CCTV Cameras

WV-BP510/WV-BP514

Operating Instructions

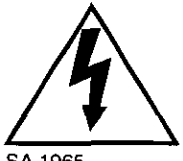
Panasonic®

Before attempting to connect or operate this product,
please read these instructions completely.

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION:
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



SA 1965

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

SA 1966

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For U.S.A

Warning:
This equipment generates and uses radio frequency energy and if not installed and used properly, i.e., in strict accordance with the instruction manual, may cause harmful 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.

The serial number of this product may be found on the bottom of the unit.
You should note the serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid identification in the event of theft.

Model No. _____

Serial No. _____

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CONTENTS

PREFACE

Panasonic's WV-BP510 series CCTV cameras introduce a new level of high picture quality and high resolution through the utilization of a 1/3-inch interline transfer CCD image sensor having 771 horizontal pixels (picture elements), and through the use of digital signal processing LSI's. High sensitivity is ensured by the use of on-chip micro lenses on each pixel. In addition, the use of aspherical high speed lenses further improves sensitivity. High performance-to-cost ratio is achieved through the extensive use of newly developed digital LSI's.

FEATURES

1. The following functions are built in.
   (1) Auto Light Control (ALC)/Electronic Light Control (ELC)
   (2) Character Generator
   (3) Back Light Compensation (Auto: Factory preset, Manual: Manual photometric measuring area set)
   (4) Various External Sync Functions, including Gen-Lock
   (5) Electronic Shutter Function
2. Signal-to-noise ratio of 46 dB
3. Minimum illumination of 0.008 footcandle (0.08 lux) with F 1.4 lenses.
4. 570 lines of horizontal resolution
5. High quality picture:
   (a) 2H type vertical enhancer for greater picture sharpness
   (b) Minimum of aliasing on fine objects
   (c) Expanded dynamic range by use of knee circuit
   (d) Highlight aperture correction for greater picture detail of bright object
6. Ability to shoot indoor scenes with fixed iris lens by use of Electronic Light Control (ELC) function.
7. Back Light Compensation for use against unusual lighting conditions.
8. Selectable electronic sensitivity up modes including : AUTO, MANUAL and OFF
9. Built-in Digital Motion Detector

PRECAUTIONS

1. **Do not attempt to disassemble the camera.**
   In order to prevent electric shock, do not remove screws or cover. There are no user-serviceable parts inside.
   Do refer all servicing to qualified service personnel.

2. **Handle the camera with care.**
   Do not abuse the camera. Avoid striking, shaking, etc. The camera could be damaged by improper handling or storage.

3. **Do not expose the camera to rain or moisture, or try to operate it in wet areas.**
   Do take immediate action if the camera becomes wet. Turn the power off and refer servicing to qualified service personnel. Moisture can damage the camera and also create the danger of electric shock.

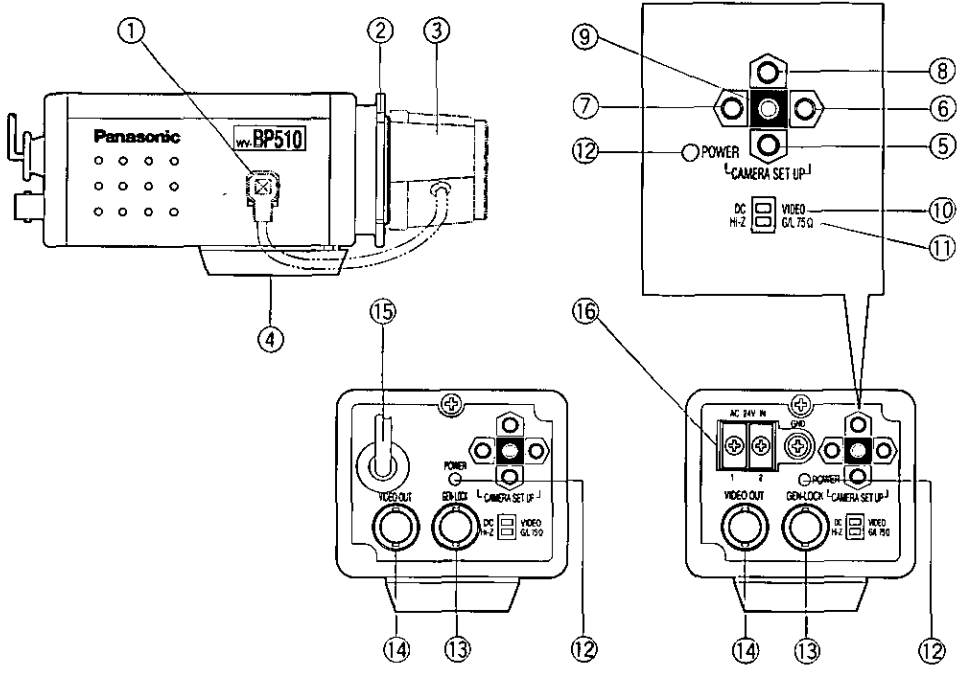
4. **Do not use strong or abrasive detergents when cleaning the camera body.**
   Do use a dry cloth to clean the camera when dirty. In case the dirt is hard to remove, use a mild detergent and wipe gently.

5. **Never face the camera towards the sun.**
   Whether the camera is in use or not, never face it towards the sun. Do use caution when operating the camera in the vicinity of spot lights or other bright lights and light reflecting objects.

6. **Do not operate the camera beyond its temperature, humidity or power source ratings.**
   Do not use the camera in an extreme environment where high temperature or high humidity exist. Use the camera under conditions where temperatures are within 14°F - 122°F (−10°C - +50°C), and humidity is below 90%. The input power source is 120V AC 60 Hz for WV-BP510 and 24V AC 60 Hz for WV-BP514.

Caution:
To prevent fire or shock hazard, the UL listed wire VW-1, style 1007 should be used for AC 24V Input Terminals.

MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS



WV-BP510 WV-BP514

(1) Auto Iris Lens Connector

This connector supplies the power and either a video signal or DC control signal to the auto iris lens for control of the lens iris.

A 4-pin male connector, to be mated with this female connector, is supplied as a standard accessory (Part No. YFE419J100).

(2) Flange-back Adjusting Ring

This is used to adjust the back focal length or picture focus by rotating this ring clockwise for C-mount lens or counterclockwise for CS-mount lens.

CAUTIONS:

1. Always set this ring to the fully clockwise position before mounting the lens to prevent damage to the inner glass or CCD image sensor.
2. Do not turn this ring too much in the counterclockwise direction when a C-mount lens is mounted as this could damage the inner glass or CCD image sensor.

(3) Lens (Option)

See pages 9, 10, 11, 12 and 13 for details on lens selection.

(4) Camera Mounting Screw Hole

This threaded hole (1/4" - 20) is used to mount the camera onto a mounting bracket or tripod.

(5) Down Switch (V)

This switch is used to move the cursor (in the setup menu) in the down direction.

(6) Right Switch (>)

This switch is used to move the cursor (in the setup menu) in the right direction.

(7) Left Switch (<)

This switch is used to move the cursor (in the setup menu) in the left direction.

(8) Up Switch (∧)

This switch is used to move the cursor (in the setup menu) in the up direction.

(9) Set Switch

The mode selected in the setup menu is enabled by pressing this switch.

(10) Lens Selection Switch (VIDEO/DC)

This switch is used to select the type of auto iris control signal to be supplied to the lens from the Auto Iris Lens Connector (1).

DC: Choose this position when an auto iris lens that requires a DC control signal is mounted on the camera. See pages 9, 10, 11 and 12 for a list of these lenses.

VIDEO: Choose this position when an auto iris lens that requires a video control signal is mounted on the camera.

Examples of this type of lens includes WV-LA2.8, WV-LA6B2, WV-LA12B2, WV-LA18 and WV-LA36.

(11) Gen-lock Termination Switch (G/L 75 ohms, Hi-Z)

When looping through a gen-lock video input signal, set this switch to the Hi-Z position. In all other cases, set this to the 75 ohms position.

(12) Power indicator

(13) Gen-lock Input Connector (GEN-LOCK)

A composite B/W or color, 1.0 Vp-p/75 ohms video signal, black burst, 0.3 Vp-p/75 ohms signal or composite sync signal should be supplied to this connector for external synchronization.

(14) Video Output Connector (VIDEO OUT) .

A 1.0 Vp-p/75 ohms composite video signal is provided at this connector.

Whenever the multiplexed vertical drive (VD2) signal is supplied to this connector, the camera synchronization mode is automatically set to Vertical Drive Lock.

(15) Power Cord

(16) AC 24V In Terminal (AC 24V IN)

This terminal accepts 24V AC power source (19.5V - 28V). Be sure to connect grounding lead to the GND terminal.

Cautions:

1. Connect to a 24V AC class 2 power supply only.
2. To prevent fire or shock hazard, the UL listed wire VW-1, style 1007 should be used for the cable for AC 24V Input Termial.

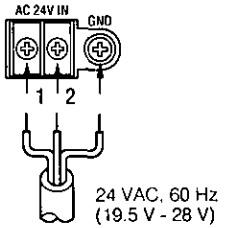
CONNECTIONS

A. WV-BP510

1. Connect the AC Power Cord (15) to an electrical outlet of 120V AC 60 Hz.

B. WV-BP514

1. A power supply of 24V AC 60Hz is required.
2. Connect the power cable to the AC 24V In Terminal (16) on the rear panel of the camera.



Recommended wire gauge sizes for 24V AC line.

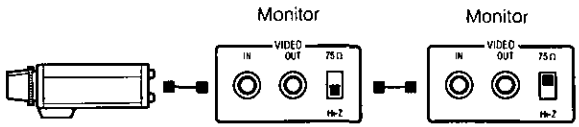
Copper wire size (AWG)		#24 (0.22mm²)	#22 (0.33mm²)	#20 (0.52mm²)	#18 (0.83mm²)
Length of Cable (Approx.)	(ft)	314	495	842	1403
	(m)	95	150	255	425

Caution:

To prevent fire or shock hazard, the UL listed wire VW-1, style 1007 should be used for the cable for AC 24V Input Terminal.

Video Cable

1. It is recommended to use a video monitor whose resolution is at least equal to the camera's resolution.
2. Terminate the camera output with a 75-ohm resistor at the furthest end of its cable run.
   A. Use 75-ohm coaxial cable.
   B. Always set the last monitor's termination switch to 75 ohms, and set the termination switches of intermediate monitors to HIGH (Hi-Z) position.



C. The maximum extensible coaxial cable length between the camera and the monitor is shown in the table 1. Since cable quality varies among manufacturers, please verify video quality before final installation, if maximum lengths are to be used.

Table 1

Type of coaxial cable		RG-59/U (3C-2V)	RG-6U (5C-2V)	RG-11/U (7C-2V)	RG-15/U (10C-2V)
Recommended maximum cable length	(ft)	825	1,650	1,980	2,640
	(m)	250	500	600	800

3. Wiring precautions:

- Do not bend coaxial cable into a curve whose radius is smaller than 10 times the cable's diameter.
- Never staple the cable-not even with circular staples. Impedance mismatching will occur.
- Never crush or pinch the cable.
  All of these will change the impedance of the cable and cause poor picture quality.

LENSES

1. Selection of Lens

<Auto Iris Lenses>

Models / Specifications		WV-LA2.8 (Wide Angle)	WV-LA6B2 (Wide Angle)	WV-LA12B2 (Standard)	WV-LA18 (Telephoto)	WV-LA36 (Telephoto)
Image Size		1/2" (6.4 (H) x 4.8 (V) mm)				
Focal Length		2.8 mm	6 mm	12 mm	18 mm	36 mm
Maximum Aperture Ratio		1 : 1.4	1 : 1.4	1 : 1.4	1 : 1.4	1 : 1.8
Angular Field of View 1/3"	H	87.5°	43.5°	22.8°	15.5°	7.7°
	V	69.2°	33.0°	17.1°	11.5°	5.7°
Focusing Range		Adjusted by Camera			0.89 ft - ∞ (0.27 m - ∞)	3.3 ft - ∞ (1 m - ∞)
Mount		CS-mount, 1"-32UN				
Filter Size		None	None	None	M37.5 mm P = 0.5	M37.5 mm P = 0.5
Dimensions		ø1-11/16" x 1-1/4" (ø43 x 32 mm)	ø1-11/16" x 1-3/8" (ø43 x 35.3 mm)	ø1-11/16" x 1-3/8" (ø43 x 35.3 mm)	ø1-11/16" x 1-5/8" (ø43 x 41 mm)	ø1-11/16" x 1-5/8" (ø43 x 41 mm)
Weights		0.09 lbs. (40g)	0.11 lbs. (50g)	0.09 lbs. (40g)	0.15 lbs. (70g)	0.18 lbs. (80g)

- Dimensions and weights indicated are approximate.
- Specifications are subject to change without notice.

<Auto Iris Lenses>

Models / Specifications		WV-LZ81/6A (Motorized Zoom)	WV-LZ81/10 (Motorized Zoom)	WV-LA4R5C3A (Wide Angle)	WV-LA9C3A (Standard)	WV-LZ61/10 (Motorized Zoom)
Image Size		1/2" (6.4 (H) x 4.8 (V) mm)		1/3" (4.8 (H) x 3.6 (V) mm)		
Focal Length		8.5 - 51 mm (6X)	8 - 80 mm (10X)	4.5 mm	9 mm	6 - 60 mm (10X)
Maximum Aperture Ratio		1 : 1.2 (Wide) 1 : 1.3 (Tele)	1 : 1.4 (Wide) 1 : 1.7 (Tele)	1 : 1.2	1 : 1.2	1 : 1.6 (Wide) 1 : 2.6 (Tele)
Angular Field of View 1/3"	H	Wide : 31.4° Tele : 5.5°	Wide : 33.5° Tele : 3.5°	56.4°	29.6°	Wide : 43.7° Tele : 4.6°
	V	Wide : 23.5° Tele : 4.1°	Wide : 25.2° Tele : 2.6°	43.3°	22.2°	Wide : 33.0° Tele : 3.5°
Focusing Range		3.3 ft - ∞ (1m - ∞)	3.6 ft - ∞ (1.1m - ∞)	Adjusted by Camera		4.0 ft - ∞ (1.2m - ∞)
Mount		CS-mount, 1"-32UN				
Filter Size		M49 mm, P = 0.75	M55 mm, P = 0.75	None		M35.5 mm, P = 0.5
Dimensions		3-3/8"(W) x 2-7/16"(H) x 4"(D) [86(W) x 62(H) 102(D) mm]	3-3/16"(W) x 2-5/8"(H) x 4-5/8"(D) [81(W) x 66(H) 117.5(D) mm]	ø1-11/16" x 1-1/2" (ø43 x 38.5 mm)	ø1-11/16" x 1-1/2" (ø43 x 38.5 mm)	2-13/16"(W) x 2-1/16" (H) x 2-3/4"(D) [71(W) x 52(H) 70.5(D) mm]
Weights		0.93 lbs. (420g)	0.97 lbs. (440g)	0.09 lbs. (42g)	0.09 lbs. (40g)	0.46 lbs. (210g)

- Dimensions and weights indicated are approximate.
- Specifications are subject to change without notice.

<Auto Iris Lenses>

Specifications \ Models		WV-LA4510 (Wide Angle)	WV-LA608 (Wide Angle)	WV-LA1208 (Standard)	WV-LZ83/6 (Motorized Zoom)
Image Size		1/2" (6.4 (H) x 4.8 (V) mm)			
Focal Length		4.5 mm	6 mm	12 mm	8.5 - 51 mm (6X)
Maximum Aperture Ratio		1 : 1.0	1 : 0.75	1 : 0.8	1 : 0.8 (Wide) 1 : 1.0 (Tele)
Angular Field of View 1/3"	H	56.9°	43.8°	23.8°	Wide : 31.3° Tele : 5.5°
	V	43.6°	33.1°	17.6°	Wide : 23.4° Tele : 4.1°
Focusing Range		Adjusted by Camera			4.0 ft - ∞ (1.2m - ∞)
Mount		CS-mount, 1"-32UN			
Filter Size		None	M46 mm, P = 0.75	M46 mm, P = 0.75	M67 mm, P = 0.75
Dimensions		2-1/8"(W) x 1-11/16"(H) x 1-1/16"(D) [54.5(W) x 43(H) x 43 (D) mm]	2-1/2"(W) 2-1/16"(H) x 2-3/16"(D) [64(W) x 52(H) x 55 (D) mm]	2-7/8"(W) x 2-5/8"(H) x 2-7/8"(D) [73(W) x 66(H) x 72.5(D) mm]	3-1/2"(W) x 3"(H) x 4-13/16"(D) [90(W) x 77(H) 123(D) mm]
Weights		0.19 lbs. (85g)	0.34 lbs. (155g)	0.56 lbs. (255g)	1.63 lbs. (740g)

- **When using the above lenses with the camera, be sure to read the lens instruction manual.**
- Dimensions and weights indicated are approximate.
- Specifications are subject to change without notice.

<Auto Iris Lenses>

Specifications \ Models		WV-LA210C3 (Wide angle)	WV-LA408C3 (Wide angle)	WV-LA908C3 (Standard)
Image Size		1/3" (4 8(H) x 3 6(V) mm)		
Focal Length		2 1 mm	4 5 mm	9 mm
Maximum Aperture Ratio		1 1 0	1 0 75	1 0 75
Angular Field of View	H	107 6°	57 2°	31 3°
	V	88 0°	43 7°	23 5°
Focusing Range		Adjusted by Camera		
Mount		CS-mount 1"-32UN		
Filter Size		None	M40 5 mm, P=0 5	M40 5 mm P=0 5
Dimensions		2-7/16"(W) x 2-1/16 (H) x 1 5/8"(D) [62 5(W) x 52(H) x 41(D) mm]	2-7/16 (W) x 2-1/16"(H) x 2-1/4 (D) [62 5(W) x 52(H) x 57 5(D) mm]	2-7/16"(W) x 2-1/16 (H) x 2 1/4"(D) [62 5(W) x 52(H) x 57 5(D) mm]
Weight		0 24 lbs (110g)	0 31 lbs (140g)	0 30 lbs (135g)

- **When using the above lenses with the camera, be sure to read the lens instruction manual**
- Dimensions and weights indicated are approximate
- Specifications are subject to change without notice

<Manual and Fixed Iris Lenses>

Models / Specifications		WV-LM4R5A (Wide Angle)	WV-LM6B2 (Wide Angle)	WV-LM12B2 (Standard)	WV-LF6 (Wide Angle)	WV-LF12 (Standard)	WV-LF4R5C3A (Wide Angle)	WV-LF9C3A (Standard)
Image Size		1/2" (6.4 (H) x 4.8 (V) mm)					1/3" (4.8 (H) x 3.6 (V) mm)	
Focal Length		4.5 mm	6 mm	12 mm	6 mm	12 mm	4.5 mm	9 mm
Maximum Aperture Ratio		1 : 1.4	1 : 1.4	1 : 1.4	1 : 1.4	1 : 1.4	1 : 1.2	1 : 1.2
Angular Field of View 1/3"	H	56.9°	43.5°	22.8°	43.5°	22.2°	56.4°	29.6°
	V	43.6°	33.0°	17.1°	32.9°	16.7°	43.3°	22.2°
Iris		Manual	Manual	Manual	Fixed	Fixed	Fixed	Fixed
Focusing Range		Adjusted by Camera						
Mount		CS-mount, 1"-32UN						
Filter Size		M37.5 mm, P = 0.5	None	None	M34 mm, P = 0.5	M34 mm, P = 0.5	M30.5 mm, P = 0.5	M30.5 mm, P = 0.5
Dimensions		ø1-3/4" x 1-5/8" (ø44 x 41 mm)	ø1-11/16" x 1-3/8" (ø43 x 35.3 mm)	ø1-11/16" x 1-3/8" (ø43 x 35.3 mm)	ø1-1/2" x 1-5/8" (ø38 x 41 mm)	ø1-1/2" x 1-5/8" (ø38 x 41 mm)	ø1-3/8" x 1-7/16" (ø34.4 x 36 mm)	ø1-3/8" x 1-7/16" (ø34.4 x 36 mm)
Weights		0.20 lbs. (93g)	0.10 lbs. (45g)	0.08 lbs. (35g)	0.08 lbs. (38g)	0.07 lbs. (33g)	0.06 lbs. (29g)	0.05 lbs. (23g)

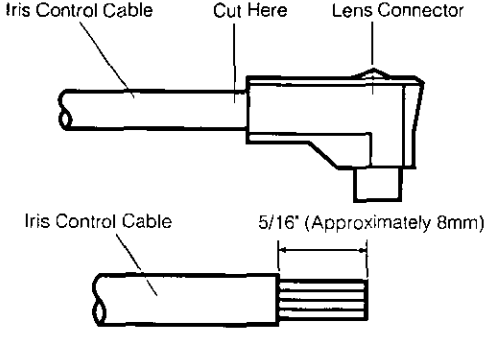
- Dimensions and weights indicated are approximate.
- Specifications are subject to change without notice.

2. Installation of Auto Iris Lens Connector

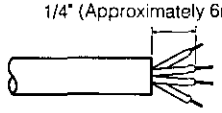
When you use an auto iris lens other than those listed on pages 9, 10, 11 and 12, for example a video servo ALC lens, install the supplied lens connector (YFE4191J100) as follows.

The following installation should be made by qualified service personnel or system installers.

(1) Cut the iris control cable at the edge of lens connector to remove the incompatible lens connector and then remove the outer cable cover as shown in the diagram below.



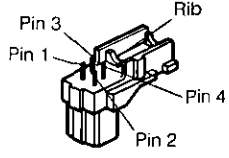
(2) Remove the insulation of the individual iris control wires as shown in the diagram below.



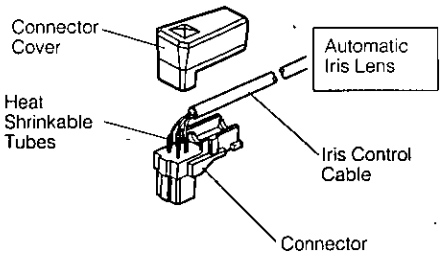
(3) Put heat shrinkable tubes or equivalent on the inner wires of the iris control cable.

(4) Solder the inner wires of the iris control cable to the pin-plug block according to the following pin assignment and then push the heat shrinkable tubes or equivalent over the soldered areas and apply heat to shrink them.

Pin 1: Power source; +9V DC, 50mA Max.
Pin 2: Not used
Pin 3: Video signal; 1.3 Vp-p/40 kohms
Pin 4: Shield, ground
(Set the Lens Selection Switch (10) to the VIDEO position)



(5) Push together the connector cover and connector base to interlock.



Note:

When the iris control cable is too thick and the connector cover and connector base can not be interlocked, cut off the rib on the connector.

3. Mounting the Lens

Caution:

Always set the Flange-back adjusting ring to fully clockwise (C-mount side) by loosing one screw on the ring before mounting the lens, otherwise the inner glass and CCD image sensor could be damaged by the lens.

(1) Mount the lens by rotating it clockwise into the lens mount of the camera.

(2) Connect the lens cable to the Auto Iris Lens Connector on the camera (when an auto iris lens is used).

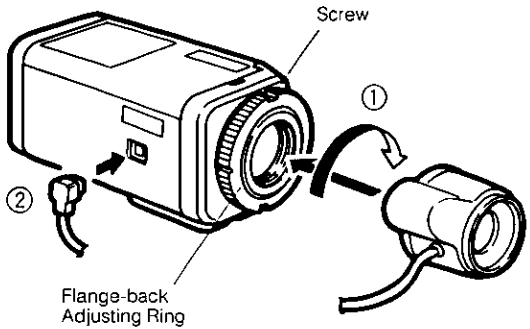
(3) Set the Lens Selection Switch (10) to the proper position as follows.

DC: The mounted lens is one of the lenses listed on pages 9, 10, 11 and 12 or is one that requires a DC control signal for auto iris control.

VIDEO: The mounted lens requires a video signal for auto iris control.

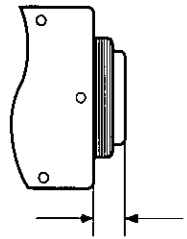
NOTE:

Refer to item-10 on page 6 for the lens selection switch.



When using a lens other than those listed on pages 9, 10, 11, 12 and 13, the lens mount should be C-mount or CS-mount (1"-32UN) and the lens weight should be less than 0.99 lbs. (450g). If not, both the lens and camera should be supported.

The protrusion of the rear of the lens should be as shown below.

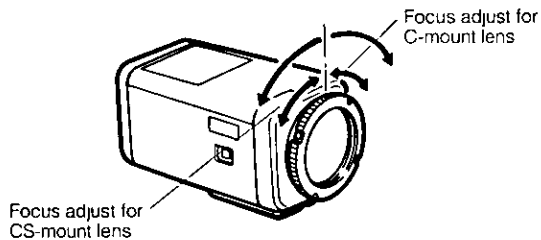


C-mount: Less than 7/16" (11.5 mm)
CS-mount: Less than 5/16" (7.2 mm)

FOCUS OR FLANGE-BACK ADJUSTMENT

The following adjustment should be made by qualified service personnel or system installers

1 Loosen screws on the flange-back adjusting ring



2 Turn the flange-back adjusting ring to the desired position

Caution

Do not turn this ring too much to counterclockwise as this could damage the inner glass and CCD image sensor

3 Tighten the screws on the flange-back adjusting ring

SETUP PROCEDURE

1 SETUP MENU

This camera utilizes a user setup menu that is displayed on-screen
This setup menu contains various sub menus that from a Tree-Type structure as shown below
This menu is described in the following section 3 "SETUP MENU DESCRIPTION"

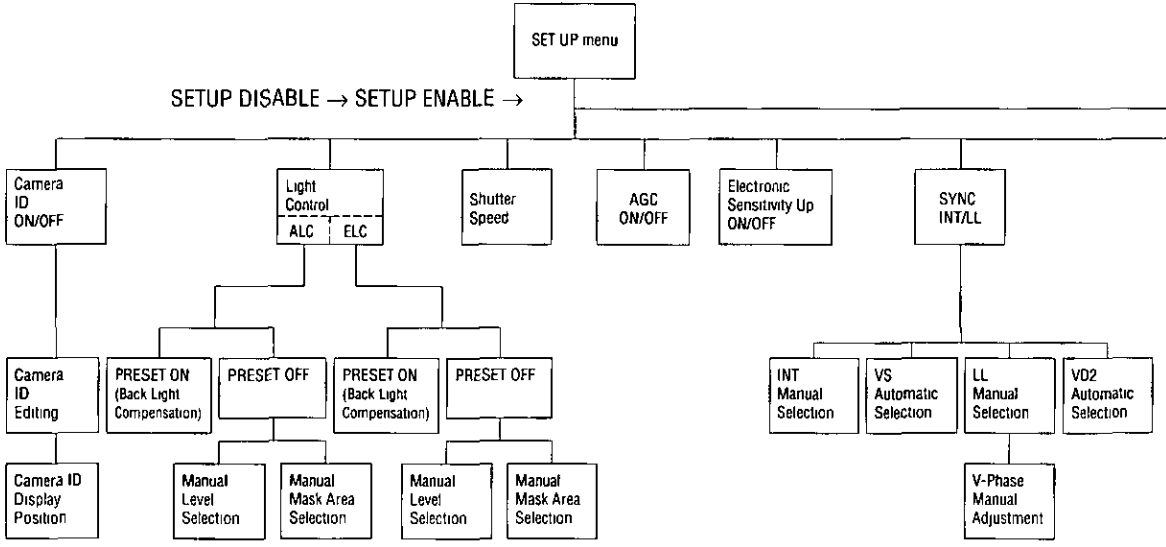
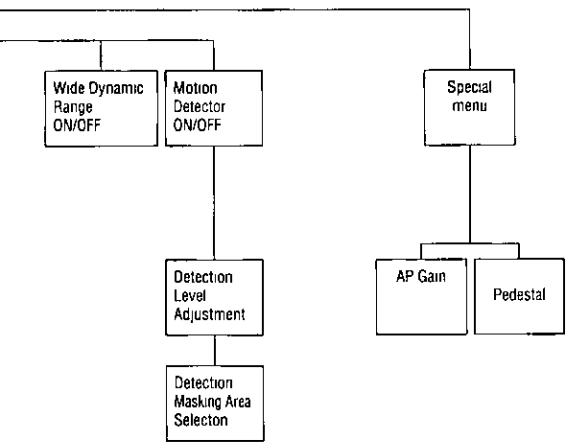


Fig 1


Wide Dynamic Range ON/OFF
Motion Detector ON/OFF
Special menu
Detection Level Adjustment
AP Gain
Pedestal
Detection Masking Area Selecton

All setup operations are performed by the following switches on the rear panel:

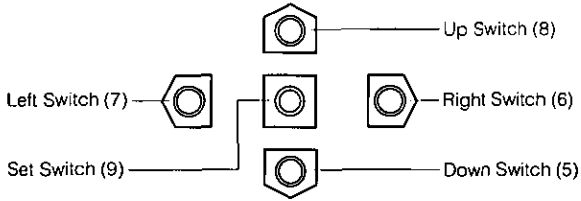


Fig. 2

Up Switch (8): Moves the cursor upwards.
Down Switch (5): Moves the cursor downwards.
Right Switch (6): Moves the cursor right. The mode is also selected by this switch and adjustment of certain levels can be made by this switch.
Left Switch (7): Moves the cursor left. The mode is also selected by this switch and adjustment of certain levels can be made by this switch.
Set Switch (9): The mode is set by this switch. Also, the menus can be changed by this switch.

2. SETUP ORDER

When camera setup is required, proceed according to the following steps.

(1) Display the "SETUP" menu. (See page 28 for procedure)
(2) Camera Identification setting. (See page 21 for description and page 30 for procedure)
(3) Auto Light Control/Electronic Light Control setting. (See page 21 for description and page 33 for procedure)
(4) Back Light Compensation setting. (See page 22 for description and page 34 for procedure)
(5) Shutter speed setting. (See page 24 for description and page 40 for procedure)
(6) Gain Control setting. (See page 24 for description and page 40 for procedure)
(7) Electronic Sensitivity Up setting. (See page 25 for description and page 40 for procedure)
(8) Synchronization setting. (See page 25 for description and page 41 for procedure)
(9) Wide Dynamic Range setting. (See page 26 for description and page 45 for procedure)
(10) Motion Detector setting. (See page 27 for description and page 45 for procedure)
(11) Special Menu setting. (See page 27 for description and page 48 for procedure)

3. SETUP MENU DESCRIPTION

3-1. Camera identification (CAMERA ID)

Up to 16 alpha/numeric characters for camera identification can be displayed near the bottom of the picture.

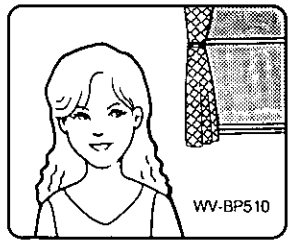


Fig. 3

The ID display ON or OFF mode is selected by the primary setup menu and the editing of displayed characters is performed in the associated sub menu.

```
        ** SET UP **

CAMERA ID      OFF  *
ALC/ELC        ALC  *
SHUTTER        OFF
AGC            ON
SENS UP        OFF
SYNC           INT
WIDE D-RANGE   OFF
MOTION DET     OFF

 END      SET UP ENABLE
```

Fig. 4

Note:

Refer to the SETUP OPERATION section for more details.

3-2. Light Control (ALC/ELC)

The video output level, corresponding to the incoming light level, can be controlled by either the lens iris (Auto Light Control (ALC)) or the CCD image sensor (Electronic Light Control (ELC)) selected from this menu.

The auto iris lenses (ALC type lens), listed pages 9, 10, 11 and 12, are recommended for use with wide incoming light control ranges.

Fixed iris lenses, such as WV-LF4R5C3A or WV-LF9C3A, or manual iris lenses may be used with the "ELC" mode under limited lighting condition.

```
        ** SET UP **

CAMERA ID      OFF  *
ALC/ELC        ALC  *
SHUTTER        OFF
AGC            ON
SENS UP        OFF
SYNC           INT
WIDE D-RANGE   OFF
MOTION DET     OFF

 END      SET UP ENABLE
```

Fig. 5

In the ELC mode, a continuously variable electronic shutter is employed to automatically control the exposure times in the CCD image sensor, according to the incoming light level. With this mode selected, a fixed or manual iris lens can be used instead of an ALC type lens.

Cautions:

1. Under bright lighting conditions such as outdoors, use an ALC type lens as the ELC control range is not wide enough under these conditions.
2. Under certain unique lighting conditions, the following phenomena may appear:

- Strong smear and/or blooming on highlight objects such as spotlights or windows.
- Noticeable flicker in the picture.

should these phenomena occur, use an ALC type lens in the ALC mode.

3. When operating in the ELC mode with a fixed iris lens, the depth of field of the image may be less than that obtained by using an ALC lens. Depth of field varies inversely with the iris opening. Thus, using this camera in the ELC mode with the fixed iris lens fully opened may result in less depth of field than if an ALC lens was used (and distant objects in the picture might not be in focus).

A sub menu of the ALC/ELC light control menu is the Back Light Compensation menu. In this menu it is possible to choose between either the factory preset mode or the manual masking area selection mode.

3-2-1. Back Light Compensation (BACK LIGHT COMP)

With conventional cameras, strong background lighting, such as a spotlight, interferes with the clarity of important scene objects, making them appear dark. This camera is equipped with a back light compensation function to overcome this problem.

As shown in Fig. 1, Setup Menu Tree, both the ALC and ELC light control modes can select either Preset ON or Preset OFF for Back Light Compensation.

- **Factory Setup Mode (PRESET ON)**

In normal use the important object in a scene is placed in the center of the monitor's screen. In the factory setup mode, more photometric weight is given to the center of the screen (where the important object is located) than is given to the edge of the picture (where a bright back light would most likely be located). In this mode, even though the backlight may vary, the object at the center of the screen can still be clearly seen.

Notes

- The masking area and the video output level are fixed to predetermined values in the factory setup mode
- Refer to the SETUP OPERATION section for detailed procedures

<Convensional Camera>

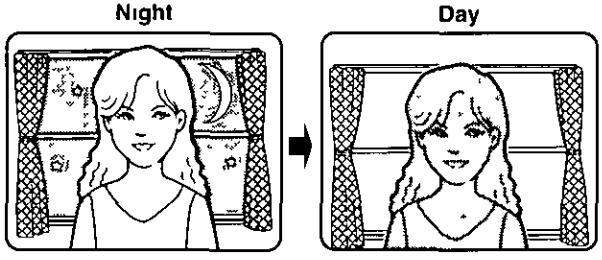


Fig 6

- **Field Setup Mode (PRESET OFF)**
  This mode is effective in conditions where the important object in the scene is not located centrally in the picture and when a bright light source is located near the center of the screen
  A conventional camera cannot cope with these situations

<Convensional Camera>

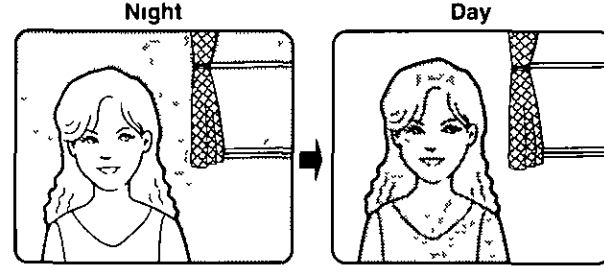


Fig 7

However, by using the WV-BP510 in the preset "OFF" mode, it is possible to compensate for difficult lighting conditions In this mode the picture is divided into 48 zones or mask areas It is possible to mask (or tell the camera to ignore) any bright light sources in those mask areas that might interfere with picture clarity

For example, a strong spotlight in the background might cause the lens iris to close down so much that all other objects in the scene appear dark. With the field setup mode for back light compensation, it is possible to mask out the spotlight and increase the rest of the scene's brightness as shown below.
In addition to the mask area setup, the overall video output level can be adjusted by using the level adjustment (LEVEL) while in the preset "OFF" mode for both the ALC and ELC modes.

<WV-BP510 Masked>

Night and Day

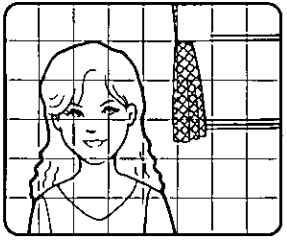


Fig. 8

Notes:

- The end result of the field setup of the mask area and level adjustment is the generation of a feed back control signal to the lens iris when in the ALC mode or a exposure time control signal to the CCD image sensor when in the ELC mode.
- Refer to the SETUP OPERATION section for detailed procedures.

3-3. Shutter Speed (SHUTTER)

The electronic shutter speed can be select from 1/60 second (OFF) to 1/100 - 1/10000 second.

Note:

Refer to the SETUP OPERATION section for detailed procedures.

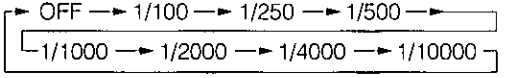


Fig. 9

3-4. Gain Control (AGC)

The gain control mode can be selected between automatic gain control (AGC ON) and manual gain control (AGC OFF) by this menu.

Note:

Refer to the SETUP OPERATION section for detailed procedures.

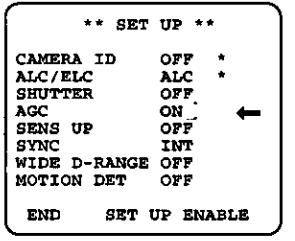


Fig. 10

3-5. Electronic Sensitivity Up (SENS UP)

The electronic sensitivity up function varies the shutter speed under low light conditions to 1/30 sec. (x2), 1/15 sec. (x4), 1/10 sec. (x6), 1/6 sec. (x10), 1/3.8 sec. (x16) and 1/1.9 sec. (x32) to increase the signal level, along with the AGC function.

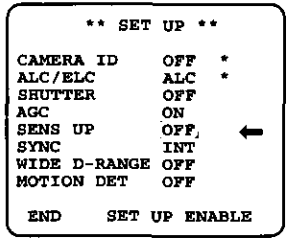


Fig. 11

Notes:

1. Refer to the SETUP OPERATION section for detailed procedures.
2. Moving objects will appear blurred when shot during the electronic sensitivity up mode since the SENS UP mode is equivalent to setting the shutter speed to slower speed in a still picture camera.
3. The horizontal and vertical resolution will be lowered in the electronic sensitivity up mode.
4. If the video output level is adjusted too low (the iris opening is too small), the Electronic Sensitivity Up (SENS UP)/AUTO mode will not function. Select the ALC PRESET ON mode in this condition.
5. When operating in the SENS UP AUTO mode with a Video Auto Iris Lens, the lens iris may be keeping opened and closed alternately.
   Adjust the lens iris control on the lens to avoid such as difficulty.
6. When adjusting Back Light Compensation (BLC) level in the SENS UP AUTO mode with WIDE D-RANGE "ON", the lens iris may be keeping opened and closed alternately.
   In such a case, set the level positioned where the lens iris is not keeping opened and closed alternately.

3-6. Synchronization (SYNC)

In the Setup Menu it is possible to select either the internal sync mode (INT) or the line-lock sync mode (LL). However, if any of the following signals are supplied to the Gen-Lock Input Connector (13): composite color video signal, black burst signal (VBS), composite B/W (black and white), or composite sync (VS), the camera will automatically change to that sync mode.
Additionally, this camera accepts the VD2 signal, which is the vertical drive signal multiplexed with the composite video output signal from a component such as the WJ-MP404 Multiplex Unit. The VD2 signal allows for roll-free vertical interval switching in a sequential switcher.Whenever VD2 is supplied to this camera, the camera automatically switches into the VD2 sync mode.

In the submenus of the synchronization section of the Setup Menu, adjustments are possible for the vertical phase adjustment for the Line-lock mode.

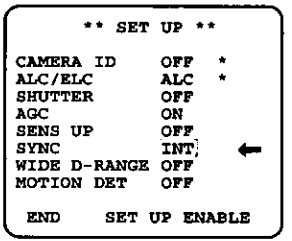


Fig. 12

Important Notice:

The priority of sync mode is as follows.

1. Multiplexed Vertical Drive (VD2) (Highest)
2. Line-lock (LL)
3. B/W Composite Video or Composite Sync Signal (VS)
4. Internal Sync (INT) (Lowest)

Note:

The automatic sync mode selection is made according to priority listed above. Refer to the SETUP OPERATION section for detailed procedures.

3-7. Wide Dynamic Range (WIDE D-RANGE)

The dynamic range of the picture can be selected between wide dynamic range (WIDE D-RANGE ON) and normal dynamic range (WIDE D-RANGE OFF) through the use of this menu.

When using a conventional camera to shoot a scene that has both very dark and very bright objects, the objects tend to appear without detail (or flat) on the monitor screen. By using this camera in the wide dynamic range on mode, details in the dark objects are brought out by "stretching" the lower levels (or dark areas) of the video signal. At the same time, details are brought out of the very bright areas by making the lens iris opening smaller, thus preserving bright object detail.

Note:

Use of the Wide Dynamic Range mode might not be appropriate when the scene consists mostly of dark objects as this may result in a picture with a significant amount of noise.

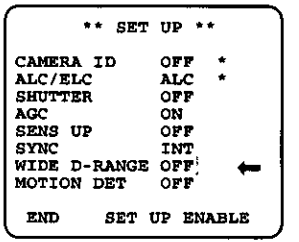


Fig. 13

Note:

Refer to the SETUP OPERATION section for detailed procedures.

3-8. Motion Detector (MOTION DET)

In this mode it is possible to detect motion in the scene by monitoring changes in the scene's brightness level. The scene is divided into 48 zones (8 horizontal x 6 vertical). Each zone is individually maskable (when a zone is masked it will be ignored by the motion detector circuit). The sensitivity of the motion detector circuit is selected through the use of the level adjust section of the motion detect submenu. When this camera is connected to a compatible Intelligent CCVE System, the camera transmits the alarm signal by multiplexing it with the video signal.

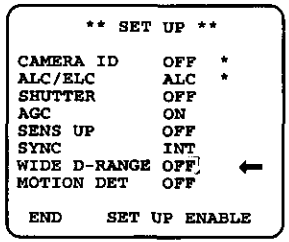


Fig. 14

Note:

Refer to the SETUP OPERATION section for detailed procedures.

3-9. Special Menu (SPECIAL)

The aperture level and pedestal level of this camera can be adjusted by using this special menu. Also, when the UP SIDE DOWN ON mode is selected, the picture will be shown up side down (however the left and right side are not reversed). Use this mode when the camera is installed up side down.

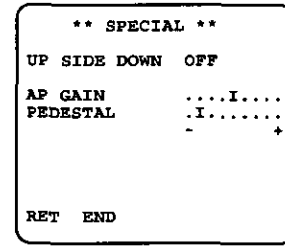


Fig. 15

Note:

Refer to the SETUP OPERATION section for detailed procedures.

4. SETUP OPERATION

If so desired, it is possible to undo all the changes the end user made to the various menus and return to the factory settings without having to go through each individual menu. This feature is called the ALL RSET operation and is accomplished as follows:

(1) Ensure that the setup menu is not displayed (a normal camera picture is displayed).

(2) While pressing both the Left Switch (<) (7) and the right Switch (>) (6), press the Set Switch (9) for a few seconds. The words ALL RESET appear momentarily on the monitor screen. At this time all adjustments and selections are being changed to the factory default settings.

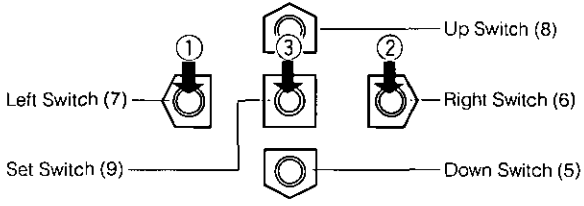


Fig. 16

Note:

While the ALL RESET mode is being performed the picture may be disturbed momentarily. This is normal and is not indicative of a problem.

4-1. Entering Setup Menu

- By pressing the Set Switch (9) for more than 1 second, the "SET UP" menu is displayed on the monitor screen as shown in Fig. 17.

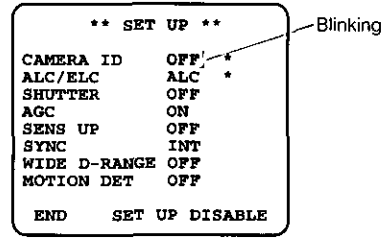


Fig. 17

- By observing this menu, the current setup conditions of the camera can be checked.
  Refer to the following sections for details of each item.
- After confirming current setup conditions and if further resetting of any item is not required, move the cursor to the "END" position on the left of the bottom line and press the Set Switch (9) to return to the normal camera picture mode.

Note:

If no key is pressed for 6 minutes while either the SETUP MENU or a submenu is being displayed, the menu display is automatically cancelled and the camera returns to the normal picture mode.

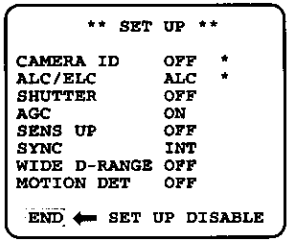


Fig. 18

Important Notice

When "SET UP DISABLE" is displayed on the bottom line of the Setup menu, you can not change any mode setting. This is a safety feature that prevents the accidental changing of the camera settings.

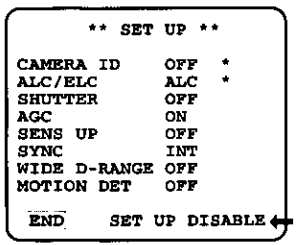


Fig. 19

- To enable the setup menu editing (resetting/readjustment), move the cursor to the bottom line by using the Up Switch (∧) (8) or Down Switch (∨) (5) and then move it to the "SET UP DISABLE" position by using the Right Switch (>) (6) or Left Switch (<) (7). Next, press the Set Switch (9) and "SET UP ENABLE" is displayed.

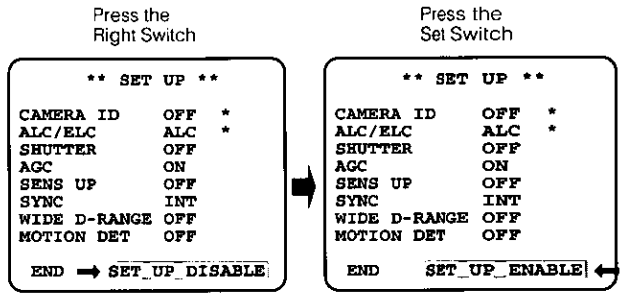


Fig. 20

- Move the cursor to the desired item to be reset or readjusted by moving the cursor through the "END" position and then up or down to the desired position.

- When an item in the Special Menu needs to be adjusted, move the cursor to the "END" position and press both the Left Switch (<) (7) and Right Switch (>) (6) together for approximately 2 seconds to display the Special Menu. (Refer to "4-11. Special Menu" on page 48.)

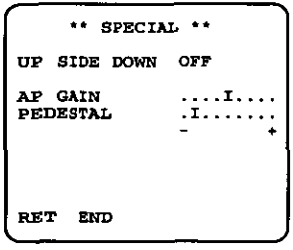


Fig. 21

Important Notice:

When the cursor is moved to the next position (next item) after changing the data (ex. ON → OFF), the latest data is written to the memory (Electronic Erasable Programmable Read Only Memory (EEPROM)) and it remains until another data write is made, even if the camera power is switched off.

4-2. Camera Identification (CAMERA ID) Setting

- Move the cursor to the "CAMERA ID" mode position, and select either "ON" (Camera identification characters are displayed) or "OFF" mode by using either the Left Switch (<) (7) or Right Switch (>) (6).

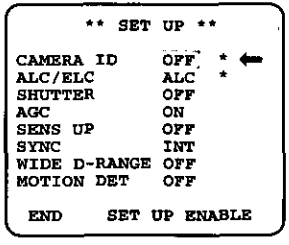


Fig. 22

- When the camera identification character needs editing, perform the following steps by using the submenu of Camera Identification.
- Move the cursor to the "CAMERA ID" mode position and press the Set Switch (9) to display the Character Editing menu as shown in Fig. 23.

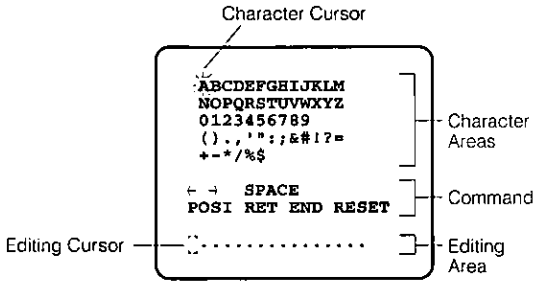


Fig. 23

- The character cursor on the letter "A" and the editing cursor on the left end of the editing area starts blinking.
- Move the character cursor to the desired letter using the Up Switch (∧) (8), Down Switch (∨) (5), Left Switch (<) (7) and Right Switch (>) (6) and then press the Set Switch (9). The selected letter is written to the editing cursor position. (The blinking Editing Cursor moves to right automatically at this moment.)
- Repeat the above procedure until all character editing is completed.

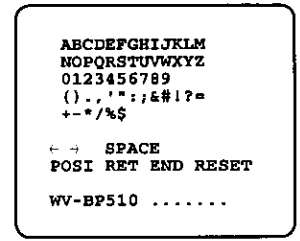


Fig. 24

- When the position of the editing cursor is to be shifted in the editing area, move the character cursor to the "←" or "→" and press the Set Switch (9). This function is used to move the editing position or to correct an individual character.

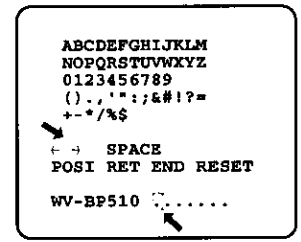


Fig. 25

- When a blank space is needed, move the character cursor to the "SPACE" position and press the Set Switch (9). The blank space is inserted into the cursor position in the editing area.

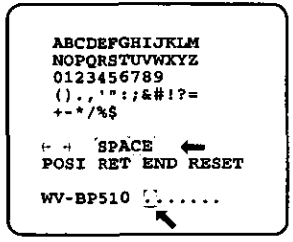


Fig. 26

- When all characters in the editing area are to be erased, move the character cursor to the "RESET" position and press the Set Switch (9).

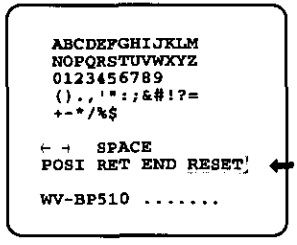


Fig. 27

- After completing the editing of the Camera Identification characters, the display position of the Camera Identification characters on the monitor screen can be set as follows.
- Move the character cursor to the "POSI" position and press the Set Switch (9) to display the ID position menu as shown Fig. 28. The characters of the camera ID start blinking to identify the selection of the positioning menu.

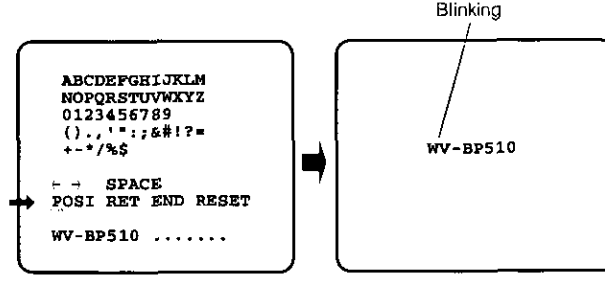


Fig. 28

- The display position of the camera ID on the monitor screen can be placed anywhere on the screen by using the Up Switch (∧) (8), Down Switch (∨) (5), Left Switch (<) (7) and Right Switch (>) (6).

Notes:

1. The positioning of the camera ID stops at the edges of the monitor screen.
2. The camera ID moves faster when the Up Switch (∧) (8), Down Switch (∨) (5), Left Switch (<) (7) or Right Switch (>) (6) is kept pressed for more than 0.5 seconds.

- After completing the positioning of the camera ID, press the Set Switch (9) to return to the Character Editing menu as shown in Fig. 23.
- To return to the normal camera picture mode, move the character cursor to the "END" position and press the Set Switch (9).
- To return to the Setup menu for setting other items, move the character cursor to the "RET" position and press the Set Switch (9).

4-3. Light Control Setting (ALC/ELC)

- Display the Setup menu as shown in Fig. 20.
- If necessary, refer to section 4-1, Entering Setup Menu, for details on displaying the Setup menu on the monitor screen.
- Move the cursor to the "ALC/ELC" mode position and select either the "ALC" or "ELC" mode by using the Left Switch (<) (7) or Right Switch (>) (6).

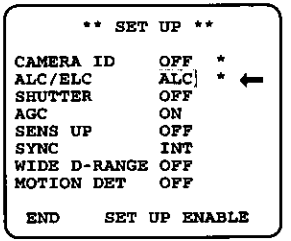


Fig. 29

- Choose the "ALC" mode when an auto iris lens (ALC lens) is used with this camera.
- Choose the "ELC" mode when a fixed iris lens such as WV-LF4R5C3A or WV-LF9C3A, or a manual iris lens such as WV-LM4R5A is used with this camera.

Note:

The back light compensation setting sub menu associated with this menu is described separately and should be setup after installing the camera at the site and observing the actual site picture.

4-4. Back Light Compensation Setting (BACK LIGHT COMP)

(1) Auto iris Lens with ALC Mode

- Confirm that the ALC mode is selected as follows.
- Display the Setup menu as shown in Fig. 17.
- If necessary, refer to section 4-1, Entering Setup Menu, for details on displaying the Setup menu on the monitor screen.
- Move the cursor to the "ALC/ELC" mode position and select the "ALC" mode by using the Left Switch (<) (7) or Right Switch (>) (6).

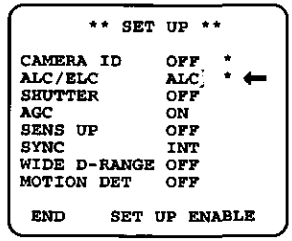


Fig. 30

- Press the Set Switch (9) to proceed to the Backlight compensation menu as shown in Fig. 31.

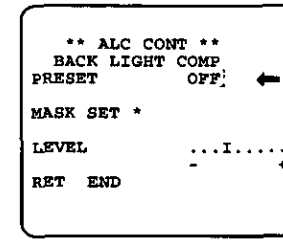


Fig. 31

(1)-1 ALC Mode with Preset Mode (PRESET ON)

- Move the cursor to the "PRESET" mode position and select the "ON" mode by using the Left Switch (<) (7) or Right Switch (>) (6). The preset mode menu is displayed on the monitor screen as shown in Fig. 32.

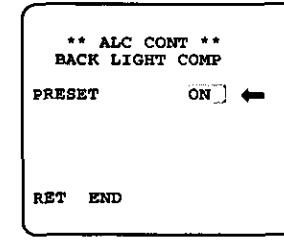


Fig. 32

- Move the cursor to "RET" position by using the Up Switch (∧) (8) or Down Switch (∨) (5) and press the Set Switch (9) to return to the Set Up menu.

Note:

Move the cursor to the "END" position and press the Set Switch (9) to return to the normal camera picture mode.

(1)-2 ALC Mode with Field Setup Mode (PRESET OFF)

- Move the cursor to the "PRESET" mode position and select the "OFF" mode by using the Left Switch (<) (7) or Right Switch (>) (6).
- The field setup menu is displayed on the monitor screen as shown in Fig. 33.

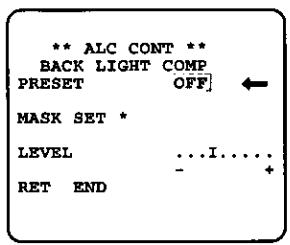


Fig. 33

- Move the cursor to the "MASK SET" mode position and press the Set Switch (9). The 48 Mask Areas appears on the monitor screen as shown in Fig. 34. The left top area has a blinking cursor.

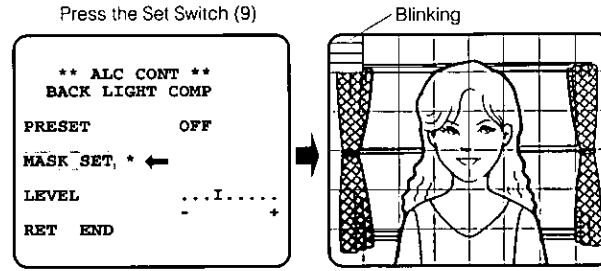


Fig. 34

- To mask this area, press the Set Switch (9). The mask and the cursor start blinking alternately.

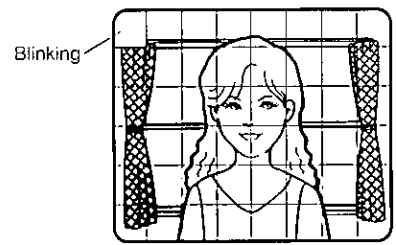


Fig. 35

- To mask other areas, move the cursor to the desired area by using the Up Switch (∧) (8), Down Switch (∨) (5), Left Switch (<) (7) or Right Switch (>) (6). Then press the Set Switch (9) to mask that area. The area turns to white as shown in Fig. 36.

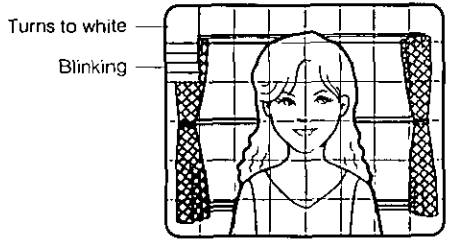


Fig. 36

- When the cursor is moved to an area that has already been masked, the mask and cursor start blinking alternately.
- Press the Set Switch (9) if this masking for this area is to be canceled.
- Press the Left Switch (<) (7) and the Right Switch (>) (6) simultaneously when all masking areas are to be canceled.
- After masking is completed, press the Set Switch (9) for more than 2 seconds. The 48 Mask Areas on the monitor screen disappear and the field setup menu as shown in Fig. 33 is then displayed.

- If the video output level (picture contrast) is to be changed, move the cursor to the "LEVEL" mode position and press the Left Switch (<) (7) or Right Switch (>) (6) to adjust the iris of the ALC lens. When the cursor is moved in the right (+) direction, the lens iris is opened wider, causing the video output level to rise.
  If the cursor is moved in the left (–) direction the reverse takes place.

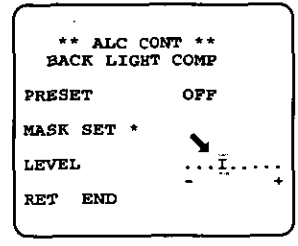


Fig. 37

- Move the cursor to "RET" position by using the Up Switch (∧) (8) or Down Switch (∨) (5) and press the Set Switch (9) to return to the Set Up menu.

Note:

Move the cursor to the "END" position and press the Set Switch (9) to return to the normal camera picture mode.

(2) Auto Iris, Manual Iris or Fixed Iris lens with ELC mode

- Confirm that the ELC mode is selected as follows.
- Display the Setup menu as shown in Fig. 17.
- If necessary, refer to section 4-1, Entering Setup Menu, for details on displaying the Setup menu on the monitor screen.
- Move the cursor to the "ALC/ELC" mode position and select the "ELC" mode by using the Left Switch (<) (7) or Right Switch (>) (6).

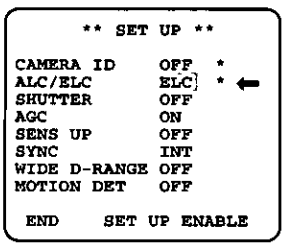


Fig. 38

CAUTION:

When an auto iris lens requiring a DC control signal is used, the lens iris is fully opened in the ELC mode.

- Press the Set Switch (9) to proceed to the Back Light Compensation menu as shown in Fig. 39.

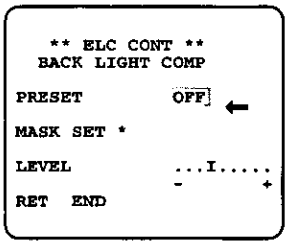


Fig. 39

(2)-1 ELC Mode with Preset Mode (PRESET ON)

- Move the cursor to the "PRESET" mode position and select the "ON" mode by using the Left Switch (<) (7) or Right Switch (>) (6). The preset mode menu is displayed on the monitor screen as shown in Fig. 40.

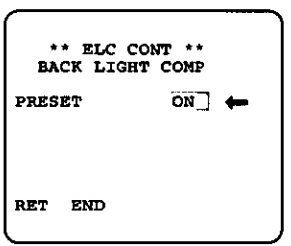


Fig. 40

- Move the cursor to "RET" position by using the Up Switch (∧) (8) or Down Switch (∨) (5) and press the Set Switch (9) to return to the Set Up menu.

Note:

Move the cursor to the "END" position and press the Set Switch (9) to return to the normal camera picture mode.

(2)-2 ELC Mode with Field Setup Mode (PRESET OFF)

- Move the cursor to the "PRESET" mode position and select the "OFF" mode by using the Left Switch (<) (7) and Right Switch (>) (6).
- The field setup menu is displayed on the monitor screen as shown in Fig. 41.

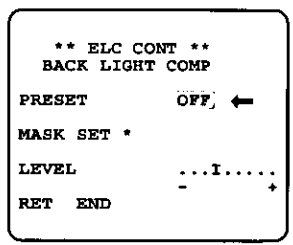


Fig. 41

- Move the cursor to the "MASK SET" mode position and press the Set Switch (9). The 48 Mask Areas appears on the monitor screen as shown in Fig. 42. The left top area has blinking cursor.

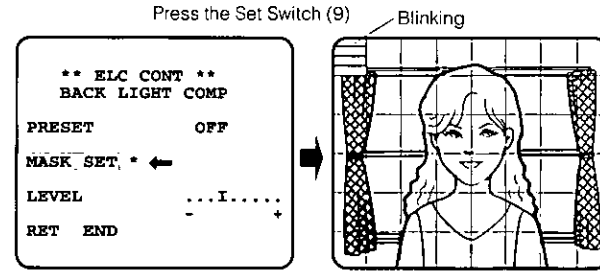


Fig. 42

- To mask this area, press the Set Switch (9). The mask and cursor start blinking alternately.

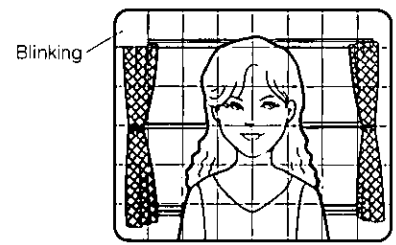


Fig. 43

- To mask other areas, move the cursor to the desired area by using the Up Switch (∧) (8), Down Switch (∨) (5), Left Switch (<) (7) or Right Switch (>) (6). Then press the Set Switch (9) to mask that area. The area turns to white as show in Fig. 44.

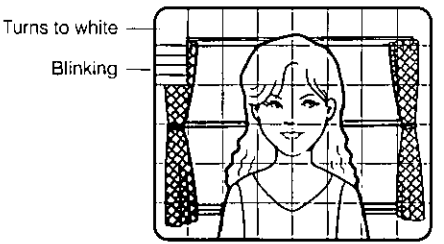


Fig. 44

- When the cursor is moved to an area that has already been masked, the mask and cursor start blinking alternately.
- Press the Set Switch (9) if this masking for this area is to be canceled.
- Press the Left Switch (<) (7) and the Right Switch (>) (6) simultaneously when all masking areas are to be canceled.
- After masking is completed, press the Set Switch (9) for more than 2 seconds. The 48 Mask Areas on the monitor screen disappear and the field setup menu as shown in Fig. 41 is then displayed.

- If the video output level (picture contrast) is to be changed, move the cursor to the "LEVEL" mode position and press the Left Switch (<) (7) and Right Switch (>) (6) to adjust the exposure time of the CCD image sensor. When the cursor is moved in the right (+) direction, the exposure time is increased, causing the video output level to rise. If the cursor is moved in the left (–) direction, the reverse takes place.

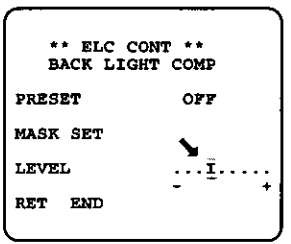


Fig. 45

- Move the cursor to "RET" position by using the Up Switch (∧) (8) or Down Switch (∨) (5) and press the Set Switch (9) to return to the Set Up menu.

Note:

Move the cursor to the "END" position and press the Set Switch (9) to return to the normal camera picture mode.

When a manual iris lens is used with the ELC mode, set the lens iris fully opened in the low lighting condition or adjust the lens iris manually in the normal room lighting condition.

Remark:

When the ELC mode is selected, the electronic shutter function is not available.

4-5. Shutter Speed Setting (SHUTTER)

- Display the Setup menu as shown in Fig. 17.
- If necessary, refer to section 4-1, Entering Setup Menu, for details on displaying the Setup menu on the monitor screen.
- Move the cursor to the SHUTTER mode position and select the electronic shutter speed by pressing the Left Switch (<) (7) or Right Switch (>) (6).

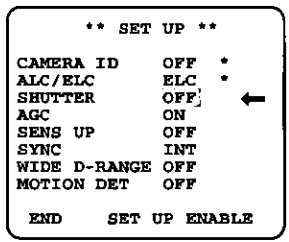
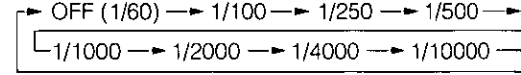


Fig. 46

The following electronic shutter speeds are available.



4-6. Gain Control Setting (AGC ON/OFF)

- Display the Setup menu as shown in Fig. 17.
- If necessary, refer to section 4-1, Entering Setup Menu, for details on displaying the Setup menu on the monitor screen.
- Move the cursor to the AGC mode position and select either ON or OFF mode by using the Left Switch (<) (7) or Right Switch (>) (6).

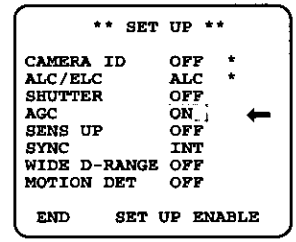


Fig. 47

4-7. Electronic Sensitivity Up Setting (SENS UP)

- Display the Setup menu as shown in Fig. 17.
- If necessary, refer to section 4-1, Entering Setup Menu, for details on displaying the Setup menu on the monitor screen.

- Move the cursor to the SENS UP mode position and select the desired Auto sensitivity Up Mode or Fixed Sensitivity Up Mode by using the Left Switch (<) (7) or Right Switch (>) (6).

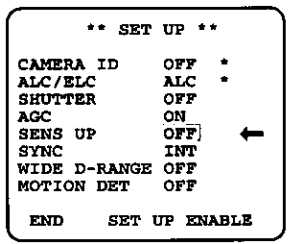
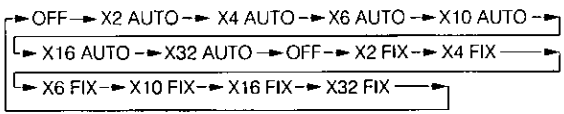


Fig. 48

The following electronic sensitivity up modes are available.



4-8. Synchronization Setting (SYNC)

- Display the Setup menu as shown in Fig. 17.
- If necessary, refer to section 4-1, Entering Setup Menu, for details on displaying the Setup menu on the monitor screen.

- Move the cursor to the SYNC mode position and select either the line-lock (LL) or internal (INT) mode by pressing the Left Switch (<) (7) or Right Switch (>) (6).

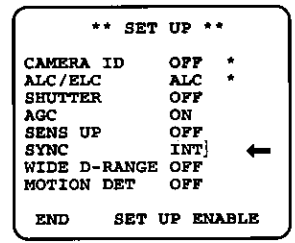


Fig. 49

Important Notice:

1. The priority for the sync modes are as follows.
   1. Multiplexed Vertical Drive (VD2) (Highest priority)
   2. Line-lock (LL)
   3. B/W Composite Video or Composite Sync Signal (VS)
   4. Internal Sync (INT) (Lowest priority)
2. When the internal sync mode is to be used, select the INT position. No gen-lock input signal should be supplied to the Gen-lock Input Connector (13) on the rear panel.

3. Whenever the multiplexed vertical drive pulse (VD2) is supplied to the camera through the coaxial cable connected to the Video Output Connector (14) on the rear panel from a WJ-MP404 Multiplex Unit or similar device, the camera sync mode is automatically switched to the VD2 mode, regardless of the sync mode selection.
4. When the VBS or VS gen-lock mode is to be used select the INT position from this menu and supply the gen-lock input signal to the Gen-lock Input Connector (13) on the rear panel.
5. The line-lock mode has a submenu for line-lock vertical phase adjustment as shown in the following section 4-8-2. If the camera installation is relocated, check the vertical phase adjustment again since the AC line phase may be different.

4-8-1. VS Gen-lock Mode (EXT(VS))

- Confirm that the cursor is on the "INT" position of the sync mode selection.

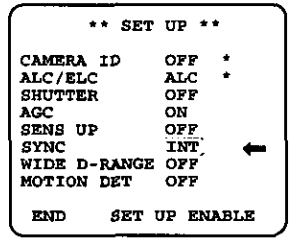


Fig. 50

- Connect the composite sync or composite black-and-white video signal to the Gen-lock Input Connector (13) and confirm that the "INT" indication has changed to the "EXT(VS)" indication.

CAUTION:

The gen-lock input signal should meet with EIA RS-170 specifications and should not contain jitter, such as a VCR playback signal , as it could disturb synchronization.

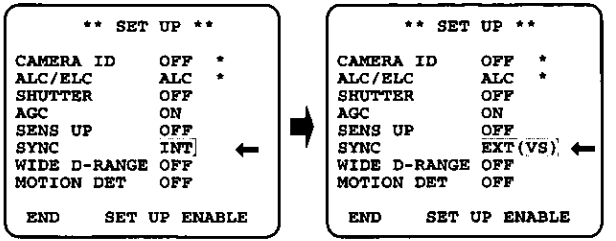


Fig. 51

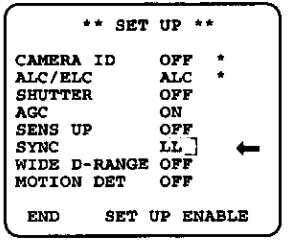


Fig. 52

4-8-2. Line-lock Sync Mode (LL)

- Display the Setup menu as shown in Fig. 17.
- If necessary, refer to section 4-1, Entering Setup Menu, for details on displaying the Setup menu on the monitor screen.
- Move the cursor to the "SYNC" mode position and select the line-lock "LL" mode by pressing the Left Switch (<) (7) or the Right Switch (>) (6). This setup can be only made when the multiplexed vertical drive (VD2) pulse is not supplied to the camera.
- After confirming that the cursor is on the "LL" position, press the Set Switch (9) on the rear panel. The following vertical phase adjustment menu is then displayed on the monitor.

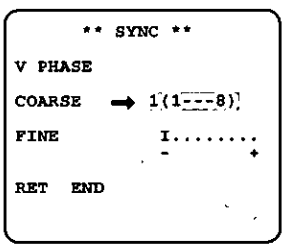
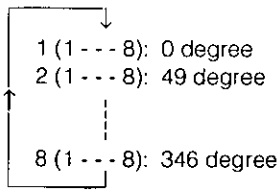


Fig. 53

- Move the cursor to the "COARSE" mode position by using the Up Switch (∧) (8) or Down Switch (∨) (5). The cursor starts blinking.
- Connect the video output signal of the camera to be adjusted and the referenced camera video output signal (for example, Camera 1) to the dual-trace oscilloscope.
- Set the dual-trace oscilloscope to the vertical rate and expand the vertical sync portion on the oscilloscope.
- Press the Left Switch (<) (7) or Right Switch (>) (6) to match as closely as possible the vertical phases for both video output signals. (The coarse adjustment can be incremented for every about 49 degrees (8 steps) by the Left Switch (<) (7) or Right Switch (>) (6).)



Note: After the eighth step, the adjustment returns to the first step.

- Move the cursor to the "FINE" mode by pressing the Down Switch (∨) (5). The cursor starts blinking.
- Press the Left Switch (<) (7) or Right Switch (>) (6) to match as closely as possible the vertical phases for both video output signals. (Fine adjustment can be made for up to 22.5 degrees by using the Left Switch (<) (7) or Right Switch (>) (6).)

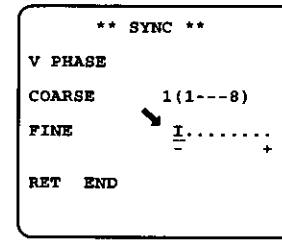


Fig. 54

Notes:

1. When the cursor "I" reaches to the end of "+" position, the cursor "I" jumps to the "–" position. At the same time, the step number of the "COARSE" mode increases one step to enable a continuous adjustment. The reverse operation takes place when the cursor "I" reaches to the end of "–" position.

2. When the Left Switch (<) (7) or Right Switch (>) (6) is kept pressed for more than one second, the cursor "I" moves quickly.
3. When both the Left Switch (<) (7) and the Right Switch (>) (6) are pressed simultaneously, both the coarse and fine adjustment are reset to the factory setup position. (Factory setup position is zero-crossing of the AC line phase as shown below.)

Press the Left Switch (<) (7) and the Right Switch (>) (6) simultaneously

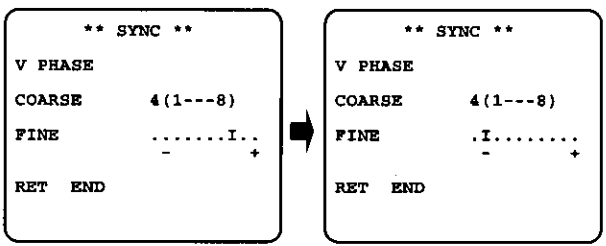


Fig. 55

4. If the AC line contains noise (spike noise etc.), the stability of the vertical phase of the camera video output signal may be disturbed.

4-9. Wide Dynamic Range Setting (WIDE D-RANGE)

- Display the Setup menu as shown in Fig. 17.
- If necessary, refer to section 4-1, Entering Setup Menu, for details on displaying the Setup menu on the monitor screen.
- Move the cursor to the WIDE D-RANGE mode position and select either ON or OFF mode by pressing the Left Switch (<) (7) or the Right Switch (>) (6).

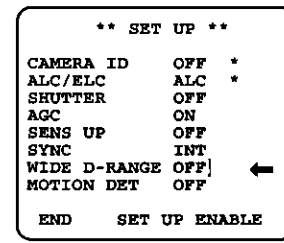


Fig. 56

4-10. Motion Detector Setting (MOTION DET)

- Display the Setup menu as shown in Fig. 17.
- If necessary, refer to section 4-1, Entering Setup Menu, for details on displaying the Setup menu on the monitor screen.

- Move the cursor to the MOTION DET mode position and select either the ON or OFF mode by pressing the Left Switch (<) (7) or the Right Switch (>) (6)

```
      ** SET UP **

CAMERA ID      OFF   *
ALC/ELC        ALC   *
SHUTTER        OFF
AGC            ON
SENS UP        OFF
SYNC           INT
WIDE D-RANGE   OFF
MOTION DET     OFF

 END     SET UP ENABLE
```

Fig 57

- When the "ON" mode is selected, press the Setup Switch (9) to display the following field setup menu on the monitor screen

```
      ** SET UP **

CAMERA ID      OFF   *
ALC/ELC        ALC   *
SHUTTER        OFF
AGC            ON
SENS UP        OFF
SYNC           INT
WIDE D-RANGE   OFF
MOTION DET     ON    *

 END     SET UP ENABLE
```

```
   ** MOTION DETECT **

LEVEL              I
                   -        +

DISPLAY MODE *

MASK SET *


RET  END
```

Fig 58

- In this menu, it is possible to mask areas Move the cursor to the "MASK SET" mode position and press the Set Switch (9) 48 Mask Areas appear on the monitor screen
- Refer to the Back Light Compensation on page 35, for details about masking areas
- After masking is completed, press the Set Switch (9) for more than 2 seconds The previous field setup menu as shown in Fig 58 is then displayed
- Move the cursor to the "DISPLAY MODE" Press the Set Switch (9) to select the demonstration mode The 48 Mask Areas start to blink when brightness changes are detected in the individual zones as shown in Fig 59

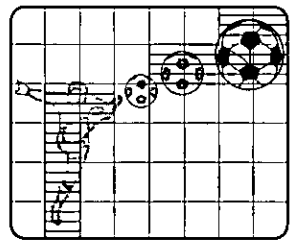


Fig 59

- When detection senstivity is not enough, press the Set Switch (9) to return to the previous field setup menu
- Move the cursor to the "LEVEL" mode position
  Press the Left Switch (<) (7) or Right Switch (>) (6) to obtain the optimum detection level The cursor "I" moves to the left or right
  Note Repeat the above procedures until satisfied with setup
- Move the cursor to the "RET" position by pressing the Up Switch (∧) (8) or the Down Switch (∨) (5) and then press the Set Switch (9) to return to the Set Up menu
  Note Move the cursor to the "END" position and press the Set Switch (9) to return to the normal camera picture mode

Important Notice

- In this menu, the desired object to be detected should meet the following conditions
  1) The object should be larger than 1/48 to the size of the picture screen
  2) The object should have more than 5% contrast ratio (when the detection level is adjusted to maximum) between the background picture on the screen
  3) The time it takes an object to move on the screen from one end of the screen to the other end is more than 0 1 second

- Also under the following conditions, use the MASK or adjust the detection level to prevent malfunction
  1) When shooting an object under flickering fluorescent light or shooting in ELC mode
  2) When leaves or curtains etc, are swayed by the wind
  3) When a noisy picture exists such as under low light condition
  4) When the object is subjected to illumination by lighting equipment that constantly turns on and off

- The alarm signal will take about 0 2 second to reach the alarm terminal of the VCR, after the camera detects the object
  Because the alarm signal is multiplexed on the video signal it may be mistakenly interpreted by other video equipment as a time code signal Therefore, when this camera is not used in a Panasonic Intelligent CCVE System, select the OFF mode to prevent the above from occurring

4-11 Special Menu

This menu lets the customer adjust and setup the video signal of the camera to meet the customer's requirement

- Display the Setup menu as shown in Fig 17
- If necessary, refer to section 4-1, Entering Setup Menu, for details on displaying the Setup menu on the monitor screen
- Move the cursor to the "END" position and press both the Left Switch (<) (7) and Right Switch (>) (6) simultaneously for approximately 2 seconds (The Left Switch (<) (7) should be pressed first) The special menu is displayed as shown below

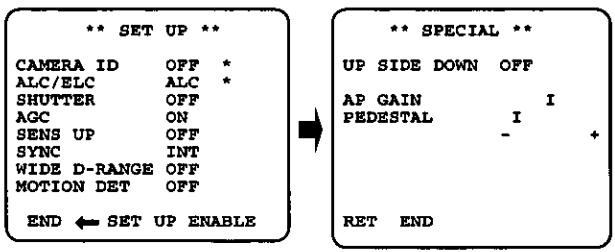


Fig 60

4-11-1 Aperture Level Setting (AP GAIN)

- Move the cursor to the "AP GAIN" mode position The cursor "I" starts blinking
- While observing the color video monitor, adjust the aperture level by pressing the Left Switch (<) (7) and the Right Switch (>) (6) The cursor "I" moves left (soft) or right (sharp)

4-11-2 Pedestal Level Setting (PEDESTAL)

- Move the cursor to the "PEDESTAL" mode position The cursor "I" starts blinking
- While observing the waveform monitor/oscilloscope or video monitor, adjust the pedestal level (black level) by pressing the Left Switch (<) (7) and the Right Switch (>) (6) The cursor "I" moves left (low, dark) or right (high, bright)

4-11-3 Camera Picture Setting (UP SIDE DOWN)

- In this menu, it is possible to turn the picture up side down When installing the camera up side down, use this menu as shown in the following procedures
- Move the cursor to the "UP SIDE DOWN" and select "ON" mode by pressing the Left Switch (<) (7) or the Right Switch (>) (6) The picture will be shown up side down but both sides will not be reversed

Notes:

■ **How to reset to factory setup**

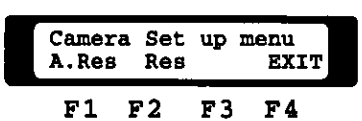
Any of the above settings plus the ALC/ELC level control and phase adjustments, can be reset to the factory setup by placing the cursor over the desired mode and then simultaneously pressing both the Left Switch (<) (7) and the Right Switch (>) (6) for more than 2 seconds.

4-12. Setup by Other Controllers

The WV-BP510 series cameras can also be setup by other controllers such as the Panasonic WJ-SX550 Matrix Switcher, when combined with the WV-CU550 System Controller.

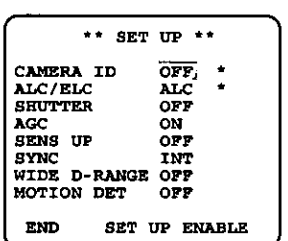
For example from the WV-CU550 System Controller:

1. Select the desired camera and monitor.
2. Select the Camera Set up menu on the LCD of the System Controller by pressing the appropriate Cursor Keys.



Note: The default setting is set up on. Pressing the Function **(F1)** Key at this point will allow access to the Camera Set up menu if such access is authorized by the operator's level. If **PROHIBITED** appears on the LCD, press the Escape **(ESC)** Key to return the Camera Set up menu display.

3. Press the Function **(F1)** Key to gain access to the Camera Set Up Menu.
   The menu now appears on the selected monitor.



4. Select the desired item by moving the Joystick Controller UP and DOWN and then select the desired mode by moving the Joystick Controller LEFT and RIGHT.
   Press the Set **(SET)** Key to execute the setting or to enter the sub menu. Press the Escape **(ESC)** Key to escape from the setup mode or menu.
5. Press the Function **(F2)** Key to reset the selected menu and press the Function **(F1)** Key to reset all settings to the initial state.
6. Press the Function **(F4)** Key to return to the original screen.

Note

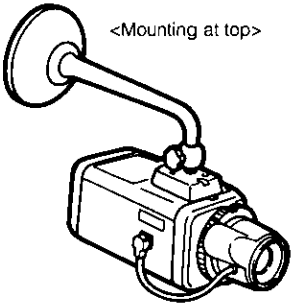
Refer to the Operating Instructions of the WJ-SX550 Matrix Switcher for more details.

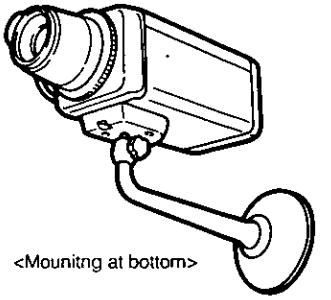
Caution: If the camera setup is started with the switches on the back of the camera, all settings must be made with the switches on the camera's rear panel.
If the camera setup is started with a matrix switcher, all settings must be made with the matrix switcher.

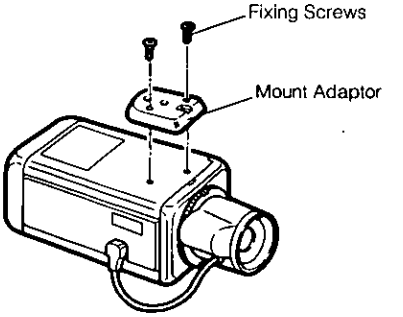
INSTALLATION OF CAMERA

- **Mounting from the bottom**
  This camera is designed to be mounted from the bottom, as shown below. The mounting hole is a standard photographic pan-head screw size (1/4" - 20).

- **Mounting from the top**
  Remove the mount adaptor from the bottom of the camera by removing the two fixing screws. Attach the mount adaptor to the top as shown in the diagram, then mount the camera on the mounting bracket.
  Make sure that the two original fixing screws are used when mounting the mount adaptor as longer length screws may damage inner components.

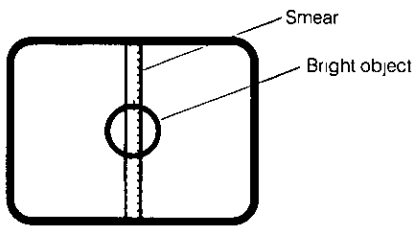






PREVENTION OF BLOOMING AND SMEAR

When the camera is aimed at a bright light, such as a spot light, or a surface that reflects bright light, smear or blooming may appear Therefore, the camera should be operated carefully in the vicinity of extremely bright objects to avoid smear or blooming



LENS MAINTENANCE AND CLEANING

1 Remove the lens connector
2 Remove the lens, and inspect the camera CCD faceplate through the lens mount opening to assure that the faceplate is free of smudges or particles of dirt
3 Clean the CCD faceplate, if necessary, using lens tissue or a cotton tipped applicator and ethanol
4 Install the new lens

SPECIFICATIONS

Pick-up Device	771 (H) x 492 (V) pixels, Interline Transfer CCD
Scanning Area	4 8 (H) x 3 6 (V) mm (Equivalent to scanning area of 1/3" pick-up tube)
Scanning	525 lines / 60 fields / 30 frames
Horizontal	15 734 KHz
Vertical	59 94 Hz
Synchronization	Internal, Line-locked, External (VS) or Multiplexed Vertical Drive (VD2) Selectable
Video Output	1 0 Vp-p NTSC composite 75 ohms / BNC connector
Horizontal Resolution	570 lines
Signal-to-Noise Ratio	46 dB (AGC OFF, weight ON)
Minimum Illumination	0 002 footcandle (0 02 lux) at F0 75 [Equivalent to 0 008 footcandle (0 08 lux) at F1 4]
Gain Control	Selectable AGC ON or OFF (SET UP MENU)
Aperture	Set Variable (SET UP MENU)
Electronic Light Control	Equivalent to continuous variable shutter speed between 1/60 sec and 1/10000 sec
Back Light Compensation	Selectable Preset On or Off (SET UP MENU)
Electronic Shutter Speed	Selectable 1/60 (OFF), 1/100 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
Lens Mount	Selectable C-mount or CS-mount
ALC Lens	Selectable DC or Video
Ambient Operating Temperature	14°F - 122°F (–10°C - +50°C)
Ambient Operating Humidity	Less than 90%
Power Source	WV-BP510 120V AC 60 Hz WV-BP514 24V AC 60 Hz

Power consumption	WV-BP510	4 0W
	WV-BP514	3 8W
Dimensions (without lens)	2-5/8 ' (W) x 2-3/16" (H) x 4-13/16" (D)	
	[67 (W) x 55 (H) x 123 (D) mm]	
Weights (without lens)	WV-BP510	1 4 lbs (0 65kg)
	WV-BP514	1 1 lbs (0 50kg)

Weights and dimensions indicated are approximate
Specifications are subject to change without notice

STANDARD ACCESSORIES

Body Cap	1 pc
ALC Lens Connector (YFE4191J100)	1 pc

OPTIONAL ACCESSORIES

Lenses WV-LA2 8, WV-LA6B2, WV-LA12B2, WV-LA18, WV-LA36, WV-LA4510, WV-LA608, WV-LA1208, WV-LA4R5C3A, WV-LA9C3A, WV-LA210C3, WV-LA408C3, WV-LA908C3, WV-LZ81/6A, WV-LZ81/10, WV-LZ83/6, WV-LZ61/10, WV-LM4R5A, WV-LF6, WV-LF12, WV-LF4R5C3A, WV-LF9C3A, WV-LM4R5A, WV-LM6B2, WV-LM12B2, WV-LF6, WV-LF12, WV-LF4R5C3A, WV-LF9C3A

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N0895-0 YWV8QA4099AN Printed in Japan
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