

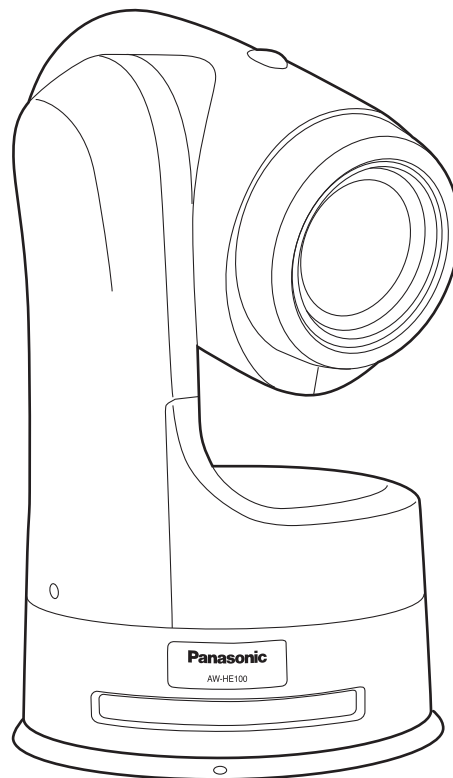
Panasonic[®]

Preliminary - March 2008

Operating Instructions

HD Integrated Camera



Model No. **AW-HE100N**



Installation Instructions provided separately

Before operating this product, please read the instructions carefully and save this manual for future use.

Safety precautions

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



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.



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

WARNING:

■ THIS APPARATUS MUST BE EARTHED

To ensure safe operation, the three-pin plug must be inserted only into a standard three-pin power point which is effectively earthed through the normal household wiring.

Extension cords used with the apparatus must have three cores and be correctly wired to provide connection to the earth. Wrongly wired extension cords are a major cause of fatalities.

The fact that the apparatus operates satisfactorily does not imply that the power point is earthed or that the installation is completely safe. For your safety, if you are in any doubt about the effective earthing of the power point, please consult a qualified electrician.

For CANADA

This class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

WARNING:

- TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.
- THE APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.

WARNING:

TO PREVENT INJURY, THIS APPARATUS MUST BE SECURELY ATTACHED TO THE FLOOR/WALL IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS.

CAUTION:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

FCC 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.

Warning:

To assure continued FCC emission limit compliance, the user must use only shielded interface cables when connecting to external units. Also, any unauthorized changes or modifications to this equipment could void the user's authority to operate it.

CAUTION:

In order to maintain adequate ventilation, do not install or place this unit in a bookcase, built-in cabinet or any other confined space. To prevent risk of electric shock or fire hazard due to overheating, ensure that curtains and any other materials do not obstruct the ventilation.

The socket outlet shall be installed near the equipment and easily accessible or the mains plug or an appliance coupler shall remain readily operable.


A warning that an apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.

 indicates safety information.

Safety precautions

IMPORTANT SAFETY INSTRUCTIONS

Read these operating instructions carefully before using the unit. Follow the safety instructions on the unit and the applicable safety instructions listed below. Keep these operating instructions handy for future reference.

- 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 install 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 point 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-over. 
- 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 have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

 indicates safety information.

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Caution

- The manual of this HD integrated camera (hereafter, “the unit”) is divided into two manuals: one is the Operating Instructions (this manual), and the other is the Installation Instructions.
Before installing the unit, be sure to read the Installation Instructions to ensure that the unit is installed correctly.
- For the purposes of this manual, the model number AW-HE100N is referred to as the “AW-HE100”.
Similarly, the model number AW-RP655N is referred as the “AW-RP655”, the AW-RP555N as the “AW-RP555”, the AW-RP400N as the “AW-RP400”, the AW-IF400N as the “AW-IF400” and the AW-CB400N as the “AW-CB400”.

Accessories

Check that the following accessories are present and accounted for.

Installation Instructions	1	Mounting screws (with flat washers, spring washers)	
Operating Instructions (CD-ROM)	1	M4 × 8 mm	4
Wireless remote control	1	Cable cover screws (flat head)	
This uses two size “AA” manganese dry batteries. (obtained separately)		M3 × 6 mm	2
Power cables		Screw concealment sheet	2
(6.6 ft. [2 m], for Japan, for North America)	1 pc each	Rubber feet	4
Installation surface bracket (for floor or ceiling)	1	Rubber foot screws (black)	
Cable cover	1	M4 × 6 mm	4

Overview

This unit is a multi-format camera that integrates a pan-tilt head and a zoom lens.

By integrating the camera, lens and pan-tilt head, it has now become easier to install the unit than before.

The unit can also be operated by remote control using the wireless remote control provided as an accessory.

Characteristics

Multiple number of formats supported

- Switching between the 1080i, 720p and 480i formats can be accomplished using a menu.
Transition from an SD format system to an HD format system can also be carried out smoothly.
- With the SD format, either 16:9 or 4:3 can be selected as the aspect ratio.

Three 1/3" CCD imaging sensors and a high-performance 13× zoom lens featured

- The unit incorporates a 14-bit analog-to-digital (A/D) converter and a 19-bit processing DSP (digital signal processor).
High-quality pictures are obtained by video processing in many different kinds of ways.
- The unit comes with wide progressive CCD imaging sensors which have been newly developed.
These 1/3" CCD sensors have a large light-sensing surface area so that pictures with a high quality can be obtained under a variety of different shooting conditions.
- The large-diameter lens that was developed for shooting HD pictures has a wide angle of 32.5 mm (35 mm equivalent) at the WIDE setting. Clear pictures are obtained under a wide range of applications.

Easy operation of unit enabled by its integration with a high-performance pan-tilt head unit

- Operations at the high speed of 60°/s
- Wide rotational angles with a panning range of more than $\pm 175^\circ$ and a tilting range from -40° to $+210^\circ$ or more
- Standstill accuracy: Accurate response of max. 3' (0.05°)
- Quiet operation with noise levels of NC30 (for operations at 30°/s) and NC35 (for operations at 60°/s)
- Storage of up to 100 positions in the preset memory
(The number of preset memory settings differs depending on the controller that is used with the unit.)

High degree of compatibility with Panasonic's currently available controllers, enabling a flexible system to be put together

- Up to five units and devices can be operated using a controller (AW-RP655, AW-RP555 or AW-RP400 + AW-IF400 + AW-CB400) currently available from Panasonic. (It may be necessary to upgrade the version of the controller in order to support the unit. The maximum distances between the units and controller is 3280 ft. (1000 meters). Use of an external device or some other means must be provided separately in order to extend the video signal connections.)
The unit can also be used together with the cameras and pan-tilt head unit systems currently available from Panasonic so that an existing system can be used to advantage to put together a system that is even more flexible.

Integrated pan-tilt head unit, camera and lens to facilitate installation

- Integrating the pan-tilt head unit, camera and lens has significantly reduced the processes involving in installation.

Easy-to-operate wireless remote control provided as a standard accessory

- A wireless remote control capable of operating up to four units is provided as a standard accessory.
It can easily be used to set the various functions or switch between them while viewing the menu screens.

Installation precautions

In addition to heeding the points presented in the “Safety precautions”, observe the following precautions as well.

Concerning the installation location

After conferring in detail with your dealer, choose a sturdy ceiling or other surface, and install the unit.

- Install the unit on a ceiling that is strong enough (such as a concrete ceiling).
If the unit is to be installed on a ceiling which is not strong enough, reinforce the ceiling sufficiently first.

Do not install or use the unit in the following kinds of locations.

- On walls (where the unit would be installed sideways)
- In locations (including places such as under the eaves of a building) where the unit would be directly exposed to rain or water
- In locations such as kitchens where there are high concentrations of steam and grease
- In outdoor locations or hot places where the temperature will exceed 104 °F (40 °C)
- In cold locations where the temperature will drop below 32 °F (0 °C)
- In locations where the humidity will exceed 85 %
- In locations where chemicals are used such as near swimming pools
- At sea, in coastal areas or in locations where corrosive gases are emitted
- In locations where the unit would be subject to a great deal of vibration such as on board a vehicle or ship (this unit is not designed to be used in vehicles)
- In locations where the temperature is subject to sudden changes such as near the air outlet of an air conditioner or near a door which allows the outside air to come in

What to avoid to ensure that the unit will perform stably over a prolonged period

- Using the unit for a prolonged period in a location with high temperature and humidity levels will cause its parts to deteriorate and shorten its service life.
- Do not expose the unit directly to the heat given off in the installation location or heat from a heater or other such appliance.

The accessory parts provided with the unit must be used without fail to install the unit.

Be absolutely sure to use the mounting brackets and mounting screws provided with the unit to install the unit.

Separately obtain the screws used to mount the installation surface bracket.

This unit does not come with the screws used to mount the installation surface bracket.

Obtain the hexagon head bolts (M6), spring washers, flat washers and, if necessary, nuts.

Tightening the installation screws

- Tighten up the screws and bolts to an extent that is commensurate with the materials and structures in the installation location.
- After tightening up the screws and bolts, visually inspect for any ricketiness or play, and check that the unit is secured properly in place.
- Use the specified tools and tighten the screws firmly.

When the unit is no longer going to be used, do not leave it lying around, but be absolutely sure to dispose of it properly.

When installing or disposing of the unit, be absolutely sure to hold it by its pedestal area.

- An accident may occur if its rotating part is held or rotated by hand.

Do not attach a filter, hood, extender or other parts to the unit.

Be absolutely sure to use size “AA” manganese dry batteries for the wireless remote control.

- Do not use any other kind of batteries.

Install the unit near the main power outlet, and position it in such a way that its power plug can be plugged into and unplugged from the outlet easily.

Do not connect a regular LAN line or telephone line to the CONTROLLER connector on the unit.

- Doing so may cause malfunctioning.

Operating precautions

Shoot under the proper lighting conditions.

- To produce pictures with eye-pleasing colors, shoot under the proper lighting conditions.
- The pictures may not appear with their proper colors when shooting under fluorescent lights. Select the proper lighting as required.

What happens with high-brightness subjects

- Shooting very bright objects may give rise to the smear effect, which is a phenomenon inherent to CCD cameras.
Smear: This is a type of distortion characterized by bright vertical stripes appearing on very bright or shiny subjects, which include light bulbs or incandescent lamps.

When using the automatic functions

- When using the ATW (auto tracking white adjustment) function under fluorescent lights, the white balance may vary.
- In some situations, it may be hard to focus at the auto setting. In cases like this, select the manual setting, and focus manually.
- The appropriate brightness may not be obtained when shooting bright objects using the auto settings for the gain and iris. In cases like this, set the shutter speed to manual, and adjust.

Zooming and focusing

When the focus is set to manual, the subject may go out of focus during zooming. Therefore, the unit comes with a function which compensates for this. (Focus compensation during zooming function)

This function was set to ON at the factory.

If the function has been set to OFF, either adjust the focus, as required, after zooming or set the focus to auto.

Aspect ratio of the composite video signals

- When 1080i or 720p has been selected as the video format, the aspect ratio of the composite video signals is fixed at 16:9 (squeeze).

Concerning the zoom position when the power is turned on

When the unit's power is turned on, the zoom, focus and iris return to the positions they occupied immediately before the power was turned off. (This happens for the focus and iris when they were set manually.)

However, this position may not be restored if, for instance, the power cable was disconnected during operation.

The unit comes with safe modes.

- The safe modes are functions designed to protect people and property from injury and the pan-tilt head unit from damage.
For further details, refer to "Safe modes" (page 55).

Turn off the power before connecting or disconnecting the cables.

- Always be sure to turn off the power before connecting or disconnecting the cables.

Handle the unit carefully.

- Do not drop the unit or subject it to strong impact or vibration. Doing so may cause the unit to malfunction.

When the unit is not in use

- Turn off the unit's power when it is not in use. When the unit is no longer going to be used, do not leave it lying around, but be absolutely sure to dispose of it properly.

Do not touch the optical system parts.

- The optical system parts are the very heart of the camera. Under no circumstances must they be touched. In the unlikely event that they have become dusty, remove the dust by using a camera blower or by wiping them gently with a lens cleaning paper.

Refrain from attaching a filter, hood, extender or other parts to the unit.

- Do not mount a filter, hood, extender or other parts on the unit.

Hold the pedestal when carrying the unit around.

- Do not hold the unit by its camera part or pan-tilt head. Doing so may cause the unit to malfunction.

Do not turn the rotating parts by hand.

- Turning the rotating parts by hand may cause the unit to malfunction.

Use the unit in an environment with minimal moisture and dust.

- Avoid using the unit in an environment with high concentration of moisture or dust since these conditions will damage the internal parts.

Operating temperature range

- Avoid using the unit in cold locations where the temperature drops below 32 °F (0 °C) or hot locations where the temperature rises above 104 °F (+40 °C) since these temperatures downgrade the picture quality and adversely affect the internal parts.

Disposal of the unit

- When the unit has reached the end of its service life and is to be disposed of, ask a qualified contractor to dispose of the unit properly in order to protect the environment.

Concerning the controller

Controller supported

- AW-RP655 ● AW-RP555
- AW-RP400 + AW-IF400 + AW-CB400 (System which combines the AW-RP400, AW-IF400 and AW-CB400)

※ It may be necessary to upgrade the version of the controller in order to support the unit.
Consult with your dealer.

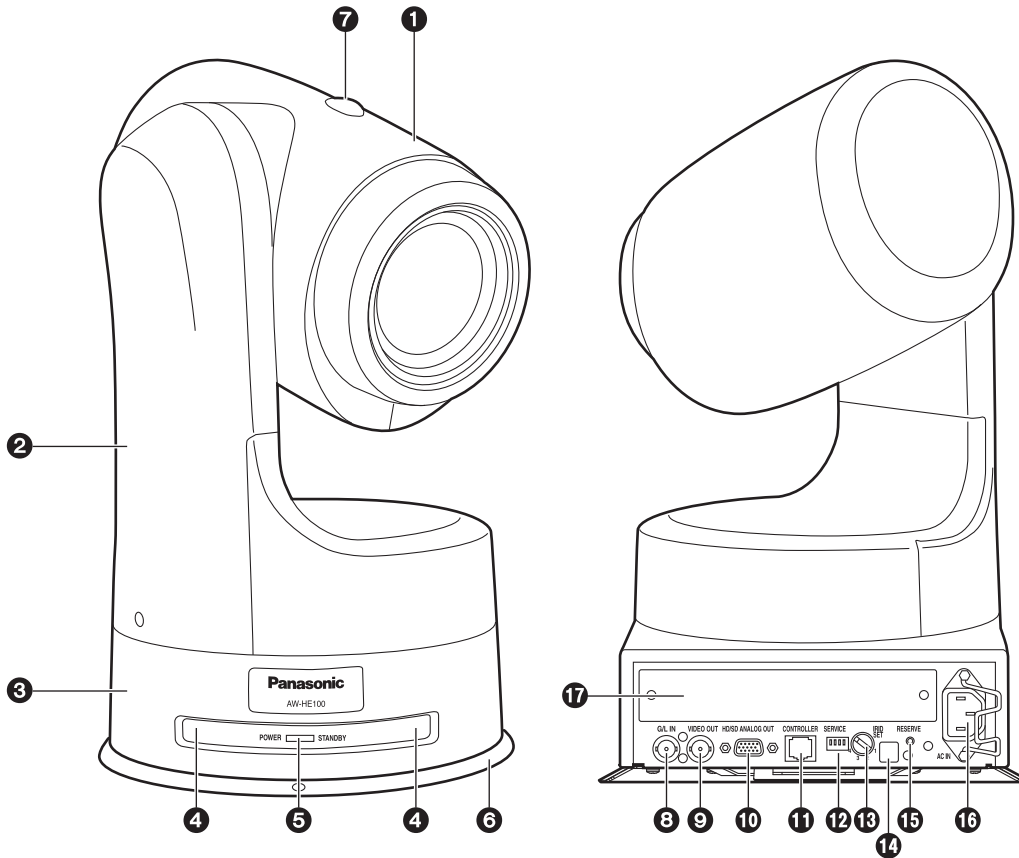
■ When connecting the AW-RP655

- The camera setting menus of the AW-RP655 cannot be used.
→ Use the camera setting menus of the unit instead.

■ When connecting the AW-RP400 + AW-IF400 + AW-CB400

- The AW-CB400 cannot be connected directly to this unit.
→ The AW-CB400 must be connected together with the AW-RP400 and AW-IF400 in combination.
- The camera setting menus of the AW-CB400 cannot be used.
→ Use the camera setting menus of the unit instead.
- R/B PED dials cannot be used.
- The tracing memory function cannot be used.
- TILT RANGE cannot be set.
- MEMORY LENGTH cannot be set.
- DIAGONAL MOTION cannot be set to ON or OFF.
- Backlash cannot be compensated.
- When the ON/OFF setting of auto focus (AF) is switched from AW-RP400, use the OPTION SW after allocating the “EXT” function to it.

Parts and their functions



1 Camera unit

This rotates in the up and down direction.

2 Rotary head

This rotates in the horizontal direction.

3 Pedestal

4 Wireless remote control signal light-sensing area (front)

5 Status display lamp

This lights in the following way depending on the status of the unit.

Orange: When the standby status is established

Green: When the power is on

Red: When trouble has occurred in the unit

Green and blinks twice:

When a signal matched by the remote control ID has been received from the accessory wireless remote control while the power is on

Orange and blinks twice:

When a signal which is not matched by the remote control ID has been received from the accessory wireless remote control while the power is on

Parts and their functions

6 Mounting bracket (installed)

7 Tally lamp

This comes on or goes off in response to the control from the controller but only when “On” has been selected as the tally lamp use setting.

8 G/L IN connector

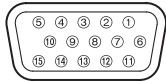
This is the genlock signal input connector. This unit supports the BBS or VBS signal as the genlock signal. Connect it to the G/L OUT connector on the cable compensator (AW-RC400) or other unit.

9 VIDEO OUT connector

This is the output connector for the camera’s composite video signals. Connect it to a monitor or other such device. Use a BNC coaxial cable as the connecting cable.

10 HD/SD ANALOG OUT connector

This is the output connector for the camera’s HD/SD component video signals. Use a D-SUB 15-pin connecting cable (VGA cable) or D-SUB 15-pin and BNC coaxial connector conversion cable as the connecting cable. Use a high-quality cable.



Pin No.	Signal name
1	Pr (In Y/C mode: C)
2	Y (In Y/C mode: VBS)
3	Pb (In Y/C mode: Y)
4 to 15	GND

11 CONTROLLER connector

This is the input connector for the control signals of the camera unit or pan-tilt head unit. Connect it to the [TO PAN/TILT HEAD] connector on the controller.

12 SERVICE switches

These switches are used for maintenance purposes. Keep them all at the “OFF” position.

SERVICE



13 IR ID SET switches

These are used to select the ID of the accessory wireless remote control.

Switches [1] to [4] correspond to the [CAM1] to [CAM4] buttons on the wireless remote control.

14 Wireless remote control signal light-sensing area (rear)

15 RESERVE button

This reserve button is used for maintenance purposes. It is not normally used by the user.

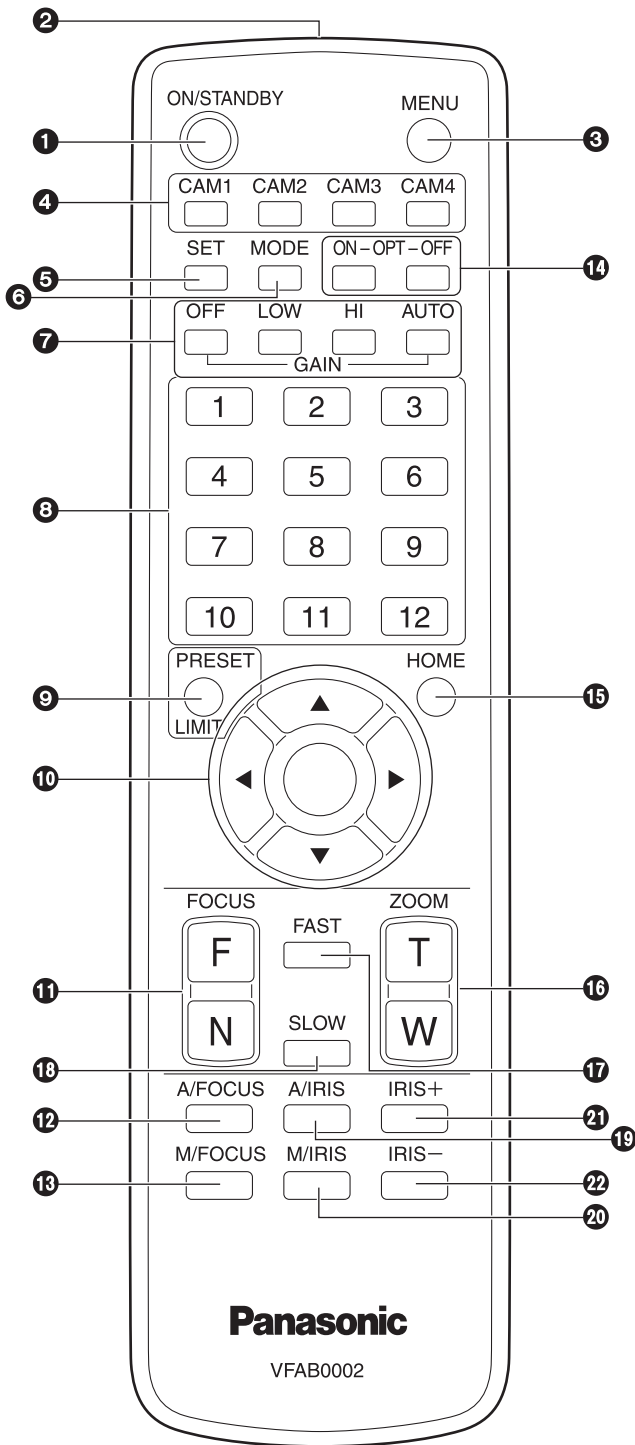
16 AC IN socket

Connect the accessory power cable to this socket.

17 Option slot

Parts and their functions

Wireless remote control



1 ON/STANDBY button

Each time this is pressed for two seconds, operation switches between turning on the unit's power and establishing the standby status.

2 Signal transmission window

3 MENU button

Each time this is pressed for two seconds, operation switches between displaying the unit's menu and exiting the menu.

4 CAM1 to CAM4 buttons

These are used to select the units that are to be operated.

Once a button has been selected, the unit corresponding to the selected button can be operated.

5 SET button

If this button is pressed for two seconds when the AWC A memory or AWC B memory is selected by the white balance adjustment, the black balance and white balance are automatically adjusted and registered in the memory currently selected.

6 MODE button

This is used to select the video signals which are output from the unit.

Each time it is pressed, the signals are switched between the color bar signals and camera video signals.

7 GAIN buttons [OFF] [LOW] [HI] [AUTO]

These are used to set the gain.

The gain increase can be set in three steps using the [OFF], [LOW] and [HI] buttons.

When the [AUTO] button is pressed, the AGC function is activated, and the gain is adjusted automatically depending on the light quantity.

The maximum gain of the AGC function can be set using the menu.

8 Preset memory call buttons [1] to [12]

These are used to call the information on the unit's directions and other settings, which have been registered in the unit's preset memories No.1 to No.12, and reproduce those settings.

Settings in preset memories No.13 and above cannot be called from the wireless remote control.

Parts and their functions

9 PRESET/LIMIT button

This is used to register the settings in the preset memories or set or release the limiters.

When a preset memory call button is pressed while the PRESET/LIMIT button is held down, the information on the unit's current direction and other settings is registered in the call button.

Preset memory call buttons [1] to [12] correspond to the unit's No.1 to No.12 preset memories.

Furthermore, the pan and tilt movement range limits (limiters) are set and released by operating the PRESET/LIMIT button and the pan/tilt buttons ([▲], [▼], [◀] and [▶]). For details, refer to "Setting/releasing the limiters" (page 54).

10 Pan-tilt buttons and menu operation buttons

[▲] [▼] [◀] [▶] [○]

These are used to change the unit's direction.

The unit is tilted in the up/down direction using the [▲] and [▼] buttons and panned in the left/right direction using the [◀] and [▶] buttons.

The [○] button does not work during tilting and panning. When the [▲] or [▼] and [◀] or [▶] buttons are pressed at the same time, the unit moves diagonally.

The buttons are used for menu operations when the unit displays the menus.

The menu items are selected using the [▲] and [▼] buttons, and the values for the menu items are changed using the [◀] and [▶] buttons.

When a selected item has a sub-menu, the sub-menu will be displayed by pressing the [○] button or [▶] button. While the menus are displayed, the [○] and [▶] button have the same functions.

Bear in mind, however, that if the [○] button is pressed when it is possible to change a value, the value will be changed by the button.

11 FOCUS buttons [F] [N]

These are used to adjust the lens focus manually when the manual setting is established for the lens focus. The focus is adjusted in the far using the [F] button and in the near using the [N] button.

12 A/FOCUS button

This is used when automatically adjusting the lens focus.

13 M/FOCUS button

This is used when manually adjusting the lens focus. The FOCUS buttons ([F] and [N]) are used when performing the actual adjustment.

14 OPT buttons [ON] [OFF]

These are used for future expansion of the functions. They are not used at the present time.

15 HOME button

When this is pressed for two seconds, the unit's direction (panning or tilting) returns to the reference position.

16 ZOOM buttons [T] [W]

These are used to adjust the lens zoom.

The zoom is adjusted in the wide-angle using the [W] button and in the telephoto using the [T] button.

17 FAST button

This is used to change the movement speed at which the panning, tilting, zooming and focusing operations are performed to the high speed.

The same applies for the movement speeds of panning and tilting when the information in a preset memory has been called.

18 SLOW button

This is used to change the movement speed at which the panning, tilting, zooming and focusing operations are performed to the low speed.

The same applies for the movement speeds of panning and tilting when the information in a preset memory has been called.

19 A/IRIS button

This establishes the setting for adjusting the lens iris automatically in line with the light quantity.

20 M/IRIS button

This establishes the setting for adjusting the lens iris manually.

The IRIS+ and IRIS- buttons are used when performing the actual adjustment.

21 IRIS+ button

This is used to adjust the lens iris in the opening direction.

22 IRIS- button

This is used to adjust the lens iris in the closing direction.

Notes

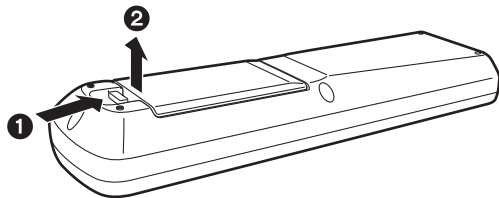
- The iris is automatically changed to the automatic adjustment if the gain is set to the automatic adjustment while the iris is at the manual adjustment setting. If the gain is later returned to the manual adjustment setting, the iris is also returned to its original value.
- The gain is automatically changed back to its previous value if the iris is set to the manual adjustment while the gain is at the automatic adjustment setting.

Concerning the wireless remote control

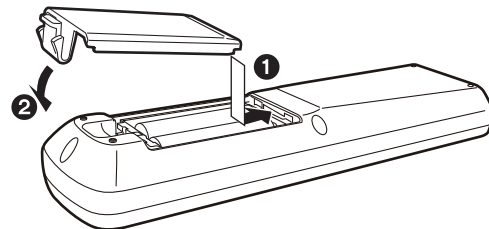
- Operate the wireless remote control from positions less than 32.8 ft. (10 meters) away from the unit.
- **The wireless remote control may not work when it is pointed from certain angles at the unit.**
From a place where the wireless remote control signal light-sensing area (hereafter, "light-sensing area") can be seen, point the signal transmission window of the wireless remote control at the light-sensing area, and operate the buttons.
- **If the unit is installed near fluorescent lights, plasma monitors or other such products or if the unit is exposed to sunlight, the effects of the light may make it impossible for the unit to be operated using the wireless remote control.** Be sure to follow the steps below for installation and use.
 - Take steps to ensure that the light-sensing area will not be exposed to the light from fluorescent lights, plasma monitors or other such products or from the sun.
 - Install the unit away from fluorescent lights, plasma monitors and other such products.
 - Operate the wireless remote control at positions within 9.8 ft. (3 meters) from the unit.
 - Use a controller that has been connected to the unit using a cable (wired connection).
- For about 10 minutes even after the batteries have been removed from the wireless remote control, the selection of the operation to be performed (the [CAM1], [CAM2], [CAM3] or [CAM4] button which was pressed last) will remain stored in the memory. When a longer period of time elapses, however, the selection is reset to the status established when the [CAM1] button was pressed.

Getting the wireless remote control ready

- 1** Remove the battery compartment cover.

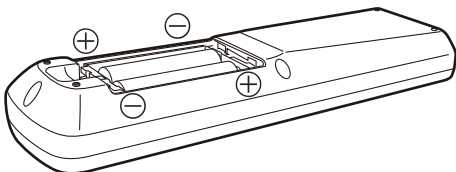


- 3** Put the battery compartment cover back.



- 2** Insert the dry batteries.

Two size "AA" manganese dry batteries (obtained separately) are used. Do not use any other kind of batteries. Check which ends of the batteries are the "+" electrodes and which ends are the "-" electrodes. Load the batteries correctly by inserting the negative end first.



Dispose of batteries that are no longer usable together with other incombustible garbage or in compliance with the local ordinances.

Basic shooting operations

1 Set the subject brightness to the appropriate level.

2 Turn on the power of all the units and devices in the system.

Note

- If the accessory wireless remote control is going to be used, be sure to install the two size “AA” manganese batteries inside.
Do not use any other kind of batteries.
(The batteries are obtained separately.)

3 Select the unit to be operated.

Even when using only one unit, it must still be selected from the wireless remote control or controller.

4 Select the shooting mode.

Select one of the four preset shooting modes, each of which corresponds to a set of circumstances in which the subject will be shot.

Select the mode that satisfies the shooting conditions and suits your preferences.

When continuing to shoot in the same circumstances, there is no need to select another mode.

5 Start shooting.

(After shooting, turn off the power of all the units and devices in the system.)

With the basic operations, it is assumed that the focus, iris and white balance will be adjusted automatically (as per the factory settings).

If the settings have already been changed and the original settings are to be restored, refer to the “What to do when encountering problems in the basic shooting operations” (page 23) and “Shooting mode setting menus” (page 45) in “Setting the menu items”.

How to turn the power on and off

■ Turning the power on

When performing the operations using the accessory wireless remote control

- 1 Set all the power switches of the units and devices connected in the system to ON.**
 - This unit does not have a power switch.
When power is supplied to it, the status display lamp will light up orange.
- 2 Press one of the [CAM1] to [CAM4] buttons on the wireless remote control to select the unit.**
- 3 Press the [ON/STANDBY] button on the wireless remote control for two seconds.**

The power of the unit is turned on, and the initial settings operation is performed.

 - The unit's status display lamp now lights up green.
- 4 If a multiple number of units are going to be used, repeat steps 2 and 3 as required.**

The unit's status display lamp blinks green when a signal matched by the remote control ID has been received, and it blinks orange when a signal that is not matched by the remote control ID has been received.

When performing the operations using the controller

- 1 Set all the power switches of the units and devices connected in the system to ON.**
 - This unit does not have a power switch.
When power is supplied to it, the status display lamp will light up orange.
- 2 Set the [OPERATE] switch on the controller to ON.**

The power of all the cameras connected to the controller (including the unit) is turned on, and initial setup is performed.

 - The unit's status display lamp now lights up green.

It takes about 30 seconds per unit for the initial settings operation to be completed. During this period, the unit cannot be operated.

Before setting the [OPERATE] switch on the controller to ON, be absolutely sure to set all the power switches of the units and devices connected in the system to ON.

For further details, refer to the Operating Instructions of the controller.

How to turn the power on and off

■ Turning the power off

When performing the operations using the accessory wireless remote control

- 1 Press one of the [CAM1] to [CAM4] buttons on the wireless remote control to select the unit.**
- 2 Press the [ON/STANDBY] button on the wireless remote control for two seconds.**

The unit's power is turned off.

 - The unit's status display lamp now lights up orange.
- 3 If a multiple number of units are going to be used, repeat steps 1 and 2 as required.**
- 4 Set all the power switches of the units and devices connected in the system to OFF.**

When performing the operations using the controller

- 1 Set the [OPERATE] switch on the controller to OFF.**

The power of all the cameras (including the unit) connected to the controller is turned off.

 - The unit's status display lamp now lights up orange.
- 2 Set all the power switches of the units and devices connected in the system to OFF.**

For further details, refer to the Operating Instructions of the controller.

Selecting the units

Up to four units can be operated using one accessory wireless remote control.
Up to five units and devices can be operated using one controller.

Select the unit (or units) to be operated from the wireless remote control or controller.
Even when using only one unit, it must still be selected.

When performing the operations using the accessory wireless remote control

Press the [CAM1], [CAM2], [CAM3] or [CAM4] button.

The unit's status display lamp blinks green when a signal matched by the remote control ID has been received, and it blinks orange when a signal that is not matched by the remote control ID has been received.

When performing the operations using the controller

When the AW-RP655 is connected:

Press the [1], [2], [3], [4] or [5] button of [CONTROL/PREVIEW MONITOR OUT SEL].

When the AW-RP555 is connected:

Press the [1], [2], [3], [4] or [5] button of [CONTROL].

When the AW-RP400/AW-CB400 is connected:

Press the [1], [2], [3], [4] or [5] button of [CONTROL SELECT].

- Operations can be performed from both the AW-RP400 and AW-CB400, but depending on the settings, it may be possible to perform the operations using only one of the controllers.

For further details, refer to the Operating Instructions of the controller.

Selecting the shooting modes (scene files)

■Types of shooting modes

This unit has four preset shooting modes, each of which corresponds to a set of circumstances in which the subject will be shot. Select the mode that satisfies the shooting conditions and suits your preferences. The settings can be changed by menu operations.

- The results of the white balance and other adjustments are stored in the memory separately by shooting mode. Be absolutely sure to select the shooting mode before making any adjustments.

Halogen light mode (Halogen)

This mode is suited to shooting indoors at wedding receptions, parties, seminars, event venues, and so on.

Fluorescent light mode (Fluorescent)

This mode is suited to shooting indoors under fluorescent lighting.

Daylight mode (Daylight)

This mode is suited to shooting in daylight conditions.

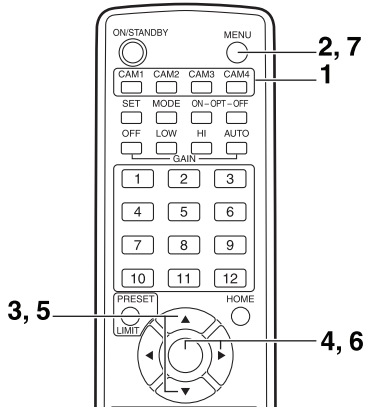
User mode (User)

This is the mode with the detailed setting items. Detailed changes to the setting can also be made.

Selecting the shooting modes (scene files)

How to select the shooting mode

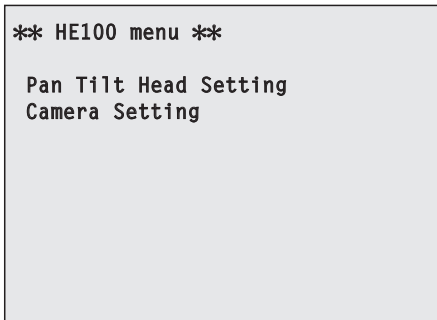
When performing the operations using the accessory wireless remote control



1 Press the [CAM1], [CAM2], [CAM3] or [CAM4] button to select the unit.

2 Press the [MENU] button for two seconds.

The main menu is displayed.

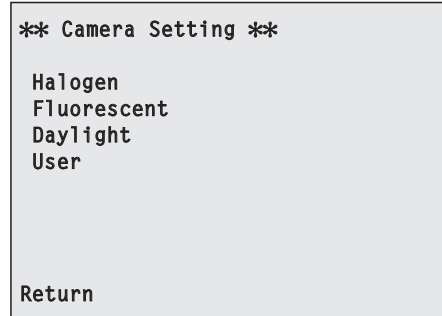


3 Press the [▲] or [▼] button to make “Camera Setting” blink.

Each time the [▲] or [▼] button is pressed, the blinking item changes.

4 Press the [○] or [▶] button.

The “Camera Setting” sub-menu is displayed.



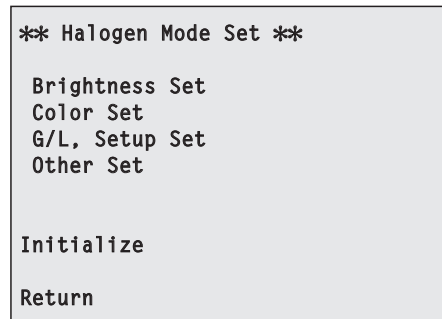
5 Press the [▲] or [▼] button to make the shooting mode to be used blink.

Each time the [▲] or [▼] button is pressed, the blinking item changes.

When “Return” is made to blink and the [○] or [▶] button is pressed, operation returns to the previous menu.

6 Press the [○] or [▶] button.

The unit is now set to the shooting mode that is blinking, and a sub-menu is displayed.



Example: Halogen mode

7 Press the [MENU] button for two seconds.

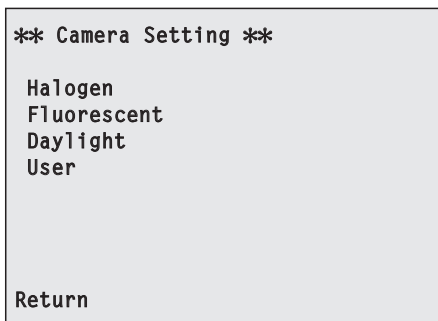
The menu display is exited.

Selecting the shooting modes (scene files)

When performing the operations using the controller

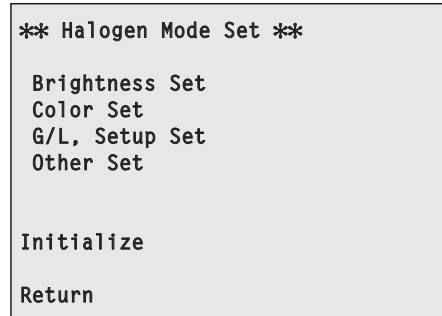
When the AW-RP655 is connected:

- 1 Press the [1], [2], [3], [4] or [5] button of [CONTROL/PREVIEW MONITOR OUT SEL].**
- 2 Press the [MENU] button.**
The display on the LCD panel of the AW-RP655 switches to the menu mode.
- 3 Turn the jog dial (main).**
Display "CAMERA SETTING" on the LCD panel.
- 4 Press the [OK] button.**
Display "OPEN CAMERA MENU? → OK Key" on the LCD panel.
- 5 Press the [OK] button again.**
The main menu is displayed on the monitor.
- 6 Press the jog dial (main) to make "Camera Setting" blink.**
- 7 Turn the jog dial (main) counterclockwise.**
Display the "Camera Setting" sub-menu on the monitor.



- 8 Press the jog dial (main) to make the shooting mode blink.**
Each time the jog dial (main) is pressed, the blinking item changes.
When the "Return" is made to blink and the jog dial (main) is turned counterclockwise, operation returns to the previous menu.

- 9 Turn the jog dial (main) counterclockwise.**
The unit is now set to the shooting mode that is blinking, and a sub-menu is displayed.



Example: Halogen mode

- 10 Press the [MENU] button or [R/B GAIN/PED] button.**
The menu display is exited.

When the AW-RP555 is connected:

- 1 Press the [1], [2], [3], [4] or [5] button of [CONTROL] to select the unit.**
- 2 Press the [1], [2], [3] or [USER] button of [SCENE FILE] to select the shooting mode.**

Shooting mode	[SCENE FILE] button
Halogen	[1]
Fluorescent	[2]
Daylight	[3]
User	[USER]

When the AW-RP400/AW-CB400 is connected:
(The following operations are performed using the AW-CB400.)

- 1 Press the [1], [2], [3], [4] or [5] button of [CONTROL SELECT] to select the unit.**
- 2 Press the [1], [2], [3] or [USER] button of [SCENE FILE] to select the shooting mode.**

Shooting mode	[SCENE FILE] button
Halogen	[1]
Fluorescent	[2]
Daylight	[3]
User	[USER]

Shooting

When performing the operations using the accessory wireless remote control

● Changing the camera's direction

Moving the camera toward the left or right (panning):
Press the [◀] or [▶] button.

Moving the camera up or down (tilting):
Press the [▲] or [▼] button.

Moving the camera diagonally:
Press the [▲] or [▼] button and [◀] or [▶] button at the same time.

Returning the camera to the reference position:
Press the [HOME] button for two seconds.

● Using the zoom function

Zooming in (the subject becomes magnified in size):
Use the [T] button of [ZOOM].

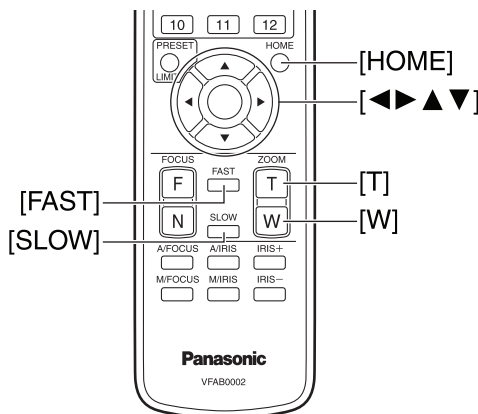
Zooming out (the subject becomes reduced in size):
Use the [W] button of [ZOOM].

● Switching the direction or zoom speed

Changing the direction or zoom at high speed:
Press the [FAST] button.

Changing the direction or zoom at low speed:
Press the [SLOW] button.

The lens focus control speed is also changed at the same time.



When performing the operations using the controller

● Changing the camera's direction

Moving the camera toward the left or right (panning):
Tilt the [PAN/TILT] lever toward L or R.

Moving the camera up or down (tilting):
Tilt the [PAN/TILT] lever toward UP or DOWN.

Moving the camera diagonally:
Tilt the [PAN/TILT] lever diagonally.

Returning the camera to the reference position:
If the controller has a [HOME] button, press the [HOME] button.

● Using the zoom function

Zooming in (the subject becomes magnified in size):
Tilt the [ZOOM] lever toward the TELE direction.

Zooming out (the subject becomes reduced in size):
Tilt the [ZOOM] lever toward the WIDE direction.

● Changing the direction or zoom speed

AW-RP655 and AW-RP555:

Press the [SPEED] button.

Each time the [SPEED] button is pressed, the control speed is switched between the high speed (the button's lamp is off) and low speed (the button's lamp is lighted). The lens focus control speed is also changed at the same time.

AW-RP400:

Turn the [PAN], [TILT], [ZOOM] dial of [SPEED CONTROL].

Turning the dial counterclockwise as far as it will go can disable all operations.

For further details, refer to the Operating Instructions of the controller.

What to do when encountering problems in the basic shooting operations

If the trouble is not resolved by taking the action suggested below, refer to “Troubleshooting” (page 56).

When performing the operations using the accessory wireless remote control

The unit does not move.

- Press the [CAM1], [CAM2], [CAM3] or [CAM4] button to select the unit which is to be operated.
If only one unit is being used, it is normally selected using the [CAM1] button.
- If the unit's status display lamp is off or lights up orange, it means that the unit's power is not on.
Refer to “How to turn the power on and off” (page 16), and turn on the power.
- If the unit's status display lamp does not blink even when the wireless remote control is operated near the unit's wireless remote control signal light-sensing area, it means that the wireless remote control's batteries have run down.
Replace the batteries.

Multiple color bands (color bars) are displayed.

Press the [MODE] button to switch to the camera picture.

The menu screen is displayed.

Press the [MENU] button for two seconds to exit the menu.

The lens focus is not adjusted automatically.

Press the [A/FOCUS] button to switch to auto focusing.

The camera picture is too light or too dark.

1. Press the [A/IRIS] button to switch automatically to the lens iris adjustment.
2. Press the [AUTO] button of [GAIN] to switch automatically to the gain adjustment.

Something is wrong with the coloring of the camera pictures.

Refer to “Auto tracking white adjustment (ATW)” (page 32), and switch to “ATW”.

When performing the operations using the controller

The unit does not move.

- Select the unit to be operated by following the procedure below.

When the AW-RP655 is connected:

Press the [1], [2], [3], [4] or [5] button of [CONTROL/PREVIEW MONITOR OUT SEL].

When the AW-RP555 is connected:

Press the [1], [2], [3], [4] or [5] button of [CONTROL].

When the AW-RP400/AW-CB400 is connected:

Press the [1], [2], [3], [4] or [5] button of [CONTROL SELECT].

- If the [OPERATE] lamp on the controller is off, it means that the power of the controller is not on.
- If the unit's status display lamp is off or lights up orange, it means that the unit's power is not on. Refer to “How to turn the power on and off” (page 16), and turn on the power.

Multiple color bands (color bars) are displayed.

Press the [MODE] button to switch to the camera picture.

The menu screen is displayed.

Press the [MENU] button to exit the menu.

The lens focus is not adjusted automatically.

Press the [EXT(AF)] button to switch to auto focusing.

The camera picture is too light or too dark.

1. Press the [IRIS] button several times to turn on its lamp, and switch the lens iris adjustment to auto.
2. Press the [GAIN] button several times to turn on its lamp, and switch the gain adjustment to auto.
When the AW-RP400 is connected, press the [AGC] button on the AW-CB400.

Something is wrong with the coloring of the camera pictures.

Refer to “Auto tracking white adjustment (ATW)” (page 32), and switch to “ATW”.

More advanced operations

Manual shooting

- Manual adjustment of focus
- Manual adjustment of iris
- Manual adjustment of shutter speed
- Manual adjustment of gain

Preset memories

- Up to 100 settings for the camera direction (panning and tilting), zoom, focus and also iris can be registered in the preset memories, and called.
- The number of settings that can be registered and called depends on the type of wireless remote control (12 settings) or controller that is used for operation.

White balance adjustment

- This adjustment is performed to express the white accurately. Its setting also has an effect on the color tones of the entire screen.
- It must be performed when using the unit for the first time or when the unit has not been used for a prolonged period.
- It must be performed when the lighting conditions or brightness has changed.
- Once the white balance has been attained, no further adjustment is required provided that the unit is going to be used under the same conditions.

Black balance adjustment

- This adjustment is performed to express the black accurately. Its setting also has an effect on the color tones of the entire screen.
- It must be performed when using the unit for the first time or when the unit has not been used for a prolonged period.
- It must be performed when the ambient temperature has changed significantly and at the change of the seasons.
- Once the black balance has been attained, no further adjustment is required provided that the unit is going to be used under the same conditions.

Black level (total pedestal) adjustment

- This adjustment is performed to align the black level (pedestal level) of a multiple number of cameras.
- Ask your dealer to perform this adjustment.

Genlock adjustment

- This adjustment is performed to achieve phase alignment by applying external synchronization (genlock) when a multiple number of cameras will be used or when the unit will be used in combination with other devices.
- Ask your dealer to perform this adjustment.

Manual shooting

■ Manually adjusting the focus

The lens focus can be adjusted manually.

When performing the operations using the accessory wireless remote control

1 Press the [M/FOCUS] button to switch the focus to manual adjustment.

2 Press the [F] or [N] button of [FOCUS], and adjust the focus.

When the [F] button is pressed, the focus moves further away (far); conversely, when the [N] button is pressed, it moves nearer (near).

The speed of focusing and other adjustments can be switched to fast or slow by pressing the [FAST] or [SLOW] button, respectively.

3 If necessary, press the [A/FOCUS] button to return the focus to the automatic adjustment.

When doing the adjustment using the controller

When the AW-RP655 is connected:

1 Press the [EXT(AF)] button to switch the focus to manual adjustment.

2 Adjust the focus manually by turning the dial above the lighted [FOCUS] lamp whether it is the lamp of the [PAN/TILT] lever or [ZOOM] lever.

Furthermore, every time the [SPEED] button is pressed, the speed of the focusing and other adjustments can be switched to fast or slow.

3 If necessary, press the [EXT(AF)] button to return the focus to the automatic adjustment.

When the AW-RP555 is connected:

1 Press the [EXT(AF)] button to switch the focus to manual adjustment.

2 Adjust the focus manually by tilting the [FOCUS] lever.

Furthermore, every time the [SPEED] button is pressed, the speed of the focusing and other adjustments can be switched to fast or slow.

3 If necessary, press the [EXT(AF)] button to return the focus to the automatic adjustment.

When the AW-RP400 is connected:

1 Press the [EXT(AF)] button to switch the focus to manual adjustment.

2 Adjust the focus manually by turning the [FOCUS] dial near the [ZOOM] lever.

Furthermore, the speed of the focusing can be adjusted by turning the [FOCUS] dial of [SPEED CONTROL]. Turning the dial counterclockwise as far as it will go can disable all operations.

3 If necessary, press the [EXT(AF)] button to return the focus to the automatic adjustment.

Notes

- When the focus is set to manual, the subject may go out of focus during zooming. Therefore, the unit comes with a function which compensates for this. (Focus compensation during zooming function) This function was set to ON at the factory. If the function has been set to OFF, either adjust the focus, as required, after zooming or set the focus to auto.
- When the ON/OFF setting of auto focus (AF) is switched from AW-RP400, use the OPTION SW after allocating the "EXT" function to it.

Manual shooting

■ Manually adjusting the iris

The lens iris can be adjusted manually.

When performing the operations using the accessory wireless remote control

- 1 Press the [M/IRIS] button to switch the iris to manual adjustment.
- 2 Adjust the iris using the [IRIS+] or [IRIS-] button.
Press the [IRIS+] button to adjust the lens iris in the opening direction; conversely, press the [IRIS-] button to adjust the lens iris in the closing direction.
- 3 If necessary, press the [A/IRIS] button to return the iris to the automatic adjustment.

When doing the adjustment using the controller

When the AW-RP655 is connected:

- 1 Press the [IRIS] button several times to turn off the button's lamp and switch to manual adjustment.
- 2 Adjust the iris manually by turning the dial above the lighted [IRIS] lamp whether it is the lamp of the [PAN/TILT] lever or [ZOOM] lever.
- 3 If necessary, press the [IRIS] button several times and turn on its lamp to return the iris to the automatic adjustment.

When the AW-RP555 is connected:

- 1 Press the [IRIS] button to turn off its lamp and switch to manual adjustment.
- 2 Turn the [LEVEL] dial of [IRIS] to adjust the iris manually.
- 3 If necessary, press the [IRIS] button to turn on its lamp and switch to automatic adjustment in order to return the iris to automatic adjustment.

When the AW-RP400/AW-CB400 is connected:

- 1 Press the [IRIS] button several times to turn off the button's lamp and switch to manual adjustment.
- 2 Turn the [IRIS] dial to adjust the iris manually.
- 3 If necessary, press the [IRIS] button several times and turn on its lamp to return the iris to the automatic adjustment.

Notes

- The iris is automatically changed to the automatic adjustment if the gain is set to the automatic adjustment while the iris is at the manual adjustment setting.
If the gain is later returned to the manual adjustment setting, the iris is also returned to its original value.
- The gain is automatically changed back to its previous value if the iris is set to the manual adjustment while the gain is at the automatic adjustment setting.

Manual shooting

Manually adjusting the shutter speed

The shutter speed can be set using two methods. One is a method that specifies the time (where a time such as 1/250 sec. is designated), and the other is a method that specifies the frequency (where synchro scan, 60 Hz, etc. is designated).

When shooting a TV screen or PC monitor screen, the horizontal noise generated when the screen is shot can be minimized by adjusting the frequency to the screen frequency using synchro scan.

Synchro scan can be designated in the user mode only.

When performing the operations using the accessory wireless remote control

Perform the adjustments on the Camera Setting menu. For further details, refer to the [Step], [Shutter Mode] and [Step/Synchro] items on page 47.

When doing the adjustment using the controller

The procedure is the same as for “When performing the operations using the accessory wireless remote control” in “Basic menu operations” (pages 40 to 42).

When the AW-RP555 is connected, the adjustments can also be performed by following the steps below.

1 Press the [SHUTTER] button and turn its lamp on.

The shutter speed set ahead of time is selected.

2 If necessary, press the [SHUTTER] button and turn its lamp off in order to return the shutter to the OFF setting.

Follow the steps below to set the shutter speed using the AW-RP555.

1 With the [MEMORY] button still held down, press the [SHUTTER] button.

The [PRESET] [1] to [5], [8] and [10] buttons blink alternately.

2 Press one of the [1] to [5] buttons or the [8] or [10] [PRESET] button — whichever button corresponds to the shutter speed which is to be set.

Any of the shutter speeds in the table below can be set.

[1]	[2]	[3]	[4]	[5]
1/100	1/250	1/500	1/1000	1/2000
[8]		[10]		
Synchro Scan		OFF		

- Any change in the shutter speed is reflected the next time the [SHUTTER] button is pressed and its lamp is turned on.
- When OFF is selected, the shutter will not operate even when the [SHUTTER] button is pressed.
- Select the synchro scan setting on the menu.
- The shutter speed setting performed here is stored in the memory even when the power of the AW-RP555 is turned off.

For further details, refer to the Operating Instructions of the AW-RP555.

Manual shooting

Manually adjusting the gain

There are two ways to adjust the gain. One way involves using the buttons on the wireless remote control or controller; the other way involves using the Camera Setting menu.

The gain can be adjusted more precisely using the Camera Setting menu. For further details, refer to the [Gain] item on page 47.

When performing the operations using the accessory wireless remote control

1 Press the [OFF], [LOW] or [HI] button.

These buttons enable the gain increase to be selected in three steps.

2 If necessary, press the [AUTO] button in order to return the gain to the automatic adjustment (AGC).

When performing the operations using the controller

When the AW-RP655 is connected:

1 Press the [GAIN] button and turn on the [MANU] lamp.

The preset gain increase amount is now selected. For further details on the gain increase amount setting, refer to the Operating Instructions of the AW-RP655.

2 If necessary, press the [GAIN] button and turn on the [AUTO] lamp in order to return the gain to the automatic adjustment (AGC).

When the AW-RP555 is connected:

1 Press the [GAIN] button to turn off its lamp.

Each time this button is pressed, one of the three gain increase amounts can be selected in sequence.

The current status is displayed as follows.

	[MANU] [L] button	[MANU] [H] button	[GAIN] button
0 dB	Off	Off	Off
LOW	Lighted	Off	Off
HIGH	Off	Lighted	Off
AUTO	Off	Off	Lighted

2 If necessary, press the [GAIN] button several times and turn on its lamp in order to return the gain to the automatic adjustment (AGC).

When the AW-RP400/AW-CB400 is connected:

(The following operations are performed using the AW-CB400.)

1 Press the [0dB], [L], [M] or [H] [GAIN] button and turn on its lamp.

These buttons enable one of the four gain increase amounts to be selected.

The gain increase amounts can be set in the [L], [M] and [H] buttons.

For further details, refer to the Operating Instructions of the AW-CB400.

2 If necessary, press the [AGC] button and turn on its lamp in order to return the gain to the automatic adjustment (AGC).

In any case, the maximum gain of the automatic adjustment can be set by the menu.

For further details, refer to the [AGC Max Gain] item on page 47.

Preset memories

This unit enables up to 100 settings for the camera direction (panning and tilting), zoom, focus and iris to be registered in its preset memories, and called.

However, the number of settings that can be registered and called depends on the type of wireless remote control or controller that is used for operation.

- The status as to whether the manual settings or auto settings are applicable is not registered for the focus and iris. The current focus and iris values are registered.
- The focus and iris values can be recalled only when the manual settings are applicable.

When performing the operations using the accessory wireless remote control

Twelve settings (preset No.1 to No.12) can be registered and called using the wireless remote control.

The [1] to [12] buttons correspond to the unit's preset memories No.1 to No.12.

●Registering the settings in the preset memories

1 Display the picture to be shot on the monitor.

Operate the pan, tilt or zoom buttons to determine the camera angle.

Adjust the focus and iris if they need to be adjusted.

2 While holding down the [PRESET] button, press the button corresponding to the preset memory number.

- If a preset memory number with an already registered setting has been selected, the existing setting will be erased and replaced with the new one.

●Calling the settings of the preset memories

1 Press the button in which the preset memory setting has been registered.

When performing the operations using the controller

When the AW-RP655 is connected:

Up to 50 settings can be registered and called.

The [1] to [50] buttons of [TRACING/PRESET MEMORY] correspond to the unit's preset memories No.1 to No.50.

●Registering the settings in the preset memories

1 Set to the preset memory mode.

Press the [TR/PSET] button to turn off its lamp.

2 Set to the memory recording mode.

Press the [M.LOCK] button to turn off its lamp.

3 Display the picture to be shot on the monitor.

Operate the [PAN/TILT] lever and [ZOOM] lever to determine the camera angle.

Adjust the focus and iris if they need to be adjusted.

4 Hold down the [MEMORY] button.

The buttons among the [1] to [50] buttons of [TRACING/PRESET MEMORY] in which settings can be registered now start blinking in sequence.

- Preset memory settings cannot be registered in buttons whose lamps are off (since they contain tracing memory settings).

5 With the [MEMORY] button still held down, press the button of the preset memory number in which the setting is to be registered.

