Operating Instructions
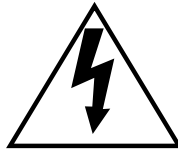
Panasonic ®

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

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION:
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO
NOT REMOVE COVER (OR BACK). NO USER SER-
VICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PER-
SONNEL.

The lightning flash with arrowhead sym-
bol, within an equilateral triangle, is
intended to alert the user to the pres-
ence 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 1965

The exclamation point within an equilat-
eral triangle is intended to alert the user
to the presence of important operating
and maintenance (servicing) instructions
in the literature accompanying the appli-
ance.

SA 1966

For U.S.A

Warning:
Do not install this product near any object that burns easily.
In case of using a halogen lamp, installation of it near such
an object could cause a fire due to the heat generated by
the lamp.

For CANADA

This digital apparatus does not exceed the Class A limits for
radio noise emissions from digital apparatus set out in the
Radio Interference Regulations of the Canadian Department
of Communications.

The serial number of this product may be found on the bot-
tom 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.

CONTENTS

FEATURES

- The AW-PH300 is a compact pan/tilt head capable of tilting up to 95° up or 95° down and panning up to 300°. It is mounted upright or suspended.
- The pan/tilt head carries a camera and lenses for a total weight of 4 **kg**.
- The pan/tilt head can be directly controlled using the Pan/tilt Control Panel AW-RP301 or AW-RP305. (The Control Panel cannot control the camera.)
- A camera and pan/tilt head can be directly controlled using the Hybrid Control Panel AW-RP501.
- Up to five cameras with pan/tilt heads can be directly controlled using the Multi-Hybrid Control Panel AW-RP505 in combination with the Multiport Hub AW-HB505.

- The pan/tilt head can be controlled from a personal computer via an RS-232C. However, simultaneous control with a personal computer and a control panel is not possible.
- The pan/tilt head can also be controlled using a contact type controller.

PRECAUTIONS

- Avoid using the pan/tilt head in the kitchen or other places full of steam and oil fume.
- The pan/tilt head has a maximum load capacity of 4**kg**. Do not use it for a load over 4 **kg**.
- Do not install the pan/tilt head outdoors, or at a place over 45°C, or at a cold place below –10°C.
  Ambient humidity must be less than 90%.
- Mounting screws must be locally purchased because they are not supplied.
  Choose screws appropriate to the material of the mounting place and the load on the pan/tilt head.
- Use only with AC Adaptor, Model AW-PS300.
- In handling the pan/tilt head, be sure to hold it by the base.
  Do not lift the pan/tilt head by the rotary part of it. Otherwise, something may go wrong with the head.
- Do not turn the pan/tilt head by the rotary part of it. Otherwise, something may go wrong with the head.
- Dropping the pan/tilt head or subjecting it to a strong shock can cause a failure or an accident.
- Keep the pan/tilt head more than 1 meter away from the monitors.
- The pan/tilt head uses a manganese dioxide lithium battery (CR2032).
  Be sure to remove the battery before disposing of the pan/tilt head or the printed wiring boards in the head.

Be sure to dispose of a removed battery, or an old battery removed to be replaced, according to the applicable provisions of law.
Do not dispose of it as ordinary trash.
The battery is located as shown in the figure below. To remove the battery, refer to Battery Replacement under the Replacement of Expendables at page 20.

Caution

Danger of explosion if battery is incorrectly replaced.
Replace only with same or equivalent type recommended by the manufacturer. Dispose of used battteries according to the manufacturer`s instructions.

Battery
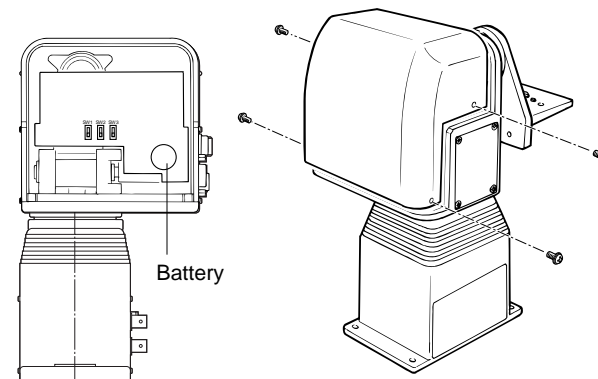
MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS
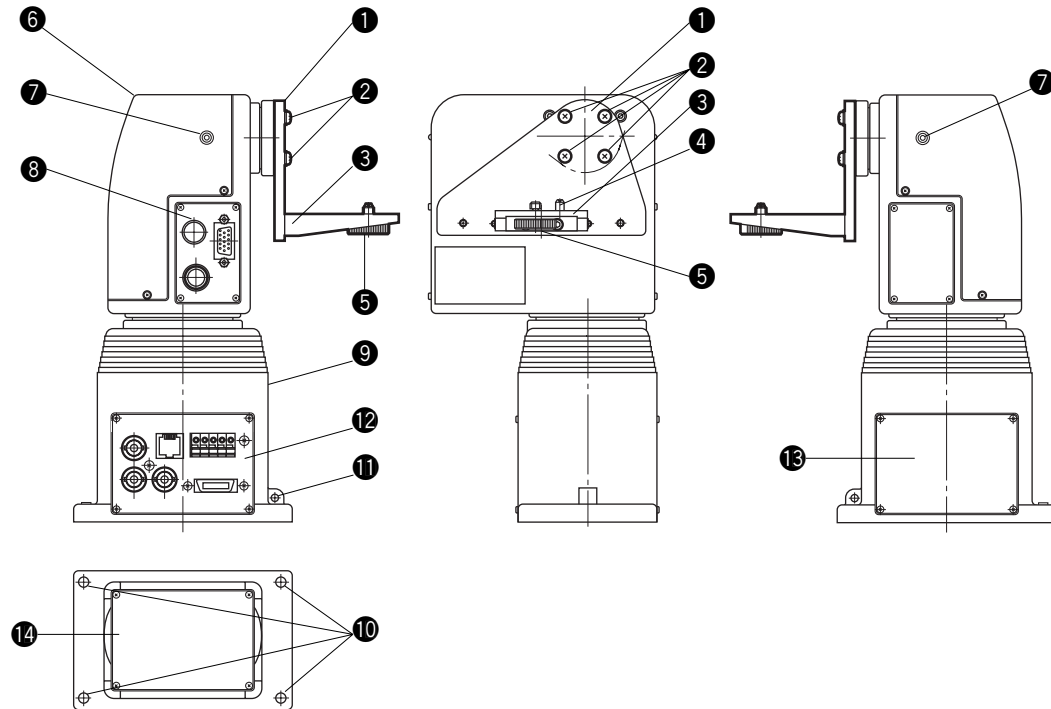
❶ **Tilting Arm (supplied)**
This arm tilts the head.

❷ **Tilting Arm Fixing Screws (supplied)**
4 screws are supplied to fasten the tilting arm.

❸ **Camera Mounting Plate (supplied)**
Used to fasten the camera.

❹ **Camera Guide Pin**
This pin sets the mounting direction of the camera.

❺ **Camera Mounting Screw**
This screw fastens the camera. (U 1/4″-20 UNC)

❻ **Panning Head**
The head rotates in panning directions.

❼ **Tally Indicators (2 pcs.)**
A selection signal lights them red.

❽ **Camera Connector Panel**
To connect a camera and lens.

❾ **Base**

❿ **Mounting Holes**
There are 4 holes to mount the pan/tilt head.

⓫ **Wire Rod Mounting Hole**
To pass a wire to prevent the pan/tilt head from falling.

⓬ **Control Connector Panel**
To connect a Control Panel (AW-RP301, RP305, or RP501) or the Multiport Hub (AW-HB505) and Pan/tilt Head AC Adapter (AW-PS300)

⓭ **Side Blank Panel**
A spare to be used in changing the mounting position of Control Connector Panel ⓬

⓮ **Bottom Blank Panel**
A spare to be used in changing the mounting position of Control Connector Panel ⓬

INSTALLATION

■ Assembling the Pan/tilt Head

In handling the pan/tilt head, be sure to hold it by the base.

● Installing the Tilting Arm

Fasten the Tilting Arm ❶ (supplied) with the Tilting Arm Fixing Screws ❷ (supplied). The way of mounting the arm differs depending on the direction of pan/tilt head installation. (See the figure right.)

Note: Do not use other than the supplied tilting arm fixing screws to fasten the tilting arm.

<Mounting suspended>

Tilting Arm

Tilting Arm Fixing Screws

<Mounting upright>

-6-
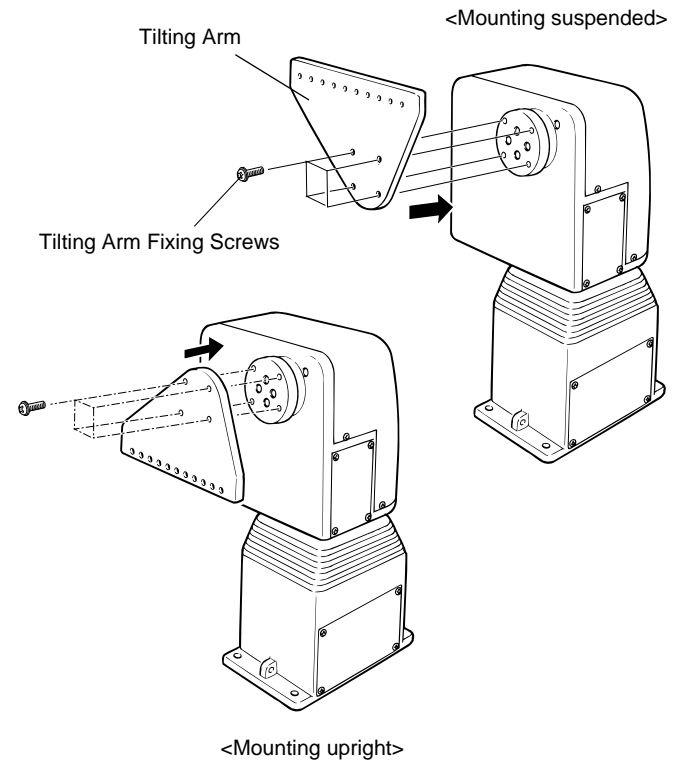
● Fastening the Camera Mounting Plate

To mount the pan/tilt head upright, pull out the Camera Guide Pin ❹ from the Camera Mounting Plate ❸, which is packed together with the pan/tilt head, and insert it into the hole shown in the figure below.

This is not necessary when mounting the pan/tilt head suspended.

- Loosen the Camera Guide Pin ❹ with a screwdriver and remove it.
- Insert the Camera Guide Pin ❹ into the hole shown below and fasten it securely with a screwdriver.

Camera Mounting Screw position

Camera Guide Pin

Pin position for mounting upright
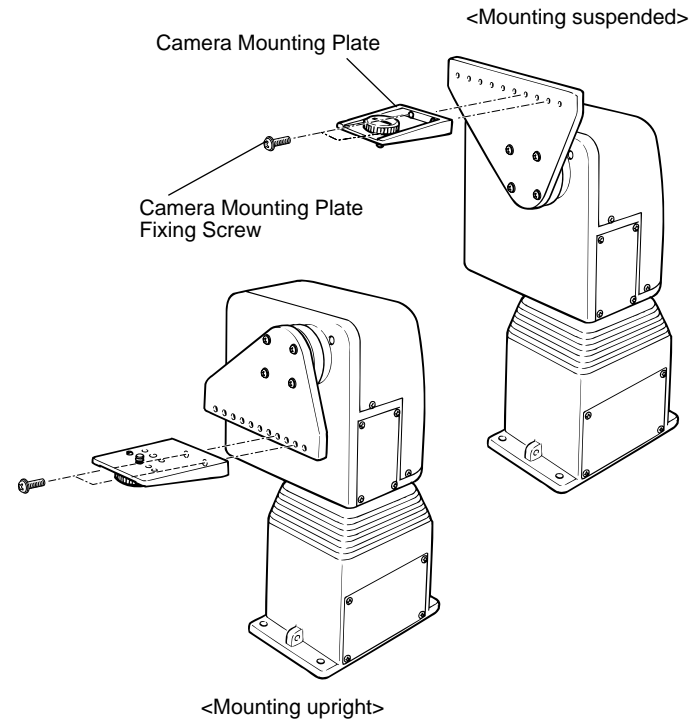
Camera Mounting Plate
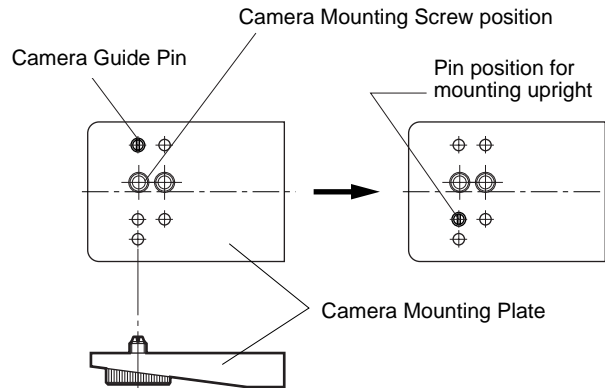
Fasten the Camera Mounting Plate ❸ as shown in the figure right.

The Camera Mounting Plate ❸ and Camera Mounting Plate Fixing Screws are packed together.

The position of the Camera Mounting Plate ❸ differs depending on the camera and lens used.

It is recommended that the position of the Camera Mounting Plate ❸ be so adjusted that the gravity center of the camera and lens will be perpendicular to the tilting center.
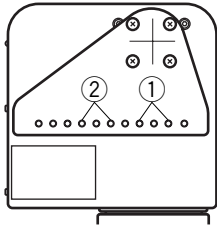
<Mounting suspended>

Camera Mounting Plate

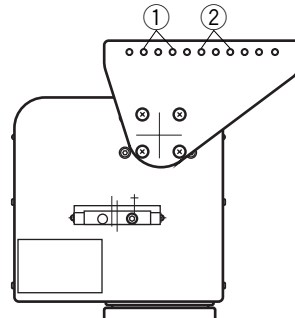Camera Mounting Plate Fixing Screw

<Mounting upright>

For Reference

Examples of screw positions on Camera Mounting Plate ❸ are shown below.

① Example of mounting position of camera WV-E550 or AW-E560 and lens S18 (FUJINON) or lens YH18 (CANON)

② Example of mounting position of camera WV-E550 or AW-E560 and lens S14 (FUJINON) or lens YH14 (CANON)

<Mounting upright>   <Mounting suspended>

■ Before Installing

Before installing the pan/tilt head, be sure to make the following settings and changes.

● Setting the Mounting Direction Switches and Setting Others in Case of Using Contact Type Controller, RS232C

To mount the pan/tilt head upright, or to control the pan/tilt head with a contact type controller or RS-232C, make the following settings.

(This is unnecessary in case of controlling a suspended pan/tilt head from a control panel.)

• Remove the cover screws from the pan/tilt head and carefully remove the cover.

(Be careful of the tally Indicator leads when removing the cover.)

• Set switches SW1, SW2, and SW3 on the front PCB as follows:

Pan/tilt head suspended: Set SW1 and SW2 to the down position. (Default)

Pan/tilt head upright: Set SW1 and SW2 to the up position.

Pan/tilt head controlled with control panel: Set SW3 to the down position. (Default)

**Pan/tilt head controlled with contact type controller with RS-232C:** Set SW3 to the up position.

• Place the cover back on and fasten it with the screws. (Be careful not to get the leads caught.)
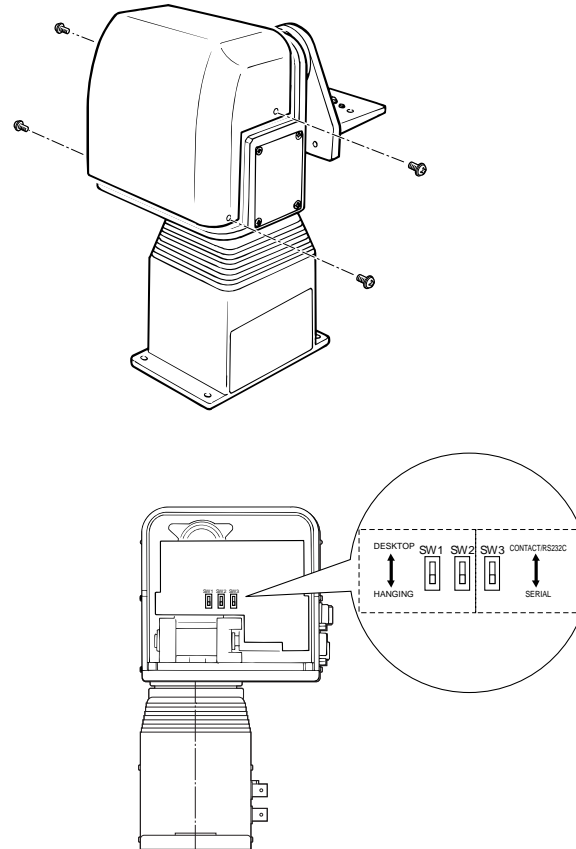
● Setting the Cable Compensation Circuit

If the pan/tilt head is connected to the controller with coaxial cables (5C-2V), the maximum allowable distance between them is 500 meters. If the cable length between them is more than 300 meters, however, set the cable compensation circuit switch to the ON position as described below.

- Remove the 4 screws from Control Connector Panel ❷ and pull out the panel toward yourself.
- Set the switch on the PCB on the back of the panel to the ON position.
- Mount Control Connector Panel ❷ back and fasten it with the screws.

ON
OFF
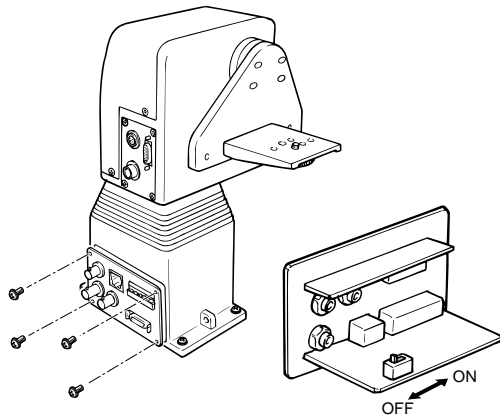
● Changing Others

Changing the Position of Control Connector Panil

The position of Control Connector Panel ❷ can be changed if necessary.

- Remove the blank panel in the position where you wish to mount Control Connector Panel ❷.
- Remove the screws from Control Connector Panel ❷ and pull out the panel up front.
- Disconnect all the 6 connectors on the PCB on the back of the panel.
- Take Control Connector Panel to the desired position, and connect the PCB connectors back as before.
- Fasten Control Connector Panel ❷ and the blank panel with the screws.

Changing the Direction of Control Connector Panel.

The direction of Control Connector Panel ❷ can be changed by 180° if necessary.

- Remove the screws from Control Connector Panel ❷ and pull out the panel up front.
- Turn the panel 180°, and place it back in position.
- Fasten the panel with the screws.

Changing the Direction of Camera Connector Panel

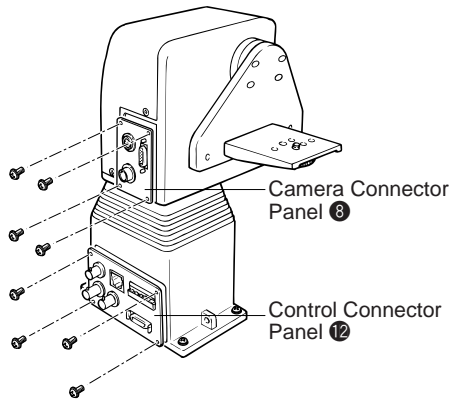The direction of Camera Connector Panel ❽ can be changed by 180° if necessary.

- Remove the screws from Camera Connector Panel ❽ and pull out the panel up front.

- Turn the panel 180°, and place it back in position.
- Fasten the panel with the screws.

Camera Connector Panel ❽

Control Connector Panel ⓬

■ Mounting the Pan/tilt Head

Observe the following instructions for mounting the pan/tilt head.

Failure to observe these instructions could cause the pan/tilt head to come off or drop, possibly resulting in an accident.

- To mount the pan/tilt head, use the 4 mounting holes and fasten the head securely.
- Have M6 hex bolts ready for mounting the head.
- The hex bolts must be long enough to meet the requirement "mounting material thickness (t) plus 25 mm or longer."

- Use plain and spring washers and hex nuts with the hex bolts as shown in the figure.
- Use a wrench of the size that fits the hex bolt head to tighten the hex bolts.
- To mount the pan/tilt head suspended, pass wire through the anti-drop wire hole and fasten the pan/tilt head to a ceiling or other firm object, securing it with the wire.
- Have a wire ready strong enough to bear the overall weight of the pan/tilt head, camera and lens.

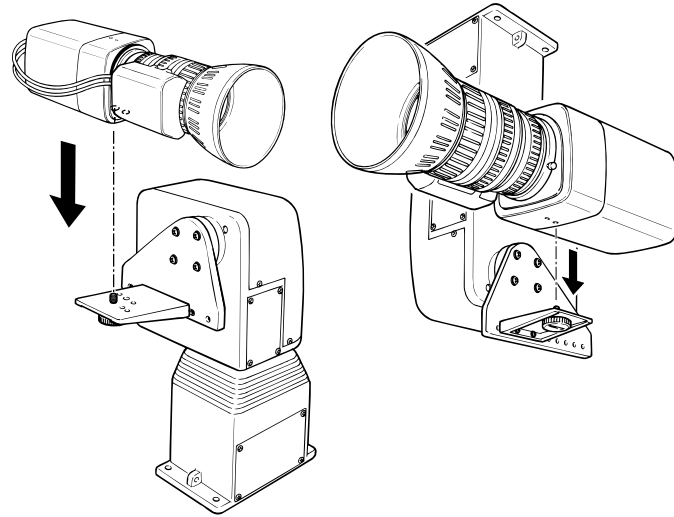* In mounting the pan/tilt head, never forcibly turn the head or tilting arm in the arrow directions by hand.
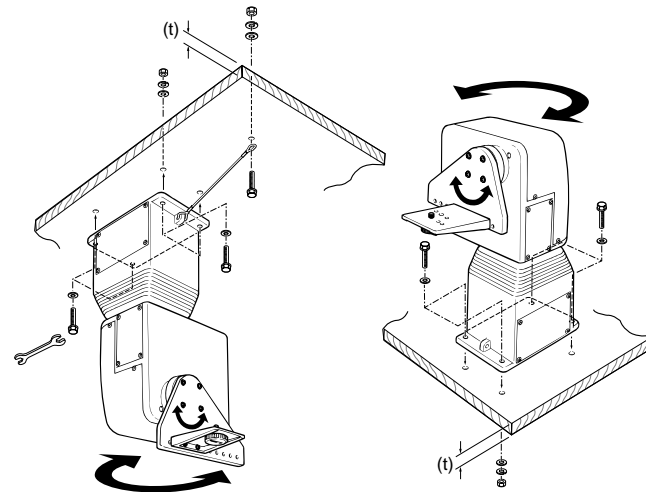
■ Mounting a Camera

● Mounting a Lens

- Turn the lens lock ring knob fully counterclockwise.
- Remove the lens mount cap if any.
- Mount the lens with the lens positioning pin up.
- Turn the lens lock ring knob clockwise to securely fasten the lens.

Lens lock ring knob
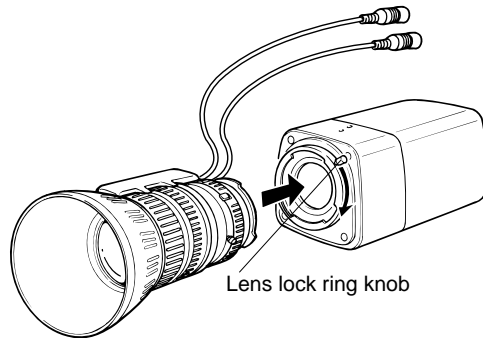
● Mounting a Camera

- Hold the camera and place it on Camera Mounting Plate ❸.
- Hold the camera and insert Camera Guide Pin ❹ into the guide hole in the camera.
- Hold the camera and tighten Camera Mounting Screw ❺ to securely fasten the camera.
  (Be sure to use a screwdriver or other tools to tighten the screw.)
- After mounting the camera, make sure that the camera is not loose.

■ Connecting Camera Connector Panel

Connect the camera and lens control cables.
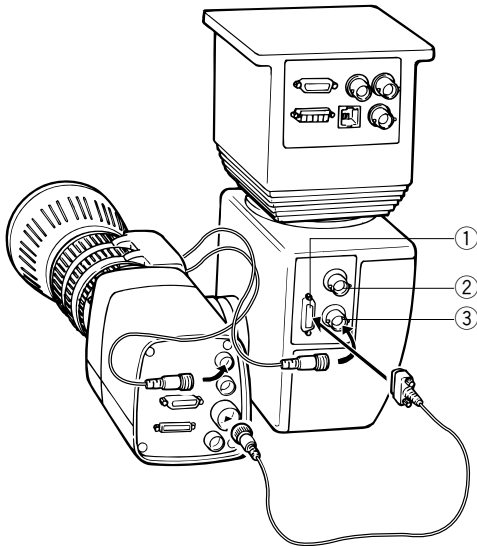
① **CAMERA I/F**
Control connector for camera WV-E550 or AW-E560
Connect it to the camera's REMOTE connector with the camera cable AW-CA20T15 (option).

② **ND/EXT**
Control connector for motor-driven lens unit's ND filter and lens extender
In case of using a motor-driven lens unit having ND filters and lens extender function, connect it to that unit.

Pins are located as follows:

CVCC (+15V) — F   A — ND signal
CGND — E   B — ND return
D   C
EXT signal
EXT return
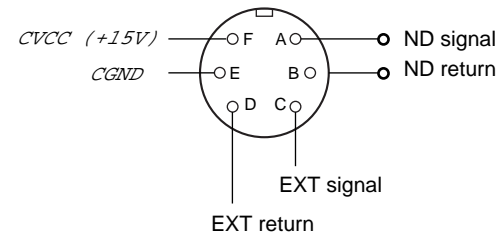
(As viewed from cable end)

③ **LENS I/F**
Control connector for motor-driven lens unit's zoom and focus
Connect the remote (zoom/focus) control cable of the motor-driven lens unit to it.

■ Connecting Control Connector Panel
● Connecting to Multiport Hub or Control Panel

Connect this panel to the Multiport Hub AW-HB505 or the Control Panel AW-RP301, RP305 or RP501.

For 2nd Pan/tilt Head and Camera

For 3rd Pan/tilt Head and Camera

For 4th Pan/tilt Head and Camera

For 5th Pan/tilt Head and Camera

Multiport Hub AW-HB505
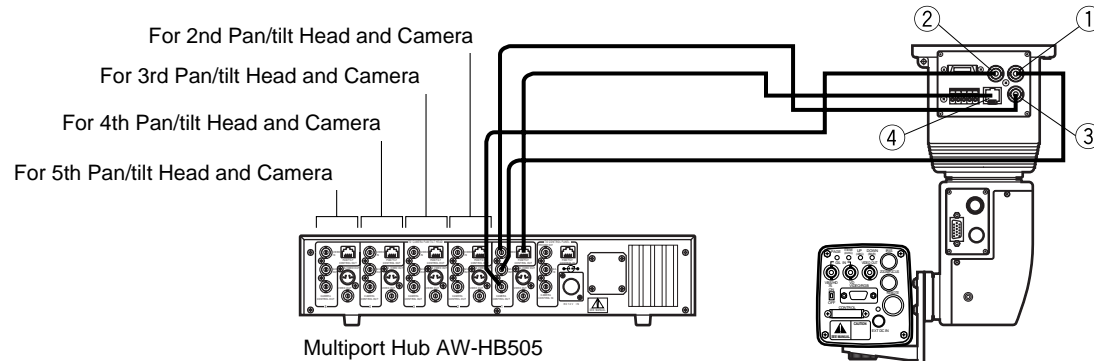
The figure above shows the connections in a case where only one pan/tilt head with camera is connected.

To use two or more pan/tilt heads with cameras, connect the second and subsequent pan/tilt heads with cameras in a similar way.
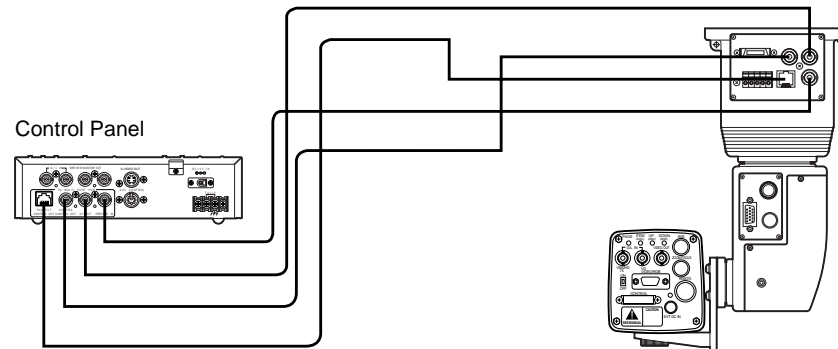
Control Panel

① **G/L IN**

Genlock signal input connector
Connect it to the G/L OUT connector on the Multiport Hub (AW-HB505) or Control Panel (AW-RP501) with a BNC coaxial cable.

② **CAMERA CONTROL IN**

Camera control signal connector
Connect it to the CAMERA CONTROL OUT connector on the Multiport Hub (AW-HB505) or Control Panel (AW-RP501) with a BNC coaxial cable.

③ **VIDEO OUT**

Camera video output connector
Connect it to the VIDEO IN connector on the Multiport Hub (AW-HB505) or Control Panel (AW-RP501) with a BNC coaxial cable.
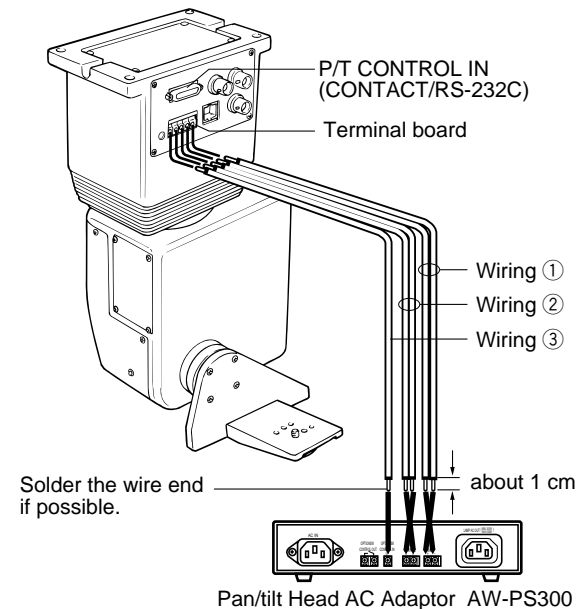
④ **P/T CONTROL IN (SERIAL)**

Pan/tilt head control signal connector
Connect it to the PAN/TILT CONTROL OUT connector on the Multiport Hub (AW-HB505) or Control Panel (AW-RP301, AW-RP305, or AW-RP501) with a 10BASE-T straight cable (UTP category 5).

■ Connecting the Pan/tilt Head AC Adapter

Connect the Pan/tilt Head AC Adapter AW-PS300.

P/T CONTROL IN (CONTACT/RS-232C)

Terminal board

Wiring ①
Wiring ②
Wiring ③

Solder the wire end if possible.

about 1 cm

Pan/tilt Head AC Adaptor AW-PS300

Terminal Board DC 12V IN (Wire ①)

Connect it to DC 15V OUT on the Pan/tilt Head AC Adapter AW-PS300.(The AC adapter is set to an output voltage of 15 V, considering a voltage drop due to an extended cable between the pan/tilt head and the adapter.)

Make sure that the positive (+) end and negative (–) end of the wire are connected to the same signs on the terminal.
Use a DC cable with a nominal cross section of 1.25 mm^2 or more that meets the UL specifications.

Terminal Board LAMP CONTROL (Wire ②)
Connect it only in case of supplying power from LAMP AC OUT on the Pan/tilt Head AC Adapter AW-PS300 to the halogen lamp.
Connect it to LAMP CONTROL on the Pan/tilt Head AC Adapter.
The symbols C and S of the wire must match the same symbols on the terminal.
Use a cable with a nominal cross section of 0.3 mm^2 or more that meets the UL specifications.

Terminal Board OP (Wire ③)
Connect it only in case of using OP SW CONTROL OUT on the Pan/tilt Head AC Adapter AW-PS300.
Connect it to OPTION SW CONTROL IN on the Pan/tilt Head AC Adapter.
Use a cable with a nominal cross section of 0.3 mm^2 or more that meets the UL specifications.

● Connecting Other Controllers

P/T CONTROL IN (CONTACT/RS-232C)

Connect it in case of controlling the pan/tilt head with a contact type controller, or via an RS-232C. Have a cable ready which meets the signal requirements specified in the pin assignment table below. TThe cable must have a nominal cross section of 0.3 mm^2 or more and meets the UL specifications.

The applicable connector is a bellows type 28-pin (1.27-mm pitch) plug.

Note: When using a contact type controller or an RS-232C, the switches must be set as specified in the item on the use of contact type controller, RS-232C in the section BEFORE INSTALLING at page 9.

It is recommended that the limiters (operating range) be set before use.

Depending on where the pan/tilt head is installed, the camera might contact an obstacle present in the operating range.

In such a case, the limiters may be set to prevent the camera from contacting such an obstacle.

The limiters can be set from the control panel at four points: upper limit, lower limit, left limit, and right limit.

Once the limiters are set, the set positions remain valid even if power is switched off.

Pin No.	Contact Signal	RS-232C Signal	Functions
1-7	Not used	Not used	
8	Not used	TXD	Pan/tilt head send data
9	Not used	RXD	Pan/tilt head receive data
10	GND	GND	
11	UP	Not used	Up tilt control input
12	DOWN	Not used	Down tilt control input
13	LEFT	Not used	Left pan control input
14	RIGHT	Not used	Right pan control input
15	RUN_SIG	Not used	Output signal showing head running
16-25	Not used	Not used	
26	DI_OPT_SEL	Not used	Pan/tilt head and camera power control input
27	Not used	Not used	
28	GND	GND	

■ Setting the Limiters

● Setting the Operating Range Upper Limit

- Turn the camera to the desired upper limit from the control panel.
- Keep the MEMORY Switch on the control panel depressed, then simultaneously press PRESET-2 Switch and PRESET-3 Switch for 5 seconds or more.
- When the LED for PRESET-5 Switch lights to indicate that the upper limit has been set, release the switches.
- Check on the control panel that the upper limit has been correctly set.

● Setting the Operating Range Lower Limit

- Turn the camera to the desired lower limit from the control panel.
- Keep the MEMORY Switch on the control panel depressed, then simultaneously press PRESET-7 Switch and PRESET-8 Switch for 5 seconds or more.
- When the LED for PRESET-5 Switch lights to indicate that the lower limit has been set, release the switches.
- Check on the control panel that the lower limit has been correctly set.

● Setting the Operating Range Left Limit

- Turn the camera to the desired left limit from the control panel.
- Keep the MEMORY Switch on the control panel depressed, then simultaneously press PRESET-1 Switch and PRESET-6 Switch for 5 seconds or more.
- When the LED for PRESET-5 Switch lights to indicate that the left limit has been set, release the switches.
- Check on the control panel that the left limit has been correctly set.

● Setting the Operating Range Right Limit

- Turn the camera to the desired right limit from the control panel.
- Keep the MEMORY Switch on the control panel depressed, then simultaneously press PRESET-4 Switch and PRESET-9 Switch for 5 seconds or more.
- When the LED for PRESET-5 Switch lights to indicate that the right limit has been set, release the switches.
- Check on the control panel that the right limit has been correctly set.

■ Resetting the Limiters

The set limiters can be released by taking the following steps.

● Resetting the Operating Range Upper Limit

- Keep the MEMORY Switch on the control panel depressed, then simultaneously press PRESET-2 Switch and PRESET-3 Switch for 5 seconds or more.
- When the LED of PRESET-10 Switch lights, it indicates that the limit has been reset. Release the switches.

● Resetting the Operating Range Lower Limit

- Keep the MEMORY Switch on the control panel depressed, then simultaneously press PRESET-7 Switch and PRESET-8 Switch for 5 seconds or more.
- When the LED of PRESET-10 Switch lights, it indicates that the limit has been reset. Release the switches.

● Resetting the Operating Range Left Limit

- Keep the MEMORY Switch on the control panel depressed, then simultaneously press PRESET-1 Switch and PRESET-6 Switch for 5 seconds or more.
- When the LED of PRESET-10 Switch lights, it indicates that the limit has been reset. Release the switches.

● Resetting the Operating Range Right Limit

- Keep the MEMORY Switch on the control panel depressed, then simultaneously press PRESET-4 Switch and PRESET-9 Switch for 5 seconds or more.
- When the LED of PRESET-10 Switch lights, it indicates that the limit has been reset. Release the switches.

■ Setting the Limiters Again

The same operation alternately applies to setting the limiters and resetting the limiters.
To set the limiters again, reset the limiters and repeat the steps for setting the limiters.
The existing limiter settings can be set again by taking the following steps.

- Reset the desired limits by following the procedures described in Resetting the Limiters.
- Set the desired limits again by following the procedures described in Setting the Limiters.

■ Replacement of Expendables

● Battery Replacement

The battery has a life of about 5 years.

The pan/tilt head has data on preset positions, limiter positions and others stored in itself. The stored data is kept in the memory even if power is switched off, but will be lost upon switching power off after the end of battery life.

If the battery has lost power, replace it with a new one.
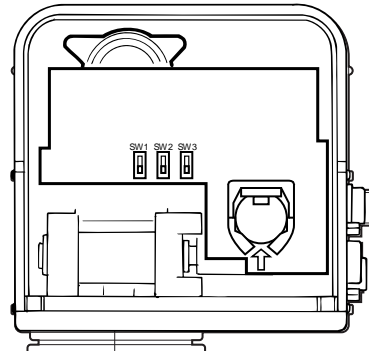
Removing the Battery
- Remove the 4 cover scress and take off the pan/tilt head cover.

- Push the battery in the arrow direction (shown in the figure) to slide it.
- Raise the sliding battery from the bottom indicated by the arrow.
- When the arrow-indicated part of the battery has come off the battery holder, pull the battery out toward yourself.

Installing a New Battery
- Insert a new battery into the battery holder, its end in the arrow direction.
- Push the battery in the arrow direction into the holder.

∗ Use the manganese dioxide lithium battery CR2032 for replacement.

● Motor Replacement

The drive motor of the pan/tilt head has a life of about 5 years. If motor operation is not normal, the motor must be replaced.
- Consult your dealer for motor replacement.

● Gear Replacement

The gear has a life of about 5 years. If preset stop positions becomes less accurate, the gear must be replaced.
- Consult your dealer for gear replacement.

SPECIFICATIONS

Source Voltage: 12 V DC (DC jack)
Power Consumption: 12V, 1.7A (with camera AW-E560) 0.7 A (pan/tilt head only)
Genlock Input: 1.0 V[p-p] composite/75Ω (BNC connector)
Camera Video Output: 1.0 V[p-p] composite/75Ω (BNC connector)
Camera Control: Two-way serial communication (BNC connector)
Pan/tilt Control: RS485 or equivalent (8-pin modular jack)
Pan/tilt Control: RS232C/contact signal (28-pin, half-pitch connector)
Lamp Control: Control signal (terminals)
Option Control: Control signal (terminals)
Maximum cable length: 500 m (In case of using coaxial cables 5C-2V and 10BASE-T sraight cable UPT category-5)
Maximum load**:**   4**kg** max
Operating temperature: −10°C to +45°C (14°F to +113°F)
Dimensions: 130 (W) x 244 (H) x 192 (D) mm [5-1/8" (W) x 9-5/8" (H) x7-9/16" (D)]
Weight: 3.5 **kg** (7.7 lbs.)
Finish: AV Ivory painting

Tilting Angle: 190° (approx. ±95°)
Panning Angle: 300° (approx. ±150°)
Maximum Speed: Panning: 25°/s, tilting: 20°/s
Repeatability: Less than ±5′
Noise Level: Less than NC30

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

ACCESSORIES

Camera mounting plate 1
Camera mounting plate fixing screw (M4 x 10 mm) 2
Tilting arm 1
Tilting arm fixing screw (M4 x 12 mm) 4

Panasonic

Broadcast & Television Systems Company