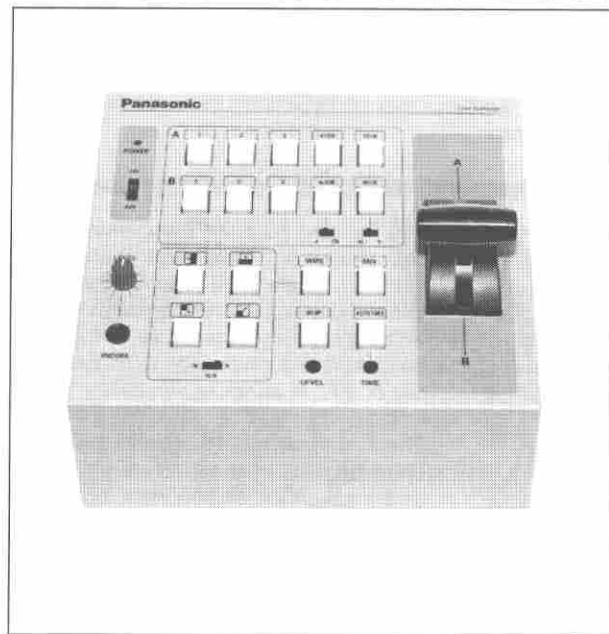


# Operating Instructions

**Panasonic**<sup>®</sup>

Live Switcher

Model No. **AW-SW300**<sub>P</sub>



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



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.

**WARNING:**

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

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.

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.

The information marking of this product may be found on the bottom of the unit.

The serial number of this product may be found on the bottom of the unit.

You should note the serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid identification in the event of theft.

Model No. \_\_\_\_\_

Serial No. \_\_\_\_\_

# CONTENTS

|  |    |
|--|----|
| WARNING/CAUTION FOR SAFETY .....                         | 4  |
| PREFACE .....  | 5  |
| FEATURES .....   | 5  |
| PRECAUTIONS .....  | 6  |
| MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS .....       | 7  |
| ■ Top (Control Panel) .....                              | 7  |
| ■ Rear Panel .....                                       | 11 |
| CONNECTIONS .....  | 15 |
| ■ CONNECTION WITHOUT EXTERNAL SYNCHRONIZATION .....      | 16 |
| ■ CONNECTION FOR EXTERNAL SYNCHRONIZATION .....          | 17 |
| ■ CONNECTION WITH PAN/TILT HEADS AND CONTROL PANEL ..... | 18 |
| RACK MOUNTING .....                                      | 20 |
| SPECIFICATIONS .....                                     | 22 |
| STANDARD ACCESSORIES .....                               | 23 |

# WARNING/CAUTION FOR SAFETY

## **WARNING**

- **Refer all servicing to qualified personnel**  
To reduce the risk of electric shock, don't remove cover or back, unless you are a qualified personnel. Refer all mountings, connections, servicing to qualified service personnel.
- **No water or moisture inside**  
Do not let water or moisture into the product, or expose it to moisture, to prevent a fire and electric shock.
- If you see smoke or smell an odor from the product, if water or other foreign matter gets inside, if it is damaged by dropping, or if you find anything wrong with it, immediately stop using it.
- **Do not disassemble or modify the product to prevent a fire and electric shock.**

## **CAUTION**

- Do not drop the product, do not expose it to strong shock, or do not step on it, to prevent a fire and injuries.
- Do not install the product at a place full of moisture and dust, which may cause a fire and electric shock.
- Do not mount the Live Switcher on a closed rack or bookshelf. (Otherwise, heat will build up inside and may cause a fire.)
- Keep the ventilation port open to secure good flow of air.

## PREFACE

The AW-SW300 is a compact switcher having four video inputs, wipe, mix, and auto take functions. The switcher can be used in the field because it operates on an external power supply of 12 V DC. (However, it is not built rainproof or dripproof.) The built-in frame synchro-

nizer makes external synchronization, or genlock, unnecessary. The switcher outputs black burst signals, so it is also compatible with the genlock system. It also has tally outputs and intercom inputs/outputs, and permits easy system configuration.

## FEATURES

- **Four Inputs Despite Compactness**

The switcher has four composite video signal inputs. (Automatic termination. Loopthrough output provided) It also has an S-terminal (4-pin), and can thus handle YC signals. Input 4 can be switched to the internal color bar or vice versa by means of a switch.

- **Four Outputs, A/B Bus Selected Outputs Available**

Effect outputs including two composite video outputs (BNC connectors) and two YC signal outputs (S-terminal, 4-pin) are available, so it is easy to build a system with monitors, VCRs, etc. The A-bus and

B-bus have their own selectable outputs (composite video signals, BNC connectors), which can be used as preview outputs to verify the individual input signals.

- **No Synchronization Necessary**

The built-in frame synchronizer makes it possible for you to build a system without external synchronization. The switcher has a synchronizer/analog selection switch so that the conventional external synchronizing type of system configuration is available using the black burst output signal. (Even an analog system is virtually free of picture quality degradation.)

- **Auto Take**

Apart from manual wipe and mix with wipe lever, the switcher has an auto take function for automatic wipe and mix. Transition time can be adjusted with a control knob on the panel.

- **External Power Supply**

The switcher can be used both indoors and outdoors because it operates on an external power

supply of 12 V DC. (However, it is not built rainproof or dripproof. Do not expose the switcher to rains or moisture.)

- **Tally and Intercom Provided**

Four tally outputs and four intercom inputs and outputs are available so that the switcher can be directly apply to conventional systems. (The switcher has its own intercom on the panel.)

## PRECAUTIONS

- **Handle with Care.**

Do not drop the switcher, or expose it to strong shock or vibration. This is important to prevent trouble and accidents.

- **Operating temperature range  $-10^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$**

Avoid using it in a cold place below  $-10^{\circ}\text{C}$  or a hot place above  $+50^{\circ}\text{C}$  because low or high temperature will adversely affect the parts inside.

- **Switch power off before cables connection or disconnection.**

Be sure to switch power off before connecting or disconnecting the cables.

- **Use at a Place Not Humid, Not Dusty.**

Avoid using the switcher at a humid, dusty place because the internal parts are subject to damage by moisture and dust.

- **Care**

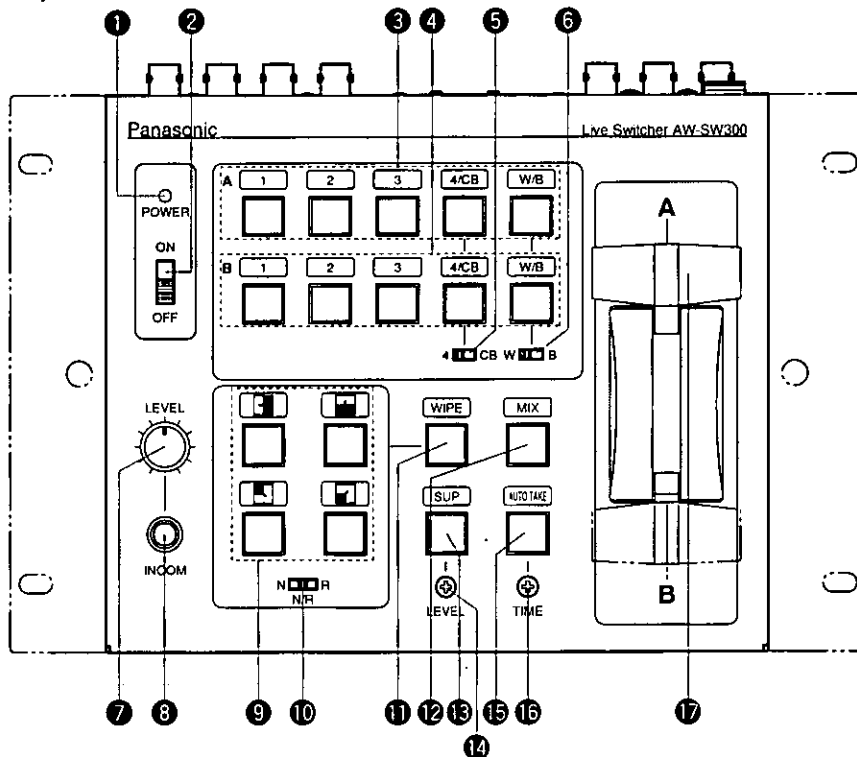
Switch power off and wipe the switcher with a dry cloth. If it is difficult to remove the dirt, dip a cloth into a diluted solution of kitchen detergent, squeeze it hard, and wipe the product carefully.

**Note**

- Do not use benzene, paint thinner, or other volatile liquids.
- When using a chemical duster, carefully read the caution notes on its use.

# MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS

## ■ Top (Control Panel)



### ❶ Power Indicator [POWER]

Lights red when power is supplied to DC Power Input Terminal ❷ and Power Switch ❸ set to the ON position, and goes out when Power Switch ❸ is set to the OFF position.

### ❷ Power Switch [POWER ON/OFF]

Power is switched on and Power Indicator ❶ lights red when this switch is set to the ON position, provided that power is supplied to DC Power Input Terminal ❷. Power is switched off and Power Indicator ❶ goes out when the switch is set to the OFF position.

### ❸ A-Bus Input Selection Switches [A 1/ 2/ 3/ 4/CB/ W/B]

To select A-bus video signals. When a switch is pressed, it lights and indicates that the corresponding signal is selected.

### ❹ B-Bus Input Selection Switches [B 1/ 2/ 3/ 4/CB/ W/B]

To select B-bus video signals. When a switch is pressed, it lights and indicates that the corresponding signal is selected.

### ❺ Input 4/Color Bar Selection Switch [4/CB]

To select the signal input to video input 4 or the internal color bar. Input signal 4 is selected when it is set to position 4, or the color bar when it is set to CB.

### ❻ White/Black Signal Selection Switch [W/B]

To select the white signal or black signal. The white signal is selected when the switch is set to W or the black signal when it is set to B. This switch is used for white fader or black fader operation.

### ❼ Intercom Volume [INCOM LEVEL]

To adjust the volume of the headset speaker connected to Intercom Jack ❽. Turning it counterclockwise decreases the volume, and turning it clockwise increases it.

### ❽ Intercom Jack [INCOM]

Connect an intercom headset to this terminal. Use the recommended headset (made by Ashida Onkyo).

### ❾ Wipe Pattern Selection Switches



To select a wipe pattern after pressing Wipe Switch ❶. One of the four patterns - vertical, horizontal, upper left, lower left - can be selected. The selected switch lights.



### ⑩ Wipe Direction Selection Switch [N/ N/R/ R]

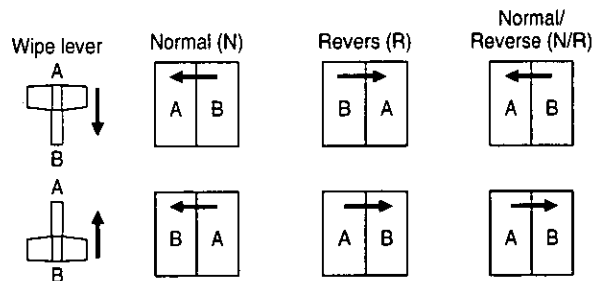
To select one of the three directions in which to change the signals from A to B or vice versa on the screen by moving Wipe Lever ⑰.

**N (Normal):** When Wipe Lever ⑰ is moved from A to B, the image on the screen is switched from the selected A-bus signal to the selected B-bus signal in the arrow direction of the pattern shown on Wipe Pattern Selection Switch ⑨. Similarly, when Wipe Lever ⑰ is moved from B to A, the image on the screen is switched from the selected B-bus signal to the selected A-bus signal in the arrow direction of the wipe pattern selected.

**R (Reverse):** When Wipe Lever ⑰ is moved from A to B, the image on the screen is switched from the selected A-bus signal to the selected B-bus signal in the direction opposite to the arrow of the pattern shown on Wipe Pattern Selection Switch ⑨. Similarly, when Wipe Lever ⑰ is moved from B to A, the image on the screen is switched from the selected B-bus signal to the selected A-bus signal in the direction opposite to the arrow of the selected pattern.

**N/R (Normal/Reverse):** When Wipe Lever ⑰ is moved from A to B, the image on the screen is switched from the selected A-bus signal to the selected B-bus signal in the arrow direction of the pattern shown on Wipe Pattern Selection Switch ⑨. When Wipe Lever ⑰ is moved from B to A, the image on the screen is switched from the selected B-bus signal to the selected A-bus signal in the direction opposite to the arrow of the selected pattern.

### [Example] Selected wipe pattern [ ④ ]



### ⑪ Wipe Switch [WIPE]

Press it to switch the signal selected with A-Bus Input Selection Switch ③ to the signal selected with B-Bus Input Selection Switch ④ or vice versa by the wipe effect. The switch lights when WIPE is selected.

### 12 Mix Switch [MIX]

Press it to switch the signal selected with A-Bus Input Selection Switch ③ to the signal selected with B-Bus Input Selection Switch ④ or vice versa by the mix effect. The switch lights when MIX is selected.

### 13 Super ON/OFF Switch [SUP]

The switch lights when it is pressed to superimpose the signals input to Superimpose Signal Input Connector ②⑤. The signals are superimposed in white on the video output. (There may be cases where superimposing is not clear depending on the input signal.) The light goes out when the switch is pressed again to turn off superimposing.

### 14 Super Level Control [SUP LEVEL]

Adjust this control after pressing Super ON/OFF Switch 13 for clear superimposing with the signals input to Super Signal Input Connector ②⑤.

### 15 Auto Take Switch [AUTO TAKE]

This switch is used to automatically wipe or mix without using Wipe Lever 17. Once the switch is pressed when Wipe Lever 17 is at A or B, wipe or mix takes place automatically to switch the signals. Signal switching time (time required for wipe or mix) can be adjusted with Auto Take Time Adjuster 16. The switch remains lit during the process of signal switching, and goes out when it is over.

### Caution

In using the Auto Take function, be sure to move Wipe Lever 17 all the way to A or B. Auto Take will not work unless the lever is fully moved to A or B.

### 16 Auto Take Time Adjuster [AUTO TAKE TIME]

It is used to adjust the time of switching signal A to B or vice versa in using the Auto Take function with Auto Take Switch 15. Turning the adjuster counter-clockwise decreases the time and turning it clockwise increases it.

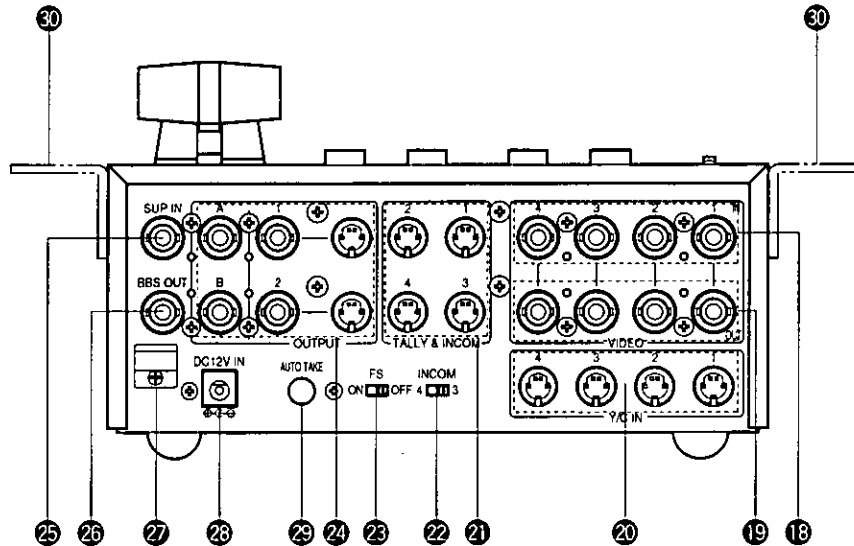
### Caution

Before using the Auto Take function, adjust the signal switching time with it.

### 17 Wipe Lever [A/B]

This lever is used to switch the signal selected with A-Bus Input Selection Switch ③ to the signal selected with B-Bus Input Selection Switch ④ or vice versa by the wipe or mix effect. When the lever is moved from A to B, the video signal is also switched from A to B accordingly. Similarly, when the lever is moved from B to A, the video signal is switched from B to A.

## ■ Rear Panel



### 18 Video Signal Input Jacks 1 to 4 [VIDEO IN 1, 2, 3, 4]

These jacks are to input composite video signals. (1 Vp-p, 75-ohm auto-terminated)

There are 4 input jacks corresponding to A-Bus Input Selection Switches 3 1 to 4 and B-Bus Input Selection Switches 4 1 to 4.

### Caution

If a BNC coaxial cable is connected to Video Signal Loopthrough Output Jack 19, the 75-ohm termination is automatically released. Do not connect a BNC coaxial cable to any of these jacks in case of connecting YC signals to Y/C Signal Input Jack 20. Use either composite signals or YC signals as video input signals.

**19 Video Signal Loopthrough Output Jacks**  
**[VIDEO OUT 1, 2, 3, 4]**

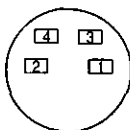
These loopthrough output jacks are for the composite video signals input to Video Signal Input Jacks 18.

**20 Y/C Signal Input Jacks [Y/C IN 1, 2, 3, 4]**

Connect YC signals to these jacks in using them as video input signals.

**Caution**

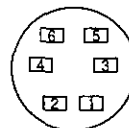
Do not connect a BNC coaxial cable to Video Signal Input Jack 19 in case of connecting YC signals to Y/C Signal Input Jack 20. Use either composite signals or YC signals as video input signals.



| Pin No. | Signal |
|---------|--------|
| 1       | Y GND  |
| 2       | G GND  |
| 3       | Y      |
| 4       | C      |

**21 Tally/Intercom Connectors [TALLY & INCOM 1, 2, 3, 4]**

Use these jacks to connect the Live Switcher to the tally/intercom connectors on a camera control unit, for example, WV-RC700A or WV-RC550, for tally control and intercom communication. Tally control is based on open collector output. These connectors are compatible with either the 3-wire or 4-wire type of intercoms, selectable with Intercom Switch 22.



| Pin No. | Signal        |
|---------|---------------|
| 1       | MIC+          |
| 2       | MIC-/COMMON   |
| 3       | PHONE+        |
| 4       | PHONE-/COMMON |
| 5       | TALLY         |
| 6       | GND           |

In case of 3-wire type intercoms, connect pins 2 and 4 to GND.

**22 Intercom Switch [INCOM 3/4]**

The 3-wire or 4-wire type can be selected by setting the switch to the position appropriate to your system. (Set the switch to the 3-wire position [3] if you are using the WV-RC700A or WV-RC550.)

### 23 **Frame Sync Switch [FS ON/FF]**

When this switch is in the ON position, the input video signals connected to Video Signal Input Jack 18 and Y/C Signal Input Jack 20 do not need external synchronization. If you are using the Live Switcher with the FS switch in the OFF position, externally synchronize the devices connected to the Live Switcher using its BBS Signal Output jack and adjust the external sync phases (horizontal and color phases) on the connected devices. In this case, internal signal processing is analog and images virtually free of quality degradation will be output.

### 24 **Video Output Connectors [OUTPUT A, B, 1, 2]**

**1, 2:** To output effect (wipe, mix, superimpose) signals. Two each composite signal outputs (BNC connector) and YC signal outputs (4-pin connectors) are available.

**A:** Composite signals selected with A-Bus Input Selection Switch 3 are output.

**B:** Composite signals selected with B-Bus Input Selection Switch 4 are output.

### 25 **Superimpose Signal Input Connector [SUP IN]**

To input video signals (monochrome video signals 1 Vp-p) for superimposing. Externally synchronize a superimpose signal generator (monochrome camera, for example) using the black burst signal output of the Live Switcher and adjust the horizontal phase before applying the superimpose video signals to this connector.

### 26 **Black Burst Signal Output Connector [BBS OUT]**

Used to externally synchronize a video signal generator before applying its generated signals to the Live Switcher. In externally synchronizing two or more devices, either distribute the black burst output to them using a video distributor, or connect the loophrough outputs of the devices to the external sync input connectors of other units.

### 27 **Cord Clamp**

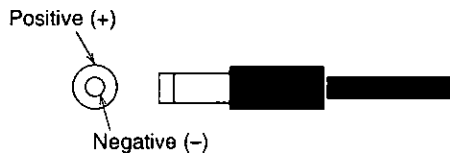
Used to clamp the cable connected to the DC power input terminal to prevent its disconnection. If it is difficult to pass the cable through the clamp, loosen the screw, pass the cable, and retighten the screw till the cable is securely clamped.

**28 DC Power Input Terminal [DC 12V IN]**

Apply 12-V DC power. (Use the AC adaptor AW-PS505.)

**Caution**

If you are using other power supply, make sure that it outputs 12 V DC, 2.5 A or more. (The plug has GND on the inside and +12 V outside. (Be careful of the positive and negative polarities.)



**29 Auto Take External Input Jack [AUTO TAKE]**

Use it for external auto take by applying a contact input. The operation is the same as when using Auto Take Switch **15**.

**30 Rack Mounting Parts (Accessories)**

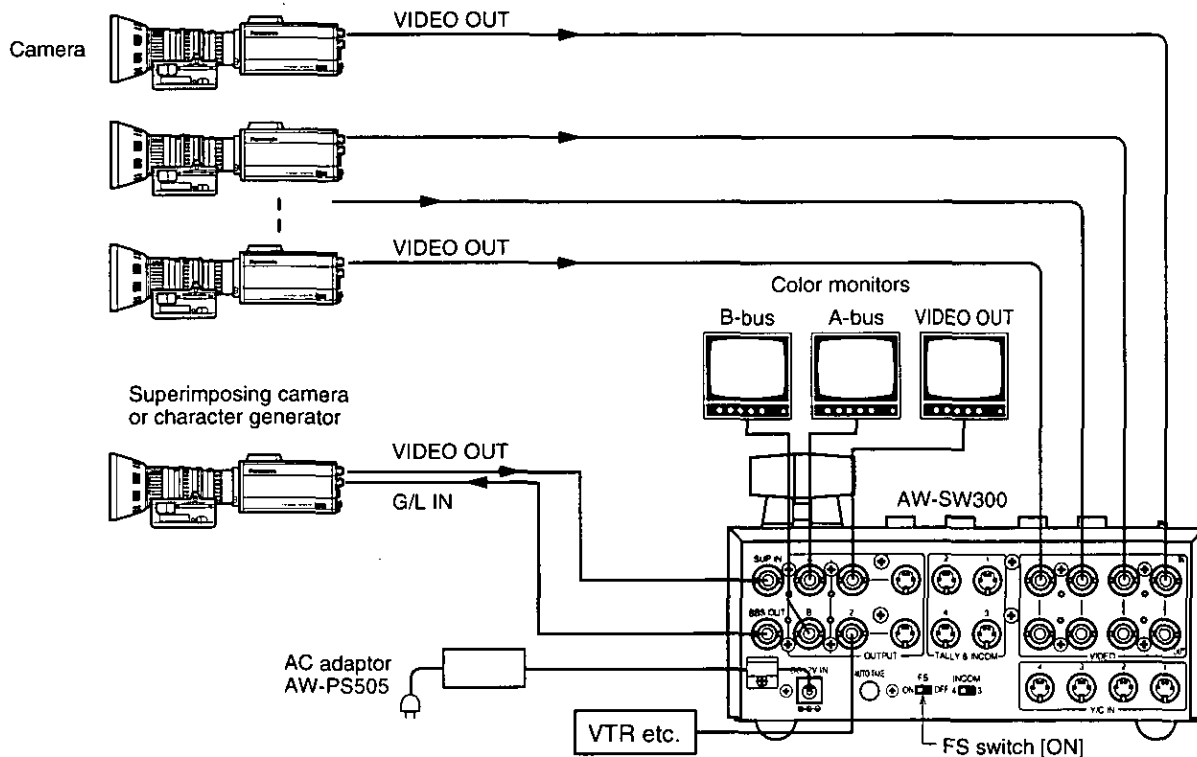
Use the parts to mount the Live Switcher on a rack.

# CONNECTIONS

- For installation and connection, be sure to ask the store where you purchased the product.
- Before making any connection, switch off all the components of the system.
- Carefully read the manuals for the individual devices connected to the Live Switcher.
- Use coaxial cable to connect video and genlock signals.

## ■ CONNECTION WITHOUT EXTERNAL SYNCHRONIZATION (Frame Synchronizer ON)

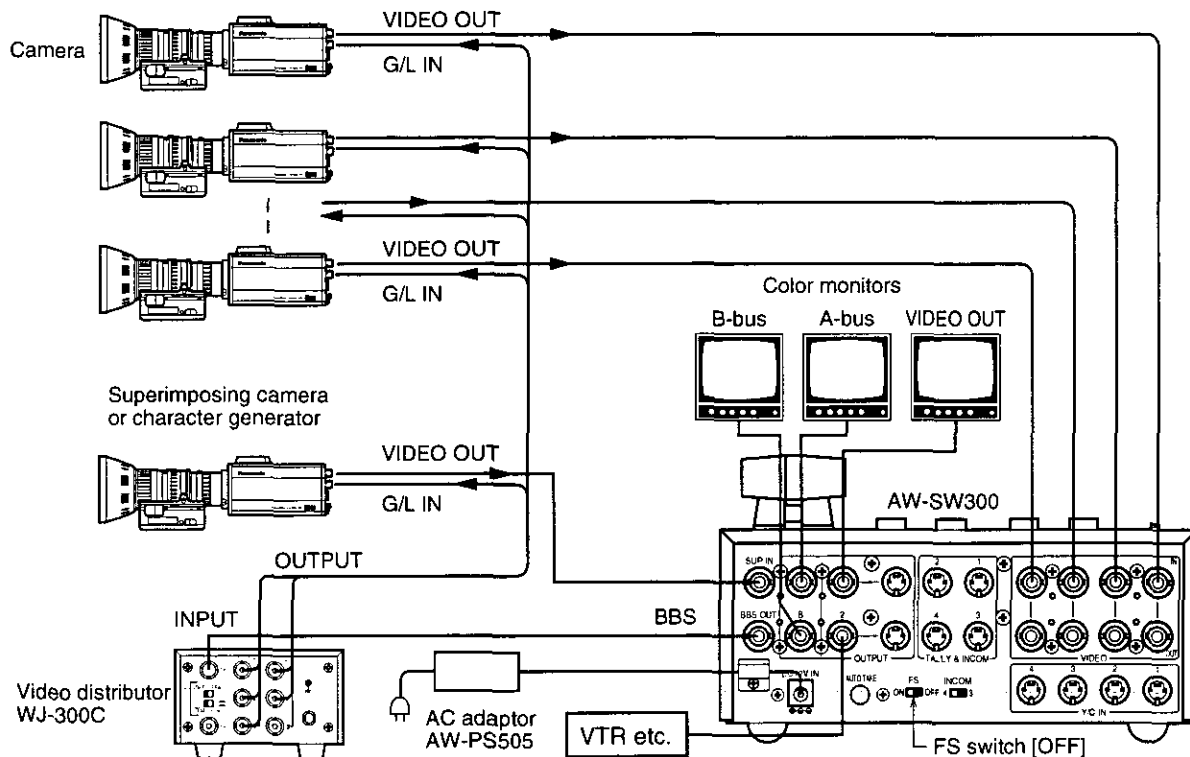
- Adjust the horizontal phase of the camera for superimposing. (Read the manual for the camera.)





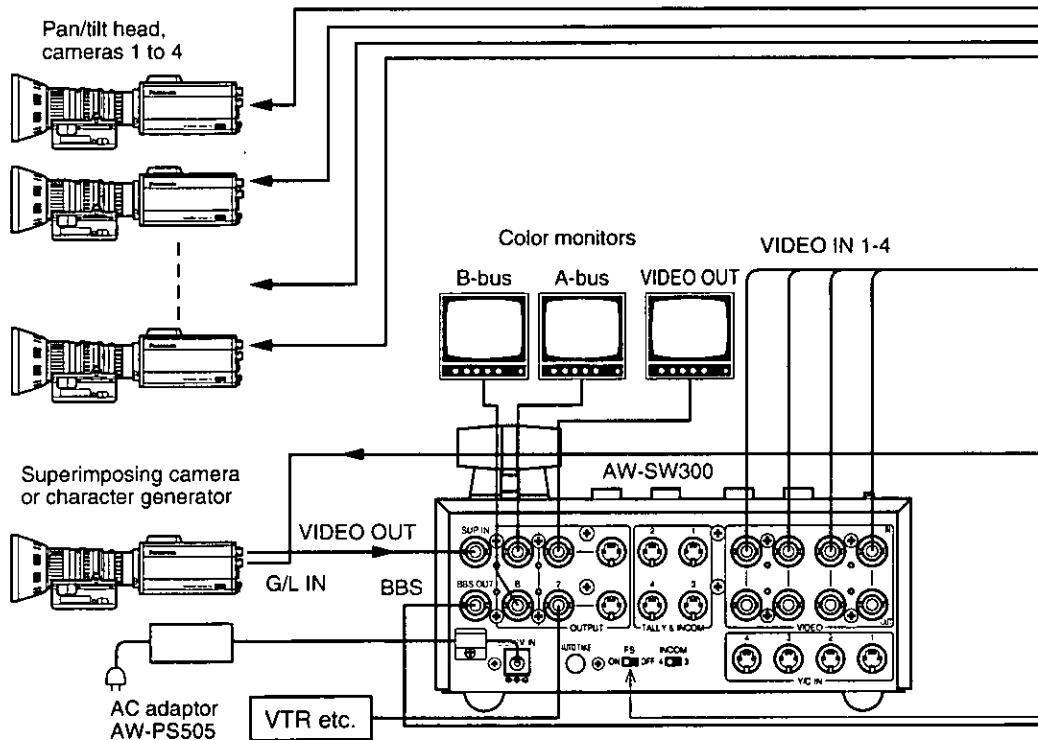
## ■ CONNECTION FOR EXTERNAL SYNCHRONIZATION (Frame Synchronizer OFF)

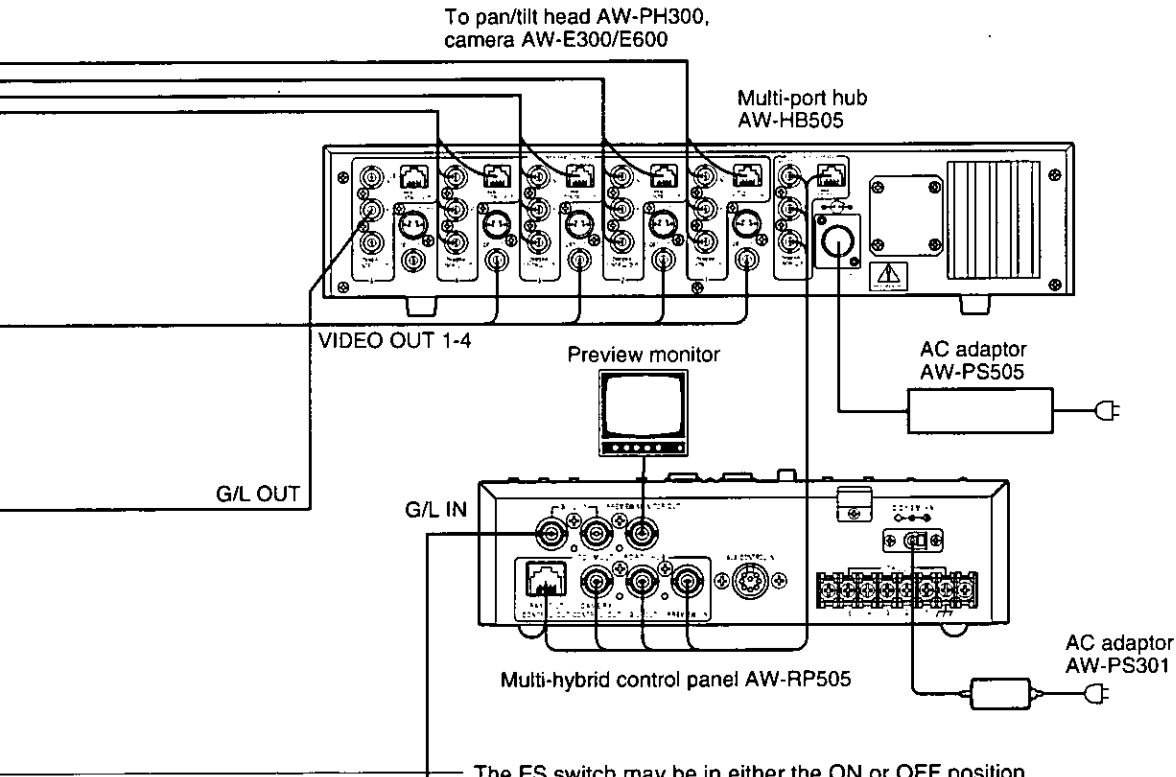
- Adjust the horizontal and color phases of the cameras. (Read the manual for the camera.)



## ■ CONNECTION WITH PAN/TILT HEADS AND CONTROL PANEL

- The cameras can be locally controlled by using the pan/tilt head AW-PH300, multi-hybrid control panel AW-RP505, and multi-port hub AW-HB505.



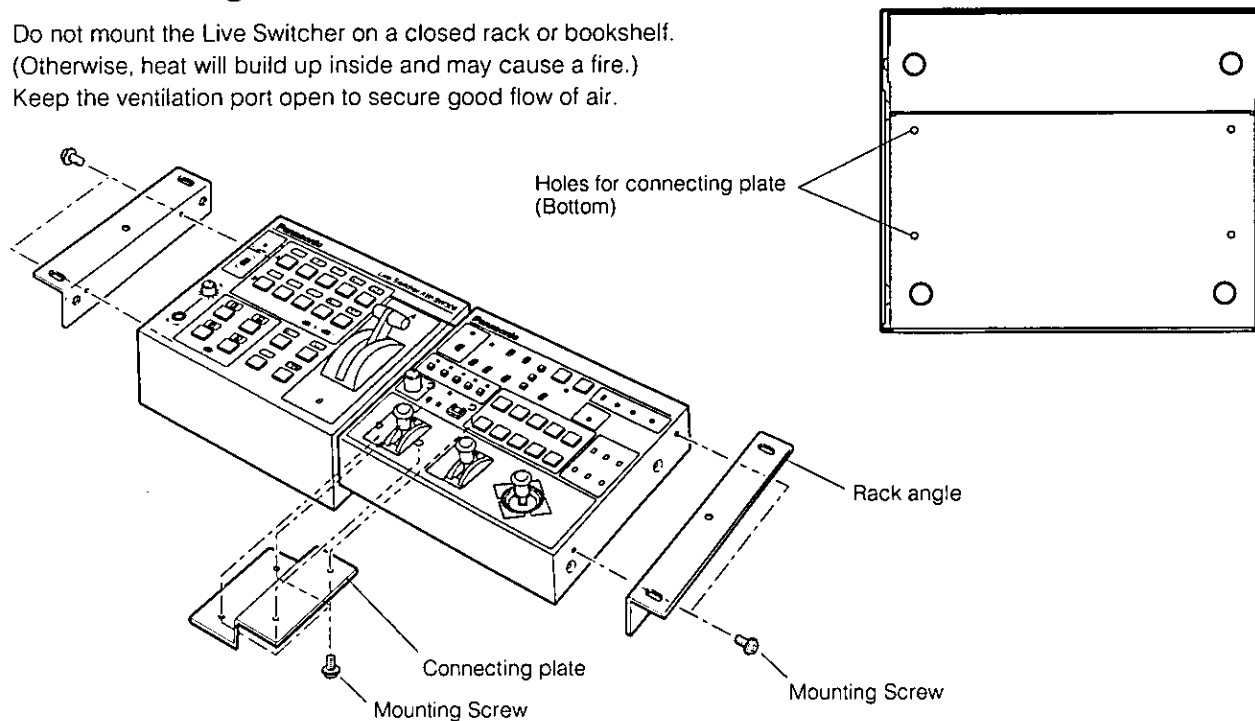


The FS switch may be in either the ON or OFF position.  
If high picture quality is desired, set the FS switch to OFF (external synchronization)  
and adjust each camera for horizontal and color phases: (Refer to the instruction  
manual for the camera.)

# RACK MOUNTING

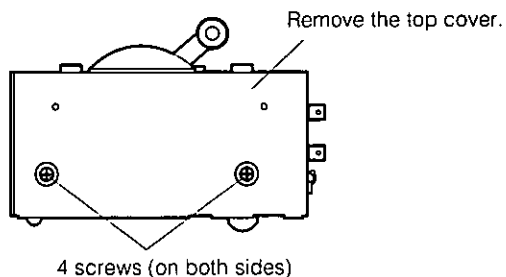
## ■ Rack Mounting

- Do not mount the Live Switcher on a closed rack or bookshelf. (Otherwise, heat will build up inside and may cause a fire.)
- Keep the ventilation port open to secure good flow of air.

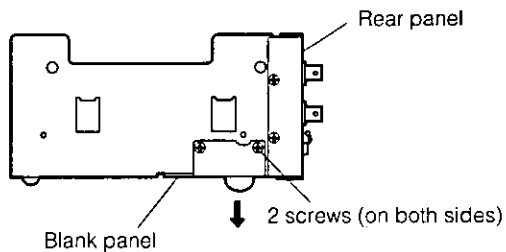


## ■ How to Change Rear Panel Direction

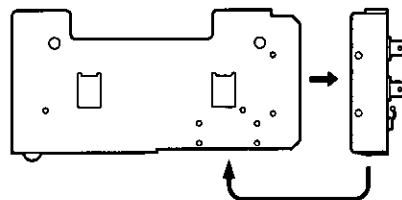
- ① Remove the four screws from both sides of the top cover, and take the top cover off.



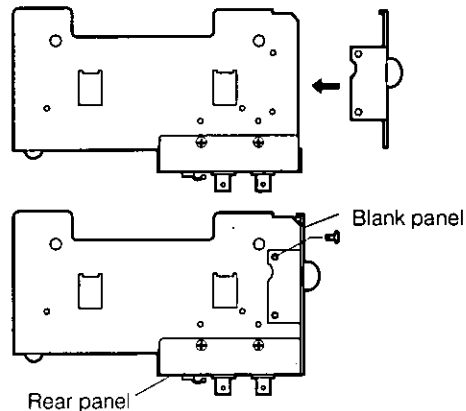
- ② Remove the four screws and take the blank panel off.



- ③ Remove the four screws from the rear panel, take off the rear panel, move it to the bottom, and fasten it.



- ④ Move the blank panel to the rear, and fasten it again with the four screws.



# SPECIFICATIONS

## Video Inputs

|                        |       |   |
|------------------------|-------|---|
| Composite video signal | : VBS | : 1.0 V[p-p]/75 $\Omega$ x 4 (BNC connector, automatic termination)     |
| Y/C                    | : Y   | : 1.0 V[p-p]/75 $\Omega$ , C: 0.286[Vp-p]/75 $\Omega$ x 4 (S connector) |
| Super signal           | : VS  | : 1.0 V[p-p]/75 $\Omega$ x 1 (BNC connector)                            |

## Video Outputs

|                        |       |  |
|------------------------|-------|--|
| Composite video output | : VBS | : 1.0 V[p-p]/75 $\Omega$ x 2 (BNC connector)                                     |
| Y/C                    | : Y   | : 1.0 V[p-p]/75 $\Omega$ , C: 0.286 V[p-p]/75 $\Omega$ x 2 (S connector)         |
| A-bus selected output  | : VBS | : 1.0 V[p-p]/75 $\Omega$ x 1 (BNC connector)                                     |
| B-bus selected output  | : VBS | : 1.0 V[p-p]/75 $\Omega$ x 1 (BNC connector)                                     |
| Black burst signal     | : BBS | : Sync: 0.286 V[p-p], C: 0.286[Vp-p] burst level/75 $\Omega$ x 1 (BNC connector) |

Composite video input and  
signal loopthrough output : 1 each (BNC connector)

## Functions and Performance

|                 |   |
|-----------------|---|
| Wipe patterns   | : 4 patterns (vertical, horizontal, upper left corner, lower left corner) |
| Wipe directions | : 3 directions (normal, reverse, normal/reverse)                          |
| Mix             | : Cross fader   |
| Auto take       | : Wipe, mix (time adjustable)   |
| Superimpose     | : White superimpose   |
| Intercom        | : 1 to 4 (6-pin connector, 3/4 wire selectable), Intercom jack (M6 jack)  |
| Tally control   | : 1 to 4 (open collector output)  |
| Color bar       | : Internal (SMPTE, input 4 selectable)                                    |

|                             |   |
|-----------------------------|---|
| White and black signals     | : Internal (White/black selectable)   |
| External sync unnecessary   | : Video can be input without external synchronization. (Switch may be operated for bypass.) |
| Power supply                | : 12 V DC   |
| Current consumption         | : 2.2 A   |
| Operating temperature range | : -10°C to +50°C  |
| Humidity                    | : 30% to 90%  |
| Dimensions                  | : 210 mm (W) x 88 mm (H) x 177 mm (D) [8-1/4" x 3-15/32" x 6-15/16"]                        |
| Weight                      | : Approx. 2.2 kg  |
| Finish                      | : AV ivory painting (Munsell 7.9Y6.8/0.8 or close to it)                                    |

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

## STANDARD ACCESSORIES

|                            |        |
|----------------------------|--------|
| Tally/intercom cable ..... | 4 pcs. |
| Rack mounting parts .....  | 2 pcs. |
| Connecting plate .....     | 1 pc.  |
| Mounting screws .....      | 1 set  |

---

# Panasonic

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**WESTERN ZONE:**

3330 Cahuenga Blvd W., Los Angeles, CA 90068 (323) 436-3500

**Government Marketing Department:**

52 West Gude Drive, Rockville, MD 20850 (301) 738-3840

**Broadcast PARTS INFORMATION & ORDERING:**

9:00 a.m.–5:00 p.m. (EST) (800) 334-4881/24 Hr. Fax (800) 334-4880

Emergency after hour parts orders (800) 334-4881

**TECHNICAL SUPPORT:**

Emergency 24 Hour Service (800) 222-0741

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5770 Ambler Drive, Mississauga, Ontario L4W 2T3 (905) 624-5010

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