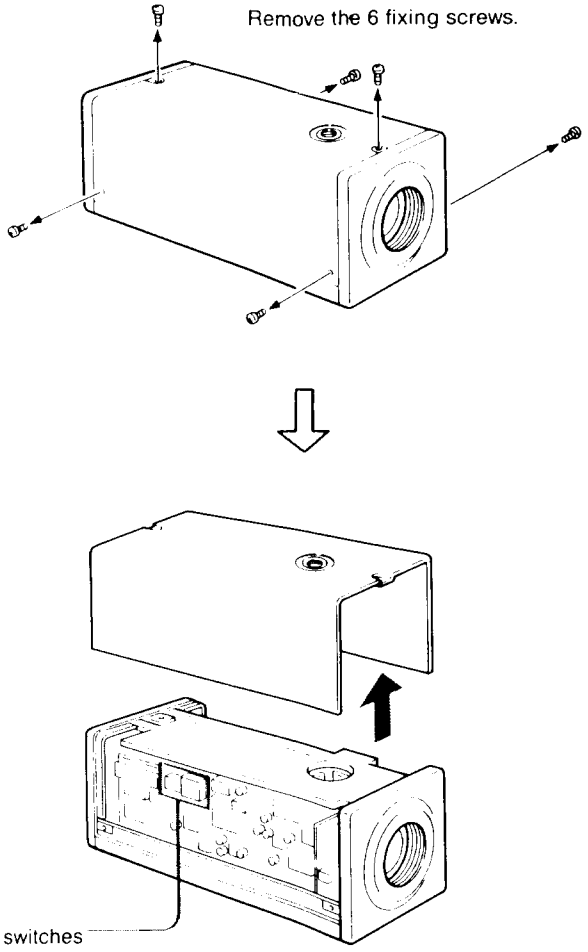
**[13] CCD IRIS switch**
This switches on and off the CCD IRIS function, which automatically adjusts the sensitivity according to the incident light conditions.

**[14] SHUTTER switch**
This switch is effective when the CCD IRIS switch [13] is off. It sets the shutter speed to any of eight fixed settings, from 1/60 to 1/10000 second.

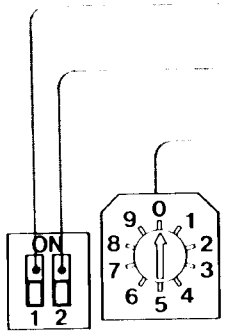
# Internal Switch Settings

Before installing the camera, set the internal switches according to the following procedure.

**1** Remove the upper cover from the camera body.




**2** Set the switches according to the conditions in which the camera is to be used.




| Switch | Settings | Factory setting |
|---|---|---|
| AGC | ON<br>OFF (gain: 0 dB) | ON |
| CCD IRIS* | ON<br>OFF | ON |
| SHUTTER | (only effective when CCD IRIS is off)<br>0: 1/60 s<br>1: 1/100 s<br>2: 1/250 s<br>3: 1/500 s<br>4: 1/1000 s<br>5: 1/2000 s<br>6: 1/4000 s<br>7: 1/10000 s | 0 |

**3** Replace the upper cover on the camera body.

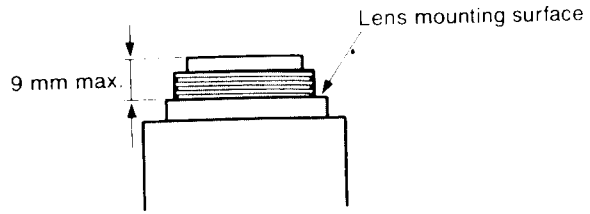
* CCD IRIS function. When using a manual iris lens, this function automatically adjusts the shutter speed to maintain a suitable exposure level. Turn this switch off when using an auto-iris lens.

**Note**

The CCD IRIS function used in the internal synchronization mode (SYNC switch set to INT) may cause unstable color reproduction (slow color changes) to an object shot under a fluorescent lamps or others. If the color changes are too extreme for the picture to be used, turn the CCD IRIS function off and use an auto-iris lens.

# Mounting the Lens

**Suitable lenses**
The lens must be a C mount type, and the screw thread must not project more than 9 mm ($^3/_8$ inches) from the lens mounting surface.



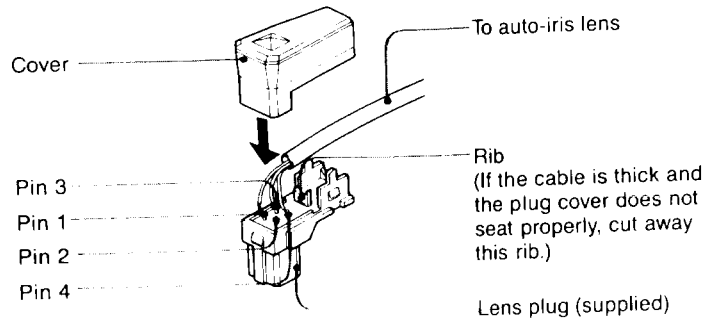

This camera uses a 1/2-inch CCD, so the lens should be for use with this size of CCD. In particular, if used with a lens for a 2/3-inch CCD the angle of view will be different.

**Plug fitting for an auto-iris lens**
The camera is supplied with a plug to fit the LENS connector. To connect an auto-iris lens, first replace the plug on the lens cable with the plug supplied.

**1** Solder the lens cable wires to the pins on the plug supplied; apply heat after putting heat shrink sleeving on the wires. The pin assignment is as follows.
Pin 1: Power supply (+9 V DC, 50 mA)
Pin 2: Unused
Pin 3: Video signal output (for auto-iris control; 0.7 Vp-p, 40 k ohms, no synchronizing signal)
Pin 4: Ground
(Refer to the operation manual for the lens to determine the cable color coding.)

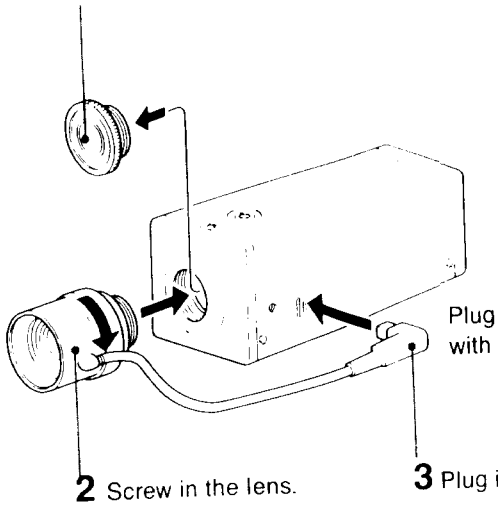


**2** Put the cover on the plug.

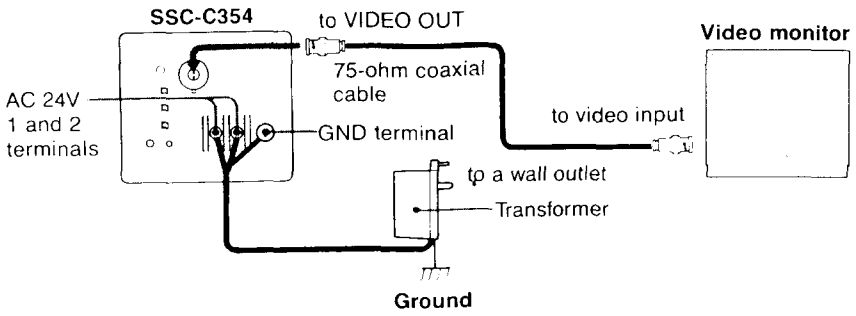



**Fitting the lens**
When using an auto-iris lens, fit it as follows. For a manual iris lens, omit step **3**.

**1** Unscrew the lens mount cap.



# Connections




**Notes on power connection**

When connecting an AC power supply, follow these notes.

- When using a transformer without ground lead (two-leads type), connect the output of the transformer to the AC 24V 1 and 2 terminals of the camera.
- When using a transformer with ground lead (three-leads type), connect the ground lead to the GND terminal and the other two leads to the AC 24V 1 and 2 terminals of the camera.



# White Balance Adjustment

After fitting the lens, and making all the installation connections, use a monitor to check the picture and set the white balance as described below. *Note that the unit is shipped with the white balance switch set to ATW.*

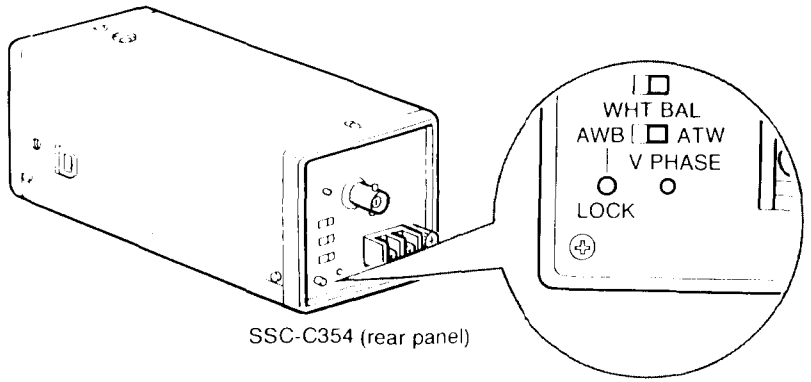
**AWB (Automatic White Balance) mode:**

This mode is appropriate when lighting conditions are more or less constant.

Point the camera at a white object so that the monitor screen is as far as possible all white, then press the LOCK button. This will calculate the current white balance setting and store it indefinitely in memory. Thus there is no need to readjust the white balance after the power is turned off and on again.

**ATW (Automatic Tracing White Balance) mode:**

In this mode the camera continuously adjusts the white balance according to the changing lighting conditions.

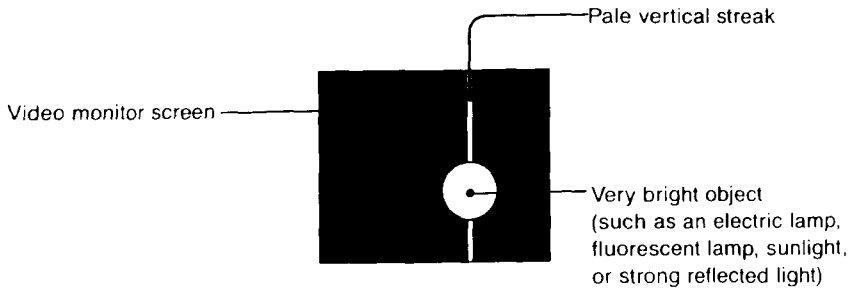



SSC-C354 (rear panel)

# CCD Characteristics

The following conditions that may be observed when using a CCD camera are not associated with any fault of the camera.

**Vertical smear**
This phenomenon occurs when shooting 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.

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



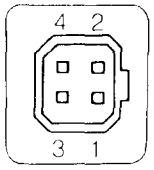
# Principal Specifications

**Imaging system**

| | |
|---|---|
| Pickup device | Inter-line transfer type CCD |
| Effective picture elements | |
| | 510 × 492 (horizontal/vertical) |
| Sencing area | 6.3 × 4.7 mm (¼ × 3/16 inches) |

**Optical system and miscellaneous**

| | |
|---|---|
| Lens mount | C mount |
| Signal system | NTSC color system |
| Scanning system | 525 lines, 2:1 interlace, 30 frames per second |
| Synchronization | Internal or line-lock |
| Horizontal resolution | 330 TV lines |
| Minimum illumination | 2.5 lux at F/1.2 (AGC on) |
| Video output | 1.0 Vp-p, 75 ohms, sync negative |
| Video S/N ratio | 46 dB minimum (AGC off) |
| Electronic shutter | 8 settings: 1/60 s, 1/100 s, 1/250 s, 1/500 s, 1/1000 s, 1/2000 s, 1/4000 s, 1/10000 s |
| White balance | AWB (Automatic White Balance) and ATW (Automatic Tracing White Balance) switchable |
| AGC | Switchable on/off |
| Input and output connectors | |
| | AC 24V: two-pole terminals |
| | GND |
| | VIDEO OUT: BNC type |
| | LENS: 4-pin connector (pin assignment as follows) |



Side of camera body

| Pin | Signal |
|---|---|
| 1 | Power supply (9 V DC, 50 mA) |
| 2 | Unused |
| 3 | Video output signal for lens (0.7 Vp-p, no synchronization signal) |
| 4 | Ground |

## Principal Specifications

| | |
|---|---|
| Power requirements | 24 ± 10% V AC, 60 Hz |
| Power consumption | 3.5 W |
| 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 humidity (operating) | 20% to 80% |
| Relative humidity (storage) | 20% to 95% |
| Shock resistance | 70 G |
| External dimensions (w/h/d) | 64 (mm) × 57 (mm) × 155 (mm) (excluding external projections) ($2^5/_8 \times 2^1/_4 \times 6^1/_8$ inches) |
| Weight | 660 g approx. (1 lb 7 oz) |
| Accessories supplied | Lens mount cap<br>4-pin plug for lens cable<br>Operation manual |

Design and specifications are subject to change without notice.