



COLOR VIDEO MONITOR

TM-950DU

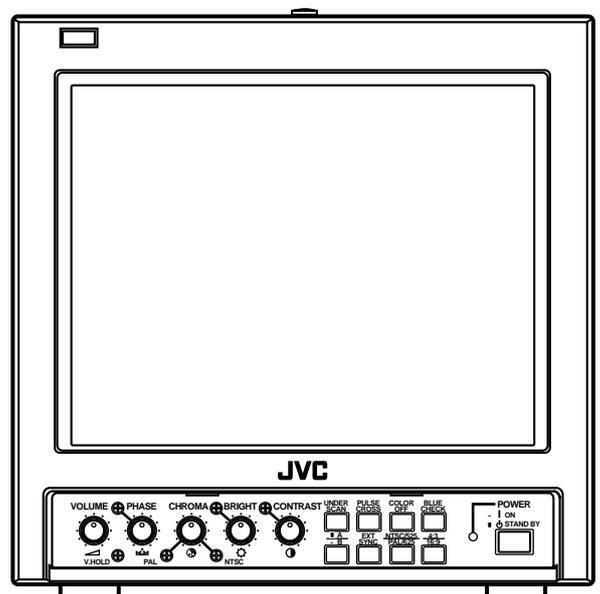
INSTRUCTIONS

For Customer Use:

Enter below the Serial No. which is located on the rear of the cabinet. Retain this information for future reference.

Model No. : TM-950DU

Serial No. : _____



Thank you for purchasing this JVC color video monitor. Before using it, read and follow all instructions carefully to take full advantage of the monitor's capabilities.

SAFETY PRECAUTIONS

WARNING:

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

CAUTION:

To reduce the risk of electric shock, do not remove cover.
Refer servicing to qualified service personnel.

This monitor is equipped with a 3-blade grounding-type plug to satisfy FCC rule. If you are unable to insert the plug into the outlet, contact your electrician.

When installing this unit, be sure that it is situated close to an easily accessible electrical outlet. The SDI circuit is always active when the unit is plugged into an AC outlet.

FCC INFORMATION (U.S.A. only)

CAUTION: Changes or modifications not approved by JVC could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

■ PRECAUTIONS

- Use only the power source specified on the unit. (120 V AC, 50 Hz/60 Hz)
- Keep flammable material, water, and metal objects away from the unit — especially the interior of the unit.
- This unit incorporates high voltage circuitry. For your own safety and that of your equipment, do not attempt to modify or disassemble this monitor. There are no user-serviceable parts inside.
- Unplug the monitor when you're not going to be using it for a long period.

■ HANDLING

- Avoid shocks or vibrations. These may damage the unit and cause it to malfunction.
- Do not block the ventilation slots.
- Do not expose this unit to high temperatures. Extended exposure to direct sunlight or a heater could deform the cabinet or cause the performance of internal components to deteriorate.
- Do not place the unit near appliances generating strong electric or magnetic fields. These can generate picture noise and instability.
- Keep the monitor clean by wiping the cabinet and CRT screen with a piece of soft cloth. Do not apply thinner or benzine. These chemicals can damage the finish and erase printed letters. When the unit is excessively dirty, use a diluted neutral cleanser, then wipe away the cleanser with a dry cloth.

SCREEN BURN

- It is not recommended to keep a certain still image displayed on screen for a long time as well as displaying extremely bright images on screen. This may cause a burning (sticking) phenomenon on the screen of cathode-ray tube. This problem does not occur as far as displaying normal video playback motion images.

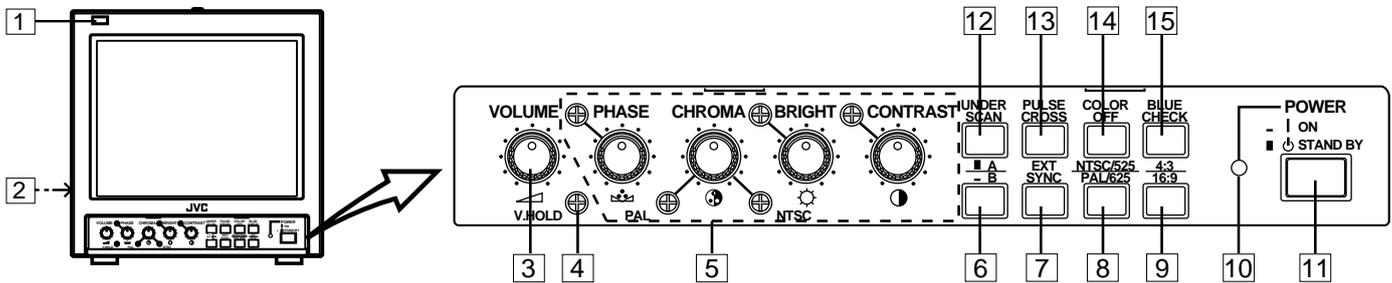
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CONTROLS AND FEATURES

Front

<Front Panel>



1 Tally lamp

Indicates that a control signal is being received. The tally lamp functions when the control signal is input to the TALLY/REMOTE terminal on the rear panel.

2 Speaker

A built-in speaker is located inside the left side panel.

3 VOLUME control

Adjusts the speaker volume.

4 V.HOLD control

Use a small-bladed screwdriver to adjust the image's vertical stability.

5 Picture control section

PHASE, CHROMA, BRIGHT and CONTRAST controls are available.

The standard setting mode can be obtained by setting each control to the center click position. To adjust a setting, insert a small-bladed screwdriver into the space around the knob and turn it to the desired position. When adjusting, use the small-bladed screwdriver and insert it into the control hole around the required control knob.

■ PHASE control

Adjusts picture hue.

■ CHROMA control

Adjusts picture color density.

■ BRIGHT control

Adjusts picture brightness.

■ CONTRAST control

Adjusts picture contrast.

Notes:

* The PHASE control is effective only in the NTSC color system mode.

* The standard CHROMA setting can be adjusted to suit the NTSC or PAL color system.

6 INPUT A/B switch

Select the video signal input to the video input terminals on the rear panel.

A (■) : Selects the signal input to VIDEO A and AUDIO A terminals on the rear panel.

B (▬) : Selects the signal input to VIDEO B and AUDIO B, or SDI and AUDIO B terminals on the rear panel.

Note:

* INPUT B supports both VIDEO and SDI terminals, and can be switched with the VIDEO/SDI switch on the rear panel.

7 EXT SYNC switch

Selects internal sync or external sync.

When using with the external sync, input the sync signal to the EXT SYNC terminal on the rear panel.

(■) : Internal sync

(▬) : External sync

Note:

* When an SDI input signal is selected, internal sync is maintained regardless of the position of the EXT SYNC switch.

8 NTSC/525 / PAL/625 switch

Selects the color system and deflection circuit.

NTSC/525 (■) : The NTSC color system is selected and the vertical deflection frequency is set to 60 Hz.

PAL/625 (▬) : The PAL color system is selected and the vertical deflection frequency is set to 50 Hz.

Note:

* When the SDI terminal is selected, the switch must be set according to the vertical frequency of the input signal.

9 4 : 3/16 : 9 switch

Selects the aspect ratio (4:3 or 16:9) of the picture displayed on the screen.

(■) : 4:3

(▬) : 16:9

Note:

* When a 4:3 picture is viewed in the 16:9 mode, the size of the image is reduced vertically.

10 Power indicator

Lights in green when the power is ON.

Lit : When the power is on.

Unlit : When the power is set to stand-by.

11 POWER switch

Press this switch to turn the power on or set it to stand-by mode.

ON (I) : Power is turned on and the power indicator lights.

STAND BY (I) : Power is set to stand-by mode.

12 UNDER SCAN switch

Selects the scanning mode (over scan screen or under scan screen).

(I) : Over scan screen

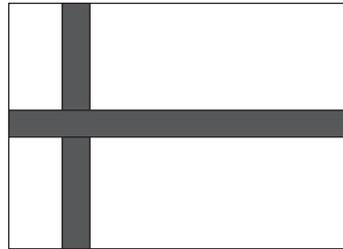
(I) : Under scan screen

13 PULSE CROSS switch

Checks the retrace period (sync signal) by delaying the input signal.

(I) : Normal screen

(I) : Retrace period display screen



Note:

* When an SDI input signal is selected, the normal screen is maintained regardless of the position of the PULSE CROSS switch.

14 COLOR OFF switch

Selects the screen mode (color or B/W). Useful when you want to check the white balance.

(I) : Color screen

(I) : B/W screen

15 BLUE CHECK switch

Selects the screen mode (normal or monochrome blue screen). Useful when you want to check the chroma and phase adjustment.

(I) : Normal screen

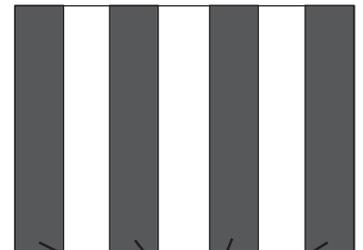
(I) : Monochrome blue screen

Note:

* The PHASE adjustment is effective only in the NTSC/525 mode.

[How to adjust]

1. Select the monochrome blue screen mode and input color bar signals in the order of brightness.
2. Adjust the CHROMA and PHASE controls until the density and brightness of each blue bar are the same.

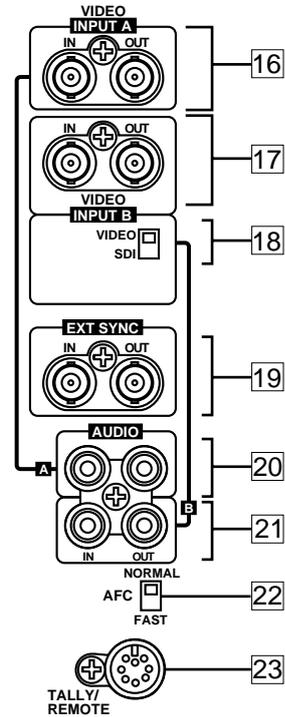
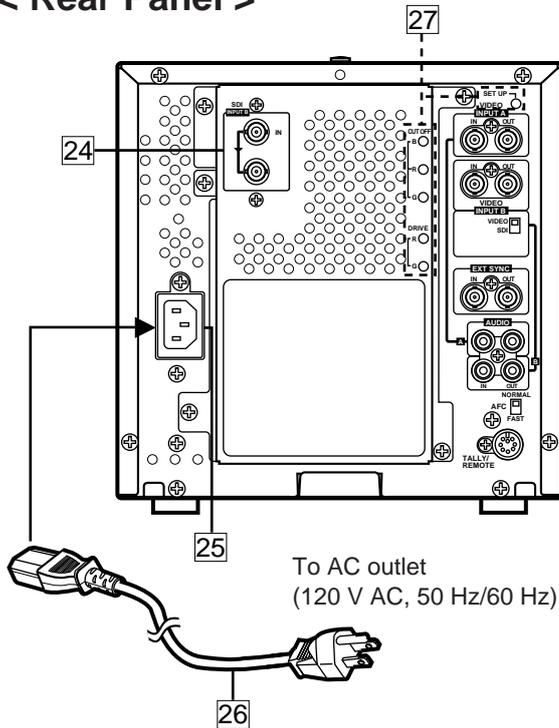


Adjust the blue bars to the same density and brightness.

CONTROLS AND FEATURES (cont'd)

Rear

< Rear Panel >



16 VIDEO A terminals

Video signal input (IN) and output (OUT) terminals. The output terminal is bridge-connected.

IN : Video signal input terminal

OUT : Bridge-connected video signal output terminal

Notes:

* For corresponding audio signals, use the AUDIO A terminals [20].

* Also refer to the Basic Connection Example on page 8.

17 VIDEO B terminals

Video signal input (IN) and output (OUT) terminals. The output terminal is bridge-connected.

IN : Video signal input terminal

OUT : Bridge-connected video signal output terminal

Notes:

* For corresponding audio signals, use the AUDIO B terminals [21].

* Also refer to the Basic Connection Example on page 8.

18 VIDEO/SDI switch

Selects the input terminal when INPUT B is selected with the INPUT A/B switch on the front panel.

VIDEO : Displays the video signal input to the VIDEO B terminal.

SDI : Displays the digital signal input to the SDI terminal via D/A conversion.

Note:

* Select VIDEO or SDI according to whether the input signal is a composite signal or a component serial digital signal.

19 EXT SYNC terminals

External sync signal input (IN) and output (OUT) terminals.

The output terminal is bridge-connected.

IN : Input terminal for the external sync signal

OUT : Bridge-connected output terminal

Note:

* Also refer to the Basic Connection Example on page 8.

20 AUDIO A terminals

Input (IN) and output (OUT) terminals for the audio signal corresponding to the VIDEO A terminals [16].

The output terminal is bridge-connected.

IN : Audio input terminal

OUT : Bridge-connected output terminal

Note:

* For corresponding video signals, use the VIDEO A terminals [16].

21 AUDIO B terminals

Input (IN) and output (OUT) terminals for the audio signal corresponding to the VIDEO B terminals [17] or SDI terminals [24].

The output terminal is bridge-connected.

IN : Audio input terminal

OUT : Bridge-connected output terminal

Note:

* For corresponding video signals, use the VIDEO B terminals [17] or SDI terminals [24].

22 AFC switch

Selects the AFC (Automatic Frequency Control) time constant for the horizontal sync circuit.

Correct the skewed portion of the picture.

NORM position : Normal mode

FAST position : Fast mode (fast: smaller time constant)

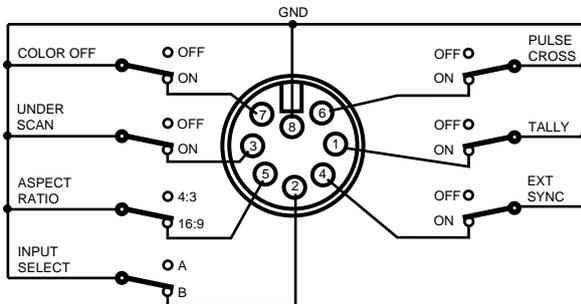
23 TALLY/REMOTE terminal

External control terminal (DIN 8-pin). Tally lamp, VIDEO A/B (input selection), Under Scan, External Sync, 4:3/16:9 (aspect ratio), Pulse Cross, and Color Off modes can be controlled from an external unit.

Notes:

- * When you're controlling the monitor externally via the TALLY/REMOTE terminal, set all corresponding switches on the front panel to the OFF (■) position. (Whichever switch is pressed first has priority so remote switches may not function if the panel switches are ON (■) position.)
- * The following functions do not work when the SDI terminal is selected:
 - PULSE CROSS does not work. (Normal screen is maintained.)
 - EXT SYNC does not work. (Internal sync is maintained.)

■ TALLY/REMOTE terminal pin layout



Pin No.	Signal	
1	TALLY lamp	ON/OFF
2	INPUT SELECT (INPUT A/B)	A/B
3	UNDER SCAN	ON/OFF
4	EXT SYNC (External Sync)	ON/OFF
5	ASPECT RATIO (4 : 3 / 16 : 9)	4 : 3 / 16 : 9
6	PULSE CROSS	ON/OFF
7	COLOR OFF	ON/OFF
8	GND	

24 SDI terminals

Input (IN) terminal for component series digital signals and active through output (OUT) terminal.

Notes:

- * For corresponding audio signals, use the AUDIO B terminals [21].
- * Also refer to BASIC CONNECTION EXAMPLE on page 9.

25 AC Inlet [AC IN]

Power input connector. Connect the provided AC power cord [26] to an AC outlet (120 V AC, 50 Hz/60 Hz).

26 Power cord

Connect the provided power cord (120 V AC, 50 Hz/60 Hz) to the AC IN connector.

27 Switch/control adjustment holes for service personnel

For adjustment of SET UP switch, CUT OFF (B, R, G) control and DRIVE (R, G) control during servicing.

Note:

- * These controls are exclusively for the use of service personnel. Do not attempt to adjust them yourself.

About the SDI Terminal

The SDI terminal inputs signals to a serial digital interface (SDI) circuit, where it performs D/A conversion of SMPTE 259M-compliant 4:2:2 component serial digital signals. The SDI circuit in this monitor automatically performs analog conversion to NTSC/525 or PAL/625 video signals.

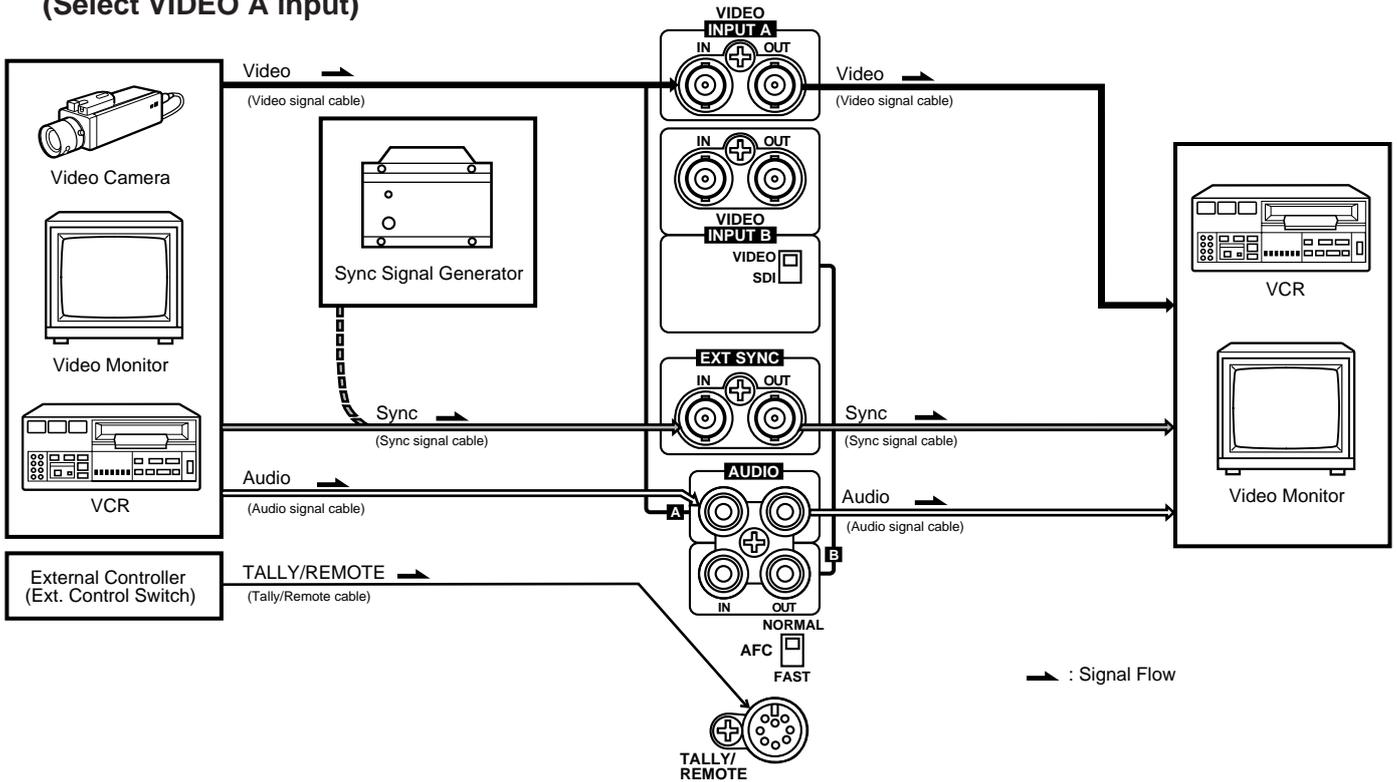
Notes:

- * In this monitor, the following operations are necessary when the SDI terminal is selected:
 - Setting the NTSC/525 / PAL/625 switch
 - Setting PHASE control in the NTSC/525 video signal
- * The following functions do not work when the SDI terminal is selected:
 - PULSE CROSS does not work. (Normal screen is maintained.)
 - EXT SYNC does not work. (Internal sync is maintained.)

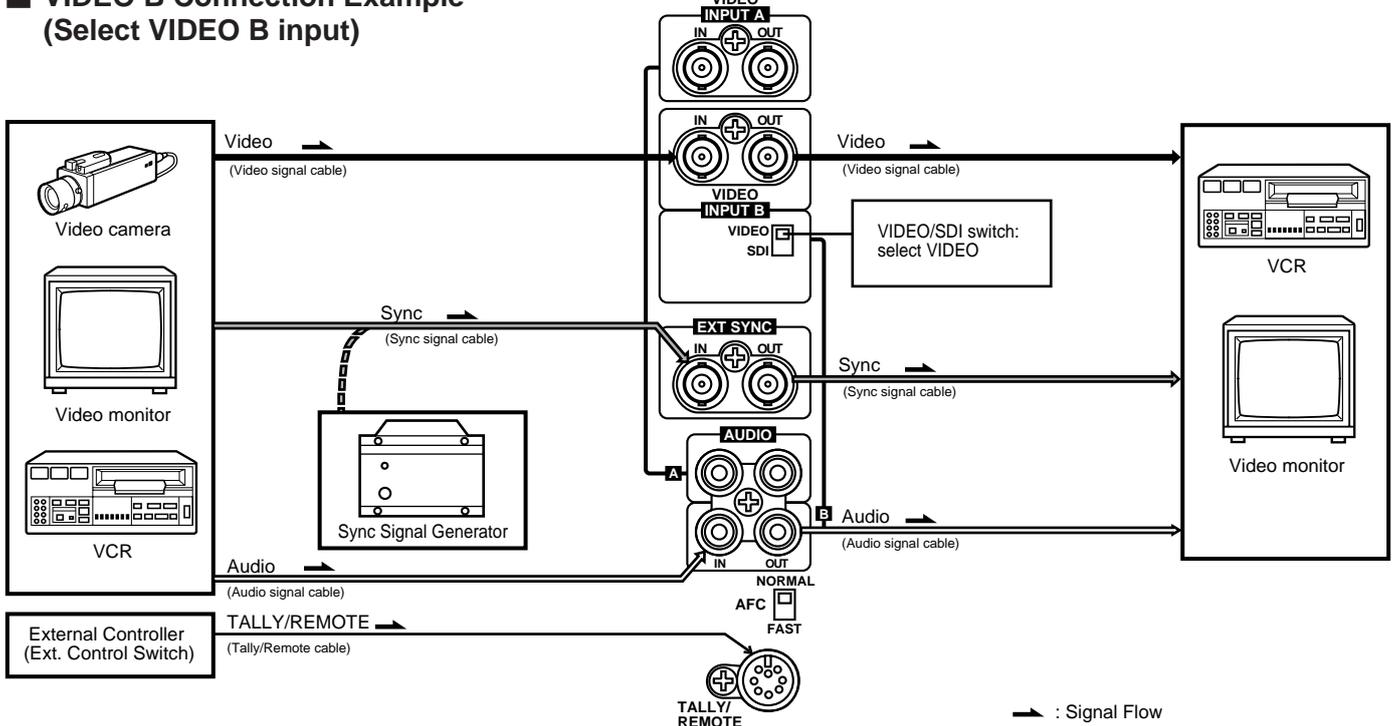
BASIC CONNECTION EXAMPLE

- Before connecting your system, make sure that all units are turned off.
- The illustration below shows some examples of different connections. Terminal connections may differ depending on the component connected. Be sure to refer to the instructions provided with the unit(s) you are connecting.
- Each pair of input (IN) and output (OUT) terminals are bridge-connected.
- If you're not connecting any equipment to a bridged output (OUT) terminal, be sure not to connect any other cables to the bridged output (OUT) terminal as this will cause the terminating resistance switch to open (auto terminate function).
- When making a bridge connection, connect the input (IN) and output (OUT) terminals on the monitor to separate video components.
(For example, if both terminals are connected to the same VCR, resonance may occur except during playback. This is caused by the same video signal "looping" between the VCRs, and is not a malfunction.)
- Select the video input (VIDEO A or VIDEO B) with the VIDEO A/B switch on the front panel.

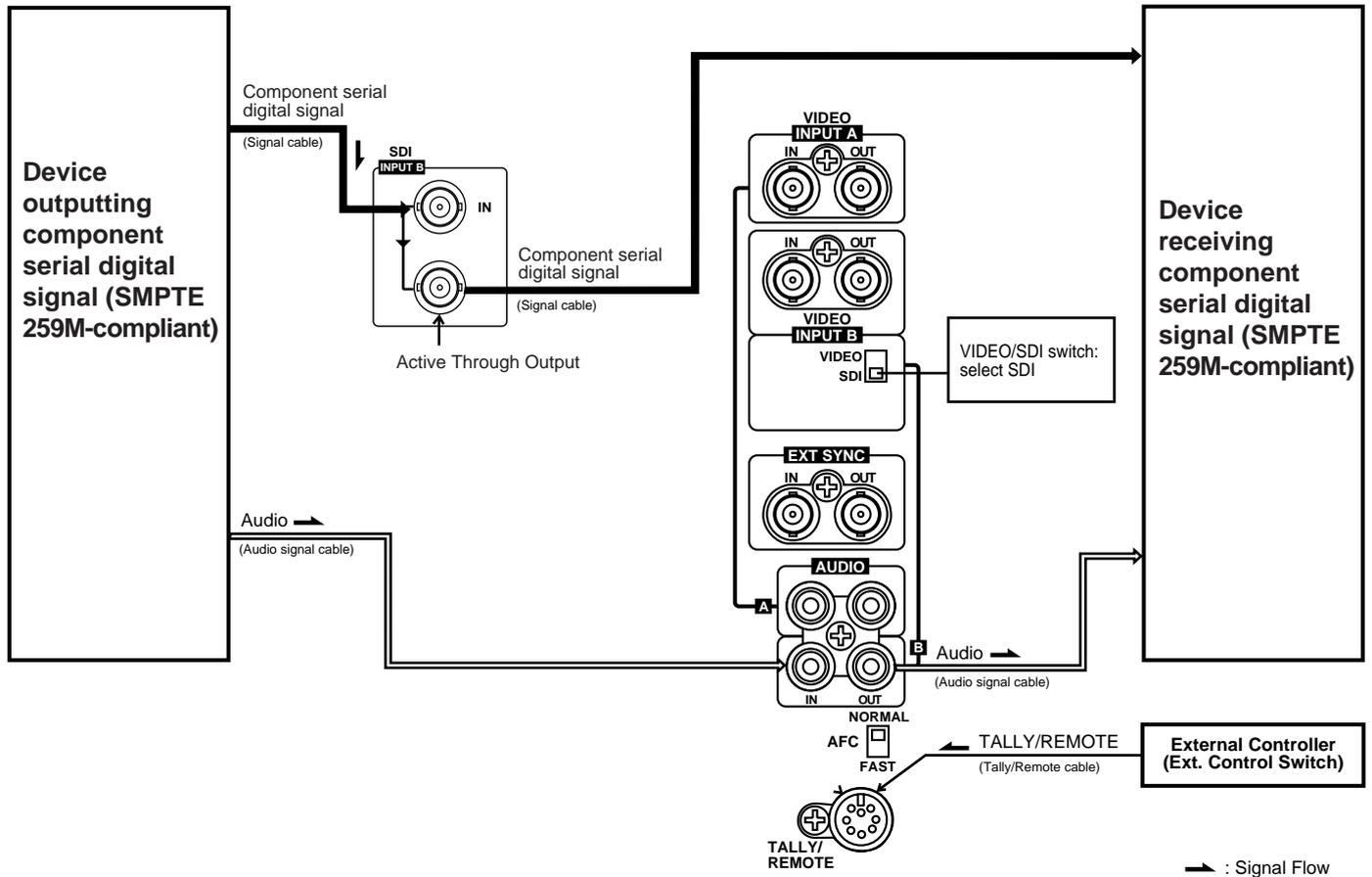
VIDEO A Connection Example (Select VIDEO A input)



VIDEO B Connection Example (Select VIDEO B input)



SDI Connection Example



Notes:

- The audio signal embedded in the component serial digital signal cannot be used with this unit. Use the analogue output signal instead.
- Even when the power is set to stand-by mode, the signal from the IN terminal is output to the Active Through output terminal. (Power is always supplied to the SDI circuit.) When the power cord is disconnected from the AC outlet, the SDI circuit operation is interrupted and thus the signal is not output from the Active Through terminal.

TROUBLESHOOTING

Solutions to common problems related to your monitor are described here. If none of the solutions presented here solves the problem, unplug the monitor and consult a JVC-authorized dealer or service center for assistance.

Problems	Points to be checked	Measures
No power supply.	Is the power plug loosened or disconnected?	Firmly insert the power plug.
No picture with the power on.	Is the video signal output from the connected component?	Set the connected component correctly.
	Is the input signal selected properly?	Select the required video signal input with the VIDEO A/B switch. (See page 4.) When INPUT B is selected, select the input terminal (VIDEO or SDI) with the VIDEO/SDI switch. (See pages 6, 8, 9.)
	Is the video cable disconnected?	Connect the video signal cable firmly. (See page 8 and 9.)
No sound.	Is the audio signal output from the connected component?	Set the connected component correctly.
	Is the volume output set at the minimum position?	Adjust the VOLUME control. (See page 4.)
	Is the audio cable disconnected?	Connect the audio signal cable firmly. (See page 8 and 9.)
Shaking picture.	Is the monitor close to a device generating a strong magnetic field (motor, transformer, etc.)?	Move the device away from the monitor until the picture stabilizes.
No color, wrong color, or dark picture.	Is the NTSC/525 / PAL/625 switch selected properly?	Select the correct color system and vertical deflection frequency with the NTSC/525 / PAL/625 switch. (See page 4.)
	Is the COLOR OFF switch set properly?	Set the COLOR OFF switch to the OFF (■) position. (See page 5.)
	Has the picture control setting (CONTRAST, BRIGHT, CHROMA or PHASE) been changed?	Set each picture control to the standard setting (center) position. (See page 4.)
Unnatural, irregularly colored, or distorted picture.	Is the monitor close to a speaker, magnet or any other device generating a strong magnetic field?	Move the device away from the monitor and turn the monitor's power off. Wait at least 30 minutes, then turn the power on again.
Dark stripes at the top and bottom of the screen, picture vertically squeezed.	Is the aspect ratio set to 16:9 (■)?	Set the 4:3/16:9 switch to the normal 4:3 (■) position. (See page 4.)
	Is the NTSC/525 / PAL/625 switch selected properly?	Select the correct color system and vertical deflection frequency with the NTSC/525 / PAL/625 switch. (See page 4.)
The overall picture size is too small.	Is the UNDER SCAN switch set to "Under scan (■)"?	Set the UNDER SCAN switch to the normal "Over scan screen (■)" position. (See page 5.)
Picture flows.	Is the EXT SYNC switch set properly?	Set the EXT SYNC switch properly. (See page 4.)
Front panel switches do not function.	Is the monitor being controlled by an external control unit via the TALLY/REMOTE terminal?	Set the control on the external unit of the same function as that on the monitor's front panel to the OFF (■) position, or disconnect the unit from the TALLY/REMOTE terminal. (See pages 4, 5, 7 – 9.)
External control not possible with the unit connected to TALLY/REMOTE terminal.	Is the switch on the front panel of the same function as that on the external control unit to the ON (■) position?	Set the control on the front panel of the same function as that on the external control unit to the OFF (■) position. (See pages 4, 5, 7 – 9.)

The following are not malfunctions:

- When a bright still image (such as a white cloth) is displayed for a long period, it may appear to be colored. This is due to the structure of the cathode ray tube and will be deleted when another image is displayed.
- You experience a mild electric shock when you touch the picture tube. This phenomenon is due to a normal buildup of static electricity on the CRT and is not harmful.
- The monitor emits a strange sound when the room temperature changes suddenly. This is only a problem if an abnormality appears on the screen as well.
- If two or more monitors are operated next to each other, their images may shake or be distorted. This phenomenon is due to mutual interference; it is not a malfunction. Move the monitors away from each other until the interference disappears or turn the power off on any monitor that is not being used.

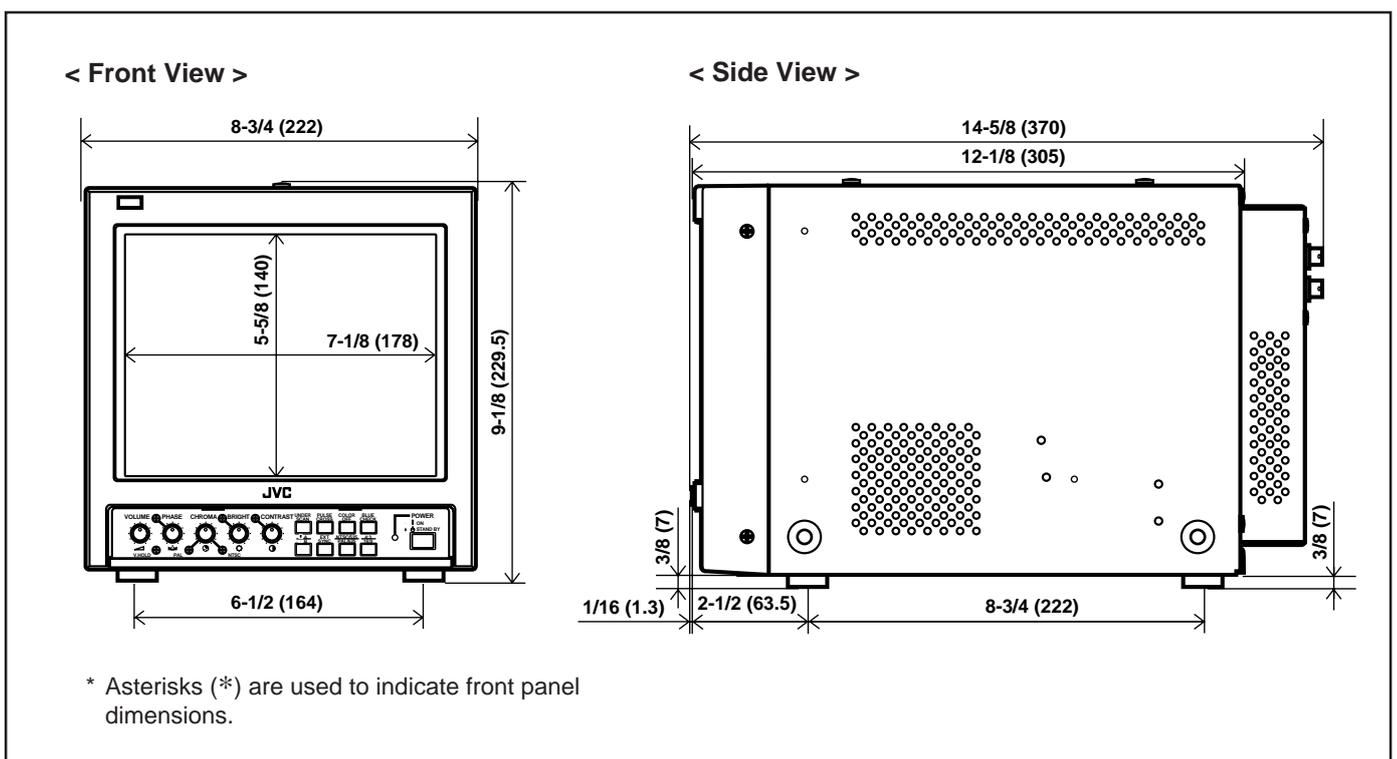
SPECIFICATIONS

- **Type** : Color video monitor
- **Color system** : NTSC, PAL
- **Picture tube** : 9" measured diagonally, flat-square type, 90° deflection, in-line gun, vertical line trio type (phosphor stripe pitch 0.5 mm)
- **Effective screen size** : Width 6-7/8" (175 mm)
Height 5-3/8" (137 mm)
Diagonal 8-3/4" (222 mm)
- **Scanning frequency** : (H) 15.734 kHz (NTSC)
15.625 kHz (PAL)
(V) 59.94 Hz (NTSC)
50 Hz (PAL)
- **Horizontal resolution** : 280 TV lines or more (SDI input mode)
- **Input terminals**
 - VIDEO A : Composite video: 1 line, BNC connector x 2, 1 V(p-p), 75 Ω, negative sync (bridge connection possible, auto termination)
 - VIDEO B : Composite video: 1 line, BNC connector x 2, 1 V(p-p), 75 Ω negative sync (bridge connection possible, auto termination)
 - SDI : Component serial digital (SMPTE 259M-compliant)
IN : BNC connector x 1
Active through out : BNC connector x 1
- **External sync** : Composite sync 1 line, BNC connector x 2 0.3 V(p-p) – 4 V(p-p), 75 Ω (bridge connection possible, auto termination)
- **Tally/Remote** : 1 line, DIN 8-pin x 1
- **Audio power output** : 1 W (monaural)
- **Built-in speaker** : 3-3/16" (8 cm) round x 1 impedance of 8 Ω
- **Environmental conditions** : Operation temperature: 0 °C – 40 °C (32 °F – 104 °F)
Operation humidity: 20 % – 80 % (non-condensing)
- **Power requirements** : 120 V AC, 50 Hz/60 Hz
- **Power consumption** : 0.83A (120 V AC)
- **Dimensions** : Width 8-3/4" (222 mm)
Height 9-1/8" (229.5 mm)
Depth 14-5/8" (370 mm)
- **Weight** : 17.4 lbs (7.9 kg)
- **Accessory** : AC power cord [7.9 ft (2.4 m)] x 1

* Illustrations used in this manual are for explanatory purposes only. The appearance of the actual product may differ slightly.
* E. & O. E. Design and specifications subject to change without notice.

Dimensions

Unit : inch (mm)



JVC[®]

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