

# Panasonic

## Color CCTV Camera Operating Instructions

Model No. **WV-CS564**



Before attempting to connect or operate this product,  
please read these instructions carefully and save this manual for future use.

# ENGLISH VERSION

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



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

**NOTE:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

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

**FCC Caution:** To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

The serial number of this product may be found on the top 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 ELECTRIC SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

# IMPORTANT SAFETY INSTRUCTIONS

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not use near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and the points where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Use only with the cart, stand, tripod, bracket or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-overs.



- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

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## PREFACE

Panasonic presents highly advanced CCTV technology that meets the demands of new and ever-changing applications. This high-performance color CCTV camera is utilized as a video surveillance device.

The camera incorporates the Digital Signal Processor, pan-tilt mechanism, x18 zoom lens and RS485 communications in a compact enclosure.

## FEATURES

- High quality picture of 768 x 494 pixels
- Minimum illumination of 2 lx (at AGC High)
- Protocol adaptability to Panasonic's protocol
- A run of manual operations is memorized in the patrol learn mode for repetitive use in future.
- 32 preset positions
- 360° panning at a rotation speed of 300°/s
- Sync selection available from among internal, line-lock or VD2
- Automatic gain control circuit
- Image hold
- Digital noise reduction effect

## ■ Camera Cleaning

Even if this function is used, noise may be produced on the monitor screen, or the preset position may be deviated in the cause of prolonged use.

In such cases, set the refresh mode on the special menu. (See page 39.)

To use this camera with the WJ-SX550B Matrix Switcher, set the auto cleaning function on each unit side, then clean WV-CS564 one time a day.

## ■ Preset Data Uploading or Downloading

To download the preset data from the camera to the controller or upload the downloaded data to the camera, set the following functions to OFF.

Downloading or uploading the data may not work normally if these functions are set to ON.

- Cleaning (See page 28.)
- Auto mode (See page 23.)
- Self return (See page 22.)

Aim the camera at a motionless object such as a wall if possible to download or upload the preset data.

**Note:** Take notice of the following cases when uploading the downloaded data to the camera.

- Preset positions may vary. If a preset position varies, delete the preset position and set the correct preset position newly.
- If a preset data of WV-CS564 is uploaded to other models (e.g. WV-CS854 series), an error may occur and uploading may not be completed successfully.

## PRECAUTIONS

### 1. Do not attempt to disassemble the camera.

To prevent electric shock, do not remove screws or covers.

There are no user-serviceable parts inside.

Ask a qualified service personnel for servicing.

### 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, nor try to operate it in wet areas.

This product is designed for indoor use or locations where it is protected from rain and moisture. Moisture can damage the camera and also cause electric shock.

If the camera becomes wet, turn the power off immediately and ask a qualified service personnel for servicing.

**4. Do not use strong or abrasive detergents when cleaning the camera body.**

Use a dry cloth to clean the camera when it is dirty.

When the dirt is hard to remove, use a mild detergent and wipe gently. Care should be taken not to scratch the dome cover when wiping it.

Afterwards, wipe off the remained part of the detergent in it with a dry cloth.

**5. Never face the camera towards the sun.**

Whether the camera is in use or not, never aim it at the sun or other extremely bright objects. Otherwise, blooming or smear may be caused.

**6. Never face the camera at a place exposed to light sources for a long time.**

If light sources such as spot light cause burn-in on the display screen, part of image may discolor due to deterioration of color filter in CCD when changing aim of the camera etc.

**7. Do not install this camera upside down.**

This camera is designed for mounting on the ceiling or wall. Using this camera installed upside down, for example, mounted on the floor, may cause malfunction.

**8. If "OVER HEAT" sign appears on the monitor screen.**

The temperature inside the camera exceeds the normal level because of a malfunction of the cooling fan etc. If it happens, turn the power off immediately and refer servicing to qualified service personnel.

**9. Do not operate the camera beyond the specified temperature, humidity or power source ratings.**

Do not use the camera in an extreme environment where high temperature or high humidity exists. Do not place the camera near heat sources such as radiators, stoves or other units that produce heat.

Use the camera under conditions where temperatures are between  $-10^{\circ}\text{C}$  and  $+50^{\circ}\text{C}$  ( $14^{\circ}\text{F}$  -  $122^{\circ}\text{F}$ ) [Recommended temperature:  $+40^{\circ}\text{C}$  ( $104^{\circ}\text{F}$ )], and humidity is below 90%.

The input power source is 24 V AC.

**10. Do not install the camera near the air outlet of an air conditioner.**

The lens may become cloudy due to condensation if the camera is used under the following conditions.

- Rapid temperature fluctuations by switching the air conditioner on and off.
- Rapid temperature fluctuations due to frequent door opening and closing.
- Use in an environment where eyeglasses become foggy.
- Use in a room filled with cigarette smoke or dust.

**If the lens becomes cloudy due to condensation, remove the dome cover and wipe all moist surfaces with a soft cloth.**

**11. Consumables**

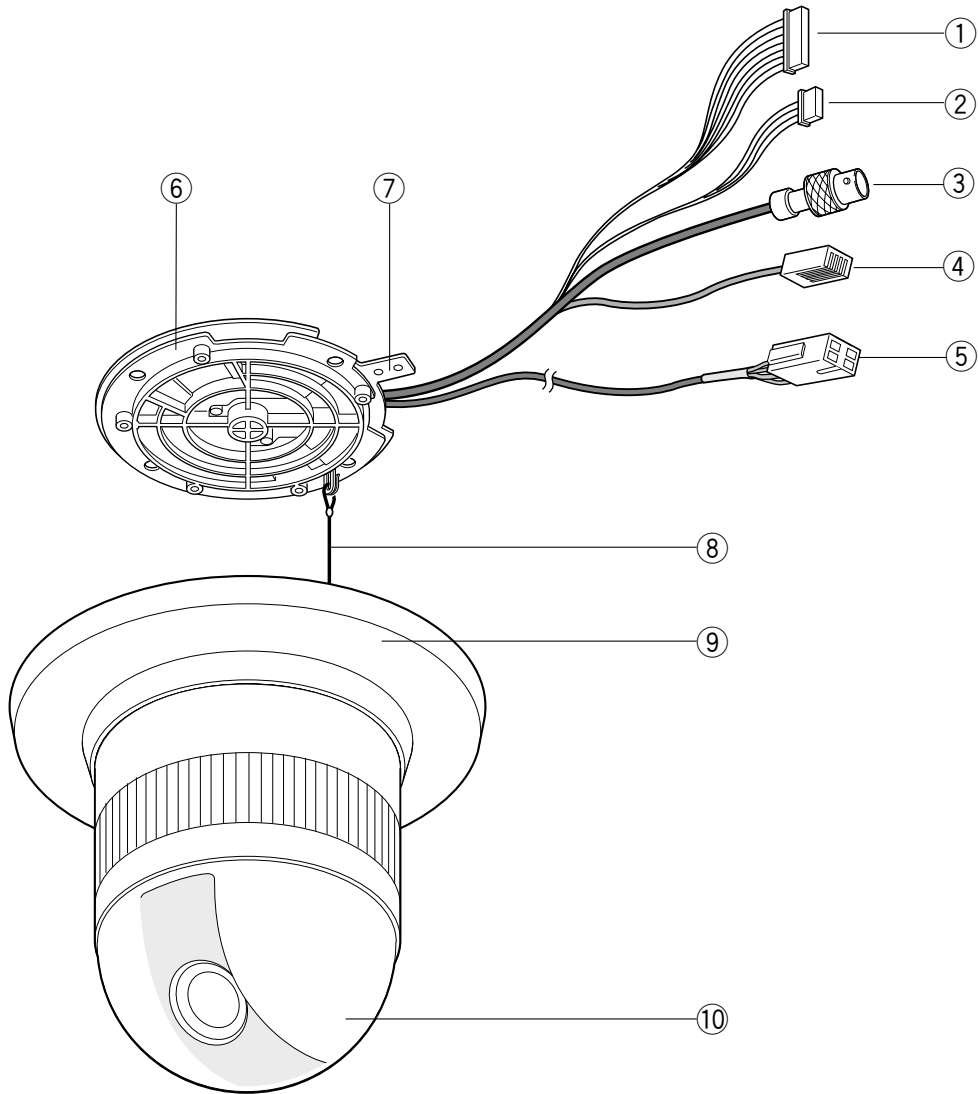
Parts having contacts such as the lens-drive motors, cooling fan motor and slip-rings inside the camera are subject to wear with time. About replacement and maintenance of such parts, please ask the nearest service center.

**12. Do not aim the camera at the same object for a long time.**

Burn-in of an image may be caused on the fluorescent screen of CRT.

- Matsushita Electric Industrial Co., Ltd. herewith declares that it will not be liable for any damage, whether direct or indirect, caused by using for business transaction or security, or malfunctioning of this product.

# CONSTRUCTION



① Not Used

② Not Used

③ Video Output Connector

④ Data Port

⑤ Power Cable

⑥ Camera Mounting Base

⑦ Panning Starting Point

⑧ Fall Prevention Wire

⑨ Decoration Cover

⑩ Dome Cover

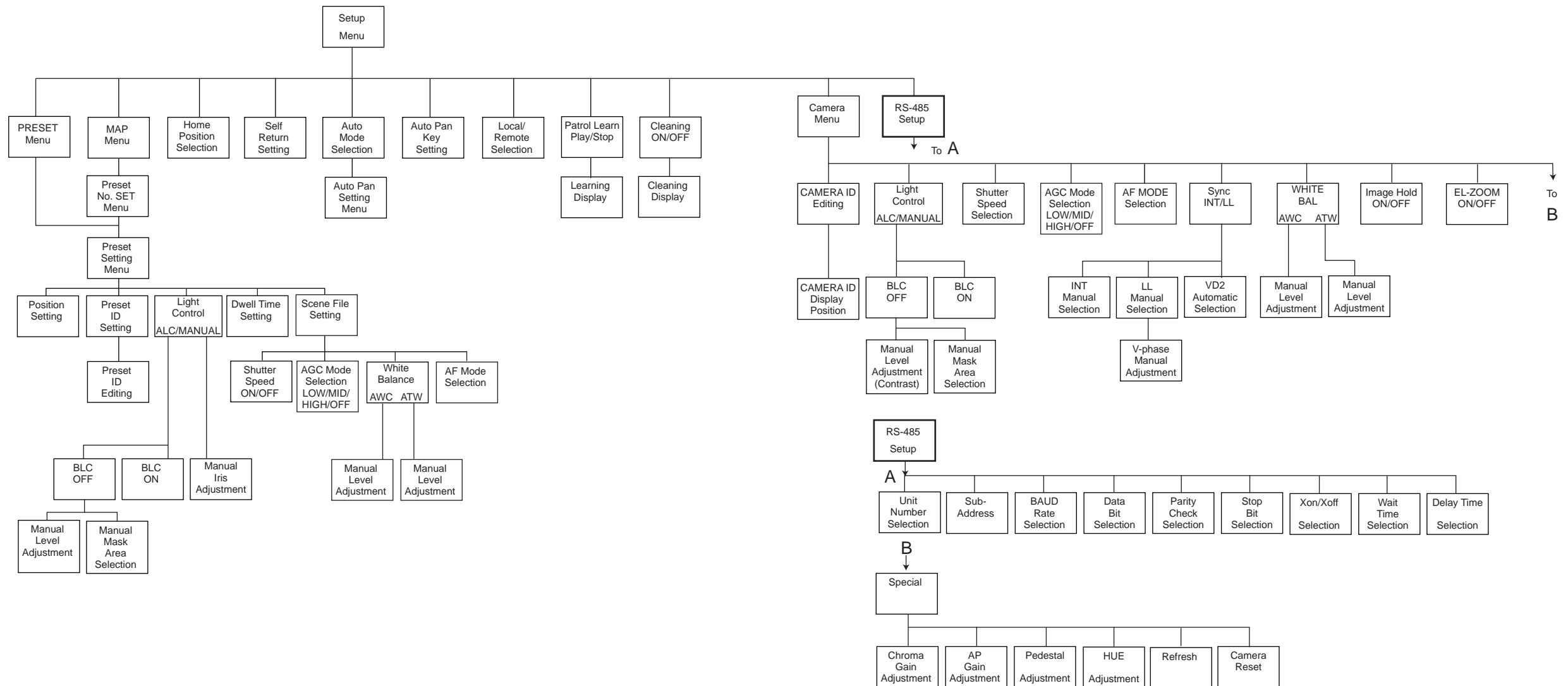
# SETUP

## Setup Menu

Setup menus are shown in the diagram below. Various kinds of setup are available to have the camera fulfill your requirements. Menus are built in a hierarchical structure from the Setup menu at the top to Manual Mask Area Selection at the bottom.

These menus are described in the following pages for reference prior to setup.

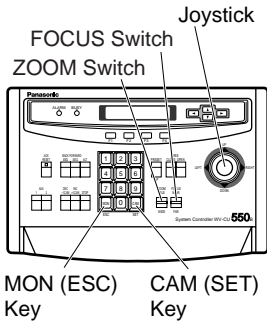
Switches, keys and the joystick are used for setup operations.



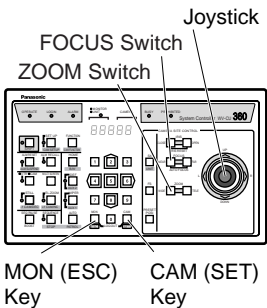


The keys (switches) to use for setup are shown in the table below. The joystick on the connected controller may also be used for setup. The table also shows the functions versus the operations of the individual controllers. For details, see the manual for the controller to be used. The switches and controls are abbreviated as SW and CTRL respectively in the table.

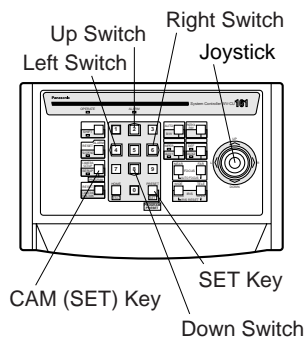
**[WV-CU550B]**



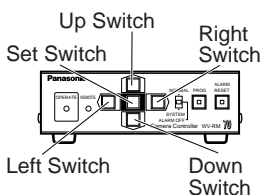
**[WV-CU360]**



**[WV-CU161]**



**[WV-RM70]**



Function/Controller	WV-CU550B	WV-CU360	WV-CU161	WV-RM70
Open CAM SETUP	See page 16	CAM SETUP key (for 2 seconds or more)	CAMERA SETUP key (for 2 seconds or more)	See page 16
Close CAM SETUP	F4 key	CAM SETUP key (for 2 seconds or more)	CAMERA SETUP key (for 2 seconds or more)	PROG SW
Move the cursor	Joystick (←, ↑, ↓, →)	Joystick (←, ↑, ↓, →)	Direction SW (←, ↑, ↓, →)	Direction SW (←, ↑, ↓, →)
Select a parameter	Joystick (←, →)	Joystick (←, →)	Direction SW (←, →)	Direction SW (←, →)
Adjust the level	Joystick (←, →)	Joystick (←, →)	Direction SW (←, →)	Direction SW (←, →)
Move the camera direction	Joystick (←, ↑, ↓, →)	Joystick (←, ↑, ↓, →)	Joystick (←, ↑, ↓, →)	Direction SW (←, ↑, ↓, →)
Zoom & Focus	ZOOM CTRL & FOCUS CTRL	ZOOM CTRL & FOCUS CTRL	ZOOM CTRL & FOCUS CTRL	Direction SW (←, ↑, ↓, →)
Enter the setting	CAM (SET) key	CAM (SET) key	CAM (SET) key	SET SW
Open a submenu	CAM (SET) key	CAM (SET) key	CAM (SET) key	SET SW
Enter CAM ID & PRESET ID display position	MON (ESC) key	MON (ESC) key	MON (ESC) key	SET SW (for 2 seconds or more)
Enter MASK setting	MON (ESC) key	MON (ESC) key	MON (ESC) key	SET SW (for 2 seconds or more)
All Reset	F3 key	4+5+6 key (for 2 seconds or more)	4+5+6 key (for 2 seconds or more)	R+SET+L SW (for 2 seconds or more)
Open special	F2 key	4+6 key (for 2 seconds or more)	4+6 key (for 2 seconds or more)	R+L SW (for 2 seconds or more)

**Notes:**

- A changed parameter is entered only when you move the cursor to another item or open a new menu. A changed parameter will not be entered if the setup menu is closed without taking either of the above steps.
- Setting procedures in the following pages are described on the assumption that the camera is used with WJ-SX550B Matrix Switcher and WV-CU550B System Controller.

## ■ Setup Menu Description

### ● Presetting

#### (1) Position (POSITION SET)

Aligns the camera position and focal point by panning, tilting, zooming and focusing.  
See page 17 for the setting.

#### (2) Preset Identification (PRESET ID)

Assigns the name for preset IDs (identification of up to 16 alphanumeric characters) and can be switched on or off on the monitor screen.  
See page 19 for the setting.

#### (3) Light Control (ALC/MANUAL)

Selects the ALC or MANUAL mode for adjust the lens iris.  
See page 20 for the setting.

#### (4) Dwell Time (DWELL TIME)

Displays the picture of each camera position in the selected duration.  
You can select a preset duration from the menu.  
See page 21 for the setting.

#### (5) Scene File (SCENE FILE)

Stores up to 10 files.  
Each file has a set of detailed parameters for the shutter speed, AGC, white balance, and AF mode.  
The scene files can be recalled later to reproduce the parameter settings under the same conditions as stored in the files.  
See page 21 for the setting.

### ● Home Position (HOME POSITION)

A home position is the camera's basic position.  
It returns to this position automatically when a specific time has elapsed after a manual operation. This setting functions only when AUTO MODE is OFF.  
See page 22 for the setting.

### ● Self Return (SELF RETURN)

Self-return is the time-out parameter for returning to the home position.  
The camera returns to AUTO MODE if it is set to ON when a specific time has elapsed after a manual operation.  
See page 22 for the setting.

### ● Auto Mode (AUTO MODE)

The auto mode is used for setting the movement of the camera.  
You can select one from four automatic operation modes and one manual operation mode as follows:

**OFF:** No automatic operation. The camera can be operated only manually.

**SEQ:** The camera operates in the sequence of preset positions in numerical order.

**SORT:** The camera operates in the sequence of preset positions counterclockwise from Pan Starting Point.

**AUTO PAN:** The camera automatically turns within the preset panning range.

**PATROL:** The camera operates in the patrol learn function.

See page 23 for the setting.

### ● Auto Pan Key (AUTO PAN KEY)

This setting assigns the SEQ, SORT, AUTO PAN or PATROL (PLAY) mode to the AUTO key on the controller.

After setting this, the AUTO key performs as assigned.

**Note:** The AUTO PAN LED on the controller does not light if the mode other than the AUTO PAN mode is assigned.

### ● Local/Remote (LOCAL/REMOTE)

This setting determines whether the camera continues or stops the ongoing auto operation when the controller is turned off.

**LOCAL:** The camera continues operating in the auto mode when the controller is turned off.

**REMOTE:** The camera stops operating in the auto mode approx. 1 minute after the controller is turned off.

See page 25 for the setting.

### ● Patrol Learn and Patrol Play (PATROL)

A set of manual operations is stored (LEARN), reproduced (PLAY) or turned inactive (OFF). Patrol operation stops if SEQ, SORT or AUTO PAN is set to AUTO MODE on the SETUP menu. See page 26 for details.

## ● Cleaning (CLEANING)

This is used for refreshing the electric-mechanical contacts built in the camera. Use this function for maintenance when the camera has been directed to a specific spot or panned over a specific range for a long time.

## ● Image Hold (IMAGE HOLD)

The camera picture remains a still image on the monitor screen or until the camera reaches the pre-set position. This function is useful for surveillance via a local area network.

## ● Camera

### (1) Camera Identification (CAMERA ID)

You can use the camera identification to assign a name to the camera. The camera ID consists of up to 16 alphanumeric characters. You can select whether to have the camera ID displayed on the monitor screen or not. See page 28 for the setting.

### (2) Light Control (ALC/MANUAL)

You can select the mode for adjusting the lens iris. There are two modes as follows:

**ALC:** The lens iris is automatically adjusted according to the brightness of the object.

You can select one of two modes (BLC ON or BLC OFF) of backlight compensation.

Backlight compensation is available for the ALC mode. It eliminates strong background light which makes the camera picture dark such as a spotlight.

**MANUAL:** The lens iris is fixed at the value that you have set regardless of the brightness of the object.

#### • ALC Mode with BLC ON

An important object in a scene is usually placed in the center of the monitor screen. By the setup, more photometric weight is given to the center of the screen than to the edge of the screen (where bright backlight would most likely be located). In such a case, the object at the center of the screen can be still clearly seen even though the backlight may vary.

See page 30 for the setting.

#### • ALC Mode with BLC OFF

This mode is effective when a main object in the scene is not located in the center of the screen but a source of bright light is located near the center of the scene. In this mode, the picture is divided into 48 areas that mask the light to keep the clarity of the picture.

**Note:** The result of field setup of the mask area and level adjustment is fed back (effected) to the lens iris control in ALC mode.

**(3) Shutter Speed (SHUTTER)**

You can select a shutter speed of 1/60 (OFF), 1/100, 1/250, 1/500, 1/1 000, 1/2 000, 1/4 000, and 1/10 000 seconds.

See page 32 for the setting.

**(4) Gain Control (AGC)**

You can set the gain (brightness level portion of an image) to automatic adjustment [Automatic Gain Control ON (LOW, MID, HIGH)] or fixed (Automatic Gain Control OFF).

See page 32 for the setting.

**(5) Synchronization (SYNC)**

You can select the internal sync (INT) mode or the line-lock sync (LL) mode. Additionally, this model accepts the VD2 signal (multiplexed vertical drive signal with the composite video output signal) from a specified component. Whenever the VD2 signal is supplied to this camera, the camera automatically switches to the VD2 sync mode.

When you select the line-lock sync (LL) mode, you can set vertical phase adjustment.

See page 33 for the setting.

**Important Notices:**

The priority of sync modes is given as follows:

1. Multiplexed vertical drive (VD2) (highest)
2. Line-lock (LL)
3. Internal sync (INT) (lowest)

**Note:** The priority of the automatic sync mode is the same as shown above.

## (6) White Balance (WHITE BAL)

You can select one of two modes for white balance adjustment as follows:

### • Auto-Tracing White Balance (ATW)

In this mode, the color temperature is monitored continuously and thereby white balance is set automatically. The color temperature range for the proper white balance is approx. 2 600 - 6 000 K. Proper white balance may not be obtained under the following conditions:

1. The color temperature is out of the 2 600 - 6 000 K range.
2. When the scene contains mostly high color temperature (bluish) objects, such as a blue sky.
3. When the scene is dim.

In these cases, select the AWC mode.

### • Automatic White Balance (AWC)

In this mode, accurate white balance is obtained within a color temperature range of approx. 2 300 - 10 000 K.

See page 34 for the setting.

## (7) Auto Focus (AF MODE)

The camera adjusts the focus automatically by sensing sharpness in the center of the picture. S, M and L stand for the breadth of the sensing area: Small, Middle and Large.

See page 36 for details.

**MANUAL S, M, L:** Auto-focus is activated when the AF key on the controller is pressed.

**AUTO S, M, L:** Auto-focus is activated automatically while operating manually: pan, tilt or zoom.

## (8) Electronic Zoom (EL-ZOOM)

Up to 2-fold electronic zooming is available besides 18-fold optical zooming.

## (9) Image Hold (IMAGE HOLD)

The camera picture remains a still image on the monitor screen until the camera reaches the preset position. This function is useful for surveillance via a local area network.

## (10) Special Menu (SPECIAL)

This menu allows you to adjust and set up the following items and functions: chroma level, aperture level, pedestal level, hue adjustment and refresh function.

You can also reset your parameters to the values preset at the factory.

See page 38 for the setting.

## ● RS485 communication

Camera communication parameters

See the following items pages for the setting.

- Full/Half duplex (page 46)
- Transmission Speed (2 400 - 19 200 bps) (page 40)
- Parity bit, Stop bit, Flow control (pages 40 and 41)
- Wait time, Delay time (page 41)
- Camera units (96 units max.) (page 44)
- Termination ON/OFF (page 46)
- Reset parameters (page 43)

# SETTING PROCEDURES

The following setting procedures are described on the assumption that this model is used in combination with the WJ-SX550B Matrix Switcher and WV-CU550B System Controller. In case of using a controller other than the WV-CU550B, refer to the table on page 10.

## ■ Menu Display

### ● Setup Menu Display

#### WV-CU550B

1. Select the camera number you want to set up and a monitor to display the SET UP MENU.
2. Display the D4 menu on the LCD by pressing the appropriate cursor buttons.
3. Press the F1 button.  
The SET UP MENU appears on the monitor screen.
4. To close the SET UP MENU, press the F4 button.

#### WV-CU360

Press the CAM SETUP key for 2 seconds or more to open the SETUP menu.

#### WV-CU161

Press the CAMERA SETUP key for 2 seconds or more to open the SETUP menu.

#### WV-RM70

1. Turn the MODE SELECTION switch to NORMAL or ALARM OFF.
2. Press the PROG switch for 2 seconds or more to open the Program Menu.
3. Move the cursor to Camera Set Up Menu, and press the SET switch to open the SETUP MENU.

### ● Submenu Display

The items marked "↵" can be selected/changed on the submenu.

- Move the cursor to an item with the "↵" mark and press the CAM (SET) key. The submenu appears.

D4 menu

```
Camera Set Up Menu
On                               Exit
```

F1 F2 F3 F4

```
Camera Set Up Menu
Res A.Res Exit
```

F1 F2 F3 F4

Setup menu

```
** SET UP MENU **
PRESET 1 ↵
MAP ↵
HOME POSITION OFF
SELF RETURN OFF
AUTO MODE OFF
AUTO PAN KEY AUTO PAN
LOCAL/REMOTE LOCAL
PATROL STOP
CLEANING OFF
CAMERA ↵
RS485 SET UP ↵
```

Submenu  
(for RS485 setup)

```
** RS485 SET UP **
UNIT NUMBER 1
SUB ADDRESS ----
BAUD RATE 19200
DATA BIT 8
PARITY CHECK NONE
STOP BIT 1
XON/XOFF NOT USE
WAIT TIME OFF
ALARM DATA ---
DELAY TIME ---
RET
```

# ■ Presetting

## ● Preset Menu Display

1. Displaying the preset menu directly
  - (1) Move the cursor to PRESET 1 **↵** and move the joystick to the right or left to select the position number to be set.
  - (2) Press the CAM (SET) key.  
The preset setting menu appears on the monitor screen.
  
2. Displaying the preset menu from the PRESET NUMBER SET menu
  - (1) Move the cursor to MAP **↵** and press the CAM (SET) key.  
The PRESET NUMBER SET menu appears on the monitor screen.
  - (2) Move the cursor to the position number to be set and press the CAM (SET) key.

### Notes:

- The \* mark means that the position number has been preset.
- The character H means the home position.
- On the second bottom line, the preset ID appears respective to the selected number. "DOOR" next to "ID" is for preset position number 1 in the example shown right.

Setup menu

```

** SET UP MENU **
PRESET 1**↵
MAP ↵
HOME POSITION OFF
SELF RETURN OFF
AUTO MODE OFF
AUTO PAN KEY AUTO PAN
LOCAL/REMOTE LOCAL
PATROL STOP
CLEANING OFF
CAMERA ↵
RS485 SET UP ↵
  
```

Setup menu

```

** SET UP MENU **
PRESET 1 ↵
MAP ↵
HOME POSITION OFF
SELF RETURN OFF
AUTO MODE OFF
AUTO PAN KEY AUTO PAN
LOCAL/REMOTE LOCAL
PATROL STOP
CLEANING OFF
CAMERA ↵
RS485 SET UP ↵
  
```

PRESET NUMBER SET menu

```

** PRESET NUMBER SET **

 1   2   3   4
 5   6   7   8
 9  10  11  12
13  14  15  16
17  18  19  20
21  22  23  24
25  26  27  28
29  30  31  32

ID:DOOR
RET
  
```

## ● Position Setting (POSITION SET)

1. Move the cursor to POSITION SET on the preset setting menu and press the CAM (SET) key.  
The position setting menu appears.
  
2. To Set Panning/Tilting Positions
  - (1) Move the cursor to PUSH SET for PAN/TILT and press the CAM (SET) key. The PAN/TILT setting menu appears.
  - (2) Select panning/tilting positions by moving the joystick up and down, right and left, and press the CAM (SET) key.  
The positions are set and the screen returns to the position setting menu.

Preset setting menu

```

PRESET NO. 1*

POSITION SET ↵
PRESET ID ON ↵
ALC/MANUAL ALC ↵
DWELL TIME 10S
SCENE FILE OFF
PRESET SPEED .....|
                L      H

RET DEL
  
```

PAN/TILT setting menu

```

** POSITION 1 **
PAN/TILT →PUSH SET
ZOOM/FOCUS →PUSH SET

U TILT D/L PAN R
PAN OFFSET SET ← -0.0 →

RET
FLOOR1
DOOR
  
```

Position setting menu

```

** POSITION 1 **
PAN/TILT →PUSH SET
ZOOM/FOCUS →PUSH SET

PAN OFFSET SET ← -0.0 →

RET
FLOOR1
DOOR
  
```



### 3. Pan Offset

If the camera is replaced with a new one, the pan offset function is used to adjust its positions to be the same as before except patrol setting.

The controller can be downloaded or uploaded the preset position data.

**Caution:** The preset data for other camera models (WV-CS650 for example) is incompatible with WV-CS564's. WV-CS564's preset data will be destroyed if you upload the conventional data. If this happened, reset the WV-CS564 to the default settings. Download the factory settings into the controller and upload the correct preset data newly to the initialized WV-CS564.

- (1) Display the PRESET NUMBER SET menu.
- (2) Select a position number for the picture to be most enlarged among the numbers by using the joystick. Then press the CAM (SET) key. The position setting menu appears.
- (3) Move the cursor to PAN OFFSET SET and select the right or left arrow by moving the joystick.
- (4) Press the CAM (SET) key until the desired offset value appears.
- (5) Move the cursor to other than PAN OFFSET SET, and press the MON (ESC) key.

**Notes:**

- Further adjustment of the other positions is unnecessary. This adjustment applies to all other positions.
- Make sure to move the cursor before pressing the key in step 5. Otherwise the settings will be ignored.
- Retry when the camera fails to upload or download the data.

### 4. To Set the Lens Zoom and Focus Positions

- (1) Move the cursor to PUSH SET for ZOOM/FOCUS and press the CAM (SET) key. The ZOOM/FOCUS setting menu appears.
- (2) Select a zoom position by moving the zoom control up and down, and a focus position by moving the focus control up and down, and then press the CAM (SET) key.

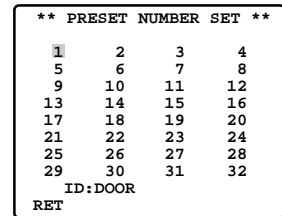
The positions are set and the screen returns to the position setting menu.

**Notes:**

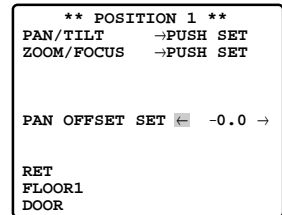
- When the camera is used at a nearly horizontal angle, the focus may not be adjustable to a high level of accuracy.
- If you move the cursor to the position number and move the joystick right or left, the position number can be selected.  
The selected preset position number can also be set after pressing the CAM (SET) key.
- The preset and camera IDs appear at the lower-left corner of the position setting menu after setting them.

5. Move the cursor to RET and press the CAM (SET) key to return to the preset setting menu.

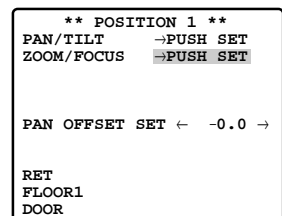
### PRESET NUMBER SET menu



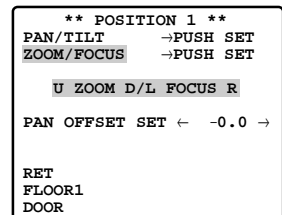
### Position setting menu



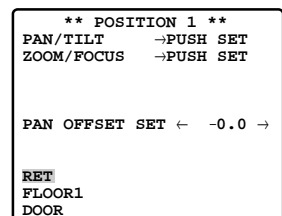
### Position setting menu



### ZOOM/FOCUS setting menu



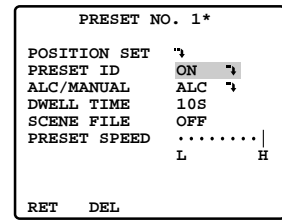
### Position setting menu



## ● Preset Identification Setting (PRESET ID)

- Move the cursor to PRESET ID on the preset setting menu and select ON or OFF by moving the joystick to the right or left. The factory default setting is OFF.  
**ON:** Preset ID appears on the monitor screen.  
**OFF:** Preset ID does not appear.
- Press the CAM (SET) key to display the preset ID setting menu.

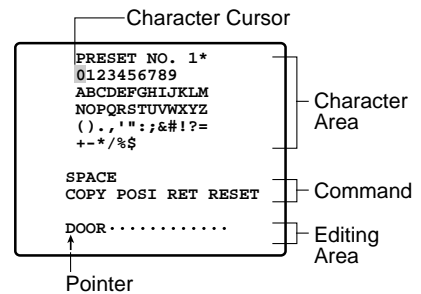
Preset setting menu



### To Enter a New Preset ID

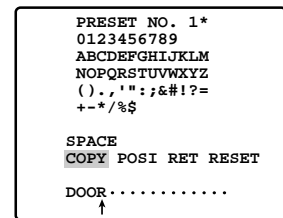
- Move the cursor to the desired character using the joystick, and press the CAM (SET) key.
- The selected character appears in the editing area. (The pointer in the editing area moves to the right automatically at this moment.) To enter a blank, select SPACE.
- Repeat the above procedure until all characters are entered.

Preset ID setting menu



### To Copy a Preset ID from Another Position

- Move the cursor to COPY and press the CAM (SET) key. The preset ID in the preceding position is immediately shown. Each consecutive pressing of the CAM (SET) key displays the ID preceding the one currently displayed.
- Display the most prospective ID.
- Follow the step "To Change an Entered Preset ID" if necessary.



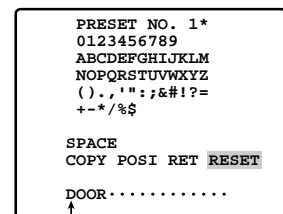
### To Change an Entered Preset ID

- Move the pointer to the character to be edited in the editing area by using the joystick.
- Select a new character by using the joystick.
- Press the CAM (SET) key to determine the Preset ID.



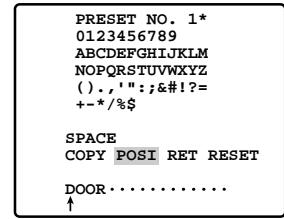
### To Delete an Entered Preset ID

Move the cursor to RESET and press the CAM (SET) key.



### To Set a Display Position for a Preset ID

- (1) Move the cursor to POSI and press the CAM (SET) key. The display position set menu appears.
- (2) Using the joystick, move the ID to the desired position on the monitor screen, and press the MON (ESC) key. The display position is set and the monitor screen returns to the preset ID setting menu.



Display position set menu

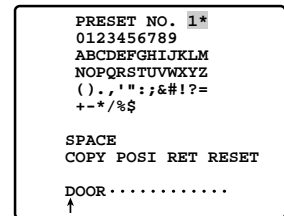


### To Enter the Next ID without Returning to the Preset Setting Menu

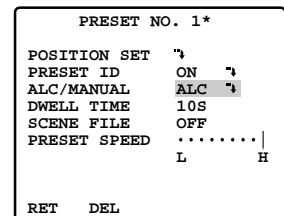
- (1) In the preset ID setting menu, move the cursor to the top line and select the desired position number by moving the joystick to the right or left.
- (2) Enter, copy, change or delete the ID as described above.

### To Return to the Preset Setting Menu

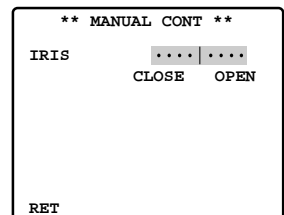
Move the cursor to RET and press the CAM (SET) key.



Preset setting menu



Manual setting menu



## ● Light Control Setting (ALC/MANUAL)

1. Move the cursor to ALC/MANUAL and select ALC or MANUAL by moving the joystick to the right or left.

The factory default setting is ALC.

**ALC:** The lens iris is automatically adjusted to suit the brightness of the object.

**MANUAL:** The lens iris is fixed at the set value regardless of the brightness of the object.

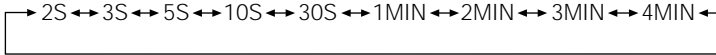
2. In case of ALC "↵"  
Press the CAM (SET) key. The backlight compensation menu appears on the monitor screen. See page 30 for the setting.

3. In case of MANUAL "↵"

Press the CAM (SET) key. The setting menu appears on the monitor screen. Set the lens iris level as desired by moving the joystick to the right or left.

## ● Dwell Time (DWELL TIME)

- Move the cursor to DWELL TIME and set a dwell time by moving the joystick to the right or left. The factory default setting is 10S. Dwell time changes as follows:



S stands for second(s), and MIN stands for minute(s).

## ● Scene File Setting (SCENE FILE)

- To set a scene file number  
Move the cursor to SCENE FILE and select a scene file number (1 to 10, or OFF) by moving the joystick to the right or left. The factory default setting is OFF. No scene file is selected at OFF.
- To set scene file details  
Move the cursor to a scene file number and press the CAM (SET) key. The setting menu appears. See the pages below for the setting.  
Shutter speed: page 32  
AGC: page 32  
White balance: page 34  
Auto focus: page 36

## ● Preset Speed Setting (PRESET SPEED)

- Move the cursor to PRESET SPEED and select a speed by moving the joystick to the right or left.

## ● To Return to the Preset Number Set Menu

- Move the cursor to RET and press the CAM (SET) key. The PRESET NUMBER SET menu appears with the \* mark on the right of the preset position number.

## ● To Return to the Setup Menu

- Move the cursor to RET and press the CAM (SET) key.

Preset setting menu

```

PRESET NO. 1*
POSITION SET  ↵
PRESET ID    ON  ↵
ALC/MANUAL  ALC  ↵
DWELL TIME  10S
SCENE FILE   OFF
PRESET SPEED .....|
                L      H
RET  DEL
    
```

Preset setting menu

```

PRESET NO. 1*
POSITION SET  ↵
PRESET ID    ON  ↵
ALC/MANUAL  ALC  ↵
DWELL TIME  10S
SCENE FILE   1   ↵
PRESET SPEED .....|
                L      H
RET  DEL
    
```

Scene file setting menu

```

** SCENE FILE 1 **
SHUTTER      OFF
AGC          ON(MID)
WHITE BAL    ATW ↵
AF MODE      MANUAL S
RET
    
```

Preset setting menu

```

PRESET NO. 1*
POSITION SET  ↵
PRESET ID    ON  ↵
ALC/MANUAL  ALC  ↵
DWELL TIME  10S
SCENE FILE   OFF
PRESET SPEED .....|
                L      H
RET  DEL
    
```

Preset setting menu

```

PRESET NO. 1*
POSITION SET  ↵
PRESET ID    ON  ↵
ALC/MANUAL  ALC  ↵
DWELL TIME  10S
SCENE FILE   OFF
PRESET SPEED .....|
                L      H
RET  DEL
    
```

PRESET NUMBER SET menu

```

** PRESET NUMBER SET **
1*  2   3   4
5   6   7   8
9   10  11  12
13  14  15  16
17  18  19  20
21  22  23  24
25  26  27  28
29  30  31  32
ID:DOOR
RET
    
```

## ■ Deleting Preset Positions

1. Move the cursor to PRESET 1\* and select the position number to be deleted by using the joystick.

2. Press the CAM (SET) key to display the preset setting menu.

3. Move the cursor to DEL and press the CAM (SET) key.

This deletes the preset position and the PRESET NUMBER SET menu appears. The \* mark on the right of the number disappears.

**Note:** Your selected preset number is cancelled only in the SEQ and SORT mode. The previously set parameters (for PAN, TILT positions, etc.) are not changed. If you want to change these parameters, you must set them again.

Setup menu

```

** SET UP MENU **
PRESET 1*
MAP ↵
HOME POSITION OFF
SELF RETURN OFF
AUTO MODE OFF
AUTO PAN KEY AUTO PAN
LOCAL/REMOTE LOCAL
PATROL STOP
CLEANING OFF
CAMERA ↵
RS485 SET UP ↵
    
```

Preset setting menu

```

PRESET NO. 1*
POSITION SET ↵
PRESET ID ON ↵
ALC/MANUAL ALC ↵
DWELL TIME 10S
SCENE FILE OFF
PRESET SPEED .....|
                    L     H
RET  DEL
    
```

PRESET NUMBER SET menu

```

** PRESET NUMBER SET **
 1      2      3      4
 5      6      7      8
 9     10     11     12
13     14     15     16
17     18     19     20
21     22     23     24
25     26     27     28
29     30     31     32
ID:DOOR
RET
    
```

## ■ Home Position Setting (HOME POSITION)

1. To set a position number for the home position

Move the cursor to HOME POSITION and select the desired position number by moving the joystick to the right or left.

The factory default setting is OFF.

2. Select OFF if you are not using the home position function.

**Note:** This setting functions only when AUTO MODE is set to OFF.

Setup menu

```

** SET UP MENU **
PRESET 1 ↵
MAP ↵
HOME POSITION 15
SELF RETURN OFF
AUTO MODE OFF
AUTO PAN KEY AUTO PAN
LOCAL/REMOTE LOCAL
PATROL STOP
CLEANING OFF
CAMERA ↵
RS485 SET UP ↵
    
```

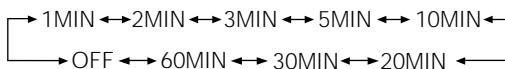
## ■ Self Return Setting (SELF RETURN)

1. To set a time-out parameter for return to the home position

Move the cursor to SELF RETURN and select a return time by moving the joystick to the right or left.

The factory default setting is OFF.

Return time changes as follows:



MIN stands for minute(s).

**Note:** The camera will return to the auto mode if that is set to SEQ, SORT, AUTO PAN or PATROL when a specific time has elapsed after a manual operation.

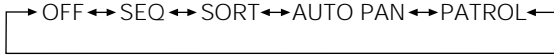
Setup menu

```

** SET UP MENU **
PRESET 1 ↵
MAP ↵
HOME POSITION OFF
SELF RETURN 10MIN
AUTO MODE OFF
AUTO PAN KEY AUTO PAN
LOCAL/REMOTE LOCAL
PATROL STOP
CLEANING OFF
CAMERA ↵
RS485 SET UP ↵
    
```

## ■ Auto Mode Selection (AUTO MODE)

- To set auto mode  
Move the cursor to AUTO MODE and select a mode by moving the joystick to the right or left.  
The factory default setting is OFF.  
Modes change as follows:



**OFF:** No automatic operation. The camera can be operated only manually.

**SEQ:** The camera operates in the sequence of preset positions in numerical order.

**SORT:** The camera operates in the sequence of preset positions counterclockwise from Pan Starting Point.

**AUTO PAN:** The camera automatically turns within the preset panning range.

**PATROL:** The camera operates in the patrol learn function.

- When the AUTO PAN mode is selected, set details as follows:  
Move the cursor to AUTO PAN  $\rightarrow$  and press the CAM (SET) key to display the AUTO PAN setting menu.
- To set a panning starting point and panning endpoint  
Follow the steps below.
  - Move the cursor to POSITION and press the CAM (SET) key. The cursor moves to START.
  - Move the joystick to the right or left to select a panning starting point and press the CAM (SET) key. This determines the starting point and the cursor moves to END.
  - Move the joystick to the right or left to select a panning endpoint and press the CAM (SET) key. This determines the endpoint and the cursor moves to POSITION.
- To set a panning speed  
Move the cursor to SPEED, and move the joystick to the right or left to set a panning speed.  
The panning speed increases when the joystick is moved to the right, and decreases when it is moved to the left.

**Caution:** If the panning range is changed after the camera has not panned for a long time or has been panning in the same panning range, the picture may not be clear or noise may appear. In this case, pan the camera fully several times.

If this does not eliminate the problem, refer servicing to qualified service personnel.

Setup menu

```

** SET UP MENU **
PRESET 1 ↵
MAP ↵
HOME POSITION OFF
SELF RETURN OFF
AUTO MODE OFF
AUTO PAN KEY AUTO PAN
LOCAL/REMOTE LOCAL
PATROL STOP
CLEANING STOP
CAMERA ↵
RS485 SET UP ↵
  
```

AUTO PAN setting menu

```

** AUTO PAN **
POSITION START
END
SPEED .....|.....
L H
PAN LIMIT OFF
ENDLESS OFF
DWELL TIME 1S
RET
  
```

```

** AUTO PAN **
POSITION START
END
SPEED .....|.....
L H
PAN LIMIT OFF
ENDLESS OFF
DWELL TIME 1S
RET
  
```

```

** AUTO PAN **
POSITION START
END
SPEED .....|.....
L H
PAN LIMIT OFF
ENDLESS OFF
DWELL TIME 1S
RET
  
```

```

** AUTO PAN **
POSITION START
END
SPEED .....|.....
L H
PAN LIMIT OFF
ENDLESS OFF
DWELL TIME 1S
RET
  
```

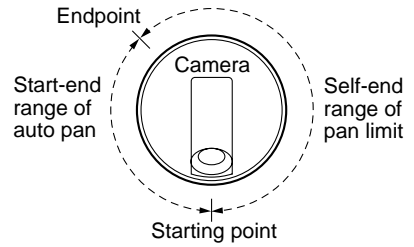
5. To set pan limit ON/OFF

Move the cursor to PAN LIMIT and select ON or OFF by moving the joystick to the right or left.

The factory default setting is OFF.

**ON:** Manual pan is limited from the starting point to the endpoint specified by position setting. Set ENDLESS to OFF before PAN LIMIT is set to ON.

**OFF:** Manual pan is not limited.



**Note:** When ON is selected for PAN LIMIT, manual pan moves the camera away from the other side (PAN LIMIT) of the start-end range.

6. To set ENDLESS to ON/OFF

Move the cursor to ENDLESS, and move the joystick to the right or left.

The factory default setting is OFF.

**ON:** The camera pans from the starting point to the endpoint, and keeps rotating in the same direction to return to the starting point. Set PAN LIMIT to OFF before ENDLESS is set to ON.

**OFF:** The camera pans from the starting point to the endpoint, and rotates backward to the starting point.

This movement is repeated over and over.

```

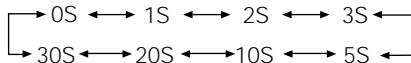
** AUTO PAN **
POSITION      START
              END
SPEED         .....|.....
              L           H
PAN LIMIT     OFF
ENDLESS       ON
DWELL TIME    1S
RET
    
```

7. To set a dwell time

Move the cursor to DWELL TIME and select a dwell time by moving the joystick to the right or left.

The factory default setting is 1S.

Dwell time changes as follows:



```

** AUTO PAN **
POSITION      START
              END
SPEED         .....|.....
              L           H
PAN LIMIT     OFF
ENDLESS       OFF
DWELL TIME    1S
RET
    
```

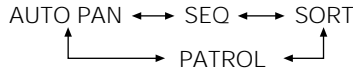
**Notes:**

- When the panning, tilting, zooming or focusing in the SEQ, SORT or PATROL mode is controlled manually, the Auto mode function should be cancelled. To activate the auto mode, select the desired auto mode again or set a time for SELF RETURN in the SET UP menu.
- When 0S is selected, the camera stops without dwelling and starts.
- Auto refreshing may be activated during the patrol play or the auto mode to calibrate the lens position.

## ■ Auto Pan Key Setting (AUTO PAN KEY)

This is used for assigning one of the following auto functions to the AUTO key on the controller. Pressing the AUTO key activates the assigned function after this setting.

- Move the cursor to AUTO PAN KEY and select an auto function by moving the joystick to the right or left.  
The factory default setting is AUTO PAN.  
Mode changes as follows:



**AUTO PAN:** assigns auto panning function to the key.

**SEQ:** assigns the sequence function to the key.

**SORT:** assigns the sort function to the key.

**PATROL:** assigns the patrol play function to the key.

**Note:** Auto pan LED on the controller does not light if a function other than the auto pan function is assigned. The auto pan function does not stop with the AUTO PAN key.

Setup menu

```

** SET UP MENU **
PRESET 1 ↵
MAP ↵
HOME POSITION OFF
SELF RETURN OFF
AUTO MODE OFF
AUTO PAN KEY AUTO PAN
LOCAL/REMOTE LOCAL
PATROL STOP
CLEANING OFF
CAMERA ↵
RS485 SET UP ↵
  
```

## ■ Local/Remote Setting (LOCAL/REMOTE)

- Move the cursor to LOCAL/REMOTE, and move the joystick to the right or left.

The factory default setting is LOCAL.

You can toggle between LOCAL and REMOTE.

**Note:** The REMOTE does not work when the WV-RM70, WV-CU360, WV-CU161, WJ-FS616 or WV-CU550 series is connected. Make sure that LOCAL is selected in this case.

Setup menu

```

** SET UP MENU **
PRESET 1 ↵
MAP ↵
HOME POSITION OFF
SELF RETURN OFF
AUTO MODE OFF
AUTO PAN KEY AUTO PAN
LOCAL/REMOTE LOCAL
PATROL STOP
CLEANING OFF
CAMERA ↵
RS485 SET UP ↵
  
```



## ■ Patrol Learn and Patrol Play (PATROL)

A routine of manual operations can be stored for 30 seconds at the maximum and reproduced repetitively.

1. Set the following parameters for the patrol learn starting position.

These parameters are stored when the patrol learn mode starts.

- PAN/TILT/ZOOM/FOCUS
- IRIS
- SHUTTER
- AGC
- WHITE BALANCE
- IMAGE HOLD
- CAMERA ID
- PAN LIMIT
- CLEANING

After starting the patrol learn, the following manual operations are stored.

- PAN/TILT/ZOOM/FOCUS operation
- IRIS operation
- Preset positioning

2. Open the SET UP menu and move the cursor to PATROL. Select LEARN, PLAY or STOP for PATROL by moving the joystick to the right or left.

The factory default setting is STOP.

**LEARN:** A series of manual operations is stored.

**PLAY:** Stored operations are reproduced.

**STOP:** LEARN or PLAY is not activated.

Special 1 menu

```
** SET UP MENU **
PRESET 1 ↵
MAP ↵
HOME POSITION OFF
SELF RETURN OFF
AUTO MODE OFF
AUTO PAN KEY AUTO PAN
LOCAL/REMOTE LOCAL
PATROL STOP
CLEANING OFF
CAMERA ↵
RS485 SET UP ↵
```

### Patrol Learn with a Controller Having the PATROL Key

1. Press the PATROL LEARN key and the PROGRAM key simultaneously to start the patrol learn. The setup menu changes to show "LEARNING" and the starting points are stored.
2. Operate the patrol learn manually. The operation data is stored.
3. To stop the patrol learn, press the PATROL STOP key and the PROGRAM key simultaneously.

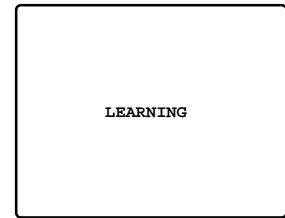
### Patrol Learn with a Controller not Having the PATROL Key

1. Select the patrol learn in the setup menu, and then close it. Starting points are stored and "LEARNING" appears on the monitor screen.
2. Operate the patrol learn manually.
3. Open the SET UP menu to stop learning.

#### Notes:

- It is recommended that you set PAN LIMIT to ON for the patrol learn. Otherwise PAN LIMIT is invalid for playback.
- Start the patrol learn function again from the starting point, if the power has failed during the patrol learn mode.
- LEARN also stops 30 seconds after starting if the memory is full.
- Auto refreshing may be activated during the patrol play mode or the auto mode to calibrate the lens position.

PATROL LEARN



### Patrol Play with a Controller Having the PATROL Key

1. Press the PATROL PLAY key. The camera turns to the starting point and the operations stored in the memory are reproduced. Iris operation is only accepted during playback.
2. Press the PATROL STOP key and PROGRAM key simultaneously to stop playback or press any manual operation key (e.g., PAN/TILT/ ZOOM/FOCUS) except the iris keys.

### Patrol Play with a Controller not Having the PATROL Key

1. Select the patrol play in the setup menu, and then close it. The camera turns to the starting point and the operations stored in the memory are reproduced. Iris operation is only accepted during playback.
2. Open the SET UP menu, or press any manual operation key (e.g., PAN/TILT/ ZOOM/FOCUS) except the iris keys to stop playback.

### Patrol Play with the AUTO PAN Key

1. If the PATROL PLAY function is assigned to the AUTO PAN key, press the AUTO PAN key to turn the camera back to the starting point and to reproduce the operation data stored in the memory.
2. Press the PATROL STOP key and PROGRAM key simultaneously or any manual operation key (e.g., PAN/TILT/ZOOM/FOCUS) except the iris keys to stop playback.

#### Notes:

- During the patrol play mode, the camera movement may occasionally deviate from the entered routine when the routine includes a move to a preset position. If this happens, re-enter the routine of manual operations in the patrol learn.
- During the patrol play mode, black and white automatic switching does not work.
- During the patrol play mode, when the power of the controller is turned on or off, the patrol play stops. In this case, press the PATROL PLAY key again. (If SELF RETURN is set to ON, the patrol play will start again after elapsing the setting return time.)

## ■ Cleaning (CLEANING)

Built-in electric mechanical contacts are refreshed at regular intervals (approx. 7 days) if CLEANING is set to ON.

A dry contract affects adversely picture quality and motors operation.

1. Move the cursor to CLEANING and select ON or OFF by moving the joystick to the right or left.  
The factory default setting is OFF.

**ON:** The contacts are cleaned as programmed for about 1 minute. "CLEANING" disappears when it is over.

**OFF:** No contact cleaning.

**Note:** Select OFF when the camera downloads or uploads the preset data.

Special 1 menu

```

** SET UP MENU **
PRESET 1 ↵
MAP ↵
HOME POSITION OFF
SELF RETURN OFF
AUTO MODE OFF
AUTO PAN KEY AUTO PAN
LOCAL/REMOTE LOCAL
PATROL STOP
CLEANING OFF
CAMERA ↵
RS485 SET UP ↵
    
```

CLEANING

```

CLEANING
    
```

## ■ Camera Setting

### To Display the Camera Setting Menu

- Move the cursor to CAMERA ↵, and press the CAM (SET) key.  
The camera setting menu appears.

Setup menu

```

** SET UP MENU **
PRESET 1 ↵
MAP ↵
HOME POSITION OFF
SELF RETURN OFF
AUTO MODE OFF
AUTO PAN KEY AUTO PAN
LOCAL/REMOTE LOCAL
PATROL STOP
CLEANING OFF
CAMERA ↵
RS485 SET UP ↵
    
```

### ● Camera Identification (CAMERA ID)

1. Move the cursor to CAMERA ID, and select ON (to display the camera identification) or OFF by using the joystick.  
The factory default setting is OFF.
2. Follow the steps below to edit the camera ID characters:
  - 2-1 Move the cursor to CAMERA ID and press the CAM (SET) key to display the character editing menu.
  - 2-2 Move the cursor to the character you want to edit or change by using the joystick, and press the CAM (SET) key. The selected character appears in the editing area.
  - 2-3 Repeat the steps above until all characters are edited.

```

** SET UP **
CAMERA ID OFF↵
ALC/MANUAL ALC↵
SHUTTER OFF
AGC ON(MID)
SYNC INT
WHITE BAL ATW↵
AF MODE MANUAL S
EL-ZOOM ON
IMAGE HOLD OFF
RET SPECIAL ↵
    
```

3. After editing the camera identification characters, follow the steps below to set the position of the CAMERA ID on the monitor screen.

3-1 Move the cursor to POSI, and press the CAM (SET) key to display the ID position menu.

3-2 Use the joystick to decide the position of the CAMERA ID on the monitor screen. Press the MON (ESC) key to fix the position, and return to the character editing menu.

```

** SET UP **
CAMERA ID   ON  *
ALC/MANUAL  ALC *
SHUTTER     OFF
AGC         ON(MID)
SYNC        INT
WHITE BAL   ATW *
AF MODE     MANUAL S
EL-ZOOM     ON
IMAGE HOLD  OFF

RET        SPECIAL  *
  
```

**Notes:**

- When you want the pointer to move to a specific character in the editing area, select a new character, and press the CAM (SET) key. This function allows you to edit or correct a specific character.
- When you want a blank space in the CAMERA ID, move the character cursor to SPACE, and press the CAM (SET) key.
- When you want to erase all characters in the editing area, move the cursor to RESET and press the CAM (SET) key.
- The positioning of the CAMERA ID stops at the edges of the screen.
- The CAMERA ID moves faster when the joystick is kept at the right or left for one second or more.
- To return to SET UP for setting other items, move the cursor to RET, and press the CAM (SET) key.

```

CAMERA ID.--
0123456789
ABCDEFGHIJKLM
NOPQRSTUVWXYZ
( ) . , ' " ; & # ! ? =
+ - * / % $

SPACE
---- POSI RET RESET

CAM1.....
↑
  
```

```

CAM1
  
```

```

CAMERA ID.--
0123456789
ABCDEFGHIJKLM
NOPQRSTUVWXYZ
( ) . , ' " ; & # ! ? =
+ - * / % $

SPACE
---- POSI RET RESET

CAM1.....
↑
  
```

```

CAMERA ID.--
0123456789
ABCDEFGHIJKLM
NOPQRSTUVWXYZ
( ) . , ' " ; & # ! ? =
+ - * / % $

SPACE
---- POSI RET RESET

CAM1.....
↑
  
```

## ● Light Control Setting (ALC/MANUAL)

1. Display SET UP on the monitor screen.  
If necessary, refer to Setup Menu Display on page 16 for details on displaying the SET UP on the monitor screen.
2. Move the cursor to ALC/MANUAL and select ALC or MANUAL by using the joystick.  
The factory default setting is ALC.  
When you select ALC, set backlight compensation.  
**Note:** The backlight compensation submenu associated with this menu is described separately and should be set up after installing the camera at the site and observing the actual site picture.
3. When MANUAL is selected, quit the setup menu by pressing MON (ESC) key. Press OPEN or CLOSE key on the controller for iris adjustments by manual.

Camera setting menu

```

** SET UP **
CAMERA ID   ON ↵
ALC/MANUAL  ALC*
SHUTTER     OFF
AGC         ON (MID)
SYNC        INT
WHITE BAL   ATW*
AF MODE     MANUAL S
EL-ZOOM     ON
IMAGE HOLD  OFF
RET        SPECIAL ↵
    
```

### (1) ALC Mode with BLC ON

1. Press the CAM (SET) key after selecting ALC. The ALC CONT menu appears.
2. Move the cursor to BLC and select ON.
3. If you want to adjust the video output level, move the "I" cursor for LEVEL. Adjust to the desired level by using the joystick.
4. Move the cursor to RET and press the CAM (SET) key to return to the CAM SET UP menu. (To return to the camera picture, press the F4 button.)

```

** ALC CONT **
BACK LIGHT COMP
BLC           ON
LEVEL         .....|.....
              -          +
RET
    
```

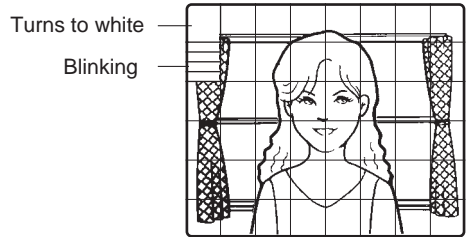
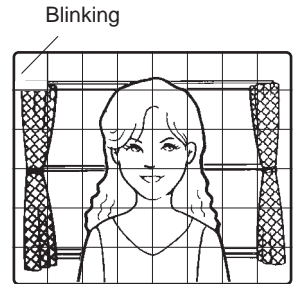
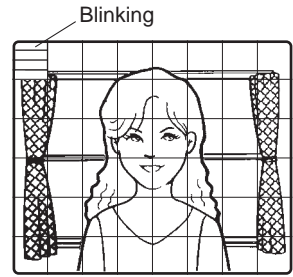
Backlight compensation menu

```

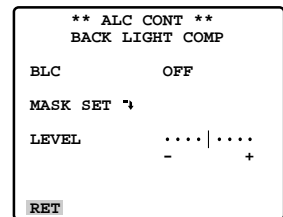
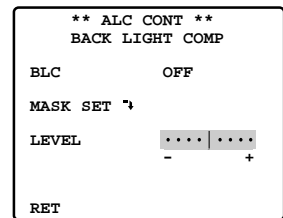
** ALC CONT **
BACK LIGHT COMP
BLC           OFF
MASK SET ↵
LEVEL         .....|.....
              -          +
RET
    
```

**(2) ALC Mode with BLC OFF**

1. Move the cursor to the BLC and select OFF. (When you select MANUAL, BLC is not available.) The MASK SET appears on the menu.
2. Move the cursor to MASK SET and press the CAM (SET) key. The 48 mask areas appear on the monitor screen. The cursor is blinking in the top left corner of the screen.
3. To mask an area where backlight is bright, move the cursor to that area and press the CAM (SET) key. The mask turns to white. Repeat this procedure to mask the desired area.
4. To cancel a masked area, move the cursor to that area, and press the CAM (SET) key. To cancel all masking area, press the F2 button of the WV-CU550B. (For the WV-RM70, press the right and left switches simultaneously.)

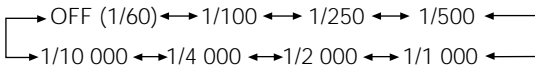


5. After masking is completed, press the MON (ESC) key. The 48 mask areas on the monitor screen disappear and the ALC CONT menu appears.
6. If you want to change the video output level (picture contrast), move the "I" cursor for LEVEL and adjust the level.
7. Move the cursor to RET and press the CAM (SET) key to return to the CAM SET UP menu. (To return to the camera picture, press the F4 button.)



## ● Shutter Speed Setting (SHUTTER)

1. Display SET UP on the monitor screen.  
If necessary, refer to Setup Menu Display on page 16 for details on displaying the SET UP menu on the monitor screen.
2. Move the cursor to SHUTTER and select the electronic shutter speed by using the joystick. The factory default setting is OFF.  
The electronic shutter speed changes as follows by operating the joystick:
  - When OFF is selected for BLC on the ALC CONT menu



## ● Gain Control (AGC)

1. Display SET UP on the monitor screen.  
If necessary, refer to Setup Menu Display on page 16 for details on displaying the SET UP menu on the monitor screen.
2. Move the cursor to AGC and select automatic level adjustment ON (LOW), ON (MID), ON (HIGH) or fixed level (OFF) by using the joystick.  
The factory default setting is ON (MID).
  - ON (LOW):** Selects lower gain control.
  - ON (MID):** Selects normal gain control.
  - ON (HIGH):** Selects higher gain control.
  - OFF (Fixed Level):** Disables the gain control function.

### Note:

- Even if AGC is set to ON and if the noise reduction function is enabled, afterimages may be produced by shooting a moving object or by panning or tilting the camera.

Camera setting menu

** SET UP **	
CAMERA ID	ON ↵
ALC/MANUAL	ALC ↵
SHUTTER	OFF
AGC	ON (MID)
SYNC	INT
WHITE BAL	ATW ↵
AF MODE	MANUAL S
EL-ZOOM	ON
IMAGE HOLD	OFF
RET	SPECIAL ↵

Camera setting menu

** SET UP **	
CAMERA ID	ON ↵
ALC/MANUAL	ALC ↵
SHUTTER	OFF
AGC	ON (MID)
SYNC	INT
WHITE BAL	ATW ↵
AF MODE	MANUAL S
EL-ZOOM	ON
IMAGE HOLD	OFF
RET	SPECIAL ↵

## ● Synchronization (SYNC)

1. Display SET UP on the monitor screen.  
If necessary, refer to Setup Menu Display on page 16 for details on displaying the SET UP menu on the monitor screen.
2. Move the cursor to SYNC and select line-lock (LL) or internal (INT) by using the joystick.  
The factory default setting is INT.

### Important Notices:

1. The priority of SYNC modes is as follows:
  1. Multiplexed vertical drive (VD2) (highest priority)
  2. Line-lock (LL)
  3. Internal sync (INT) (lowest priority)
2. To use internal sync, select INT.
3. Whenever the vertical drive pulse (VD2) is supplied to the camera, the camera sync mode is automatically switched to the multiplexed vertical drive (VD2) regardless which sync mode is selected.

Camera setting menu

** SET UP **	
CAMERA ID	ON ↵
ALC/MANUAL	ALC↵
SHUTTER	OFF
AGC	ON (MID)
SYNC	INT ↵
WHITE BAL	ATW↵
AF MODE	MANUAL S
EL-ZOOM	ON
IMAGE HOLD	OFF
RET	SPECIAL ↵

### Line-lock Sync Mode (LL)

1. Display SET UP on the monitor screen.  
(Refer to Setup Menu Display on page 16 for details on displaying the SET UP menu on the monitor screen.)
2. Move the cursor to SYNC and select LL by using the joystick. LL sync mode is not available when the multiplexed vertical drive (VD2) pulse is supplied.
3. After selecting LL, press the CAM (SET) key.  
The SYNC menu appears on the monitor screen.
4. Supply the video output signal of the camera to be adjusted and the reference camera video output signal to a dual-trace oscilloscope.
5. Set the dual-trace oscilloscope to the vertical rate and expand the vertical sync portion on the oscilloscope.
6. Move the cursor to COARSE by using the joystick.

Camera setting menu

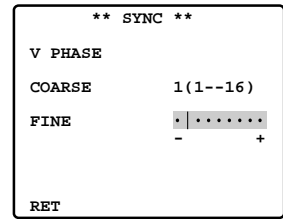
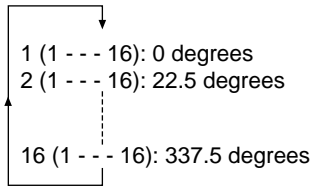
** SET UP **	
CAMERA ID	ON ↵
ALC/MANUAL	ALC↵
SHUTTER	OFF
AGC	ON (MID)
SYNC	LL ↵
WHITE BAL	ATW↵
AF MODE	MANUAL S
EL-ZOOM	ON
IMAGE HOLD	OFF
RET	SPECIAL ↵

SYNC menu

** SYNC **	
V PHASE	
COARSE	1(1--16)
FINE	·   ······ + -
RET	



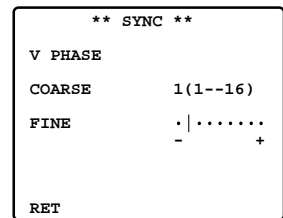
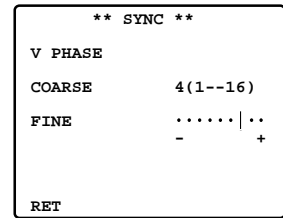
- Use the joystick to match the vertical phases for both video output signals as closely as possible. (COARSE adjustment can be incremented in steps of 22.5 degrees (16 steps) with the joystick.)  
**Note:** After the 16 steps, the adjustment returns to the first step.



- Move the cursor to FINE by using the joystick.
- Use the joystick to match the vertical phase for both video output signals as closely as possible.

**Notes:**

- When the “|” cursor reaches the “+” end, it jumps back to “-”. At the same time, COARSE is incremented by one step to enable a continuous adjustment. The reverse takes place when the “|” cursor reaches the “-” end.
- When the joystick is kept at the right or left for one second or more, the “|” cursor moves quickly.
- To reset COARSE and FINE to the preset values at the factory, press the F2 button of the WV-CU550B. (For the WV-RM70, press the Right and Left switches simultaneously.) COARSE is preset at the factory to zero-crossing of the AC line phase.
- If the AC line contains noise (spike noise, etc.), the stability of the vertical phase of the camera video output signal may be disturbed.

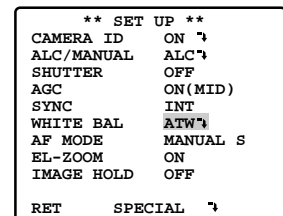


● **White Balance (WHITE BAL)**

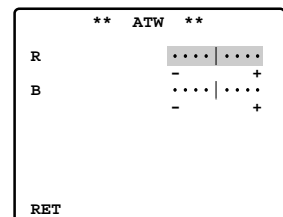
**(1) Auto-Tracing White Balance Mode (ATW)**

- Display SET UP on the monitor screen.  
(Refer to Setup Menu Display on page 16 for details on displaying the SET UP menu on the monitor screen.)
- Move the cursor to WHITE BAL and select ATW by using the joystick.  
The factory default setting is ATW.  
The white balance of the camera is automatically set.
- For fine adjustment of the ATW, press the CAM (SET) key to display the ATW fine adjustment menu on the monitor screen.
- Move the cursor to R.  
Use the joystick to obtain the optimum amount of red gain. The “|” cursor moves to the right or left.
- Move the cursor to B.  
Use the joystick to obtain the optimum amount of blue gain. The “|” cursor moves to the right or left.
- Move the cursor to RET by using the joystick and press the CAM (SET) key to return to SET UP.

Camera setting menu



ATW fine adjustment menu



## (2) Automatic White Balance Control Mode (AWC)

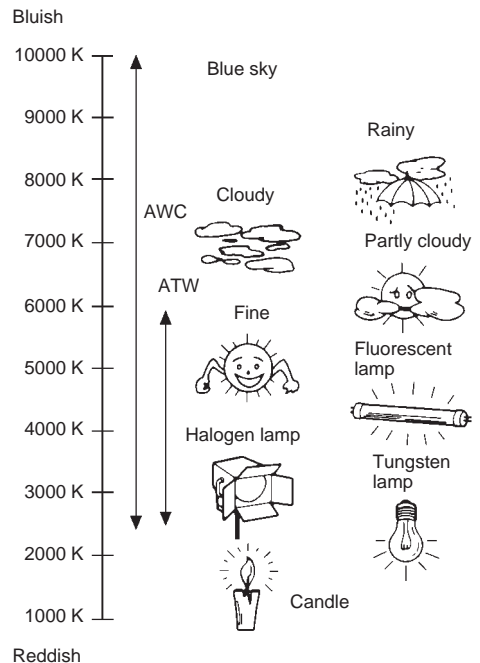
1. Display SET UP on the monitor screen.  
(Refer to Setup Menu Display on page 16 for details on displaying the SET UP menu on the monitor screen.)
2. Move the cursor to WHITE BAL and select AWC → PUSH SW by using the joystick.
3. Press the CAM (SET) key to start the white balance setup. PUSH SW is highlighted to indicate that white balance is being set.
4. PUSH SW returns to normal when balance setting is completed.
5. For fine adjustment of the AWC, move the cursor to select AWC and press the CAM (SET) key to display the AWC fine adjustment menu on the monitor screen.
6. Move the cursor to R.  
Use the joystick to obtain the optimum amount of red gain. The "I" cursor moves to the right or left.
7. Move the cursor to B.  
Use the joystick to obtain the optimum amount of blue gain. The "I" cursor moves to the right or left.
8. Move the cursor to RET by using the joystick and press the CAM (SET) key to return to SET UP.

Camera setting menu

** SET UP **	
CAMERA ID	ON ↵
ALC/MANUAL	ALC ↵
SHUTTER	OFF
AGC	ON (MID)
SYNC	INT
WHITE BAL	AWC ↵
AF MODE	MANUAL S
EL-ZOOM	ON
IMAGE HOLD	OFF
RET	SPECIAL ↵

AWC fine adjustment menu

** AWC **	
R	..... ..... - .....  ..... + .....
B	..... ..... - .....  ..... + .....
RET	

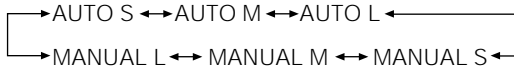


## ● Auto Focus Setting (AF MODE)

1. Move the cursor to AF MODE, and select the following mode by moving the joystick to the right or left.

The factory default setting is MANUAL S.

S, M and L stand for Small, Middle and Large areas in the center of a scene that are used for sensing sharpness in auto-focusing.



**MANUAL S, M, L:** Brings the camera into focus when the AF key on the controller is pressed.

**AUTO S, M, L:** Brings the camera into focus while operating pan, tilt or zoom manually. These may be selected in the same way as selecting MANUAL by pressing the AF key on the controller.

2. To confirm auto-focus operation, press CAM (SET) key while the cursor is at AF MODE.

### Notes:

- The auto focus lens does not function properly in AUTO after using WIDE lens.
- The auto focus lens may not function properly in AUTO under the following conditions.
  1. Dirt or water on window glass.  
The auto focus may focus on the dirt or water.
  2. Low lighting/illumination or zone marker is blinking.
  3. Bright objects or high intensity objects.
  4. Single color with unfigured object such as white wall or fine felt.
  5. No center objects, sloping objects.
  6. Far and near objects on the screen.

Camera setting menu

** SET UP **	
CAMERA ID	ON ↗
ALC/MANUAL	ALC↗
SHUTTER	OFF
AGC	ON(MID)
SYNC	INT
WHITE BAL	ATW↗
AF MODE	MANUAL S
EL-ZOOM	ON
IMAGE HOLD	OFF
RET	SPECIAL ↗

## ● Electronic Zoom (EL-ZOOM)

The electronic zoom magnifies a scene 2-fold. With a 18-fold optical zoom lens, the camera is capable of 36-fold zoom.

1. Move the cursor to EL-ZOOM and select ON or OFF by moving the joystick to the right or left, and then press the CAM (SET) key. The factory default setting is ON.

**ON:** Two (2) - fold electronic zoom is available with the ZOOM switch on the controller.

**OFF:** The electronic zoom function is not used.

### Notes:

- A scene magnified by the electronic zoom function may be inferior to a non-magnified one in picture quality.
- The electronic zoom does not function in preset position setting mode.
- To set preset position directly from the WV-CU360 System Controller, it is temporarily required setting the electronic zoom function to OFF.

Camera setting menu

** SET UP **	
CAMERA ID	ON ↗
ALC/MANUAL	ALC ↗
SHUTTER	OFF
AGC	ON(MID)
SYNC	INT
WHITE BAL	ATW ↗
AF MODE	MANUAL S
EL-ZOOM	ON
IMAGE HOLD	OFF
RET	SPECIAL ↗

## ● Image Hold (IMAGE HOLD)

The camera picture remains as a still image on the monitor screen until the camera reaches the preset position. This function is useful for surveillance via local area network.

1. Move the cursor to IMAGE HOLD and select ON or OFF. The factory default setting is OFF.

**ON:** The last displayed still image is shown till the camera finishes moving to a preset position. However, the still image may be distorted with the effect of panning or tilting.

**OFF:** The current image is being displayed while the camera is moving to a preset position.

Camera setting menu

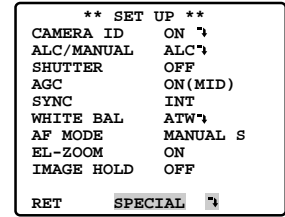
** SET UP **	
CAMERA ID	ON ↗
ALC/MANUAL	ALC ↗
SHUTTER	OFF
AGC	ON(MID)
SYNC	INT
WHITE BAL	ATW ↗
AF MODE	MANUAL S
EL-ZOOM	ON
IMAGE HOLD	OFF
RET	SPECIAL ↗

## ● Special Menu (SPECIAL)

This menu lets you adjust and set up the picture quality to meet your requirements.

- Display SET UP on the monitor screen.  
(Refer to Setup Menu Display on page 16 for details on displaying the SET UP on the monitor screen.)
- Move the cursor to SPECIAL and press the F2 button of the WV-CU550B. The special menu appears on the monitor screen.  
(For the WV-RM70, keep pressing the Right and Left switches simultaneously for 2 seconds or more.)

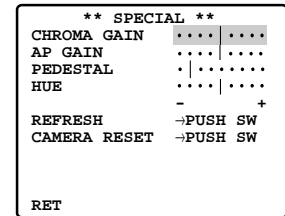
Camera setting menu



### (1) Chroma Level Setting (CHROMA GAIN)

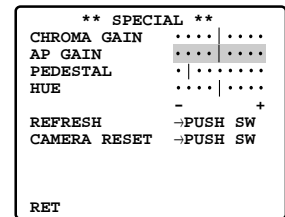
1. Move the cursor to CHROMA GAIN. The "I" cursor is highlighted.
2. While observing the vectorscope or color video monitor, adjust the chroma level by using the joystick. The "I" cursor moves to the right or left.  
To reset to the factory setup, press the F2 button of the WV-CU550B.  
(For the WV-RM70, keep pressing the Right and Left switches simultaneously for 2 seconds or more.)

Special menu



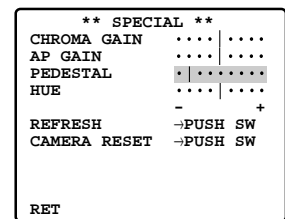
### (2) Aperture Level Setting (AP GAIN)

1. Move the cursor to AP GAIN. The "I" cursor is highlighted.
2. While observing the video monitor, adjust the aperture level with the joystick. The "I" cursor moves to the right (sharp) or left (soft).  
To reset to the factory setup, press the F2 button of the WV-CU550B.  
(For the WV-RM70, keep pressing the Right and Left switches simultaneously for 2 seconds or more.)



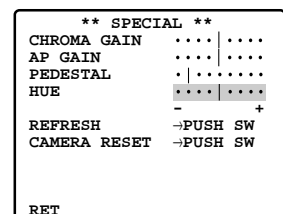
### (3) Pedestal Level Setting (PEDESTAL)

1. Move the cursor to PEDESTAL. The "I" cursor is highlighted.
2. While observing the waveform monitor/oscilloscope or video monitor, adjust the pedestal level (black level) by moving the joystick. The "I" cursor moves to the right (high, bright) or left (low, dark).  
To reset to the factory setup, press the F2 button of the WV-CU550B.  
(For the WV-RM70, keep pressing the Right and Left switches simultaneously for 2 seconds or more.)



### (4) Chroma Phase (Hue) Setting (HUE)

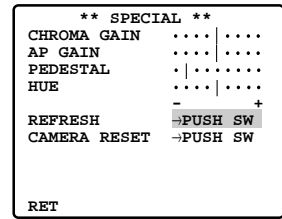
1. Move the cursor to HUE. The "I" cursor is highlighted.
2. While observing the vector scope or a color video monitor, adjust the chroma phase by moving the joystick. The "I" cursor moves to the right or left.  
To reset to the factory setup, press the F2 button of the WV-CU550B.  
(For the WV-RM70, keep pressing the Right and Left switches simultaneously for 2 seconds or more.)



**(5) To Restore the Camera Default Position (REFRESH)**

Move the cursor to REFRESH by using the joystick and press the F2 button of the WV-CU550B.

(For the WV-RM70, WV-CU360 or WV-CU161, keep pressing the Right and Left switches simultaneously for 2 seconds or more.)

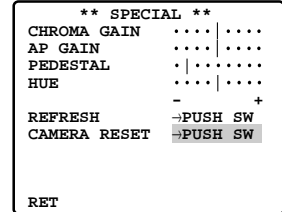


**(6) Camera Resetting (CAMERA RESET)**

Move the cursor to CAMERA RESET by using the joystick and press the F3 button of the WV-CU550B.

The camera is reset to the factory preset parameters.

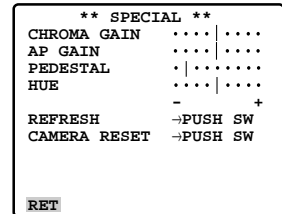
(For the WV-RM70, keep pressing the Right, Left and Set switches simultaneously for 2 seconds or more. For the WV-CU360 or WV-CU161, keep pressing the Right and Left switches and the numeric button 5 simultaneously for 2 seconds or more.)



**(7) To Close the SPECIAL Menu**

Move the cursor to RET and press the CAM (SET) key.

The setup menu appears on the monitor screen.



## How to Reset to the Factory Preset Parameters

Any of the above settings plus the ALC/MANUAL level control and phase adjustments can be reset to the factory preset parameters by placing the cursor over the desired mode and then press the F2 button of the WV-CU550B. (For the WV-RM70, keep pressing the Right and Left switches simultaneously for 2 seconds or more.)

## ■ RS485 Setup

### ● Initial Camera Communication Parameters

In an RS485 chain the matrix switcher, PC, controllers and cameras should be set to the same protocol and parameters for communication. Confirm the system protocol and parameters prior to setting the communication parameters for the camera.

The initial communication parameters are shown on the RS485 setup menu below. Other than the on-screen-setup parameters, the 4-bit DIP switch may be used to select 2-line (Half Duplex) or 4-line (Full Duplex) communication.

### ● Changing the Camera Communication Parameters

You can remote control this camera by using a specified extension unit such as a computer with a modem.

1. Display the SET UP MENU. Move the cursor to RS485 SET UP and press the CAM (SET) key. RS485 SET UP menu appears on the monitor.
2. Move the cursor to the item and select the parameter by moving the joystick to the right or left.

RS485 Setup menu

** RS485 SET UP **	
UNIT NUMBER	1
SUB ADDRESS	----
BAUD RATE	19200
DATA BIT	8
PARITY CHECK	NONE
STOP BIT	1
XON/XOFF	NOT USE
WAIT TIME	OFF
ALARM DATA	---
DELAY TIME	---
RET	

#### Unit Number (UNIT NUMBER)

Displays the unit number set by the DIP switch. If the switch is set to 1-96, select a number by moving the joystick to the right or left. In an RS485 chain each unit must have a unique number.

Default: 1. See INSTALLATION for DIP switch setting.

#### Sub Address (SUB ADDRESS)

Do not set.

#### Baud Rate (BAUD RATE)

Specifies the transmission speed (2 400, 4 800, 9 600, 19 200 bit per second) for the RS485 communication. The factory setting is 19 200.

#### Data Bit (DATA BIT)

Specifies the number of data bits (7 or 8 bits) for the RS485 communication. The factory setting is 8.

#### Parity Check (PARITY CHECK)

Specifies the parity check mode (NONE, ODD, EVEN). The factory setting is NONE.

#### Stop Bit (STOP BIT)

Specifies the number of stop bits (1 or 2 bits). The factory setting is 1.

**X ON/X OFF (X ON/X OFF)**

Specifies whether to apply flow control or not (NOT USE, USE). The factory setting is NOT USE.

**Wait Time (WAIT TIME)**

Specifies the time to wait until retrying after confirming that no data is received from the controller.

(OFF: no retry, 100, 200, 400, 1 000 ms).

The factory setting is OFF.

**Delay Time (DELAY TIME)**

Specifies the time to transmit the acknowledge request when communicating on a 2-line connection.

[----, 100 ms] Default: ---- (no set).

This menu appears only when a 2-line communication is used. Make sure to be 100 ms when connecting the camera with the WJ-FS616 Video Multiplexer or Matrix Switcher WJ-SX350 in a 2-line communication system.

The settings become effective with the closing of the SET UP MENU.

**Note:** Set the same parameters for the cameras, controllers and personal computers in an RS485 chain.



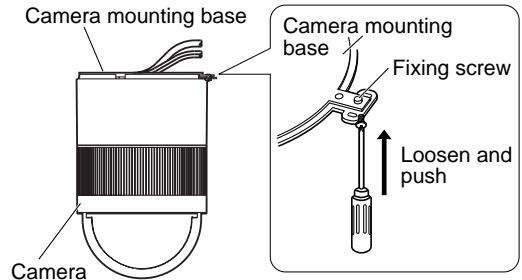
# INSTALLATION

## Precautions

- The following steps of installation and connection should be taken by qualified service personnel or system installers and should conform to all local codes.
- Make sure to switch the camera off before installation and connection.
- Do not install the camera near the air outlet of an air conditioner.

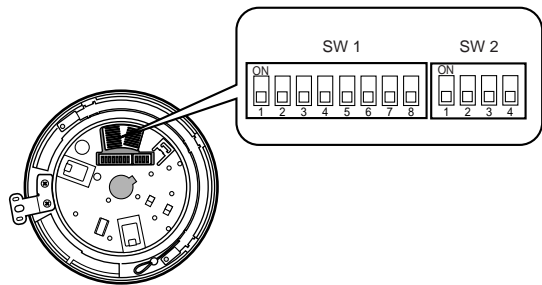
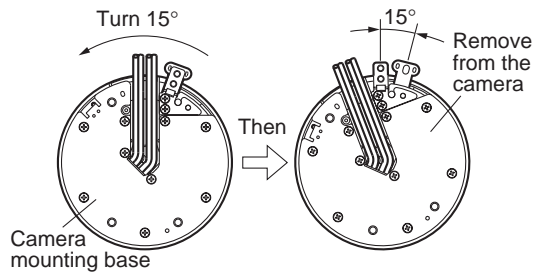
## 1. Disassembling the Camera

- (1) Loosen the fixing screw to separate the camera mounting base and the camera. Push up the screwdriver once before removing the screw.
- (2) Turn the camera mounting base approximately 15 degrees counterclockwise and remove the base from the camera.



## 2. Setting the Switches

There are two DIP switches on the camera: an 8-bit switch and a 4-bit switch. The 8-bit DIP switch is used in both ways to return to the factory default settings and to specify the unit number. The 4-bit DIP switch selects termination ON/OFF and half/full duplex selection for RS485 communications. Switch settings are read in to the camera when the power is turned on. Make sure to turn it off, then turn it back on after changing the switch settings. Switch positions and functions are shown below.



### RS485 Parameter Setup

The selected protocol, communication parameters, and set unit numbers are read into the camera when power is switched on.

1. Switch off the camera.
2. Set the switch according to the function shown in the table.
3. Switch on the camera to read in the changed switch settings.
4. Switch off the camera.
5. Set the unit number with the DIP switch (see next page).
6. Switch on the camera to read in the changed switch settings.

**Note:** The changed communication parameters are displayed on the RS485 SETUP menu after the camera has been switched on.

Switch position	Returns to the factory default settings.

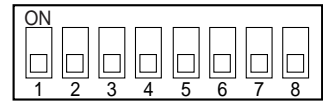
Switch position	Parameter selection			
	Baud rate	Data bit	Parity check	Stop bit
	19 200	8	None	1
	9 600	8	None	1
	4 800	8	None	1

## Unit Number

Switch 1, an 8-bit DIP switch, specifies unit number or returns to the factory default settings for Panasonic's protocol.

When the switch position corresponding to the unit number 1-96\* is selected, setting should be made on the RS485 SET UP menu (see page 40).

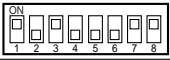

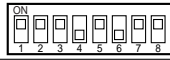
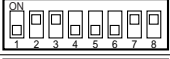
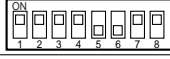
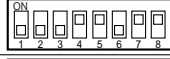
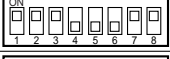

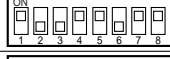
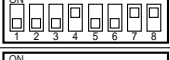
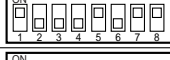
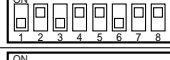


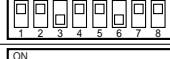









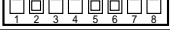
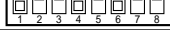
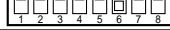
SW 1



## For Panasonic's Protocol

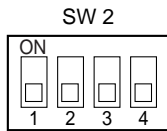
Switch position	Unit number	Switch position	Unit number	Switch position	Unit number
	1-96*		23		46
	1		24		47
	2		25		48
	3		26		49
	4		27		50
	5		28		51
	6		29		52
	7		30		53
	8		31		54
	9		32		55
	10		33		56
	11		34		57
	12		35		58
	13		36		59
	14		37		60
	15		38		61
	16		39		62
	17		40		63
	18		41		64
	19		42		65
	20		43		66
	21		44		67
	22		45		68

(to be continued)

Switch position	Unit number	Switch position	Unit number	Switch position	Unit number
	69		78		87
	70		79		88
	71		80		89
	72		81		90
	73		82		91
	74		83		92
	75		84		93
	76		85		94
	77		86		95

### RS485 Setting

The 4-bit DIP switch in used for RS485 termination.



	BP 1	Function
Switch position	ON	Termination ON
	OFF	Termination OFF *

	BP 2	BP 3	BP 4	Function
Switch position	ON	ON	ON	Half duplex (2 line)
	OFF	OFF	OFF	Full duplex (4 line) *

#### Notes:

- Defaults are marked with \*.
- BP stands for Bit Position.
- Daisy chain connection is not available for Full Duplex. (Only for Panasonic's system controllers)

### 3. Assemble the Camera

Reverse the disassembly procedure. Take care not to cut any cables.

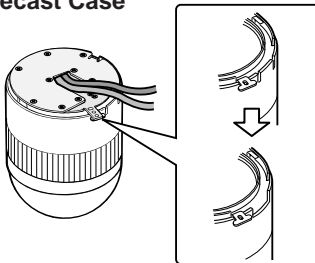
#### Precaution

Be sure to select a ceiling board strong enough to support 4 times the total weight of the camera.

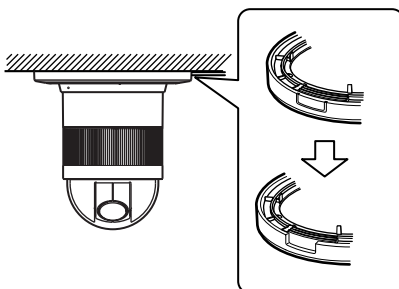
#### a. Sideway Cable Exit

Prepare a cutout in the diecast case and decoration cover as shown in the following figures.

##### Cutout in Diecast Case



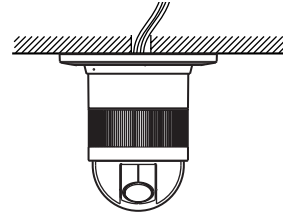
##### Cutout in Decoration Cover



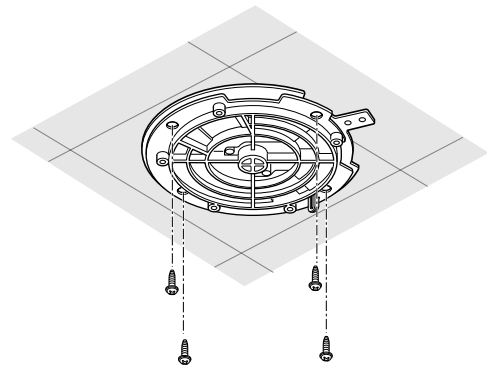
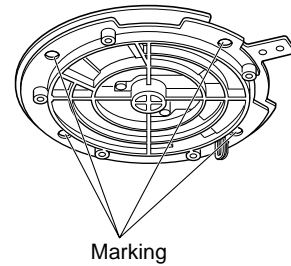
**Note:** Remove sharp edges to protect the cables.

#### b. Top Cable Exit

Prepare a hole in the ceiling board to run the cables.

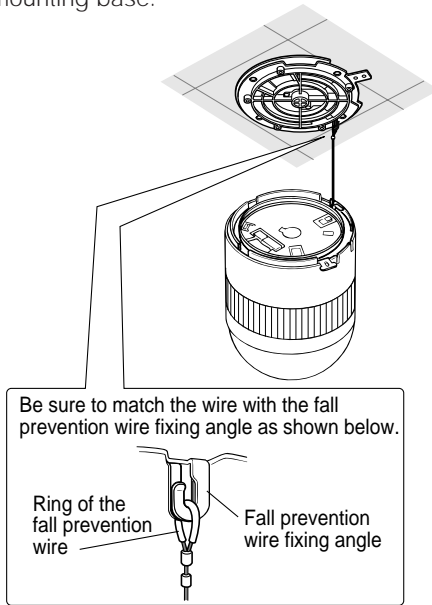


1. Mark the mounting holes on the ceiling, using the removed camera mounting base as a template.



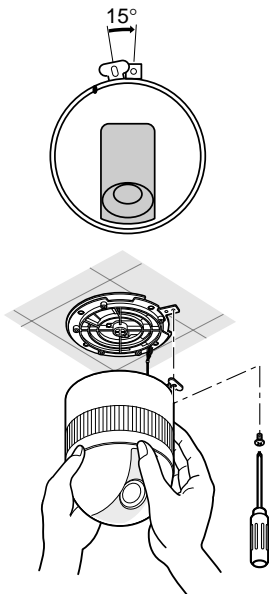
2. Fix the camera mounting base to the ceiling with four screws (not provided, M4).

- Hook the fall prevention wire on the camera mounting base.



**Cautions:**

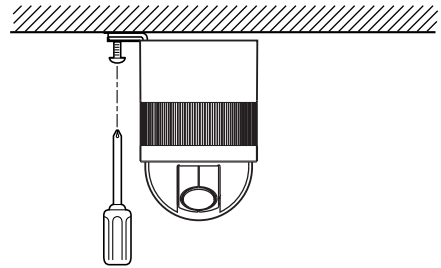
- Use the supplied dust protection sheet if the camera mounting base is liable to be exposed to a dusty atmosphere. Remove the cover from the dust protection sheet, then stick the sheet on the camera mounting base.
  - Remove the sheet before mounting the camera on the base.
  - While the camera is separated from the base, keep the camera in the supplied polyethylene sack.
- Mount the camera on the camera mounting base and rotate the camera clockwise.



- Tighten the fixing screw M3 (provided).

**Notes:**

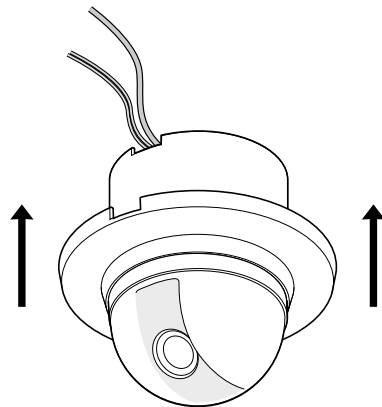
- Tighten the camera fixing screw with a screwdriver.
- Follow the instructions given here to ensure that the camera and camera mounting base are installed safely.
- When removing the camera from the camera mounting base, loosen and press up the camera fixing screw (M3) by using a screwdriver.



- Fix the decoration cover to the camera mounting base.

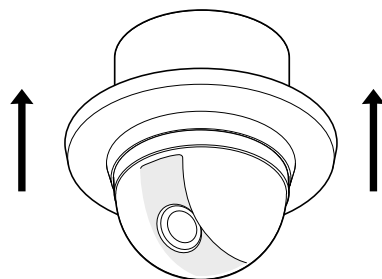
**a. Sideway Cable Exit**

Pass the cables through the cutout made in the diecast case and decoration cover.



**b. Top Cable Exit**

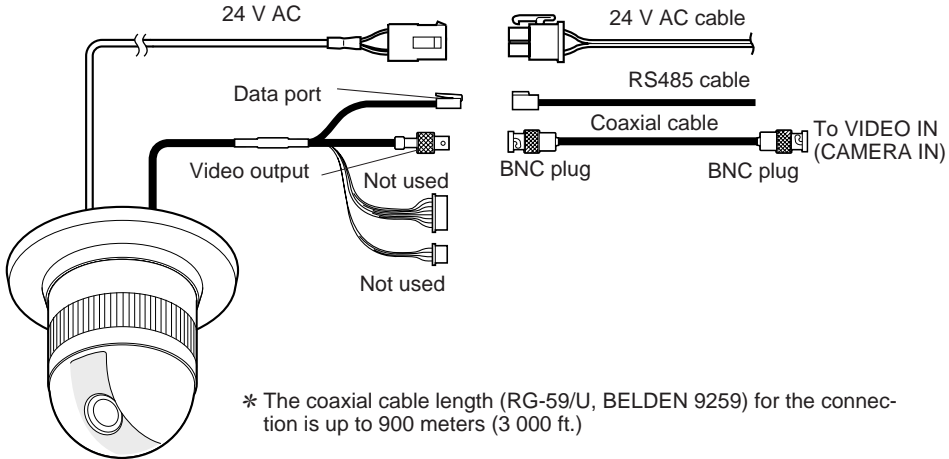
Push the decoration cover against the camera mounting base.



# CONNECTIONS

## Precautions

- The following connections should be made by qualified service personnel or system installers in accordance with all local codes.
- See the reverse side of the cover page for mains lead connection.



**Note:** When powered up, the unit performs a self-check (including one panning, tilting, zooming and focusing operation).

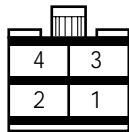
## • 24 V AC Power Supply Connection

### Recommended wire gauge sizes for 24 V AC line

Copper wire size (AWG)	#24 (0.22mm <sup>2</sup> )	#22 (0.33mm <sup>2</sup> )	#20 (0.52mm <sup>2</sup> )	#18 (0.83mm <sup>2</sup> )
Length of cable (approx.) (m)	20	30	45	75
(ft)	65	100	160	260

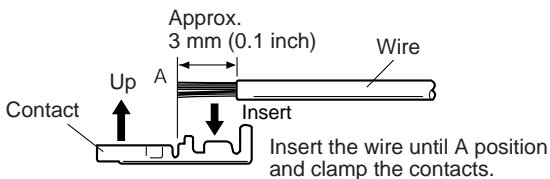
### Accessory Connector Information

Pin no.	Power source
1	24 V AC LIVE
2	24 V AC NEUTRAL
3	Ground
4	Not use

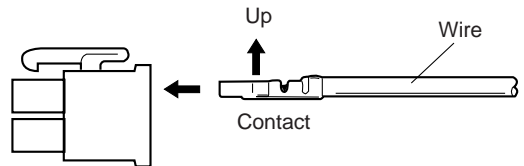


### How to Assemble the Cable with the Accessory Connector

Strip back the cable jacket approx. 3 mm (0.1 inch) and separate the individual conductors.



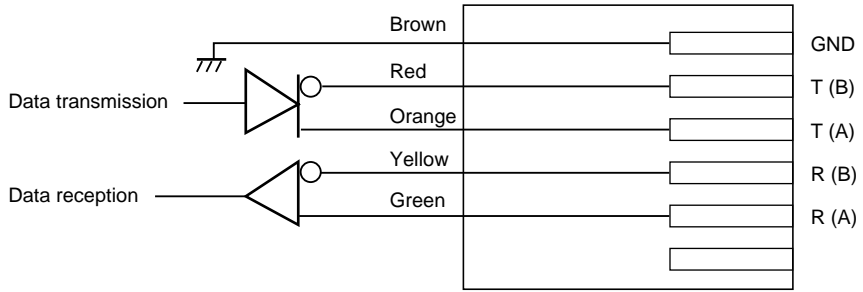
Prepare the individual conductors for clamping. Use MOLEX band tool part number 57027-5000 (for UL-Style Cable UL1015) or 57026-5000 (for UL-Style UL1007) for clamping the contacts. After clamping the contacts, push them into the proper holes in the accessory connector of this camera until they snap in place.



## CAUTIONS

- Shrinking the cable-entry seal is a one-time procedure. Do not shrink the cable-entry seal until it has been ascertained that the unit is functioning.
- CONNECT THIS TO 24 V AC CLASS 2 POWER SUPPLY ONLY.

• **RS485 Connection**

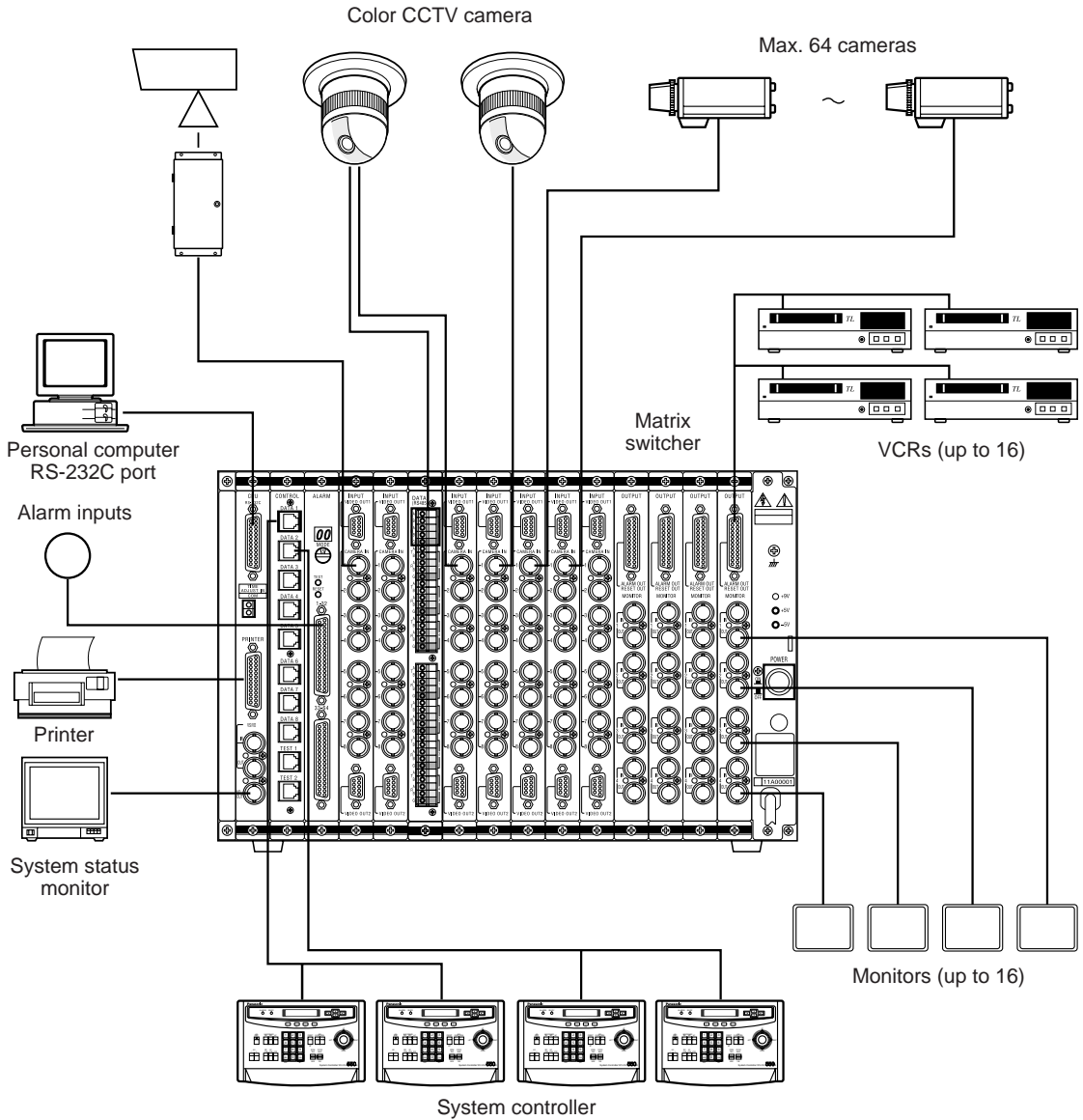


**Note:**

Use the cable that is described below for RS485 site communication.

- Shielded, twisted pair cable
- Low impedance
- Wire gauge size is thicker than AWG #22 (0.33 mm<sup>2</sup>).

# SYSTEM CONNECTIONS

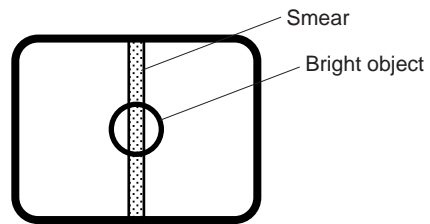


**Note:** When any peripheral is turned off and turned on again, the camera is also turned off and turned back on.



# PREVENTION OF BLOOMING AND SMEAR

When the camera is aimed at a bright light, such as a spotlight, 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.



## SPECIFICATIONS

Effective pixels	768 (H) x 494 (V)	
Scanning area	3.65 mm (H) x 2.71 mm (V), 1/4"	
Synchronization	internal/line-lock / multiplexed vertical drive (VD2)	
Horizontal scanning frequency	15.724 kHz	
Vertical scanning frequency	59.94 Hz	
Video output	1.0 V[p-p] NTSC composite/75 Ω	
Horizontal resolution	more than 480 lines at center (C/L)	
Vertical resolution	more than 350 lines at center	
Signal-to-noise ratio	50 dB (AGC OFF, weight on)	
Minimum illumination	2.0 lx (0.2 foot-candle) (AGC HIGH)	
Zoom speed	approx. 4.5 s (TELE/WIDE) in manual mode	
Focus speed	approx. 6.0 s (FAR/NEAR) in manual mode	
Iris	automatic (open/close is possible)/manual	
Maximum aperture ratio	1 : 1.6 (WIDE) - 3.0 (TELE)	
Focal length	3.78 - 67.1 mm (17.8X)	
Angular field of view	H	3.2° - 51.7°
	V	2.4° - 39.9°
Electronic shutter	1/60 (OFF), 1/100, 1/250, 1/500, 1/1 000, 1/2 000, 1/4 000, 1/10 000 s	
AGC	ON (LOW)/ON (MID)/ON (HIGH)/OFF	
BLC	selectable ON/OFF (SETUP MENU)	
Zoom ratio	x 18 +digital zoom x2	
Iris range	F1.6 - 22, CLOSE	

Power source	24 V AC, 60 Hz
Power consumption	14 W
Ambient operating temperature	-10°C - +50°C (14°F - 122°F)
Dimensions	120 (D) x 191 (H) mm (4-3/4" (D) x 7-1/2" (H))
Weight	approx. 2 kg (4.4 lbs)

Auto focus	MANUAL/AUTO
Auto mode	OFF/SEQ/SORT/AUTO PAN/PATROL
Auto pan key	SEQ/SORT/AUTO PAN/PATROL PLAY
Camera ID	preset ID, camera ID: up to 16 characters
PATROL	LEARN/PLAY/STOP, up to 30 seconds
Cleaning	ON/OFF

Panning range	360° endless
Panning angle setting	possible (in auto-pan mode)
Panning mode	manual/sequential position/sort position/auto pan
Panning speed	manual : approx. 0.1°/s - 120°/s 8-steps/64-steps sequence position : maximum approx. 300°/s
Tilting range	0° - 90°
Tilting mode	manual/sequential position/sort position
Tilting speed	manual : approx. 0.1°/s - 120°/s. 8-steps/64-steps sequential position : maximum approx. 300°/s
Controls	pan/tilt, lens, 32 preset positions, home position

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

## ACCESSORIES

Decoration cover ..... 1 pc.  
Connector for 24 V AC ..... 1 pc.

## OPTIONAL ACCESSORIES

Dome cover (approx. 60 % smoked type) ..... WV-CS2S  
Dome cover (approx. 50 % smoked type) ..... WV-CS2SH  
Dome cover (approx. 70 % metal type) ..... WV-CS2M

# APPENDIX

## Shortcuts

Shortcut operations are available to controllers having the CAM FUNCTION key. Pressing numeric key(s) for one digit up to three digits then CAM FUNCTION key implements the respective functions as follows. The CAM FUNCTION key is abbreviated to [CAM FUNC] here.

Function	Key	Function	Key
Selecting a PRESET position	From #1 to #32	RESTART	
#1	[1] + [CAM FUNC]	Begin	[1] + [0] + [0] + [CAM FUNC]
#10	[1] + [0] + [CAM FUNC]	Memorize PRESET	From #1 to #32**
#32	[3] + [2] + [CAM FUNC]	Position #1	[1] + [0] + [1] + [CAM FUNC]
AUTO PAN		Position #10	[1] + [1] + [0] + [CAM FUNC]
ON	[6] + [5] + [CAM FUNC]	Position #32	[1] + [3] + [2] + [CAM FUNC]
OFF	[6] + [6] + [CAM FUNC]	PATROL	
Speed Up	[6] + [7] + [CAM FUNC]	PLAY	[1] + [6] + [5] + [CAM FUNC]
Speed Down	[6] + [8] + [CAM FUNC]	STOP	[1] + [6] + [6] + [CAM FUNC]
Setting Start Point	[6] + [9] + [CAM FUNC]	LEARN (Start)	[1] + [6] + [7] + [CAM FUNC]
Setting End Point	[7] + [0] + [CAM FUNC]	IRIS	
Setting PAN Reverse	[7] + [4] + [CAM FUNC]	Open	[1] + [6] + [9] + [CAM FUNC]
AUTO MODE		Close	[1] + [7] + [0] + [CAM FUNC]
MODE Off	[7] + [1] + [CAM FUNC]	EL-SHUTTER	
SEQ On	[7] + [2] + [CAM FUNC]	On	[1] + [7] + [1] + [CAM FUNC]
SORT On	[7] + [3] + [CAM FUNC]	Off	[1] + [7] + [2] + [CAM FUNC]
ENDLESS PAN		Speed Up	[1] + [7] + [3] + [CAM FUNC]
On	[7] + [6] + [CAM FUNC]	Speed Down	[1] + [7] + [4] + [CAM FUNC]
Off	[7] + [7] + [CAM FUNC]	AGC	
BLC		On	[1] + [7] + [5] + [CAM FUNC]
On	[8] + [4] + [CAM FUNC]	Off	[1] + [7] + [6] + [CAM FUNC]
Off	[8] + [5] + [CAM FUNC]	LL SYNC phase	
AUTO FOCUS		INC	[1] + [8] + [5] + [CAM FUNC]
AUTO	[8] + [6] + [CAM FUNC]	DEC	[1] + [8] + [6] + [CAM FUNC]
MANUAL	[8] + [7] + [CAM FUNC]	PAN	
AF On (Activate)	[8] + [8] + [CAM FUNC]	180° turn	[1] + [8] + [7] + [CAM FUNC]
HOME POSITION		CLEANING	
Move to HOME	[8] + [9] + [CAM FUNC]	On	[1] + [8] + [8] + [CAM FUNC]
CAMERA ID		Off	[1] + [8] + [9] + [CAM FUNC]
On	[9] + [3] + [CAM FUNC]		
Off	[9] + [4] + [CAM FUNC]		
EL-ZOOM			
On	[9] + [8] + [CAM FUNC]		
Off	[9] + [9] + [CAM FUNC]		

## Notes:

- Shortcut operations marked with \* will change parameter settings only. Actual operation takes place when the conditions for the changed settings are met.
- Shortcuts may be ignored while PAN/TILT, ZOOM or FOCUS is in operation.
- PATROL LEARN saves only [1] through [6]+[4], [1]+[6]+[9] and [1]+[7]+[0] in the memory.
- PATROL PLAY stops when a shortcut other than [1]+[6]+[9] or [1]+[7]+[0] is entered.

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