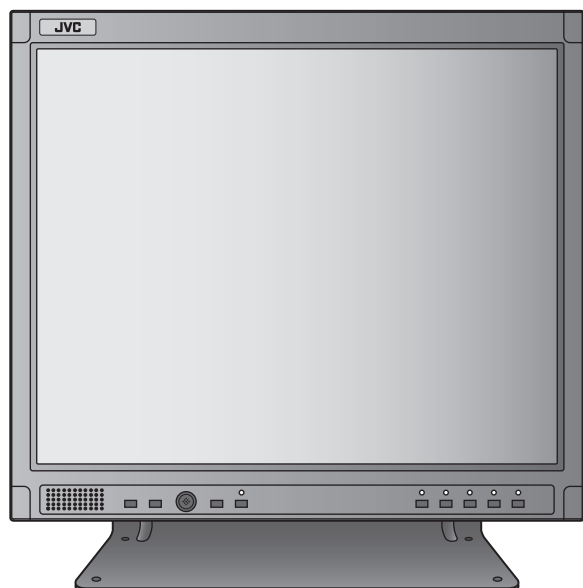# JVC

LCD DISPLAY MONITOR

LM-170
LM-150

INSTRUCTIONS

The illustration of the monitor is of LM-170.

Safety Precautions

IMPORTANT SAFEGUARDS

Electrical energy can perform many useful functions. This unit has been engineered and manufactured to assure your personal safety. But **IMPROPER USE CAN RESULT IN POTENTIAL ELECTRICAL SHOCK OR FIRE HAZARD.** In order not to defeat the safeguards incorporated into this product, observe the following basic rules for its installation, use, and service. Please read these "IMPORTANT SAFEGUARDS" carefully before use.

• All the safety and operating instructions should be read before the product is operated.
• The safety and operating instructions should be retained for future reference.
• All warnings on the product and in the operating instructions should be adhered to.
• All operating instructions should be followed.

FCC NOTICE (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.

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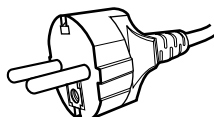
POWER CONNECTION

The power supply voltage rating of this product is AC 100 – 240 V.
The power cord attached conforms to the following power supply voltage and countries. Use only the power cord designated to ensure safety and EMC regulations of each countries.
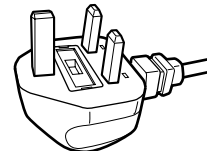
For U.S.A. and Canada: AC 120 V

For European and Asian countries: AC 220 – 240 V

For United Kingdom: AC 220 – 240 V

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

• This product should be operated only with the type of power source indicated on the label. If you are not sure of the type of power supply of your home, consult your product dealer or local power company.

Warning:
• Do not use the same power cord for AC 120 V as for AC 220 – 240 V. Doing so may cause malfunction, electric shock or fire.

Note for United Kingdom power cord only
The plug on United Kingdom power cord has a built-in fuse. When replacing the fuse, be sure to use only a correctly rated approved type, re-fit the fuse cover. (Consult your dealer or qualified personnel.)

How to replace the fuse
Open the fuse compartment with the blade screwdriver, and replace the fuse.

Fuse
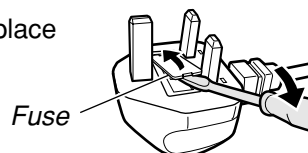
Safety Precautions (cont.)

- Make enough room for inserting or removing the power plug. Place the product as close to the outlet as possible. The main power supply for the product is controlled by inserting or removing the power plug.
- When the product is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cables.
- Do not overload wall outlets, extension cords, or convenience receptacles on other equipment as this can result in a risk of fire or electric shock.
- Use only the accessory cord designed for this product to prevent shock.

Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltages and other hazards. Refer all service to qualified service personnel.

- Do not put heavy objects on the product.
- Do not rest your arm on the product or lean against the product.
- Do not hang on the product when installing the product on the wall.

- Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at doors, plugs, receptacles, and the point where they exit from the product.

The illustration of the monitor is of LM-170.

- When the product is used on a table with casters, lock the casters to prevent the product from falling over.

- Do not use the monitor for a long time if the sound is distorted. (LM-170 only)

- Do not use this product near water.
- Do not use immediately after moving from a low temperature to high temperature, as this causes condensation, which may result in a fire, electric shock, or other hazards.

- Leave the following distance of space (minimum) around the monitor (see diagram below). This product may become hot during use. To avoid overheating, keep enough space around the product and take enough care when handling the product.

When installing the monitor on a stand   *Unit: mm (inch)*
Front view   *Side view*

100 (4)
100 (4)
100 (4)
100 (4)
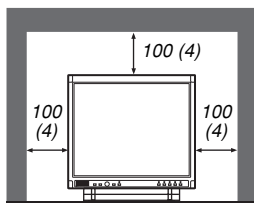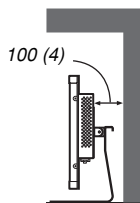
When installing the monitor on the wall   *Unit: mm (inch)*
Front view   *Side view*

100 (4)
100 (4)
100 (4)
100 (4)
50 (2)

4

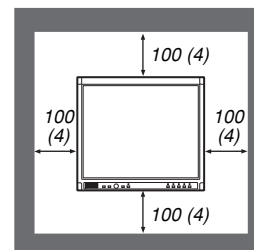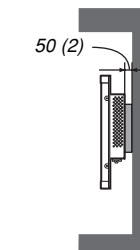- Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock.
- Never spill liquid of any kind on the product.

Under the following conditions,
1. Turn off the power.
2. Unplug this product from the wall outlet.
3. Refer service to qualified service personnel.

a) When the product emits smoke or unusual smell.
b) When the product exhibits a distinct change in performance—for example, no picture or no sound.
c) If liquid has been spilled, or objects have fallen on the product.
d) If the product has been exposed to rain or water.
e) If the product has been dropped or damaged in any way.
f) When the power supply cord or plug is damaged.
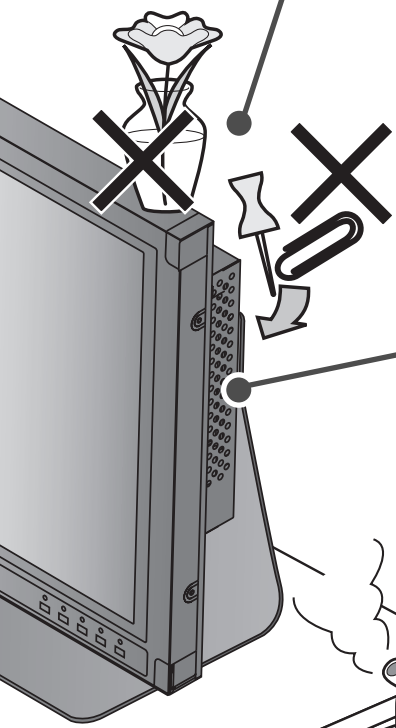
- Slots and openings in the cabinet are provided for ventilation. These ensure reliable operation of the product and protect it from overheating. These openings must not be blocked or covered.
- The openings should never be blocked by placing the product on bed, sofa, rug, or similar surface. It should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided and the manufacturer's instructions have been adhered to.

Do not install this product in the following places:
- in a damp or dusty room
- where the product is exposed to soot or steam, such as near the cooking counter or a humidifier
- near heat sources
- where condensation easily occurs, such as near the window
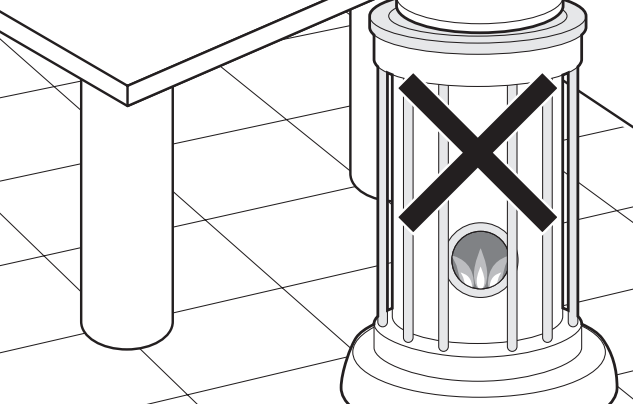
- When connecting other products such as VCR's and personal computers, you should turn off the power of this product for protection against electric shock.
- Do not use attachments not recommended by the product manufacturer as they may be hazardous.

- **When replacement parts are required,** be sure the service technician has used replacement parts specified by the manufacturer or equivalents. Unauthorized substitutions may result in fire, electric shock, or other hazards.
- **Upon completion of any service or repairs to this product,** ask the service technician to perform safety checks to determine that the product is in proper operating condition.

▌Safety Precautions (cont.)

Maintenance

Unplug this product from the wall outlet before cleaning.

Screen

To avoid irreparable change in appearance of the screen such as uneven color, discoloration, scratches, be careful about the following:
• Do not paste or stick anything with any glues or adhesive tapes.
• Do not write anything on the screen.
• Do not strike the screen with a hard object.
• Avoid condensation on the screen.
• Do not wipe the screen with solvent such as alcohol, thinner, or benzine.
• Do not wipe the screen hard.

If the screen gets stained, wipe it with a soft dry cloth, a soft damp cloth, or a soft cloth soaked in water-diluted neutral detergent and wrung well.

Cabinet

To avoid the deterioration or damages of the cabinet such as its paint's peeling away, be careful about the following:
• Do not wipe the cabinet using solvent such as alcohol, thinner, or benzine.
• Do not expose the cabinet to any volatile substance such as insecticides.
• Do not remain any rubber or plastic in contact for a long time.
• Do not wipe the cabinet hard.

Wipe stains off the cabinet with a soft cloth. If the cabinet gets heavily stained, wipe it with a soft cloth soaked in water-diluted neutral detergent and wrung well, and then wipe with a soft dry cloth.

Ventilation openings

• Use a vacuum cleaner to get rid of the dust around the intakes (all the openings). If a vacuum cleaner is not available, use a cloth and wipe it off. Leaving the dust around the intakes may raise up the internal heat and cause damage to the product.

Information for Users on Disposal of Old Equipment

Attention:
This symbol is only valid in the European Union.

[European Union]

This symbol indicates that the electrical and electronic equipment should not be disposed as general household waste at its end-of-life. Instead, the product should be handed over to the applicable collection point for the recycling of electrical and electronic equipment for proper treatment, recovery and recycling in accordance with your national legislation.

By disposing of this product correctly, you will help to conserve natural resources and will help prevent potential negative effects on the environment and human health which could otherwise be caused by inappropriate waste handling of this product. For more information about collection point and recycling of this product, please contact your local municipal office, your household waste disposal service or the shop where you purchased the product.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

(Business users)

If you wish to dispose of this product, please visit our web page www.jvc-europe.com to obtain information about the take-back of the product.

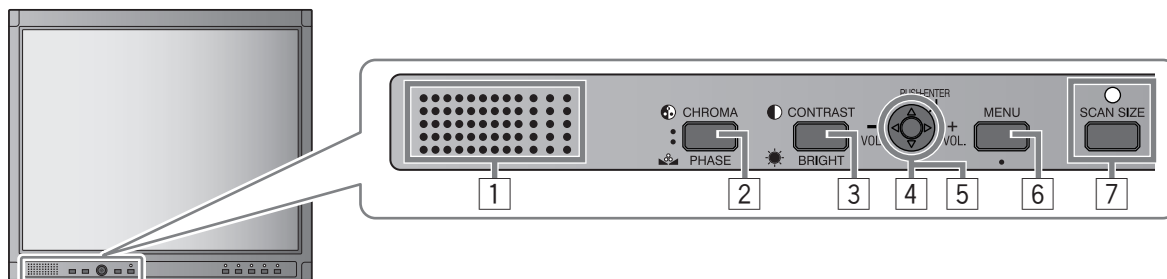**[Other Countries outside the European Union]**

If you wish to dispose of this product, please do so in accordance with applicable national legislation or other rules in your country for the treatment of old electrical and electronic equipment.

▌Contents

Controls and Features

■ Front panel

The illustration of the monitor is of LM-170.

① Speaker (Monaural) (LM-170 only)

Outputs the audio signal of the selected input.

NOTE:
- *For audio signals input to the DVI-D or RGB terminal, left and right audio channel are mixed and output as monaural audio.*

② CHROMA/PHASE button*¹

Activates the Chroma (picture color density) adjustment mode or the Phase (picture hue) adjustment mode.
- Press the button to select the mode, then adjust the value (–25 - 00 - +25) by pushing the menu control button (④) left or right.

NOTE:
- *Chroma is adjustable when the NTSC or PAL signal is input.*
- *Phase is adjustable when the NTSC signal is input.*
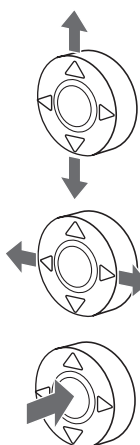
③ CONTRAST/BRIGHT button*¹

Activates the picture contrast adjustment mode or picture brightness adjustment mode.
- Press the button to select the mode, then adjust the value (–25 - 00 - +25) by pushing the menu control button (④) left or right.

④ Menu control button

Operates the menu by pushing or pressing the button to the indicated direction.
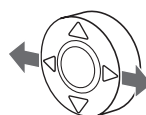☞ pages 13 and 14

Pushing the button up or down:
Selects a menu item.

Pushing the button left or right:
Adjusts the selected menu item.

Pressing the center of the button:
- Goes to the next step.
- Performs the selected function.

⑤ Volume control button (LM-170 only)*²

While the menu is not displayed, adjust the volume level (00 to 50) by pushing the button left or right.

⑥ MENU button

Displays the MAIN MENU.
☞ page 13

To display the SET-UP MENU:
Press the CHROMA/PHASE button (②) while pressing the MENU button. (☞ page 14)

⑦ SCAN SIZE button/lamp

Selects the screen size.

OVER → 100% → USER → (back to the beginning)

NOTE:
- *Memorized for each input.*
- *For LM-170: when "100%" is selected, black bars appear on the top and the bottom of the screen because the aspect ratio of the LCD panel is 5:4.*
- *When "USER" is selected, horizontal/vertical size and position can be manually adjusted. (☞ "SIZE/POSI. ADJ. (USER)" on page 15)*
- *When "100%" or "USER" is selected, the lamp lights up.*
- *This function is not available for the computer signals.*

---

*¹ During picture adjustment:
- The adjustment bar will disappear in about 10 seconds after the last operation.
- Pressing MENU will also make the adjustment bar disappeared.
- "NO EFFECT" is displayed when the operation you have tried is not available for the current input or setting.
- The position of the adjustment bar can be changed. (☞ "ADJ. BAR POSI." on page 13)

*² During volume adjustment (LM-170 only):
- The adjustment bar will disappear in about 5 seconds after the last operation.
- Pressing MENU will also make the adjustment bar disappeared.
- The position of the adjustment bar can be changed. (☞ "ADJ. BAR POSI." on page 13)
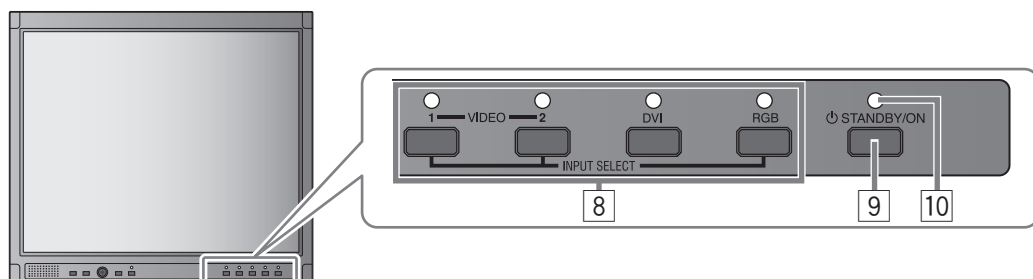
The illustration of the monitor is of LM-170.

8 INPUT SELECT buttons/lamps

Select an input to display.

VIDEO 1: Selects the video signal input to the VIDEO 1 terminal.

VIDEO 2: Selects the video signal input to the VIDEO 2 terminal.

DVI: Selects the video signal input to the DVI-D terminal.

RGB: Selects the video signal input to the RGB terminal.

• For LM-170, the corresponding audio signal is also selected.

9 ⏻ STANDBY/ON button

Turns on and off (standby) the monitor.

NOTE:
• *To disconnect the mains line completely, unplug the AC plug from the wall outlet.*

10 Power lamp

Lights in orange:
The monitor is off (standby).

Flashes in orange:
The monitor is in the suspend mode.

Lights in Green:
The monitor is on.

Unlit:
The monitor is off (the AC plug is not connected).

■ About the status display

When "STATUS DISPLAY" is set to "ON" (☞ page 16), the status (information of the current input and the monitor settings) is displayed for about 5 seconds in the following cases:

• When you press the INPUT SELECT button of the current input.
• When you change the inputs.
• When the signal condition of the current input changes.

```
VIDEO 1 · · · · · · · · · · · · · · · · · · · · · · · · · · ·①
NTSC · · · · · · · · · · · · · · · · · · · · · · · · · · · · ·②
OVER · · · · · · · · · · · · · · · · · · · · · · · · · · · · ·③
```
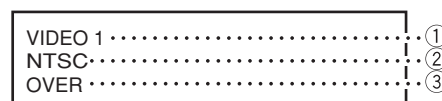
① **Input status**

② **Signal format**
• "NO SYNC" is displayed when no video signal is input.
• When "COLOR SYSTEM" is set to "AUTO" (☞ page 13), "OTHERS" is displayed for a noncompliant video signal input.
• "Out of range" is displayed for a noncompliant computer signal input.

③ **Setting of SCAN SIZE**
☞ "7 SCAN SIZE button/lamp" on page 8

NOTE:
• *Not displayed for computer signals.*

Controls and Features (cont.)

■ Rear panel

The illustration of the monitor is of LM-170.

① **AC inlet**

Power input connector. Connect the provided AC power cord to an AC outlet (AC 120 V/AC 220 - 240 V, 50 Hz/60 Hz).

② **VIDEO terminals**

ⓐ **VIDEO 1 terminals (BNC)**

Input (IN) and output (OUT) terminals for the composite signals.
• The IN and OUT terminals are bridge-connected (auto termination).
• Use the AUDIO 1 terminal* for the audio connection.

ⓑ **VIDEO 2 terminals (BNC)**

Input (IN) and output (OUT) terminals for the composite signals.
• The IN and OUT terminals are bridge-connected (auto termination).
• Use the AUDIO 2 terminal* for the audio connection.

ⓒ **AUDIO 1 terminal (pin jack)***

Input terminal for the analog audio signals.
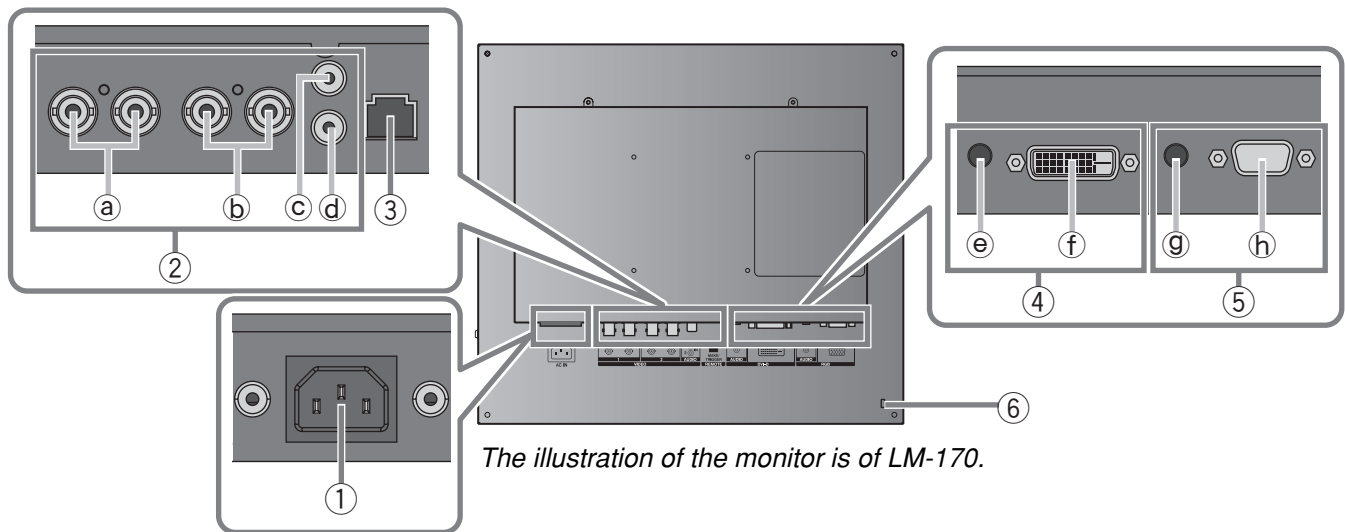• Use the VIDEO 1 terminal for the video connection.

ⓓ **AUDIO 2 terminal (pin jack)***

Input terminal for the analog audio signals.
• Use the VIDEO 2 terminal for the video connection.

③ **REMOTE (external control) terminal (MAKE/ TRIGGER)**

Terminals for controlling the monitor by an external control.
• Enables the monitor to be controlled by short-circuiting the pin terminal in this terminal or by inputting the pulse signal.
☞ "How to Use the External Control" on page 17

④ **DVI-D terminals**

ⓔ **AUDIO terminal (stereo mini jack)***

Input terminal for the analog audio signals.
NOTE:
• *The built-in speaker of the monitor is monaural.*

ⓕ **DVI-D terminal**

Input terminal for the DVI-D signals.
NOTE:
• *Use a DVI-D cable with two ferrite cores (commercially available) to avoid electromagnetic interference.*

⑤ **RGB terminals**

ⓖ **AUDIO terminal (stereo mini jack)***

Input terminal for the analog audio signals.
NOTE:
• *The built-in speaker of the monitor is monaural.*

ⓗ **RGB terminal (D-sub 15-pin)**

Input terminal for the analog RGB signals.

⑥ **Security slot**

Install a security wire to this slot.
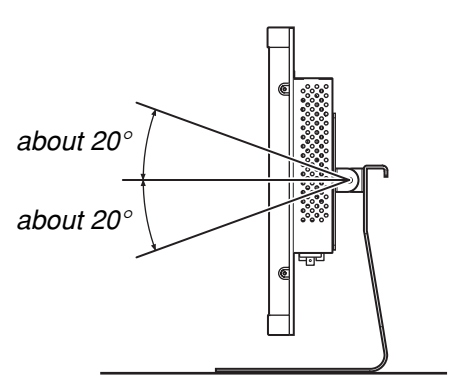
* Equipped on LM-170 only
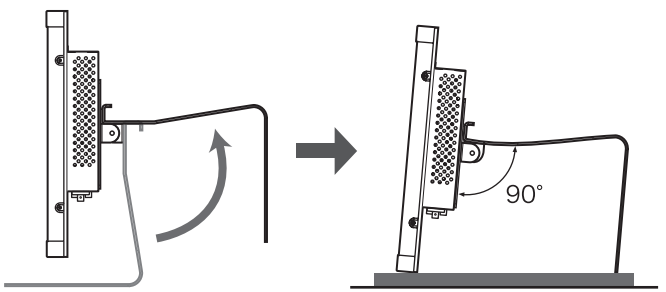
▌Installation

NOTE:
- *Do not rest your arm on the monitor or lean against the monitor.*
- *Do not hold the LCD panel when installing the monitor.*
- *Make sure to install the monitor securely to prevent the monitor from falling over, which causes damage to the monitor or injury.*
- *The illustrations of the monitor is of LM-170.*

■ Using the monitor on the stand

You can place the monitor in the following two ways when using the monitor on the supplied stand.

You can tilt the monitor upward or downward within the range of about 20° in each direction.	When the monitor is attached to the higher position of the stand (see below), you can lift the stand up by 90° and place the monitor as illustrated below.

about 20°

about 20°

90°

NOTE:
- *Be careful not to pinch your fingers in the gap between the monitor and the stand.*
- *Do not tilt the monitor upward more than 20°; otherwise the monitor may fall over.*
- *When the monitor is attached to the lower position of the stand (see below), you cannot tilt the monitor downward.*

NOTE:
- *Be careful not to pinch your fingers in the moving parts.*
- *Make sure to lift the stand up until it stops; otherwise the monitor may fall over.*
- *Place the monitor on a mat to avoid scratching the table surface.*
- *Do not place the monitor in this way when the monitor is attached to the lower position of the stand.*

To adjust the stand height
You can select the stand height—higher position or lower position.
- For how to detach the stand, see below.

Screw holes for lower position

Screw holes for higher position
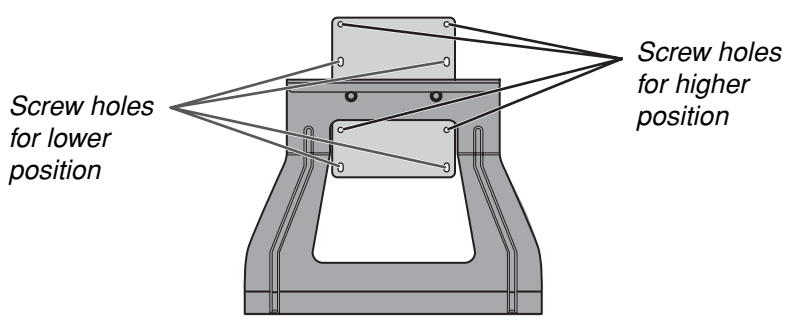
To detach the stand

NOTE:
- *Lay the monitor on a cloth with the LCD panel facing down to prevent the LCD panel being damaged.*

Screw (M4 x 10)

Stand

VESA mounting holes

Monitor

11
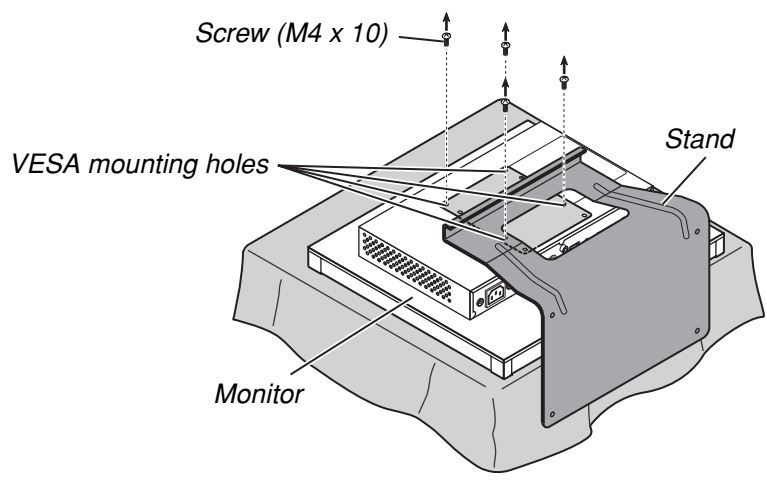
▌Installation (cont.)

■ Installing the monitor on the wall

Use a commercial wall mounting unit compliant with the VESA standard (100 mm x 100 mm).

NOTE:
• *Detach the stand first. (☞ page 11)*
• *Ask your dealer to install.*
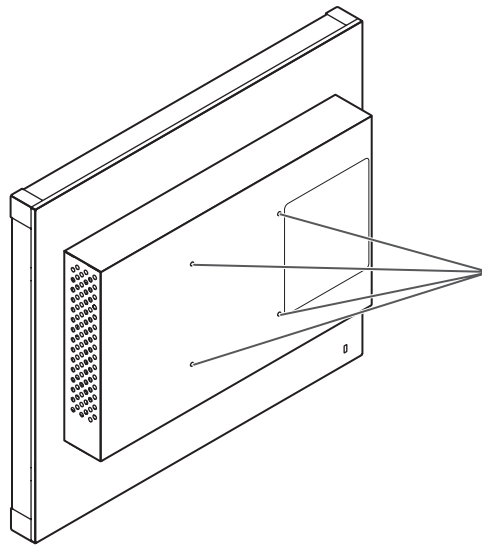
*VESA mounting holes
(See page 21 for the specifications
of the mounting holes.)*

■ Installing the monitor on the rack

Use a JVC's RACK MOUNT ADAPTER (RK-C157L1G; not supplied).

NOTE:
• *Detach the stand first. (☞ page 11)*
• *Ask your dealer to install.*

How to Use the MAIN MENU

The MAIN MENU contains the functions for daily use.

MAIN MENU

```
<MAIN  MENU>

►BACK  LIGHT        : 25
 SHARPNESS          : 02
 CTI.               : NORMAL
 LTI.               : OFF
 COLOR  SYSTEM      :NTSC
 ASPECT             :4 : 3
 ADJ.  BAR  POSI.   :LOWER
 AUTO ADJ.
 △all  reset
SELECT:[▲▼] ADJUST:[◄|►] ENTER:(⊕) EXIT:[MENU]
```

MENU

① Select

② Adjust

Operation guide
Shows the buttons for each operation.

■ **To exit the menu:**

MENU

When analog RGB signals are input from the computer

① Select "AUTO ADJ."

② Perform "AUTO ADJ."

```
NOW  ADJUSTING
```

① Select "all reset"

② Next

```
< all  reset >
△Are you sure?
˝YES˝ then  ⊕  key
˝NO˝  then  [MENU] key
```

Perform "all reset"

MENU

Cancel

NOTE:
* *The menu automatically disappears in about 30 seconds after the last menu operation.*
* *Some items may not appear on the menu. Those items are not available for the current input or the current input signal.*

■ MAIN MENU items

BACK LIGHT

Adjusts the brightness of the display.
   Setting value: 00 - 25

SHARPNESS

Adjusts the clearness of the picture.
   Setting value: 00 - 10

CTI.

Adjusts the clearness of the outlines of the color signals (R/G/B).
   Setting value: OFF, NORMAL, HARD

LTI.

Adjusts the clearness of the outlines of the luminance signal.
   Setting value: OFF, NORMAL, HARD

COLOR SYSTEM

Selects the color system.
   Setting value: AUTO, NTSC, PAL

NOTE:
* *If the picture is unstable with "AUTO," select "NTSC" or "PAL."*

ASPECT

Selects the aspect ratio.
   Setting value: 4:3, 16:9
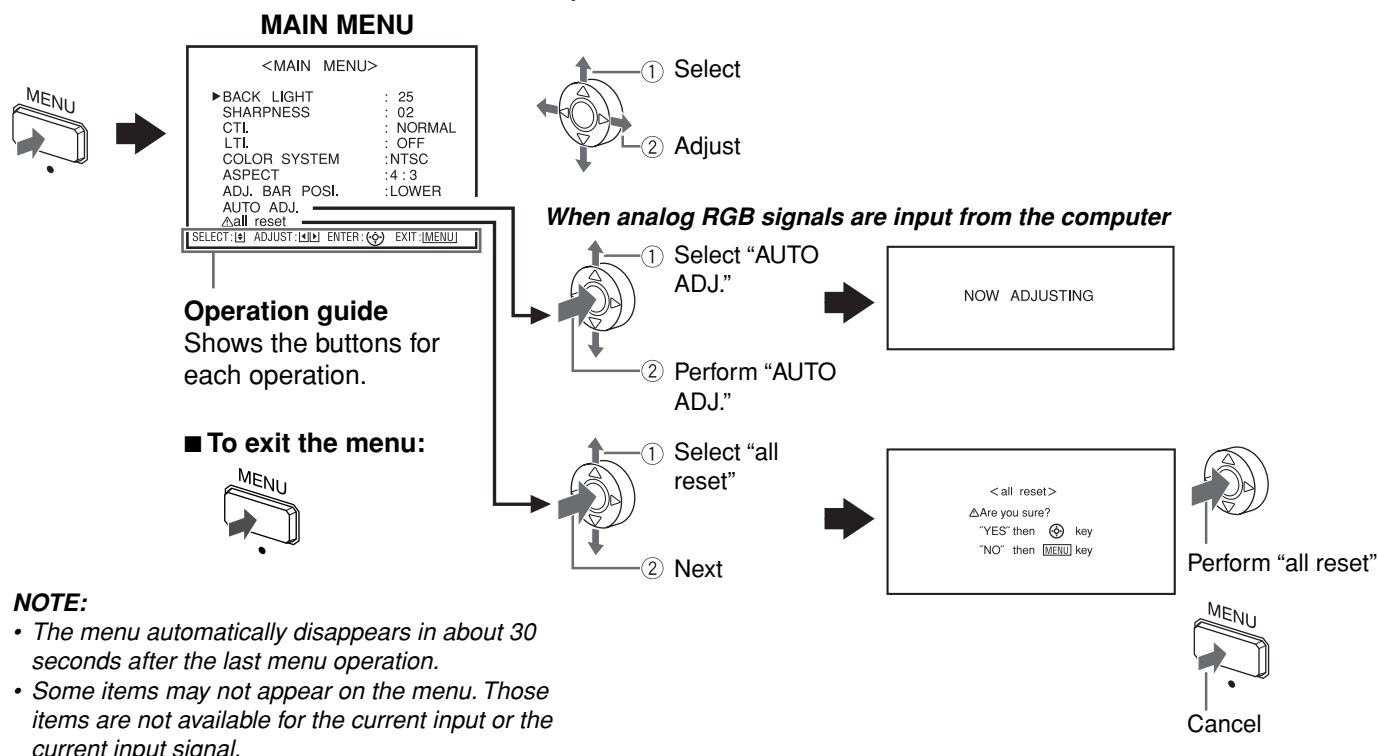
NOTE:
* *Memorized for each input.*

ADJ. BAR POSI.

Selects the position of the adjustment bars.
   Setting value: UPPER, LOWER

AUTO ADJ.

Adjusts the position of the picture automatically when analog RGB signals are input from the computer. By using this function, the picture is displayed as large as possible in the effective screen area.
* Adjust the items in "SIZE/POSI. ADJ. (RGB)" (☞ page 15) manually when you cannot get a good picture quality with "AUTO ADJ."

all reset

Restores all the settings and adjustments of the monitor to the factory settings.
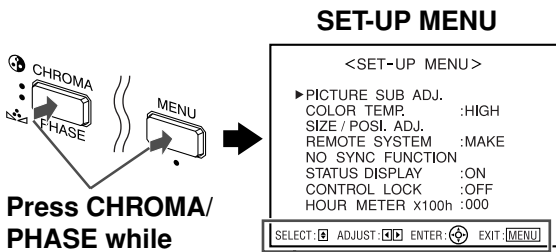* Adjustments made by using the buttons on the front panel will also be reset.

NOTE:
* *"HOUR METER X100h" (☞ page 16) and the settings of "SIZE/POSI. ADJ. (RGB)" (☞ page 15) will not be reset.*
* *After performing "all reset," the screen goes back to the MAIN MENU.*

How to Use the SET-UP MENU

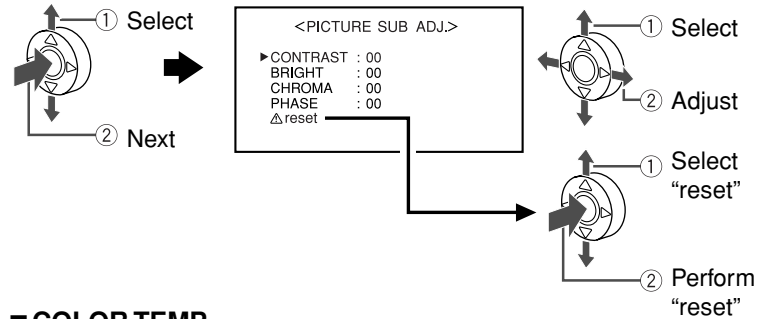The SET-UP MENU contains the initial settings of the monitor.

SET-UP MENU

CHROMA
PHASE
MENU

Press CHROMA/PHASE while pressing MENU.

```
        <SET-UP MENU>

 ▶PICTURE SUB ADJ.
  COLOR  TEMP.          :HIGH
  SIZE / POSI. ADJ.
  REMOTE  SYSTEM        :MAKE
  NO  SYNC  FUNCTION
  STATUS  DISPLAY       :ON
  CONTROL  LOCK         :OFF
  HOUR  METER X100h     :000

 SELECT:▣ ADJUST:◀▶ ENTER:⊕ EXIT:MENU
```

Operation guide
Shows the buttons for each operation.

■ **To exit the menu:**

MENU

■ PICTURE SUB ADJ.

① Select
② Next

```
      <PICTURE SUB ADJ.>

 ▶CONTRAST : 00
  BRIGHT    : 00
  CHROMA    : 00
  PHASE     : 00
  ⚠reset
```

① Select
② Adjust

① Select "reset"
② Perform "reset"

■ COLOR TEMP.

① Select
② Adjust
Next
(When selecting "USER1" or "USER2" in ②)

```
     <COLOR TEMP. (USER1)>

 ▶R  DRIVE : 00
  G  DRIVE : 00
  B  DRIVE : 00
```

① Select
② Adjust

■ SIZE/POSI. ADJ.

① Select
② Next

When video signals are input and "SCAN SIZE" is "USER"

```
   <SIZE / POSI.  ADJ. (USER)>

 ▶H. SIZE          : 00
  H. POSI.         : 00
  V.  SIZE (4 : 3)  : 00
  V.  POSI. (4 : 3) : 00
```

① Select
② Adjust

Ex. When "ASPECT" is "4:3"

When analog RGB signals are input from the computer

```
   <SIZE / POSI.  ADJ. (RGB) >

 ▶H. POSI.       : 50
  V.  POSI.      : 50
  DOT  CLOCK     : 50
  CLOCK  PHASE : 50
```

① Select
② Adjust

■ NO SYNC FUNCTION

① Select
② Next

```
     <NO  SYNC  FUNCTION>

 ▶NO SYNC  DISPLAY : OFF
  DELAY  TIME        : 5
```

① Select
② Adjust

■ REMOTE SYSTEM
■ STATUS DISPLAY
■ CONTROL LOCK

① Select
② Adjust

(☞ page 16)

■ **To go back to the previous screen:**

MENU

■ SET-UP MENU items

PICTURE SUB ADJ.

Sets the standard level for the picture adjustments by using the CHROMA/PHASE and CONTRAST/BRIGHT buttons on the front panel.

CONTRAST*1	Adjusts the standard level for contrast adjustment.	−20 - 00 - +20
BRIGHT*1	Adjusts the standard level for brightness adjustment.	−20 - 00 - +20
CHROMA*1	Adjusts the standard level for chroma adjustment.	−20 - 00 - +20
PHASE*1	Adjusts the standard level for phase adjustment.	−20 - 00 - +20
reset	Restores the items in "PICTURE SUB ADJ." to the factory settings.	

COLOR TEMP.

Selects the color temperature and adjusts the drive level of each color (R/G/B).

COLOR TEMP.*1		Selects the color temperature. • When selecting "USER1" or "USER2," adjust the R/G/B drive level below.	HIGH (9300), LOW (6500), USER1, USER2
	R DRIVE	Adjusts the drive level of red.	−40 - 00 - +40
	G DRIVE	Adjusts the drive level of green.	−40 - 00 - +40
	B DRIVE	Adjusts the drive level of blue.	−40 - 00 - +40

SIZE/POSI. ADJ. (USER)

Adjusts the position and size of the picture. This item is available only when video signals are input and "SCAN SIZE" (☞ page 8) is set to "USER."

H. SIZE*1	Adjusts the horizontal picture size.	−40 - 00 - +40
H. POSI.*1	Adjusts the horizontal picture position.	−40 - 00 - +40
V. SIZE (4:3)*1	Adjusts the vertical picture size (for 4:3 aspect ratio).	−40 - 00 - +40
V. SIZE (16:9)*1	Adjusts the vertical picture size (for 16:9 aspect ratio).	−40 - 00 - +40
V. POSI. (4:3)*1	Adjusts the vertical picture position (for 4:3 aspect ratio).	−40 - 00 - +40
V. POSI. (16:9)*1	Adjusts the vertical picture position (for 16:9 aspect ratio).	−40 - 00 - +40

SIZE/POSI. ADJ. (RGB)

Adjusts the position of the picture. This item is available only when analog RGB signals are input from the computer.

H. POSI.*2	Adjusts the horizontal picture position.	00 - 99
V. POSI.*2	Adjusts the vertical picture position.	00 - 99
DOT CLOCK*2	Eliminates stripes or flickering by adjusting the both settings.	00 - 99
CLOCK PHASE*2		00 - 99

NOTE:

*1 Memorized for each input.

*2 Memorized for each signal.

How to Use the SET-UP MENU (cont.)

REMOTE SYSTEM

Selects the external control system of the MAKE/TRIGGER terminal.
Setting value: MAKE (make contact system), TRIG. (trigger system)

NO SYNC FUNCTION

Selects the screen status when no signal is being input.

NO SYNC DISPLAY	Sets the screen status when no signal is being input.	OFF, SUSPEND (suspend mode), GRAY (gray screen)
DELAY TIME	Sets the period until the screen status changes after signals stop coming in.	5, 20, 60 (seconds, approx.)

STATUS DISPLAY

Selects whether or not to display the status. (☞ page 9)
Setting value: ON, OFF

NOTE:
• *While this item is set to "ON," warning messages except "Control lock on!" do not appears.*

CONTROL LOCK

Turns on (or off) the control lock function to disable the buttons on the front panel.
Setting value: ON, OFF

NOTE:
• *The following operations are available while this function is activated:*
  – Turning on/off the monitor
  – Displaying the SET-UP MENU (by pressing CHROMA/PHASE button while pressing the MENU button) and turning "CONTROL LOCK" to "OFF"
  – Operating the monitor by the external control
  If you try other operations, "Control lock on!" appears on the screen.

HOUR METER X100h

Shows the total hours of use.

NOTE:
• *The hour is shown in 100-hour unit.*
• *The hour is reset to "000" after the total hours of use have reached to "999."*
• *Use time less than 1 hour is not accumulated.*

How to Use the External Control

■ About the external control

The monitor has the MAKE/TRIGGER terminal, which allows you to control the monitor by the MAKE (make contact) or TRIG. (trigger) system.

MAKE (make contact) system: Controls the function by short-circuiting the corresponding pin terminal to the GND pin terminal, or disconnecting (opening) it.

TRIG. (trigger) system: Controls the function by inputting the pulse signal instantaneously to the corresponding pin terminal.

* Select "MAKE" or "TRIG." from "REMOTE SYSTEM" in the SET-UP MENU.
  ☞ "REMOTE SYSTEM" on page 16

NOTE:
* *When using the make contact system, you cannot use the buttons on the front panel or menu to utilize functions which are controlled through the MAKE/TRIGGER terminal. (When using the trigger system, you can also use those functions using the buttons on the front panel or the menu.)*

■ How to use the MAKE/TRIGGER terminal

8 7 6 5 4 3 2 1
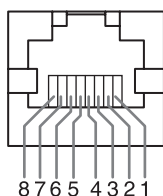
This is a female terminal.

No.	Functions to be controlled	Opening	Short-circuiting	*1
1	Changes the input to VIDEO 1	Invalid	Valid	
2	Changes the input to VIDEO 2	Invalid	Valid	
3	Changes the input to DVI	Invalid	Valid	
4	Changes the input to RGB	Invalid	Valid	
5	—	—	—	
6	Changes ASPECT to 16:9	Off	On	
7	External control	Invalid	Valid	*2
8	GND	—	—	

*1 The TRIG. (trigger) system switches each function by short-circuiting for approx. 1 second.
*2 External control (the 7th pin terminal) is controlled by the MAKE (make contact) system even when you select the "TRIG." (trigger) system.

Operation
1. Short-circuit the 7th pin terminal (External control) to the 8th pin terminal (GND) so that the monitor can be controlled externally.
2. **When selecting the "MAKE" (make contact) system,** operate each function by short-circuiting the corresponding pin terminal to the 8th pin terminal (GND) or opening it.
   When selecting the "TRIG." (trigger) system, operate each function by pulse control, that is short-circuiting the corresponding pin terminal to the 8th pin terminal (GND) for about 1 second.

NOTE:
* *When controlling No. 1 to 4 pin terminals by the MAKE (make contact) system, only one terminal must be short-circuited. (Other terminals must be opened.)*
* *When selecting the "TRIG." (trigger) system, you can operate only one function at a time. Operate the functions one by one.*

▌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 (Remedy)	Reference pages
No power supply	Is the power plug loosened or disconnected?	Firmly insert the power plug.	—
No picture with the power on	Is the signal cable disconnected?	Connect the signal cable firmly.	10
	Is the power of the connected component on? Is the signal being output from the connected component?	Turn on the power of the connected component and set the output correctly.	—
	Is the input selected correctly?	Select the correct input with the INPUT SELECT buttons.	9
	Is the input signal adapted to the monitor's specification?	Check if the input signal format is acceptable to the monitor.	20
"OTHERS" or "Out of range" appears.	Is the input signal adapted to the monitor's specification?	Check if the input signal format is acceptable to the monitor.	20
"NO SYNC" appears.	Is the signal cable disconnected?	Connect the signal cable firmly.	10
	Is the input selected correctly?	Select the correct input with the INPUT SELECT buttons.	9
	Is the power of the connected component on? Is the signal being output from the connected component?	Turn on the power of the connected component and output video signals. Or, check if the video output of the component (video output setting of the VCR or graphic board of the computer) is set correctly.	—
No sound (LM-170 only)	Is the signal cable disconnected?	Connect the signal cable firmly.	10
	Is the signal being output from the connected component?	Turn on the power of the connected component and set the output correctly.	—
	Is the volume set to minimum?	Adjust the volume level.	8
Wrong color, no color	Has the picture adjustment been changed?	Adjust the picture by using the buttons on the front panel or the items in "PICTURE SUB ADJ." in the SET-UP MENU. Or, perform "reset" in "PICTURE SUB ADJ."	8, 15
	Has the white balance setting been changed?	Change "COLOR TEMP." in the SET-UP MENU. Or, perform "all reset" in the MAIN MENU.	13, 15
	Is the correct color system selected?	Set "COLOR SYSTEM" correctly in the MAIN MENU.	13
Unnatural picture	Has "CONTRAST" or "BRIGHT" been changed?	Adjust picture contrast or brightness by using the buttons on the front panel. Or, adjust "CONTRAST" or "BRIGHT" in "PICTURE SUB ADJ." in the SET-UP MENU.	8, 15

Problems	Points to be checked	Measures (Remedy)	Reference pages
Wrong picture position, wrong picture size	Has the picture position or size been changed?	Adjust the picture size (H. SIZE/V. SIZE) or position (H. POSI./V. POSI.) in "SIZE/POSI. ADJ." in the SET-UP MENU. When analog RGB signals are input from the computer, perform "AUTO ADJ." in the MAIN MENU.	13, 15
		For some signals, the picture cannot be displayed fully in the effective screen area. There is no sure method to solve this problem.	—
	Is the input signal adapted to the monitor's specification?	Check if the input signal format is acceptable to the monitor.	20
	Has the SCAN SIZE button been pressed?	Press the SCAN SIZE button to select "OVER."	8
	Is "ASPECT" in the MAIN MENU set to "16:9"?	Set it to "4:3."	13
Some items do not appear on the menu.	The items which are not available for the current input or the current input signal do not appear on the menu.	Change the input or the input signal.	—
The buttons on the front panel do not function.	Is "CONTROL LOCK" in the SET-UP MENU set to "ON"?	Set it to "OFF."	16
	Has the monitor's setting been changed to enable control by the external control connected to the REMOTE terminal?	Disable the external control.	17
Installing the driver is required when a computer is connected.	—	Use the driver of the graphic board installed into your computer (the driver is supplied with the graphic board). Or, set the monitor to the standard display. • Recommended display setting: 1280 x 1024, 60 Hz (LM-170) 1024 x 768, 60 Hz (LM-150)	—

The following are not malfunctions:
- When a still image is displayed for a long time, it may remains on the screen after the picture changes. This is due to the characteristics of the LCD display and is not malfunction. The remaining picture will disappear after a while.
- The red spots, blue spots and green spots on the panel surface are a normal characteristic of LCD displays, and not a problem. The LCD display is built with very high precision technology, however, be aware that a few pixels may be missing or constantly lit.

The following symptoms are problems only when pictures or sounds are not played back normally:
- A slight electric shock occurs when you touch the monitor.
- The top and/or rear panel of the monitor becomes hot.
- The monitor emits a cracking noise.
- The monitor emits a mechanical noise.

Specifications

Model	LM-170	LM-150
Type	LCD Display Monitor	
LCD panel	17", active matrix TFT	15", active matrix TFT
Effective Screen Size	Width: 337.9 mm (13 1/4") Height: 270.3 mm (10 5/8")	Width: 304.1 mm (11 15/16") Height: 228.1 mm (8 15/16")
Number of Pixels Displayed	1280 x 1024	1024 x 768
PC Scanning Frequency	H: 31.5 kHz – 80 kHz V: 56 Hz – 75 Hz	H: 31.5 kHz – 60 kHz V: 56 Hz – 75 Hz
	* Some signals within this frequency range may not be displayed depending on the computer you use ("Out of range" appears).	

Input/Output Terminals	Video	VIDEO 1	Composite video: 1 line, BNC connector x 2, 1 V(p-p), 75 Ω * The input (IN) and output (OUT) terminals are bridge-connected. (Auto termination)
		VIDEO 2	
		DVI-D	DVI-D: DVI-D connector x 1 (compatible with DDC2B)
		RGB	Analog RGB: D-Sub 15-pin x 1 Video signal: G: 1 V(p-p), 75 Ω (including sync) R, B: 0.7 V(p-p), 75 Ω Horizontal sync (HD)/Composite sync (Cs): 1 V(p-p) – 5 V(p-p) (positive/negative polarity) Vertical sync (VD): 1 V(p-p) – 5 V(p-p) (positive/negative polarity) * Computer signals are compatible with DDC2B.
	Audio	AUDIO 1	Analog audio: 1 line, RCA connector x 1, 500 mV (rms), high impedance
		AUDIO 2	
		AUDIO (DVI-D)	Analog audio: 1 line, Stereo mini jack (φ 3.5 mm) x 1, 500 mV (rms), high impedance
		AUDIO (RGB)	

Compliant Video Signal Format	Video signal: Composite video: NTSC, PAL, B/W (50 Hz/60 Hz) Computer signal: DVI-D: ☞ "Available computer signals" on page 22 Analog RGB: ☞ "Available computer signals" on page 22
Audio Output	Internal: 1 W (monaural)
Environmental Conditions	Operating temperature: 5°C – 35°C (41°F – 95°F) Operating humidity: 20% – 85% (non-condensing)
Power Requirements	AC 100 - 240 V, 50 Hz/60 Hz

	LM-170	LM-150
Rated Input Current	0.9 A	0.9 A
Dimensions	Width: 374 mm (14 3/4") 374 mm (14 3/4") Height: 373.6 mm (14 3/4") 334 mm (13 1/4") Depth: 184 mm (7 1/4") 70.5 mm (2 7/8") (with the stand) (without the stand)	Width: 342 mm (13 1/2") 342 mm (13 1/2") Height: 330.6 mm (13 1/8") 291 mm (11 1/2") Depth: 184 mm (7 1/4") 70.5 mm (2 7/8") (with the stand) (without the stand)
Weight	7.2 kg (15.8 lbs) (including the stand) 4.6 kg (10.1 lbs) (excluding the stand)	6.2 kg (13.6 lbs) (including the stand) 3.6 kg (7.9 lbs) (excluding the stand)
Accessory	AC power cord	

* Illustrations and pictures used in this manual have been exaggerated, abbreviated or compounded for explanatory purposes only. The appearance of the actual product may differ slightly.
* Dimensions and weight are approximate.
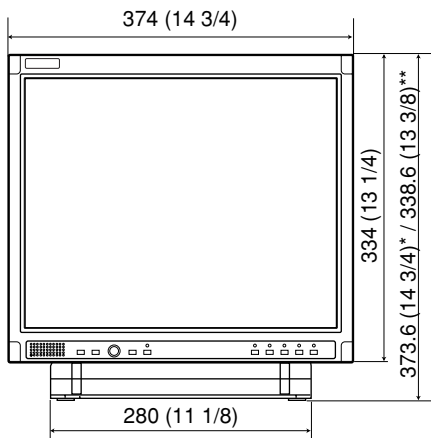* Design and specifications are subject to change without notice.
* All company names and product names mentioned herein are used for identification purposes only, and may be the trademarks or registered trademarks of their respective companies.
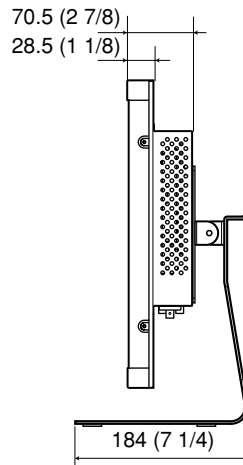
■ Dimensions

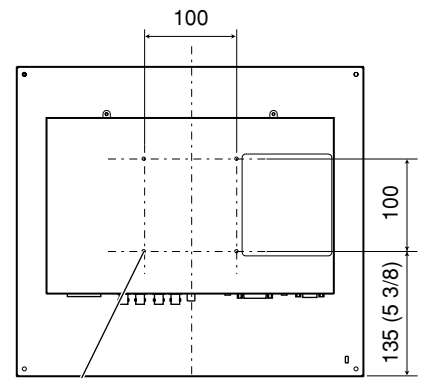*Unit : mm (inch)*

LM-170

Front View

374 (14 3/4)
334 (13 1/4)
373.6 (14 3/4)* / 338.6 (13 3/8)**
280 (11 1/8)

* at the higher position
** at the lower position

Side View

70.5 (2 7/8)
28.5 (1 1/8)
184 (7 1/4)

Rear View (without the stand)

100
100
135 (5 3/8)

VESA mounting holes
(Size: M4, depth: 10 mm)

LM-150

Front View
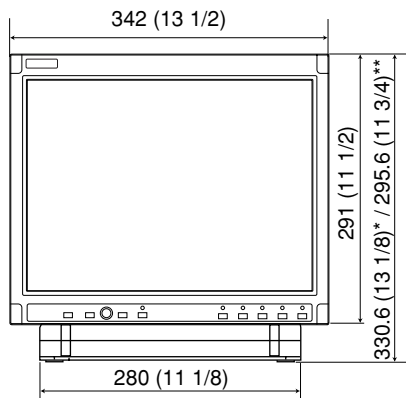
342 (13 1/2)
291 (11 1/2)
330.6 (13 1/8)* / 295.6 (11 3/4)**
280 (11 1/8)

* at the higher position
** at the lower position

Side View

70.5 (2 7/8)
28.5 (1 1/8)
184 (7 1/4)

Rear View (without the stand)

100
100
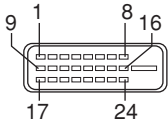135 (5 3/8)

VESA mounting holes
(Size: M4, depth: 10 mm)

21
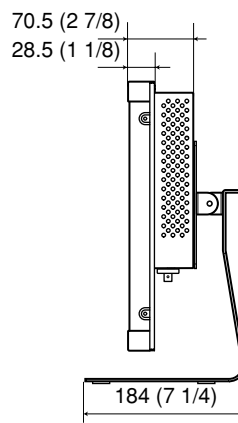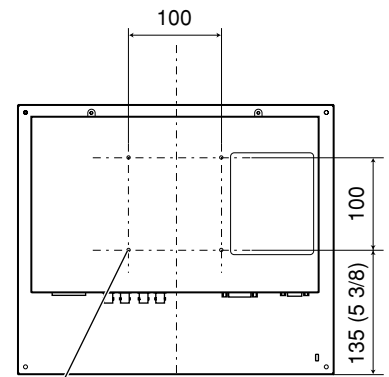
Specifications (cont.)

Specification of the DVI-D terminal

Pin No.	Input signal	Pin No.	Input signal	Pin No.	Input signal
1	T.M.D.S Data 2–	9	T.M.D.S Data 1–	17	T.M.D.S Data 0–
2	T.M.D.S Data 2+	10	T.M.D.S Data 1+	18	T.M.D.S Data 0+
3	T.M.D.S Data 2/4 shield	11	T.M.D.S Data 1/3 shield	19	T.M.D.S Data 0/5 shield
4	NC	12	NC	20	NC
5	NC	13	NC	21	NC
6	DDC Clock	14	+5 V Power	22	T.M.D.S Clock shield
7	DDC Data	15	GND	23	T.M.D.S Clock+
8	NC	16	Hot Plug Detect	24	T.M.D.S Clock–

Specification of the RGB terminal (D-sub 15-pin)
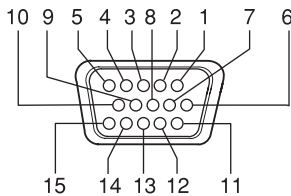
Pin No.	Input signal	Pin No.	Input signal
1	Red	9	+5 V
2	Green	10	GND
3	Blue	11	GND
4	—	12	DDC data
5	GND	13	Horizontal sync/composite sync
6	GND	14	Vertical sync
7	GND	15	DDC clock
8	GND	External	GND

■ Available computer signals

The following computer signals can be displayed on the monitor.

Preset signals

Signal name	Screen resolution	Vertical frequency (reflesh rate)
VGA	640 x 350* 640 x 480	70 Hz* 60 Hz
SVGA	800 x 600* 800 x 600	56 Hz* 60 Hz
XGA	1024 x 768 1024 x 768*	60 Hz 70 Hz*
SXGA (LM-170 only)	1280 x 1024	60 Hz
US TEXT	720 x 400*	70 Hz*
Macintosh	640 x 480*	67 Hz*

* Analog RGB signals only

For analog RGB signals:
In the following cases, perform "AUTO ADJ." (☞ page 13)
• When inputting other signals than those listed in this table
• If the picture of the listed signals is displayed in wrong position or size

If "AUTO ADJ." does not solve the problem, adjust the items in "SIZE/POSI. ADJ. (RGB)." (☞ page 15)