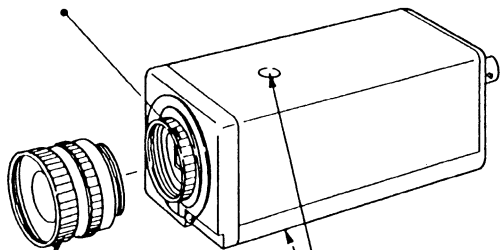# NAMES OF PARTS

Conversion ring
Change the direction of this ring to match the type of the lens to be used.
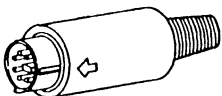
Lens (optional)
Use a C or CS mount lens.

Screw holes for fixing brackets
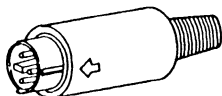Use two holes at the top and bottom to fix the camera to a camera fixing bracket (optional).

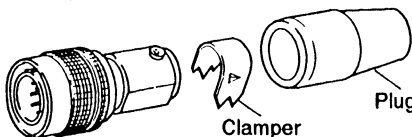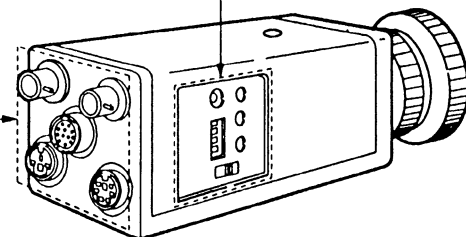| Provided accessories (Check the accessories)	
One 6-pin plug (for auto-iris) (Hosiden Corp. TCP8060-01-540) (See page 12)	One 3-pin plug (for power supply) (Hosiden Corp. TCP8030-01-540)
Clamper	Clamper
One 12-pin plug (for RGB, Y/C outputs) (Hirose HR10A-10P12P) Clamper Plug cover	

NAMES OF PARTS (Cont'd)

Switch block

Input/output connectors

Switch Block

NEG/POS switch
This switches between positive and negative images.

AGC switch
Optimizes the video output level to match the amount of incident light.

AWB/MAN switch
Switches the white balance adjustment between automatic and manual.

R/B switch
When the AWB/MAN switch is set to MAN, use this switch to change the direction (the R or B direction) in which you want to adjust with the UP/DOWN buttons. When the AWB/MAN switch is set to MAN, you can switch the direction in which you are going to adjust the manual white balance to the R or B direction.

SHUTTER speed select switch
You can switch the shutter speed in seven steps.

SET button
Used to adjust the white balance when the AWB/MAN switch is in the MAN position.
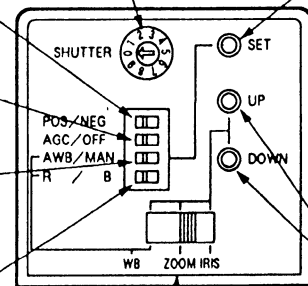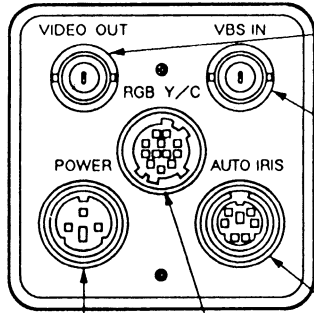
UP/DOWN buttons
Used to adjust the magnification ratio of the electronic zoom, automatic light control (ALC) level and manual white balance.

WB/ZOOM/IRIS switch
Switch this when adjusting the manual white balance, electronic zoom ratio or ALC level.

Input/output connectors

VIDEO OUT jack
A composite video signal (VBS) is output from this jack.

External sync input jack (VBS IN)
Accepts a composite sync signal (C.SYNC), composite video signal (VBS) or black burst signal (BBS).

POWER input connector
Use the provided 3-pin plug (for power supply) to supply 12V DC to the camera.

Input/output connector for auto-iris
Use this when attaching an optional auto-iris lens without an amplifier.

RGB, Y/C output connector
This outputs the RGB or Y/C signals.

PROCEDURE FROM CONNECTION TO ADJUSTMENT

Perform the following procedure to attach a lens, connect the camera and adjust.

BACKFOCUS ADJUSTMENT

Depending on the type of lens used, there may be cases in which the actual distance to the subject and the distance index of the lens do not match.
In this case, adjust the backfocus to bring the subject into focus.
- Observe the monitor when adjusting the backfocus.
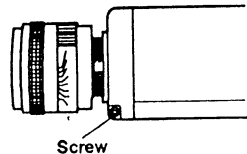
1. Loosen the screw.
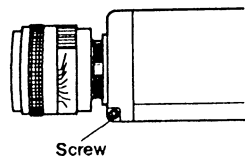
Screw

2. Adjust the backfocus.

① Set the lens aperture to minimum.
② Set the index of the lens focal length to 3 m.
③ Turn the lens and conversion ring at the same time to adjust the focus so a subject 3 m away is brought into focus.

Lens   Conversion ring

3m
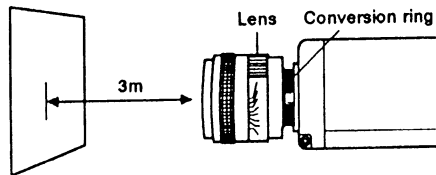
3. Tighten the screw.

- Tighten the screw securely.

Screw

ADJUSTING THE MAGNIFICATION OF THE DIGITAL ZOOM

The camera's magnification can be adjusted up to 4 times as required.
- The larger the magnification, the rougher the picture. It is recommended to determine the magnification, taking the picture roughness into consideration.
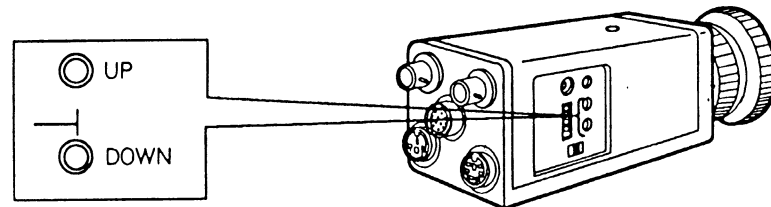- Observe the monitor when adjusting the magnification.

1. Set the WB/ZOOM/IRIS switch to ZOOM.

- The switch is set to ZOOM when shipped from the factory.

WB ZOOM IRIS
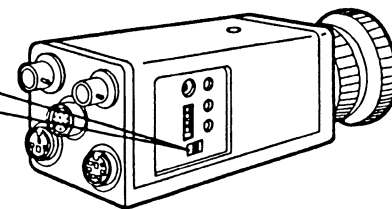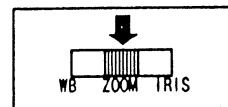
2. Press the UP and DOWN buttons to adjust the magnification of the digital zoom.
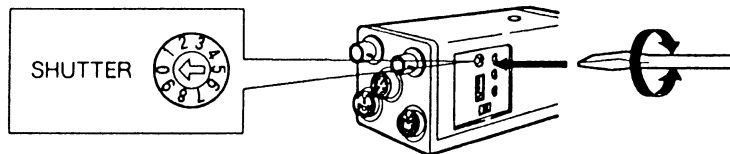
- Press the UP button to increase the magnification, and the DOWN button to decrease it.

UP

DOWN

SHUTTER SPEED CONTROL

The shutter speed can be switched in 7 steps.
- The shutter speed is set to "0" (1/60 second) when shipped from the factory.
- Use a flat-bladed screwdriver with a fine tip to turn the shutter speed switch dial to adjust the speed.

Number on dial	Shutter speed (second)	Suitable for shooting the following
0	1/ 60	When recording an object moving slowly
1	1/100	
2	1/250	
3	1/500	
4	1/1000	
5	1/2000	
6	1/10000	When recording an object moving rapidly
7	CCD iris	When using the electronic shutter to adjust the amount of light automatically.

Shutter Speed
- If a rapidly moving object is recorded at a higher shutter speed, a little shaking is likely to occur in the picture played back by a time-lapse VCR in the still or slow play mode. The higher the shutter speed, the more light is necessary, so use the camera in as bright a place as possible at higher shutter speeds.
- If the shutter speed is increased with fluorescent lighting, etc., flickering becomes conspicuous. Also smear (a phenomenon with vertical lines above and below bright objects) are likely to be obvious.

Brightness of Subject and Lighting
The subject has to be properly lighted to obtain a good picture. The table below gives approximate brightness values. Refer to this table and use a light with sufficient brightness for the subject.

Lux	
10	• Brightness of candle (20 cm away) (10~15)
100	
	• Indoor driving range (200~300) • Direct light of flashlight (1m away) (250)
	• Room illuminated by 2 30W fluorescent lamps (300) • Subway platform (300)
	• Study disk illuminated by fluorescent lamp (400) • Clothes shop (400~500)
	• Office illuminated by fluorescent lamps (400~500) • Reading room of library (400~500)
	• Bowling alley (500) • Inside subway car (500)
	• Department store (500~700) • Station (650)
1,000	• Outdoors 1 hour before sunset in fine weather (1,000)
	• Outdoors 1 hour after sunset in cloudy weather (2,000) • Office near window with fluorescent lighting (1,000)
10,000	
	• Sunlight at 10 a.m. in cloudy weather (250×10^2)
	• Sunlight at noon in cloudy weather (320×10^2)
	• Sunlight at 3 p.m. in fine weather (350×10^2)
	• Sunlight at 10 a.m. in fine weather (6500×10^2)
100,000	• Sunlight at noon in fine weather $(1,000 \times 10^2)$

ADJUSTING WHITE BALANCE

This camera is equipped with an auto white balance function that automatically adjusts the tone according to the color temperature of the light source illuminating the subject as well as a manual white balance function.

[Cases in which auto white balance does not function correctly]

- If the subject is illuminated by several different light sources
- If a sodium lamp, mercury vapor lamp or special-effects lamp is used
- If the subject has a single color (red, blue, etc.)

- If the camera is used in the conditions above, a picture with the proper tone may not be obtained. In such a case, adjust the tone while observing the picture on a color monitor, etc.
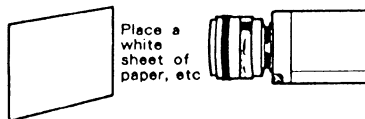
1. Set the AWB/MAN switch to MAN.

- The switch is set to AWB when shipped from the factory.
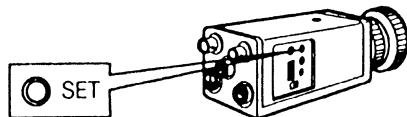- Use a fine rod to switch.
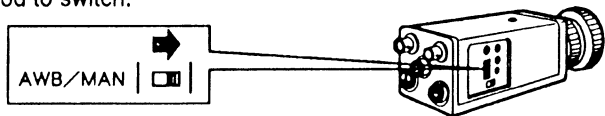
2. Point the camera at a white object and bring it into focus.

- Point at the subject to fill the TV screen.
- Use a light to illuminate the subject.

Place a white sheet of paper, etc

3. Press the SET button.
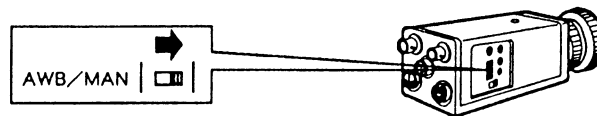
- The color becomes optimum automatically.
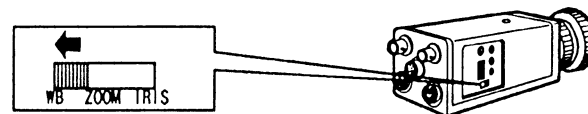
● **Manual White Balance Adjustment**

Perform the following procedure to adjust the white balance manually.

1. Set the AWB/MAN switch to MAN.

- The switch is set to AWB when shipped from the factory.
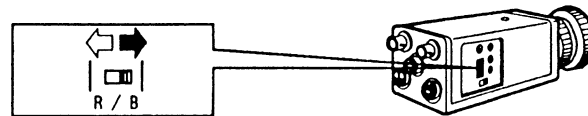- Use a fine rod to switch.

2. Set the WB/ZOOM/IRIS switch to WB.

3. Use the R/B switch to select the direction of tone you want to adjust.

R ... Between red and cyan
B ... Between blue and yellow

## 4. Press the UP and DOWN buttons to adjust the white balance.

The R/B and UP/DOWN switches have the following relationship.

R/B switch	UP	DOWN
R	Red increases	Cyan increases
B	Blue increases	Yellow increases

ADJUSTING NEGATIVE/POSITIVE

Use the NEG/POS switch to record a inverted subject such as a negative film taken by a still camera.
- The switch is set to POS when shipped from the factory.
- Normally set the switch to POS.
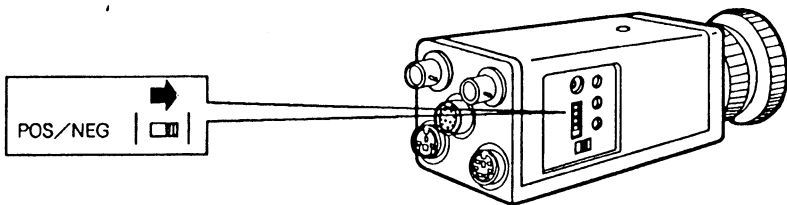
ADJUSTING AUTO LEVEL CONTROL (ALC)

When an auto-iris lens or CCD iris (when the shutter speed switch dial is set to "7") is used, the ALC makes the video output level constant according to the amount of incident light.
- Adjust the video output level by the following procedure while observing the monitor.
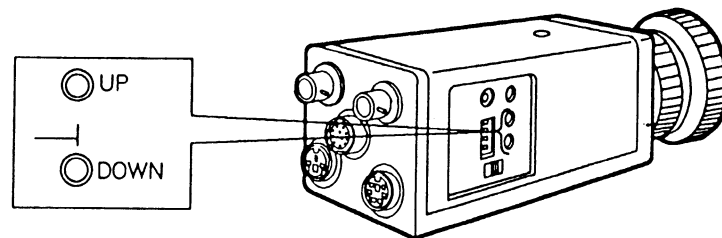
1. Set the WB/ZOOM/IRIS switch to IRIS.
- The switch is set to ZOOM when shipped from the factory.
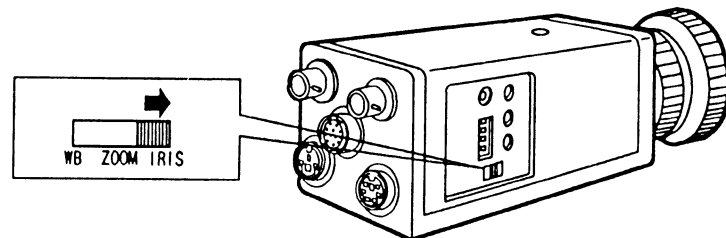
### 2. Press the UP and DOWN buttons to adjust the brightness.
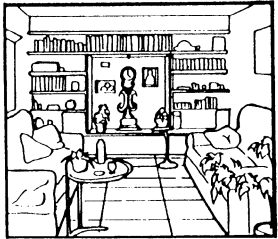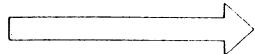- Press UP to increase the brightness and DOWN to decrease it.

AUTOMATIC GAIN CONTROL (AGC)

AGC adjusts the camera's gain according to the brightness of the subject to
suppress variations in contrast.
- The AGC switch is set to ON when shipped from the factory. Normally,
  leave it set to ON.
- When the AGC switch is in the OFF position, the optimum picture cannot
  be obtained when the brightness is low.
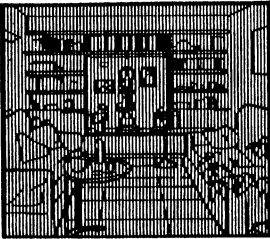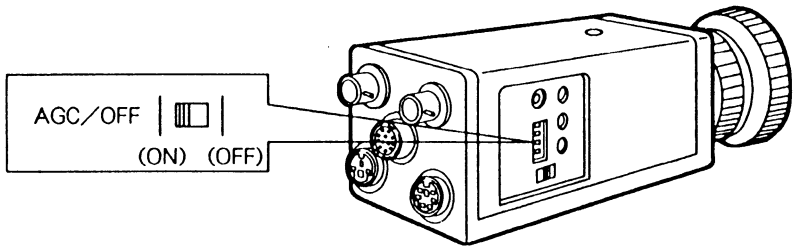
AGC/OFF
(ON) (OFF)

Without AGC (OFF)   With AGC (ON)