

Ikegami

CCTV PICTURE MONITOR

MODEL PM-175B

INSTRUCTION MANUAL

Ikegami Tsushinki Co., Ltd.

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1. INTRODUCTIONS

Model PM-175B, 17-inch Picture Monitor is developed with many new technologies for picture monitoring. The entire circuit is designed by IC and all silicon semiconductor devices except CRT.

This model have high performance, more reliable and strength construction for shock or vibration.

In the other words, the picture monitor have very good performance, quality and reliability, it is greater than 800 lines Horizontal resolution at center and video bandwidth 10MHz +1.5dB, -3dB. In addition, it is also excellent performance for deflection linearity and distortion.

Internal-external switchable synchronization and DC restoration are provided as standard configurations.

2. FEATURES

- 2-1 The monitor is designed by most highest reliability to be used with abundant IC and promise to decrease for minimum failures.
- 2-2 The monitor provide an external sync input connector and it is advantage to selectable for internal sync such as VS composite and external sync.
- 2-3 The monitor provide DC restoration circuit with back porch clamp and it is very stable black level and make good picture quality.
- 2-4 The monitor has complied safety standard such as X-Ray radiation and etc.
- 2-5 The monitor provide ABL circuit to be limited CRT cathode current and it is control of the highlight signal.

3. RATINGS

- 3-1 Signal Input Level
(1) Video Input : VS Composite 1.0Vp-p
or Video 0.7Vp-p (positive)
(2) Sync Input : 4Vp-p (negative)
- 3-2 Signal Input Impedance
(1) Video Input : 75Ω and High-impedance with bridge connection
(2) Sync Input : 75Ω and High-impedance with bridge connection
- 3-3 Video Output Level : 40Vp-p at Cathode
- 3-4 CRT : 44cm(17")diagonal, Implosion Protection,
Type 440LB4(P4 Phosphor) or equivalents
- 3-5 Scanning Frequency : Horizontal 15.75 KHz Vertical 60Hz, or
Horizontal 15.625KHz Vertical 50Hz
(Specify for Factory Adjustment)
- 3-6 Power Requirement : 100V AC 50/60Hz, 120V AC 60Hz,
230V AC 50Hz
(Specify for Factory Adjustment)
- 3-7 Signal IN/OUT Connectors : BNC type × 4pcs
- 3-8 Power Consumption : Less than 65W
- 3-9 Operating Ambient : -10°C to +45°C (14°F to +113°F)
Temperature

4. CONSTRUCTIONS

- 4-1 External Dimensions : 408 (W) × 385 (H) × 341 (D) mm
(16.06"(W) × 15.16"(H) × 13.43"(D))
- 4-2 Weight : Approx. 15.0Kg (Standard Type)
(Approx. 33lbs)

5. PERFORMANCES

5-1 General Performance

- (1) Resolution : More than 800 horizontal lines (at center)
- (2) Brightness : More than 30FL continuously variable against rated white input signal.
- (3) Power Supply Voltage Variation : Power Supply Voltage Variation shall be assured even when the AC input voltage changed 120V AC $\pm 10\%$ or 230V AC $\pm 13\%$ of rated value during operation.
- (4) Spot Killer : Prevents spot burn-in of CRT when power loss
- (5) Isolation : More than 50M Ω when measured by 500V Megger between the AC input terminal and cabinet
- (6) Voltage Withstanding : No any damage after given voltage, such as 1200V AC per one second between the AC input plug and cabinet
- (7) Vibration : No any loosen or damaged components after vibrated the equipment with operating condition at 1000 cps (16.7Hz), at an acceleration of 2G for 30 minutes vertically and horizontally.

5-2 Video Amplifier Circuit

- (1) Maximum Gain : 44dB ± 2 dB
- (2) Video Bandwidth : 60Hz to 10MHz Within +1.5, -3dB
Under 60Hz and over 10MHz : falling down characteristics
- (3) Amplifier Distortion : Sag : Less than 5%
(against 60Hz square wave)
Overshoot : Less than 10%
(against 250KHz square wave)
Ringing greater than 10MHz shall be excluded
Rise time : Less than 60nS
(against 250MHz square wave)
- (4) Linearity : Within $\pm 5\%$ (by DG method)
- (5) Signal to Noise : Hum noise : Less than -60dB
Synchronous noise : Less than -40dB
- (6) DC Restoration : Fluctuations of DC components at APL 10 to 90% shall be less than 3% of rated output.

5-3 Deflection Circuit

- (1) Synchronous Stability : Stable range of input Sync signal for :
Internal Sync between
VS 0.5 to 2.0Vp-p
External Sync between
S 2.0 to 6.0Vp-p
- (2) Raster Distortion : Less than 2%
- (3) Deflection Distortion : Measured by the interval variation index
method :
Horizontal Less than 7%
Vertical Less than 5%
- (4) Blanking Time : Horizontal Approx. 11.5 μ S
Vertical Less than 1mS
- (5) Scanning Size : 5% over against usefull screen area
10% under against usefull screen area (option)

5-4 High Voltage

- (1) High Voltage : Approx. 16KV

5-5 Others

- (1) X-Ray Radiation : Less than 0.5mR/HR

6. HANDLING

6-1 Handling Precautions

- (1) This model can be installed in any environmental location. However, please note the following conditions which is kept the monitor's performance, such as picture quality, long life operation and etc.
 - (a) Please avoid to install the monitor nearby any vibration source.
 - (b) Please avoid the CRT's surface from direct sunshine and light.
 - (c) When it use adjacent area with the other equipment, please ensure good ventilation by keeping a space greater than 50mm in all directions between the monitor and other equipment.
 - (d) Please avoid moisture as much as possible.
 - (e) Please avoid dusty the locations.
 - (f) Please avoid the installation nearby generating a strong magnetic field.
 - (g) Please keep the operating environmental conditions within rating.
- (2) The picture may be disappeared for when the contrast(CONT) and brightness(BRIGHT) controllers are adjusted fully counterclockwise. However, it is not any problem.
- (3) The monitor is available both vertical scanning frequencies such as 50 & 60 Hz. If they operate to mixed with both frequencies, the monitor's picture will be different vertical height for each others.
- (4) A high voltage is generated 16KV inside the monitor, and the person except servicing staff should not open the case.
- (5) Please check sometime the connection cables, which it may be any damage, especially in outdoor use. The cable should always be handled with care, keep free from sharp bends and kinks, and relieved from the strain with nearly connectors.
Please check the connector to be connected fully insertion and tightness, especially it has used long time operation after installed.

6-2 Set up and Operation

(1) AC line connection

Please connect the monitor to the AC line. (single phase, within 10% of the specified commercial AC line voltage)

A picture appears on the screen within 30 seconds after turning on the power switch.

(2) Video and Sync Signals Connection

Example- A. Connections between one monitor and camera

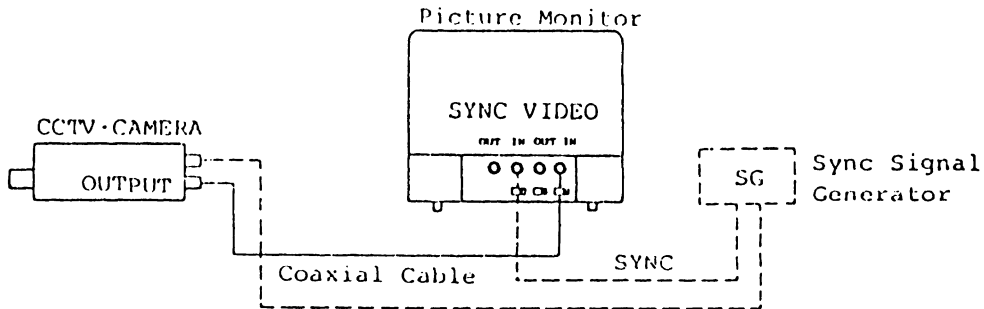


Fig.1 Connections Between Monitor and Camera

- * Connect from the camera OUTPUT BNC connector to the monitor VIDEO IN BNC connector by 75Ω coaxial cable.
- * Set to turn on 75Ω termination switch for video input.
- * Set to "INT" position at Sync INT/EXT switch.
- * When the monitor use with external sync mode, please connect the sync signal to monitor's sync input by coaxial cable, set to "EXT" position at Sync INT/EXT switch, and set to turn on 75Ω termination switch for sync input.
- * They are provided two input connectors for each VIDEO and SYNC.
When you connect the video or sync input, please connect always "Input" side, not output side.

Example- B. Connections between one monitor and several cameras

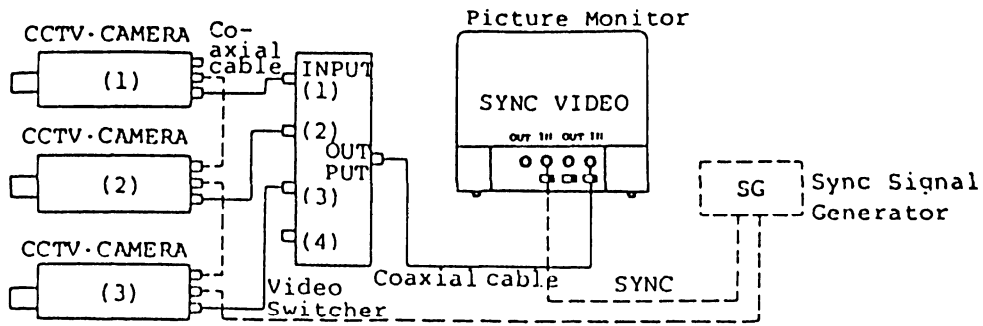


Fig.2 Connections between Monitor and Several Cameras

- * When the monitor use with several camaras, they need a video swicher as per the above drowing configuration.
- * Connect each coaxial cable between camaras and video swicher.
- * Connect the coaxial cable between swicher and monitor.
- * Set to turn on 75Ω termination switch for monitor's video input.
- * Set to "INT" position at Sync INT/EXT switch.
- * External sync mode operation:
It is same as previous section Example A

Example- C. Connection between several monitors and one camera

C1. Bridge connection of monitors

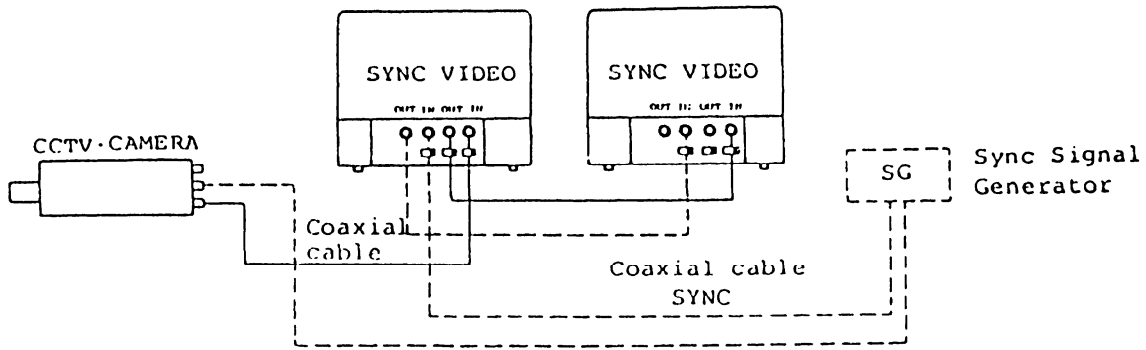


Fig.3 One Camera and Bridge Connection of Several Monitors

- * Connect from camera to monitor (1) by coaxial cable.
- * Connect cable between monitor (1) and (2) by coaxial cable.
- * Set to 75 Ω termination switch to "OFF" for monitor (1) and "ON" for monitor (2)
- * When the monitor may use more than two units, the cable connection is same as the above two units and the last monitor shall be only turn on 75 Ω termination switch.
- * Set to "INT" position at INT/EXT switch.
- * External sync mode operation :
It is same as previous section, Example-A. and set to 75 Ω termination switch to "OFF" for monitor (1) and "ON" for monitor (2).
- * When the monitor use more than ten monitors for single camera, it needs a video distributor Amp for proper picture quality (please refer to section C2).
- * The external sync signal is also recommended the sync distributor Amp for several monitors use.

C2. Use of video distributor amp.

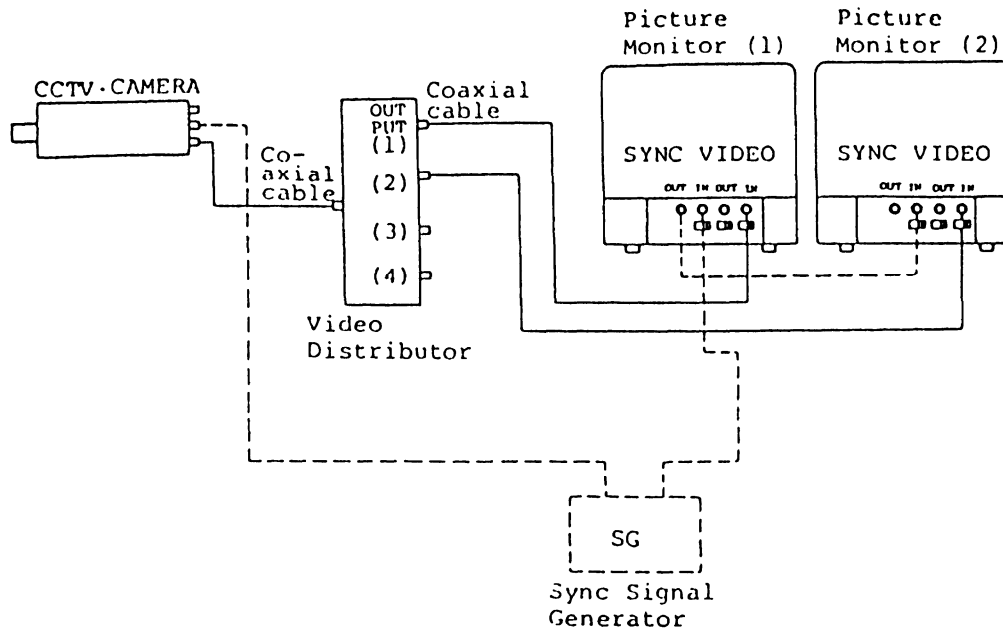


Fig.4 Use of Video Distributor Amp.

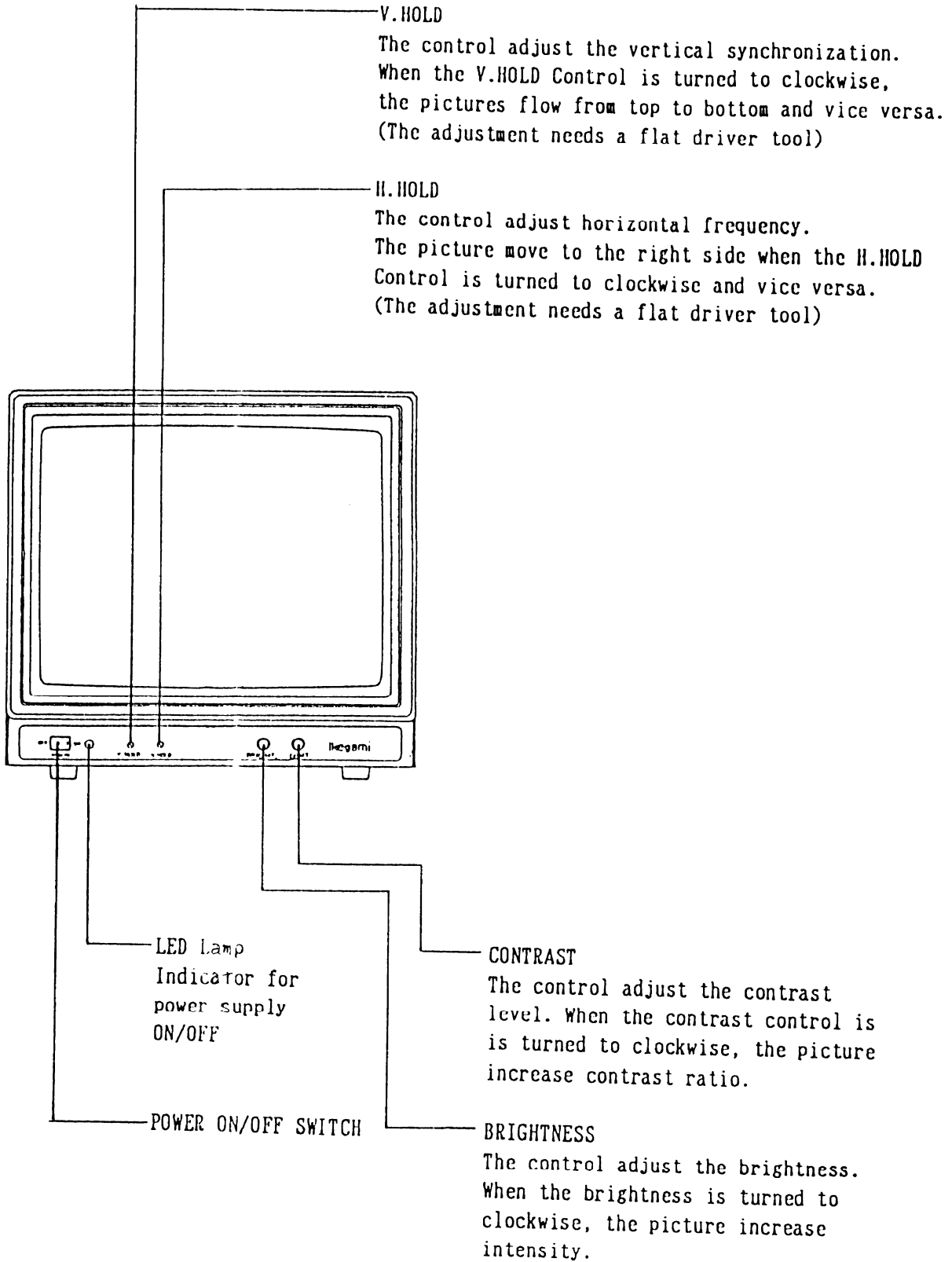
* As described previous section C1, the distributor Amp, may be used with one camera and several monitors connecting method for other than the bridge connection.

In the above method, the quality of monitor's picture do not decline any characteristic, because of the video distributor Amp can be compensated the output characteristic for individual monitor. The bridge connection systems might be declined the characteristic for the last monitor against 1st monitor.

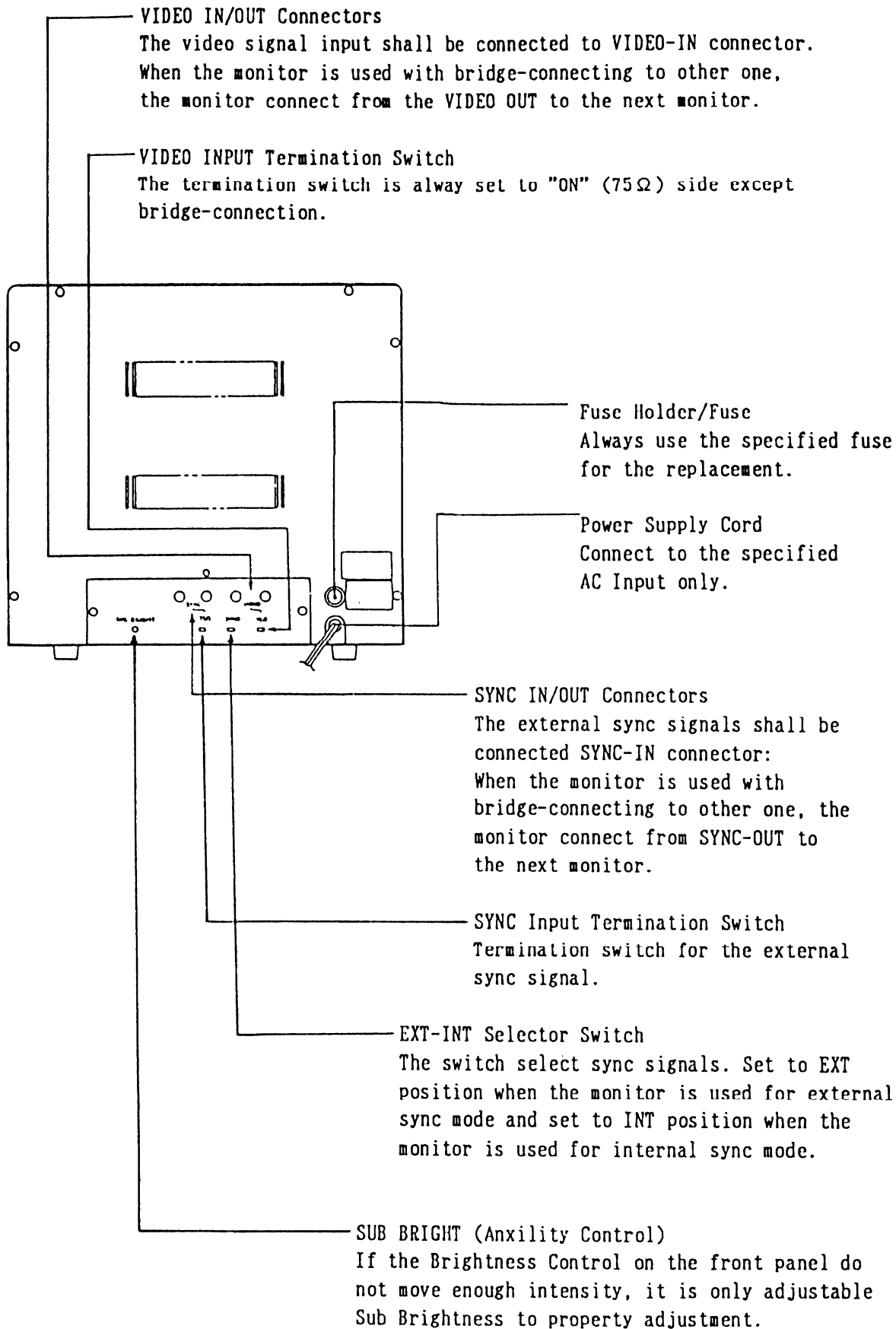
- * Connect between the OUTPUT of camera and the INPUT of video distributor amp by coaxial cable.
- * Connect between the OUTPUT of video distributor and the VIDEO IN of monitor by coaxial cable.
- * Set to turn-on 75Ω termination switch for video input.
- * Set to "INT" position at Sync INT/EXT switch.
- * External sync mode operation:
It is same as previous section Exampre-A. and set to 75Ω termination switch to "OFF" for monitor(1) and "ON" for monitor (2).
- * A synchronizing distributor Amp is also recommended for several monitors operation.

6-3 External Controls and Connections

(1) Front Panel



(2) Rear Panel



7. SERVICE AND MAINTENANCE

"This section is only permitted to authorized personal for any service and maintenance"

7-1 Overall Description

This model has designed to fully continuous operation. For assure satisfactory performances, it should be maintained the following items, and the periodic inspection is necessity.

- (1) Please check for controls knob position and any loose contact.
- (2) Please check for connector connections and any loose contact.
- (3) Please check for any short circuits at input and output circuits.
- (4) Please take care for any rise temperature component inside the monitor.
- (5) Please check for soldering situation.
- (6) Please clean up inside the monitor.

7-2 General Precautions

- (1) Please do not disconnect or reconnect connectors while the power is on.
- (2) Recommend to apply the silicon oil for around the CRT anode cap after clean up it, because of it may occur spark with any dust.
- (3) When you replace CRT, the anode cap may be charged high voltage and it recommend to handle after discharged any voltage for it.

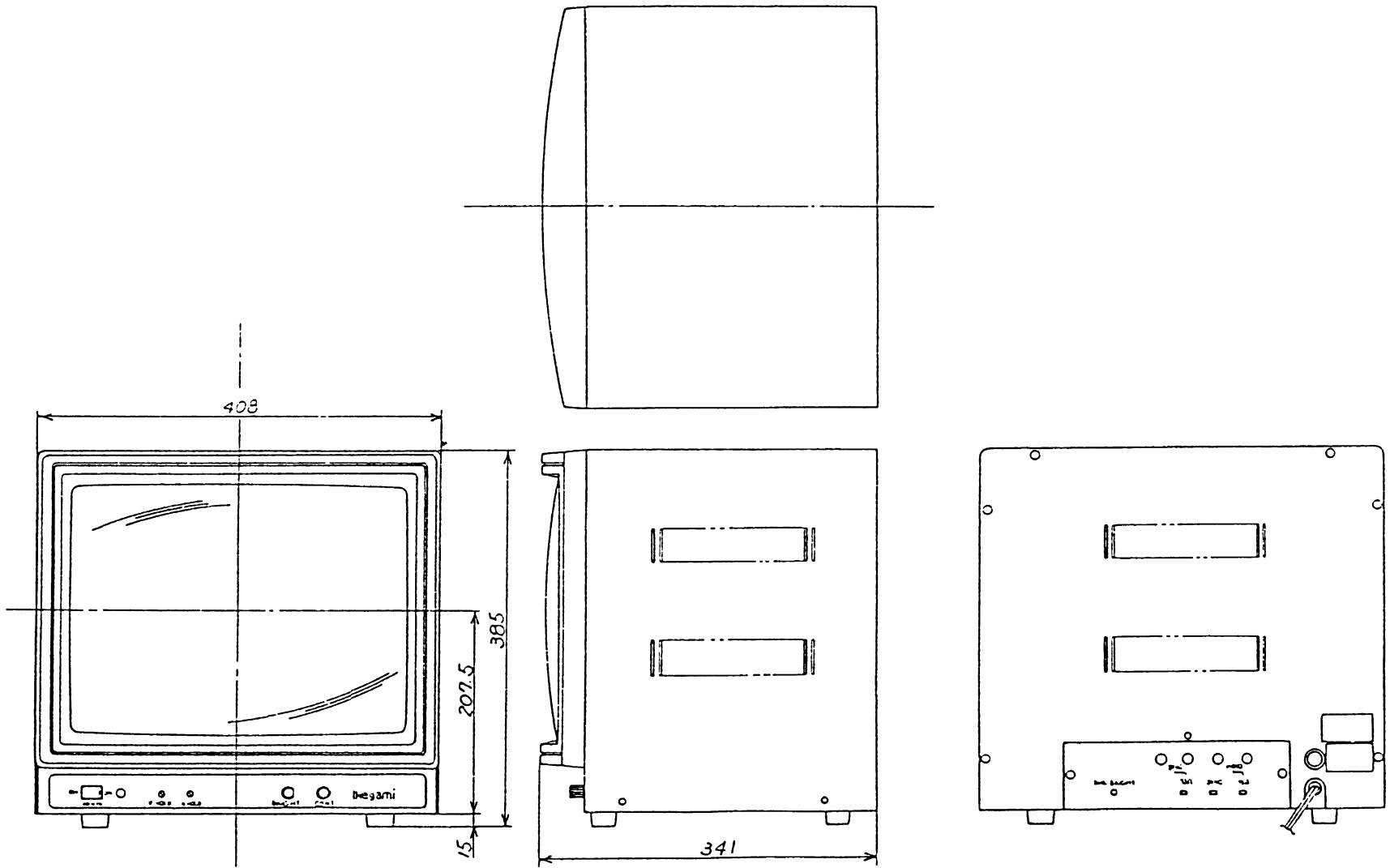
7-3 Handling For Transistors

Please take care the following handling for transistors except CRT:

- (1) Please do not have any short circuit mode with tester or etc when you check the monitor at operation time, because of the transistor has weak characteristic for the electrical shock, but it is so strong the mechanical shock.
- (2) Please turn off power switch when you replace or remove any component.
- (3) Please do not connect a capacitor to the circuit at operation time.
(Especially, please don't do large-capacitance capacitors)

Connecting a large-capacitance capacitor which is not charged, may be damaged around the circuit including the other area.

- (4) please prevent to transmit any unnecessary heating when you have soldering of the transistors.
- (5) Please do not use the soldering iron with any AC leak.
- (6) Please use altime the high impedance probe when you use the scope to be checked the circuit waveform.



PM-175B
EXTERNAL APPEARANCE

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