

**SONY**

3-752-695-21 (1)

CCD Black-and-White Video Camera

# SSC-M354

## **Operating Instructions** Page 2

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

## **Mode d'emploi** Page 20

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

## Owner's Record

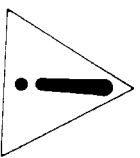
The model and serial numbers are located on the bottom. Record the serial number in the space provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. SSC-M354

Serial No. \_\_\_\_\_

### **WARNING**

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



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 customers in the USA**

Warning—This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

### **For customers in Canada**

This apparatus complies with Class A limits for radio noise emissions set out in Radio Interference Regulations.

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# Features

The SSC-M354 black-and-white 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.

### 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 glass cover 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.

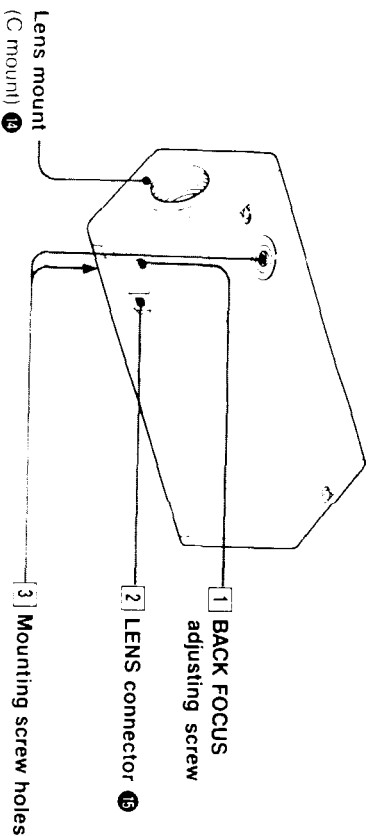
In the event of any problems with the operation of the camera, contact your Sony service representative.

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# Location and Function of Parts and Controls

The numerals such as ① 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)

④ 4.5 mm ±0.2 mm (ISO standard), or  
0.197" (ASA standard)



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## Location and Function of Parts and Controls

### Rear

Power indicator \_\_\_\_\_

[4] Power switch [16] \_\_\_\_\_

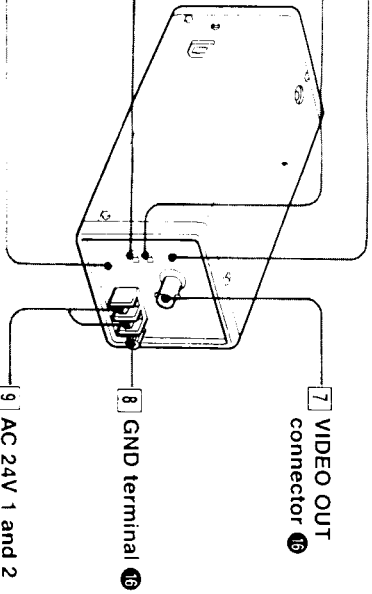
[7] VIDEO OUT  
connector [16] \_\_\_\_\_

[5] SYNC switch \_\_\_\_\_

[8] GND terminal [16] \_\_\_\_\_

[6] V PHASE button \_\_\_\_\_

[9] AC 24V 1 and 2  
terminals [16] \_\_\_\_\_



[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] **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°.

[7] **VIDEO OUT connector**

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

[8] **GND (ground) terminal**

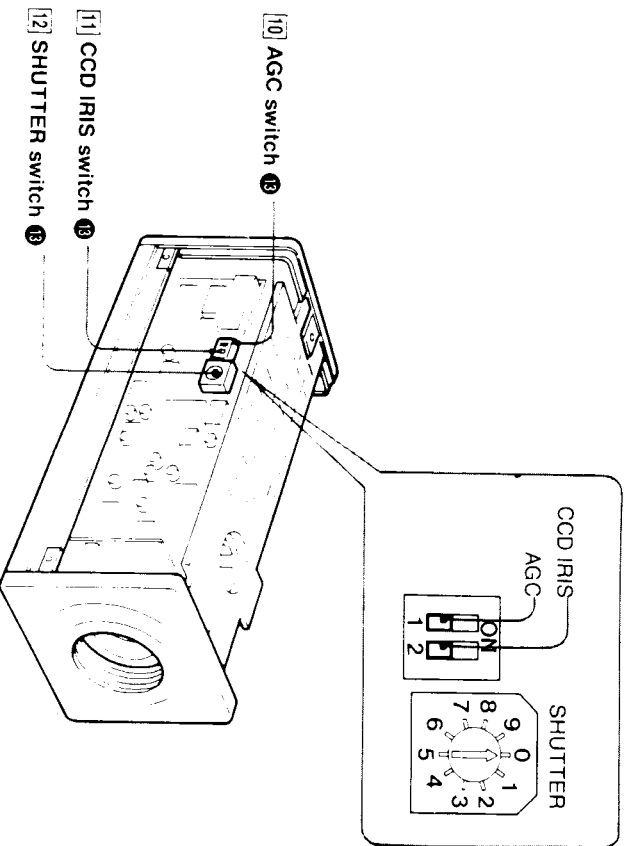
Connect this terminal to the ground.

[9] **AC 24V (AC power supply) 1 and 2 terminals**

Connect these terminals to a 24 V AC power supply.

## Location and Function of Parts and Controls

### Internal switches



**[10] AGC switch**

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

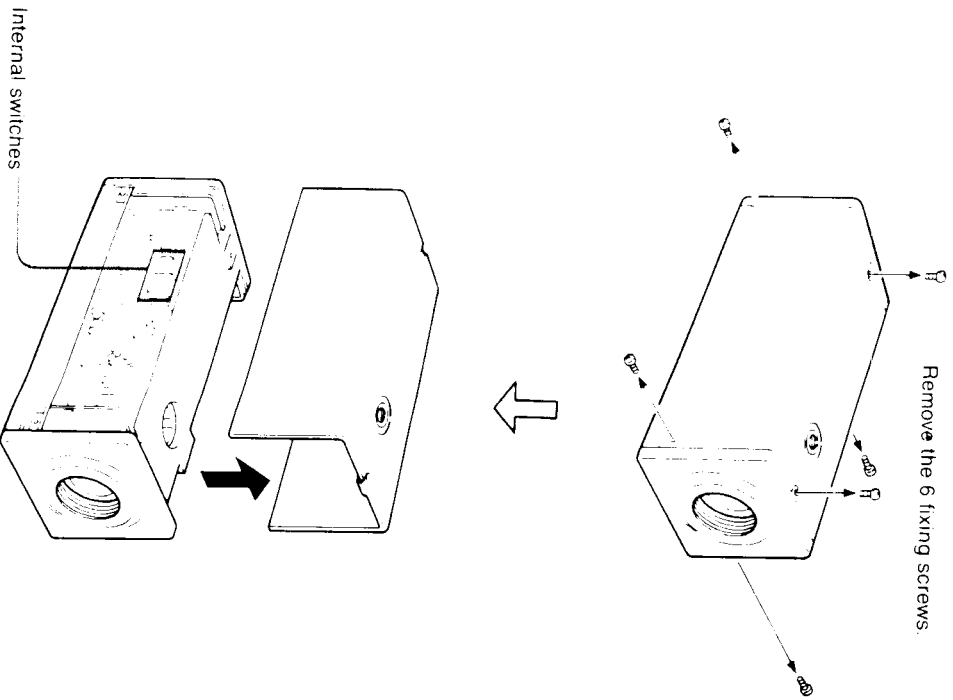
**[11] CCD IRIS switch**  
This switches on and off the CCD IRIS function, which automatically adjusts the sensitivity according to the incident light conditions.

**[12] SHUTTER switch**  
This switch is effective when the CCD IRIS switch [11] is off. It sets the shutter speed to any of eight fixed settings, from 1/60 to 1/10000 second.

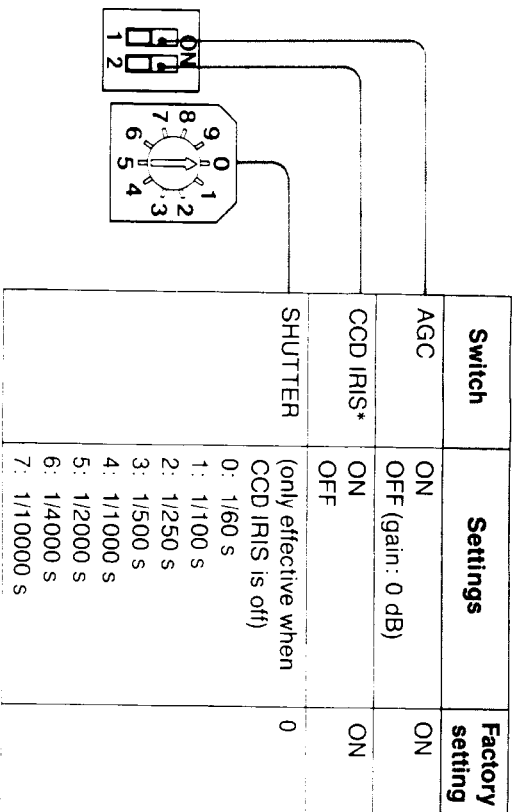
# Internal Switch Settings

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.



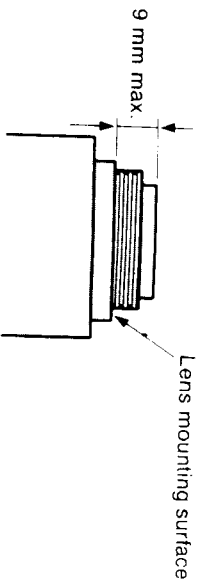
**3** Replace the upper cover on the camera body.

\* 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.

# 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.

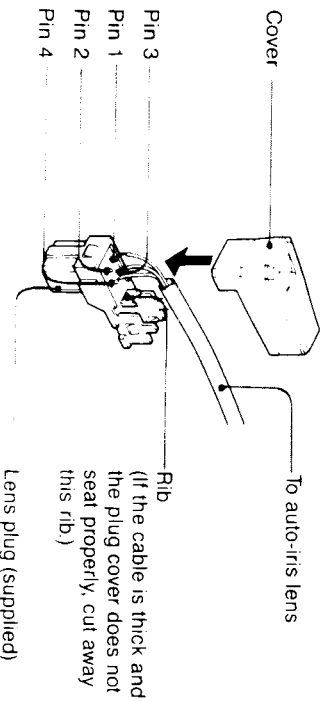
## Plug fitting for an auto-iris lens

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.)

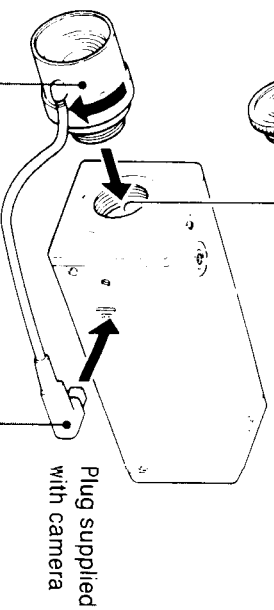
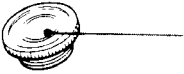
### 2 Put the cover on the plug.



## 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.

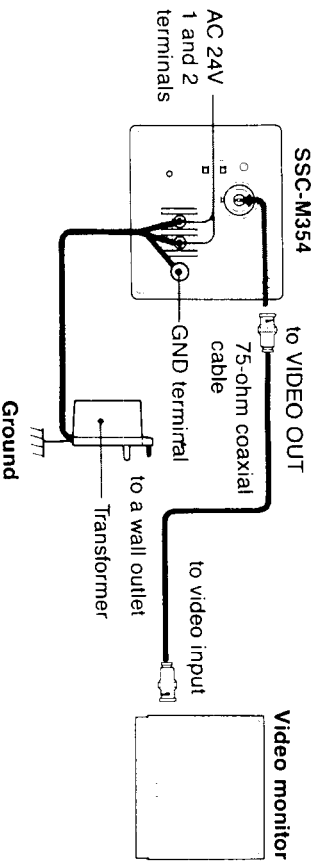


### 2 Screw in the lens.

### 3 Plug in the lens cable.



# Connections



## Notes on power connection

When connecting an AC power supply, follow these notes.

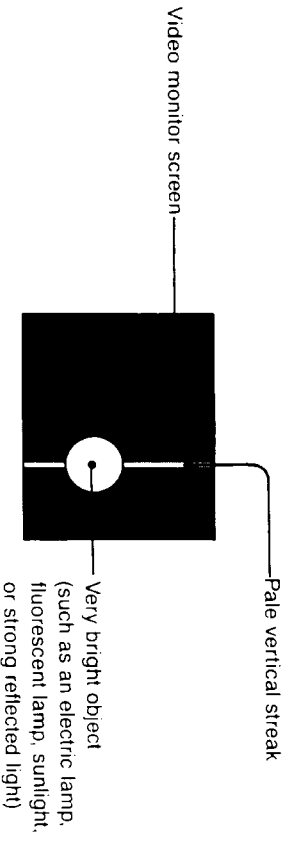
- When using a transformer without ground lead (two-leads type), connect the output of the transformer to the AC 24V 1 and 2 terminals of the camera.
- When using a transformer with ground lead (three-leads type), connect the ground lead to the GND terminal and the other two leads to the AC 24V 1 and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

# 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 (1/4 × 3/16 inches)

## Optical system and miscellaneous

Lens mount C mount  
 Signal system EIA standard  
 Scanning system 525 lines, 2:1 interlace, 30 frames per second  
 Synchronization Internal or line-lock  
 Horizontal resolution 380 TV lines  
 Minimum illumination 0.3 lux at F/1.2 (AGC on)  
 Video output 1.0 Vp-p, 75 ohms, sync negative  
 Video S/N ratio 48 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

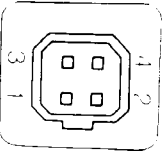
AGC Switchable on/off  
 Input and output connectors

AC 24V: two-pole terminals  
 GND

VIDEO OUT: BNC type

LENS: 4-pin connector (pin assignment as follows)

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



Side of camera body

Power requirements 24 V AC ± 10%, 60 Hz  
 Power consumption 3.4 W  
 Operating temperature

Storage temperature -10°C to 50°C (14°F to 122°F)  
 Relative humidity (operating) -40°C to 60°C (-40°F to 140°F)  
 Relative humidity (storage) 20% to 80%  
 Relative humidity (operating) 20% to 95%

Shock resistance 70 G  
 External dimensions 64 (mm) × 57 (mm) × 155 (mm)  
 (w/h/d) (excluding external projections)  
 Weight (25/8 × 2 1/4 × 6 1/8 inches)  
 Accessories supplied 660 g approx. (1 lb 7 oz)

Weight Lens mount cap  
 Accessories supplied 4-pin plug for lens cable  
 Operation manual

Design and specifications are subject to change without notice.